



RedCrown2



...the new generation of pencil probes

Evolving from our customer's latest quality requirements RedCrown2 is the new line of pencil probes developed to meet industry's global performance specifications. As a result of experience in the metrology market place & with input from measurement integrators throughout the world RedCrown2 sets the new metrological standard.

PRODUCT FEATURES

The new precision engineered design incorporates ball cage movements, improved protection from electrical interference, by the introduction of Mu-metal shielding and added robustness throughout, all produced from a refined manufacturing process. Performance of RedCrown2 is guaranteed to give excellent accuracy under the harshest conditions where high reliability is constantly required in the manufacturing field.

The RedCrown2 line and its digitalized versions Digi Crown 2 and Red Crown 2 USB, offers a variety of measuring solutions.. The two main families, Standard (with Gaiter-IP 65) and Soft Touch (without Gaiter-IP 54), are available with the following options:

- With **HBT** and **LVDT** type transducers
- **Five standard measuring ranges:** 1mm, 2mm, 5mm, 10mm & 20mm
- **Actuation / retraction** by Spring, Pneumatic, or Vacuum methods.
- **Analogue connection:** Marposs standard connector or compatible connectors for interfacing with competitor electronics world wide.
- **Digital connection** for Marposs DigiCrown networks
- **Direct USB connector** for simple interfacing to computers
- **Cable only** allows customer to connect using their preferred type of connector
- **OEM "private label"** versions with customized body Logos, your part numbers and dedicated packaging for your product.

QUALITY ASSURANCE

Marposs manufactures each pencil probe to strict quality standards, is certified for its integrated system of quality, environment & safety, according to international standards.

- ISO 9001(Quality Management)
- ISO 14001(Environmental Management)
- OHSAS 18001(Safety Management)

A dedicated design & production team using the latest manufacturing procedures and equipment guarantees the product meets the all the expectation of the customer for quality measuring solutions.

Red Crown2 is designed to be in compliance with the latest world standards for RoHS/WEEE.

TRANSDUCERS AND MEASUREMENT TRANSMISSIONS

BORE GAUGES LINE

FORKS AND RING GAUGES

BENCH GAUGES

INDICATORS AND ELECTRONIC DISPLAY UNITS

INTERFACE BOXES FOR DATA ACQUISITION

SOFTWARES

THE PRODUCT LINE

Red Crown²

A line of analogue pencil probes, available with **LVDT** and **HBT** circuitry.

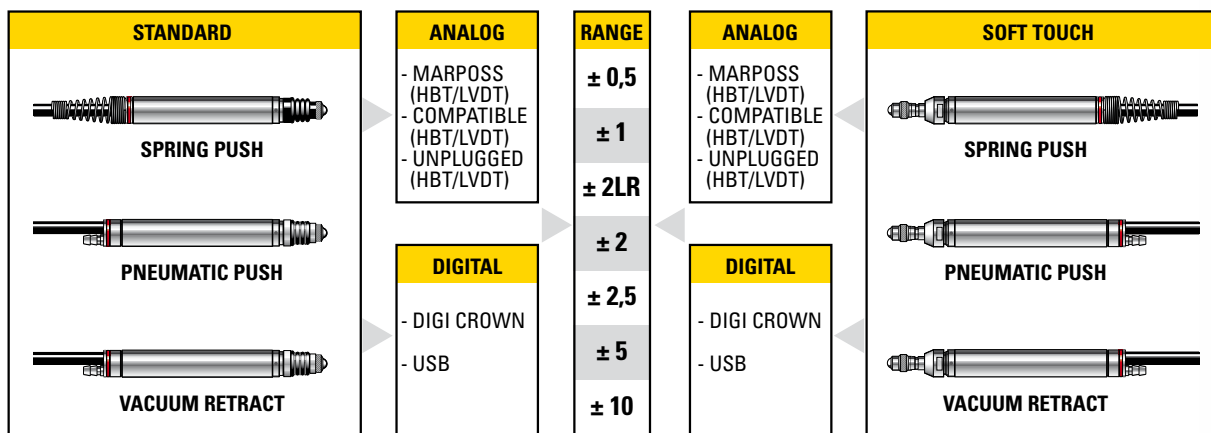
Digi Crown²

Digitized version, with high levels of accuracy and versatility used in combination with **Digi Net**.

Red Crown² USB

A probe version linearized with the USB interface integrated in the (standard USB) connector ready to be used via direct connection to any **USB** host device.





Red Crown2 is a line of pencil probes available in STANDARD (with gaiter –IP65) or SOFT TOUCH (without gaiter –IP54) configuration, with highly precise ball cage movements and various connection options according to the conditioning and display interfaces used.

The analogue version, with LVDT or HBT transducer, allows the use of the product with standard Marposs amplifiers, or with third party amplifiers available on the market.

These probes are available both with and without connector (UNPLUGGED).

Red Crown2 USB is the version with USB connector, which provides high levels of measuring accuracy and is easy to use.

- ACCURACY. The high level of accuracy is guaranteed during the production when the compensation of the linearity and sensitivity errors are stored in each probe. Each unique unit is certified and identified by a serial number, to ensure complete traceability.
- PLUG & GAUGE. All the conditioning and interface electronics of the transducer are integrated in the USB connector, therefore no additional connecting devices are required to use the product.
- EASY TO USE. The measurement can be displayed with Marposs electronics (Nemo, Merlin, E9066) or by connecting directly with USB Host devices, where Red Crown2 USB is visible as a standard virtual COM.
- APPLICATIONS. Both static and dynamic measurements can be performed (maximum sampling frequency 1000 samples/s).
- SOFTWARE INTERFACES. For the measurement integration the Marposs software (U-Com, Easy Acquisition and QSPC) are available; alternatively a simple list of protocol commands for an easy and quick integration in other programming environments can be used.

Digi Crown2, digitized version, is the probe family that provides high levels of measuring accuracy combined with the Digi Net network interface.

Digi Crown2 and Digi Net together provide the following advantages:

- ACCURACY. High levels of measuring accuracy is guaranteed by the linearization data stored in the memory of the connector. The Digi Net interface box is able to read the error map and perform an automatic compensation.
- PLUG & GAUGE. The memory in the connector allows any Digi Crown2 probe to be connected to the Digi Net network without requiring individual probe programming.
- FLEXIBILITY. The modularity of the system can create a network where 1 input-channel* and 2 input-channel* interface boxes are provided with the exact number of probes required. In a comprehensive Digi Net the Digi Crown2 can be combined with any type of incremental sensor, with analogue output sensors, and various I/O interfaces to provide a complete machine integration.
- VERSATILITY. The application can be designed by selecting the most suitable probe for the measuring task (for any measuring range the models are available with spring or pneumatic push, with axial or radial cable output and with or without gasket), and connecting it to the interface* box.
- APPLICATIONS. Both static and synchronised dynamic measurements can be performed (maximum sampling frequency 4,000 samples/sec)
- CONNECTIVITY. The Digi Crown2 probe is designed for the Digi Net system, but it also connects to the Marposs standard line of LVDT amplifiers.

STANDARD

STANDARD - AXIAL - SPRING

| | ±0.5 | ±1 | ±2LR | ±2.5 | ±5 | ±10 |
|---|-------|-------|--------|-------|--------|--------|
| A | 36.20 | 59.40 | 106.35 | 83.35 | 114.45 | 162.45 |
| B | 24.35 | 41.25 | 75.50 | 61.05 | 86.60 | 120.65 |
| C | 7.10 | 12.80 | 25.30 | 16.75 | 22.30 | 39.45 |
| D | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| E | 2.05 | - | - | - | - | - |
| F | 0.70 | 1.30 | 1.50 | 1.50 | 1.50 | - |
| G | - | - | - | - | - | - |
| H | - | - | - | - | - | - |
| L | - | 22.00 | 22.00 | 22.00 | 22.00 | 22.00 |
| M | - | - | - | - | - | - |

F= Max. pretravel adj. value

STANDARD - RADIAL - SPRING

| | ±0.5 | ±1 | ±2LR | ±2.5 | ±5 | ±10 |
|---|-------|-------|--------|-------|--------|--------|
| A | 37.50 | 57.78 | 107.65 | 84.85 | 115.95 | 163.95 |
| B | 17.20 | 31.20 | 88.58 | 54.10 | 79.65 | 112.50 |
| C | 7.10 | 12.80 | 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 | 1.50 | 1.50 | 1.50 | - |
| G | - | - | - | - | - | - |
| H | 15.20 | - | 15.20 | 15.20 | 15.20 | 15.20 |
| L | - | - | 22.00 | 22.00 | 22.00 | 22.00 |
| M | - | - | - | - | - | - |

