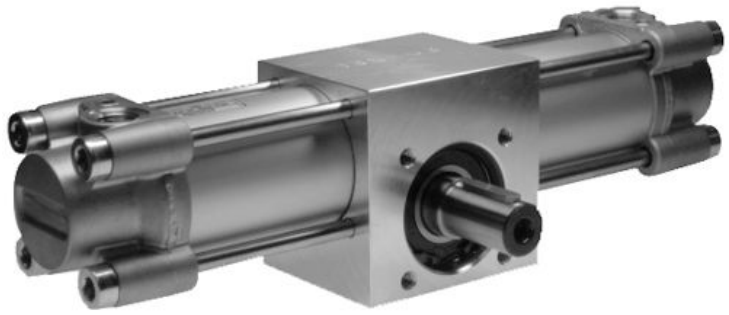
Series TRR



AVENTICS™

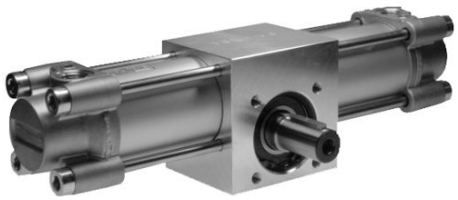
AVENTICS Series TRR Rotary actuators

EMERSON™

Series TRR

The AVENTICS Series TRR is a rotary cylinder based on two ISO cylinders and a rack and pinion gearbox to generate high torques with adjustable angle.

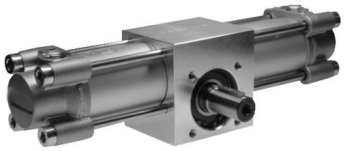
- Torque 5 ... 111 Nm
- Angle of rotation 90 ... 360°
- Double piston with rack
- Adjustable pneumatic cushioning
- Optionally with adjustable angle of rotation

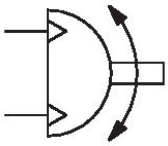


Product overview

Rack-and-pinion gears, Series TRR

: Double piston with rack
: with magnetic piston
: Pneumatic adjustable cushioning
Ambient temperature min./max.: -20 °C ... 80 °C
Medium temperature min./max.: -20 °C ... 80 °C
Working pressure min./max.: 1.5 bar ... 10 bar

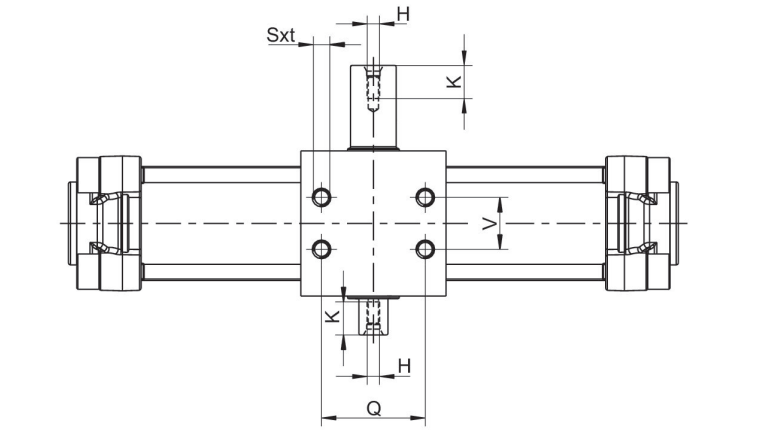


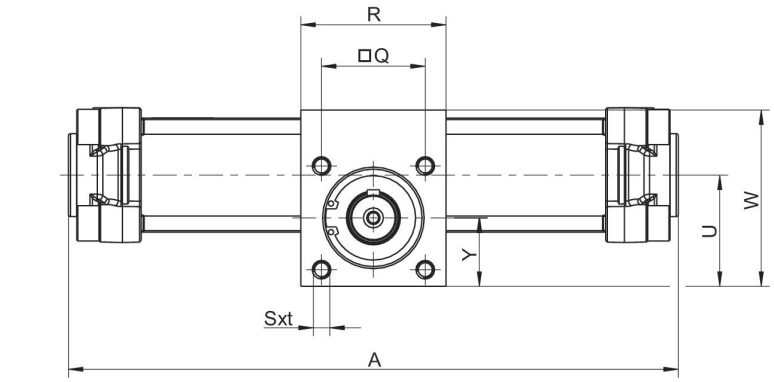


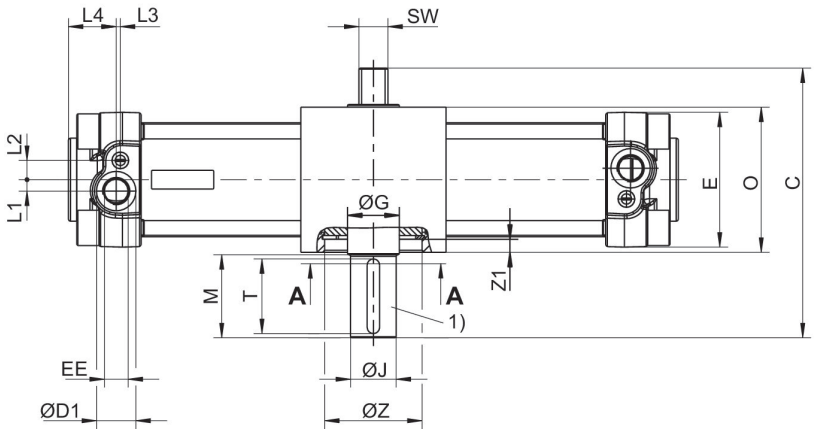
Frame size	Compressed air connection	angle of rotation [°]	Rotation angle tolerance	Rotation angle setting	Tolerance in 0° position not under pressure [°]	Direction of rotation	Max. play (radial) [°]	Part No.
TRR-32	G 1/8	0, 90	0° / +3°		-3.5, 3.5	counterclockwise	2.1	0822930204
TRR-32	G 1/8	0, 180	0° / +3°		-3.5, 3.5	counterclockwise	2.1	0822930205
TRR-32	G 1/8	0, 360	0° / +3°		-3.5, 3.5	counterclockwise	2.1	0822930206
TRR-40	G 1/4	0, 90	0° / +3°		-3, 3	counterclockwise	1.6	0822931204
TRR-40	G 1/4	0, 180	0° / +3°		-3, 3	counterclockwise	1.6	0822931205
TRR-40	G 1/4	0, 360	0° / +3°		-3, 3	counterclockwise	1.6	0822931206
TRR-50	G 1/4	0, 90	0° / +6°		-3, 3	counterclockwise	1.3	0822932204
TRR-50	G 1/4	0, 180	0° / +6°		-3, 3	counterclockwise	1.3	0822932205
TRR-50	G 1/4	0, 360	0° / +6°		-3, 3	counterclockwise	1.3	0822932206
TRR-50	G 1/4	0, 90		-5° / +5°	-3, 3	counterclockwise	1.3	0822932227
TRR-50	G 1/4	0, 180		-5° / +5°	-3, 3	counterclockwise	1.3	0822932228
TRR-50	G 1/4	0, 360		-5° / +5°	-3, 3	counterclockwise	1.3	0822932229
TRR-63	G 3/8	0, 90	0° / +5°		-2, 2	counterclockwise	1	0822933204
TRR-63	G 3/8	0, 180	0° / +5°		-2, 2	counterclockwise	1	0822933205
TRR-63	G 3/8	0, 360	0° / +5°		-2, 2	counterclockwise	1	0822933206

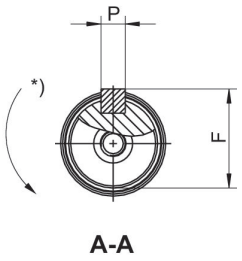
Frame size	Compressed air connection	angle of rotation [°]	Rotation angle tolerance	Rotation angle setting	Tolerance in 0° position not under pressure [°]	Direction of rotation	Max. play (radial) [°]	Part No.
TRR-63	G 3/8	0, 90		-5° / +5°	-2, 2	counterclockwise	1	0822933227
TRR-63	G 3/8	0, 180		-5° / +5°	-2, 2	counterclockwise	1	0822933228
TRR-63	G 3/8	0, 360		-5° / +5°	-2, 2	counterclockwise	1	0822933229
TRR-80	G 3/8	0, 90	0° / +4°		-2, 2	counterclockwise	0.9	0822934204
TRR-80	G 3/8	0, 180	0° / +4°		-2, 2	counterclockwise	0.9	0822934205
TRR-80	G 3/8	0, 360	0° / +4°		-2, 2	counterclockwise	0.9	0822934206
TRR-80	G 3/8	0, 90		-7° / +7°	-2, 2	counterclockwise	0.9	0822934227
TRR-80	G 3/8	0, 180		-7° / +7°	-2, 2	counterclockwise	0.9	0822934228
TRR-80	G 3/8	0, 360		-7° / +7°	-2, 2	counterclockwise	0.9	0822934229
TRR-100	G 1/2	0, 90	0° / +3°		-1.5, 1.5	counterclockwise	0.75	0822935204
TRR-100	G 1/2	0, 180	0° / +3°		-1.5, 1.5	counterclockwise	0.75	0822935205
TRR-100	G 1/2	0, 360	0° / +3°		-1.5, 1.5	counterclockwise	0.75	0822935206
TRR-100	G 1/2	0, 90		-7° / +7°	-1.5, 1.5	counterclockwise	0.75	0822935227
TRR-100	G 1/2	0, 180		-7° / +7°	-1.5, 1.5	counterclockwise	0.75	0822935228
TRR-100	G 1/2	0, 360		-7° / +7°	-1.5, 1.5	counterclockwise	0.75	0822935229

Dimensions









1) Parallel key and slot dimensions according to DIN 6885
* Direction of rotation

Frame size	Ø	C	ØD1	E	EE	F	ØG	H	ØJ k6
TRR-32	32	103.5	15	47	G 1/8	16	17	M5x12,5	14
TRR-40	40	110	19	53	G 1/4	19	20	M5x12,5	17
TRR-50	50	130	19	65	G 1/4	24.5	25	M6x16	22
TRR-63	63	142.5	23	75	G 3/8	28	30	M8x19	25
TRR-80	80	175	23	95	G 3/8	33	35	M8x19	30
TRR-100	100	190	27	115	G 1/2	38	40	M10x22	35

