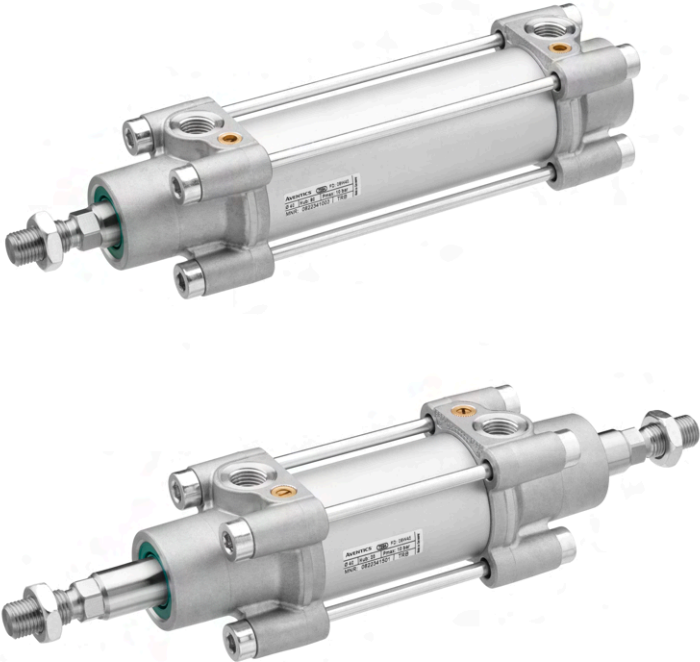


series TRB



AVENTICS™

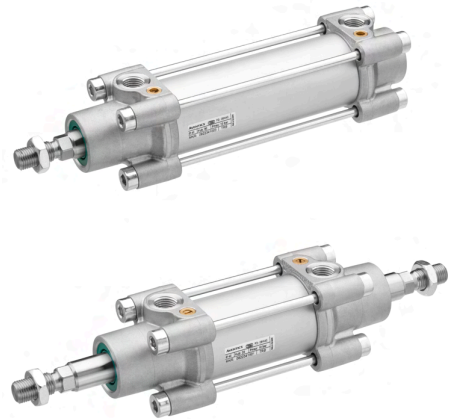
AVENTICS Series TRB Tie rod cylinders (ISO 15552)

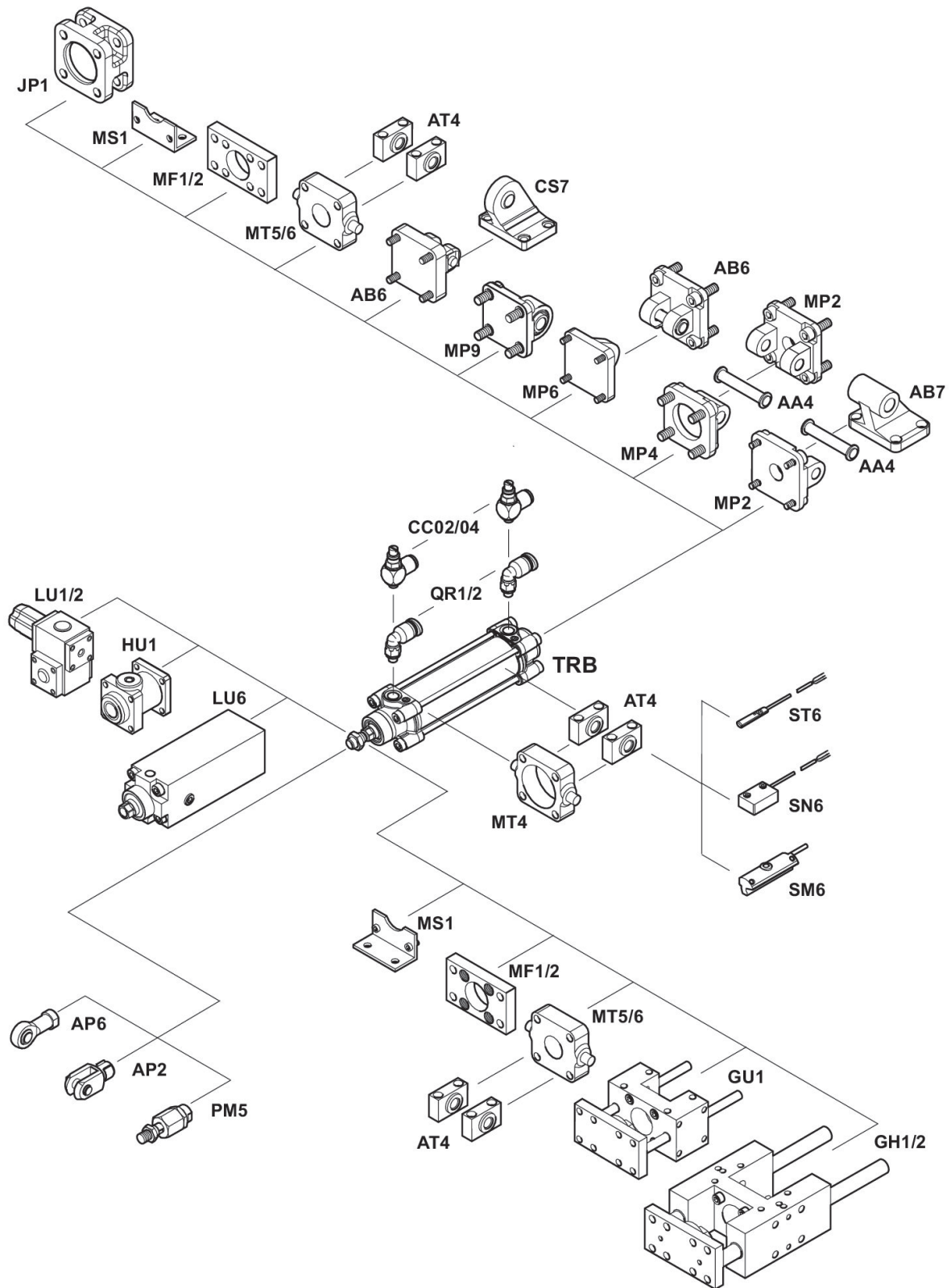


## series TRB

The AVENTICS Series TRB (ISO 15552) cylinders are among the most frequently implemented in industries where heavy duty cylinders are required, such as wood and aluminium, steel and automotive, heavy-duty machinery and mining to name just a few.

- Available in piston diameters from 32 mm to 125 mm
- Advanced pneumatic end position cushioning
- Additional elastic damping elements
- Wide range of scraper modules available
- With the modular system you can change the scraper on the cylinder at any time and considerably decrease service intervals
- Wide range of variants and accessories available in the configurator





## Product overview

	Page
<b>Metric</b>	
Tie rod cylinder ISO 15552, Series TRB..... Double-acting - single - elastic cushioning - With magnet - External thread	9
Tie rod cylinder ISO 15552, Series TRB..... Double-acting - single - Pneumatic adjustable cushioning - With magnet - External thread	12
Tie rod cylinder ISO 15552, Series TRB..... Double-acting - single - Pneumatic adjustable cushioning - With magnet - External thread - with trunnion mounting	16
Tie rod cylinder ISO 15552, Series TRB..... Double-acting - single - Pneumatic adjustable cushioning - w/o magnet - External thread - Heat resistant	20
Tie rod cylinder ISO 15552, Series TRB..... Double-acting - single - Pneumatic adjustable cushioning - With magnet - External thread - Heat resistant	24
Tie rod cylinder ISO 15552, Series TRB..... Double-acting - single - Pneumatic adjustable cushioning - With magnet - External thread - -40 °C cold-resistant	28
Tie rod cylinder ISO 15552, Series TRB..... Double-acting - single - Pneumatic adjustable cushioning - With magnet - External thread - corrosion-resistant	32
Tie rod cylinder ISO 15552, Series TRB..... Double-acting - single - Pneumatic adjustable cushioning - With magnet - External thread - Bellows	36
Tie rod cylinder ISO 15552, Series TRB..... Double-acting - through - Pneumatic adjustable cushioning - With magnet - External thread	40
Tie rod cylinder ISO 15552, Series TRB..... Double-acting - non-rotating - Pneumatic adjustable cushioning - With magnet - External thread	44
<b>Inch</b>	
Tie rod cylinder ISO 15552, Series TRB - inch..... Double-acting - single - Pneumatic adjustable cushioning - Piston with magnet - External thread	47
Tie rod cylinder ISO 15552, Series TRB - inch..... Double-acting - through - Pneumatic adjustable cushioning - Piston with magnet - External thread	51
<b>Accessories overview Cylinder mountings</b>	
Bearing block AB7-HD, Series CM1..... Suitable for robust mechanical engineering applications with fixed bearing - ISO 15552	55
Bearing block CS7, Series CM1..... With ball joint and foot - VDMA 24562 part 2	57
Clevis mounting AB6, Series CM1..... ISO 15552	59
Clevis mounting MP2-HD, Series CM1..... Suitable for robust mechanical engineering applications - ISO 15552	61
Rear eye MP4-HD, suitable for robust mechanical engineering applications..... for clevis mounting MP2 and AB3	63
Rear eye MP6, with ball joint and foot, aluminum (forged)..... With ball joint and foot	65
Rear eye MP9, with rubber bushing..... With rubber bushing	67

## Product overview

	Page
Rear eye MP9, with rubber bushing.....	69
With rubber bushing	
Bearing, Series CM1.....	71
for trunnion mounting	
Trunnion mounting MT5, MT6, Series CM1.....	73
for mounting to the cylinder cover or base	
Bearing AT4, Series CM1.....	76
for trunnion mounting MT4, MT5, MT6 - ISO 15552	
Flange mounting MF1, MF2, Series CM1.....	78
ISO 15552	
Intermediate flange JP1, Series CM1.....	81
for multi-position cylinders	
Foot mounting MS1, Series CM1.....	82
Bolts AA4, Series CM1.....	84
Bolts AA4, Series CM1.....	86
<b>Accessories overview Piston rod mountings</b>	
Flexible spherical coupling, Series PM5.....	87
to mount on cylinder PRA, TRB, CCL-IS/-IC, CCI, SSI, MNI, KPZ, KHZ, 167, CVI, RPC, RDC, ITS	
Flexible plate coupling, Series PM7.....	89
to mount on cylinder PRA, TRB, CCL-IS/-IC, CCI, SSI, KPZ, 167, CVI, RPC, ITS with plate	
Rod clevis with lock washer, Series AP2, Galvanized Steel.....	91
to mount on cylinder PRA, TRB, CCI, MNI, ICM, KPZ, KHZ, 167, CVI, RPC, RDC, ITS	
Rod clevis with circlip, Series AP2.....	93
to mount on cylinder PRA, TRB, CCI, MNI, ICM, KPZ, KHZ, 167, CVI, RPC, RDC, ITS	
Rod clevis, Series PM6.....	94
for ball eye rod end AP6	
Ball eye rod end AP6, galvanized Steel.....	96
to mount on cylinder PRA, TRB, CCI, SSI, MNI, RPC, KPZ, 167, CVI, RDC, 102, ITS with flange	
Piston rod nut MR9.....	99
<b>Accessories overview Guide units</b>	
Guide unit GU1, Series CG1.....	102
Guide unit GH1, Series CG1.....	107
Guide unit GH2, Series CG1.....	113
Compensating coupling GU3 form B, series CG1.....	119
Compensating coupling GU3 form C, series CG1.....	121
<b>Accessories overview Holding unit</b>	
Holding unit, Series HU1.....	122
Ø 32 ... 100 mm Release pressure min./max. 4 ... 8 bar	
Locking unit, Series LU1.....	124
Ø 32 ... 100 mm Release pressure min./max. 2 ... 8 bar	
Locking unit, Series LU1.....	126
Ø 32 ... 100 mm Release pressure min./max. 4,5 ... 8 bar	
Locking unit, Series LU1.....	129
Ø 32 ... 100 mm Release pressure min./max. 5,5 ... 8 bar	
Locking unit, Series LU6.....	132
Mounting flange, Series LU1.....	135
for cylinders with locking units	

## Product overview

	Page
<b>Modular scraper system</b>	
Modular scraper system.....	137
Ø 32 ... 40 mm - ISO 15552	
Modular scraper system.....	139
Ø 50 ... 125 mm - ISO 15552	
<b>Sensors and sensor mountings, accessories</b>	
Sensor, Series IN1.....	142
DIN EN 60947-5-2 - Plug	
Sensors, Series SM6, with cable, without wire end ferrule, tin-plated.....	143
TRB ITS 167 MNI ICM TRR	
Sensors, Series SM6, with cable, plug M8x1.....	145
TRB ITS 167 MNI ICM TRR - Plug	
Sensor, Series SN2, open cable ends.....	147
Heat resistant - TRB PRA ITS MNI CSL-RD ICM RPC TRR FLT CVI - without wire end ferrule, tin-plated	
Sensor, Series SN2, Plug M8.....	150
TRB PRA ITS MNI CSL-RD ICM RPC TRR FLT CVI - Plug	
Sensor, Series SN2, Plug M8, 4-pin.....	152
TRB PRA ITS MNI CSL-RD ICM RPC TRR FLT CVI - Plug	
Sensor, Series SN5-X, With stretched impulse.....	154
TRB ITS	
Sensor, Series SN5-X, welding-proof.....	155
TRB ITS - Socket	
Sensor, Series SN6, Form B, industry.....	157
TRB ITS 523 - Plug	
Sensor, Series SN6, Form B, industry, ATEX.....	159
TRB ITS - Plug - ATEX	
Sensor, Series SN6, open cable ends.....	161
TRB ITS - without wire end ferrule, tin-plated	
Pneumatic sensor, Series SP1.....	163
TRB MNI TRR	
Sensors, Series ST6, open cable ends, 2-pin, Reed.....	164
to mount on cylinder TRB, ITS, 167, C12P, CCL-IS/-IC, MNI, CSL-RD, KHZ, ICM, RPC, ICS, TRR - TRB ITS 167 C12P CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR - without wire end ferrule, tin-plated	
Sensors, Series ST6, open cable ends, 3-pin, NPN.....	165
to mount on cylinder TRB, ITS, 167, C12P, CCL-IS/-IC, MNI, CSL-RD, KHZ, ICM, RPC, ICS, TRR - TRB ITS CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR - without wire end ferrule, tin-plated	
Sensors, Series ST6, open cable ends, 3-pin, PNP.....	166
to mount on cylinder TRB, ITS, 167, C12P, CCL-IS/-IC, MNI, CSL-RD, KHZ, ICM, RPC, ICS, TRR - TRB ITS CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR - without wire end ferrule, tin-plated	
Sensors, Series ST6, open cable ends, 3-pin, Reed.....	168
to mount on cylinder TRB, ITS, 167, C12P, CCL-IS/-IC, MNI, CSL-RD, KHZ, ICM, RPC, ICS, TRR - TRB ITS CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR - without wire end ferrule, tin-plated	

## Product overview

	Page
Sensors, Series ST6, plug M8..... to mount on cylinder TRB, ITS, 167, C12P, CCL-IS/-IC, MNI, CSL-RD, KHZ, ICM, RPC, ICS, TRR - TRB ITS CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR - Plug	170
Sensors, Series ST6, plug M12x1..... to mount on cylinder TRB, ITS, 167, C12P, CCL-IS/-IC, MNI, CSL-RD, KHZ, ICM, RPC, ICS, TRR - TRB ITS CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR - Plug	172
Sensors, Series ST6, plug M12x1, with knurled screw, ATEX..... to mount on cylinder TRB, ITS, 167, C12P, CCL-IS/-IC, MNI, CSL-RD, KHZ, ICM, RPC, ICS, TRR - TRB ITS CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR - Plug - ATEX	174
Sensors, Series ST6, plug M8x1, with knurled screw..... to mount on cylinder TRB, ITS, 167, C12P, CCL-IS/-IC, MNI, CSL-RD, KHZ, ICM, RPC, ICS, TRR - TRB ITS CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR - Plug	176
Sensors, Series ST6, plug M8x1, ATEX..... to mount on cylinder TRB, ITS, 167, C12P, CCL-IS/-IC, MNI, CSL-RD, KHZ, ICM, RPC, ICS, TRR - TRB ITS CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR - Plug - ATEX	179
Sensors, Series ST6, open cable ends, 3-pin, PNP, ATEX..... TRB ITS CCL-IS MNI CSL-RD RPC ICS-D2 ICM KHZ TRR - open cable ends - ATEX	181
Sensors, Series ST6, open cable ends, 3-pin, cold-resistant..... TRB ITS - open cable ends	182
Sensors, Series ST6, open cable ends, 3-pin, M12, cold-resistant..... TRB ITS - open cable ends	183
Sensors, Series ST6, open cable ends, 3-pin, M8, cold-resistant..... TRB ITS - open cable ends	184
Sensors, Series ST6, open cable ends, 2-pin, Heat resistant..... TRB ITS MNI CSL-RD RPC - open cable ends	185
Sensor mounting, Series CB1..... SN1 SN2	186
Sensor mounting, Series CB1.....	187
Sensor mounting, Series CB1.....	188
Sensor mounting, Series CB1..... SN6	189
Sensor mounting, Series CB1..... SN6	190
Sensor mounting, Series CB1..... ST6 SM6	191
Sensor mounting, Series CB1..... ST6 SM6 SN1 SN2	192
Round plug connector, Series CON-RD, 5-pin, angled, unshielded..... Socket - M12x1 - 5-pin - angled - without wire end ferrule, tin-plated - 4-pin	193
Round plug connector, Series CON-RD..... Socket - M8x1 - 3-pin - straight - Soldering	195
Round plug connector, Series CON-RD..... Socket - M8x1 - 3-pin - straight - open cable ends - 3-pin	196
Round plug connector, Series CON-RD..... Socket - M8x1 - 3-pin - angled - Soldering	198
Round plug connector, Series CON-RD..... Socket - M8x1 - 3-pin - angled - open cable ends - 3-pin	199
<b>Accessories overview Silencer</b>	
Silencers, series SI1, Sintered bronze.....	201

## Product overview

	Page
Silencers, series SI1, Sintered bronze.....	204

**Tie rod cylinder ISO 15552, Series TRB**

Standards: ISO 15552

Functional principle: Double-acting

Piston: With magnet

Cushioning: elastic cushioning

Piston rod: External thread

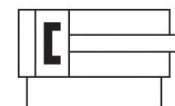
Piston rod: single

Compressed air connection: Internal thread

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



Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
Piston rod thread	M10x1,25	M12x1,25	M16x1,5	M16x1,5	M20x1,5	M20x1,5
Ports	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2
Piston rod Ø	12 mm	16 mm	20 mm	20 mm	25 mm	25 mm
Stroke 25	0822340600	0822341600	0822342600	0822343600	0822344600	0822345600
50	0822340601	0822341601	0822342601	0822343601	0822344601	0822345601
80	0822340602	0822341602	0822342602	0822343602	0822344602	0822345602
100	0822340611	R480055348	0822342607	0822343603	0822344603	0822345604
125	0822340612	0822341611	0822342612	R480163015	0822344605	R480141842
160	0822340609	0822341610	0822342606	0822343606	0822344609	0822345606
200	R480162940	0822341604	0822342620	R480163016	0822344607	0822345610
250	0822340618	0822341608	0822342614	0822343608	0822344608	R480149881
320	R480162941	R480162983	0822342621	0822343612	0822344606	R480163046
400	0822340614	0822341605	R480162998	R480163017	0822344604	0822345603
500	R480045159	R480162984	R480162999	R480163018	0822344611	R480163047

