

ISO 15552, series PRA



AVENTICS™ ISO 15552, series PRA



Profile cylinder ISO 15552, Series PRA with SM6

- with distance measuring sensor, measurement range 32 ... 256 mm
- double-acting
- with magnetic piston



Standards	ISO 15552
Compressed air connection	Internal thread
Working pressure min./max.	2 ... 10 bar
Ambient temperature min./max.	-20 ... 70 °C
Medium temperature min./max.	-20 ... 80 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m ³
Pressure for determining piston forces	6.3 bar

Technical information

The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .

The oil content of compressed air must remain constant during the life cycle.

Use only the approved oils from AVENTICS. Further information can be found in the "Technical information" document (available in the MediaCentre).

For additional technical data please see the relevant data sheets for the standard version.

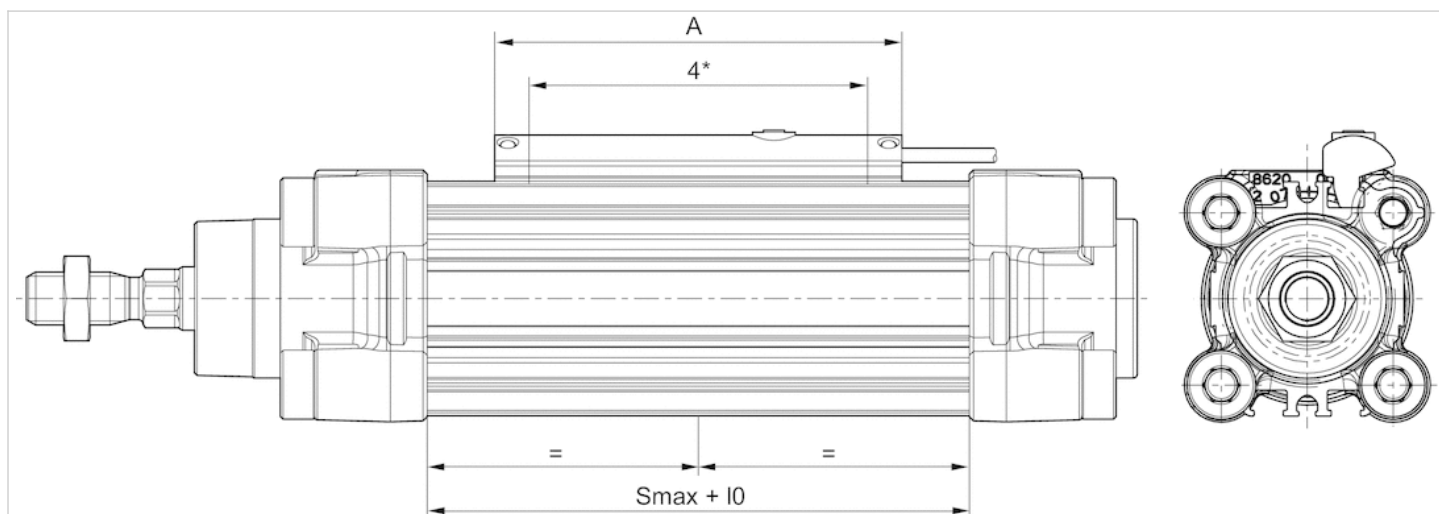
The PRA cylinder is available in our Internet configurator. Please order the distance measuring sensor separately. It can be found under the accessories for this series. Contact your nearest AVENTICS sales office if you have any questions.

Technical information

Material	
Cylinder tube	Aluminum, anodized
Piston rod	Stainless steel
Front cover	Die-cast aluminum
End cover	Die-cast aluminum
Seal	Polyurethane
Nut for piston rod	Steel, galvanized
Scraper	Polyurethane

Dimensions

Dimensions



A = sensor length

4* = Measurement range

S = stroke

I0 = zero stroke in mm

Dimensions

Stroke ranges (mm)					
		Ø32		Ø40	
I0 = zero stroke in mm		38,5		38,5	
		Stroke		Stroke	
Measurement range	A = sensor length	Min.	Max.	Min.	Max.
32	45	7	31	7	31
64	77	39	63	39	63
96	109	71	95	71	95
128	141	103	127	103	127
160	173	135	159	135	159
192	205	167	191	167	191
224	237	199	223	199	223
256	269	231	255	231	255

