



**INDUCTIVE SENSORS:  
HIGH-PRESSURE RESISTANT  
SERIES 500P**



- ✓ **500 bar** high-pressure resistant
- ✓ **1 million pressure cycles**
- ✓ Fail-safe for peak pressures of up to **1000 bar**
- ✓ Temperature resistant **up to 100 °C**
- ✓ Long operating distances of up to **3 mm**
- ✓ Stainless steel housing with **solid ceramic disk**
- ✓ Sensing face **gas tight & IP 68**

**TECHNICAL DATA**

(according to IEC 60947-5-2)	
Max. operating pressure	500 bar
Peak pressure	1000 bar
Sensing face	Ceramic ZrO <sub>2</sub>
Supply voltage range U <sub>B</sub>	10 ... 30 VDC
Output current	≤ 200 mA
Max. ripple content	≤ 20 % U <sub>B</sub>
No-load supply current	≤ 10 mA / ≤ 12 mA (changeover)
Leakage current at output	≤ 0,1 mA
Voltage drop, switched state	≤ 2,0 V
Temperature drift % s <sub>r</sub>	≤ 15 %
Hysteresis % s <sub>r</sub>	8 % typical
Repeat accuracy	≤ 5 % s <sub>r</sub>
Short-circuit protection	Built-in
Polarity reversal protection	Built-in
Power-on reset	Built-in

Rugged high-pressure-resistant sensors for permanent operating pressures of up to 500 bar and peak pressures of up to 1000 bar. Temperature resistant up to 100 °C with gas-tight and IP 68 sensing face. Operating distances of up to 3 mm. Particularly suited for

- ✓ **hydraulic pumps**
- ✓ **hydraulic cylinders**
- ✓ **hydraulic valves**
- ✓ **lubrication systems**
- ✓ **construction machinery**
- ✓ **offshore installations**
- ✓ **harbor cranes**
- ✓ **concrete pumps & mixers**
- ✓ **plastic injection machines**
- ✓ **water-jet cutting machines**
- ✓ **high-vacuum pumps**

Inductive

Photoelectric

Optical fibers

Ultrasonic

Capacitive

Cables & connectors

Accessories

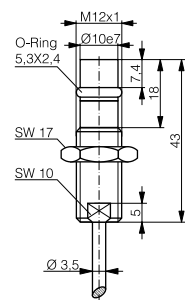
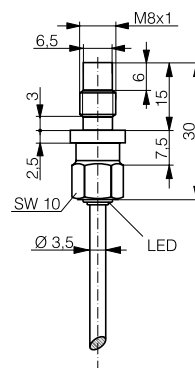
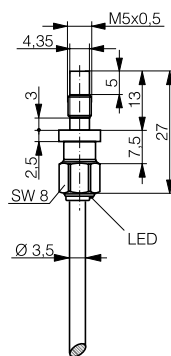
Glossary

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HOUSING SIZE	M5	M8	M12
OPERATING DISTANCE MM	1.0	1.5	1.5



500 BAR (TESTED AT 1000 BAR)



- 1) Standard cable length 2 m.  
Non-standard cable lengths  
and types on request.  
Cable type see page 271.  
2) see page 133  
3) see page 268

TECHNICAL DATA			
Housing material	Stainless steel Phynox	Stainless steel V4A	Stainless steel V2A
Connection <sup>1)</sup>	PUR cable type 3	PUR cable type 3	PUR cable type 3
Degree of protection	IP 68	IP 68	IP 68
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	600 Hz	800 Hz	600 Hz
Wiring <sup>2)</sup>	Diagram 1	Diagram 1	Diagram 1
LED	Built-in	Built-in	---
Ambient temperature range	-25 ... +80 °C	-25 ... +100 °C	-25 ... +80 °C
Approvals	CE, RoHS	CE, RoHS	CE, RoHS

