















MARPOSS

PRECISION GAUGING

REFERENCE GUIDE



-  mobile gauge
-  wireless data connection
-  manual operations
-  manual and automatic loading
-  real-time measure
-  cost effective
-  multiple measurements
-  guided sequence
-  essential data management
-  advanced data management
-  many configurable part programs
-  clean and dry part
-  3D surface inspection
-  dynamic measurements



SHOPFLOOR PRODUCTS



CONTACT GAUGES



GAUGES FOR INTERNAL DIMENSIONS



OPTICAL GAUGES



GAUGES FOR EXTERNAL DIMENSIONS



INTEGRATED SOLUTIONS



INDUSTRIAL CONTROL UNITS



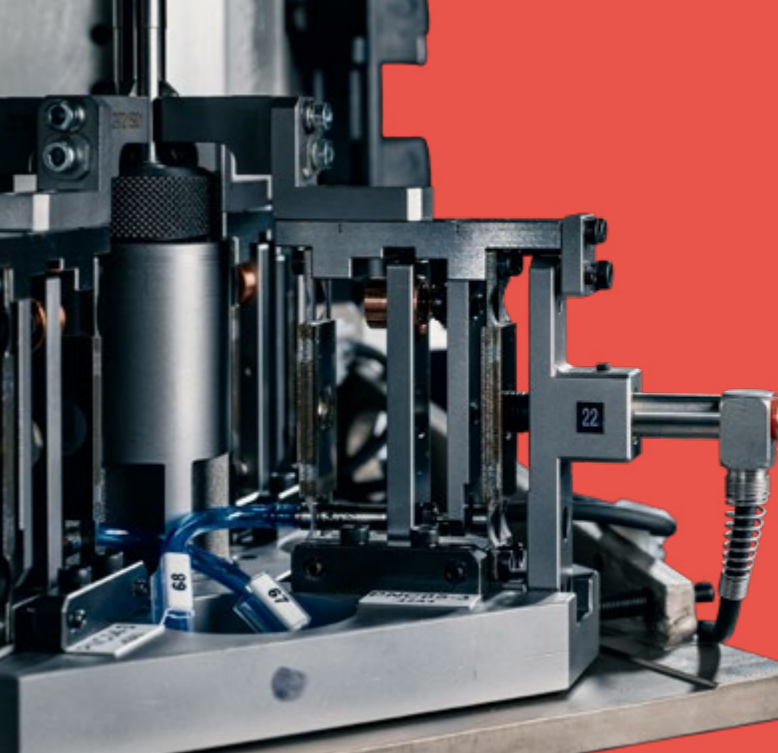
GAUGING SOLUTIONS FOR INTERNAL DIMENSIONS



MANUAL AND AUTOMATIC LOADING



GAUGING SOLUTIONS FOR EXTERNAL DIMENSIONS



GAUGING COMPONENTS



MODULES FOR CONTACT GAUGING



GAUGING MODULES FOR INTERNAL DIMENSIONS



SOFTWARE SOLUTIONS



MODULES FOR OPTICAL GAUGING



GAUGING MODULES FOR EXTERNAL DIMENSIONS



CONNECTIVITY AND INTERFACING MODULES











MARPOSS

SHOPFLOOR PRODUCTS



SHOPFLOOR PRODUCTS

-  CONTACT BORE GAUGES, STAND-ALONE Page 10
-  CONTACT BORE GAUGES WITH TABLE-TOP DISPLAY. Page 12
-  CONTACT BORE GAUGES COLOR DISPLAY AND BLUETOOTH. Page 14
-  CONTACT SNAP GAUGES, STAND ALONE. Page 16
-  CONTACT SNAP GAUGES WITH TABLE-TOP DISPLAY. Page 17
-  OPTICAL GAUGE, WIDE AND FLEXIBLE MEASURING RANGE Page 18
-  OPTICAL GAUGE, TOTAL SURFACE INSPECTION – 3D VISUALIZATION Page 20
-  OPTICAL GAUGE, TOTAL SURFACE INSPECTION – 3D VISUALIZATION. Page 22



Contact Bore Gauges Stand Alone



Contact Bore Gauges With Table-Top Display



Contact Bore Gauges Color Display and Bluetooth



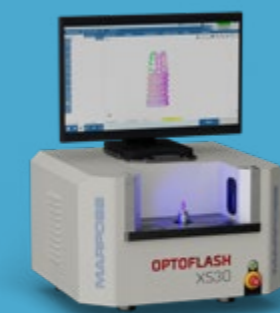
Contact Snap Gauges Stand Alone



Contact Snap Gauges With Table-Top Display



Optical Gauges Total Surface Inspection 3D Visualization



Optical Gauges Total Surface Inspection - 3D Visualization



Optical Gauges Wide and Flexible Measuring Range



CONTACT BORE GAUGES STAND ALONE



- mobile gauge
- manual operations
- real-time measure
- cost effective

APPLICATION AND PRODUCT DESCRIPTION

- ▶ M1-Star with integrated digital indicator is an "All-in-One" solution for manual precision gauging of internal bores. It integrates the measuring head and the display inside the same structure. It does not require any additional accessory in the use. This characteristic makes it a cost-effective solution.
- ▶ M1-Star is perfect to validate workpieces with tight manufacturing tolerance. It features a measurement accuracy up to 1 µm.
- ▶ The rugged structure of this hand-held gauge has been designed for the use inside harsh manufacturing environments. Its industrial-grade measuring head is capable of millions of measurement cycles without any performance degradation. The product robustness is fundamental for efficient operations since it allows easy and fast handling of the gauge.
- ▶ Thanks to the digital integrated display, the operator can take advantage of the total mobility across the production line, with instantaneous feedback of the measurement and the consequent validation of the workpieces.
- ▶ The measuring head is interchangeable, so enabling a high level of gauging flexibility, available directly at the level of the production environment.

AVAILABLE MODULES TO EXTEND THE CONFIGURATION



QUICKDIGIT HR

Quick Digit™ is a digital indicator, integrating the measuring sensor inside. The measured value is shown in real time on its LCD display, together with the "green-yellow-red" led indication for immediate part quality classification.

Quick Digit™ features a standard visualization resolution of 1 µm. An advanced model with extended resolution up to 0.1 µm is available.

Quick Digit is battery powered, allowing a total mobility of the gauge.



ROTARY SPACER

Accessory to have the indicator display always facing the operator.



ANGLE ADAPTOR

Accessory to be used when space is limited and the position of the bore is 90° from the direction of insertion



DEPTH STOP EXTENSION

Accessory to control the position in depth where the measurement is executed



QUICKDIGIT HR AND BLUETOOTH

QuickDigit Bluetooth is the premium version of QuickDigit, extending the base functionalities with wireless transmission capabilities.

QuickDigit Bluetooth is a perfect solution to connect the M1 Star gauge to a PC application. It can transfer the data at each measurement acquisition.



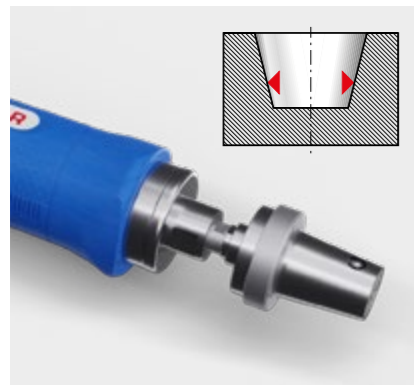
DEPTH EXTENSION

Accessory to bring the gauging head at a farther distance with respect to the direct connection at the handle front-end

BORE GAUGE DEDICATED SOLUTIONS

M1-Star can be equipped with different measuring head models. For instance, specific measuring heads are dedicated to shapes like countersinks, splined geometries, and angled bores.

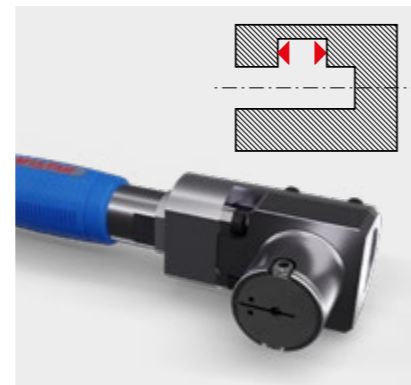
COUNTERSINK FOR CONICAL PROFILES



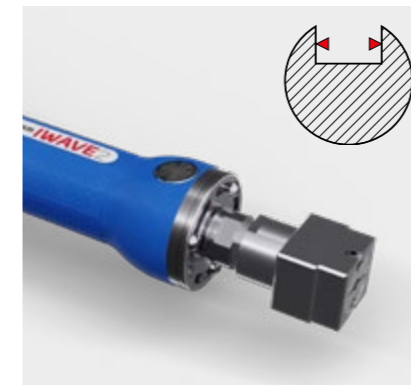
SPLINED, GEARED



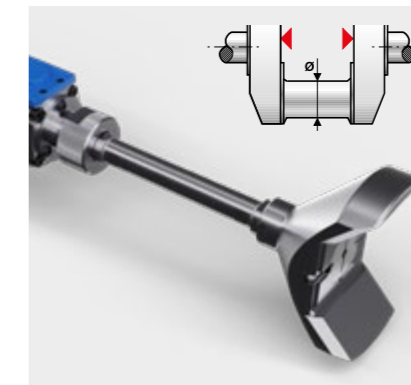
PIPE FOR TURNED BORES



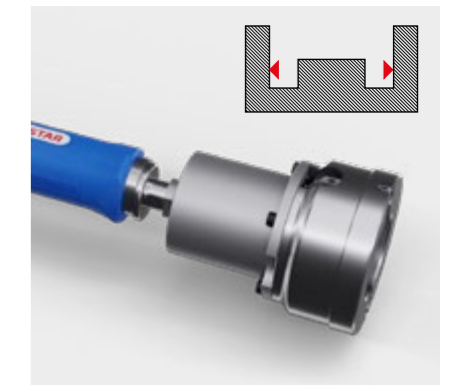
SQUARED NOSEPIECE



«V» SHAPED NOSEPIECE



GAUGE HEADS FOR BORES WITH CENTRAL HUB





CONTACT BORE GAUGES WITH TABLE-TOP DISPLAY



- manual operations
- real-time measure
- cost effective
- essential data management

APPLICATION AND PRODUCT DESCRIPTION

- ▶ M1-Star and DUO Display together are a compact workstation dedicated to precision gauging applications with data management requirements.
- ▶ M1-Star is the hand-held gauge unit to validate workpieces with tight manufacturing tolerance. It features a measurement accuracy up to 1 µm. Its rugged structure has been designed for the use inside harsh manufacturing environments: the measuring head has an industrial grade and is capable of millions of measurement cycles without any performance degradation. Thanks to a fast-release system, the measuring head is exchangeable in the workshop, offering a high level of gauging flexibility directly inside the production environment.
- ▶ DUO Display incorporates a wide range of functionalities, typically required in structured quality control processes. First, it manages the gauge setup and displays the results of the measurements in real-time. Additionally, DUO features several functionalities to manage the measuring data coming from the gauging unit, like results archiving inside the internal microSD card and also transmission of the data to external devices.
- ▶ While the USB port, RS232 and RS485 interfaces are available by default, Duo can be optionally equipped with additional Fieldbus interfaces, directly integrated in its structure. ETHERNET/IP, PROFINET and PROFIBUS are available options.

AVAILABLE MODULES TO EXTEND THE CONFIGURATION



DUO ELECTRONIC

Duo has a 4.3" touch display. Beyond to be a comfortable display for measurement data, it allows the setup of the workstation directly in the workshop. In fact, its touch-display is IP54-grade and its software interface has been specifically optimized for the use by operators in the production line.

IN-OUT port, USB port, RS232 and RS485 interfaces are embedded. Digital INPUT lines are typically used for cycle activation, for instance with a foot-switch and OUTPUT lines are used to communicate the status (good/not good) of the measurement.



ROTARY SPACER
Accessory to have the indicator display always facing the operator.



ANGLE ADAPTOR
Accessory to be used when space is limited and the position of the bore is 90° from the direction of insertion



DEPTH STOP EXTENSION
Accessory to control the position in depth where the measurement is executed

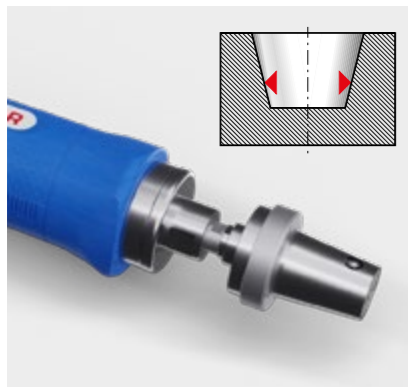


DEPTH EXTENSION
Accessory to bring the gauging head at a farer distance with respect to the direct connection at the handle front-end

BORE GAUGE DEDICATED SOLUTIONS

M1-Star can be equipped with different measuring head models. For instance, specific measuring heads are dedicated to shapes like countersinks, splined geometries, and angled bores.

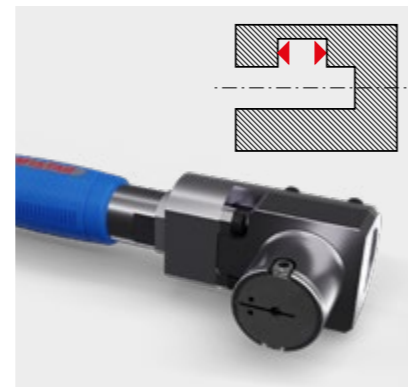
COUNTERSINK FOR CONICAL PROFILES



SPLINED, GEARED



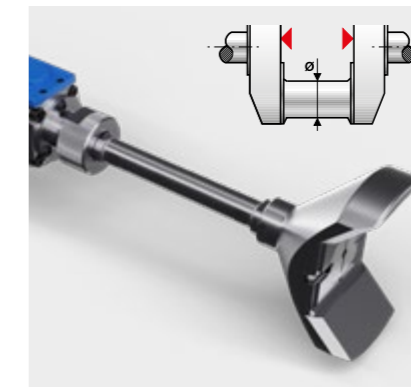
PIPE FOR TURNED BORES



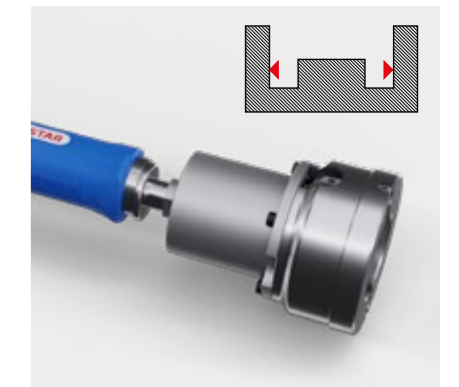
SQUARED NOSEPIECE



«V» SHAPED NOSEPIECE



GAUGE HEADS FOR BORES WITH CENTRAL HUB





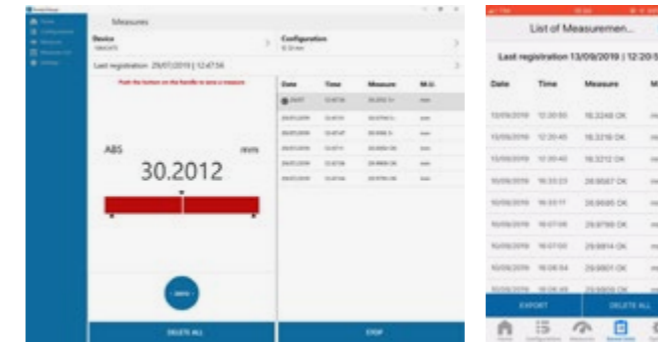
CONTACT BORE GAUGES

COLOR DISPLAY AND BLUETOOTH



APPLICATION AND PRODUCT DESCRIPTION

- ▶ IWAVE2 is the premium product in the mobile bore gauges line, designed with a toolkit of features to support the maximum efficiency during operations in the production line.
- ▶ In fact, it offers all together high gauging precision, total mobility and superior ease-of-use.
- ▶ IWAVE2 incorporates a comfortable display, offering in a single view each of the relevant information about the gauging and the handle status, as the power of the Bluetooth connection or the battery level.
- ▶ Thanks to its wireless charging system, IWAVE2 actually offers a superior grade of mobility to operators, from gauging activities up to the release of the product into its charger station.
- ▶ The activation button is duplicated and the weight of the product is uniformly distributed along its structure. Those are fundamental aspects in order to guarantee the maximum comfort and fast handlings for the operators during the measurement execution.
- ▶ Thanks to the integrated Bluetooth connectivity, IWAVE2 can easily transfer the measurement data in real-time to external devices, like PC or even smartphones.
- ▶ IWAVE2 comes with Ready2Gauge software application, compatible with PC and smartphones, offering several functionalities to extend the use of the gauge and its potentiality.



Ready2Gauge software is a Marposs application for PC, tables and smartphone, dedicated to extend the functionalities of the IWAVE2 hand-held gauges. With Ready2Gauge application, it is possible to quickly configure the measurement parameters and then to visualize the measurement results. Ready2Gauge application is also capable to archive the measurement data in different export formats, like csv or Excel.

Ready2Gauge is compatible with Windows, Android and IOS.



Direct-Lock is the mechanical interface on IWAVE2 to directly connect the measurement head to the handle. Direct-Lock is available in three sizes: M10, M6 or M3,5 thread, in order to accommodate the full variety of measurement heads.



Star-Lock is the fast release mechanical system for quick change of the measurement heads: with a simple action the operator can release the installed measurement head and connect a new one. Star-Lock version is perfect for frequent gauge head changeovers.



WAVE2 electronic version is the right option for application with ultra-tight tolerance. It is coupled with the EBG (Electronic Bore Gauge) electronic version of measurement head.

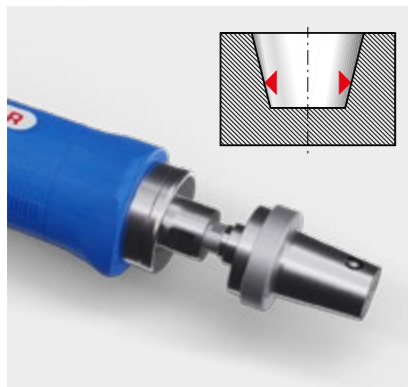


In order to offer the optimal usability for the line operators, the charging station is available in 2 different patterns: Nose-Up, Nose-down.

BORE GAUGE DEDICATED SOLUTIONS

IWAVE2 can be equipped with different measuring head models. For instance, specific measuring heads are dedicated to shapes like countersinks, splined geometries, and angled bores.

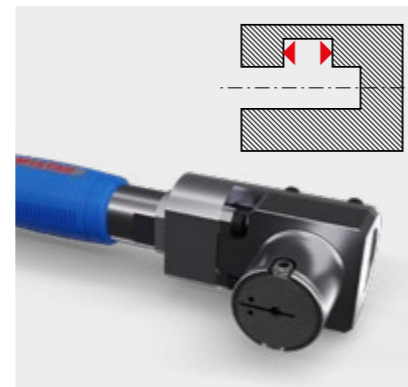
COUNTERSINK FOR CONICAL PROFILES



SPLINED, GEARED



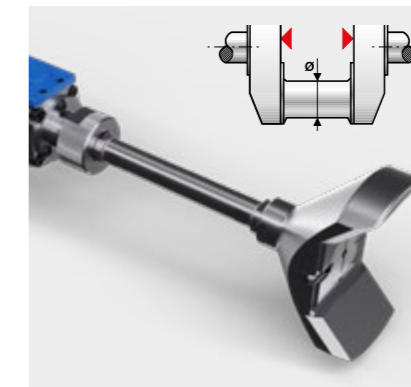
PIPE FOR TURNED BORES



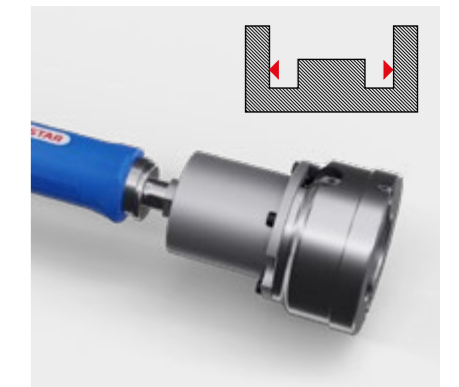
SQUARED NOSEPIECE



«V» SHAPED NOSEPIECE



GAUGE HEADS FOR BORES WITH CENTRAL HUB





CONTACT SNAP GAUGE STAND ALONE



- mobile gauge
- manual operations
- real-time measure
- cost effective

APPLICATION AND PRODUCT DESCRIPTION

- ▶ M3-Star is the hand-held model for manual precision gauging of external diameters.
- ▶ M3-Star is perfect to validate workpieces with tight manufacturing tolerance. It features a measurement accuracy up to 1 µm. The measuring head is purposely designed to be as thin as possible, in order to allow measurements into tiny geometries like section grooves.
- ▶ The rugged structure of this hand-held gauge has been designed for the use inside harsh manufacturing environments. Its industrial-grade measuring head is capable of millions of measurement cycles without any performance degradation. The product robustness is fundamental for efficient operations since it allows easy and fast handling of the gauge.
- ▶ The measuring head is interchangeable, so enabling a high level of gauging flexibility, available directly at the level of the production environment.
- ▶ M3-Star can be configured with an integrated digital indicator, so the operator can take advantage of the total mobility across the production line, with instantaneous feedback of the measurement and the consequent validation of the workpieces. Since "All-in-One", this configuration is super cost-effective.



Quick Digit™ is a digital indicator, integrating the measuring sensor inside. The measured value is shown in real time on its LCD display, together with the "green-yellow-red" led indication for immediate part quality classification. Quick Digit™ features a standard visualization resolution of 1 µm. An advanced model with extended resolution up to 0.1 µm is available. Quick Digit is battery powered, allowing a total mobility of the gauge.

QuickDigit Bluetooth is the premium version of QuickDigit, extending the base functionalities with wireless transmission capabilities.

QuickDigit Bluetooth is a perfect solution to connect the M1 Start gauge to a PC application. It can transfer the data at each measurement acquisition.



ROTARY SPACER

Accessory to have the indicator display always facing the operator.



DEPTH EXTENSION

Accessory to bring the gauging head at a farer distance with respect to the direct connection at the handle front-end

CONTACT SNAP GAUGE WITH TABLE-TOP DISPLAY



- manual operations
- real-time measure
- cost effective
- essential data management

APPLICATION AND PRODUCT DESCRIPTION

- ▶ M3-Star can be connected to a DUO Display, in order to create a functional and compact workstation, combining together gauging functions and data management.
- ▶ DUO Display incorporates a wide range of functionalities, typically required in structured quality control processes. First, it manages the gauge setup and it displays the results of the measurements in real-time. Additionally, DUO features several functionalities to manage the measuring data coming from the gauging unit, like results archiving inside the internal microSD card and also transmission of the data to external devices.
- ▶ While the USB port, RS232 and RS485 interfaces are available by default, Duo can be optionally equipped with additional Fieldbus interfaces, directly integrated in its structure. ETHERNET/IP, PROFINET and PROFIBUS are available options.



DUO ELECTRONIC

Duo has a 4.3" touch display. Beyond to be a comfortable display for measurement data, it allows the setup of the workstation directly in the workshop. In fact, its touch-display is IP54-grade and its software interface has been specifically optimized for the use by operators in the production line.

IN-OUT ports, USB port, RS232 and RS485 interfaces are embedded. Digital INPUT lines are typically used for cycle activation, for instance with a foot-switch and OUTPUT lines are used to communicate the status (good/not good) of the measurement.



OPTICAL GAUGE

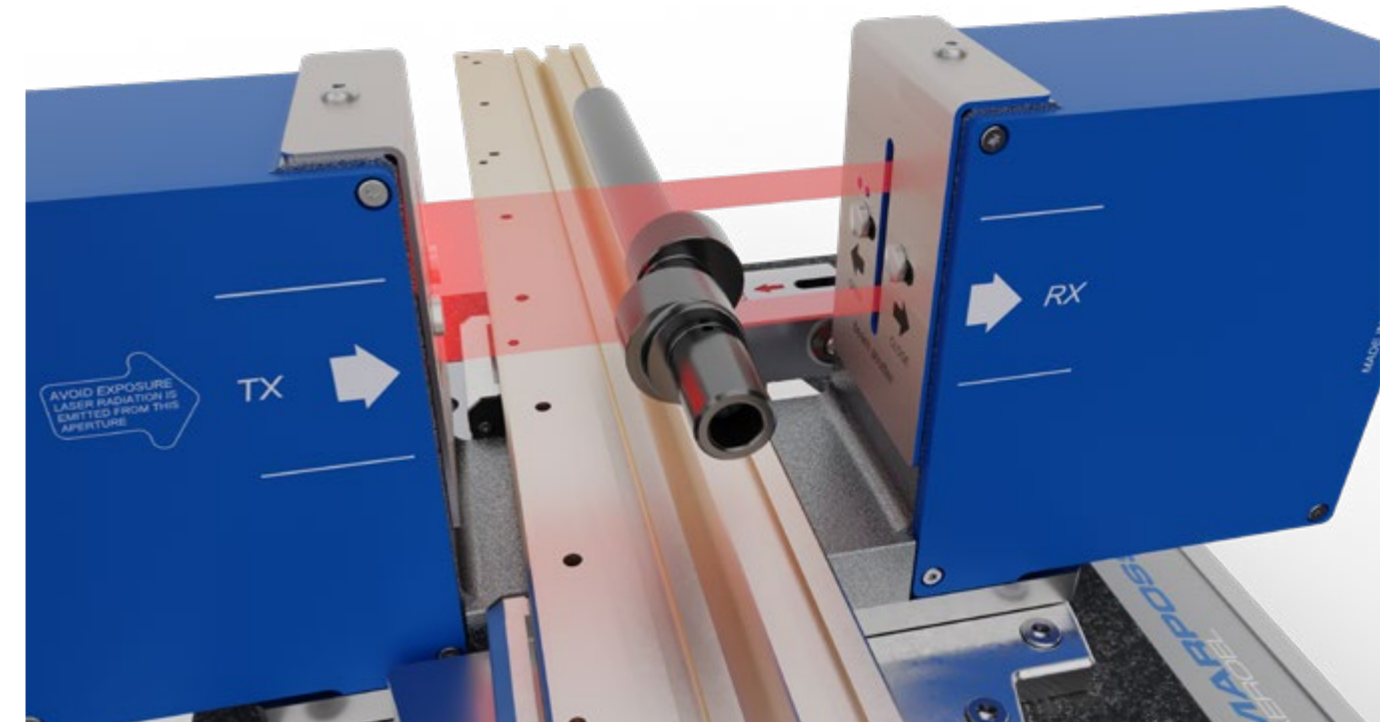
WIDE AND FLEXIBLE MEASURING RANGE



pn: 03PX0610062

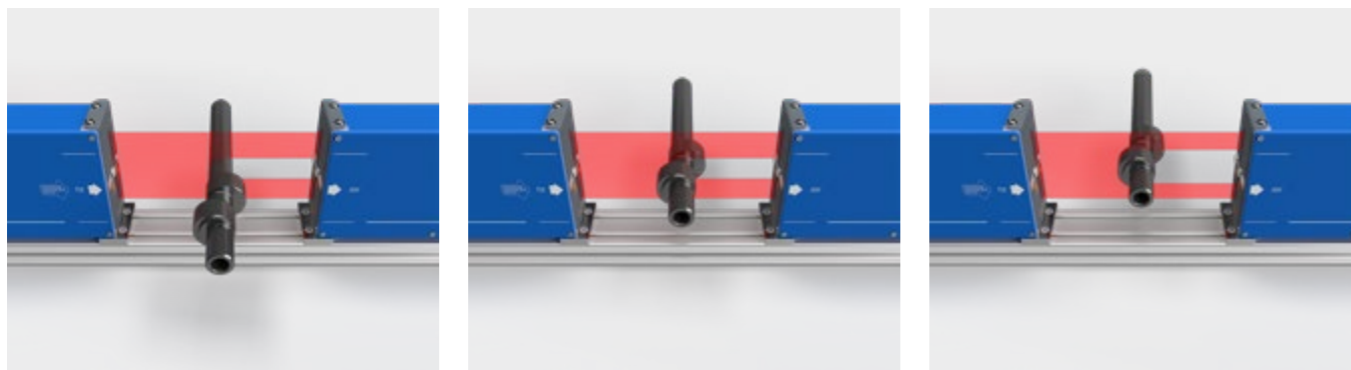
APPLICATION AND PRODUCT DESCRIPTION

- ▶ SUPER-MECLAB is an optical micrometer for the shop floor environment, capable to measure diameters with ultra-precision. For that, SUPER-MECLAB fits several manufacturing applications, even the ones with ultra-tight manufacturing tolerances. It performs an unrivalled accuracy, up to $\pm 0.05\mu\text{m}$.
- ▶ Beyond accuracy in measurement, its laser technology allows a great flexibility of the gauge: a single SUPER-MECLAB station can easily measure several different diameters sizes. It is sufficient to place the workpiece within the laser beam, without any centering requirement. As result, with one single SUPER-MECLAB station, operator can quickly validate a single shaft in different sections or even can validate different shaft models without any re-tooling operation.
- ▶ Thanks to its flexibility in use, precision in measurement and speed in operations, SUPER-MECLAB has a very short time as Return on Investment.



- ▶ In order to deliver sub-micron performance grade, both the ambient temperature and the workpiece temperature matter, since they affect the measured values. The high-end measuring system SUPER MECLAB integrates a performing thermal compensation system that automatically removes from the measured value the undesired contributes due to thermal effects. Thank to this function, SUPER-MECLAB is super-accurate even when installed in the harsh production environment.
- ▶ The user interface is intuitive and allows fast operations in the line.

STEP	1	2	3	4	DIA	23.7999
DIA	12.0346	23.8547	12.0335	23.7999	CEN	-0.1164
CEN	-5.7506	-0.1221	-5.7329	-0.1162	PRESET	0.000
POS	5.995	39.995	80.000	95.995		95.995





OPTICAL GAUGE TOTAL SURFACE INSPECTION – 3D VISUALIZATION

- manual operations
- advanced data management
- many configurable part programs
- clean and dry part
- 3D surface inspection
- dynamic measurements

pn: B2980655205



pn: B0407480657

APPLICATION AND PRODUCT DESCRIPTION

- ▶ Marposs Optoflash is a precision measuring system, that by optical technology, is capable to fully inspect the external geometry of a workpiece and to measure each relevant feature on it. The capability to rotate the part during the measuring cycle allows a 360° control of the complete part surface. Thanks to its special 2D architecture, OptoFlash is a leading product for measuring speed: it can analyze in just 10 seconds the compliance of a workpiece to its design specifications.
- ▶ MEASUREMENTS ARE CONFIGURED BY SOFTWARE. Through intuitive actions, like drag-n-drop, operators can generate the so called “measurement programs”, autonomously. As result, a single OptoFlash unit can measure a large variety of different part types. It is sufficient to enable the requested “part program” in the software interface and activate the automatic measurement cycle through the start button.
- ▶ OptoFlash can measure workpieces up to 300 mm in length and 60 mm in diameter.

S100
Measuring range:
D 60 x L 100 (mm)



pn: B0407480655

S200
Measuring range:
D 60 x L 200 (mm)



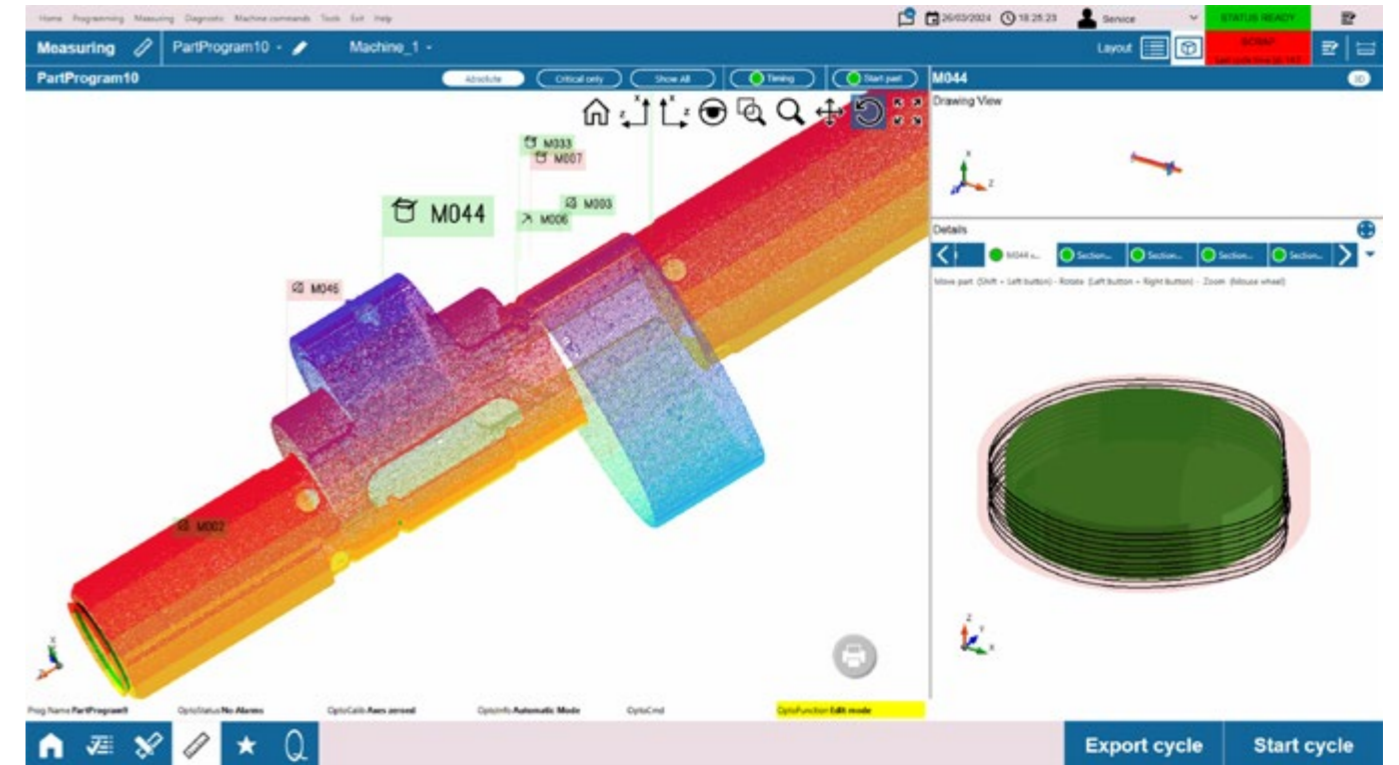
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S300
Measuring range:
D 60 x L 300 (mm)



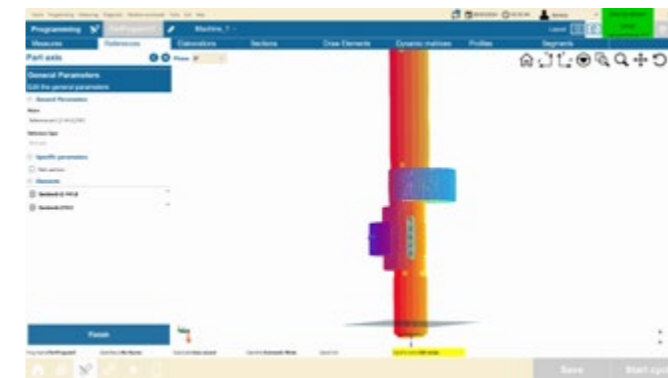
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ACCESSORIES

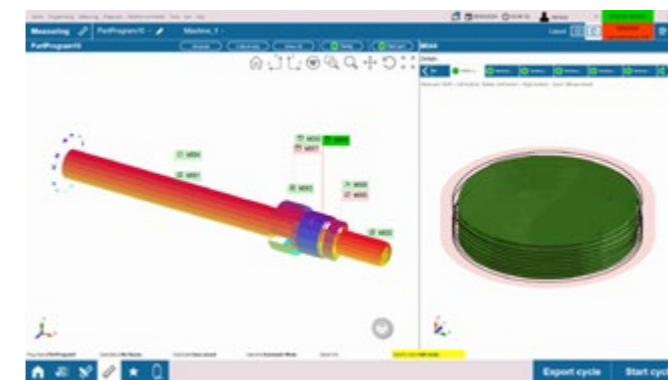


▶ EACH OF YOUR SHAFT IS RECONSTRUCTED IN 3D.

By synchronization of image acquisitions and workpiece rotation, OptoFlash is capable to digitally reproduce the workpiece in a 3D format. This unique capability of the OptoFlash has 2 crucial advantages. First, measurement results are visualized with a 3D style, so delivering a superior ease-of-use to line operators, that can visualize the actual workpiece in a realistic form and to navigate its features very intuitively. Moreover, measurements are much more accurate since calculated on the super-precise reconstruction of the entire workpiece surface, that is the Point Cloud.

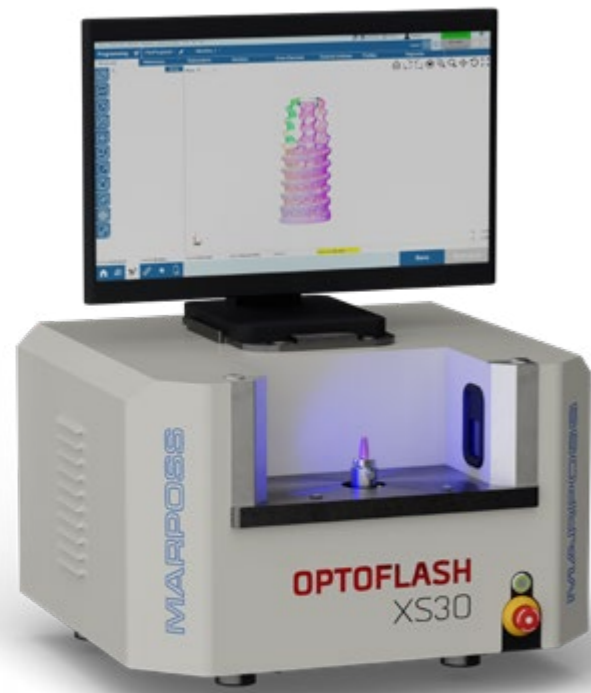








- Axis calculation
- Keyslot angle
- Radial runout
- Diameters
- Thu-hole diameter
- Thu-hole Z-Position
- Roundness
- Cylindricity
- Parallelism
- Stroke
- Angular shift
- Small radii
- Distances and lengths





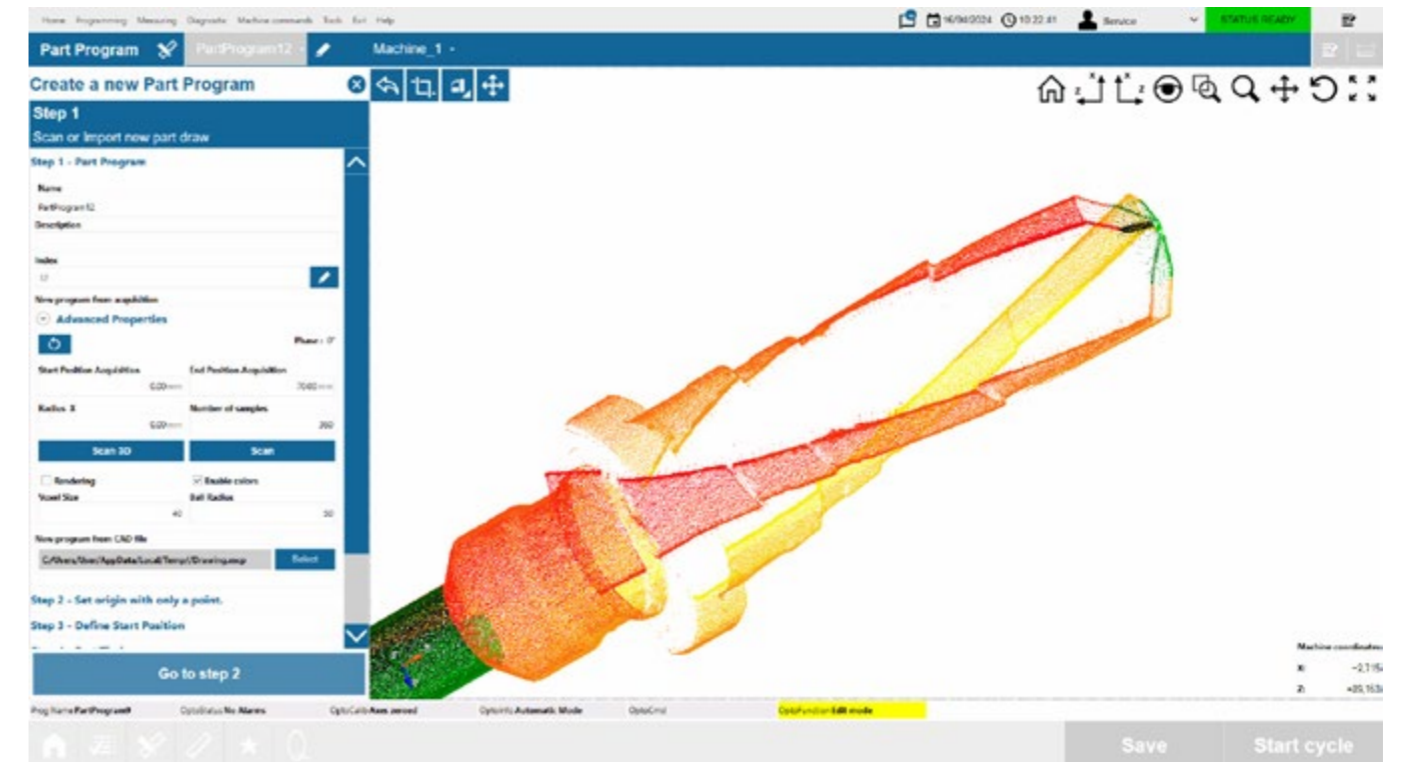
OPTICAL GAUGE TOTAL SURFACE INSPECTION – 3D VISUALIZATION



-  manual operations
-  advanced data management
-  many configurable part programs
-  clean and dry part
-  3D surface inspection
-  dynamic measurements

APPLICATION AND PRODUCT DESCRIPTION

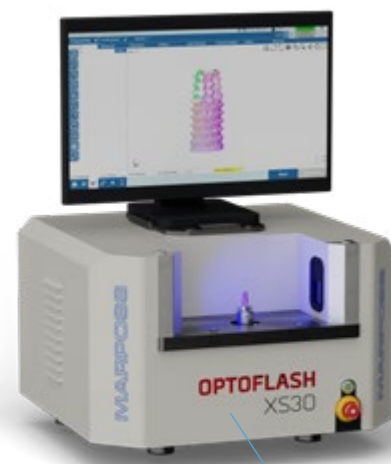
- ▶ OptoFlash XS is a ultra-high resolution optical gauge, designed for precision micro-mechanic and dental implants applications.
- ▶ Workpieces, that are precise and small-sized at the same time, have generally micro-geometries can be validated on the OptoFlash XS with extreme simplicity and in particular, in a bounce of seconds. In fact, the optical acquisitions has no limitation when inspecting even the most small features on a part.
- ▶ MEASUREMENTS ARE CONFIGURED BY SOFTWARE. Through intuitive actions, like drag-n-drop, operators can generate the so called “measurement programs”, autonomously. As result, a single OptoFlash unit can measure a large variety of different part types. It is sufficient to enable the requested “part program” in the software interface and activate the automatic measurement cycle through the start button.



- ▶ EACH OF YOUR SHAFT IS RECONSTRUCTED IN 3D. OptoFlash is the only measuring unit in the market capable to digitally reproduce the workpiece in a 3D format with a sub-micron resolution. This unique capability of the OptoFlash has 2 crucial advantages. First, measurement results are visualized with a 3D style, so delivering a superior ease-of-use to line operators, that can visualize the actual workpiece in a realistic form and to navigate its features very intuitively. Moreover, measurements are much more accurate since calculated on the super-precise reconstruction of the entire workpiece surface, that is the Point Cloud.

XS30
Measuring range:
D 20 x L 30 (mm)

XS60
Measuring range:
D 20 x L 60 (mm)

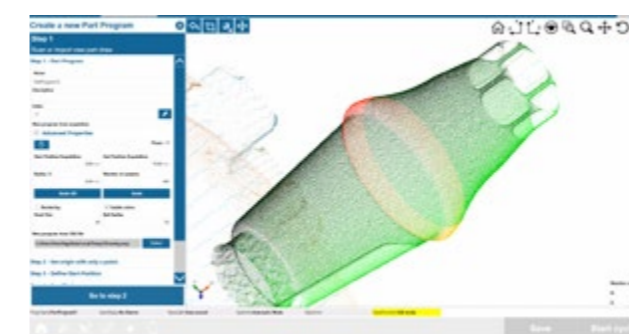
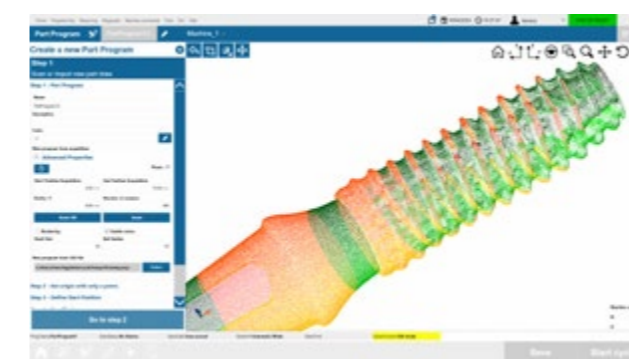


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pn: B0407477295

ACCESSORIES



- Axis calculation
- Keyslot angle
- Radial runout
- Diameters
- Thu-hole diameter
- Thu-hole Z-Position
- Roundness
- Cylindricity
- Parallelism
- Stroke
- Angular shift
- Small radii
- Distances and lengths



MARPOSS

INTEGRATED SOLUTIONS

QUICKSET
MARPOSS



MAIN MEASURE PAGE

EV Part		EV Part		Step 1 (1 / 1)	
Good: 0		Scrap: 0		Trend: 0	
1	Diameter1 25 ± 0.05			mm	
2	Diameter2 25 ± 0.05			mm	

MERLINplus

MARPOSS

INTEGRATED SOLUTIONS

TOOLKIT OF SCALABLE FUNCTIONALITIES Page 28

! ○ ○ MULTISENSOR, WORKSTATIONS Page 30

○ ○ ● MULTISENSOR, WORKSTATIONS Page 32

! ● MULTISENSOR, WORKSTATIONS Page 34

! ○ ○ PREMIUM MULTISENSOR, WORKSTATIONS Page 36

! ○ PREMIUM MULTISENSOR, WORKSTATIONS Page 38

! ○ ● OPTICAL GAUGE, TOTAL SURFACE INSPECTION - 3D VISUALIZATION Page 40



Multisensor Workstations



Multisensor Workstations



Multisensor Workstations



Premium Multisensor Workstations



Premium Multisensor Workstations



Optical Gauge Total Surface Inspection - 3D Visualization



Optical Gauge Total Surface Inspection - 3D Visualization



MULTISENSOR WORKSTATIONS



B830DUOA000



- manual operations
- real-time measure
- cost effective
- essential data management

APPLICATION AND PRODUCT DESCRIPTION

- ▶ With Duo control unit, it is easy to create compact and cost-effective gauging workstations with 2 separated gauging sensors. Thanks to its large flexibility in configuration, it makes possible to select the appropriate gauging technology for an application. In fact, with Duo control unit it is possible to interconnect 2 gauges irrespective of their specific gauging technology. For instance, one mechanical gauge and one air gauge can be used in the same workstation, at the same time. This is a typical configuration of a manual workstation for checking the perfect matching of the external diameters of a shaft against the internal diameter of its housing.
- ▶ DUO control unit incorporates a wide range of functionalities, typically required during quality control activities in the production. First, it manages the gauge setup and displays the results of the measurements in real-time. Additionally, DUO features several functionalities for the management of the measuring results, like data archiving inside the internal microSD card and also transmission to external devices.
- ▶ While the USB port, RS232 and RS485 interfaces are available by default, Duo can be optionally equipped with additional Fieldbus interfaces, integrated in its structure.



ETHERNET/IP, PROFINET and PROFIBUS are available options.



Interface card is an accessory, and it is integrated in the DUO structure.

AVAILABLE MODULES TO EXTEND THE CONFIGURATION



DUO ELECTRONIC

Duo has a 4.3" touch display. Beyond to be a comfortable display for measurement results, the touch-display allows the setup of the workstation directly in the workshop. In fact, it is IP54-grade and the software interface is optimized for use by operators in the production line.

IN-OUT ports, USB port, RS232 and RS485 interfaces are embedded. Digital INPUT lines are typically used for cycle activation, for instance with a foot-switch and OUTPUT lines are used to communicate the status (good/not good) of the measurement.



PRODUCT FEATURES

GAUGING CONTROLS

Duo is a compact control unit that integrates a toolkit of essential functionalities for creation of measurement programs, including creation of custom-defined measurement formulas and configuration of the digital input/output.

WHEN TO USE IT

- ▶ The standard software allows a large configurability that is a fundamental advantage in order to match most of the application requirements, easily and quickly. Configurability become strategical aspect when introducing new models of workpiece in production.

DATA VISUALIZATION

When a measurement cycle is complete, results are visualized on the 4.3" product display. The intuitive graphical layout, the high display contrast, the use of colors allow all together a quick review of the results.

- ▶ Ease-of-use is a fundamental aspect for operators in the field. In fact, basing on the output of a measurement cycle, good/scrap/rework, operator consequently takes actions. DUO is actually intuitive and makes reliable the operators' activities.

DATA MANAGEMENT

Duo integrates a SD memory, 4GB size, usable to store measurement results after each cycle. Export formats are CSV and DFQ. In addition to the local storage, it is possible to mirror the data on a PC directly connected to Duo by using the integrated Ethernet connectivity.

- ▶ Even though the primary function of a measuring station is to classify workpieces as "good/scrap/rework", it is not the only important functionality. In fact, the measurement data contains precious information about the process and its efficiency. Archiving measurement data allows implementing traceability programs or improvement programs of the production efficiency.



MULTISENSOR WORKSTATIONS



-  manual operations
-  real-time measure
-  multiple measurements
-  essential data management

APPLICATION AND PRODUCT DESCRIPTION

- ▶ QUICK SET™ CHUCK is an integrated solution, operator loaded, for gauging multiple features simultaneously on a workpiece. To accomplish this task, it can be configured with multiple contact sensors, integrated in this structure. Sensors can be installed both in a radial and axial pattern in order to perform diameters and height controls on the same workpiece.
- ▶ Using QuickSet chuck is easy. In fact, the operator just needs to introduce the workpiece into the measuring cell. The mechanical robustness of the structure allows a high performance of the system, both in terms of repeatability and reproducibility of the measurements. Its industrial grade is also the guarantee of system reliability all over the time.



Nemo control unit is a perfect combination with QuickSet Chuck: it collects measurement data from multiple sensors and generates a comfortable visualization of the measurement results on its 5.7" color display.

NEMO is the control unit dedicated to medium complexity applications, with a maximum number of 16 measuring sensors.

Its 5.7" touch display, IP54 protection grade, allows a comfortable interaction for the operators.

PRODUCT FEATURES

GAUGING CONTROLS

With NEMO it is possible to create and manage structured measurement programs with a large number of controls inside. Moreover, Nemo implements functionalities to synchronize the execution of the measurements with production batches, collecting results and calculating statistics consistently with the specific batch in process.

WHEN TO USE IT

- ▶ The standard software allows a large configurability that is a fundamental advantage in order to resolve even the most complicate applications. Configurability becomes a strategical aspect when introducing new models of workpiece in production. Thanks to the capability to manage production batches, NEMO is a perfect solution for high volume manufacturing or where stringent quality control programs are implemented.

DATA VISUALIZATION

NEMO features a 5.7" touch display, with IP54 protection grade. The best ease-of-use is obtained through the simple graphical layout, the high display contrast, the use of colors.

In addition to the visualization of the current measurement result, NEMO displays the history of the measuring values on a summary chart, giving the operators clear information of the manufacturing trends.

- ▶ The industrial grade of the touch display is an important feature since operators can quickly input batch information, directly on the display panel. No keyboard and mouse are necessary. Ease-of-use for field operators is a fundamental aspect, since it directly improves the speed of the quality validation activities. The visualization of the results is so intuitive, in order to allow reliable processing of the workpieces, that is based on the output of the validation check.

DATA MANAGEMENT

Measurement results, at the end of each cycle, can be stored into the embedded memory of the product. Optionally those same data can be transferred to remote locations, as networks folders or servers, by using the integrated Ethernet connectivity.

- ▶ Even though the primary function of a measuring station is to classify workpieces as "good/scrap/rework", it is not the only important functionality. In fact, the measurement data contains precious information about the process and its efficiency. Archiving measurement data allows implementing traceability programs or improvement programs of the production efficiency.





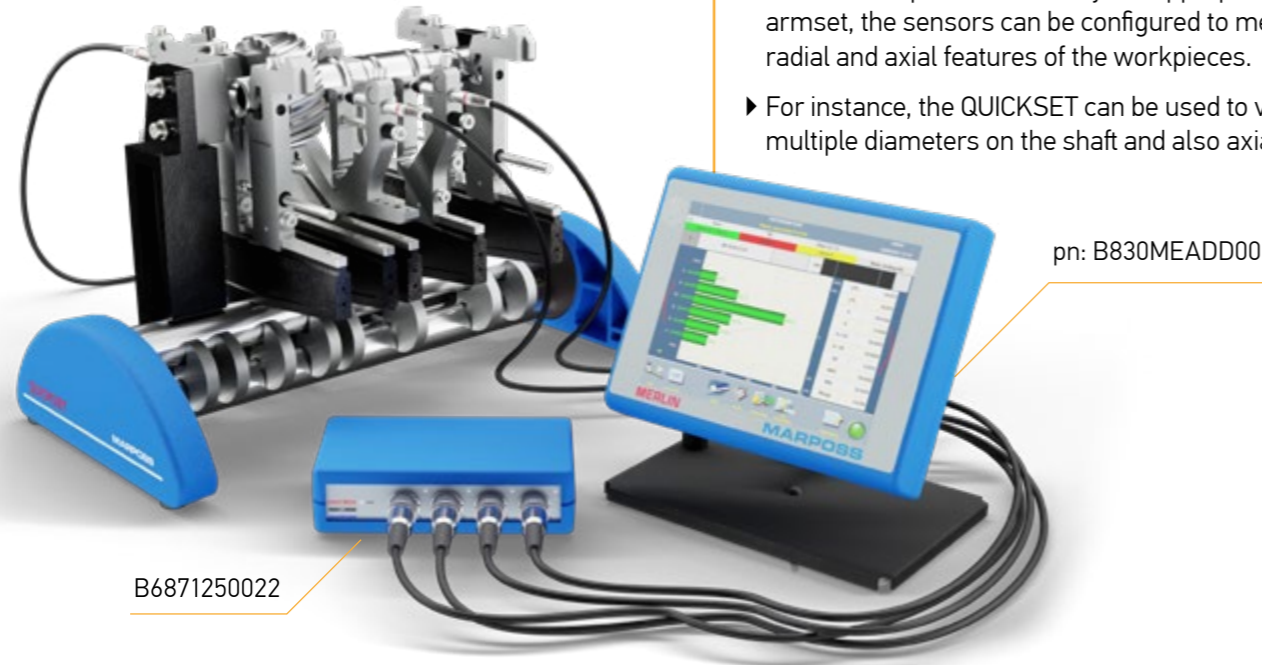
MULTISENSOR WORKSTATIONS



-  manual operations
-  real-time measure
-  multiple measurements
-  essential data management

APPLICATION AND PRODUCT DESCRIPTION

- ▶ QUICK SET™ HORIZONTAL is a gauging solution for multiple controls on shafts. As a modular system, it is combining gauging capabilities and high flexibility, in order to meet demanding application requirements. In its structure, the QuickSet can accommodate different Marposs sensors. By the appropriate armset, the sensors can be configured to measure radial and axial features of the workpieces.
- ▶ For instance, the QUICKSET can be used to validate multiple diameters on the shaft and also axial positions.



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ACCESSORIES



MERLIN is the control unit dedicated to large complexity applications, with a maximum number of 16 characteristics per part program.

Its 8.4" touch display, IP54 protection grade, allows a comfortable visualization of each sensor output.

Thanks to the measure history and part history, Merlin helps operators to precisely control the production flow.

PRODUCT FEATURES

GAUGING PROCESS CONTROL

MERLIN is the right solution for gauging workstations with several measuring sensors. The large display makes comfortable the management of complex measurement programs with a large number of controls inside. Moreover, MERLIN implements functionalities to synchronize the execution of the measurements with production batches, collecting results and calculating statistics consistently with the specific batch in process.

WHEN TO USE IT

- ▶ The standard software allows a large configurability that is a fundamental advantage in order to resolve even the most complicate applications. Configurability become strategical aspect when introducing new workpiece models in production. Thanks to the capability to manage production batches, MERLIN is a perfect solution for high volume manufacturing, where stringent quality control programs are implemented.

DATA VISUALIZATION

MERLIN features a 8.4" touch display, with IP54 protection grade. The best ease-of-use is obtained through the large display, the simple graphical layout, the high display contrast, the use of colors. In addition to the visualization of the current measurement result, MERLIN can display on summary charts the history of the measuring values, giving the operators immediate information of the manufacturing trends.

- ▶ The industrial grade of the touch display is an important feature since operators can easily interact with the control unit, for instance to input batch information. No keyboard and mouse are necessary. Ease-of-use for field operators is a fundamental aspect, since it directly improves the speed of the quality validation activities. The measurement history visualization is a simple as effective tool for the production team. It allows a quick understanding of the production efficiency and facilitate decisions on corrective actions when necessary.

DATA MANAGEMENT

Measurement results, at the end of each cycle, can be stored into the embedded memory. Optionally those same data can be transferred to remote locations, as networks folders or servers, by using the integrated Ethernet connectivity.

- ▶ Even though the primary function of a measuring station is to classify workpieces as "good/scrap/rework", it is not the only important functionality. In fact, the measurement data contains precious information about the process and its efficiency. Archiving measurement data allows implementing traceability programs or improvement programs of the production efficiency.

STATISTICAL PROCESS CONTROL

On MERLIN there are functionalities dedicated to validate the efficiency of production process as the automatic calculation of the Gauge Capability and Machine Tool Capability. In fact, MERLIN, is capable to elaborate in real time measurements into statistical parameters of the production process, as Cp and Cpk. On top of this, MERLIN implements functionalities for the active surveillance of the process: basing on the actual statistical figures, warnings and alarms are automatically generated.

- ▶ Thanks to its integrated statistical toolkit, MERLIN is a perfect solution to quickly implement Statistical Process Control programs. Real time monitoring of production and its output quality are fundamental aspects to improve productivity, efficiency and definitively to save money. Automatic warnings allows to intercept in time critical situations and so to prevent costly not-compliances.

PREMIUM MULTISENSOR WORKSTATIONS



- mobile gauge
- wireless data connection
- manual operations
- multiple measurements
- guided sequence
- advanced data management

APPLICATION AND PRODUCT DESCRIPTION

- ▶ Fast operations and maximum ease-of-use is what MERLIN Plus together with IWAVE2 gauges can deliver, irrespective of the application complexity. For this reason, MERLIN Plus and IWAVE2 gauges are often used in applications with several gauging steps and with tight requirements of productivity.
- ▶ IWAVE2 is the top-of-the-range manual bore gauge, integrating both Bluetooth connectivity and embedded color display for real time measurement review. Double activation button, automatic rotating display, wireless charging station are some of features of this product designed to elevate the level of ease-of-use.
- ▶ With Merlin Plus control unit, part programs with a large number of measurements can be easily managed. Guided sequences can be configured, integrating application-specific information as workpieces images and graphical overlays for the maximum ease-of-use of the line operators.



Direct-Lock is the mechanical interface on IWAVE2 to directly connect the measurement head to the handle. Direct-Lock is available in three sizes: M10, M6 or M3,5 thread, in order to accommodate the full variety of measurement heads.



Star-Lock is the fast release mechanical system for quick change of the measurement heads: with a simple action the operator can release the installed measurement head and connect a new one. Star-Lock version is the perfect one for frequent gauge head changeovers.



WAVE2 electronic version is the right option for application with ultra-tight tolerance. This version is coupled with EBG (Electronic Bore Gauge) the electronic version of measurement head.



MERLIN Plus is the control unit dedicated to medium complexity applications, with a maximum number of 250 measuring sensors.

Its 12.1" touch display, IP54 protection grade, allows a comfortable visualization of each sensor output.

Thanks to the measure history and part history, Merlin Plus helps operators to precisely control the production flow.

PRODUCT FEATURES

GAUGING PROCESS CONTROL

MERLIN Plus is the premium control unit offering, on top of the primary gauging application, a wide range of functionalities to support the manufacturing process and the quality control execution. The high level of configurability is one of the key advantages of the MERLIN Plus, allowing a perfect fitting into existing applications.

WHEN TO USE IT

- ▶ The combination of a large number of functionalities designed purposely for quality control and the extreme level of configurability make Merlin PLUS the preferred choice for manufacturing with structured quality control and traceability programs.

DATA VISUALIZATION

With MERLIN Plus, it is possible to create custom-defined pages for the visualization of the measurement results at the end of the cycle. Multiple displays can be connected to MERLIN Plus in order to have a comfortable visualization in case of large control plans. Measurement results can also be printed in pdf format. Operator can access to part history, in order to visualize the results of previous parts. Moreover, summary charts with measurement history are available, normally used for graphical review of the trends.

- ▶ Configurability of the visualizations gives a significant benefit to operators, making intuitive the review of the measuring cycle even when it is composed by several different controls. Efficiency in manufacturing operations is directly connected to productivity and cost savings.

DATA MANAGEMENT

Measurement results, at the end of each cycle, can be stored into the embedded memory. Optionally those same data can be transferred to remote locations, as networks folders or servers, by using the integrated Ethernet connectivity.

- ▶ Even though the primary function of a measuring station is to classify workpieces as "good/not good", it is not the only important functionality. In fact, the measurement data contains precious information about the process and archiving those data allows implementing traceability programs or improvement programs of the production efficiency.

STATISTICAL PROCESS CONTROL

On MERLIN Plus there are functionalities dedicated to validate the efficiency of production process as the automatic calculation of the Gauge Capability and Machine Tool Capability. In fact, Merlin Plus, is capable to elaborate in real time measurements into statistical parameters of the production process, as Cp and Cpk. On top of this, Merlin Plus implements functionalities for the active surveillance of the process: basing on the actual statistical figures, warnings and alarms are automatically generated.

- ▶ Thanks to its integrated statistical toolkit, Merlin Plus is a perfect solution to quickly implement Statistical Process Control programs. Real time monitoring of production and its output quality are fundamental aspects to improve productivity, efficiency and definitively to save money. Automatic warnings allows to intercept in time critical situations and so to prevent costly not-compliances.

PREMIUM MULTISENSOR WORKSTATIONS



APPLICATION AND PRODUCT DESCRIPTION

- ▶ Quick Set Vertical is a gauging system for shafts, capable to execute multiple measurements on a workpiece in a single shot. Its architecture is designed to accommodate measuring sensors in the right position, according to the specific workpiece model. The QuickSet belongs to the class of flexible measuring solutions: in fact, the vertical bars allow an easy repositioning of the measuring head in case of production changes, directly in the workshop.
- ▶ QuickSet is also available as dual structure, perfect solution for productions with demanding throughput: on the same base structure there are 2 separated measuring systems, that are normally controlled by one single control unit. Thanks to this structure, with QuickSet dual it is sufficient to change the part program on the software interface to switch from a workpiece model to another or in case of different operations to control. Thanks to the optional motor for part rotation, dynamic measurements are supported.



The GagePod is a line of connectivity modules with a wide range of functionalities. First, GagePod can network the measuring sensors composing the gauging solution and convey measurement data to the Control unit. In addition, GagePod offers connectivity to the customer automation system, thanks to Fieldbus modules like ETHERNET/IP, PROFINET and PROFIBUS.

Several GagePod blocks can be interconnected together in order to create large measuring systems. As option, multiple GagePod can be concatenated, in a side by side mechanical mounting pattern, for the best compact installation in line.



E9066E is the top-of-the-range control unit, capable to resolve up to the most demanding applications.

PRODUCT FEATURES

GAUGING PROCESS CONTROL

E9066 control unit, with its software suite QuickSPC, is the top of the product range. It is purposely designed to cover demanding applications both in terms of configuration complexity and computational performance. It offers a toolkit of utilities and functionalities that can cover almost any need in industrial applications from measurement for quality controls, automation, traceability up to data management.

WHEN TO USE IT

- ▶ The combination of a large number of functionalities designed purposely for quality control and the extreme level of configurability make E9066 the preferred choice for manufacturing with structured quality control and traceability programs.

DATA VISUALIZATION

The user interface is optimized to visualize control plans with a large number of measurements. Each single measurement can also be analyzed in details, through a dedicated page with graphical illustration of the profiles. Multiple displays can be connected and custom-defined pages can be created, for a perfect adaptation to the customer application and use. Measurement results can be printed in pdf format, on request or automatically at the end of each cycle.

- ▶ Configurability of the visualizations gives a significant benefit to operators, making intuitive the review of the measuring cycle even when it is composed by several different controls. Efficiency in manufacturing operations is directly connected to productivity and cost savings.

DATA MANAGEMENT

Measurement results, at the end of each cycle can be transferred to remote locations. A deep level of configurability is supported, for instance data formatting or custom export-file naming.

- ▶ Even though the primary function of a measuring station is to classify workpieces as "good/not good", it is not the only important functionality. In fact, the measurement data contains precious information about the process and archiving those data allows implementing traceability programs or improvement programs of the production efficiency.

STATISTICAL PROCESS CONTROL

On E9066 there are functionalities dedicated to validate the efficiency of production process as the automatic calculation of the Gauge Capability and Machine Tool Capability. In fact, E9066, is capable to elaborate in real time measurements into statistical parameters of the production process, as Cp and Cpk. On top of this, E9066 implements functionalities for the active surveillance of the process: basing on the actual statistical figures, warnings and alarms are automatically generated.

- ▶ Thanks to its integrated statistical toolkit, E9066 is a perfect solution to quickly implement Statistical Process Control programs. Real time monitoring of production and its output quality are fundamental aspects to improve productivity, efficiency and definitively to save money. Automatic warnings allows to intercept in time critical situations and so to prevent costly non-compliances.

ADVANCED SETUP

E9066 and QuickSPC merge all together computational power, configuration flexibility and a wide toolkit of functionalities. Advanced functionalities to develop complex applications are integrated: guided sequences for manual step-by-step controls, interfacing to PLC for automatic loading, in-line thermal compensation base or real part temperature, fine-tuning feedback for the machine tool.

- ▶ E9066 and QuickSPC are much more than a measuring system. Thanks to the wide range of functionalities, from data management to automation, applications can be resolved with an excellent balance price-performance: the high level of integrated functionalities remove the need of additional components or separated accessories.

OPTICAL GAUGE

TOTAL SURFACE INSPECTION - 3D VISUALIZATION



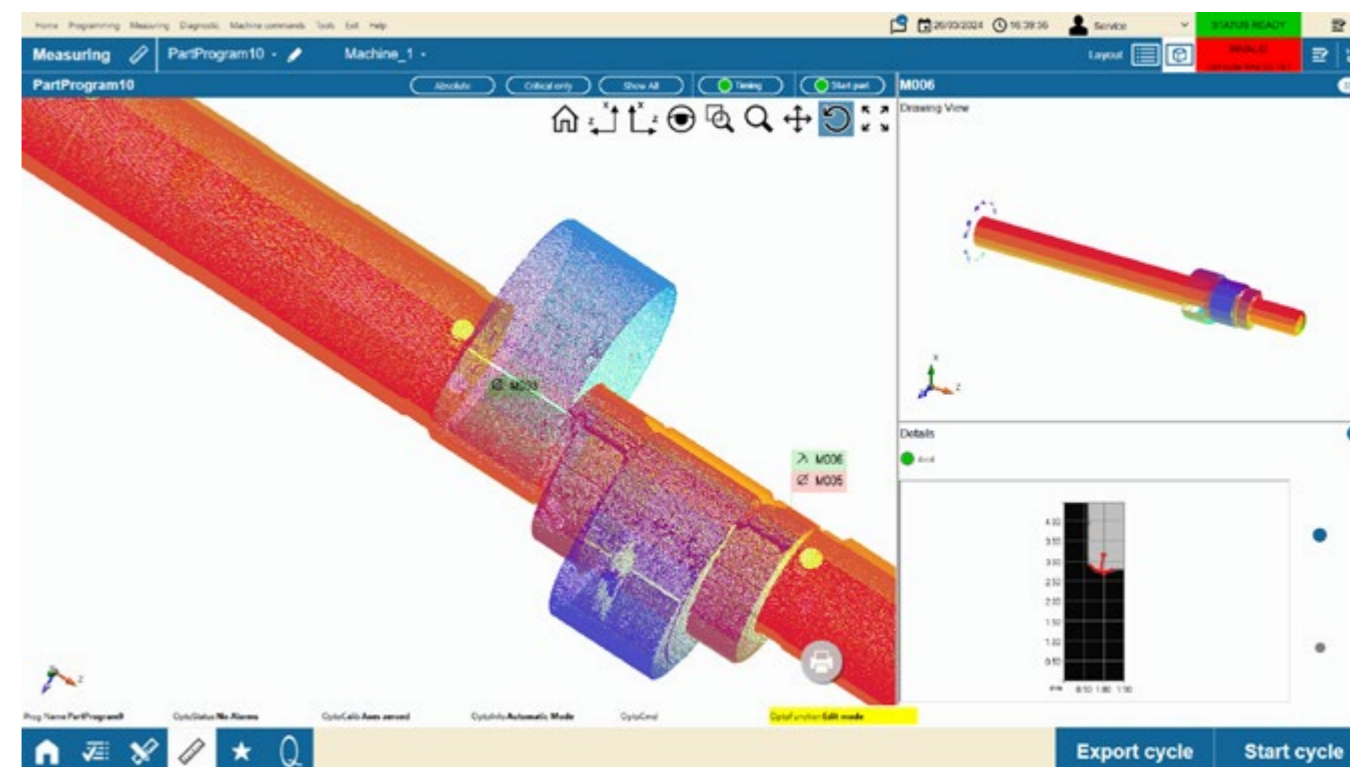
- manual and automatic loading
- 3D surface inspection
- dynamic measurements
- clean and dry part
- advanced data management
- many configurable part programs

APPLICATION AND PRODUCT DESCRIPTION

- ▶ End-of-line is the stage of the production where quality compliance means validating each single feature on the workpiece and checking it is perfectly in specifications. Optical gauging is the right method to validate a workpiece in any of its external features, irrespective of the geometrical constraints of a part, and all over 360°.
- ▶ Optical technology is super fast and thanks to this characteristic, it has revolutioned the quality control in the end-of-line, enabling the possibility to control 100% of the workpieces in the end-of-line. OptoFlash is the Marposs precision optical gauge, based on a unique 2D optical architecture without axis motion, that makes this product the first-in-its-class for speed in measurement. A complete measuring cycle takes typically no longer than 10 seconds, irrespective of the number of measurements executed.
- ▶ Premium Ease-of-Use is also a distinctive feature of the OptoFlash. In fact, through a special Marposs algorithm, patent-pending, OptoFlash is capable to reconstruct in real-time the 3D of each workpiece in measurement. Measurement results are visualized in a 3D style, so elevating the level of ease-of-use at top of its category.

The GagePod is a line of connectivity modules with a wide range of functionalities. First, GagePod can network the measuring sensors composing the gauging solution and convey measurement data to the Control unit. In addition, GagePod offers connectivity to the customer automation system, thanks to Fieldbus modules like ETHERNET/IP, PROFINET and PROFIBUS.

Several GagePod blocks can be interconnected together in order to create large measuring systems. As option, multiple GagePod can be concatenated, in a side by side mechanical mounting pattern, for the best compact installation in line.



PRODUCT FEATURES

READY FOR ANY GAUGING CHALLENGE

OptoFlash offers a superior measurement flexibility: measurements are configured by software and each part program is saved in the product memory, ready to be activated in any moment. Measurements are obtained by digital analysis of the ultra-high resolution images. Complex controls, like small elements or dynamic sessions, are very easy to execute on the OptoFlash

EASE-OF-USE

Visualization of the measurement results is in a 3D style, making so intuitive for the operator the validation of a measurement cycle. Through intuitive actions, like drag-n-drop actions, operators can generate "measurement programs" autonomously.

DATA MANAGEMENT

Measurement results, at the end of each cycle can be transferred to remote locations. A deep level of configurability is supported, for instance data formatting or custom export-file naming.

AUTOMATIC LOADING

OptoFlash is largely used in automatic applications where workpieces are loaded by robot and where measuring cycle time is actually demanding, in the range of 10 seconds. In fact, thanks to its unrivalled speed in measurement, OptoFlash fits the most totality of automated applications, even the most complicated.

WHEN TO USE IT

▶ A single OptoFlash unit can measure a large variety of part types, just switching measurement program in the software interface. It is a perfect product for productions with high mix of part types.

▶ No training is necessary for users of the OptoFlash. The ease-of-use is a strategical aspect for this product, since it makes fast the product configuration in line. When new workpieces model are introduced in production, the part programs can be generated in a few moments.

▶ Even though the primary function of a measuring station is to classify workpieces as "good/not good", it is not the only important functionality. In fact, the measurement data contains precious information about the process and archiving those data allows implementing traceability programs or improvement programs of the production efficiency.

▶ HIGHER THE MEASUREMENT SPEED, CHEAPER IS THE AUTOMATION SYSTEM OF THE LINE. A single optoFlash unit is normally sufficient to fulfil the target line throughput. In fact OptoFlash is normally 2 time faster in measurement than a traditional system based on part scanning.

OPTICAL GAUGE

TOTAL SURFACE INSPECTION - 3D VISUALIZATION



- manual and automatic loading
- 3D surface inspection
- dynamic measurements
- clean and dry part
- advanced data management
- many configurable part programs

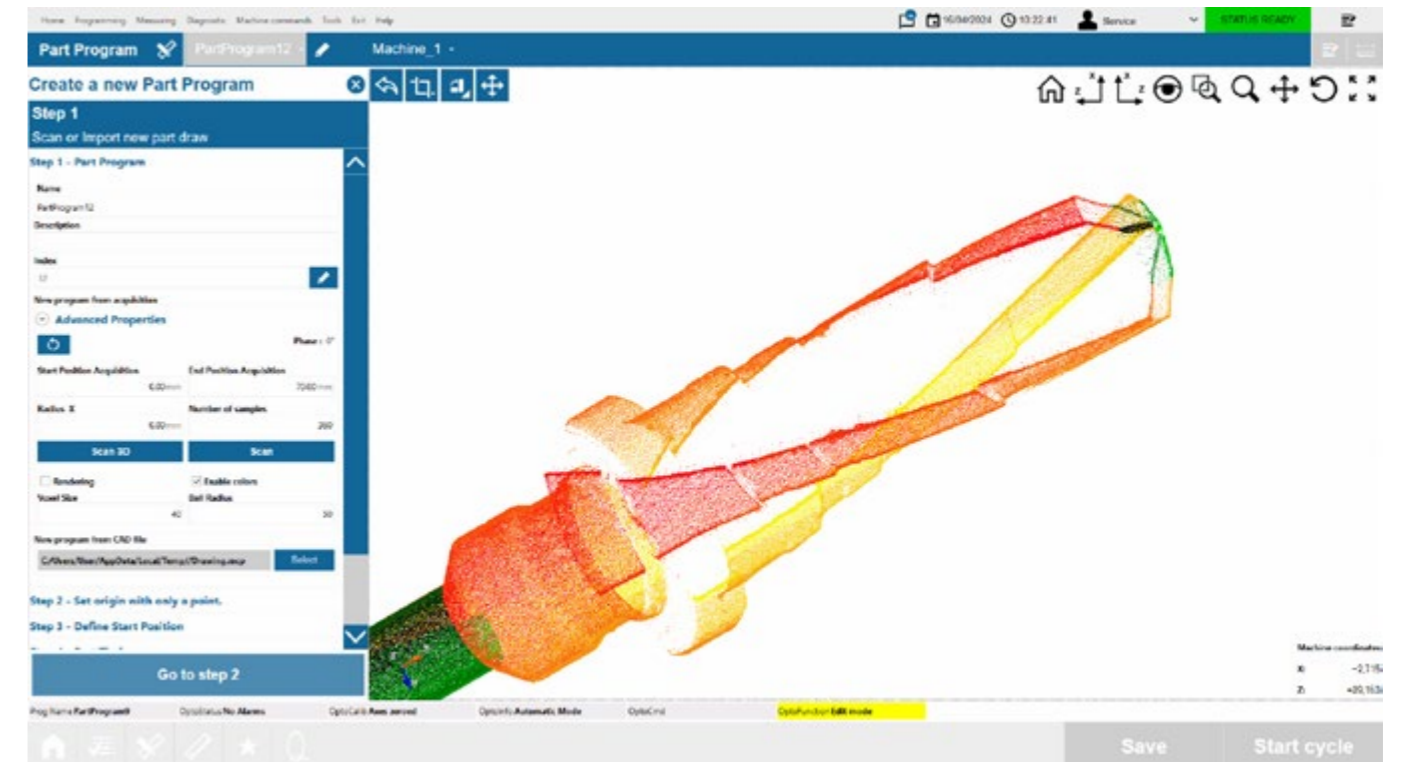
APPLICATION AND PRODUCT DESCRIPTION

- ▶ OptoFlash XS is an ultra-high resolution optical gauge, designed for precision micro-mechanic and dental implants applications.
- ▶ Workpieces, that are precise and small-sized at the same time, have generally micro-geometries that can be validated on the OptoFlash XS with extreme simplicity and in particular, in a bounce of seconds. In fact, the optical acquisition has no limitation when inspecting even the smallest features on a part.
- ▶ MEASUREMENTS ARE CONFIGURED BY SOFTWARE. Through intuitive actions, like drag-n-drop, operators can generate the so called “measurement programs”, autonomously. As result, a single OptoFlash unit can measure a large variety of different part types. It is sufficient to enable the requested “part program” in the software interface and activate the automatic measurement cycle through the start button.



The GagePod is a line of connectivity modules with a wide range of functionalities. First, GagePod can network the measuring sensors composing the gauging solution and convey measurement data to the Control unit. In addition, GagePod offers connectivity to the customer automation system, thanks to Fieldbus modules like ETHERNET/IP, PROFINET and PROFIBUS.

Several GagePod blocks can be interconnected together in order to create large measuring systems. As option, multiple GagePod can be concatenated, in a side by side mechanical mounting pattern, for the best compact installation in line.



PRODUCT FEATURES

READY FOR ANY GAUGING CHALLENGE

OptoFlash offers a superior measurement flexibility: measurements are configured by software and each part program is saved in the product memory, ready to be activated in any moment. Measurements are obtained by digital analysis of the ultra-high resolution images. Complex controls, like small elements or dynamic sessions, are very easy to execute on the OptoFlash

EASE-OF-USE

Visualization of the measurement results is in a 3D style, making so intuitive for the operator the validation of a measurement cycle. Through intuitive actions, like drag-n-drop actions, operators can generate “measurement programs” autonomously.

DATA MANAGEMENT

Measurement results, at the end of each cycle can be transferred to remote locations. A deep level of configurability is supported, for instance data formatting or custom export-file naming.

AUTOMATIC LOADING

OptoFlash is largely used in automatic applications where workpieces are loaded by robot and where measuring cycle time is actually demanding, in the range of 10 seconds. In fact, thanks to its unrivalled speed in measurement, Optoflash fits the most totality of automated applications, even the most complicated.

WHEN TO USE IT

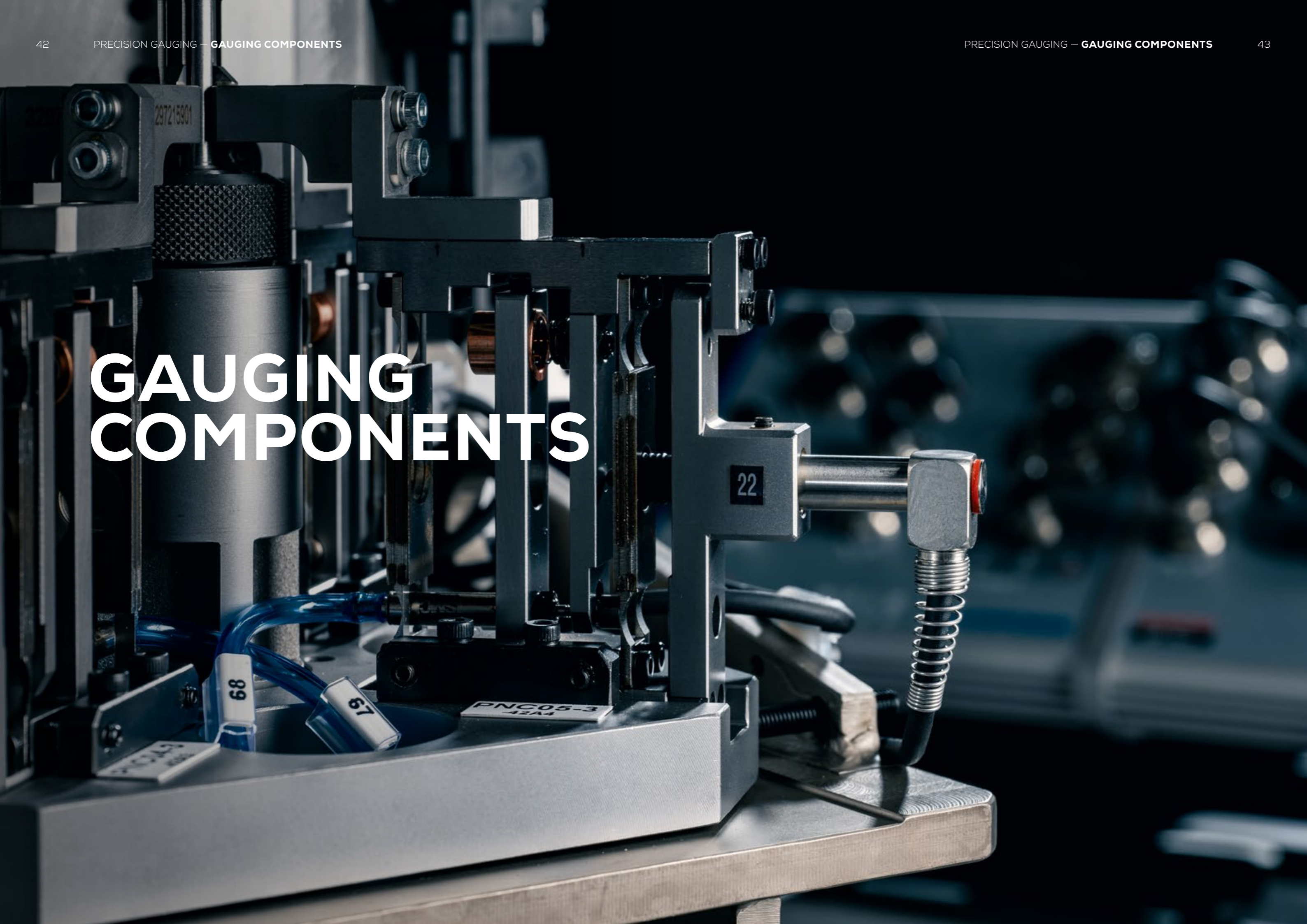
- ▶ A single OptoFlash unit can measure a large variety of part types, just switching measurement program in the software interface. It is a perfect product for productions with high mix of part types.

