

UK1 Series / Ultrasonic Sensors

Switching / Measuring Sensors



- Construction type: M18x1
- Connector: M12 plug, 4-pin and cable
- Housing material: Plastic (PBT)
- IP67 Ingress protection
- Power supply: 15 - 30 V DC

CONSTRUCTION TYPE	CONNECTION TYPE	MEASURING RANGE	0 - 10 V	4 - 20 mA	DIGITAL NPN NO / NC	DIGITAL PNP NO / NC
1 OUTPUT						
M18x1	M12 connector	50 - 400 mm	UK1A/E1-0E	UK1A/E2-0E	UK1A/EN-0E	UK1A/EP-0E
		100 - 900 mm	UK1C/E1-0E	UK1C/E2-0E	UK1C/EN-0E	UK1C/EP-0E
		150 - 1600 mm	UK1D/E1-0E	UK1D/E2-0E	UK1D/EN-0E	UK1D/EP-0E
		200 - 2200 mm	UK1F/E1-0E	UK1F/E2-0E	UK1F/EN-0E	UK1F/EP-0E
	Cable	50 - 400 mm	UK1A/E1-0A	UK1A/E2-0A	UK1A/EN-0A	UK1A/EP-0A
		100 - 900 mm	UK1C/E1-0A	UK1C/E2-0A	UK1C/EN-0A	UK1C/EP-0A
		150 - 1600 mm	UK1D/E1-0A	UK1D/E2-0A	UK1D/EN-0A	UK1D/EP-0A
		200 - 2200 mm	UK1F/E1-0A	UK1F/E2-0A	UK1F/EN-0A	UK1F/EP-0A

CONSTRUCTION TYPE	CONNECTION TYPE	MEASURING RANGE	DIGITAL NPN NO / NC 4 - 20 mA	DIGITAL PNP NO / NC 4 - 20 mA	DIGITAL PNP NO / NC 0 - 10 V	DIGITAL NPN NO / NC 0 - 10 V	2x DIGITAL PNP NO / NC	2x DIGITAL NPN NO / NC
2 OUTPUTS								
M18x1	M12 connector	50 - 400 mm	UK1A/E4-0E	UK1A/E6-0E	UK1A/E7-0E	UK1A/E9-0E	UK1A/EW-0E	UK1A/EM-0E
		100 - 900 mm	UK1C/E4-0E	UK1C/E6-0E	UK1C/E7-0E	UK1C/E9-0E	UK1C/EW-0E	UK1C/EM-0E
		150 - 1600 mm	UK1D/E4-0E	UK1D/E6-0E	UK1D/E7-0E	UK1D/E9-0E	UK1D/EW-0E	UK1D/EM-0E
		200 - 2200 mm	UK1F/E4-0E	UK1F/E6-0E	UK1F/E7-0E	UK1F/E9-0E	UK1F/EW-0E	UK1F/EM-0E
	Cable	50 - 400 mm	UK1A/E4-0A	UK1A/E6-0A	UK1A/E7-0A	UK1A/E9-0A	UK1A/EW-0A	UK1A/EM-0A
		100 - 900 mm	UK1C/E4-0A	UK1C/E6-0A	UK1C/E7-0A	UK1C/E9-0A	UK1C/EW-0A	UK1C/EM-0A
		150 - 1600 mm	UK1D/E4-0A	UK1D/E6-0A	UK1D/E7-0A	UK1D/E9-0A	UK1D/EW-0A	UK1D/EM-0A
		200 - 2200 mm	UK1F/E4-0A	UK1F/E6-0A	UK1F/E7-0A	UK1F/E9-0A	UK1F/EW-0A	UK1F/EM-0A

