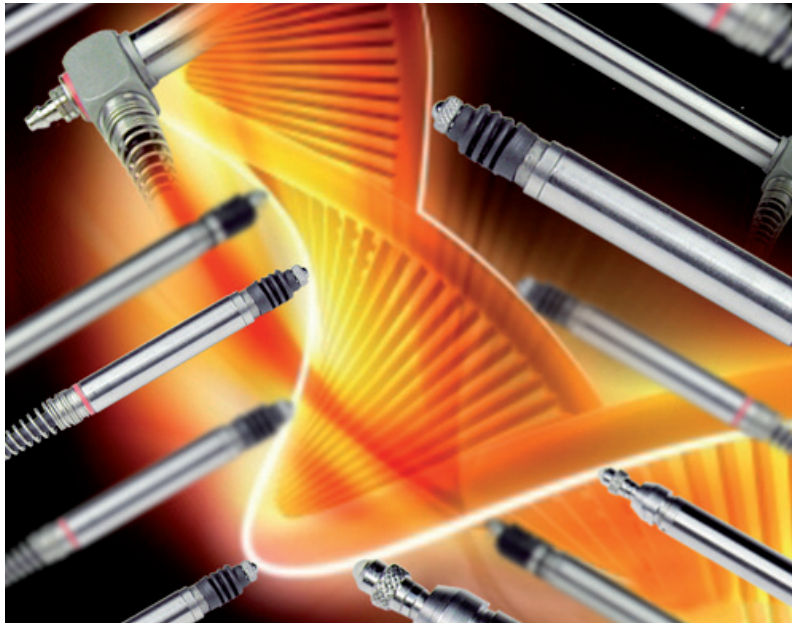




# RedCrown2



## *...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 (with-out 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.