PART REFERENCES: (BOLD: PREFERRED TYPES)			
NPN N.O.	<b>DW-AD-501-P5*</b>	<b>DW-AD-501-P8</b>	<b>DW-AD-501-P12-639</b>
NPN N.C.			
PNP N.O.	<b>DW-AD-503-P5*</b>	<b>DW-AD-503-P8</b>	<b>DW-AD-503-P12-639</b>
PNP N.C.			
NPN changeover			
PNP changeover			
Compatible connectors <sup>3)</sup>			

\* available 4Q/2010

# M12

1.5

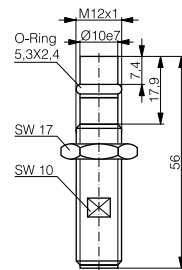
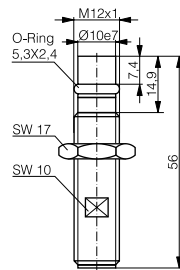
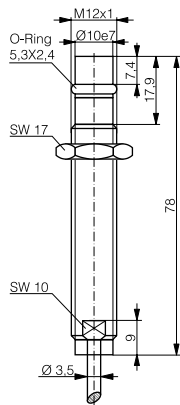
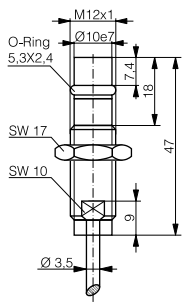
1.5

1.5

1.5



## 500 BAR (TESTED AT 1000 BAR)



Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
PUR cable type 3	PUR cable type 3	Connector S12	Connector S12
IP 68	IP 68	IP 68	IP 68
Embeddable	Embeddable	Embeddable	Embeddable
600 Hz	600 Hz	600 Hz	600 Hz
Diagram 1	Diagram 1	Diagram 2	Diagram 2
---	---	---	---
-25 ... +80 °C	-25 ... +80 °C	-25...+80 °C / -25...+100 °C*	-25...+80 °C / -25...+100 °C*
CE, RoHS	CE, RoHS	CE, RoHS	CE, RoHS

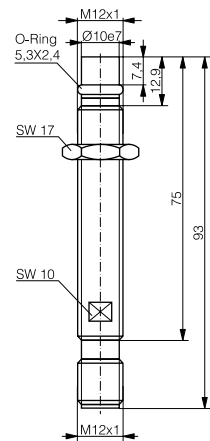
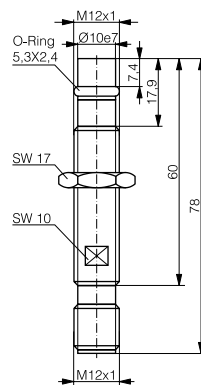
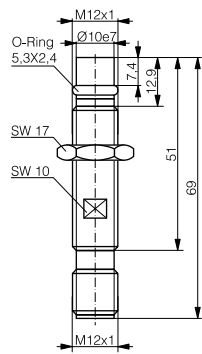
<b>DW-AD-501-P12-625</b>	<b>DW-AD-501-P12-627</b>	<b>DW-AS-501-P12-624</b>	<b>DW-AS-501-P12-630</b>
			DW-AS-502-P12-630
<b>DW-AD-503-P12-625</b>	<b>DW-AD-503-P12-627</b>	<b>DW-AS-503-P12-624</b>	<b>DW-AS-503-P12-630</b>
			DW-AS-504-P12-630
		<b>DW-AS-508-P12-624</b>	<b>DW-AS-508-P12-630</b>
		<b>DW-AS-50A-P12-624</b>	<b>DW-AS-50A-P12-630</b>
		G, H, M, N; M, N (changeover)	G,H,M,N (N.O.); M,N (N.C.); M,N*

\* changeover

HOUSING SIZE	M12		
OPERATING DISTANCE MM	1.5	1.5	1.5



**500 BAR (TESTED AT 1000 BAR)**



- 1) Standard cable length 2 m. Non-standard cable lengths and types on request. Cable type see page 271.
- 2) see page 133
- 3) see page 268

