

MEASURING PROBES AND DIGITAL DISPLAYS

Depending on the domain of application, Sylvac proposes two types of probes. The capacitive type offers a high accuracy on all the probe's range and a high repeatability. Coupled to the Sylvac display units, a linearisation can be performed to decrease the sampling error up to $0.4\text{ }\mu\text{m}$. They perfectly fit for applications on granite stands and Sylvac measuring benches. The inductive type proposes some probes with minimal dimensions and a very high repeatability. Insensitive to the dust, their IP65 rating allow them to be used in heavy-duty work. They are the solution for multigauging applications from 2 to 255 probes.

The Sylvac display units allow to connect a large range of products like linear probes, linear scales, handtools and dial gauges.

Absolute capacitive measuring system

Digital display units RS232 and USB

Operational temperature 0 to $+50^{\circ}\text{C}$



Measuring probes

LISTING OF ALL MODELS

		INDUCTIVE				CAPACITIVE							
	TYPE	ORDER NUMBER	P2i	P2iP	P5i	P5iP	P5	P5BL	P5V	P5B	P5BVL	P5L	P5VL
			900.1101	900.1102	900.1111	900.1112	900.1001	900.1002	900.1003	900.1004	900.1007	900.1006	900.1008
RANGE													
	±2 mm		•	•									
	5 mm						•	•	•	•		•	•
	± 5 mm				•	•							
	10 mm												
	12.7 mm												
	25 mm												
EXECUTION													
	Plain bearing						•		•			•	•
	B- Ball bearing		•	•	•	•		•		•	•		
	Pneumatic push			•		•							
	V- Vacuum lifter								•		•		•
	L- 90 degrees cable		*		*			•			•	•	•
	S- with rubber boot		•	•	•	•	•	•	•	•	•	•	•
MECHANIC													
	Diameter 8 mm h6		•	•	•	•	•	•	•	•	•	•	•
	Diameter 12 mm												
	Measuring anvil M2.5		•	•	•	•	•	•	•	•	•	•	•
LIFTING													
	Integrated			•		•			•		•		•
	Separate accessories						•	•		•		•	
PROTECTION IP													
	Protection rating IP (IEC 60529)		65	65	65	65	64	64	64	64	64	64	64

* by accessories, see next pages

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Absolute digital measuring probes

P12D

DESCRIPTION

- New very high accuracy P12D probes Series
- Measuring range 12.7mm (½in)
- Resolution up to 0.01 µm
- Repeatability up to 0.08 µm
- Absolute system with integrated correction, no more pairing needed
- Patented dual inductive and capacitive system
- Available in very low force version
- USB connector or M8 industrial connector



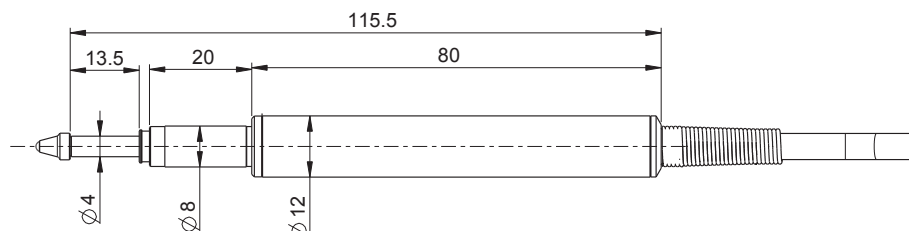
**SWISS
MADE**

IP54

Absolute digital measuring probes

P12D

DIMENSIONAL DRAWINGS



TECHNICAL SPECIFICATIONS

High resolution		801.1012	801.1018	801.1212	801.1218
Resolution type		High resolution			
Type		P12D HR USB	P12D HR USB CF ²⁾	P12D HR M8	P12D HR M8 CF ²⁾
Force ¹⁾	N	0.2 - 0.3	0.06	0.2 - 0.3	0.06
Measuring range	mm	12.7			
Resolution	µm	0.01			
Max. Error	µm	0.6			
Repeatability	µm	0.08			
Nb measures/s		up to 300/s, according to configuration ⁴⁾		up to 100/s, according to configuration ⁵⁾	
Output type		USB		M8	
Cable output		Straight			