DISPLACEMENT SENSORS

BORE GAUGES LINE

FORKS AND RING GAUGES

BENCH GAUGES

INDICATORS AND ELECTRONIC DISPLAY UNITS

INTERFACE BOXES FOR DATA ACQUISITION

SOFTWARE

## THE PRODUCT LINE

# Red Crown<sup>2</sup>

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

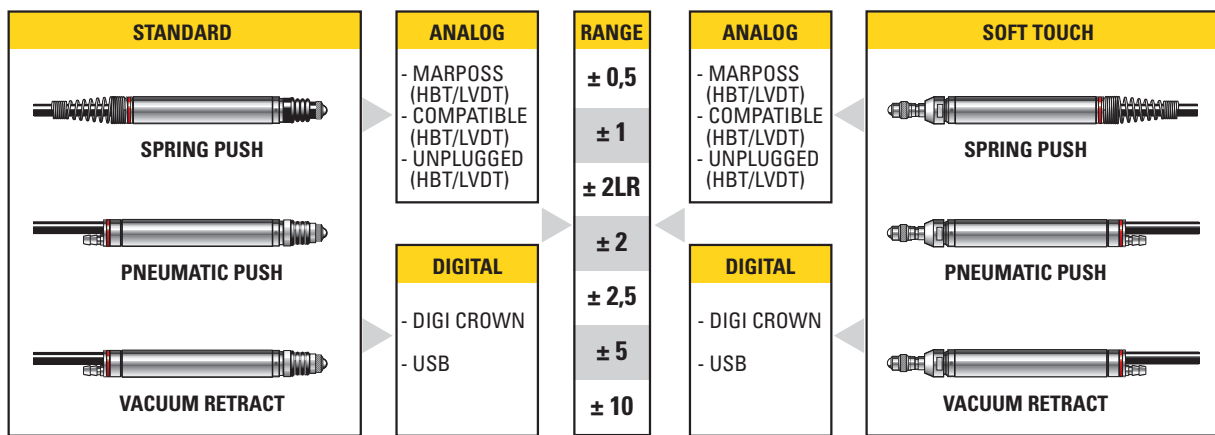
## Digi Crown<sup>2</sup>

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

## Red Crown<sup>2</sup> 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.

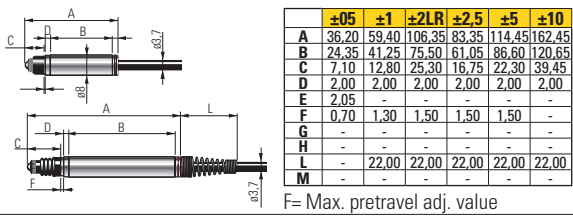
**Digi Crown2**, digitized version, is the probe family that provides high levels of measuring accuracy combined with the Digi Net network interface.

Digi Crown2 and Digi Net together provide the following advantages:

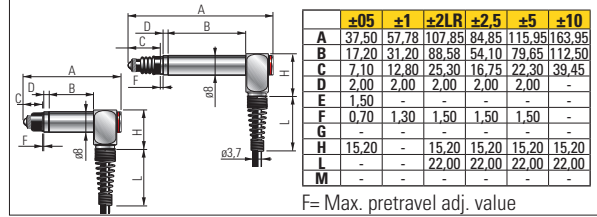
- ACCURACY. High levels of measuring accuracy is guaranteed by the linearization data stored in the memory of the connector. The Digi Net interface box is able to read the error map and perform an automatic compensation.
- PLUG & GAUGE. The memory in the connector allows any Digi Crown2 probe to be connected 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



STANDARD - RADIAL - SPRING



MECHANICAL SPECIFICATIONS	±0.5 mm		±1 mm				±2 mm LongRange											
	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							
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		0,70		0,8÷2,5		0,4				0,70		0,7 ÷ 2,3		0,4			
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)	2				2						2							
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)÷(+65)				(-10)÷(+65)						(-10)÷(+65)							
Storage temperature (°C)	(-20)÷(+100)				(-20)÷(+100)						(-20)÷(+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	3PR01L0000	3PR01L1200	3PR02L0000	3PR02L1200	3PR02L0400	3PR02L1600	3PR02L0560	3PR02L1760	.	.	3PR10L0199	3PR10L1399	3PR10L0559	3PR10L1759	3PR10L0599	3PR10L1799	.	.
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 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							
Accuracy error (µm)	(**)				± MAX(1+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

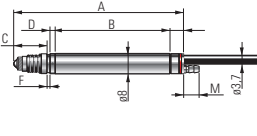
TRADE NAME	U05	UR05	U10	UR10	UPA10	UP10	UVA10	UV10	.	.	.	.	.	.	.	.	.	.
ORDER CODE	3PR01Y0000	3PR01Y1200	3PR02Y0000	3PR02Y1200	3PR02Y0400	3PR02Y1600	3PR02Y0560	3PR02Y1760	.	.	.	.	.	.	.	.	.	.
Accuracy error (µm)	±(0,2+K*1)				±(0,2+K*1)													

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)

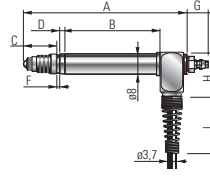
STANDARD - AXIAL - PNEUMATIC PUSH



	±0.5	±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



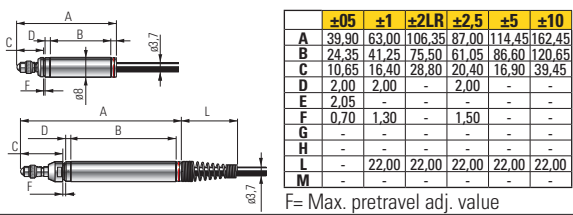
	±0.5	±1	±2LR	±2.5	±5	±10
A	71,75	107,65	84,85	115,95	163,95	-
B	36,10	68,55	52,60	78,15	112,50	-
C	12,80	25,30	16,75	22,30	39,45	-
D	2,00	2,00	2,00	2,00	-	-
E	-	-	-	-	-	-
F	1,30	1,50	1,50	1,50	-	-
G	7,50	7,50	7,50	7,50	7,50	-
H	15,20	15,20	15,20	15,20	15,20	-
L	-	22,00	22,00	22,00	22,00	-
M	-	-	-	-	-	-