**TECHNICAL DATA**

Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection <sup>1)</sup>	Connector S12	Connector S12	Connector S12
Degree of protection	IP 68	IP 68	IP 68
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	600 Hz	600 Hz	600 Hz
Wiring <sup>2)</sup>	Diagram 2	Diagram 2	Diagram 2
LED	---	---	---
Ambient temperature range	-25...+80 °C / -25...+100 °C*	-25...+80 °C / -25...+100 °C*	-25...+80 °C / -25...+100 °C*
Approvals	CE, RoHS	CE, RoHS	CE, RoHS

**PART REFERENCES: (BOLD: PREFERRED TYPES)**

NPN N.O.	<b>DW-AS-501-P12</b>	<b>DW-AS-501-P12-627</b>	<b>DW-AS-501-P12-621</b>
NPN N.C.	DW-AS-502-P12		
PNP N.O.	<b>DW-AS-503-P12</b>	<b>DW-AS-503-P12-627</b>	<b>DW-AS-503-P12-621</b>
PNP N.C.	DW-AS-504-P12		
NPN changeover	<b>DW-AS-50B-P12</b>	<b>DW-AS-50B-P12-627</b>	<b>DW-AS-50B-P12-621</b>
PNP changeover	<b>DW-AS-50A-P12</b>	<b>DW-AS-50A-P12-627</b>	<b>DW-AS-50A-P12-621</b>
Compatible connectors <sup>3)</sup>	G,H,M,N (N.O.); M,N (N.C.); M,N*	G, H, M, N; M, N (changeover)	G, H, M, N; M, N (changeover)

\* changeover

# M12

1.5

1.5

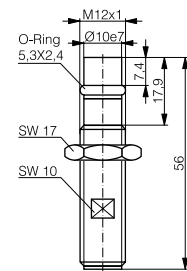
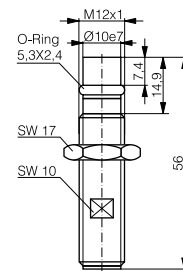
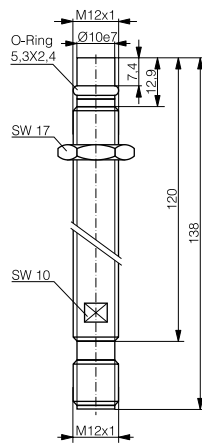
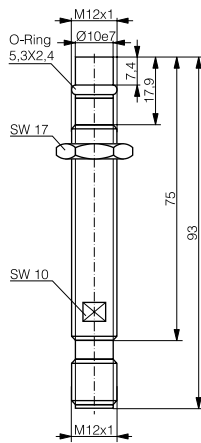
2.5

2.5



500 BAR (TESTED AT 1000 BAR)

LONG OPERATING DISTANCE / 500 BAR (TESTED AT 1000 BAR)



Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connector S12	Connector S12	Connector S12	Connector S12
IP 68	IP 68	IP 68	IP 68
Embeddable	Embeddable	Embeddable	Embeddable
600 Hz	600 Hz	600 Hz	600 Hz
Diagram 2	Diagram 2	Diagram 2	Diagram 2
---	---	---	---
-25...+80 °C / -25...+100 °C*	-25...+80 °C / -25...+100 °C*	-25...+100 °C	-25...+100 °C
CE, RoHS	CE, RoHS	CE, RoHS	CE, RoHS