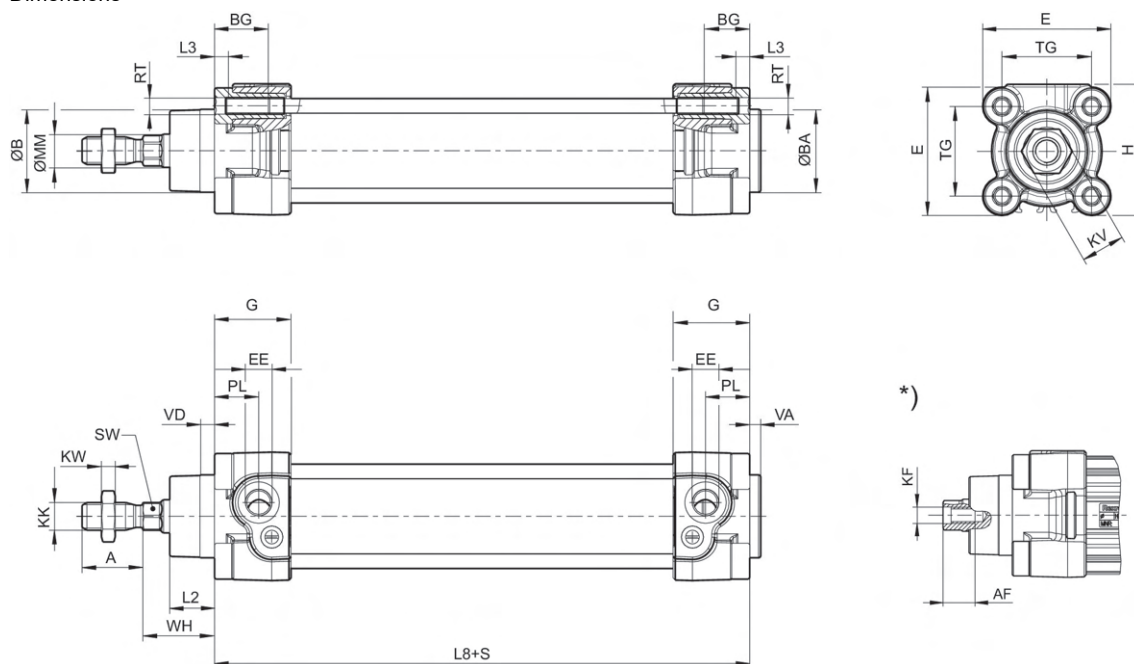
Piston Ø	125 mm
Piston rod thread	M27x2
Ports	G 1/2
Piston rod Ø	32 mm
Stroke 25	R480170413
50	R480142425
80	R480170781
100	R480160422
125	R480170784
160	R480170785
200	R480170786
250	R480170787

<b>Piston Ø</b>	<b>125 mm</b>
<b>Piston rod thread</b>	<b>M27x2</b>
<b>Ports</b>	<b>G 1/2</b>
<b>Piston rod Ø</b>	<b>32 mm</b>
320	R480146555
400	R480170788
500	R480168824

<b>Piston Ø</b>	<b>32 mm</b>	<b>40 mm</b>	<b>50 mm</b>	<b>63 mm</b>	<b>80 mm</b>	<b>100 mm</b>
Retracting piston force	435 N	660 N	1035 N	1765 N	2855 N	4635 N
Extracting piston force	505 N	790 N	1235 N	1960 N	3165 N	4945 N
Impact energy	0.4 J	0.65 J	1 J	1.6 J	2.5 J	3.9 J
Weight 10 mm stroke	0.024 kg	0.03 kg	0.036 kg	0.052 kg	0.06 kg	0.065 kg
Weight 0 mm stroke	0.46 kg	0.67 kg	1.14 kg	1.4 kg	2.12 kg	3.16 kg

<b>Piston Ø</b>	<b>125 mm</b>
Retracting piston force	7220 N
Extracting piston force	7725 N
Impact energy	6 J
Weight 10 mm stroke	0.21 kg
Weight 0 mm stroke	6.92 kg

Dimensions



S = stroke

\*) For cylinders with optional piston rod with internal thread

Piston $\varnothing$	A -2	AF+1	$\varnothing B$ d11	$\varnothing BA$ d11	BG min.	E	EE	G	H
32	22	12	30	30	16	46.5	G 1/8	27.75	47.5
40	24	13.5	35	35	16	53	G 1/4	33.25	53
50	32	17	40	40	16	65	G 1/4	31	65
63	32	17	45	45	16	75	G 3/8	38.25	75
80	40	21	45	45	17	95	G 3/8	38.25	95
100	40	21	55	55	17	115	G 1/2	42.25	115
125	54	28	60	60	20	140	G 1/2	53.85	140

Piston $\varnothing$	KF	KK	KV	KW	$\varnothing MM$ f8	PL	L2	L3 $\pm 0,5$	L8
32	M6	M10x1,25	16	5	12	16	16.25	4.5	94 $\pm 0,4$
40	M8	M12x1,25	18	6	16	20	18.25	4.5	105 $\pm 0,7$
50	M10	M16x1,5	24	8	20	19	25	4.5	106 $\pm 0,7$
63	M10	M16x1,5	24	8	20	24	25	4.5	121 $\pm 0,8$
80	M12	M20x1,5	30	10	25	23.5	33	0	128 $\pm 0,8$
100	M12	M20x1,5	30	10	25	25	36	0	138 $\pm 1$
125	M16	M27x2	41	13.5	32	33	45	0	160 $\pm 1$

Piston $\varnothing$	RT	SW	TG	VA -1	VD	WH
32	M6	10	32,5 $\pm 0,5$	4	5	26 $\pm 1,4$
40	M6	13	38 $\pm 0,5$	4	5	30 $\pm 1,4$
50	M8	17	46,5 $\pm 0,6$	4	5	37 $\pm 1,4$
63	M8	17	56,5 $\pm 0,7$	4	5	37 $\pm 1,8$
80	M10	22	72 $\pm 0,7$	4	5	46 $\pm 1,8$
100	M10	22	89 $\pm 0,7$	4	5	51 $\pm 1,8$
125	M12	27	110 $\pm 1,1$	6	7	65 $\pm 2,2$

**Tie rod cylinder ISO 15552, Series TRB**

Standards: ISO 15552

Functional principle: Double-acting

Certificates: ATEX optional

Piston: With magnet

Cushioning: Pneumatic adjustable cushioning

Piston rod: External thread

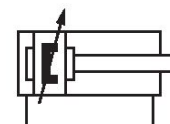
Piston rod: single

Compressed air connection: Internal thread

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



Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
Piston rod thread	M10x1,25	M12x1,25	M16x1,5	M16x1,5	M20x1,5	M20x1,5
Ports	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2
Piston rod Ø	12 mm	16 mm	20 mm	20 mm	25 mm	25 mm
Stroke 25	0822340001	0822341001	0822342001	0822343001	0822344001	0822345001
50	0822340002	0822341002	0822342002	0822343002	0822344002	0822345002
80	0822340003	0822341003	0822342003	0822343003	0822344003	0822345003
100	0822340004	0822341004	0822342004	0822343004	0822344004	0822345004
125	0822340005	0822341005	0822342005	0822343005	0822344005	0822345005
160	0822340006	0822341006	0822342006	0822343006	0822344006	0822345006
200	0822340007	0822341007	0822342007	0822343007	0822344007	0822345007
250	0822340008	0822341008	0822342008	0822343008	0822344008	0822345008
320	0822340009	0822341009	0822342009	0822343009	0822344009	0822345009
400	0822340010	0822341010	0822342010	0822343010	0822344010	0822345010
500	0822340011	0822341011	0822342011	0822343011	0822344011	0822345011

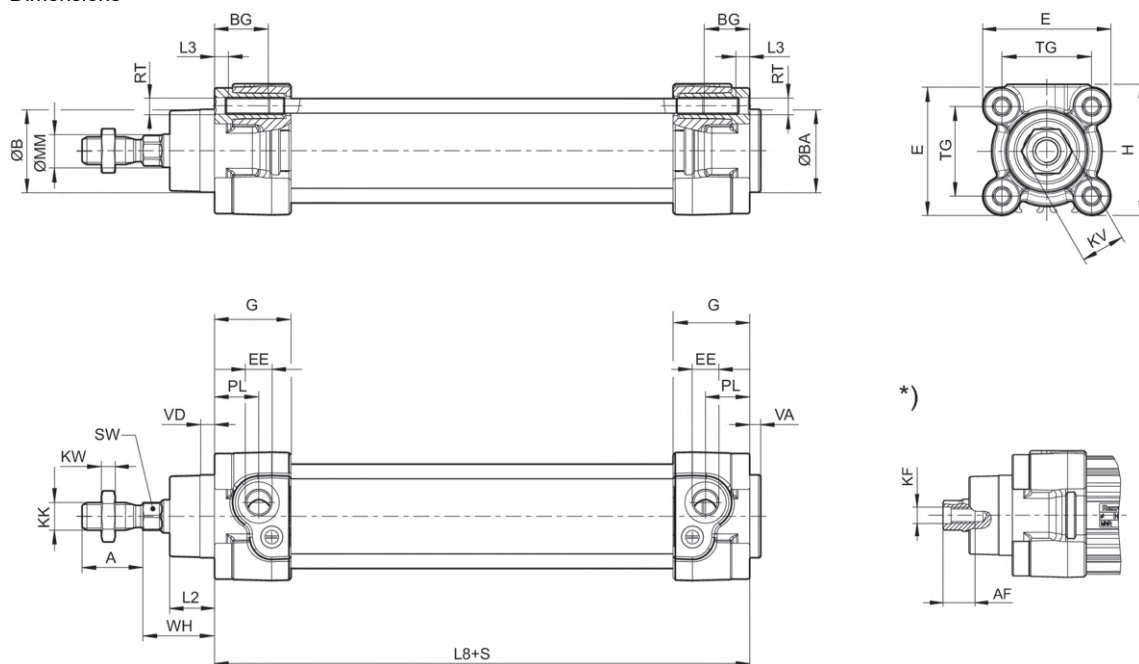
Piston Ø	125 mm
Piston rod thread	M27x2
Ports	G 1/2
Piston rod Ø	32 mm
Stroke 25	0822306201
50	0822306202
80	0822306203
100	0822306204
125	0822306205
160	0822306206
200	0822306207

<b>Piston Ø</b>	<b>125 mm</b>
<b>Piston rod thread</b>	<b>M27x2</b>
<b>Ports</b>	<b>G 1/2</b>
<b>Piston rod Ø</b>	<b>32 mm</b>
250	0822306208
320	0822306209
400	0822306210
500	0822306211

<b>Piston Ø</b>	<b>32 mm</b>	<b>40 mm</b>	<b>50 mm</b>	<b>63 mm</b>	<b>80 mm</b>	<b>100 mm</b>
Retracting piston force	435 N	660 N	1035 N	1765 N	2855 N	4635 N
Extracting piston force	505 N	790 N	1235 N	1960 N	3165 N	4945 N
Cushioning energy	4.8 J	9 J	15 J	27 J	54 J	88 J
Cushioning length	16.5 mm	19 mm, 15 mm	17 mm	16.5 mm	19.5 mm	19.5 mm
Weight 10 mm stroke	0.024 kg	0.03 kg	0.036 kg	0.052 kg	0.06 kg	0.065 kg
Weight 0 mm stroke	0.46 kg	0.67 kg	1.14 kg	1.4 kg	2.12 kg	3.16 kg

<b>Piston Ø</b>	<b>125 mm</b>
Retracting piston force	7220 N
Extracting piston force	7725 N
Cushioning energy	140 J
Cushioning length	22 mm
Weight 10 mm stroke	0.21 kg
Weight 0 mm stroke	6.92 kg

Dimensions



S = stroke

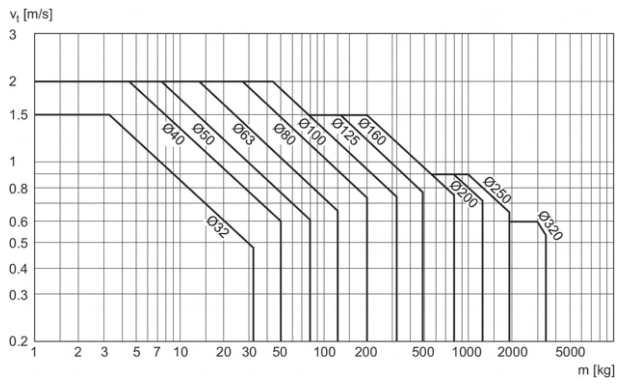
\*) For cylinders with optional piston rod with internal thread

Piston $\varnothing$	A -2	AF+1	$\varnothing B$ d11	$\varnothing BA$ d11	BG min.	E	EE	G	H
32	22	12	30	30	16	46.5	G 1/8	27.75	47.5
40	24	13.5	35	35	16	53	G 1/4	33.25	53
50	32	17	40	40	16	65	G 1/4	31	65
63	32	17	45	45	16	75	G 3/8	38.25	75
80	40	21	45	45	17	95	G 3/8	38.25	95
100	40	21	55	55	17	115	G 1/2	42.25	115
125	54	28	60	60	20	140	G 1/2	53.85	140

Piston $\varnothing$	KF	KK	KV	KW	$\varnothing MM$ f8	PL	L2	L3 $\pm 0,5$	L8
32	M6	M10x1,25	16	5	12	16	16.25	4.5	94 $\pm 0,4$
40	M8	M12x1,25	18	6	16	20	18.25	4.5	105 $\pm 0,7$
50	M10	M16x1,5	24	8	20	19	25	4.5	106 $\pm 0,7$
63	M10	M16x1,5	24	8	20	24	25	4.5	121 $\pm 0,8$
80	M12	M20x1,5	30	10	25	23.5	33	0	128 $\pm 0,8$
100	M12	M20x1,5	30	10	25	25	36	0	138 $\pm 1$
125	M16	M27x2	41	13.5	32	33	45	0	160 $\pm 1$

Piston $\varnothing$	RT	SW	TG	VA -1	VD	WH
32	M6	10	32,5 $\pm 0,5$	4	5	26 $\pm 1,4$
40	M6	13	38 $\pm 0,5$	4	5	30 $\pm 1,4$
50	M8	17	46,5 $\pm 0,6$	4	5	37 $\pm 1,4$
63	M8	17	56,5 $\pm 0,7$	4	5	37 $\pm 1,8$
80	M10	22	72 $\pm 0,7$	4	5	46 $\pm 1,8$
100	M10	22	89 $\pm 0,7$	4	5	51 $\pm 1,8$
125	M12	27	110 $\pm 1,1$	6	7	65 $\pm 2,2$

**Cushioning diagram**



$v_t$  = Piston velocity [m/s]  $m$  = Cushionable mass [kg]

**Tie rod cylinder ISO 15552, Series TRB**

Standards: ISO 15552

Functional principle: Double-acting

Piston: With magnet

Cushioning: Pneumatic adjustable cushioning

Piston rod: External thread

Piston rod: single

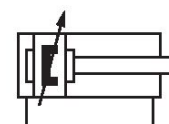
Compressed air connection: Internal thread

: with trunnion mounting

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



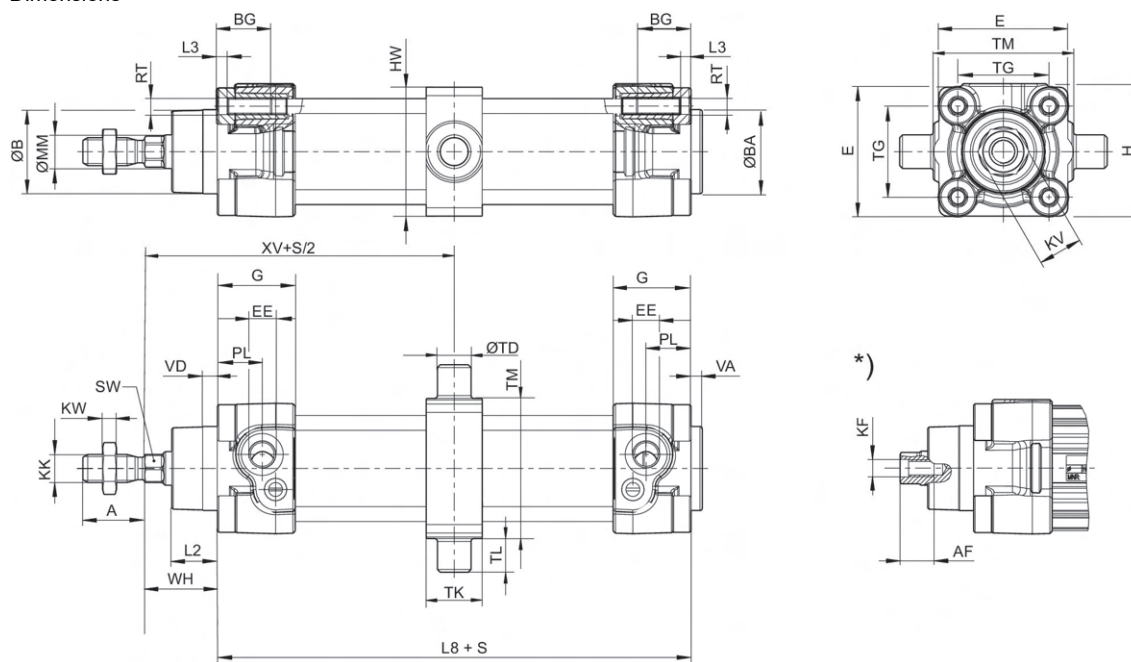
Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
Piston rod thread	M10x1,25	M12x1,25	M16x1,5	M16x1,5	M20x1,5	M20x1,5
Ports	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2
Piston rod Ø	12 mm	16 mm	20 mm	20 mm	25 mm	25 mm
Stroke 80	0822340902	0822341902	0822342902	0822343902	0822344902	0822345902
100	0822340903	0822341903	0822342903	0822343903	0822344903	0822345903
125	0822340904	0822341904	0822342904	0822343904	0822344904	0822345904
160	0822340905	0822341905	0822342905	0822343905	0822344905	0822345905
200	0822340906	0822341906	0822342906	0822343906	0822344906	0822345906
250	0822340907	0822341907	0822342907	0822343907	0822344907	0822345907
320	0822340908	0822341908	0822342908	0822343908	0822344908	0822345908
400	0822340909	0822341909	0822342909	0822343909	0822344909	0822345909
500	0822340910	0822341910	0822342910	0822343910	0822344910	0822345910