F= Max. pretravel adj. value

| MECHANICAL SPECIFICATIONS | ±0.5 mm | | ±1 mm | | | | ±2 mm LongRange | | | | | | | | | | | |
|----------------------------|--------------|---|--------------|---|-------------------|---|-------------------|---|-------------------|---|-------------------|---|-------------------|---|-------------------|--|-------------------|--|
| | A | R | A | R | A | R | A | R | A | R | A | R | A | R | | | | |
| Cable (A=axial - R=radial) | S | | S | | PP | | V | | PV | | S | | PP | | V | | PV | |
| Movement (*) | 1 | | 2 | | 3 | | 4 | | 11 | | 11 | | 11 | | 11 | | 11 | |
| Measuring range (mm) | 1 | | 2 | | 3 | | 4 | | 11 | | 11 | | 11 | | 11 | | 11 | |
| Mechanical travel (mm) | 1.5 | | 3 | | 3 | | 3 | | 11 | | 11 | | 11 | | 11 | | 11 | |
| Body Ø (mm) | 8 | | 8 | | 8 | | 8 | | 8 | | 8 | | 8 | | 8 | | 8 | |
| Spring strenght (N/mm±15%) | 0,17 | | 0,14 | | 0,04 | | 0,023 | | 0,023 | | 0,03 | | 0,02 | | 0,02 | | 0,02 | |
| Measuring force (N±25%) | 1,00 | | 0,70 | | 0,8÷2,5 | | 0,70 | | 0,70 | | 0,7÷2,3 | | 0,70 | | 0,70 | | 0,70 | |
| PP pressure | bar | | psi | | 7,5 ÷ 14,5 | | 0,5 ÷ 1 | | 0,5 ÷ 1 | | 7,5 ÷ 14,5 | | 0,5 ÷ 1 | | 0,5 ÷ 1 | | 0,5 ÷ 1 | |
| Vacuum retract pressure | bar | | psi | | ≤0,6 | | ≤0,9 | | ≤0,6 | | ≤0,6 | | ≤0,6 | | ≤0,6 | | ≤0,6 | |
| Cable length (m) | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | |
| Gasket | Fluoroelast. | | Fluoroelast. | | Fluoroelastometer | | Fluoroelastometer | | Fluoroelastometer | | Fluoroelastometer | | Fluoroelastometer | | Fluoroelastometer | | Fluoroelastometer | |
| Repeatability (µm) | 0,15 | | 0,15 | | 0,15 | | 0,15 | | 0,15 | | 0,15 | | 0,15 | | 0,15 | | 0,15 | |
| Thermal drift (µm/°C) | 0,25 | | 0,25 | | 0,25 | | 0,25 | | 0,25 | | 0,25 | | 0,25 | | 0,25 | | 0,25 | |
| Operating temperature (°C) | (-10)H(+65) | | (-10)H(+65) | | (-10)H(+65) | | (-10)H(+65) | | (-10)H(+65) | | (-10)H(+65) | | (-10)H(+65) | | (-10)H(+65) | | (-10)H(+65) | |
| Storage temperature (°C) | (-20)H(+100) | | (-20)H(+100) | | (-20)H(+100) | | (-20)H(+100) | | (-20)H(+100) | | (-20)H(+100) | | (-20)H(+100) | | (-20)H(+100) | | (-20)H(+100) | |
| Protection grade | IP65 | | IP65 | | IP65 | | IP65 | | IP65 | | IP65 | | IP65 | | IP65 | | IP65 | |
| Contact type | carbide | | carbide | | carbide | | carbide | | carbide | | carbide | | carbide | | carbide | | carbide | |
| Contact tread | M2,5 | | M2,5 | | M2,5 | | M2,5 | | M2,5 | | M2,5 | | M2,5 | | M2,5 | | M2,5 | |

Red Crown 2 LVDT MARPOSS

| TRADE NAME | F05 | FR05 | F10 | FR10 | FPA10 | FP10 | FVA10 | FV10 | . | . | F21 | FR21 | FPA21 | FP21 | FVA21 | FV21 | . | . |
|-----------------------|---|------------|-----------------------|------------|-----------------------|------------|-----------------------|------------|-----------------------|---|---|------------|-----------------------|------------|-----------------------|------------|-----------------------|---|
| ORDER CODE | 3PR01L0000 | 3PR01L1200 | 3PR02L0000 | 3PR02L1200 | 3PR02L0400 | 3PR02L1600 | 3PR02L0560 | 3PR02L1760 | . | . | 3PR10L0199 | 3PR10L1399 | 3PR10L0559 | 3PR10L1759 | 3PR10L0599 | 3PR10L1799 | . | . |
| Sensitivity (mV/V/mm) | 230 | | 230 | | 230 | | 230 | | 230 | | 230 | | 230 | | 230 | | 230 | |
| Accuracy error (µm) | (**) | | ± MAX(1+2*K; 7*K)*** | | ± MAX(1+2*K; 7*K)*** | | ± MAX(1+2*K; 7*K)*** | | ± MAX(1+2*K; 7*K)*** | | ± MAX(2+2*K; 7*K)*** | | ± MAX(2+2*K; 7*K)*** | | ± MAX(2+2*K; 7*K)*** | | ± MAX(2+2*K; 7*K)*** | |
| Calibration spec. | 3,5355V RMS with load 1MΩ//360pF/7,5kHz | | | | | | | | | | 3,5355V RMS with load 1MΩ//360pF/7,5kHz | | | | | | | |

Red Crown 2 HBT MARPOSS (for TESA compatible models please refer to dedicated section on page 6, 7, 10, 11)

| TRADE NAME | H05 | HR05 | H10 | HR10 | HPA10 | HP10 | HVA10 | HV10 | . | . | H21 | HR21 | HPA21 | HP21 | HVA21 | HV21 | . | . |
|-----------------------|---------------------------------------|------------|-----------------------|------------|-----------------------|------------|-----------------------|------------|-----------------------|---|---------------------------------------|------------|-----------------------|------------|-----------------------|------------|-----------------------|---|
| ORDER CODE | 3PR01N0000 | 3PR01N1200 | 3PR02N0000 | 3PR02N1200 | 3PR02N0400 | 3PR02N1600 | 3PR02N0560 | 3PR02N1760 | . | . | 3PR10N0199 | 3PR10N1399 | 3PR10N0559 | 3PR10N1759 | 3PR10N0599 | 3PR10N1799 | . | . |
| Sensitivity (mV/V/mm) | 73,75 | | 73,75 | | 73,75 | | 73,75 | | 73,75 | | 73,75 | | 73,75 | | 73,75 | | 73,75 | |
| Accuracy error (µm) | (**) | | ± MAX(1+2*K; 7*K)*** | | ± MAX(1+2*K; 7*K)*** | | ± MAX(1+2*K; 7*K)*** | | ± MAX(1+2*K; 7*K)*** | | ± MAX(2+2*K; 7*K)*** | | ± MAX(2+2*K; 7*K)*** | | ± MAX(2+2*K; 7*K)*** | | ± MAX(2+2*K; 7*K)*** | |
| Calibration spec. | 3,5355V RMS with load 2KΩ±0,1%/7,5kHz | | | | | | | | | | 3,5355V RMS with load 2KΩ±0,1%/7,5kHz | | | | | | | |

RED CROWN 2 USB

| TRADE NAME | U05 | UR05 | U10 | UR10 | UPA10 | UP10 | UVA10 | UV10 | . | . | . | . | . | . | . | . | . | . |
|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|---|---|---|---|---|---|---|---|---|---|
| ORDER CODE | 3PR01Y0000 | 3PR01Y1200 | 3PR02Y0000 | 3PR02Y1200 | 3PR02Y0400 | 3PR02Y1600 | 3PR02Y0560 | 3PR02Y1760 | . | . | . | . | . | . | . | . | . | . |
| Accuracy error (µm) | ±(0,2+K*1) | | | | ±(0,2+K*1) | | | | - | | | | - | | | | | |

DIGI CROWN 2

| TRADE NAME | D01 | RD01 | D02 | RD02 | PAD02 | PD02 | VAD02 | VD02 | . | . | . | . | . | . | . | . | . |
|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|---|---|---|---|---|---|---|---|---|
| ORDER CODE | 3PD01L0000 | 3PD01L1200 | 3PD02L0000 | 3PD02L1200 | 3PD02L0400 | 3PD02L1600 | 3PD02L0560 | 3PD02L1760 | . | . | . | . | . | . | . | . | . |
| Accuracy error (µm) | ±(0,2+K*1) | | | | ±(0,2+K*1) | | | | - | | | | - | | | | |

* Movement S= spring - PP= pneumatic push - V= vacuum - PV= push/vacuum - ** Accuracy = +/-MAX(0,5+2*K;|7*K|) *** K= Reading (mm)

STANDARD - AXIAL - PNEUMATIC PUSH

| | ±05 | ±1 | ±2LR | ±2.5 | ±5 | ±10 |
|---|-------|--------|-------|--------|--------|-----|
| A | 65,98 | 109,65 | 86,65 | 117,75 | 166,75 | |
| B | 44,55 | 75,50 | 61,05 | 86,60 | 120,65 | |
| C | 12,80 | 25,30 | 16,75 | 22,30 | 39,45 | |
| D | 2,00 | 2,00 | 2,00 | 2,00 | | |
| E | | | | | | |
| F | 1,30 | 1,50 | 1,50 | 1,50 | | |
| G | | | | | | |
| H | | | | | | |
| L | | 22,00 | | | | |
| M | 6,00 | 6,00 | 6,00 | 6,00 | 6,00 | |

F= Max. pretravel adj. value

STANDARD - RADIAL - PNEUMATIC PUSH

| | ±05 | ±1 | ±2LR | ±2.5 | ±5 | ±10 |
|---|-------|--------|-------|--------|--------|-----|
| A | 71,75 | 107,65 | 84,85 | 115,95 | 163,95 | |
| B | 36,10 | 68,55 | 52,60 | 78,15 | 112,50 | |
| C | 12,80 | 25,30 | 16,75 | 22,30 | 39,45 | |
| D | 2,00 | 2,00 | 2,00 | 2,00 | | |
| E | | | | | | |
| F | 1,30 | 1,50 | 1,50 | 1,50 | | |
| G | 7,30 | 7,50 | 7,30 | 7,30 | 7,30 | |
| H | 15,20 | 15,20 | 15,20 | 15,20 | 15,20 | |
| L | | 22,00 | | | | |
| M | | | | | | |

