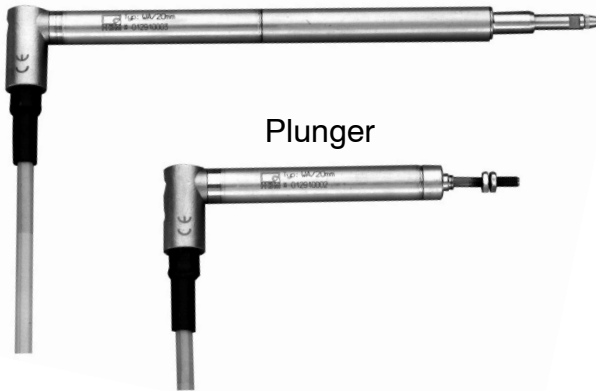


WA

Inductive Standard Displacement Transducers

Displacement probe

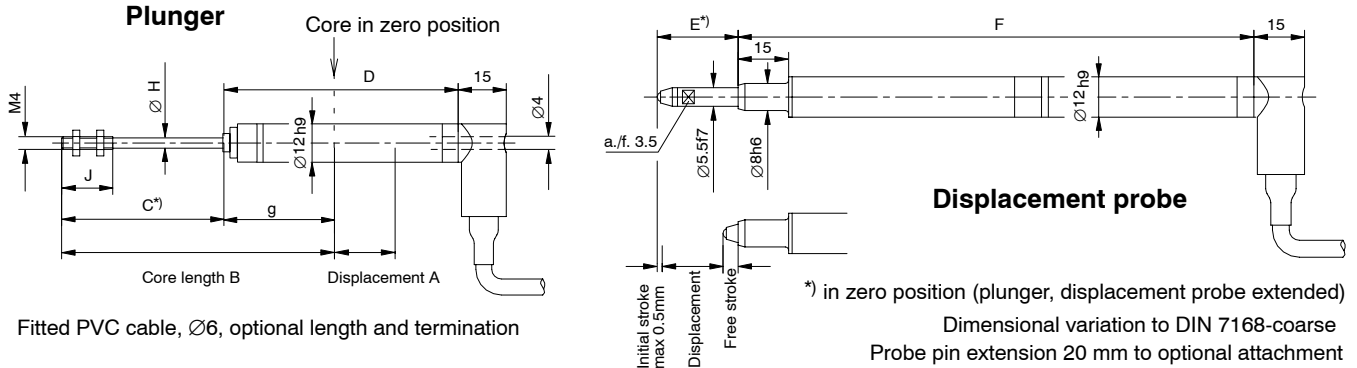


Plunger

Special features

- Displacement probe and transducer with detachable plunger
- Good thermal stability in the event of temperature gradients
- Space-saving, compact design
- Pressure-resistant transducer for measuring displacement in hydraulic cylinders
- Acceleration resistance ensures long service life
- Option: high temperature version up to 150 °C
- Output signal of your choice: 80 mV/V, 0.5-10 V

Dimensions (in mm; 1 mm= 0.0397 inches)



Measuring range	Plunger							Displacement probe		
	A	B	C	D	G	ØH	J	A	E	F
0...2 mm	2	75.5	40	69	35.5	1.2	15	2	14	130
0...10 mm	10	66	40	69	26 ± 0.5	3.7	16	10	14	130
0...20 mm	20	87	55	84	32 ± 0.5	3.7	16	20	24	170
0...50 mm	50	117	85	114	32 ± 0.5	3.7	16	50	54	230
0...100 mm	100	180	134	181.6	46 ± 10	3.7	16	100	104	372.6
0...200 mm	200	280	234	281.6	46 ± 10	3.7	16			
0...300 mm	300	380	334	381.6	46 ± 10	3.7	16			
0...500 mm	500	580	534	581.8	46 ± 10	3.7	16			