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Standard resolution		801.2012	801.2017	801.2212*
Resolution type		Standard		
Type		P12D USB	P12D USB LF ³⁾	P12D M8
Force ¹⁾	N	0.4 - 0.8	0.2 - 0.3	0.4 - 0.8
Measuring range	mm	12.7		
Resolution	µm	0.1		
Max. Error	µm	1		
Repeatability	µm	0.2		
Nb measures/s		up to 300/s, according to configuration ⁴⁾		up to 100/s, according to configuration ⁵⁾
Output type		USB		M8
Cable output		Straight		

¹⁾ ± 20%, vertical position

²⁾ CF = constant force

³⁾ LF = low force

⁴⁾ depends on resolution and software

⁵⁾ depends on resolution and number of probes

* Availability : August 2017

Absolute digital measuring probes

P12D

BASIC INSTRUMENT

- Probe according to technical specifications
- Cable 1.8 m
- Stainless steel contact point with tungsten carbide ball Ø 2 mm
- Quickstart
- Calibration certificate

APPLICATIONS

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Absolute digital probes connected to a PC, measures displayed by Sylcom.



Absolute digital probes connected to a D300S (maximum resolution 0.1µm)



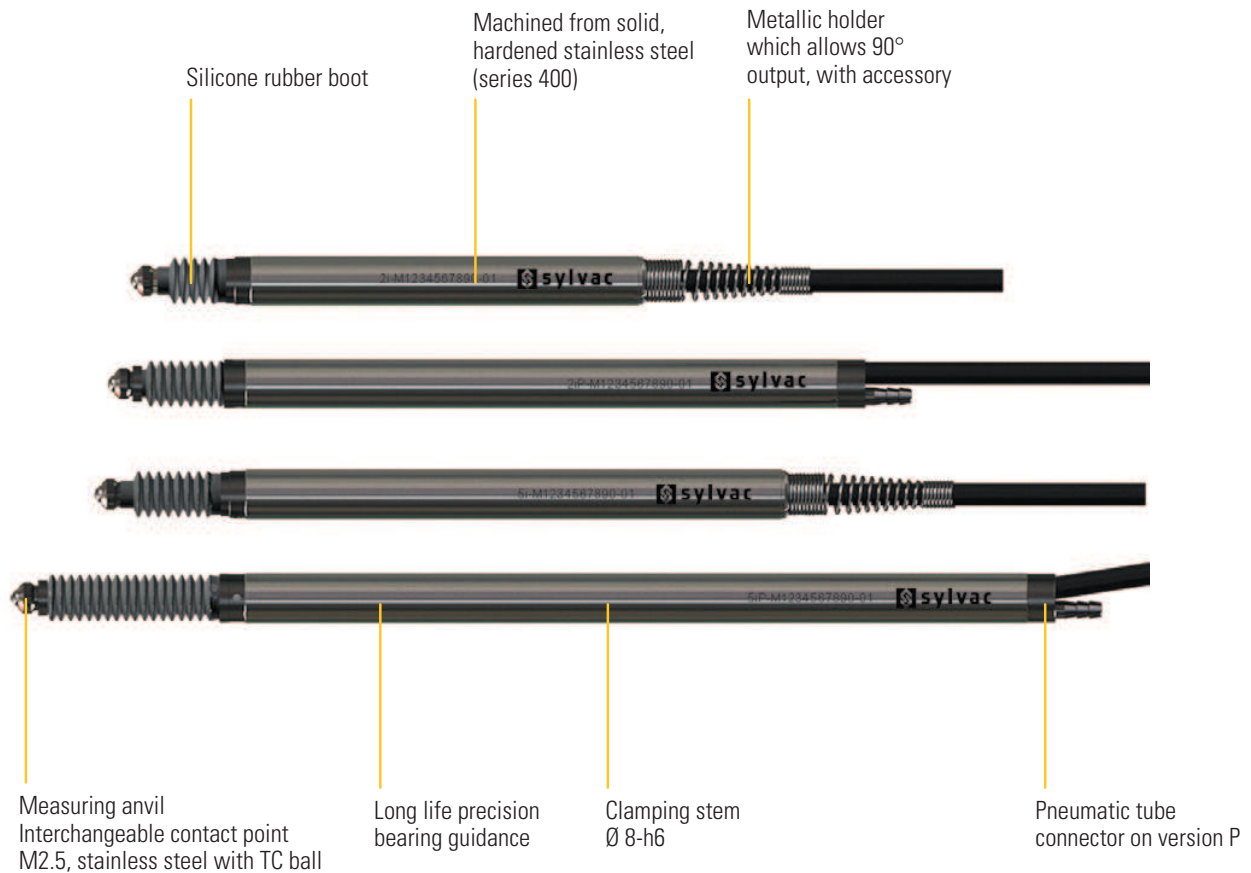
Probes P12D connected to a D62S.