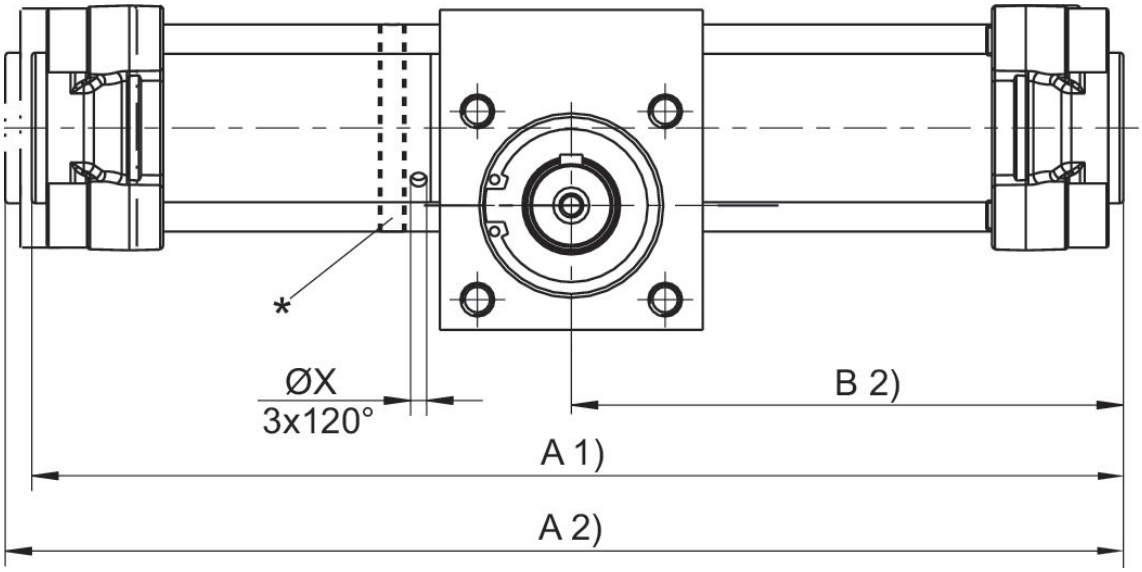
Frame size	L1	L2	L3	L4	M	O	P	Q	R
TRR-32	5	7.5	4.2	20	30	55	5x25	33	63
TRR-40	5.5	9.5	5.2	24	30	60	5x25	40	70
TRR-50	5.5	9.3	2	23	40	70	6x36	50	70
TRR-63	9	11.7	2	28	40	80	8x36	60	80
TRR-80	8	15	2.5	28	50	100	8x45	80	106
TRR-100	12	14	4	29	50	114	10x45	80	125

Frame size	Sxt	SW	U	V	W	Y	ØZ H7	Z1
TRR-32	M6x9	11	40.7	18	63	25	35	4
TRR-40	M6x9	13	43.5	22	70	26.5	42	4.25
TRR-50	M8x12	14	53.5	25	85	33	47	6.25
TRR-63	M8x12	17	65	35	105	40	55	7
TRR-80	M10x15	22	84.5	50	135	53	62	9.5
TRR-100	M10x15	22	91.5	60	150	53	80	16.5

Technical data

Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
Frame size	TRR-32	TRR-40	TRR-50	TRR-63	TRR-80	TRR-100
Stroke/10° angle of rotation	2 mm	2,2 mm	2,6 mm	3,5 mm	3,9 mm	5,2 mm
Theoretical torque	5 Nm	7 Nm	14 Nm	29 Nm	54 Nm	111 Nm
Cushioning angle	61°	69°	65°	49°	56°	45°

Rotation angle setting



* Rotation angle setting via rotation of the setting ring. The nuts of the tie rod must be loosened and tightened with the torque Ma. 0-position: parallel key on top (piston stop on the right).
Tightening torque TRR-50, TRR-63: 9-10 Nm Tightening torque TRR-80, TRR-100: 18-20 Nm
1) Min.
2) Max.

Adjustable angle of rotation

Frame size	Ø	A 1) 90°	A 1) 180°	A 1) 360°	A 2) 90°	A 2) 180°	A 2) 360°	B 2) 90°	B 2) 180°
TRR-50	50	292	339	434	299	345	440	150	173
TRR-63	63	337	400	525	344	407	533	173	204
TRR-80	80	388	458	600	399	470	611	200	235
TRR-100	100	440	533	722	451	544	733	226	273

Frame size	B 2) 360°	ØX
TRR-50	220	4.2
TRR-63	267	4.2
TRR-80	306	4.2
TRR-100	366	4.2

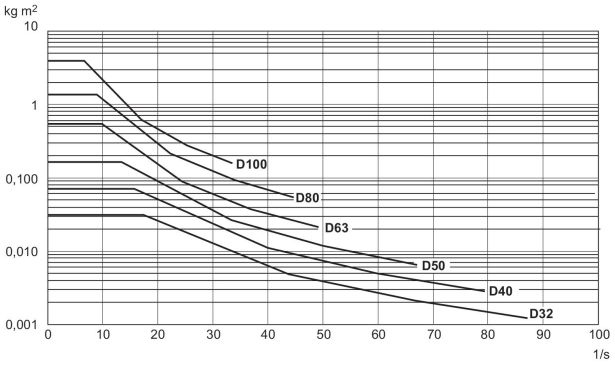
1) Min.
2) Max.

Non-adjustable angle of rotation

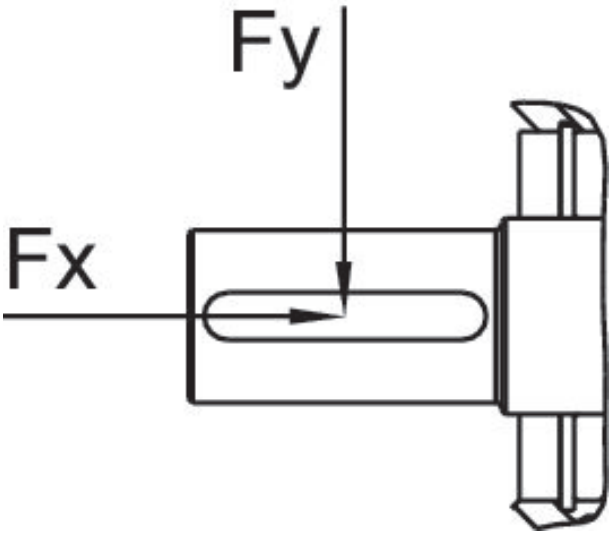
Frame size	Ø	A 2) 90°	A 2) 180°	A 2) 360°	B 2) 90°	B 2) 180°	B 2) 360°	ØX
TRR-32	32	251	285	357	126	143	179	–
TRR-40	40	265	304	383	133	152	192	–
TRR-50	50	295	342	436	148	171	218	–
TRR-63	63	338	401	527	169	200	264	–
TRR-80	80	390	460	602	195	230	301	–
TRR-100	100	440	536	724	220	268	362	–

2) Max.

Permissible mass moment of inertia (kg m²) depending on size and angular velocity (per second)



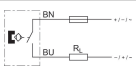
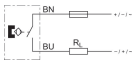
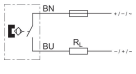
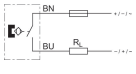
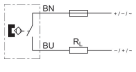
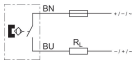
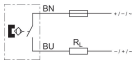
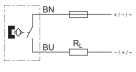
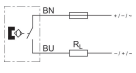
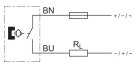
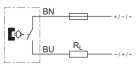
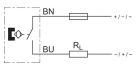
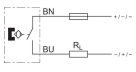
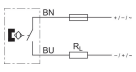
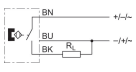
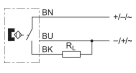
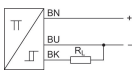
Max. permissible axial Fx [N] and radial Fy [N] transverse force on the drive pin

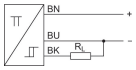
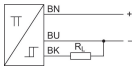
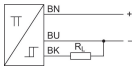


Frame size	Ø	Fx [N]	Fy [N]
TRR-32	32	400	630
TRR-40	40	600	1000
TRR-50	50	800	1150
TRR-63	63	1000	1500
TRR-80	80	1200	1800
TRR-100	100	2500	3500

Sensor, Series SN2, open cable ends

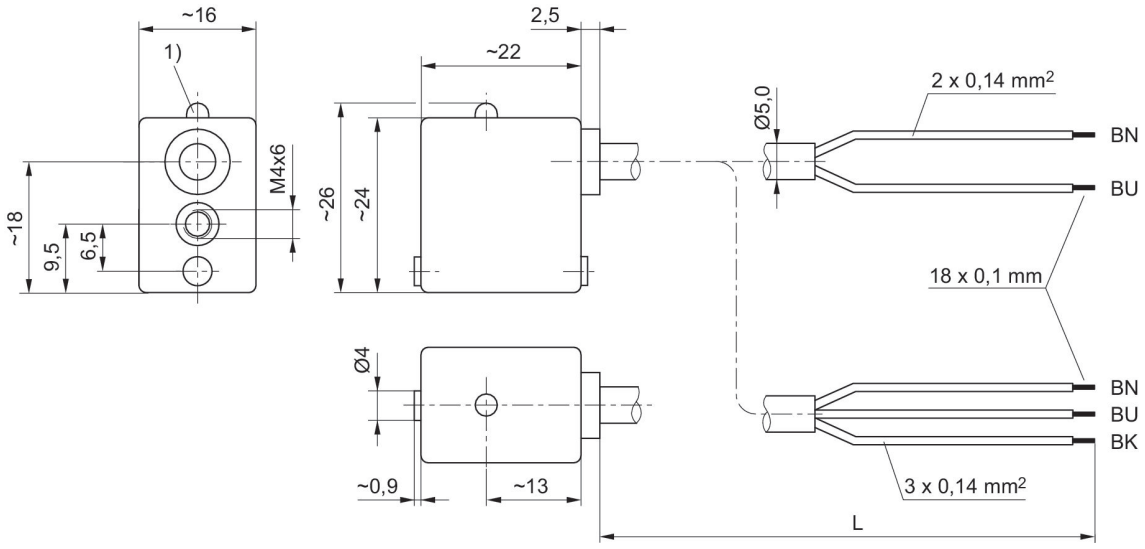
: with cable
Indirect mounting for series: TRB PRA ITS MNI CSL-RD ICM RPC TRR FLT CVI

	Switch descr.	Protective resistor for reed	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Min. operating voltage AC [V AC]	Max. operational voltage AC [V AC]	Max. DC switching current [A]	Part No.
	Reed	27 Ω	0	60	0	240	0.13	0830100315
	Reed	27 Ω	12	60	12	240	0.13	0830100365
	Reed	1,3 Ω	12	60	12	240	0.3	0830100368
	Reed	1,3 Ω	12	60	12	240	0.3	0830100370
	Reed	1,3 Ω	0	60	0	240	0.13	0830100316
	Reed	100 Ω	0	60	0	240	0.13	0830100373
	Reed	27 Ω	12	60	12	240	0.13	0830100367
	Reed	27 Ω	12	60	12	240	0.12	0830100317
	Reed	27 Ω	12	60	12	240	0.13	0830100366
	Reed	1,3 Ω	12	60	12	240	0.3	0830100369
	Reed	1,3 Ω	12	60	12	240	0.3	0830100327
	Reed	27 Ω	12	60	12	240	0.13	0830100325
	Reed	27 Ω	12	60	12	240	0.12	0830100326
	Reed	27 Ω	12	60	12	240	0.13	R412004848
	Reed	27 Ω	12	42	12	42	0.13	0830100371
	Reed	27 Ω	12	42	12	42	0.13	0830100372
	electronic PNP		10	30	10	30	0.13	0830100375