F= Max. pretravel adj. value

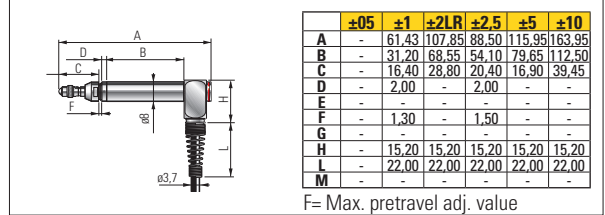
		±2,5 mm						±5 mm						±10 mm									
		A	R	A	R	A	R	A	R	A	R	A	R	A	R	A	R	A	R	A	R	A	R
		S	PP	V	PV	S	PP	V	PV	S	PP	V	PV	S	PP	V	PV	S	PP	V	PV	S	PP
		5						10						20									
		6,6						11						21									
		8						8						8									
		0,023	0,03	0,02				0,03	0,02	0,02				-	-	-							
		0,70	0,7 ÷ 2,3	0,4				0,70	0,7 ÷ 2,4	0,4				0,70	0,7 ÷ 2,4	0,4							
			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						
		3PR05L0000	3PR05L1200	3PR05L0400	3PR05L1600	3PR05L0560	3PR05L1760	3PR10L0000	3PR10L1200	3PR10L0400	3PR10L1600	3PR10L0560	3PR10L1760	3PR20L0000	3PR20L1200	3PR20L0400	3PR20L1600						
		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						
		3PR05N0000	3PR05N1200	3PR05N0400	3PR05N1600	3PR05N0560	3PR05N1760	3PR10N0000	3PR10N1200	3PR10N0400	3PR10N1600	3PR10N0560	3PR10N1760	3PR20N0000	3PR20N1200	3PR20N0400	3PR20N1600						
		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						
		±(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						
		3PD05L0000	3PD05L1200	3PD05L0400	3PD05L1600	3PD05L0560	3PD05L1760	3PD10L0000	3PD10L1200	3PD10L0400	3PD10L1600	3PD10L0560	3PD10L1760	3PD20L0000	3PD20L1200	3PD20L0400	3PD20L1600						
		±(0,6+K*2)						±(0,6+K*2)						±(1,2+K*2)									

# SOFT TOUCH

SOFT TOUCH - AXIAL - SPRING



SOFT TOUCH - RADIAL - SPRING



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							
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		0,30		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)						Nylon (PA66)							
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						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				3V RMS with load 2kΩ ± 0,1%/13kHz						3,5355V RMS with load 2KΩ±0,1%/13kHz							

**RED CROWN 2 USB**

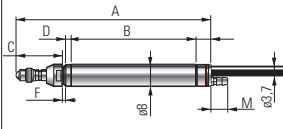
TRADE NAME	U05L	-	U10L	UR10L	UPA10L	UP10L	-	-	UPVA10L	UPV10L	-	-	-	-	-	-	-	-
ORDER CODE	3PR01Y5000		3PR02Y5000	3PR02Y6200	3PR02Y5400	3PR02Y6600			3PR02Y5800	3PR02Y7000								
Accuracy error (µm)	±(0,2+K*1)				±(0,2+K*1)													

**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)

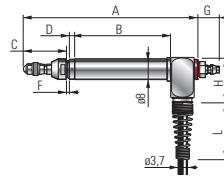
SOFT TOUCH - AXIAL - PNEUMATIC PUSH



	±0.5	±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			
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