- ▶ No training is necessary for users of the OptoFlash. The ease-of-use is a strategical aspect for this product, since it makes fast the product configuration in line. When new workpieces model are introduced in production, the part programs can be generated in a few moments.

- ▶ Even though the primary function of a measuring station is to classify workpieces as “good/not good”, it is not the only important functionality. In fact, the measurement data contains precious information about the process and archiving those data allows implementing traceability programs or improvement programs of the production efficiency.

- ▶ HIGHER THE MEASUREMENT SPEED, CHEAPER IS THE AUTOMATION SYSTEM OF THE LINE. A single optoFlash unit is normally sufficient to fulfil the target line throughput. In fact OptoFlash is normally 2 time faster in measurement than a traditional system based on part scanning.

GAUGING COMPONENTS



GAUGING COMPONENTS

-  PENCIL PROBES Page 46
-  AMA Page 70
-  QUICKBLOCK Page 86
-  HAND HELD GAUGES Page 92
-  CHROMATIC CONFOCAL Page 124
-  DIGITAL INDICATORS Page 162
-  CONNECTIVITY SOLUTIONS Page 164
-  QUICKSET Page 192
-  MARPOSS AEROEL LASER MICROMETER Page 206
-  OPTOFLASH Page 216
-  ELECTRONICS Page 224



PENCIL PROBES



AMA



QUICKBLOCK



HAND HELD GAUGES



CHROMATIC CONFOCAL



DIGITAL INDICATORS



CONNECTIVITY SOLUTIONS



QUICK SET



MARPOSS AEROEL LASER MICROMETER



OPTOFLASH



ELECTRONICS



SOFTWARE



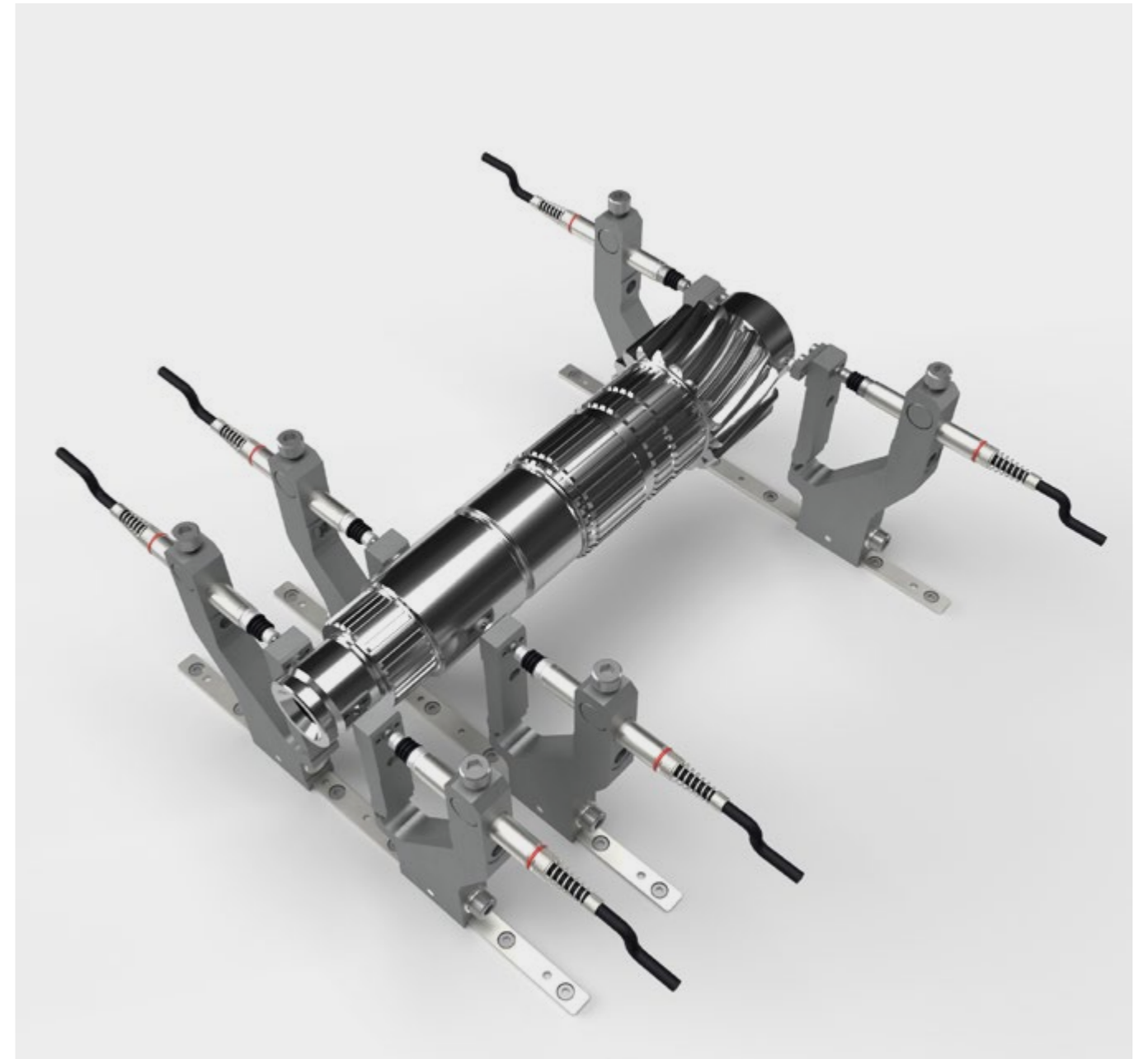
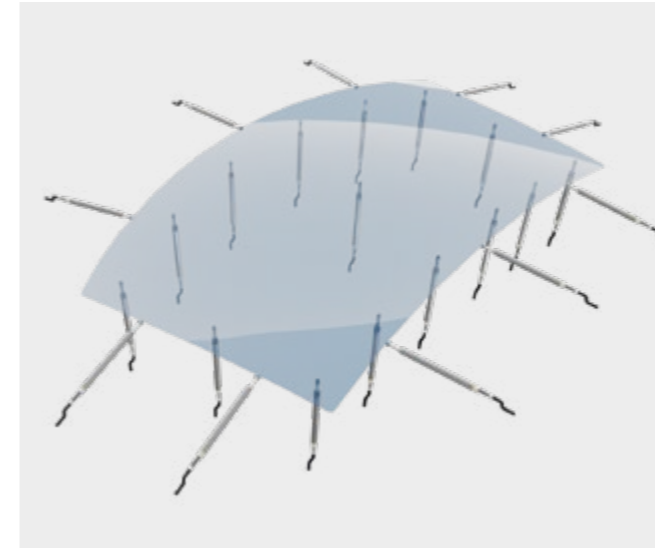
PENCIL PROBES



APPLICATION AND PRODUCT DESCRIPTION

- ▶ Pencil Probes are displacement sensors with a super high precision performance, designed for integration into application-specific systems.
- ▶ Thanks to the large configurability of its mechanical and electrical features, the pencil probes resolve thousands of different applications.
- ▶ For instance, multiple pencil probes can be integrated into automated lines for in-line control of bearings or beverage containers.
- ▶ Pencil probes are also the measuring heart of the Marposs QuickSet solution for shaft gauging.

APPLICATION EXAMPLES



PENCIL PROBES



REDCROWN2

REDCROWN2 is a high precision displacement sensor for industrial gauging applications. It is capable of accuracy up to 0,3µm. It is available in several different versions in order to perfectly fit applications requirements. Export free versions are available.



DIGICROWN2

DIGICROWN2 is the premium performance displacement sensor in the line, capable to achieve **accuracy up to 0,2µm and featuring a constant** signal linearity all-over its full measuring range.

Thanks to the integrated, TEDS (Transducer Electronic Data Sheet) **DIGICROWN2** is automatically detected by the network controller, so accelerating the installation process and eliminating setup errors.



REDCROWN2 USB

REDCROWN2 USB is the cost-effective model in the product line. In fact, it integrates the premium performance level of the digital version DIGICROWN2 and the USB interface at the same time.

It is designed to be directly connected to a PC, without any additional accessory as power supply or connectivity blocks. For its characteristics, it is the perfect model for super-high precision applications in the laboratory.



REDCROWN2 SMART

REDCROWN2 SMART is the latest addition to the line, born to deliver a superior level of functionalities in measurement. It delivers the highest accuracy, up to 0,1µm, thanks to the on-board processor, it is fast to install thanks to the push-pull connecting system, it is easy to configure thanks to the auto-detection system and the embedded LED indicator.



► The contact element can be selected among a wide range of models, in order to perfectly fit application requirements and constraints. For instance, it is possible to select different contact radius, special material for high temperatures, special profiles of the contact area, like flat or knife shapes.

► The contact element is in Carbide. As option, Nylon (PA66) versions are available on soft touch and ultra-soft touch versions.

► **The standard probe versions integrate an enclosing gasket** for the IP65 grade, perfect for aggressive environments.

► **For applications with delicate material, so requiring a low measuring force SoftTouch** probes without gasket are available. Soft touch versions have protection rate P50 or IP54.

► **Ultra soft touch** With the same IP characteristics above it was designed to measure delicate or very thin materials (glass, plastic...).

► LVDT and HBT measuring cores are available, in order to satisfy a wide range of different applications. Moreover there is a large range of compatible models: TESA®, Solartron®, Mercer®, Metem®, Mahr-Feinpruef®, Microcontrol®.

► The type of actuation is selectable between:

- **Spring Push (S):** Always ready to measure
- **Pneumatic Push (PP):** It needs to be pneumatically activated to perform the measure
- **Vacuum Retraction(V):** Like the spring version but it can be retracted by the vacuum
- **Push vacuum (PV):** It needs a pneumatic activation to perform the measure and the vacuum to be retracted.

► Cable output is available in axial and radial pattern, for a perfect integration into tiny spaces.



MEASURING RANGE ± 0,5MM

[MECHANICAL TRAVEL 1,5MM]

REDCrown2 LVDT

Cable length: 2 m

Accuracy error: $\pm \text{MAX}(0,5 + 2 \cdot \text{Reading [mm]}; 7 \cdot |\text{Reading [mm]}|)$ • Sensitivity: 230 mV/V/mm



	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
F05	±0.5 mm	Spring	Axial	1	Standard	B3PR01L0000
FR05	±0.5 mm	Spring	Radial	1	Standard	B3PR01L1200
F05L	±0.5 mm	Spring	Axial	0,3	Soft touch	B3PR01L5000

REDCrown2 HBT

Cable length: 2 m

Accuracy error: $\pm \text{MAX}(0,5 + 2 \cdot \text{Reading [mm]}; 7 \cdot |\text{Reading [mm]}|)$ • Sensitivity: 73,75 mV/V/mm



	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
H05	±0.5 mm	Spring	Axial	1	Standard	B3PR01N0000
HR05	±0.5 mm	Spring	Radial	1	Standard	B3PR01N1200
H05L	±0.5 mm	Spring	Axial	0,3	Soft touch	B3PR01T5000(*)
H05S	±0.5 mm	Spring	Axial	0,3	Ultra short	B3PR01T0100

DIGICrown2

Cable length: 2 m

Accuracy error: $\pm(0,2 + \text{Reading [mm]} \cdot 1)$



	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
D01	±0.5 mm	Spring	Axial	1	Standard	B3PD01N0000
RD01	±0.5 mm	Spring	Radial	1	Standard	B3PD01N1200
D01L	±0.5 mm	Spring	Axial	0,3	Soft touch	B3PD01N5000
D01S	±0.5 mm	Spring	Axial	0,6	Ultra short	B3PD01S0000

REDCrown2 USB

Cable length: 2 m

Accuracy error: $\pm(0,2 + \text{Reading [mm]} \cdot 1)$



	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
U05	±0.5 mm	Spring	Axial	1	Standard	B3PR01Y0000
UD05	±0.5 mm	Spring	Radial	1	Standard	B3PR01Y1200
U05L	±0.5 mm	Spring	Axial	0,3	Soft touch	B3PR01Y5000

REDCrown2 SMART

Cable length: 0,2 m

Accuracy error: $\pm(0,2 + \text{Reading [mm]} \cdot 1)$



	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
K01	±0.5 mm	Spring	Axial	1	Standard	B3PK01N0000
RK01	±0.5 mm	Spring	Radial	1	Standard	B3PK01N1200
K01L	±0.5 mm	Spring	Axial	0,3	Soft touch	B3PK01N5000

(*) HBT TESA

MEASURING RANGE ± 1MM

[MECHANICAL TRAVEL 3MM]

REDCrown2 LVDT

Cable length: 2 m

Accuracy error: $\pm(0,3 + 5 \cdot |\text{Reading [mm]}|)$ • Sensitivity: 230 mV/V/mm



	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
F10	±1 mm	Spring	Axial	0,7	Standard	B3PR02L0000
FR10	±1 mm	Spring	Radial	0,7	Standard	B3PR02L1200
FPA10	±1 mm	Pneumatic Push	Axial	from 0,8 to 2,2	Standard	B3PR02L0400
FP10	±1 mm	Pneumatic Push	Radial	from 0,8 to 2,2	Standard	B3PR02L1600
FVA10	±1 mm	Vacuum	Axial	0,4	Standard	B3PR02L0560
FV10	±1 mm	Vacuum	Radial	0,4	Standard	B3PR02L1760
F10L	±1 mm	Spring	Axial	0,3	Soft touch	B3PR02L5000
FR10L	±1 mm	Spring	Radial	0,3	Soft touch	B3PR02L6200
FPA10L	±1 mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PR02L5400
FP10L	±1 mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PR02L6600
FPVA10L	±1 mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PR02L5800
FPV10L	±1 mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PR02L7000

REDCrown2 HBT

Cable length: 2 m

Accuracy error: $\pm(0,3 + 5 \cdot |\text{Reading [mm]}|)$ • Sensitivity: 73,75 mV/V/mm



	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
H10	±1 mm	Spring	Axial	0,7	Standard	B3PR02N0000
HR10	±1 mm	Spring	Radial	0,7	Standard	B3PR02N1200
HPA10	±1 mm	Pneumatic Push	Axial	from 0,8 to 2,2	Standard	B3PR02N0400
HP10	±1 mm	Pneumatic Push	Radial	from 0,8 to 2,2	Standard	B3PR02N1600
HVA10	±1 mm	Vacuum	Axial	0,4	Standard	B3PR02N0560
HV10	±1 mm	Vacuum	Radial	0,4	Standard	B3PR02N1760
H10L	±1 mm	Spring	Axial	0,3	Soft touch	B3PR02T5000(*)
HR10L	±1 mm	Spring	Radial	0,3	Soft touch	B3PR02T6200(*)
HPA10L	±1 mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PR02T5400(*)
HP10L	±1 mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PR02T6600(*)
HPVA10L	±1 mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PR02T5800(*)
HPV10L	±1 mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PR02T7000(*)

(*) HBT TESA

DIGICrown2**Cable length:** 2 m**Accuracy error:** $\pm(0,2+\text{Reading [mm]})^*1$ 

	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
D02	±1 mm	Spring	Axial	0,7	Standard	B3PD02N0000
RD02	±1 mm	Spring	Radial	0,7	Standard	B3PD02N1200
PAD02	±1 mm	Pneumatic Push	Axial	from 0,8 to 2,2	Standard	B3PD02N0400
PD02	±1 mm	Pneumatic Push	Radial	from 0,8 to 2,2	Standard	B3PD02N1600
VAD02	±1 mm	Vacuum	Axial	0,4	Standard	B3PD02N0560
VD02	±1 mm	Vacuum	Radial	0,4	Standard	B3PD02N1760
D02L	±1 mm	Spring	Axial	0,3	Soft touch	B3PD02N5000
RD02L	±1 mm	Spring	Radial	0,3	Soft touch	B3PD02N6200
PAD02L	±1 mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PD02N5400
PD02L	±1 mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PD02N6600
PVAD02L	±1 mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PD02N5800
PVD02L	±1 mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PD02N7000

REDCrown2 USB**Cable length:** 2 m**Accuracy error:** $\pm(0,2+\text{Reading [mm]})^*1$ 

	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
U10	±1 mm	Spring	Axial	0,7	Standard	B3PR02Y0000
UR10	±1 mm	Spring	Radial	0,7	Standard	B3PR02Y1200
UPA10	±1 mm	Pneumatic Push	Axial	from 0,8 to 2,2	Standard	B3PR02Y0400
UPI0	±1 mm	Pneumatic Push	Radial	from 0,8 to 2,2	Standard	B3PR02Y1600
UVA10	±1 mm	Vacuum	Axial	0,4	Standard	B3PR02Y0560
UV10	±1 mm	Vacuum	Radial	0,4	Standard	B3PR02Y1760
U10L	±1 mm	Spring	Axial	0,3	Soft touch	B3PR02Y5000
UR10L	±1 mm	Spring	Radial	0,3	Soft touch	B3PR02Y6200
UPA10L	±1 mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PR02Y5400
UPI0L	±1 mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PR02Y6600
UPVA10L	±1 mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PR02Y5800
UPV10L	±1 mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PR02Y7000

REDCrown2 SMART**Cable length:** 0,2 m**Accuracy error:** $\pm(0,2+\text{Reading [mm]})^*1$ 

	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
K02	±1 mm	Spring	Axial	0,7	Standard	B3PK02N0000
RK02	±1 mm	Spring	Radial	0,7	Standard	B3PK02N1200
PAK02	±1 mm	Pneumatic Push	Axial	from 0,8 to 2,2	Standard	B3PK02N0400
PK02	±1 mm	Pneumatic Push	Radial	from 0,8 to 2,2	Standard	B3PK02N1600
VAK02	±1 mm	Vacuum	Axial	0,4	Standard	B3PK02N0560
VK02	±1 mm	Vacuum	Radial	0,4	Standard	B3PK02N1760
K02L	±1 mm	Spring	Axial	0,3	Soft touch	B3PK02N5000
RK02L	±1 mm	Spring	Radial	0,3	Soft touch	B3PK02N6200
PAK02L	±1 mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PK02N5400
PK02L	±1 mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PK02N6600
PVAK02L	±1 mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PK02N5800
PVK02L	±1 mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PK02N7000

(*) HBT TESA

MEASURING RANGE ± 2MM
[MECHANICAL TRAVEL 6,6MM]**REDCrown2 LVDT****Cable length:** 2 m**Accuracy error:** $\pm(0,3 + 7^*|\text{Reading [mm]}|)$ • **Sensitivity:** 230 mV/V/mm

	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
F20	±2 mm	Spring	Axial	0,7	Standard	B3PR05L0199
FR20	±2 mm	Spring	Radial	0,7	Standard	B3PR05L1399
FP20	±2 mm	Pneumatic Push	Radial	from 0,7 to 2	Standard	B3PR05L1759
F20L	±2 mm	Spring	Axial	0,3	Soft touch	B3PR05L5199

REDCrown2 HBT**Cable length:** 2 m**Accuracy error:** $\pm(0,3 + 7^*|\text{Reading [mm]}|)$ • **Sensitivity:** 73,75 mV/V/mm<

	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
H20	±2 mm	Spring	Axial	0,7	Standard	B3PR05N0199
HR20	±2 mm	Spring	Radial	0,7	Standard	B3PR05N1399
HP20	±2 mm	Pneumatic Push	Radial	from 0,7 to 2	Standard	B3PR05N1759
H20L	±2 mm	Spring	Axial	0,3	Soft touch	B3PR05T5199(*)

[MECHANICAL TRAVEL 11MM]**REDCrown2 LVDT****Cable length:** 2 m**Accuracy error:** $\pm\text{MIN}(0,3 + 10^*|\text{Reading [mm]}|; 12 + 2^*|\text{Reading [mm]}|)$ • **Sensitivity:** 230 mV/V/mm

	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
F21L	±2LR mm	Spring	Axial	0,7	Standard	B3PR1020199
FR21L	±2LR mm	Spring	Radial	0,7	Standard	B3PR1021399
FPA21	±2LR mm	Pneumatic Push	Axial	from 0,7 to 2	Standard	B3PR1020559
FP21	±2LR mm	Pneumatic Push	Radial	from 0,7 to 2	Standard	B3PR1021759
FVA21	±2LR mm	Vacuum	Axial	0,5	Standard	B3PR1020599
FV21	±2LR mm	Vacuum	Radial	0,5	Standard	B3PR1021799
F21L	±2LR mm	Spring	Axial	0,3	Soft touch	B3PR1025199
FR21L	±2LR mm	Spring	Radial	0,3	Soft touch	B3PR1026399
FPA21L	±2LR mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PR1025559
FP21L	±2LR mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PR1026759
FPVA21L	±2LR mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PR1025999
FPV21L	±2LR mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PR1027199

REDCrown2 HBT**Cable length:** 2 m**Accuracy error:** $\pm\text{MAX}(2,0 + 2^*|\text{Reading [mm]}|; 7^*|\text{Reading [mm]}|)$ • **Sensitivity:** 73,75 mV/V/mm

	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
H21	±2LR mm	Spring	Axial	0,7	Standard	B3PR10N0199
HR21	±2LR mm	Spring	Radial	0,7	Standard	B3PR10N1399
HPA21	±2LR mm	Pneumatic Push	Axial	from 0,7 to 2	Standard	B3PR10N0559
HP21	±2LR mm	Pneumatic Push	Radial	from 0,7 to 2	Standard	B3PR10N1759
HVA21	±2LR mm	Vacuum	Axial	0,5	Standard	B3PR10N0599
HV21	±2LR mm	Vacuum	Radial	0,5	Standard	B3PR10N1799
H21L	±2LR mm	Spring	Axial	0,3	Soft touch	B3PR10T5199(*)
HR21L	±2LR mm	Spring	Radial	0,3	Soft touch	B3PR10T6399(*)

(*) HBT TESA



	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
HPA21L	±2LR mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PR10T5559(*)
HP21L	±2LR mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PR10T6759(*)
HPVA21L	±2LR mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PR10T5999(*)
HPV21L	±2LR mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PR10T7199(*)

MEASURING RANGE ± 2,5MM

[MECHANICAL TRAVEL 6,6MM]

REDCrown2 LVDT

Cable length: 2 m

Accuracy error: $\pm \text{MIN}(0,3 + 10*|\text{Reading} [\text{mm}]|; 11 + 2*|\text{Reading} [\text{mm}]|)$ • Sensitivity: 115 mV/V/mm



	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
F25	±2.5 mm	Spring	Axial	0,7	Standard	B3PR05L0000
FR25	±2.5 mm	Spring	Radial	0,7	Standard	B3PR05L1200
FPA25	±2.5 mm	Pneumatic Push	Axial	from 0,7 to 2	Standard	B3PR05L0400
FP25	±2.5 mm	Pneumatic Push	Radial	from 0,7 to 2	Standard	B3PR05L1600
FVA25	±2.5 mm	Vacuum	Axial	0,5	Standard	B3PR05L0560
FV25	±2.5 mm	Vacuum	Radial	0,5	Standard	B3PR05L1760
F25L	±2.5 mm	Spring	Axial	0,3	Soft touch	B3PR05L5000
FR25L	±2.5 mm	Spring	Radial	0,3	Soft touch	B3PR05L6200
FPA25L	±2.5 mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PR05L5400
FP25L	±2.5 mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PR05L6600
FV25L	±2.5 mm	Vacuum	Radial	-	Soft touch	B3PR05L6760
FPVA25L	±2.5 mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PR05L5800
FPV25L	±2.5 mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PR05L7000

REDCrown2 HBT

Cable length: 2 m

Accuracy error: $\pm \text{MAX}(2,5 + 2*|\text{Reading} [\text{mm}]|; 7*|\text{Reading} [\text{mm}]|)$

Sensitivity: (Marposs) 36,875 mV/V/mm; (*TESA) 73,75 mV/V/mm



	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
H25	±2.5 mm	Spring	Axial	0,7	Standard	B3PR05N0000
HR25	±2.5 mm	Spring	Radial	0,7	Standard	B3PR05N1200
HPA25	±2.5 mm	Pneumatic Push	Axial	from 0,7 to 2	Standard	B3PR05N0400
HP25	±2.5 mm	Pneumatic Push	Radial	from 0,7 to 2	Standard	B3PR05N1600
HVA25	±2.5 mm	Vacuum	Axial	0,5	Standard	B3PR05N0560
HV25	±2.5 mm	Vacuum	Radial	0,5	Standard	B3PR05N1760
H25L	±2.5 mm	Spring	Axial	0,3	Soft touch	B3PR05T5000(*)
HR25L	±2.5 mm	Spring	Radial	0,3	Soft touch	B3PR05T6200(*)
HPA25L	±2.5 mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PR05T5400(*)
HP25L	±2.5 mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PR05T6600(*)
HPVA25L	±2.5 mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PR05T5800(*)
HPV25L	±2.5 mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PR05T7000(*)

DIGICrown2

Cable length: 2 m

Accuracy error: $\pm(0,6+\text{Reading} [\text{mm}]^2)$



	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
D05	±2.5 mm	Spring	Axial	0,7	Standard	B3PD05N0000
RD05	±2.5 mm	Spring	Radial	0,7	Standard	B3PD05N1200
PAD05	±2.5 mm	Pneumatic Push	Axial	from 0,7 to 2	Standard	B3PD05N0400
PD05	±2.5 mm	Pneumatic Push	Radial	from 0,7 to 2	Standard	B3PD05N1600
VAD05	±2.5 mm	Vacuum	Axial	0,5	Standard	B3PD05N0560
VD05	±2.5 mm	Vacuum	Radial	0,5	Standard	B3PD05N1760
D05L	±2.5 mm	Spring	Axial	0,3	Soft touch	B3PD05N5000
RD05L	±2.5 mm	Spring	Radial	0,3	Soft touch	B3PD05N6200
PAD05L	±2.5 mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PD05N5400
PD05L	±2.5 mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PD05N6600
PVAD05L	±2.5 mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PD05N5800
PVD05L	±2.5 mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PD05N7000

REDCrown2 USB

Cable length: 2 m

Accuracy error: $\pm(0,6+\text{Reading} [\text{mm}]^2)$



	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
U25	±2.5 mm	Spring	Axial	0,7	Standard	B3PR05Y0000
UR25	±2.5 mm	Spring	Radial	0,7	Standard	B3PR05Y1200
UPA25	±2.5 mm	Pneumatic Push	Axial	from 0,7 to 2	Standard	B3PR05Y0400
UP25	±2.5 mm	Pneumatic Push	Radial	from 0,7 to 2	Standard	B3PR05Y1600
UVA25	±2.5 mm	Vacuum	Axial	0,5	Standard	B3PR05Y0560
UV25	±2.5 mm	Vacuum	Radial	0,5	Standard	B3PR05Y1760
U25L	±2.5 mm	Spring	Axial	0,3	Soft touch	B3PR05Y5000
UR25L	±2.5 mm	Spring	Radial	0,3	Soft touch	B3PR05Y6200
UPA25L	±2.5 mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PR05Y5400
UP25L	±2.5 mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PR05Y6600
UPVA25L	±2.5 mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PR05Y5800
UPV25L	±2.5 mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PR05Y7000

REDCrown2 SMART

Cable length: 0,2 m

Accuracy error: $\pm(0,6+\text{Reading} [\text{mm}]^2)$



	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
K05	±2.5 mm	Spring	Axial	0,7	Standard	B3PK05N0000
RK05	±2.5 mm	Spring	Radial	0,7	Standard	B3PK05N1200
PAK05	±2.5 mm	Pneumatic Push	Axial	from 0,7 to 2	Standard	B3PK05N0400
PK05	±2.5 mm	Pneumatic Push	Radial	from 0,7 to 2	Standard	B3PK05N1600
VAK05	±2.5 mm	Vacuum	Axial	0,5	Standard	B3PK05N0560
VK05	±2.5 mm	Vacuum	Radial	0,5	Standard	B3PK05N1760
K05L	±2.5 mm	Spring	Axial	0,3	Soft touch	B3PK05N5000
RK05L	±2.5 mm	Spring	Radial	0,3	Soft touch	B3PK05N6200
PAK05L	±2.5 mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PK05N5400
PK05L	±2.5 mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PK05N6600
PVAK05L	±2.5 mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PK05N5800
PVK05L	±2.5 mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PK05N7000

MEASURING RANGE ± 5MM

[MECHANICAL TRAVEL 11MM]

REDCrown2 LVDT

Cable length: 2 m

Accuracy error: $\pm \text{MAX}(5,0 + 2 \cdot |\text{Reading [mm]}|; 7 \cdot |\text{Reading [mm]}|)$ • Sensitivity: 115 mV/V/mm

	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
F50	±5 mm	Spring	Axial	0,7	Standard	B3PR10L0000
FR50	±5 mm	Spring	Radial	0,7	Standard	B3PR10L1200
FPA50	±5 mm	Pneumatic Push	Axial	from 0,8 to 2	Standard	B3PR10L0400
FP50	±5 mm	Pneumatic Push	Radial	from 0,8 to 2	Standard	B3PR10L1600
FVA50	±5 mm	Vacuum	Axial	0,4	Standard	B3PR10L0560
FV50	±5 mm	Vacuum	Radial	0,4	Standard	B3PR10L1760
F50L	±5 mm	Spring	Axial	0,3	Soft touch	B3PR10L5000
FR50L	±5 mm	Spring	Radial	0,3	Soft touch	B3PR10L6200
FPA50L	±5 mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PR10L5400
FP50L	±5 mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PR10L6600
FPVA50L	±5 mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PR10L5800
FPV50L	±5 mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PR10L7000

REDCrown2 HBT

Cable length: 2 m

Accuracy error: $\pm \text{MAX}(5,0 + 2 \cdot |\text{Reading [mm]}|; 7 \cdot |\text{Reading [mm]}|)$ • Sensitivity: 29,5 mV/V/mm

	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
H50	±5 mm	Spring	Axial	0,7	Standard	B3PR10N0000
HR50	±5 mm	Spring	Radial	0,7	Standard	B3PR10N1200
HPA50	±5 mm	Pneumatic Push	Axial	from 0,8 to 2	Standard	B3PR10N0400
HP50	±5 mm	Pneumatic Push	Radial	from 0,8 to 2	Standard	B3PR10N1600
HVA50	±5 mm	Vacuum	Axial	0,4	Standard	B3PR10N0560
HV50	±5 mm	Vacuum	Radial	0,4	Standard	B3PR10N1760
H50L	±5 mm	Spring	Axial	0,3	Soft touch	B3PR10T5000(*)
HR50L	±5 mm	Spring	Radial	0,3	Soft touch	B3PR10T6200(*)
HPA50L	±5 mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PR10T5400(*)
HP50L	±5 mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PR10T6600(*)
HPVA50L	±5 mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PR10T5800(*)
HPV50L	±5 mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PR10T7000(*)
HPA50UL	±5 mm	Pneumatic Push	Axial	0,12	Ultra soft touch	B3PR10T5410(*)

(*) HBT TESA

DIGICrown2

Cable length: 2 m

Accuracy error: $\pm(0,6 + \text{Reading [mm]} \cdot 2)$

	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
D10	±5 mm	Spring	Axial	0,7	Standard	B3PD10N0000
RD10	±5 mm	Spring	Radial	0,7	Standard	B3PD10N1200
PAD10	±5 mm	Pneumatic Push	Axial	from 0,8 to 2	Standard	B3PD10N0400
PD10	±5 mm	Pneumatic Push	Radial	from 0,8 to 2	Standard	B3PD10N1600
VAD10	±5 mm	Vacuum	Axial	0,4	Standard	B3PD10N0560
VD10	±5 mm	Vacuum	Radial	0,4	Standard	B3PD10N1760
D10L	±5 mm	Spring	Axial	0,3	Soft touch	B3PD10N5000
RD10L	±5 mm	Spring	Radial	0,3	Soft touch	B3PD10N6200
PAD10L	±5 mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PD10N5401
PD10L	±5 mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PD10N6600
PVAD10L	±5 mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PD10N5800
PVD10L	±5 mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PD10N7000
PAD10UL	±5 mm	Pneumatic Push	Axial	0,12	Ultra soft touch	B3PD10N5410
PAD10J	±5 mm	Pneumatic Push	Axial	0,3	Dust-Proof	B3PD10N0558

REDCrown2 USB

Cable length: 2 m

Accuracy error: $\pm(0,6 + \text{Reading [mm]} \cdot 2)$

	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
U50	±5 mm	Spring	Axial	0,7	Standard	B3PR10Y0000
UR50	±5 mm	Spring	Radial	0,7	Standard	B3PR10Y1200
UPA50	±5 mm	Pneumatic Push	Axial	from 0,8 to 2	Standard	B3PR10Y0400
UP50	±5 mm	Pneumatic Push	Radial	from 0,8 to 2	Standard	B3PR10Y1600
UVA50	±5 mm	Vacuum	Axial	0,4	Standard	B3PR10Y0560
UV50	±5 mm	Vacuum	Radial	0,4	Standard	B3PR10Y1760
U50L	±5 mm	Spring	Axial	0,3	Soft touch	B3PR10Y5000
UR50L	±5 mm	Spring	Radial	0,3	Soft touch	B3PR10Y6200
UPA50L	±5 mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PR10Y5400
UP50L	±5 mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PR10Y6600
UPVA50L	±5 mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PR10Y5800
UPV50L	±5 mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PR10Y7000

REDCrown2 SMART

Cable length: 0,2 m

Accuracy error: $\pm(0,6 + \text{Reading [mm]} \cdot 2)$

	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
K10	±5 mm	Spring	Axial	0,7	Standard	B3PK10N0000
RK10	±5 mm	Spring	Radial	0,7	Standard	B3PK10N1200
PAK10	±5 mm	Pneumatic Push	Axial	from 0,8 to 2	Standard	B3PK10N0400
PK10	±5 mm	Pneumatic Push	Radial	from 0,8 to 2	Standard	B3PK10N1600
VAK10	±5 mm	Vacuum	Axial	0,4	Standard	B3PK10N0560
VK10	±5 mm	Vacuum	Radial	0,4	Standard	B3PK10N1760
K10L	±5 mm	Spring	Axial	0,3	Soft touch	B3PK10N5000
RK10L	±5 mm	Spring	Radial	0,3	Soft touch	B3PK10N6200
PAK10L	±5 mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PK10N5401
PK10L	±5 mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PK10N6600
PVAK10L	±5 mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PK10N5800
PVK10L	±5 mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PK10N7000

(*) HBT TESA



MEASURING RANGE ± 10MM

[MECHANICAL TRAVEL 21MM]

REDCrown2 LVDT

Cable length: 2 m

Accuracy error: $\pm \text{MAX}(10 + 2 \cdot |\text{Reading [mm]}|; 7 \cdot |\text{Reading [mm]}|)$ • Sensitivity: 23 mV/V/mm



	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
F100	±10 mm	Spring	Axial	0,1	Standard	B3PR20L0000
FR100	±10 mm	Spring	Radial	0,1	Standard	B3PR20L1200
FPA100	±10 mm	Pneumatic Push	Axial	from 0,7 to 2	Standard	B3PR20L0400
FP100	±10 mm	Pneumatic Push	Radial	from 0,7 to 2	Standard	B3PR20L1600
F100L	±10 mm	Spring	Axial	0,3	Soft touch	B3PR20L5000
FR100L	±10 mm	Spring	Radial	0,3	Soft touch	B3PR20L6200
FPA100L	±10 mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PR20L5400
FP100L	±10 mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PR20L6600
FPVA100L	±10 mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PR20L5800
FPV100L	±10 mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PR20L7000

REDCrown2 HBT

Cable length: 2 m

Accuracy error: $\pm \text{MAX}(10 + 2 \cdot |\text{Reading [mm]}|; 7 \cdot |\text{Reading [mm]}|)$ • Sensitivity: 7,375 mV/V/mm



	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
H100	±10 mm	Spring	Axial	0,1	Standard	B3PR20N0000
HR100	±10 mm	Spring	Radial	0,1	Standard	B3PR20N1200
HPA100	±10 mm	Pneumatic Push	Axial	from 0,7 to 2	Standard	B3PR20N0400
HP100	±10 mm	Pneumatic Push	Radial	from 0,7 to 2	Standard	B3PR20N1600
H100L	±10 mm	Spring	Axial	0,3	Soft touch	B3PR20T5000(*)
HR100L	±10 mm	Spring	Radial	0,3	Soft touch	B3PR20T6200(*)
HPA100L	±10 mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PR20T5400(*)
HP100L	±10 mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PR20T6600(*)
HPVA100L	±10 mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PR20T5800(*)
HPV100L	±10 mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PR20T7000(*)

DIGICrown2

Cable length: 2 m

Accuracy error: $\pm(1,2 + \text{Reading [mm]} \cdot 2)$



	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
D20	±10 mm	Spring	Axial	0,1	Standard	B3PD20N0000
RD20	±10 mm	Spring	Radial	0,1	Standard	B3PD20N1200
PAD20	±10 mm	Pneumatic Push	Axial	from 0,7 to 2	Standard	B3PD20N0400
PD20	±10 mm	Pneumatic Push	Radial	from 0,7 to 2	Standard	B3PD20N1600
D20L	±10 mm	Spring	Axial	0,3	Soft touch	B3PD20N5000
RD20L	±10 mm	Spring	Radial	0,3	Soft touch	B3PD20N6200
PAD20L	±10 mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PD20N5400
PD20L	±10 mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PD20N6600
PVAD20L	±10 mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PD20N5800
PVD20L	±10 mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PD20N7000

(*) HBT TESA

REDCrown2 SMART

Cable length: 0,2 m

Accuracy error: $\pm(1,2 + \text{Reading [mm]} \cdot 2)$



	MEASURING RANGE	ACTUATION	CABLE OUTLET	MEAS. FORCE [N±25%]	VERSION	ORDER CODE
K20	±10 mm	Spring	Axial	0,1	Standard	B3PK20N0000
RK20	±10 mm	Spring	Radial	0,1	Standard	B3PK20N1200
PAK20	±10 mm	Pneumatic Push	Axial	from 0,7 to 2	Standard	B3PK20N0400
PK20	±10 mm	Pneumatic Push	Radial	from 0,7 to 2	Standard	B3PK20N1600
K20L	±10 mm	Spring	Axial	0,3	Soft touch	B3PK20N5000
RK20L	±10 mm	Spring	Radial	0,3	Soft touch	B3PK20N6200
PAK20L	±10 mm	Pneumatic Push	Axial	from 0,18 to 1,9	Soft touch	B3PK20N5400
PK20L	±10 mm	Pneumatic Push	Radial	from 0,18 to 1,9	Soft touch	B3PK20N6600
PVAK20L	±10 mm	Push vacuum	Axial	from 0,14 to 2,3	Soft touch	B3PK20N5800
PVK20L	±10 mm	Push vacuum	Radial	from 0,14 to 2,3	Soft touch	B3PK20N7000

(*) HBT TESA



STANDARD TOUCH COMPATIBLE MODELS



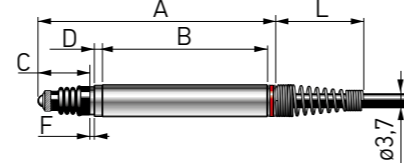
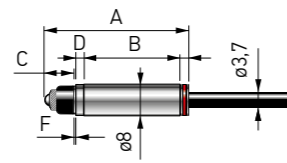
MEASURING RANGE	CABLE OUTLET	ACTUATION	TESA STANDARD	MERCER STANDARD	METEM STANDARD	MAHR STANDARD	MICROCONTROL STANDARD
± 0,5 mm	A	Spring	B3PR01T0000	B3PR01R0000	B3PR01S0000	B3PR01P0000	B3PR01K0000
± 0,5 mm	R	Spring	B3PR01T1200	B3PR01R1200	B3PR01S1200	B3PR01P1200	B3PR01K1200
± 1 mm	A	Spring	B3PR02T0000	B3PR02R0000	B3PR02S0000	B3PR02P0000	B3PR02K0000
± 1 mm	R	Spring	B3PR02T1200	B3PR02R1200	B3PR02S1200	B3PR02P1200	B3PR02K1200
± 2 mm	A	Spring	B3PR05T0199	B3PR05R0199	-	B3PR05P0199	-
± 2 mm	R	Spring	B3PR05T1399	-	-	-	-
± 2 mm LongRange	A	Spring	B3PR10T0199	-	-	-	-
± 2 mm LongRange	R	Spring	B3PR10T1399	B3PR10R1399	-	-	-
± 2,5 mm	A	Spring	B3PR05T0000	B3PR05R0000	B3PR05S0000	B3PR05P0000	B3PR05K0000
± 2,5 mm	R	Spring	B3PR05T1200	B3PR05R1200	B3PR05S1200	B3PR05P1200	B3PR05K1200
± 5 mm	A	Spring	B3PR10T0000	B3PR10R0000	B3PR10S0000	B3PR10P0000	B3PR10K0000
± 5 mm	R	Spring	B3PR10T1200	B3PR10R1200	B3PR10S1200	B3PR10P1200	B3PR10K1200
± 10 mm	A	Spring	B3PR20T0000	B3PR20R0000	B3PR20S0000	B3PR20P0000	B3PR20K0000
± 10 mm	R	Spring	B3PR20T1200	B3PR20R1200	B3PR20S1200	B3PR20P1200	B3PR20K1200
± 0,5 mm	A	Pneum. push	NA	NA	NA	NA	NA
± 0,5 mm	R	Pneum. push	NA	NA	NA	NA	NA
± 1 mm	A	Pneum. push	B3PR02T0400	B3PR02R0400	B3PR02S0400	B3PR02P0400	B3PR02K0400
± 1 mm	R	Pneum. push	B3PR02T1600	B3PR02R1600	B3PR02S1600	B3PR02P1600	B3PR02K1600
± 2 mm	A	Pneum. push	-	-	-	-	-
± 2 mm	R	Pneum. push	-	-	-	-	-
± 2 mm LongRange	A	Pneum. push	B3PR10T0559	-	-	-	-
± 2 mm LongRange	R	Pneum. push	B3PR10T1759	-	-	-	-
± 2,5 mm	A	Pneum. push	B3PR05T0400	B3PR05R0400	B3PR05S0400	B3PR05P0400	B3PR05K0400
± 2,5 mm	R	Pneum. push	B3PR05T1600	B3PR05R1600	B3PR05S1600	B3PR05P1600	B3PR05K1600
± 5 mm	A	Pneum. push	B3PR10T0400	B3PR10R0400	B3PR10S0400	B3PR10P0400	B3PR10K0400
± 5 mm	R	Pneum. push	B3PR10T1600	B3PR10R1600	B3PR10S1600	B3PR10P1600	B3PR10K1600
± 10 mm	A	Pneum. push	B3PR20T0400	B3PR20R0400	B3PR20S0400	B3PR20P0400	B3PR20K0400
± 10 mm	R	Pneum. push	B3PR20T1600	B3PR20R1600	B3PR20S1600	B3PR20P1600	B3PR20K1600
± 0,5 mm	A	Vacuum	NA	NA	NA	NA	NA
± 0,5 mm	R	Vacuum	NA	NA	NA	NA	NA
± 1 mm	A	Vacuum	B3PR02T0560	B3PR02R0560	B3PR02S0560	B3PR02P0560	B3PR02K0560
± 1 mm	R	Vacuum	B3PR02T1760	B3PR02R1760	B3PR02S1760	B3PR02P1760	B3PR02K1760
± 2 mm	A	Vacuum	-	-	-	-	-
± 2 mm	R	Vacuum	-	-	-	-	-
± 2 mm LongRange	A	Vacuum	B3PR10T0599	B3PR10R0599	-	-	-
± 2 mm LongRange	R	Vacuum	B3PR10T1799	-	-	-	-
± 2,5 mm	A	Vacuum	B3PR05T0560	B3PR05R0560	B3PR05S0560	B3PR05P0560	B3PR05K0560
± 2,5 mm	R	Vacuum	B3PR05T1760	B3PR05R1760	B3PR05S1760	B3PR05P1760	B3PR05K1760
± 5 mm	A	Vacuum	B3PR10T0560	B3PR10R0560	B3PR10S0560	B3PR10P0560	B3PR10K0560
± 5 mm	R	Vacuum	B3PR10T1760	B3PR10R1760	B3PR10S1760	B3PR10P1760	B3PR10K1760
± 10 mm	A	Vacuum	-	-	-	-	-
± 10 mm	R	Vacuum	-	-	-	-	-

SOFT TOUCH COMPATIBLE MODELS



RANGE	CABLE OUTLET	ACTUATION	TESA SOFT TOUCH	MERCER SOFT TOUCH	METEM SOFT TOUCH	MAHR SOFT TOUCH	MICROCONTROL SOFT TOUCH
± 0,5 mm	A	Spring	B3PR01T5000		B3PR01S5000		-
± 0,5 mm	R	Spring	B3PR01T6200		B3PR01S6200		-
± 1 mm	A	Spring	B3PR02T5000		B3PR02S5000		-
± 1 mm	R	Spring	B3PR02T6200		B3PR02S6200		B3PR02K6200
± 2 mm	A	Spring	B3PR05T5199		-		-
± 2 mm	R	Spring	-		-		-
± 2 mm LongRange	A	Spring	B3PR10T5199		-		-
± 2 mm LongRange	R	Spring	B3PR10T6399		-		-
± 2,5 mm	A	Spring	B3PR05T5000		B3PR05S5000		B3PR05K5000
± 2,5 mm	R	Spring	B3PR05T6200		B3PR05S6200		B3PR05K6200
± 5 mm	A	Spring	B3PR10T5000		B3PR10S5000		B3PR10K5000
± 5 mm	R	Spring	B3PR10T6200		B3PR10S6200		B3PR10K6200
± 10 mm	A	Spring	B3PR20T5000		B3PR20S5000		B3PR20K5000
± 10 mm	R	Spring	B3PR20T6200		B3PR20S6200		B3PR20K6200
			0		0		0
± 0,5 mm	A	Pneum. push	NA		NA		NA
± 0,5 mm	R	Pneum. push	NA		NA		NA
± 1 mm	A	Pneum. push	B3PR02T5400		B3PR02S5400		B3PR02K5400
± 1 mm	R	Pneum. push	B3PR02T6600		B3PR02S6600		B3PR02K6600
± 2 mm	A	Pneum. push	-		-		-
± 2 mm	R	Pneum. push	-		-		-
± 2 mm LongRange	A	Pneum. push	B3PR10T5559		-		-
± 2 mm LongRange	R	Pneum. push	B3PR10T6759		-		-
± 2,5 mm	A	Pneum. push	B3PR05T5400		B3PR05S5400		B3PR05K5400
± 2,5 mm	R	Pneum. push	B3PR05T6600		B3PR05S6600		B3PR05K6600
± 5 mm	A	Pneum. push	B3PR10T5400		B3PR10S5400		B3PR10K5400
± 5 mm	R	Pneum. push	B3PR10T6600		B3PR10S6600		B3PR10K6600
± 10 mm	A	Pneum. push	B3PR20T5400		B3PR20S5400		B3PR20K5400
± 10 mm	R	Pneum. push	B3PR20T6600		B3PR20S6600		B3PR20K6600
			0		0		0
± 0,5 mm	A	Vacuum	NA		NA		NA
± 0,5 mm	R	Vacuum	NA		NA		NA
± 1 mm	A	Vacuum	B3PR02T5560		B3PR02S5560		-
± 1 mm	R	Vacuum	B3PR02T6760		B3PR02S6760		-
± 2 mm	A	Vacuum	-		-		-
± 2 mm	R	Vacuum	-		-		-
± 2 mm LongRange	A	Vacuum	B3PR10T5599		-		-
± 2 mm LongRange	R	Vacuum	B3PR10T6799		-		-
± 2,5 mm	A	Vacuum	B3PR05T5560		B3PR05S5560		-
± 2,5 mm	R	Vacuum	B3PR05T6760		B3PR05S6760		-
± 5 mm	A	Vacuum	B3PR10T5560		B3PR10S5560		B3PR10K5560
± 5 mm	R	Vacuum	B3PR10T6760		B3PR10S6760		-
± 10 mm	A	Vacuum	B3PR20T5560		B3PR20S5560		-
± 10 mm	R	Vacuum	B3PR20T6760		B3PR20S6760		-

STANDARD TOUCH DIMENSIONS (MM)

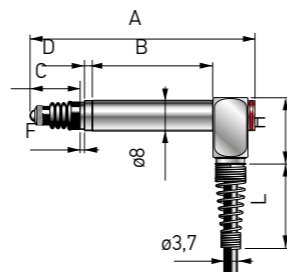
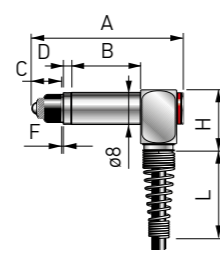


AXIAL SPRING

Pencil probe $\pm 0,5\text{mm}$

	$\pm 0,5$	± 1	± 2	$\pm 2\text{LR}$	$\pm 2,5$	± 5	± 10
A	36,20	59,40	83,35	106,35	83,35	114,45	162,45
B	24,35	41,25	61,05	75,50	61,05	86,60	120,65
C	7,10	12,80	17,25	25,30	16,75	22,30	39,45
D	2,00	2,00	2	2,00	2,00	2,00	2,00
E	2,05	-	-	-	-	-	-
F	0,70	1,30	1	1,50	1,50	1,50	-
G	-	-	-	-	-	-	-
H	-	-	-	-	-	-	-
L	-	22,00	22,00	22,00	22,00	22,00	22,00
M	-	-	-	-	-	-	-

F= Max. pretravel adj. value

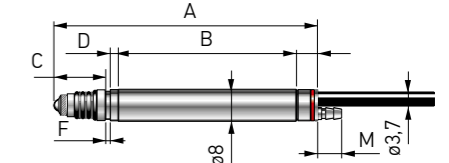


Pencil probe $\pm 0,5\text{mm}$

RADIAL SPRING

	$\pm 0,5$	± 1	± 2	$\pm 2\text{LR}$	$\pm 2,5$	± 5	± 10
A	37,50	57,78	84,85	107,85	84,85	115,95	163,95
B	17,20	31,20	54,1	88,58	54,10	79,65	112,50
C	7,10	12,80	17,25	25,30	16,75	22,30	39,45
D	2,00	2,00	2,00	2,00	2,00	2,00	-
E	1,50	-	-	-	-	-	-
F	0,70	1,30	1	1,50	1,50	1,50	-
G	-	-	-	-	-	-	-
H	15,20	15,20	15,20	15,20	15,20	15,20	15,20
L	22,00	22,00	22,00	22,00	22,00	22,00	22,00
M	-	-	-	-	-	-	-

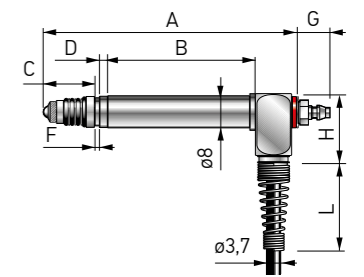
F= Max. pretravel adj. value



AXIAL PNEUMATIC PUSH

	$\pm 0,5$	± 1	± 2	$\pm 2\text{LR}$	$\pm 2,5$	± 5	± 10
A	-	65,98	86,65	109,65	86,65	117,75	166,75
B	-	44,55	61,05	75,50	61,05	86,60	120,65
C	-	12,80	17,25	25,30	16,75	22,30	39,45
D	-	2,00	2,00	2,00	2,00	2,00	-
E	-	-	-	-	-	-	-
F	-	1,30	1	1,50	1,50	1,50	-
G	-	-	-	-	-	-	-
H	-	-	-	-	-	-	-
L	-	-	-	-	-	-	-
M	-	6,00	6,00	6,00	6,00	6,00	6,00

F= Max. pretravel adj. value

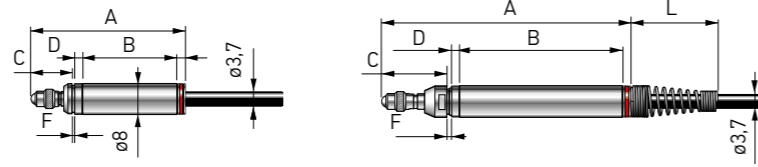


RADIAL PNEUMATIC PUSH

	$\pm 0,5$	± 1	± 2	$\pm 2\text{LR}$	$\pm 2,5$	± 5	± 10
A	-	71,75	84,85	107,85	84,85	115,95	163,95
B	-	36,10	54,1	68,55	52,60	78,15	112,50
C	-	12,80	17,25	25,30	16,75	22,30	39,45
D	-	2,00	2,00	2,00	2,00	2,00	-
E	-	-	-	-	-	-	-
F	-	1,30	1	1,50	1,50	1,50	-
G	-	7,50	-	7,50	7,50	7,50	7,50
H	-	15,20	15,20	15,20	15,20	15,20	15,20
L	-	22,00	22,00	22,00	22,00	22,00	22,00
M	-	7,5	7,5	7,5	7,5	7,5	7,5

F= Max. pretravel adj. value

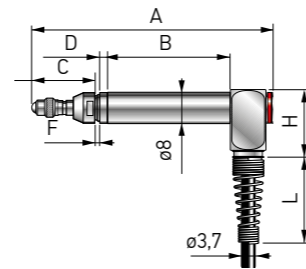
SOFT TOUCH DIMENSIONS (MM)

Pencil probe $\pm 0,5$ mm

AXIAL SPRING

	$\pm 0,5$	± 1	± 2	$\pm 2LR$	$\pm 2,5$	± 5	± 10
A	39,90	63,00	87,00	106,35	87,00	114,45	162,45
B	24,35	41,25	61,05	75,50	61,05	86,60	120,65
C	10,65	16,40	20,9	28,80	20,40	22,30	39,45
D	2,00	2,00	2	-	2,00	-	-
E	2,05	-	-	-	-	-	-
F	0,70	1,30	1	-	1,50	-	-
G	-	-	-	-	-	-	-
H	-	-	-	-	-	-	-
L	-	22,00	22,00	22,00	22,00	22,00	22,00
M	-	-	-	-	-	-	-

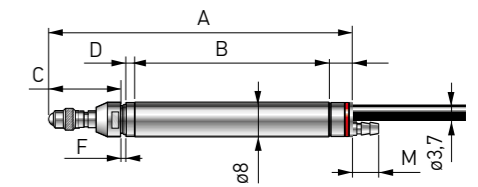
F= Max. pretravel adj. value



RADIAL SPRING

	$\pm 0,5$	± 1	± 2	$\pm 2LR$	$\pm 2,5$	± 5	± 10
A	-	61,43	88,50	107,85	88,50	115,95	163,95
B	-	31,20	54,1	68,55	54,10	79,65	112,50
C	-	16,40	20,9	28,80	20,40	16,90	39,45
D	-	2,00	2	-	2,00	-	-
E	-	-	-	-	-	-	-
F	-	1,30	1	-	1,50	-	-
G	-	-	-	-	-	-	-
H	-	15,20	15,20	15,20	15,20	15,20	15,20
L	-	22,00	22,00	22,00	22,00	22,00	22,00
M	-	-	-	-	-	-	-

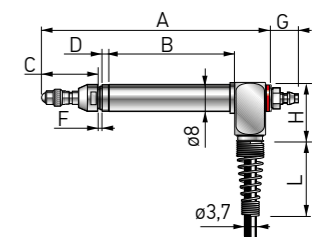
F= Max. pretravel adj. value



AXIAL PNEUMATIC PUSH

	$\pm 0,5$	± 1	± 2	$\pm 2LR$	$\pm 2,5$	± 5	± 10
A	-	69,63	90,30	109,65	90,30	117,75	165,75
B	-	44,55	61,05	75,50	61,05	86,60	120,65
C	-	16,40	20,90	28,80	20,40	16,90	39,45
D	-	2,00	2,00	-	2,00	-	-
E	-	-	-	-	-	-	-
F	-	1,30	1	-	1,50	-	-
G	-	-	-	-	-	-	-
H	-	-	-	-	-	-	-
L	-	-	-	-	-	-	-
M	-	6,00	6,00	6,00	6,00	6,00	6,00

F= Max. pretravel adj. value



RADIAL PNEUMATIC PUSH

	$\pm 0,5$	± 1	± 2	$\pm 2LR$	$\pm 2,5$	± 5	± 10
A	-	66,30	88,50	107,85	88,50	115,95	163,95
B	-	36,10	52,6	68,55	52,60	78,15	112,50
C	-	16,40	20,40	28,80	20,40	16,90	39,45
D	-	2,00	2,00	-	2,00	-	-
E	-	-	-	-	-	-	-
F	-	1,30	1	-	1,50	-	-
G	-	7,50	-	7,50	7,50	7,50	7,50
H	-	15,20	15,20	15,20	15,20	15,20	15,20
L	-	22,00	22	22,00	22,00	22,00	22,00
M	-	7,5	7,5	7,5	7,5	7,5	7,5

F= Max. pretravel adj. value

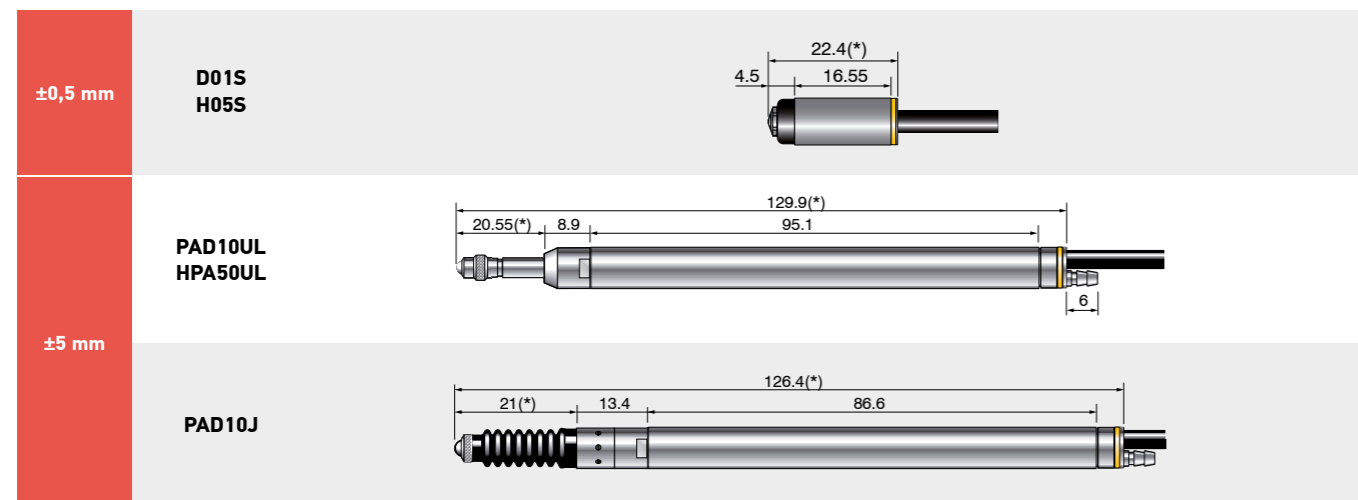


SPECIAL MODELS

MODEL		ULTRA-SHORT	ULTRA-SOFT TOUCH	SOFT-TOUCH & DUST-PROOF
Cable (A=axial - R=radial)		A	A	A
Actuation (*)		S	PP	PP
Measuring range	[mm]	1	10	10
Mechanical travel	[mm]	1,5	11	11
Body Ø	[mm]	8	8	8
Spring strength	[N/mm]	0,17	0,003	0,007
Measuring force	[N±25%]	0,60	0,12	0,30
PP pressure	bar	-	0,20	0,5 ÷ 2
	psi	-	2,90	7,3 ÷ 29
Vacuum retract pressure	bar	-	-	-
	psi	-	-	-
Cable length	[m]	2	2	2
Gasket		Fluoroelastometer	-	Fluoroelastometer
Repeatability (2.77 σ)	[μm]	≤0,15	≤0,15	≤0,15
Zero thermal drift	[μm/°C]	<0,25	<0,25	<0,25
Operating temperature	[°C]	(-10)÷(+65)	(-10)÷(+65)	(-10)÷(+65)
Storage temperature	[°C]	(-20)÷(+100)	(-20)÷(+100)	(-20)÷(+100)
Protection grade		IP65	IP54	IP54
Contact type		Carbide	Nylon (PA66)	Nylon (PA66)
Contact thread		M2,5	M2,5	M2,5

DIGITAL HBT MARPOSS	D01S B3PD01S0000	PAD10UL B3PD10N5410	PAD10J B3PD10N0558	
Accuracy error	[μm]	±(0,2+K*1)	±(0,6+K*2)	±(0,6+K*2)
ANALOG HBT TESA		H05S B3PR01T0100	HPA50UL B3PR10T5410	
Sensitivity	[mV/V/mm]	73,75	29,5	-
Calibration spec.		3 _{rms} @13KHz with load 2KΩ±0,1%	3 _{rms} @13KHz with load 2KΩ±0,1%	-
Accuracy error	[μm]	±(0,2+K**1)	±(0,2+K**1)	-

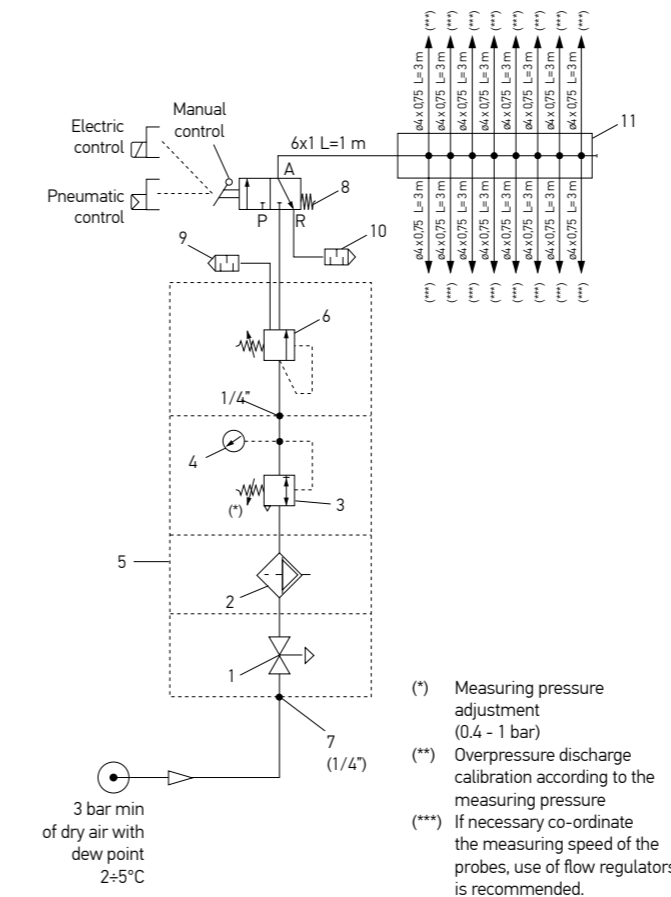
* Movement S= spring - PP= pneumatic push. K= Reading [mm]



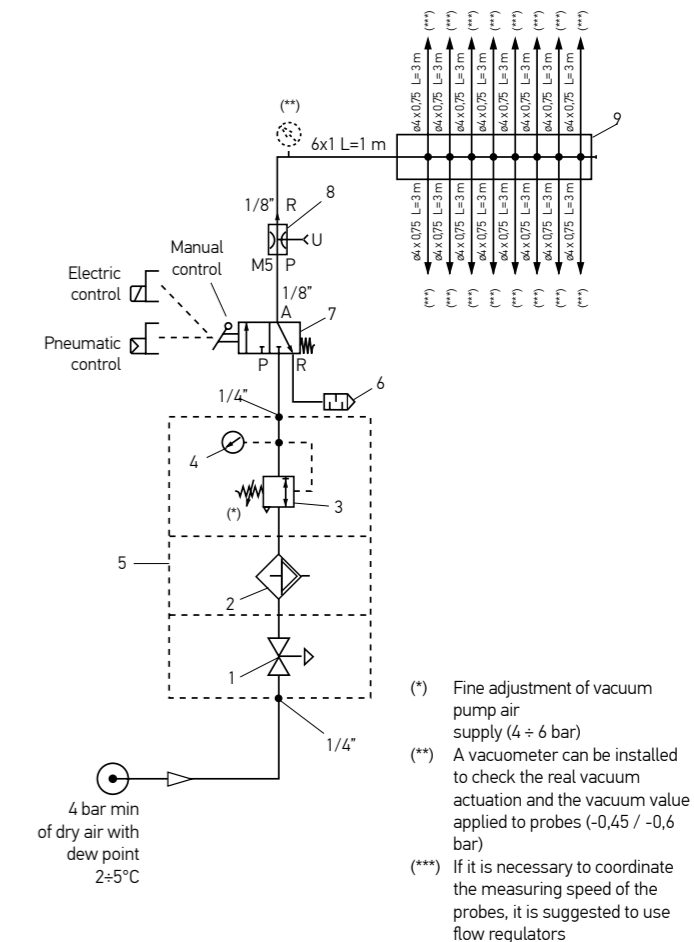
(*) Dimensions at zero position.
For other special models (i.e. Gravity actuation) please contact Marpos

- For applications with pneumatic push and vacuum retraction probe type, the pneumatic system should be sized as shown in the below schemes.
- Air supply: air must be dry and unoled, with dew point in the range 2-5 °C and filtered to 5 μm.

PNEUMATIC SYSTEM FOR MEASURING PROBES



PNEUMATIC LAYOUT FOR VACUUM CONTACT RETRACTION



REF	Q.TY	DESCRIPTION
1	1	ON-OFF valve 1/4"
2	1	Filter 5μ with semi automatic discharge
3	1	Pressure regulator
4	1	Pressure gauge ø 50 1/8" scale 0÷4 bar
5	2	Rapid terminal with bracket 72
6	1	Overpressure discharge valve
7	1	Beam 1/4"
8	1	Monostable lever 3-way 2-position valve
9	1	Silencer 1/2"
10	1	Silencer 1/8"
11	1	Distributor for max 16 probes

REF	Q.TY	DESCRIPTION
1	1	ON-OFF valve 1/4"
2	1	Filter 5μ with semi automatic discharge
3	1	Pressure regulator
4	1	Pressure gauge ø 50 1/8" scale 0÷4 bar
5	2	Rapid terminal with bracket 72
6	1	Silencer 1/2"
7	1	Monostable lever 3-way 2-position valve
8	1	Vacuum pump
9	1	Distributor for max 16 probes

Application specs for probes with spring push and vacuum retraction:
 - Standard version with gaiter: -0,45÷ -0,6 bar
 - Version without gaiter: 0,5÷2 bar

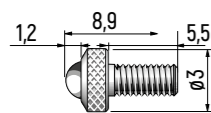
Application specs for pneumatic push probes:
 - Standard version with gaiter: 0,4÷1 bar
 - Version without gaiter: 0,5÷2 bar

ACCESSORIES



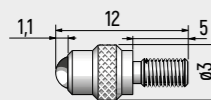
SPRINGS	±0,5 mm	±1 mm	±2 mm	±2LR mm	±2,5 mm	±5 mm	±10 mm
	0,3 (N) B1024099751	-	-	-	-	-	-
	1 (N)	-	B1042414237	-	-	B1042414435 B1042414537	-
	1,6 (N)	-	-	-	-	B1042414441 B1042414561 B1042414736	-
	2 (N)	B1024099753	B1042414236	-	-	B1042414436 B1042414536	-
	2,5 (N)	B1024099754	B1042414235	-	-	B1042414437	-

CONTACTS (THREAD M2,5)	DESCRIPTION	ORDER CODE
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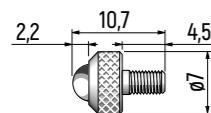
Contact radius R1,5 mm - Widia (standard)

B3394241450



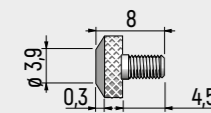
Contact radius R1,5 mm - Nylon (soft-touch)

B3394156100



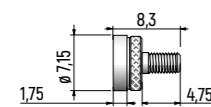
Contact radius R2,5 mm - Widia

B3392409910



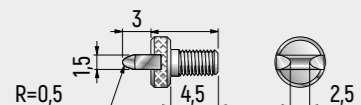
Flat contact - Widia

B3392409912



Full-Flat contact - Widia

B3394241401



Cut contact - Widia

B3392409914

EXTENSION CABLES	DESCRIPTION	ORDER CODE
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LVDT / HBT

Cable extension 1 m

B6735932026

Cable extension 2 m

B6735932015

Cable extension 5 m

B6735932016

Cable extension 10 m

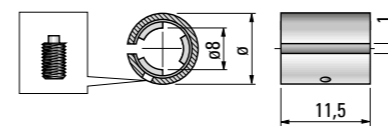
B6735932017

Cable extension 15 m

B6735932037



CLAMPING	DESCRIPTION	ORDER CODE
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Bushing outside \varnothing 10 mm*

B1019826001

Bushing outside \varnothing 3/8**

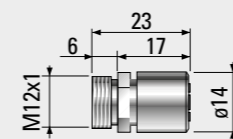
B1019826002

Dowel M3x10

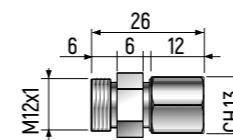
B1024099760

Dowel 4-40 UNC x .375"

B1024099761

Tongs bushing \varnothing 8 - Compact version

B2042414100

Tongs bushing \varnothing 8 - For standard wrench

B2042414200

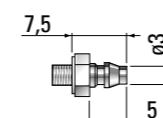
WRENCH	DESCRIPTION	ORDER CODE
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Pre-travel regulator wrench

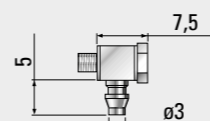
B1346040027

AIR ADAPTORS	DESCRIPTION	ORDER CODE
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Axial air adaptor

B4430RSMV03



Radial air adaptor

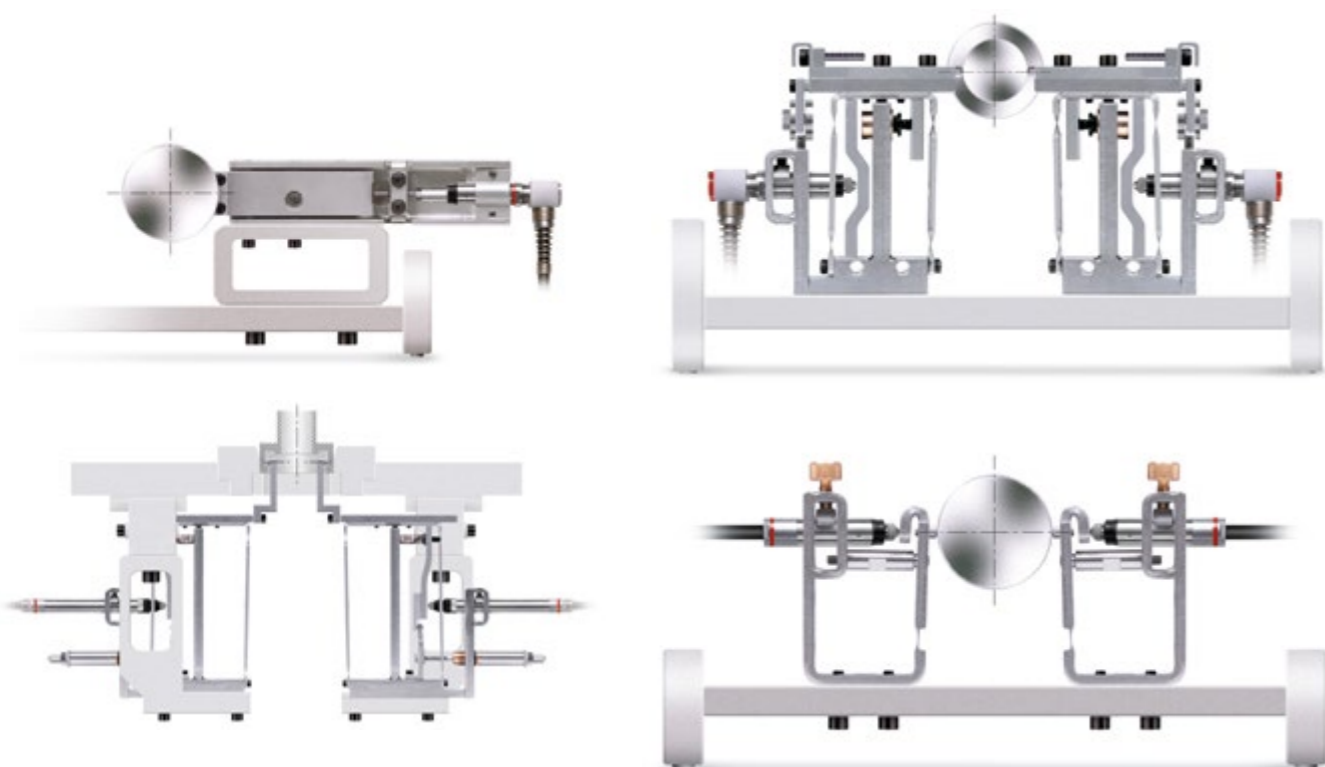
B4430RSMVAB

* Recommended hole tolerance: G7

AMA



- ▶ AMA™, Advanced Measuring Armset, is a line of mechanical structures designed to integrate and to fit Marposs measuring sensors into applications.
- ▶ By the combination of different armsets and measuring sensors it is possible to implement precise and reliable measurements on the workpieces.
- ▶ AMA is also a fundamental accessory to protect the precision measuring sensor from mechanical stresses or accidental events.



TB10, TB16

TB10, TB10C, TB16, TB16C are compact measuring armsets, appropriate for tight installation spaces.

TB10 and TB10C have a working range of 1000 μm .

TB16 and TB16C have a working range of 1600 μm

The "C" versions (TB10C, TB16C) accommodate short size ± 0.5 mm pencil probes, while the base models (TB10, TB16) accommodate regular size ± 1 mm pencil probes.



TP12

The TP12 line has a working range of 1200 μm , that allows the use of pencil probes with ± 1 mm measuring range.

It is available in different models, for internal and external diameter check and for different probes actuation, spring and pneumatic.

A self-centering model is also available.



TP60

TP60 line has a working range of 6000 μm , that allows the use of pencil probe with ± 5 mm measuring range.

It is available in different models, for internal and external diameter check and for different probes actuation, spring and pneumatic.

A self-centering model is also available.



TS12, TS21

The TS12 line has a working range of 1200 μm , while TS21 a working range from 1800 to 2100 μm . Both models allow the use of pencil probes with ± 1 mm measuring range. Pencil probes must be "Spring push" type.

This model is used to measure shoulders and it is perfect in case of limited installation space.

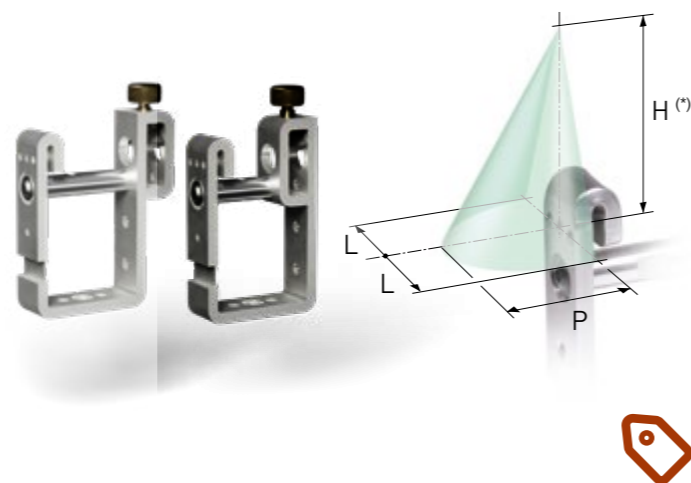
TS12E is the premium version of the TS12 line, featuring superior measurement repeatability thanks to the built-in transducer. It is available with LVDT and HBT transducer, also compatible with Tesa electronics.



MODELS AND ACCESSORIES

TB10

- TB10 and TB10C are compact measuring armsets, perfect for a reduced overall installation dimension.
- Working range is 1000 μm .
- TB10C accommodates short size ± 0.5 mm pencil probe, while the base models TB10 accommodates longer ± 1 mm pencil probes.



MODEL \emptyset SIZE	H MAX* (mm)	L MAX (mm)	P MAX (mm)	ORDER CODE
TB10 \emptyset 8 mm	30	14	20	B2927364005
TB10 \emptyset 3/8"	30	14	20	B2927364035
TB10C \emptyset 8 mm	30	14	20	B2927364006
TB10C \emptyset 3/8"	30	14	20	B2927364036

* With a vertical off-set the Arm Ratio changes: mod. TB10 [30 / (30 + h)] mod. TB16 [50 / (50 + h)] with h = 0 \div H

NON ADJUSTABLE FEATURES

MODEL \emptyset SIZE		TB10 \emptyset 8 mm	TB10 \emptyset 3/8"	TB10C \emptyset 8 mm	TB10C \emptyset 3/8"
CONTACT THREAD		M2,5	4-48 UNF	M2,5	4-48 UNF
Working range	[μm]	1000 (0/+300)	1000 (0/+300)	1000 (0/+300)	1000 (0/+300)
Suggested pretravel (**)	[μm]	300	300	300	300
Suggested overtravel (***)	[μm]	700	700	700	700
Measuring force at 300 μm from the front stop	[N]	Fprobe $\pm 0,3$ (**)	Fprobe $\pm 0,3$ (**)	Fprobe $\pm 0,3$ (**)	Fprobe $\pm 0,3$ (**)
Stiffness K measured on the contact (only armset)	[N/mm]	0,9 \pm 0,3	0,9 \pm 0,3	0,9 \pm 0,3	0,9 \pm 0,3
Mechanical repeatability error (2.77 σ) (assembled through the measuring gauge)	[μm]	$\leq 0,15$ (*)	$\leq 0,15$ (*)	$\leq 0,15$ (*)	$\leq 0,15$ (*)
Mechanical repeatability error (2.77 σ) (assembled to one side)	[μm]	$\leq 0,15$ (*)	$\leq 0,15$ (*)	$\leq 0,15$ (*)	$\leq 0,15$ (*)
Mechanical repeatability error (2.77 σ) (assembled to the base)	[μm]	$\leq 0,4$ (*)	$\leq 0,4$ (*)	$\leq 0,4$ (*)	$\leq 0,4$ (*)
Maximum sensitivity error		$\pm 1\%$	$\pm 1\%$	$\pm 1\%$	$\pm 1\%$
Linearity error on the working range	[μm]	≤ 2	≤ 2	≤ 2	≤ 2
Thermal drift	[$\mu\text{m}/^\circ\text{C}$]	$\leq 0,2$	$\leq 0,2$	$\leq 0,2$	$\leq 0,2$
Operating and storage temperature	[$^\circ\text{C}$]	-10 to 65	-10 to 65	-10 to 65	-10 to 65
Weight	[g]	49	49	47	47

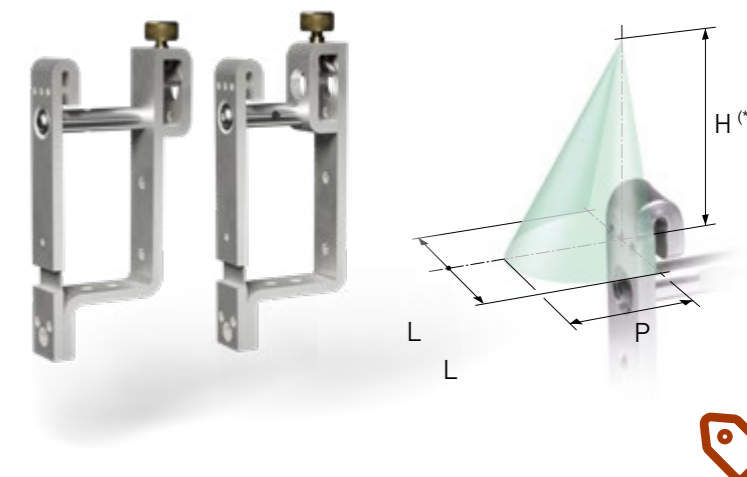
(*) With standard Marposs Red Crown F10 pencil probe. The performance is recorded at the suggested zero.

(**) F probe = Force of the measuring gauge. Ex.: with 0,8N measuring gauge, F = 0,8 \div 0,3 N

(***) As the mechanical zero device is not available to identify any fixed positioning inside the measuring range, the "suggested zero position" (at 300 μm from the front stop) is the one with minimum measuring errors

TB16

- TB16 and TB16C are compact measuring armsets, perfect for a reduced overall installation dimension.
- Working range is 1000 μm .
- TB16C accommodates short size pencil probe $\pm 0,5$ mm, while the base models TB16 accommodates longer pencil probes ± 1 mm.



MODEL \emptyset SIZE	H MAX* (mm)	L MAX (mm)	P MAX (mm)	ORDER CODE
TB16 \emptyset 8 mm	50	14	20	B2927364003
TB16 \emptyset 3/8"	50	14	20	B2927364033
TB16C \emptyset 8 mm	50	14	20	B2927364004
TB16C \emptyset 3/8"	50	14	20	B2927364034

* With a vertical off-set the Arm Ratio changes: mod. TB16 [30 / (30 + h)] mod. TB16 [50 / (50 + h)] with h = 0 \div H

NON ADJUSTABLE FEATURES

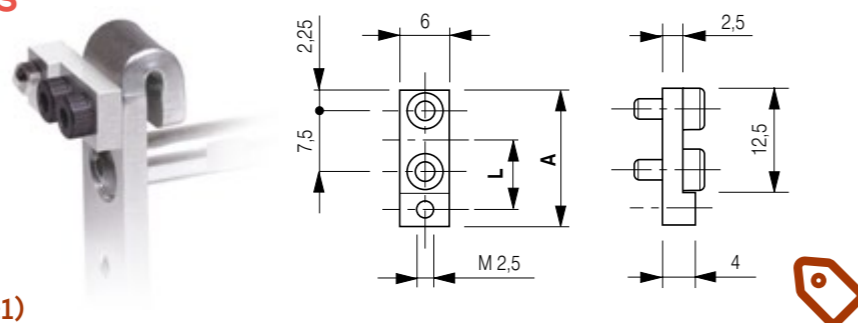
MODEL \emptyset SIZE		TB16 \emptyset 8 mm	TB16 \emptyset 3/8"	TB16C \emptyset 8 mm	TB16C \emptyset 3/8"
CONTACT THREAD		M2,5	4-48 UNF	M2,5	4-48 UNF
Working range	[μm]	1600 (0/+300)	1600 (0/+300)	1600 (0/+300)	1600 (0/+300)
Suggested pretravel (**)	[μm]	300	300	300	300
Suggested overtravel (***)	[μm]	1300	1300	1300	1300
Measuring force at 300 μm from the front stop	[N]	Fprobe $\pm 0,3$ (**)	Fprobe $\pm 0,3$ (**)	Fprobe $\pm 0,3$ (**)	Fprobe $\pm 0,3$ (**)
Stiffness K measured on the contact (only armset)	[N/mm]	0,4 \pm 0,2	0,4 \pm 0,2	0,4 \pm 0,2	0,4 \pm 0,2
Mechanical repeatability error (2.77 σ) (assembled through the measuring gauge)	[μm]	$\leq 0,15$ (*)	$\leq 0,15$ (*)	$\leq 0,15$ (*)	$\leq 0,15$ (*)
Mechanical repeatability error (2.77 σ) (assembled to one side)	[μm]	$\leq 0,4$ (*)	$\leq 0,4$ (*)	$\leq 0,4$ (*)	$\leq 0,4$ (*)
Mechanical repeatability error (2.77 σ) (assembled to the base)	[μm]	$\leq 0,4$ (*)	$\leq 0,4$ (*)	$\leq 0,4$ (*)	$\leq 0,4$ (*)
Maximum sensitivity error		$\pm 1\%$	$\pm 1\%$	$\pm 1\%$	$\pm 1\%$
Linearity error on the working range	[μm]	≤ 2	≤ 2	≤ 2	≤ 2
Thermal drift	[$\mu\text{m}/^\circ\text{C}$]	$\leq 0,2$	$\leq 0,2$	$\leq 0,2$	$\leq 0,2$
Operating and storage temperature	[$^\circ\text{C}$]	-10 to 65	-10 to 65	-10 to 65	-10 to 65
Weight	[g]	62	62	60	60

(*) With standard Marposs Red Crown F10 pencil probe. The performance is recorded at the suggested zero.