	Switch descr.	Protective resistor for reed	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Min. operating voltage AC [V AC]	Max. operational voltage AC [V AC]	Max. DC switching current [A]	Part No.
	electronic PNP	27 Ω	10	30			0.12	0830100378
	electronic PNP		10	30	10	30	0.13	0830100377
	electronic PNP		10	30	10	30	0.13	0830100376

Max. AC switching current [A]	Switching capacity	Voltage drop U at Imax	Electrical connection number of poles	Cable length L [m]	Cable sheath	Part No.
0.13	10 W / 10 VA	Rs*Imax.	2-pin	3	Polyvinyl chloride	0830100315
0.13	10 W / 10 VA	2,1 V + I*Rs	2-pin	3	Polyvinyl chloride	0830100365
0.5	10 W / 10 VA	2,1 V + I*Rs	2-pin	3	Polyvinyl chloride	0830100368
0.5	10 W / 10 VA	2,1 V + I*Rs	2-pin	3	Polyurethane	0830100370
	10 W / 10 VA	Rs*Imax.	2-pin	3		0830100316
	10 W / 10 VA	Rs*Imax.	2-pin	3		0830100373
0.13	10 W / 10 VA	2,1 V + I*Rs	2-pin	3	Polyurethane	0830100367
0.12	10 W / 10 VA	2,1 V + I*Rs	2-pin	3	Thermoplastic elastomer	0830100317
0.13	10 W / 10 VA	2,1 V + I*Rs	2-pin	5	Polyvinyl chloride	0830100366
0.5	10 W / 10 VA	2,1 V + I*Rs	2-pin	5	Polyvinyl chloride	0830100369
0.5	10 W / 10 VA	2,1 V + I*Rs	2-pin	7	Polyvinyl chloride	0830100327
0.13	10 W / 10 VA	2,1 V + I*Rs	2-pin	10	Polyvinyl chloride	0830100325
0.12	10 W / 10 VA	2,1 V + I*Rs	2-pin	11	Thermoplastic elastomer	0830100326
0.13	10 W / 10 VA	2,1 V + I*Rs	2-pin	20	Polyvinyl chloride	R412004848
0.13	5,5 W / 5,5 VA	I*Rs	2-pin	3	Polyvinyl chloride	0830100371
0.13	5,5 W / 5,5 VA	I*Rs	2-pin	5	Polyvinyl chloride	0830100372
		≤ 2,0 V	3-pin	3	Polyvinyl chloride	0830100375
	10 W / 10 VA	2,1 V + I*Rs	3-pin	3	Thermoplastic elastomer	0830100378
		≤ 2,0 V	3-pin	3	Polyurethane	0830100377
		≤ 2,0 V	3-pin	5	Polyvinyl chloride	0830100376

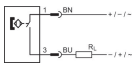
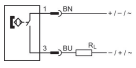
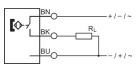
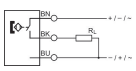
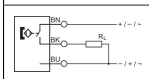
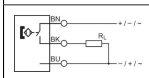
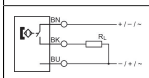
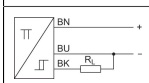
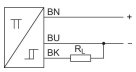
Dimensions



1) LED
L = cable length BN = brown, BK = black, BU = blue

Sensor, Series SN2, Plug M8

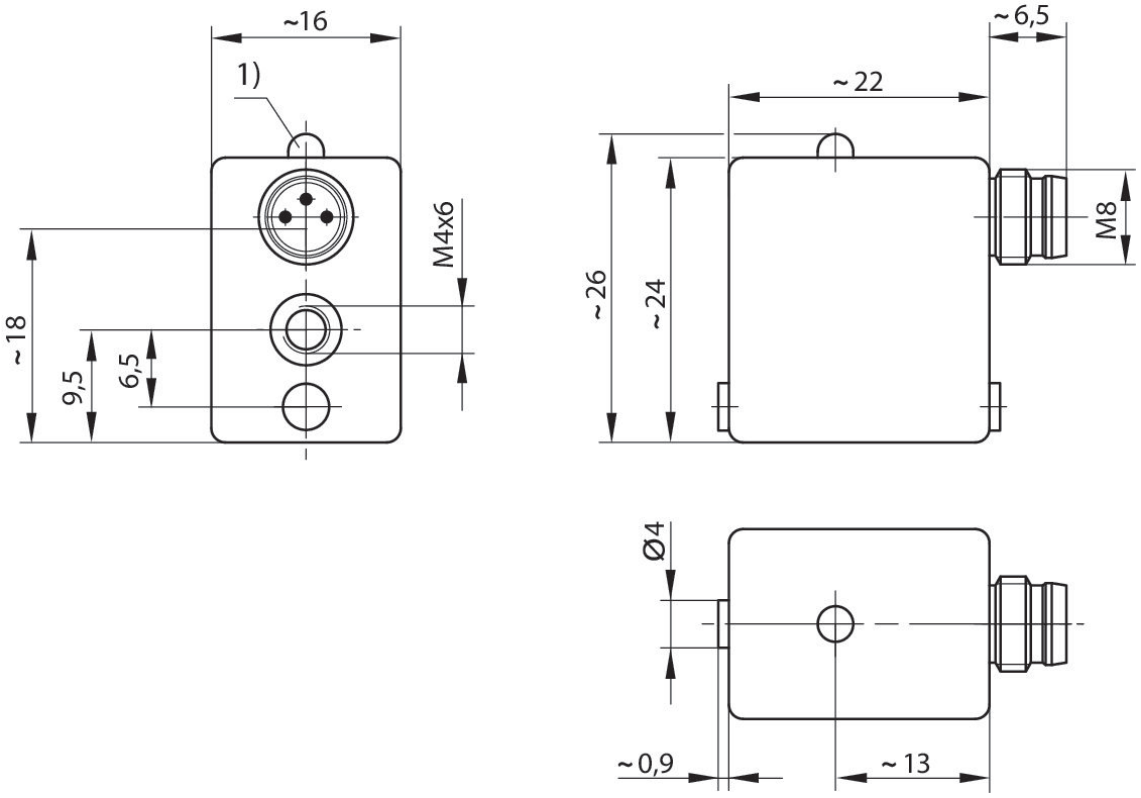
Indirect mounting for series: TRB PRA ITS MNI CSL-RD ICM RPC TRR FLT CVI

	Switch descr.	Protective resistor for reed	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Min. operating voltage AC [V AC]	Max. operational voltage AC [V AC]	Max. DC switching current [A]	Part No.
	Reed	27 Ω	12	36	12	30	0.13	0830100465
	Reed	1,3 Ω	12	36	12	30	0.3	0830100468
	Reed	27 Ω	12	36	12	30	0.13	R412004299
	Reed	100 Ω	12	36	12	30	0.13	0830100466
	Reed	27 Ω	12	36	12	30	0.13	0830100469
	Reed	27 Ω	12	36	12	30	0.13	R412004820
	Reed		12	36	12	30	0.2	0830100472
	electronic PNP		10	30	12	30	0.13	0830100480
	electronic PNP		10	30			0.13	R412004800

Max. AC switching current [A]	Switching capacity	Voltage drop U at Imax	Electrical connection number of poles	Part No.
0.13	10 W / 10 VA	2,1 V + I*Rs	2-pin	0830100465
0.5	10 W / 10 VA	2,1 V + I*Rs	2-pin	0830100468
0.13	10 W / 10 VA	2,1 V + I*Rs	3-pin	R412004299
0.13	10 W / 10 VA	2,1 V + I*Rs	2-pin	0830100466
0.13	5,5 W / 5,5 VA	≤ 0,5 V	3-pin	0830100469
0.13	10 W / 10 VA	I*Rs	3-pin	R412004820
0.13	5 W / 5 VA	≤ 1,5 V	3-pin	0830100472

Max. AC switching current [A]	Switching capacity	Voltage drop U at Imax	Electrical connection number of poles	Part No.
		≤ 2,0 V	3-pin	0830100480
		≤ 2,0 V	3-pin	R412004800

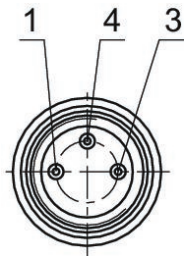
Dimensions



1) LED
M8: combination plug can be combined with valve plug connectors Ø6.5 mm and M8.

0830100465, 0830100468, R412004299, 0830100466, 0830100469, R412004820, 0830100472, 0830100480, R412004800

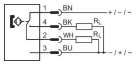
Pin assignment M8x1 (3-pin)



Pin	Allocation
1	(+)
3	(-)
4	(OUT)