Specifications

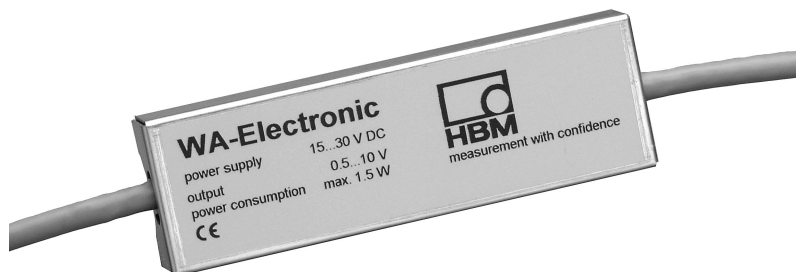
Type		WA2	WA10	WA20	WA50	WA100	WA200	WA300	WA500
Nominal displacement	mm	0...2	0...10	0...20	0...50	0...100	0...200	0...300	0...500
Nominal sensitivity Nominal output signal at nominal displacement with output unloaded	mV/V	80							
Characteristic tolerance Deviation of sensitivity from nominal sensitivity	%	±1							
Zero point tolerance with core in zero position	mV/V	±1		±8					
Linearity deviation Greatest deviation between start and end point (including hysteresis by reference to nominal sensitivity)	%	≤ ±0.2 to ≤ ±0.1							
Nominal temperature range	°C	-20...+80							
Operating temperature range Standard	°C	-20...+80							
Variant for high temperature	°C	-20...+150							
Effect of temperature on zero signal in nominal temp. range per 10 K, by refer. to nominal sensitivity	%	< ±0.1							
Effect of temperature on output signal in nominal temp. range per 10 K, by refer. to actual value	%	< ±0.1							
Input resistance	Ω	100 ± 10 %		350 ± 10 %					
Output resistance	Ω	570 ± 10 %		680 ± 10 %					
Nominal excitation voltage	V _{rms}	2.5							
Operating range of the excitation voltage	V _{rms}	0.5...10							
Carrier frequency, Nominal range	kHz	4.8 ± 1 %							
Operating range	kHz	4.8 ± 8 %							
Weight of transducer body of plunger	g g	54 4	56 6	57 7	68 9	104 13	147 20	190 28	276 42
Surface materials	-	rust-resistant							
Impact resistance , test severity level to DIN IEC 68, Part 2-27; IEC 68-2-27-1987 Number of impacts (per direction)	-	1000							
Impact acceleration	m/s ²	650							
Impact duration	ms	3							
Impact form	-	Half sine wave							
Vibration resistance , test severity level to DIN IEC 68, Part 2-6, IEC 68-2-6-1982 Frequency range	Hz	5 to 65							
Vibration acceleration	m/s ²	150							
Stress duration (per direction)	h	0.5							
Max. number of stress cycles		10 million						-	
Spring constant	N/mm	0.116				0.063		-	
Spring force in zero position (for 1mm initial stroke) approx.	N	2.4				2		-	
Spring force in final position (nom. displ.) approx.	N	2.7	3.6	4.7	8.2	8.3	-		
Max. permissible probe tip acceleration	m/s ²	170		140	95	45	-		
Max. permissible plunger acceleration	m/s ²	2500							
Probe tip cut-off frequency for 1 mm stroke approx.	Hz	60		55	45	30	-		
Probe tip cut-off frequency at nominal displacem.	Hz	18		10	5	3	-		
Degree of protection acc. to EN 60 529 for transducer duct and core channel	-	IP67 (depending on connection piece)							
Max. permissible pressure (increasing load)	bar	350							
Overload limit (to VDI/VDE 2600, Sheet 4)	bar	450							
Destructive range (to VDI/VDE 2600, Sheet 4)	bar	> 500							