Inductive measuring probes

DESCRIPTION

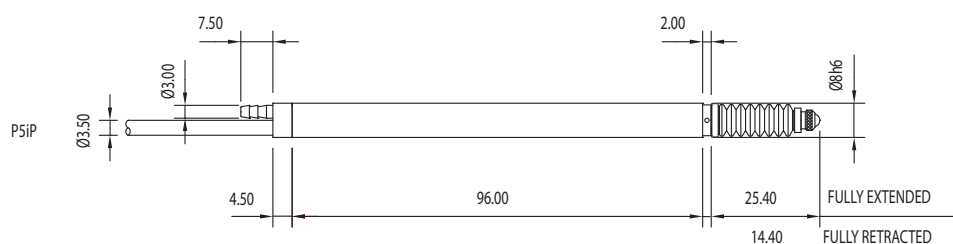
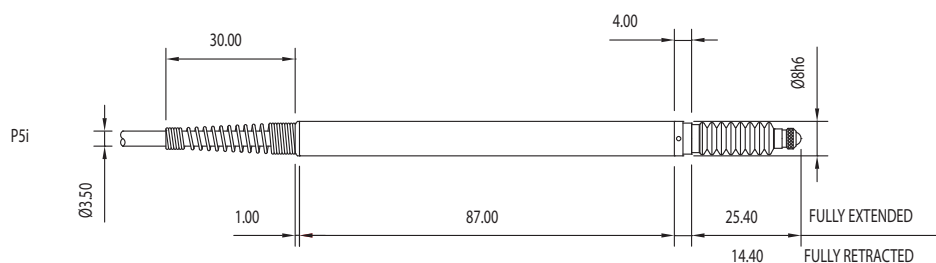
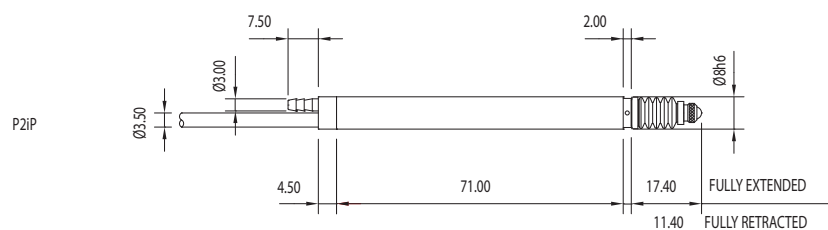
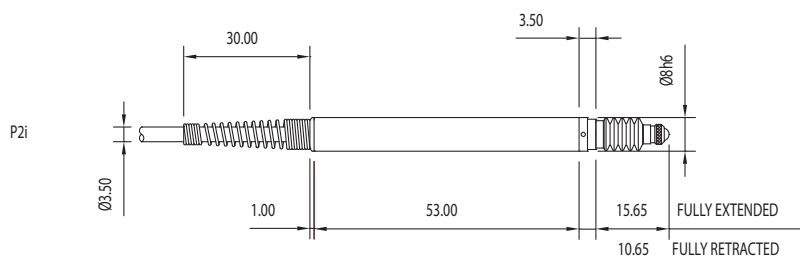
- Inductive measuring probes specially designed for measurement by comparison
- Available in 2 versions: spring push and pneumatic push
- Long life precision bearing guidance (tested up to 13 million cycles)
- Resolution <0.0001 mm
- Repeatability $0.15\text{ }\mu\text{m}$
- Measuring range ± 2 mm and ± 5 mm
- Compatible with D300SV2, D70i and D400S units through M-Bus multiplexer units
- High data speed
- Operating temperature $+5$ to $+80^{\circ}\text{C}$
- IP65 protected