Piston Ø	125 mm
Piston rod thread	M27x2
Ports	G 1/2
Piston rod Ø	32 mm
Stroke 80	7472412312
100	R480647252
125	R480166294
160	7472412341
200	R480647253
250	7472412343
320	7472412344
400	R480647341
500	R480166072

Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
Retracting piston force	435 N	660 N	1035 N	1765 N	2855 N	4635 N
Extracting piston force	505 N	790 N	1235 N	1960 N	3165 N	4945 N
Cushioning energy	4.8 J	9 J	15 J	27 J	54 J	88 J
Cushioning length	16.5 mm	19 mm	17 mm	16.5 mm	19.5 mm	19.5 mm
Weight 10 mm stroke	0.024 kg	0.03 kg	0.036 kg	0.052 kg	0.06 kg	0.065 kg
Weight 0 mm stroke	0.76 kg	1.17 kg	1.84 kg	2.5 kg	3.67 kg	5.86 kg

Piston Ø	125 mm
Retracting piston force	7220 N
Extracting piston force	7725 N
Cushioning energy	140 J
Cushioning length	22 mm
Weight 10 mm stroke	0.21 kg
Weight 0 mm stroke	10.62 kg

Dimensions



S = stroke

\*) For cylinders with optional piston rod with internal thread

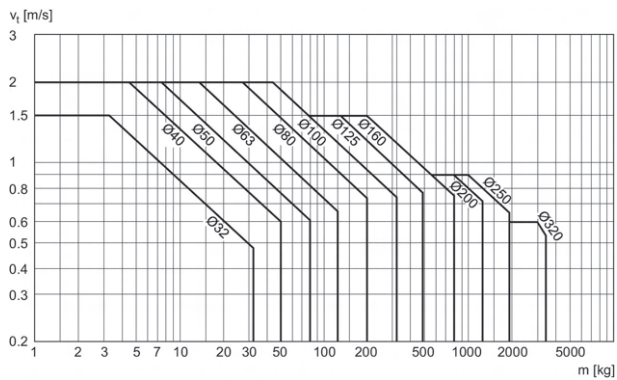
Piston Ø	A -2	AF+1	ØB d11	ØBA d11	BG min.	E	EE	G	H
32	22	12	30	30	16	46.5	G1/8	27.75	47.5
40	24	13.5	35	35	16	53	G1/4	33.25	53
50	32	17	40	40	16	65	G1/4	31	65
63	32	17	45	45	16	75	G3/8	38.25	75
80	40	21	45	45	17	95	G3/8	38.25	95
100	40	21	55	55	17	115	G1/2	42.25	115
125	54	28	60	60	20	140	G1/2	53.85	140

Piston Ø	KF	KK	KV	KW	ØMM f8	PL	L2	L3 ±0,5	L8
32	M6	M10x1,25	16	5	12	16	16.25	4.5	94±0,4
40	M8	M12x1,25	18	6	16	20	18.25	4.5	105±0,7
50	M10	M16x1,5	24	8	20	19	25	4.5	106±0,7
63	M10	M16x1,5	24	8	20	24	25	4.5	121±0,8
80	M12	M20x1,5	30	10	25	23.5	33	0	128±0,8
100	M12	M20x1,5	30	10	25	25	36	0	138±1
125	M16	M27x2	41	13.5	32	33	45	0	160±1

Piston Ø	RT	SW	TG	VA -1	VD	WH	HW	ØTD e9	TK
32	M6	10	32,5±0,5	4	5	26±1,4	46	12	20
40	M6	13	38±0,5	4	5	30±1,4	59	16	20
50	M8	17	46,5±0,6	4	5	37±1,4	69	16	25
63	M8	17	56,5±0,7	4	5	37±1,8	84	20	30
80	M10	22	72±0,7	4	5	46±1,8	102	20	35
100	M10	22	89±0,7	4	5	51±1,8	125	25	46
125	M12	27	110±1,1	6	7	65±2,2	155	25	32

Piston Ø	TL h14	TM h14	XV
32	12	50	73
40	16	63	82.5
50	16	75	90
63	20	90	97.5
80	20	110	110
100	25	132	120
125	25	160	145

**Cushioning diagram**



$v_t$  = Piston velocity [m/s]  $m$  = Cushionable mass [kg]

**Tie rod cylinder ISO 15552, Series TRB**

Standards: ISO 15552

Functional principle: Double-acting

Piston: w/o magnet

Cushioning: Pneumatic adjustable cushioning

Piston rod: External thread

Piston rod: single

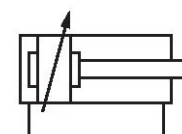
Compressed air connection: Internal thread

: Heat resistant

Ambient temperature min./max.: -10 °C ... 150 °C

Medium temperature min./max.: -10 °C ... 150 °C

Working pressure min./max.: 1.5 bar ... 10 bar



Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
Piston rod thread	M10x1,25	M12x1,25	M16x1,5	M16x1,5	M20x1,5	M20x1,5
Ports	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2
Piston rod Ø	12 mm	16 mm	20 mm	20 mm	25 mm	25 mm
Stroke 25	0822240400	0822241400	0822242400	0822243400	0822244400	0822245400
50	0822240401	0822241401	0822242401	0822243401	0822244401	0822245401
80	0822240402	0822241402	0822242402	0822243402	0822244402	0822245402
100	0822240403	0822241403	0822242403	0822243403	0822244403	0822245403
125	0822240404	0822241404	0822242404	0822243404	0822244404	0822245404
160	0822240405	0822241405	0822242405	0822243405	0822244405	0822245405
200	0822240406	0822241406	0822242406	0822243406	0822244406	0822245406
250	0822240407	0822241407	0822242407	0822243407	0822244407	0822245407
320	0822240408	0822241408	0822242408	0822243408	0822244408	0822245408
400	0822240409	0822241409	0822242409	0822243409	0822244409	0822245409
500	0822240410	0822241410	0822242410	0822243410	-	0822245410

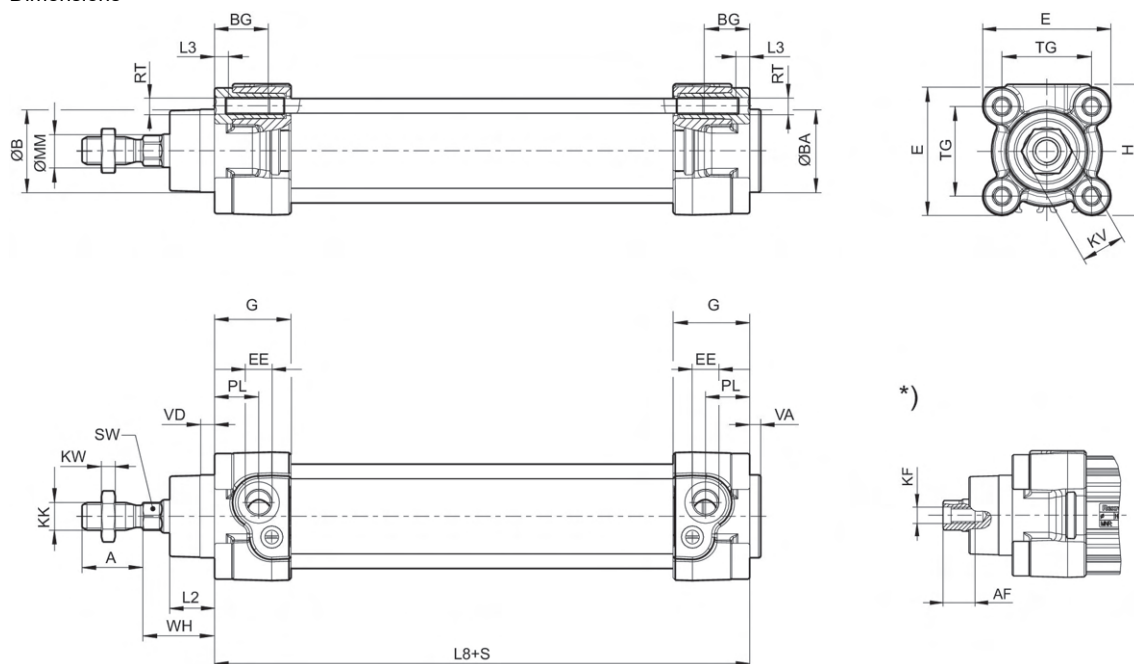
Piston Ø	125 mm
Piston rod thread	M27x2
Ports	G 1/2
Piston rod Ø	32 mm
Stroke 25	0822206401
50	0822206402
80	0822206403
100	0822206404
125	0822206405
160	0822206406
200	0822206407

<b>Piston Ø</b>	<b>125 mm</b>
<b>Piston rod thread</b>	<b>M27x2</b>
<b>Ports</b>	<b>G 1/2</b>
<b>Piston rod Ø</b>	<b>32 mm</b>
250	0822206408
320	0822206409
400	0822206410
500	0822206411

<b>Piston Ø</b>	<b>32 mm</b>	<b>40 mm</b>	<b>50 mm</b>	<b>63 mm</b>	<b>80 mm</b>	<b>100 mm</b>
Retracting piston force	435 N	660 N	1035 N	1765 N	2855 N	4635 N
Extracting piston force	505 N	790 N	1235 N	1960 N	3165 N	4945 N
Cushioning energy	4.8 J	9 J	15 J	27 J	54 J	88 J
Cushioning length	11.5 mm	15 mm	17 mm	16.5 mm	19.5 mm	19.5 mm
Weight 10 mm stroke	0.024 kg	0.03 kg	0.036 kg	0.052 kg	0.06 kg	0.065 kg
Weight 0 mm stroke	0.46 kg	0.67 kg	1.14 kg	1.4 kg	2.12 kg	3.16 kg

<b>Piston Ø</b>	<b>125 mm</b>
Retracting piston force	7220 N
Extracting piston force	7725 N
Cushioning energy	140 J
Cushioning length	22 mm
Weight 10 mm stroke	0.21 kg
Weight 0 mm stroke	6.92 kg

Dimensions



S = stroke

\*) For cylinders with optional piston rod with internal thread

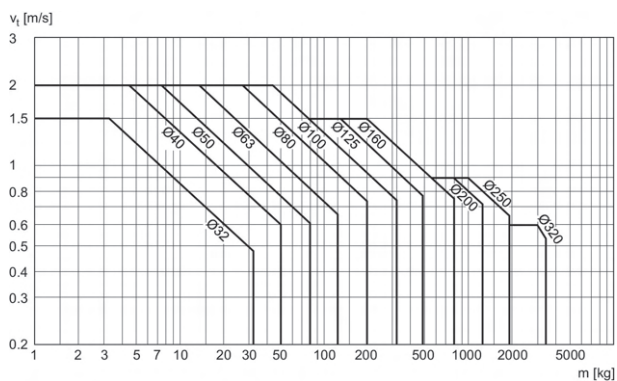
Dimensions

Piston Ø	A -2	AF+1	ØB d11	ØBA d11	BG min.	E	EE	G	H
32	22	12	30	30	16	46.5	G 1/8	27.75	47.5
40	24	13.5	35	35	16	53	G 1/4	33.25	53
50	32	17	40	40	16	65	G 1/4	31	65
63	32	17	45	45	16	75	G 3/8	38.25	75
80	40	21	45	45	17	95	G 3/8	38.25	95
100	40	21	55	55	17	115	G 1/2	42.25	115
125	54	28	60	60	20	140	G 1/2	53.85	140

Piston Ø	KF	KK	KV	KW	ØMM f8	PL	L2	L3 ±0,5	L8
32	M6	M10x1,25	16	5	12	16	16.25	4.5	94±0,4
40	M8	M12x1,25	18	6	16	20	18.25	4.5	105±0,7
50	M10	M16x1,5	24	8	20	19	25	4.5	106±0,7
63	M10	M16x1,5	24	8	20	24	25	4.5	121±0,8
80	M12	M20x1,5	30	10	25	23.5	33	0	128±0,8
100	M12	M20x1,5	30	10	25	25	36	0	138±1
125	M6	M27x2	41	13.5	32	33	45	0	160±1

Piston Ø	RT	SW	TG	VA -1	VD	WH
32	M6	10	32,5±0,5	4	5	26±1,4
40	M6	13	38±0,5	4	5	30±1,4
50	M8	17	46.5±0,6	4	5	37±1,4
63	M8	17	56,5±0,7	4	5	37±1,8
80	M10	22	72±0,7	4	5	46±1,8
100	M10	22	89±0,7	4	5	51±1,8
125	M12	27	110±1,1	6	7	65±2,2

**Cushioning diagram**



$v_1$  = Piston velocity [m/s]  $m$  = Cushionable mass [kg]

**Tie rod cylinder ISO 15552, Series TRB**

Standards: ISO 15552

Functional principle: Double-acting

Piston: With magnet

Cushioning: Pneumatic adjustable cushioning

Piston rod: External thread

Piston rod: single

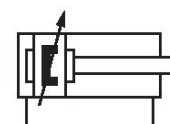
Compressed air connection: Internal thread

: Heat resistant

Ambient temperature min./max.: -10 °C ... 120 °C

Medium temperature min./max.: -10 °C ... 120 °C

Working pressure min./max.: 1.5 bar ... 10 bar



Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
Piston rod thread	M10x1,25	M12x1,25	M16x1,5	M16x1,5	M20x1,5	M20x1,5
Ports	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2
Piston rod Ø	12 mm	16 mm	20 mm	20 mm	25 mm	25 mm
Stroke 25	R412013636	R412013654	R412013674	R412013694	R412013712	R412013731
50	R412013637	R412013655	R412013675	R412013695	R412013713	R412013732
80	R412013638	R412013656	R412013676	R412013696	R412013714	R412013733
100	R412013639	R412013657	R412013677	R412013697	R412013715	R412013734
125	R412013640	R412013658	R412013678	R412013698	R412013716	R412013735
160	R412013641	R412013659	R412013679	R412013699	R412013717	R412013736
200	R412013642	R412013660	R412013680	R412013700	R412013718	R412013737
250	R412013643	R412013661	R412013681	R412013701	R412013719	R412013738
320	R412013644	R412013662	R412013682	R412013702	R412013720	R412013739
400	R412013645	R412013663	R412013683	R412013703	R412013721	R412013740
500	R412013646	R412013664	R412013684	R412013704	R412013722	R412013741

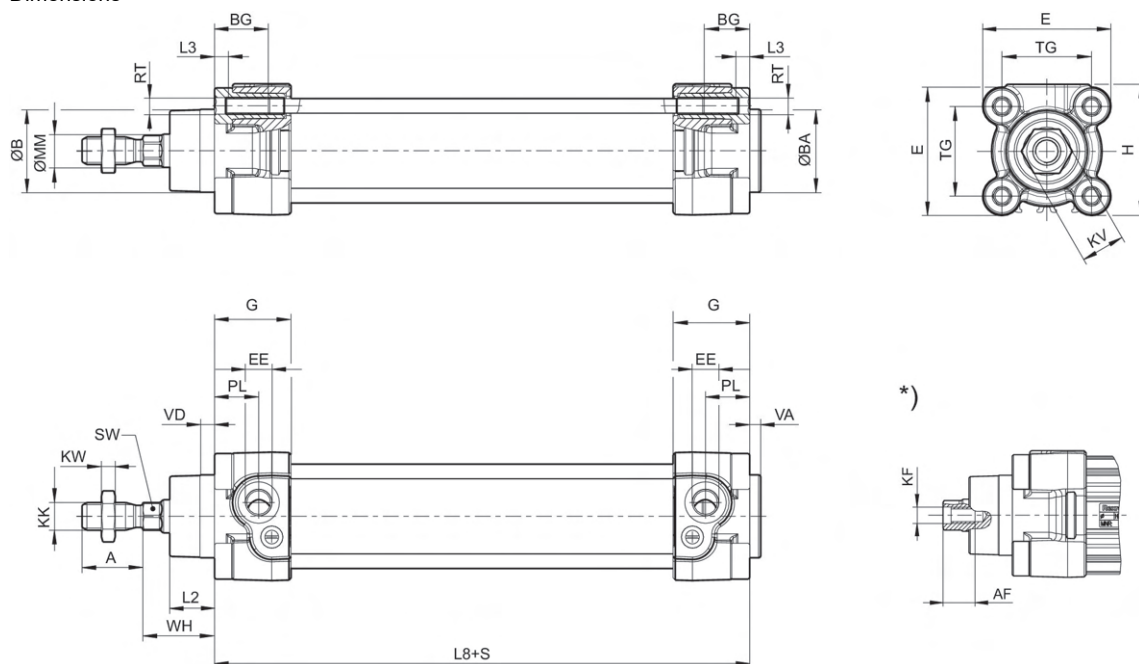
Piston Ø	125 mm
Piston rod thread	M27x2
Ports	G 1/2
Piston rod Ø	32 mm
Stroke 25	R480605348
50	R480605349
80	R480605350
100	R480605351
125	R480605352
160	R480605353
200	R480605354

<b>Piston Ø</b>	<b>125 mm</b>
<b>Piston rod thread</b>	<b>M27x2</b>
<b>Ports</b>	<b>G 1/2</b>
<b>Piston rod Ø</b>	<b>32 mm</b>
250	R480605355
320	R480605356
400	R480605357
500	R480605358

<b>Piston Ø</b>	<b>32 mm</b>	<b>40 mm</b>	<b>50 mm</b>	<b>63 mm</b>	<b>80 mm</b>	<b>100 mm</b>
Retracting piston force	435 N	660 N	1035 N	1765 N	2855 N	4635 N
Extracting piston force	505 N	790 N	1235 N	1960 N	3165 N	4945 N
Cushioning energy	4.8 J	9 J	15 J	27 J	54 J	88 J
Cushioning length	11.5 mm	15 mm	17 mm	16.5 mm	19.5 mm	19.5 mm
Weight 10 mm stroke	0.024 kg	0.03 kg	0.036 kg	0.052 kg	0.06 kg	0.065 kg
Weight 0 mm stroke	0.46 kg	0.67 kg	1.14 kg	1.4 kg	2.12 kg	3.16 kg

<b>Piston Ø</b>	<b>125 mm</b>
Retracting piston force	7220 N
Extracting piston force	7725 N
Cushioning energy	140 J
Cushioning length	22 mm
Weight 10 mm stroke	0.21 kg
Weight 0 mm stroke	6.92 kg