<b>DW-AS-501-P12-635</b>	<b>DW-AS-501-P12-622</b>	<b>DW-AS-521-P12-624</b>	<b>DW-AS-521-P12-630</b>
<b>DW-AS-503-P12-635</b>	<b>DW-AS-503-P12-622</b>	<b>DW-AS-523-P12-624</b>	<b>DW-AS-523-P12-630</b>
<b>DW-AS-50B-P12-635</b>	<b>DW-AS-50B-P12-622</b>	<b>DW-AS-52B-P12-624</b>	<b>DW-AS-52B-P12-630</b>
<b>DW-AS-50A-P12-635</b>	<b>DW-AS-50A-P12-622</b>	<b>DW-AS-52A-P12-624</b>	<b>DW-AS-52A-P12-630</b>
G, H, M, N; M, N (changeover)	G, H, M, N; M, N (changeover)	G, H, M, N; M, N (changeover)	G, H, M, N; M, N (changeover)

\* changeover

Inductive

Photoelectric

Optical fibers

Ultrasonic

Capacitive

Cables & connectors

Accessories

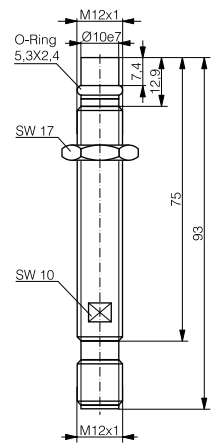
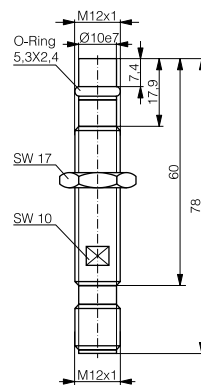
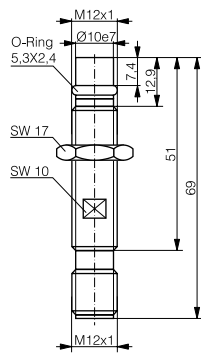
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HOUSING SIZE	M12		
OPERATING DISTANCE MM	2.5	2.5	2.5



**LONG OPERATING DISTANCE / 500 BAR (TESTED AT 1000 BAR)**



- 1) Standard cable length 2 m. Non-standard cable lengths and types on request. Cable type see page 271.
- 2) see page 133
- 3) see page 268

**TECHNICAL DATA**

Housing material	Stainless steel V2A	Stainless steel V2A	Stainless steel V2A
Connection <sup>1)</sup>	Connector S12	Connector S12	Connector S12
Degree of protection	IP 68	IP 68	IP 68
Mounting	Embeddable	Embeddable	Embeddable
Max. switching frequency	600 Hz	600 Hz	600 Hz
Wiring <sup>2)</sup>	Diagram 2	Diagram 2	Diagram 2
LED	---	---	---
Ambient temperature range	-25 ... +100 °C	-25 ... +100 °C	-25 ... +100 °C
Approvals	CE, RoHS	CE, RoHS	CE, RoHS

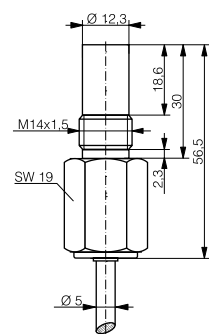
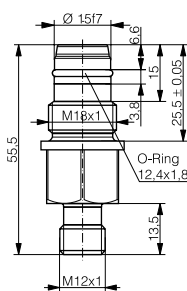
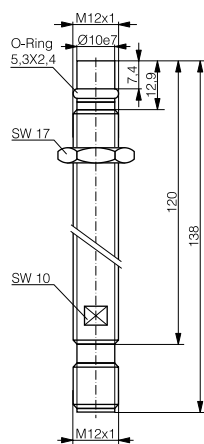
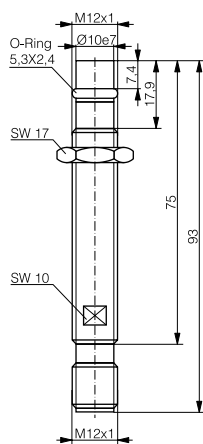
**PART REFERENCES: (BOLD: PREFERRED TYPES)**