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Inductive measuring probes

DIMENSIONAL DRAWINGS



Inductive measuring probes

TECHNICAL SPECIFICATIONS

		P2i	P2iP	P5i	P5iP
Travel	mm	±2	±2	±5	±5
Pre-travel	mm	0.15	0.8	0.15	0.3
Post-travel	mm	1.35	1.2	0.85	0.7
Resolution		Digital : user selectable to <0.1µm			
Repeatability	µm	0.15	0.15	0.15	0.15
Moving mass	g	3.4	3.4	3.7	3.7
Accuracy of reading %		0.5	0.5	0.5	0.5
Body diameter	mm	8h6			
IP rating		IP65			
Temperature	%FS/°C	0.01			

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MEASURING FORCE

		P2i	P2iP	P5i	P5iP
Standard	N	0.7	0.7 / 0.4 bar - 2.6 / 1 bar	0.7	0.7 / 0.4 bar - 2.6 / 1 bar

Tolerance ± 20%, measuring probe in middle course, outgoing spindle.

PNEUMATIC PROBES

Pneumatic probes are fully retracted when they are not supplied with air. For continual reliable operation and to maximise working life, the air supply should be clean and dry. 60% maximum relative humidity, filtered to better than 2µm particle size. Air pressure : 0.4-0.8 bar, don't go over 0.8 Bar because the rubber boot can be damaged.

LIST OF REFERENCES

P2i				P5i			
P2i	900.1101	P2iP	900.1102	P5i	900.1111	P5iP	900.1112

P = pneumatic push

Inductive measuring probes

BASIC INSTRUMENT

- Probe according to technical specifications
- Cable 2 m
- Stainless steel contact point with tungsten carbide ball Ø 3 mm (905.2204)
- Calibration certificate

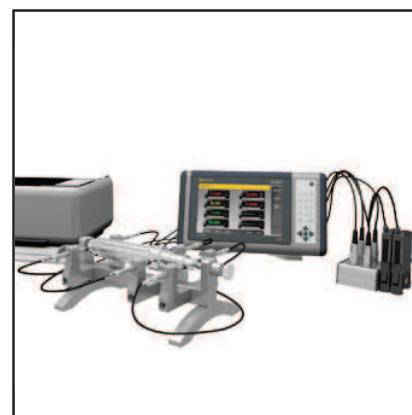
APPLICATIONS



Inductives probes connected to a D70I.



Inductives and Solartron probes connected to a M-Bus modul coupled with D400S.