(**) F probe = Force of the measuring gauge. Ex.: with 0,8N measuring gauge, F = 0,8 \div 0,3 N

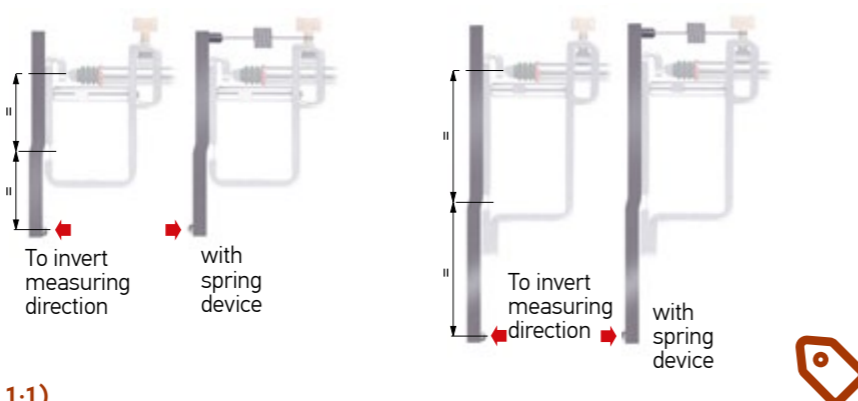
(***) As the mechanical zero device is not available to identify any fixed positioning inside the measuring range, the "suggested zero position" (at 300 μm from the front stop) is the one with minimum measuring errors

MODELS AND ACCESSORIES



OFF-SET ARMSET (ARM RATIO 1:1)

MODEL	VERSION	A	OFF-SET L	ORDER CODE
TB10 / TB10C / TB16 / TB16C ø 8 mm	M 2,5	16,5 [mm]	8,5 [mm]	B2924017150
TB10 / TB10C / TB16 / TB16C ø 8 mm	M 2,5	18 [mm]	10 [mm]	B2924017151
TB10 / TB10C / TB16 / TB16C ø 3/8"	4-48 UNF	16,5 [mm]	8,5 [mm]	B2924017152
TB10 / TB10C / TB16 / TB16C ø 3/8"	4-48 UNF	18 [mm]	10 [mm]	B2924017152



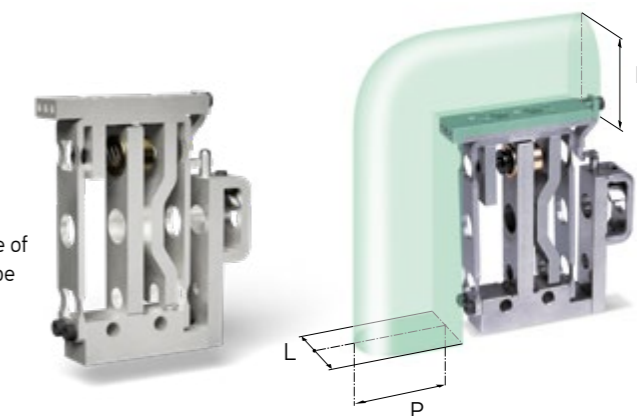
STRAIGHT ARMSET (ARM RATIO 1:1)

MODEL	VERSION	ORDER CODE
TB10	8 [mm]	B3192736405
TB10C	3/8"	B3192736435
TB16	8 [mm]	B3192736403
TB16C	3/8"	B3192736433

ACCESSORY MODEL	ORDER CODE
Spring for TB10 / TB16	B2027364001
Spring for TB10C / TB16C	B2027364002
Alternate Clamping Device	B2027364000

TP12 E, TP12 I

- The TP12 line has a working range of 1200 µm, that allows the use of pencil probes with ±1 mm measuring range. Pencil probes must be Spring push type.
- TP12E is the model for checking external diameters.
- TP12I is the model for checking internal diameters.



MODEL Ø SIZE	H MAX* (mm)	L MAX (mm)	P MAX (mm)	ORDER CODE
TP12E ø 8 mm	40	14	40	B2924051200
TP12E ø 3/8"	40	14	40	B2924051202
TP12I ø 8 mm	40	14	40	B2924051201
TP12I ø 3/8"	40	14	40	B2924051203

* The Arm Ratio is 1:1 for any contact position.

NON ADJUSTABLE FEATURES

MODEL Ø SIZE	TP12E ø 8 mm	TP12E ø 3/8"	TP12I ø 8 mm	TP12I ø 3/8"
CONTACT THREAD	M2,5	4-48 UNF	M2,5	4-48 UNF
Working range	[µm] 1200 (0/+300)	1200 (0/+300)	1200 (0/+300)	1200 (0/+300)
Retraction field	[µm] 0	0	0	0
Pretravel	[µm] 350 ± 50	350 ± 50	350 ± 50	350 ± 50
Overtravel	[µm] 800 min	800 min	800 min	800 min
Stiffness K measured on the contact	[N/mm] 0,75 ± 0,2	0,75 ± 0,2	0,95 ± 0,2	0,95 ± 0,2
Mechanical repeatability error (2.77 σ)	[µm] ≤ 0,2 (•)	≤ 0,2 (•)	≤ 0,2 (•)	≤ 0,2 (•)
Maximum sensitivity error	± 1,5%	± 1,5%	± 1,5%	± 1,5%
Linearity error on the working range	[µm] ≤ 2	≤ 2	≤ 2	≤ 2
Thermal drift	[µm/°C] ≤ 0,2	≤ 0,2	≤ 0,2	≤ 0,2
Operating and storage temperature	[°C] -10 to 65	-10 to 65	-10 to 65	-10 to 65
Operative pressure	[MPa] -	-	-	-
Weight	[g] 147	147	147	147

(•) With standard Marposh Red Crown F10 pencil probe.

ADJUSTABLE FEATURES

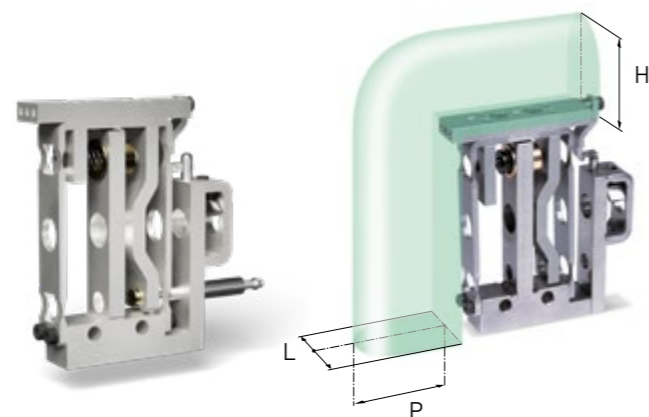
MODEL Ø SIZE	TP12E ø 8 mm	TP12E ø 3/8"	TP12I ø 8 mm	TP12I ø 3/8"
CONTACT THREAD	M2,5	4-48 UNF	M2,5	4-48 UNF
Measuring force at 350 µm from the front stop	(N) ± 0,15	Fmin = Fprobe - 0,25 (••)	Fmin = Fprobe - 0,25 (••)	Fmin = 1,2 - Fprobe (••)
Maximum measuring force	[µm]	FMAX ≥ Fprobe + 0,05 (••)	FMAX ≥ Fprobe + 0,05 (••)	FMAX ≥ 1,5 - Fprobe (••)

(••) F probe = Force of the measuring gauge.
The armset is provided at F min minimum measuring force.

MODELS AND ACCESSORIES

TP12 EP, TP12 IP

- The TP12 line has a working range of 1200 μm , that allows the use of pencil probes with ± 1 mm measuring range. Pencil probes must be Spring push type.
- This version is pneumatically actuated, and works with pneumatic retraction.
- TP12EP is the model for checking external diameters.
- TP12IP is the model for checking internal diameters.



MODEL Ø SIZE	H MAX* (mm)	L MAX (mm)	P MAX (mm)	ORDER CODE
TP12EP ø 8 mm	40	14	40	B3024051204
TP12EP ø 3/8"	40	14	40	B3024051206
TP12IP ø 8 mm	40	14	40	B3024051205
TP12IP ø 3/8"	40	14	40	B3024051207

* The Arm Ratio is 1:1 for any contact position.

NON ADJUSTABLE FEATURES

MODEL Ø SIZE		TP12EP ø 8 mm	TP12EP ø 3/8"	TP12IP ø 8 mm	TP12IP ø 3/8"
CONTACT THREAD		M2,5	4-48 UNF	M2,5	4-48 UNF
Working range	[μm]	1200 (0/+300)	1200 (0/+300)	1200 (0/+300)	1200 (0/+300)
Retraction field	[μm]	900 (0/+100)	900 (0/+100)	900 (0/+100)	900 (0/+100)
Pretravel	[μm]	350 \pm 50	350 \pm 50	350 \pm 50	350 \pm 50
Overtravel	[μm]	800 min	800 min	800 min	800 min
Stiffness K measured on the contact	[N/mm]	0,75 \pm 0,2	0,75 \pm 0,2	0,95 \pm 0,2	0,95 \pm 0,2
Mechanical repeatability error (2.77 σ)	[μm]	\leq 0,2 (*)	\leq 0,2 (*)	\leq 0,2 (*)	\leq 0,2 (*)
Maximum sensitivity error		\pm 1,5%	\pm 1,5%	\pm 1,5%	\pm 1,5%
Linearity error on the working range	[μm]	\leq 2	\leq 2	\leq 2	\leq 2
Thermal drift	[$\mu\text{m}/^\circ\text{C}$]	\leq 0,2	\leq 0,2	\leq 0,2	\leq 0,2
Operating and storage temperature	[$^\circ\text{C}$]	-10 to 65	-10 to 65	-10 to 65	-10 to 65
Operative pressure	[MPa]	0,3 to 0,7	0,3 to 0,7	0,3 to 0,7	0,3 to 0,7
Weight	[g]	154	154	154	154

(*) With standard Marposs Red Crown F10 pencil probe.

ADJUSTABLE FEATURES

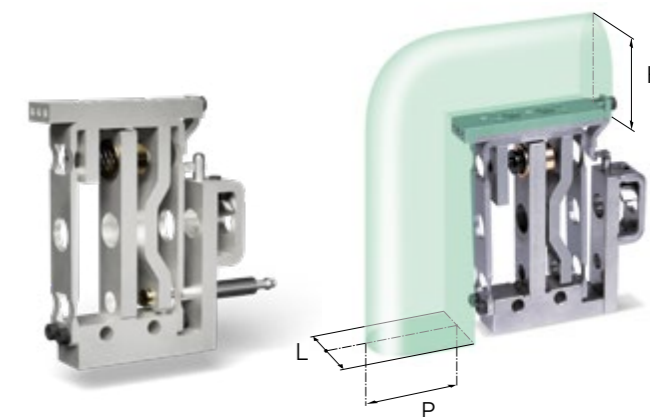
MODEL Ø SIZE		TP12EP ø 8 mm	TP12EP ø 3/8"	TP12IP ø 8 mm	TP12IP ø 3/8"
CONTACT THREAD		M2,5	4-48 UNF	M2,5	4-48 UNF
Measuring force at 350 μm from the front stop	(N) \pm 0,15	Fmin = Fprobe - 0,25 (**)	Fmin = Fprobe - 0,25 (**)	Fmin = 1,2 - Fprobe (**)	Fmin = 1,2 - Fprobe (**)
Maximum measuring force	[μm]	FMAX \geq Fprobe + 0,05 (**)	FMAX \geq Fprobe + 0,05 (**)	FMAX \geq 1,5 - Fprobe (**)	FMAX \geq 1,5 - Fprobe (**)

(**) F probe = Force of the measuring gauge.

The armset is provided at F min minimum measuring force.

TP12 SE, TP12 SI

- The TP12 line has a working range of 1200 μm , that allows the use of pencil probes with ± 1 mm measuring range. Pencil probes must be Spring push type.
- This specific version is self-centering type, feature that allows to use one single measurement probe and one static contact point, instead of 2 measurement probes.
- TP12SE is the model for checking external diameters.
- TP12SI is the model for checking internal diameters.



MODEL Ø SIZE	H MAX* (mm)	L MAX (mm)	P MAX (mm)	ORDER CODE
TP12SE ø 8 mm	40	14	40	B2924051208
TP12SE ø 3/8"	40	14	40	B2924051209
TP12SI ø 8 mm	40	14	40	B2924051228
TP12SI ø 3/8"	40	14	40	B2924051229

* The Arm Ratio is 1:1 for any contact position.

NON ADJUSTABLE FEATURES

MODEL Ø SIZE		TP12SE ø 8 mm	TP12SE ø 3/8"	TP12SI ø 8 mm	TP12SI ø 3/8"
CONTACT THREAD		M2,5	4-48 UNF	M2,5	4-48 UNF
Working range	[μm]	1200 (0/+300)	1200 (0/+300)	1200 (0/+300)	1200 (0/+300)
Retraction field	[μm]	0	0	0	0
Pretravel	[μm]	350 \pm 50	350 \pm 50	350 \pm 50	350 \pm 50
Overtravel	[μm]	800 min	800 min	800 min	800 min
Stiffness K measured on the contact	[N/mm]	1,2 \pm 0,2	1,2 \pm 0,2	0,8 \pm 0,2	0,8 \pm 0,2
Mechanical repeatability error (2.77 σ)	[μm]	\leq 0,6 each pair (*)	\leq 0,6 each pair (*)	\leq 0,6 each pair (*)	\leq 0,6 each pair (*)
Maximum sensitivity error		\pm 1,5%	\pm 1,5%	\pm 1,5%	\pm 1,5%
Linearity error on the working range	[μm]	\leq 2	\leq 2	\leq 2	\leq 2
Thermal drift	[$\mu\text{m}/^\circ\text{C}$]	\leq 0,2	\leq 0,2	\leq 0,2	\leq 0,2
Operating and storage temperature	[$^\circ\text{C}$]	-10 to 65	-10 to 65	-10 to 65	-10 to 65
Operative pressure	[MPa]	-	-	-	-
Weight	[g]	132	132	132	132

(*) With standard Marposs Red Crown F10 pencil probe

ADJUSTABLE FEATURES

MODEL Ø SIZE		TP12SE ø 8 mm	TP12SE ø 3/8"	TP12SI ø 8 mm	TP12SI ø 3/8"
CONTACT THREAD		M2,5	4-48 UNF	M2,5	4-48 UNF
Measuring force at 350 μm from the front stop	(N) \pm 0,15	Fmin = 1,2 - Fprobe (**)	Fmin = 1,2 - Fprobe (**)	Fmin = Fprobe - 0,25 (**)	Fmin = Fprobe - 0,25 (**)
Maximum measuring force	[μm]	FMAX \geq 1,5 - Fprobe (**)	FMAX \geq 1,5 - Fprobe (**)	FMAX \geq Fprobe + 0,05 (**)	FMAX \geq Fprobe + 0,05 (**)

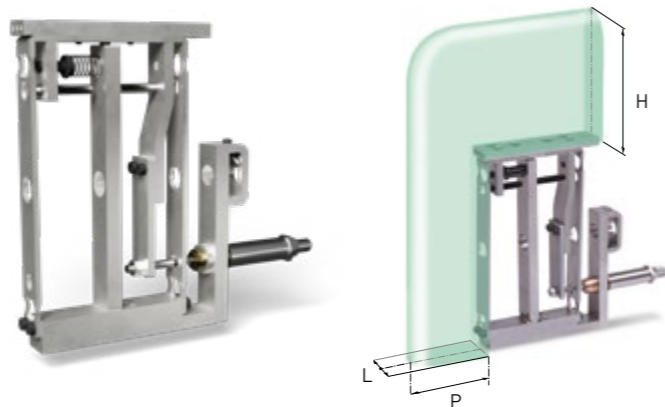
(**) F probe = Force of the measuring gauge.

The armset is provided at F min minimum measuring force.

MODELS AND ACCESSORIES

TP60E, TP60I

- The TP60 line has a working range of 6000 μm , that allows the use of pencil probes with ± 5 mm measuring range. Pencil probes must be Spring push type.
- TP60E is the model for checking external diameters.
- TP60I is the model for checking internal diameters.



MODEL Ø SIZE	H MAX* (mm)	L MAX (mm)	P MAX (mm)	ORDER CODE
TP60E ø 8 mm	90	14	50	B2924051400
TP60E ø 3/8"	90	14	50	B2924051430
TP60I ø 8 mm	90	14	50	B2924051401
TP60I ø 3/8"	90	14	50	B2924051431

* The Arm Ratio is 1:1 for any contact.

NON ADJUSTABLE FEATURES

MODEL Ø SIZE		TP60E ø 8 mm	TP60E ø 3/8"	TP60I ø 8 mm	TP60I ø 3/8"
CONTACT THREAD		M2,5	4-48 UNF	M2,5	4-48 UNF
Maximum working range	[μm]	6000 (0/+300)	6000 (0/+300)	6000 (0/+300)	6000 (0/+300)
Stiffness K measured on the contact	[N/mm]	0,15 \pm 0,1	0,15 \pm 0,1	0,25 \pm 0,1	0,25 \pm 0,1
Mechanical repeatability error (2.77 σ)	[μm]	\leq 0,3 (•)	\leq 0,3 (•)	\leq 0,3 (•)	\leq 0,3 (•)
Maximum sensitivity error		\pm 1,5%	\pm 1,5%	\pm 1,5%	\pm 1,5%
Linearity error on the working range	[μm]	\leq 6	\leq 6	\leq 6	\leq 6
Thermal drift	[$\mu\text{m}/^{\circ}\text{C}$]	\leq 0,2	\leq 0,2	\leq 0,2	\leq 0,2
Operating and storage temperature	[$^{\circ}\text{C}$]	-10 to 65	-10 to 65	-10 to 65	-10 to 65
Operating pressure	[MPa]	0,3 to 0,6	0,3 to 0,6	0,3 to 0,6	0,3 to 0,6
Weight	[g]	292	292	294	294
Operating and storage temperature	[$^{\circ}\text{C}$]	-10 to 65	-10 to 65	-10 to 65	-10 to 65
Operative pressure	[MPa]	0,3 to 0,7	0,3 to 0,7	0,3 to 0,7	0,3 to 0,7
Weight	[g]	154	154	154	154

(•) With standard Marposs Red Crown F10 pencil probe

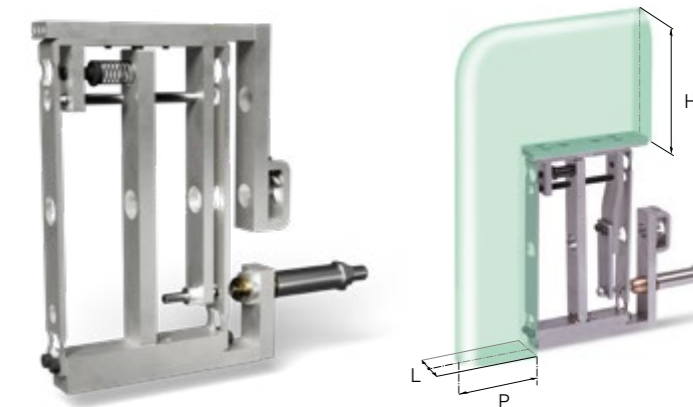
ADJUSTABLE FEATURES

MODEL Ø SIZE		TP60E ø 8 mm	TP60E ø 3/8"	TP60I ø 8 mm	TP60I ø 3/8"
CONTACT THREAD		M2,5	4-48 UNF	M2,5	4-48 UNF
Adjusted working range	[μm]	5700 \pm 100	5700 \pm 100	5700 \pm 100	5700 \pm 100
Retraction range	[μm]	5700 \pm 100	5700 \pm 100	5700 \pm 100	5700 \pm 100
Measuring force at zero (ref. of the travel centre + 2750 μm)	(N) \pm 0,15	Fmin = Fprobe + 0,2 (••)	Fmin = Fprobe + 0,2 (••)	Fmin = 2,6 - Fprobe (••)	Fmin = 2,6 - Fprobe (••)
Maximum measuring force	(N)	FMAX \geq Fprobe + 0,5 (••)	FMAX \geq Fprobe + 0,5 (••)	FMAX \geq 3,0 - Fprobe (••)	FMAX \geq 3,0 - Fprobe (••)

(••) F probe = Force of the measuring gauge.
The armset is provided at F min minimum measuring force.

TP60SE, 60SI

- The TP60 line has a working range of 6000 μm , that allows the use of pencil probes with ± 5 mm measuring range. Pencil probes must be Spring push type.
- This specific version is self-centering type, feature that allows to use one single measurement probe and one static contact point, instead of 2 measurement probes.
- TP60SE is the model for checking external diameters.
- TP60SI is the model for checking internal diameters.



MODEL Ø SIZE	H MAX* (mm)	L MAX (mm)	P MAX (mm)	ORDER CODE
TP60SE ø 8 mm	90	14	50	B2924051409
TP60SE ø 3/8"	90	14	50	B2924051407
TP60SI ø 8 mm	90	14	50	B2924051406
TP60SI ø 3/8"	90	14	50	B2924051408

* The Arm Ratio is 1:1 for any contact.

NON ADJUSTABLE FEATURES

MODEL Ø SIZE		TP60SE ø 8 mm	TP60SE ø 3/8"	TP60SI ø 8 mm	TP60SI ø 3/8"
CONTACT THREAD		M2,5	4-48 UNF	M2,5	4-48 UNF
Maximum working range	[μm]	6000 (0/+300)	6000 (0/+300)	6000 (0/+300)	6000 (0/+300)
Stiffness K measured on the contact	[N/mm]	0,25 \pm 0,1	0,25 \pm 0,1	0,15 \pm 0,1	0,15 \pm 0,1
Mechanical repeatability error (2.77 σ)	[μm]	\leq 0,6 each pair (•)	\leq 0,6 each pair (•)	\leq 0,6 each pair (•)	\leq 0,6 each pair (•)
Maximum sensitivity error		\pm 1,5%	\pm 1,5%	\pm 1,5%	\pm 1,5%
Linearity error on the working range	[μm]	\leq 6	\leq 6	\leq 6	\leq 6
Thermal drift	[$\mu\text{m}/^{\circ}\text{C}$]	\leq 0,2	\leq 0,2	\leq 0,2	\leq 0,2
Operating and storage temperature	[$^{\circ}\text{C}$]	-10 to 65	-10 to 65	-10 to 65	-10 to 65
Operating pressure	[MPa]	0,3 to 0,6	0,3 to 0,6	0,3 to 0,6	0,3 to 0,6
Weight	[g]	267	267	267	267

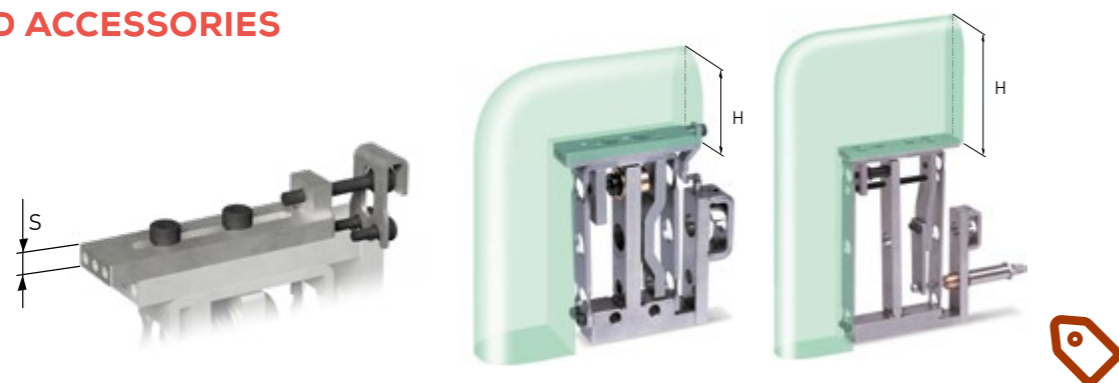
(•) With standard Marposs Red Crown F10 pencil probe

ADJUSTABLE FEATURES

MODEL Ø SIZE		TP60SE ø 8 mm	TP60SE ø 3/8"	TP60SI ø 8 mm	TP60SI ø 3/8"
CONTACT THREAD		M2,5	4-48 UNF	M2,5	4-48 UNF
Adjusted working range	[μm]	5700 \pm 100	5700 \pm 100	5700 \pm 100	5700 \pm 100
Retraction range	[μm]	5700 \pm 100	5700 \pm 100	5700 \pm 100	5700 \pm 100
Measuring force at zero (ref. of the travel centre + 2750 μm)	(N) \pm 0,15	Fmin = 2,6 - Fprobe (••)	Fmin = 2,6 - Fprobe (••)	Fmin = Fprobe + 0,2 (••)	Fmin = Fprobe + 0,2 (••)
Maximum measuring force	(N)	FMAX \geq 3,0 Fprobe (••)	FMAX \geq 3,0 Fprobe (••)	FMAX \geq Fprobe + 0,5 (••)	FMAX \geq Fprobe + 0,5 (••)

(••) F probe = Force of the measuring gauge.
The armset is provided at F min minimum measuring force.

MODELS AND ACCESSORIES



SLIDES

MODEL	H(*) MAX (MM)	S SIZE (MM)	COMPATIBLE WITH ARMSET	ORDER CODE
M 2,5	20	4	TP12	B2924051211
M 2,5	40	6	TP12	B2924051219
4-48 UNF	20	4	TP12	B2924051212
4-48 UNF	40	6	TP12	B2924051220
M 2,5	90	6	TP60	B2924051405
4-48 UNF	90	6	TP60	B2924051435



ARMSET

MODEL	A SIZE (MM)	COMPATIBLE WITH ARMSET	ORDER CODE
M 2,5	30	TP12	B3192405120
4-48 UNF	30	TP12	B3192405123
M 2,5	60	TP60	B3192405140
4-48 UNF	60	TP60	B3192405143



OFFSET ARMSET

MODEL	MAX OFFSET (MM)	ORDER CODE
M 2,5	8,5 mm	B2924017150
M 2,5	10 mm	B2924017151
4-48 UNF	8,5 mm	B2924017152
4-48 UNF	10 mm	B2924017153



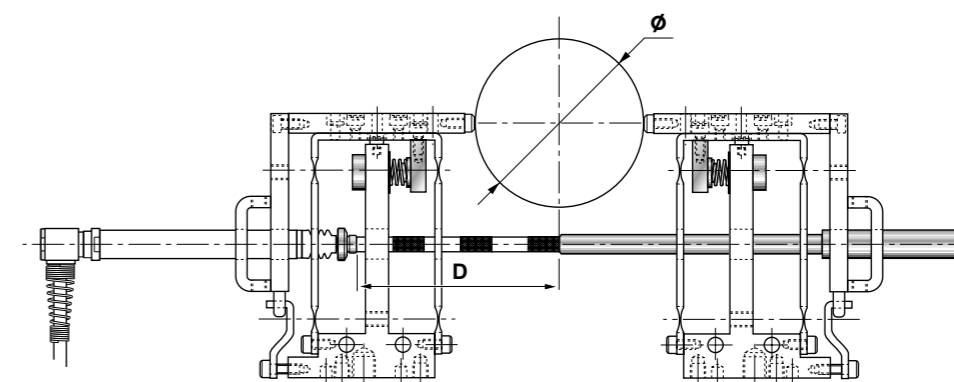
PRETRAVEL/ OVERTRAVEL LIMITER

MODEL	COMPATIBLE WITH	ORDER CODE
TP12 (any model)	TP12 any model	B2924051260

SELF-CENTERING KIT



COMPATIBLE CELL MODEL	Ø	ORDER CODE
TP12	8 mm	B2924051210
TP12	3/8"	B2924051213
TP60	8 mm	B2924051410
TP60	3/8"	B2924051413



COMPATIBLE CELL MODEL	PART DIAMETER TO MEASURE Ø [MM]	TOTAL EXTENSION LENGTH D [MM]	ORDER CODE
TP12	0-3	10	B1024017105
TP12	3-8	15	B1024017106
TP12	8-13	20	B1024017107
TP12	13-18	25	B1024017108
TP12	18-23	30	B1024017109
TP12	23-28	35	B1024017105 + B1024017107
TP12	28-33	40	B1024017107 + B1024017107
TP12	33-38	45	B1024017109 + B1024017106
TP12	38-43	50	B1024017109 + B1024017107
TP12	43-48	55	B1024017109 + B1024017108
TP12	48-53	60	B1024017109 + B1024017109
TP12	53-58	65	B1024017109 + B1024017108 + B1024017105

COMPATIBLE CELL MODEL	PART DIAMETER TO MEASURE Ø [MM]	TOTAL EXTENSION LENGTH D [MM]	ORDER CODE
TP60	0-10	-	
TP60	10-20	10	B1024017105
TP60	20-30	20	B1024017107
TP60	30-40	30	B1024017109
TP60	40-50	40	B1024017107 + B1024017107
TP60	50-60	50	B1024017109 + B1024017107
TP60	60-70	60	B1024017109 + B1024017109
TP60	70-80	70	B1019750093
TP60	80-90	80	B1019750122
TP60	90-100	90	B1019750093 + B1024017107



MODELS AND ACCESSORIES

TS12, TS21

- The TS12 line has a working range of 1200 µm, while TS21 a working range from 1800 to 2100 µm. Both models allow the use of pencil probes with ±1 mm measuring range. Pencil probes must be Spring push type.
- This model is used to measure shoulders and is perfect in case of limited installation space.



MODEL Ø SIZE	ORDER CODE
TS12 ø 8 mm	B2927364100
TS12 ø 3/8"	B2927364130
TS21 ø 8 mm	B2927364101
TS21 ø 3/8"	B2927364131

NON ADJUSTABLE FEATURES

MODEL Ø SIZE	TS12 ø 8 mm	TS12 ø 3/8"	TS21 ø 8 mm	TS21 ø 8 mm	TS21 ø 3/8"	TS21 ø 3/8"
CONTACT THREAD	M2	M2	M2	M2	M2	M2
Arm ratio (min and max value)	1	1	1,5	1,75	1,5	1,75
Suggested pretravel (***)	[µm] 300	300	450	525	450	525
Suggested overtravel (***)	[µm] 900	900	1350	1375	1350	1375
Measuring force at suggested zero	[N] Fprobe + 0,8 ± 0,2 (**)	Fprobe + 0,8 ± 0,2 (**)	Fprobe + 0,4 ± 0,2 (**)	Fprobe + 0,25 ± 0,2 (**)	Fprobe + 0,4 ± 0,2 (**)	Fprobe + 0,25 ± 0,2 (**)
Mechanical repeatability error (2.77 σ)	[µm] ≤ 0,5 (*)	≤ 0,5 (*)	≤ 0,5 (*)	≤ 0,5 (*)	≤ 0,5 (*)	≤ 0,5 (*)
Maximum sensitivity error	± 2%	± 2%	± 2%	± 2%	± 2%	± 2%
Linearity error	[µm] ≤ 5 (in 1000 µm)	≤ 5 (in 1000 µm)	≤ 10	≤ 10	≤ 10	≤ 10
Thermal drift	[µm/°C] ≤ 0,2	≤ 0,2	≤ 0,2	≤ 0,2	≤ 0,2	≤ 0,2
Protection degree	-	-	-	-	-	-
Operating and storage temperature	[°C] -10 to 65	-10 to 65	-10 to 65	-10 to 65	-10 to 65	-10 to 65
Weight	[g] 80	82	80	80	82	82

(*) With standard Marposs Red Crown F10 pencil probe. The performance is recorded at the suggested zero.

(**) F probe = Force of the measuring gauge.

(***) As the mechanical zero device is not available to identify any fixed positioning inside the measuring range, the "suggested zero position" (at 450µm from the front stop with arm ratio 1,5) is the one with minimum measuring errors.

ADJUSTABLE FEATURES

MODEL Ø SIZE	TS12 ø 8 mm	TS12 ø 3/8"	TS21 ø 8 mm	TS21 ø 8 mm	TS21 ø 3/8"	TS21 ø 3/8"
CONTACT THREAD	M2	M2	M2	M2	M2	M2
Working range	[µm] 1200 (0/+200) to 900	1200 (0/+200) to 900	1800 (0/+200) to 1350	1800 (0/+200) to 1350	1800 (0/+200) to 1350	2100 (0/+200) to 1575

TS12, TS21

- TS12E is the premium version of the TS12 line, featuring superior measurement repeatability thanks to the built-in transducer. It is available with LVDT and HBT transducer, also compatible with Tesa electronics.



MODEL Ø SIZE	ORDER CODE
TS12E LVDT	B3427364150
TS12E HBT	B3427364005
TS12E HBT TESA	B3427364100

NON ADJUSTABLE FEATURES

MODEL Ø SIZE	TS12E LVDT	TS12E LVDT	TS12E HBT	TS12E HBT	TS12E HBT TESA	TS12E HBT TESA	
CONTACT THREAD	M2	M2	M2	M2	M2	M2	
Arm ratio (min and max value)	1	1	1	1	1	1	
Suggested pretravel (***)	[µm] 550	600	550	600	550	600	
Suggested overtravel (***)	[µm] 700	800	700	800	700	800	
Measuring force at suggested zero	[N] 0,8 ± 0,2	0,8 ± 0,2	0,8 ± 0,2	0,8 ± 0,2	0,8 ± 0,2	0,8 ± 0,2	
Mechanical repeatability error (2.77 σ)	[µm] ≤ 0,3	≤ 0,3	≤ 0,3	≤ 0,3	≤ 0,3	≤ 0,3	
Maximum sensitivity error	± 0,5%	± 0,5%	± 0,5%	± 0,5%	± 0,5%	± 0,5%	
Linearity error	[µm] ≤ 3	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3	
Thermal drift	[µm/°C] ≤ 0,25	≤ 0,25	≤ 0,25	≤ 0,25	≤ 0,25	≤ 0,25	
Protection degree	IP65	IP65	IP65	IP65	IP65	IP65	
Operating and storage temperature	[°C] -10 to 65	-10 to 65	-10 to 65	-10 to 65	-10 to 65	-10 to 65	
Sensitivity	[mV/V/mm] 230 ± 0,5%	230 ± 0,5%	73,75 ± 0,5%	73,75 ± 0,5%	73,75 ± 0,5%	73,75 ± 0,5%	
Calibration spec.	LVDT	3,5355 Vrms @ 7,5 kHz with load 1 MΩ//360 pF	3,5355 Vrms @ 7,5 kHz with load 1 MΩ//360 pF	10 Vpp @ 7,5 kHz with load 2 kΩ ± 0,1%	10 Vpp @ 7,5 kHz with load 2 kΩ ± 0,1%	3 Vrms @ 13 kHz with load 2 kΩ ± 0,1%	3 Vrms @ 13 kHz with load 2 kΩ ± 0,1%
Weight	[g] 80	80	80	80	80	80	

(***) As the mechanical zero device is not available to identify any fixed positioning inside the measuring range, the "suggested zero position" (at 450µm from the front stop with arm ratio 1,5) is the one with minimum measuring errors.

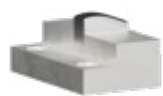
ADJUSTABLE FEATURES

MODEL Ø SIZE	TS12E LVDT	TS12E LVDT	TS12E HBT	TS12E HBT	TS12E HBT TESA	TS12E HBT TESA
CONTACT THREAD	M2	M2	M2	M2	M2	M2
Working range	[µm] 1000	1000	1000	1000	1000	1000



MODELS AND ACCESSORIES

CONTACT FOR
TS12 (AR 1:1)



ORDER CODE

B3292736401

CONTACT FOR
TS12 (AR 1:1)



R

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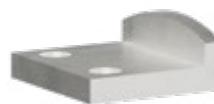
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ORDER CODE

B3292736405

B3292736410

CONTACT FOR
TS12E (AR 1:1)



ORDER CODE

B3292736430

ARMSET FOR GROOVES
FOR TS21 (AR 1:1.75)



ORDER CODE

B3292736415

INTERFACE BLOCK FOR QUICK SET
SUPPORT BRACKET



ORDER CODE

B2927364150

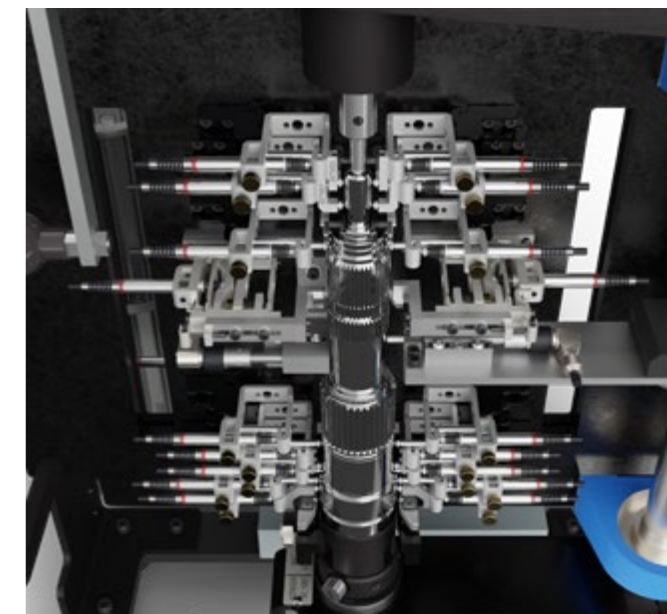
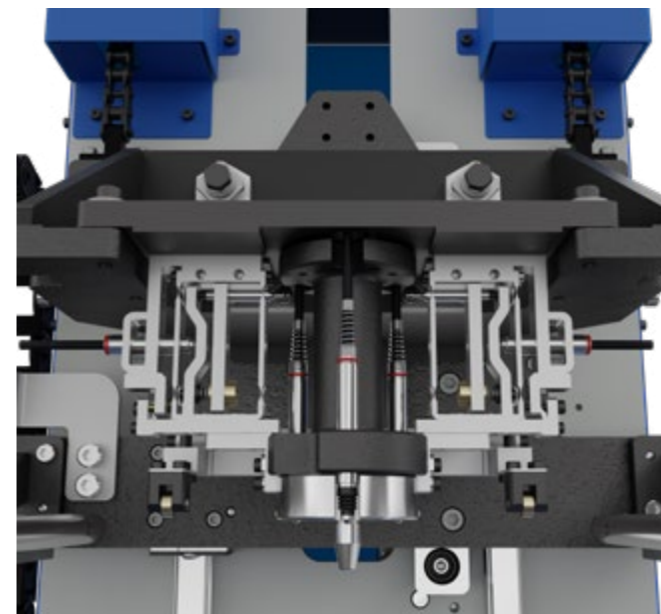
SIDE COVER



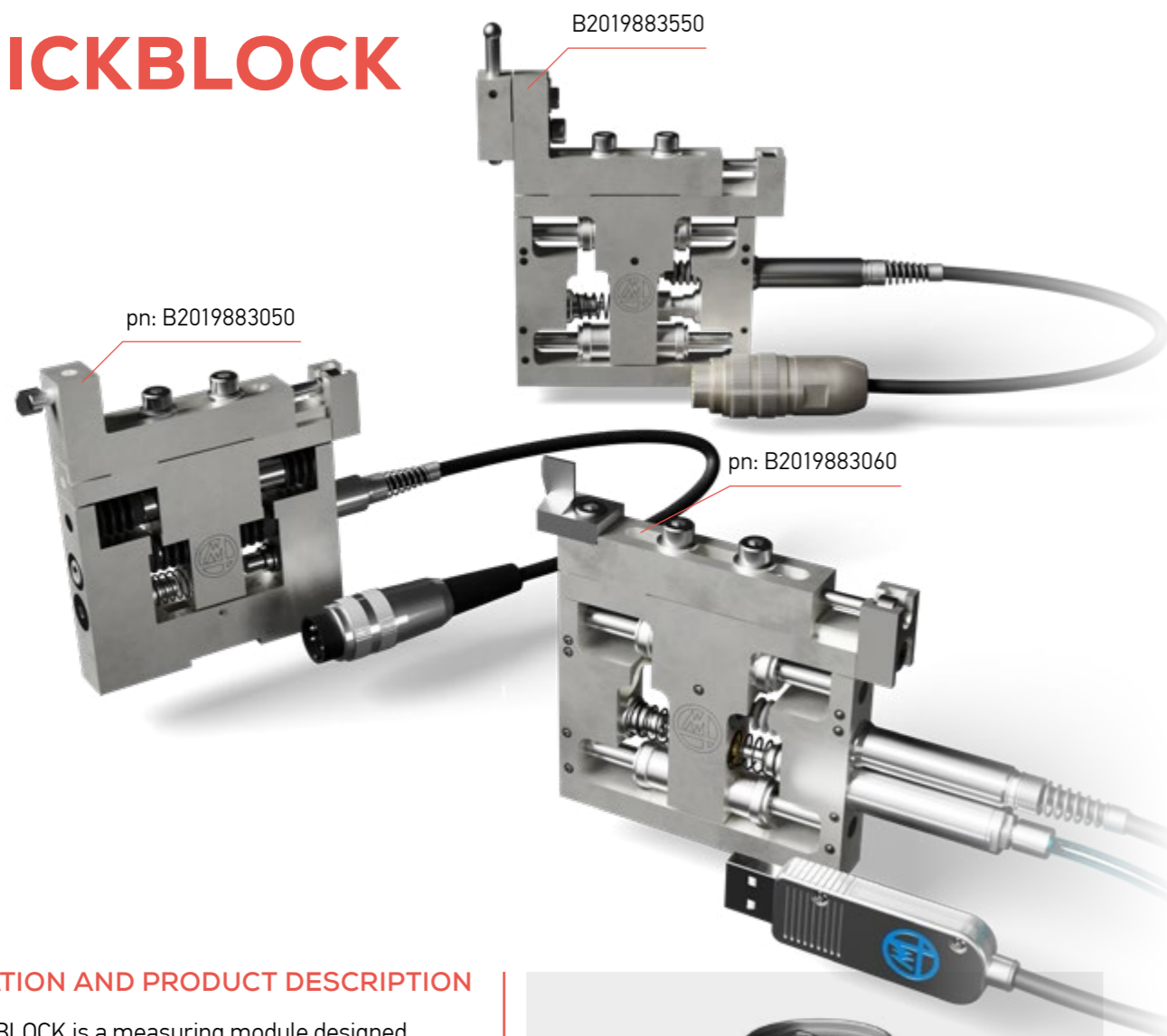
ORDER CODE

B1027364145

APPLICATION EXAMPLES



QUICKBLOCK



APPLICATION AND PRODUCT DESCRIPTION

- ▶ QUICK BLOCK is a measuring module designed to be integrated into applications having both measuring performance demands and high motion speed. Quick Block purposely integrates a sliding system, that is super-precise and robust at the same time. The measuring sensor is incorporated into the QUICK BLOCK structure, so it is well protected from mechanical stresses and external agents. It features up to IP65 protection grade.
- ▶ The QUICK BLOCK comes with a number of different options, as for instance LVDT or HBT built-in sensor and different measuring ranges, up to ± 5 mm.
- ▶ Thanks to the different connectivity options, it is always possible to obtain the perfect cost-effectiveness: the USB version is a perfect solution for single measurement point, while for larger systems the DigiCrown version offers high flexibility in networking multiple sensors together.



QBF100 / QBH100

QUICK BLOCK structure with a measuring range of 2 mm and a total stroke of 6 mm.

Available with integrated LVDT sensor and HBT sensor.



QBF1000 / QBH1000 / QBH1000 TESA

QUICK BLOCK structure with an extended measuring range of 10 mm and a total stroke of 10.6 mm.

Available with integrated LVDT sensor and HBT sensor, also compatible with Tesa electronics.



DB1000

This is the premium version of QUICK BLOCK structure with superior level of measuring accuracy, thanks to the integration of a digital probe inside with the DigiCrown interface.

DB1000 features an extended measuring range of 10 mm and a total stroke of 10.6 mm.



UB1000

This is the premium version of QUICK BLOCK structure with superior level of measuring accuracy, thanks to the integration of a digital probe inside with the DigiCrown interface.

Thanks to the USB interface on the sensor, this version can be directly connected to a standard PC, without the need of interfacing box and power supply.

DB1000 features an extended measuring range of 10 mm and a total stroke of 10.6 mm.



QB600 / 1000

QUICKBLOCK structure with the possibility to mount a desired probe.

It comes with the 8mm hole ready to accommodate a desired pencil probe

Available for 6 and 10 mm measuring ranges.



MODELS AND ACCESSORIES



MODEL	SENSOR VERSION	MEASURING RANGE	ACTUATION	CABLE OUTLET	FIXING INTERFACE	IP RATE	ORDER CODE
QBF100	LVDT	2 mm	SPRING	AXIAL	SQUARE GUIDE	IP65	B3419883300
QBF100	LVDT	2 mm	PNEUM A	AXIAL	SQUARE GUIDE	IP65	B3419883305
QBH100	HBT	2 mm	SPRING	AXIAL	SQUARE GUIDE	IP65	B3419883350
QBH100	HBT	2 mm	PNEUM A	AXIAL	SQUARE GUIDE	IP65	B3419883355
QBH100	HBT	2 mm	SPRING	AXIAL	TESA INTERFACE	IP65	B3419883360
QBH100	HBT	2 mm	PNEUM A	AXIAL	TESA INTERFACE	IP65	B3419883365
QBF1000	LVDT	10 mm	SPRING	AXIAL	SQUARE GUIDE	IP40	B3419883800
QBF1000	LVDT	10 mm	SPRING	RADIAL	SQUARE GUIDE	IP40	B3419883801
QBF1000	LVDT	10 mm	PNEUM A	AXIAL	SQUARE GUIDE	IP40	B3419883805
QBF1000	LVDT	10 mm	PNEUM R	RADIAL	SQUARE GUIDE	IP40	B3419883806
QBF1000	LVDT	10 mm	SPRING	AXIAL	SQUARE GUIDE	IP65	B3419883810
QBF1000	LVDT	10 mm	SPRING	RADIAL	SQUARE GUIDE	IP65	B3419883811
QBF1000	LVDT	10 mm	PNEUM A	AXIAL	SQUARE GUIDE	IP65	B3419883815
QBF1000	LVDT	10 mm	PNEUM R	RADIAL	SQUARE GUIDE	IP65	B3419883816
QBH1000	HBT	10 mm	SPRING	AXIAL	SQUARE GUIDE	IP40	B3419883850
QBH1000	HBT	10 mm	SPRING	RADIAL	SQUARE GUIDE	IP40	B3419883851
QBH1000	HBT	10 mm	PNEUM A	AXIAL	SQUARE GUIDE	IP40	B3419883855
QBH1000	HBT	10 mm	PNEUM R	RADIAL	SQUARE GUIDE	IP40	B3419883856
QBH1000	HBT	10 mm	SPRING	AXIAL	SQUARE GUIDE	IP65	B3419883860
QBH1000	HBT	10 mm	SPRING	RADIAL	SQUARE GUIDE	IP65	B3419883861
QBH1000	HBT	10 mm	PNEUM A	AXIAL	SQUARE GUIDE	IP65	B3419883865
QBH1000	HBT	10 mm	PNEUM R	RADIAL	SQUARE GUIDE	IP65	B3419883866
QBH1000 TESA	HBT TESA	10 mm	SPRING	AXIAL	SQUARE GUIDE	IP40	B3419883900
QBH1000 TESA	HBT TESA	10 mm	SPRING	RADIAL	SQUARE GUIDE	IP40	B3419883901
QBH1000 TESA	HBT TESA	10 mm	PNEUM A	AXIAL	SQUARE GUIDE	IP40	B3419883905
QBH1000 TESA	HBT TESA	10 mm	PNEUM R	RADIAL	SQUARE GUIDE	IP40	B3419883906
QBH1000 TESA	HBT TESA	10 mm	SPRING	AXIAL	SQUARE GUIDE	IP65	B3419883910
QBH1000 TESA	HBT TESA	10 mm	SPRING	RADIAL	SQUARE GUIDE	IP65	B3419883911
QBH1000 TESA	HBT TESA	10 mm	PNEUM A	AXIAL	SQUARE GUIDE	IP65	B3419883915
QBH1000 TESA	HBT TESA	10 mm	PNEUM R	RADIAL	SQUARE GUIDE	IP65	B3419883916

SPECIFICATIONS		QBF100	QBH100	QBF1000	QBH1000	QBH1000 TESA
Transducer	mm	LVDT	HBT	LVDT	HBT	HBT
Tot Stroke	mm	6	6	10,6	10,6	10,6
Meas Range	mm	2	2	10	10	10
Pretravel		1.1 / 1.2	1.1 / 1.2	5.1 / 5.2	5.1 / 5.2	5.1 / 5.2
Interface		square guide	square guide / TESA Dovetail	square guide	square guide	square guide
Guiding Sys		ball cage	ball cage	ball cage	ball cage	ball cage
Antirotaion		allen screw	allen screw	ball cage	ball cage	ball cage
Repeatability	µm	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tip Force with Standard Spring	N	1±20%	1±20%	1.7±20%	1.7±20%	1.7±20%
Thermal Drift	µm/°C	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Operat. Pressure	Bar	3 to 6	3 to 6	3 to 6	3 to 6	3 to 6
Total Weight	G(N)	< 260	< 260	< 260	< 260	< 260
Mobile Part Weight	G(N)	100	100	110	110	110
Operating Temp	°C	-10 to 65	-10 to 65	-10 to 65	-10 to 65	-10 to 65
Protection Degree Guides		IP65	IP65	IP40 / IP65	IP40 / IP65	IP40 / IP65
Protection Degree Transducer		IP65	IP65	IP65	IP65	IP65
Cable Length	m	2	2	2	2	2
Connector		Lumberg SV50/6	Lumberg SV50/6	Lumberg SV50/6	Lumberg SV50/6	Lumberg SV50/6
Sensitivity	mV/V/mm	230	73,75	115	29,5	29,5
Accuracy	µm	±MAX(1+ 10•K ; 15•K)***	±MAX(1+ 10•K ; 15•K)***	±MAX(8+ 3•K ; 8•K)***	±MAX(8+ 3•K ; 8•K)***	±MAX(8+ 3•K ; 8•K)***
Calibration Specs		3,5V RMS @7,5kHz with load 1MΩ//360pF	3,5V RMS @7,5kHz with load 2KΩ±0,1%	3,5V RMS @7,5kHz with load 1MΩ//360pF	3,5V RMS @7,5kHz with load 2KΩ±0,1%	3V RMS @13kHz with load 2KΩ±0,1%

*** K = reading value (mm)

MODELS AND ACCESSORIES



MODEL	SENSOR VERSION	MEASURING RANGE	ACTUATION	CABLE OUTLET	FIXING INTERFACE	IP RATE	ORDER CODE
DB1000	DIGITIZED	10	SPRING	AXIAL	SQUARE GUIDE	IP40	B3419883970
DB1000	DIGITIZED	10	SPRING	RADIAL	SQUARE GUIDE	IP40	B3419883971
DB1000	DIGITIZED	10	PNEUM A	AXIAL	SQUARE GUIDE	IP40	B3419883975
DB1000	DIGITIZED	10	PNEUM R	RADIAL	SQUARE GUIDE	IP40	B3419883976
DB1000	DIGITIZED	10	SPRING	AXIAL	SQUARE GUIDE	IP65	B3419883980
DB1000	DIGITIZED	10	SPRING	RADIAL	SQUARE GUIDE	IP65	B3419883981
DB1000	DIGITIZED	10	PNEUM A	AXIAL	SQUARE GUIDE	IP65	B3419883985
DB1000	DIGITIZED	10	PNEUM R	AXIAL	SQUARE GUIDE	IP65	B3419883986



MODEL	SENSOR VERSION	MEASURING RANGE	ACTUATION	CABLE OUTLET	FIXING INTERFACE	IP RATE	ORDER CODE
UB1000	USB	10	SPRING	AXIAL	SQUARE GUIDE	IP40	B3419883972
UB1000	USB	10	SPRING	RADIAL	SQUARE GUIDE	IP40	B3419883973
UB1000	USB	10	PNEUM A	AXIAL	SQUARE GUIDE	IP40	B3419883977
UB1000	USB	10	PNEUM R	RADIAL	SQUARE GUIDE	IP40	B3419883978
UB1000	USB	10	SPRING	AXIAL	SQUARE GUIDE	IP65	B3419883982
UB1000	USB	10	SPRING	RADIAL	SQUARE GUIDE	IP65	B3419883983
UB1000	USB	10	PNEUM A	AXIAL	SQUARE GUIDE	IP65	B3419883987
UB1000	USB	10	PNEUM R	AXIAL	SQUARE GUIDE	IP65	B3419883989



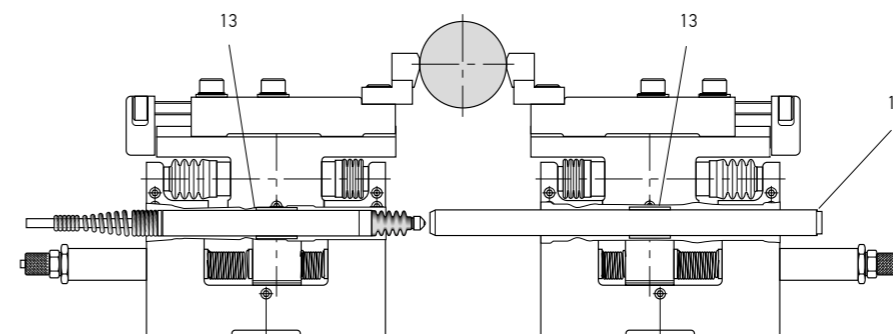
MODEL	SENSOR	STROKE	ACTUATION	FIXING INTERFACE	IP RATE	ORDER CODE
QB600	NOT INCLUDED	6	SPRING	SQUARE GUIDE	IP65	B3019883001
QB600	NOT INCLUDED	6	PNEUM A	SQUARE GUIDE	IP65	B3019883002
QB1000	NOT INCLUDED	10.6	SPRING	SQUARE GUIDE	IP40	B3019883711
DB1000	NOT INCLUDED	10.6	PNEUM A	SQUARE GUIDE	IP40	B3019883712
DB1000	NOT INCLUDED	10.6	PNEUM R	SQUARE GUIDE	IP40	B3019883714
QB1000	NOT INCLUDED	10.6	SPRING	SQUARE GUIDE	IP65	B3019883721
DB1000	NOT INCLUDED	10.6	PNEUM A	SQUARE GUIDE	IP65	B3019883722
DB1000	NOT INCLUDED	10.6	PNEUM R	SQUARE GUIDE	IP65	B3019883724

SPECIFICATIONS	DB1000	UB1000	QB1000	QB600
Transducer	Digitized	USB	-	-
Tot Stroke	mm	10,6	10,6	6
Meas Range	mm	10	10	-
Pretravel	mm	5.1 / 5.2	5.1 / 5.2	-
Interface	square guide	square guide	square guide	square guide
Guiding Sys	ball cage	ball cage	ball cage	ball cage
Antirotation			ball cage	allen screw
Repeatability	µm	< 0.5	< 0.5	< 0.5
Tip Force with Standard Spring	N	1±20%	1±20%	1.7±20%
Thermal Drift	µm/°C	< 0.25	< 0.25	< 0.25
Operat. Pressure	bar	3 to 6	3 to 6	3 to 6
Total Weight	g(N)	< 260	< 260	< 260
Mobile Part Weigth	g(N)	110	110	100
Operating Temp	°C	-10 to 65	-10 to 65	-10 to 65
Protection Degree Guides	IP40 / IP65	IP40 / IP65	IP40 / IP65	IP65
Protection Degree Transducer	IP65	IP65	IP65	IP65
Cable Length	m	2	2	-
Connector	Lumberg SV50/6	Standard USB	-	-
Sensitivity	mV/V/mm	-	-	-
Accuracy	µm	±(1.2+K*2)***	±(1.2+K*2)***	-

*** K = reading value (mm)

ACCESSORIES FOR QB600/QB1000 APPLICATION

REF.	DESCRIPTION	ORDER CODE
12	Mechanical reference rod dia. 8 mm, L = 120 mm, for using a single probe	B1119883071
13	Adapter bushing for fixing probe or reference rod dia. 8 mm	B1019826001
	Adapter bushing for fixing probe dia. 3/8"	B1019883072



ACCESSORIES FOR APPLICATION ON A QUICK SET BENCH GAUGE

To integrate the Quick Block with the Quick Set bench gauge, dedicated accessories are available.

DESCRIPTION	ORDER CODE
Support bracket L = 200 mm to measure diameters up to 40 mm, with interface for two Quick Block	B3024017100
Support bracket L = 250 mm to measure diameters up to 90 mm (without interface for Quick Block)	B3024018100
Mounting interface for one Quick Block for support bracket L = 250 mm	B2924018110



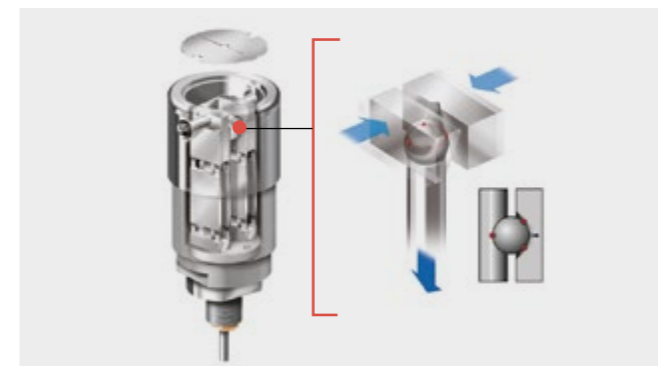
HAND HELD GAUGES



APPLICATION EXAMPLES



- ▶ Marposs hand-held gauges are industrial-grade products for precision measurements of internal and outside diameters during manufacturing operations. M1-Star and IWAVE2 are the product models dedicated to internal diameters (I.D), while M3-Star is for outside diameters (O.D).
- ▶ The Marposs hand-held gauges have a rugged structure, purposely designed for the use inside harsh manufacturing environments. The industrial-grade measuring sensor is capable of millions of measurement cycles without any performance degradation. The product robustness is fundamental for efficient operations since it allows easy and fast handling of the gauge.
- ▶ The measuring head is exchangeable in the workshop, so enabling a high level of gauging flexibility, directly at the level of the production environment.



MECHANICAL BORE GAUGE (MBG) is the measuring head for Internal Diameters (I.D). In its structure, the MBG is capable to transfer with ultra-precision the radial position of the contacts to an axial movement of the plug.

The measurement is executed by sensing the plug position through a Marposs pencil probe, that is integrated inside the handle structure and connected to a measuring electronic. On mobile gauges configuration, a digital indicator is mounted on the top of the handle, to execute the measurement and to display values.

Measurement Repeatability is 1 μm .

Its industrial-grade measuring head is capable of millions of measurement cycles without any performance degradation.



ELECTRONIC BORE GAUGE (EBG) is the premium version, integrating directly inside the head structure the electronic measuring sensor.

Thanks to its specific architecture, the EBG is capable of measuring internal diameters with a repeatability of 0.5 μm



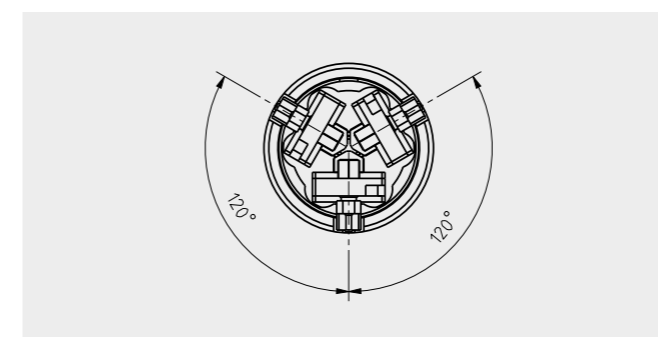
MECHANICAL SNAP GAUGE (MSG) is the measuring head for Outer Diameters (O.D). In its structure, the MSG is capable to transfer with ultra-precision the radial position of the contacts to an axial movement of the plug. The measurement is executed by sensing the plug position through a Marposs pencil probe, that is integrated inside the handle structure and connected to a measuring electronic. On mobile gauges configuration, a digital indicator is mounted on the top of the handle, to execute the measurement and to display values. Measurement Repeatability is 1 μm .

Its industrial-grade measuring head is capable of millions of measurement cycles without any performance degradation. The product robustness is fundamental for efficient operations since it allows easy and fast handling of the gauge.



ELECTRONIC SNAP GAUGE (ESG) is the premium version of the line, integrating directly inside the head structure the electronic measuring sensor.

Thanks to its specific architecture, the ESG is capable of measuring outer diameters with a repeatability of 0.5 μm .



MECHANICAL BORE GAUGE – 3 CONTACTS.

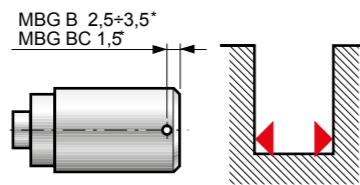
With its 3 contacts, positioned with a pitch of 120°, this version is ideal solution for squared shaped bores and trilobed shapes.

Its measuring range is from 12 mm to 100mm.

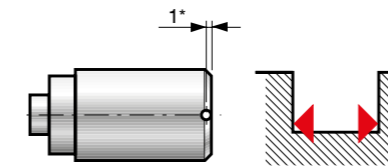
Thanks to the 3 independent contacts, it is perfect to measure very tiny tolerances.



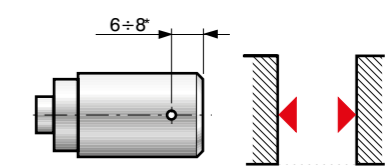
MODELS AND ACCESSORIES MECHANICAL BORE GAUGES



MBG-B/BC Plug Heads for blind bores.



MBG-SB Plug Heads for superblind bores.

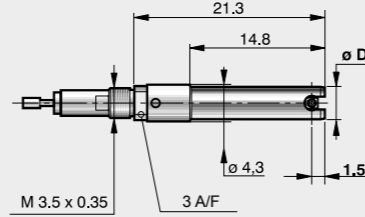
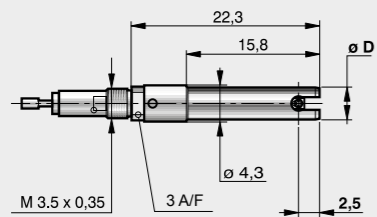


MBG-T Plug Heads for through bores.

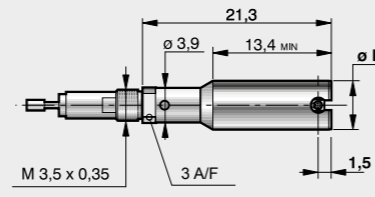
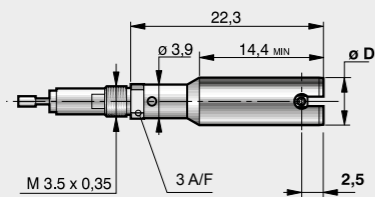
PLUG HEAD MBG-B

PLUG HEAD MBG-BC

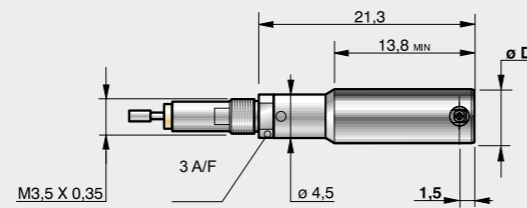
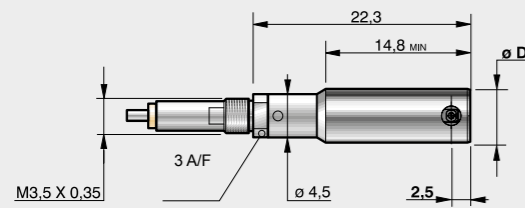
ØMIN* 3 TO <4



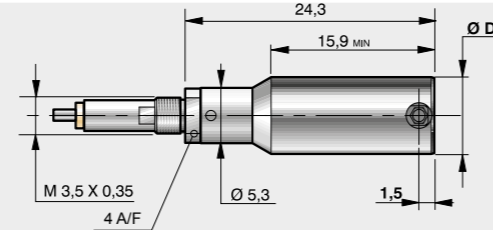
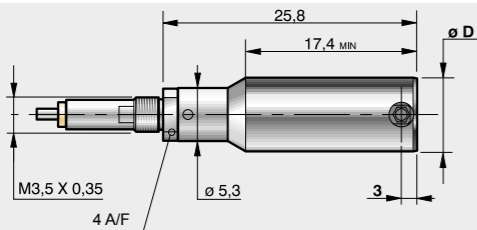
ØMIN* 4 TO <4,5



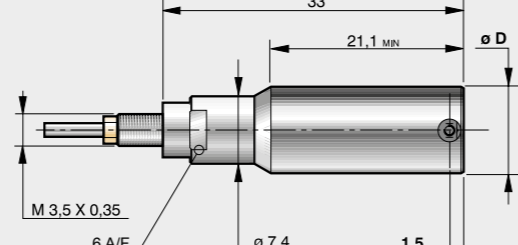
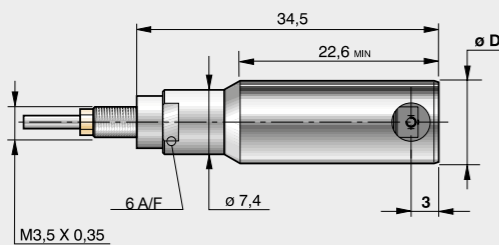
ØMIN* 4,5 TO <5,5



ØMIN* 5,5 TO <7,5



ØMIN* 7,5 TO <9,5



MEASURING CONTACTS FOR PLUG HEADS TYPE B

Ø D	CARBIDE OR DLC - COATED		DIAMOND	
	R1	R2	R1	R2
3 ÷ <5,5	0,25	0,75	-	-
5,5 ÷ <7,5	0,5	1	-	-
7,5 ÷ <9,5	1,5	2,5	0,75	-

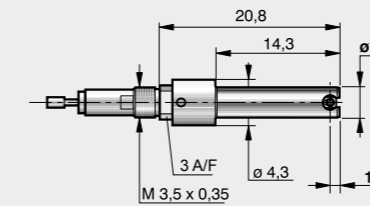
MEASURING CONTACTS FOR PLUG HEADS TYPE BC

Ø D	CARBIDE OR DLC - COATED		DIAMOND	
	R1	R2	R1	R2
3 ÷ <5,5	0,25	0,75	-	-
5,5 ÷ <7,5	0,5	1	-	-
7,5 ÷ <9,5	1,5	2,5	-	-

* Ømin = minimum bore diameter

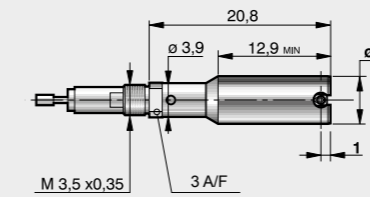
PLUG HEAD MBG-SB

PLUG HEAD MBG-T



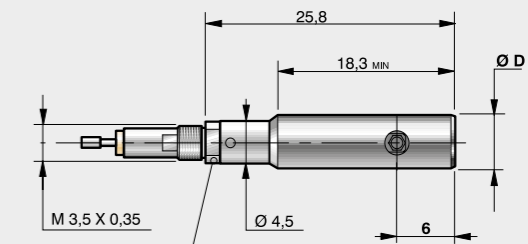
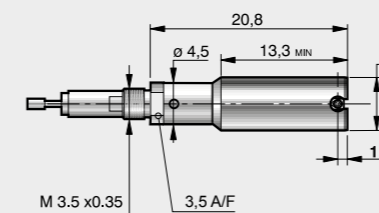
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ØMIN* 3 TO <4

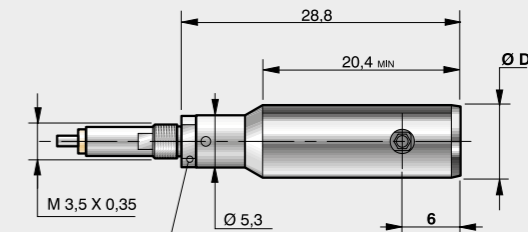
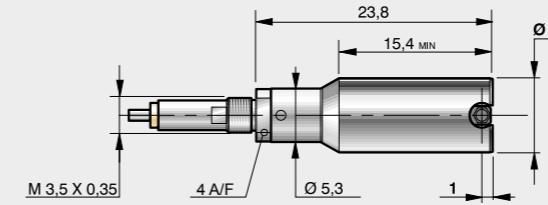


N.A.

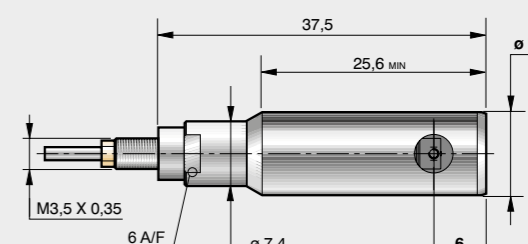
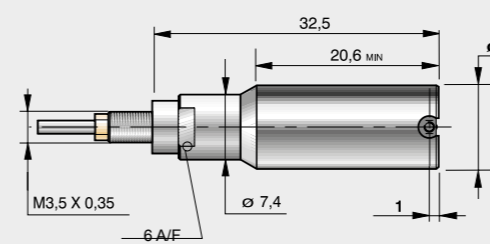
ØMIN* 4 TO <4,5



ØMIN* 4,5 TO <5,5



ØMIN* 5,5 TO <7,5



ØMIN* 7,5 TO <9,5

MEASURING CONTACTS FOR PLUG HEADS TYPE SB

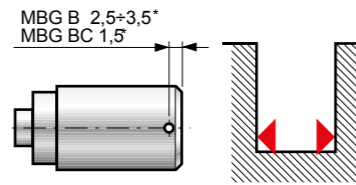
Ø D	CARBIDE OR DLC - COATED		DIAMOND	
	R1	R2	R1	R2
3 ÷ <5,5	0,25	0,75	-	-
5,5 ÷ <7,5	0,5	1	-	-
7,5 ÷ <9,5	1,5	2,5	-	-

MEASURING CONTACTS FOR PLUG HEADS TYPE T

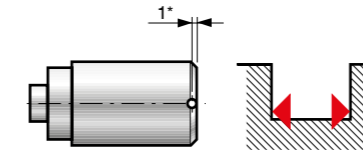
Ø D	CARBIDE OR DLC - COATED		DIAMOND	
	R1	R2	R1	R2
4,5 ÷ <5,5	0,25	0,75	-	-
5,5 ÷ <7,5	0,5	1	-	-
7,5 ÷ <9,5	1,5	2,5	0,75	-

* Ømin = minimum bore diameter

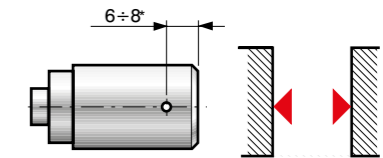
MODELS AND ACCESSORIES MECHANICAL BORE GAUGES



MBG-B/BC Plug Heads for blind bores.



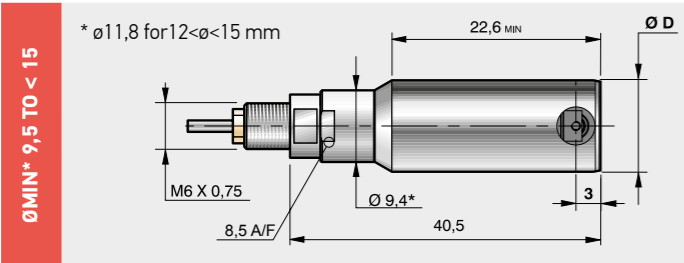
MBG-SB Plug Heads for superblind bores.



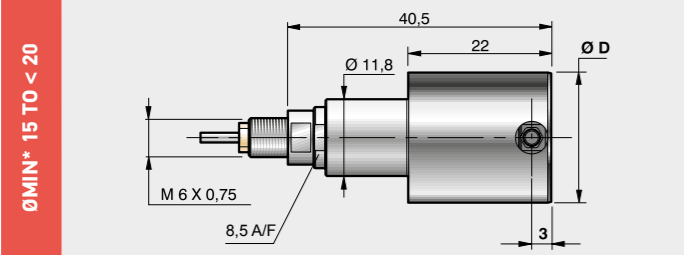
MBG-T Plug Heads for through bores.

PLUG HEAD MBG-B

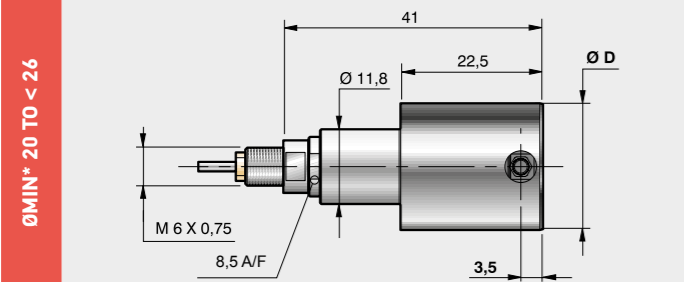
PLUG HEAD MBG-BC



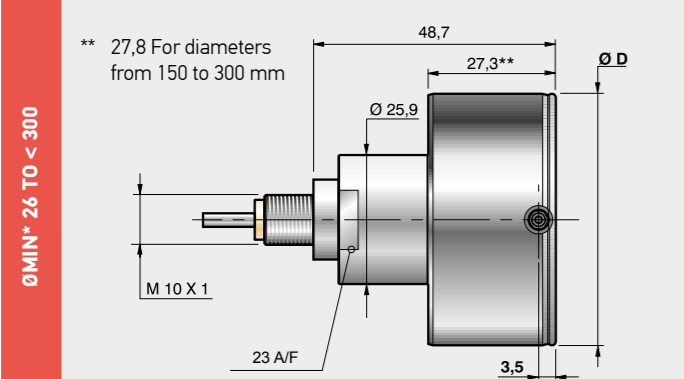
N.A.



N.A.



N.A.



N.A.

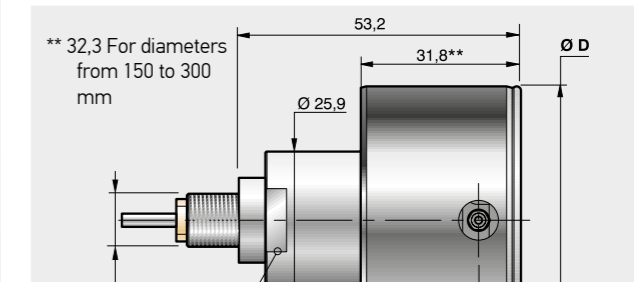
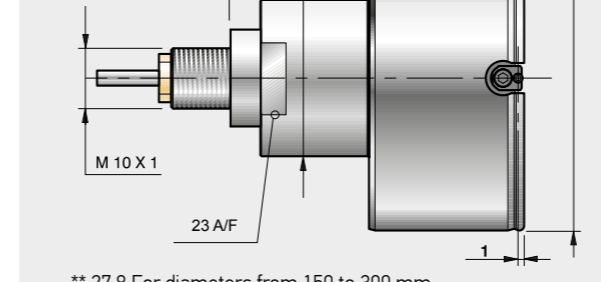
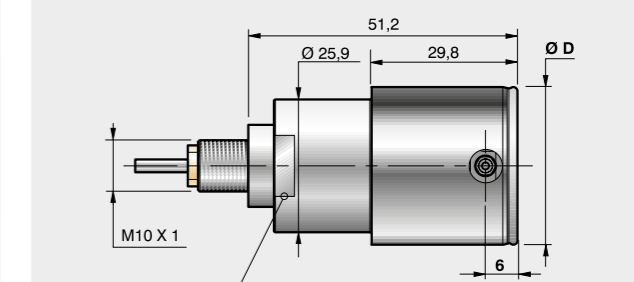
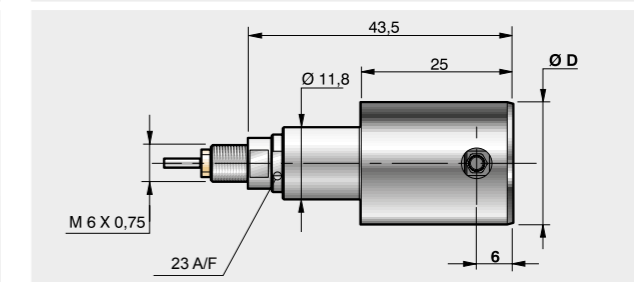
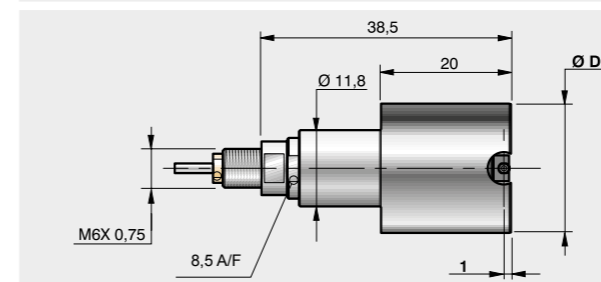
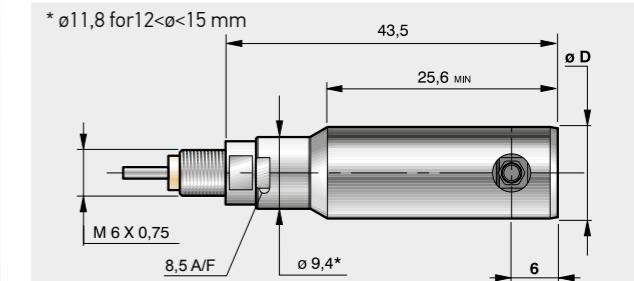
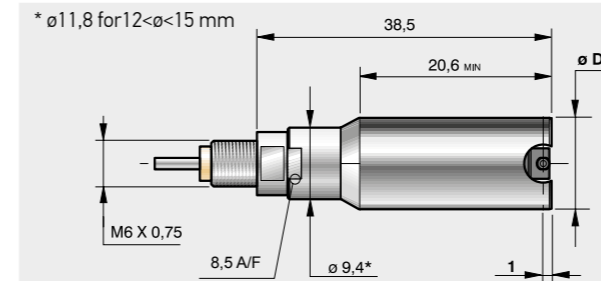
MEASURING CONTACTS FOR PLUG HEADS TYPE B

Ø D	CARBIDE OR DLC - COATED		DIAMOND	
	R1	R2	R1	R2
9,5 ÷ <15	2	3,5	0,75	-
15 ÷ <16	2	5	0,75	-
16 ÷ <20	2	5	2	-
20 ÷ <26	2	5	2	5
26 ÷ <32	4	10	2	-
32 ÷ <300	4	10	4	10

* Ømin = minimum bore diameter

PLUG HEAD MBG-SB

PLUG HEAD MBG-T



MEASURING CONTACTS FOR PLUG HEADS TYPE SB

Ø D	CARBIDE OR DLC - COATED		DIAMOND	
	R1	R2	R1	R2
9,5 ÷ <15	2	3,5	-	-
15 ÷ <26	2	5	-	-
-	-	-	-	-
26 ÷ <300	4	10	-	-

MEASURING CONTACTS FOR PLUG HEADS TYPE T

Ø D	CARBIDE OR DLC - COATED		DIAMOND	
	R1	R2	R1	R2
9,5 ÷ <15	2	3,5	0,75	-
15 ÷ <16	2	5	0,75	-
16 ÷ <26	2	5	2	5
26 ÷ <32	4	10	2	-
32 ÷ <300	4	10	4	10

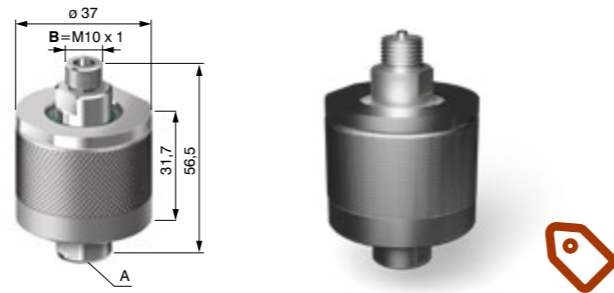
* Ømin = minimum bore diameter



MODELS AND ACCESSORIES MBG ACCESSORIES

ROTARY SPACERS

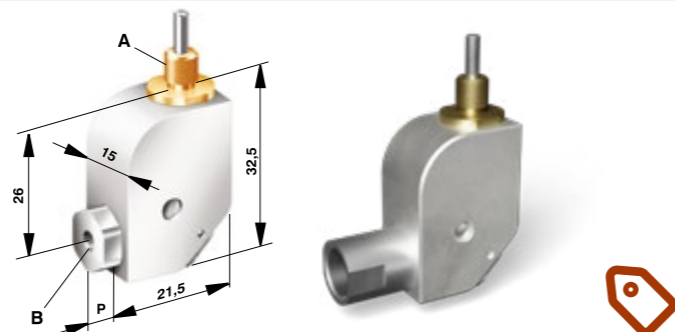
Rotary spacers make it possible to have the indicator display always facing the operator, even during dynamic measurements.



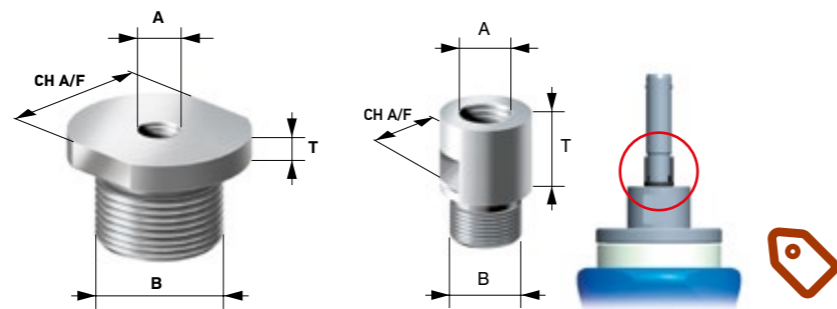
THREAD A ON GAUGE HEAD	GAUGE HEAD MODEL	ORDER CODE
M6X0,75	MBG	B2TR060S000
M10X1	MBG	B2TR100S000

ANGLE ADAPTORS

The angle adaptors are needed when space is limited and the position of the bore is 90° from the direction of insertion.