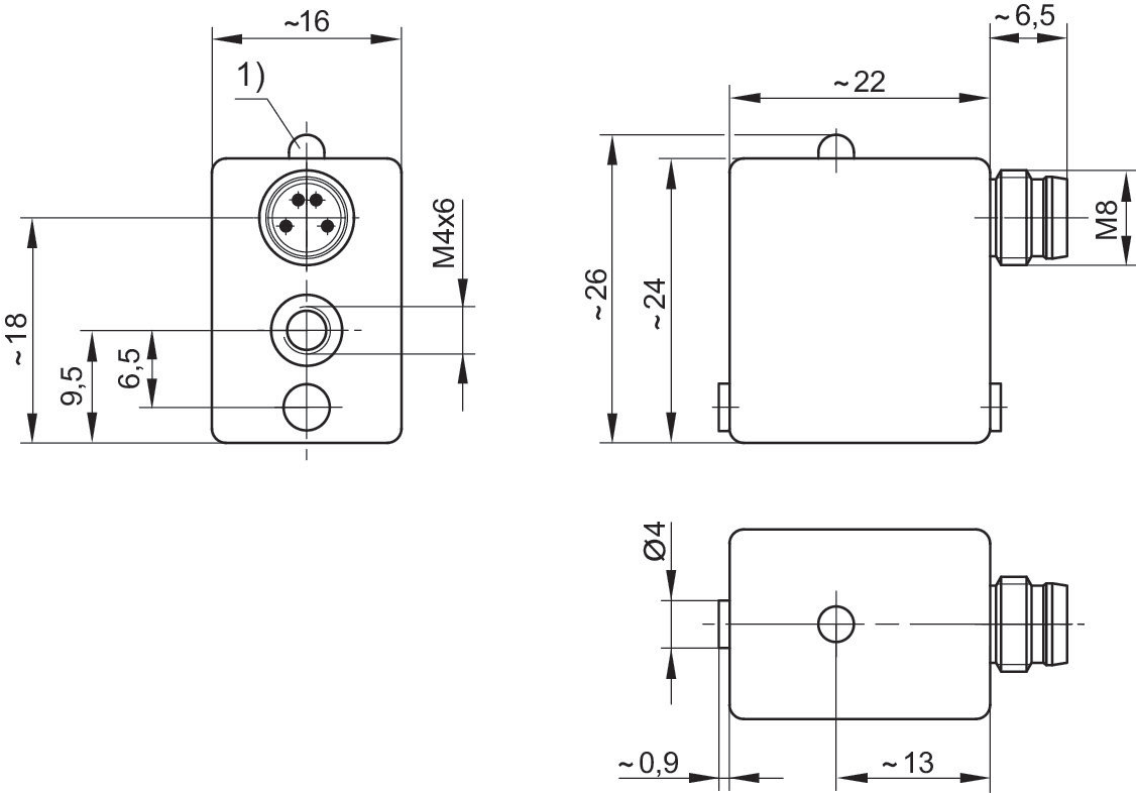
Sensor, Series SN2, Plug M8, 4-pin

Indirect mounting for series: TRB PRA ITS MNI CSL-RD ICM RPC TRR FLT CVI

	Switch descr.	Protective resistor for reed	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Min. operating voltage AC [V AC]	Max. operational voltage AC [V AC]	Max. DC switching current [A]	Part No.
	Reed	27 Ω	12	36	12	30	0.13	0830100467

Max. AC switching current [A]	Switching capacity	Voltage drop U at Imax	Electrical connection number of poles	Part No.
0.13	10 W / 10 VA	≤ 3,5 V	4-pin	0830100467

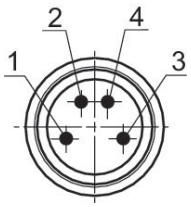
Dimensions



1) LED
M8: combination plug can be combined with valve plug connectors Ø6.5 mm and M8.

0830100467

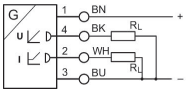
Pin assignment M8x1 (4-pin)



Pin	Allocation
1	(+)
3	(-)
4	(OUT)

Sensors, Series SM6, with cable, without wire end ferrule, tin-plated

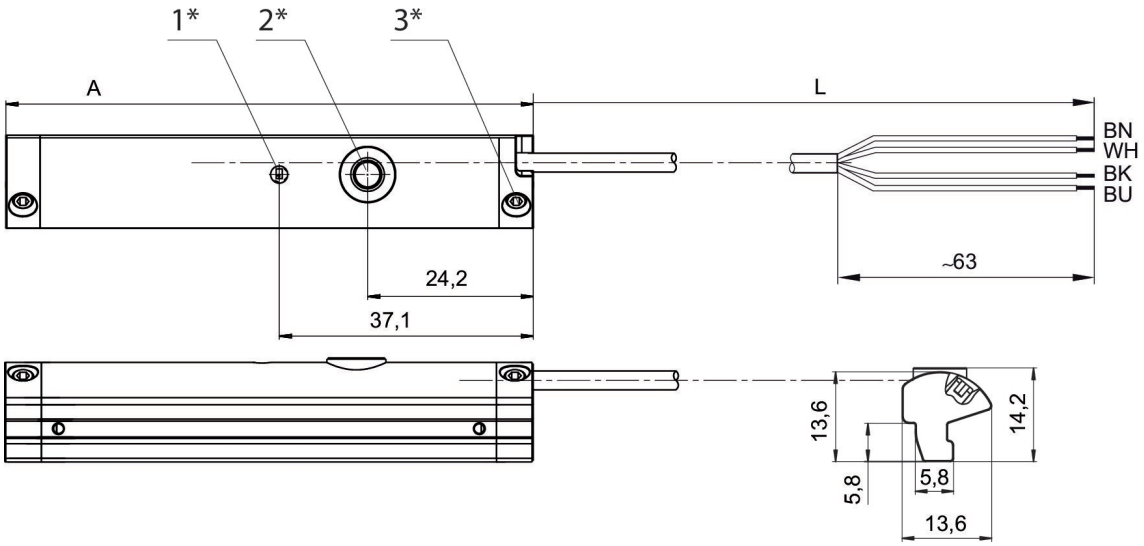
: with cable
Certificates: cULus
Direct mounting for series: PRA PRE CCI KPZ SSI GPC CVI
Indirect mounting for series: TRB ITS 167 MNI ICM TRR
Ambient temperature min./max.: -20 °C ... 70 °C



Direct mounting for series	Switch descr.	Cable length L [m]	max. measuring range [mm]	Overall length Sensor [mm]	Version	Part No.
PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	2	32	45	short circuit resistant, Protected against polarity reversal, Overload protection	R412010141
PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	2	64	77	short circuit resistant, Protected against polarity reversal, Overload protection	R412010143
PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	2	96	109	short circuit resistant, Protected against polarity reversal, Overload protection	R412010262
PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	2	128	141	short circuit resistant, Protected against polarity reversal, Overload protection	R412010264
PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	2	160	173	short circuit resistant, Protected against polarity reversal, Overload protection	R412010411
PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	2	192	205	short circuit resistant, Protected against polarity reversal, Overload protection	R412010413
PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	2	224	237	short circuit resistant, Protected against polarity reversal, Overload protection	R412010415
PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	2	256	269	short circuit resistant, Protected against polarity rever-	R412010417

Direct mounting for series	Switch descr.	Cable length L [m]	max. measuring range [mm]	Overall length Sensor [mm]	Version	Part No.
					sal, Overload protection	

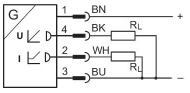
Dimensions



1* = LED 2* = teach button 3* = threaded pin M3x11
L = cable length
(2) WH=white
A = sensor length

Sensors, Series SM6, with cable, plug M8x1

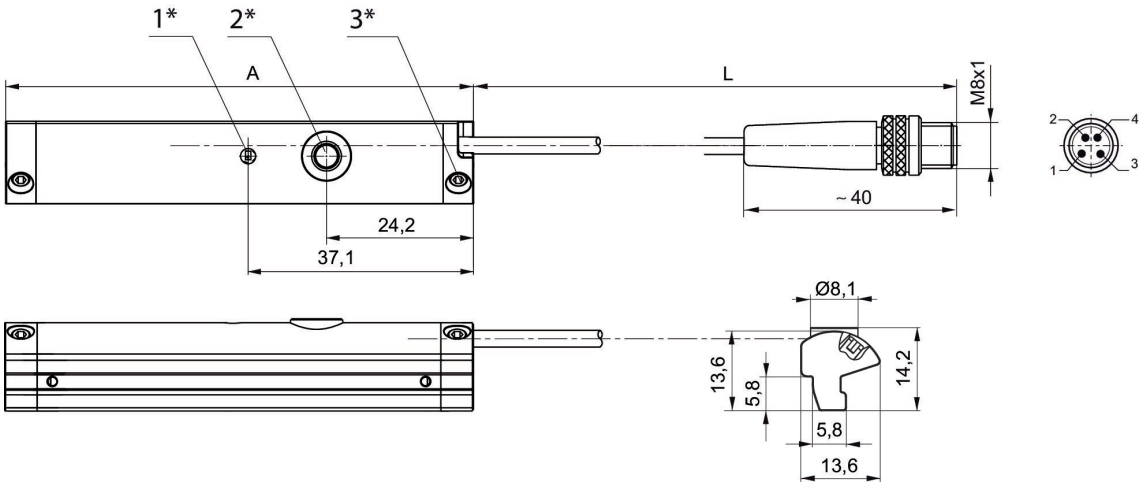
: with cable
Certificates: cULus
Direct mounting for series: PRA PRE CCI KPZ SSI GPC CVI
Indirect mounting for series: TRB ITS 167 MNI ICM TRR
Ambient temperature min./max.: -20 °C ... 70 °C



Direct mounting for series	Switch descr.	Cable length L [m]	max. measuring range [mm]	Overall length Sensor [mm]	Version	Part No.
PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	0.3	32	45	short circuit resistant, Protected against polarity reversal, Overload protection	R412010142
PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	0.3	64	77	Protected against polarity reversal, Protected against polarity reversal, Overload protection	R412010144
PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	0.3	96	109	Protected against polarity reversal, Protected against polarity reversal, Overload protection	R412010263
PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	0.3	128	141	Protected against polarity reversal, Protected against polarity reversal, Overload protection	R412010265
PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	0.3	160	173	Protected against polarity reversal, Protected against polarity reversal, Overload protection	R412010410
PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	0.3	192	205	Protected against polarity reversal, Protected against polarity reversal, Overload protection	R412010412
PRA, PRE, CCI, KPZ,	Analog	0.3	224	237	Protected against po-	R412010414

Direct mounting for series	Switch descr.	Cable length L [m]	max. measuring range [mm]	Overall length Sensor [mm]	Version	Part No.
SSI, GPC, CVI					larity reversal, Protected against polarity reversal, Overload protection	
PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	0.3	256	269	Protected against polarity reversal, Protected against polarity reversal, Overload protection	R412010416