Dimensions



S = stroke

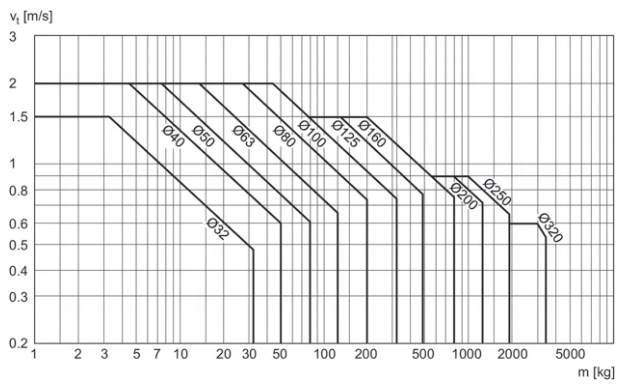
\*) For cylinders with optional piston rod with internal thread

Piston $\varnothing$	A -2	AF+1	$\varnothing B$ d11	$\varnothing BA$ d11	BG min.	E	EE	G	H
32	22	12	30	30	16	46.5	G 1/8	27.75	47.5
40	24	13.5	35	35	16	53	G 1/4	33.25	53
50	32	17	40	40	16	65	G 1/4	31	65
63	32	17	45	45	16	75	G 3/8	38.25	75
80	40	21	45	45	17	95	G 3/8	38.25	95
100	40	21	55	55	17	115	G 1/2	42.25	115
125	54	28	60	60	20	140	G 1/2	53.85	140

Piston $\varnothing$	KF	KK	KV	KW	$\varnothing MM$ f8	PL	L2	L3 $\pm 0,5$	L8
32	M6	M10x1,25	16	5	12	16	16.25	4.5	94 $\pm 0,4$
40	M8	M12x1,25	18	6	16	20	18.25	4.5	105 $\pm 0,7$
50	M10	M16x1,5	24	8	20	19	25	4.5	106 $\pm 0,7$
63	M10	M16x1,5	24	8	20	24	25	4.5	121 $\pm 0,8$
80	M12	M20x1,5	30	10	25	23.5	33	0	128 $\pm 0,8$
100	M12	M20x1,5	30	10	25	25	36	0	138 $\pm 1$
125	M16	M27x2	41	13.5	32	33	45	0	160 $\pm 1$

Piston $\varnothing$	RT	SW	TG	VA -1	VD	WH
32	M6	10	32,5 $\pm 0,5$	4	5	26 $\pm 1,4$
40	M6	13	38 $\pm 0,5$	4	5	30 $\pm 1,4$
50	M8	17	46,5 $\pm 0,6$	4	5	37 $\pm 1,4$
63	M8	17	56,5 $\pm 0,7$	4	5	37 $\pm 1,8$
80	M10	22	72 $\pm 0,7$	4	5	46 $\pm 1,8$
100	M10	22	89 $\pm 0,7$	4	5	51 $\pm 1,8$
125	M12	27	110 $\pm 1,1$	6	7	65 $\pm 2,2$

**Cushioning diagram**



$v_t$  = Piston velocity [m/s]  $m$  = Cushionable mass [kg]

**Tie rod cylinder ISO 15552, Series TRB**

Standards: ISO 15552

Functional principle: Double-acting

Piston: With magnet

Cushioning: Pneumatic adjustable cushioning

Piston rod: External thread

Piston rod: single

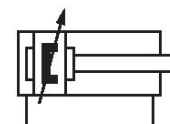
Compressed air connection: Internal thread

: -40 °C cold-resistant

Ambient temperature min./max.: -40 °C ... 70 °C

Medium temperature min./max.: -40 °C ... 70 °C

Working pressure min./max.: 1.5 bar ... 10 bar



Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
Piston rod thread	M10x1,25	M12x1,25	M16x1,5	M16x1,5	M20x1,5	M20x1,5
Ports	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 3/8
Piston rod Ø	12 mm	16 mm	20 mm	20 mm	25 mm	25 mm
Stroke 25	R480691898	R480691909	R480691920	R480691931	R480691942	R480691953
50	R480691899	R480691910	R480691921	R480691932	R480691943	R480691954
80	R480691900	R480691911	R480691922	R480691933	R480691944	R480691955
100	R480691901	R480691912	R480691923	R480691934	R480691945	R480691956
125	R480691902	R480691913	R480691924	R480691935	R480691946	R480691957
160	R480691903	R480691914	R480691925	R480691936	R480691947	R480691958
200	R480691904	R480691915	R480691926	R480691937	R480691948	R480691959
250	R480691905	R480691916	R480691927	R480691938	R480691949	R480691960
320	R480691906	R480691917	R480691928	R480691939	R480691950	R480691961
400	R480691907	R480691918	R480691929	R480691940	R480691951	R480691962
500	R480691908	R480691919	R480691930	R480691941	R480691952	R480691963

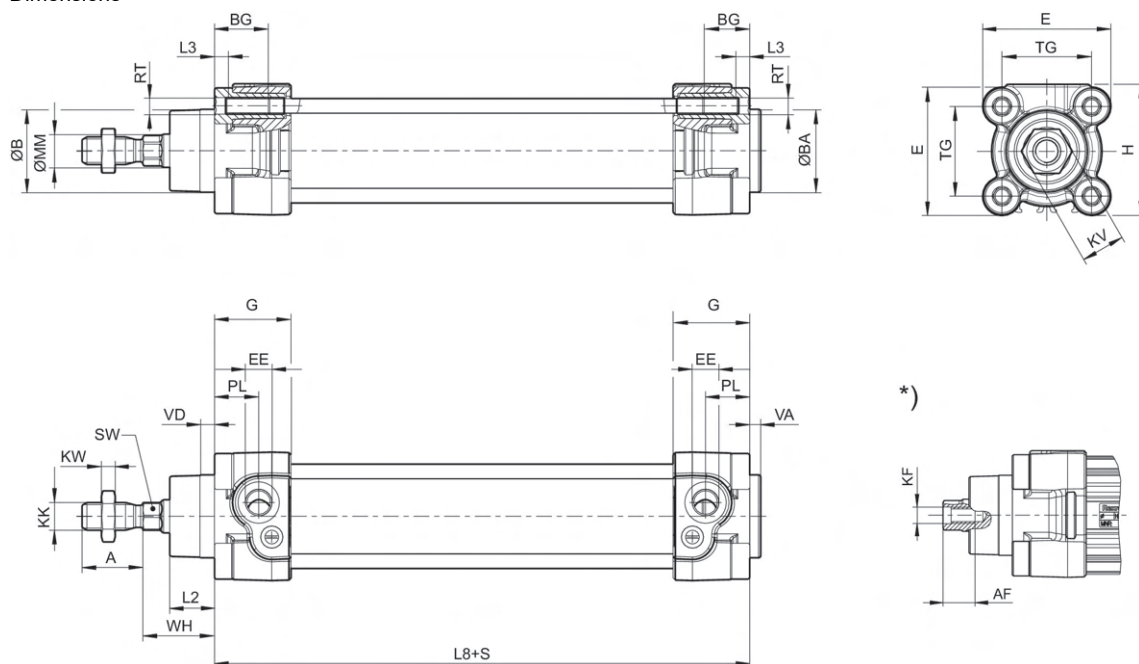
Piston Ø	125 mm
Piston rod thread	M27x2
Ports	G 1/2
Piston rod Ø	32 mm
Stroke 25	R480691964
50	R480691965
80	R480691966
100	R480691967
125	R480691968
160	R480691969
200	R480691970

<b>Piston Ø</b>	<b>125 mm</b>
<b>Piston rod thread</b>	<b>M27x2</b>
<b>Ports</b>	<b>G 1/2</b>
<b>Piston rod Ø</b>	<b>32 mm</b>
250	R480691971
320	R480691972
400	R480691973
500	R480691974

<b>Piston Ø</b>	<b>32 mm</b>	<b>40 mm</b>	<b>50 mm</b>	<b>63 mm</b>	<b>80 mm</b>	<b>100 mm</b>
Retracting piston force	435 N	660 N	1035 N	1765 N	2855 N	4635 N
Extracting piston force	505 N	790 N	1235 N	1960 N	3165 N	4945 N
Cushioning energy	4.8 J	9 J	15 J	27 J	54 J	88 J
Cushioning length	11.5 mm	15 mm	17 mm	16.5 mm	19.5 mm	19.5 mm
Weight 10 mm stroke	0.024 kg	0.03 kg	0.036 kg	0.052 kg	0.06 kg	0.065 kg
Weight 0 mm stroke	0.46 kg	0.67 kg	1.14 kg	1.4 kg	2.12 kg	3.16 kg

<b>Piston Ø</b>	<b>125 mm</b>
Retracting piston force	7220 N
Extracting piston force	7725 N
Cushioning energy	140 J
Cushioning length	22 mm
Weight 10 mm stroke	0.21 kg
Weight 0 mm stroke	6.92 kg

Dimensions



S = stroke

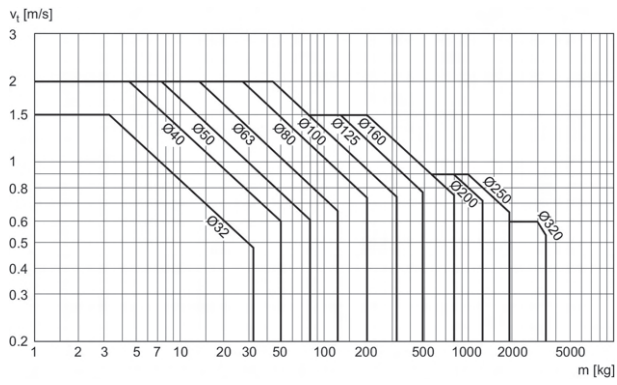
\*) For cylinders with optional piston rod with internal thread

Piston $\varnothing$	A -2	AF+1	$\varnothing B$ d11	$\varnothing BA$ d11	BG min.	E	EE	G	H
32	22	12	30	30	16	46.5	G 1/8	27.75	47.5
40	24	13.5	35	35	16	53	G 1/4	33.25	53
50	32	17	40	40	16	65	G 1/4	31	65
63	32	17	45	45	16	75	G 3/8	38.25	75
80	40	21	45	45	17	95	G 3/8	38.25	95
100	40	21	55	55	17	115	G 1/2	42.25	115
125	54	28	60	60	20	140	G 1/2	53.85	140

Piston $\varnothing$	KF	KK	KV	KW	$\varnothing MM$ f8	PL	L2	$L3 \pm 0,5$	L8
32	M6	M10x1,25	16	5	12	16	16.25	4.5	94 $\pm 0,4$
40	M8	M12x1,25	18	6	16	20	18.25	4.5	105 $\pm 0,7$
50	M10	M16x1,5	24	8	20	19	25	4.5	106 $\pm 0,7$
63	M10	M16x1,5	24	8	20	24	25	4.5	121 $\pm 0,8$
80	M12	M20x1,5	30	10	25	23.5	33	0	128 $\pm 0,8$
100	M12	M20x1,5	30	10	25	25	36	0	138 $\pm 1$
125	M16	M27x2	41	13.5	32	33	45	0	160 $\pm 1$

Piston $\varnothing$	RT	SW	TG	VA -1	VD	WH
32	M6	10	32,5 $\pm 0,5$	4	5	26 $\pm 1,4$
40	M6	13	38 $\pm 0,5$	4	5	30 $\pm 1,4$
50	M8	17	46,5 $\pm 0,6$	4	5	37 $\pm 1,4$
63	M8	17	56,5 $\pm 0,7$	4	5	37 $\pm 1,8$
80	M10	22	72 $\pm 0,7$	4	5	46 $\pm 1,8$
100	M10	22	89 $\pm 0,7$	4	5	51 $\pm 1,8$
125	M12	27	110 $\pm 1,1$	6	7	65 $\pm 2,2$

**Cushioning diagram**



$v_t$  = Piston velocity [m/s]  $m$  = Cushionable mass [kg]

**Tie rod cylinder ISO 15552, Series TRB**

Standards: ISO 15552

Functional principle: Double-acting

Piston: With magnet

Cushioning: Pneumatic adjustable cushioning

Piston rod: External thread

Piston rod: single

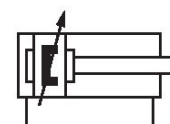
Compressed air connection: Internal thread

: corrosion-resistant

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



Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
Piston rod thread	M10x1,25	M12x1,25	M16x1,5	M16x1,5	M20x1,5	M20x1,5
Ports	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2
Piston rod Ø	12 mm	16 mm	20 mm	20 mm	25 mm	25 mm
Stroke 25	R480692052	R480692063	R480692074	R480692085	R480692096	R480692107
50	R480692053	R480692064	R480692075	R480692086	R480692097	R480692108
80	R480692054	R480692065	R480692076	R480692087	R480692098	R480692109
100	R480692055	R480692066	R480692077	R480692088	R480692099	R480692110
125	R480692056	R480692067	R480692078	R480692089	R480692100	R480692111
160	R480692057	R480692068	R480692079	R480692090	R480692101	R480692112
200	R480692058	R480692069	R480692080	R480692091	R480692102	R480692113
250	R480692059	R480692070	R480692081	R480692092	R480692103	R480692114
320	R480692060	R480692071	R480692082	R480692093	R480692104	R480692115
400	R480692061	R480692072	R480692083	R480692094	R480692105	R480692116
500	R480692062	R480692073	R480692084	R480692095	R480692106	R480692117

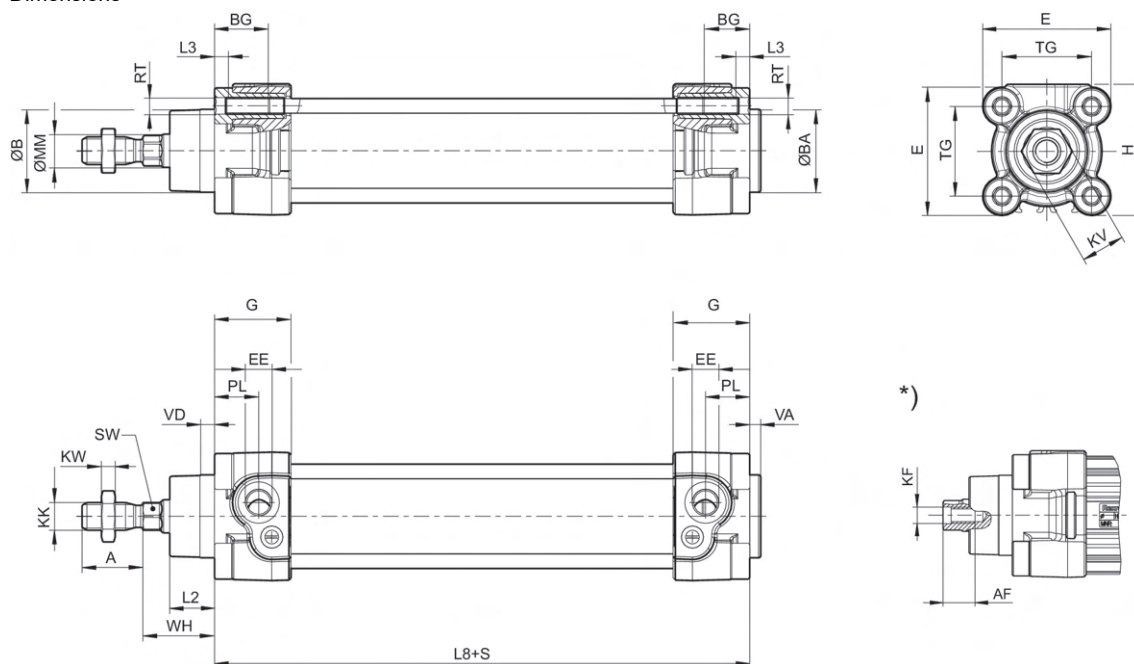
Piston Ø	125 mm
Piston rod thread	M27x2
Ports	G 1/2
Piston rod Ø	32 mm
Stroke 25	R480692118
50	R480692119
80	R480692120
100	R480692121
125	R480692122
160	R480692123
200	R480692124

<b>Piston Ø</b>	<b>125 mm</b>
<b>Piston rod thread</b>	<b>M27x2</b>
<b>Ports</b>	<b>G 1/2</b>
<b>Piston rod Ø</b>	<b>32 mm</b>
250	R480692125
320	R480692126
400	R480692127
500	R480692128

<b>Piston Ø</b>	<b>32 mm</b>	<b>40 mm</b>	<b>50 mm</b>	<b>63 mm</b>	<b>80 mm</b>	<b>100 mm</b>
Retracting piston force	435 N	660 N	1035 N	1765 N	2855 N	4635 N
Extracting piston force	505 N	790 N	1235 N	1960 N	3165 N	4945 N
Cushioning energy	4.8 J	9 J	15 J	27 J	54 J	88 J
Cushioning length	16.5 mm	19 mm	17 mm	16.5 mm	19.5 mm	19.5 mm
Weight 10 mm stroke	0.024 kg	0.03 kg	0.036 kg	0.052 kg	0.06 kg	0.065 kg
Weight 0 mm stroke	0.46 kg	0.67 kg	1.14 kg	1.4 kg	2.12 kg	3.16 kg

<b>Piston Ø</b>	<b>125 mm</b>
Retracting piston force	7220 N
Extracting piston force	7725 N
Cushioning energy	140 J
Cushioning length	22 mm
Weight 10 mm stroke	0.21 kg
Weight 0 mm stroke	6.92 kg

Dimensions



S = stroke

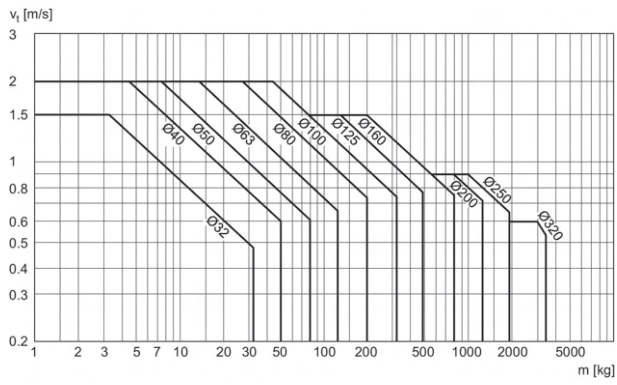
\*) For cylinders with optional piston rod with internal thread

Piston $\varnothing$	A -2	AF+1	$\varnothing B$ d11	$\varnothing BA$ d11	BG min.	E	EE	G	H
32	22	12	30	30	16	46.5	G 1/8	27.75	47.5
40	24	13.5	35	35	16	53	G 1/4	33.25	53
50	32	17	40	40	16	65	G 1/4	31	65
63	32	17	45	45	16	75	G 3/8	38.25	75
80	40	21	45	45	17	95	G 3/8	38.25	95
100	40	21	55	55	17	115	G 1/2	42.25	115
125	54	28	60	60	20	140	G 1/2	53.85	140