F= Max. pretravel adj. value

| | | ±2,5 mm | | | | | | ±5 mm | | | | | | ±10 mm | | | | | | | | | |
|--|--|---|------------|------------|------------|------------|------------|---|------------|------------|------------|------------|------------|---|------------|------------|------------|------------|------------|---|----|---|----|
| | | A | R | A | R | A | R | A | R | A | R | A | R | A | R | A | R | A | R | A | R | A | R |
| | | S | PP | V | PV | S | PP | V | PV | S | PP | V | PV | S | PP | V | PV | S | PP | V | PV | S | PP |
| | | 5 | | | | | | 10 | | | | | | 20 | | | | | | | | | |
| | | 6,6 | | | | | | 11 | | | | | | 21 | | | | | | | | | |
| | | 8 | | | | | | 8 | | | | | | 8 | | | | | | | | | |
| | | 0,023 | 0,03 | 0,02 | | | | 0,03 | 0,02 | 0,02 | | | | - | - | - | | | | | | | |
| | | 0,70 | 0,7 ÷ 2,3 | 0,70 | | | | 0,70 | 0,7 ÷ 2,4 | 0,70 | | | | 0,70 | 0,7 ÷ 2,4 | 0,70 | | | | | | | |
| | | | 0,5 ÷ 1 | | | | | | 0,5 ÷ 1 | | | | | | 0,5 ÷ 1 | | | | | | | | |
| | | | 7,5 ÷ 14,5 | | | | | | 7,5 ÷ 14,5 | | | | | | 7,5 ÷ 14,5 | | | | | | | | |
| | | | | ≤0,6 | | | | | ≤0,6 | | | | | | | ≤0,6 | | | | | | | |
| | | | | ≤0,9 | | | | | ≤0,9 | | | | | | | ≤0,9 | | | | | | | |
| | | 2 | | | | | | 2 | | | | | | 2 | | | | | | | | | |
| | | Fluoroelastometer | | | | | | Fluoroelastometer | | | | | | Fluoroelastometer | | | | | | | | | |
| | | 0,15 | | | | | | 0,15 | | | | | | 0,15 | | | | | | | | | |
| | | 0,25 | | | | | | 0,25 | | | | | | 0,25 | | | | | | | | | |
| | | (-10)÷(+65) | | | | | | (-10)÷(+65) | | | | | | (-10)÷(+65) | | | | | | | | | |
| | | (-20)÷(+100) | | | | | | (-20)÷(+100) | | | | | | (-20)÷(+100) | | | | | | | | | |
| | | IP65 | | | | | | IP65 | | | | | | IP65 | | | | | | | | | |
| | | carbide | | | | | | carbide | | | | | | carbide | | | | | | | | | |
| | | M2,5 | | | | | | M2,5 | | | | | | M2,5 | | | | | | | | | |
| | | F25 | FR25 | FPA25 | FP25 | FVA25 | FV25 | F50 | FR50 | FPA50 | FP50 | FVA50 | FV50 | F100 | FR100 | FPA100 | FP100 | FVA100 | FV100 | | | | |
| | | 3PR05L0000 | 3PR05L1200 | 3PR05L0400 | 3PR05L1600 | 3PR05L0560 | 3PR05L1760 | 3PR10L0000 | 3PR10L1200 | 3PR10L0400 | 3PR10L1600 | 3PR10L0560 | 3PR10L1760 | 3PR20L0000 | 3PR20L1200 | 3PR20L0400 | 3PR20L1600 | 3PR20L0560 | 3PR20L1760 | | | | |
| | | 115 | | | | | | 115 | | | | | | 23 | | | | | | | | | |
| | | ± MAX(2,5+2*K); 7*K)*** | | | | | | ± MAX(5+2*K); 7*K)*** | | | | | | ± MAX(10+2*K); 7*K)*** | | | | | | | | | |
| | | 3,5355V RMS with load 1MΩ//360pF/7,5kHz | | | | | | 3,5355V RMS with load 1MΩ//360pF/7,5kHz | | | | | | 3,5355V RMS with load 1MΩ//360pF/7,5kHz | | | | | | | | | |
| | | H25 | HR25 | HPA25 | HP25 | HVA25 | HV25 | H50 | HR50 | HPA50 | HP50 | HVA50 | HV50 | H100 | HR100 | HPA100 | HP100 | HVA100 | HV100 | | | | |
| | | 3PR05N0000 | 3PR05N1200 | 3PR05N0400 | 3PR05N1600 | 3PR05N0560 | 3PR05N1760 | 3PR10N0000 | 3PR10N1200 | 3PR10N0400 | 3PR10N1600 | 3PR10N0560 | 3PR10N1760 | 3PR20N0000 | 3PR20N1200 | 3PR20N0400 | 3PR20N1600 | 3PR20N0560 | 3PR20N1760 | | | | |
| | | 36,875 | | | | | | 29,5 | | | | | | 7,375 | | | | | | | | | |
| | | ± MAX(2,5+2*K); 7*K)*** | | | | | | ± MAX(5+2*K); 7*K)*** | | | | | | ± MAX(10+2*K); 7*K)*** | | | | | | | | | |
| | | 3,5355V RMS with load 2KΩ±0,1%/7,5kHz | | | | | | 3,5355V RMS with load 2KΩ±0,1%/7,5kHz | | | | | | 3,5355V RMS with load 2KΩ±0,1%/7,5kHz | | | | | | | | | |
| | | U25 | UR25 | UPA25 | UP25 | UVA25 | UV25 | U50 | UR50 | UPA50 | UP50 | UVA50 | UV50 | U100 | UR100 | UPA100 | UP100 | UVA100 | UV100 | | | | |
| | | 3PR05Y0000 | 3PR05Y1200 | 3PR05Y0400 | 3PR05Y1600 | 3PR05Y0560 | 3PR05Y1760 | 3PR10Y0000 | 3PR10Y1200 | 3PR10Y0400 | 3PR10Y1600 | 3PR10Y0560 | 3PR10Y1760 | 3PR20Y0000 | 3PR20Y1200 | 3PR20Y0400 | 3PR20Y1600 | 3PR20Y0560 | 3PR20Y1760 | | | | |
| | | ±(0,6+K*2) | | | | | | ±(0,6+K*2) | | | | | | ±(1,2+K*2) | | | | | | | | | |
| | | D05 | RD05 | PAD05 | PD05 | VAD05 | VD05 | D10 | RD10 | PAD10 | PD10 | VAD10 | VD10 | D20 | RD20 | PAD20 | PD20 | VAD20 | VD20 | | | | |
| | | 3PD05L0000 | 3PD05L1200 | 3PD05L0400 | 3PD05L1600 | 3PD05L0560 | 3PD05L1760 | 3PD10L0000 | 3PD10L1200 | 3PD10L0400 | 3PD10L1600 | 3PD10L0560 | 3PD10L1760 | 3PD20L0000 | 3PD20L1200 | 3PD20L0400 | 3PD20L1600 | 3PD20L0560 | 3PD20L1760 | | | | |
| | | ±(0,6+K*2) | | | | | | ±(0,6+K*2) | | | | | | ±(1,2+K*2) | | | | | | | | | |

SOFT TOUCH

SOFT TOUCH - AXIAL - SPRING

| | ±0.5 | ±1 | ±2LR | ±2.5 | ±5 | ±10 |
|---|-------|-------|--------|-------|--------|--------|
| A | 39,90 | 63,00 | 106,35 | 87,00 | 114,45 | 162,45 |
| B | 24,35 | 41,25 | 75,50 | 61,05 | 86,60 | 120,65 |
| C | 10,65 | 16,40 | 28,80 | 20,40 | 16,90 | 39,45 |
| D | 2,00 | 2,00 | - | 2,00 | - | - |
| E | 2,05 | - | - | - | - | - |
| F | 0,70 | 1,30 | - | 1,50 | - | - |
| G | - | - | - | - | - | - |
| H | - | - | - | - | - | - |
| L | - | 22,00 | 22,00 | 22,00 | 22,00 | 22,00 |
| M | - | - | - | - | - | - |

F= Max. pretravel adj. value

SOFT TOUCH - RADIAL - SPRING

| | ±0.5 | ±1 | ±2LR | ±2.5 | ±5 | ±10 |
|---|------|-------|--------|-------|--------|--------|
| A | - | 61,43 | 107,65 | 88,50 | 115,95 | 163,95 |
| B | - | 31,20 | 68,55 | 54,10 | 79,65 | 112,50 |
| C | - | 16,40 | 28,80 | 20,40 | 16,90 | 39,45 |
| D | - | 2,00 | - | 2,00 | - | - |
| E | - | - | - | - | - | - |
| F | - | 1,30 | - | 1,50 | - | - |
| G | - | - | - | - | - | - |
| H | - | 15,20 | 15,20 | 15,20 | 15,20 | 15,20 |
| L | - | 22,00 | 22,00 | 22,00 | 22,00 | 22,00 |
| M | - | - | - | - | - | - |

F= Max. pretravel adj. value

| SOFT TOUCH | ±0.5 mm | | ±1 mm | | | | ±2 mm LongRange | | | | | | | | | | | |
|-------------------------------|--------------|---|-------|---|-----------------------|---|-----------------|---|------------------------|---|-------------|---|----|---|-------------|--|----|--|
| | A | R | A | R | A | R | A | R | A | R | A | R | A | R | | | | |
| Cable (A=axial - R=radial) | S | | S | | PP | | V | | PV | | S | | PP | | V | | PV | |
| Movement (*) | S | | S | | PP | | V | | PV | | S | | PP | | V | | PV | |
| Measuring range (mm) | 1 | | | | 2 | | | | 4 | | | | 11 | | | | | |
| Mechanical travel (mm) | 1,5 | | | | 3 | | | | 11 | | | | | | | | | |
| Body Ø (mm) | 8 | | | | 8 | | | | 8 | | | | | | | | | |
| Spring strenght (N/mm±15%) | 0,070 | | 0,06 | | 0,045 | | | | 0,016 | | 0,010 | | | | | | | |
| Total Measuring force (N±25%) | 0,40 | | 0,30 | | 0,18 ÷ 1,23 | | | | 0,09 ÷ 1,41 | | 0,18 ÷ 1,23 | | | | 0,09 ÷ 1,41 | | | |
| PP pressure bar | | | | | 0,5 ÷ 2 | | | | 0,125 ÷ 2 | | 0,5 ÷ 2 | | | | 0,125 ÷ 2 | | | |
| psi | | | | | 7,3 ÷ 29 | | | | 1,825 ÷ 29 | | 7,3 ÷ 29 | | | | 1,825 ÷ 29 | | | |
| Vacuum retract pressure bar | | | | | | | | | ≤0,6 | | | | | | ≤0,6 | | | |
| psi | | | | | | | | | ≤0,9 | | | | | | ≤0,9 | | | |
| Cable length (m) | 2 | | | | 2 | | | | 2 | | | | | | | | | |
| Repeatability (µm) | 0,15 | | | | 0,15 | | | | 0,15 | | | | | | | | | |
| Thermal drift (µm/°C) | 0,25 | | | | 0,25 | | | | 0,25 | | | | | | | | | |
| Operating temperature (°C) | (-10)H(+65) | | | | (-10)H(+65) | | | | (-10)H(+65) | | | | | | | | | |
| Storage temperature (°C) | (-20)H(+100) | | | | (-20)H(+100) | | | | (-20)H(+100) | | | | | | | | | |
| Protection grade | IP50 | | | | IP50(IP54 PP version) | | | | IP50 (IP54 PP version) | | | | | | | | | |
| Contact type | Nylon (PA66) | | | | Nylon (PA66) | | | | carbide | | | | | | | | | |
| Contact tread | M2,5 | | | | M2,5 | | | | M2,5 | | | | | | | | | |