Ø50		Ø63		Ø80		Ø100		Ø125	
44		44,5		51,5		53,5		52,3	
Stroke		Stroke		Stroke		Stroke		Stroke	
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
2	31	1	31	0	31	0	31	0	31
34	63	33	63	26	63	24	63	26	63
66	95	65	95	58	95	56	95	58	95
98	127	97	127	90	127	88	127	90	127
130	159	129	159	122	159	120	159	122	159
162	191	161	191	154	191	152	191	154	191

194	223	193	223	184	223	184	223	186	223
226	255	225	255	218	255	216	255	218	255

Profile cylinder ISO 15552, Series PRA with SM6-AL

- with distance measuring sensor, measurement range 107 - 1007 mm
- double-acting
- with magnetic piston



Standards	ISO 15552
Compressed air connection	Internal thread
Working pressure min./max.	2 ... 10 bar
Ambient temperature min./max.	-20 ... 70 °C
Medium temperature min./max.	-20 ... 80 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m ³
Pressure for determining piston forces	6.3 bar

Technical information

The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .

The oil content of compressed air must remain constant during the life cycle.

Use only the approved oils from AVENTICS. Further information can be found in the "Technical information" document (available in the MediaCentre).

For additional technical data please see the relevant data sheets for the standard version.

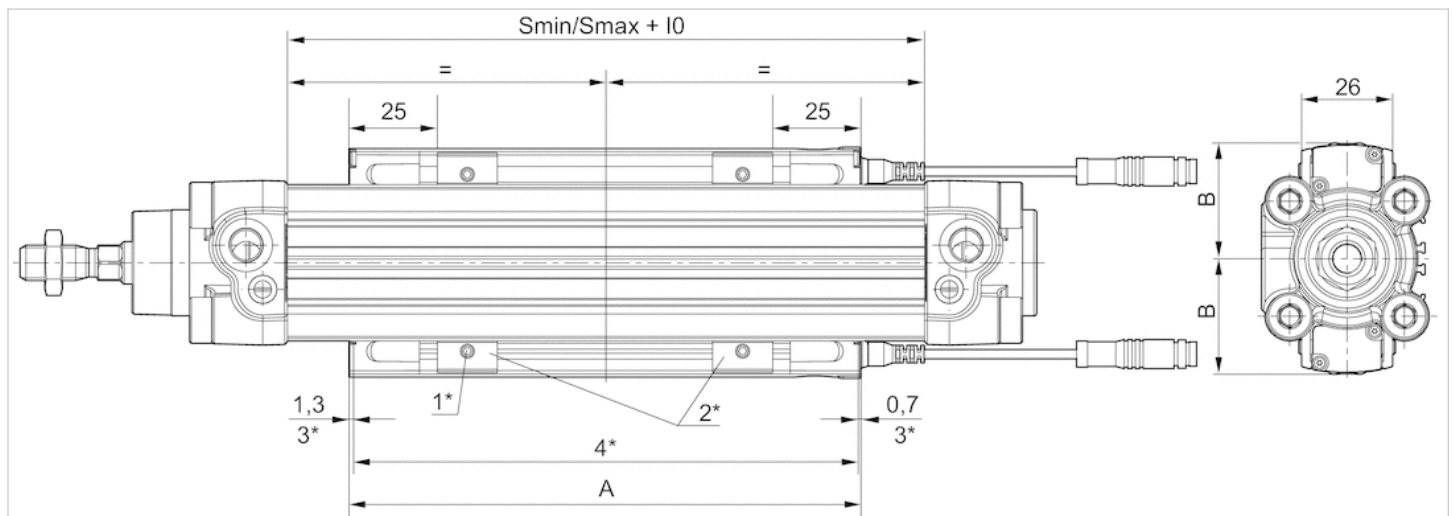
The PRA cylinder is available in our Internet configurator. Please order the distance measuring sensor separately. It can be found under the accessories for this series. Contact your nearest AVENTICS sales office if you have any questions.