Piston $\varnothing$	KF	KK	KV	KW	$\varnothing MM$ f8	PL	L2	$L3 \pm 0,5$	L8
32	M6	M10x1,25	16	5	12	16	16.25	4.5	94 $\pm 0,4$
40	M8	M12x1,25	18	6	16	20	18.25	4.5	105 $\pm 0,7$
50	M10	M16x1,5	24	8	20	19	25	4.5	106 $\pm 0,7$
63	M10	M16x1,5	24	8	20	24	25	4.5	121 $\pm 0,8$
80	M12	M20x1,5	30	10	25	23.5	33	0	128 $\pm 0,8$
100	M12	M20x1,5	30	10	25	25	36	0	138 $\pm 1$
125	M16	M27x2	41	13.5	32	33	45	0	160 $\pm 1$

Piston $\varnothing$	RT	SW	TG	VA -1	VD	WH
32	M6	10	32,5 $\pm 0,5$	4	5	26 $\pm 1,4$
40	M6	13	38 $\pm 0,5$	4	5	30 $\pm 1,4$
50	M8	17	46,5 $\pm 0,6$	4	5	37 $\pm 1,4$
63	M8	17	56,5 $\pm 0,7$	4	5	37 $\pm 1,8$
80	M10	22	72 $\pm 0,7$	4	5	46 $\pm 1,8$
100	M10	22	89 $\pm 0,7$	4	5	51 $\pm 1,8$
125	M12	27	110 $\pm 1,1$	6	7	65 $\pm 2,2$

**Cushioning diagram**



$v_t$  = Piston velocity [m/s]  $m$  = Cushionable mass [kg]

**Tie rod cylinder ISO 15552, Series TRB**

Standards: ISO 15552

Functional principle: Double-acting

Piston: With magnet

Cushioning: Pneumatic adjustable cushioning

Piston rod: External thread

Piston rod: single

Compressed air connection: Internal thread

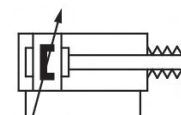
Piston rod protection: Bellows

: Bellows

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



Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
Piston rod thread	M10x1,25	M12x1,25	M16x1,5	M16x1,5	M20x1,5	M20x1,5
Ports	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2
Piston rod Ø	12 mm	16 mm	20 mm	20 mm	25 mm	25 mm
Stroke 25	R481602131	R481602139	R481602150	R481602161	R481602172	R481602183
50	R481602132	R481602140	R481602151	R481602162	R481602173	R481602184
80	R481602133	R481602141	R481602152	R481602163	R481602174	R481602185
100	R481602134	R481602142	R481602153	R481602164	R481602175	R481602186
125	R481602135	R481602143	R481602154	R481602165	R481602176	R481602187
160	R481602136	R481602144	R481602155	R481602166	R481602177	R481602188
200	R481602137	R481602145	R481602156	R481602167	R481602178	R481602189
250	R481602138	R481602146	R481602157	R481602168	R481602179	R481602190
320	-	R481602147	R481602158	R481602169	R481602180	R481602191
400	-	R481602148	R481602159	R481602170	R481602181	R481602192
500	-	R481602149	R481602160	R481602171	R481602182	R481602193

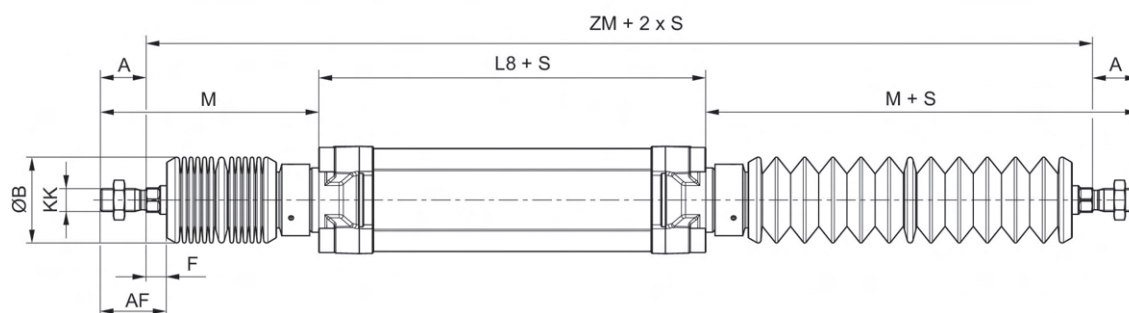
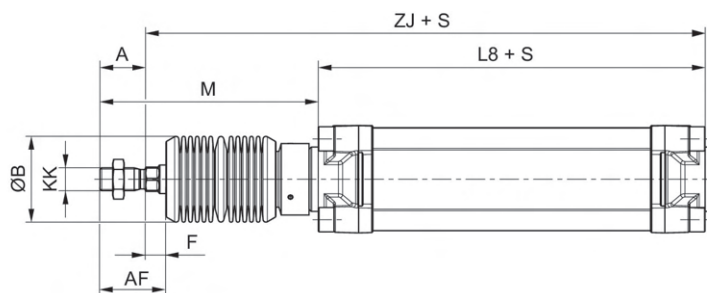
Piston Ø	125 mm
Piston rod thread	M27x2
Ports	G 1/2
Piston rod Ø	32 mm
Stroke 25	R481602194
50	R481602195
80	R481602196
100	R481602197
125	R481602198
160	R481602199
200	R481602200
250	R481602201

Piston Ø	125 mm
Piston rod thread	M27x2
Ports	G 1/2
Piston rod Ø	32 mm
320	R481602202
400	R481602203
500	R481602204

Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
Retracting piston force	435 N	660 N	1035 N	1765 N	2855 N	4635 N
Extracting piston force	505 N	790 N	1235 N	1960 N	3165 N	4945 N
Cushioning energy	4.8 J	9 J	15 J	27 J	54 J	88 J
Cushioning length	16.5 mm	19 mm	17 mm	16.5 mm	19.5 mm	19.5 mm

Piston Ø	125 mm
Retracting piston force	7220 N
Extracting piston force	7725 N
Cushioning energy	140 J
Cushioning length	22 mm

Dimensions



S = stroke

Stroke-dependent dimensions

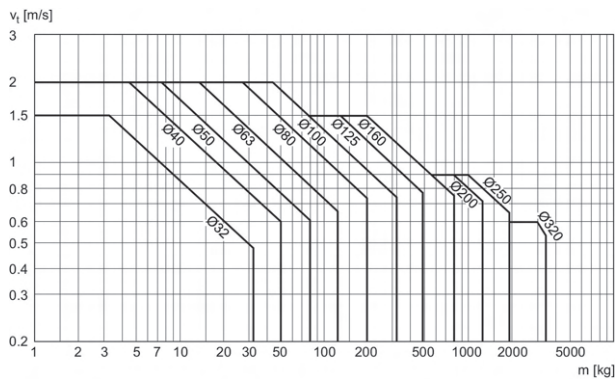
Piston Ø	S=0-75 M	S=0-75 ZJ	S=0-75 ZM	S=76-150 M	S=76-150 ZJ	S=76-150 ZM	S=151-250 M	S=151-250 ZJ	S=151-250 ZM
32	81	153	212	107	179	264	127	199	304
40	138	219	333	138	219	333	138	219	333
50	153	227	348	153	227	348	153	227	348
63	153	242	363	153	242	363	153	242	363
80	170	258	388	170	258	388	170	258	388
100	160	258	378	160	258	378	160	258	378
125	188	294	418	188	294	428	188	294	428

Piston Ø	S=251-5000 M	S=251-500 ZJ	S=251-500 ZM	S=501-750 M	S=501-750 ZJ	S=501-750 ZM	S=751-1000 M	S=751-1000 ZJ	S=751-1000 ZM
32	-	-	-	-	-	-	-	-	-
40	218	299	493	-	-	-	-	-	-
50	233	307	508	313	387	668	-	-	-
63	233	322	523	313	402	683	394	483	845
80	250	338	548	330	418	708	411	499	870
100	220	318	498	280	378	618	340	438	738
125	248	354	548	308	414	668	368	474	788

S = stroke

	A	Ø B	KK	L8	AF	F
R481602131	22	42	M10x1.25	94	34	12
R481602139	24	42	M12x1.25	105	39	15
R481602150	32	64	M16x1,5	106	47	15
R481602161	32	64	M16x1,5	121	47	15
R481602172	40	64	M20x1,5	128	57	17
R481602183	40	64	M20x1,5	138	57	17
R481602194	54	94	M27x2	160	71	17

**Cushioning diagram**



$v_t$  = Piston velocity [m/s]  $m$  = Cushionable mass [kg]

**Tie rod cylinder ISO 15552, Series TRB**

Standards: ISO 15552

Functional principle: Double-acting

Piston: With magnet

Cushioning: Pneumatic adjustable cushioning

Piston rod: External thread

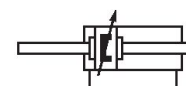
Piston rod: through

Compressed air connection: Internal thread

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



Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
Piston rod thread	M10x1,25	M12x1,25	M16x1,5	M16x1,5	M20x1,5	M20x1,5
Ports	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2
Piston rod Ø	12 mm	16 mm	20 mm	20 mm	25 mm	25 mm
Stroke 25	0822340501	0822341501	0822342501	0822343501	0822344501	0822345501
50	0822340502	0822341502	0822342502	0822343502	0822344502	0822345502
80	0822340503	0822341503	0822342503	0822343503	0822344503	0822345503
100	0822340504	0822341504	0822342504	0822343504	0822344504	0822345504
125	0822340505	0822341505	0822342505	0822343505	0822344505	0822345505
160	0822340506	0822341506	0822342506	0822343506	0822344506	0822345506
200	0822340507	0822341507	0822342507	0822343507	0822344507	0822345507
250	0822340508	0822341508	0822342508	0822343508	0822344508	0822345508
320	0822340509	0822341509	0822342509	0822343509	0822344509	0822345509
400	0822340510	0822341510	0822342510	0822343510	0822344510	0822345510
500	0822340511	0822341511	0822342511	0822343511	0822344511	0822345511

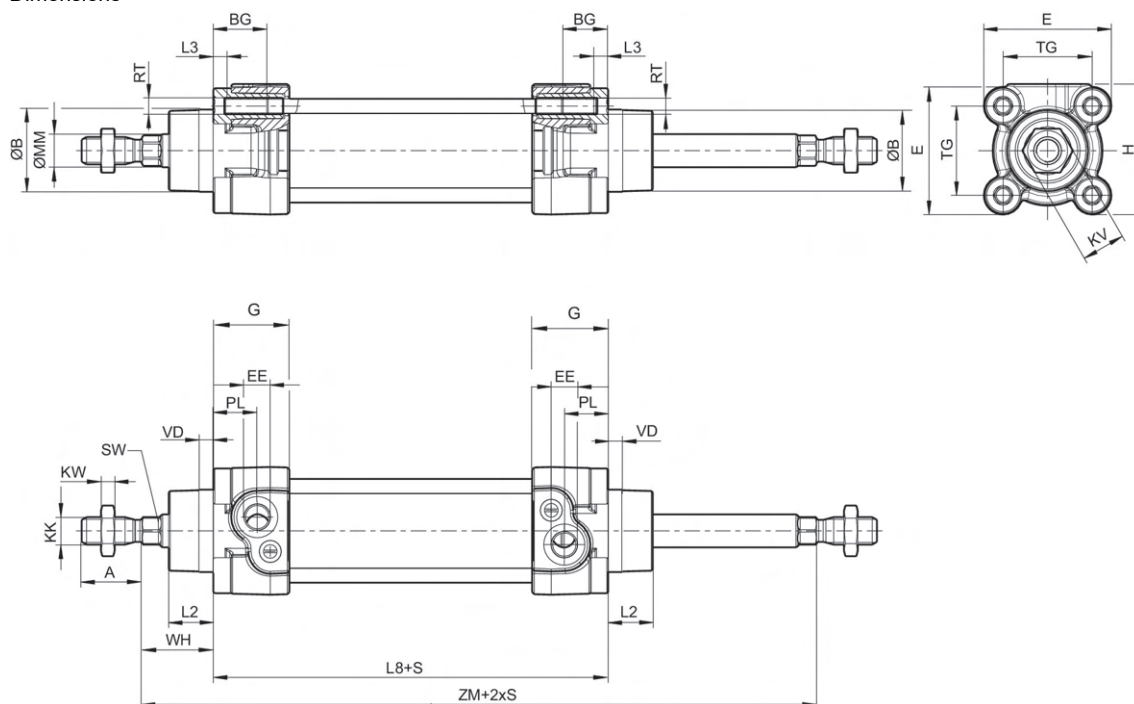
Piston Ø	125 mm
Piston rod thread	M27x2
Ports	G 1/2
Piston rod Ø	32 mm
Stroke 25	R480166022
50	7472410919
80	7472024294
100	7472412262
125	7472412263
160	7472412264
200	7472412265
250	7472412266

<b>Piston Ø</b>	<b>125 mm</b>
<b>Piston rod thread</b>	<b>M27x2</b>
<b>Ports</b>	<b>G 1/2</b>
<b>Piston rod Ø</b>	<b>32 mm</b>
320	7472412267
400	7472412268
500	7472412269

<b>Piston Ø</b>	<b>32 mm</b>	<b>40 mm</b>	<b>50 mm</b>	<b>63 mm</b>	<b>80 mm</b>	<b>100 mm</b>
Retracting piston force	435 N	660 N	1035 N	1765 N	2855 N	4635 N
Extracting piston force	435 N	660 N	1035 N	1765 N	2855 N	4635 N
Cushioning energy	4.8 J	9 J	15 J	27 J	54 J	88 J
Cushioning length	16.5 mm	19 mm	17 mm	16.5 mm	19.5 mm	495.3 mm
Weight 10 mm stroke	0.033 kg	0.046 kg	0.061 kg	0.077 kg	0.099 kg	0.104 kg
Weight 0 mm stroke	0.52 kg	0.82 kg	1.42 kg	1.7 kg	2.67 kg	3.7 kg

<b>Piston Ø</b>	<b>125 mm</b>
Retracting piston force	7220 N
Extracting piston force	7220 N
Cushioning energy	140 J
Cushioning length	22 mm
Weight 10 mm stroke	0.26 kg
Weight 0 mm stroke	9 kg

Dimensions



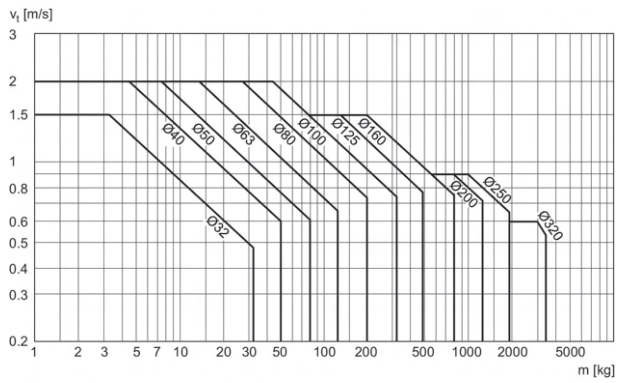
S = stroke

Piston Ø	A -2	ØB d11	BG min.	E	EE	G	H	KK	KV
32	22	30	16	46.5	G1/8	27.75	47.5	M10x1,25	16
40	24	35	16	53	G1/4	33.25	53	M12x1,25	18
50	32	40	16	65	G1/4	31	65	M16x1,5	24
63	32	45	16	75	G3/8	38.25	75	M16x1,5	24
80	40	45	17	95	G3/8	38.25	95	M20x1,5	30
100	40	55	17	115	G1/2	42.25	115	M20x1,5	30
125	54	60	20	140	G1/2	53.85	140	M27x2	41

Piston Ø	KW	ØMM f8	PL	L2	L3 ±0,5	L8	RT	SW	TG
32	5	12	16	16.25	4.5	94±0,4	M6	10	32,5±0,5
40	6	16	20	18.25	4.5	105±0,7	M6	13	38±0,5
50	8	20	19	25	4.5	106±0,7	M8	17	46,5±0,6
63	8	20	24	25	4.5	121±0,8	M8	17	56,5±0,7
80	10	25	23.5	33	0	128±0,8	M10	22	72±0,7
100	10	25	25	36	0	138±1	M10	22	89±0,7
125	13.5	32	33	45	0	160±1	M12	27	110±1,1

Piston Ø	VD	WH	ZM
32	5	26±1,4	146+3/-1,5
40	5	30±1,4	165+3/-1,5
50	5	37±1,4	180+3/-1,5
63	5	37±1,8	195+3/-1,5
80	5	46±1,8	220+3/-1,5
100	5	51±1,8	240+3,5/-2
125	7	65±2,2	290+3,5/-2

**Cushioning diagram**



$v_t$  = Piston velocity [m/s]  $m$  = Cushionable mass [kg]

**Tie rod cylinder ISO 15552, Series TRB**

Standards: ISO 15552

Functional principle: Double-acting

Piston: With magnet

Cushioning: Pneumatic adjustable cushioning

Piston rod: External thread

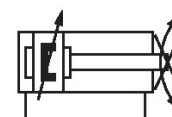
Piston rod: non-rotating

Compressed air connection: Internal thread

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

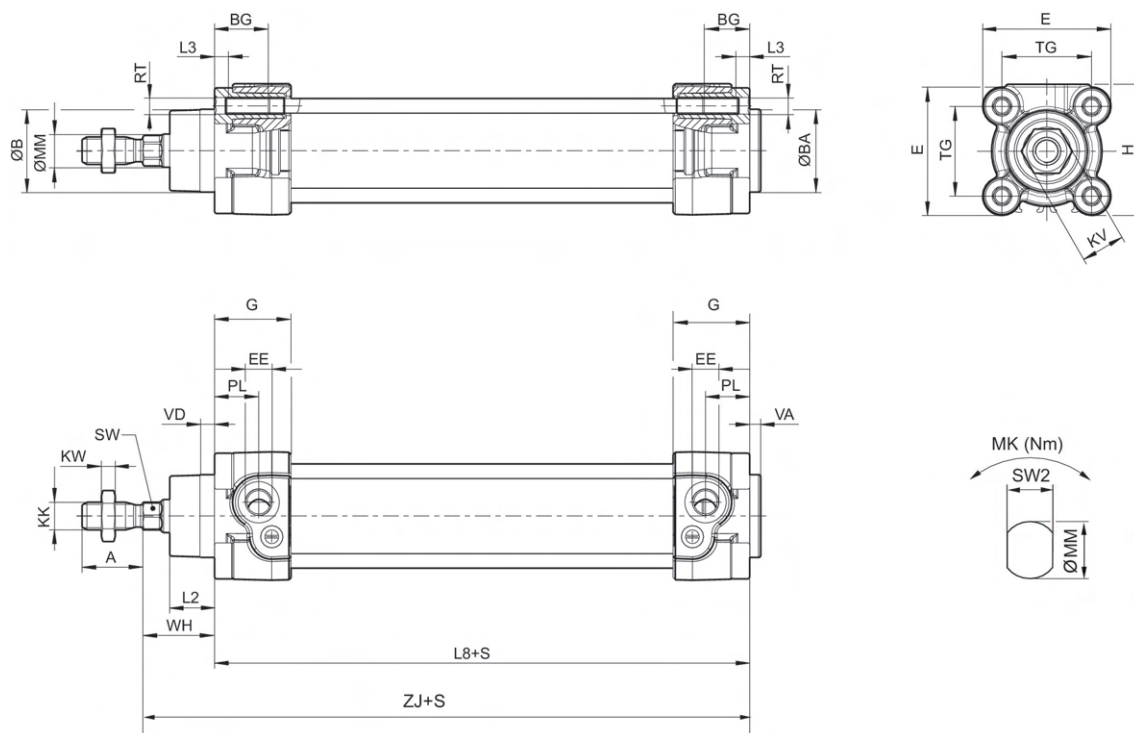


Piston Ø	32 mm	40 mm	50 mm	63 mm
Piston rod thread	M10x1,25	M12x1,25	M16x1,5	M16x1,5
Ports	G 1/8	G 1/4	G 1/4	G 3/8
Piston rod Ø	12 mm	16 mm	20 mm	20 mm
Stroke 25	R481602013	R481602024	R481602035	R481602046
50	R481602014	R481602025	R481602036	R481602047
80	R481602015	R481602026	R481602037	R481602048
100	R481602016	R481602027	R481602038	R481602049
125	R481602017	R481602028	R481602039	R481602050
160	R481602018	R481602029	R481602040	R481602051
200	R481602019	R481602030	R481602041	R481602052
250	R481602020	R481602031	R481602042	R481602053
320	R481602021	R481602032	R481602043	R481602054
400	R481602022	R481602033	R481602044	R481602055
500	R481602023	R481602034	R481602045	R481602056