Red Crown 2 LVDT MARPOSS

| TRADE NAME | F05L | FR05L | F10L | FR10L | FPA10L | FP10L | - | - | FPVA10L | FPV10L | F21L | FR21L | FPA21L | FP21L | FVA21L | FV21L | FPVA21L | FPV21L |
|-----------------------|--|-------|-------------------------|------------|------------|------------|---|---|------------|------------|--|------------|------------|------------|--------|-------|------------|------------|
| ORDER CODE | 3PR01L5000 | - | 3PR02L5000 | 3PR02L6200 | 3PR02L5400 | 3PR02L6600 | - | - | 3PR02L5800 | 3PR02L7000 | 3PR10L5199 | 3PR10L6399 | 3PR10L5559 | 3PR10L6759 | - | - | 3PR10L5999 | 3PR10L7199 |
| Sensitivity (mV/V/mm) | 230 | | 230 | | | | | | | | 230 | | | | | | | |
| Accuracy error (µm) | (**) | | ± MAX(1+2*K); 7*K)***) | | | | | | | | ± MAX(2+2*K); 7*K)***) | | | | | | | |
| Calibration spec. | 3,5355V RMS with load 1MΩ/360pF/7,5kHz | | | | | | | | | | 3,5355V RMS with load 1MΩ/360pF/7,5kHz | | | | | | | |

Red Crown 2 HBT TESA

| TRADE NAME | H05L | HR05L | H10L | HR10L | HPA10L | HP10L | - | - | HPVA10L | HPV10L | H21L | HR21L | HPA21L | HP21L | HVA21L | HV21L | HPVA21L | HPV21L |
|-----------------------|-----------------------------------|-------|-------------------------|------------|------------|------------|---|---|------------|------------|---------------------------------------|------------|------------|------------|--------|-------|------------|------------|
| ORDER CODE | 3PR01T5000 | - | 3PR02T5000 | 3PR02T6200 | 3PR02T5400 | 3PR02T6600 | - | - | 3PR02T5800 | 3PR02T7000 | 3PR10T5199 | 3PR10T6399 | 3PR10T5559 | 3PR10T6759 | - | - | 3PR10T5999 | 3PR10T7199 |
| Sensitivity (mV/V/mm) | 73,75 | | 73,75 | | | | | | | | 73,75 | | | | | | | |
| Accuracy error (µm) | (**) | | ± MAX(1+2*K); 7*K)***) | | | | | | | | ± MAX(2+2*K); 7*K)***) | | | | | | | |
| Calibration spec. | 3V RMS with load 2kΩ ± 0,1%/13kHz | | | | | | | | | | 3,5355V RMS with load 2KΩ±0,1%/7,5kHz | | | | | | | |

RED CROWN 2 USB

| TRADE NAME | U05L | - | U10L | UR10L | UPA10L | UP10L | - | - | UPVA10L | UPV10L | - | - | - | - | - | - | - | - |
|---------------------|------------|---|------------|------------|------------|------------|---|---|------------|------------|---|---|---|---|---|---|---|---|
| ORDER CODE | 3PR01Y5000 | - | 3PR02Y5000 | 3PR02Y6200 | 3PR02Y5400 | 3PR02Y6600 | - | - | 3PR02Y5800 | 3PR02Y7000 | - | - | - | - | - | - | - | - |
| Accuracy error (µm) | ±(0,2+K*1) | | ±(0,2+K*1) | | | | | | | | - | | | | | | | |

DIGI CROWN 2

| TRADE NAME | D01L | RD01L | D02L | RD02L | PAD02L | PD02L | - | - | PVAD02L | PVD02L | - | - | - | - | - | - | - | - |
|---------------------|------------|-------|------------|------------|------------|------------|---|---|------------|------------|---|---|---|---|---|---|---|---|
| ORDER CODE | 3PD01L5000 | - | 3PD02L5000 | 3PD02L6200 | 3PD02L5400 | 3PD02L6600 | - | - | 3PD02L5800 | 3PD02L7000 | - | - | - | - | - | - | - | - |
| Accuracy error (µm) | ±(0,2+K*1) | | ±(0,2+K*1) | | | | | | | | - | | | | | | | |

* Movement S= spring - PP= pneumatic push - V= vacuum - PV= push/vacuum - ** Accuracy = +/-MAX(0,5+2*K);|7*K|) *** K= Reading (mm)

SOFT TOUCH - AXIAL - PNEUMATIC PUSH

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

F= Max. pretravel adj. value

SOFT TOUCH - RADIAL - PNEUMATIC PUSH

| | ±05 | ±1 | ±2LR | ±2,5 | ±5 | ±10 |
|---|-----|-------|--------|-------|--------|--------|
| A | | 66,30 | 107,65 | 88,50 | 115,95 | 163,95 |
| B | | 36,10 | 68,55 | 52,60 | 78,15 | 112,50 |
| C | | 16,40 | 28,80 | 20,40 | 16,90 | 39,45 |
| D | | 2,00 | | 2,00 | | |
| E | | | | | | |
| F | | 1,30 | | 1,50 | | |
| G | | 7,30 | 7,50 | 7,30 | 7,30 | 7,30 |
| H | | 15,20 | 15,20 | 15,20 | 15,20 | 15,20 |
| L | | 22,00 | 22,00 | 22,00 | 22,00 | 22,00 |
| M | | | | | | |

F= Max. pretravel adj. value

| ±2,5 mm | | | | | | ±5 mm | | | | | | ±10 mm | | | | | | | | | | | | | | | |
|---------|------------|-------------|------------|-----------------------|---|-------------|---|------------|------------|-----------------------|------------|------------|------------|---|-------|-------------|------------|------------|------------|-----------------------|------------|---|--|------------|------------|--|--|
| A | R | A | R | A | R | A | R | A | R | A | R | A | R | A | R | A | R | A | R | A | R | | | | | | |
| S | | PP | | V | | S | | PP | | V | | S | | PP | | V | | S | | PP | | V | | | | | |
| | | | | 5 | | | | | | 10 | | | | | | | | | | 20 | | | | | | | |
| | | | | 6,6 | | | | | | 11 | | | | | | | | | | 21 | | | | | | | |
| | | | | 8 | | | | | | 8 | | | | | | | | | | 8 | | | | | | | |
| 0,016 | | 0,01 | | | | | | 0,02 | | 0,07 | | | | 0,030 | | 0,010 | | | | | | | | | | | |
| 0,30 | | 0,18 ÷ 1,23 | | | | 0,09 ÷ 1,41 | | 0,30 | | 0,18 ÷ 1,23 | | | | 0,30 | | 0,18 ÷ 1,23 | | | | 0,09 ÷ 1,41 | | | | | | | |
| | | 0,5 ÷ 2 | | | | 0,125 ÷ 2 | | | | 0,5 ÷ 2 | | | | 0,125 ÷ 2 | | 0,5 ÷ 2 | | | | 0,125 ÷ 2 | | | | | | | |
| | | 7,3 ÷ 29 | | | | 1,825 ÷ 29 | | | | 7,3 ÷ 29 | | | | 1,825 ÷ 29 | | 7,3 ÷ 29 | | | | 1,825 ÷ 29 | | | | | | | |
| | | | | | | ≤0,6 | | | | | | | | ≤0,6 | | | | | | ≤0,6 | | | | | | | |
| | | | | | | ≤0,9 | | | | | | | | ≤0,9 | | | | | | ≤0,9 | | | | | | | |
| | | | | 2 | | | | | | 2 | | | | | | | | | | 2 | | | | | | | |
| | | | | 0,15 | | | | | | 0,15 | | | | | | | | | | 0,15 | | | | | | | |
| | | | | 0,25 | | | | | | 0,25 | | | | | | | | | | 0,25 | | | | | | | |
| | | | | (-10)÷(+65) | | | | | | (-10)÷(+65) | | | | | | | | | | (-10)÷(+65) | | | | | | | |
| | | | | (-20)÷(+100) | | | | | | (-20)÷(+100) | | | | | | | | | | (-20)÷(+100) | | | | | | | |
| | | | | IP50(IP54 PP version) | | | | | | IP50(IP54 PP version) | | | | | | | | | | IP50(IP54 PP version) | | | | | | | |
| | | | | Nylon (PA66) | | | | | | Nylon (PA66) | | | | | | | | | | Nylon (PA66) | | | | | | | |
| | | | | M2,5 | | | | | | M2,5 | | | | | | | | | | M2,5 | | | | | | | |
| | F25L | FR25L | FPA25L | FP25L | | | | FPVA25L | FPV25L | F50L | FR50L | FPA50L | FP50L | FVA50L | FV50L | FPVA50L | FPV50L | F100L | FR100L | FPA100L | FP100L | | | FPVA100L | FPV100L | | |
| | 3PR05L5000 | 3PR05L6200 | 3PR05L5400 | 3PR05L6600 | | | | 3PR05L5800 | 3PR05L7000 | 3PR10L5000 | 3PR10L6200 | 3PR10L5400 | 3PR10L6600 | | | 3PR10L5800 | 3PR10L7000 | 3PR20L5000 | 3PR20L6200 | 3PR20L5400 | 3PR20L6600 | | | 3PR20L5800 | 3PR20L7000 | | |
| | | | | | 115 | | | | | | | | | 115 | | | | | | | | 23 | | | | | |
| | | | | | ± MAX(2,5+2*K); 7*K)*** | | | | | | | | | ± MAX(5+2*K); 7*K)*** | | | | | | | | ± MAX(10+2*K); 7*K)*** | | | | | |
| | | | | | 3,5355V RMS with load 1MΩ//360pF/7,5kHz | | | | | | | | | 3,5355V RMS with load 1MΩ//360pF/7,5kHz | | | | | | | | 3,5355V RMS with load 1MΩ//360pF/7,5kHz | | | | | |
| | H25L | HR25L | HPA25L | HP25L | | | | HPVA25L | HPV25L | H50L | HR50L | HPA50L | HP50L | | | HPVA50L | HPV50L | H100LL | HR100L | HPA100L | HP100L | | | HPVA100L | HPV100L | | |
| | 3PR05T5000 | 3PR05T6200 | 3PR05T5400 | 3PR05T6600 | | | | 3PR05T5800 | 3PR05T7000 | 3PR10T5000 | 3PR10T6200 | 3PR10T5400 | 3PR10T6600 | | | 3PR10T5800 | 3PR10T7000 | 3PR20T5000 | 3PR20T6200 | 3PR20T5400 | 3PR20T6600 | | | 3PR20T5800 | 3PR20T7000 | | |
| | | | | | 73,75 | | | | | | | | | 29,5 | | | | | | | | 7,375 | | | | | |
| | | | | | ± MAX(2,5+2*K); 7*K)*** | | | | | | | | | ± MAX(5+2*K); 7*K)*** | | | | | | | | ± MAX(10+2*K); 7*K)*** | | | | | |
| | | | | | 3V RMS with load 2kΩ ± 0,1%/13kHz | | | | | | | | | 3V RMS with load 2kΩ ± 0,1%/13kHz | | | | | | | | 3V RMS with load 2kΩ ± 0,1%/13kHz | | | | | |
| | U25L | UR25L | UPA25L | UP25L | | | | UPVA25L | UPV25L | U50L | UR50L | UPA50L | UP50L | | | UPVA50L | UPV50L | U100L | UR100L | UPA100L | UP100L | | | UPVA100L | UPV100L | | |
| | 3PR05Y5000 | 3PR05Y6200 | 3PR05Y5400 | 3PR05Y6600 | | | | 3PR05Y5800 | 3PR05Y7000 | 3PR10Y5000 | 3PR10Y6200 | 3PR10Y5400 | 3PR10Y6600 | | | 3PR10Y5800 | 3PR10Y7000 | | | | | | | | | | |
| | | | | | ±(0,6+K*2) | | | | | | | | | ±(0,6+K*2) | | | | | | | | ±(1,2+K*2) | | | | | |
| | D05L | RD05L | PAD05L | PD05L | | | | PVAD05L | PVD05L | D10L | RD10L | PAD10L | PD10L | | | PVAD10L | PVD10L | D20L | RD20L | PAD20L | PD20L | | | PVAD20L | PVD20L | | |
| | 3PD05L5000 | 3PD05L6200 | 3PD05L5400 | 3PD05L6600 | | | | 3PD05L5800 | 3PD05L7000 | 3PD10L5000 | 3PD10L6200 | 3PD10L5400 | 3PD10L6600 | | | 3PD10L5800 | 3PD10L7000 | 3PD20L5000 | 3PD20L6200 | 3PD20L5400 | 3PD20L6600 | | | 3PD20L5800 | 3PD20L7000 | | |
| | | | | | ±(0,6+K*2) | | | | | | | | | ±(0,6+K*2) | | | | | | | | ±(1,2+K*2) | | | | | |