Technical information

Material	
Cylinder tube	Aluminum, anodized
Piston rod	Stainless steel
Front cover	Die-cast aluminum
End cover	Die-cast aluminum
Seal	Polyurethane
Nut for piston rod	Steel, galvanized
Scraper	Polyurethane

Dimensions

Dimensions



I0 = zero stroke in mm

A = sensor length

S = stroke

1* = hexagon socket WS2

2* = sensor clamping fixture

3* = blind zone

4* = measurement range

Dimensions

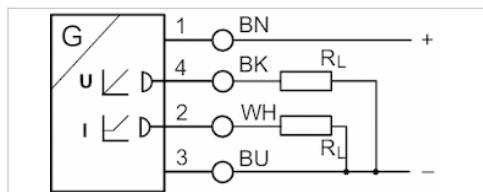
Stroke ranges (mm)					
		Ø32		Ø40	
I0 = zero stroke in mm		38,5		38,5	
Dimension B [mm]		33		37	
		Stroke		Stroke	
Measurement range	A = sensor length	Min.	Max.	Min.	Max.
107	109	71	106	71	106
143	145	107	142	107	142
179	181	143	178	143	178
215	217	179	214	179	214
251	253	215	250	215	250
287	289	251	286	251	286
323	325	287	322	287	322
359	361	323	358	323	358
395	397	359	394	359	394
431	433	395	430	395	430
467	469	431	466	431	466
503	505	467	502	467	502
539	541	503	538	503	538
575	577	539	574	539	574
611	613	575	610	575	610
647	649	611	646	611	646
683	685	647	682	647	682

Stroke ranges (mm)					
719	721	683	718	683	718
755	757	719	754	719	754
791	793	755	790	755	790
827	829	791	826	791	826
863	865	827	862	827	862
899	901	863	898	863	898
935	937	899	934	899	934
971	973	935	970	935	970
1007	1009	971	1006	971	1006

Ø50		Ø63		Ø80		Ø100		Ø125	
44		44,5		51,5		53,5		52,3	
42		49		58		69		82	
Stroke		Stroke		Stroke		Stroke		Stroke	
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
66	106	65	106	58	106	56	106	58	106
102	142	101	142	94	142	92	142	94	142
138	178	137	178	130	178	128	178	130	178
174	214	173	214	166	214	164	214	166	214
210	250	209	250	202	250	200	250	202	250
246	286	245	286	238	286	236	286	238	286
282	322	281	322	274	322	272	322	274	322
318	358	317	358	310	358	308	358	310	358
354	394	353	394	346	394	344	394	346	394
390	430	389	430	382	430	380	430	382	430
426	466	425	466	418	466	416	466	418	466
462	502	461	502	454	502	452	502	454	502
498	538	497	538	490	538	488	538	490	538
534	574	533	574	526	574	524	574	526	574
570	610	569	610	562	610	560	610	562	610
606	646	605	646	598	646	596	646	598	646
642	682	641	682	634	682	632	682	634	682
678	718	677	718	670	718	668	718	670	718
714	754	713	754	706	754	704	754	706	754
750	790	749	790	742	790	740	790	742	790
786	826	785	826	778	826	776	826	778	826
822	862	821	862	814	862	812	862	814	862
858	898	857	898	850	898	848	898	850	898
894	934	893	934	886	934	884	934	886	934
930	970	929	970	922	970	920	970	922	970
966	1006	965	1006	958	1006	956	1006	958	1006

Sensors, Series SM6

- 6 mm groove
- with cable
- without wire end ferrule, tin-plated, 4-pin
- with distance measuring sensor, measurement range 32 ... 256 mm
- Analog
- Direct mounting for series PRA, PRE, CCI, KPZ, SSI, GPC, CVI
- Indirect mounting for series TRB, ITS, 167, MNI, ICM, TRR



Certificates	cULus
Ambient temperature min./max.	-20 ... 70 °C
Protection class	IP67
Output signal	0 - 10 V DC, 4 - 20 mA
Quiescent current (without load)	25 mA
Maximum load (analog current output)	500 Ω
Residual ripple	≤ 10 %
sampling interval	1 ms
Resolution max. measuring range	0,05 mm
Repetitive precision max. measuring range	0.1 mm
Linearity deviation	0,3 mm
Sampling speed	3 m/s
Display	LED
LED status display	Yellow
Vibration resistance	10 - 55 Hz, 1 mm
Shock resistance	30 g / 11 ms
Cable length L	2 m