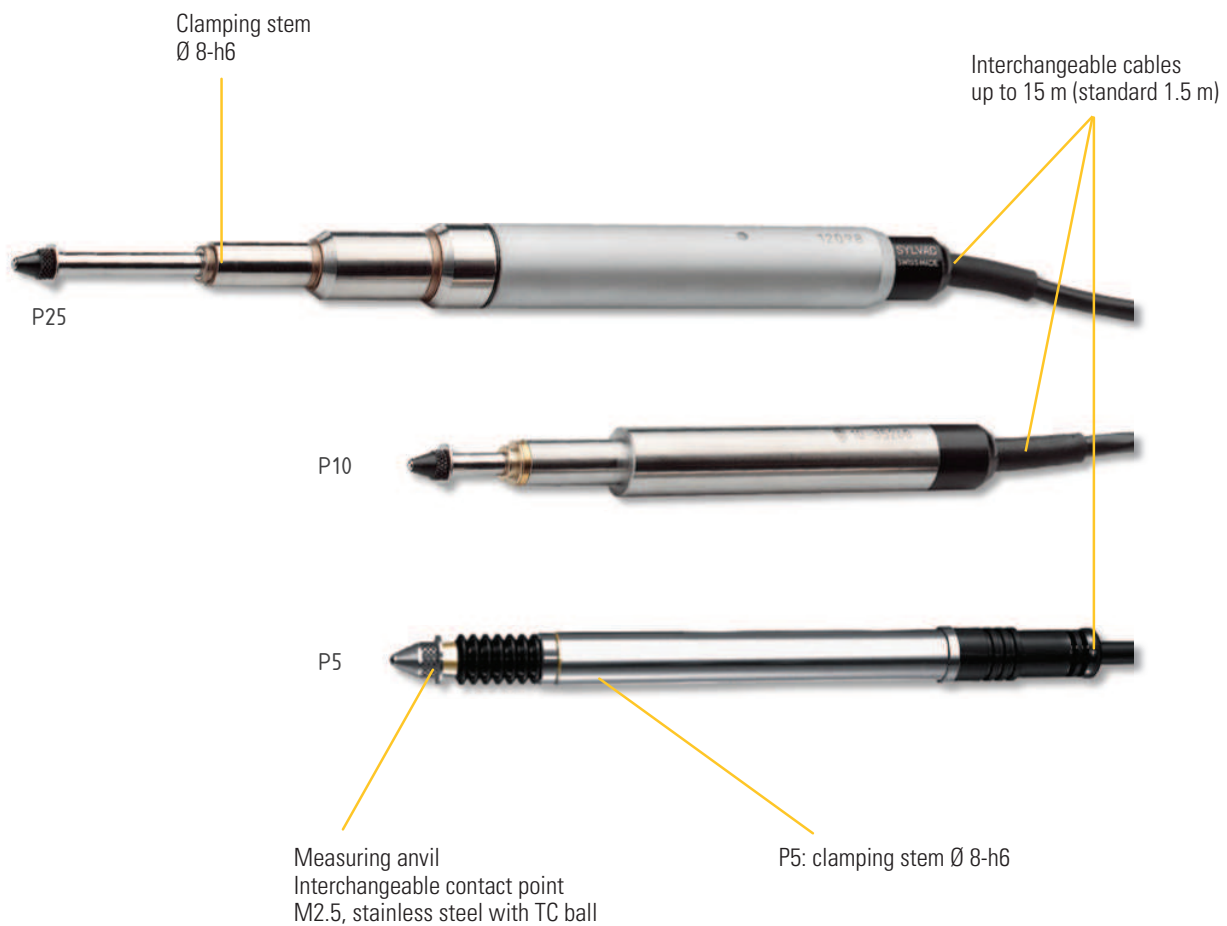


Inductives probes connected to a M-Bus modul coupled with D300S.