THREAD B ON GAUGE HEAD-SIDE	THREAD A ON HANDLE-SIDE	P [mm]	GAUGE HEAD MODEL	ORDER CODE
M3,5 X 0,35	M6 X 0,75	3,7	MBG	B2TAS630000
M6 X 0,75	M6 X 0,75	4,2	MBG	B2TAS660000
M10 X 1	M6 X 0,75	13,1	MBG	B2TAS6A0000
M3,5 X 0,35	M10 X 1	3,7	MBG	B2TASA30000
M6 X 0,75	M10 X 1	4,2	MBG	B2TASA60000
M10 X 1	M10 X 1	13,1	MBG	B2TASAA0000

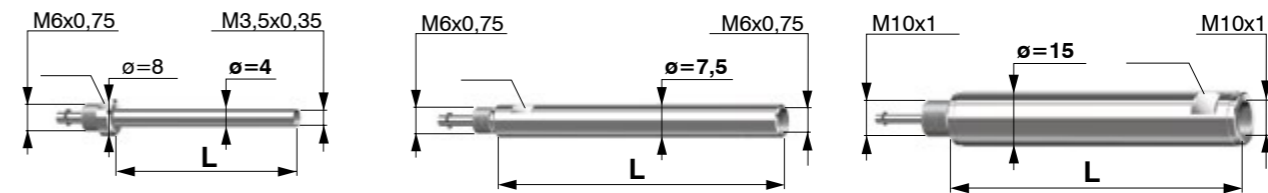


STANDARD THREAD ADAPTORS

THREAD A ON GAUGE HEAD-SIDE	THREAD B ON HANDLE-SIDE	RANGE [mm]	CH A/F	T [mm]	GAUGE HEAD MODEL	ORDER CODE
M3,5X0,35	M6X0,75	3 - 9,5	7	1	MBG	B1TA0350600
M3,5X0,35	M10X1	3 - 9,5	13	2	MBG	B1TA0351000
M6X0,75	M10X1	9,5 - 26	13	2	MBG	B1TA0601000

PROTECTIVE THREAD ADAPTORS

THREAD A ON GAUGE HEAD-SIDE	THREAD B ON HANDLE-SIDE	RANGE [mm]	CH A/F	T [mm]	GAUGE HEAD MODEL	ORDER CODE
M3,5X0,35	M6X0,75	3-4	6	6	MBG	B1TA0350600
M3,5X0,35	M6X0,75	4-4.5	6	6	MBG	B1TA0351000
M3,5X0,35	M6X0,75	4.5-5.5	6	6	MBG	B1TA0601000
M3,5X0,35	M6X0,75	5.5-7.5	6	6	MBG	B1TAP350603
M3,5X0,35	M6X0,75	7.5-9.5	9	9	MBG	B1TAP350604



DEPTH EXTENSIONS

DIAMETER [mm]	LENGTH L [mm]	GAUGE HEAD MODEL	ORDER CODE
4	20	MBG	B2TXMS40020
4	30	MBG	B2TXMS40030
4	40	MBG	B2TXMS40040
4	50	MBG	B2TXMS40050
4	65	MBG	B2TXMS40065
4	80	MBG	B2TXMS40080
4	100	MBG	B2TXMS40100
4	125	MBG	B2TXMS40125
7.5	20	MBG	B2TXMS70020
7.5	30	MBG	B2TXMS70030
7.5	40	MBG	B2TXMS70040
7.5	50	MBG	B2TXMS70050
7.5	65	MBG	B2TXMS70065
7.5	80	MBG	B2TXMS70080
7.5	100	MBG	B2TXMS70100
7.5	125	MBG	B2TXMS70125
7.5	250	MBG	B2TXMS70250
15	50	MBG	B2TXMSF0050
15	65	MBG	B2TXMSF0065
15	80	MBG	B2TXMSF0080
15	100	MBG	B2TXMSF0100
15	125	MBG	B2TXMSF0125
15	250	MBG	B2TXMSF0250
15	500	MBG	B2TXMSF0500

SPECIAL DEPTH EXTENSIONS

For special applications and used where the extension diameter must not exceed the plug head size:



REF	DIAMETER [mm]	LENGTH L [mm]	GAUGE HEAD MODEL	ORDER CODE
1	3,8	20	MBG	B2TXMS30020
1	3,8	65	MBG	B2TXMS30065
1	4,8	65	MBG	B2TXMS50065
1	4,8	80	MBG	B2TXMS50080
1	5,3	65	MBG	B2TXMS60065
1	5,3	80	MBG	B2TXMS60080
2	8	65	MBG	B2TXMS80065
2	8	80	MBG	B2TXMS80080
2	8	100	MBG	B2TXMS80100
2	8	125	MBG	B2TXMS80125

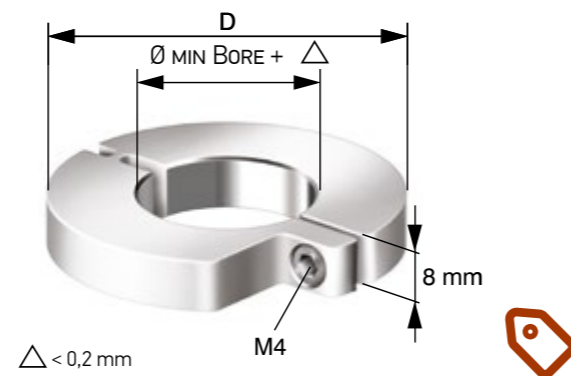
MODELS AND ACCESSORIES MBG ACCESSORIES

EXTENSIONS FOR BORE GAUGE WITH CABLE

The stainless steel extensions, when inserted between the plug head and the handle, make it possible to reach the correct position in a bore, where the measurement must be read.



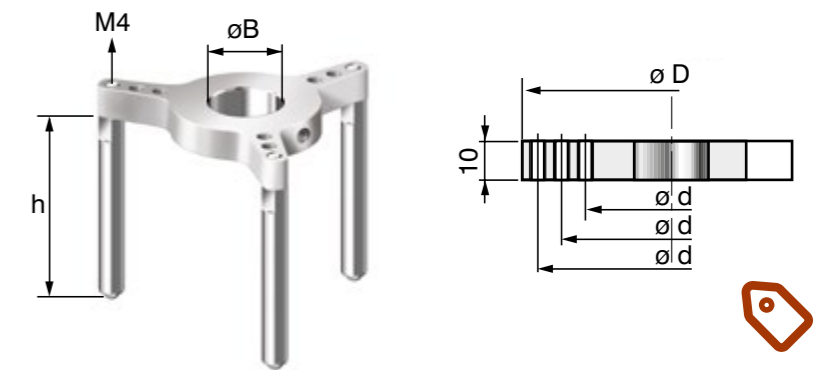
DIAMETER [mm]	LENGTH L [mm]	GAUGE HEAD MODEL	ORDER CODE
26<D≤375	20	EBG	B1TX0S00020
26<D≤375	30	EBG	B1TX0S00030
26<D≤375	40	EBG	B1TX0S00040
26<D≤375	50	EBG	B1TX0S00050
26<D≤375	65	EBG	B1TX0S00065
26<D≤375	80	EBG	B1TX0S00080
26<D≤375	100	EBG	B1TX0S00100
26<D≤375	125	EBG	B1TX0S00125
26<D≤375	250	EBG	B1TX0S00250
26<D≤375	500	EBG	B1TX0S00500



DEPTH STOPS FOR NOSEPIECE

[mm]	[inch]	[mm]	[inch]
8 < 11	0.3150" < 0.4331"	33	1.29"
11 < 15	1.7716" < 1.9685"	37	1.45"
15 < 20	0.5905" < 0.7874"	42	1.77"
20 < 25	0.7874" < 0.9842"	51	2.00"
25 < 30	0.9842" < 1.1811"	56	2.20"
30 < 35	1.1811" < 1.378"	61	2.40"
35 < 40	1.378" < 1.5748"	66	2.59"
40 < 45	1.5748" < 1.7716"	71	2.79"
45 < 50	1.7716" < 1.9685"	76	2.99"
50 < 60	1.9685" < 2.3622"	86	3.38"
60 < 70	2.3622" < 2.7559"	96	3.77"
70 < 80	2.7559" < 3.1496"	106	4.17"
80 < 90	3.1496" < 3.5433"	116	4.56"
90 <= 100	3.5433" <= 3.937"	126	4.96"

NOTE: specific order codes are defined according to the application requirements



DEPTH STOPS FOR EXTENSION

ø B [mm]	ø D [mm]	h [mm]	ø d [mm]	ORDER CODE
4	32	32,8	26	B2TDEM040A0
7,5	42	34,8	36	B2TDEM075A0
15	45	45	38	B2TDEM150A0
15	75	45	44, 56, 68	B2TDEM150B0
15	110	45	79, 91, 103	B2TDEM150C0
15	160	45	117, 129, 141, 153	B2TDEM150D0
15	220	45	177, 189, 201, 213	B2TDEM150E0
22	45	63,3	38	B2TDEE220A0
22	75	63,3	44, 56, 68	B2TDEE220B0
22	110	63,3	79, 91, 103	B2TDEE220C0
22	160	63,3	117, 129, 141, 153	B2TDEE220D0
22	220	63,3	177, 189, 201, 213	B2TDEE220E0



HOOKS

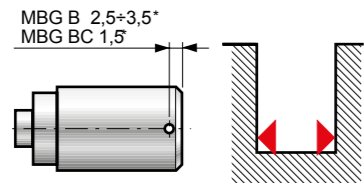
DESCRIPTION	ORDER CODE
Eye hook for pencil probe handle	B1T0JHS0810
T-shaped hook for pencil probe handle	B1T0JHS0811
Eye hook for indicator handle	B1T0JHS0812



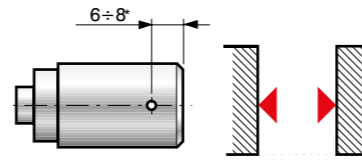
STAND

DESCRIPTION	ORDER CODE
Multiposition Stand for EBG and MBG	B2TS0001111
Extra plug support kit for stand 2TS0001111	B2TS0002222

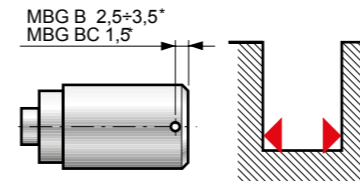
MODELS AND ACCESSORIES ELECTRONIC BORE GAUGES



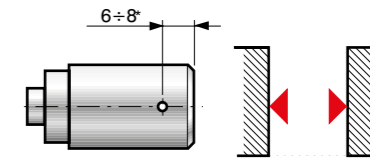
EBG-B Plug Heads for blind bores.



EBG-T Plug Heads for through bores.



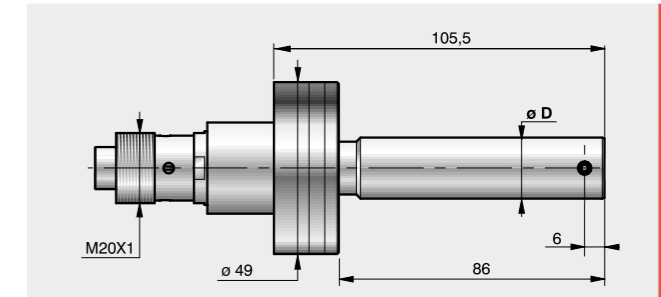
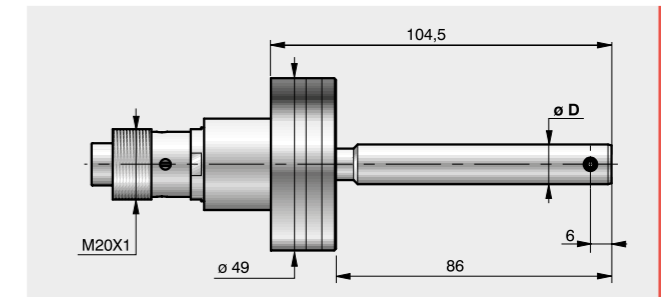
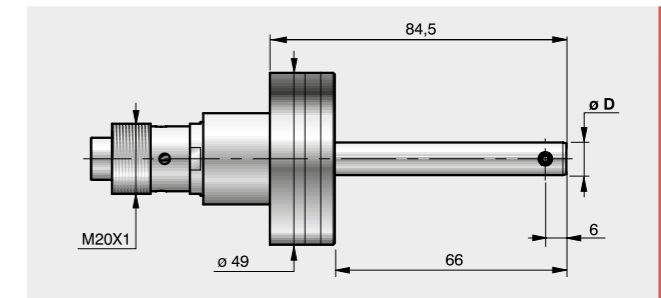
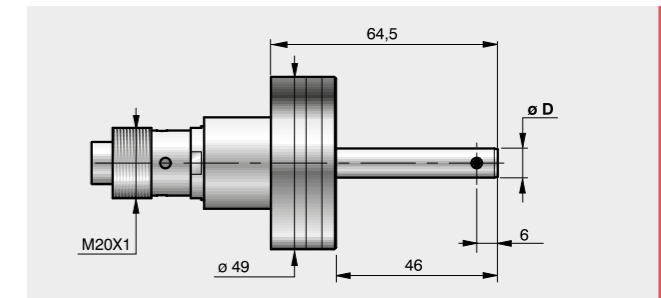
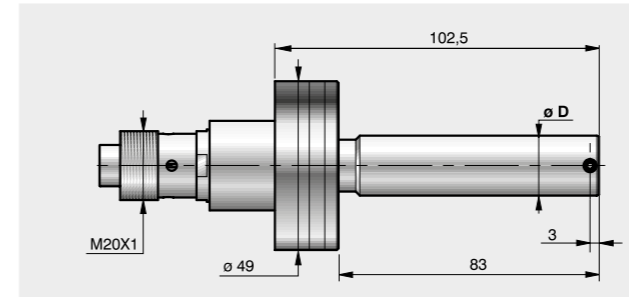
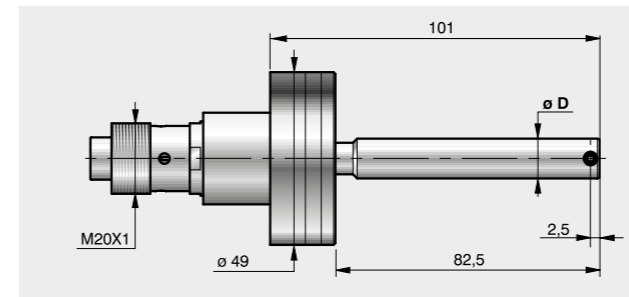
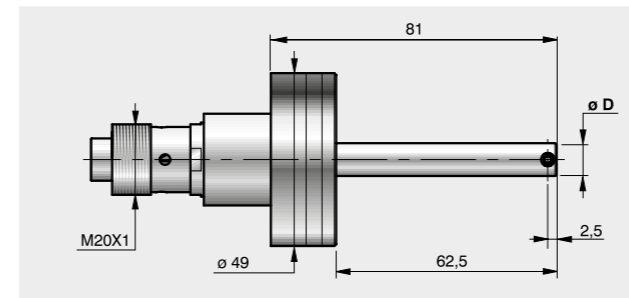
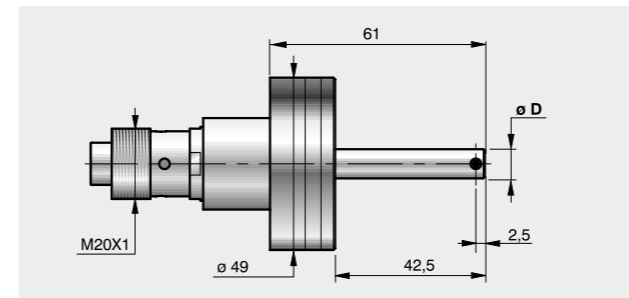
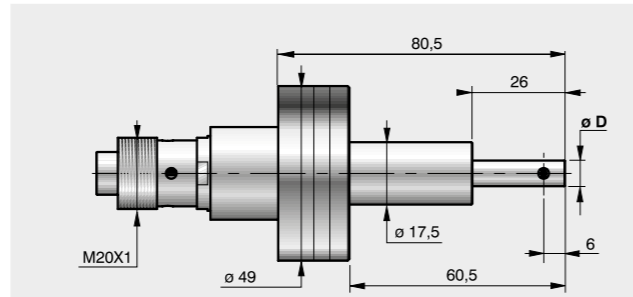
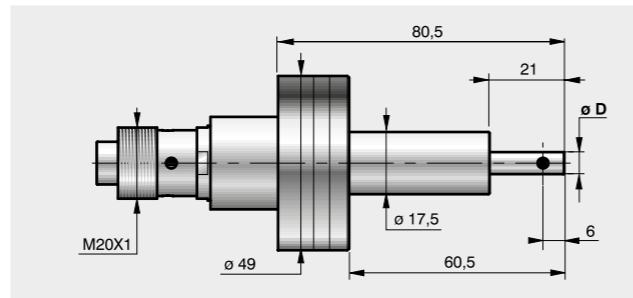
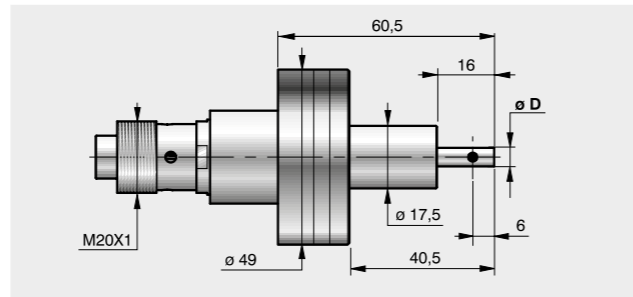
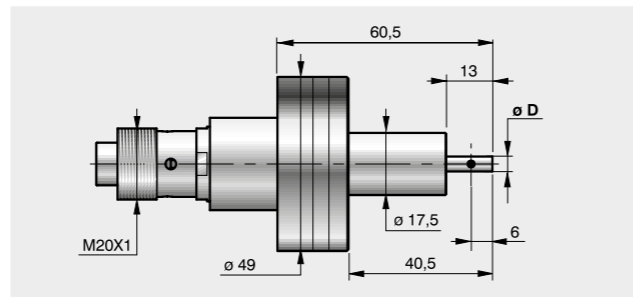
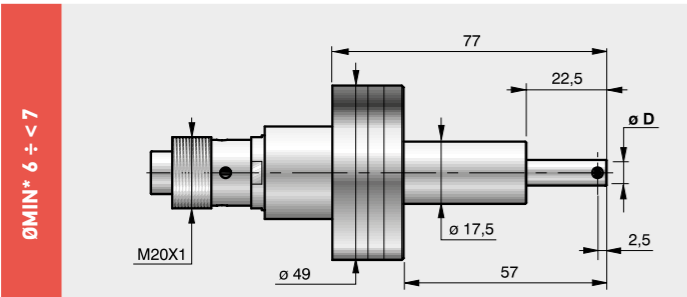
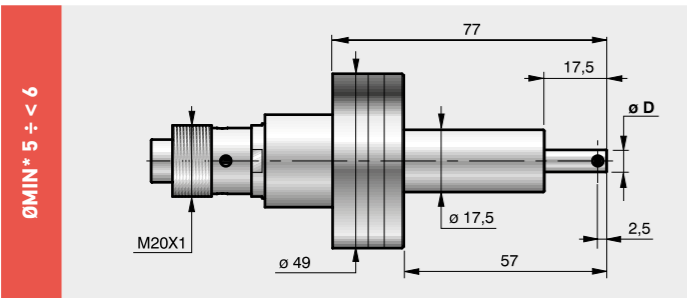
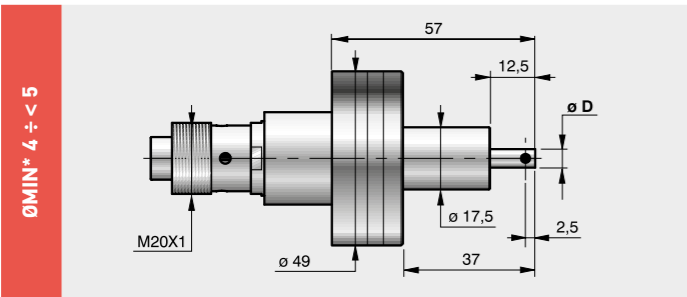
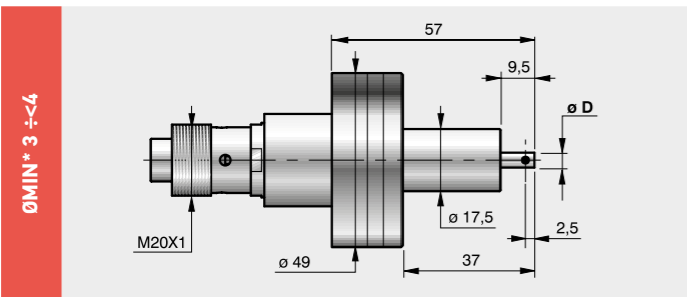
EBG-B Plug Heads for blind bores.



EBG-T Plug Heads for through bores.

PLUG HEAD EBG-B

PLUG HEAD EBG-T



ØMIN* 7 ÷ < 8

ØMIN* 8 ÷ < 9

ØMIN* 9 ÷ < 13

ØMIN* 13 ÷ < 20

CONTACTS FOR B-TYPE PLUG HEADS

CONTACTS FOR T-TYPE PLUG HEADS

CONTACTS FOR B-TYPE PLUG HEADS

CONTACTS FOR T-TYPE PLUG HEADS

Ø D	CARBIDE OR DLC		DIAMOND	
	R1	R2	R1	R2
3 ÷ < 4	0,25	-	-	-
4 ÷ < 5	0,25	-	-	-
5 ÷ < 6	0,5	1	-	-
6 ÷ < 7	0,5	1	-	-

Ø D	CARBIDE OR DLC		DIAMOND	
	R1	R2	R1	R2
3 ÷ < 4	0,25	-	-	-
4 ÷ < 5	0,25	-	-	-
5 ÷ < 6	0,5	1	-	-
6 ÷ < 7	0,5	1	-	-

Ø D	CARBIDE OR DLC		DIAMOND	
	R1	R2	R1	R2
7 ÷ < 8	0,5	1	0,4	-
8 ÷ < 10,5	1,5	2,5	0,4	-
10,5 ÷ < 13	1,5	2,5	0,75	-
13 ÷ < 20	2	5	2	5

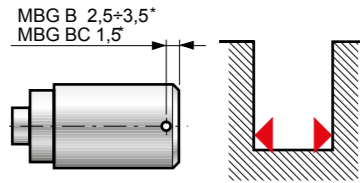
Ø D	CARBIDE OR DLC		DIAMOND	
	R1	R2	R1	R2
7 ÷ < 8	0,5	1	0,4	-
8 ÷ < 10,5	1,5	2,5	0,4	-
10,5 ÷ < 13	1,5	2,5	0,75	-
13 ÷ < 20	2	5	2	5

* Ømin = minimum bore diameter

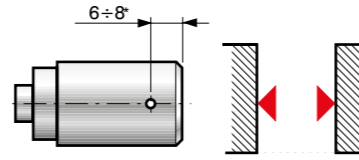
* Ømin = minimum bore diameter



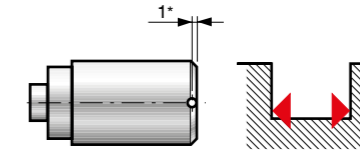
MODELS AND ACCESSORIES
ELECTRONIC BORE GAUGES



EBG-B Plug Heads for blind bores.



EBG-T Plug Heads for through bores.

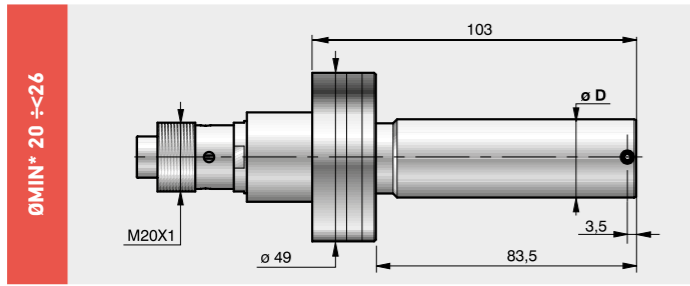


EBG-SB Plug Heads for superblind bores.

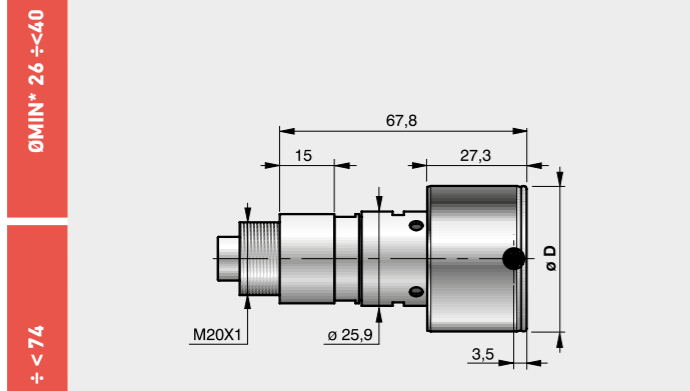
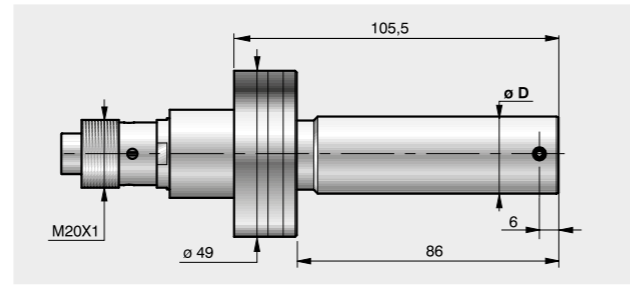
PLUG HEAD EBG-B

PLUG HEAD EBG-T

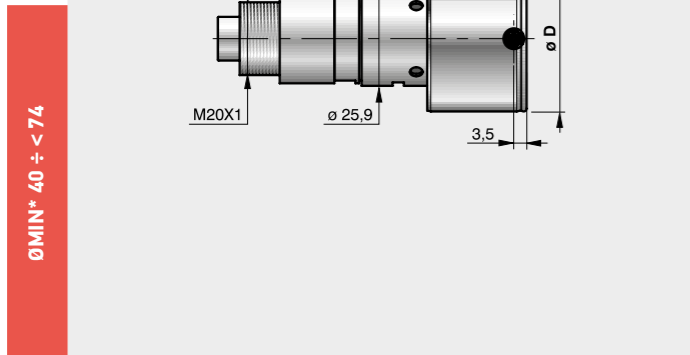
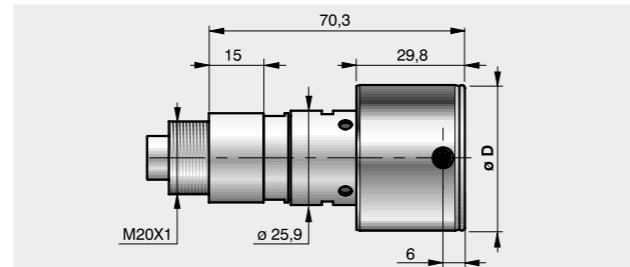
PLUG HEAD EBG-SB



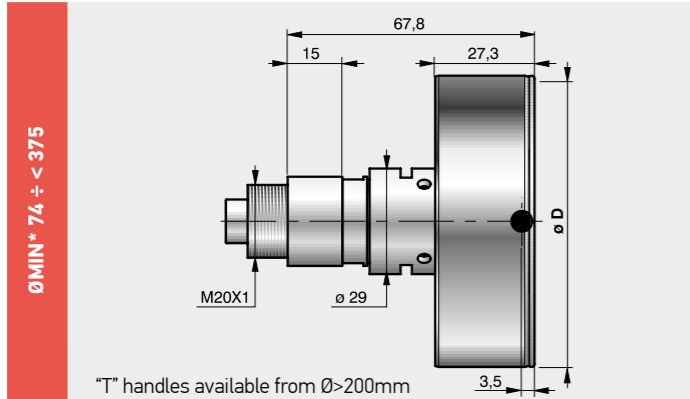
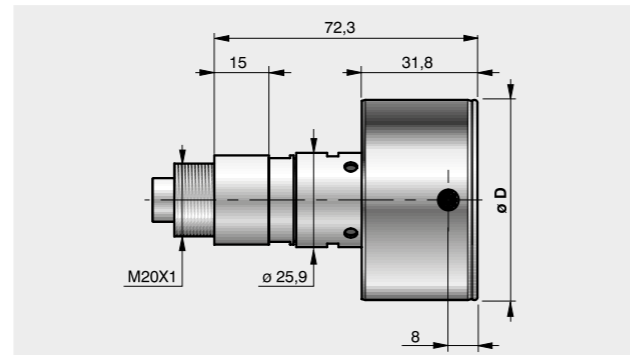
ØMIN* 20 ÷ <26



ØMIN* 26 ÷ <40

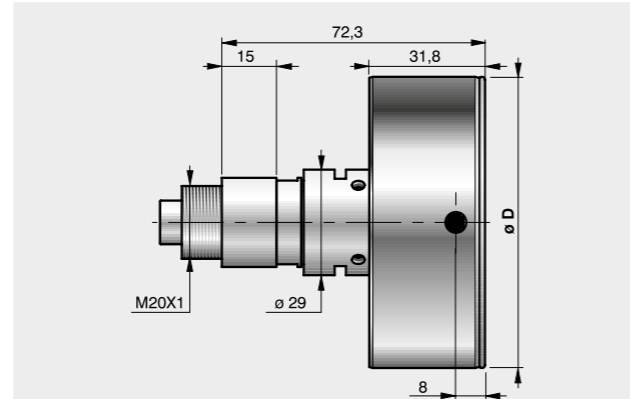


ØMIN* 40 ÷ <74



ØMIN* 74 ÷ <375

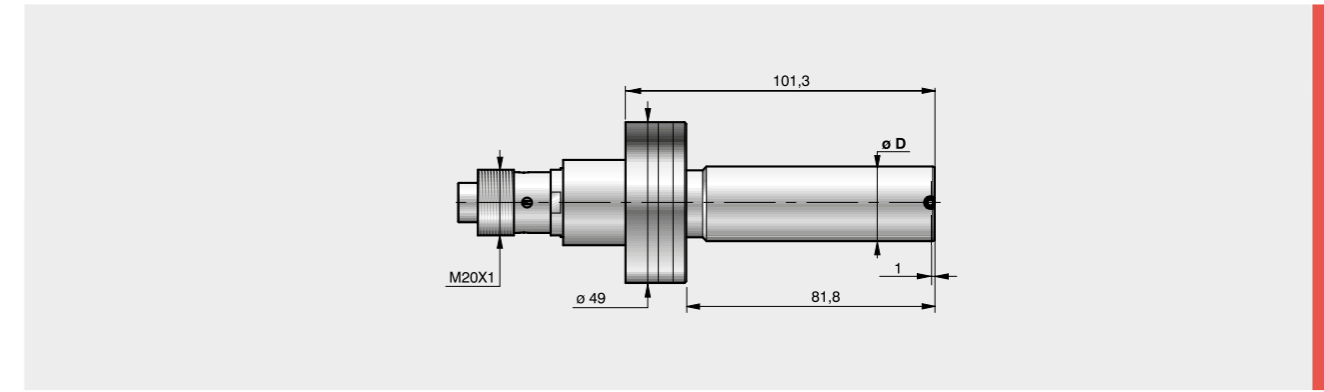
*T handles available from Ø>200mm



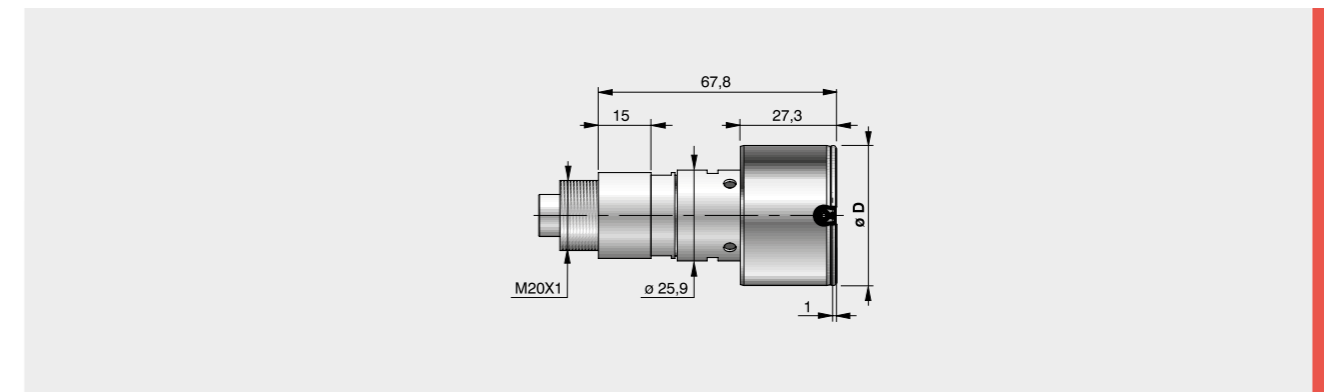
Ø D	CARBIDE OR DLC		DIAMOND	
	R1	R2	R1	R2
20 ÷ <26	2	5	2	5
26 ÷ <32	4	10	2	-
32 ÷ <375	4	10	4	10

Ø D	CARBIDE OR DLC		DIAMOND	
	R1	R2	R1	R2
20 ÷ <26	2	5	2	5
26 ÷ <32	4	10	2	-
32 ÷ <375	4	10	4	10

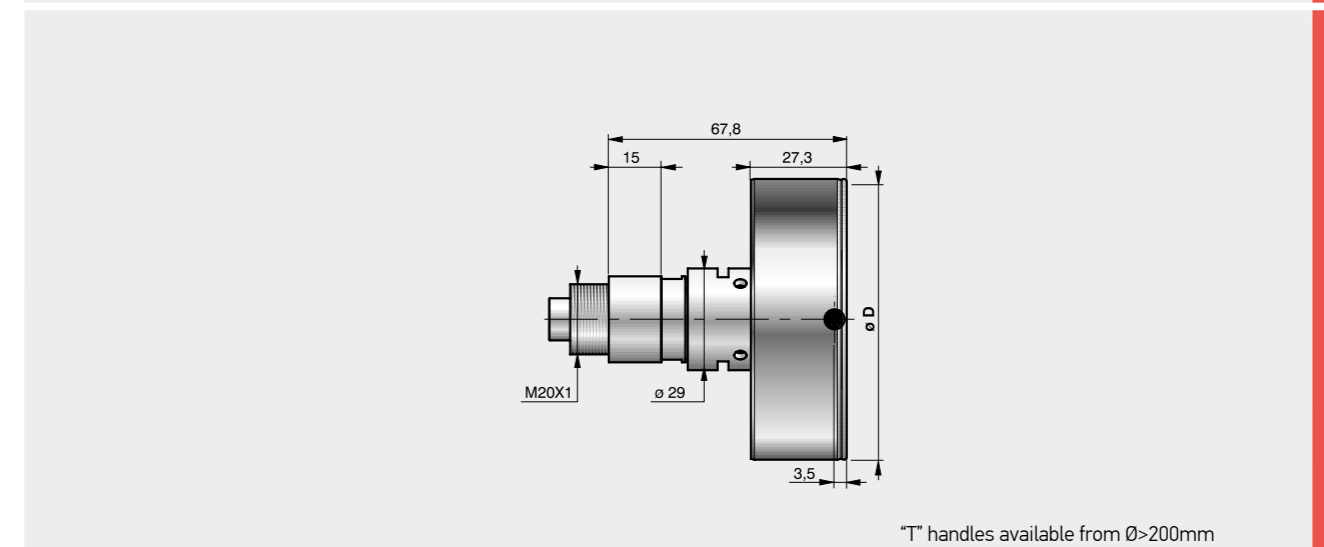
* Ømin = minimum bore diameter



ØMIN* 13 ÷ <26



ØMIN* 26 ÷ <74



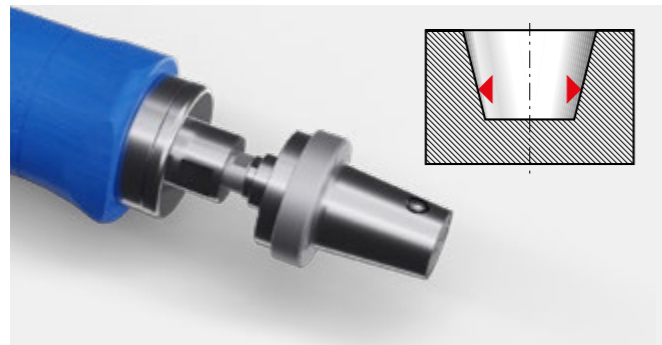
ØMIN* 74 ÷ <375

Ø D	CARBIDE OR DLC		DIAMOND	
	R1	R2	R1	R2
13 ÷ <26	2	5	-	-
26 ÷ <375	4	10	-	-

*T handles available from Ø>200mm

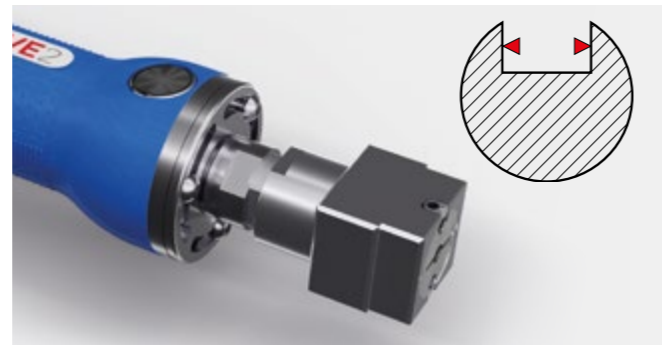
* Ømin = minimum bore diameter

MODELS AND ACCESSORIES DEDICATED SOLUTIONS



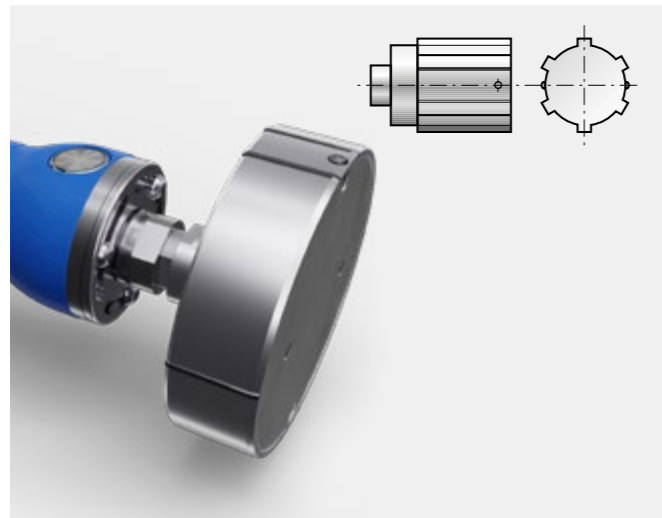
CONICAL NOSEPIECE

Usually supplied with a calibrated depth stop, it allows to measure the diameter of tapered bores in a specific position. Example: knuckle joint.



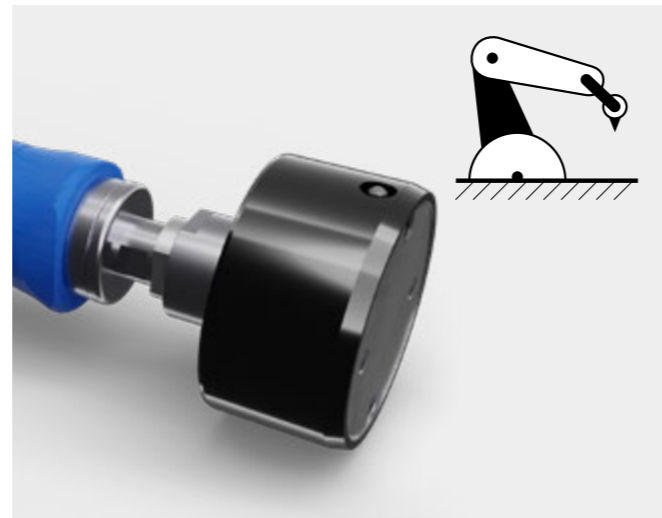
SQUARED NOSEPIECE

To be used for gap measurements, for example: keyways or splines.



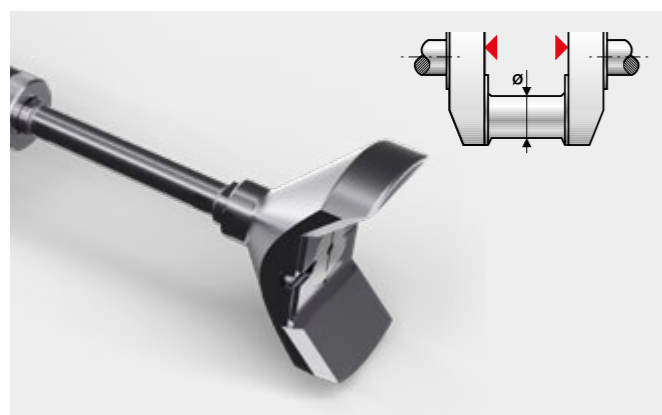
NOSEPIECE WITH CARBIDE BAR INSERTS

The carbide bars protect the nosepiece from wear and jamming caused by the presence of metal swarfs or debris, thus increasing the life of the gauge.



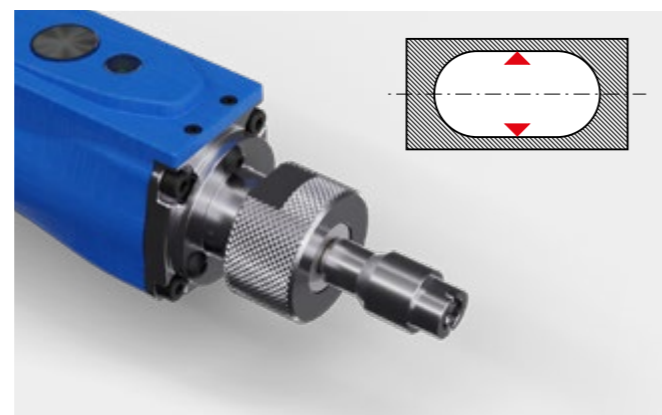
NOSEPIECE WITH DLC COATING

The DLC coating improves the wear resistance of the nosepiece, increasing the surface hardness and reducing the surface friction coefficient. This is the ideal choice for demanding applications.



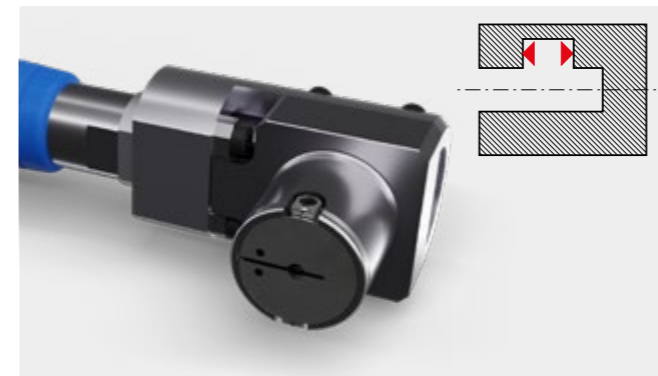
«V» SHAPED NOSEPIECE

Gauges with V shaped nosepiece refer on the shaft and measure the distance between the faces of the counterweights, for the assembly of connecting rod bearing on crankshafts or camshafts.



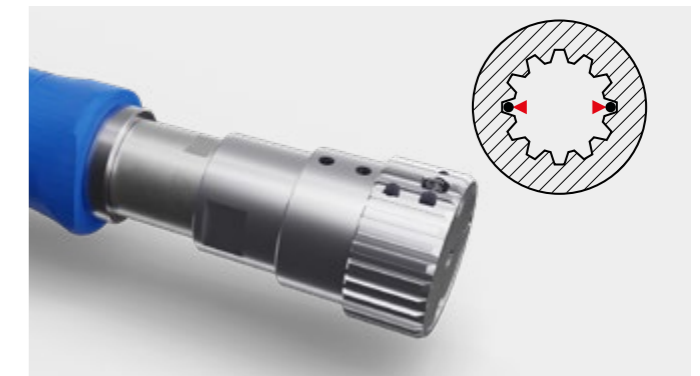
OVAL NOSEPIECE

Designed for measuring oval bores or inter-connecting bores. Example: lobe pump designs in fuel and oil pumps.



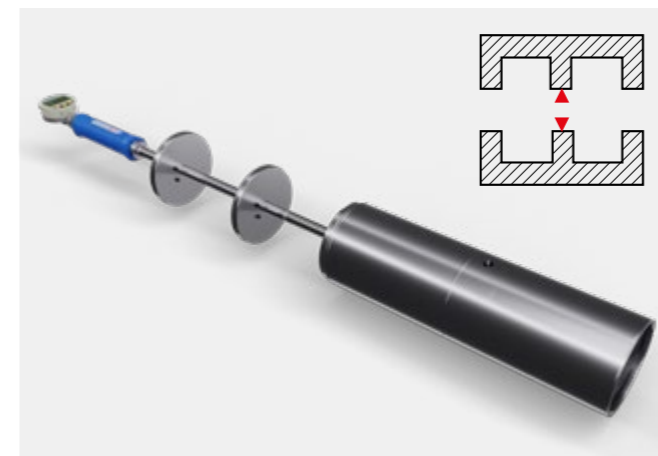
RIGHT ANGLE PLUG HEAD

For measuring bores with perpendicular axis to the direction of gage insertion, or for limited space applications. Example: differential carrier.



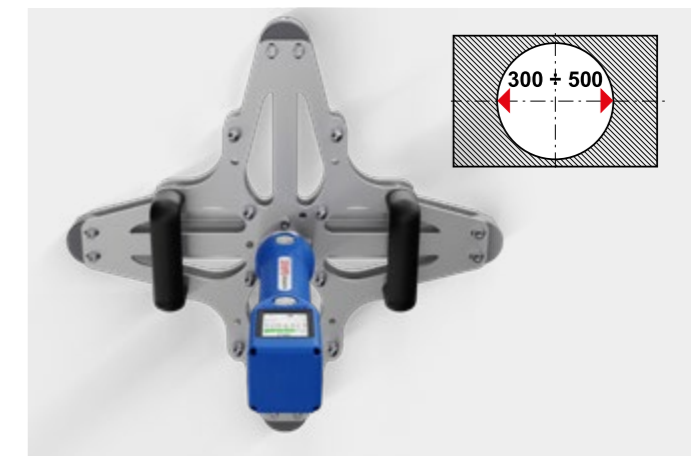
PLUG HEAD FOR GEARS

The toothed nosepiece is manufactured to engage with the workpiece. The HSS material ensures high durability. The accurate choice of contacts allows measurement of
Over ball diameter
Major diameter
Minor diameter
The wide range of solutions for the choice of armset allows the measurement of both even and odd gears.



LONG NOSEPIECE

The long nosepiece guides the plug head when measuring discontinuous or interrupted deep bores, improving ergonomics. It can be equipped with reference rings to help the user in the positioning.



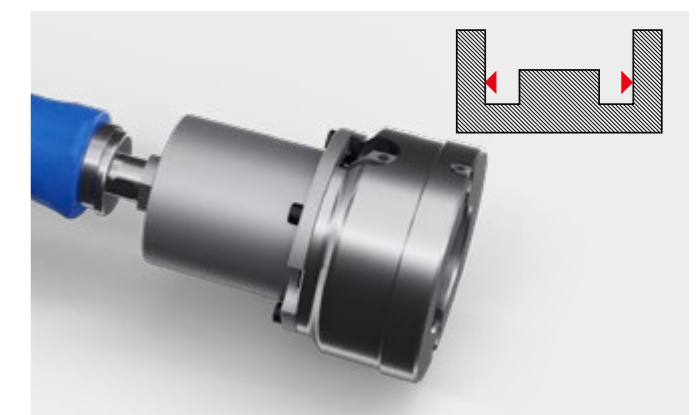
MACROLIGHT NOSEPIECE

For big size bores. The specific design allows to reduce the weight of the nosepiece.



NOSEPIECE WITH PILOT CONE

For CNC automatic applications, the cone helps the introduction of the nosepiece into the workpiece, reducing the possibility of accidental damages.



GAUGE HEADS FOR BORES WITH CENTRAL HUB

For the measuring of internal diameters where there is a central hub projection. Example: automatic transmission components.



MODELS AND ACCESSORIES MECHANICAL SNAP GAUGES



MECHANICAL SNAP GAUGE (ONLY HEAD)

RANGE [MM]	20MM "V" REFERENCE	14MM "V" REFERENCE	10MM "V" REFERENCE
5 - 15	B3TTASAWXS	B3TTATAWXS	B3TTAUAWXS
15 - 30	B3TTASBWXS	B3TTATBWXS	B3TTAUBWXS
30 - 50	B3TTASCWXS	B3TTATCWXS	B3TTAUCWXS
50 - 70	B3TTASDWXS	B3TTATDWXS	B3TTAUDWXS



COMPLETE SNAP GAUGE WITH MINI HANDLE

RANGE [MM]	20MM "V" REFERENCE	14MM "V" REFERENCE	10MM "V" REFERENCE
5 - 15	B3TBAMISAWS	B3TBAMITAWS	B3TBAMIUAWS
15 - 30	B3TBAMISBWS	B3TBAMITBWS	B3TBAMIUBWS
30 - 50	B3TBAMISCWS	B3TBAMITCWS	B3TBAMIUCWS
50 - 70	B3TBAMISDWS	B3TBAMITDWS	B3TBAMIUDWS

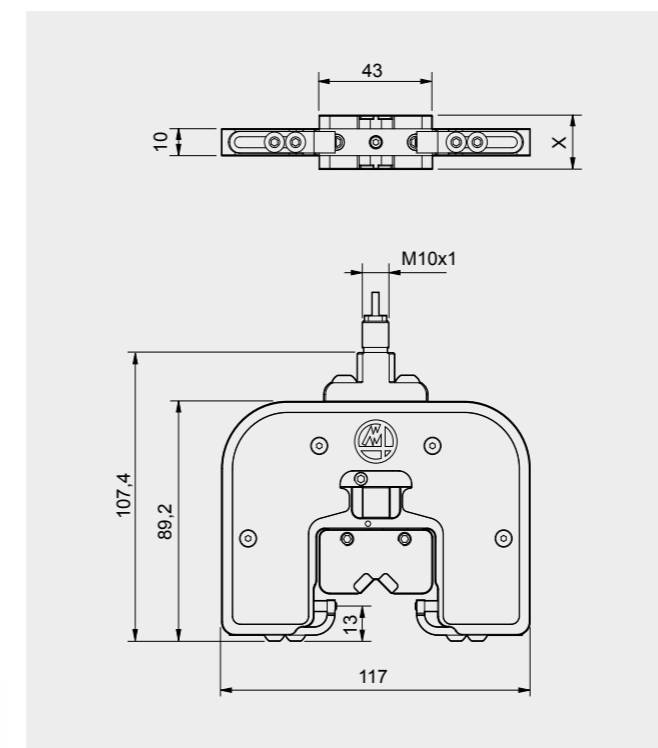


COMPLETE SNAP GAUGE WITH REGULAR HANDLE

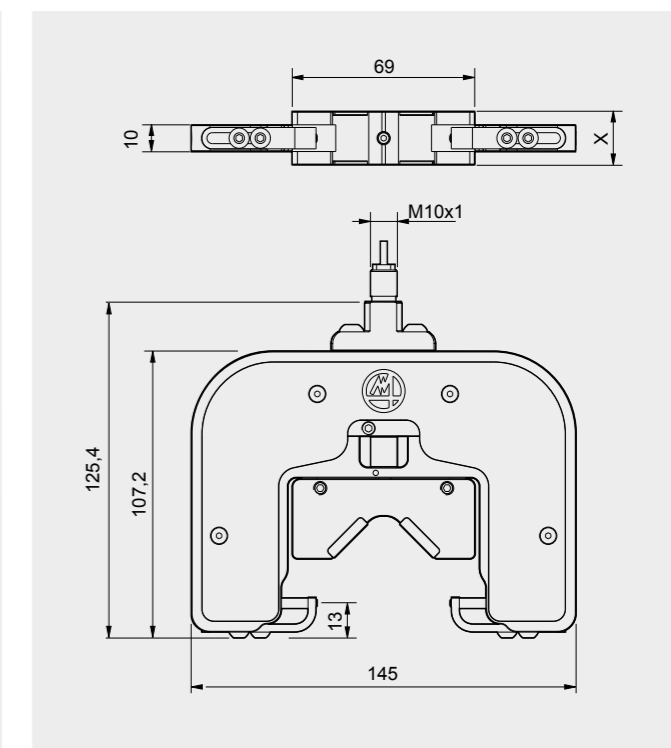
RANGE [MM]	20MM "V" REFERENCE	14MM "V" REFERENCE	10MM "V" REFERENCE
5 - 15	B3TBAISAWS	B3TBAITAWS	B3TBAIHUAWS
15 - 30	B3TBAISBWS	B3TBAITBWS	B3TBAIHUBWS
30 - 50	B3TBAISCWS	B3TBAITCWS	B3TBAIHUCWS
50 - 70	B3TBAISDWS	B3TBAITDWS	B3TBAIHUUDWS

MSG SNAP HEAD

MEASURABLE DIAMETER $5 \leq D < 30$ mm



MEASURABLE DIAMETER $30 \leq D < 70$ mm



X = V reference part thickness

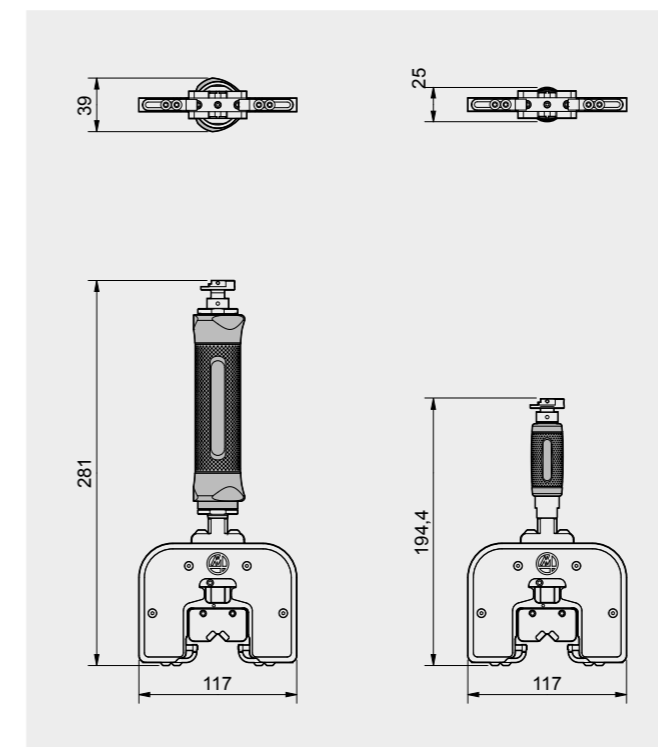
20 mm

14 mm

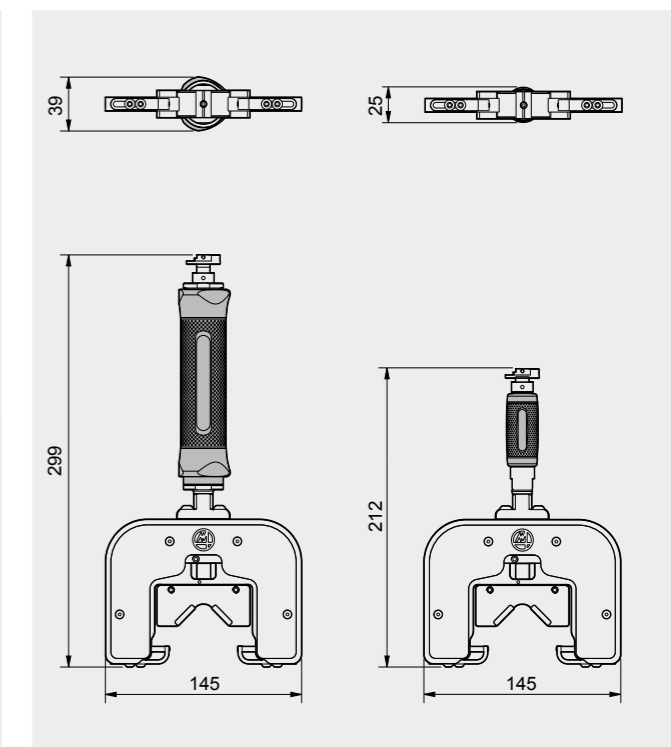
10 mm

COMPLETE SNAP GAUGE

MEASURING RANGE $5 \div 30$



MEASURING RANGE $30 \div 70$



MODELS AND ACCESSORIES ELECTRONIC SNAP GAUGES



ELECTRONIC SNAP GAUGE (ONLY HEAD)

RANGE [MM]	CELL TYPE	20MM "V" REFERENCE	14MM "V" REFERENCE	10MM "V" REFERENCE
5 - 15	LVDT	B3TTFSAWXXS	B3TTFTAWXXS	B3TTFUAWXXS
15 - 30	LVDT	B3TTFBWXXS	B3TTFBWXXS	B3TTFUBWXXS
30 - 50	LVDT	B3TTFSCWXXS	B3TTFSCWXXS	B3TTFUCWXXS
50 - 70	LVDT	B3TTFSDWXXS	B3TTFDXXS	B3TTFUDWXXS
5 - 15	HBT	B3TTHSAWXXS	B3THTAWXXS	B3THUAWXXS
15 - 30	HBT	B3TTHSBWXXS	B3THTBWXXS	B3THUBWXXS
30 - 50	HBT	B3TTHSCWXXS	B3THTCWXXS	B3THUCWXXS
50 - 70	HBT	B3TTHSDWXXS	B3THTDXXS	B3THUDWXXS



COMPLETE SNAP GAUGE WITH REGULAR HANDLE

RANGE [MM]	CELL TYPE	20MM "V" REFERENCE	14MM "V" REFERENCE	10MM "V" REFERENCE
5 - 15	LVDT	B3TBFE3SAWS	B3TBFE3TAWWS	B3TBFE3UAWWS
15 - 30	LVDT	B3TBFE3SBWS	B3TBFE3TBWS	B3TBFE3UBWS
30 - 50	LVDT	B3TBFE3SBWS	B3TBFE3TCWS	B3TBFE3UCWS
50 - 70	LVDT	B3TBFE3SDWS	B3TBFE3TDWS	B3TBFE3UDWS
5 - 15	HBT	B3TBHE3SAWS	B3TBHE3TAWWS	B3TBHE3UAWWS
15 - 30	HBT	B3TBHE3SBWS	B3TBHE3TBWS	B3TBHE3UBWS
30 - 50	HBT	B3TBHE3SCWS	B3TBHE3TCWS	B3TBHE3UCWS
50 - 70	HBT	B3TBHE3SDWS	B3TBHE3TDWS	B3TBHE3UDWS

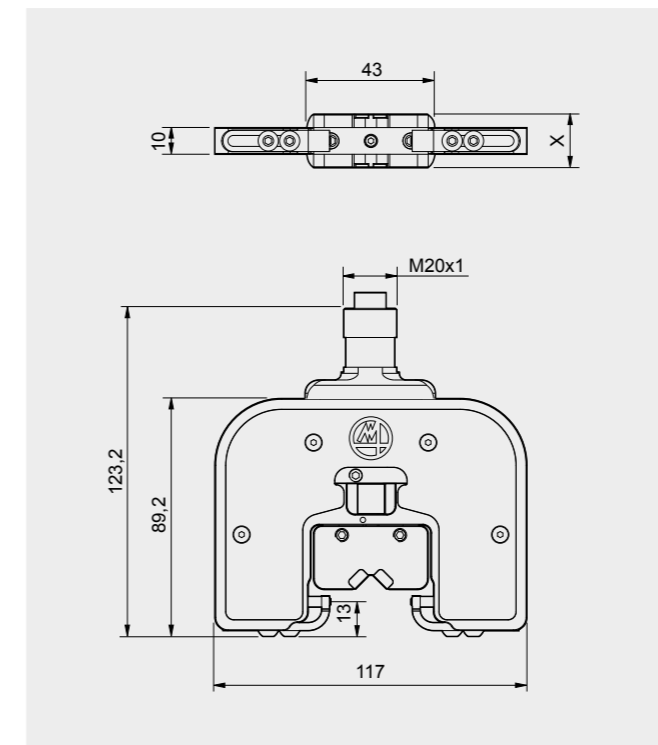


COMPLETE SNAP GAUGE WITH MINI WAVE HANDLE

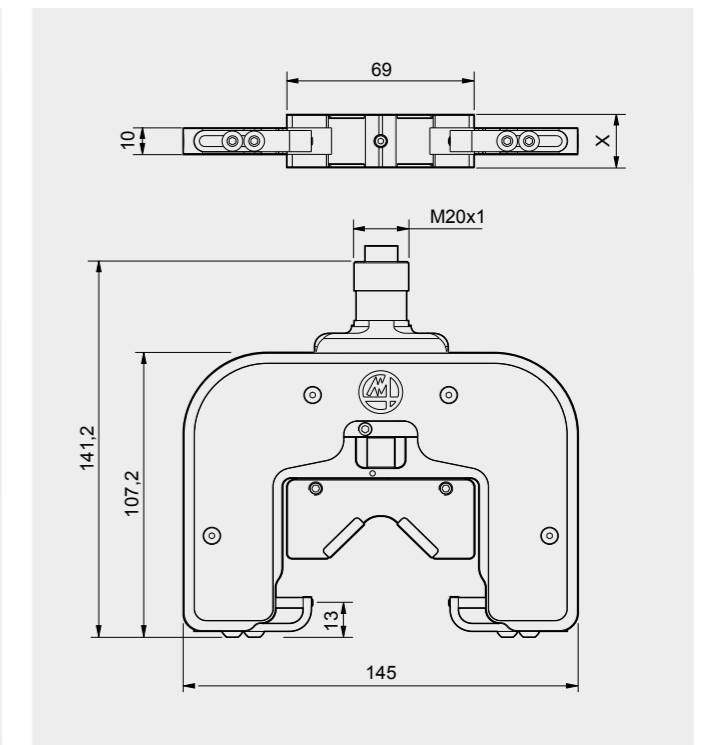
RANGE [MM]	CELL TYPE	20MM "V" REFERENCE	14MM "V" REFERENCE	10MM "V" REFERENCE
5 - 15	LVDT	B3TBFEWSAWS	B3TBFEWTAWWS	B3TBFEWUAWWS
15 - 30	LVDT	B3TBFEWSBWS	B3TBFEWTBWS	B3TBFEWUBWS
30 - 50	LVDT	B3TBFEWSCWS	B3TBFEWTCWS	B3TBFEWUCWS
50 - 70	LVDT	B3TBFEWSDWS	B3TBFEWTDWS	B3TBFEWUDWS
5 - 15	HBT	B3TBHEWSAWS	B3TBHEWTAWWS	B3TBHEWUAWWS
15 - 30	HBT	B3TBHEWSBWS	B3TBHEWTBWS	B3TBHEWUBWS
30 - 50	HBT	B3TBHEWSCWS	B3TBHEWTCWS	B3TBHEWUCWS
50 - 70	HBT	B3TBHEWSDWS	B3TBHEWTDWS	B3TBHEWUDWS

ESG SNAP HEAD

MEASURING RANGE 5÷30



MEASURING RANGE 30÷70



X= V reference part thickness

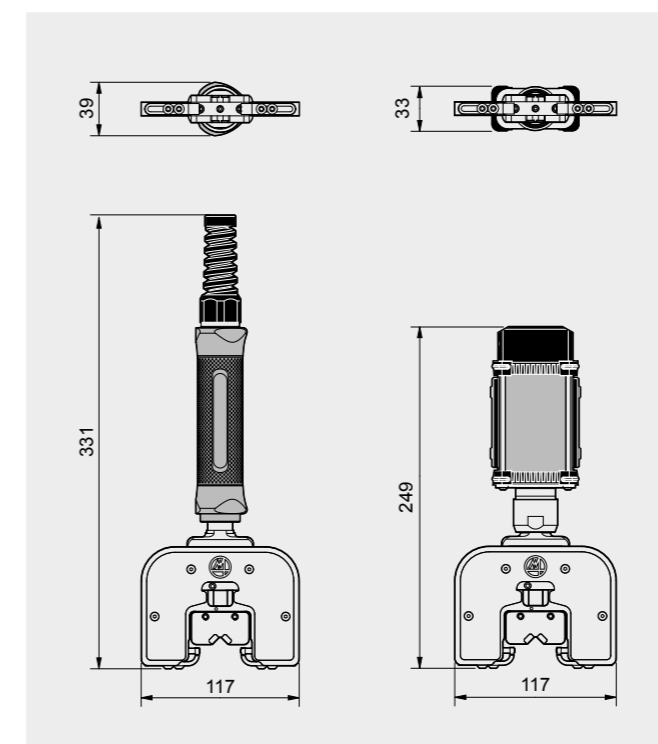
20 mm

14 mm

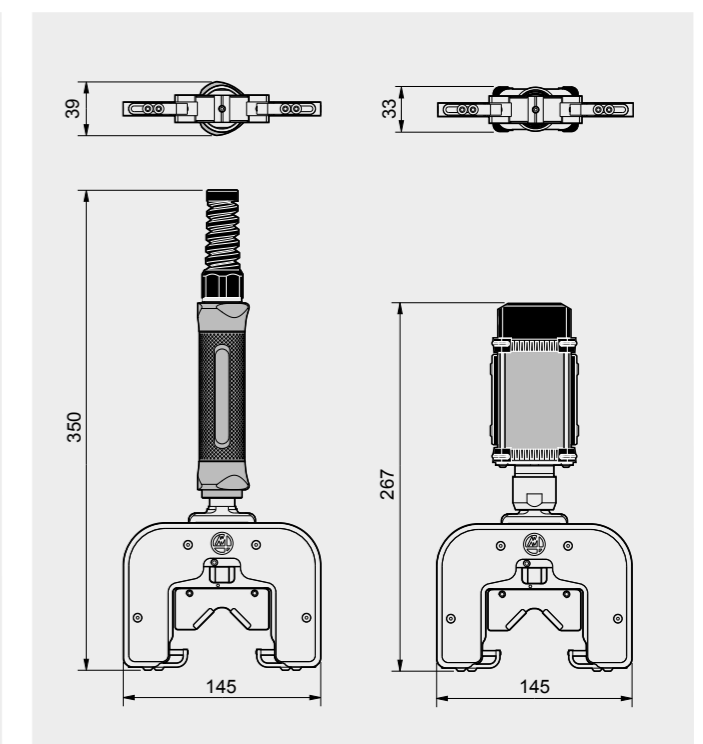
10 mm

COMPLETE SNAP GAUGE

MEASURING RANGE 5÷30



MEASURING RANGE 30÷70





MODELS AND ACCESSORIES
MECHANICAL SNAP GAUGES



BODIES SPARE PARTS

RANGE [MM]	CELL TYPE	ORDER CODE
5 - 30	MECHANIC	B2942426421
30 - 70	MECHANIC	B2942426411
5 - 30	ELECTRONIC, LVDT	B2942426422
30 - 70	ELECTRONIC, LVDT	B2942426412
5 - 30	ELECTRONIC, HBT	B2942426423
30 - 70	ELECTRONIC, HBT	B2942426413



V-PART REFERENCES

RANGE	20MM "V"	ORDER CODE	14MM "V"	ORDER CODE	10MM "V"	ORDER CODE
5 - 15 mm		B2942426459		B2942426463		B2942426457
15 - 30 mm		B2942426458		B2942426462		B2942426456
30 - 50 mm		B2942426455		B2942426465		B2942426453
50 - 70 mm		B2942426454		B2942426464		B2942426452

CONTACT AND PROTECTIONS

CONTACT (CARBIDE 1 PIECE)	ORDER CODE	CONTACT PROTECTIONS (CARBIDE)	ORDER CODE
	B3TXCX00026		M3Star 5+30 mm B2942426434
			M3Star 30+50 mm B2942426435
			M3Star 50+70 mm B2942426436



TOOLS

DESCRIPTION	ORDER CODE
2 mm Hex wrench	B4413675303
2,5 mm Hex wrench	B4413675304



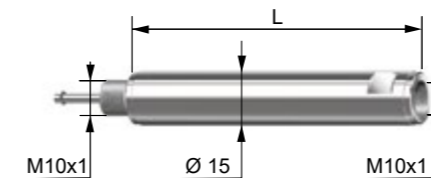
SPARES

DESCRIPTION	ORDER CODE
Protections kit for 5-30mm body	B4413675303
Protections kit for 30-70mm body	B4413675304
Spring – 1 piece	B1042426287
Screw for spring limitation - 1 piece	B1042426286
Transfer Rod	B2042433015
Rod Bushing	B1042433204



DEPTH EXTENSIONS AVAILABLE ONLY FOR M3STAR MSG

LENGTH L (mm)	ORDER CODE
50	B2TXMSF0050
65	B2TXMSF0065
80	B2TXMSF0080
100	B2TXMSF0100
125	B2TXMSF0125



STAND AVAILABLE ONLY FOR M3STAR ESG MINI WAVE

DESCRIPTION	ORDER CODE
Stand charger for M3 Star ESG with Mini Wave handle (power supply unit included).	B2T0IRBS004





GAUGE HANDLES M1STAR AND M3STAR HANDLES

REGULAR HANDLE, WITH DIGITAL INDICATOR



WHEN TO USE IT

M1 Star with QuickDigit indicator is the right configuration for applications where operators need a **mobile gauge**. This configuration is **super-cost effective** since it integrates the measuring head and the indicator in the same product.

It is available in combination with mechanical measuring head only (MBG and MSG). M1 Star Bore Gauges and M3 Star Snap Gauges are compatible with this handle configuration.

MINI HANDLE



The MINI HANDLE is the compact version, designed for applications with spacing constraints, especially in the repository of the unit.

It is available for M1 Star and M3 Star mechanical gauges.

REGULAR HANDLE, CABLE CONNECTIVITY, MBG/MSG HEADS



M1 Star with cable is the product configuration to connect to control unit, offering the possibility of data visualization on large displays and data archiving.

REGULAR HANDLE, CABLE CONNECTIVITY, EBG/ESG HEADS



M1 Star with cable is the product configuration to connect to control unit, offering the possibility of data visualization on large displays and data archiving.

EBG version is the premium performance one, that features 0.5 μm accuracy

REGULAR HANDLE, DIGITAL INDICATOR

Compatible with mechanical bore gauges only



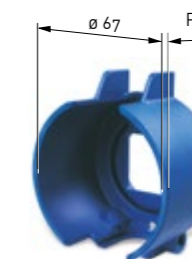
THREAD ON GAUGE HEAD	CLAMPING DIAMETER	HANDLE LENGTH	COMPATIBLE GAUGE HEAD	ORDER CODE
M3,5	8 mm h6	169-192	M1STAR BORE GAUGE	B2TCL3S0000
M3,5	3/8"	189-212	M1STAR BORE GAUGE	B2TCL4S0000
M6	8 mm h6	169-192	M1STAR BORE GAUGE	B2TCL6S0000
M6	3/8"	189-212	M1STAR BORE GAUGE	B2TCL7S0000
M10	8 mm h6	169-190	M1STAR BORE GAUGE	B2TCLAS0000
M10	3/8"	189-210	M1STAR BORE GAUGE	B2TCLBS0000
M10	8 mm h6		M3STAR SNAP GAUGE	B2TCLAS0030

MINI HANDLE, DIGITAL INDICATOR

Compatible with mechanical bore gauges only



THREAD ON GAUGE HEAD	CLAMPING DIAMETER	HANDLE LENGTH	COMPATIBLE GAUGE HEAD	ORDER CODE
M3,5	8 mm h6	88-110	M1STAR BORE GAUGE	B2TCS3S0000
M3,5	3/8"	108-130	M1STAR BORE GAUGE	B2TCS4S0000
M6	8 mm h6	88-110	M1STAR BORE GAUGE	B2TCS6S0000
M6	3/8"	108-130	M1STAR BORE GAUGE	B2TCS7S0000
M10	8 mm h6	88-108	M1STAR BORE GAUGE	B2TCSAS0000
M10	3/8"	108-128	M1STAR BORE GAUGE	B2TCSBS0000
M10	8 mm h6		M3STAR SNAP GAUGE	B2TCSAS0030



ACCESSORIES

DESCRIPTION	ORDER CODE
Protective shell for mechanical Indicator (P=38 mm)	B2TODIPS001
Protective shell for digital Indicator (P=52 mm)	B2TODIPS000
Protective cap for digital Indicator (P=52 mm)	B2TODICS000

GAUGE HANDLES M1STAR AND M3STAR HANDLES



REGULAR HANDLES WITH CABLE, MBG/MSG

THREAD ON GAUGE HEAD	MEASURING SENSOR	HANDLE LENGTH	COMPATIBLE GAUGE HEAD	ORDER CODE
M3,5	Without Pencil Probe - 8 mm h6 Clamping Diameter	237,5	M1STAR BORE GAUGE	B2TPL300000
M3,5	With RedCrown2 LVDT ±2 mm, cable L=2 m, Lumberg SV50/6	237,5	M1STAR BORE GAUGE	B2TPL3F2000
M3,5	With RedCrown2 HBT ±2 mm, cable L=2 m, Lumberg SV50/6	237,5	M1STAR BORE GAUGE	B2TPL3H2000
M6	Without Pencil Probe - 8 mm h6 Clamping Diameter	237,5	M1STAR BORE GAUGE	B2TPL600000
M6	With RedCrown2 LVDT ±2 mm, cable L=2 m, Lumberg SV50/6	237,5	M1STAR BORE GAUGE	B2TPL6F2000
M6	With RedCrown2 HBT ±2 mm, cable L=2 m, Lumberg SV50/6	237,5	M1STAR BORE GAUGE	B2TPL6H2000
M10	Without Pencil Probe - 8 mm h6 Clamping Diameter	239,5	M1STAR BORE GAUGE	B2TPLA00000
M10	With RedCrown2 LVDT ±2 mm, cable L=2 m, Lumberg SV50/6	239,5	M1STAR BORE GAUGE	B2TPLAF2000
M10	With RedCrown2 HBT ±2 mm, cable L=2 m, Lumberg SV50/6	239,5	M1STAR BORE GAUGE	B2TPLAH2000



REGULAR HANDLES WITH CABLE, EBG/ESG

DESCRIPTION	COMPATIBLE GAUGE HEAD	ORDER CODE
M1 Handle without cable	M1STAR BORE GAUGE	B2THS000000
M3 Handle without cable	M3STAR SNAP GAUGE	B2TH3000001
Cable 2 m LVDT - connector SV50/6	M1STAR BORE GAUGE / M3STAR SNAP GAUGE	B2TG0000026
Cable 3,5 m LVDT - connector SV50/6	M1STAR BORE GAUGE / M3STAR SNAP GAUGE	B2TG0000356
Cable 5 m LVDT - connector SV50/6	M1STAR BORE GAUGE / M3STAR SNAP GAUGE	B2TG0000056
Cable 2 m LVDT - connector S3	M1STAR BORE GAUGE / M3STAR SNAP GAUGE	B2TG0000023
Cable 2 m TESA COMPATIBLE - connector SV50/6	M1STAR BORE GAUGE / M3STAR SNAP GAUGE	B2TG00TS026
Cable 2 m HBT - connector SV50/6	M1STAR BORE GAUGE / M3STAR SNAP GAUGE	B2TG0001026
Cable 3,5 m HBT - connector SV50/6	M1STAR BORE GAUGE / M3STAR SNAP GAUGE	B2TG0001356
Cable 5 m HBT - connector SV50/6	M1STAR BORE GAUGE / M3STAR SNAP GAUGE	B2TG0001056

GAUGE HANDLES WAVE LINE – PREMIUM MOBILE HANDLES

The Marposs Wave Line features high-end mobile gauges for demanding applications. These gauges are battery powered, with a wireless charging system. The Bluetooth connectivity is embedded in any model of the Wave line. As result, Wave line gauges deliver a superior level of usability and performance, allowing fast operations at the manufacturing line and also a real-time measuring data transfer to the control unit.

As option, versions with embedded display are available, in order to fit those applications where the feedback to operator at the measurement instant is fundamental for correct operations.



I-WAVE2 AND WAVE2

I-WAVE2 is the premium mobile gauge, with **Bluetooth connectivity**, **wireless charging system**, and an **integrated TFT color display**, size 1.8 inches.

On-board there is a motion sensor that enables a superior level of usability. In fact, it automatically adapts the display orientation during handlings. In addition, the motion sensor is used to optimize the battery duration, by dynamically activating the gauge on movement detection.

The **integrated Li-ion batteries** guarantee a long charge duration and a short charging time.

The doubled trigger buttons are to furtherly increase fast and ergonomic operations.

The models **I-WAVE2** can be connected to any Marposs **Mechanical Gauge Head** in the line, as mechanical bore gauges (MBG) and mechanical snap gauges (MSG).

The models **WAVE2** can be connected to any Marposs **Electronic Gauge Head** in the line, as electronic bore gauges (EBG) and electronic snap gauges (ESG).



I-WAVE AND M1 WAVE

I-WAVE and M1 WAVE are cost-effective mobile gauge, with **Bluetooth connectivity** and a two different battery configurations, in order to match different requirements in terms of price-performance requirements.

The models **I-WAVE** can be connected to any **Marposs Mechanical Gauge Head** in the line, as mechanical bore gauges (MBG) and mechanical snap gauges (MSG).

The models **WAVE** can be connected to any Marposs **Electronic Gauge Head** in the line, as electronic bore gauges (EBG) and electronic snap gauges (ESG).



MINI I WAVE AND MINI WAVE

Compact dimensions, lightweight and double push buttons, make it perfect for small bores and countersink gauges.



WAVE2 VERSION

I-WAVE2 WITH DIRECT-LOCK FOR MECHANICAL BORE GAUGE

I-WAVE2 can be connected to any Marposs Mechanical Gauge Head in the line, as mechanical bore gauges (MBG) and mechanical snap gauges (MSG).



DESCRIPTION	BATTERY TYPE	CHARGING SYSTEM	GAUGE HEAD MODEL	ORDER CODE
I-Wave2 Handle with Direct-Lock interface M18 thread	Li-Ion rechargeable	Inductive	MBG and MSG	B3TJ5SDI000
I-Wave2 Handle with Direct-Lock for plug heads with M10 thread	Li-Ion rechargeable	Inductive	MBG and MSG	B3TJ5SDI100
I-Wave2 Handle with Direct-Lock for plug heads with M6 thread	Li-Ion rechargeable	Inductive	MBG and MSG	B3TJ5SDI060
I-Wave2 Handle with Direct-Lock for plug heads with M3.5 thread	Li-Ion rechargeable	Inductive	MBG and MSG	B3TJ5SDI035

I-WAVE2 WITH STAR-LOCK FOR MECHANICAL BORE GAUGE



DESCRIPTION	BATTERY TYPE	CHARGING SYSTEM	GAUGE HEAD MODEL	ORDER CODE
I-Wave2 Handle with Starlock system for plug heads	Li-Ion rechargeable	Inductive	MBG and MSG	B3TJ6SDI000

WAVE2 FOR ELECTRONIC BORE GAUGE



DESCRIPTION	BATTERY TYPE	CHARGING SYSTEM	GAUGE HEAD MODEL	ORDER CODE
Wave2 display handle	Li-Ion rechargeable	Inductive	EBG	B3TJESDI000
Wave2 display handle - full (Transducer compensation function available)	Li-Ion rechargeable	Inductive	EBG	B3TJFSDI000

TECHNICAL SPECIFICATIONS	I-WAVE2	WAVE2
Compatibility	Mechanical Gauge Head M3.5/M6/M10	Electronic Gauge Head/RedCrown2/A124
Display	1.8" full color	1.8" full color
Wireless transmission technology	Bluetooth Smart	Bluetooth Smart
Communication distance	10 m	10 m
Ergonomic handle design	Dual buttons Line	Dual buttons Line
Compatibility with Marposs Electronic Display Units	Nemo, Merlin Line, E9066 Line	Nemo, Merlin Line, E9066 Line
Software for Windows OS	Easy Acquisition, Merlin Plus SW, Quick SPC, DLL	Easy Acquisition, Merlin Plus SW, Quick SPC, DLL
Programming for stand alone use	by Ready2Gauge (R2G) APP for IOS or Android phone/tablet or Windows PC (FREE)	by Ready2Gauge (R2G) APP for IOS or Android phone/tablet or Windows PC (FREE)
Auto switch on	by accelerometer	by accelerometer
View display aspect	Portrait/Landscape-selectable	Portrait/Landscape-selectable
Programmable auto shut down time	YES	YES
Settable acoustic feedback	YES	YES
IP rating	67	65
Weight	540 g	500g
Battery type	Li-Ion rechargeable	Li-Ion rechargeable
Wireless charging system	Inductive	Inductive

WAVE2 VERSION ACCESSORIES



DESCRIPTION	COMPATIBLE WITH	ORDER CODE
Interface adapter to fix EBG plug heads to Wave or Wave2 handle	Wave 2	B2TIESF0000
Interface adapter to fix LVDT probes with SV50/6 connector to Wave or Wave2 handle	Wave 2	B2042421960
Interface adapter to fix HBT probes with SV50/6 connector to Wave or Wave2 handle	Wave 2	B2042421959
Interface adapter to fix LVDT probes with SV50/6 connector to Wave or Wave2 handle with flange Ø 59	Wave 2	B2042421966
Interface adapter to fix HBT probes with SV50/6 connector to Wave or Wave2 handle with flange Ø 59	Wave 2	B2042421965



DESCRIPTION	ORDER CODE
Nose-Up stand with battery charger	B2T0IRBS030
Nose-Down stand with battery charger	B2T0IRBS031
Power supply unit for one stand with battery charger	B2T0IRCS010
Power supply unit and junction box for up to four stands with charger	B2T0IRSS010
Cable for connecting the stand charger to junction box (length 1m)	B2T0IRCS001
Power supply cable with CE plug (L=2m)*	B4709009001
I-Wave2 BT SMART USB adapter	B6872020044



WAVE VERSION



I-WAVE

DESCRIPTION	BATTERY TYPE	CHARGING SYSTEM	GAUGE HEAD MODEL	ORDER CODE
I-Wave handle with Star Lock - Li-Ion battery	Li-Ion rechargeable	Inductive	MBG and MSG	B3TJ0SFI000
I-Wave handle with Star Lock - Alkaline battery	Alkaline rechargeable	Inductive	MBG and MSG	B3TJ0SFB000



M1WAVE

DESCRIPTION	BATTERY TYPE	CHARGING SYSTEM	GAUGE HEAD MODEL	ORDER CODE
M1 WAVE Handle with Star Lock - Li-ion battery	Li-Ion rechargeable	Inductive	EBG	B2TW0SFI000
M1 WAVE handle with Star Lock - Alkaline battery	Alkaline rechargeable	Inductive	EBG	B2TW0SFB000

TECHNICAL SPECIFICATIONS	I-WAVE	M1WAVE
Compatibility	M1Star MBG M10 M6 M3.5, M3Star MSG (by means of an adapter)*	M1Star EBG
Wireless transmission technology	BT 2.0	BT 2.0
Communication distance	10m	10m
Compatibility with Marposs Electronic Display Units	Nemo, Merlin line, E9066 line	Nemo, Merlin line, E9066 line
Software for Windows OS	Easy Acquisition, Merlin Plus SW, Quick SPC	Easy Acquisition, Merlin Plus SW, Quick SPC
Max. Number of manageable signals	N/A	1
IP rating	67	67 (with the EBG installed)

WAVE VERSION ACCESSORIES



STAR ADJUST INTERFACE

DESCRIPTION	ORDER CODE
StarAdjust interface (M10 and M6)	B2TIMSMT600



INTERFACE ADAPTER TO FIX EBG PLUG HEADS TO WAVE HANDLE

DESCRIPTION	ORDER CODE
Interface adapter to fix EBG plug heads to Wave handle	B2TIESF0000



"CLIP ON" MANUAL CHARGER FOR I-WAVE, WAVE AND MULTIWAVE HANDLE WITH LI-ION BATTERIES (WITHOUT PSU)

DESCRIPTION	HANDLES MODEL	ORDER CODE
"Clip On" manual charger for I-Wave, Wave and MultiWave handle with Li-Ion Batteries (without PSU)	I-Wave, Wave and MultiWave	B2T0IRMS001



STAND WITH BATTERY CHARGER

DESCRIPTION	ORDER CODE
Stand with battery charger for I-Wave and Wave handles with Li-Ion Batteries (without PSU)	B2T0IRBS001
Stand with battery charger for MultiWave handle (without PSU)	B2T0IRBS005
Power supply unit for one stand with battery charger	B2T0IRCS010
Power supply unit and junction box for up to four chargers.	B2T0IRSS010
Cable for connecting the stand charger to the junction box (length 1m)	B2T0IRCS001
I-Wave/M1Wave/Mini I-Wave/MiniWave/MultiWave BT USB adapter	B47013J0101



GAUGE HANDLES MINI WAVE LINE



MINI WAVE

DESCRIPTION	BATTERY TYPE	CHARGING SYSTEM	GAUGE HEAD MODEL	ORDER CODE
Mini Wave	Li-Ion rechargeable	Inductive		B3TJ2SDJ000



MINI I-WAVE

DESCRIPTION	BATTERY TYPE	CHARGING SYSTEM	GAUGE HEAD MODEL	ORDER CODE
Mini I-Wave	Li-Ion rechargeable	Inductive		B3TJ2SDJ000



STAND WITH BATTERY CHARGER

DESCRIPTION	ORDER CODE
Stand with battery charger for Mini I-Wave and MiniWave handle (PSU included)	B47013J0101

TECHNICAL SPECIFICATIONS	MINI I-WAVE	MINI WAVE
Compatibility	MBG M10 M6 M3.5, M3Star MSG (by means of an adapter)*	M1Star EBG M3Star ESG
Wireless transmission technology	BT 2.0	BT 2.0
Communication distance	10m	10m
Compatibility with Marposs Electronic Display Units	Nemo, Merlin line, E9066 line	Nemo, Merlin line, E9066 line
Software for Windows OS	Easy Acquisition, Merlin Plus SW, Quick SPC	Easy Acquisition, Merlin Plus SW, Quick SPC
Max. Number of manageable signals	N/A	1
IP rating	54	54
Weight	390g	340g
Battery type	Li-ion Recharg.	Li-ion Recharg.
Battery min. duration	36 hours**	36 hours**
Time to reach the full charge of the battery	3 hours	3 hours





CHROMATIC CONFOCAL



- ▶ Marposs Chromatic Confocal is a line of industrial solutions based on the optical technology, perfect to measure delicate and transparent components with micron precision and without touching them. This is a unique advantage of the optical technology that makes it perfect for applications in the semiconductor and medical industries, where the optical technology is the only one that has zero-risk of damaging the part.
- ▶ Marposs is capable to offer complete measurement workstations, integrating the confocal optical heads, the electronic controller and the software, to visualize and manage the measurement results.