	±0.5	±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			
F	1.30		1.50			
G	7.50	7.50	7.50	7.50	7.50	
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										
		S	PP	V	PV	S	PP	V	PV	S	PP	V	PV										
				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		0,09 ÷ 1,41	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				F50L	FR50L	FPA50L	FP50L	FVA50L	FV50L	FPVA50L	FPV50L	F100L	FR100L	FPA100L	FP100L			FPVA100L	FPV100L
	3PR05L5000	3PR05L6200	3PR05L5400	3PR05L6600				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				H50L	HR50L	HPA50L	HP50L			H100L	HR100L	HPA100L	HP100L					HPVA100L	HPV100L
	3PR05T5000	3PR05T6200	3PR05T5400	3PR05T6600				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				U50L	UR50L	UPA50L	UP50L			U100L	UR100L	UPA100L	UP100L					UPVA100L	UPV100L
	3PR05Y5000	3PR05Y6200	3PR05Y5400	3PR05Y6600				3PR10Y5000	3PR10Y6200	3PR10Y5400	3PR10Y6600			3PR10Y5800	3PR10Y7000								
	±(0,6+K*2)				±(0,6+K*2)				±(1,2+K*2)														
	D05L	RD05L	PAD05L	PD05L				D10L	RD10L	PAD10L	PD10L			D20L	RD20L	PAD20L	PD20L					PVAD20L	PVD20L
	3PD05L5000	3PD05L6200	3PD05L5400	3PD05L6600				3PD10L5000	3PD10L6200	3PD10L5400	3PD10L6600			3PD10L5800	3PD10L7000	3PD20L5000	3PD20L6200	3PD20L5400	3PD20L6600			3PD20L5800	3PD20L7000
	±(0,6+K*2)				±(0,6+K*2)				±(1,2+K*2)														

## SPECIAL MODELS

### Ultra-short probe

The probe model D01S has been designed to offer a total measuring range of 1 mm with a dimension of only 22,4 mm.

The high accuracy and the ease of use (same simple fixing as every probe with 8 mm body diameter) allows to extend the use of this model in all applications where compactness is a must.

### Ultra-soft touch probe

The probe model PAD10UL has been designed to grant a measuring force of 0,12 N at 0,2 bar in horizontal position and 0,05 N at 0,2 bar in vertical position with contact upward. This model allows to measure parts with delicate surfaces that cannot be marked by the contact tip, or light components that could be bent by excessive measuring force.

### Soft touch & dust-proof probe

The PAD10J is a probe model that combines a low measuring force with the use of a front-gasket, to guarantee protection against dust and solid particles. The special design allows to blow air through radial holes located on the jacket, with no deformation of the gasket in operating conditions.