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Technical details

	UK1A/Ex-0x	UK1C/Ex-0x	UK1D/Ex-0x	UK1F/Ex-0x
GENERAL DATA				
Sensorfunction	Measure (analog), Switch (digital)			
Anzeigeelemente	LED – Multifunktion			
Temperature compensation	Yes			
Teach-in	External			
MEASUREMENT DATA				
Measuring range	50 - 400 mm	100 - 900 mm	150 - 1600 mm	200 - 2200 mm
Blind zone	50 mm	100 mm	150 mm	200 mm
Beam angle	± 10 °	± 7 °	± 8 °	± 7 °
Repeat accuracy	0.5 %			
Linearity error	1 %			
Response time (digital)	≤ 500 ms	≤ 125 ms	250 ms	500 ms
Temperature drift	≤ 7 %			
OUTPUTS				
Ausgangsstrom	500 mA (analog / 2x digital) / 300 mA (analog and digital)			
Lastwiderstand	3 kΩ			
Time delay before availability	≤ 900 ms (analog / 2x digital) / ≤ 500 ms (digital)			
Switching hysteresis	1 %			
Switching frequency	10 Hz	4 Hz	2 Hz	1 Hz
POWER SUPPLY				
Power supply V DC	15 - 30 V DC			
No-load current	≤ 50 mA			
Short circuit protection	Yes			
Reverse polarity protection	Yes			
Ripple	5 %			
Voltage drop	2.2 V @ 100 mA			
Leakage current	10 µA @ 30 V DC			
PHYSICAL CHARACTERISTICS				
Housing material	Plastic (polybutyleneterephthalate)			
Optic material	Epoxy-glass resin			
Ingress protection	IP67			
Dimensions (ø x L)	18 x 91 mm (Plug) / 18 x 86.6 mm (Cable)			
Cable length	2000 mm (Cable)			
Weight	26 g (Plug) / 88 g (Cable)			
Tightening torque	1 Nm			
ENVIRONMENTAL				
Operating temperature	-20 - +60 °C		-20 - +70 °C	
Storage temperature	-35 - +70 °C			

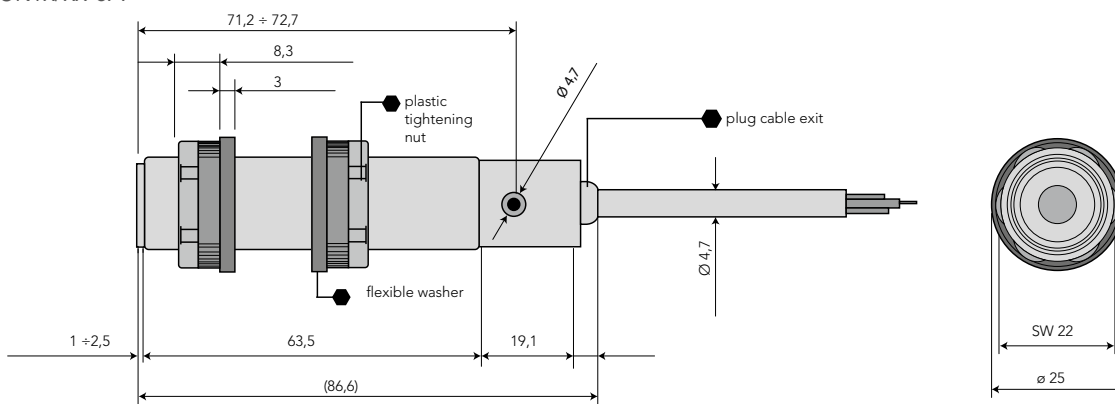
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Technical details

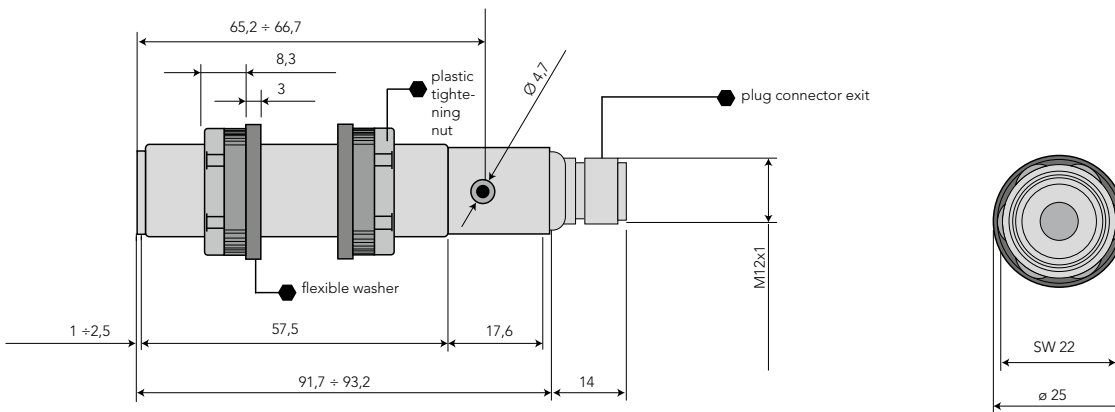
	UK1A/Ex-0x	UK1C/Ex-0x	UK1D/Ex-0x	UK1F/Ex-0x
APPROVALS				
CE	EC Directive 2004/108/EC			
EMC	EN 60947-5-2,7			
ATEX	Option			
cULus	Option			