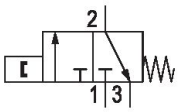
Dimensions



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

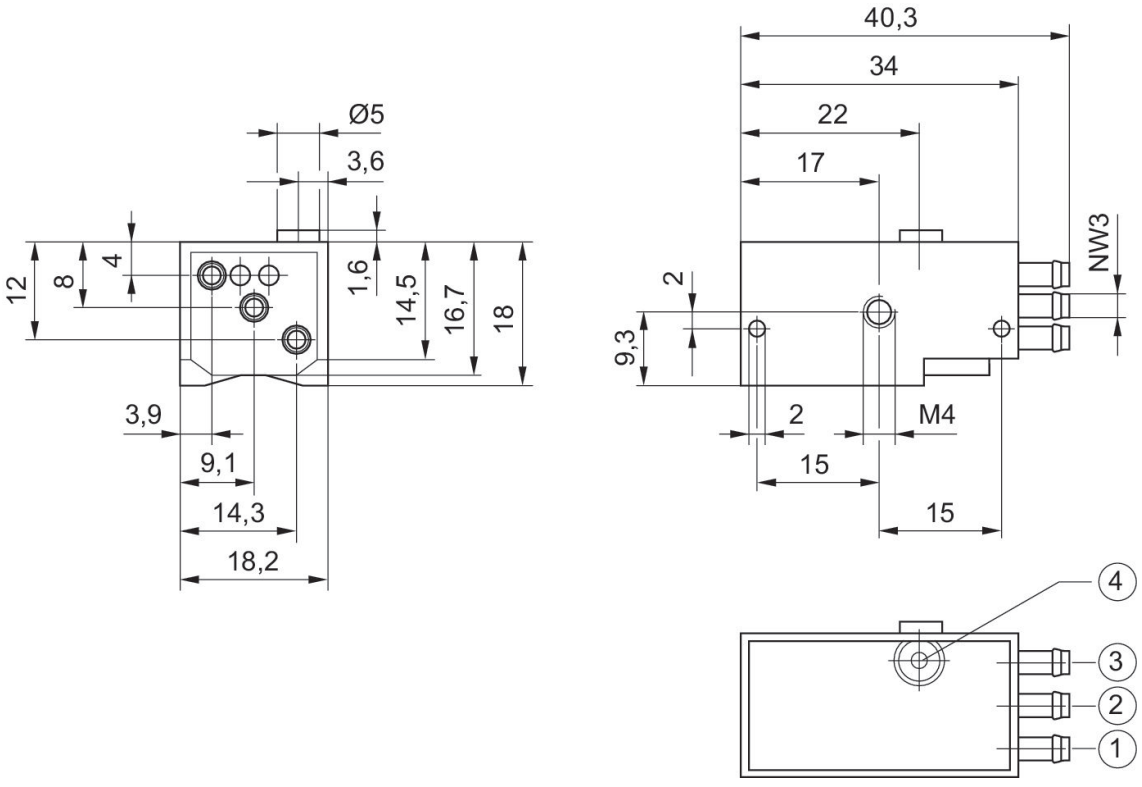
Pneumatic sensor, Series SP1

Flow Qn: 40 l/min
Indirect mounting for series: TRB MNI TRR
Ambient temperature min./max.: -15 °C ... 60 °C
Min. working pressure: 2 bar ... 6 bar



Switching time on [ms]	Switching time off [ms]	Switching point precision	Part No.
12	25	±0,2 mT	0820212201

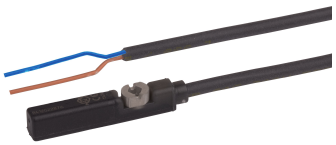
Dimensions

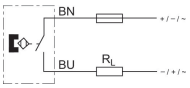


1) compressed air connection 2) output line 3) exhaust 4) visual indicator

Sensors, Series ST6, open cable ends, 2-pin, Reed

: 6 mm T-slot
: with cable
Direct mounting for series: PRA CCI KPZ SSI GPC CVI
Indirect mounting for series: TRB ITS 167 C12P CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR
Certificates: CE declaration of conformity cULus RoHS UL (Underwriters Laboratories)
Ambient temperature min./max.: -30 °C ... 80 °C

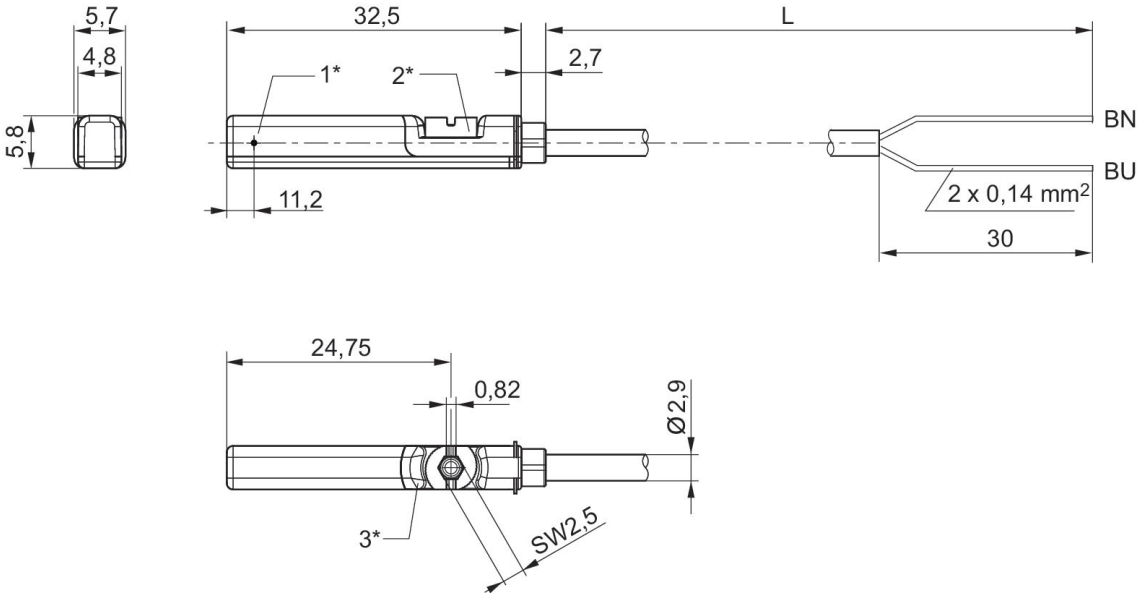




Switch descr.	Cable sheath	Number of poles	Max. DC switching current [A]	Max. AC switching current [A]	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Min. operating voltage AC [V AC]	Part No.
Reed	Polyurethane	2-pin	0.13	0.13	10	230	10	R412022866
Reed	Polyurethane	2-pin	0.13	0.13	10	230	10	R412027170

Max. operational voltage AC [V AC]	Version	Cable length L [m]	Part No.
230	Protected against polarity reversal	3	R412022866
230	Protected against polarity reversal	5	R412027170

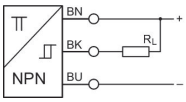
Dimensions



1* = switching point 2* = locking screw 3* = LED window, transparent
L = cable length BN=brown, BU=blue

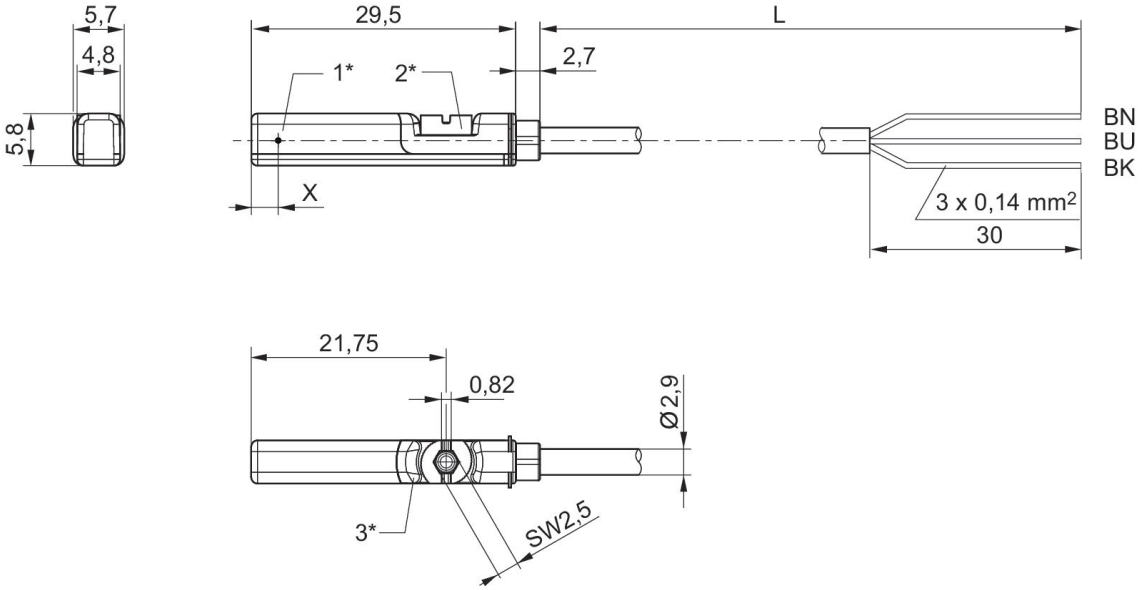
Sensors, Series ST6, open cable ends, 3-pin, NPN

: 6 mm T-slot
: with cable
Direct mounting for series: PRA PRE CCI KPZ SSI GPC CVI
Indirect mounting for series: TRB ITS CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR
Certificates: CE declaration of conformity cULus RoHS UL (Underwriters Laboratories)
Ambient temperature min./max.: -30 °C ... 80 °C



Switch descr.	Cable sheath	Number of poles	Max. DC switching current [A]	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Version	Cable length L [m]	Part No.
NPN	Polyurethane	3-pin	0.13	10	30	short circuit resistant, Protected against polarity reversal	3	R412022849
NPN	Polyurethane	3-pin	0.13	10	30	short circuit resistant, Protected against polarity reversal	5	R412022850

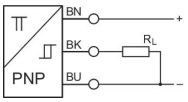
Dimensions



1* = switching point 2* = locking screw 3* = LED window, transparent
L = cable length BN = brown, BK = black, BU = blue
X = electronic: 11.6 mm

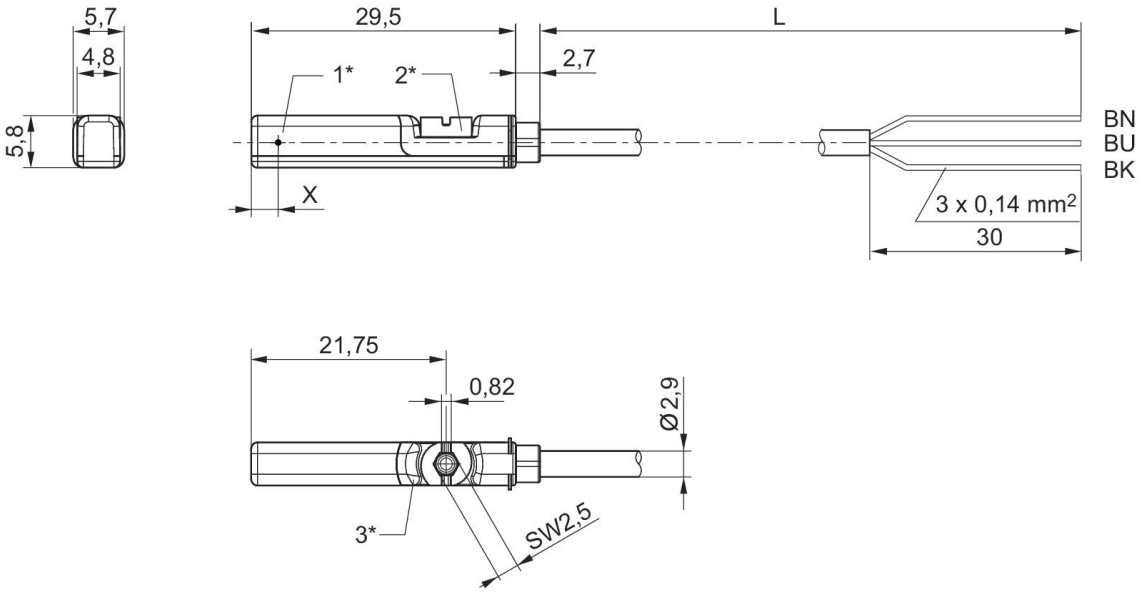
Sensors, Series ST6, open cable ends, 3-pin, PNP