UNPLUGGED

| STANDARD | ±0,5 mm | | ±1 mm | | | | | | ±2 mm LongRange | | | | | | | | | |
|---------------------------------|-----------------|------------|---|------------|--------------------|------------|------------|------------|-----------------|---|---|------------|--------------------|------------|------------|------------|----|---|
| Cable (A=axial - R=radial) | A | R | A | R | A | R | A | R | A | R | A | R | A | R | A | R | | |
| Movement (*) | S | | S | | PP | | V | | PV | | S | | PP | | V | | PV | |
| Measuring range (mm) | 1 | | | | 2 | | | | | | 4 | | | | | | | |
| Mechanical travel (mm) | 1,5 | | | | 3 | | | | | | 11 | | | | | | | |
| Body Ø (mm) | 8 | | | | 8 | | | | | | 8 | | | | | | | |
| Spring strenght (N/mm±15%) | 0,17 | | 0,14 | | 0,04 | | 0,023 | | | | 0,023 | | 0,03 | | 0,02 | | | |
| Measuring force (N±25%) | 1,00 | | 0,75 | | 0,8 ÷ 2,5 | | 0,75 | | | | 0,70 | | 0,7 ÷ 2,3 | | 0,70 | | | |
| PP pressure bar | | | | | 0,5 ÷ 1 | | | | | | | | 0,5 ÷ 1 | | | | | |
| psi | | | | | 7,5 ÷ 14,5 | | | | | | | | 7,5 ÷ 14,5 | | | | | |
| Vacuum retract pressure bar | | | | | | | ≤0,6 | | | | | | | | ≤0,6 | | | |
| psi | | | | | | | ≤0,9 | | | | | | | | ≤0,9 | | | |
| Cable length (m) | 3,5 | | | | 3,5 | | | | | | | | 3,5 | | | | | |
| Gasket | Fluoroelast. | | | | Fluoroelastometer | | | | | | | | Fluoroelastometer | | | | | |
| Repeatability (µm) | 0,15 | | | | 0,15 | | | | | | | | 0,15 | | | | | |
| Thermal drift (µm/°C) | 0,25 | | | | 0,25 | | | | | | | | 0,25 | | | | | |
| Operating temperature (°C) | (-10) to (+65) | | | | (-10) to (+65) | | | | | | | | (-10) to (+65) | | | | | |
| Storage temperature (°C) | (-20) to (+100) | | | | (-20) to (+100) | | | | | | | | (-20) to (+100) | | | | | |
| Protection grade | IP65 | | | | IP65 | | | | | | | | IP65 | | | | | |
| Contact type | carbide | | | | carbide | | | | | | | | carbide | | | | | |
| Contact tread | M2,5 | | | | M2,5 | | | | | | | | M2,5 | | | | | |
| Red Crown 2 LVDT MARPOSS | | | | | | | | | | | | | | | | | | |
| TRADE NAME | F05 | FR05 | F10 | FR10 | FPA10 | FP10 | FVA10 | FV10 | . | . | F21 | FR21 | FPA21 | FP21 | FVA21 | FV21 | . | . |
| ORDER CODE | 3PR01M0000 | 3PR01M1200 | 3PR02M0000 | 3PR02M1200 | 3PR02M0400 | 3PR02M1600 | 3PR02M0560 | 3PR02M1760 | . | . | 3PR10M0199 | 3PR10M1399 | 3PR10M0559 | 3PR10M1759 | 3PR10M0599 | 3PR10M1799 | . | . |
| Sensitivity (mV/V/mm) | 233 ±5% | | | | 233 ±5% | | | | | | | | 233 ±5% | | | | | |
| Linearity error (µm) | (**) | | | | ± MAX(1; 5*K)***) | | | | | | | | ± MAX(2; 5*K)***) | | | | | |
| Calibration spec. | | | 3,5355V RMS with load 1MΩ//360pF/7,5kHz | | | | | | | | 3,5355V RMS with load 1MΩ//360pF/7,5kHz | | | | | | | |
| Red Crown 2 HBT MARPOSS | | | | | | | | | | | | | | | | | | |
| TRADE NAME | H05 | HR05 | H10 | HR10 | HPA10 | HP10 | HVA10 | HV10 | . | . | H21 | HR21 | HPA21 | HP21 | HVA21 | HV21 | . | . |
| ORDER CODE | 3PR01Z0000 | 3PR01Z1200 | 3PR02Z0000 | 3PR02Z1200 | 3PR02Z0400 | 3PR02Z1600 | 3PR02Z0560 | 3PR02Z1760 | . | . | 3PR10Z0199 | 3PR10Z1399 | 3PR10Z0559 | 3PR10Z1759 | 3PR10Z0599 | 3PR10Z1799 | . | . |
| Sensitivity (mV/V/mm) | 86 ±5% | | | | 83 ±5% | | | | | | | | 83 ±5% | | | | | |
| Linearity error (µm) | (**) | | | | ± MAX(1; 5*K)***) | | | | | | | | ± MAX(2; 5*K)***) | | | | | |
| Calibration spec. | | | 3,5355V RMS with load 2kΩ±0,1%/7,5kHz | | | | | | | | 3,5355V RMS with load 2KΩ±0,1%/7,5kHz | | | | | | | |

* Movement S= spring - PP= pneumatic push - V= vacuum - PV= push/vacuum - ** Accuracy ±0,5 = +/-MAX(0,5;|5*K|) - *** K= Reading (mm)