Technical data

Part No.	for	Type of contact	Cable length L
R412010141	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	2 m
R412010143	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	2 m
R412010262	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	2 m
R412010264	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	2 m
R412010411	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	2 m
R412010413	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	2 m
R412010415	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	2 m
R412010417	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	2 m

Part No.	max. measuring range	Overall length Sensor A
R412010141	32 mm	45 mm
R412010143	64 mm	77 mm
R412010262	96 mm	109 mm
R412010264	128 mm	141 mm
R412010411	160 mm	173 mm
R412010413	192 mm	205 mm

Part No.	max. measuring range	Overall length Sensor A
R412010415	224 mm	237 mm
R412010417	256 mm	269 mm

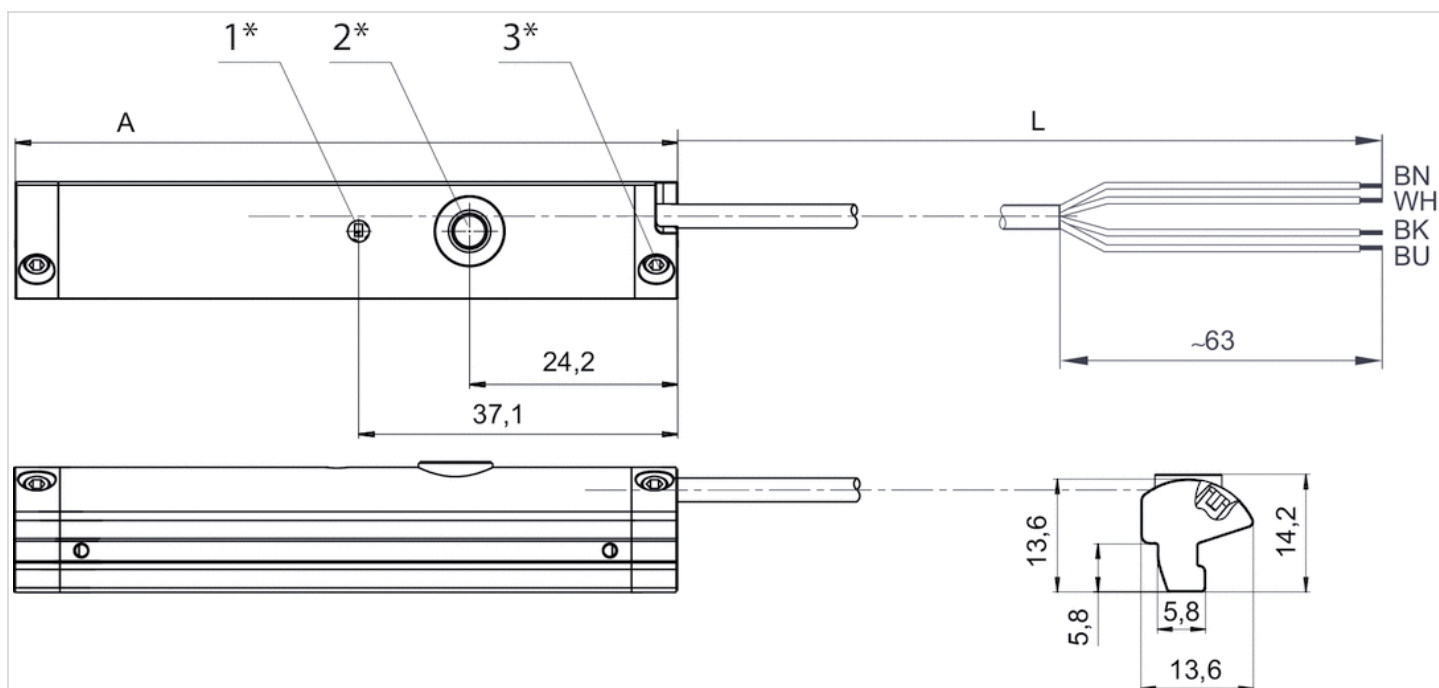
Part No.	Version
R412010141	short circuit resistant Protected against polarity reversal Overload protection
R412010143	short circuit resistant Protected against polarity reversal Overload protection
R412010262	short circuit resistant Protected against polarity reversal Overload protection
R412010264	short circuit resistant Protected against polarity reversal Overload protection
R412010411	short circuit resistant Protected against polarity reversal Overload protection
R412010413	short circuit resistant Protected against polarity reversal Overload protection
R412010415	short circuit resistant Protected against polarity reversal Overload protection
R412010417	short circuit resistant Protected against polarity reversal Overload protection