: 6 mm T-slot
: with cable
Direct mounting for series: PRA PRE CCI KPZ SSI GPC CVI
Indirect mounting for series: TRB ITS CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR
Certificates: CE declaration of conformity cULus RoHS UL (Underwriters Laboratories)
Ambient temperature min./max.: -30 °C ... 80 °C



Switch descr.	Cable sheath	Number of poles	Max. DC switching current [A]	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Version	Cable length L [m]	Part No.
electronic PNP	Polyurethane	3-pin	0.13	10	30	short circuit resistant, Protected against polarity reversal	3	R412022853
electronic PNP	Polyurethane	3-pin	0.13	10	30	short circuit resistant, Protected against polarity reversal	5	R412022855
electronic PNP	Polyurethane	3-pin	0.13	10	30	short circuit resistant, Protected against polarity reversal	10	R412022857

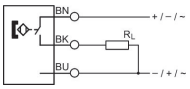
Dimensions



1* = switching point 2* = locking screw 3* = LED window, transparent
L = cable length BN = brown, BK = black, BU = blue
X = electronic: 11.6 mm

Sensors, Series ST6, open cable ends, 3-pin, Reed

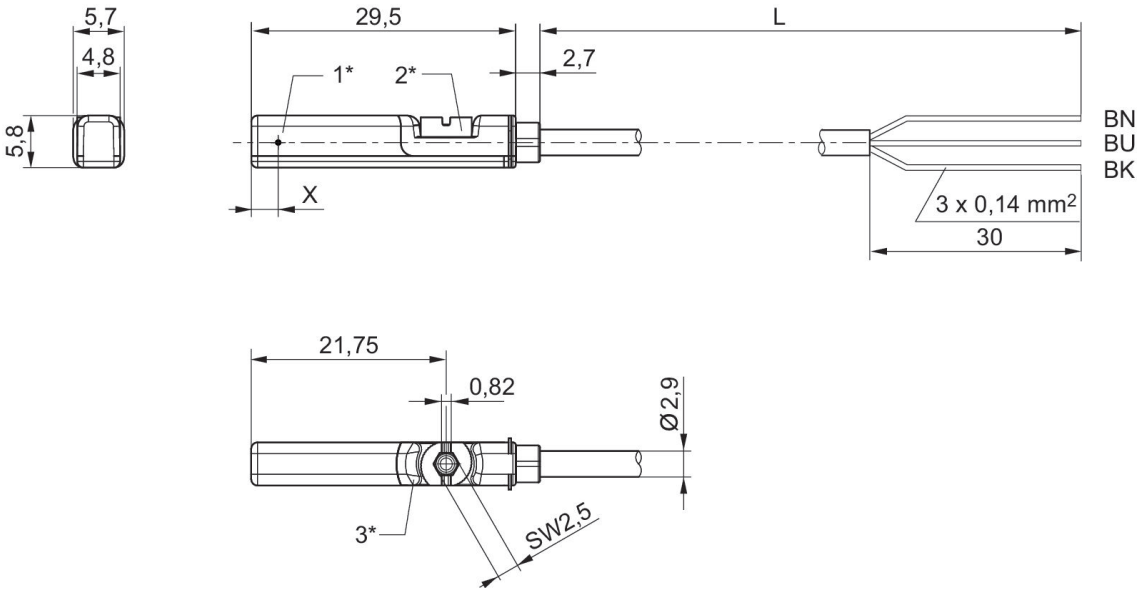
: 6 mm T-slot
: with cable
Direct mounting for series: PRA PRE CCI KPZ SSI GPC CVI
Indirect mounting for series: TRB ITS CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR
Certificates: CE declaration of conformity cULus RoHS UL (Underwriters Laboratories)
Ambient temperature min./max.: -30 °C ... 80 °C



Switch descr.	Cable sheath	Number of poles	Max. DC switching current [A]	Max. AC switching current [A]	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Min. operating voltage AC [V AC]	Part No.
Reed	Polyurethane	3-pin	0.3	0.5	10	30	10	R412022869
Reed	Polyurethane	3-pin	0.3	0.5	10	30	10	R412022870
Reed	Polyurethane	3-pin	0.3	0.5	10	30	10	R412022871

Max. operational voltage AC [V AC]	Version	Cable length L [m]	Part No.
30	Protected against polarity reversal	3	R412022869
30	Protected against polarity reversal	5	R412022870
30	Protected against polarity reversal	10	R412022871

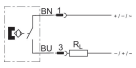
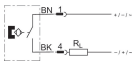
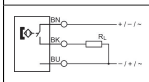
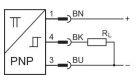
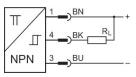
Dimensions



1* = switching point 2* = locking screw 3* = LED window, transparent
L = cable length BN = brown, BK = black, BU = blue
X = electronic: 11.6 mm

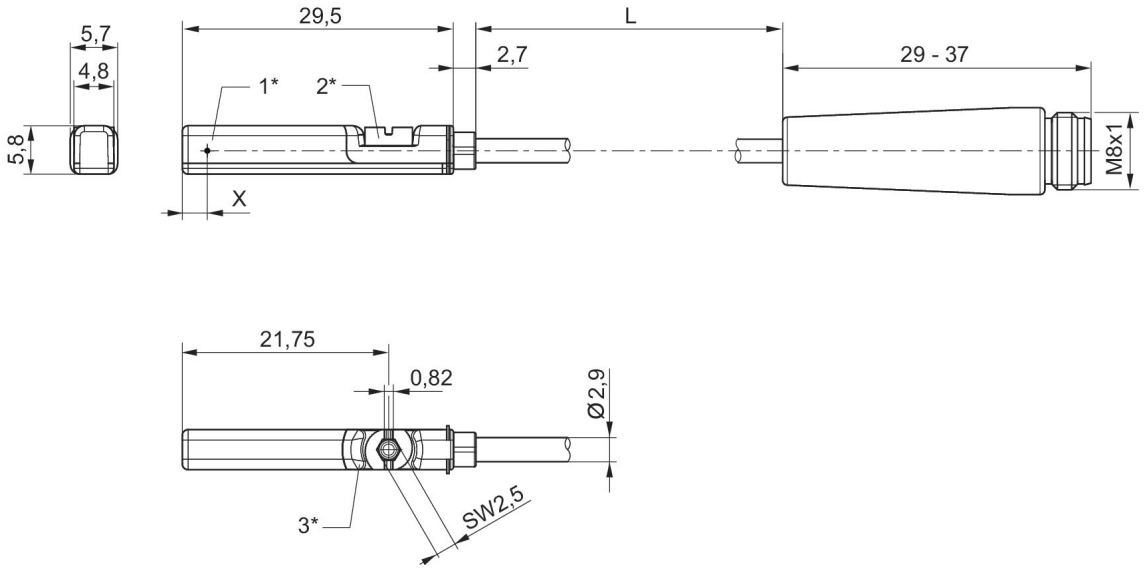
Sensors, Series ST6, plug M8

: 6 mm T-slot
: with cable
Direct mounting for series: PRA PRE CCI KPZ SSI GPC CVI
Indirect mounting for series: TRB ITS CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR
Certificates: CE declaration of conformity cULus RoHS UL (Underwriters Laboratories)
Ambient temperature min./max.: -30 °C ... 80 °C

	Switch descr.	Cable sheath	Electrical interface 2	Number of poles	Max. DC switching current [A]	Max. AC switching current [A]	Min. operating voltage DC [V DC]	Part No.
	Reed	Polyurethane	M8x1	3-pin	0.13	0.13	10	R412022868
	Reed	Polyurethane	M8x1	2-pin	0.13	0.13	10	R412027172
	Reed	Polyurethane	M8x1	3-pin	0.3	0.5	10	R412022872
	electronic PNP	Polyurethane	M8x1	3-pin	0.13		10	R412022858
	NPN	Polyurethane	M8x1	3-pin	0.13		10	R412022851

Max. operating voltage DC [V DC]	Min. operating voltage AC [V AC]	Max. operational voltage AC [V AC]	Version	Cable length L [m]	Part No.
30	10	30	Protected against polarity reversal	0.3	R412022868
30	10	30	Protected against polarity reversal	0.3	R412027172
30	10	30	Protected against polarity reversal	0.3	R412022872
30			short circuit resistant, Protected against polarity reversal	0.3	R412022858
30			short circuit resistant, Protected against polarity reversal	0.3	R412022851

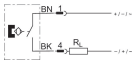
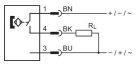
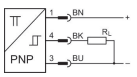
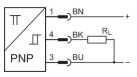
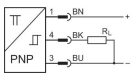
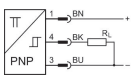
Dimensions



1* = switching point 2* = locking screw 3* = LED window, transparent
L = cable length
X = electronic: 11,6 mm, Reed: 8,3 mm

Sensors, Series ST6, plug M12x1

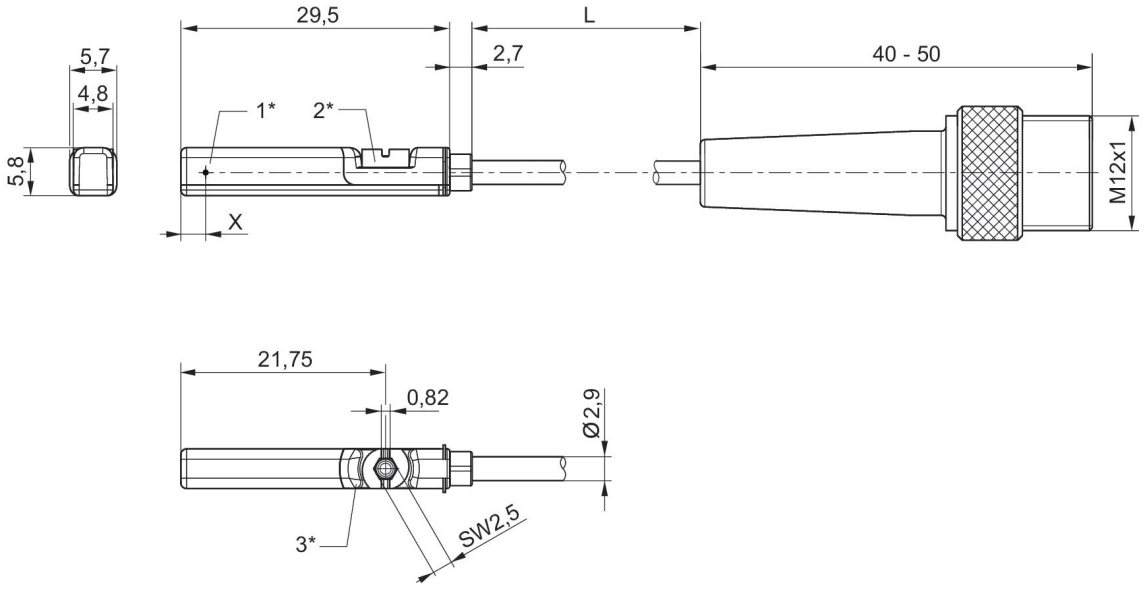
: 6 mm T-slot
: with cable
Direct mounting for series: PRA PRE CCI KPZ SSI GPC CVI
Indirect mounting for series: TRB ITS CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR
Certificates: CE declaration of conformity cULus RoHS UL (Underwriters Laboratories)
Ambient temperature min./max.: -30 °C ... 80 °C