Dimensions

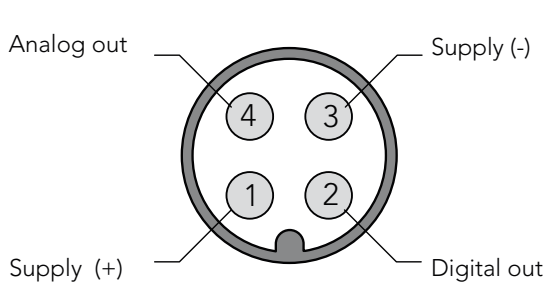
UK1x/xx-0A



UK1x/xx-0E



Connector

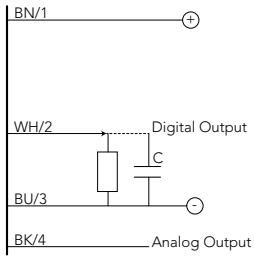


UK1A/Ex-0x
 UK1C/Ex-0x
 UK1D/Ex-0x
 UK1F/Ex-0x

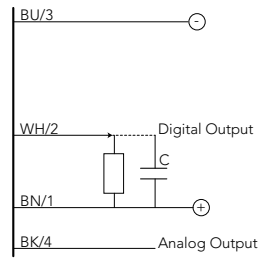
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Electrical diagrams

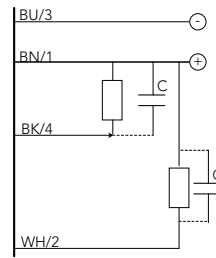
PNP NO/NC and Analog



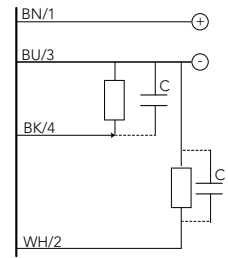
NPN NO/NC and Analog



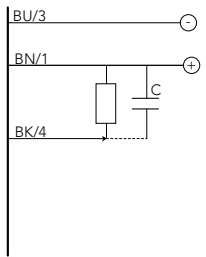
2x NPN NO/NC



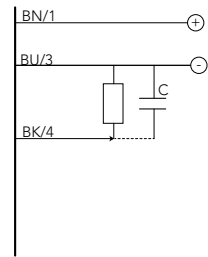
2x PNP NO/NC



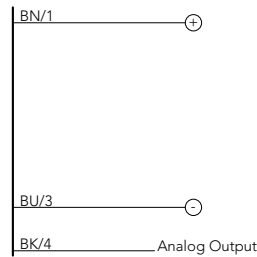
Digital NPN NO/NC



Digital PNP NO/NC

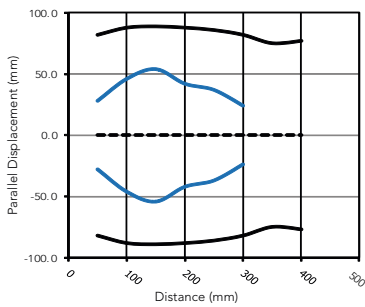


Analog

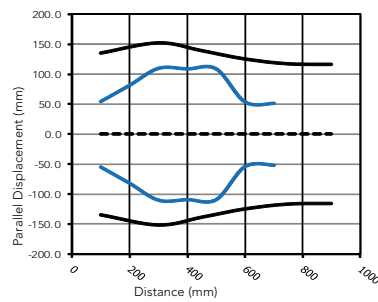


Sensing area

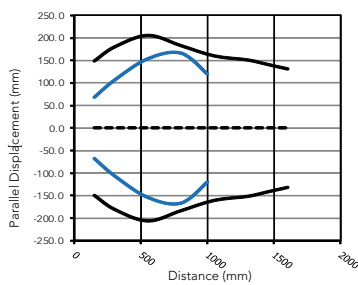
UK1A/Ex-0x



UK1C/Ex-0x



UK1D/Ex-0x



UK1F/Ex-0x