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

Dimensions

Dimensions



1* = LED 2* = teach button 3* = threaded pin M3x11

L = cable length

(1) BN=brown

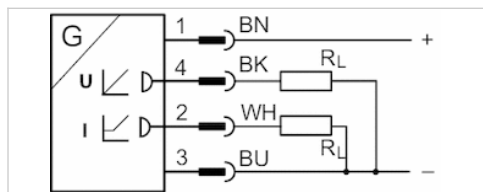
(2) WH=white

(3) BU=blue

(4) BK=black
A = sensor length

Sensors, Series SM6

- 6 mm groove
- with cable
- Plug, M8x1, 4-pin, with knurled screw
- with distance measuring sensor, measurement range 32 ... 256 mm
- Analog
- Direct mounting for series PRA, PRE, CCI, KPZ, SSI, GPC, CVI
- Indirect mounting for series TRB, ITS, 167, MNI, ICM, TRR



Certificates	cULus
Ambient temperature min./max.	-20 ... 70 °C
Protection class	IP67
Output signal	0 - 10 V DC, 4 - 20 mA
Quiescent current (without load)	25 mA
Min./max. DC operating voltage	15 ... 30 V DC
sampling interval	1 ms
Resolution max. measuring range	0,05 mm
Repetitive precision max. measuring range	0.1 mm
Linearity deviation	0,3 mm
Sampling speed	3 m/s
Display	LED
LED status display	Yellow
Vibration resistance	10 - 55 Hz, 1 mm
Shock resistance	30 g / 11 ms
Cable length L	0.3 m

Technical data

Part No.	for	Type of contact	Cable length L
R412010142	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	0.3 m
R412010144	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	0.3 m
R412010263	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	0.3 m
R412010265	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	0.3 m

Part No.	max. measuring range	Overall length Sensor A
R412010142	32 mm	45 mm
R412010144	64 mm	77 mm
R412010263	96 mm	109 mm
R412010265	128 mm	141 mm

Part No.	Version
R412010142	short circuit resistant Protected against polarity reversal Overload protection
R412010144	short circuit resistant Protected against polarity reversal Overload protection
R412010263	short circuit resistant Protected against polarity reversal Overload protection

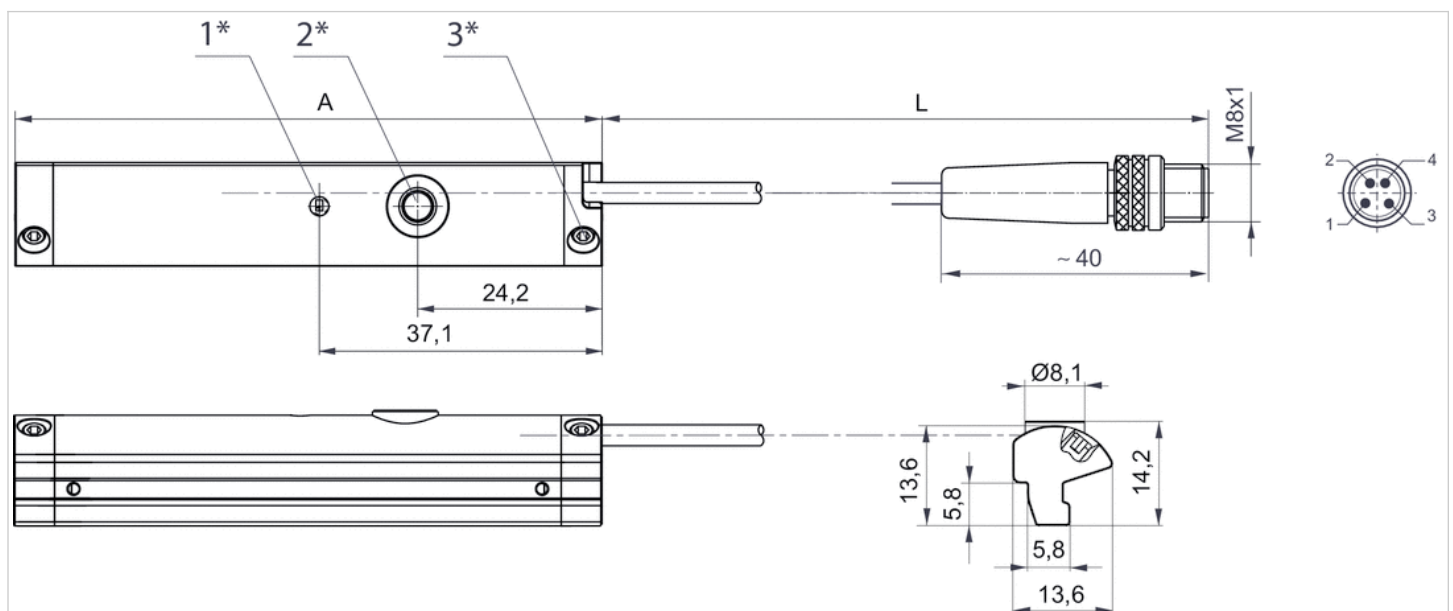
Part No.	Version
R412010265	short circuit resistant Protected against polarity reversal Overload protection