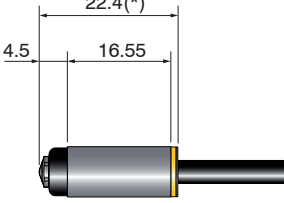
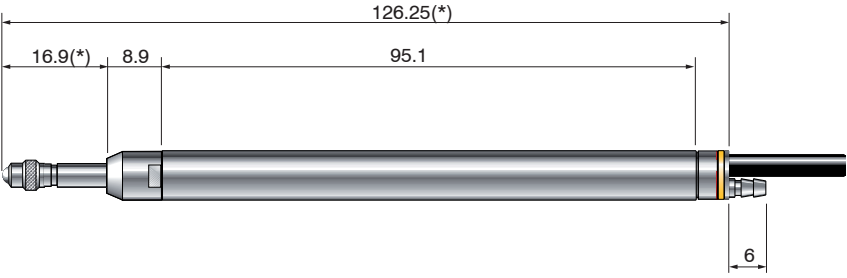
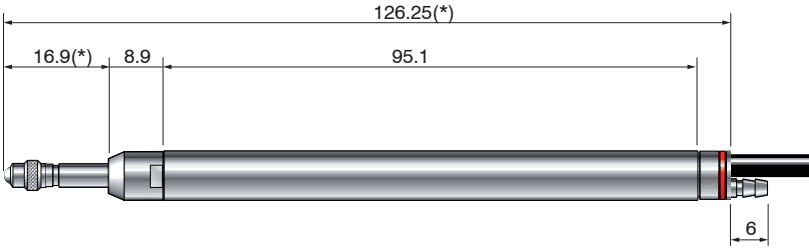
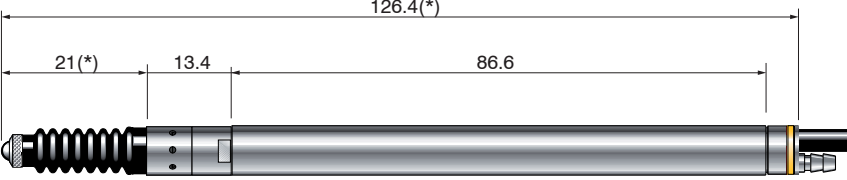
STANDARD	DIGITAL	DIGITAL	ANALOG	DIGITAL
	±0,5 mm	±5 mm	±5 mm	±5 mm
Cable (A=axial - R=radial)	A	A	A	A
Movement (*)	S	PP	PP	PP
Measuring range (mm)	1	10	10	10
Mechanical travel (mm)	1,5	11	11	11
Body Ø (mm)	8	8	8	8
Spring strenght (N/mm±15%)	0,17	0,003	0,003	0,007
Measuring force (N±25%)	0,60	0,12	0,12	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	2
Gasket	Fluoroelastometer	-	-	Fluoroelastometer
Repeatability (µm)	0,15	0,15	0,15	0,15
Thermal drift (µm/°C)	<0,25	<0,25	<0,25	<0,25
Operating temperature (°C)	(-10)÷(+65)	(-10)÷(+65)	(-10)÷(+65)	(-10)÷(+65)
Storage temperature (°C)	(-20)÷(+100)	(-20)÷(+100)	(-20)÷(+100)	(-20)÷(+100)
Protection grade	IP65	IP54	IP54	IP54
Contact type	Carbide	Nylon (PA66)	Nylon (PA66)	Nylon (PA66)
Contact tread	M2,5	M2,5	M2,5	M2,5
<b>TRADE NAME</b>	D01S	PAD10UL	FPA50UL	PAD10J
<b>ORDER CODE</b>	3PD01S0000	3PD10L5410	3PR10L5410	3PD10L0558
Sensitivity (mV/V/mm)	-	-	115	-
Linearity error (µm)	+/- (0,2+K*1)	+/- (0,6+K*2)	+/- MAX( 5+2*K ;  7*K )**)	+/- (0,6+K*2)
Calibration spec.	-	-	3,5355V RMS with load 1Mohm/360pF/7,5kHz	-

\* Movement S= spring - PP= pneumatic push - V= vacuum - PV= push/vacuum - \*\* K= Reading (mm)



## DIMENSIONS

The clamping diameter of all versions is 8h6 mm.

±0,5 mm	D01S	
±5 mm	PAD10UL	
	FPA50UL	
	PAD10J	

## 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	3PR05T1399
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	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	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	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	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	FR20L
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	HPA20L	HP20L
TESA	NA	NA	3PR02T5400	3PR02T6600	3PR10T5559	3PR10T6759	-	-
METEM	NA	NA	3PR02S5400	3PR02S6600	-	-	-	-
LVDT	FPA10L	FP10L	FPA21L	FP21L	FPA20L	FP20L	FPA20L	FP20L
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	HVA20L	HV20L
TESA	NA	NA	3PR02T5560	3PR02T6760	3PR10T5599	3PR10T6799	-	-
METEM	NA	NA	3PR02S5560	3PR02S6760	-	-	-	-
LVDT	FVA10L	FV10L	FVA21L	FV21L	FVA20L	FV20L	FVA20L	FV20L
MICROCONTROL	NA	NA	3PR02K5560	3PR02K6760	-	-	-	-

$\pm 2,5$ mm		$\pm 5$ mm		$\pm 10$ 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

$\pm 2,5$ mm		$\pm 5$ mm		$\pm 10$ 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

$\pm 2,5$ mm		$\pm 5$ mm		$\pm 10$ 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.