	Switch descr.	Cable sheath	Electrical interface 2	Number of poles	Max. DC switching current [A]	Max. AC switching current [A]	Min. operating voltage DC [V DC]	Part No.
	Reed	Polyurethane	M12x1	2-pin	0.13	0.13	10	R412027171
	Reed	Polyurethane	M12x1	3-pin	0.3	0.5	10	R412022876
	electronic PNP	Polyurethane	M12x1	3-pin	0.13		10	R412022879
	electronic PNP	Polyurethane	M12x1	3-pin	0.13		10	R412022863
	electronic PNP	Polyurethane	M12x1	3-pin	0.13		10	R412022877
	electronic PNP	Polyurethane	M12x1	3-pin	0.13		10	R412022878

Max. operating voltage DC [V DC]	Min. operating voltage AC [V AC]	Max. operational voltage AC [V AC]	Version	Cable length L [m]	Part No.
30	10	30	Protected against polarity reversal	0.3	R412027171
30	10	30	Protected against polarity reversal	0.3	R412022876
30			short circuit resistant, Protected against polarity reversal	0.1	R412022879
30			short circuit resistant, Protected against polarity reversal	0.3	R412022863
30			short circuit resistant, Protected against	3	R412022877

Max. operating voltage DC [V DC]	Min. operating voltage AC [V AC]	Max. operational voltage AC [V AC]	Version	Cable length L [m]	Part No.
			polarity reversal		
30			short circuit resistant, Protected against polarity reversal	5	R412022878

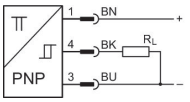
Dimensions



1* = switching point 2* = locking screw 3* = LED window, transparent
L = cable length
X = PNP: 11,6 mm, reed: 8,3 mm

Sensors, Series ST6, plug M12x1, with knurled screw, ATEX

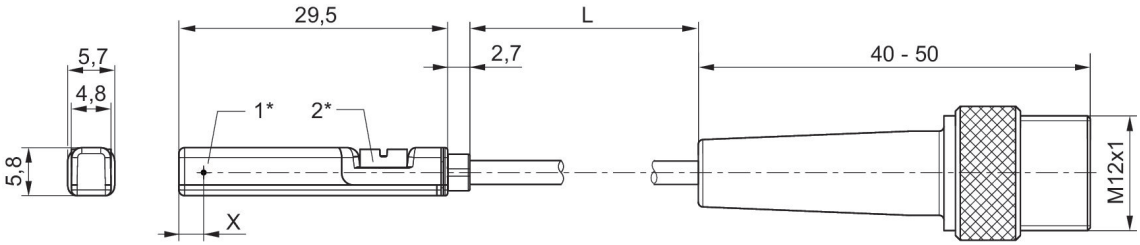
: 6 mm T-slot
: with cable
Direct mounting for series: PRA PRE CCI KPZ SSI GPC CVI
Indirect mounting for series: TRB ITS CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR
Certificates: ATEX CE declaration of conformity cULus RoHS UL (Underwriters Laboratories)
Ambient temperature min./max.: -20 °C ... 50 °C

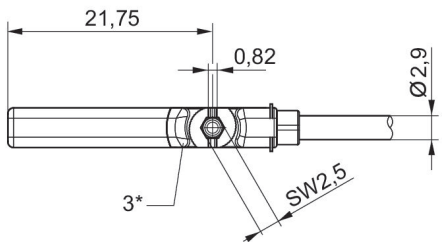


Switch descr.	Cable sheath	Electrical interface 2	Number of poles	Max. DC switching current [A]	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Version	Part No.
PNP	Polyurethane	M12x1	3-pin	0.1	10	30	short circuit resistant, Protected against polarity reversal	R412022864

Cable length L [m]	Part No.
0.3	R412022864

Dimensions

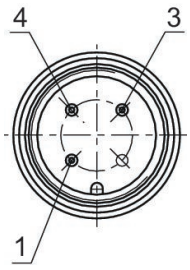




1* = switching point 2* = locking screw 3* = LED window, transparent
L = cable length
X = PNP: 11,6 mm, reed: 8,3 mm

R412022864

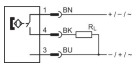
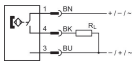
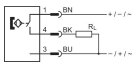
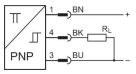
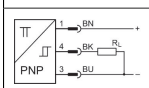
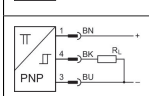
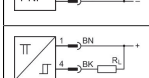
Pin assignments



Pin	Allocation
1	(+)
3	(-)
4	(OUT)

Sensors, Series ST6, plug M8x1, with knurled screw

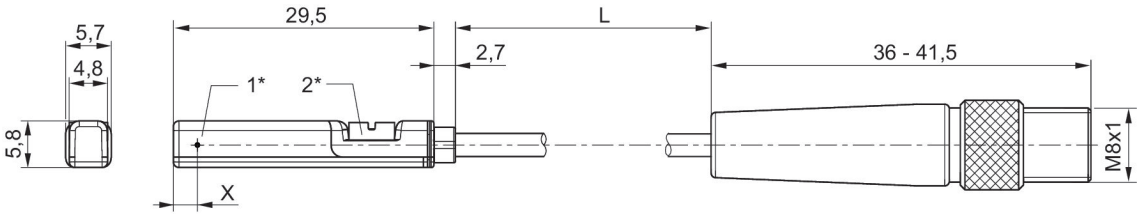
: 6 mm T-slot
: with cable
Direct mounting for series: PRA PRE CCI KPZ SSI GPC CVI
Indirect mounting for series: TRB ITS CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR
Certificates: CE declaration of conformity cULus RoHS UL (Underwriters Laboratories)
Ambient temperature min./max.: -30 °C ... 80 °C

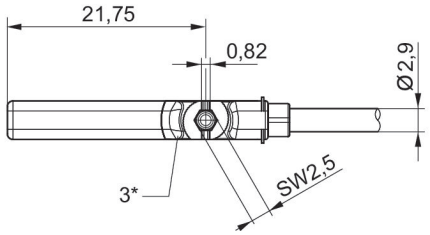
	Switch descr.	Cable sheath	Electrical interface 2	Number of poles	Max. DC switching current [A]	Max. AC switching current [A]	Min. operating voltage DC [V DC]	Part No.
	Reed	Polyurethane	M8x1	3-pin	0.3	0.5	10	R412022873
	Reed	Polyvinyl chloride	M8x1	3-pin	0.3	0.5	10	R412022875
	Reed	Polyurethane	M8x1	3-pin	0.3	0.5	10	R412022874
	electronic PNP	Polyurethane	M8x1	3-pin	0.13		10	R412022859
	electronic PNP	Polyvinyl chloride	M8x1	3-pin	0.13		10	R412022862
	electronic PNP	Polyurethane	M8x1	3-pin	0.13		10	R412022861
	NPN	Polyurethane	M8x1	3-pin	0.13		10	R412022852

Max. operating voltage DC [V DC]	Min. operating voltage AC [V AC]	Max. operational voltage AC [V AC]	Version	Cable length L [m]	Part No.
30	10	30	Protected against polarity reversal	0.3	R412022873
30	10	30	Protected against polarity reversal	0.3	R412022875
30	10	30	Protected against polarity reversal	0.5	R412022874
30			short circuit resistant, Protected against polarity reversal	0.3	R412022859

Max. operating voltage DC [V DC]	Min. operating voltage AC [V AC]	Max. operational voltage AC [V AC]	Version	Cable length L [m]	Part No.
30			short circuit resistant, Protected against polarity reversal	0.3	R412022862
30			short circuit resistant, Protected against polarity reversal	0.5	R412022861
30			short circuit resistant, Protected against polarity reversal	0.3	R412022852

Dimensions

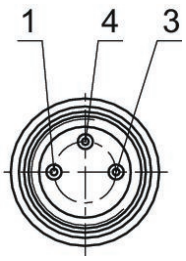




1* = switching point 2* = locking screw 3* = LED window, transparent
L = cable length
X = electronic: 11,6 mm, Reed: 8,3 mm

R412022873, R412022875, R412022874, R412022859, R412022862, R412022861, R412022852

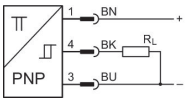
Pin assignment M8x1 (3-pin)



Pin	Allocation
1	(+)
3	(-)
4	(OUT)

Sensors, Series ST6, plug M8x1, ATEX

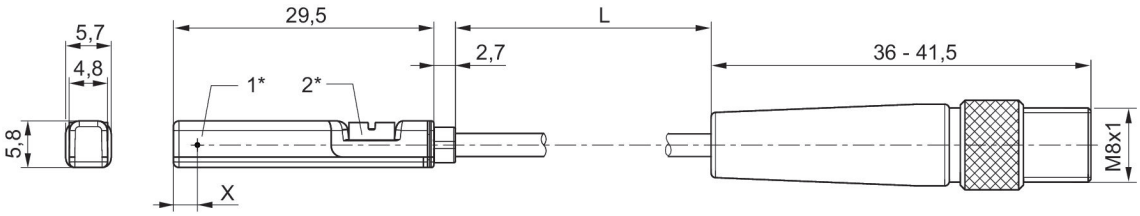
: 6 mm T-slot
: with cable
Direct mounting for series: PRA PRE CCI KPZ SSI GPC CVI
Indirect mounting for series: TRB ITS CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR
Certificates: ATEX CE declaration of conformity cULus RoHS UL (Underwriters Laboratories)
Ambient temperature min./max.: -20 °C ... 50 °C