Specifications WA electronics

Type		WA2	WA10	WA20	WA50	WA100	WA200	WA300	WA500
Nominal displacement	mm	0...2	0...10	0...20	0...50	0...100	0...200	0...300	0...500
Nominal output span ¹⁾	V	9.5 (0.5...10)							
Output span tolerance ¹⁾	%	± 0.5							
Linearity deviation ¹⁾ Greatest deviation between start and end point (including hysteresis by reference to nominal sensitivity)	%	± 0.2							
Nominal temperature range	°C	-20...+60							
Operating temperature range	°C	-20...+70							
Effect of temperature ¹⁾ on zero signal in nominal temperature range per 10 K, by reference to nominal sensitivity	%	≤ ± 0.15; typically < ± 0.10							
Effect of temperature ¹⁾ on output signal in nominal temperature range per 10 K, by reference to actual value	%	≤ ± 0.15; typically < ± 0.10							
Supply voltage	V	15...30							
Dependence on supply voltage, typically	%	0.03							
Burden in the output	kΩ	≥ 10							
Current consumption	mA	45 (typically 26)							
Power consumption max.	W	1.5							
Cut-off frequency	Hz	520 filter 4th order, Butterworth							
Cable length between the transducer and the electronics	m	3...20							
Cable length between the electronics and the evaluator	m	3...50							