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

Dimensions

Dimensions



1* = LED 2* = teach button 3* = threaded pin M3x11

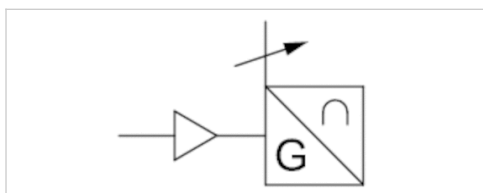
L = cable length

Pin assignment: 1 = (+), 2 = (OUT 1) 3 = (GND), 4 = (OUT 2), EN 60947-5-7

A = sensor length

Sensors, Series SM6-AL

- with cable
- Plug, M8x1, 4-pin
- with distance measuring sensor, measurement range 107 - 1007 mm
- IO-Link
- Analog
- Indirect mounting for series PRA, ITS, RTC, CVI



Certificates	cULus
Ambient temperature min./max.	-20 ... 70 °C
Protection class	IP65, IP67
Output signal	0 - 10 V DC, 4 - 20 mA
Quiescent current (without load)	35 mA
Current signal	4 ... 20 mA
Maximum load (analog current output)	500 Ω
Residual ripple	≤ 10 %
sampling interval	1,15 ms
Resolution max. measuring range	typ. 0,03 % FSR
Repetitive precision max. measuring range	typ. 0,06 % FSR
Linearity deviation	0,5 mm
Sampling speed Partial stroke	1,5 m/s
Sampling speed Full stroke	3 m/s
Display	2 LED
Vibration resistance	10 - 55 Hz, 1 mm
Shock resistance	30 g / 11 ms
Cable length L	0.3 m

Technical data

Part No.	Type of contact	Cable length L	max. measuring range	Overall length Sensor A
R412010880	Analog	0.3 m	107 mm	109 mm
R412010881	Analog	0.3 m	143 mm	145 mm
R412010882	Analog	0.3 m	179 mm	181 mm
R412010883	Analog	0.3 m	215 mm	217 mm
R412010884	Analog	0.3 m	251 mm	253 mm
R412010885	Analog	0.3 m	287 mm	289 mm
R412010886	Analog	0.3 m	323 mm	325 mm
R412010887	Analog	0.3 m	359 mm	361 mm
R412010888	Analog	0.3 m	395 mm	397 mm
R412010889	Analog	0.3 m	431 mm	433 mm
R412010890	Analog	0.3 m	467 mm	469 mm
R412010891	Analog	0.3 m	503 mm	505 mm
R412010892	Analog	0.3 m	539 mm	541 mm
R412010893	Analog	0.3 m	575 mm	577 mm
R412010894	Analog	0.3 m	611 mm	613 mm
R412010895	Analog	0.3 m	647 mm	649 mm
R412010896	Analog	0.3 m	683 mm	685 mm