The Chromatic Confocal Head incorporates optical lenses inside an industrial-grade mechanics, specifically designed to be installed close to the target surface to inspect. The optical heads are structured to perform highly and simultaneously to resist even inside though production environments.

Marposs offers a large variety of optical heads, differentiated by working distances, optical spot dimensions, optical output pattern 0-90°. Also different external mechanical dimensions are available in the range.



DISTANCE
0.15 μm --> 100 mm



THICKNESS
5 μm --> +00



ROUGHNESS
 $R_a = 0.05 \mu\text{m}$ --> 700 μm



INSPECTION
Defect size > 1 μm

By calculating the absolute distance of the target point, the confocal technology enables a number of different typologies of quality controls, as for instance surface position, dimensions or flatness.

Moreover, by selecting the appropriate optical spot dimension, it is possible to resolve complex applications. For instance Confocal sensors with small optical spot are ideal for surface roughness measurements. In fact, the small spot can detect the specific characteristics, with high frequency variations, typical of the surface structure of the material.

On the other hand, there are optical heads in the range featuring large spots, perfect for low-reflectivity surfaces. More in detail, a large spot is necessary to obtain a good level of return light intensity even with semitransparent materials like glass.

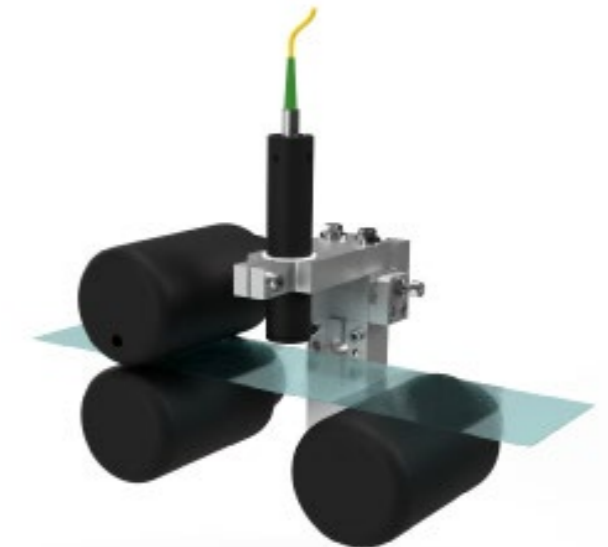
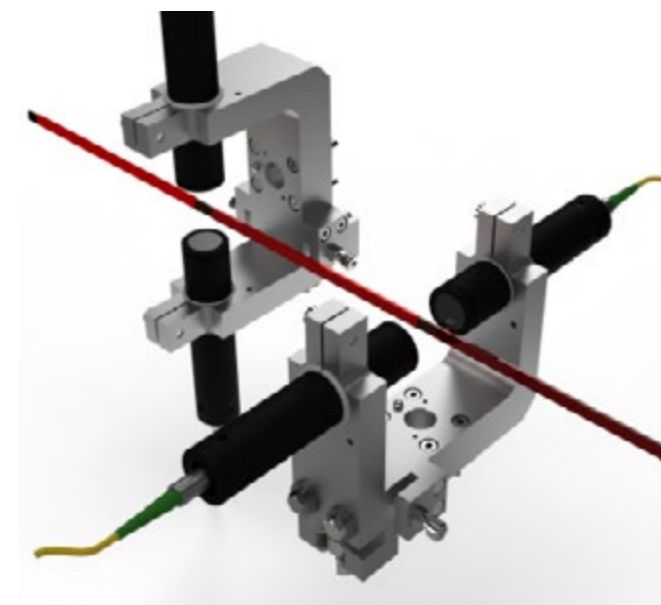
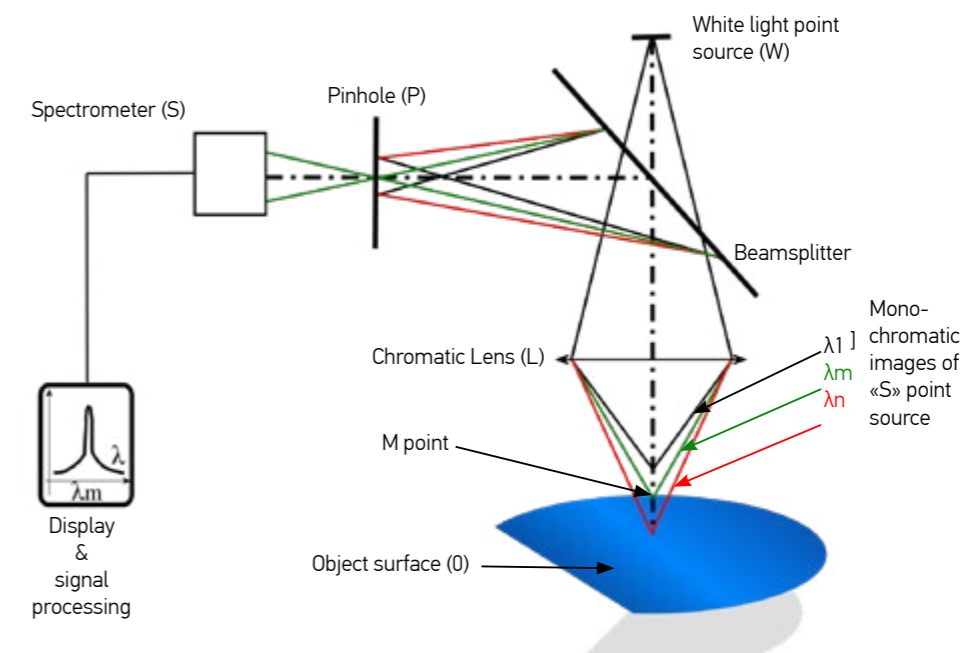
WORKING PRINCIPLE

The chromatic confocal principle is as simple as effective in measurement.

A white light source come across a diffractive lens before to reach the target surface to measure. The diffractive lens decomposes the white light into any of its chromatic components, each one having a specific wavelength.

The target surface reflects the projected light back to sensor and only one of the light wavelengths, among the projected components, will be perfectly in focus on the spectrometer sensor.

By analyzing the output of the spectrometer sensor, it is possible to perfectly calculate the distance of the target surface, with an incredible resolution down to 3 nanometers, quickly and without touching the material.





CHROMATIC CONFOCAL SENSORS

Marposs Chromatic Confocal are optical sensors capable to execute distance measurements from the sensor to a target surface with ultra-high precision and without touching the target material. Since based on light, this non-contact sensors is perfect for delicate materials and super-accurate measurements at the same time.

Marposs Chromatic Confocal solutions have been designed to resolve applications in highly demanding industries like semiconductors and medical, where measurements technologies are subject to restrictive constraints, as for instance the capability to operate at high temperatures or inside vacuum chambers



CL-MG

CL-MG is a single point optical sensor, with ultra-high accuracy up to the nanometer.

CL-MG is the most used confocal model in applications. In fact, thanks to the high number of optical options supported, it fits the requirements of typical optical applications.

Among its configurability, there is the possibility to define the measuring range and the spot size.

It is purposely designed to operate into harsh environments as for instance vacuum chambers or high temperatures.



ENDO

ENDO is a point confocal sensor, featuring the smallest physical diameter in the line.

It is available in 3 different external diameter sizes: 4 mm, 6 mm, 8mm. Thanks to its excellent compactness, it is perfect for integrations into very constrained spaces.



OP

OP is the point sensor for applications where long working distances are required. OP can be installed and properly operate far away from the measuring target, up to 500 mm.

With a long working distance, the OP sensor can safely measure hot materials or in remote positions outside protective or safety barriers. OP is the perfect model for glass, bottles production or automotive applications.



EVEREST

EVEREST is the premium performance point sensor, capable to accomplish high demand tasks like surfaces profiles acquisition. In fact, it is designed to work at a short distance from the target material. Moreover, thanks to its super-large optic aperture, it can easily collect scattered light during roughness measurement or it is perfect for analysis of curved surfaces.



CHROMALINE

CHROMALINE is a multi-point sensor, typically applied in applications of scanning and inspecting large surfaces in a short time. As per its name, CHROMALINE operates through a line pattern, obtained by the projection of 180 separate optical points, side-by-side. Its unique capability is to generate a simultaneous acquisition of its 180 optical points. By synchronizing each single shot with the encoder value it can generate a digital reconstruction of a surface area, with the resolution of nanometers.



CHROMA VISION CAMERA

The **CHROMA VISION CAMERA** is the advanced sensor for micro-defect detection on surfaces.

It is based on the CHROMALINE architecture and elaborates the optical signal through a precision 2D sensor, in order to generate a 3 dimensional picture of the surface.

It is a unique solution where scanning speed matters. In fact, CHROMA VISION CAMERA features an unrivalled intrinsic optical depth-of-field, with no autofocus and no moving parts inside. This technology definitively overcomes the limitations of traditional microscopes that need to adjust the focus in order to follow the real surface profile.

CHROMA VISION CAMERA is not just fast and precise. Its capability to generate 3D pictures of the scanned surface is an important advantage, being images intuitive and easy to inspect by definition.

CONTROLLERS FOR CHROMATIC CONFOCAL POINT SENSORS

Marposs Controllers for Confocal Point Sensors are electronic units featuring any necessary functionality to implement a gauging system. They integrate both the active opto-electronic components, light generator and spectrometer, and a powerful digital processor. At the same time, the controller is the element in the system managing input and output signals, like triggers and encoder for dynamic measurements.



ZENITH

ZENITH Controller is the new and also pivotal model in the line.

It is available with 1 or 2 channels and also with 2 different levels of performance, namely acquisition frequency 5 kHz and 10 kHz.

ZENITH is compatible with any Confocal Point Head in the range, as CL-MG, OP, ENDO, EVEREST.

Ethernet and RS422 communication interfaces are integrated.

ZENITH comes with its dedicated software suite, composed by the ChromaPoint manager and a Software Development Kit (SDK), allowing both effective control of the sensor and a fast integration with the automation system.



LIGHTMASTER

The **LIGHTMASTER** is a multi-channel controller for large networks of chromatic confocal point-sensor heads, up to a maximum of 48 units. Each single channel of the LightMaster can control and manage a single point-sensor head.

The channels can be installed on the LightMaster through boards, having 4 channels each one.

The LightMaster standard version accommodates up to 12 separate slots, 4 channels each, for a total of 48 sensors connected.

The lightMaster16 is the compact and cost-effective version, that accommodates up to 4 different slots, 4 channels each, for a total of 16 sensors.

LightMaster is available with 2 different levels of acquisition frequency, namely 1300Hz and 2000Hz.

LightMaster has a trigger input, Ethernet interface for easy integration, and can be easily mounted on a production line.



MPLS

MPLS, standing for MultiPoint Line System, is a controller dedicated to the Line Sensor Heads in the Chromatic Confocal portfolio. As per its name, Line Sensors perform an optical linear pattern, obtained by the projection of several separate optical points, on the target surface. Different models of line sensors are available, with an increasing number of side-by-side points, from 45 up to 180.

MPLS interconnects optical sensors through its 8 optical ports, named MPO, each one performing 45 separate optical channels. By using the different optical ports the MPLS Controller can operate with a variable number of sensors, from 1 to 4.

MPLS is provided of the necessary interfaces to develop demanding applications, like trigger and encoder for dynamic measurements. Gigabit Ethernet is also available.

MODELS AND ACCESSORIES CL-MG

CL-MG is a single point optical sensor, with ultra-high accuracy up to the nanometer. It is purposely designed to operate into harsh environments as for instance vacuum chambers or high temperatures.

Confocal technology is "speckle free" and thanks to the high-end optical architecture, CL-MG is immune to shadow effects. As result, CL-MG is performing well with demanding materials, like black carbon, glass, ceramics or polished metals.

The CL-MG is available with a high number of optical options as a variable measuring range from 150 μm to 24 mm, different optical spot size, straight and 90° folded optical pattern.

CL-MG optical heads can be connected to ChromaPoint controllers, like Zenith and Lightmaster.



MODEL	UNIT	CL1-MG420	CL1-MG210	CL1-MG140	CL2-MG210	CL2-MG140	CL2-MG70	CL3-MG140
ORDER CODE		O3PS0114202	O3PS0112102	O3PS0111402	O3PS0122102	O3PS0121402	O3PS0127002	O3PS0131401
Measuring Range	mm	0.15	0.15	0.15	0.4	0.4	0.4	1.4*
Working Distance	mm	3.3	3.3	3.3	10.8	10.8	10.8	12.2
Numerical Aperture		0.71	0.71	0.71	0.46	0.46	0.46	0.41
Max. Slope Angle	°	±42	±42	±42	±28	±28	±28	±25
Axial		Standard						
90° Folded Model		Option						
Max. Linearity Error*	μm	±0.025	±0.025	±0.02	±0.045	±0.04	±0.035	±0.11
Static Noise*	nm	3.5	4	4.5	9	11	13	27
Axial resolution (Averaging 10)*	nm	1.17	1.33	1.5	3	3.67	4.33	9
Lateral Resolution	μm	0.8	1.1	1.3	1.7	1.8	3.7	2.6
Spot Size	μm	1.8	2.7	3.5	4	5.2	8.8	6.8
Photometric Efficiency		0.8	5	13	3	8	42	12
Min. Measurable Thickness	μm	5	7.5	9	14	14	22	38
Length	mm	270	243.8	209.4	243.3	208.9	176.1	208.9
Diameter	mm	27	27	27	27	27	27	27
Weight	g	310	268	195	248	190	189	215

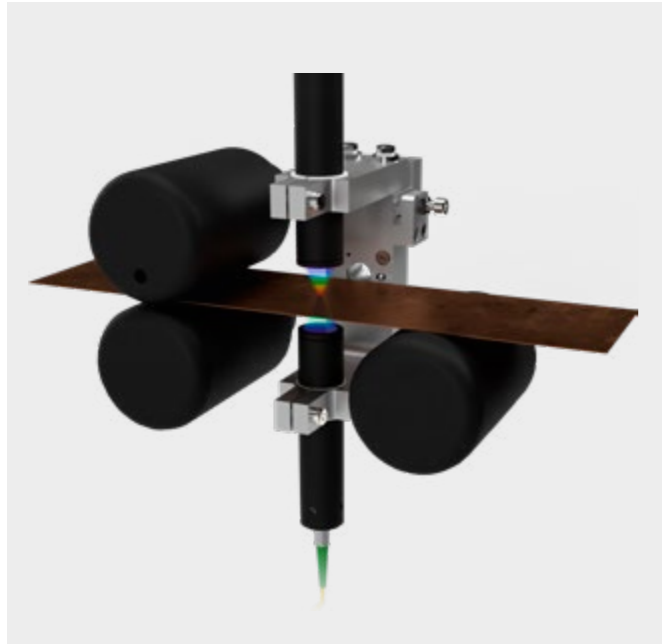
MODEL	UNIT	CL3-MG70	CL4-MG35	CL4-MG20	CL5-MG35	CL5-MG20	CL6-MG35	CL6-MG20
ORDER CODE		O3PS0137001	O3PS0143501	O3PS0142001	O3PS0153501	O3PS0152001	O3PS0163501	O3PS0162001
Measuring Range	mm	1.4*	4	4	12	12	24	24
Working Distance	mm	12.2	16.5	16.5	26.6	26.6	20	20
Numerical Aperture		0.41	0.32	0.32	0.2	0.2	0.12	0.12
Max. Slope Angle	°	±25	±21	±21	±14	±14	±8.5	±8.5
Axial		Standard						
90° Folded Model		Option						
Max. Linearity Error*	μm	±0.08	±0.225	±0.205	±0.5	±0.4	±1.2	±1
Static Noise*	nm	30	65	80	210	270	370	400
Axial resolution (Averaging 10)*	nm	10	21.67	26.67	70	90	123.33	133.33
Lateral Resolution	μm	4.5	4.6	7	11	14	11	18
Spot Size	μm	11.9	12.3	19.9	24.3	40	26.8	43
Photometric Efficiency		63	31	96	42	108	14	60
Min. Measurable Thickness	μm	40	110	120	350	550	590	725
Length	mm	176.1	145.4	130	145.4	130	171	155.6
Diameter	mm	27	27	27	27	27	27	27
Weight	g	214	155	140	175	160	195	180

* With ZENITH Controller



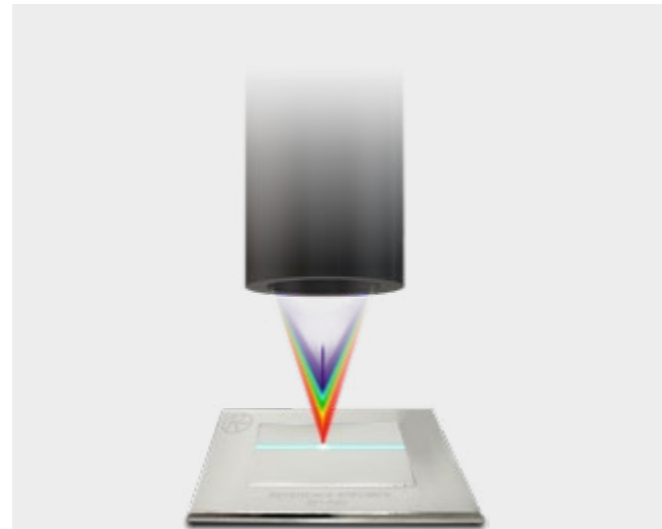
MODELS AND ACCESSORIES CL-MG

APPLICATION EXAMPLES



ROLL-TO-ROLL (R2R) THICKNESS

R2R applications include thickness measurement of carbon or ceramic lithium-ion battery electrodes, metallic laminated films, transparent (rubbery) or reflective materials; and more.



ISO 4287 - ROUGHNESS (S-L)

F: None

S-filter (λ_s): Gaussian, 2.5 μm

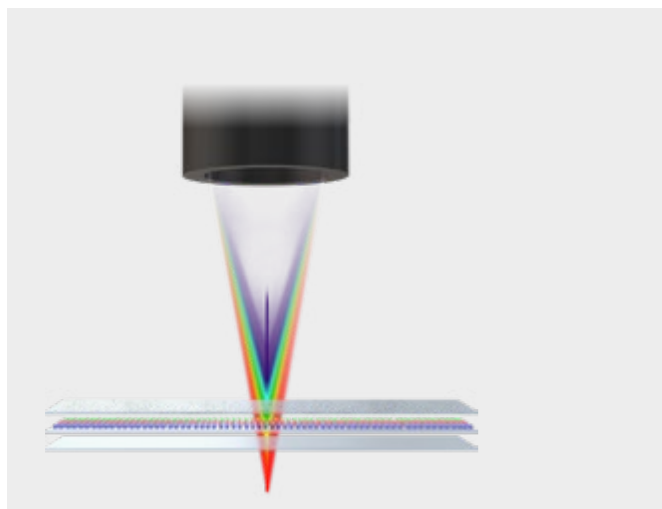
L- filter (λ_c): Gaussian, 0.8 mm

Evaluation length: All λ_c (6)

AMPLITUDE PARAMETERS

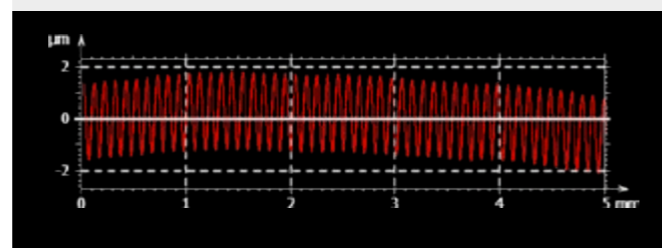
Ra 0.967 μm

Rq 1.072 μm



TRANSPARENT MULTI-LAYER MEASUREMENTS

CL-MG sensors in association with Zenith or LightMaster controller can measure up to 8 transparent layers at once. This is of interest for multilayer car-glass windows, isolating windows, coated / varnished surfaces, multi-layers polymers.



SURFACE TOPOGRAPHY / ROUGHNESS CERTIFIED MEASUREMENTS

Chromatic Confocal technology is one of the non-contact / contactless technologies that ISO 25 178 norm recommends to measure "Surface Topography" including roughness (Ra, Rq, Rz, ... Sa, Sq ...).

CL1TM CL2TM and CL3TM are the most suitable sensors for such Surface Topography contactless measurements, allowing, Roughness $R_a \geq 70 \text{ nm}$ (mirror polished surface) to be measured. Certified gauge measurements had been proved (against tactile measurements).

The main advantages of using non-contact Confocal Chromatic technology for Roughness measurements are :

- Surface is not scratched or contaminated, allowing the part to continue its way in production
- Measurement is faster than tactile profilers

CL-MG FOR VACUUM APPLICATIONS



MODEL	UNIT	CL1-MG210	CL1-MG140	CL2-MG210	CL2-MG140	CL2-MG70	CL3-MG140	CL3-MG70
ORDER CODE		O3PS01121V1	O3PS01114V1	O3PS01221V2	O3PS01214V2	O3PS01270V2	O3PS013140V1	O3PS01370V2
Measuring Range	mm	0.15	0.15	0.4	0.4	0.4	1.4*	1.4*
Working Distance	mm	3.3	3.3	10.8	10.8	10.8	12.2	12.2
Numerical Aperture		0.71	0.71	0.46	0.46	0.46	0.41	0.41
Max. Slope Angle	°	±42	±42	±28	±28	±28	±25	±25
Axial		Standard						
90° Folded Model		Option						
Max. Linearity Error*	μm	±0.025	±0.02	±0.045	±0.04	±0.035	±0.11	±0.08
Static Noise*	nm	4	4.5	9	11	13	27	30
Axial resolution (Averaging 10)*	nm	1.33	1.5	3	3.67	4.33	9	10
Lateral Resolution	μm	1.1	1.3	1.7	1.8	3.7	2.6	4.5
Spot Size	μm	2.7	3.5	4	5.2	8.8	6.8	11.9
Photometric Efficiency		5	13	3	8	42	12	63
Min. Measurable Thickness	μm	7.5	9	14	14	22	38	40
Length	mm	243.8	209.4	243.3	208.9	176.1	208.9	176.1
Diameter	mm	27	27	27	27	27	27	27
Weight	g	268	195	248	190	189	215	214

MODEL	UNIT	CL4-MG35	CL4-MG20	CL5-MG35	CL5-MG20	CL6-MG35	CL6-MG20
ORDER CODE		O3PS01435V1	O3PS01420V1	O3PS01535V1	O3PS01520V1	O3PS01635V1	O3PS01620V1
Measuring Range	mm	4	4	12	12	24	24
Working Distance	mm	16.5	16.5	26.6	25.9	20	20
Numerical Aperture		0.32	0.32	0.2	0.2	0.12	0.12
Max. Slope Angle	°	±21	±21	±14	±14	±8.5	±8.5
Axial		Standard					
90° Folded Model		Option					
Max. Linearity Error*	μm	±0.225	±0.205	±0.5	±0.4	±1.2	±1
Static Noise*	nm	65	80	210	270	370	400
Axial resolution (Averaging 10)*	nm	21.67	26.67	70	90	123.33	133.33
Lateral Resolution	μm	4.6	7	11	14	11	18
Spot Size	μm	12.3	19.9	24.3	40	26.8	43
Photometric Efficiency		31	96	42	108	14	60
Min. Measurable Thickness	μm	110	120	350	550	590	725
Length	mm	145.4	130	145.4	130	171	155.6
Diameter	mm	27	27	27	27	27	27
Weight	g	155	140	175	160	195	180

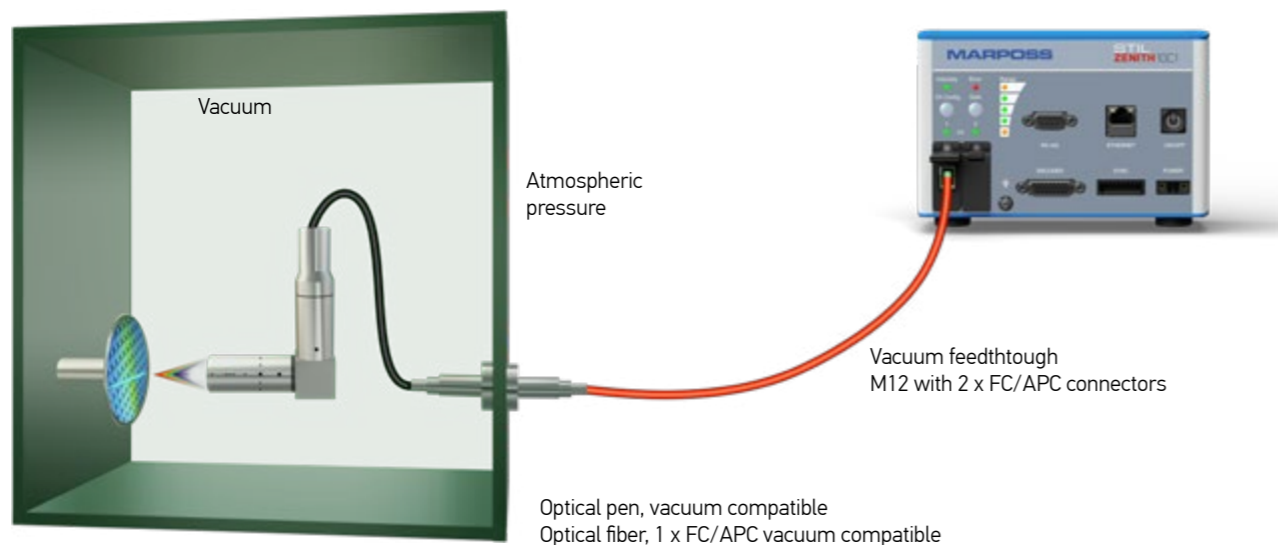
* With ZENITH Controller ** Design to be tested by customer based on his specific parameters



CL-MG FOR VACUUM APPLICATIONS

APPLICATION EXAMPLES

STANDARD SETUP



DIMENSIONS (MM)

CL1-MG420™



CL1-MG210™



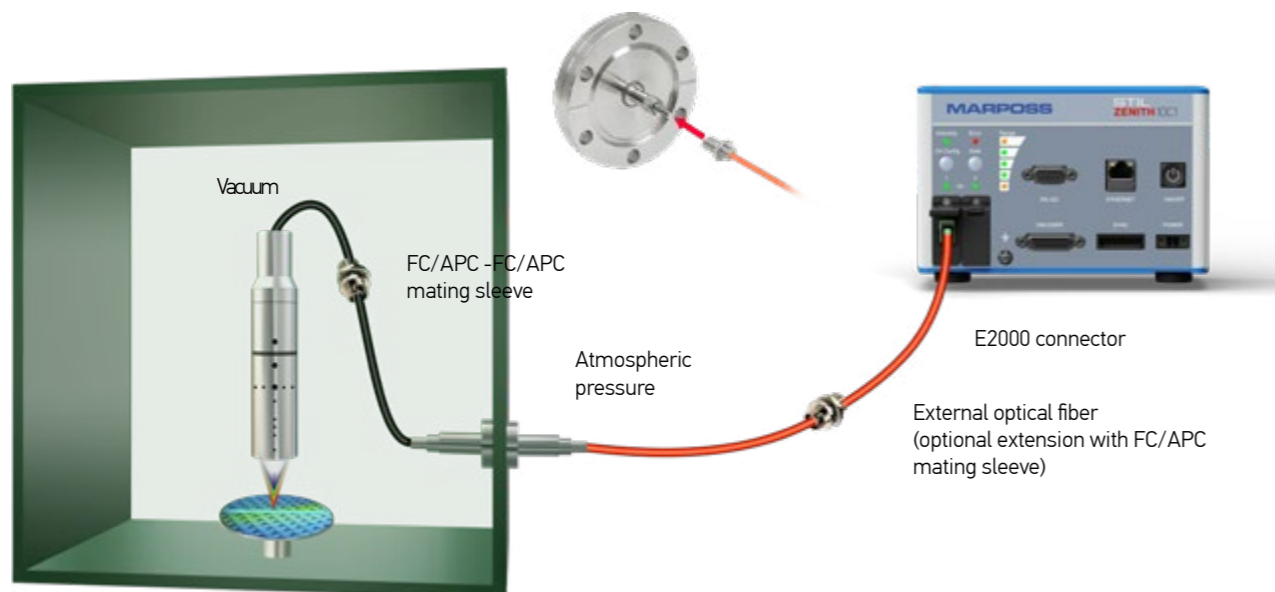
CL1-MG140™



CL2-MG210™



SPECIFIC SETUP



CL2-MG140™



CL2-MG70™



CL3-MG140™



CL3-MG70™





CL-MG FOR VACUUM APPLICATIONS

CL4-MG35TM



CL4-MG20TM



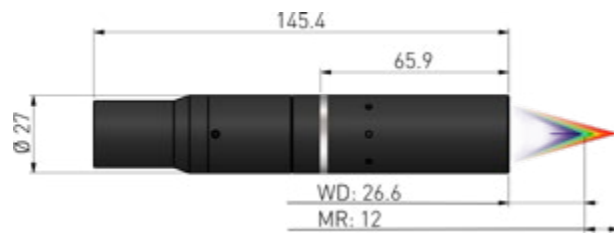
CL1-MG210TM



CL1-MG140TM



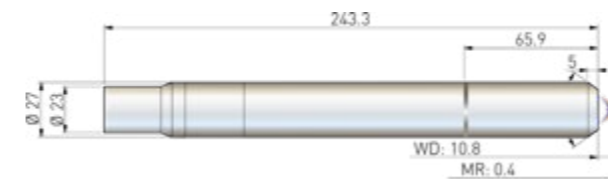
CL5-MG35TM



CL5-MG20TM



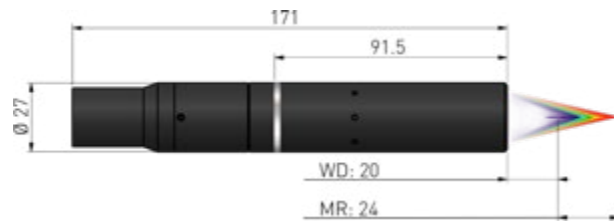
CL2-MG210TM



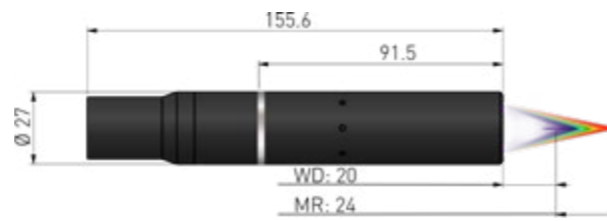
CL2-MG140TM



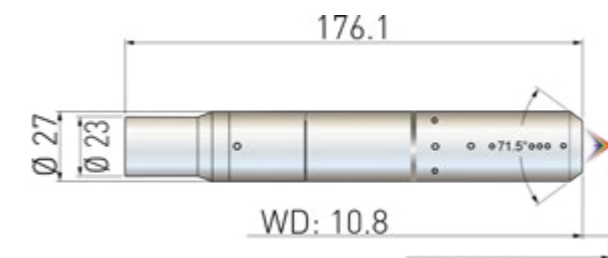
CL6-MG35TM



CL6-MG20TM



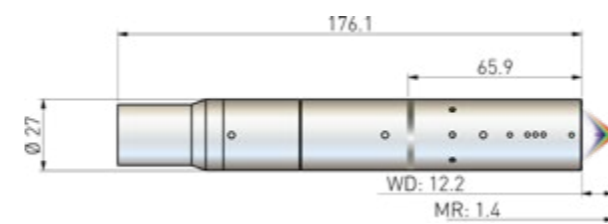
CL2-MG70TM



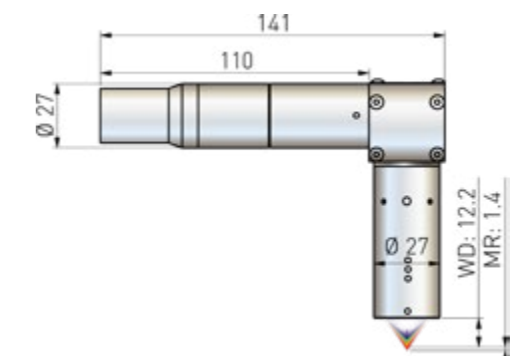
CL3-MG140TM



CL3-MG70TM



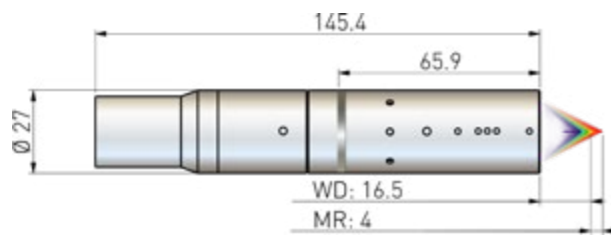
CL3-MG70-90TM



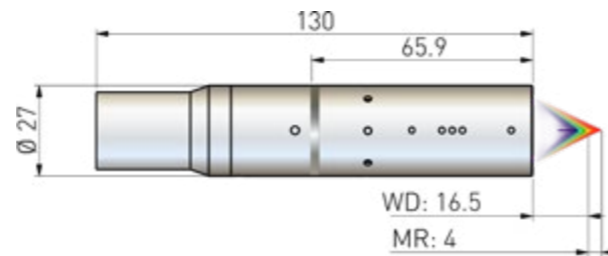


CL-MG FOR VACUUM APPLICATIONS

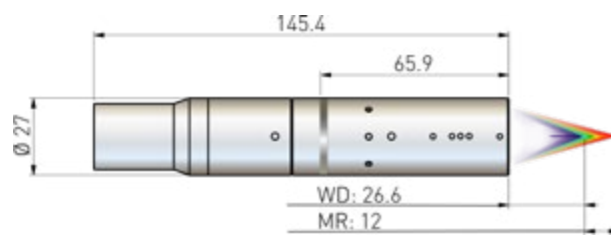
CL4-MG35™



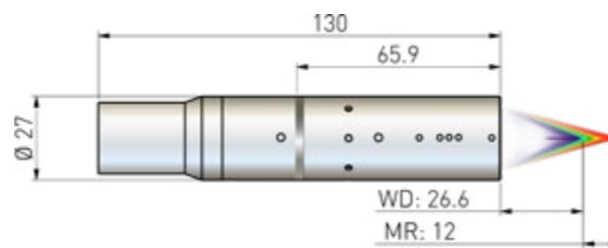
CL4-MG20™



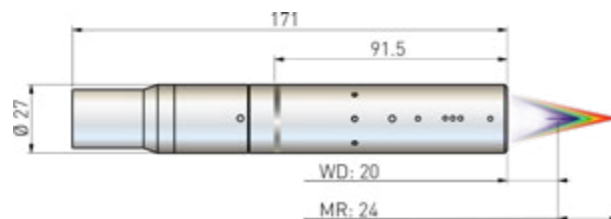
CL5-MG35™



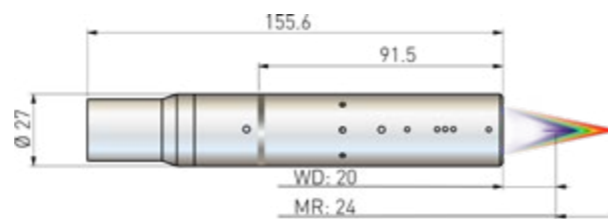
CL5-MG20™



CL6-MG35™



CL6-MG20™



MODELS AND ACCESSORIES ENDO

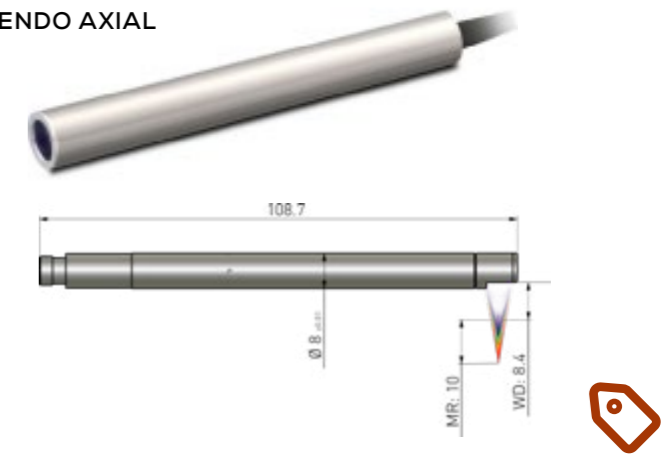
ENDO is a point confocal sensor, featuring the smallest physical diameter in the line.

ENDO is available in 3 different external diameter sizes, 4 mm, 6 mm, 8mm and also straight and 90° folded optical pattern.

Thanks to the combination of its excellent compactness and optical versions, it is the perfect solution for integrations into very constrained spaces.

ENDO features a coaxial optic pattern, so it is immune to shadow effects. ENDO is performing well with demanding materials, like black carbon, glass, ceramics or polished metals.

ENDO AXIAL

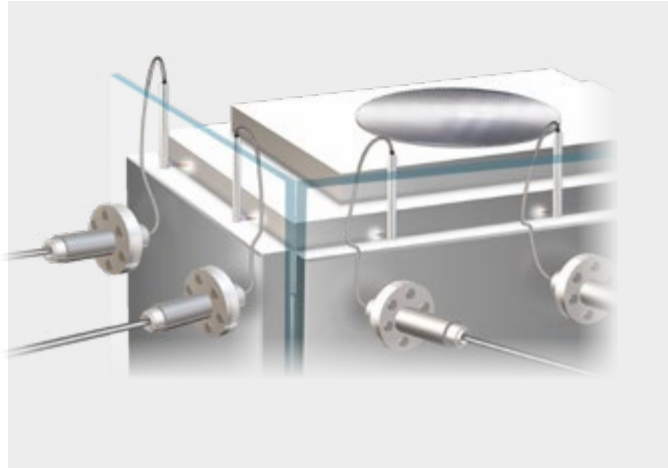


MODEL	UNIT	ENDO 0.2/D8	ENDO 1/D4-R	ENDO 1.5/D6-R	ENDO 2/D6	ENDO 1/D8-R	ENDO 1.2/D8	ENDO 10/D8	ENDO 10/D8-R
ORDER CODE		03PS0382002	03PS0341002	03PS0362502	03PS0362702	03PS0386501	03PS0386001	03PS0388001	03PS0388501
Measuring Range	mm	0.22	1	1.5	2	1	1.2	10	10
Working Distance	mm	4.8	1	0.9	5.2	0.6	3.5	11.3	8.4
Numerical Aperture		0.39	0.16	0.19	0.18	0.37	0.36	0.1	0.1
Max. Slope Angle	°	±21.5	±7.5	10	10	20	±19.5	±4.5	±4.5
Axial or Radial model		Axial		Axial		Radial	Axial		Radial
Max. Linearity Error*	µm	±0.04	±0.15	±0.15	±0.16	±0.06	±0.06	±0.45	±0.45
Static Noise*	nm	15	60	95	100	35	35	300	300
Axial resolution (Averaging 10)*	nm	5	20	570	600	210	11.67	100	100
Lateral Resolution	µm	2.5	6.5	10	8.5	3.4	3.4	17	17
Spot Size	µm	4.6	13.2	19.5	16.5	6.7	6.8	31	31
Photometric Efficiency		16	10	29	24	13	19	36	24
Min. Measurable Thickness	µm	25	300	200	180	60	60	500	500
Length	mm	102	64	95.1	82.2	77.6	74	102	108.7
Diameter	mm	8	4	6	6	8	8	8	8
Weight	g	20	3.5	13	12	16	16	23	23



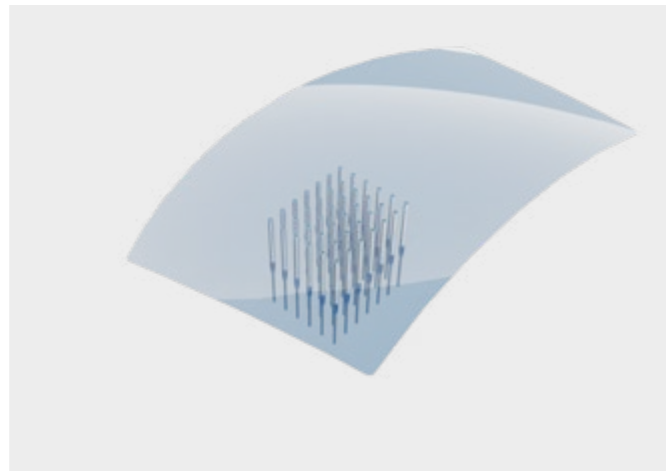
MODELS AND ACCESSORIES
ENDO

APPLICATION EXAMPLES

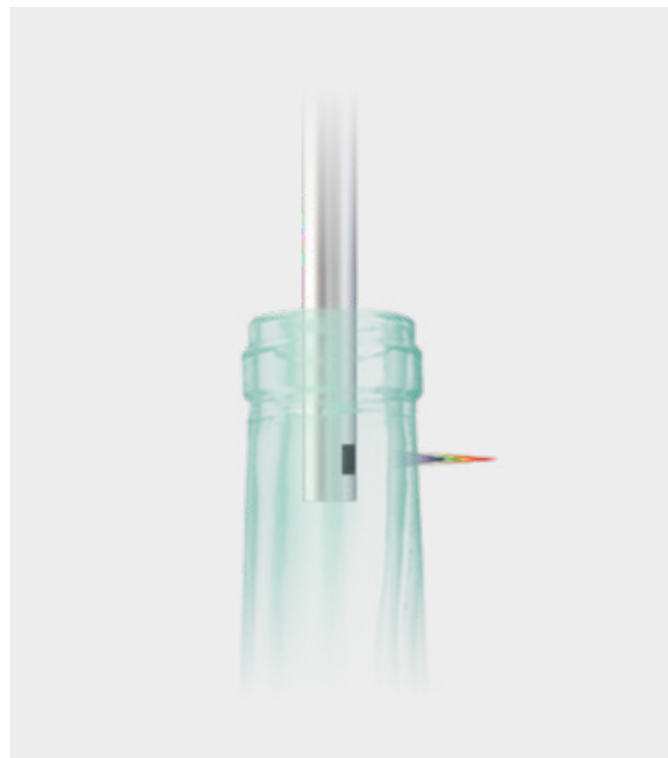


VACUUM APPLICATION: PART POSITIONING

Endo™ sensors are suitable to vacuum environment where space is limited, like CVD, PVD, EUV photolithography & E-beam chambers



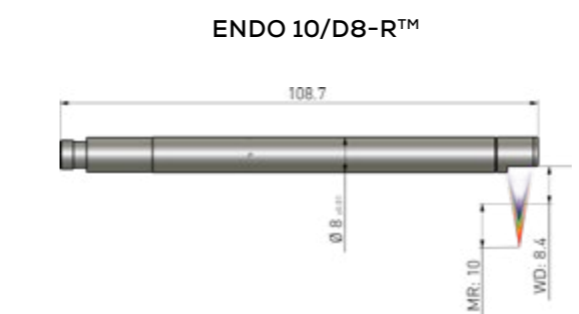
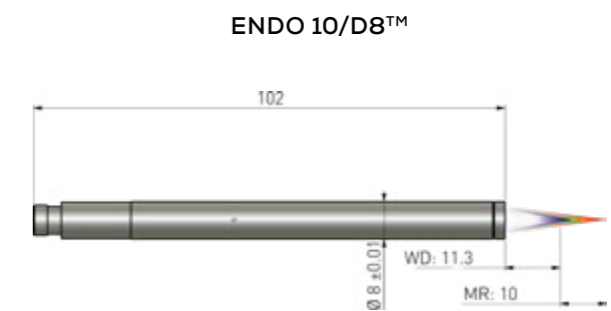
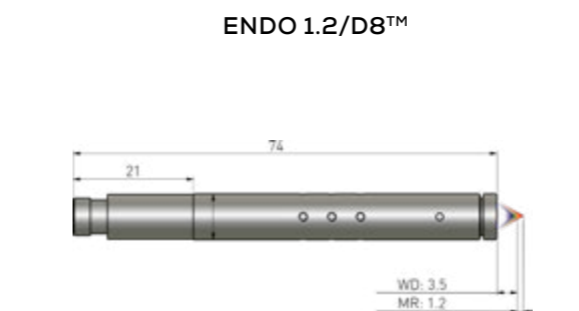
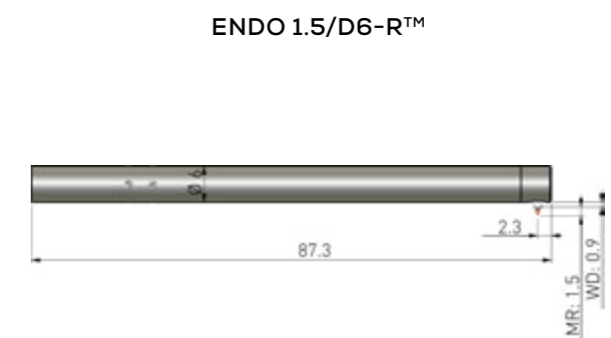
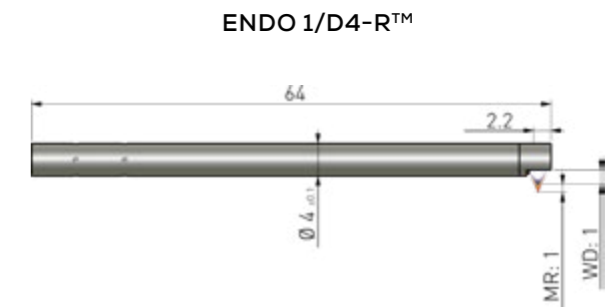
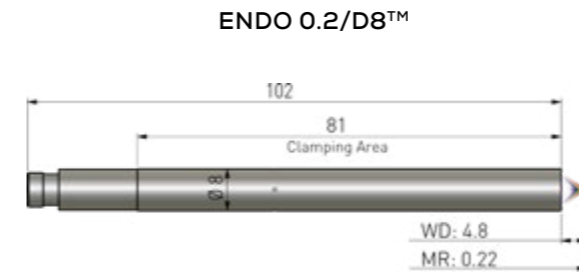
Endo sensors are perfectly suitable for the Head Up Display inspection on windshields



SMALL VOLUME MEASUREMENTS: BOTTLE NECK

Endo sensors perfectly suit measurements in small rooms like small diameter holes, bottle necks. They have been designed to measure inner diameters, thicknesses, roughness ($R_a \geq 150$ nm), liquid height (volume) with nanometric resolution.

DIMENSIONS (MM)



T handles available from Ø>200mm



MODELS AND ACCESSORIES

OP

OP is the point sensor for applications where long working distances are required. In fact, the optical architecture of OP model allows to project the measuring spot on the measuring target up to 500mm far away from the sensor.

With a long working distance, the OP sensor can safely measure hot materials or in remote positions outside protective/safety barriers. OP is the perfect model for glass, bottles production or automotive applications.

Similar to its companion line CL-MG, OP heads are immune to shadow effects. OP heads work excellent on demanding materials, like black carbon, glass, ceramics or polished metals.

OP heads can be connected to ChromaPoint controllers, like Zenith or Lightmaster.



MODEL	UNIT	OP 300VM	OP300-VM-R	OP 850-I	OP 850-T**	OP 1 000	OP 2400-I
ORDER CODE		O3PS1400021	O3PS1400022	O3PS1400813	On demand	O3PS1400003	O3PS1402401
Measuring Range	mm	0.22	0.22	0.85	0.85	1	2.4
Working Distance	mm	5	4.4	12.3	12.6	23.9	11.8
Numerical Aperture		0.5	0.5	0.48	0.47	0.45	0.46
Max. Slope Angle	°	±25	±25	±28	±28	±24	27
Axial or Radial model		Axial	Radial			Axial	
Max. Linearity Error*	µm	±0.04	±0.04	±0.07	±0.08	±0.15	±110
Static Noise*	nm	12	12	45	25	30	43
Axial resolution (Averaging 10)*	nm	4	4	0.27	0.15	10	0.26
Lateral Resolution	µm	3.2	3.2	4.2	2	2.2	4.5
Spot Size	µm	6.4	6.4	7.5	3.9	4.4	10.1
Photometric Efficiency		34	24	54	TBD	15	60
Min. Measurable Thickness	µm	25	25	50	40	25	60
Length	mm	127	128	149	161.5	254.1	107
Diameter	mm	15	15	35	35	50	27
Weight	g	27	39	180	TBD	753	TBD

MODEL	UNIT	OP 2400-T	CL4-LWD	OP 6 000	OP 8 000	OP 10 000	OP 10 000-R
ORDER CODE		O3PS1402402	O3PS014LWD0	O3PS1400004	O3PS1400005	O3PS1400006	O3PS1400007
Measuring Range	mm	2	4	6	8	10	10
Working Distance	mm	11.8	40	28	39	66.9	66.9
Numerical Aperture		0.46	0.36	0.39	0.295	0.2	0.2
Max. Slope Angle	°	27	±21	±22	±16	±11	±11
Axial or Radial model				Axial			90° folded
Max. Linearity Error*	µm	±130	±0.3	±0.3	±0.35	±0.51	±0.51
Static Noise*	nm	43	110	100	160	280	280
Axial resolution (Averaging 10)*	nm	0.26	660	33.333	53.333	93.333	93.333
Lateral Resolution	µm	2.5	4.3	6.25	16.5	25	25
Spot Size	µm	5.1	8.6	12.5	33	50	50
Photometric Efficiency		15	25	43	145	156	138
Min. Measurable Thickness	µm	60	110	200	300	425	425
Length	mm	128	167.4	205.5	139	189	152
Diameter	mm	27	50	60	40	50	50
Weight	g	TBD	470	760	365	525	674

*With Zenith™ Controller

OP 10 000R – OP 42 000



NCTP



PRODUCT	UNIT	OP 12 000	OP 30 000	OP 35 000	OP 42 000	OP 100 000	NCTP***
ORDER CODE		O3PS1400010	O3PS1400008	O3PS1400011	O3PS1400012	O3PS1400014	O3PS1400009
Measuring Range	mm	12	30	35	42	100	2
Working Distance	mm	46	220	62	530	451	54.5
Numerical Aperture		0.25	0.095	0.33	0.052	0.08	0.35/0.17
Max. Slope Angle	°	±14	±5	±17	±2.5	±5	±18/9
Axial or Folded Model					Axial		
Max. Linearity Error*	µm	±0.4	±1.5	±1.65	±30	±16	±2
Static Noise*	nm	225	750	600	6000	5000	1000
Axial resolution (Averaging 10)*	nm	75	250	200	2000	1666.667	6000
Lateral Resolution	µm	14	48	13	53	55	15
Spot Size	µm	32.5	96	26	106	110	30
Photometric Efficiency		100	117	30	90	>150	73
Min. Measurable Thickness	µm	550	2000	1200	2500	2500	500
Length	mm	58.3	168	300.3	327	348.9	210
Diameter	mm	36	59	80	85	120	80/35
Weight	g	130	405	2200	1700	4200	1025

*With Zenith™ Controller

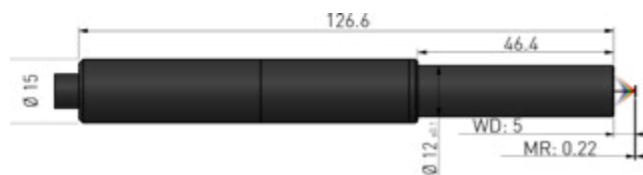
**OP 850-T preliminary specifications



MODELS AND ACCESSORIES
OP

DIMENSIONS (MM)

OP 300-VM™



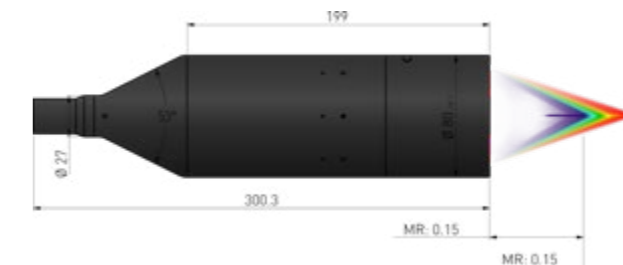
OP 300-VM-R™



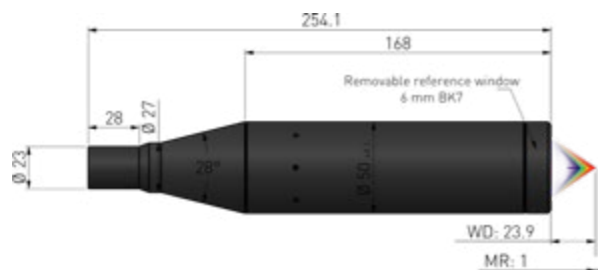
OP 30 000™



OP 35 000™



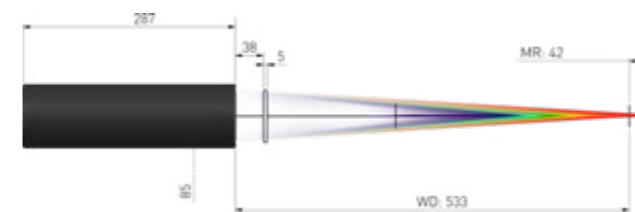
OP 1000™



OP 6000™



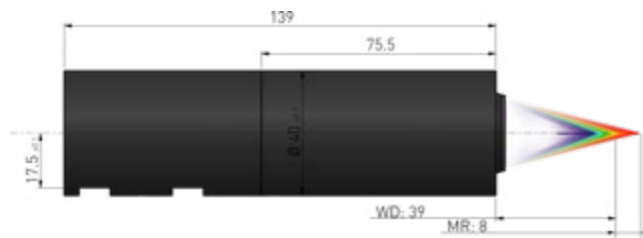
OP 42 000™



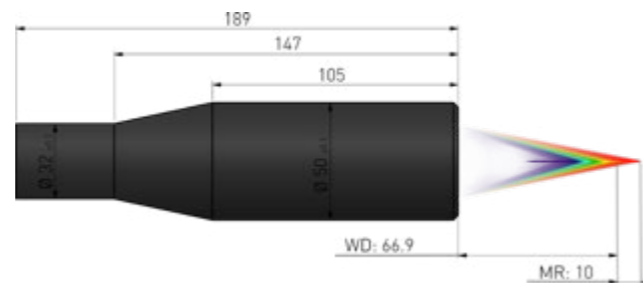
OP 100 000™



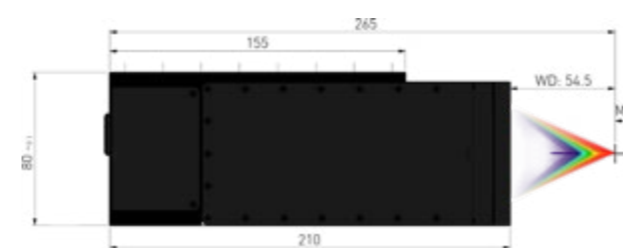
OP 8000™



OP 10 000™



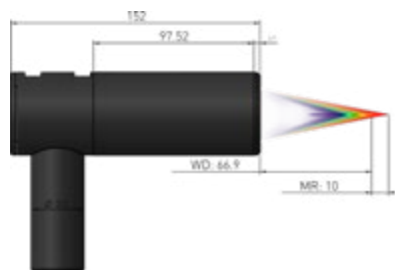
NCTP™



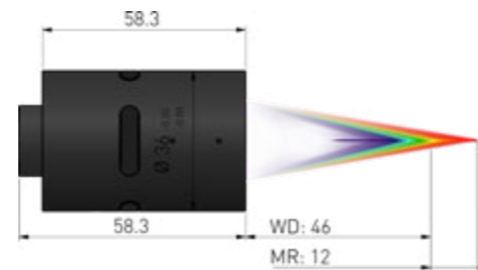
OP 850-T™



OP 10 000-R™



OP 12 000™



OP 850-I™





MODELS AND ACCESSORIES EVEREST

EVEREST is the premium performance point sensor, capable to accomplish high demanding tasks, like surface profile acquisition. In fact, it is designed to work at a short distance to the target material. Moreover, thanks to its super-large optic it can easily collect scattered light during roughness measurement or it is perfect for analysis of curved surfaces. In addition it is an excellent solution for application with high slope surfaces, up to 88°.

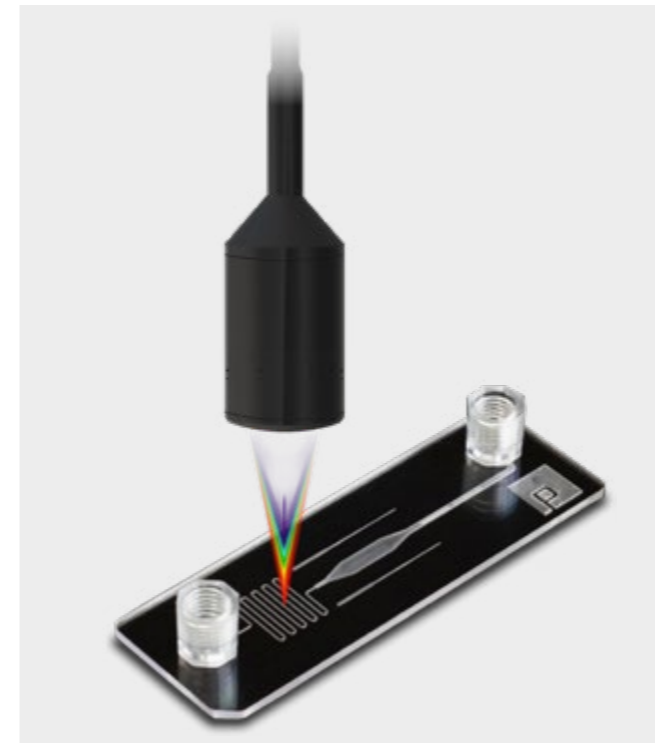
EVEREST is capable of measurement accuracy up to $\pm 0.075 \mu\text{m}$

EVEREST series is composed of three different models with a measuring range of 1 mm, 2 mm, 6 mm



MODEL	UNIT	EVEREST K1	EVEREST K2	EVEREST K6
ORDER CODE		O3PS0470001	O3PS0472001	O3PS0461001
Measuring Range	mm	1	2	6
Working Distance	mm	18.5	19.2	13.7
Numerical Aperture		0.7	0.67	0.55
Max. Slope Angle	°	± 44	± 42	± 32
Axial or Radial model			Axial	
Max. Linearity Error*	μm	± 0.06	± 0.12	± 0.25
Static Noise*	nm	19	38	100
Axial resolution (Averaging 10)*	nm	6.33	12.67	33.33
Lateral Resolution	μm	2.5	3.8	5.2
Spot Size	μm	5	7	10.4
Photometric Efficiency		34	52	26
Min. Measurable Thickness	μm	50	100	150
Length	mm	260.5	243.4	136.3
Diameter	mm	82	82	47
Weight	g	1400	1250	360

APPLICATION EXAMPLES



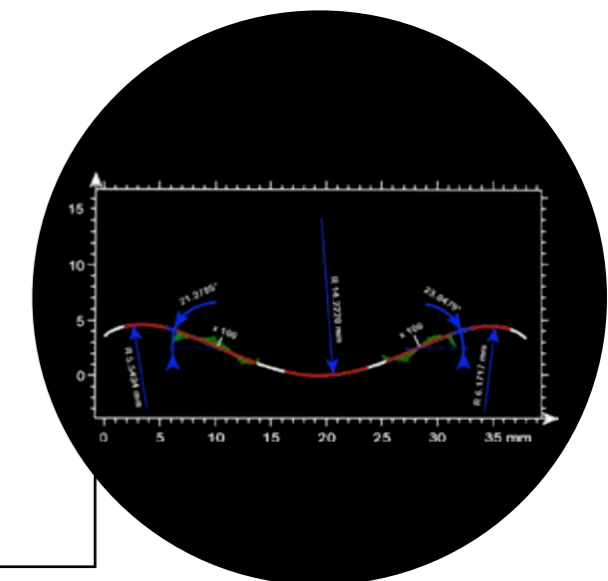
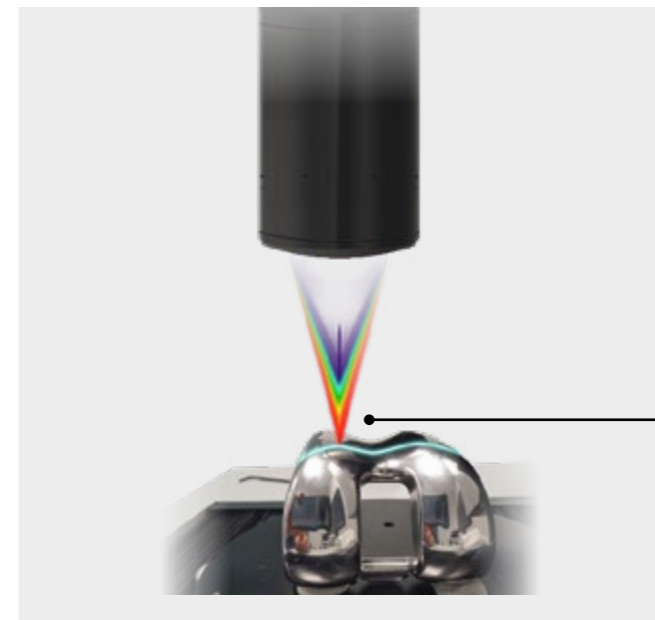
MEMSENSORS & MEDICAL - MICROFLUIDIC CHANNELS

EVEREST™ sensors, thanks to their large Numerical Aperture (NA), the large Measuring Range (MR) & their lateral resolution in μm , can measure all dimensions of micro-fluidic channels, Lab-on-Chip, MEMS, Displays & Solid lighting (LED, OLED, TFT, Electronic ink ...), Integrated Optics, RF chips ...



3C - ELECTRONIC COMPONENTS

EVEREST™ sensors have been designed to measure components on boards, where their large Measuring Range, high accuracy & their ability to measure the largest set of materials without shadowing effect is key.



MEDICAL - KNEE IMPLANTS

EVEREST™ sensors, thanks to their ability to measure steep slopes even if mirror polished, can measure medical implant shape even with simple set-up.

Everest can also measure roughness $R_a \geq 0.4 \mu\text{m}$.

T handles available from $\varnothing > 200\text{mm}$

MODELS AND ACCESSORIES

ZENITH

ZENITH Controller is the new and also pivotal model in the line. It is available with 1 or 2 channels and also with 2 different levels of performance, namely acquisition frequency 5 kHz and 10 kHz. ZENITH is compatible with any Confocal Point Head in the range, as CL-MG, OP, ENDO, EVEREST.

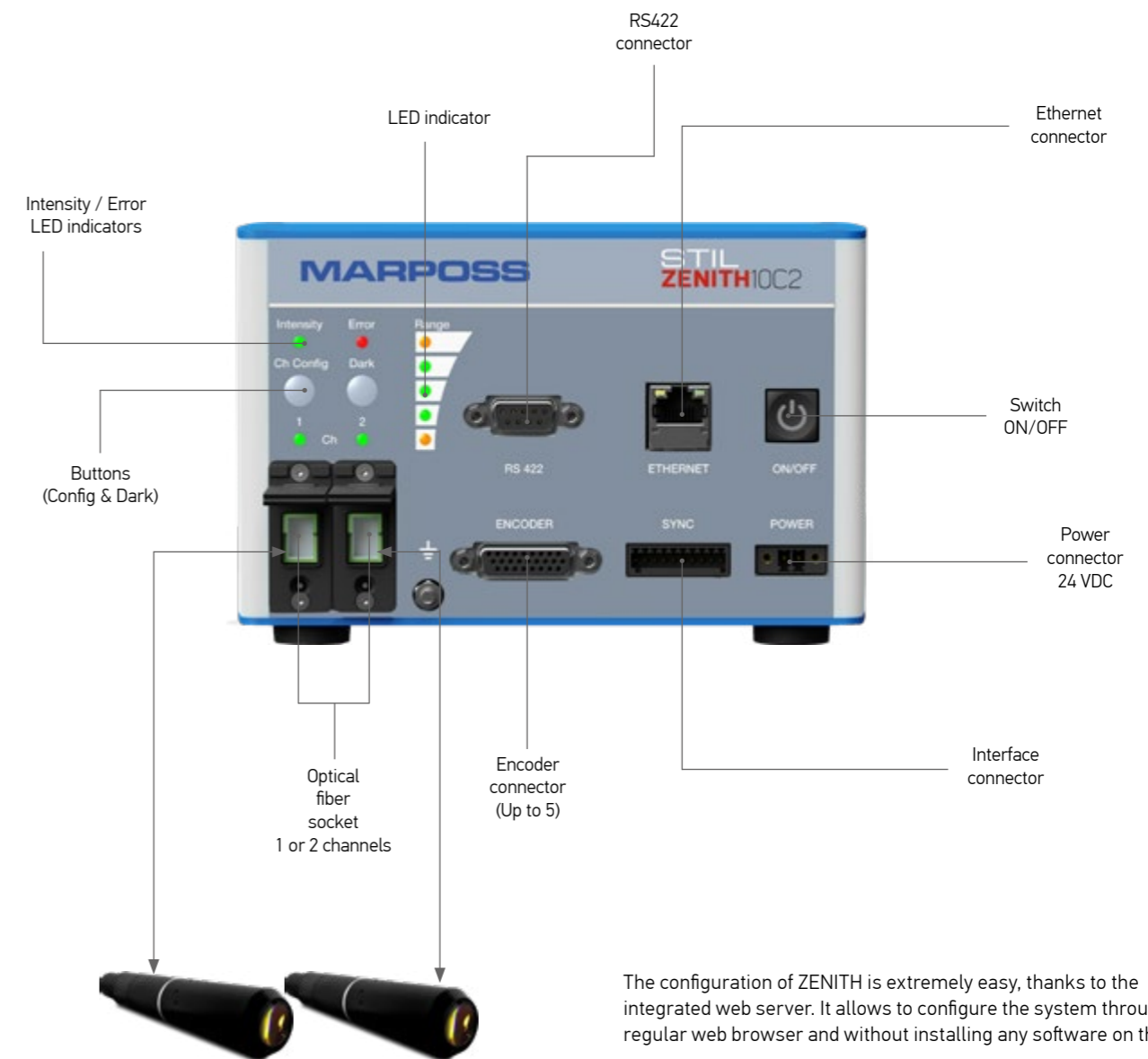
ZENITH comes with its dedicated software suite, composed by the ChromaPoint manager and a Software Development Kit, allowing both effective control of the sensor and a fast integration with the automation system.

Ethernet and RS422 communication as well as Profinet interfaces are integrated. This integration allows the system to communicate with a variety of different devices or networks, which is essential in environments that require flexibility and compatibility with diverse industrial systems. Ethernet interface is optimal for general networking and communication. RS422 is normally used for long-distance and reliable serial communication, while Profinet for high-speed, real-time communication in industrial automation systems. This kind of integration is particularly beneficial in industrial automation, robotics, and control systems, where multiple communication standards are needed to support a range of devices and ensure interoperability across different platforms.



MODEL	ZENITH 5C1	ZENITH 5C2	ZENITH 10C1	ZENITH 10C2
ORDER CODE	08ST17E1003	08ST17E1101	08ST17E1201	08ST17E1301
Technology	Chromatic Confocal			
Source	White LED			
Number of channels	1	2 (simultaneous)	1	2 (simultaneous)
Acquisition Frequencies	Up to 5 kHz		Up to 10 kHz	
Measuring range	Sensor head specifications			
Axial resolution	>0,25 μm*			
Calibration table memory	Up to 20			
Distance Measurement	1 peak among 4: First/Second/Third/Fourth/Last/Strongest		1 peak among 8: First/Second/.../Seventh/Eighth/Last/Strongest	
Thickness Measurement	2 strongest peaks		2 peaks among 8	
Multipeak Measurement	Not available		First 5 peaks	
Advanced features	Web configurator/ AutoExposureTime/Computed data/ EncoderTrigger/ Master&Slave mode...		Web configurator/ Multipeak / Network Discovery App/ AutoExposureTime/Computed data/EncoderTrigger/ Master&Slave mode...	
Digital Output	Ethernet (GigE) and RS422			
Synchronization	Trigger in (5V TTL or -24Vdc or encoder) & Trigger out (5V TTL)			
Other Input/Output	Up to 5 encoder inputs (differential TTL)			
Fiber connection	E2000/APC			
Operating temperature	+5 to +50°C			
Storage temperature	-20 to +70°C			
Relative humidity	5 to 80% RH without condensation			
Protection type	IP 40			
Compliance	-Electromagnetic compatibility (EN 61326-1) -Cold operation at +5°C (CEI EN 60068-2-1 A) -Stationary hot humid operation at +45°C and 93% RH (CEI EN 60068-2-78) -Cold storage at -20°C (CEI EN 60068-2-1 A) -Dry hot storage at +65°C (CEI EN 60068-2-2 B) -5G Sinusoidal vibrations (CEI EN 60068-2-6 FC) -Degree of tightness IP40 (CEI EN 60529)			
Power Supply	24 VDC			
Maximum/Usual Consumption	25W/10W	25W/15W	25W/10W	25W/15W
Dimensions (mm)	169 x 110 x 88			
Weight	1 kg	1.2 kg	1 kg	1.2 kg

* Full resolution on request, please contact your local sales representative



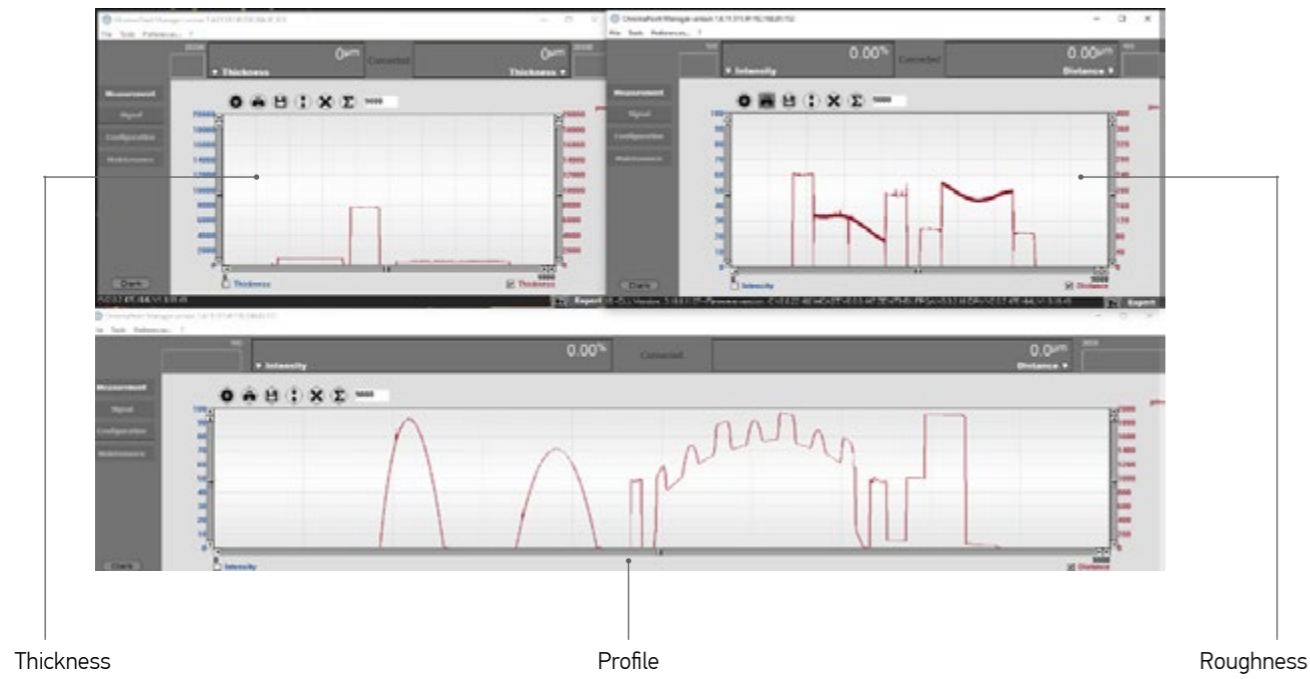
The configuration of ZENITH is extremely easy, thanks to the integrated web server. It allows to configure the system through a regular web browser and without installing any software on the PC.



ZENITH SDK tool set had been developed with most valuable and efficient software environments C++, C, and C#, with state of the art software development technologies. Integration examples are available.



APPLICATION EXAMPLES

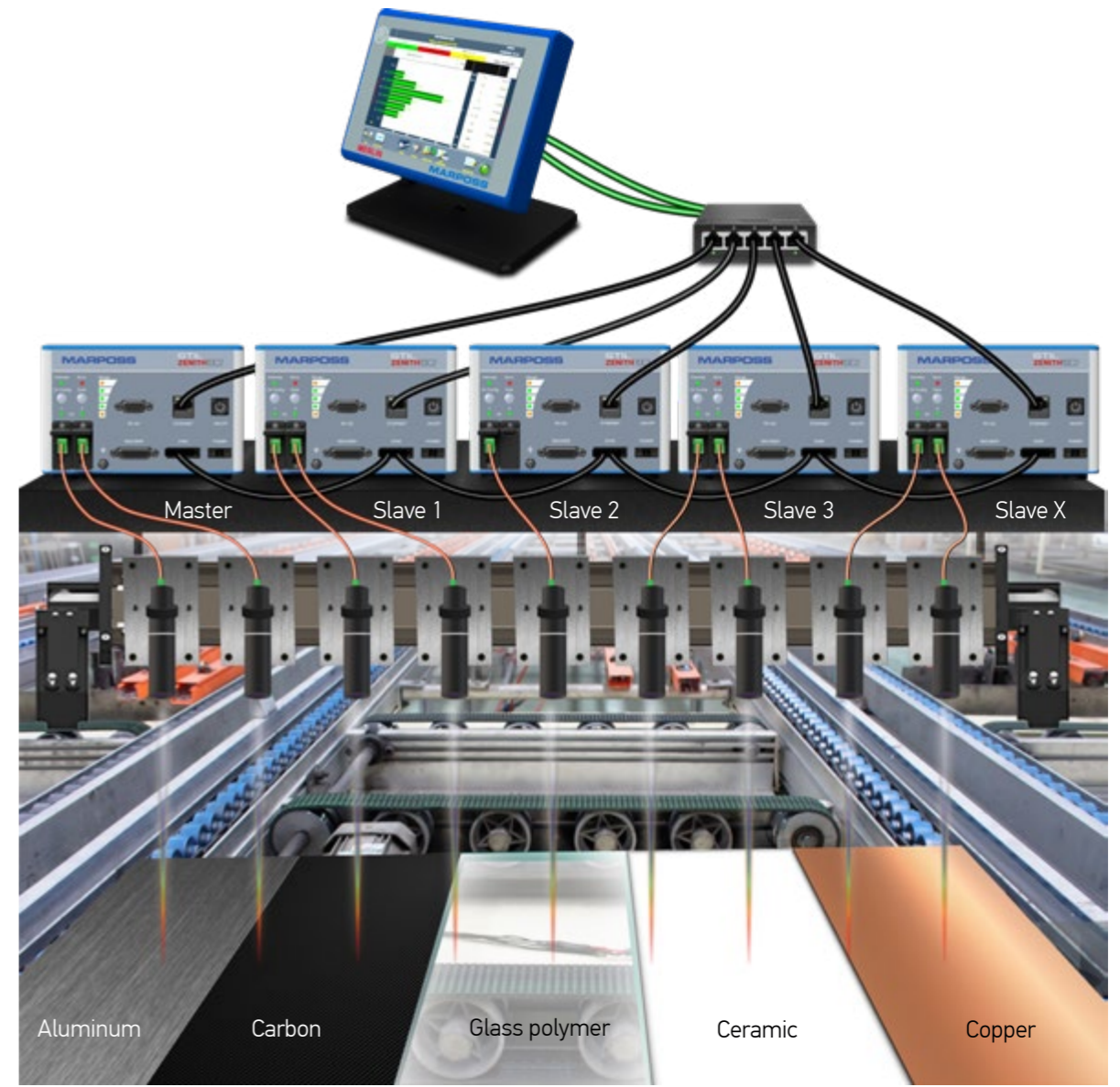
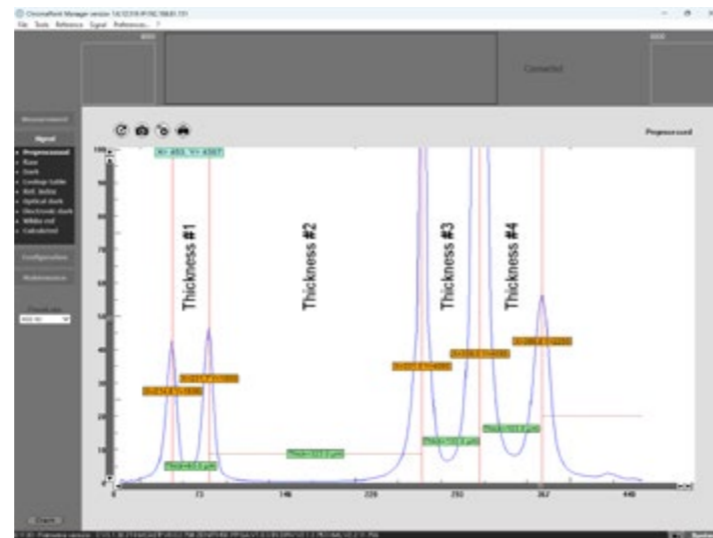


Thickness

Profile

Roughness

- Layer #1 (n_1)
- Layer #2 (n_2)
- Layer #3 (n_3)
- Layer #4 (n_4)



Aluminum

Carbon

Glass polymer

Ceramic

Copper



MODELS AND ACCESSORIES LIGHTMASTER

The LightMaster is a multi-channel controller for large networks of chromatic confocal point-sensor heads, up to a maximum of 48 units.

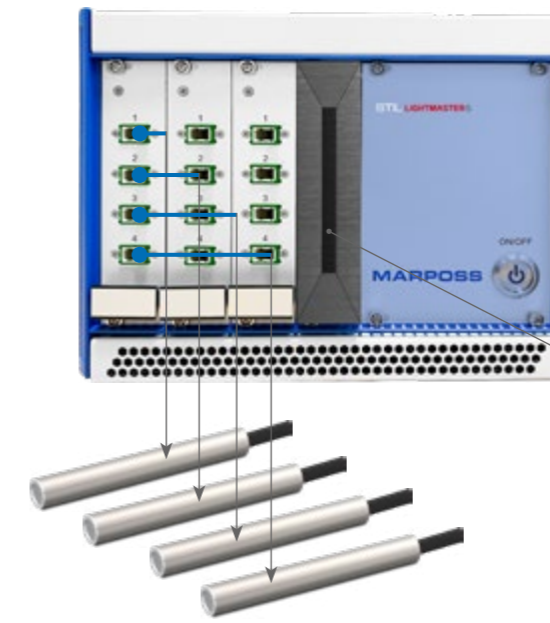
Each single channel of the LightMaster can control and manage a single point-sensor head. The channels can be installed on the LightMaster through separate boards, having 4 channels each one.