Piston Ø	32 mm	40 mm	50 mm	63 mm
Retracting piston force	435 N	660 N	1035 N	1765 N
Extracting piston force	505 N	790 N	1235 N	1960 N
Cushioning energy	4.8 J	9 J	15 J	27 J
Cushioning length	16.5 mm	19 mm	17 mm	16.5 mm
Max. torque for torsion protection	0.75 Nm	1.5 Nm	2 Nm	2 Nm
Rotation angle tolerance (±)	1.8 °	1.6 °	1.4 °	1.4 °
Weight 10 mm stroke	0.024 kg	0.03 kg	0.036 kg	0.052 kg

Piston Ø	32 mm	40 mm	50 mm	63 mm
Weight 0 mm stroke	0.46 kg	0.67 kg	1.14 kg	1.4 kg

Dimensions



S = stroke

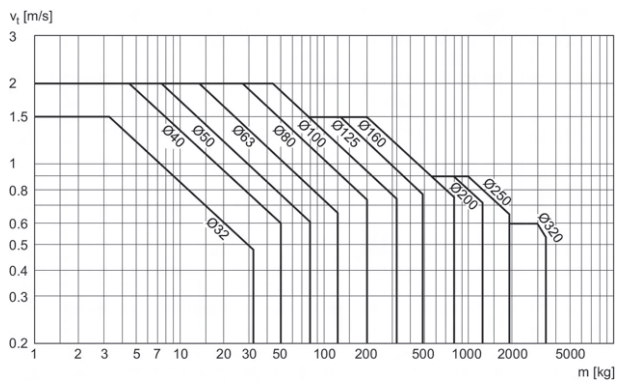
Piston Ø	A -2	ØB d11	ØBA d11	BG min.	E	EE	G	H	KF
32	22	30	30	16	46.5	G 1/8	27.75	47.5	M6
40	24	35	35	16	53	G 1/4	33.25	53	M8
50	32	40	40	16	65	G 1/4	31	65	M10
63	32	45	45	16	75	G 3/8	38.25	75	M10

Piston Ø	KK	KV	KW	ØMM f8	PL	L2	L3 ±0,5	L8	RT
32	M10x1,25	16	5	12	16	16.25	4.5	94±0,4	M6
40	M12x1,25	18	6	16	20	18.25	4.5	105±0,7	M6
50	M16x1,5	24	8	20	19	25	4.5	106±0,7	M8
63	M16x1,5	24	8	20	24	25	4.5	121±0,8	M8

Piston Ø	SW	TG	VA -1	VD	WH	ZJ	MK	SW2
32	10	32,5±0,5	4	5	26±1,4	120	0.75	10
40	13	38±0,5	4	5	30±1,4	135	1.5	13
50	16*	46,5±0,6	4	5	37±1,4	143	2	16
63	16*	56,5±0,7	4	5	37±1,8	158	2	16

\* not according to ISO 15552

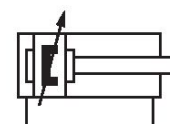
**Cushioning diagram**



$v_t$  = Piston velocity [m/s]  $m$  = Cushionable mass [kg]

**Tie rod cylinder ISO 15552, Series TRB - inch**

Functional principle: Double-acting  
 Piston: Piston with magnet  
 Cushioning: Pneumatic adjustable cushioning  
 Piston rod: External thread  
 Piston rod: single  
 Compressed air connection: Internal thread  
 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



Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
Piston rod thread	7/16-20 UNF	1/2-20 UNF	3/4-16 UNF	3/4-16 UNF	3/4-16 UNF	3/4-16 UNF
Ports	1/8 NPT	1/4 NPT	1/4 NPT	3/8 NPT	3/8 NPT	1/2 NPT
Piston rod Ø	12 mm	16 mm	20 mm	20 mm	25 mm	25 mm
Stroke 25.4	R480176766	R480176858	R480176946	R480177032	R480177121	R480177211
50.8	R480176776	R480176865	R480176953	R480177040	R480177128	R480177219
76.2	R480176789	R480176875	R480176960	R480177047	R480177139	R480177225
101.6	R480176795	R480176882	R480176969	R480177054	R480177143	R480177237
127	R480176802	R480176891	R480176979	R480177067	R480177155	R480177238
152.4	R480176813	R480176900	R480176982	R480177077	R480177164	R480177247
177.8	R480176817	R480176907	R480176997	R480177078	R480177166	R480177258
203.2	R480176823	R480176913	R480176998	R480177090	R480177176	R480177266
228.6	R480176834	R480176923	R480177007	R480177099	R480177182	R480177272
254	R480176844	R480176932	R480177017	R480177102	R480177195	R480177278
304.8	R480176852	R480176941	R480177023	R480177114	R480177205	R480177290

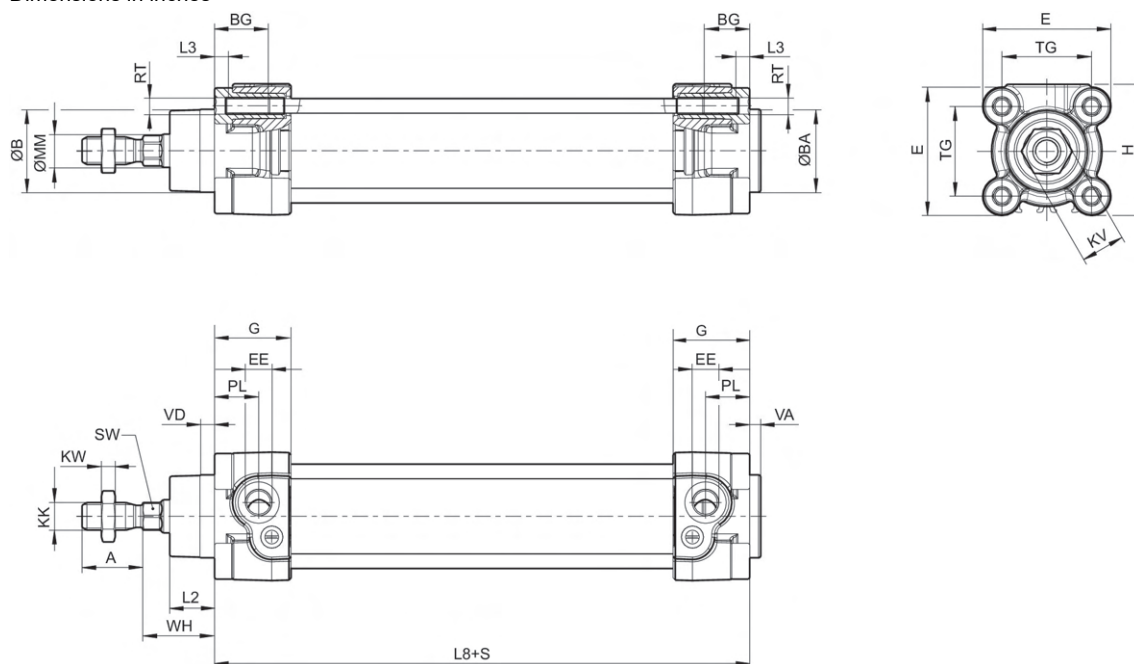
Piston Ø	125 mm
Piston rod thread	1-14 UNF
Ports	1/2 NPT
Piston rod Ø	32 mm
Stroke 25.4	R480177299
50.8	R480177307
76.2	R480177316
101.6	R480177323
127	R480177328
152.4	R480177334
177.8	R480177346

<b>Piston Ø</b>	<b>125 mm</b>
<b>Piston rod thread</b>	<b>1-14 UNF</b>
<b>Ports</b>	<b>1/2 NPT</b>
<b>Piston rod Ø</b>	<b>32 mm</b>
203.2	R480177357
228.6	R480177360
254	R480177367
304.8	R480177377

<b>Piston Ø</b>	<b>32 mm</b>	<b>40 mm</b>	<b>50 mm</b>	<b>63 mm</b>	<b>80 mm</b>	<b>100 mm</b>
Retracting piston force	435 N	660 N	1035 N	1765 N	2855 N	4635 N
Extracting piston force	505 N	790 N	1235 N	1960 N	3165 N	4945 N
Cushioning energy	4.8 J	9 J	15 J	27 J	54 J	88 J
Cushioning length	16.5 mm	19 mm	17 mm	16.5 mm	19.5 mm	19.5 mm
Weight 10 mm stroke	0.024 kg	0.03 kg	0.036 kg	0.052 kg	0.06 kg	0.065 kg
Weight 0 mm stroke	0.46 kg	0.67 kg	1.14 kg	1.4 kg	2.12 kg	3.16 kg

<b>Piston Ø</b>	<b>125 mm</b>
Retracting piston force	7220 N
Extracting piston force	7725 N
Cushioning energy	140 J
Cushioning length	22 mm
Weight 10 mm stroke	0.21 kg
Weight 0 mm stroke	6.92 kg

Dimensions in inches



S = stroke

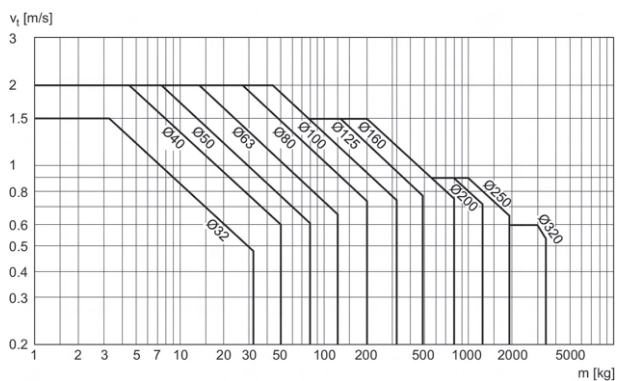
## Dimensions in inches

Ø [mm]	Ø [inch]	A -0,08	ØB d11	ØBA d11	BG min.	E	EE	KK	G
32	1 1/4	0.87	1.18	1.18	0.63	1.83	1/8 NPT	7/16 - 20 UNF	1.09
40	1 1/2	0.94	1.38	1.38	0.63	2.09	1/4 NPT	1/2 - 20 UNF	1.31
50	2	1.26	1.57	1.57	0.63	2.56	1/4 NPT	3/4 - 16 UNF	1.22
63	2 1/2	1.26	1.77	1.77	0.63	2.95	3/8 NPT	3/4 - 16 UNF	1.51
80	3	1.57	1.77	1.77	0.67	3.74	3/8 NPT	3/4 - 16 UNF	1.51
100	4	1.57	2.17	2.17	0.67	4.53	1/2 NPT	3/4 - 16 UNF	1.66
125	5	2.13	2.36	2.36	0.79	5.51	1/2 NPT	1 - 14 UNF	2.12

Ø [mm]	H	KV	KW	ØMM f8	PL	L2	L3 ±0,02	L8	RT
32	1.87	0.63	0.2	0.47	0.63	0.64	0.18	3.7±0.02	M6
40	2.09	0.71	0.24	0.63	0.79	0.72	0.18	4.13±0.03	M6
50	2.56	0.94	0.31	0.79	0.75	0.98	0.18	4.17±0.03	M8
63	2.95	0.94	0.31	0.79	0.94	0.98	0.18	4.76±0.03	M8
80	3.74	1.18	0.39	0.98	0.93	1.3	0	5.04±0.03	M10
100	4.53	1.18	0.39	0.98	0.98	1.42	0	5.43±0.04	M10
125	5.51	1.61	0.53	1.26	1.3	1.77	0	6.3±0.04	M12

Ø [mm]	SW	TG	VA -0,04	VD	WH
32	0.39	1.28±0.02	0.16	0.2	1.02±0.06
40	0.51	1.5±0.02	0.16	0.2	1.18±0.06
50	0.67	1.83±0.02	0.16	0.2	1.46±0.06
63	0.67	2.22±0.03	0.16	0.2	1.46±0.07
80	0.87	2.83±0.03	0.16	0.2	1.81±0.07
100	0.87	3.5±0.03	0.16	0.2	2.01±0.07
125	1.06	4.33±0.04	0.24	0.28	2.56±0.09

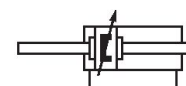
**Cushioning diagram**



$v_t$  = Piston velocity [m/s]  $m$  = Cushionable mass [kg]

**Tie rod cylinder ISO 15552, Series TRB - inch**

Functional principle: Double-acting  
 Piston: Piston with magnet  
 Cushioning: Pneumatic adjustable cushioning  
 Piston rod: External thread  
 Piston rod: through  
 Compressed air connection: Internal thread  
 Ambient temperature min./max.: -20 °C ... 80 °C  
 Medium temperature min./max.: -20 °C ... 80 °C  
 Working pressure min./max.: 2 bar ... 10 bar



Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
Piston rod thread	7/16-20 UNF	1/2-20 UNF	3/4-16 UNF	3/4-16 UNF	3/4-16 UNF	3/4-16 UNF
Ports	1/8 NPT	1/4 NPT	1/4 NPT	3/8 NPT	3/8 NPT	1/2 NPT
Piston rod Ø	12 mm	16 mm	20 mm	20 mm	25 mm	25 mm
Stroke 25.4	R480176773	R480176861	R480176949	R480177037	R480177118	R480177210
50.8	R480176779	R480176863	R480176951	R480177044	R480177133	R480177214
76.2	R480176785	R480176872	R480176961	R480177052	R480177135	R480177222
101.6	R480176792	R480176878	R480176967	R480177058	R480177149	R480177233
127	R480176804	R480176893	R480176976	R480177063	R480177157	R480177241
152.4	R480176809	R480176896	R480176988	R480177071	R480177160	R480177246
177.8	R480176814	R480176903	R480176996	R480177084	R480177167	R480177259
203.2	R480176827	R480176916	R480177001	R480177088	R480177180	R480177268
228.6	R480176837	R480176921	R480177012	R480177095	R480177187	R480177276
254	R480176839	R480176931	R480177014	R480177108	R480177190	R480177284
304.8	R480176851	R480176939	R480177028	R480177111	R480177204	R480177293

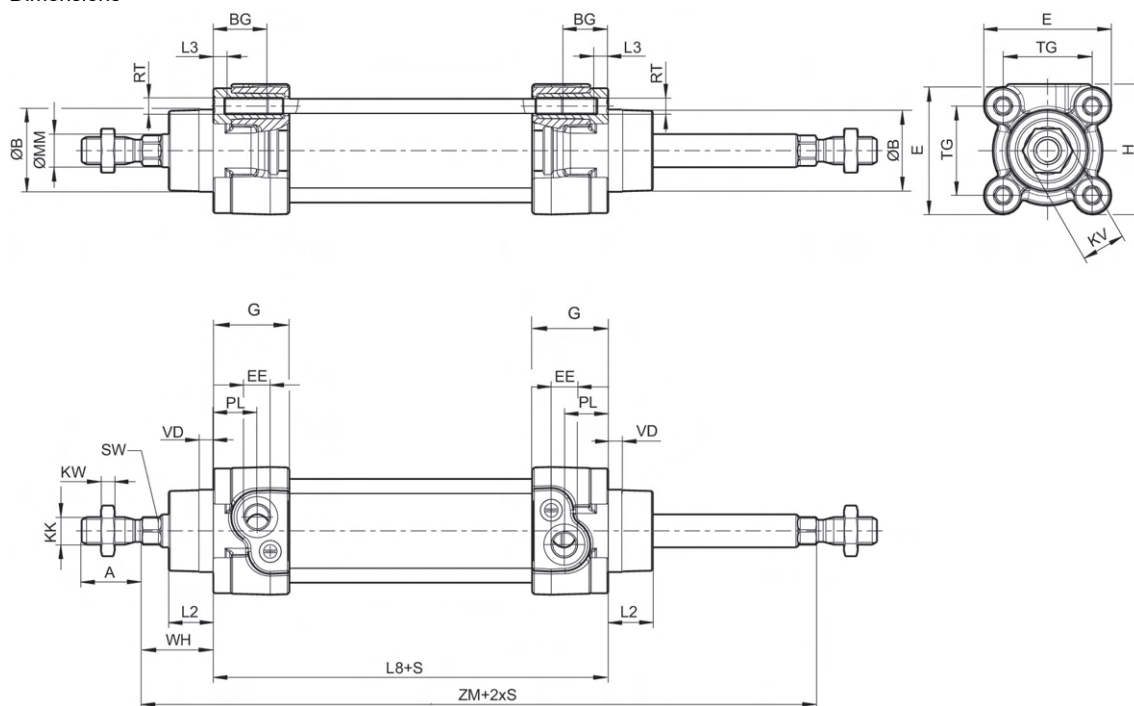
Piston Ø	125 mm
Piston rod thread	1-14 UNF
Ports	1/2 NPT
Piston rod Ø	32 mm
Stroke 25.4	R480177297
50.8	R480177304
76.2	R480177311
101.6	R480177321
127	R480177332
152.4	R480177337
177.8	R480177348
203.2	R480177356

<b>Piston Ø</b>	<b>125 mm</b>
<b>Piston rod thread</b>	<b>1-14 UNF</b>
<b>Ports</b>	<b>1/2 NPT</b>
<b>Piston rod Ø</b>	<b>32 mm</b>
228.6	R480177364
254	R480177366
304.8	R480177381