$\pm 2,5$ mm		$\pm 5$ mm		$\pm 10$ 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

$\pm 2,5$ mm		$\pm 5$ mm		$\pm 10$ 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

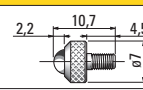
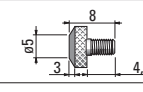
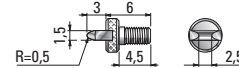
$\pm 2,5$ mm		$\pm 5$ mm		$\pm 10$ mm	
AX	90°	AX	90°	AX	90°
HVA25L	HV25L	HVA50L	HV50L	HVA100L	HV100L
3PR05T5560	3PR05T6760	3PR10T5560	3PR10T6760	3PR20T5560	3PR20T6760
3PR05S5560	3PR05S6760	3PR10S5560	3PR10S6760	3PR20S5560	3PR20S6760
FVA25L	FV25L	FVA50L	FV50L	FVA100L	FV100L
3PR05K5560	3PR05K6760	3PR10K5560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

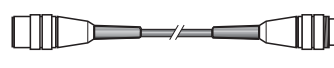
For dimensions please refer to drawings on page 6-7.

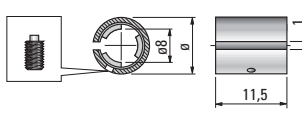
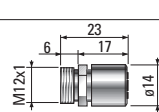
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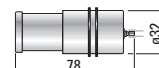

SPRING	FORCE	Measuring Range						ORDER CODE
		±05	±1	±2LR	±2,5	±5	±10	
	0,4 (N)	X						1024099751
	2 (N)	X						1024099753
	2,5 (N)	X						1024099754
	1 (N)		X					1042414237
	2 (N)		X					1042414236
	2,5 (N)		X					1042414235
	1 (N)				X			1042414435
	1,6 (N)				X			1042414441
	2 (N)				X			1042414436
	2,5 (N)				X			1042414437
	1 (N)					X		1042414537
	1,6 (N)					X		1042414561
	2 (N)					X		1042414536

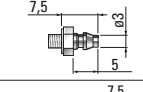
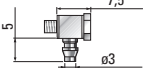
## ACCESSORIES

CONTACTS	DESCRIPTION	ORDER CODE
	Contact ø5 mm / M2,5	3392409910
	Flat contact M2,5	3392409912
	Cut contact M2,5	3392409914

EXTENSION CABLES	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

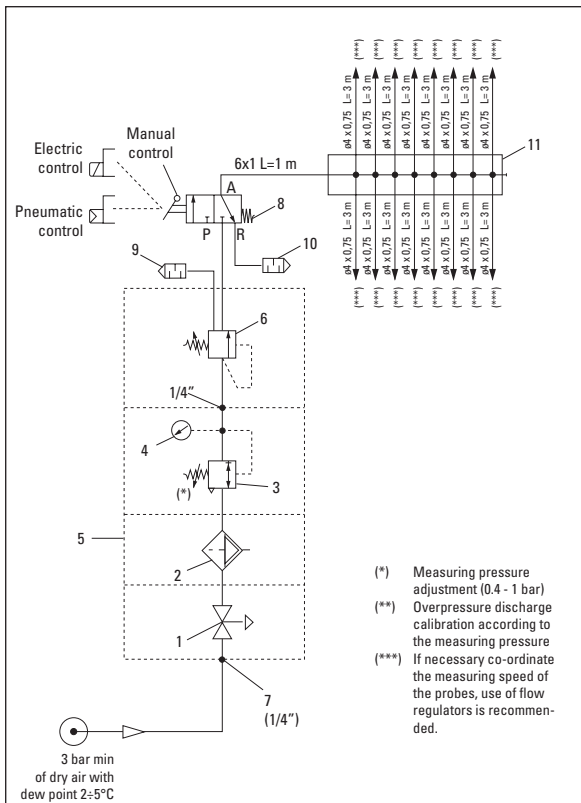
AIR ADAPTORS	DESCRIPTION	ORDER CODE
	Axial air adaptor	4430RSMV03
	Radial air adaptor	4430RSMVAB