The LightMaster standard version accommodates up to 12 separate slots, 4 channels each, for a total of 48 sensors. The lightMaster16 is the compact and cost-effective version, that accommodates up to 4 different slots, 4 channels each, for a total of 16 sensors.

LightMaster is available with 2 different levels of acquisition frequency, namely 1300Hz and 2000Hz. It also has a trigger input, Ethernet interface for easy integration, and can be easily mounted on a production line.



MODEL	LIGHTMASTER S	LIGHTMASTER F	LIGHTMASTER16 S	LIGHTMASTER16 F
ORDER CODE	O8ST08M0001	O8ST08M0002	O8ST08M0003	O8ST08M0004
Technology	Chromatic Confocal			
Source	White LED			
Number of channels	Up to 48 (simultaneous)		Up to 16 (simultaneous)	
Acquisition Frequency	Up to 1300 Hz	Up to 2000 Hz	Up to 1300 Hz	Up to 2000 Hz
Distance Measurement	First/Second/Third/Fourth/Last/Strongest peak			
Thickness Measurement	2 Peaks among 5			
Advanced features	Exposure time / Encoder trigger...			
Digital Output	Ethernet (GigE)			
Synchronization	Trigger in&out			
Other Input/Output	Encoder input (1)			
Fiber connection	E2000/APC			
Operating temperature	+5 to +50°C			
Storage temperature	-30 to +70°C			
Relative humidity	5 to 80% RH without condensation			
Protection type	IP20			
Compliance	EN 61010-1; EN 61326-1			
Power supply	100-240 VDC		24 VDC	
Maximum/Usual Consumption		120W / 70W		
Dimensions	502 x 440 x 184 mm		436 x 236 x 183 mm	
Weight	11 kg		6.2 kg	



LIGHTMASTER™ and LIGHTMASTER16™ controllers manage acquisition signals, compute the distance data, and provide data transmission functions via Gigabit Ethernet link.

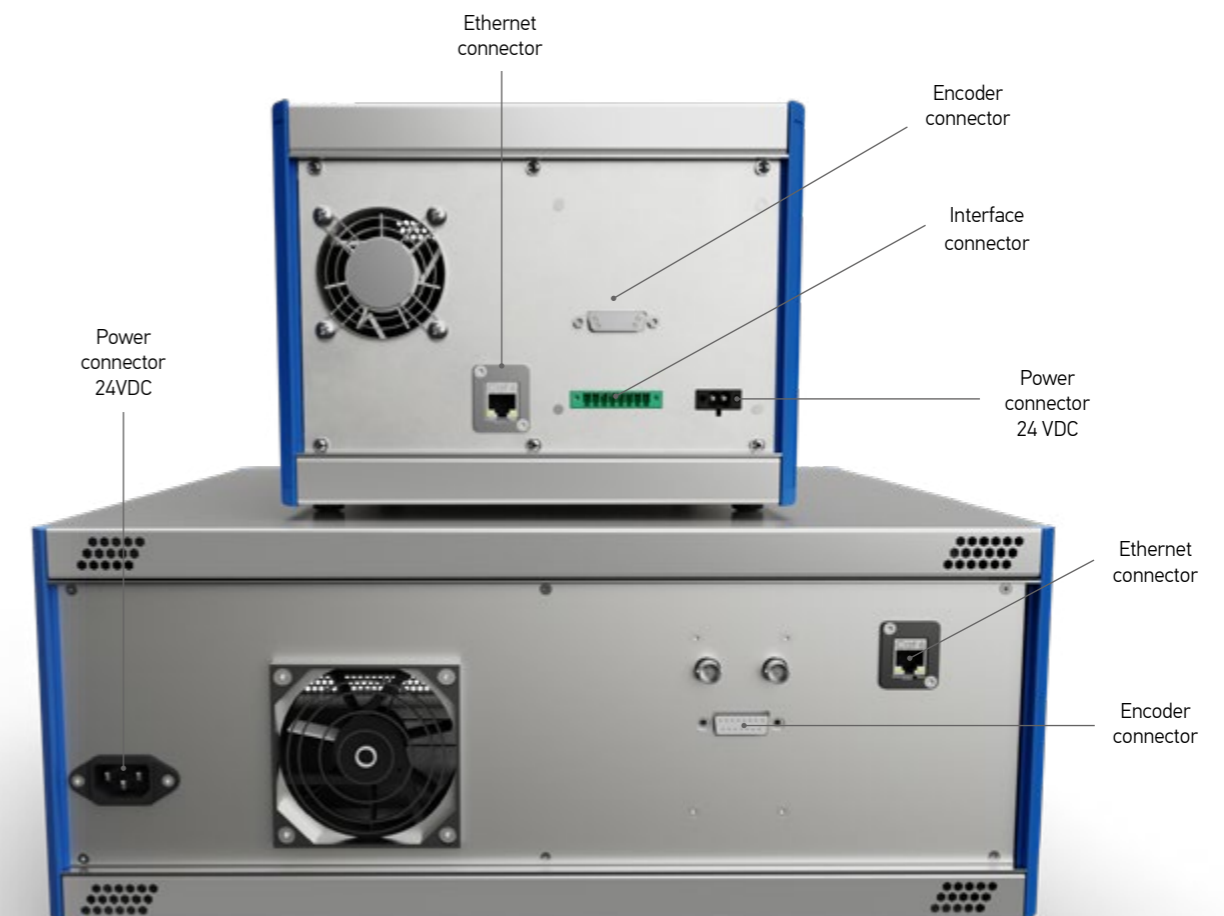
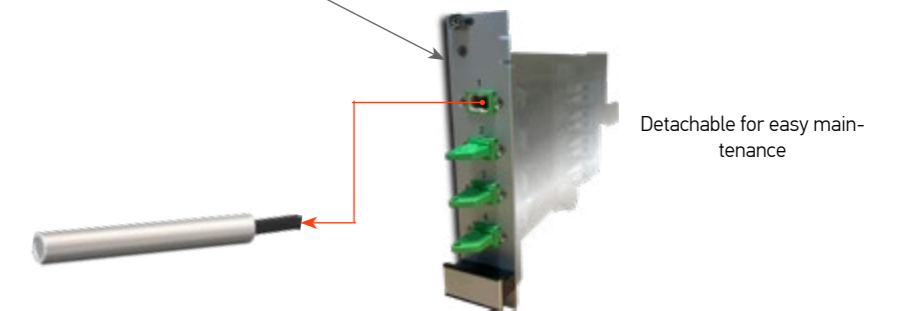
The front panel of the controller features:

- up to 48 (16 - respectively) parallel and simultaneous acquisitions through 12 (4 - respectively) LightSlots of 4 optical lines each

- On/Off Switch with power LED indicator

The back panel of the controller features:




- Power supply
- RJ-45 Gigabit Ethernet connector
- Interface connector for synchronization signals
- Encoder connector





MODELS AND ACCESSORIES LIGHTMASTER

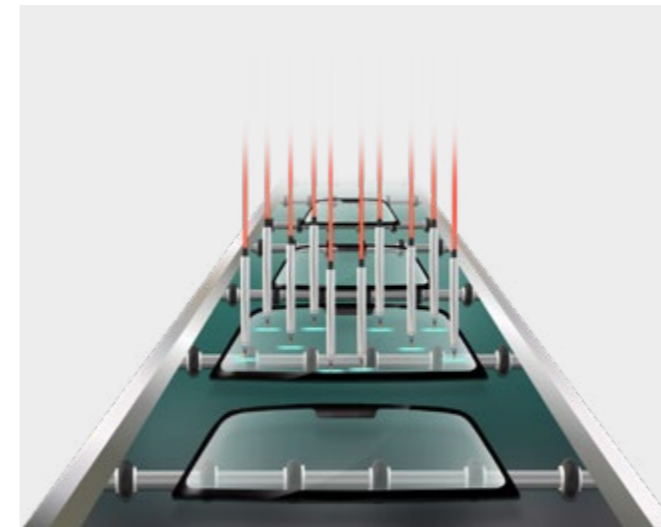


MODEL	DESCRIPTION	ORDER CODE
	E50-3 Optical fiber - standard cladding - Length: 3 m or 5 m or 10m; External Diam.: 2.8 mm Minimum bending radius in : Static Mode: 25 mm - Dynamic Mode: 40 mm	3 m - 067SE503001
		5 m - 067SE505001
		10 m - 067SE510001
	E50-3-MA Optical fiber - armored fiber - Length: 3 m or 5 m or 10 m; External Diam.: 3 mm Minimum bending radius in : Static Mode: 30 mm - Dynamic Mode: 60 mm	3 m - 067SE503M02
		5 m - 067SE505M02
		10 m - 067SE510M02
	E50-3-M Optical fiber - stainless steel cladding - Length: 3 m or 5 m or 10 m or 15 m or 20 m ; External Diam.: 6.2 mm Minimum bending radius in : Static Mode: 40 mm - Dynamic Mode: 40 mm	3 m - 067SE503M01
		5 m - 067SE505M01
		10 m - 067SE510M01
		15 m - 067SE515M01
		20 m - 067SE520M01



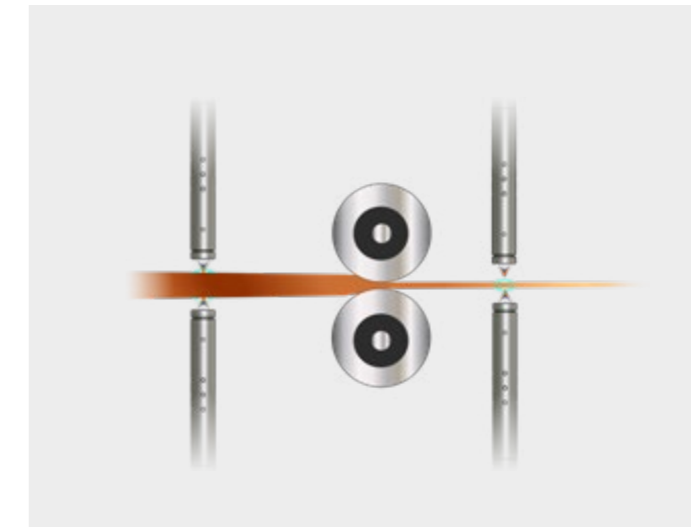
MODEL	DESCRIPTION	ORDER CODE
	Optical connector cleaner for Chromapoint sensors	015ST000028

APPLICATION EXAMPLES



AUTOMOTIVE - CAR GLASS QUALITY CONTROL

- Windshield shape and thicknesses measurements
- Glass shape & thickness measurements
- Screen's shape control measurements with single or multi-points sensor heads
- AIR GAP & PVB measurement



R2R – ROLL ADJUSTMENTS

In cold calendaring process, measuring thickness of foil after the rolls offers the ability to adjust in real time roll spacing & tilt in order to deliver better characteristics uniformity on final foil. Measuring before the rolls allows to anticipate foil thickness variations to better adjust roll pressure.

Similarly, in lamination processes, measuring films before & after the rolls allows a fine control of final product characteristics



3C – CELL PHONE CASE

- Dimensions & flatness,
- Thickness,
- Machined step heights,
- Roughness



CHROMATIC CONFOCAL LINE SENSORS

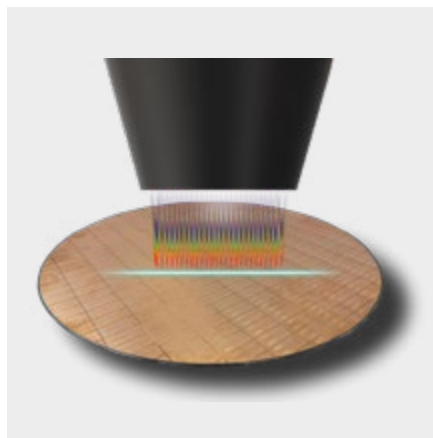
MPLS, standing for Multipoint Line System, is a controller dedicated to Line Sensor Heads in the Chromatic Confocal portfolio. As per its name, Line Sensors perform an optical line pattern, obtained by the projection of several separate optical points, on the target surface. Different models of line sensors are available, with an increasing number of side-by-side points, from 45 up to 180.

MPLS interconnects optical sensors through its 8 optical ports, named MPO, each one performing 45 separate optical channels. By using the different optical ports the MPLS Controller can operate with a variable number of sensors, from 1 to 4.

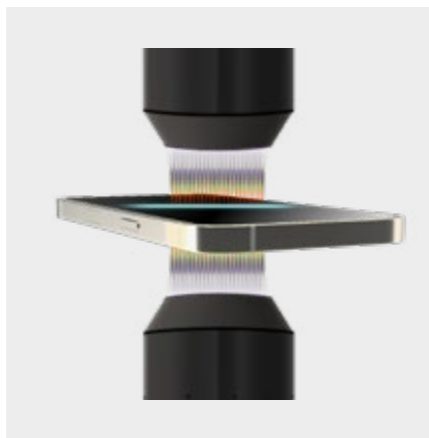
MPLS is provided of the necessary interfaces to develop demanding applications, like input and output signals, triggers and encoder for dynamic measurements. Gigabit Ethernet is also available.



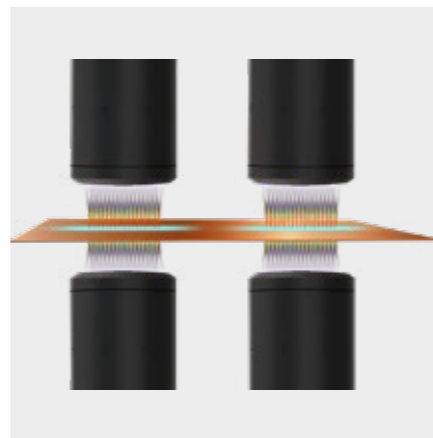
MPLS allows multiple combinations on the same controller: 1 sensor with 180 points, or 2 sensors of 90 points each, or 4 sensors of 45 points each



1 X 180 POINTS

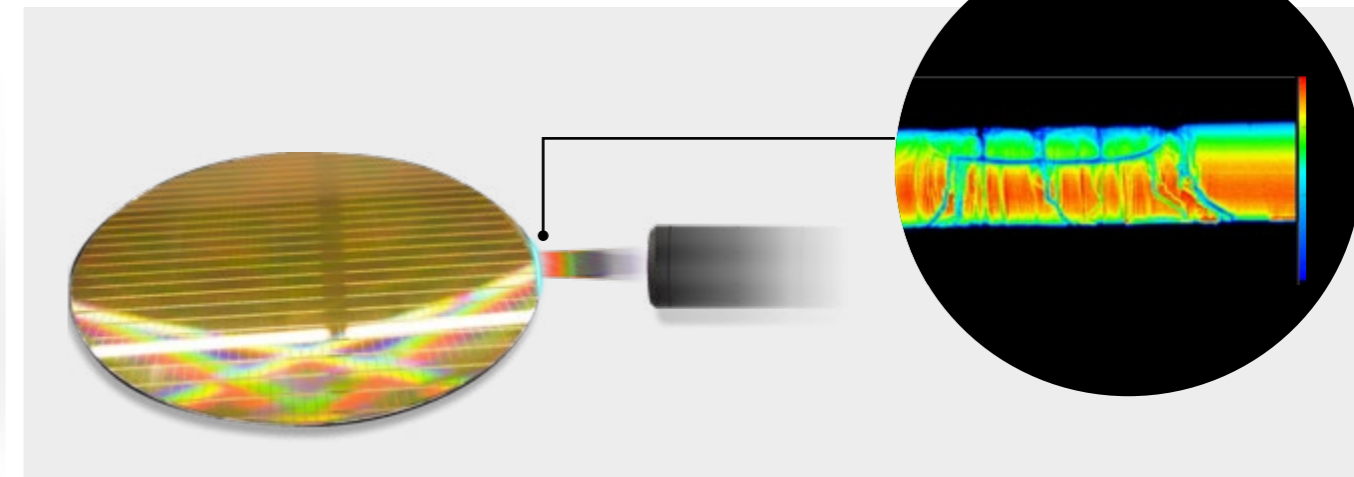


2 X 90 POINTS



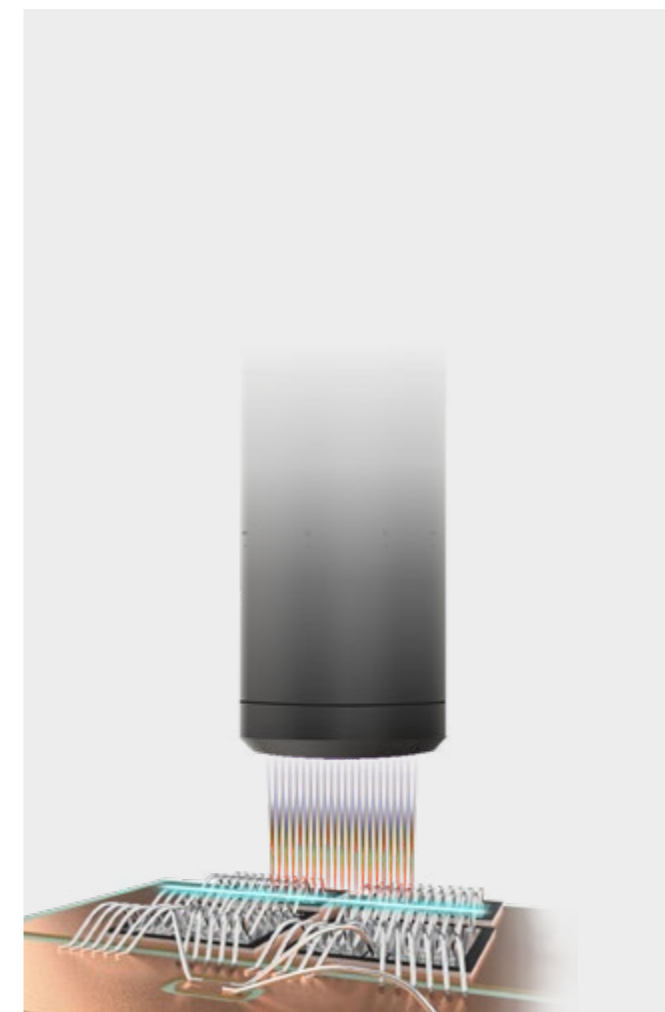
4 X 45 POINTS

APPLICATION EXAMPLES



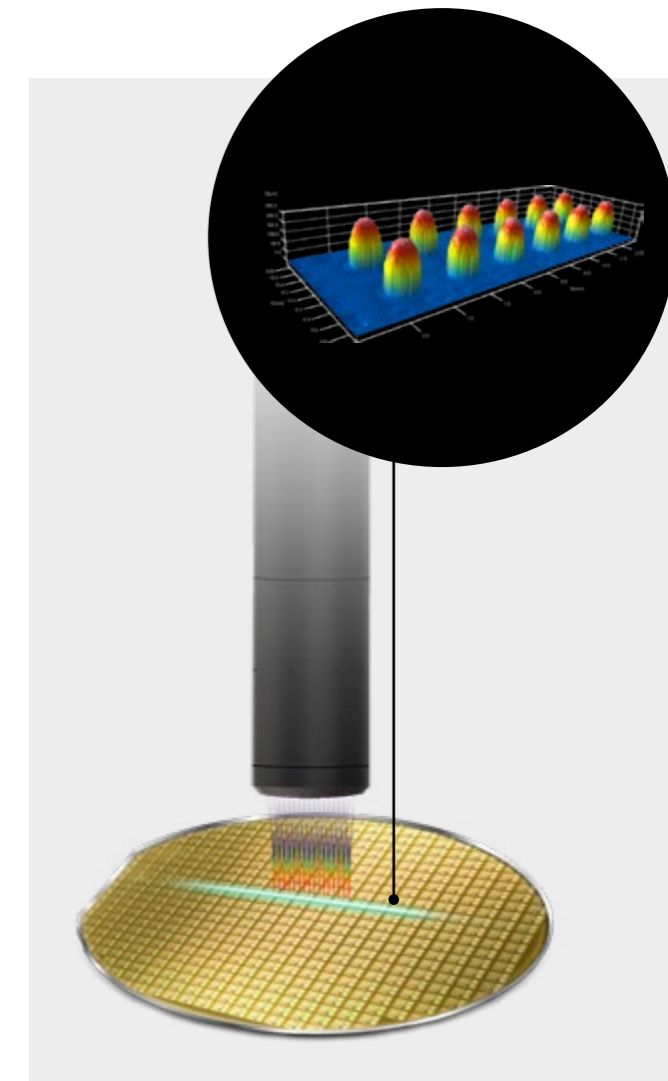
EDGE KRACK CONTROL WITH MICROVIEWTM

MPLS is the right solution to measure edge shape & defects



CONTROL OF GOLD WIRES OF COMPONENTS WITH MICROVIEWTM

MPLS with his high resolution allows wires measurements in order to detect and measure defective wires : missing wire, touching wires, mis-bent wires ...



BUMPS INSPECTION WITH MICROVIEWTM

MPLS is the right tool to measure bumps height, bump top shapes, top flatness & measure any defect

CHROMATIC CONFOCAL LINE SENSORS



THE VIEW LINE

ChromaLine sensor is the sensor scanning through array of point allocated side-by-side and so generating a linear optical pattern. A range of models is available, featuring from 45 up to 180 separate points.

Being able to acquire multiple points simultaneously, it is the perfect solution for scanning and inspecting large surfaces at high speed.

With a maximum linear error of 0.04 μm , steep slope angle of +/- 88° and a 0.75 NA, these sensors offer high axial resolution. ChromaLine sensors are compatible with all MPLS versions. These advanced sensors provide reliable and durable control solutions for various industrial settings.



PRODUCT	UNIT	WIREVIEW	MICROVIEW	DEEVIEW	SUPERVIEW	MAGICVIEW
ORDER CODE MPLS-DM		OPSTM710002	OPSTM706002	OPSTM707002	OPSTM711002	OPSTM712001
ORDER CODE 45 POINTS		O3PS1800451	O3PS1200451	O3PS0200451	O3PS1700451	O3PS2000451
ORDER CODE 90 POINTS		O3PS1800901	O3PS1200901	O3PS0200901	O3PS1700901	O3PS2000901
ORDER CODE 180 POINTS		O3PS1801801	O3PS1201801	O3PS0201801	O3PS1701801	O3PS2001801
Line Length	mm	1.51	1.8	4.2	12.85	4.2
Measuring Range 2 kHz	mm	0.9	0.5	2.6	2	6
Measuring Range 4 kHz	mm	0.45	0.23	1.15	0.9	/
Measuring Range 6 kHz	mm	0.24	0.12	0.65	0.5	/
Working Distance	mm	7.8	10.1	19.5	11.3	13.4
Numerical Aperture		0.75	0.5	0.37	0.33	0.65
Max. Sample Slope	°	± 46	± 30	± 20	± 17	38
Pitch 45 pts	μm	34	40.4	94	287.2	96
Pitch 90 pts	μm	17	20.2	47	143.6	48
Pitch 180 pts	μm	8.5	10.1	23.5	71.8	24
Max. Linearity Error	μm	± 0.1	± 0.08	± 0.12	± 0.12	0.35
Static Noise	nm	150	100	300	300	400
Axial Resolution	μm	0.9	0.6	1.8	1.8	2.4
Spot Size	μm	3.2	3.8	8.8	27.2	9.2
Homogeneity	nm	200	125	400	400	0.7
Min. Measurable Thickness	μm	110	50	250	300	300
Length	mm	480.7	425.6	428.3	397.8	537.3
Diameter	mm	70	50	60	60	118
Weight	kg	2.2	1.6	2.8	2.55	7.2

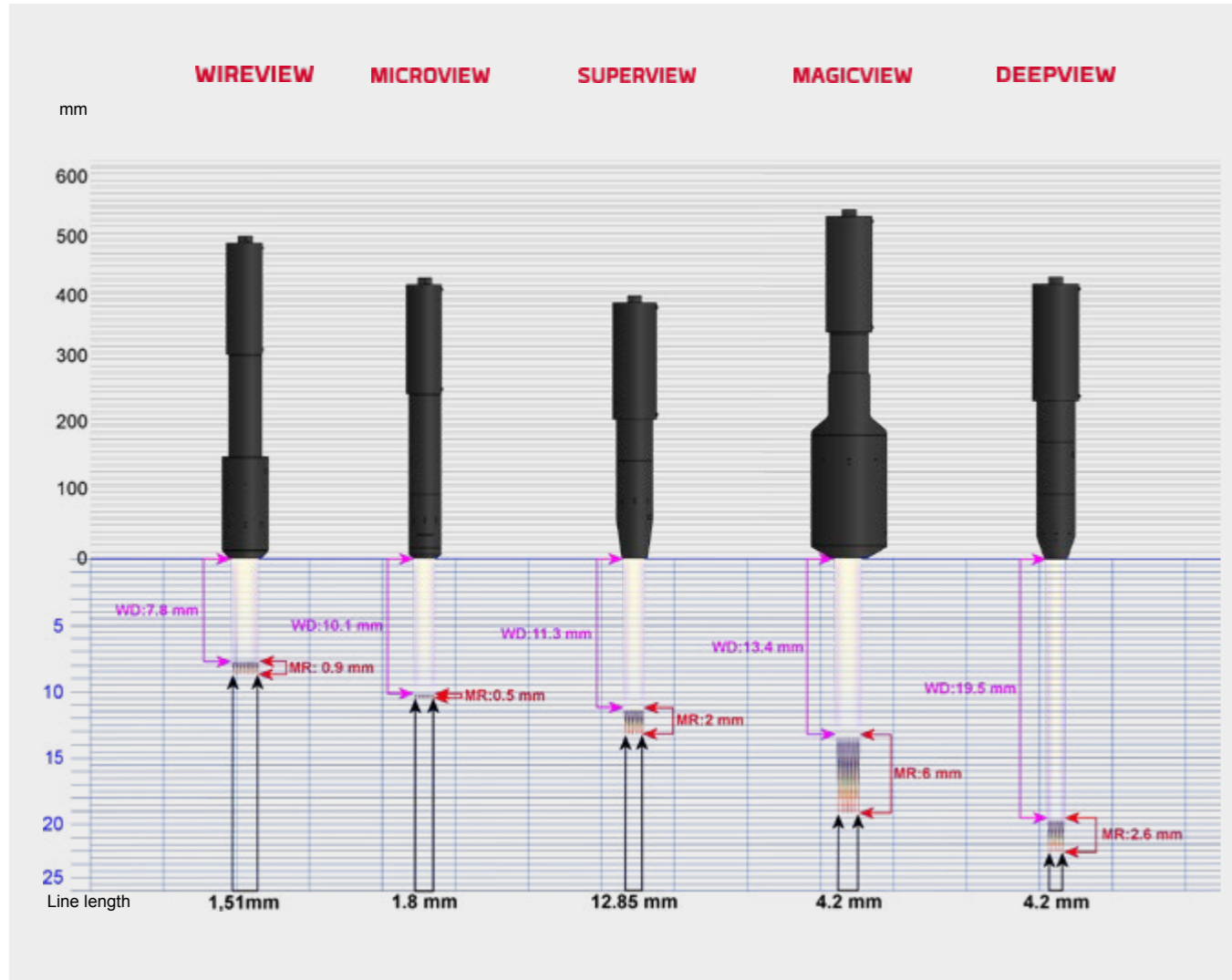
MPLS



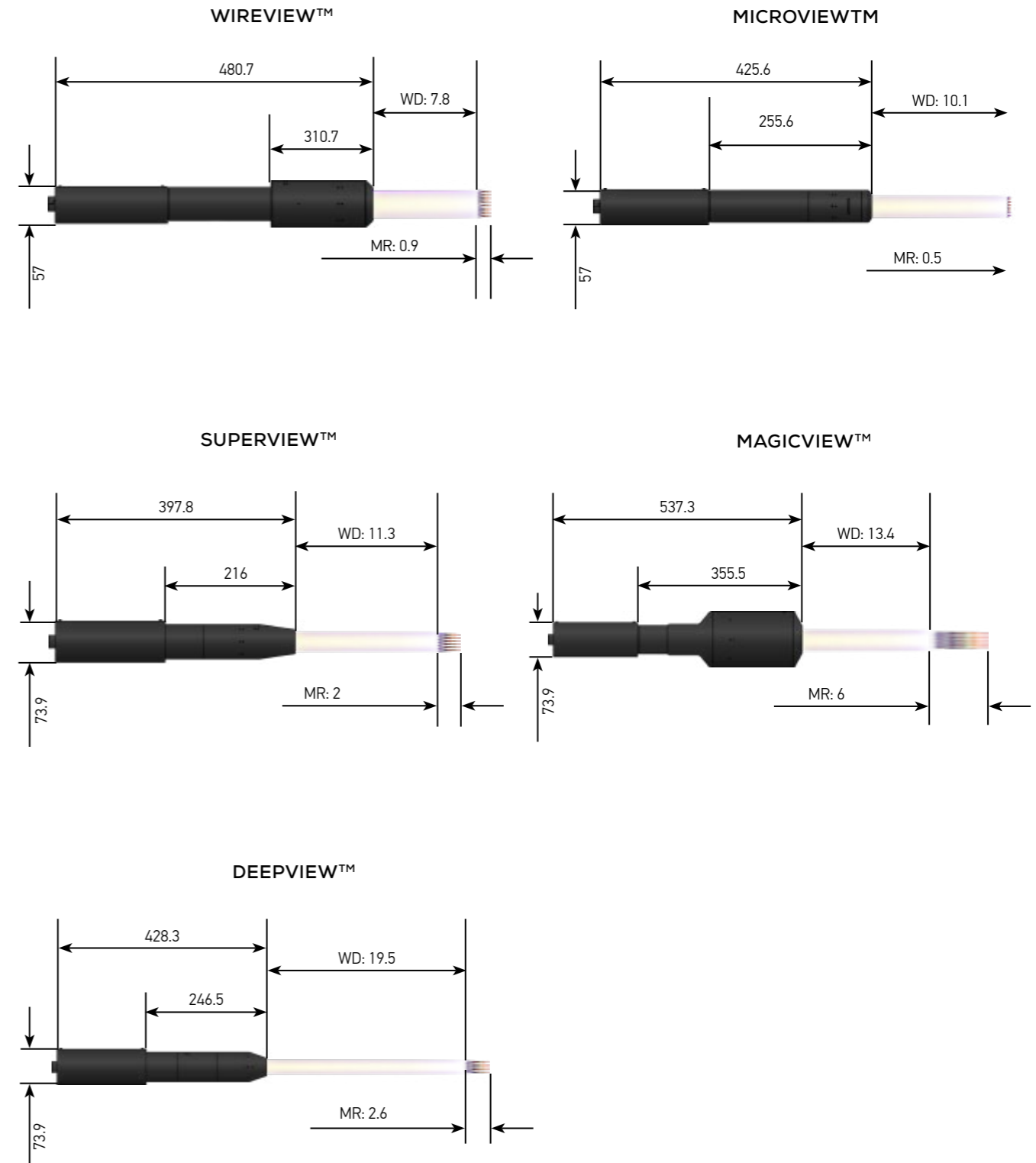
CONTROLLER	MPLS-DM	MPLS
ORDER CODE	O8ST05M0003	O8ST05M0004
Technology	Chromatic Confocal	
Source	White LED	
Number of Points	180	(1) x 180 / (2) x 90 / (4) x 45
Measuring Frequency	200 Hz to 2000 Hz (up to 6000 Hz decreasing MR)	
Distance Measurement	Highest/First/Second/Third/Fourth/Last Peak	
Thickness Measurement	2 of 5 peaks	
Digital Output	GigaEthernet	
Synchronization	Trigger in&out	
Other Input/Output	Encoder Input (1)	
Sensor head connection	via fiber bundle 5 m long	Via optical connectors
Temperature In Use	+5 to + 50°C	
Storage Temperature	-30 to + 70°C	
Relative Humidity	5 to 80% RH without condensation	
Protection Type	IP20	
Compliance	EN 61010-1; EN 61326-1	
Power Supply	100-240 VAC	
Maximum/Usual Consumption	120W/70W	
Dimensions (mm)	497 x 448.9 x 184	
Weight	14.5 kg	



CHROMATIC CONFOCAL LINE SENSORS




DIMENSIONS (MM)



ACCESSORIES



MODEL	DESCRIPTION	ORDER CODE
	Holder D50 for 50 mm Diameter probes (MicroView)	015ST000005
	Holder D60 for 60 mm Diameter probes (DeepView, SuperView)	015ST000006
	Holder D70 for 70 mm Diameter probes (WireView)	015ST000010
	Holder D118 for 118 mm Diameter probes (MagicView)	015ST000037



MODELS AND ACCESSORIES

MC2

MC2 ChromaVision is a 3-dimensional camera, solution for high-precision microscopy and defect detection.

Based on Chromatic Confocal technology & optics, it offers 100x the Depth of Focus (DoF - also called Depth of Field) of similar microscopic magnifications, extended Field of View (FoV) with still high level lateral resolutions. Then, imaging with MC2 camera will require lower motion specifications and avoid auto-focus, saving valuable time. MC2 line varies from 1.34 mm up to 12.5 mm and lateral resolution from 0.43 μm up to 4.1 μm. This high speed 4K camera connectable with standard or private image treatment software is the ideal device for inline or near line quality controls for semiconductor wafers, consumer electronics and micromechanics components



Camera JAI SW-4000 high performance



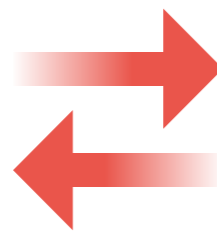
Frame grabber

Combined camera and optical sensors adapted to the frame grabber of choice

WILL SUIT YOUR PREFERRED IMAGE PROCESSING SOFTWARE

SELECT A FRAME GRABBER

- Coaxlink Quad CXP-12
- Coaxlink Duo CPX-12
- Coaxlink Octo
- Coaxlink Quad G3 DF
- Coaxlink Quad G3 LH
- Coaxlink Quad 3D - LLE
- Coaxlink Quad
- Coaxlink Quad CXP - 3
- Coaxlink Duo
- Grablink Full
- Grablink DualBase
- Grablink Base
- Grablink Value
- Grablink Avenue
- Grablink Express
- Domino Melody
- Domino Harmony



COMPATIBLE POWERFUL IMAGE PROCESSING SOFTWARE

COMPONENT SELECTION

BRAND	MODEL	DOWNLOAD	SUPPORTED FRAME GRABBER
Coaxlink Quad CXP-12	SW-4000M-PMCL	JAI_SW-4000-PMCL.ZIP	Grablink Duo, Grablink Full, Grablink Full XR

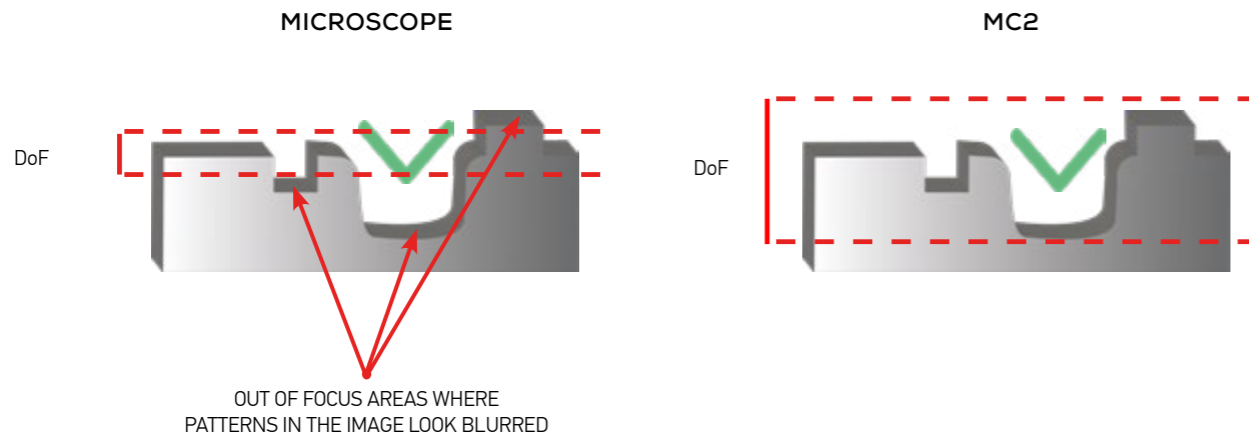
CONTROLLER		MC2
Technology	Chromatic Confocal line camera	
Source	White LED in external box	
Fiber bundle length	5 m	
Temperature in use	0 to +65°C	
Storage temperature	-30 to +70°C	
Relative humidity	5 to 80% RH without condensation	
Protection type	IP 20 (ChromaLight) IP50 (Body)	
Line Detector	Camera	SW-4000M-PMCL
	Number of pixels	4096
	Number of used pixels	~ 3100
	Pixel size	7.5 μm
	Line rate	Up to 199.5 kHz
	Control and data	Camera Link (x2)
	Power supply	5-24 VDC
Chromalight (LED source)	Power dissipation	5W
	Power Supply	100-240 VAC
	Maximum/Usual Consumption	100W / 60W
	Dimensions (mm)	235.5 x 184.2 x 255.5
	Weight	4 kg



PRODUCT		WIREVIEW	MICROVIEW	DEEVIEW	SUPERVIEW
ORDER CODE		OPSTM708001	OPSTM704001	OPSTM706002	OPSTM709001
Line Length	mm	1.51	1.8	4.2	12.85
Depth of Field	mm	0.9	0.5	2.6	2.0
Working Distance	mm	7.8	10.1	19.5	11.3
Magnification		15.6	12.9	5.6	1.8
Numerical Aperture		0.75	0.5	0.37	0.33
Max. Sample Slope	°	± 46	± 30	± 20	± 17
Pixel Size on the Sample	μm	0.49	0.58	1.35	4.1
Lenght	mm	468	412.8	408.5	378
Diameter	mm	70	50	60	60
Weight	kg	5.8	5.2	5.85	5.6



PERMANENT FOCUS



Depth of Focus, also called Depth of Field or DoF, is defined as the distance (on Z-axis) where all points are well resolved so that image elements are distinguished, understandable & usable.

Any point within the surface and out of the DoF appears blurred the DoF appears blurred.

MC2 offers 100x the DoF of a microscope for the same magnification maintaining same lateral (X-Y) resolution preventing any focus adjustment

MAGNIFICATION 50X

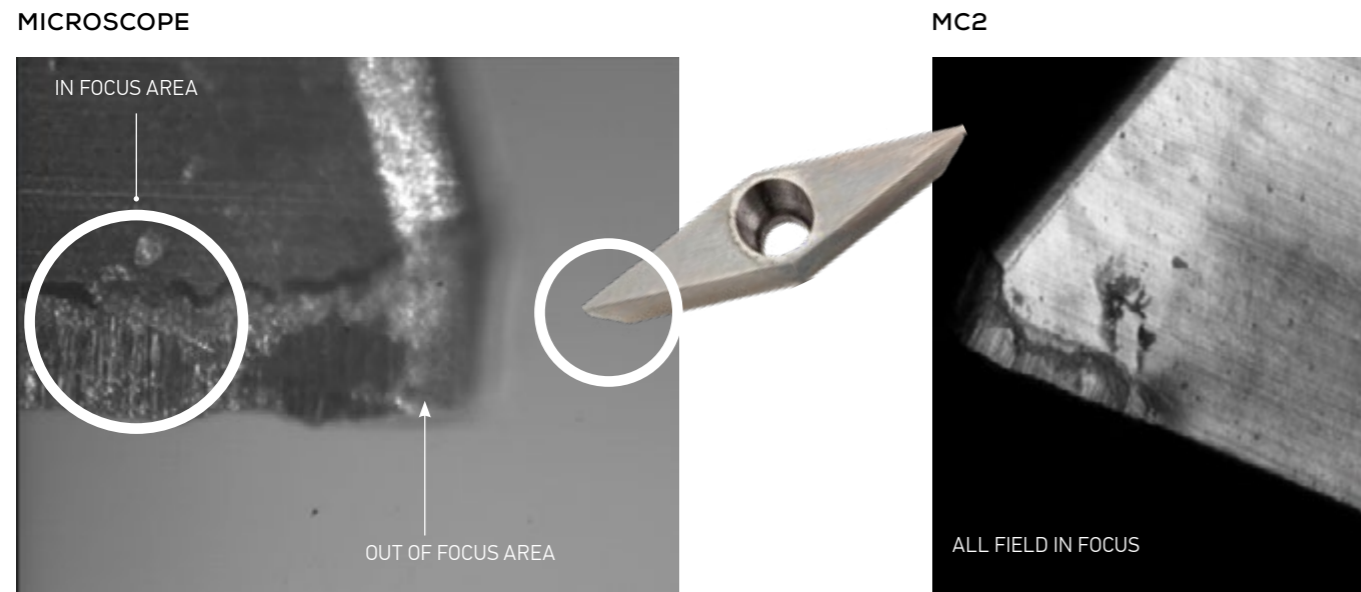
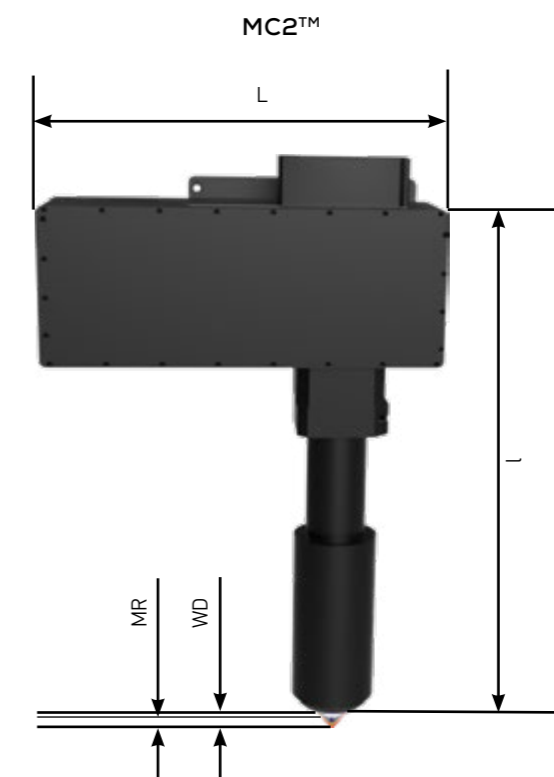
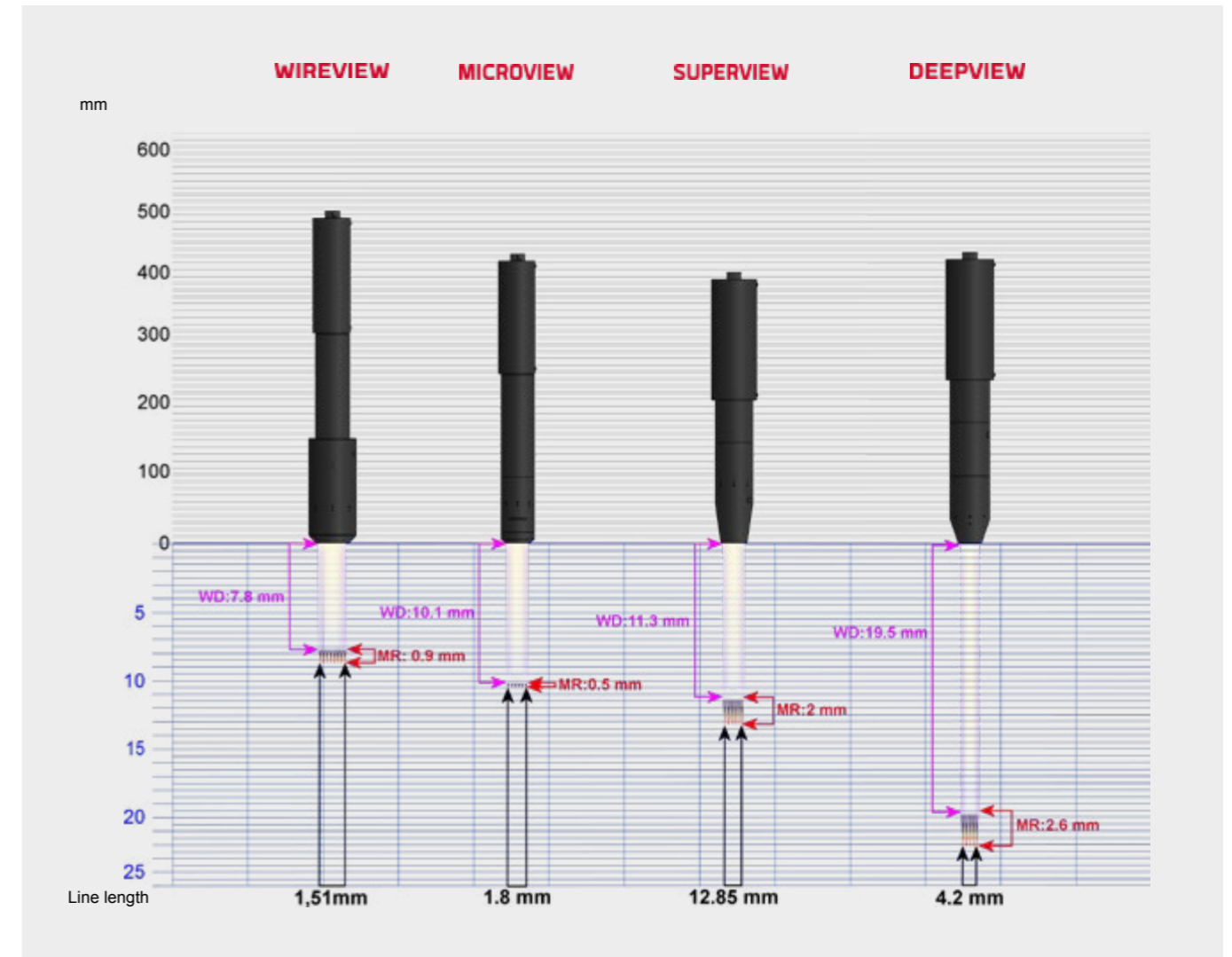


Image X-Y size (µm/mm) Resolution X-Y

Image X-Y size (µm/mm) Resolution X-Y



DIGITAL INDICATORS



- ▶ Quick Digit™ is a line of digital indicators based on a highly accurate capacitive measuring system, designed to resolve several different applications.
- ▶ QuickDigit is a cost effective solution since it integrates into its structure a high precision measuring sensor and a display for real time measurement visualization.
- ▶ Moreover it integrates essential computational capabilities, for setup of its measuring functionalities, like data format or tolerance barriers preset.
- ▶ Quick Digit is available with a standard measuring range of 12,5 mm / 0.5 inches or an extended measuring range of 25 mm / 1.0 inch, (50 mm/2.0", 100 mm/4.0" only on request). The large digits of the LCD display allow immediate and error-free reading of the measurement result. Measuring values can be classified through the tolerance indicator lights (green, yellow, red), and transmitted by cable or by Bluetooth® transmission technology

APPLICATION EXAMPLES



- ▶ Configurable functionalities, by the three buttons:
 - Direct metric / inch conversion
 - Preset
 - Dynamic Min./Max./TIR measuring mode
 - Memory HOLD
 - Input of a multiplicative coefficient
 - Zero setting at any point within the measuring range
 - Choice of measurement sign (positive or negative)
 - Automatic switch-off into standby mode without loss of the origin value
- ▶ The central button selects the favorite function.
- ▶ Large digits for ease-of-visualization
- ▶ M 2,5 interchangeable stainless steel contact



QUICK DIGIT

- ▶ Quick DIGIT 12.5 Advanced is a digital indicator with a large display for an easy reading. It features aluminum case and can rotate 270° for the best ease-of-use during measurement execution.
- ▶ Setting and display of tolerance limits. Measurement value classification through tolerance indicator lights (green, yellow, red). 'Proximity' and 'Power' data outputs; the Power output allows the use of the indicator without battery, when connected through the specific cable to an electronic unit/PC.



MODEL	MEAS. RANGE	RESOLUTION	ACCURACY	REPEATABILITY ($\pm 2\sigma$)	PROT. DEGREE	MEAS FORCE [N] ($\pm 20\%$)	WEIGHT [GR]	ORDER CODE
12,5 S Advanced	12,5 (.49 in)	0,001 (.00004 in)	3 (.00012 in)	2 (.00008 in)	IP54	0,65 - 0,90	120	B0E21201012
12,5 S Advanced HR	12,5 (.49 in)	0,0001 (.000004 in)	1,2 (.000047 in)	0,3 (.000012 in)	IP54	0,65 - 0,90	120	B0E21200000
12,5 S Advanced Bluetooth®	12,5 (.49 in)	0,001 (.00004 in)	3 (.00012 in)	2 (.00008 in)	IP54	0,65 - 0,90	120	B0E21201022
12,5 S Advanced HR Bluetooth®	12,5 (.49 in)	0,0001 (.000004 in)	1,2 (.000047 in)	0,3 (.000012 in)	IP54	0,65 - 0,90	120	B0E21200003
12,5 S Advanced HRA Bluetooth® with digital and analog display	12,5 (.49 in)	0,0001 (.000004 in)	1,8 (.00071 in)	0,5 (.00002 in)	IP51	0,65 - 0,90	120	B0E21200002

QUICK DIGIT COMPACT

- ▶ Quick Digit Compact is Ø 45 mm non-rotating, solution for applications with limited space.
- ▶ It features aluminum case and can rotate 270° for the best ease-of-use during measurement execution.
- ▶ Setting and display of tolerance limits. Measurement value classification through tolerance indicator lights (green, yellow, red). 'Proximity' and 'Power' data outputs; the Power output allows the use of the indicator without battery, when connected through the specific cable to an electronic unit/PC.



MODEL	MEAS. RANGE	RESOLUTION	ACCURACY	REPEATABILITY ($\pm 2\sigma$)	PROT. DEGREE	MEAS FORCE [N] ($\pm 20\%$)	WEIGHT [GR]	ORDER CODE
5S with lifting cap	12,5 (.49 in)	0,001 (.00004 in)	4 (.00016 in)	2 (.00008 in)	IP67	0,50 - 0,9	70	B0E20501000
5S with lifting cap Bluetooth®	12,5 (.49 in)	0,001 (.00004 in)	4 (.00016 in)	2 (.00008 in)	IP67	0,50 - 0,9	70	B0E20501001
5S with fixed cap	12,5 (.49 in)	0,001 (.00004 in)	4 (.00016 in)	2 (.00008 in)	IP67	0,50 - 0,9	70	B0E20501003
5S with fixed cap Bluetooth®	12,5 (.49 in)	0,001 (.00004 in)	4 (.00016 in)	2 (.00008 in)	IP67	0,50 - 0,9	70	B0E20501002

ACCESSORIES



MODEL	ORDER CODE
Contact extension 5S to M1 Star MBG mini indicator handle M2,5 thread	B1024017105
Contact extension 5S to M1 Star MBG mini indicator handle = 4-48 UNF thread	B1024017115
Power – RS232 cable for bidirectional data transmission (L = 3 m)	B4420240001
Proximity – RS232 cable for bidirectional data transmission (L = 3 m)	B4420240002
Power – USB cable for bidirectional data transmission (L = 3 m)	B4420240003
Proximity – USB cable for bidirectional data transmission (L = 3 m)	B4420240004
Power – DIGIMATIC cable for bidirectional data transmission (L = 3 m)	B4420240005
Proximity – DIGIMATIC cable for bidirectional data transmission (L = 3 m)	B4420240006

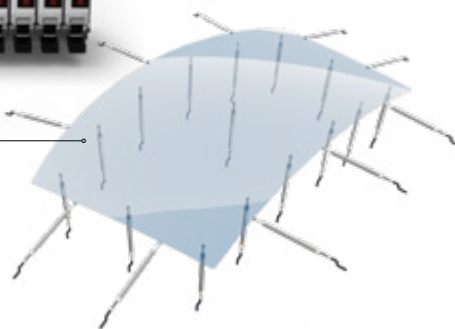
CONNECTIVITY SOLUTIONS



APPLICATIONS



Automotive glass



- ▶ CONNECTIVITY accessories are pivotal elements in the Marposs products portfolio, elevating the functional capabilities and effectiveness of the Marposs gauges. In fact, through the connectivity devices it is possible to interconnect multiple gauges all together and to create gauging solutions with multiple measuring sensors inside. Moreover connectivity accessories allow to interface the Marposs gauges to external controls by fieldbus or to transfer the measuring data to servers.



EASYBOX AND EASYBOX AIR

- ▶ EasyBox is the connectivity block to create networks of gauges, up to the limit of 32 units.
- ▶ EasyBox works with the Industrial Control Units of the Marposs portfolio or even with regular PC. EasyBox integrates USB communication type, where data captured by each single sensors are conveyed and transfer to the controlling system.
- ▶ EasyBox is available in different configurations, among which a model dedicated to MARPOSS standard full-bridge (LVDT) transducers and a model for MARPOSS standard half-bridge transducers (HBT). Another model is available for half-bridge transducers (HBT) compatible with amplifiers of TESA.
- ▶ EasyBox Air is the interfacing module dedicated to the connection of air gauges. EasyBox Air is capable to distribute air to the sensors and integrates controls to adjust sensitivity and zeroing nozzles. There are different models to interface one, three or four air transducers simultaneously.



DUO AIR

- ▶ Duo Air is the interfacing box for small workstations with up to 2 air gauges. Duo Air is designed purposely to work in combination with the Marposs Duo Control unit.
- ▶ Duo Air is capable to distribute air to the sensors and integrates controls to adjust sensitivity and zeroing nozzles.
- ▶ Duo Air D is the interfacing box for small workstations with up to 4 air gauges. Duo Air D is designed purposely to work in combination with the Marposs Duo Control unit.
- ▶ Duo Air D is equipped with high-speed digital air-to-electronics converters with fixed sensitivity nozzles. It is ideal for measurements with very tight tolerances requiring high resolution.



GAGEPOD

- ▶ GagePod is the premium connectivity line in the Marposs connectivity portfolio. The GagePod is dedicated to complex industrial applications, with several sensors interconnected, speed performance requirements or functionalities for automation.
- ▶ Multiple GagePods can be chained in order to interconnect up to 250 sensors. At the same time, the GagePod network can integrate modules for interfacing encoders, DC motors or to implement industrial fieldbus communications.
- ▶ GagePod network is extremely flexible, being able to support different control architectures. For instance, it can interface to Marposs E9066™ industrial computer as well as to any regular commercial PC. It is sufficient to install and to run the Marposs QuickSPC™ software suite, incorporating a complete toolkit of native functionalities.
- ▶ USB and Ethernet interfaces are available on the GagePod.



SMARTNET

- ▶ SMARTNET is the newest connectivity solution, designed for the implementation of large networks of displacement sensors. SmartNet is using a proprietary Marposs technology for networking, that elevates the ease-of-use and it delivers a superior level of performance. SmartNet can operate with the latest generation Marposs Controllers, as Merlin CORE, or with the dedicated SmartNet Bridge, that is a cost-effective solution for a direct connection to a PLC, without any industrial PC in the middle
- ▶ SMARTNET requires the newest versions of RedCrown probes, called RedCrownSmart.



DIGICROWN

- ▶ DIGINet is the unique Marposs connectivity solution for the high level of modularity and high performance level. The main element is the DigiCrownBox, a module capable to power and connect 2 sensors. Multiple DigiCrownBoxes can be chained in order to create large sensor networks. Like GagePod, DigiNet portfolio offers a large number of functional modules, like DC motor control, Input/Output signals, Ethernet or industrial fieldbus communication.



ASC

- ▶ ASC, meaning Automation Signal Controller, is the interfacing unit capable to acquire the measuring signals from multiple gauge sensors and to transform them into a digital data stream, ready for immediate elaboration on line controls.
- ▶ ASC is the perfect solution for small gauges networks, up to 4 sensors, and for direct interconnection to PLC over the standard Industrial Network Protocols or RS-232.
- ▶ It is available with 2 and 4 channels for the gauges and with RS232 or Profinet for the PLC interfacing.



TCI

- ▶ TCI, meaning Transducer Conditioning Interface, is a Marposs accessory to convert the structured signal from a transducer, both LVDT or HBT, into a traditional analog signal, ready to be elaborated on standard electronics for data acquisition. Thanks to the built-in connectors and the power supply distribution, TCI makes easy the implementation of small gauging networks and their interfacing to third party electronics.



U-FAMILY

- ▶ U-modules is the easiest and cost-effective solution to interface Marposs sensors to a regular PC. There are different models of this accessory line, specifically dedicated to connect Input/Output sensors, incremental sensors like encoders, pencil probes. U-modules are the perfect solution for simple application in a laboratory environment.

EASYBOX MODELS AND ACCESSORIES



EASYBOX U4F-HR/U4H-HR/U4T

- ▶ U4F-HR to connect up to 4 MARPOSS standard full-bridge (LVDT) transducers, for applications requiring a very high measurement resolution.
- ▶ U4H-HR to connect up to 4 MARPOSS standard half-bridge transducers (HBT), for applications requiring a very high measurement resolution
- ▶ U4T to connect up to 4 half-bridge transducers (HBT) compatible with amplifiers of TESA.

TECHNICAL SPECIFICATIONS	U4F-HR	U4H-HR	U4T
ORDER CODE	B6871250022	B6871250002	B6871250030
Number of input channels	4	4	4
Type of input channels	MARPOSS standard Full-Bridge (LVDT)	MARPOSS standard Half-Bridge (HBT)	Half Bridge (HBT) compatible with Tesa amplifiers
Programmable measuring range - REGULAR	up to ±1000 µm (0.04")	up to ±1000 µm (0.04")	up to ±2000 µm (0.08")
Programmable measuring range - LONG	up to ±5000 µm (0.20")	up to ±5000 µm (0.20")	up to ±5000 µm (0.2")
Output type	1 x USB (connector type B)	1 x USB (connector type B)	1 x USB (connector type B)
Output transmission speed	12 MBit / sec.	12 MBit / sec.	12 MBit / sec.
Sampling rate	max 40 samples /s max 1000 samples /s with Quick SPC	max 40 samples /s max 1000 samples /s with Quick SPC	max 40 samples /s max 1000 samples /s with Quick SPC
Accuracy at 20° C	± 0.5% of the measuring value ± resolution	± 0.5% of the measuring value ± resolution	± 0.5% of the measuring value ± resolution
Power supply source	from USB port	from USB port	from USB port
Current requirement	<350 mA (S)	<350 mA (S)	<350 mA (S)
Number of Easy Box connectable to one USB port	Max 16	Max 16	Max 16
Data triggering modes	external footswitch or host command	external footswitch or host command	external footswitch or host command
Footswitch option	1 input / box (female ø 3.5 mm stereo Jack on box rear side)	1 input / box (female ø 3.5 mm stereo Jack on box rear side)	1 input / box (female ø 3.5 mm stereo Jack on box rear side)
Protection degree	IP40 (on front panel) IP30 (on rear panel)	IP40 (on front panel) IP30 (on rear panel)	IP40 (on front panel) IP30 (on rear panel)
Storage temperature	-40 to +70 °C	-40 to +70 °C	-40 to +70 °C
Operating temperature	0 to +50° C	0 to +50° C	0 to +50° C
Dimensions W x D x H	157 x 90 x 45 mm (6.2" x 3.5" x 1.8")	157 x 90 x 45 mm (6.2" x 3.5" x 1.8")	157 x 90 x 45 mm (6.2" x 3.5" x 1.8")
Weight	approx. 0.6 kg	approx. 0.6 kg	approx. 0.6 kg

(S) To connect more than one box to a HUB a self-powered HUB is required.

EASYBOX MODELS AND ACCESSORIES



EASYBOX U4E

- ▶ U4E to connect up to three incremental transducers such as linear probes, linear and rotary encoders, etc

TECHNICAL SPECIFICATIONS	U4E
ORDER CODE	B6871250090
Number of input channels	3
Type of input channels	Digital and analog incremental transducers(*)
Programmable measuring range	depending on the transducer used
Output type	1 x USB (connector type B)
Output transmission speed	12 MBit / sec.
Sampling rate	max 40 samples /s (max 1000 samples /s with Quick SPC)
Accuracy at 20° C	depending on the transducer used
Power supply source	from USB port or external power supply
Current requirement	<300 mA (S)
Number of Easy Box connectable to one USB port	Max. 16
Data triggering modes	external footswitch, host command, RS422/485, 24V optoInsulated input
Footswitch option	common with data control (9-pin D-Sub connector on the rear side)
Protection degree	IP40 (on front panel) IP30 (on rear panel)
Storage temperature	-40 to +70 °C
Operating temperature	0 to +50° C
Dimensions W x D x H	157 x 90 x 45 mm (6.2" x 3.5" x 1.8")
Weight	approx. 0.6 kg

(*) Any digital encoder or linear scale featuring differential Line Driver output, 6.4 MHz max. frequency, requiring 5 V power supply.
Any voltage analog encoder or linear scale featuring 1 Vpp sinusoidal output, 250 kHz max. frequency, requiring 5 V power supply.
Any current analog encoder or linear scale featuring 11 µA output, 250 kHz. max. frequency, requiring 5V power supply, by means of a specific adapter (not included in the supply).

(S) To connect more than one box to a HUB a self-powered HUB is required.



EASYBOX U4D

- ▶ U4D to connect up to 4 Digimatic gauges (such as Mitutoyo calipers, digital indicators, etc..).

TECHNICAL SPECIFICATIONS	U4D
ORDER CODE	B6871250012
Number of input channels	4
Type of input channels	Mitutoyo Digimatic compatible
Programmable measuring range	depending on the Digimatic gauge used
Output type	1 x USB (connector type B)
Output transmission speed	12 MBit / sec.
Sampling rate	max. 40 samples /s (depending on the Digimatic gauge used)
Accuracy at 20° C	depending on the Digimatic gauge used
Power supply source	from USB port or external power supply (*)
Current requirement	<100 mA (S)
Number of Easy Box connectable to one USB port	Max. 16
Data triggering modes	external footswitch/ host command/ Data send button on gauge
Footswitch option	1 input / box (female ø 3.5 mm stereo Jack on box rear side)
Protection degree	IP30 (on both front and rear panel)
Storage temperature	-40 to +70 °C
Operating temperature	0 to +50° C
Dimensions W x D x H	157 x 90 x 45 mm (6.2" x 3.5" x 1.8")
Weight	approx. 0.6 kg

(*) For any gauge other than Mitutoyo requiring an external power supply

(S) Max. 4 boxes of this type can be connected to a HUB powered by a USB port. For connection of more than 4 boxes a self-powered HUB is required.

EASYBOX MODELS AND ACCESSORIES



EASYBOX U4S

- ▶ U4S to connect up to 4 gauges with RS232 output (cable shall feature Cannon 9-pin female connector).

TECHNICAL SPECIFICATIONS	U4S
ORDER CODE	B6871250060
Number of input channels	4
Type of input channels	RS232
Programmable measuring range	depending on the serial gauge used
Output type	1 x USB (connector type B)
Output transmission speed	12 MBit / sec.
Sampling rate	max. 40 samples /s (depending on the serial gauge used)
Accuracy at 20° C	depending on the serial gauge used
Power supply source	from USB port
Current requirement	<150 mA (S)
Number of Easy Box connectable to one USB port	Max. 16
Data triggering modes	external footswitch / host command
Footswitch option	1 input for each box (female connector ø 3.5 mm stereo Jack plug on box rear side)
Protection degree	IP40 (on front panel) IP30 (on rear panel)
Storage temperature	-40 to +70° C
Operating temperature	0 to +50° C
Dimensions W x D x H	157 x 90 x 65 mm (6.2" x 3.5" x 2.6")
Weight	approx. 0.6 kg

(S) To connect more than one box to a HUB a self-powered HUB is required.



EASYBOX U1/U3/U4 AIR

- ▶ U1AIR, U3AIR, U4AIR with adjustable sensitivity and zeroing nozzles to connect one, three, four air transducers respectively.

TECHNICAL SPECIFICATIONS	U1AIR(#)	U3AIR(#)	U4AIR(#)
ORDER CODE	B6871250101	B6871250111	B6871250122
Number of input channels	1	3	4
Type of input channels	Air	Air	Air
Programmable measuring range	±500 µm (0.02")	±500 µm (0.02")	±500 µm (0.02")
Output type	1 x USB (connector type B)	1 x USB (connector type B)	1 x USB (connector type B)
Output transmission speed	12 MBit / sec.	12 MBit / sec.	12 MBit / sec.
Sampling rate	max. 40 samples /s (up to 1000 samples/s if used with Quick SPC)	max. 40 samples /s (up to 1000 samples/s if used with Quick SPC)	max. 40 samples /s (up to 1000 samples/s if used with Quick SPC)
Accuracy at 20° C	±0.5% of the measuring value ±resolution	±0.5% of the measuring value ±resolution	±0.5% of the measuring value ±resolution
Power supply source	from USB port	from USB port	from USB port
Current requirement	<350 mA (S)	<350 mA (S)	<350 mA (S)
Number of Easy Box connectable to one USB port	Max. 16	Max. 16	Max. 16
Data triggering modes	external footswitch / host command	external footswitch / host command	external footswitch / host command
Footswitch option	1 input for each box (female connector ø 3.5 mm stereo Jack plug on box rear side)	1 input for each box (female connector ø 3.5 mm stereo Jack plug on box rear side)	1 input for each box (female connector ø 3.5 mm stereo Jack plug on box rear side)
Protection degree	IP40 (on front panel) IP30 (on rear panel)	IP40 (on front panel) IP30 (on rear panel)	IP40 (on front panel) IP30 (on rear panel)
Storage temperature	-40 to +70° C	-40 to +70° C	-40 to +70° C
Operating temperature	0 to +50° C	0 to +50° C	0 to +50° C
Dimensions W x D x H	157 x 103 x 65 mm (6.2" x 4.05" x 2.6")	224 x 159 x 150 mm (8.82" x 6.26" x 5.90")	224 x 159 x 150 mm (8.82" x 6.26" x 5.90")
Weight	approx. 1 kg	approx. 2.8 kg	approx. 3.8 kg

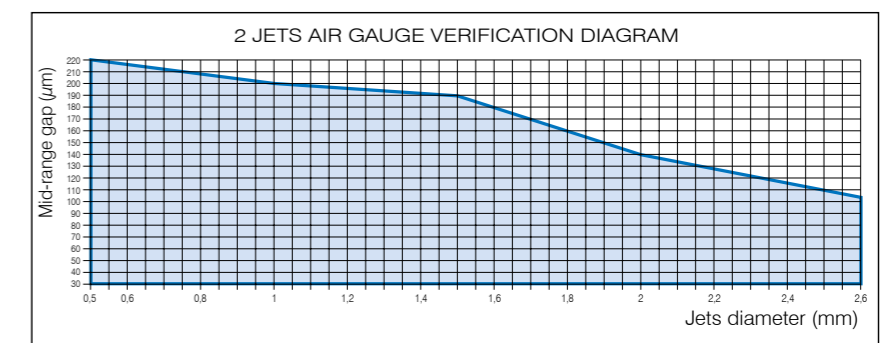
(#) Air supply: air must be dry and unoled, filtered to 5 µm and at a pressure of 3 bar (the working range of the converter is 1,5 to 4 bar).

(S) To connect more than one box to a HUB a self-powered HUB is required.

U1AIR / U3AIR / U4AIR APPLICATION RANGE

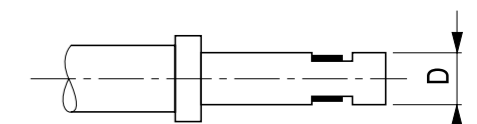
The MARPOSS and/or non-MARPOSS air gauges, with specifications inside the blue area of the diagram, can be easily and immediately connected to these models. The parameters to be considered are the following:

- ▶ air supply pressure
- ▶ number of air gauge jets
- ▶ diameter of air gauge jets
- ▶ "mid-range gap", as to the difference between the mid-tolerance diameter of the part to be measured and the distance between the air gauge jets.



EXAMPLE OF MEASUREMENT WITH AIR-PLUG

- ▶ air supply pressure: 3 bar ± 0.1
- ▶ number of jets : 2
- ▶ diameter of jets: 2mm (.0787")
- ▶ diameter of the part to be measured = 10 mm ± 0.030 (.3937" ± .0012")
- ▶ mid tolerance diameter = 10 mm (.3937")
- ▶ distance between the jets D = 9.90 mm (.3898")



We obtain:

- ▶ "mid tolerance gap": (10 - 9.90) = 0.10 mm = 100 µm
- As shown in the diagram the intersection between the value of the "mid-range gap", 100 µm (.0039"), and the diameter of the jet, 2 mm (.0787"), stays inside the blue area: the application can be therefore realized.

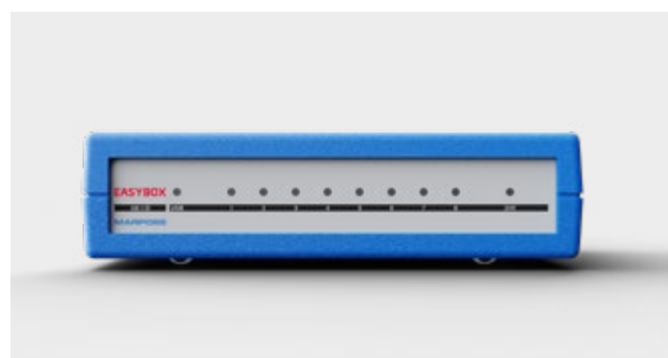
EASYBOX MODELS AND ACCESSORIES



EASYBOX U4TP-E/TP-K

- ▶ U4TP-E, U4TP-K to connect up to four thermocouples type E, K respectively

TECHNICAL SPECIFICATIONS	U4TP-E	U4TP-K
ORDER CODE	B6871250080	B6871250086
Number of input channels	4	4
Type of input channels	Thermocouples type E	Thermocouples type K
Programmable measuring range	0 - 100 °C	0 - 100 °C
Output type	1 x USB (connector type B)	1 x USB (connector type B)
Output transmission speed	12 MBit / sec.	12 MBit / sec.
Sampling rate	max. 40 samples /s	max. 40 samples /s
Accuracy at 20° C	±[0.6° + 0.2% (T _{meas.} -T _{amb.})]	±[0.6° + 0.2% (T _{meas.} -T _{amb.})]
Power supply source	from USB port	from USB port
Current requirement	<200 mA (S)	<200 mA (S)
Number of Easy Box connectable to one USB port	Max. 16	Max. 16
Data triggering modes	external footswitch / host command	external footswitch / host command
Footswitch option	1 input for each box (female connector ø 3.5 mm stereo Jack plug on box rear side)	1 input for each box (female connector ø 3.5 mm stereo Jack plug on box rear side)
Protection degree	IP40 (on front panel) IP30 (on rear panel)	IP40 (on front panel) IP30 (on rear panel)
Storage temperature	-40 to +70° C	-40 to +70° C
Operating temperature	0 to +50° C	0 to +50° C
Dimensions W x D x H	157 x 90 x 45 mm (6.2" x 3.5" x 1.8")	157 x 90 x 45 mm (6.2" x 3.5" x 1.8")
Weight	approx. 0.5 kg	approx. 0.5 kg



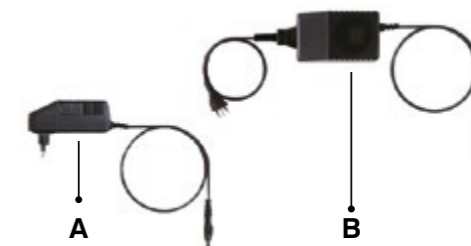
EASYBOX U8I/O

- ▶ B6871250050
U8I/O managing 8 Input/Output powered 24Vdc.



EASYBOX U4P

- ▶ B6871250071
U4P pushbutton box for remote control of data acquisition, zeroing, etc.

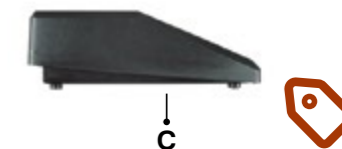


POWER SUPPLY

MODEL	VERSION	ORDER CODE
POWER SUPPLY FOR EASY BOX U4D	EU PLUG	B6871140155
POWER SUPPLY FOR EASY BOX U4D	USA PLUG	B6871140156
POWER SUPPLY FOR EASY BOX U4D	UK PLUG	B6871140157
POWER SUPPLY FOR EASY BOX U8I/O	EU PLUG	B6871140238
POWER SUPPLY FOR EASY BOX U8I/O	USA PLUG	B6871140239
POWER SUPPLY FOR EASY BOX U8I/O	UK PLUG	B6871140240
POWER SUPPLY UNIT FOR EASY BOX U4E, with EU mains cable		B6871140170
POWER SUPPLY UNIT FOR EASY BOX U4E, with U.S.A. mains cable		B6871140171
POWER SUPPLY UNIT FOR EASY BOX U4D, with EU mains cable (*)		B6871140158
POWER SUPPLY UNIT FOR EASY BOX U4D, with U.S.A. mains cable (*)		B6871140159
POWER SUPPLY UNIT FOR EASY BOX U8I/O, with EU mains cable (**)		B6871140238
POWER SUPPLY UNIT FOR EASY BOX U8I/O, with U.S.A. mains cable (**)		B6871140239

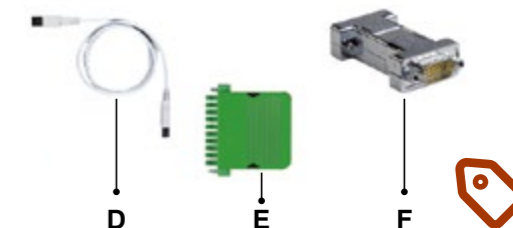
(*) For any gauge other than Mitutoyo requiring an external power supply.

(**) This power supply is required if the Easy Box U8I/O is not connected to an alternative 24V power supply.



FOOTSWITCH

MODEL	VERSION	ORDER CODE
Footswitch with 2 m cable for data triggering function (not for Easy Box U8I/O)		B6131000110



CABLES AND TERMINATORS

	WHERE USED	ORDER CODE
USB cable L= 1 m (type A-B)	Easy Box to PC	B4701300229
USB cable L= 3 m (type A-B)	Easy Box to PC	B6871140239
Cable terminal for 10 pin connector of Easy Box U8I/O (*)		B6872010015
Interface adapter	Connecting analog current transducers feat. 11 µA output to Easy Box U4E	B6303540800

(*) One piece is always supplied in the packaging with the Easy Box



PROTECTIVE CASE

MODEL	VERSION	ORDER CODE
Protective and fixing case for 1 Easy Box	type U4F-HR, U4H, U4T, U4E, U4D, U4TP-E, U4TP-K, U8I/O	B1502050600
Protective and fixing case for 1 Easy Box	type U1AIR or U4S	B1502050601
Protective and fixing case for 2 Easy Box	type U4F-HR, U4H, U4T, U4E, U4D, U4TP-E, U4TP-K, U8I/O	B1502050610
Protective and fixing case for 3 Easy Box	type U4F-HR, U4H, U4T, U4E, U4D, U4TP-E, U4TP-K, U8I/O or 2 Easy Box type U1AIR or U4S	B1502050620

DUO AIR

Duo Air is the interfacing box for small workstations with up to 2 air gauges. Duo Air is designed purposely to work in combination with the Marposs Duo Control unit. Duo Air is capable to distribute air to the sensors and integrates controls to adjust sensitivity and zeroing nozzles

ALL-IN-ONE



DESCRIPTION	ORDER CODE
Duo Air 1 ch.+ Duo Basic (standard 0.3 m connecting cable from Duo Air to Duo included in the supply)	BPSDUD01201
Duo Air 1 ch.+ Duo Ethernet/IP (standard 0.3 m connecting cable from Duo Air to Duo included in the supply)	BPSDUD01211
Duo Air 1 ch.+ Duo Profibus (standard 0.3 m connecting cable from Duo Air to Duo included in the supply)	BPSDUD01221
Duo Air 1 ch.+ Duo Profinet (standard 0.3 m connecting cable from Duo Air to Duo included in the supply)	BPSDUD01231
Duo Air 2 ch.+ Duo Basic (standard 0.3 m connecting cables from Duo Air to Duo included in the supply)	BPSDUD01200
Duo Air 2 ch.+ Duo Ethernet/IP (standard 0.3 m connecting cables from Duo Air to Duo included in the supply)	BPSDUD01210
Duo Air 2 ch.+ Duo Profibus (standard 0.3 m connecting cables from Duo Air to Duo included in the supply)	BPSDUD01220
Duo Air 2 ch.+ Duo Profinet (standard 0.3 m connecting cables from Duo Air to Duo included in the supply)	BPSDUD01230



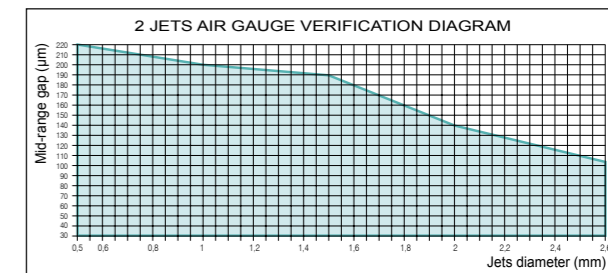
DESCRIPTION	ORDER CODE
Duo Air with 1 air transducer input	B830DUOA001
Duo Air with 2 air transducer inputs	B830DUOA000

DESCRIPTION	ORDER CODE
Connecting cable from Duo Air to Duo (L = 0.3 m)	B6735932033
Connecting cable from Duo Air to Duo (L = 1.0 m)	B6735932026
Connecting cable from Duo Air to Duo (L = 2.0 m)	B6735932015
Connecting cable from Duo Air to Duo (L = 5.0 m)	B6735932016
Connecting cable from Duo Air to Duo (L = 10.0 m)	B6735932017

APPLICATION RANGE

The MARPOSS and non-MARPOSS air gauges, with specifications inside the blue area of the diagram, can be easily and immediately connected to Duo Air.

- ▶ The parameters to be considered are the following:
- ▶ air supply pressure (3 bar \pm 0.1)
- ▶ number of air gauge jets
- ▶ diameter of air gauge jets
- ▶ "mid-range gap", as to the difference between the mid-tolerance diameter of the part to be measured and the distance between the air gauge jets.



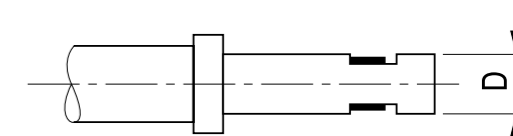
EXAMPLE OF MEASUREMENT WITH AIR-PLUG

- ▶ number of jets: 2
- ▶ diameter of jets: 2 mm (.0787")
- ▶ mid tolerance diameter of the part to be measured = 10 mm (.3937")
- ▶ distance between the jets D = 9.90 mm (.3898")

We obtain:

- ▶ "mid tolerance gap": (10 - 9.90) = 0.10 mm = 100 μ m

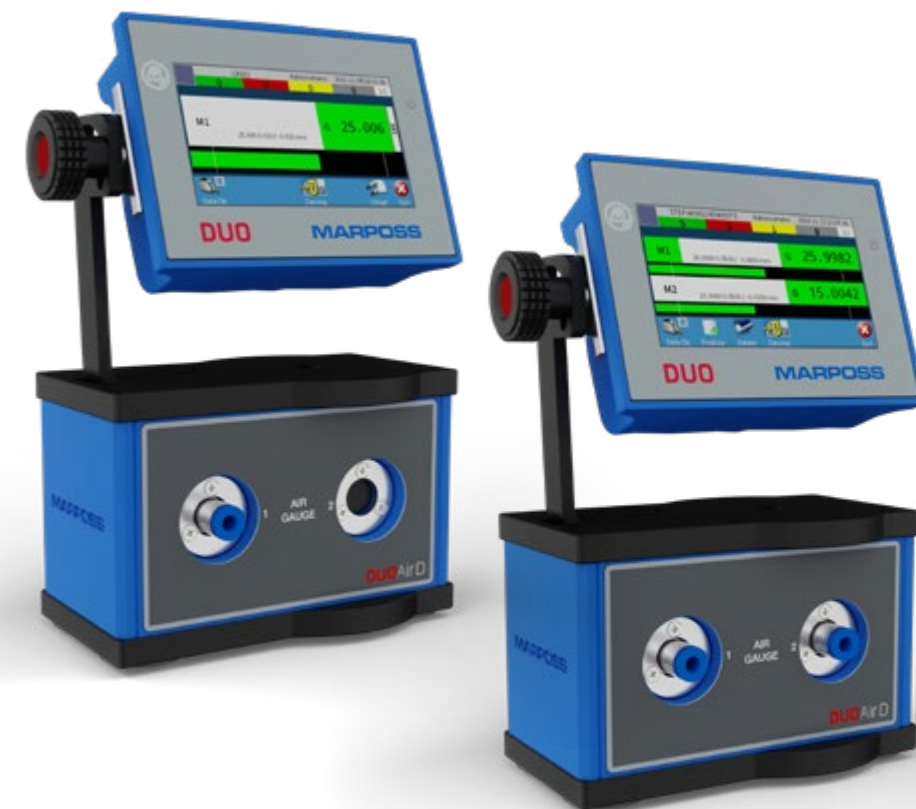
As shown in the diagram the intersection between the value of the "mid-range gap", 100 μ m (.0039"), and the diameter of the jet, 2 mm (.0787"), stays inside the blue area: the application can be therefore realized.



DUO AIR D

Duo Air D is the interfacing box for small workstations with up to 4 air gauges. Duo Air D is designed purposely to work in combination with the Marposs Duo Control unit.

Duo Air D is equipped with high-speed digital air-to-electronics converters with fixed sensitivity nozzles. It is ideal for measurements with very tight tolerances requiring high resolution.