<b>Piston Ø</b>	<b>32 mm</b>	<b>40 mm</b>	<b>50 mm</b>	<b>63 mm</b>	<b>80 mm</b>	<b>100 mm</b>
Retracting piston force	435 N	660 N	1035 N	1765 N	2855 N	4635 N
Extracting piston force	435 N	660 N	1035 N	1765 N	2855 N	4635 N
Cushioning energy	4.8 J	9 J	15 J	27 J	54 J	88 J
Cushioning length	16.5 mm	15 mm	17 mm	16.5 mm	19.5 mm	19.5 mm
Weight 10 mm stroke	0.033 kg	0.046 kg	0.061 kg	0.077 kg	0.099 kg	0.104 kg
Weight 0 mm stroke	0.52 kg	0.82 kg	1.42 kg	1.7 kg	2.67 kg	3.7 kg

<b>Piston Ø</b>	<b>125 mm</b>
Retracting piston force	7220 N
Extracting piston force	7220 N
Cushioning energy	140 J
Cushioning length	22 mm
Weight 10 mm stroke	0.26 kg
Weight 0 mm stroke	9 kg

Dimensions



S = stroke

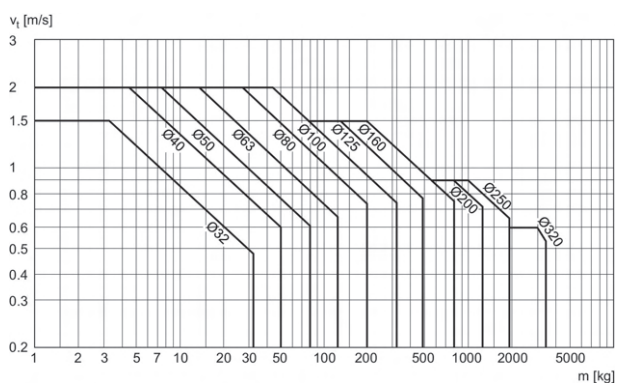
Dimensions in inches

Part No. Ø [mm]	Ø [inch]	A -0,08	ØB d11	BG min.	E	EE	KK	G	H
32	1 1/4	0.87	1.18	0.63	1.83	1/8 NPT	7/16 - 20 UNF	1.09	1.87
40	1 1/2	0.94	1.38	0.63	2.09	1/4 NPT	1/2 - 20 UNF	1.31	2.09
50	2	1.26	1.57	0.63	2.56	1/4 NPT	3/4 - 16 UNF	1.22	2.56
63	2 1/2	1.26	1.77	0.63	2.95	3/8 NPT	3/4 - 16 UNF	1.22	2.95
80	3	1.57	1.77	0.67	3.74	3/8 NPT	3/4 - 16 UNF	1.51	3.74
100	4	1.57	2.17	0.67	4.53	1/2 NPT	3/4 - 16 UNF	1.51	4.53
125	5	2.13	2.36	0.79	5.51	1/2 NPT	1 - 14 UNF	1.66	5.51

Part No. Ø [mm]	KV	KW	ØMM f8	PL	L2	L3 ±0,02	L8	RT	SW
32	0.63	0.2	0.47	0.63	0.64	0.18	3.7±0.02	M6	0.39
40	0.71	0.24	0.63	0.79	0.72	0.18	4.13±0.03	M6	0.51
50	0.94	0.31	0.79	0.75	0.98	0.18	4.17±0.03	M8	0.67
63	0.94	0.31	0.79	0.94	0.98	0.18	4.76±0.03	M8	0.67
80	1.18	0.39	0.98	0.93	1.3	0	5.04±0.03	M10	0.87
100	1.18	0.39	0.98	0.98	1.42	0	5.43±0.04	M10	0.87
125	1.61	0.53	1.26	1.3	1.77	0	6.3±0.04	M12	1.06

Part No. Ø [mm]	TG	VD	WH	ZM
32	1.28±0.02	0.2	26±1.4	5.75+0.12/0.06
40	1.5±0.02	0.2	30±1.4	6.5+0.12/0.06
50	1.83±0.02	0.2	37±1.4	7.09+0.12/0.06
63	2.22±0.03	0.2	37±1.8	7.68+0.12/0.06
80	2.83±0.03	0.2	46±1.8	8.66+0.12/0.06
100	3.5±0.03	0.2	51±1.8	9.45+0.08/0.08
125	4.33±0.04	0.28	65±2.2	11.42+0.08/0.08

### Cushioning diagram



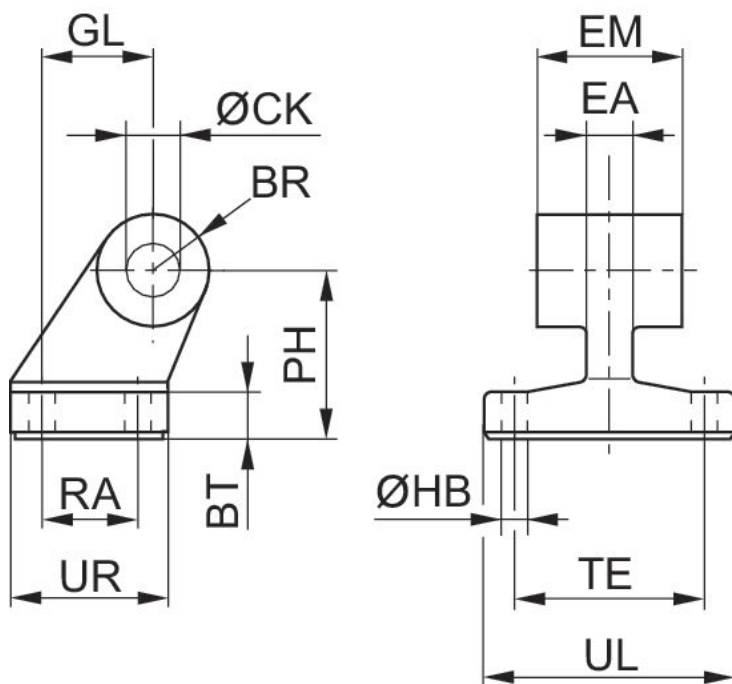
$v_t$  = Piston velocity [m/s]  $m$  = Cushionable mass [kg]

**Bearing block AB7-HD, Series CM1**



Piston diameter [mm]	Swivel bearing Ø [mm]	Standardization	Material	Part No.
32	10	ISO 15552	Nodular graphite iron	1825805275
40	12	ISO 15552	Nodular graphite iron	1825805276
50	12	ISO 15552	Nodular graphite iron	1825805277
63	16	ISO 15552	Nodular graphite iron	1825805278
80	16	ISO 15552	Nodular graphite iron	1825805279
100	20	ISO 15552	Nodular graphite iron	1825805280
125	25	ISO 15552	Nodular graphite iron	1825805281

Dimensions



Part No.	Piston Ø	BR	BT	Ø CK H9	Ø HB H13	EM	GL JS14	EA max.	PH JS15
1825805275	32	10	8	10	6.6	26 -0,2/-0,6	21	10	32
1825805276	40	11	10	12	6.6	28 -0,2/-0,6	24	12	36
1825805277	50	13	12	12	9	32 -0,2/-0,6	33	16	45
1825805278	63	15	12	16	9	40 -0,2/-0,6	37	16	50
1825805279	80	15	14	16	11	50 -0,2/-0,6	47	20	63
1825805280	100	19	15	20	11	60 -0,2/-0,6	55	20	71
1825805281	125	22,5	20	25	14	70 -0,5/-1,5	70	30	90
1825805282	160	31,5	25	30	14	90 -0,5/-1,5	97	36	115
1825805283	200	31,5	30	30	18	90 -0,5/-1,5	105	40	135
1825805284	250	40	35	40	22	110 -0,5/-1,5	128	45	165
5239013422	320	45	40	45	26	120 -0,5/-1,5	150	55	200

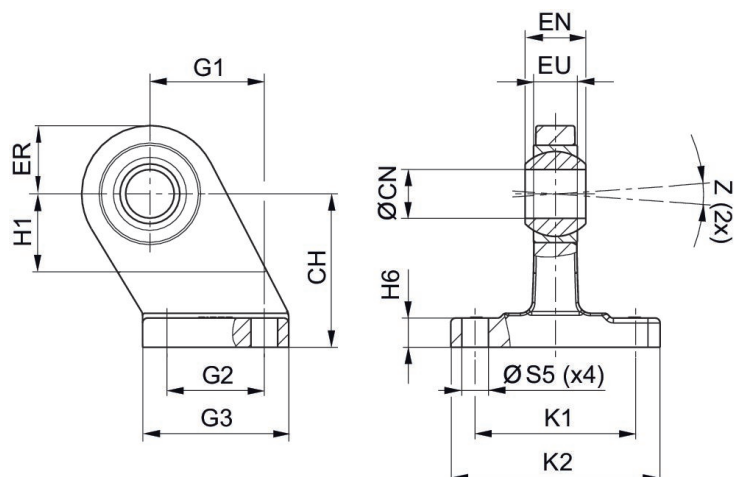
Part No.	RA JS14	TE JS14	UL max.	UR max.
1825805275	18	38	51	31
1825805276	22	41	54	35
1825805277	30	50	65	45
1825805278	35	52	67	50
1825805279	40	66	86	60
1825805280	50	76	96	70
1825805281	60	94	124	90
1825805282	88	118	156	126
1825805283	90	122	162	130
1825805284	110	150	200	160
5239013422	122	170	234	186

**Bearing block CS7, Series CM1**



Piston diameter [mm]	Swivel bearing Ø [mm]	Standardization	Material	Part No.
32	10	VDMA 24562 part 2	Nodular graphite iron	1827001784
40	12	VDMA 24562 part 2	Nodular graphite iron	1827001785
50	16	VDMA 24562 part 2	Nodular graphite iron	1827001786
63	16	VDMA 24562 part 2	Nodular graphite iron	1827001787
80	20	VDMA 24562 part 2	Nodular graphite iron	1827001788
100	20	VDMA 24562 part 2	Nodular graphite iron	1827001789
125	30	VDMA 24562 part 2	Nodular graphite iron	1827001790

Dimensions



Piston Ø	Part No.	CH JS15	ØCN H7	EU max.	EN -1,0	ER max.	G1 JS14	G2 JS14	G3 max.
32	1827001784	32	10	10.5	14	16	21	18	31
40	1827001785	36	12	12	16	18	24	22	35
50	1827001786	45	16	15	21	21	33	30	45
63	1827001787	50	16	15	21	23	37	35	50
80	1827001788	63	20	18	25	28	47	40	60
100	1827001789	71	20	18	25	30	55	50	70
125	1827001790	90	30	25	37	40	70	60	90
160	1827001791	115	35	28	43	44	97	88	126
200	1827001792	135	35	28	43	47	105	90	130
250	1827001793	165	40	33	49	53	128	110	160
320	5239013442	200	50	45	60	63	150	122	186

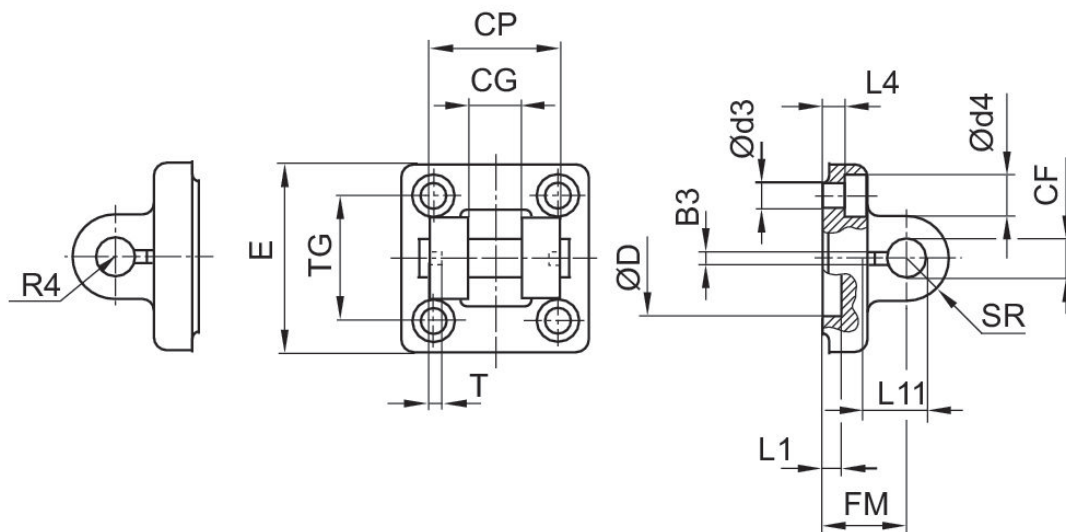
Piston Ø	H1 min.	H6	K1 JS14	K2 max.	ØS5 H13	Z min.
32	16	9 ±1	38	51	6.6	4°
40	20	9 ±1	41	54	6.6	4°
50	22	11 ±1	50	65	9	4°
63	27	11 ±1	52	67	9	4°
80	31	12 ±1,5	66	86	11	4°
100	38	13 ±1,5	76	96	11	4°
125	40	17 ±1,5	94	124	14	4°
160	45	22 ±1,5	118	156	14	4°
200	45	27 ±2	122	162	18	4°
250	50	31 ±2	150	200	22	4°
320	60	36 ±2	170	234	26	4°

**Clevis mounting AB6, Series CM1**



Piston diameter [mm]	Swivel bearing Ø [mm]	Standardization	Material	Part No.
32	10	ISO 15552	Aluminum	1827001593
40	12	ISO 15552	Aluminum	1827001594
50	16	ISO 15552	Aluminum	1827001595
63	16	ISO 15552	Aluminum	1827002024
80	20	ISO 15552	Aluminum	1827001597
100	20	ISO 15552	Aluminum	1827001598
125	30	ISO 15552	Aluminum	1827001599

Dimensions



Piston Ø	Part No.	B3 ±0,2	Ø CF F7	CG D10	CP d12	Ø d3	Ø d4	Ø D	E
32	1827001593	3.3	10	14	34	6.6	11	30	46
40	1827001594	4.3	12	16	40	6.6	11	35	52
50	1827001595	4.3	16	21	45	9	15	40	64
63	1827002024	4.3	16	21	51	9	15	45	74
80	1827001597	4.3	20	25	65	11	18	45	94
100	1827001598	4.3	20	25	75	11	18	55	113
125	1827001599	6.3	30	37	97	14	20	60	138
160	1827001600	6.3	35	43	122	18	26	65	180
200	1827001601	6.3	35	43	122	18	26	75	220
250	1827001602	8.3	40	49	125	22	33	90	280
320	5239013432	8.3	50	60	150	26	36	110	340

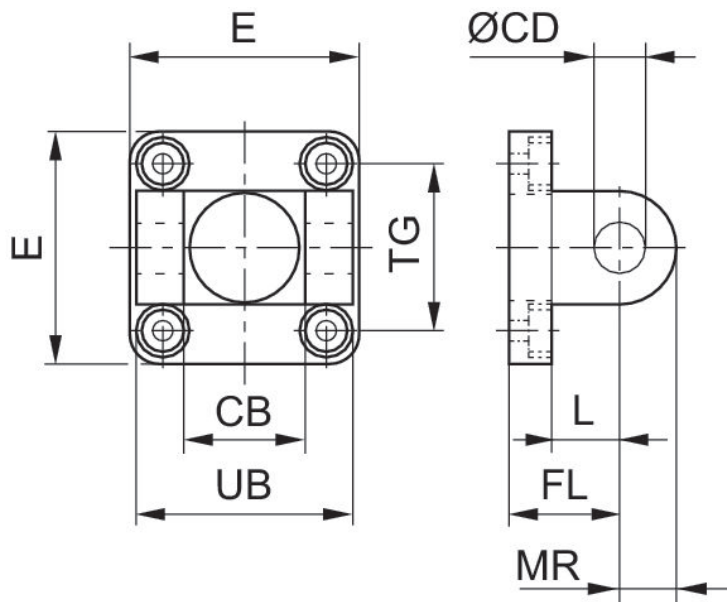
Piston Ø	FM ±0,2	L1 min.	L4 ±0,5	L11 -0,5	R4	SR	T ±0,2	TG
32	22	4.5	5.5	16.5	17	10	3	32,5 ±0,2
40	25	4.5	5.5	18	20	12	4	38 ±0,2
50	27	4.5	6.5	23	22	15	4	46,5 ±0,2
63	32	4.5	6.5	23	25	15	4	56,5 ±0,2
80	36	4.5	10	27	30	20	4	72 ±0,2
100	41	4.5	10	27	32	20	4	89 ±0,2
125	50	7	10	40	42	26	6	110 ±0,3
160	55	10	10	45	46	32.5	6	140 ±0,3
200	60	10	11	45	49	32.5	6	175 ±0,3
250	70	12	11	53	55	40	8	220 ±0,3
320	80	11	15	69	65	50	8	270 ±0,3

**Clevis mounting MP2-HD, Series CM1**



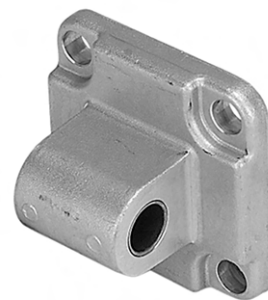
Piston diameter [mm]	Swivel bearing Ø [mm]	Standardization	Material	Part No.
32	10	ISO 15552	Aluminum	1827001289
40	12	ISO 15552	Aluminum	1827001290
50	12	ISO 15552	Aluminum	1827001291
63	16	ISO 15552	Aluminum	1827001500
80	16	ISO 15552	Aluminum	1827001293
100	20	ISO 15552	Aluminum	1827001294
125	25	ISO 15552	Aluminum	1827004862

Dimensions



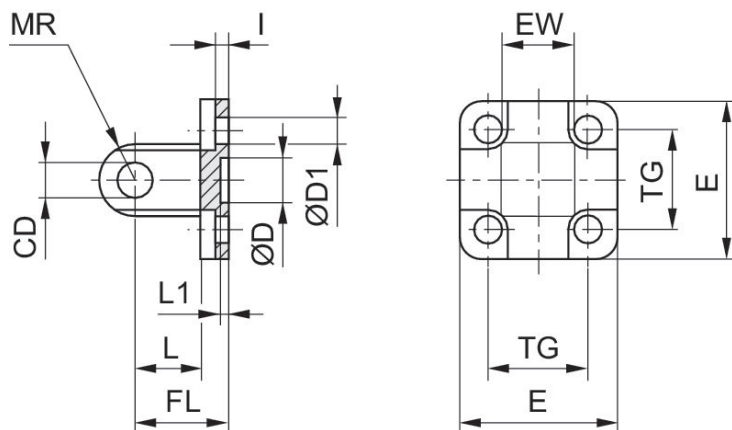
Piston Ø	Part No.	CB H14	Ø CD H9	E	FL ±0.2	L min.	MR max.	UB h13	TG
32	1827001289	26	10	47.5	22	12	10	45	32.5 ±0.2
40	1827001290	28	12	53.5	25	15	13	52	38 ±0.2
50	1827001291	32	12	64	27	15	13	60	46.5 ±0.2
63	1827001500	40	16	74	32	18	17	70	56.5 ±0.2
80	1827001293	50	16	94	36	20	17	90	72.0 ±0.2
100	1827001294	60	20	113.5	41	25	18	110	89.0 ±0.2
125	1827004862	70	25	138	50	30	26	130	110 ±0.3
160	1827004863	90	30	180	55	35	31	170	140 ±0.3
200	1827004864	90	30	220	60	35	31	170	175 ±0.3
250	1827004865	110	40	280	70	45	41	200	220 ±0.3
320	5239813402	120	45	350	80	50	45	220	270 ±0.3