## 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.

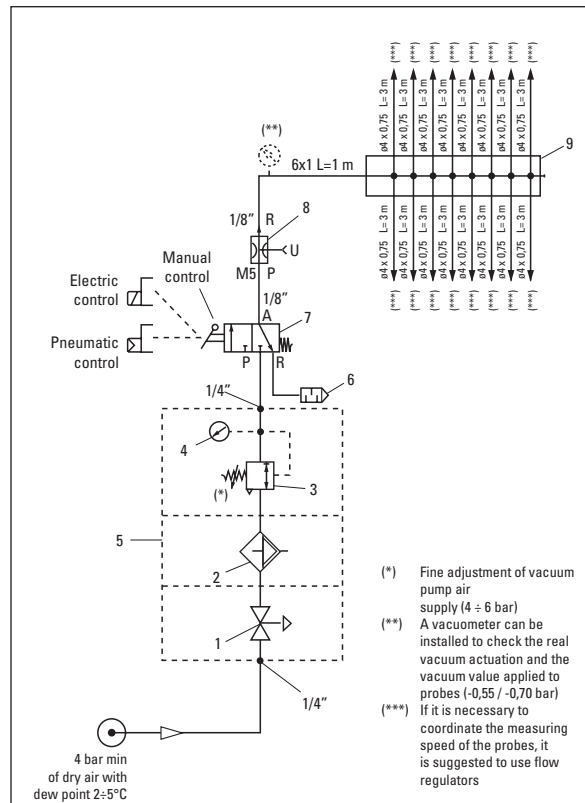
### PNEUMATIC SYSTEM FOR MEASURING PROBES



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	Monostable lever 3-way 2-position valve
9	1	Silencer 1/2"
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
		●		●	●			<b>QUICK READ</b> 	1-2	2 ms
●		●		●	●	(*)		<b>E4N</b> 	1÷4	2 ms
●		●		●	●	(*)		<b>TCI1 - TCI4 - TCI8</b> 	1 4 8	2 ms
●	●	●	●	●	●	(*)		<b>GAGE POD</b> 	16	0,25 ms
(****) ●		●		●	●	(*)		<b>EASY BOX</b> 	4	1 ms
	●	● (***)	●	●	● (**)	● (*)		<b>DIGI NET</b> 	1÷744	0,25 ms
									1÷31	0,25 ms
									1÷8	0,25 ms
									1÷744	0,25 ms
							●	<b>RED CROWN 2 USB</b> 	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 Network System by dedicated programming.

\*\*\* Quick Block LVDT can be connected to Digi Crown Network System by dedicated programming.

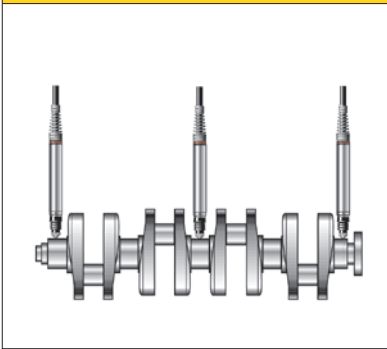
\*\*\*\* A124 can be connected to Easy Box for LVDT and HBT TESA compatible transducers

	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

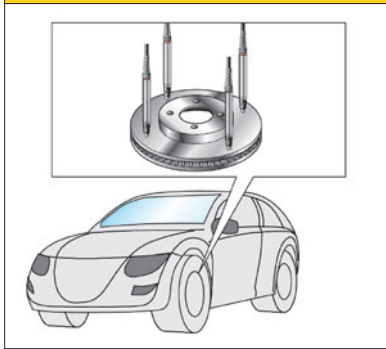
(1) Please refer to the Easy Box section in Testar catalogue  
 (2) Please refer to the Digi Net section in Testar catalogue