NPN N.O.	<b>DW-AS-521-P12</b>	<b>DW-AS-521-P12-627</b>	<b>DW-AS-521-P12-621</b>
NPN N.C.			
PNP N.O.	<b>DW-AS-523-P12</b>	<b>DW-AS-523-P12-627</b>	<b>DW-AS-523-P12-621</b>
PNP N.C.			
NPN changeover	<b>DW-AS-52B-P12</b>	<b>DW-AS-52B-P12-627</b>	<b>DW-AS-52B-P12-621</b>
PNP changeover	<b>DW-AS-52A-P12</b>	<b>DW-AS-52A-P12-627</b>	<b>DW-AS-52A-P12-621</b>
Compatible connectors <sup>3)</sup>	G, H, M, N; M, N (changeover)	G, H, M, N; M, N (changeover)	G, H, M, N; M, N (changeover)

M12		M18	P20 (M14)
2.5	2.5	1.5	3.0



LONG OPERATING DISTANCE / 500 BAR (TESTED AT 1000 BAR)	500 BAR (TESTED AT 1000 BAR)	LONG OP. DISTANCE / 500 BAR*
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Stainless steel V2A	Stainless steel V2A	Stainless steel V2A	Stainless steel V4A
Connector S12	Connector S12	Connector S12	PUR cable type 11
IP 68	IP 68	IP 68	IP 68
Embeddable	Embeddable	Embeddable	Embeddable
600 Hz	600 Hz	800 Hz	500 Hz
Diagram 2	Diagram 2	Diagram 2	Diagram 1
---	---	---	---
-25 ... +100 °C	-25 ... +100 °C	-25 ... +80 °C	-25 ... +80 °C
CE, RoHS	CE, RoHS	CE, RoHS	CE, RoHS

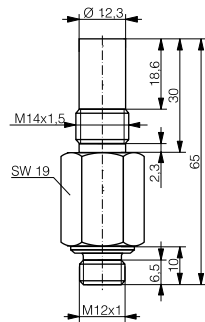
<b>DW-AS-521-P12-635</b>	<b>DW-AS-521-P12-622</b>	<b>DW-AS-501-P18</b>	<b>DW-AD-501-P20</b>
		DW-AS-502-P18	DW-AD-502-P20
<b>DW-AS-523-P12-635</b>	<b>DW-AS-523-P12-622</b>	<b>DW-AS-503-P18</b>	<b>DW-AD-503-P20</b>
			DW-AD-504-P20
<b>DW-AS-52B-P12-635</b>	<b>DW-AS-52B-P12-622</b>		
<b>DW-AS-52A-P12-635</b>	<b>DW-AS-52A-P12-622</b>		
G, H, M, N; M, N (changeover)	G, H, M, N; M, N (changeover)	G, H, M, N (N.O.); M, N (N.C.)	

\* tested at 1000 bar

HOUSING SIZE	<b>P20 (M14)</b>		
OPERATING DISTANCE MM	<b>3.0</b>		



**LONG OPERATING DISTANCE / 500 BAR (TESTED AT 1000 BAR)**



- 1) Standard cable length 2 m. Non-standard cable lengths and types on request. Cable type see page 271.
- 2) see page 133
- 3) see page 268

**TECHNICAL DATA**

Housing material	Stainless steel V4A		
Connection <sup>1)</sup>	Connector S12		
Degree of protection	IP 68		
Mounting	Embeddable		
Max. switching frequency	500 Hz		
Wiring <sup>2)</sup>	Diagram 2		
LED	---		
Ambient temperature range	-25 ... +80 °C		
Approvals	CE, RoHS		

**PART REFERENCES: (BOLD: PREFERRED TYPES)**

NPN N.O.	<b>DW-AS-501-P20</b>		
NPN N.C.	DW-AS-502-P20		
PNP N.O.	<b>DW-AS-503-P20</b>		
PNP N.C.	DW-AS-504-P20		
NPN changeover			
PNP changeover			
Compatible connectors <sup>3)</sup>	G, H, M, N (N.O.); M, N (N.C.)		