Capacitive measuring probes

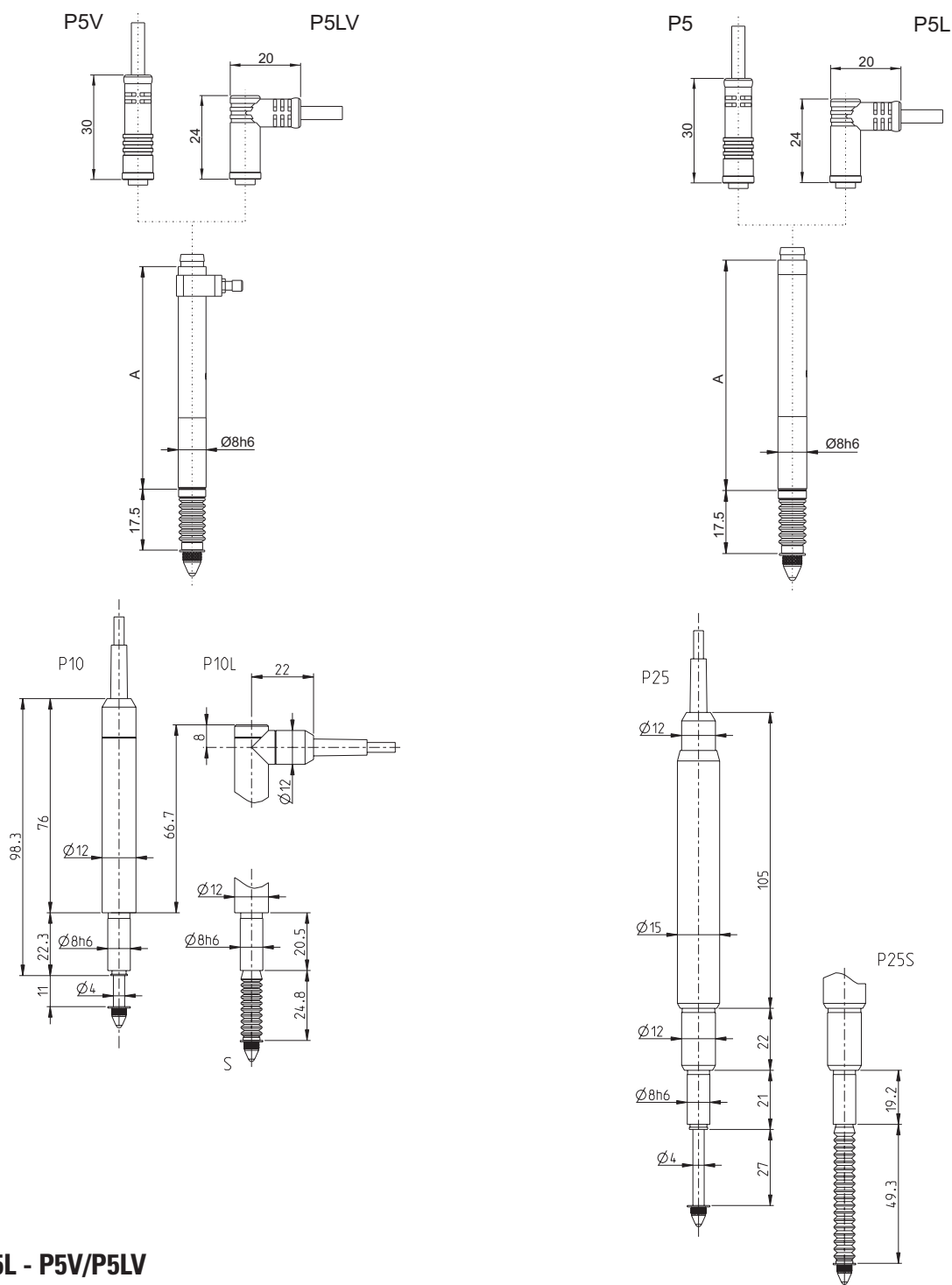
DESCRIPTION

- Capacitive absolute measuring probes, plunger type
- Resolution 0.0001 mm
- Measuring range from 5 to 25 mm
- Plain bearing or ball bearing, integrated vacuum lifter on P5
- Compatible with all Sylvac digital units
- Excellent linearity
- Interchangeable cables on most types



Capacitive measuring probes

DIMENSIONAL DRAWINGS



P5/P5L - P5V/P5LV

Guiding axis	Measure A
Plain bearing	72
Ball bearing	64

Capacitive measuring probes

TECHNICAL SPECIFICATIONS

		P5	P10	P25
Travel	mm	5	10	25
Pre-travel	mm	0.7	0.5	0.8
Max. Error ¹⁾	µm	1	1	1.2
Repeatability	µm	0.2	0.2	0.2
Moving mass	g	3.7	4.1	9.6

¹⁾ With Master unit. See as well the specifications of the pair Measuring probe/display unit.

MEASURING FORCE

		P5	P10	P10S	P25	P25S
Standard	N	0.60-1.20	0.60-0.80	0.70-1.25	0.60-1.00	0.65-1.4
Minimum	N	---	< 0.10	---	< 0.15	---
Low	N	0.20-0.25	0.20-0.25	---	0.20-0.30	---
High	N	1.00-1.80	0.70-1.50	---	0.70-1.60	---
Lateral max	N	0.70	0.60	---	0.30	---

Tolerance ± 20%, measuring probe in vertical position, outgoing spindle.

LIST OF REFERENCES

P5				P10				P25			
P5	900.1001	P5BV	900.1005	P10	900.1010	P10L LF	900.1014.91	P25	900.1025	P25S	900.1027
P5BL	900.1002	P5L	900.1006	P10 LF	900.1010.91						
P5V	900.1003	P5BVL	900.1007	P10S	900.1012	P10LS	900.1016				
P5B	900.1004	P5LV	900.1008	P10L	900.1014						

B = ball bearing / V = Vacuum lifter / L = 90° cable / LF = low force / S = with rubber boot

BASIC INSTRUMENT

- Probe according to technical specifications
- Calibration certificate
- Cable 1.5 m
- Stainless steel contact point with tungsten carbide ball Ø 2 mm (905.2204)