DUO AIR D



DESCRIPTION	ORDER CODE
Duo Air D 1 ch. K type + Duo Basic (standard 0.35 m connecting cable from Duo Air D to Duo included in the supply)	BPSDUD01301
Duo Air D 1 ch. K type + Duo Ethernet/IP (standard 0.35 m connecting cable from Duo Air D to Duo included in the supply)	BPSDUD01311
Duo Air D 1 ch. K type + Duo Profibus (standard 0.35 m connecting cable from Duo Air D to Duo included in the supply)	BPSDUD01321
Duo Air D 1 ch. K type + Duo Profinet (standard 0.35 m connecting cable from Duo Air D to Duo included in the supply)	BPSDUD01331
Duo Air D 2 ch. K type + Duo Basic (std. 0.35 m conn. cable from Duo Air D to Duo and 0.2 m conn. cable between converters included in the supply)	BPSDUD01300
Duo Air D 2 ch. K type + Duo Ethernet/IP (std. 0.35 m conn. cable from Duo Air D to Duo and 0.2 m conn. cable between converters included in the supply)	BPSDUD01310
Duo Air D 2 ch. K type + Duo Profibus (std. 0.35 m conn. cable from Duo Air D to Duo and 0.2 m conn. cable between converters included in the supply)	BPSDUD01320
Duo Air D 2 ch. K type + Duo Profinet (std. 0.35 m conn. cable from Duo Air D to Duo and 0.2 m conn. cable between converters included in the supply)	BPSDUD01330
Duo Air D 3 ch. K type + Duo Basic (std. 0.35 m conn. cable from Duo Air D to Duo and 2 x 0.2 m conn. cable between converters included in the supply)	BPSDUD01303
Duo Air D 3 ch. K type + Duo Ethernet/IP (std. 0.35 m conn. cable from Duo Air D to Duo and 2 x 0.2 m conn. cable between converters included in the supply)	BPSDUD01313
Duo Air D 3 ch. K type + Duo Profibus (std. 0.35 m conn. cable from Duo Air D to Duo and 2 x 0.2 m conn. cable between converters included in the supply)	BPSDUD01323
Duo Air D 3 ch. K type + Duo Profinet (std. 0.35 m conn. cable from Duo Air D to Duo and 2 x 0.2 m conn. cable between converters included in the supply)	BPSDUD01333
Duo Air D 4 ch. K type + Duo Basic (std. 0.35 m conn. cable from Duo Air D to Duo and 3 x 0.2 m conn. cable between converters included in the supply)	BPSDUD01302
Duo Air D 4 ch. K type + Duo Ethernet/IP (std. 0.35 m conn. cable from Duo Air D to Duo and 3 x 0.2 m conn. cable between converters included in the supply)	BPSDUD01312
Duo Air D 4 ch. K type + Duo Profibus (std. 0.35 m conn. cable from Duo Air D to Duo and 3 x 0.2 m conn. cable between converters included in the supply)	BPSDUD01322
Duo Air D 4 ch. K type + Duo Profinet (std. 0.35 m conn. cable from Duo Air D to Duo and 3 x 0.2 m conn. cable between converters included in the supply)	BPSDUD01332



DESCRIPTION	ORDER CODE
Duo Air D with 1 air transducer input for K type air gauges	B830DUOADK1
Duo Air D with 2 air transducer input for K type air gauges	B830DUOADK0
Duo Air D with 3 air transducer input for K type air gauges	B830DUOADK3
Duo Air D with 4 air transducer input for K type air gauges	B830DUOADK2
Connecting cable from Duo Air D to Duo (L = 0,35 m)	B6739696775
Connecting cable between digital converters in the Duo Air D 2 ch (L = 0,2 m)	B4159ABDUEF

U-FAMILY



U1-E ENCODER INTERFACE

Adapter Encoder to USB

MODEL	U1-E
ORDER CODE	B687126E000
USB connector	Type 'A'
Encoder connector	Male 9 poles SUB D connect or
Protection Degree	IP40
Current requirement	< 500 mA < 2.5 mA in suspend mode
USB interface	USB 2.0
Power supply USB	4,40 ÷ 5,25 Vdc from USB bus
Power supply Encoder	5V from USB bus with 400mA max available for the encoder
Resolution	Depending on connect ed device
Band width	300KHz analog encoder 4MH z digita l encoder
Input	differential (A+, A-, B+, B-, Z+, Z-)
Input type	RS 422 (TTL) / Incremental signal 1Vpp Analog signal / 11µA with MARPOSS adapter 6303540800
Cable length	50cm / 20 inches*
Storage temperature	-20°C / +70°C
Operative temperature	0°C / +60°C

U-FAMILY

U2-I/O INPUT/OUTPUT INTERFACE

- ▶ Adapter I/O digital signal to USB.
- ▶ One adapter can manage up to 2 separate I/O lines.
- ▶ The lines can be programmed separately, as one input-one output, or 2 inputs, or 2 outputs.



MODEL	U2-I/O
ORDER CODE	B687126I000
USB connector	Type 'A'
I/O connect or	M12 type, female straight connect or
Protection Degree	IP40
Current requirement	< 100 mA (max) < 500 µA (max, in suspend mode)
USB interface	USB 2.0
Power supply USB face	4,40 ÷ 5,25 Vdc from USB bus
Power supply I/O face (isolated)	24 V nominal voltage
Cable length	50cm / 20 inches*
Storage temperature	-20°C / +70°C
Operative temperature	-10°C / +40°C

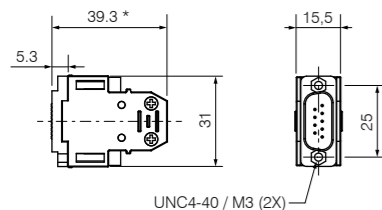


U1-FS FOOTSWITCH INTERFACE

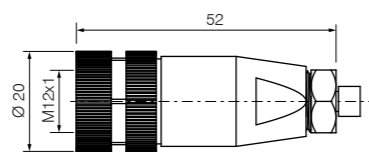
Pedal trigger via USB

MODEL	U1-FS
ORDER CODE	B687126E000
USB connector	Type 'A'
I/O connect or	M12 type, female straight connect or
Protection Degree	IP40
Current requirement	< 100 mA (max) < 500 µA (max, in suspend mode)
USB interface	USB 2.0
Power supply USB face	4,40 ÷ 5,25 Vdc from USB bus
Power supply I/O face (isolated)	24 V nominal voltage
Cable length	50cm / 20 inches*
Storage temperature	-20°C / +70°C
Operative temperature	-10°C / +40°C

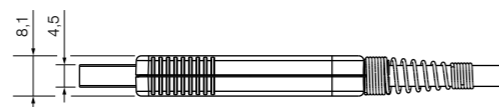
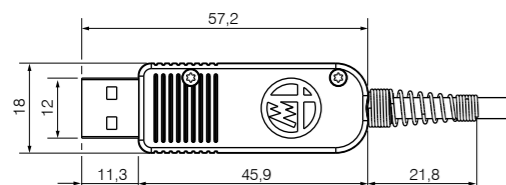
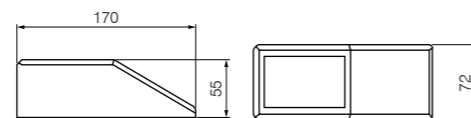
U1E Encoder interface



U2-I/O I/O interface



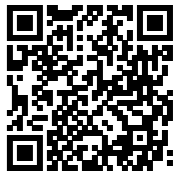
U1-FS Footswitch interface



GAGEPOD MODELS

SENSORS

- ▶ DAQ modules, acronym for Data acquisition.
- ▶ It implements 16 separated channels, so it connects up to 16 sensors.
- ▶ There are 2 versions of this device, differentiating for connector layout.



TECHNICAL SPECIFICATIONS	16 DAQ	4X4 DAQ
NUMBER OF CHANNELS	16	16
CONNECTORS TYPE	Lumberg SV50/6 (female)	4 male VEAM (4 channels each)
CHANNEL INPUT TYPE	LVDT, HBT, HBT TESA, MG (Microcontrol), DIGI (Digicrown)	LVDT, HBT
A/D CONVERTER RESOLUTION	24 bit	24 bit
DATA SYNCHRONIZATION	YES (all modules)	YES (all modules)
COMPUTER CONNECTIVITY	Ethernet and USB	Ethernet and USB
SAMPLING	Synchronous sampling on all 16 channels	Synchronous sampling on all 16 channels
POWER SUPPLY	24Vdc-SELV compliant. +20 -15 % / M12 male connector	24Vdc-SELV compliant. +20 -15 % / M12 male connector
PORTS (depending on module)	2 x Ethernet 100Mbps / RJ45 connector 2 x USB device; 1 x USB host. USB 2.0 Full Speed RS232 - 422 - 485 (multi-standard) / DSUB-9	2 x Ethernet 100Mbps / RJ45 connector 2 x USB device; 1 x USB host. USB 2.0 Full Speed RS232 - 422 - 485 (multi-standard) / DSUB-9

INPUT OUTPUT

- ▶ These modules manage 16 or 32 opto-insulated, 24Vdc digital input/output signals. The version with 32 I/O is also available with a single connector.
- ▶ Any number of digital input/outputs can be managed simultaneously.
- ▶ There are 2 versions of this accessory, differentiating for connector layout.



TECHNICAL SPECIFICATIONS	16 IO	32 IO	32 IO - BLIND
NUMBER OF CHANNELS	16	32	32
CONNECTORS TYPES	8 x M12 (female) 1 x DSUB-25 (female)	16 x M12 (female) 2 x DSUB-25 (female) 1 x DSUB-37 (female)	1 x DSUB-37 (female)
I/O ASSIGNMENT	Each pin definable as Input or Output (via software)	Each pin definable as Input or Output (via software)	Each pin definable as Input or Output (via software)
POWER SUPPLY FOR I/O	Internal/External. SELV-compliant. Selectable via dip-switch The PS of the output signals can be interrupt separately from inputs	Internal/External. SELV-compliant. Selectable via dip-switch The PS of the output signals can be interrupt separately from inputs	Internal/External. SELV-compliant. Selectable via dip-switch The PS of the output signals can be interrupt separately from inputs
MAX OUT CURRENT	M12 100mA on each pin. Connectors 7 and 8 provide up to 250mA on each pin (500mA on each connector)	M12 100mA on each pin. Connectors 7, 8, 15 and 16 provide up to 250mA on each pin (500mA on each connector)	100mA on each pin. some of them can provide up to 250mA
INPUT ABSORPTION (ACTIVE HIGH)	15mA	15mA	15mA
OUT INTERFACE TYPE	Source/Sink selectable in groups of 16I/O IEC 61131-2	Source/Sink selectable in groups of 16I/O IEC 61131-2	Source/Sink selectable in groups of 16I/O IEC 61131-2

GAGEPOD MODELS

HYBRID MODULES

- These modules are multi-functional, designed to manage simultaneously sensors, motors control with/without an integrated motion controller and encoder, 8 digital input/output and an emergency circuit to interrupt power supply on the Outputs and motor rotation.



TECHNICAL SPECIFICATIONS	4M8	MC8
NUMBER OF CHANNELS (SENSORS)	4, Lumberg SV50/6 (female)	4, 26 pin connector (motor interface, I/O)
CHANNEL INPUT TYPE	LVDT, HBT, HBT TESA, MG (Microcontrol), DIGI (Digicrown)	HBT
NUMBER OF I/O	8, 4 x M12 (female)	8, 4 x M12 (female)
OUT INTERFACE TYPE	Source	Source
DC MOTOR - OUTPUT CURRENT	Max 2,6A (refer to HW manual for more details)	2,5A (refer to HW manual for more details)
DC MOTOR - SAFETY POWER SUPPLY INTERRUPTION	With emergency circuit	With emergency circuit
DC MOTOR - V OUT	SW regulated: 0Vdc to 24Vdc	Adjustable in speed and position



ENCODER

- This module manages up to 9 linear and rotary encoders, providing a synchronization input/output for external devices as well

TECHNICAL SPECIFICATIONS	9E
NUMBER OF CHANNELS	9
CONNECTORS	DSUB-9 for encoder and synchronization
SENSOR TYPES	Incremental analogue 1V pp Digital RS422
TRIGGER INPUT/OUTPUT	Logical Input 5V TTL Logical Input (fast) – optocoupled RS485 bus to share measurement synchronism (bi-directional)



FIELD BUS

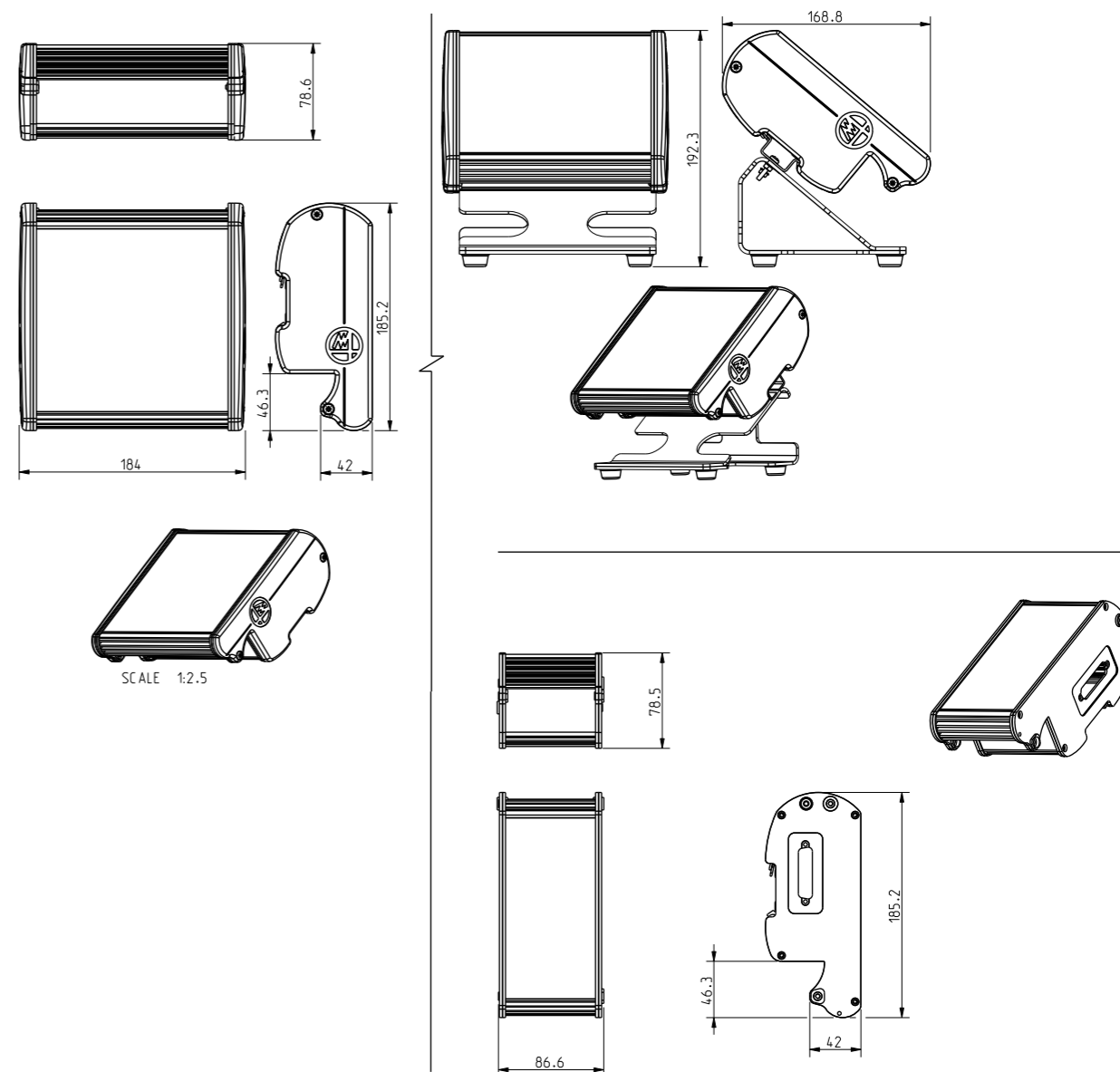
- This module implement Industrial fieldbus interfaces: Profibus®, Profinet® and Ethernet/IP™ protocols.

BRIDGE

- The Bridge is a blind-panel module and is used as a “line repeater”, typically in conjunction with Extension modules (e.g. I/O and Fieldbus).
- It must be used when splitting a configuration in two or more groups and the first module of the new group is an Extension module.
- The Bridge is NOT necessary if the first module of the new group is a master or a slave unit.



TECHNICAL SPECIFICATIONS	4M8
PROTECTION DEGREE	Up to IP54
STORAGE TEMPERATURE	-20-60°C
OPERATING TEMPERATURE	5-45°C (41 – 113 °F)
RELATIVE HUMIDITY	5-80% non condensing
DIMENSIONS	H185 - W184 - D78,6 mm
MOUNTING SOLUTIONS	DIN rail mounting integrated, benchmount stand (option)
WEIGHT (SINGLE MODULE) WITHOUT STAND	1.3Kg



GAGEPOD MODELS



	DESCRIPTION	ORDER CODE
Mounting	GAGEPOD BENCHTOP STAND	B6134700030
	DIN RAIL 1-MODULES L=165MM	B1502047910
	DIN RAIL 1.5-MODULES L=250MM	B1502047920
	DIN RAIL 2-MODULES L=330MM	B1502047930
	DIN RAIL 2.5-MODULES L=415MM	B1502047940
	DIN RAIL 3-MODULES L=495MM	B1502047950
	DIN RAIL 3.5-MODULES L=580MM	B1502047960
	DIN RAIL 4-MODULES L=660MM	B1502047970
	DIN RAIL 4.5-MODULES L=745MM	B1502047980
	DIN RAIL 5-MODULES L=825MM	B1502047990
	DIN RAIL 5.5-MODULES L=910MM	B1502048000
	DIN RAIL 6-MODULES L=990MM	B1502048010
	DIN RAIL 6.5-MODULES L=1075MM	B1502048020
	Power supply	AC/DC POWER SUPPLY UNIT 24VDC - 3.5A
M12 BINDER CONNECTOR		B4140K04307
POWER SUPPLY SPLITTER (LUMBERG T-CONNECTOR)		B4159ALMT74
1M CABLE EXTENSION FOR POWER SUPPLY SPLITTER		B4159ALMUEH
2M CABLE EXTENSION FOR POWER SUPPLY SPLITTER		B4159ALMUEJ
3M CABLE EXTENSION FOR POWER SUPPLY SPLITTER		B4159ALMUFJ
5M CABLE EXTENSION FOR POWER SUPPLY SPLITTER		B4159ALMUES
GAGEPOD INTERCONNECT CABLE 0.3M		B6734620021
GAGEPOD INTERCONNECT CABLE 0.5M		B6734620022
GAGEPOD INTERCONNECT CABLE 1M		B6734620015
GAGEPOD INTERCONNECT CABLE 1.5M	B6734620025	
GAGEPOD INTERCONNECT CABLE 3M	B6734620016	
GAGEPOD INTERCONNECT CABLE 5M	B6734620024	
GAGEPOD INTERCONNECT CABLE 10M	B6734620018	
GAGEPOD INTERCONNECT CABLE 15M	B6734620020	
GAGEPOD LOOPBACK CABLE 3M	B6734620017	
Cables	ETHERNET CABLE 1M - IP54 CONNECTOR	B6739696465
	ETHERNET CABLE 3M - IP54 CONNECTOR	B6739696466
	ETHERNET CABLE 5M - IP54 CONNECTOR	B6739696467
	ETHERNET CABLE 10M - IP54 CONNECTOR	B6739696468
	ETHERNET CABLE 15M - IP54 CONNECTOR	B6739696469
	ETHERNET CABLE 20M - IP54 CONNECTOR	B6739696470
	ETHERNET CABLE 25M - IP54 CONNECTOR	B6739696549
	3M ETHERNET CABLE / CAT6-SFTP/(BLACK)	B47013D0277
	5M ETHERNET CABLE / CAT6-SFTP/(BLACK)	B47013D0278
	10M ETHERNET CABLE / CAT6-SFTP/(BLACK)	B47013D0270
	15M ETHERNET CABLE / CAT6-SFTP/(BLACK)	B47013D0275
	20M ETHERNET CABLE / CAT6-SFTP/(BLACK)	B47013D0268
	ADAPTER CABLE FOR E9066 FOOTSWITCH DB9 --> M12	B6739659001
	USB CABLE L=1M (TYPE A-B) TO CONNECT EASY BOX TO THE PC USB PORT	B4701300229
USB CABLE L=3M (TYPE A-B)	B4701300230	



	DESCRIPTION	ORDER CODE
Other accessories	LEFT-SIDE GASKET	B1502046480
	RIGHT-SIDE GASKET	B1502046485
	CANNON GASKET	B1502046490
	GAGEPOD LVDT MINICARD	B6840041268
	GAGEPOD DIGICROWN MINICARD	B6840041269
	GAGEPOD HBT MINICARD	B6840041270
	GAGEPOD HBT-13 MINICARD	B6840041271
	GAGEPOD MG MINICARD	B6131640064
	GAGEPOD FASTENING SCREWS KIT (3)	B6134704400
	BLUE PROTECTION COVERS (RIGHT+LEFT) - BLIND	B6134704500
	PASS-THRU PROTECTION COVERS (RIGHT+LEFT)	B6134704600
	GAGEPOD COVER PLATES + GASKETS	B6134720400
	ACCESSORY KIT (LABELS, MINICARDS, SCREWS) FOR SPARE GAGEPOD MODULES	B6871992254
HARDWARE MANUAL ENGLISH	BD2660018UG	

DIGICROWN

SENSORS - DUAL CHANNEL BOX

- ▶ It allows the management of the entire Marposs DIGICrown probing line and all Marposs digitized sensors (A/E converter, D124, etc.). Please refer to REDCrown2 line catalogue.
- ▶ The DIGICrown BOX can acquire up to 4000 samples/s.



MODEL	BOX 2CHANNELS
ORDER CODE	B767X200400
NUMBER OF CHANNELS	2
Max number of modules per net	31
Power supply	+7,5Vdc (-10/+30%) - from bus
Current consumption	90 mA
Input (sensor)	Two DIGICrown2 probes
Output (BUS)	Serial communication toward bus, by DIGICrown protocol
Input type	1 / 2 / 5 / 10 / 20 mm
Resolution	0,05µm (1-2mm) / 0,2µm (4-10mm) / 0,5µm (20mm)
Sampling rate [Samples/s]	up to 4000
Operating temperature [°C]	0 to +60
Storage temperature [°C]	-20 to +70
Protection degree	IP43
Connection	Lumberg SV50/6 female connector
Network position	from the 3rd to the 33th
Connection to the DIGICrown net	DIGICrown BUS

DIGICROWN

PC/PLC INTERFACES

- ▶ The system can be connected to PC or PLC with three different interfaces. All these modules allow static or dynamic measurements acquisitions with synchronisation, for performance details please refer to the technical specifications table.
- ▶ ETHERNET Interface (ETH). The bus network baud rate is 2083 Kbps. In case of configuration with more than one network, the synchronization signal can be also extended to other networks (external synchronisation).
- ▶ RS232 Interface (232). The COM port baud rate is programmable up to 115.2 Kbps and the bus network baud rate is 625 Kbps.



MODEL	BOX ETHERNET	BOX RS232
ORDER CODE	B767Y020500	B767Y000100
Max. number of networks for application	12	12
Number of interface x network	1	1
PC operative system	WINDOWS 7® / WINDOWS 8® / WINDOWS 10®	WINDOWS 7® / WINDOWS 8® / WINDOWS 10®
Power supply	+7,5 Vdc (-10 / +30%) external by DIGICrown PSU	+7,5 Vdc (-10 / +30%) external by DIGICrown PSU
Current consumption	90 mA	40 mA
Communication [toward pc]	ETH (10/100)	1 RS232 channel, full duplex hardware handshake (RTS/CTS)
Internal network baud rate [Kbaud]	2083	625
Max managed sampling rate [samples/s]	up to 4000	-
Operating temperature [°C]	0 to +60	0 to +60
Storage temperature [°C]	-20 to +70	-20 to +70
Protection degree	IP43	IP43
Connection	RJ45	9 pin D-Sub female connector
Network position	2nd	2nd
Connection to the DIGICrown net	DIGICrown BUS	DIGICrown BUS

POWER SUPPLY UNITS

- ▶ Power Supply Unit (PSU) is always the first module and supplies voltage to the complete network. It is available in 3 models, 2 types for 100-240Vac (with or without box) and 1 type for 24Vdc.

MODEL	PSU 100-240 VAC WITH BOX	PSU 100-240 VAC WITHOUT BOX	PSU 24 VDC
ORDER CODE	B767W000001	B767W000011	B767W010000
Max number of modules x net	up to 31 DIGICrown BOX (*)	up to 31 DIGICrown BOX (*)	up to 18 DIGICrown BOX (*)
Current consumption	-	-	0,8 A
Input	100-240 Vac	100-240 Vac	24 Vdc
Output	7,5 Vdc / 3 A	7,5 Vdc / 3 A	7,5 Vdc / 1,7 A
Operating temperature [°C]	0 to +40	0 to +40	0 to +40
Storage temperature [°C]	-20 to +70	-20 to +70	-20 to +70
Protection degree	IP41	IP41	IP41
Connection	cable	cable	jack
Network position	1st	1st	1st
Connection to the DIGICrown net	DIGICrown PSC	direct to DIGICrown BUS of the selected interface. DIGICrown PSC not needed.	DIGICrown PSC

(*) please refer to the current consumption value in the next tables to evaluate how many modules of different types can be managed.

INPUT / OUTPUT

- ▶ DIGICrown I/O interface is available in 3 versions with 8 Input/Output (sink or source) and only input (8 inputs). The inputs/outputs are opto-coupled, they can be singularly programmed as in or out. With this module it is possible to manage: solenoid valves (through power relays), acquisition of input signals by local cycle



MODEL	SINK	SOURCE	ONLY INPUT
ORDER CODE	B767I000500	B767I010500	B767I020500
Max number of modules per net	31	31	31
Power supply	+7,5Vdc (-10/+30%) - from bus	+7,5Vdc (-10/+30%) - from bus	+7,5Vdc (-10/+30%) - from bus
Current consumption	70 mA	70 mA	80 mA
Input (sensor)	8 in/out opto-insulated Voff (min)= (Vio-5V) Von (max)= (Vio-15V) Every bit can be programmed as IN or OUT	8 in/out opto-insulated Voff (min)= (Vio-5V) Von (max)= (Vio-15V) Every bit can be programmed as IN or OUT	8 IN for switch box Off: Rswitch > 500 kohm Ω On: Rswitch < 3300 ohm Ω
Output (BUS)	serial communication toward bus, by DIGICrown protocol	serial communication toward bus, by DIGICrown protocol	serial communication toward bus, by DIGICrown protocol
Input type	200mA for out (700mA max total)	200mA for out (700mA max total)	-
Sampling rate [Samples/s]	up to 4000	up to 4000	up to 4000
Operating temperature [°C]	0 to +60	0 to +60	0 to +60
Storage temperature [°C]	-20 to +70	-20 to +70	-20 to +70
Protection degree	IP43	IP43	IP43
Connection	15 pin D-SUB male connector	15 pin D-SUB male connector	15 pin D-SUB male connector
Network position	from the 3rd to the 33rd	from the 3rd to the 33rd	from the 3rd to the 33rd
Connection to the DIGICrown net	DIGICrown BUS	DIGICrown BUS	DIGICrown BUS

ENCODER INPUT

- ▶ Encoder Input (EI) is available in 2 models for analogue or digital, linear or rotary type encoders; spatial and temporal synchronisation are managed.



MODEL	DIGITAL	ANALOGUE
ORDER CODE	B767E010500	B767E100500
Max number of modules per net	31	31
Power supply	+7,5Vdc (-10/+30%) - from bus	+7,5Vdc (-10/+30%) - from bus
Current consumption	115 mA (without encoder connected)	115 mA (without encoder connected)
Input (sensor)	single ended (A,B,Z, ER) or differential (A+,A-,B+,B-, Z+,Z-,ER)	Phases A, B, M and error
Output (BUS)	serial communication toward bus, by DIGICrown protocol	serial communication toward bus, by DIGICrown protocol
Input type	TTL, HTL, RS422 push pull or open-collector	1Vpp or 11μApp
Resolution	depending on the device connected	depending on the device connected
Sampling rate [Samples/s]	up to 4000	up to 4000
Operating temperature [°C]	0 to +60	0 to +60
Storage temperature [°C]	-20 to +70	-20 to +70
Protection degree	IP43	IP43
Connection	9 pin D-SUB male connector	9 pin D-SUB male connector
Network position	from the 3rd to the 33rd	from the 3rd to the 33rd
Connection to the DIGICrown net	DIGICrown BUS	DIGICrown BUS

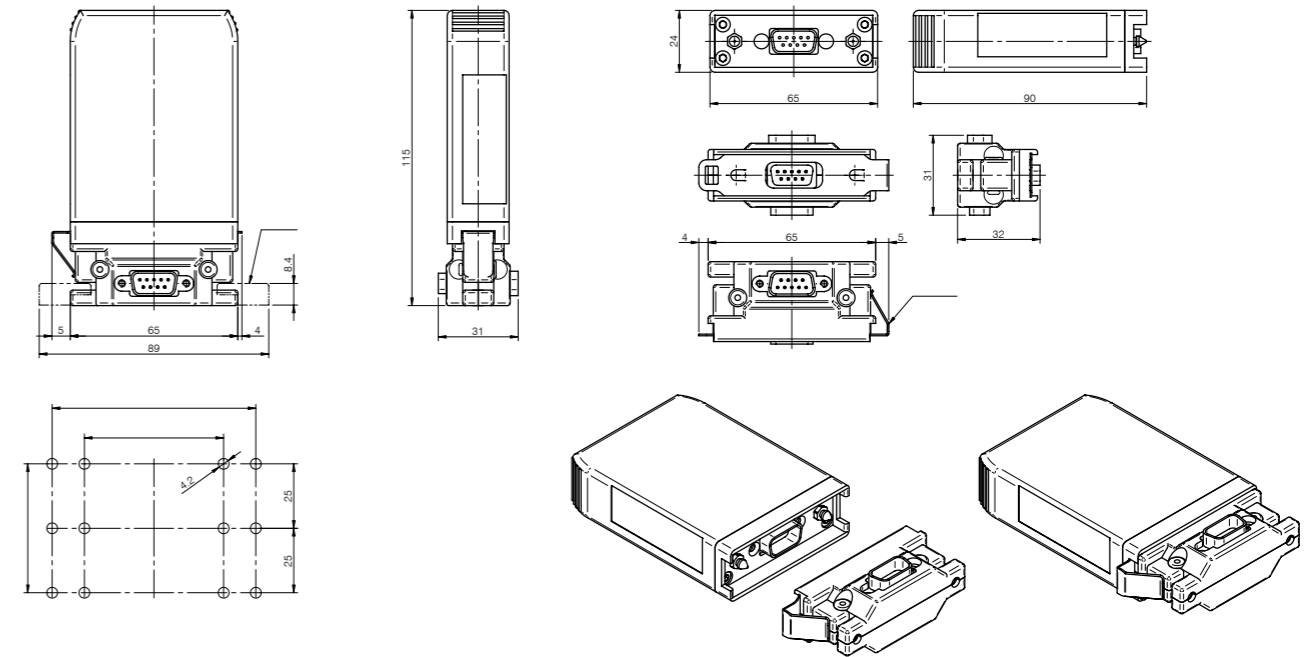
DIGICROWN



ANALOGUE INPUT

► Analogue Input (AI). It allows to interface any third party sensor with voltage or current analogue signal.

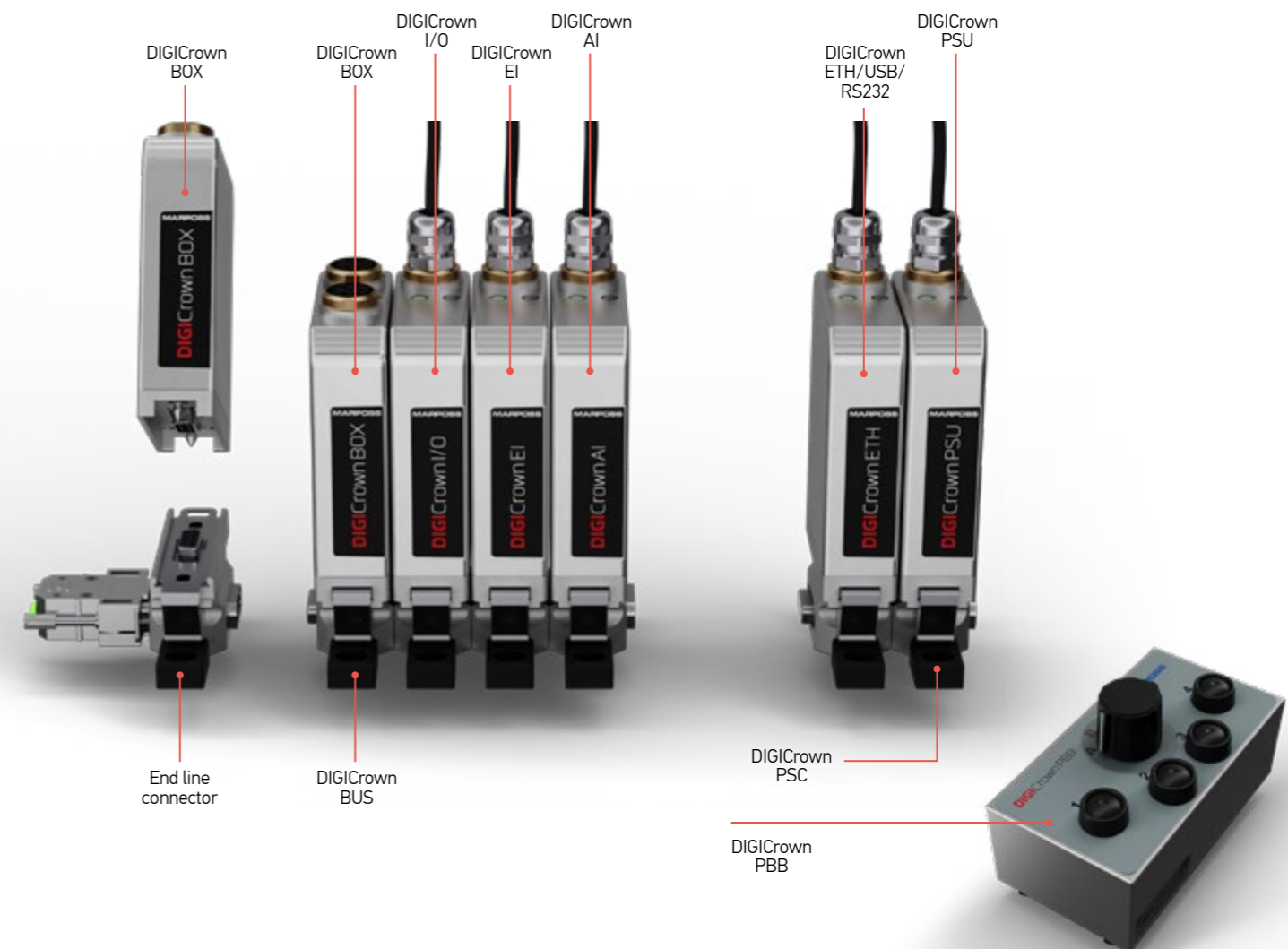
MODEL		ANALOGUE INPUT	
ORDER CODE	B767A000400		
Max number of modules per net	31		
Power supply	+7,5Vdc (-10/+30%) - from bus		
Current consumption	100 to 150 mA depending on input type		
Input (sensor)	voltage / current input		
Output (BUS)	serial communication toward bus, by DIGICrown protocol		
Input type	voltage ($\pm 10V / \pm 5V / 0-10V$)	current ($\pm 20mA / 4-20 mA$)	resistance
Resolution	0,02mV ($\pm 5V$ range) or 0,05mV ($\pm 10V$)	0,0001 mA	0,1 Ω (range 50÷3.000 Ω) 0,01 Ω (range 50÷500 Ω)
Sampling rate [Samples/s]	up to 4000		
Operating temperature [°C]	0 to +60		
Storage temperature [°C]	-20 to +70		
Protection degree	IP43		
Connection	wires		
Network position	from the 3rd to the 33rd		
Connection to the DIGICrown net	DIGICrown BUS		



ACCESSORIES AND CABLES



	DESCRIPTION	ORDER CODE
Accessories	End line connector	B6355200000
	DIGICrown BUS	B6872030020
	DIGICrown PSC (for DIGICrown PSU only)	B6872030021
	DIGICrown PBB (Push Button Box)	B6139013200
	EU cable	B4147000016
Cables	USA cable	B4147000017
	Connection cable 2 m	B6738057027
	Connection cable 3,5 m	B6738057029
	9 Connection cable 6 m	B6738057031
	Connection cable 10 m	B6738057033



ASC MODELS



RS232

- ▶ ASC acquires the measuring signals from both LVDT (full bridge) and HBT (half bridge with LVDT pinout) multiple gauge sensors and automatically transforms them into a digital data stream, ready for immediate elaboration on line controls.
- ▶ ASC is the perfect solution of small gauges networks, up to 4 sensors, and direct interconnection to PLC.
- ▶ This version has RS-232 interface embedded.
- ▶ ASC RS232 accepts Marposs standard LVDT analog sensors and LVDT/HBT with LVDT pinout digital sensors.

MODEL	MEASURING RANGE	2 CH BAUDRATE=9600BPS	2 CH BAUDRATE=115200BPS	4 CH BAUDRATE=9600BPS	4 CH BAUDRATE=115200BPS
ANALOG LVDT (Standard Marposs)	±0.5mm	B768231AL00	B768231AL01	B768232AL00	B768232AL01
	±1mm or ±2mm	B768231AL20	B768231AL21	B768232AL20	B768232AL21
	±2,5mm	B768231AL40	B768231AL41	B768232AL40	B768232AL41
	±5mm	B768231AL60	B768231AL61	B768232AL60	B768232AL61
	±10mm	B768231AL80	B768231AL81	B768232AL80	B768232AL81
DIGITAL (LVDT/HBT pinout LVDT)	ALL	B768231DL00	B768231DL01	B768232DL00	B768232DL01

TECHNICAL SPECIFICATIONS

Power supply Vdc	Nominal value +24 ; Input range -15/+20 %
Output type	1 RS-232 channel, full duplex; hardware handshake (RTS/CTS)
Baudrate [bps]	9600 / 19200 / 38400 / 57600 / 115200
Data bit	8
Stop bit	1
Parity	even
Sampling rate [sample/s]	up to 400 (depending on net configuration)
Electrical absorption [mA]	ASC 2: 90 ASC 4: 200
Protection degree	IP40
Storage temperature [°C]	-20 to 70
Operating temperature [°C]	0 to 55
Weight [g]	555



PROFINET

- ▶ ASC acquires the measuring signals from multiple gauge sensors and automatically transforms them into a digital data stream, ready for immediate elaboration on line controls.
- ▶ ASC is the perfect solution of small gauges networks, up to 4 sensors, and direct interconnection to PLC.
- ▶ This version implements Profinet connectivity.
- ▶ ASC PROFINET accepts Marposs standard LVDT analog sensors and LVDT/HBT with LVDT pinout digital sensors.

MODEL	MEASURING RANGE	2 CH	4 CH
ANALOG LVDT (Standard Marposs)	±0.5mm	B768PN1AL00	B768PN2AL00
	±1mm or ±2mm	B768PN1AL20	B768PN2AL20
	±2,5mm	B768PN1AL40	B768PN2AL40
	±5mm	B768PN1AL60	B768PN2AL60
	±10mm	B768PN1AL80	B768PN2AL80
DIGITAL (LVDT/HBT pinout LVDT)	ALL	B768PN1DL00	B768PN2DL00

TECHNICAL SPECIFICATIONS

Power supply [Vdc]	Nominal value +24 ; Input range -15/+20 %
Conformance Class	B
Number of Connections	2
Compliant Protocol	SNMP, LLDP, DCP
Minimum update time [ms]	1
Profinet Version	Profinet RT
Device Type	Data I/O Communication Record Data Communication
GSDML Version	2.41
Profinet Device Connectors Type	2x RJ-45, 100 Mbit/s ports, available simultaneously
Netload Class	III
Ethernet features	Device configuration via Ethernet Secure Firmware update via Ethernet IT functions web server
Electrical absorption [W]	ASC2 PN P(typ) = 1.40 [W] P(max) = 2.35 [W] ASC4 PN P(typ) = 2.30 [W] P(max) = 3.40 [W]
Protection degree	IP20
Storage temperature [°C]	-20 to 70
Operating temperature [°C]	0 to 55
Weight [g]	594

ACCURACY SPECIFICATIONS

Measuring range [mm]	±0,5	±1	±2	±2,5	±5	±10	
Resolution [µm]	0,05	0,05	0,2	0,2	0,2	0,5	
Sensitivity [mV/V/mm]	230	230	230	115	115	23	
Accuracy pencil probes	REDCrown2 [µm]	±MAX (0,5 + 2* K ; 7* K)	±(0,3 + 5* K)	±(0,3 + 7* K)	±MIN (0,3 + 10* K ; 11 + 2* K)	±MAX (5,0 + 2* K ; 7* K)	±MAX (10 + 2* K ; 7* K)
	DIGICrown2 [µm]	±(0,2+1* K)	±(0,2+1* K)	±(0,3+7* K)	±(0,6+2* K)	±(0,6+2* K)	±(1,2+2* K)
Accuracy ASC	±(0,1+0,2* K)	±(0,2+0,2* K)	±(0,4+0,2* K)	±(0,5+0,2* K)	±(1+0,2* K)	±(2+0,2* K)	

NOTE: K= Reading [mm]

TCI MODELS



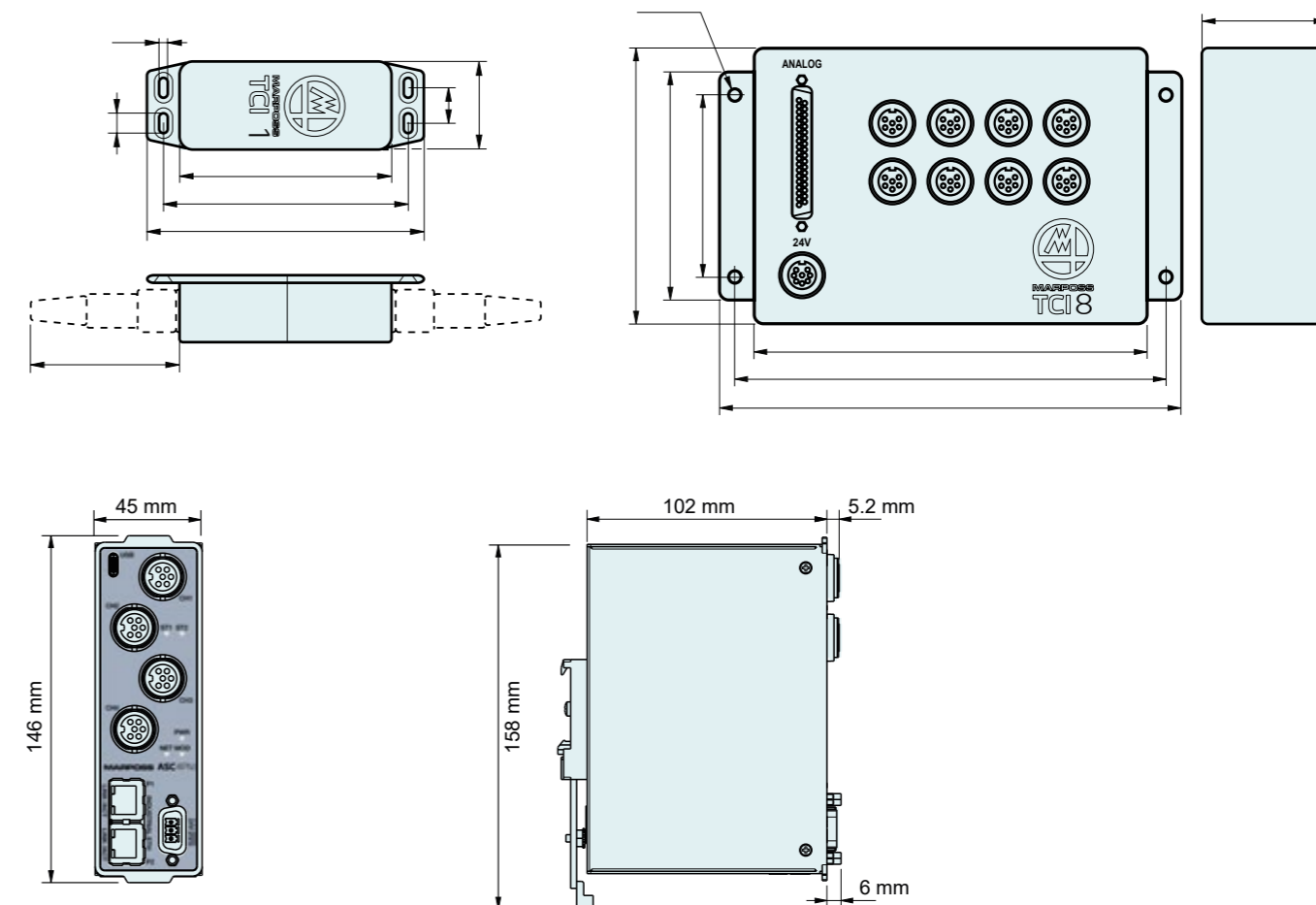
► TCI, meaning Transducer Conditioning Interface, is a Marposs accessory to convert the structured signal from a transducer, both LVDT or HBT, into a traditional analog signal, ready to be elaborated on standard electronics for data acquisition. Thanks to the built-in connectors and the power supply distribution, TCI makes easy the implementation of small gauging networks and their interfacing to third party electronics.

MODEL	TCI1	TCI4	TCI8
ORDER CODE	To be configured (see table below)	To be configured (see table below)	To be configured (see table below)
Protection degree (with connectors plugged in)	IP52	IP54	IP54
Weight	0,14 kg	0,8 kg	0,8 kg
Operating temperature	0°+ 50 °C	0°+ 50 °C	0°+ 50 °C
Storing temperature	-25°+ 75 °C	-25°+ 75 °C	-25°+ 75 °C
Operating relative humidity (not condensing)	20% - 80%	20% - 80%	20% - 80%
Storing relative humidity (not condensing)	10% - 95%	10% - 95%	10% - 95%
Linearity error	max 0.05% of the end scale	max 0.1% of the end scale	max 0.1% of the end scale
Gain drift	max 0.02% °C of the end scale	max 0.02% °C of the end scale	max 0.02% °C of the end scale
Offset drift	max 0.02% °C of the end scale	max 0.01% °C of the end scale	max 0.01% °C of the end scale
Power supply rejection ratio (gain+offset)	max 0.04% / V of the end scale (voltage: ±15V)	max 0.04% / V of the end scale (voltage: ±15V)	max 0.04% / V of the end scale (voltage: ±15V)
Output ripple (AF spike excluded)	20 µA rms current output	15 µA rms current output	15 µA rms current output
Transducer frequency	Typical 5.1 KHz	Typical 5.0 KHz	Typical 5.0 KHz
Transducer voltage supply	Typical 3.3 Vrms	Typical 3.4 Vrms	Typical 3.4 Vrms
Transducer current supply	Max 30 mA	Max 30 mA	Max 30 mA
Bandwidth	Typical 500 Hz	Typical 500 Hz	Typical 500 Hz
Voltage supply: ±15 V	Dual filtered and stabilised ±15 Vdc ±5% Max. ripple allowed at 100/120 Hz: 50 mVpp	Dual filtered and stabilised ±15 Vdc ±5% Max. ripple allowed at 100/120 Hz: 50 mVpp	Dual filtered and stabilised ±15 Vdc ±5% Max. ripple allowed at 100/120 Hz: 50 mVpp
Typical consume with transducer connected	Voltage output: ±20 mA Current output: ±40 mA	Voltage output: ±270 mA max. Current output: ±450 mA max.	Voltage output: ±270 mA max. Current output: ±450 mA max.
Voltage supply: ±12 V (if configured with a tension output signal)	±12 Vdc ±5% Max. ripple allowed at 100/120 Hz: 50 mVpp	±12 Vdc ±5% Max. ripple allowed at 100/120 Hz: 50 mVpp	±12 Vdc ±5% Max. ripple allowed at 100/120 Hz: 50 mVpp
Typical consume with transducer connected	Voltage output: ±20 mA Not available with current output	Voltage output: ±270 mA max. Current output: ±450 mA max	Voltage output: ±270 mA max. Current output: ±450 mA max
Voltage supply: +24 V	Single 24 Vdc ±10% Max. ripple allowed at 100/120 Hz: 200 mVpp	Single 24 Vdc ±10% Max. ripple allowed at 100/120 Hz: 200 mVpp	Single 24 Vdc ±10% Max. ripple allowed at 100/120 Hz: 200 mVpp
Typical consume with transducer connected	Voltage output: 45 mA Current output: 65 mA	Voltage output: 300 mA max. Current output: 500 mA max	Voltage output: 300 mA max. Current output: 500 mA max
Output signal, tension mode ±5V	Maximum output current ±1 mA	Maximum output current ±1 mA	Maximum output current ±1 mA
Output signal, tension mode ±10V	Maximum output current ±1 mA	Maximum output current ±1 mA	Maximum output current ±1 mA
Output signal, tension mode 0-10V	Maximum output current ±1 mA	Maximum output current ±1 mA	Maximum output current ±1 mA
Output signal, current mode 4/20 mA	Load impedance max. 250 ohm, min. 100 ohm	Load impedance max. 250 ohm, min. 100 ohm	Load impedance max. 250 ohm, min. 100 ohm

HOW TO ORDER

	B	6	7	4	6	T	N	X	A	C	U
TRANSDUCER TYPE	LVDT					0					
	HBT					1					
NUMBER OF CHANNELS	1 CH						0				
	4 CH						2				
	8 CH						3				
MEASURING RANGE	±0,5							0			
	±1							1			
	±1,5							2			
	±2,5							3			
	±5							4			
POWER SUPPLY	±15 V / ±12 V								0		
	24 V								1		
COMPATIBILITY (*)	MARPOSS									0	
	MICROCONTROL									1	
	SOLARTRON									2	
	MERCER									3	
	TESA									4	
OUTPUT SIGNAL	±5 V										0
	±10 V										1
	4-20 MA										2
	0 - 10 V										3

Note. (*) If the transducer type is not included in the list, please contact your nearest Marposs office to define the specific order code.



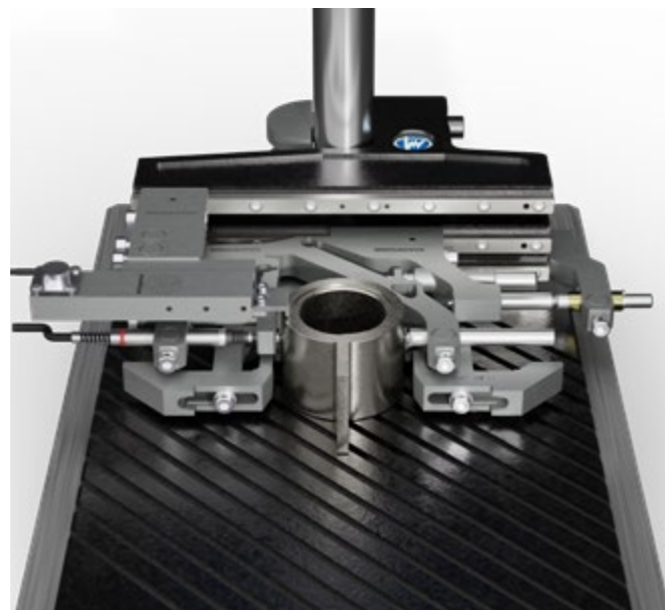
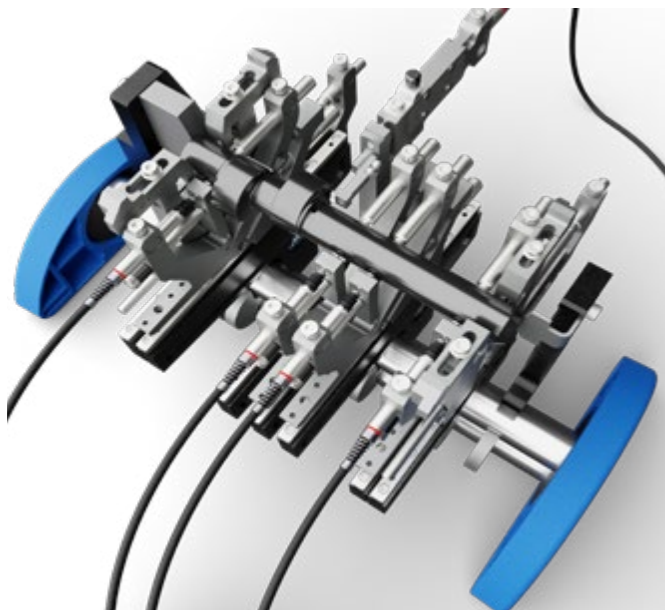
The dimensions are the same for all versions.

QUICK SET

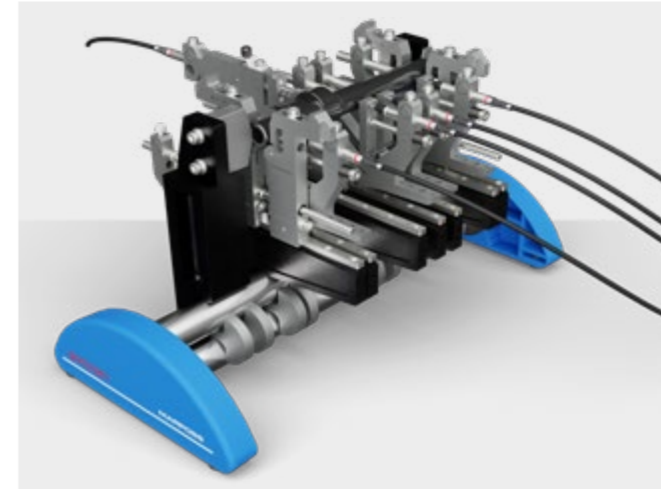


- ▶ QuickSet™ is a measuring solution for quality control of shafts-like workpieces. Designed to integrate multiple Marposs measuring probes in its structure, it is perfect for multi-dimensional and geometrical controls. QuickSet is available in different gauging configurations, in order to match the specific workpiece geometries and its clamping constraints into the measuring system.
- ▶ QuickSet horizontal and vertical configurations are dedicated to shafts with clamping centers; QuickSet chuck is the version dedicated to parts that cannot be referenced horizontally with Vees or held between centers, such as bushings, bearings, pistons and cylindrical parts that are manufactured with a flange.

APPLICATION EXAMPLES



GAUGE CONFIGURATIONS



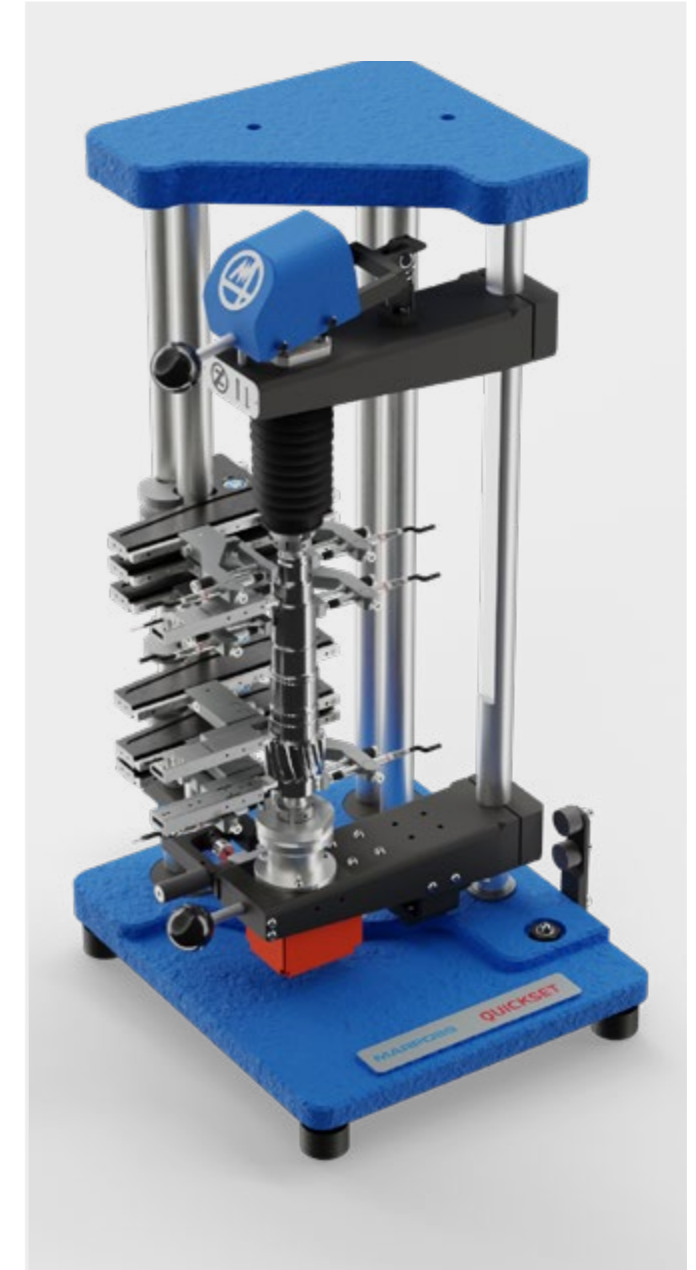
QUICKSET HORIZONTAL

QuickSet horizontal can be configured with V-support structures or with live centers, depending on the shaft clamping features.



QUICKSET CHUCK

Parts can be supported and referenced through the serrated plate and a Vee.



QUICKSET VERTICAL

QuickSet vertical is the configuration with clamping centers for shaft having centering holes. Shaft is kept in measurement position through the integrated live centers.

Two versions are available, Single and Dual station; the second is used when a large number of measurements is required

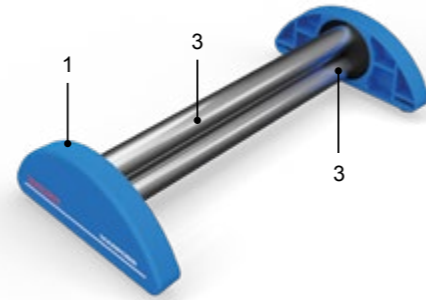
TECHNICAL SPECIFICATIONS

GAUGE CONFIGURATION	QUICK SET-HORIZONTAL	QUICK SET-VERTICAL	QUICK SET-CHUCK
Measurable Diameter	5 - 160 mm (0.02" - 6.30")	5 - 160 mm (0.07" - 6.30")	5 - 160 mm (0.02" - 6.30")
Max. Non-measurable Diameter	260 mm (10.24")	260 mm (10.24")	260 mm (10.24")
Max. Measurable Length	700 mm (27.56")	840 mm (33.07")	250 mm (9.84")
Weight	up to 14 kg	up to 8 kg (*)	-

(*) Special versions are available to measure heavier parts.

QUICK SET HORIZONTAL

► BASE STRUCTURE ASSEMBLY



REF	BARS NOMINAL LENGTH	PART LENGTH	PART LENGTH	PART LENGTH	ORDER CODE
3	200 mm (7.87 in)	100 mm (3.94 in)	70 mm (2.76 in)	80 mm (3.15 in)	B2924017010
3	300 mm (11.81 in)	200 mm (7.87 in)	170 mm (6.69 in)	180 mm (7.08 in)	B2924017020
3	400 mm (15.75 in)	300 mm (11.81 in)	270 mm (10.63 in)	280 mm (11.02 in)	B2924017030
3	500 mm (19.69 in)	400 mm (15.75 in)	370 mm (14.57 in)	380 mm (14.96 in)	B2924017040
3	600 mm (23.62 in)	500 mm (19.69 in)	470 mm (18.50 in)	480 mm (18.89 in)	B2924017050
3	800 mm (31.50 in)	700 mm (27.56 in)	670 mm (26.38 in)	680 mm (26.77 in)	B2924017070

REF	STRUCTURE ELEMENTS	ORDER CODE
1	SUPPORT FEET (PAIR)	B2924017005
2	CLAMPING DEVICES (PAIR)	B2924017115

QUICK SET CHUCK

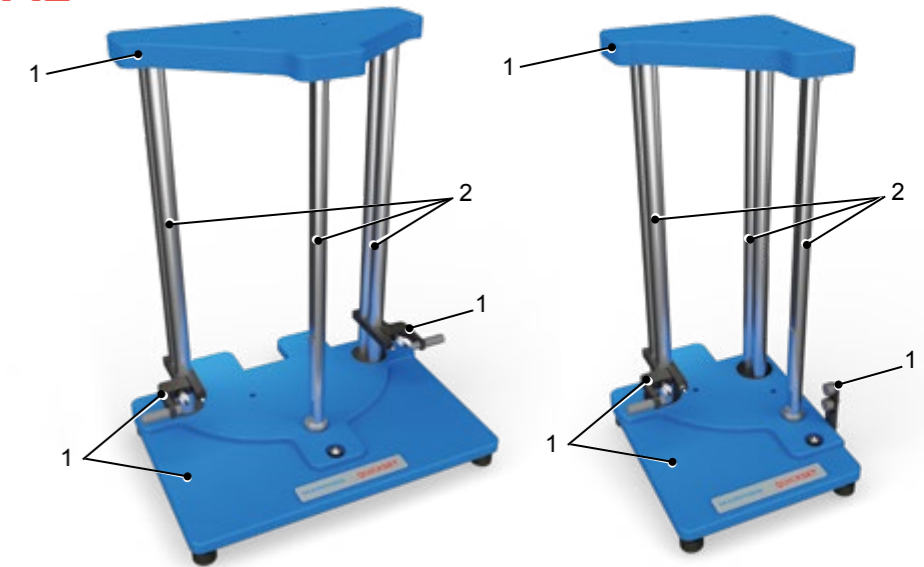
► BASE STRUCTURE ASSEMBLY



REF	STRUCTURE ELEMENTS	ORDER CODE
1	Support Feet	B2924017005
2	Clamping Device	B2924017115
3	BARS L = 300 mm (PAIR)	B2924017880
	BARS L = 500 mm (PAIR)	B2924017882
4	Serrated Referencing Plate (220 x 250 mm)	B2924017885
	Chromed Serrated Referencing Plate (220 x 250 mm, hrc 68)	B2924017886
5	Support Plate (Inclusive of Rubber Feet)	B2924017890

QUICK SET VERTICAL

► BASE STRUCTURE ASSEMBLY



IN CASE ON CONFIGURATION WITH STATIC LIVE CENTERS

IN CASE ON CONFIGURATION WITH DINAMIC LIVE CENTERS



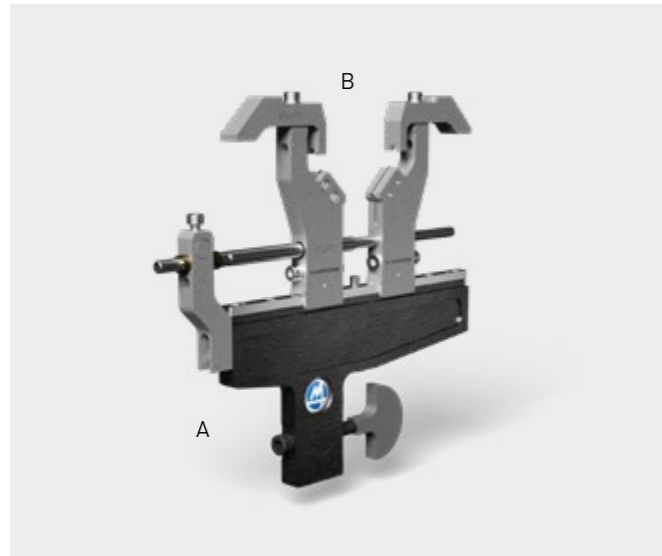
REF	BARS NOMINAL LENGTH	PART LENGTH	PART LENGTH	ORDER CODE
2	500 mm (19.69 in)	190 mm (7.48 in)	100 mm (3.94 in)	B3024025025
2	600 mm (23.62 in)	290 mm (11.41 in)	200 mm (7.87 in)	B3024025026
2	700 mm (27.56 in)	390 mm (15.35 in)	300 mm (11.81 in)	B3024025027
2	800 mm (31.50 in)	490 mm (19.29 in)	400 mm (15.75 in)	B3024025028
2	900 mm (35.43 in)	590 mm (23.22 in)	500 mm (19.69 in)	B3024025029
2	1000 mm (39.37 in)	690 mm (27.16 in)	600 mm (23.62 in)	B3024025030
2	1150 mm (45.28 in)	840 mm (33.07 in)	750 mm (29.53 in)	B3024025031

Part length values are referred to bench gauges equipped with:
 - Standard interchangeable centers for static measurements
 - Cone center L = 100 mm, diameter 18 mm, for dynamic measurements

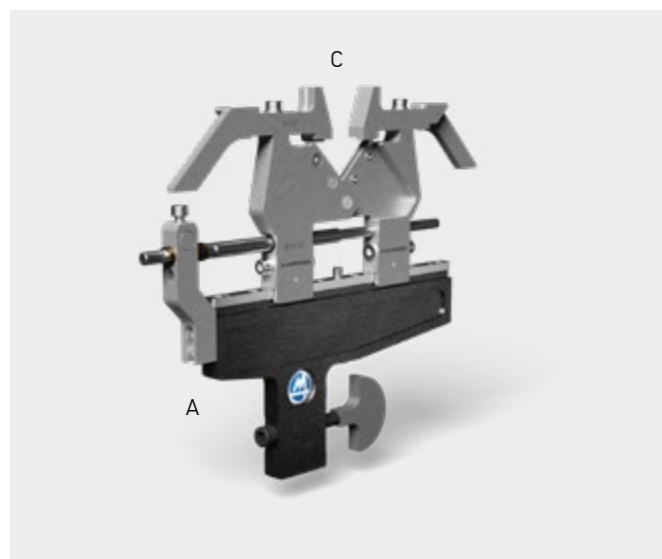
REF	STRUCTURE ELEMENTS	ORDER CODE
1	SINGLE STATION BASE (includes upper and lower plates and stoppers)	B3024025503
1	DUAL STATION BASE (includes upper and lower plates and stoppers)	B3024025003



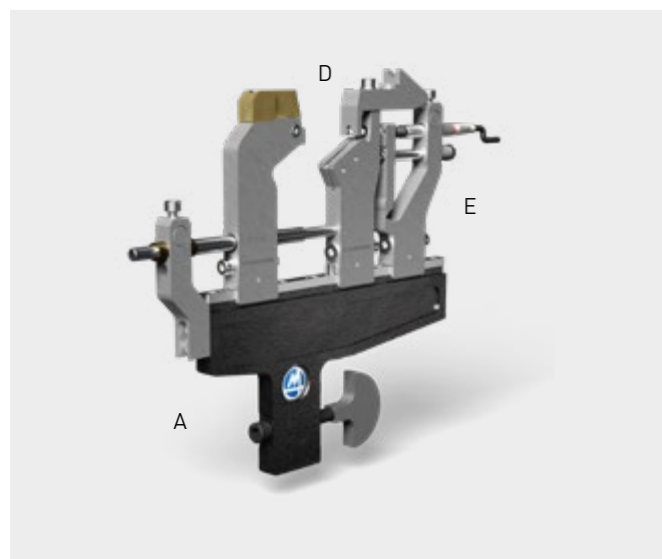
PART SUPPORT ELEMENTS



- ▶ **FRONTAL V-shape** for Horizontal and Chuck QuickSet.
- ▶ It accurately defines the measuring mechanical axis of the part.
- ▶ An assembly is composed of one support bracket [A] and one frontal V-shape [B]. Available with or without self-centering screw



- ▶ **CROSSED V-shape** for Horizontal and Chuck QuickSet.
- ▶ It is used for very frequent retooling and when a large retooling range is needed.
- ▶ An assembly is composed of one support bracket [A] and one crossed "V" [C]. Available with or without self-centering screw.



- ▶ **MEASURING V-shape** for Horizontal and Chuck QuickSet.
- ▶ It is used when both part reference and part diameter measurement have to be carried out in the same section.
- ▶ An assembly is composed of one support bracket [A] one measuring "V" [D], and one single transmission unit [E] or one direct sensor unit [F] Available with or without self-centering screw.

MODEL	ASSEMBLY MODE	SUPPORT BRACKET [A] LENGTH	SUPPORT BRACKET [A] ORDER CODE	FRONTAL V-SHAPE [B] RANGE	ORDER CODE
FRONTAL V-shape	with self-centering screw	200 mm (7.87 in)	B3024017540	5 - 10 mm (0.19 - 0.39 in)	B3024017633
				10 - 15 mm (0.39 - 0.59 in)	B3024017643
				15 - 24 mm (0.59 - 0.94 in)	B3024017653
				24 - 40 mm (0.94 - 1.57 in)	B3024017663
				40 - 70 mm (1.57 - 2.76 in)	B3024017673
				55 - 100 mm (2.16 - 3.94 in)	B3024017693
	without self-centering screw	200 mm (7.87 in)	B3024017000	5 - 10 mm (0.19 - 0.39 in)	B3024017632
				10 - 15 mm (0.39 - 0.59 in)	B3024017642
				15 - 24 mm (0.59 - 0.94 in)	B3024017652
				24 - 40 mm (0.94 - 1.57 in)	B3024017662
				40 - 70 mm (1.57 - 2.76 in)	B3024017672
				55 - 100 mm (2.16 - 3.94 in)	B3024017692
		250 mm (9.84 in)	B3024017050	100 - 150 mm (3.94 - 5.91 in)	B3024017695

MODEL	ASSEMBLY MODE	SUPPORT BRACKET [A] LENGTH	SUPPORT BRACKET [A] ORDER CODE	CROSSED V-SHAPE [C] RANGE	ORDER CODE
CROSSED V-shape	with self-centering screw	200 mm (7.87 in)	B3024017540	5 - 100 mm (0.19 in - 3.94 in)	B3024017553
	without self-centering screw	200 mm (7.87 in)	B3024017000	5 - 100 mm (0.19 in - 3.94 in)	B3024017552

MODEL	ASSEMBLY MODE	SUPPORT BRACKET [A] LENGTH	SUPPORT BRACKET [A] ORDER CODE	MEASURING V-SHAPE [D] RANGE	ORDER CODE
MEASURING V-shape	with self-centering screw	200 mm (7.87 in)	B3024017540	5 - 35 mm (.19 in - 1.39 in)	B3024017524
				35 - 65 mm (1.39 in - 2.56 in)	B3024017526
	without self-centering screw	200 mm (7.87 in)	B3024017000	5 - 35 mm (.19 in - 1.38 in)	B3024017520
				35 - 65 mm (1.38 in - 2.56 in)	B3024017522

SENSOR SUPPORT	CLAMPING Ø FOR SENSOR	ORDER CODE
SINGLE TRANSMISSION UNIT [E]	8 mm	B3024017155
	3/8"	B3024017157
DIRECT SENSOR UNIT [F]	8 mm	B3024017145
	3/8"	B3024017147

LIMITERS

RADIAL LIMITER

- **RADIAL LIMITER** for Horizontal and Chuck QuickSet. It ensures the correct part introduction into the bench.
- An assembly is composed of one support bracket [A] and one pair of radial limiters [G].
Limiters contacts are available in steel material or brass material for low hardness workpieces.



ASSEMBLY MODE	SUPPORT BRACKET [A] LENGTH	ORDER CODE
with radial limiter	200 mm (7.87 in)	B3024017000
	250 mm (9.84 in)	B3024017050

RADIAL LIMITER [G]	ORDER CODE
Steel Radial Limiters (Pair)	B3024017200
Brass Radial Limiters (Pair)	B3024017210

AXIAL LIMITER

- **AXIAL LIMITER** for Horizontal QuickSet. It ensures the correct part positioning into the bench.
- Two versions are available:
 - Introducing axial limiter to limit part position
 - Measuring axial limiter. Beyond limiting part position, it works as mechanical reference for a distance measurements.
- Differently from other limiters, this component is fixed directly on the two-bars of the horizontal bench.

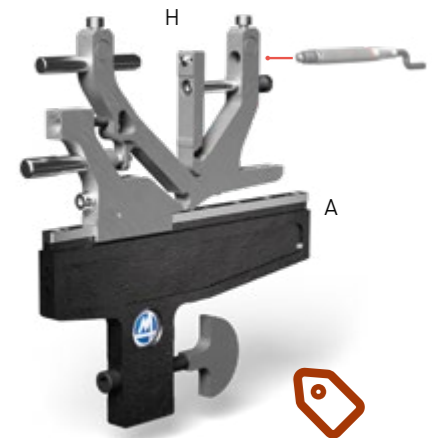


AXIAL LIMITER	ORDER CODE
Introducing Axial Limiter	B3024017214
Measuring Axial Limiter	B3024017218

MEASURING ASSEMBLIES

SELF-CENTERING UNIT WITH TRANSMISSION

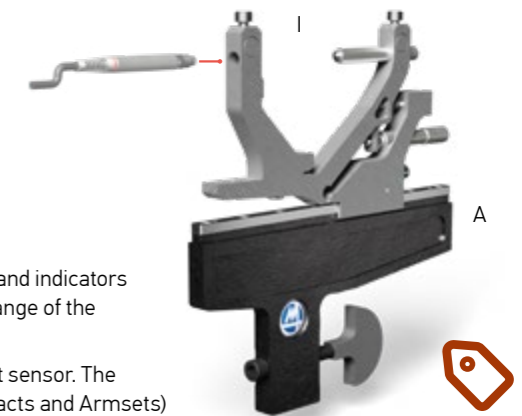
- It is used to carry out diameter measurements only. It can accommodate pencil probes and indicators with diameter 8 mm or 3/8". The sensor is not in direct contact with the part, therefore it is preserved during part loading/unloading operations. The working range of the transmission unit is 1.150 mm.
- An assembly is composed by one support bracket and one self-centering unit with transmission. The sensor and the two contacts to be mounted on the unit must be ordered separately (see Contacts and Armsets).



SUPPORT BRACKET [A] LENGTH	ORDER CODE	SELF-CENTERING UNIT [H] RANGE	CLAMPING Ø FOR SENSOR	ORDER CODE
200mm (7.87 in)	B3024017000	5 - 80 mm (0.20 in - 3.15 in)	8 mm	B3024017460
			3/8"	B3024017462

SELF-CENTERING UNIT WITH DIRECT SENSOR

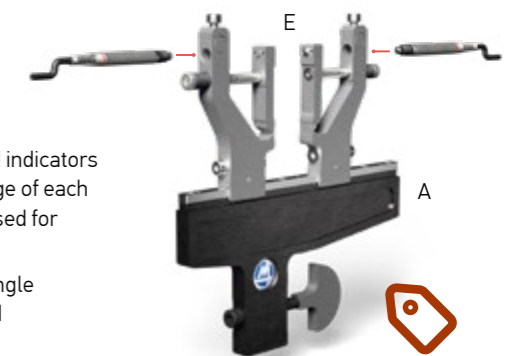
- It is used to carry out diameter measurements only. It can accommodate pencil probes and indicators with diameter 8 mm or 3/8". The sensor is in direct contact with the part. The working range of the transmission unit is 1.150 mm.
- An assembly is composed of one support bracket and one self-centering unit with direct sensor. The sensor and the contact to be mounted on the unit must be ordered separately (see Contacts and Armsets)



SUPPORT BRACKET [A] LENGTH	ORDER CODE	SELF-CENTERING UNIT [I] RANGE	CLAMPING Ø FOR SENSOR	ORDER CODE
200mm (7.87 in)	B3024017000	5 - 80 mm (0.20 in - 3.15 in)	8 mm	B3024017470
			3/8"	B3024017472

SINGLE TRANSMISSION UNIT

- It is used to carry out diameter and form measurements. It can accommodate pencil probes and indicators with diameter 8 mm or 3/8". The sensor is not in direct contact with the part. The working range of each transmission unit is 1.150 mm. The assembly with only one transmission unit is particularly used for T.I.R. measurements.
- An assembly is composed of one support bracket (L=200 mm or 250 mm) and one or two single transmission units. The sensor and the contact to be mounted on each unit must be ordered separately (see Contacts and Armsets).



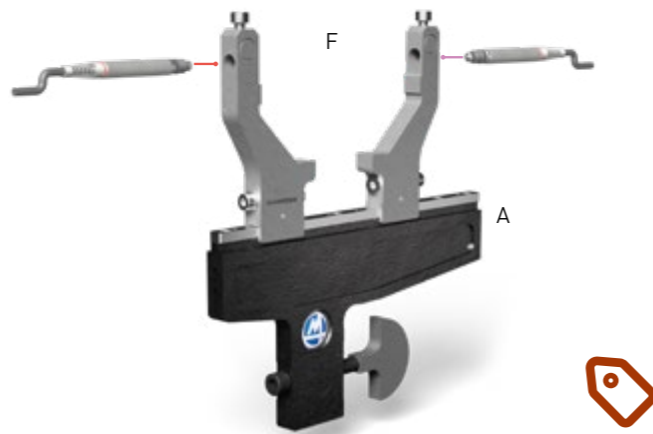
SUPPORT BRACKET [A] LENGTH	SUPPORT BRACKET [A] RANGE (MEASURABLE DIAMETER)	ORDER CODE
200 mm (7.87 in)	3 - 118 mm (0.12 in - 4.64 in)	B3024017000
250 mm (9.84 in)	3 - 160 mm (0.12 in - 6.30 in)	B3024017050

SENSOR SUPPORT [E]	CLAMPING Ø FOR SENSOR	ORDER CODE
Single Transmission Unit	8 mm	B3024017155
	3/8 in	B3024017157

MEASURING ASSEMBLIES

WITH DIRECT SENSOR UNIT

- It is used to carry out diameter and form measurements. It can accommodate pencil probes and indicators with diameter 8 mm or 3/8".
- An assembly is composed of one support bracket (L=200 mm or 250 mm) and one or two direct sensor units. The sensor to be mounted on each unit must be ordered separately

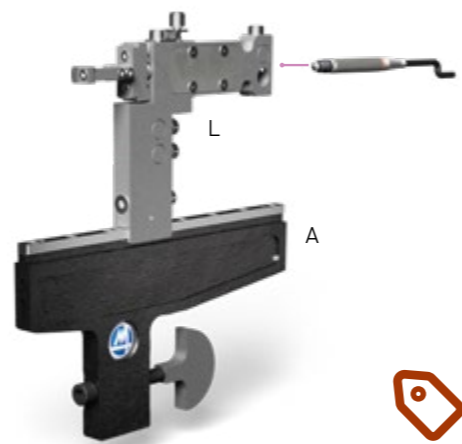


SUPPORT BRACKET [A] LENGTH	SUPPORT BRACKET [A] RANGE (MEASURABLE DIAMETER)	ORDER CODE
200 mm (7.87 in)	3 - 118 mm (0.12 in - 4.64 in)	B3024017000
250 mm (9.84 in)	3 - 160 mm (0.12 in - 6.30 in)	B3024017050

SENSOR SUPPORT [F]	CLAMPING Ø FOR SENSOR	ORDER CODE
Direct Sensor Unit	8 mm	B3024017145
	3/8"	B3024017147

WITH SHOULDER TRANSMISSION UNIT

- It is used to carry out distance measurements. It can accommodate pencil probes and indicators with diameter 8 mm or 3/8". The working range of this transmission unit is 1.50 mm.
- The sensor is not in direct contact with the part, therefore it is preserved during part loading/unloading operations. Distance measurements can be carried out by using two assemblies or one assembly and a measuring axial limiter.
- An assembly is composed of one support bracket and one shoulder transmission unit. The sensor, the armset and the contact to be mounted on the unit must be ordered separately (see Contacts and Armsets).



SUPPORT BRACKET [A] LENGTH	ORDER CODE
200 mm (7.87 in)	B3024017000
250 mm (9.84 in)	B3024017050

SHOULDER TRANSMISSION UNIT [L]	CLAMPING Ø FOR SENSOR	ORDER CODE
	8 mm	B3024017330
	3/8"	B3024017331

ARMS FOR CENTERS SUPPORT

STATIC CENTERS FOR VERTICAL QUICKSET

- These arms are suitable for static measurement acquisitions and accept standard, interchangeable universal and short center with cylindrical shank.
- An assembly is composed of the two arms. Centers must be ordered separately or provided by the customer.



DESCRIPTION	ORDER CODE
Upper arm without center for single and dual station, for static measurements	B2924017190
Lower arm without center for single station, for static measurements	B2924017220
Lower arm without center for dual station, for static measurements	B2924017221
Universal Center (see page 204)	B1024017753
Short Center (see page 204)	B1024017755

MOTORIZED CENTERS FOR VERTICAL QUICKSET

- These arms are suitable for dynamic measurement acquisitions (the lower arm is equipped with a brushless motor) and accept standard MK2 cone centers.
- An assembly is composed of the two arms. Centers must be ordered separately or provided by the customer



DESCRIPTION	ORDER CODE
Upper arm without center for single and dual station, for dynamic measurements	B2924017170
Lower arm without center for single station, with Faulhaber motor for dynamic measurements	B2942441808
Lower arm without center for single station, with commercial motor for dynamic measurements	B2942441809
Lower arm without center for dual station, with Faulhaber motor for dynamic measurements	B2942441813
Lower arm without center for dual station, with commercial motor for dynamic measurements	B2942441814

PIVOTING CENTERS UNIT FOR HORIZONTAL QUICKSET

- This unit is needed when the part to be measured is provided with center holes. The part is loaded between the centers and then introduced into the measuring station.
- It is recommended for small parts [max. part weight 3 kg and max. flywheel overall diameter 170 mm (6.69")].
- An assembly is composed of one pair of pivoting supports and their connecting shaft, whose length depends on the length of the bars of the base structure assembly. The centers, their supports and the dampers must be ordered separately. Dampers are available to avoid impacts during part introduction in the measuring station.



BASE BARS LENGTH	MAX PART LENGTH	PIVOTING SUPPORTS (PAIR) ORDER CODE	CONNECTING SHAFT LENGTH	CONNECTING SHAFT ORDER CODE
200 mm (7.87 in)	80 mm (3.15 in)	B3024017355	360 mm (14.17 in)	B1024017369
300 mm (11.81 in)	180 mm (7.08 in)	B3024017355	460 mm (18.11 in)	B1024017371
400 mm (15.75 in)	280 mm (11.02 in)	B3024017355	560 mm (22.04 in)	B1024017373
500 mm (19.69 in)	380 mm (14.96 in)	B3024017355	660 mm (25.98 in)	B1024017375
600 mm (23.62 in)	480 mm (18.89 in)	B3024017355	760 mm (29.92 in)	B1024017377
800 mm (31.50 in)	680 mm (26.77 in)	B3024017355	960 mm (37.79 in)	B1024017379

FIXED CENTER SUPPORT



ORDER CODE
B1024017567

IDLE CENTER SUPPORT



ORDER CODE
B3024017325

**IDLE CENTER
RELOADING
SUPPORT****ORDER CODE**

B3024017315

**UNIVERSAL
CENTER****ORDER CODE**

B1024017753

**SHORT
CENTER****ORDER CODE**

B1024017755

**DAMPER (FOR MAX.
PART WEIGHT 3 KG)****ORDER CODE**

B44331AC108

ACCESSORIES**PART PUSHER**

- The part pusher ensures the contact between the part and the “V” supports. It is particularly useful for parts with weight lower than 200 gr. It is suitable for part diameters from 5 to 50 mm (0.19” - 1.97”).

**ORDER CODE**

B3024017980

DESCRIPTION

Part Pusher

SUPPORT BRACKET WITH BACK HOLES

- This support bracket is used with the Vertical version; it is equipped with two holes in the bottom that allow the use of the specific retooling tool to setup it horizontally.