Part No.	Type of contact	Cable length L	max. measuring range	Overall length Sensor A
R412010897	Analog	0.3 m	719 mm	721 mm
R412010898	Analog	0.3 m	755 mm	757 mm
R412010899	Analog	0.3 m	791 mm	793 mm
R412010900	Analog	0.3 m	827 mm	829 mm
R412010901	Analog	0.3 m	863 mm	865 mm
R412010902	Analog	0.3 m	899 mm	901 mm
R412010903	Analog	0.3 m	935 mm	937 mm
R412010904	Analog	0.3 m	971 mm	973 mm
R412010905	Analog	0.3 m	1007 mm	1009 mm

Part No.	Incl. number of sensor clamp pairs	Current signal
R412010880	2 piece	4 ... 20 mA
R412010881	2 piece	4 ... 20 mA
R412010882	2 piece	4 ... 20 mA
R412010883	2 piece	4 ... 20 mA
R412010884	2 piece	4 ... 20 mA
R412010885	3 piece	4 ... 20 mA
R412010886	3 piece	4 ... 20 mA
R412010887	3 piece	4 ... 20 mA
R412010888	3 piece	4 ... 20 mA
R412010889	3 piece	4 ... 20 mA
R412010890	4 piece	4 ... 20 mA
R412010891	4 piece	4 ... 20 mA
R412010892	4 piece	4 ... 20 mA
R412010893	4 piece	4 ... 20 mA
R412010894	4 piece	4 ... 20 mA
R412010895	4 piece	4 ... 20 mA
R412010896	5 piece	4 ... 20 mA
R412010897	5 piece	4 ... 20 mA
R412010898	5 piece	4 ... 20 mA
R412010899	5 piece	4 ... 20 mA
R412010900	6 piece	4 ... 20 mA
R412010901	6 piece	4 ... 20 mA
R412010902	6 piece	4 ... 20 mA
R412010903	6 piece	4 ... 20 mA
R412010904	6 piece	4 ... 20 mA
R412010905	6 piece	4 ... 20 mA

Part No.	Version
R412010880	short circuit resistant Protected against polarity reversal Overload protection
R412010881	short circuit resistant Protected against polarity reversal Overload protection
R412010882	short circuit resistant Protected against polarity reversal Overload protection
R412010883	short circuit resistant Protected against polarity reversal Overload protection
R412010884	short circuit resistant Protected against polarity reversal Overload protection
R412010885	short circuit resistant Protected against polarity reversal Overload protection

Part No.	Version
R412010886	short circuit resistant Protected against polarity reversal Overload protection
R412010887	short circuit resistant Protected against polarity reversal Overload protection
R412010888	short circuit resistant Protected against polarity reversal Overload protection
R412010889	short circuit resistant Protected against polarity reversal Overload protection
R412010890	short circuit resistant Protected against polarity reversal Overload protection
R412010891	short circuit resistant Protected against polarity reversal Overload protection
R412010892	short circuit resistant Protected against polarity reversal Overload protection
R412010893	short circuit resistant Protected against polarity reversal Overload protection
R412010894	short circuit resistant Protected against polarity reversal Overload protection
R412010895	short circuit resistant Protected against polarity reversal Overload protection
R412010896	short circuit resistant Protected against polarity reversal Overload protection
R412010897	short circuit resistant Protected against polarity reversal Overload protection
R412010898	short circuit resistant Protected against polarity reversal Overload protection
R412010899	short circuit resistant Protected against polarity reversal Overload protection
R412010900	short circuit resistant Protected against polarity reversal Overload protection
R412010901	short circuit resistant Protected against polarity reversal Overload protection
R412010902	short circuit resistant Protected against polarity reversal Overload protection
R412010903	short circuit resistant Protected against polarity reversal Overload protection
R412010904	short circuit resistant Protected against polarity reversal Overload protection
R412010905	short circuit resistant Protected against polarity reversal Overload protection

Technical information

Holders for cylinder series PRA are included in the scope of delivery. For cylinder series ITS, please order the appropriate holders separately.