¹⁾ specified for the complete measuring chain

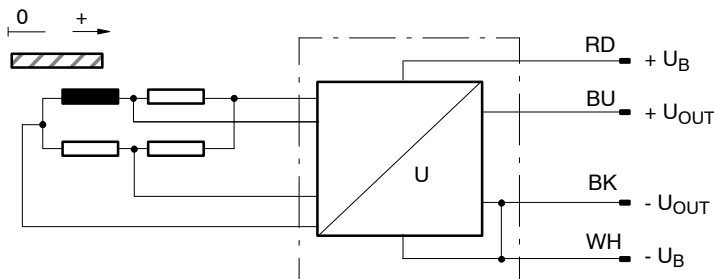
WA electronics



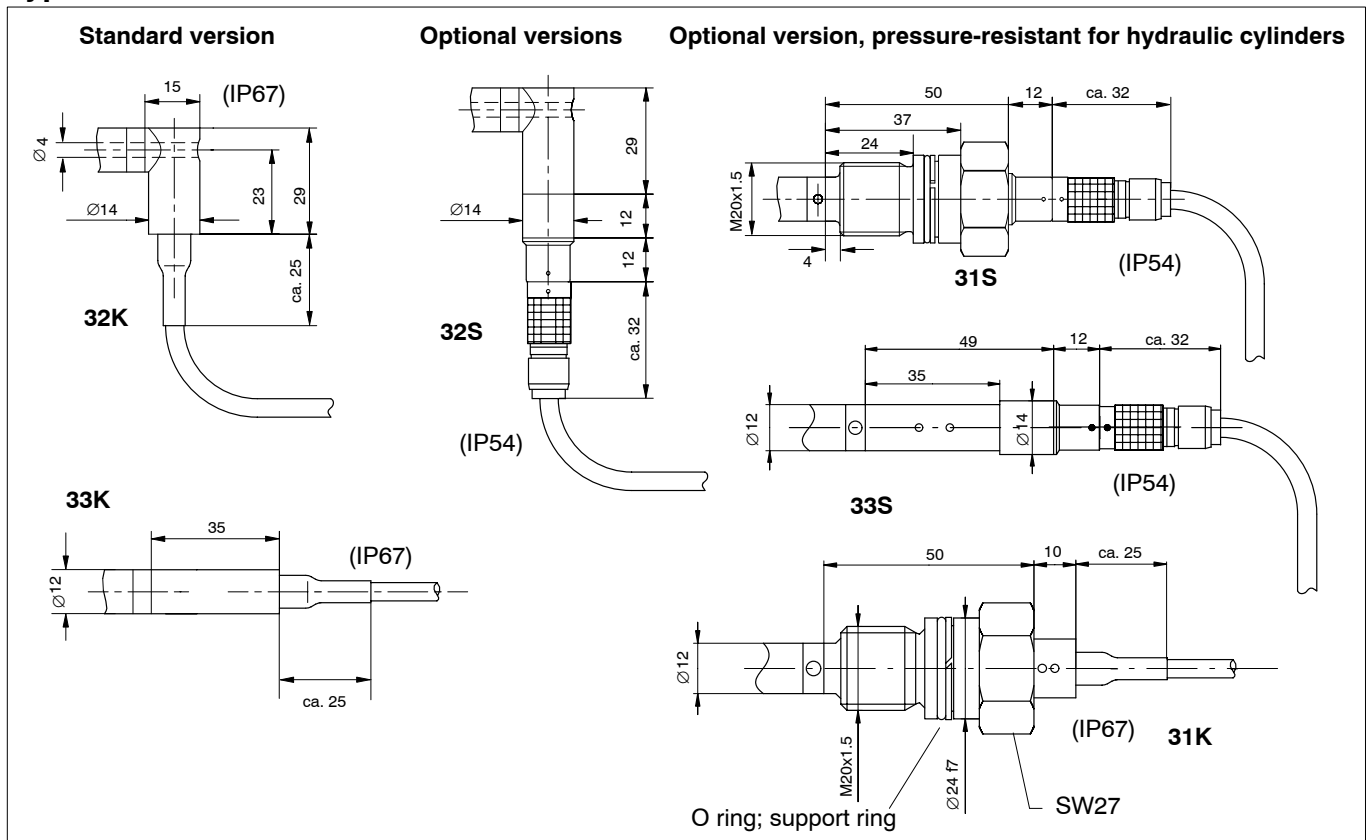
Dimensions WA electronics

Length: 102 mm
Width: 32 mm
Depth: 13.5 mm

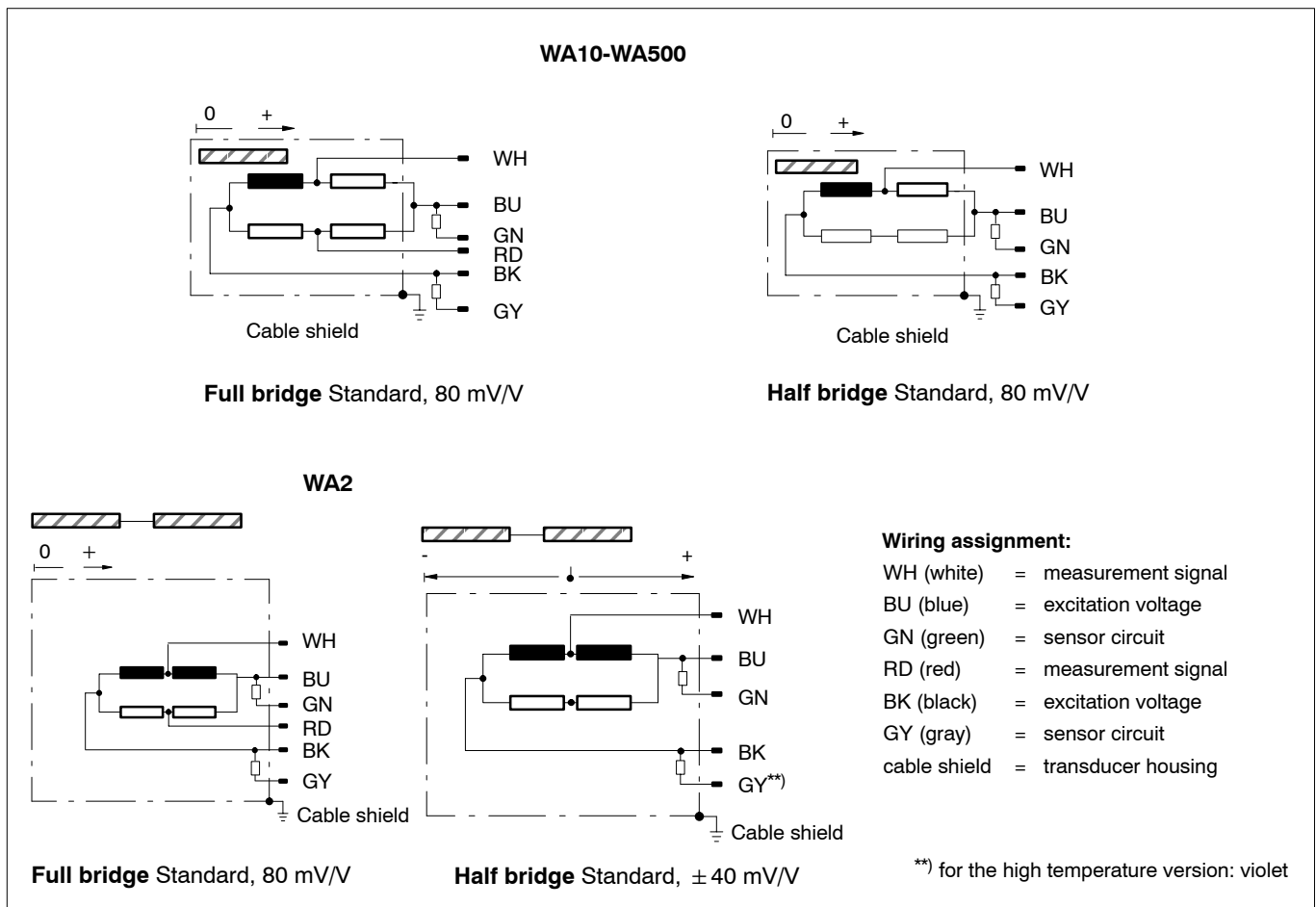
WA electronics cable assignment



Types of connection

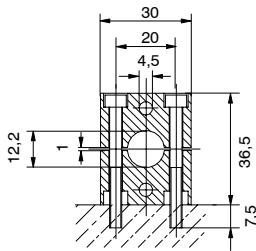


Principle of measurement, wiring assignment



Mounting

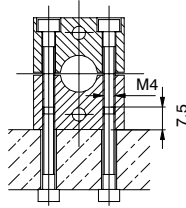
1. Fitting suggestion



WS/ZB12

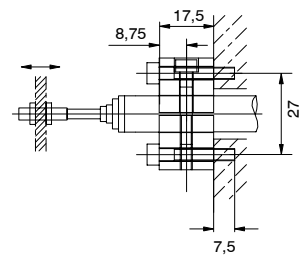
2 mounting blocks with countersink Km4
DIN 74
1 mounting block with thread M4

2. Fitting suggestion



4 fillister-head screws M4x25, DIN 912
2 fillister-head screws M4x40, DIN 912

3. Fitting suggestion



1 hexagonal-head bolt spanner a.f. 3

Operating temperature range from -40 °C...+80 °C

Accessories:

Mounting set WS/ZB12

Replacement parts:

PVC cable such as cable type S1, 3 m, with Lemosa connector (male)
(2-9268.0675 for 80mV/V / 2-9268.0580 for 10 mV/V)

PVC cable such as cable type S2, any length
(max. 300 m, 2-9268.0676 for 80 mV/V / max. 20 m, 2-9268.0588 for 10 mV/V)

PTFE cable such as cable type S3, 3 m; with Lemosa connector (male)
(2-9268.0766 for 80 mV/V; 2-9268.0768 for 10 mV/V)

PTFE cable such as cable type S4, any length, max. 20 m
(2-9268.0767 for 80 mV/V; 2-9268.0769 for 10 mV/V)

Measurement insert with carbide ball (3-6061.0003)

Lemosa connector, detachable (6-pin, 3-3312.0126 for 80 mV/V / 8-pin, 3-3312.0139 for 10 mV/V)

Lemosa jack, detachable (6-pin, 3-3312.0235 for 80 mV/V / 8-pin, 3-3312.0140 for 10 mV/V)

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