## APPLICATION EXAMPLES

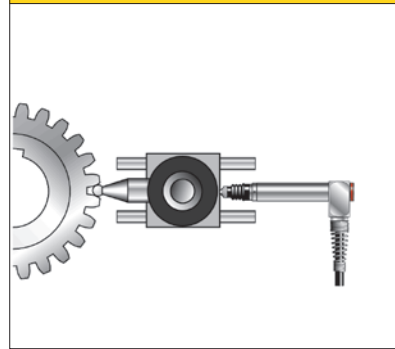
## AUTOMOTIVE



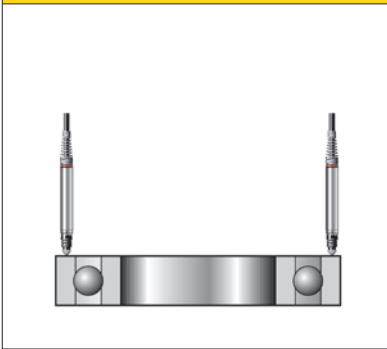
## AUTOMOTIVE COMPONENTS



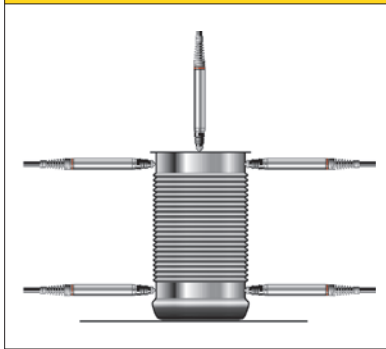
## GEARS



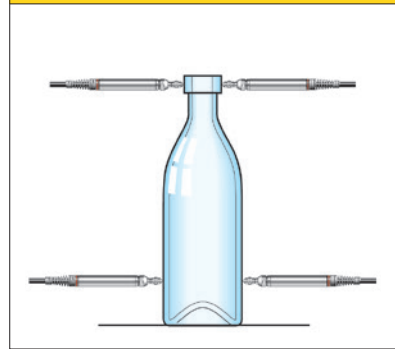
## BEARING INDUSTRY



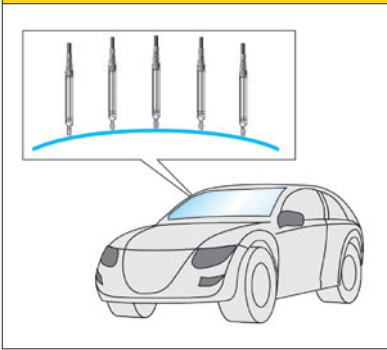
## CONTAINERS &amp; PACKAGING



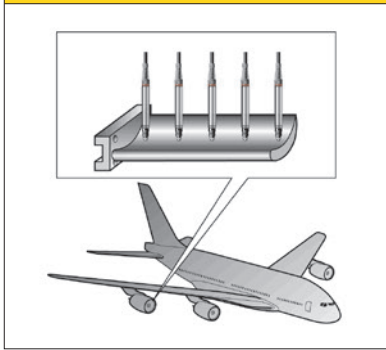
## GLASS CONTAINERS



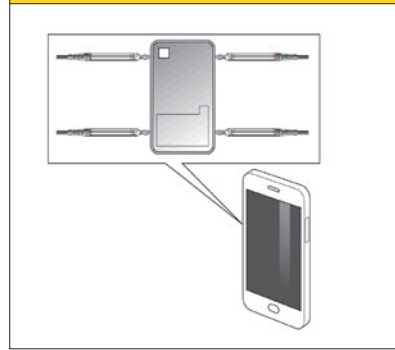
## AUTOMOTIVE GLASS



## AEROSPACE



## CONSUMER ELECTRONICS



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

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