FSR: Full Scale Range, max. measurement range

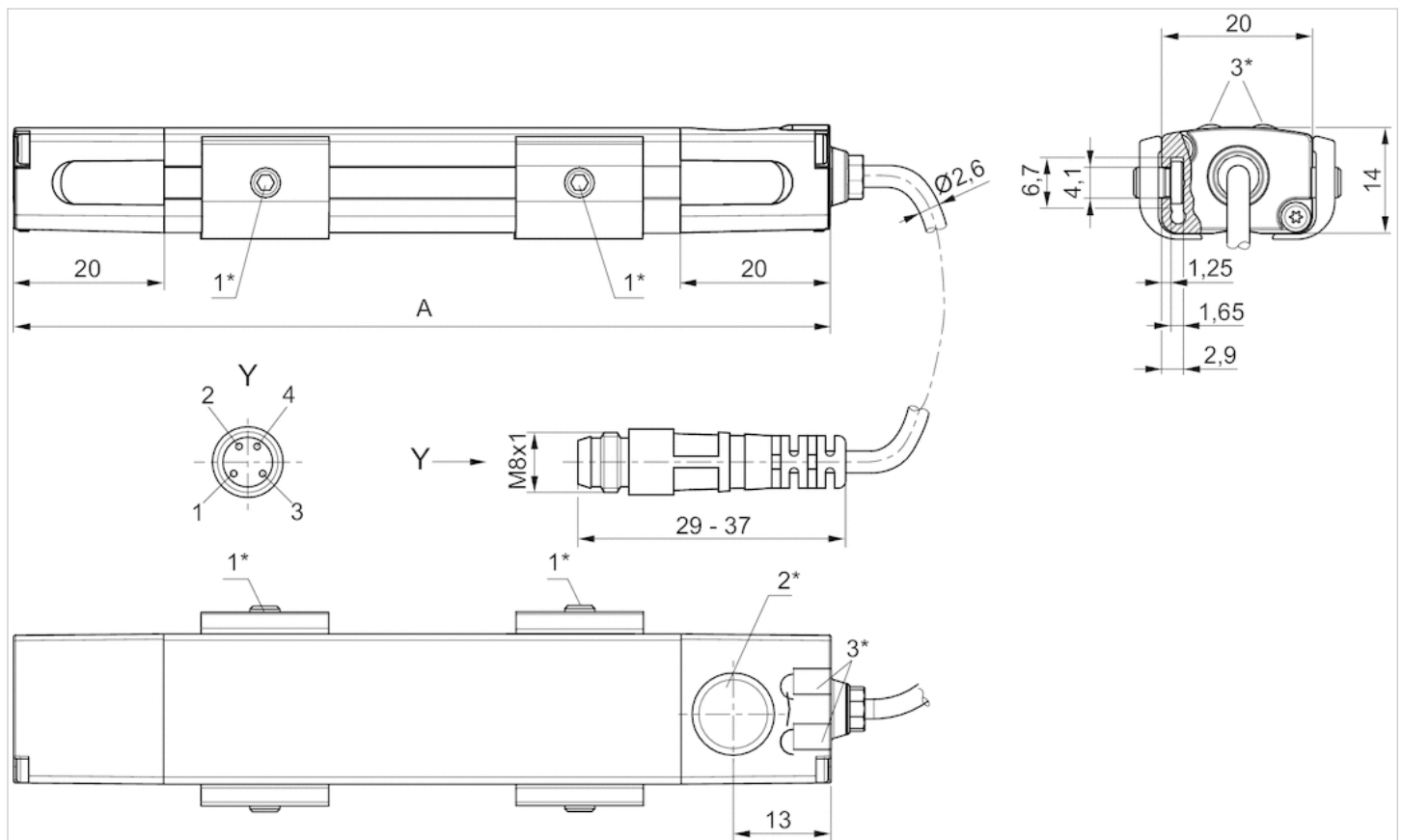
The IO-Link device description (IODD) for the SM6-AL distance measuring sensor is available for download in the Media Centre.

Technical information

Material	
Housing	Aluminum
Cable sheath	Polyurethane
End caps	Polyamide

Dimensions

Dimensions



1* = threaded pin M3x11 2* = teach area 3* = LED

A = sensor length

Pin assignment: 1 = (+), 2 = (OUT 1) 3 = (GND), 4 = (OUT 2/IO-Link), EN 60947-5-7

LED 1: yellow = measuring operation, red = error

LED 2: green = voltage signal, blue = current signal

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