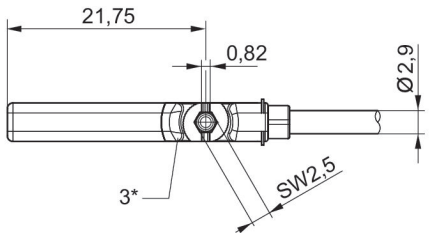


Switch descr.	Cable sheath	Electrical interface 2	Number of poles	Max. DC switching current [A]	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Version	Part No.
PNP	Polyurethane	M8x1	3-pin	0.1	10	30	short circuit resistant, Protected against polarity reversal	R412022860

Cable length L [m]	Part No.
0.3	R412022860

Dimensions

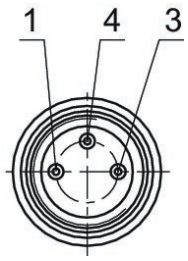




1* = switching point 2* = locking screw 3* = LED window, transparent
L = cable length
X = electronic: 11,6 mm, Reed: 8,3 mm

R412022860

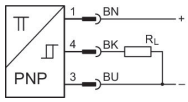
Pin assignment M8x1 (3-pin)



Pin	Allocation
1	(+)
3	(-)
4	(OUT)

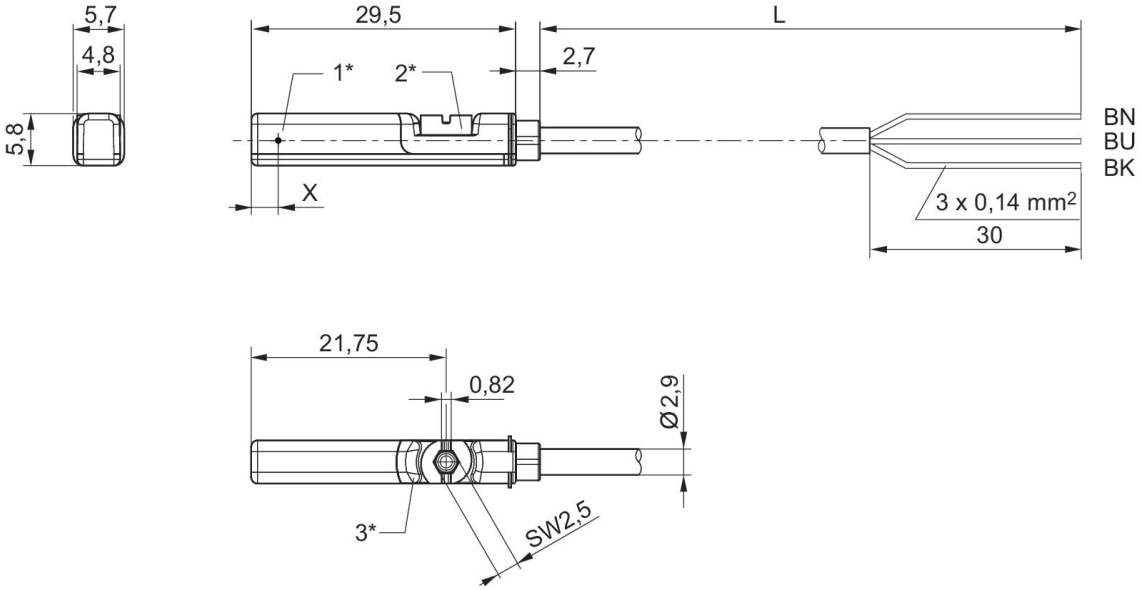
Sensors, Series ST6, open cable ends, 3-pin, PNP, ATEX

: 6 mm T-slot
: with cable
Direct mounting for series: PRA PRE CCI KPZ SSI GPC CVI
Indirect mounting for series: TRB ITS CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR
Certificates: ATEX CE declaration of conformity cULus RoHS UL (Underwriters Laboratories)
Ambient temperature min./max.: -20 °C ... 50 °C



Switch descr.	Cable sheath	Number of poles	Max. DC switching current [A]	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Version	Cable length L [m]	Part No.
PNP	Polyurethane	3-pin	0.1	10	30	short circuit resistant, Protected against polarity reversal	3	R412022854
PNP	Polyurethane	3-pin	0.1	10	30	short circuit resistant, Protected against polarity reversal	5	R412022856

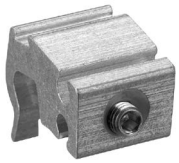
Dimensions



1* = switching point 2* = locking screw 3* = LED window, transparent
L = cable length BN = brown, BK = black, BU = blue
X = electronic: 11.6 mm

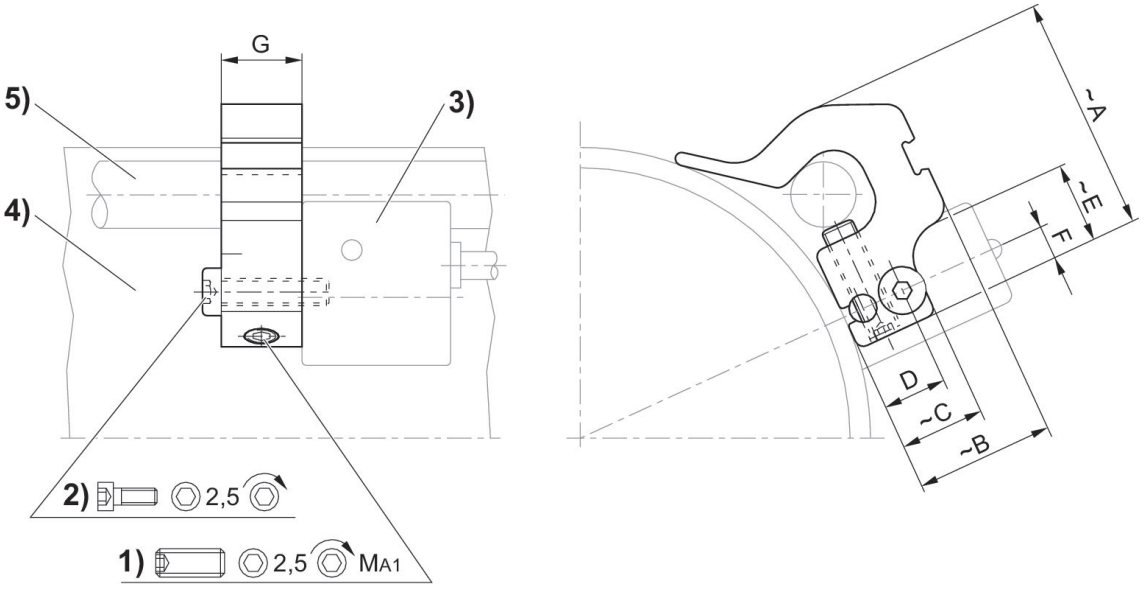
Sensor mounting, Series CB1

To mount on series: SN1 SN2
To mount on series: TRB TRR



Min. cylinder Ø [mm]	Max. cylinder Ø [mm]	Material	Part No.
32	40	Aluminum	1827020081
50	63	Aluminum	1827020082
80	100	Aluminum	1827020083

Dimensions



1) Clamping threaded pin 2) Mounting screw for sensor 3) Sensor 4) Cylinder profile 5) Tie rod

Part No.	Cylinders Ø mm	A	B	C	D	E	F	G	Clamping threaded pin
1827020081	32 - 40 mm	25.3	12.5	12.5	9.5	–	5	16	M5x16
1827020082	50 - 63 mm	28.7	15.6	12.5	9.5	12	5	12	M5x16
1827020083	80 - 100 mm	33.8	23	12.5	9.5	12	5	12	M5x16

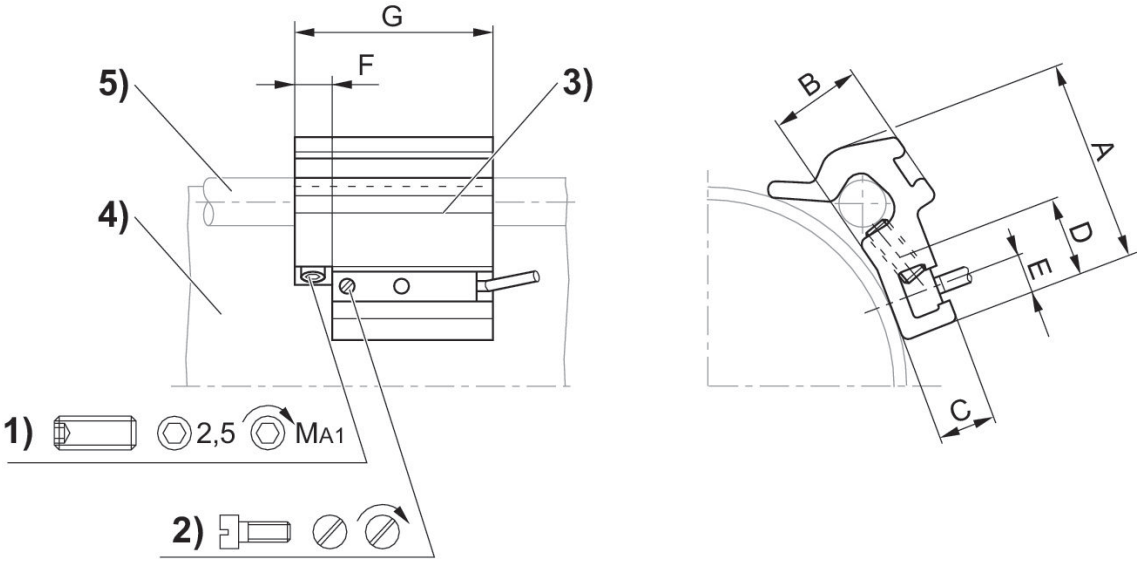
Part No.	MA1 [Nm]
1827020081	1 +0,3
1827020082	1 +0,3
1827020083	1 +0,3

Sensor mounting, Series CB1

To mount on series: ST6 SM6
To mount on series: TRB C12P 167 CVI TRR 523

Min. cylinder Ø [mm]	Max. cylinder Ø [mm]	Material	Part No.
32	40	Aluminum	1827020282
50	63	Aluminum	1827020283
80	100	Aluminum	1827020284

Dimensions



1) Clamping threaded pin 2) Mounting screw for sensor 3) Sensor 4) Cylinder profile 5) Tie rod

Part No.	Cylinders Ø	A	B	C	D	E	F	G	Clamping threaded pin
1827020282	32 - 40 mm	26	10	7	14	5	8	40	M5x8
1827020283	50 - 63 mm	32.5	15.5	7	14	5	8	40	M5x10
1827020284	80 - 100 mm	43	17	6.9	14	5	8	40	M5x16

Part No.	MA1 [Nm]
1827020282	2 ±0,2
1827020283	2 ±0,2
1827020284	2 ±0,2

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