**ORDER CODE**

B2924025255

DESCRIPTION

Support bracket with back holes

RETOOLING TOOL (ONLY FOR BRACKET WITH BACK HOLES)

This tool allows to setup the support bracket code B2924025255 horizontally

**ORDER CODE**

B2924025050

DESCRIPTION

Retooling tool (only for bracket with back holes)

**WRENCH SET - B2924017990****DESCRIPTION**

Wrench set

ORDER CODE

B2924017990

CONTACTS AND ARMSETS**STANDARD CONTACTS**

- To be used with:
 - Self-centering unit with transmission (Q.ty = 2)
 - Self-centering unit with direct sensor (Q.ty = 1)
 - Single transmission unit (Q.ty = 1)



RADIUS R	THREAD	MATERIAL	ORDER CODE
10 mm (0.39")	M 2.5	Carbide	B3392401702
50 mm (1.97")	M 2.5	Carbide	B3392401705
100 mm (3.94")	M 2.5	Carbide	B3392401706
10 mm (0.39")	M 2.5	Diamond	B3392401722
50 mm (1.97")	M 2.5	Diamond	B3392401725
100 mm (3.94")	M 2.5	Diamond	B3392401726

CONTACTS FOR MEASURING 'V'

- Special carbide contacts to be mounted on the single transmission unit or directly on the sensor.



RADIUS R	THREAD	MATERIAL	ORDER CODE
10 mm (0.39")	M 2,5	Special Carbide	B3392401701
50 mm (1.97")	M 2,5	Special Carbide	B3392401720
100 mm (3.94")	M 2,5	Special Carbide	B3392401721

CONTACT EXTENSION

- To be used with:
 - Self-centering unit with transmission or direct sensor
 - Single transmission unit
 - Direct sensor unit
 - Indicators



LENGTH	THREAD	ORDER CODE
10 mm (0.39")	M 2.5	1024017105
15 mm (0.59")	M 2.5	1024017106
20 mm (0.79")	M 2.5	1024017107
25 mm (0.98")	M 2.5	1024017108
30 mm (1.18")	M 2.5	1024017109
10 mm (0.39")	4 - 48 UNF	1024017115
15 mm (0.59")	4 - 48 UNF	1024017116
20 mm (0.79")	4 - 48 UNF	1024017117
25 mm (0.98")	4 - 48 UNF	1024017118
30 mm (1.18")	4 - 48 UNF	1024017119

ARMSET FOR SELF-CENTERING UNIT WITH TRANSMISSION

- It is needed to carry out measurements very close to each other and close to a shoulder (min. 3 mm) by offsetting the contact.
- Min. distance between two measuring sections: 5,2 mm



DESCRIPTION	ORDER CODE
Armset + fixing screw	B2924017405

ARMSET FOR SINGLE TRANSMISSION UNIT

- For contact off-set when measurements close to each other must be carried out.
- Min. distance between two measuring sections: 5,2 mm

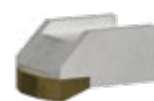


DESCRIPTION	OFFSET LENGTH	ORDER CODE
Armset + fixing screw	8.5 mm (0.33 in)	B2924017150
Armset + fixing screw	10 mm (0.39 in)	B2924017151



ARMSETS FOR SHOULDER TRANSMISSION UNIT

It is the interface for mounting the contact on the unit.

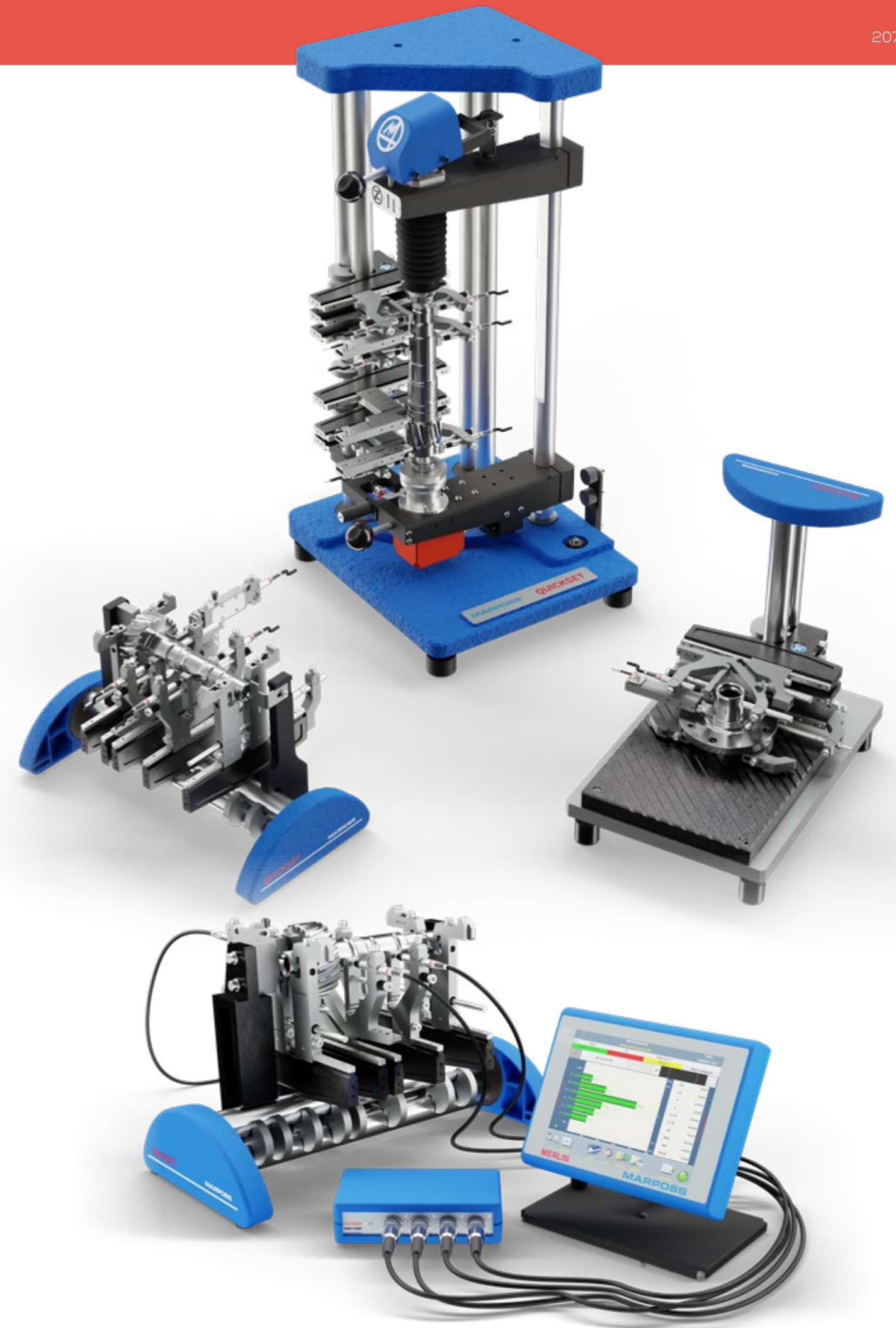


CONTACT FOR SHOULDER TRANSMISSION UNIT

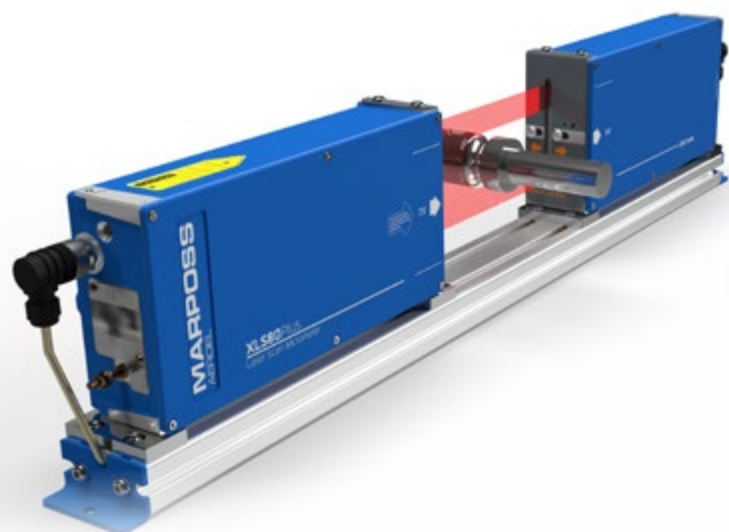


ARMSETS FOR SHOULDER TRANSMISSION UNIT. CONTACT FOR GROOVES

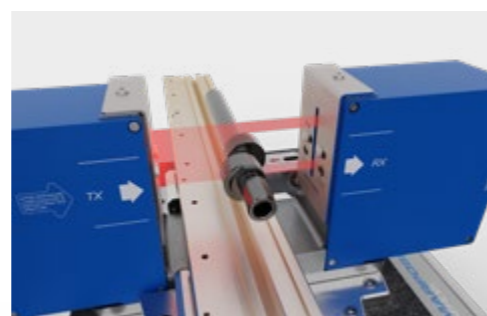
DESCRIPTION	ORDER CODE
Armset	B2924017302
Carbide Contact	B3292401702
Diamond Contact	B3292401712
Armset For Grooves	B3292401705



MARPOSS AEROEL LASER MICROMETER



- ▶ Marposs Aeroel micrometers are super-accurate measuring systems for diameters of shaft-like workpieces. The measuring head is called XLS, meaning eXactum Laser Scan Micrometer. Its technical architecture is laser-based, purposely implemented to deliver accuracy and flexibility at the same time. For instance, the measuring repeatability of diameters is up to $\pm 0.07 \mu\text{m}$ and its laser beam generates measuring field up to 80 millimeters that makes the system super-flexible to different part diameters.
- ▶ The XLS measuring head can be combined with a number of standard accessories and interfaces, to perfectly fit different application requirements. For instance, the system can be configured with a range of different displays and control units, for an increasing level of measuring functionalities, data management and result visualizations.
- ▶ Marposs Aeroel micrometers are industrial-grade solutions, capable to deliver the highest measuring performance even in harsh environments, like in the shop floor. An exclusive thermal compensation technology is available as option on the XLS system. Its name is NO-VAR since it guarantees a perfect level of accuracy in measurement, without variations, even under variable ambient temperature conditions.



LASER OPTICAL MEASUREMENT



TABLE GAUGE

This is the base system for diameters measurement on shaft-like workpieces. The table gauge integrates the XLS measuring head and a compact display DM200 for the immediate result visualization.

This configuration comes with a remote control device usable for the product setup in line. The product also supports webpage configuration, thanks to an effective webserver integrated.

It is available in two different versions: XLS40 for diameters up to 40mm and XLS80 for diameters up to 80mm.



MECLAB X

MECLAB X is the advanced diameters measuring station, integrating a multi-functional display CE200 that has a number of measuring function abilities. For instance, touch keyboard, multiple language menus for easy programming, different measurement units and visualization of 3 measured values in the display.

It is available in two different versions: XLS40 for diameters up to 40mm and XLS80 for diameters up to 80mm.



MECLAB X S

MECLAB X S is the configuration of the MECLAB X for multiple diameters measurements at controlled Z position of the part. In fact, it integrates a linear slide that allows moving the part and an optional precision scale directly connected to the control display CE200.

It is available in two different versions: XLS40 for diameters up to 40mm and XLS80 for diameters up to 80mm.

LASER OPTICAL MEASUREMENT



SUPERMECLAB X

This is the premium version in the line, extending the basic functionalities of diameters measurement with a number of functionalities of data management.

The SUPERMECLAB X comes with a 15" Full HD display and a PC embedded in the structure. Multi-touch that increases the ease-of-use in the line since mouse and keyboard is no longer used. The embedded PC runs exclusive data processing software. For instance, SUPERMECLAB X can store all the measuring data, export to external devices or print reports. It can also calculate online statistics of the measurement on a display chart for immediate detection of trends.

It is available in two different versions: XLS40 for diameters up to 40mm and XLS80 for diameters up to 80mm.



MECLAB T

MECLAB T is the extended version of MECLAB X, implementing special functionalities for cutting tool measurements. Cutting tools are normally complicated items to measure since they have discontinuous surfaces and tight tolerances. MECLAB T makes it easy and fast to validate cutting tools since it offers automatic specialized measurements.

It is available in one version: XLS40 for diameters up to 40mm.



SUPERMECLAB T

This version is the top of the range.

In addition to the SUPERMECLAB X configuration, the SUPERMECLAB T version implements a toolkit of functionalities for cutting tool measurements. Cutting tools are normally complicated items to measure since they have discontinuous surfaces and tight tolerances. SUPERMECLAB T makes it easy and fast to validate cutting tools since it offers automatic specialized measurements. For instance, it allows for quick tolerance checks and multiple measurements on the same part that allow for checking the taper or the bending of the part.

It is available in one version: XLS40 for diameters up to 40mm.

TABLE GAUGE



Base system, including compact display and remote control, for applications of diameters measurement on shaft-like workpieces.

The version XLS40 is for diameters up to 40mm.

DESCRIPTION

TABLE-GAUGE.X40/B

ORDER CODE

03PX0710008

ACCESSORIES

DESCRIPTION

NO-VAR thermal compensation software option for Table-Gauge.X.

Fixed "V" block in hardened steel for XLS40, angle 140°. Part diameter from 1 to 36 mm. L = 80 mm.

Fixed "V" block in plastic (insulated) for XLS40, angle 140°. Part diameter from 1 to 36 mm. L = 80 mm.

Fixed "V" block in hardened steel for XLS40, angle 140°. Part diameter from 1 to 36 mm. L = 180 mm.

Vertically adjustable "V" block to hold gage pins, to be used with XLS40. Part diameter from 0.5 to 38 mm.

Foot switch for CE200/DM200/NCB

ORDER CODE

OSMA071Z001

030X0001212

030X0001213

030X0001209

030X0001041

061AX000012



Base system, including compact display and remote control, for applications of diameters measurement on shaft-like workpieces.

The version XLS80 is for diameters up to 80mm.

DESCRIPTION

TABLE-GAUGE.X80/B

ORDER CODE

03PX0710012

ACCESSORIES

DESCRIPTION

NO-VAR thermal compensation software option for Table-Gauge.X.

Fixed "V" block in hardened steel for XLS80, angle 140°. Part diameter from 1 to 75 mm. L = 106 mm.

Foot switch for CE200/DM200/NCB

ORDER CODE

OSMA071Z001

030X0001039

061AX000012

MECLAB X



MECLAB X is the advanced diameters measuring station, integrating a multi-functional display CE200 that has a number of measuring function abilities.

The version XLS40 is for diameters up to 40mm.



DESCRIPTION	ORDER CODE
MECLAB.X40/B	03PX0610035

ACCESSORIES



DESCRIPTION	ORDER CODE
NO-VAR thermal compensation software option for Meclab.X.	500VXXLXXZ7
Fixed "V" block in hardened steel for XLS40, angle 140°. Part diameter from 1 to 36 mm. L = 80 mm.	030X0001212
Fixed "V" block in plastic (insulated) for XLS40, angle 140°. Part diameter from 1 to 36 mm. L = 80 mm.	030X0001213
Fixed "V" block in hardened steel for XLS40, angle 140°. Part diameter from 1 to 36 mm. L = 180 mm.	030X0001209
Vertically adjustable "V" block to hold gage pins, to be used with XLS40. Part diameter from 0.5 to 38 mm.	030X0001041
Foot switch for CE200/DM200/NCB	061AX000012



MECLAB X is the advanced diameters measuring station, integrating a multi-functional display CE200 that has a number of measuring function abilities.

The version XLS80 is for diameters up to 80mm.



DESCRIPTION	ORDER CODE
MECLAB.X80/B	03PX0610031

ACCESSORIES



DESCRIPTION	ORDER CODE
NO-VAR thermal compensation software option for Meclab.X.	500VXXLXXZ7
Fixed "V" block in hardened steel for XLS80, angle 140°. Part diameter from 1 to 75 mm. L = 106 mm.	030X0001039
Foot switch for CE200/DM200/NCB	061AX000012



MECLAB X S is the configuration of the MECLAB X for multiple diameters measurements at controlled Z position of the part. In fact, it integrates a linear slide that allows moving the part and an optional precision scale directly connected to the control display CE200.

The version XLS40 is for diameters up to 40mm.



DESCRIPTION	ORDER CODE
MECLAB.X40/B-S	03PX0610036

ACCESSORIES



DESCRIPTION	ORDER CODE
Precision steel slide to hold the parts, length 400 mm; useful range 160 mm.	030X0001073
Precision steel slide to hold the parts, length 640 mm; useful range 400 mm.	030X0001074
Precision steel slide to hold the parts, length 820 mm; useful range 580 mm.	030X0001075
NO-VAR thermal compensation software option for Meclab.X.	500VXXLXXZ7
Digital scale, resolution 0.005 mm, to read the slide position	030X0001069
Optional device for the fine tuning of the slide position	030X0001072
Foot switch for CE200/DM200/NCB	061AX000012

Accessories and part holder for the linear slide: please refer to the specific table



MECLAB X S is the configuration of the MECLAB X for multiple diameters measurements at controlled Z position of the part. In fact, it integrates a linear slide that allows moving the part and an optional precision scale directly connected to the control display CE200.

The version XLS80 is for diameters up to 80mm.



DESCRIPTION	ORDER CODE
MECLAB.X80/B-S	03PX0610040

ACCESSORIES



DESCRIPTION	ORDER CODE
Precision steel slide to hold the parts, length 400 mm; useful range 160 mm.	030X0001073
Precision steel slide to hold the parts, length 640 mm; useful range 400 mm.	030X0001074
Precision steel slide to hold the parts, length 820 mm; useful range 580 mm.	030X0001075
NO-VAR thermal compensation software option for Meclab.X.	500VXXLXXZ7
Digital scale, resolution 0.005 mm, to read the slide position	030X0001069
Optional device for the fine tuning of the slide position	030X0001072
Foot switch for CE200/DM200/NCB	061AX000012

Accessories and part holder for the linear slide: please refer to the specific table

MECLAB X



SUPERMECLAB X is the premium version in the line, extending the basis functionalities of diameters measurement with a number of functionalities of data management.

The integrated linear slide allows moving the part and the optional precision scale directly enables the possibility to control and associate the controlled Z position of the part where the diameter is measured.

The NO-VAR option thermal compensation is included in the software.

The version XLS40 is for diameters up to 40mm.



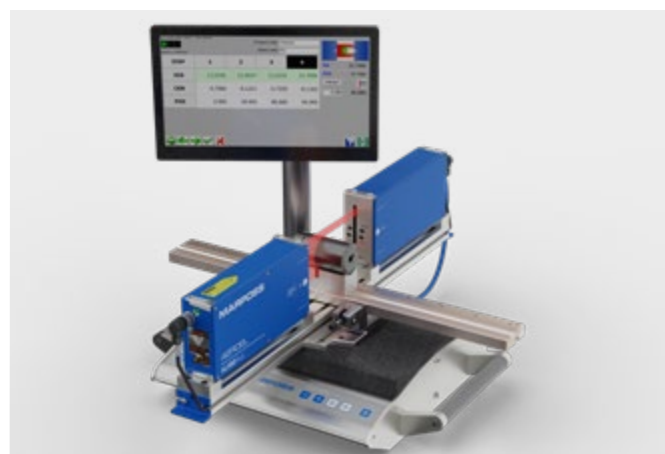
DESCRIPTION	ORDER CODE
SUPER-MECLAB.X40/B-SR	03PX0610036

ACCESSORIES



DESCRIPTION	ORDER CODE
Precision steel slide to hold the parts, length 400 mm; useful range 160 mm.	030X0001073
Precision steel slide to hold the parts, length 640 mm; useful range 400 mm.	030X0001074
Precision steel slide to hold the parts, length 820 mm; useful range 580 mm.	030X0001075
Digital scale, resolution 0.005 mm, to read the slide position	030X0001069
Optional device for the fine tuning of the slide position	030X0001072
Foot switch for CE200/DM200/NCB	061AX000012

Accessories and part holder for the linear slide: please refer to the specific table



SUPERMECLAB X is the premium version in the line, extending the basis functionalities of diameters measurement with a number of functionalities of data management.

The integrated linear slide allows moving the part and the optional precision scale directly enables the possibility to control and associate the controlled Z position of the part where the diameter is measured.

The NO-VAR option thermal compensation is included in the software.

The version XLS80 is for diameters up to 80mm.



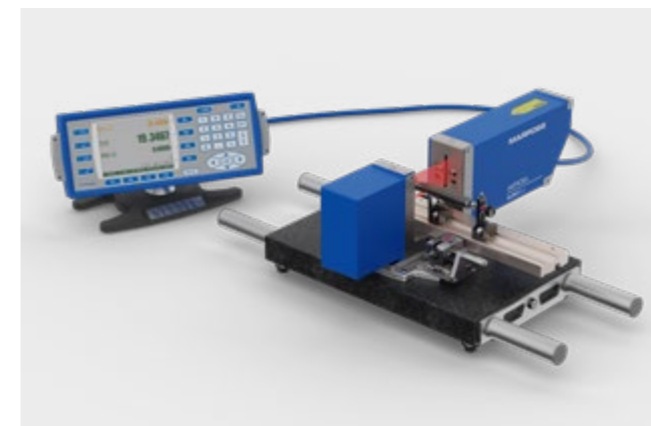
DESCRIPTION	ORDER CODE
SUPER-MECLAB.X80/B-SR	03PX0610062

ACCESSORIES



DESCRIPTION	ORDER CODE
Precision steel slide to hold the parts, length 400 mm; useful range 160 mm.	030X0001073
Precision steel slide to hold the parts, length 640 mm; useful range 400 mm.	030X0001074
Precision steel slide to hold the parts, length 820 mm; useful range 580 mm.	030X0001075
Digital scale, resolution 0.005 mm, to read the slide position	030X0001069
Optional device for the fine tuning of the slide position	030X0001072
Foot switch for CE200/DM200/NCB	061AX000012

Accessories and part holder for the linear slide: please refer to the specific table



MECLAB T is the extended version of MECLAB X, implementing special functionalities for cutting tool measurements.

The version XLS40 is for diameters up to 40mm.

The integrated linear slide with integrated micrometric movement, allows moving the part and the precision scale directly enables the possibility to control and associate the controlled Z position of the part where the diameter is measured.

It also integrates the accessories for the manual rotation of the part during the measurement (diameters 1-28 mm).



DESCRIPTION	ORDER CODE
MECLAB.T40 - MGM (manual tool rotation)	03PX0610043

ACCESSORIES



DESCRIPTION	ORDER CODE
NO-VAR thermal compensation software option for Meclab.T.	OSMA061Z002
Foot switch for CE200/DM200/NCB	061AX000012

Accessories and part holder for the linear slide: please refer to the specific table



This version is the top of the range. In addition to the SUPERMECLAB X configuration, the SUPERMECLAB T version implements a toolkit of functionalities for cutting tool measurements.

The integrated linear slide with integrated micrometric movement allows moving the part and the precision scale directly enables the possibility to control and associate the controlled Z position of the part where the diameter is measured.

The NO-VAR option thermal compensation is included in the software.

It also integrates the accessories for automatic rotation of the part during the measurement (diameters 1-28 mm).

The version XLS40 is for diameters up to 40mm.



DESCRIPTION	ORDER CODE
SUPERMECLAB.T40 - MGA - SLIDE 400	03PX0610064
SUPERMECLAB.T40 - MGA - SLIDE 640	03PX061C011

ACCESSORIES



DESCRIPTION	ORDER CODE
Foot switch for CE200/DM200/NCB	061AX000012

Accessories and part holder for the linear slide: please refer to the specific table

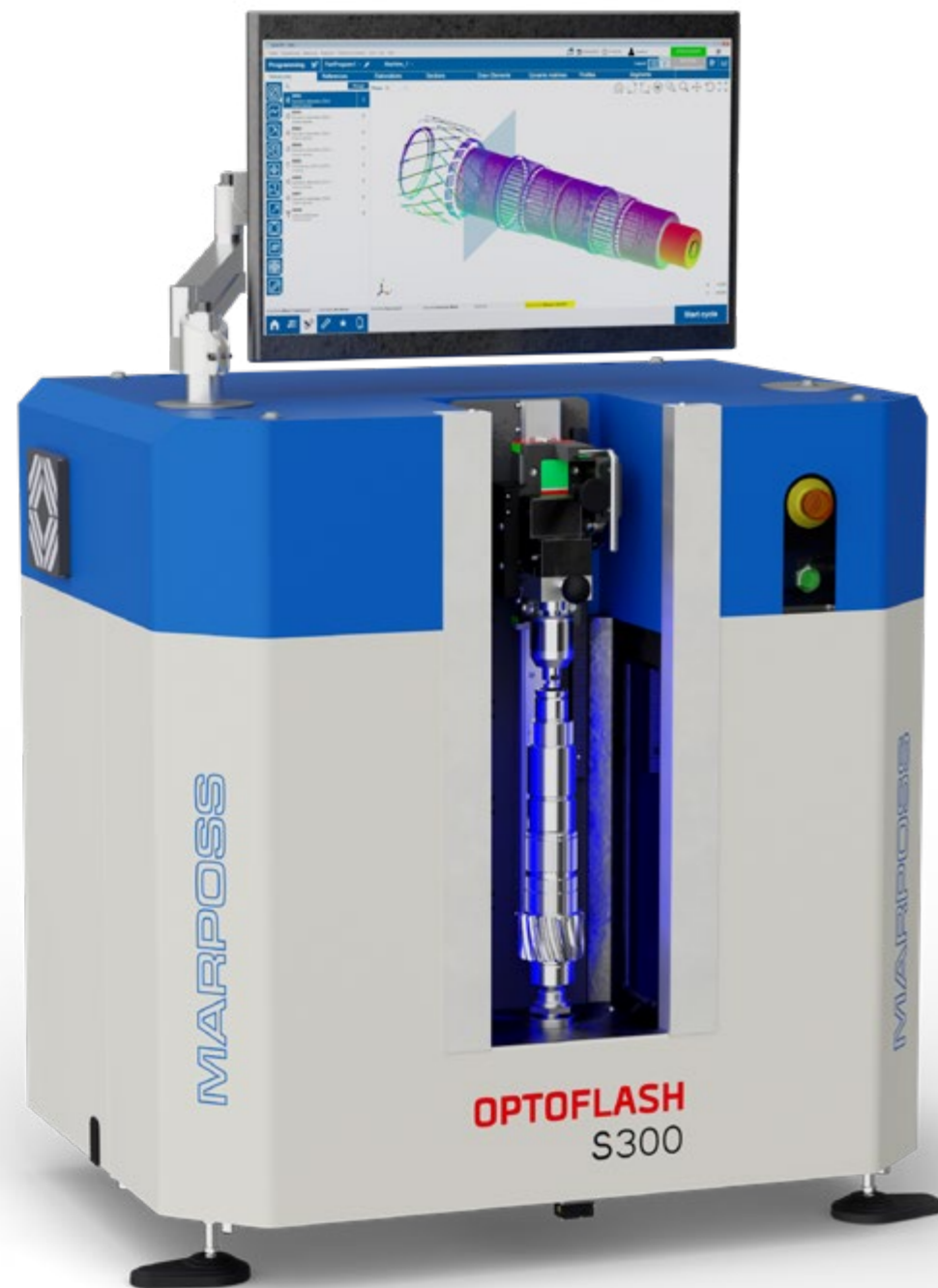
ACCESSORIES



DESCRIPTION	ORDER CODE
Pair of fixed 90° V blocks. XLS40 from 1 to 28 mm, XLS80 from 1 to 28 mm.	030X0001043
Pair of fixed 90° V blocks. XLS40 from 8 to 36 mm, XLS80 from 15 to 36 mm.	030X0001045
Pair of fixed 90° V blocks. XLS80 from 35 to 70 mm.	030X0001047
Pair of fixed 90° V blocks. XLS80 from 67 to 76 mm.	030X0001048
Pair of fixed 140° V blocks. XLS40: from 1 to 36 mm, XLS80 from 1 to 71 mm.	030X0001046
Pair of fixed 140° V blocks. XLS80 from 14 to 76 mm.	030X0001049
Pair of fixed 'knife like' 90° V blocks, 0.7 mm thick blade. Max. part diameter 10 mm. For XLS40	030X0001044
Pair of fixed 'knife like' 90° V blocks, 0.7 mm thick blade. Max. part diameter 20 mm. For XLS40	030X0001138
Pair of fixed 'knife like' 90° V blocks, 0.7 mm thick blade. Diameter 22-33 mm. For XLS40	030X0001139
Pair of fixed 'knife like' 90° V blocks, 0.7 mm thick blade. Max. part diameter 10 mm. For XLS80	030X0001207
Monolithic fixed V block. Diameter from 0.1 to 36 mm. For XLS40	030X0001050
Pair of supports with free rolls. Diameters from 3 to 10 mm. For XLS40 and XLS80	030X0001051
Pair of supports with free rolls. Diameters from 8 to 20 mm. For XLS40 and XLS80	030X0001052
Pair of supports with free rolls. XLS40 diameter from 18 to 32 mm, XLS80 diameter from 18 to 50 mm.	030X0001053
Pair of supports with free rolls. Diameters from 47 to 75 mm. For XLS80	030X0001054
Vertically adjustable "V" block to hold gage pins, For XLS40	030X0001055
Pair of dead centers. For XLS40.	030X0001056
Pair of dead centers. For XLS80 (10 Kg)	030X0001057
Pair of dead centers. For XLS80 (5 Kg)	030X0001058
Set of two pairs of hollow cones to be used with dead centers. Diameter 6-20 mm (thickness 5 mm), diameter 18-38 mm (thickness 17 mm). For XLS40 and XLS80	030X0001060
High precision pair of motorized centers to be mounted on linear slides. For XLS40.	030X0001223
Manual rotating chuck, min diameter 2 mm. For XLS40 and XLS80	030X0001137
Manual rotating chuck, diameters from 0.5 to 6.5 mm. For XLS40 and XLS80	030X0001072
Rotating chuck motor	ND
Motor driven device to rotate the part (rubber wheel). For XLS40.	067AX000064
Part stopper with reference cone/ball. For XLS40.	030X0001062
Part stopper with reference cone/ball. For XLS80.	030X0001063
Spring loaded clamp to lock the part on the V blocks. For XLS40.	030X0001064
Spring loaded clamp to lock the part on the V blocks. For XLS80.	030X0001141
Spring loaded clamp with free roll. For XLS40.	030X0001065
Spring loaded clamp with free roll. For XLS80.	030X0001141
Universal base to be mounted on linear slides. For XLS40 and XLS80	030X0001068



OPTOFLASH



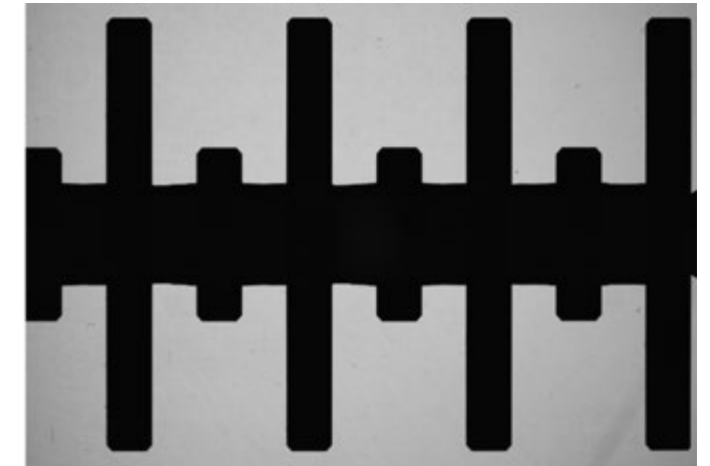
- End-of-Line is that stage during the manufacturing process where quality control means checking each single feature on the workpiece in order to validate the perfect compliance to specifications and so a perfect quality in output.
- Thanks to its unprecedented measuring speed and its capability to control the complete part surface in any possible detail, OptoFlash has definitively improved the quality control in the end of line. OptoFlash is so fast that it makes possible to control 100% of the production flow. Measurement output can be transferred to archives or servers at the end of each cycle, allowing operators to implement high-end traceability programs.

MEASURING SPEED

The unrivalled speed of the OptoFlash is the result of its unique 2D optical architecture.

Thanks to fixed-position 2D sensors and the absence of axis in motion, this product is actually the first-in-its-class for speed in measurement. A complete measuring cycle takes typically 10 seconds, irrespective of the number of executed measurements.

The absence of moving axis has an additional advantage: the OptoFlash has a superior reliability and it needs actually a minimum maintenance in the time.

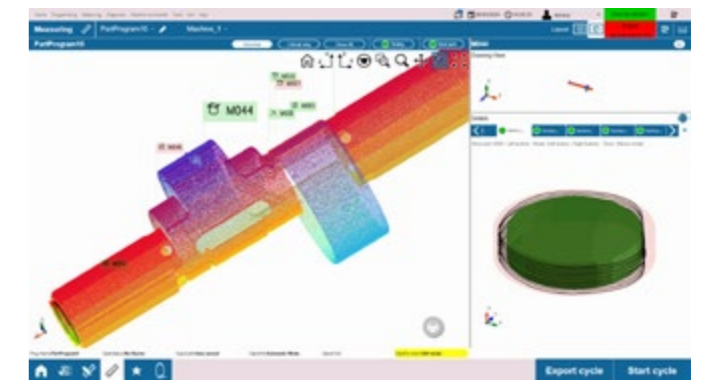


EACH SHAFT IS RECONSTRUCTED IN 3D

By synchronization of image acquisitions and workpiece rotation, OptoFlash is capable to digitally reproduce the workpiece in a 3D format. This unique capability of the OptoFlash has 2 crucial advantages in applications.

First, measurement results are visualized with a 3D style, so delivering a superior ease-of-use to line operators, that can visualize the actual workpiece in a realistic form and to navigate its features very intuitively.

Moreover, measurements are much more accurate since calculated on the super-precise reconstruction of the entire workpiece surface, that is the Point Cloud.



MEASUREMENTS ARE CONFIGURED BY SOFTWARE

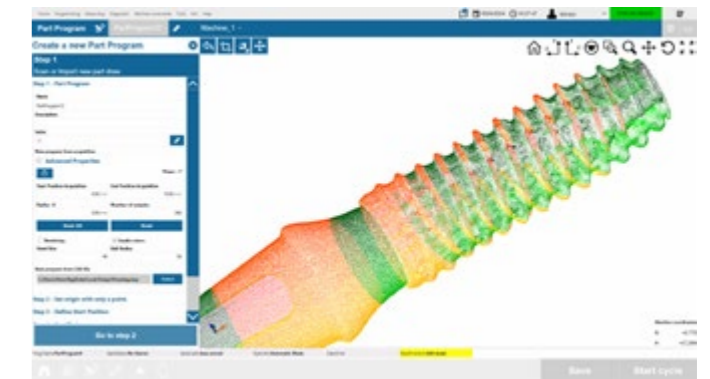
Through intuitive actions like “drag and drop”, it is extremely easy to create new measurement programs.

As result, a single OptoFlash can be used to validate different component typologies in a plant.

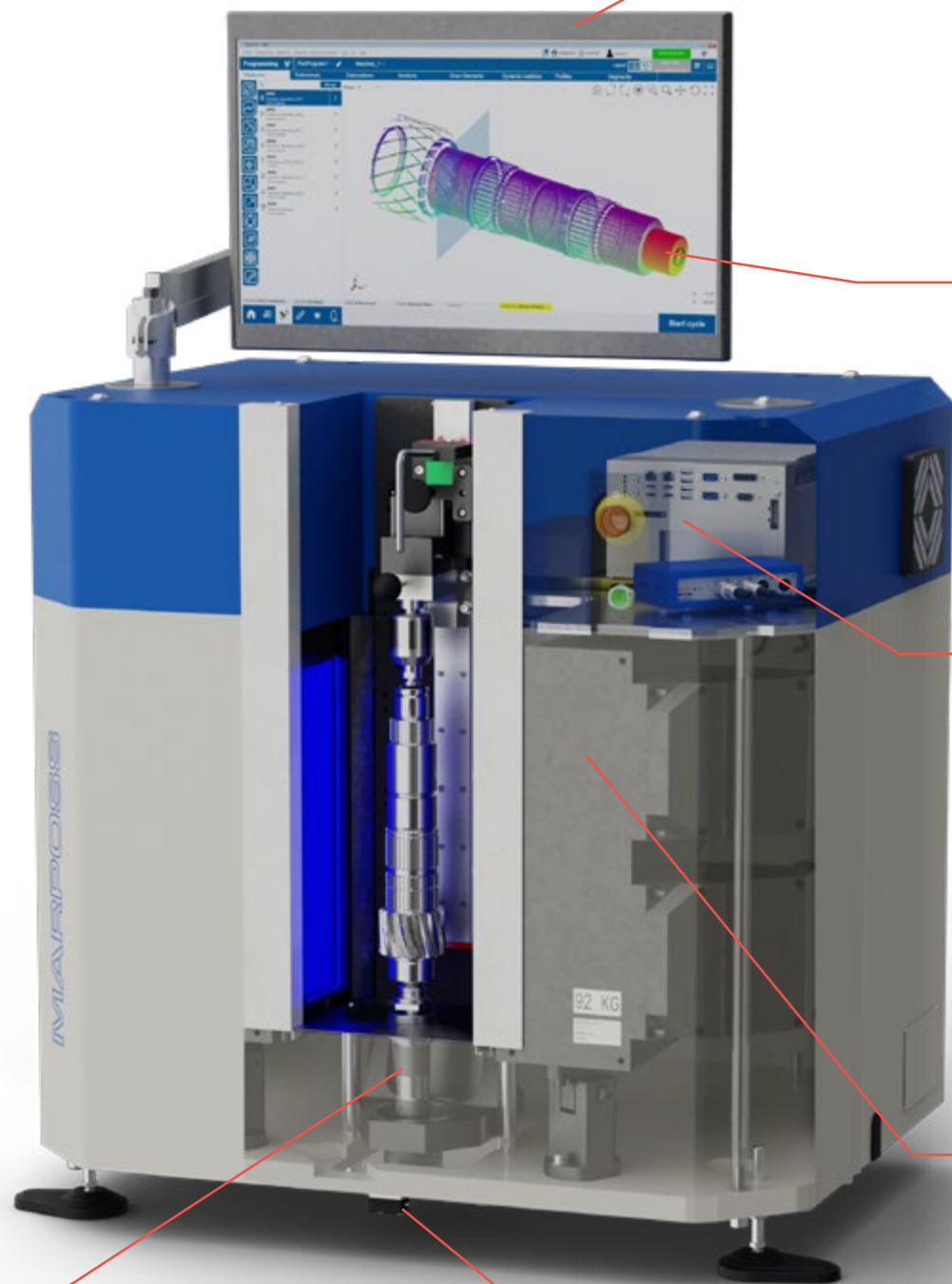
Through the OptoFlash software interface, it is sufficient to activate the appropriate measurement program, load a part and press the “Start” button.

So the OptoFlash is a durable product in the time, not just because its architecture is without moving parts.

Actually the product re-configurability via-software makes the product ready to meet changes in the production quality control and so to avoid extra costs for adaptations.



MODELS AND ACCESSORIES OPTOFLASH



INCLUDED SOFTWARE FEATURES

Not only the hardware is fully integrated. The Marposs software suite is pre-installed on the OptoFlash and it features thousands of different functionalities. For instance, there is a full-feature measuring engine including 2D and 3D functionalities, data management utilities, feedback functionalities to the machine tool.

INTEGRATED THERMAL PROBES

Optoflash is designed to operate in the shopfloor environment and to deliver the highest accuracy in measurement. The integrated thermal probes in the structure allow automatic compensation of the measurements during the regular measuring operations.

SOLUTION ALL-IN-ONE, HARDWARE & SOFTWARE

OptoFlash incorporates inside its structure everything is necessary for its use, from the setup operations to the regular use in the production. There is no separate peripheral around the product. As result, the installation at the shop-floor level is super easy and the product has a superior robustness to resist into harsh manufacturing environments.

INDUSTRIAL GRADE PC.

Perfectly integrated inside the structure, protected from external agents and purposely positioned to prevent thermal influence with the measuring system.

FIXED OPTICAL SYSTEM.

It is stable and fixed to the structure. The absence of movements guarantees a perfect Performance and no maintenance.

HIGH PRECISION SPINDLE

Thanks to a full Marposs design, the spindle combine unprecedented performance, both in term of leading-edge rotational accuracy and robustness to the load up to 15 Kg.

OPTOFLASH XS



OPTOFLASH XS is a precision measuring bench (Stand alone) based on 2D optical technology. It is available in 2 versions: XS30 and XS60 depending on the measuring range. The bench equipped with accessories allows to dynamically measure the size, position and shape of small shafts, screws, dental implants, etc. loaded/unloaded manually by the operator.

Optoflash XS60 can be used also in case of parts automatic load/unload by a cobot.

DESCRIPTION	VERSION	MEASURING RANGE (mm)	MAX PART WEIGHT	ACCURACY	PRODUCT DIMENSIONS W X D X H (mm)	ORDER CODE
Optoflash XS30	with upper tailstock	D 20 x L 30	2 Kg	D 1um + D mm/100 L 2um + L mm/100	626 x 667 x 806	B0407477294
Optoflash XS60	with upper tailstock	D 20 x L 60	2 Kg	D 1um + D mm/100 L 2um + L mm/100	626 x 667 x 806	B0407477295

OPTOFLASH S



OPTOFLASH S is a precision bench gauge based on 2D optical technology. It is available in three versions: S100 – S200 – S300 depending on the measuring range. The different models and accessories are used to measure part dimensions, position and shape in both the static and dynamic modes. The equipment will test small shafts, screw fasteners and connectors; it is loaded and unloaded manually by the operator or automatically by a cobot.

The measurements are defined, configured and displayed on the graphic user interface shown on the touchscreen monitor.

OPTOFLASH S unit has an industrial class architecture which makes it ideal for precision quality control in both the workshop and the laboratory.

DESCRIPTION	VERSION	MEASURING RANGE (mm)	MAX PART WEIGHT	ACCURACY	PRODUCT DIMENSIONS W X D X H (mm)	ORDER CODE
Optoflash S100	with upper tailstock	D 20 x L 30	15 Kg	D 1um + D mm/100 L 2um + L mm/100	910 x 610 x 1040	B0407480655
Optoflash S200	with upper tailstock	D 20 x L 30	15 Kg	D 1um + D mm/100 L 2um + L mm/100	910 x 610 x 1150	B0407480656
Optoflash S300	with upper tailstock	D 20 x L 60	15 Kg	D 1um + D mm/100 L 2um + L mm/100	1000 x 610 x 1255	B0407480657
Optoflash S100	with automatic upper tailstock	D 20 x L 30	15 Kg	D 1um + D mm/100 L 2um + L mm/100	910 x 610 x 1040	B0407480740
Optoflash S200	with automatic tailstock	D 20 x L 30	15 Kg	D 1um + D mm/100 L 2um + L mm/100	910 x 610 x 1150	B0407480741
Optoflash S300	with automatic tailstock	D 20 x L 60	15 Kg	D 1um + D mm/100 L 2um + L mm/100	1000 x 610 x 1255	B0407480742

ACCESSORIES

CLAMPING TOOLS

Clamping tools are used to maintain the consistent positioning of the workpiece relative to the optical sensors. Selecting the most appropriate clamping tool is essential for achieving precise optical measurements in various applications, including mechanical fasteners, dental implants, and turnery. Each sector has specific requirements for the type and precision of clamping. Choosing the ideal clamping solution ensures reliable and repeatable measurement results in every context.

LOWER CONICAL LIVE CENTRES

They are ideal for measuring diameters, lengths, and distances on cylindrical components, such as shafts and spindles, where precise rotation is essential for dimensional control.

The part is positioned on the lower centre ready for referencing.

To enhance friction between workpiece and clamping tool a surface tungsten carbide based coating is used.

The lower live centers can be customized on request according to specific needs by modifying parameters A (maximum diameter) and B (minimum diameter).



DESCRIPTION	COMPATIBLE WITH	MIN DIAMETER (mm)	MAX DIAMETER (mm)	CONE ANGLE	SURFACE COATING	ORDER CODE
Conical lower live center	OF S100, S200, S300	3	30	60°	no	B2QE0010000
Conical lower live center	OF S100, S200, S300	3	30	60°	yes	B2971421995
Conical lower live center	OF S100, S200, S300	0	30	60°	yes	B2976151100
Conical lower live center	OF XS30, XS60	3	20	60°	no	B2977279200

UPPER CONICAL LIVE CENTRES

The upper centre unit slides up and down and clamps the part in position after that it has been inserted on the lower centre.

The upper center is suitable in case of workpiece with an upper hole, usually for turneries applications.

The upper live centers can be customized on request.



DESCRIPTION	COMPATIBLE WITH	MIN DIAMETER (mm)	MAX DIAMETER (mm)	CONE ANGLE	ORDER CODE
Conical upper live center	OF S100, S200, S300	0,2	16	60°	B4390040435
Conical upper live center	OF XS30, XS60	0,2	16	60°	B2077131901

MONITOR

The monitor can either be placed sideways on the right or left side of the Optoflash.



DESCRIPTION	COMPATIBLE WITH	PRODUCT DIMENSIONS W X H (mm)	SCREEN	ORDER CODE
Monitor	OF XS 60 OF S100, S200, S300	571 x 392	Touch screen 24"	B47016A6515

PLATE CENTRE

The support plate is a robust and stable base that facilitates the positioning of components to be measured in the optical system. This support provides a wide, level area, making measurement operations easier in case of automatic loading for all types of applications. This center can be customized on request, modifying both parameters A (hole width) and B (hole depth).



DESCRIPTION	COMPATIBLE WITH	MAX DIAMETER PLATE (mm)	ORDER CODE
Plate center	OF S100, S200, S300	60	B2QL0000000
Plate center	OF XS30, XS60	30	B2977279100

SIX-JAW CLAMPING CHUCK

Clamping system with clamp chuck. It is suggested for cylindrical workpieces, axially symmetric or not. This chuck is also suitable for body implants, in biomedical sector and abutment, in dental application.

Note that this clamping doesn't allow the complete optical access to the workpiece so it can be used only in case a partial length of the workpiece has to be measured.



DESCRIPTION	COMPATIBLE WITH	JAW NUMBER	MIN DIAMETER (mm)	MAX DIAMETER (mm)	ORDER CODE
6 jaw clamping chuck	OF S100, S200, S300	6	0	70	B2972583250
6 jaw clamping chuck	OF XS30, XS60	6	0	70	B2977279030

TWO-JAW CHUCK SPINDLE

The two-jaw configuration allows a stable and precise grip, capable of firmly blocking the piece without damaging it. The two jaws pins can be adjusted to adapt to different sizes and shapes of the workpiece to be measured.

Usually the 2-jaw self-centring gripper is used in case of screw measurement. It can be specifically designed where requested for specific applications.



DESCRIPTION	COMPATIBLE WITH	ORDER CODE
2 jaw chuck spindle	OF S100, S200, S300	ON REQUEST
2 jaw chuck spindle	OF XS30, XS60	ON REQUEST

MANUAL THERMAL PROBE

The workpiece temperature must be the same as that of the bench. The manual part temperature probe enables quick and accurate readings of the temperature of the workpiece or measurement environment, reducing the risk of errors caused by thermal variations. The device measures the temperature of the part to be tested before the dimensional test. The probe is easy to use and can be employed for frequent, rapid measurements without disrupting workflow.

This device is available but it is not a Marposs product.

The order number includes the manual thermal probe and also the Easy Box interface needed to the signals exchange.



DESCRIPTION	PRODUCT VERSION	TIP CONTACT DIAMETER in mm	MAX LENGTH in mm	ORDER CODE
Part temperature probe	Manual	2,4	60	B297419544

ACCESSORIES

CALIBRATION MASTER

The calibration master serves as a "precision reference," a certified and known geometry against which measurements can be compared, ensuring that the instrument maintains its accuracy over time. It is used to perform a rapid check of the metrological quality of the equipment for diameter and distance measurements.



DESCRIPTION	COMPATIBLE WITH	PRODUCT DIMENSIONS MAX DIAMETER X H (mm)	ORDER CODE
Calibration master	OF S100	60 x 100	B2972632050
Calibration master	OF S200	60 x 200	B2972632060
Calibration master	OF S300	60 x 300	B2972632070
Calibration master	OF XS30, XS60	24 x 101	B2977299000

SERVICE KEY SET

The service keys are used for the replacement of the lower and upper centres and allow for their removal without damaging them.



DESCRIPTION	COMPATIBLE WITH	ORDER CODE
Service key set	OF XS 30, 60 OF S100, S200, S300	B2972583750

LENS CLEANING KIT

The optical cleaning kit is designed to remove dust, dirt, and fingerprints from the protective lenses. The set is optimally designed for gentle cleaning and ensures a streak-free, shiny, clean, and grease-free surface. The kit includes a spray bottle with cleaning fluid and a microfiber cloth.



DESCRIPTION	COMPATIBLE WITH	ORDER CODE
Lens cleaning kit	OF XS 30, 60 OF S100, S200, S300	B29T0447009

FLEXIBLE MONITOR ARM

The monitor arm allows adjusting the screen according to the operator's needs. It can either be placed on the right or left side of Optoflash.



DESCRIPTION	COMPATIBLE WITH	ORDER CODE
Flexible monitor arm	OF S100, S200, S300	B2980655205

KEYBOARD

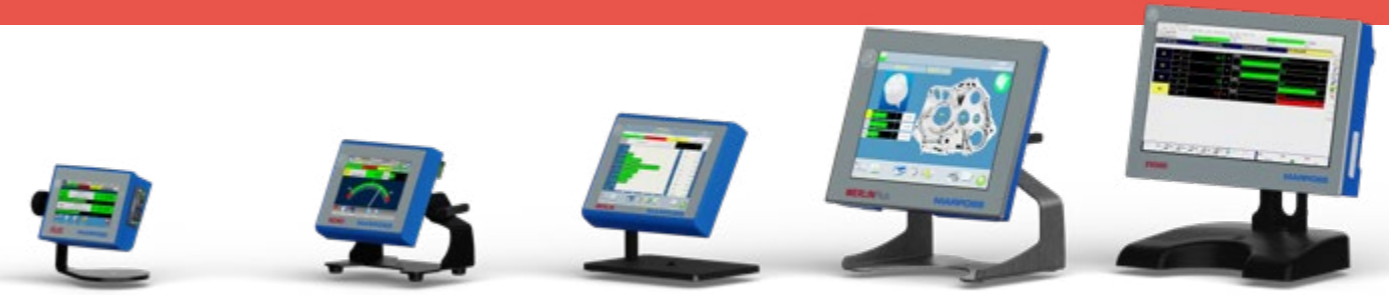
The touch keyboard is ideal for applications that require versatility, such as industrial environments.


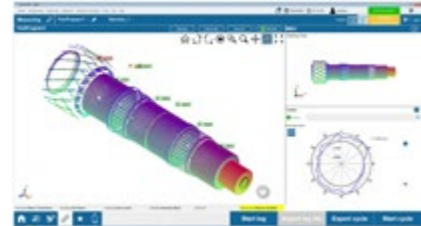





DESCRIPTION	COMPATIBLE WITH	PRODUCT DIMENSIONS W X D X H (mm)	LAYOUT	ORDER CODE
Keyboard	OF XS30, XS 60, S100, S200, S300	374 x 139 x 18	touchpad with two mouse keys	B6871992392

ELECTRONICS

A TOOLKIT OF SCALABLE FUNCTIONALITIES TO IMPROVE YOUR PRODUCTION PROCESS



		DUO	NEMO	MERLIN	MERLIN PLUS	E9066+QSPC
GAUGING PROCESS CONTROL	 <p>Each Control Unit of the range offers a wide toolkit of functionalities to manage the gauging process execution. There are specific functionalities to setup the measurement programs, to configure the digital input and output, to create formulas for custom-defined measurements. The standard software allows a large configurability of the system, aspect that represents a fundamental advantage since it helps to revolve quickly several different gauging applications.</p>	2 sensors 100 part programs	16 sensors 100 part programs 40 batch programs	24 sensors 1000 part programs 1000 batch programs	250 sensors 1000 part programs 1000 batch programs	250 sensors 1000 part programs 1000 batch programs
DATA VISUALIZATION	 <p>When a measurement cycle is executed, results are visualized on the display of the Control Unit. Visualizations are purposely using simple graphical layouts and colors in order to allow a fast and intuitive review of the results. On high-end Control Unit models, there is a premium level of functionalities, as for instance navigation of the measurements history or custom-defined layouts. Those premium features guarantee the maximum ease-of-use also in complex applications and allow an effective monitoring of the production flow.</p>	Current Measurement result and current part status	Measurement history	Measurement history	Part history and measurement history Custom page of results	Part history and measurement history Custom page of results
DATA MANAGEMENT	 <p>Even when the primary function of a measuring station is to classify workpieces as "good/not good" for the assembly process, it is definitively not the only important functionality. In fact, measurement data contains precious information about the manufacturing process. Archiving those data is fundamental for traceability programs or analytic processing for manufacturing efficiency improvements. For that reason, at the end of each cycle, measurement data can be saved into the product memory or optionally transferred to remote locations, as networks folders or servers, by using the embedded Ethernet connectivity.</p>	Local storage and remote transfer	Local storage and remote transfer	Local storage and remote transfer	Measurement reports Local storage and remote transfer	Measurement reports Local storage and remote transfer
PRODUCTION KPI	 <p>Statistical figures and KPI are calculated in real time during measurement execution and visualized on simple graphical charts in order to supply effective indications to production managers about the production process performance and its trend. Among the main supported functionalities, there are Gauge Capability, Machine Tool Capability, Cp-Cpk calculation.</p>		On-line essential statistics	On line statistics and statistical alarm management Gauge Capabilities	On line advanced statistics and statistical alarm management Gauge Capabilities	On line advanced statistics and statistical alarm management Gauge Capabilities
ADVANCED APPLICATION SPECIFIC SETUP	 <p>High-end Control Unit are equipped with a wide toolkit of software functionalities to develop complex applications: guided sequences for manual step-by-step controls, interfacing to PLC for automatic loading, in-line thermal compensation basing on real temperature of part, feedback signal to machine tool.</p>				Guided Sequences Compensations Machine feedback	Guided Sequences Compensations Machine feedback Programmable interfacing to automation

MODELS AND ACCESSORIES ELECTRONICS



DUO



- ▶ Marposs DUO is the compact and cost-effective Industrial Control Unit for workstations with 1 or 2 distinct gauging sensors. DUO has embedded inside the necessary electronics to connect directly the sensors, without any additional junction box.
- ▶ Its color touch-display is of industrial-grade and it allows easy interactions by line operators, simply by selecting items on the screen.
- ▶ In addition, fieldbus interfaces can be optionally integrated in the structure, so it can directly connect to PLC without external adaptors.
- ▶ Its mechanical compactness is not limiting the wide level of functionalities it delivers. For instance, it can accommodate simultaneously in the same workstation sensors of different technologies, like one electronic-gauge and one air-gauge. Or it can accomplish post-measurement tasks of data management, like data archiving inside the internal microSD card and also data transmission to external devices.
- ▶ USB, RS232 and RS485 interfaces are available by default.

APPLICATION FUNCTIONS

GAUGING CONTROLS

DUO is a compact control unit that integrates a toolkit of essential functionalities for creation of measurement programs, including creation of custom-defined.

TECHNICAL FEATURES

- ▶ 2 Sensors and up to 4 distinct measurements
- ▶ 100 Part programs
- ▶ Static and dynamic measurements
- ▶ Acquisition command through external signal
- ▶ Measurement trigger via touch-screen or footswitch
- ▶ Basic mathematical and trigonometric formulas to elaborate the sensors acquisition into measurement values
- ▶ Collecting data from Marposs LVDT and HBT gauges: M1 and M1Star bore gauges, M3Star snap gauges. M4 and M4Star ring gauges, RedCrown and RedCrown2 sensors.

DATA VISUALIZATION

When a measurement cycle is complete, results are visualized on the 4.3" display. The intuitive graphical layout, the high display contrast, the use of colors allow all together a quick review of the results.

- ▶ Multi-language support: english, italian, german, french, spanish, portuguese, swedish, romanian, dutch, polish, magyar, czech, russian, taiwanese, turkish, japanese, chinese, korean.
- ▶ Measurement results visualization optimized for ease-of-reading for operators
- ▶ Programming interface optimized for touchscreen
- ▶ Password protected multi-user management

DATA MANAGEMENT

DUO integrates a 4 GB MicroSD memory card usable to store measurement results after each cycle. Export format is CSV and DFQ. In addition to the local storage, it is possible to mirror the data on a PC directly connected to DUO by using the integrated Ethernet connectivity.

- ▶ Measurement data transmission through fieldbus (option), serial protocols or serial keyboard emulation.
- ▶ Remote data storage and export through removable USB memory device
- ▶ Data storage format: .Csv (Microsoft® Excel comma separated values), Dfq (k-fields)

DISPLAY	DISPLAY PROTECTION GRADE	ARCHITECTURE	USB PORTS	SERIAL PORTS	CASE MATERIAL	INTERNAL STORAGE	POWER SUPPLY
4.3" Color Touch-screen	IP54	Fanless, diskless	1 type B 1 type A	1 RS232C 1 RS485	Aluminium	4GB MicroSD	5VDC 1.4A

Optional fieldbus interfaces



IN-OUT ports, USB port, RS232 and RS485 interfaces are embedded. Digital INPUT lines can be programmed via the software interface for cycle activation, for instance with a foot-switch. Conversely, OUTPUT lines can be configured to communicate the status (GOOD/NOT GOOD) of the measurement control.

DESCRIPTION	ORDER CODE
DUO Basic for LVDT/HBT/Tesa HBT sensors	B830DUOD001
DUO Bus for LVDT/HBT/Tesa HBT sensors, with Profibus module	B830DUOD043
DUO Bus for LVDT/HBT/Tesa HBT sensors, with Profinet module	B830DUOD044
DUO Bus for LVDT/HBT/Tesa HBT sensors, with Ethernet/IP module	B830DUOD045
Footswitch with 2 m cable for data triggering function	B6131000110

MODELS AND ACCESSORIES ELECTRONICS

NEMO



- ▶ MARPOSS NEMO is the compact Control Unit to create gauging workstations of small size, with up to 16 sensors. Effective gauging networking is one of the distinctive elements of NEMO: it comes with embedded interfaces to interconnect gauging sensors. 2 or 8 separate USB ports or 3 MARPOSS Diginet connectors are available directly in the back panel of the unit.
- ▶ Moreover, NEMO delivers a superior ease-of-use to users: its 5.7" color display enables a comfortable visualization of the measurement results and the graphical layout is optimized to be intuitive during manufacturing operations. The display is a touch-sensitive and it has IP54 protection-grade, purposely designed to resist under harsh operating conditions in production.
- ▶ NEMO is much more than a measurement display. In fact, it runs functionalities to aggregate the history of the measuring values and to display that data on a summary chart, giving the operators clear information about trends of the manufacturing performance. In background, at the end of each cycle, measurement results are stored into the embedded 4GB memory. Optionally, data can be transferred to remote locations, as networks folders or servers, by using the integrated Ethernet connectivity.

APPLICATION FUNCTIONS

GAUGING CONTROLS

With NEMO it is possible to create and manage structured measurement programs with a large number of controls inside. Moreover, NEMO implements functionalities to synchronize the execution of the measurements with production batches, collecting results and calculating statistics consistently with the specific batch in process.

DATA VISUALIZATION

NEMO features a 5.7" touch display, with IP54 protection grade. The best ease-of-use is obtained through the simple graphical layout, the high display contrast, the use of colors to classify events.

In addition to the visualization of the current measurement result, NEMO can display the history of the measuring values on a summary chart, giving the operators clear information of the manufacturing trends.

DATA MANAGEMENT

Measurement results, at the end of each cycle, can be stored into the embedded memory. Optionally those same data can be transferred to remote locations, as networks folders or servers, by using the integrated Ethernet connectivity.

TECHNICAL FEATURES

- ▶
 - Up to 16 sensors and 8 characteristics
 - Up to 8 measuring steps in a single cycle
 - Up to 100 part programs
 - Up to 100 batches
 - Up to 32 tolerance classes
 - Collecting data from Marposs LVDT and HBT gauges: M1 and M1Star bore gauges, M3Star snap gauges, M4 and M4Star ring gauges, RedCrown and RedCrown2 sensors.
 - Collecting data from third parties devices over USB, RS232, RS485, Bluetooth
- ▶
 - Part counters
 - Standard, pre-configured report pages
 - Measurement results display: horizontal, vertical bargraphs, analog values
 - Multi-language support: english, italian, german, french, spanish, portuguese, swedish, romanian, dutch, polish, magyar, czech, russian, taiwanese, turkish, japanese, chinese, korean.
- ▶
 - Measurement data export format: csv, dfq (q-das® qs-stat®)
 - Remote measurement data storage: internal SD card, USB, network (smb 1.0)
 - Statistics visualization: single value chart
 - K-fields: part program basic data and measurement results

DISPLAY	DISPLAY PROTECTION GRADE	ARCHITECTURE	USB PORTS	ETHERNET PORTS	SERIAL PORTS	CASE MATERIAL	INTERNAL STORAGE	POWER SUPPLY
5.7" Color Touch-screen	IP54	Fanless, diskless	Up to 8x type B 1x type A	2x 10/100, RJ45	1x RS232C	Aluminium	4GB MicroSD	24 VDC



2 USB

This version allows the connection of two Easy Box interfaces or Red Crown2 USB probes or USB dongles for wireless gauges.



DIGI CROWN BOX + 2 USB

This version features three serial bus connectors for Digi Crown boxes and 2 USB ports for Easy Box interfaces or USB dongles for wireless gauges.



8 USB

This version allows the connection of up to eight Easy Box interfaces or Red Crown2 USB probes or USB dongles for wireless gauges.

DESCRIPTION	ORDER CODE
NEMO DIGI CROWN BOX + 2 USB	B830NA00002
NEMO 2 USB	B8830NA00011
NEMO 8 USB	B830NA00031
FOOTSWITCH with 2 m cable for data triggering function	B6738099035



MODELS AND ACCESSORIES ELECTRONICS

MERLIN



- ▶ Marposs Merlin is the powerful control unit for demanding measurement applications. First, Merlin is based on a super-performing hardware platform and it is capable to control gauge networks with up to 250 sensors and to manage measuring tasks with up to 16 separate steps.
- ▶ The embedded software suite on Merlin integrates a number of functionalities to effectively support the stream of production operations. For instance, it can manage up to 1000 different part programs, it supports workpieces classification into up to 32 tolerance classes, it can aggregate data by production batches, with a wide limit of 500 different batches. It can export measurement data in CSV or DFQ format and calculate production statistics during the cycles execution.

DISPLAY	DISPLAY PROTECTION GRADE	ARCHITECTURE	USB 2.0	ETHERNET PORTS	SERIAL PORTS	CASE MATERIAL	INTERNAL STORAGE	POWER SUPPLY
8.4" Touch-screen	IP54	Fanless, diskless	5x ports	1 x 10/100, RJ45	1x RS232	Industrial-grade Plastic	4GB eMMC	24 VDC



APPLICATION FUNCTIONS

GAUGING PROCESS CONTROL

MERLIN is the right solution for gauging workstation with several measuring sensors. The large display makes comfortable the management of complex measurement programs with a large number of controls inside. Moreover, MERLIN implements functionalities to synchronize the execution of the measurements with production batches, collecting results and calculating statistics consistently with the specific batch in process.

DATA VISUALIZATION

MERLIN features a 8.4" touch display, with IP54 protection grade. The best ease-of-use is obtained through the large display, the simple graphical layout, the high display contrast, the use of colors. In addition to the visualization of the current measurement result, MERLIN can display on a summary charts the history of the measuring values, giving the operators immediate information of the manufacturing trends.

DATA MANAGEMENT

Measurement results, at the end of each cycle, can be stored into the embedded memory. Optionally those same data can be transferred to remote locations, as networks folders or servers, by using the integrated Ethernet connectivity.

STATISTICAL PROCESS CONTROL

On MERLIN there are functionalities dedicated to validate the efficiency of production process as the automatic calculation of the Gauge Capability and Machine Tool Capability. In fact, MERLIN, is capable to elaborate in real time measurements into statistical parameters of the production process, as Cp and Cpk. On top of this, MERLIN implements functionalities for the active surveillance of the process: basing on the actual statistical figures, warnings and alarms are automatically generated.

TECHNICAL FEATURES

- ▶ Up to 250 sensors and 16 characteristics
 - ▶ Up to 16 measuring steps in a single cycle
 - ▶ Up to 1000 part programs
 - ▶ Up to 500 batches
 - ▶ Up to 32 tolerance classes
-
- ▶ Standard, pre-configured report pages
 - ▶ Measurement results display: horizontal, vertical bargraphs, analog values
 - ▶ Password protected multi-user management
-
- ▶ Measurement data export format: csv, dfq
 - ▶ Measurement data export on: internal SD card, USB, network (smb 2.0)
 - ▶ K-fields: part program basic data, measurement results, cycle events
-
- ▶ Statistics: single value line charts, histograms, control charts
 - ▶ Alarms based on statistical figures
 - ▶ Utilities for gauge capability and gauge r&r studies.

DESCRIPTION	ORDER CODE
MERLIN - Windows CE7, True flat, Western Operating System	B830MEADD01
MERLIN - Windows CE7, Western Operating System	B830MEADD00
MERLIN - Windows CE7, Japanese Operating System	B830MECD00
MERLIN - Windows CE7, Korean Operating System	B830MEED00
MERLIN - Windows CE7, Chinese Operating System	B830MEFD00



MODELS AND ACCESSORIES ELECTRONICS

MERLIN CORE



- ▶ MERLIN Core is the latest addition to the portfolio of Marposs Industrial Control Units: beyond a superior computational power obtained by its state-of-the-art quad-core CPU, it features a comfortable 10.1" touch-display, IP54 protection grade and a wide range of embedded interfaces for multiple connectivity implementations. Among the available connectivity interfaces, MERLIN Core incorporates the latest Marposs connectivity system, named SmartNet. Such latest generation connectivity network is synonym of performance and ease-of-use all together: superior sensor acquisition speed, automatic sensors network setup, LED indications at close to the connected sensor, push-pull physical connectors.
- ▶ Together with its new hardware platform, MERLIN Core is powered by the new generation Marposs software, designed to deliver a superior level of functionalities and a better ease-of-use at the same time. It can manage up to 20 measuring steps per part programs and a total of 1000 different part programs. It can manage batch productions and aggregate data into 1000 distinct batches statistics. It supports workpiece classification into up to 32 distinct tolerance classes. It can export measurement data in CSV or DFQ format and calculate production statistics during the execution of cycles.
- ▶ The 10.1" wide-form and touch display elevates the user experience for operators, with a superior ease-of-use during interactions and a much more intuitive presentation of the measuring results.

APPLICATION FUNCTIONS

GAUGING PROCESS CONTROL

MERLIN is the right solution for gauging workstation with several measuring sensors. The large display makes comfortable the management of complex measurement programs with a large number of controls inside. Moreover, MERLIN implements functionalities to synchronize the execution of the measurements with production batches, collecting results and calculating statistics consistently with the specific batch in process.

DATA VISUALIZATION

MERLIN features a 8.4" touch display, with IP54 protection grade. The best ease-of-use is obtained through the large display, the simple graphical layout, the high display contrast, the use of colors. In addition to the visualization of the current measurement result, MERLIN can display on a summary charts the history of the measuring values, giving the operators immediate information of the manufacturing trends.

DATA MANAGEMENT

Measurement results, at the end of each cycle, can be stored into the embedded memory in product. Optionally those same data can be transferred to remote locations, as networks folders or servers, by using the integrated Ethernet connectivity.

STATISTICAL PROCESS CONTROL

On MERLIN there are functionalities dedicated to validate the efficiency of production process as the automatic calculation of the Gauge Capability and Machine Tool Capability. In fact, MERLIN, is capable to elaborate in real time measurements into statistical parameters of the production process, as Cp and Cpk. On top of this, MERLIN implements functionalities for the active surveillance of the process: basing on the actual statistical figures, warnings and alarms are automatically generated.

TECHNICAL FEATURES

- ▶
 - Up To 250 Sensors And 20 Characteristics
 - Up To 20 Measuring Steps In A Single Cycle
 - Up To 1000 Part Programs
 - Up To 1000 Batches
 - Up To 32 Tolerance Classes
- ▶
 - Standard, pre-configured report pages
 - Measurement results display: horizontal, vertical bargraphs, analog values
 - Password protected multi-user management
- ▶
 - Measurement data export format: csv, dfq
 - Measurement data export on: internal SD card, USB, network (smb 2.0)
 - K-fields: part program basic data, measurement results, cycle events
- ▶
 - Statistics: single value line charts, histograms, control charts
 - Alarms based on statistical figures
 - Utilities for gauge capability and gauge r&r studies.

DISPLAY	DISPLAY PROTECTION GRADE	ARCHITECTURE	USB 2.0	ETHERNET	SERIAL PORTS	CASE MATERIAL	INTERNAL STORAGE	POWER SUPPLY
10.1" Touch-screen	IP54	Fanless, diskless	4x ports	2x 10/100	1	Aluminium	16 GB eMMC	24 VDC



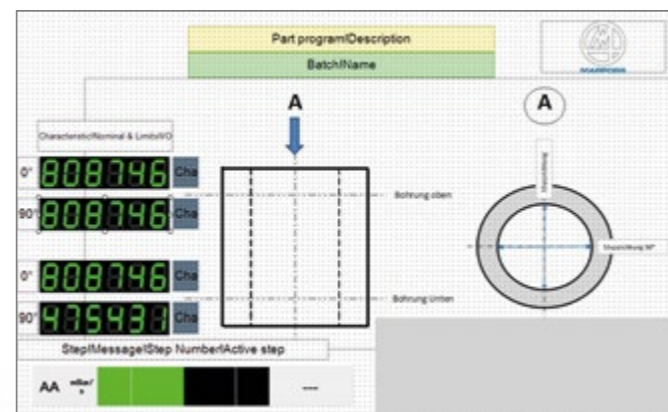
MODELS AND ACCESSORIES ELECTRONICS

MERLIN PLUS



- ▶ Merlin plus is the premium model in the line of marposs control unit. On top of a superior performance level, Merlin Plus delivers a number of premium functionalities to create and to manage gauging workstations for demanding and articulated applications.
- ▶ For instance, it supports networks with up to 250 sensors and can manage dynamic acquisitions. It can classify parts into tolerance classes, up to 99, and can store up to 1000 different part programs.
- ▶ The human machine interface is purposely designed for applications with several sensors, several measurements and several operational steps: in fact, with Merlin Plus the page layout of the measurement results are customizable and it is possible to connect up to 3 different monitors, for a comfortable visualization of different pages simultaneously. It can also print measurement reports in pdf format or communicate with physical printers.

DISPLAY	DISPLAY PROTECTION GRADE	ARCHITECTURE	USB 2.0	ETHERNET	SERIAL PORTS	CASE MATERIAL	INTERNAL STORAGE	POWER SUPPLY
12.1" Touch-screen	IP54	Fanless, diskless	6x ports	2x 10/ 100/ 1000 RJ45	1x RS232	Aluminium	MSATA Up to 240 Gb	24 VDC



Merlin Plus Designer is an extension of the base Merlin Plus Software. This utility allows creating user-defined pages for measurement results.

Thanks to the possibility to design the measurement result page around the specific application, it is a fundamental tool to increase the ease-of-use of operators and to avoid errors.

Among the available tools, Merlin Plus Designer makes available measuring bars, images, blinking objects, graphs, charts.



APPLICATION FUNCTIONS

GAUGING PROCESS CONTROL

Merlin Plus is the premium control unit offering, on top of the primary gauging application, a wide range of functionalities to support the manufacturing process and the quality control execution. The high level of configurability is one of the key advantages of the merlin plus, allowing a perfect fitting into existing applications.

DATA VISUALIZATION

With Merlin Plus, it is possible to create custom-defined pages for the visualization of the measurement results at the end of the cycle. Multiple displays can be connected to it in order to have a comfortable visualization in case of large control plans. Measurement results can also be printed in pdf format. Operator can access to part history, in order to visualize the results of previous parts. Moreover, summary charts with measurement history are available, normally used for graphical review of the trends.

DATA MANAGEMENT

Measurement results, at the end of each cycle, can be stored into the embedded memory. Optionally those same data can be transferred to remote locations, as networks folders or servers, by using the integrated Ethernet connectivity.

STATISTICAL PROCESS CONTROL

On MERLIN Plus there are functionalities dedicated to validate the efficiency of production process as the automatic calculation of the Gauge Capability and Machine Tool Capability. In fact, Merlin Plus, is capable to elaborate in real time measurements into statistical parameters of the production process, as Cp and Cpk. On top of this, Merlin Plus implements functionalities for the active surveillance of the process: basing on the actual statistical figures, warnings and alarms are automatically generated.

TECHNICAL FEATURES

- ▶ Up to 250 sensors and 250 characteristics
- ▶ Up to 250 measuring steps in a single cycle
- ▶ Up to 1000 part programs
- ▶ Up to 2000 batches
- ▶ Up to 99 tolerance classes
- ▶ Fast dynamic acquisitions (up to 4000 samples/s)

- ▶ Standard, pre-configured report pages
- ▶ Measurement results display: horizontal, vertical bargraphs, analog values
- ▶ User-defined measurement result pages
- ▶ Password protected multi-user management
- ▶ Up to 3 different monitors for simultaneous pages visualizations

- ▶ Reports management in pdf format
- ▶ Printing capabilities
- ▶ Measurement data export format: csv, dfq
- ▶ Measurement data export on: internal SD card, USB, network (smb 1.0)
- ▶ K-fields: part program, batch data, measurement results, cycle events
- ▶ Configurable qr code management to select batches, to read kfields, to start cycle and more

- ▶ Statistics: single value line charts, histograms, control charts
- ▶ Alarms based on statistical figures
- ▶ Utilities for gauge capability and gauge r&r studies.

DESCRIPTION	ORDER CODE
MERLIN PLUS – Windows 10 IoT multi-language 4GB RAM, 60 GB SSD	B830MPMFIC0
MERLIN PLUS – Windows 10 IoT multi-language 8GB RAM, 120 GB SSD	B830MPMFJD0
MERLIN PLUS BOX – Windows 10 IoT multi-language 4GB RAM, 60 GB SSD	B830MBBBBB0
MERLIN PLUS BOX – Windows 10 IoT multi-language 8GB RAM, 120 GB SSD	B830MBBBCC0
MERLIN PLUS BOX – Windows 10 IoT multi-language 8GB RAM, 240 GB SSD	B830MBBDDC0

Merlin Plus Software and Merlin Plus Designer can be installed on 3rd party PC, not just on Merlin Plus hardware:

DESCRIPTION	ORDER CODE
Merlin Plus Software (License)	BCM700000E
Merlin Plus Designer (License)	BCM701000E

MODELS AND ACCESSORIES ELECTRONICS

E9066E



- ▶ E9066E™ is the bench-top Industrial Computer dedicated to meet the demanding requirements of high-end applications in quality control.
- ▶ E9066E™ is purposely designed to operate into harsh industrial environments, like the production shop floor. It is totally fan-less and features a wide-screen 15.6", industrial-grade touch screen and protection grade IP65.
- ▶ E9066E™ integrates a CPU INTEL® quad-core 64-bit and comes with Microsoft® Windows 10-IoT Enterprise pre-installed. Marposs QuickSPC™ is the multi-functional software suite designed and optimized for the E9066 platforms and with a super-wide range of functionalities for quality controls and data management.
- ▶ QuickSPC™ speeds up the deployment of gauging systems based on E9066E, since it comes with software drivers to communicate with Marposs connectivity devices, like EasyBox or GagePod. Moreover, it offers a large number of optimized functionalities, ranging from the from measurement setup to data management and automation signals control.

DISPLAY	DISPLAY PROTECTION GRADE	ARCHITECTURE	USB 2.0	ETHERNET	SERIAL PORTS	CASE MATERIAL	INTERNAL STORAGE	POWER SUPPLY
15.6" Touch-screen	IP54	Fanless, diskless	6x ports	2x 10/ 100/ 1000 RJ45	1x RS232	Aluminium	MSATA Up to 240 Gb	24 VDC



APPLICATION FUNCTIONS

GAUGING PROCESS CONTROL

E9066 control unit, with its software suite QuickSPC, is the top of the product range. It is purposely designed to cover demanding applications both in terms of configuration complexity and computational performance. It offers a toolkit of utilities and functionalities that can cover almost any need in industrial applications from measurement for quality controls, automation, traceability up to data management.

DATA VISUALIZATION

The user interface is optimized to visualize control plans with a large number of measurements. Each single measurement can also be analyzed in detail, through a dedicated page with graphical illustration of the profiles. Multiple displays can be connected and custom-defined pages can be created, for a perfect adaptation to the customer application and use. Measurement results can be printed in pdf format, on request or automatically at the end of each cycle.

DATA MANAGEMENT

Measurement results, at the end of each cycle can be transferred to remote locations. A deep level of configurability is supported, for instance data formatting or custom exportfile naming.

STATISTICAL PROCESS CONTROL

On E9066 there are functionalities dedicated to validate the efficiency of production process as the automatic calculation of the Gauge Capability and Machine Tool Capability. In fact, E9066 is capable to elaborate in real time measurements into statistical parameters of the production process, as Cp and Cpk. On top of this, it implements functionalities for the active surveillance of the process: basing on the actual statistical figures, warnings and alarms are automatically generated.

ADVANCED SETUP

E9066 and QuickSPC combine together computational power, configuration flexibility and a wide toolkit of functionalities. Advanced functionalities to develop complex applications are integrated: guided sequences for manual step-by-step controls, interfacing to PLC for automatic loading, in-line thermal compensation based on real part temperature, fine-tuning feedback for the machine tool.

TECHNICAL FEATURES

- ▶ Unlimited number of sensors and characteristics (*)
- ▶ Unlimited number of measuring steps (*)
- ▶ Unlimited number of part programs (*)
- ▶ Up to 999 tolerance classes per each single characteristic
- ▶ External devices easibly connectable

(*) Numerical amount limited only by the memory available

- ▶ Standard, pre-configured report pages
- ▶ Bargraphs and analog values
- ▶ Guided acquisition sequence via custom pages
- ▶ User-defined measurement result pages
- ▶ Password protected multi-user management

- ▶ Reports management in pdf format
- ▶ Printing capabilities with automatic printouts
- ▶ Measurement data export format: csv, txt, dfq or custom
- ▶ Opc-ua customizable server
- ▶ K-fields: certified for aqdef 4.1 B level

- ▶ Q-das made server for online spc analysis
- ▶ Q-das standard statistics pages
- ▶ Utilities for gauge capability, R&R studies and machine capability
- ▶ Export gauge capability studies, Q-das standard

- ▶ Additional tools for: alternative gauging fixtures creation, guided sequence page creation, groups & users definition

MODELS AND ACCESSORIES ELECTRONICS

E9066T



- ▶ Marposs E9066T is the Industrial PC at the top-of-the-range. This platform merges together industrial-grade features with high performance computational power. It is fan-less, it integrates INTEL® Core™-i 64-bit CPU and it runs Microsoft® Windows®10-IoT Enterprise. Its connectivity equipment is at a premium level: 4x GIGABIT ETHERNET, 6 USB ports, Serial port, fieldbus interface integrated.
- ▶ Such powerful hardware platform makes E9066T the right Industrial Control Unit for the most demanding applications, like when the gauging system is integrated in automatic lines. E9066T can run multiple applications on board: while coordinating with controls for automation, it can execute data acquisition from sensors, it can aggregate and collect data, calculate statistics and send real-time feedback signals to the machine tool.
- ▶ Marposs QuickSPC™ is the multi-functional software suite designed and optimized for the E9066T Industrial PC. First, QuickSPC™ incorporates software drivers to communicate with Marposs connectivity devices, like EasyBox or GagePod. Moreover, it offers a large number of functionalities, from measurement setup to data management or control of automation signals.

DISPLAY	DISPLAY PROTECTION GRADE	ARCHITECTURE	USB 2.0	ETHERNET	SERIAL PORTS	CASE MATERIAL	INTERNAL STORAGE	POWER SUPPLY
15" to 24" TOUCH-SCREEN	IP66	Fanless, diskless	6x ports	4x GIGABIT	1x RS232	Aluminium	MSATA Up to 240 Gb	24 VDC



E9066T is optionally integrated inside a sealed cabinet, perfect to integrate and to protect hardware peripherals and power supply.

APPLICATION FUNCTIONS

GAUGING PROCESS CONTROL

E9066 control unit, with its software suite QuickSPC, is the top of the product range. It is purposely designed to cover demanding applications both in terms of configuration complexity and computational performance. It offers a toolkit of utilities and functionalities that can cover almost any need in industrial applications from measurement for quality controls, automation, traceability up to data management.

DATA VISUALIZATION

The user interface is optimized to visualize control plans with a large number of measurements. Each single measurement can also be analyzed in details, through a dedicated page with graphical illustration of the profiles. Multiple displays can be connected and custom-defined pages can be created, for a perfect adaptation to the customer application and use. Measurement results can be printed in pdf format, on request or automatically at the end of each cycle.

DATA MANAGEMENT

Measurement results, at the end of each cycle can be transferred to remote locations. A deep level of configurability is supported, for instance data formatting or custom exportfile naming.

STATISTICAL PROCESS CONTROL

On E9066T there are functionalities dedicated to validate the efficiency of production process as the automatic calculation of the Gauge Capability and Machine Tool Capability. In fact, E9066T, is capable to elaborate in real time measurements into statistical parameters of the production process, as Cp and Cpk. On top of this, it implements functionalities for the active surveillance of the process: basing on the actual statistical figures, warnings and alarms are automatically generated.

ADVANCED SETUP

E9066 and QuickSPC combine together computational power, configuration flexibility and a wide toolkit of functionalities. Advance functionalities to develop complex applications are integrated: guided sequences for manual step-by-step controls, interfacing to PLC for automatic loading, in-line thermal compensation based on real part temperature, finetuning feedback for the machine tool based on measurement trends.

QuickSPC Software can be installed E9066 platforms as well as on 3rd party PC

DESCRIPTION	ORDER CODE
QuickSPC Software License	CM2238MA00

TECHNICAL FEATURES

- ▶ Unlimited number of sensors and characteristics (*)
- ▶ Unlimited number of measuring steps (*)
- ▶ Unlimited number of part programs (*)
- ▶ Up to 999 tolerance classes x each characteristic

(*) Numerical amount limited only by the memory available

- ▶ Standard, pre-configured report pages
- ▶ Bargraphs and analog values
- ▶ Guided acquisition sequence via custom pages
- ▶ User-defined measurement result pages
- ▶ Password protected multi-user management

- ▶ Reports management in pdf format
- ▶ Printing capabilities with automatic printouts
- ▶ Measurement data export format: csv, txt, dfq or custom
- ▶ Opc-ua customizable server
- ▶ K-fields: certified for aqdef 4.1 B level

- ▶ Q-Das Made Server For Online Spc Analysis
- ▶ Q-Das Standard Statistics Pages
- ▶ Utilities For Gauge Capability, R&R Studies And Machine Capability
- ▶ Export Gauge Capability Studies, Q-Das Standard

- ▶ Dedicated tools for: alternative gauging fixtures creation, guided sequence page creation, groups & users definition




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