| | | ±2,5 mm | | | | | | | | ±5 mm | | | | | | | | ±10 mm | | | | | | | |
|--|--|---|------------|------------|------------|------------|------------|----|---|---|------------|------------|------------|------------|------------|----|---|---|------------|------------|------------|------------|------------|----|---|
| | | A | R | A | R | A | R | A | R | A | R | A | R | A | R | A | R | A | R | A | R | A | R | A | R |
| | | S | | PP | | V | | PV | | S | | PP | | V | | PV | | S | | PP | | V | | PV | |
| | | 5 | | | | | | | | 10 | | | | | | | | 20 | | | | | | | |
| | | 6,6 | | | | | | | | 11 | | | | | | | | 21 | | | | | | | |
| | | 8 | | | | | | | | 8 | | | | | | | | 8 | | | | | | | |
| | | 0,023 | 0,03 | 0,02 | | | | | | 0,03 | 0,02 | 0,02 | | | | | | - | - | - | | | | | |
| | | 0,70 | 0,7 ÷ 2,3 | 0,70 | | | | | | 0,70 | 0,7 ÷ 2,4 | 0,70 | | | | | | 0,70 | - | 0,70 | | | | | |
| | | | 0,5 ÷ 1 | | | | | | | | 0,5 ÷ 1 | | | | | | | | 0,5 ÷ 1 | | | | | | |
| | | | 7,5 ÷ 14,5 | | | | | | | | 7,5 ÷ 14,5 | | | | | | | | 7,5 ÷ 14,5 | | | | | | |
| | | | | ≤0,6 | | | | | | | | ≤0,6 | | | | | | | | ≤0,6 | | | | | |
| | | | | ≤0,9 | | | | | | | | ≤0,9 | | | | | | | | ≤0,9 | | | | | |
| | | 3,5 | | | | | | | | 3,5 | | | | | | | | 3,5 | | | | | | | |
| | | Fluoroelastometer | | | | | | | | Fluoroelastometer | | | | | | | | Fluoroelastometer | | | | | | | |
| | | 0,15 | | | | | | | | 0,15 | | | | | | | | 0,15 | | | | | | | |
| | | 0,25 | | | | | | | | 0,25 | | | | | | | | 0,25 | | | | | | | |
| | | (-10)+(±65) | | | | | | | | (-10)+(±65) | | | | | | | | (-10)+(±65) | | | | | | | |
| | | (-20)+(±100) | | | | | | | | (-20)+(±100) | | | | | | | | (-20)+(±100) | | | | | | | |
| | | IP65 | | | | | | | | IP65 | | | | | | | | IP65 | | | | | | | |
| | | carbide | | | | | | | | carbide | | | | | | | | carbide | | | | | | | |
| | | M2,5 | | | | | | | | M2,5 | | | | | | | | M2,5 | | | | | | | |
| | | F25 | FR25 | FPA25 | FP25 | FVA25 | FV25 | . | . | F50 | FR50 | FPA50 | FP50 | FVA50 | FV50 | . | . | F100 | FR100 | FPA100 | FP100 | FVA100 | FV100 | . | . |
| | | 3PR05M0000 | 3PR05M1200 | 3PR05M0400 | 3PR05M1600 | 3PR05M0560 | 3PR05M1760 | . | . | 3PR10M0000 | 3PR10M1200 | 3PR10M0400 | 3PR10M1600 | 3PR10M0560 | 3PR10M1760 | . | . | 3PR20M0000 | 3PR20M1200 | 3PR20M0400 | 3PR20M1600 | 3PR20M0560 | 3PR20M1760 | . | . |
| | | 117,5 ±5% | | | | | | | | 117,5 ±5% | | | | | | | | 23 ±5% | | | | | | | |
| | | ± MAX(2,5; 5*K)****) | | | | | | | | ± MAX(5; 5*K)****) | | | | | | | | ± MAX(10; 5*K)****) | | | | | | | |
| | | 3,5355V RMS with load 1MΩ//360pF/7,5kHz | | | | | | | | 3,5355V RMS with load 1MΩ//360pF/7,5kHz | | | | | | | | 3,5355V RMS with load 1MΩ//360pF/7,5kHz | | | | | | | |
| | | H25 | HR25 | HPA25 | HP25 | HVA25 | HV25 | . | . | H50 | HR50 | HPA50 | HP50 | HVA50 | HV50 | . | . | H100 | HR100 | HPA100 | HP100 | HVA100 | HV100 | . | . |
| | | 3PR05Z0000 | 3PR05Z1200 | 3PR05Z0400 | 3PR05Z1600 | 3PR05Z0560 | 3PR05Z1760 | . | . | 3PR10Z0000 | 3PR10Z1200 | 3PR10Z0400 | 3PR10Z1600 | 3PR10Z0560 | 3PR10Z1760 | . | . | 3PR20Z0000 | 3PR20Z1200 | 3PR20Z0400 | 3PR20Z1600 | 3PR20Z0560 | 3PR20Z1760 | . | . |
| | | 80,5 ±5% | | | | | | | | 53,5 ±5% | | | | | | | | 37 ±5% | | | | | | | |
| | | ± MAX(2,5; 5*K)****) | | | | | | | | ± MAX(5; 5*K)****) | | | | | | | | ± MAX(10; 5*K)****) | | | | | | | |
| | | 3,5355V RMS with load 2kΩ±0,1%/7,5kHz | | | | | | | | 3,5355V RMS with load 2kΩ±0,1%/7,5kHz | | | | | | | | 3,5355V RMS with load 2kΩ±0,1%/7,5kHz | | | | | | | |

STANDARD COMPATIBLE MODELS

| SPRING | ±05 mm | | ±1 mm | | ±2 mm LongRange | | ±2 mm | |
|----------------|------------|------------|------------|------------|-----------------|------------|------------|------|
| | AX | 90° | AX | 90° | AX | 90° | AX | 90° |
| Cable | AX | 90° | AX | 90° | AX | 90° | AX | 90° |
| HBT | H05 | HR05 | H10 | HR10 | H21 | HR21 | H20 | HR20 |
| TESA | 3PR01T0000 | 3PR01T1200 | 3PR02T0000 | 3PR02T1200 | 3PR10T0199 | 3PR10T1399 | 3PR05T0199 | - |
| MERCER | 3PR01R0000 | 3PR01R1200 | 3PR02R0000 | 3PR02R1200 | - | - | - | - |
| METEM | 3PR01S0000 | 3PR01S1200 | 3PR02S0000 | 3PR02S1200 | - | - | - | - |
| MAHR-FEINPRUEF | 3PR01P0000 | 3PR01P1200 | 3PR02P0000 | 3PR02P1200 | - | - | 3PR05P0199 | - |
| LVDT | F05 | FR05 | F10 | FR10 | F21 | FR21 | F20 | FR20 |
| MICROCONTROL | 3PR01K0000 | 3PR01K1200 | 3PR02K0000 | 3PR02K1200 | - | - | - | - |

| PNEUM. PUSH | ±05 mm | | ±1 mm | | ±2 mm LongRange | | ±2 mm | |
|----------------|--------|-----|------------|------------|-----------------|------------|-------|------|
| | AX | 90° | AX | 90° | AX | 90° | AX | 90° |
| Cable | AX | 90° | AX | 90° | AX | 90° | AX | 90° |
| HBT | | | HPA10 | HP10 | HPA21 | HP21 | HPA20 | HP20 |
| TESA | NA | NA | 3PR02T0400 | 3PR02T1600 | 3PR10T0559 | 3PR10T1759 | - | - |
| MERCER | NA | NA | 3PR02R0400 | 3PR02R1600 | - | - | - | - |
| METEM | NA | NA | 3PR02S0400 | 3PR02S1600 | - | - | - | - |
| MAHR-FEINPRUEF | NA | NA | 3PR02P0400 | 3PR02P1600 | - | - | - | - |
| LVDT | | | FPA10 | FP10 | FPA21 | FP21 | FPA20 | FP20 |
| MICROCONTROL | NA | NA | 3PR02K0400 | 3PR02K1600 | - | - | - | - |

| VACUUM | ±05 mm | | ±1 mm | | ±2 mm LongRange | | ±2 mm | |
|----------------|--------|-----|------------|------------|-----------------|------------|-------|------|
| | AX | 90° | AX | 90° | AX | 90° | AX | 90° |
| Cable | AX | 90° | AX | 90° | AX | 90° | AX | 90° |
| HBT | | | HVA10 | HV10 | HVA21 | HV21 | HVA20 | HV20 |
| TESA | NA | NA | 3PR02T0560 | 3PR02T1760 | 3PR10T0599 | 3PR10T1799 | - | - |
| MERCER | NA | NA | 3PR02R0560 | 3PR02R1760 | - | - | - | - |
| METEM | NA | NA | 3PR02S0560 | 3PR02S1760 | - | - | - | - |
| MAHR-FEINPRUEF | NA | NA | 3PR02P0560 | 3PR02P1760 | - | - | - | - |
| LVDT | | | FVA10 | FV10 | FVA21 | FV21 | FVA20 | FV20 |
| MICROCONTROL | NA | NA | 3PR02K0560 | 3PR02K1760 | - | - | - | - |

SOFT TOUCH COMPATIBLE MODELS

| SPRING | ±05 mm | | ±1 mm | | ±2 mm LongRange | | ±2 mm | |
|--------------|------------|------------|------------|------------|-----------------|------------|------------|-------|
| | AX | 90° | AX | 90° | AX | 90° | AX | 90° |
| Cable | AX | 90° | AX | 90° | AX | 90° | AX | 90° |
| HBT | H05L | HR05L | H10L | HR10L | H21L | HR21L | H20L | HR20L |
| TESA | 3PR01T5000 | 3PR01T6200 | 3PR02T5000 | 3PR02T6200 | 3PR10T5199 | 3PR10T6399 | 3PR05T5199 | - |
| METEM | 3PR01S5000 | 3PR01S6200 | 3PR02S5000 | 3PR02S6200 | - | - | - | - |
| LVDT | F05L | FR05L | F10L | FR10L | F21L | FR21L | F20L | FR11L |
| MICROCONTROL | - | - | - | 3PR02K6200 | - | - | - | - |

| PNEUM. PUSH | ±05 mm | | ±1 mm | | ±2 mm LongRange | | ±2 mm | |
|--------------|--------|-----|------------|------------|-----------------|------------|--------|-------|
| | AX | 90° | AX | 90° | AX | 90° | AX | 90° |
| Cable | AX | 90° | AX | 90° | AX | 90° | AX | 90° |
| HBT | | | HPA10L | HP10L | HPA21L | HP21L | HPA20L | HP20L |
| TESA | NA | NA | 3PR02T5400 | 3PR02T6600 | 3PR10T5559 | 3PR10T6759 | - | - |
| METEM | NA | NA | 3PR02S5400 | 3PR02S6600 | - | - | - | - |
| LVDT | | | FPA10L | FP10L | FPA21L | FP21L | FPA20L | FP11L |
| MICROCONTROL | NA | NA | 3PR02K5400 | 3PR02K6600 | - | - | - | - |

| VACUUM | ±05 mm | | ±1 mm | | ±2 mm LongRange | | ±2 mm | |
|--------------|--------|-----|------------|------------|-----------------|------------|--------|-------|
| | AX | 90° | AX | 90° | AX | 90° | AX | 90° |
| Cable | AX | 90° | AX | 90° | AX | 90° | AX | 90° |
| HBT | | | HVA10L | HV10L | HVA21L | HV21L | HVA20L | HV20L |
| TESA | NA | NA | 3PR02T5560 | 3PR02T6760 | 3PR10T5599 | 3PR10T6799 | - | - |
| METEM | NA | NA | 3PR02S5560 | 3PR02S6760 | - | - | - | - |
| LVDT | | | FVA10L | FV10L | FVA21L | FV21L | FVA20L | FV11L |
| MICROCONTROL | NA | NA | 3PR02K5560 | 3PR02K6760 | - | - | - | - |