Capacitive measuring probes

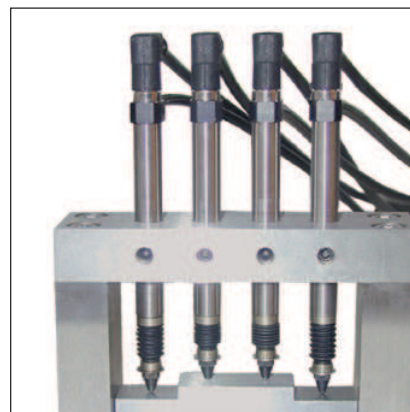
APPLICATIONS



P5 probes connected to a D302 coupled with D300S for OD, concentricity and cylindricity measurements



P5 probes connected to a D50S unit measuring the external diameter of a shaft



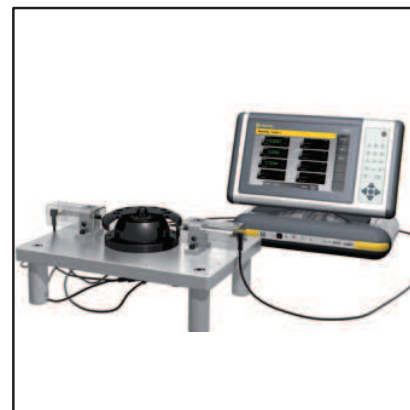
Combined probes for the measurement of several heights



Capacitive probes connected to a D70S.



Capacitive probes connected to a D200S

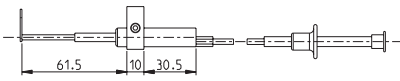
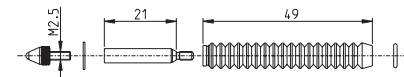
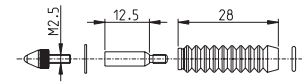
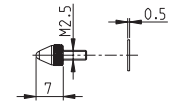


Capacitive probes on a jig

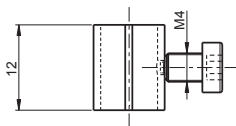
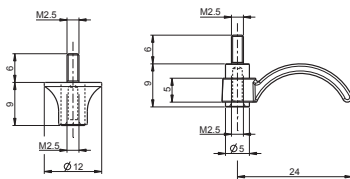
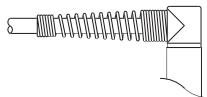
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Measuring probes

ACCESSORIES



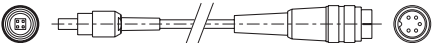

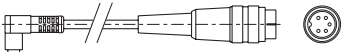
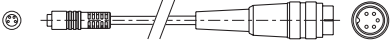
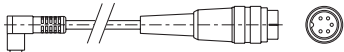
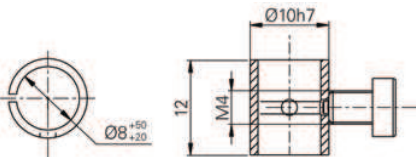
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		P2i	P2iP	P5i	P5iP	P2	P5	P10	P25	P12D
905.2204	Stainless steel contact point M2.5 with TC ball probe (other contact points, see chapter digital indicators)					•	•	•	•	•
901.2003	Rubber boot and contact point set							•		
901.2004	Rubber boot and contact point set								•	
901.2005	Lifting device with photo-cable							•	•	•
901.2012	Tube Ø 4 mm / 2 mm, Length to be specified						•	•	•	
901.2013	Tube Ø 6 mm / 4 mm, Length to be specified						•	•	•	
901.2014	Double tube diameter 2 x 4 mm / 2 mm, Length to be specified						•	•	•	
901.5110	Bridle 90°	•		•						
902.2225	Plastic lifting ring (bottom)	•	•	•	•	•	•	•	•	•
902.2224	Plastic lifting lever (bottom)	•	•	•	•	•	•	•	•	•
905.2231	Sleeve Ø8 -->10mm with locking screw	•	•	•	•	•	•	•	•	•

Measuring probes

ACCESSORIES

		P2i	P2iP	P5i	P5iP	P2	P5	P10	P25	P12D
	901.5002 Cable 1.5 m							•		
	901.5012 Cable 1.5 m								•	
	901.5032 Cable 1.5 m bent							•		
	901.5042 Cable 1.5 m						•			
	901.5052 Cable 1.5 m bent						•			
	905.2231 Adapting socket + screw	•	•	•	•	•	•	•	•	•

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