| ±2,5 mm | | ±5 mm | | ±10 mm | |
|------------|------------|------------|------------|------------|------------|
| AX | 90° | AX | 90° | AX | 90° |
| H25 | HR25 | H50 | HR50 | H100 | HR100 |
| 3PR05T0000 | 3PR05T1200 | 3PR10T0000 | 3PR10T1200 | 3PR20T0000 | 3PR20T1200 |
| 3PR05R0000 | 3PR05R1200 | 3PR10R0000 | 3PR10R1200 | 3PR20R0000 | 3PR20R1200 |
| 3PR05S0000 | 3PR05S1200 | 3PR10S0000 | 3PR10S1200 | 3PR20S0000 | 3PR20S1200 |
| 3PR05P0000 | 3PR05P1200 | 3PR10P0000 | 3PR10P1200 | 3PR20P0000 | 3PR20P1200 |
| F25 | FR25 | F50 | FR50 | F100 | FR100 |
| 3PR05K0000 | 3PR05K1200 | 3PR10K0000 | 3PR10K1200 | 3PR20K0000 | 3PR20K1200 |

| ±2,5 mm | | ±5 mm | | ±10 mm | |
|------------|------------|------------|------------|------------|------------|
| AX | 90° | AX | 90° | AX | 90° |
| HPA25 | HP25 | HPA50 | HP50 | HPA100 | HP100 |
| 3PR05T0400 | 3PR05T1600 | 3PR10T0400 | 3PR10T1600 | 3PR20T0400 | 3PR20T1600 |
| 3PR05R0400 | 3PR05R1600 | 3PR10R0400 | 3PR10R1600 | 3PR20R0400 | 3PR20R1600 |
| 3PR05S0400 | 3PR05S1600 | 3PR10S0400 | 3PR10S1600 | 3PR20S0400 | 3PR20S1600 |
| 3PR05P0400 | 3PR05P1600 | 3PR10P0400 | 3PR10P1600 | 3PR20P0400 | 3PR20P1600 |
| FPA25 | FP25 | FPA50 | FP50 | FPA100 | FP100 |
| 3PR05K0400 | 3PR05K1600 | 3PR10K0400 | 3PR10K1600 | 3PR20K0400 | 3PR20K1600 |

| ±2,5 mm | | ±5 mm | | ±10 mm | |
|------------|------------|------------|------------|------------|------------|
| AX | 90° | AX | 90° | AX | 90° |
| HVA25 | HV25 | HVA50 | HV50 | HVA100 | HV100 |
| 3PR05T0560 | 3PR05T1760 | 3PR10T0560 | 3PR10T1760 | 3PR20T0560 | 3PR20T1760 |
| 3PR05R0560 | 3PR05R1760 | 3PR10R0560 | 3PR10R1760 | 3PR20R0560 | 3PR20R1760 |
| 3PR05S0560 | 3PR05S1760 | 3PR10S0560 | 3PR10S1760 | 3PR20S0560 | 3PR20S1760 |
| 3PR05P0560 | 3PR05P1760 | 3PR10P0560 | 3PR10P1760 | 3PR20P0560 | 3PR20P1760 |
| FVA25 | FV25 | FVA50 | FV50 | FVA100 | FV100 |
| 3PR05K0560 | 3PR05K1760 | 3PR10K0560 | 3PR10K1760 | 3PR20K0560 | 3PR20K1760 |

For dimensions please refer to drawings on page 4-5.


| ±2,5 mm | | ±5 mm | | ±10 mm | |
|------------|------------|------------|------------|------------|------------|
| AX | 90° | AX | 90° | AX | 90° |
| H25L | HR25L | H50L | HR50L | H100L | HR100L |
| 3PR05T5000 | 3PR05T6200 | 3PR10T5000 | 3PR10T6200 | 3PR20T5000 | 3PR20T6200 |
| 3PR05S5000 | 3PR05S6200 | 3PR10S5000 | 3PR10S6200 | 3PR20S5000 | 3PR20S6200 |
| F25L | FR25L | F50L | FR50L | F100L | FR100L |
| 3PR05K5000 | 3PR05K6200 | 3PR10K5000 | 3PR10K6200 | 3PR20K5000 | 3PR20K6200 |

| ±2,5 mm | | ±5 mm | | ±10 mm | |
|------------|------------|------------|------------|------------|------------|
| AX | 90° | AX | 90° | AX | 90° |
| HPA25L | HP25L | HPA50L | HP50L | HPA100L | HP100L |
| 3PR05T5400 | 3PR05T6600 | 3PR10T5400 | 3PR10T6600 | 3PR20T5400 | 3PR20T6600 |
| 3PR05S5400 | 3PR05S6600 | 3PR10S5400 | 3PR10S6600 | 3PR20S5400 | 3PR20S6600 |
| FPA25L | FP25L | FPA50L | FP50L | FPA100L | FP100L |
| 3PR05K5400 | 3PR05K6600 | 3PR10K5400 | 3PR10K6600 | 3PR20K5400 | 3PR20K6600 |

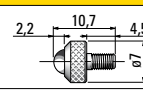
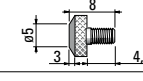
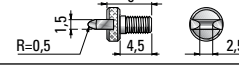
| ±2,5 mm | | ±5 mm | | ±10 mm | |
|------------|------------|------------|------------|------------|------------|
| AX | 90° | AX | 90° | AX | 90° |
| HVA25L | HV25L | HVA50L | HV50L | HVA100L | HV100L |
| 3PR05T5560 | 3PR05T6760 | 3PR10T5560 | 3PR10T6760 | 3PR20T5560 | 3PR20T6760 |
| 3PR05S5560 | 3PR05S6760 | 3PR10S5560 | 3PR10S6760 | 3PR20S5560 | 3PR20S6760 |
| FVA25L | FV25L | FVA50L | FV50L | FVA100L | FV100L |
| 3PR05K5560 | 3PR05K6760 | 3PR10K5560 | 3PR10K6760 | 3PR20K5560 | 3PR20K6760 |

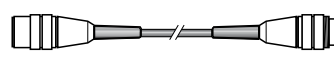
For dimensions please refer to drawings on page 6-7.

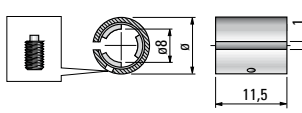
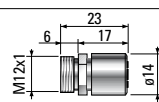
SPRINGS

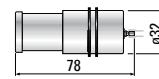

| SPRING | FORCE | Measuring Range | | | | | | Order code |
|---|---------|-----------------|----|------|------|----|-----|------------|
| | | ±05 | ±1 | ±2LR | ±2,5 | ±5 | ±10 | |
|  | 0,4 (N) | X | | | | | | 1024099751 |
| | 2 (N) | X | | | | | | 1024099753 |
| | 2,5 (N) | X | | | | | | 1024099754 |
| | 1 (N) | | X | | | | | 1042414337 |
| | 2 (N) | | X | | | | | 1042414336 |
| | 2,5 (N) | | X | | | | | 1042414335 |
| | 1 (N) | | | | | X | | 1042414435 |
| | 1,6 (N) | | | | | X | | 1042414441 |
| | 2 (N) | | | | | X | | 1042414436 |
| | 2,5 (N) | | | | | X | | 1042414437 |
| | 1 (N) | | | | | | X | 1042414537 |
| | 1,6 (N) | | | | | | X | 1042414561 |
| | 2 (N) | | | | | | X | 1042414536 |

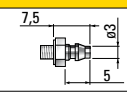
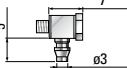
ACCESSORIES

| CONTACTS | DESCRIPTION | Order code |
|---|----------------------|------------|
|  | Contact ø5 mm / M2,5 | 3392409910 |
|  | Flat contact M2,5 | 3392409912 |
|  | Cut contact M2,5 | 3392409914 |

| CABLE EXTENSIONS | DESCRIPTION | Order code |
|---|----------------------|------------|
|  LVDT / HBT | Cable extension 1 m | 6735932026 |
| | Cable extension 2 m | 6735932015 |
| | Cable extension 5 m | 6735932016 |
| | Cable extension 10 m | 6735932017 |
| | Cable extension 15 m | 6735932037 |

| CLAMPING | DESCRIPTION | Order code |
|---|-------------------------|------------|
|  | Bushing outside ø 10 mm | 1019826001 |
| | Bushing outside ø 3/8" | 1019826002 |
| | Dowel M3x10 | 1024099760 |
| | Dowel 4-40 UNC x .375" | 1024099761 |
|  | Tongs bushing ø 8 | 2042414100 |

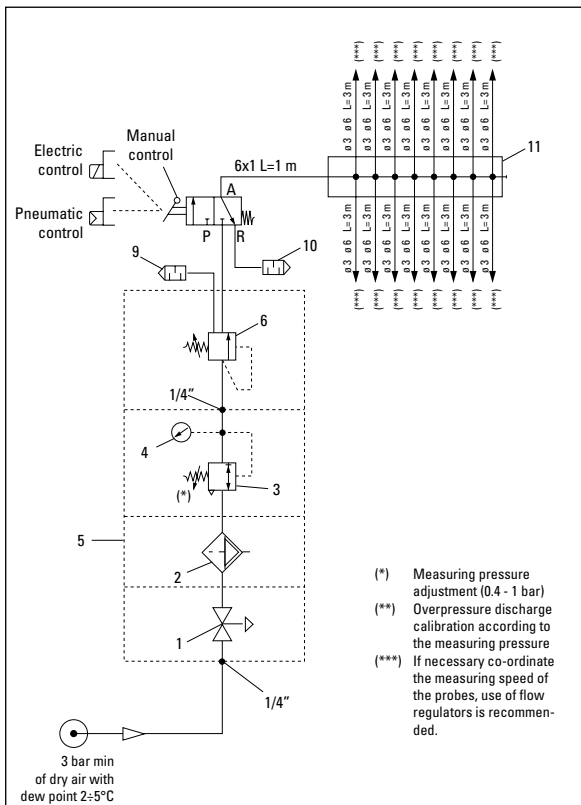
| OTHER ACCESSORIES | DESCRIPTION | Order code |
|---|------------------------------|------------|
|  | Vacuum pump + L = 1 m tubing | 4717008002 |
|  | Pre-travel regulator wrench | 1346413200 |

| AIR ADAPTORS | DESCRIPTION | Order code |
|---|--------------------|------------|
|  | Axial air adaptor | 4430RSMV03 |
|  | Radial air adaptor | 4430RSMVAB |

PNEUMATIC SYSTEM

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 unooled, with dew point in the range 2-5 °C and filtered to 5 µm.

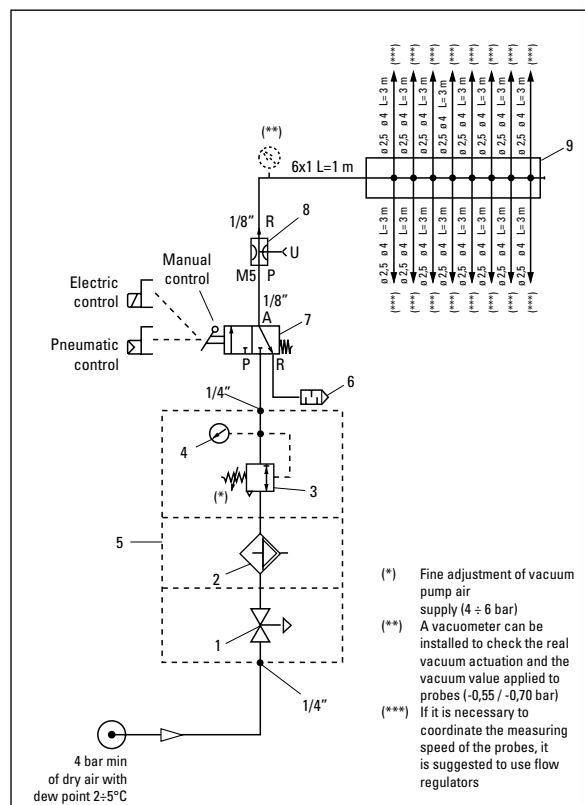
PNEUMATIC SYSTEM FOR MEASURING PROBES



| 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 | Overpressure discharge valve |
| 7 | 1 | Beam 1/4" |
| 8 | 1 | Silencer 1/2" |
| 9 | 1 | Monostable lever 3-way 2-position valve |
| 10 | 1 | Silencer 1/8" |
| 11 | 1 | Distributor for max 16 probes |

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

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 | 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: -0,55÷ -0,7 bar
 - Version without gaiter: 0,5÷2 bar

CROSS REFERENCE TABLE: SENSORS - INTERFACE UNITS - DISPLAY UNITS

| A124 | D124 | QUICK BLOCK | DIGI BLOCK | HAND HELD GAUGES | RED CROWN 2 | DIGI CROWN 2 | RED CROWN 2 USB | DEVICE NAME | #CH | ACQUISITION TIME |
|------|------|-------------|------------|------------------|-------------|--------------|-----------------|----------------------|-------------|------------------|
| ● | | ● | | ● | ● | | | QUICK READ | 1-2 | 2 ms |
| ● | | ● | | ● | ● | ● (*) | | E4N | 1-4 | 2 ms |
| ● | | ● | | ● | ● | ● (*) | | TCI1 TCI4 TCI8 | 1 4 8 | 2 ms |
| ● | ● | ● | ● | ● | ● | ● (*) | | GAGE POD | 16 | 0,25 ms |
| ● | | ● | | ● | ● | ● (*) | | EASY BOX | 4 | 1 ms |
| | | | | | | | | DIGI NET | 1÷744 | 0,25 ms |
| | ● | | ● | ● | ● (**) | ● (*) | | | 1÷31 | 0,25 ms |
| | | | ● | ● | | | | | 1-8 | 0,25 ms |
| | | | | | | | | | 1÷744 | 0,25 ms |
| | | | | | | | ● | | 1 | 1 ms |

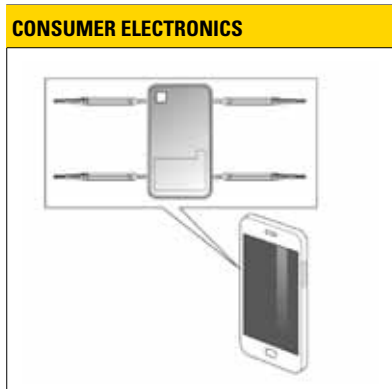
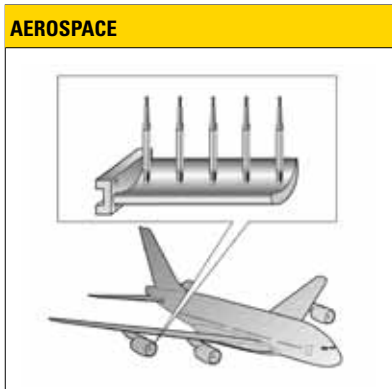
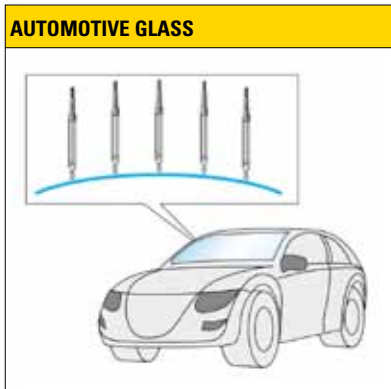
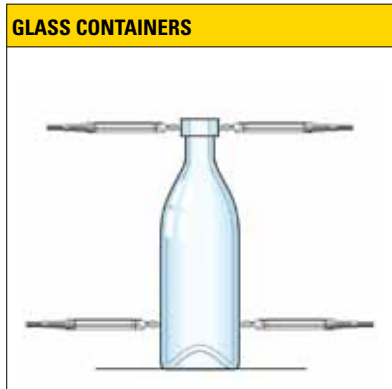
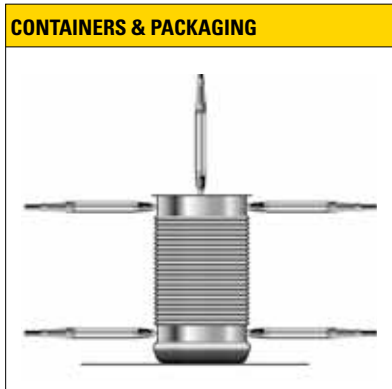
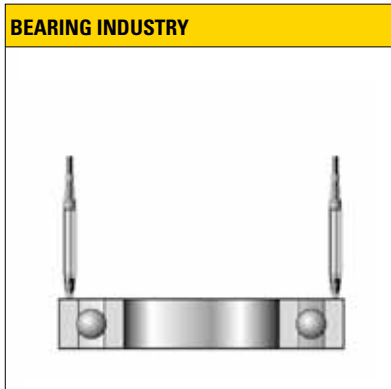
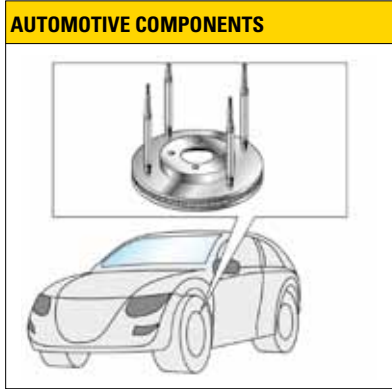
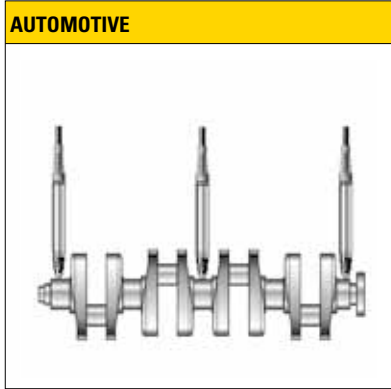
* Digi Crown2 probes, can also be connected to all Marposs standard LVDT interfaces.

** Red Crown2 LVDT can be connected to Digi Crown Net by dedicated programming.

| OUTPUT TYPE | ACQUISITION SW | DISPLAY UNIT | VISUALIZATION ON |
|------------------------------|--------------------------|--|--------------------------------|
| SERIAL 232 | EMBEDDED | QUICK READ | LED BARGRAPH + DIGITAL DISPLAY |
| SERIAL 232 / DIGIMATIC / BCD | EMBEDDED | E4N | LED BARGRAPH + DIGITAL DISPLAY |
| ANALOGUE (VOLTAGE / CURRENT) | - | | PLC/CNC |
| USB ETHERNET WIFI | Marposs Acq. SW (1) | E9066 INDUSTRIAL PC / COMMERCIAL PC | LCD DISPLAY |
| USB | Marposs Acq. SW (1) | E9066 INDUSTRIAL PC / COMMERCIAL PC | LCD DISPLAY |
| USB | EMBEDDED | MERLIN | LCD DISPLAY |
| USB | EMBEDDED | NEMO | LCD DISPLAY |
| USB/232/PCI CARD/ISA CARD | Marposs Acq. SW (2) | E9066 INDUSTRIAL PC / COMMERCIAL PC | LCD DISPLAY |
| USB/232 | EMBEDDED | MERLIN | 8,4" LCD DISPLAY |
| DIRECT | EMBEDDED | NEMO | 5,7" LCD DISPLAY |
| USB/232 | MADE BY PROTOCOL COMMAND | PLC | PLC |
| USB | Marposs Acq. SW (1) | NEMO/MERLIN/E9066/INDUSTRIAL PC/COMMERCIAL PC/PLC/ANY HOST USB | DEPENDING ON THE DISPLAY UNIT |

(1) Please refer to the Easy Box section in Testar catalogue
(2) Please refer to the Digi Net section in Testar catalogue

APPLICATION EXAMPLES



For a full list of address locations, please consult the Marposs official website

D6L01004G1 - Edition 12/2013 - Specifications are subject to modifications
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