**Rear eye MP4-HD, suitable for robust mechanical engineering applications**



Piston diameter [mm]	Swivel bearing Ø [mm]	Standardization	Material	Part No.
32	10	ISO 15552	Aluminum (forged)	1827001283
40	12	ISO 15552	Aluminum (forged)	1827001284
50	12	ISO 15552	Aluminum (forged)	1827001285
63	16	ISO 15552	Aluminum (forged)	1827020086
80	16	ISO 15552	Aluminum (forged)	1827001287
100	20	ISO 15552	Aluminum (forged)	1827001288
125	25	ISO 15552	Aluminum (forged)	1827004866

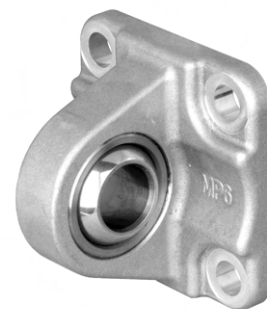
Dimensions



Piston Ø	Part No.	CD H9	Ø D	Ø D1	E	EW	FL ±0,2	I ±0,5	L min.
16	1825805368	6	10 H13	4.5	27	12 -0.2/-0.6	16	2.6	10
20	1827002300	8	12 H13	5.5	34	16 -0.2/-0.6	20	2.6	14
25	1827002301	8	12 H13	5.5	40	16 -0.2/-0.6	20	2.6	14
32	1827001283	10	30 H11	6.6	47.5	26 -0.2/-0.6	22	5.5	12
40	1827001284	12	35 H11	6.6	53.5	28 -0.2/-0.6	25	5.5	15
50	1827001285	12	40 H11	9	64	32 -0.2/-0.6	27	6.5	15
63	1827020086	16	45 H11	9	74	40 -0.2/-0.6	32	6.5	20
80	1827001287	16	45 H11	11	94	50 -0.2/-0.6	36	10	20
100	1827001288	20	55 H11	11	113.5	60 -0.2/-0.6	41	10	25
125	1827004866	25	60 H11	14	138	70 -0.5/-1.2	50	10	30
160	1827004867	30	65 H11	18	180	90 -0.5/-1.2	55	10	35
200	1827004868	30	75 H11	18	220	90 -0.5/-1.2	60	11	35
250	1827004869	40	90 H11	22	280	110 -0.5/-1.2	70	11	45
320	5239813412	45	110 H11	26	350	120 -0.5/-1.2	80	15	50

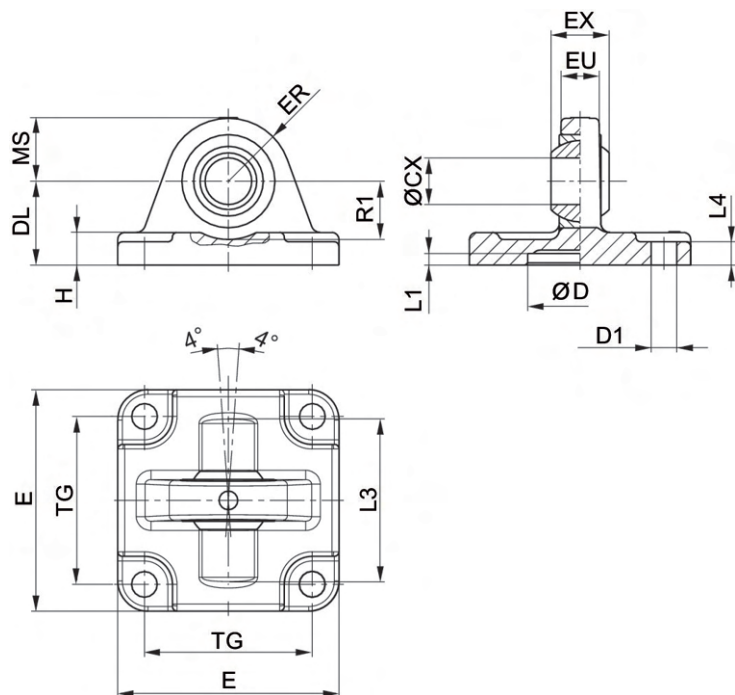
Piston Ø	L1 min.	MR max.	TG
16	3	6	18 ±0.2
20	3	8	22 ±0.4
25	3	8	26 ±0.4
32	4.5	10	32.5 ±0.2
40	4.5	12	38 ±0.2
50	4.5	12	46.5 ±0.2
63	4.5	16	56.5 ±0.2
80	4.5	16	72 ±0.2
100	4.5	20	89 ±0.2
125	7	26	110 ±0.3
160	7	31	140 ±0.3
200	7	31	175 ±0.3
250	11	41	220 ±0.3
320	11	45	270 ±0.3

**Rear eye MP6, with ball joint and foot, aluminum (forged)**



Piston diameter [mm]	Swivel bearing Ø [mm]	Standardization	Material	Part No.
32	10	ISO 15552	Aluminum (forged)	1827001619
40	12	ISO 15552	Aluminum (forged)	1827001620
50	16	ISO 15552	Aluminum (forged)	1827001621
63	16	ISO 15552	Aluminum (forged)	1827020087
80	20	ISO 15552	Aluminum (forged)	1827001623
100	20	ISO 15552	Aluminum (forged)	1827001624
125	30	ISO 15552	Aluminum (forged)	1827001625

Dimensions



Scope of delivery: clevis incl. mounting screws

Piston $\varnothing$	Part No.	$\varnothing CX$ H7	$\varnothing D$ H11	$\varnothing D1$ H13	DL $\pm 0,2$	E	EX $-0,1$	ER	EU
32	1827001619	10	30	6.6	22	47	14	15	10.5
40	1827001620	12	35	6.6	25	53	16	18	12
50	1827001621	16	40	9	27	65	21	20	15
63	1827020087	16	45	9	32	75	21	23	15
80	1827001623	20	45	11	36	95	25	27	18
100	1827001624	20	55	11	41	115	25	30	18
125	1827001625	30	60	14	50	140	37	40	25

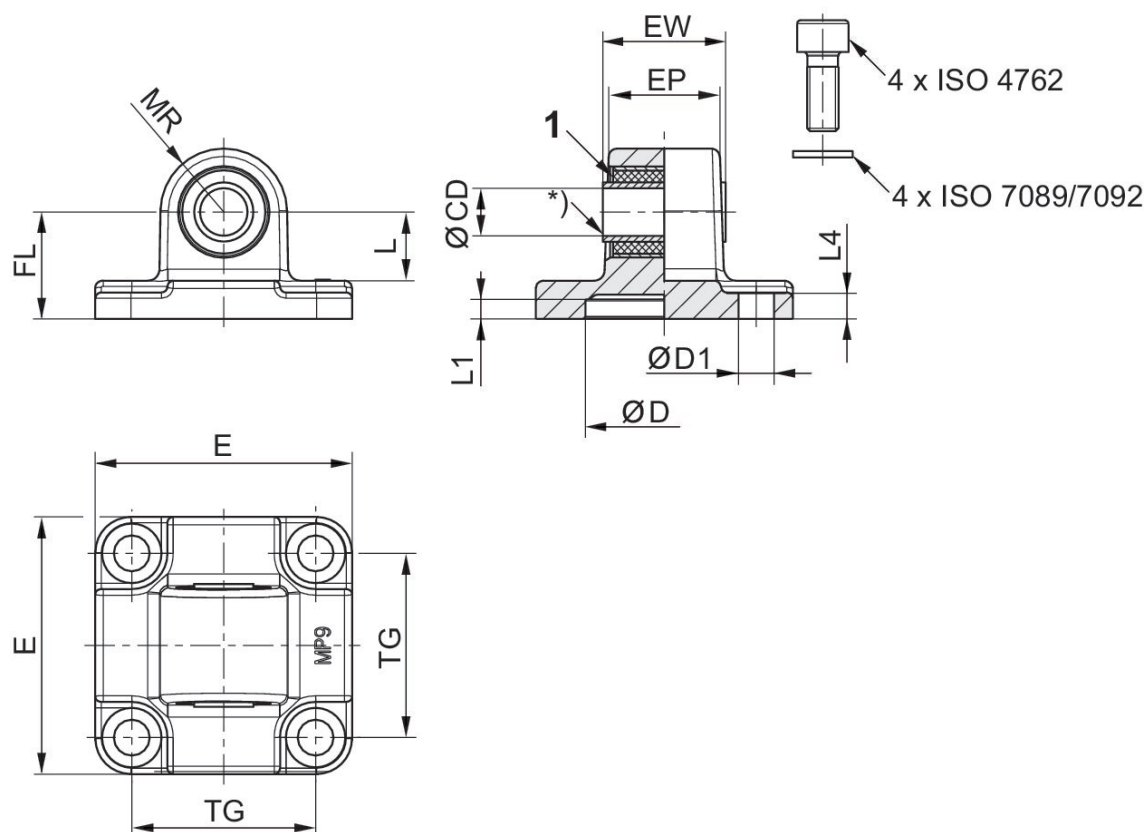
Piston $\varnothing$	H	L1 min.	L3	L4	MS $-0,5$	R1 min.	TG
32	9	4.5	36	5.5	15	12	32,5 $\pm 0,2$
40	9	4.5	42	5.5	18	15	38 $\pm 0,2$
50	10.5	4.5	48	6.5	21	19	46,5 $\pm 0,2$
63	10.5	4.5	55	6.5	23	21	56,5 $\pm 0,2$
80	14	4.5	70	10	27	24	72 $\pm 0,2$
100	15	4.5	80	10	30	25	89 $\pm 0,2$
125	16	7	100	10	40	33	110 $\pm 0,3$

**Rear eye MP9, with rubber bushing**



Piston diameter [mm]	Swivel bearing Ø [mm]	Standardization	Material	Part No.
32	10	ISO 15552	Aluminum	3683203000
50	12		Aluminum	3663205000
80	16		Aluminum	3663208000

Dimensions



1) Rubber bushing

Piston Ø	Part No.	CD H11	CD H9	E	EW	EP	TG	TG1 ±0,2	FL ±0,2
32	3683203000	10	-	46	25.5	18,9	32.5	-	22
50	3683205000	-	12	65	31	28	46.5	-	27
50	3663205000	-	12	63	31		46		28
80	3663208000	-	16	95	49.5		73		38
80	3683208000	-	16	94.5	49.5	43	72	-	36
125	R412015973	-	25	138	69.5	60	110	-	50

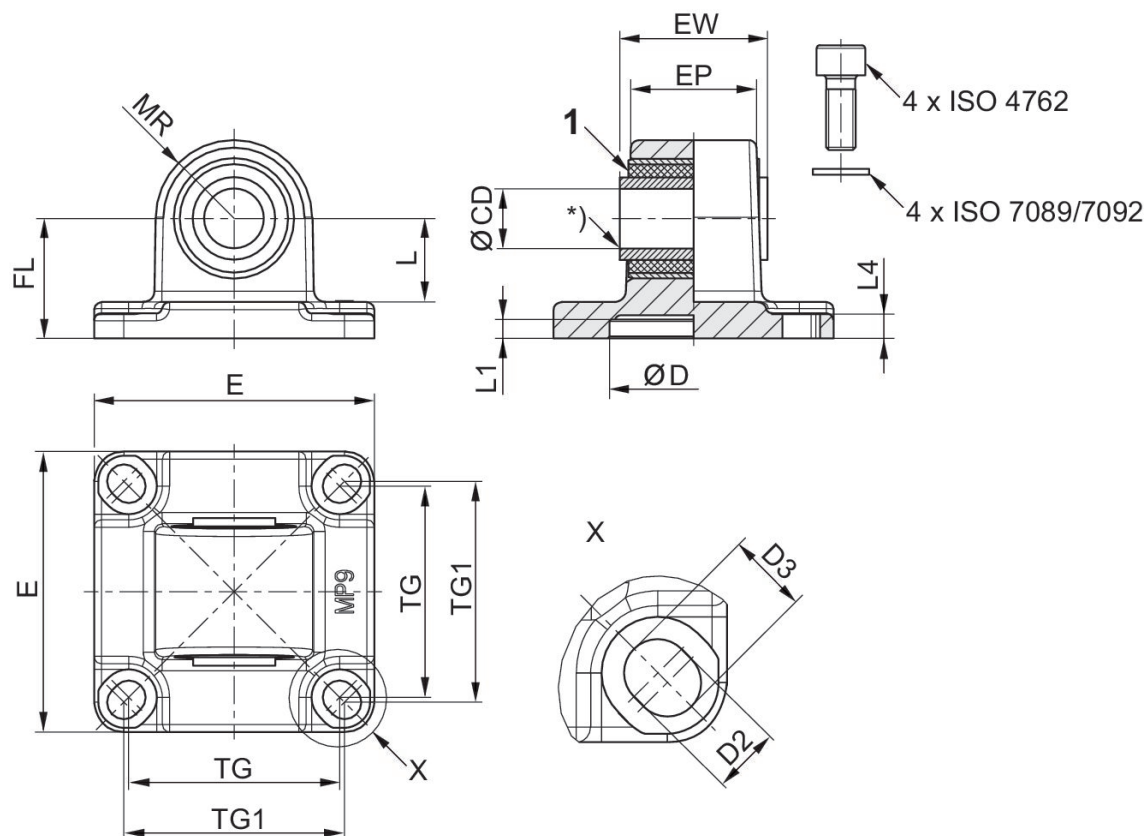
Piston Ø	L 1)	MR	L1	L4	D H11	D1 H13
32	13.8	12.5	5	5.5	30	6.6
50	17.3	16	5	6.5	40	9
50	15.5	18				
80	20.5	24				
80	21.8	22	5	10	45	11
125	33.8	34	7.5	10	60	13.5

**Rear eye MP9, with rubber bushing**



Piston diameter [mm]	Swivel bearing Ø [mm]	Standardization	Material	Part No.
25	10	ISO 21287	Die-cast aluminum	3683202000
40	12	ISO 15552	Aluminum	3683204000
63	16	ISO 15552	Aluminum	3683206000
100	20	ISO 15552	Aluminum	3683210000

Dimensions



1) Rubber bushing

Piston Ø	Part No.	CD H11	CD H9	E	EW	EP	TG	TG1 ±0,2	FL ±0,2
25	3683202000	10	-	40	17.5	14,5	26	27	20
40	3683204000	-	12	53	27	23,5	38	40	25
63	3683206000	-	16	75	39.5	33.5	56.5	59	32
100	3683210000	-	20	114	59.5	54	89	90	41

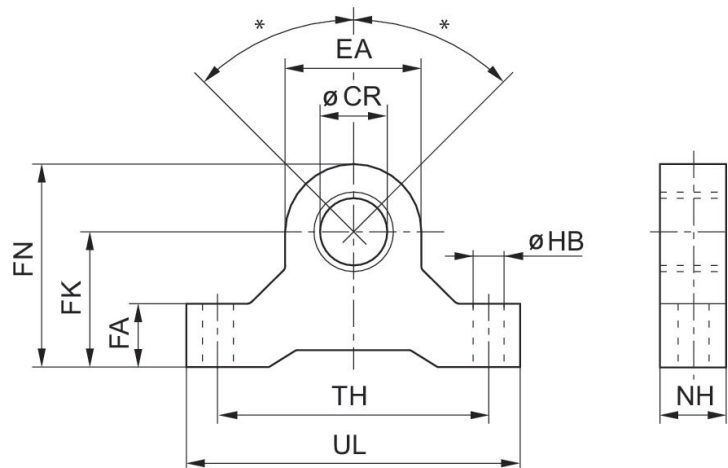
Piston Ø	L 1)	MR	L1	L4	D H11	D2 -0,2	D3 -0,2
25	14.8	12,5	3	3	18	5,5	6,2
40	16.3	15	5	5.5	35	6.6	8
63	22.3	21	5	6.5	45	-	-
100	25.8	25	5	10	55	11	11.7

**Bearing, Series CM1**



Piston diameter [mm]	Swivel bearing Ø [mm]	Material	Part No.
32	12	Aluminum	3671203000
40, 50	16	Aluminum	3671204000
63, 80	20	Aluminum	3671206000
100, 125	25	Aluminum	3671210000

Dimensions

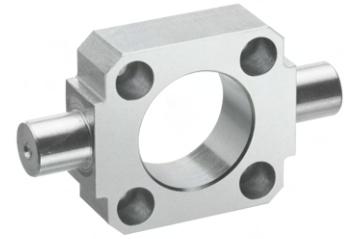


\* Max. pendulum movement for cylinders with rear eye MP6 with ball joint:  $\pm 45^\circ$

Piston Ø	Part No.	Ø CR H8	EA	FA	FK $\pm 0,1$	FN	HB	NH	TH
25	3671202000	10	16	10	21	29	5.5	10	27
32	3671203000	12	19	11	22	32	6.6	11	44
40, 50	3671204000	16	28	16	35	49	9	16	65
63, 80	3671206000	20	38	19	40	59	9	19	80
100, 125	3671210000	25	46	22	48	71	11	22	96
100	3671212000	30	56	28	57	88	13	28	114
160, 200	3671216000	32	66	32	70	103	17	32	140
250, 320	3671220000	35	66	32	70	103	17	32	140

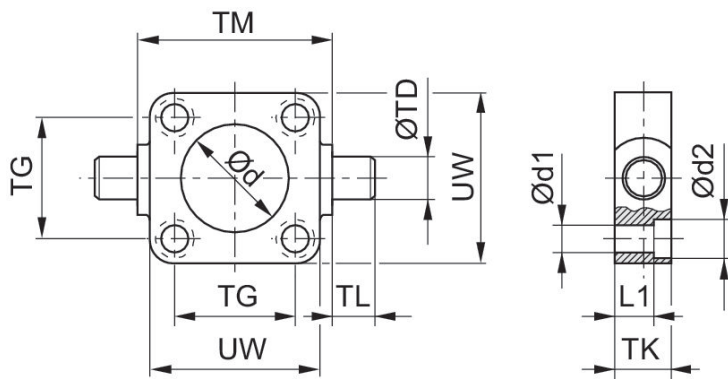
Piston Ø	UL
25	37
32	55
40, 50	82
63, 80	99
100, 125	118
100	142
160, 200	172
250, 320	172

**Trunnion mounting MT5, MT6, Series CM1**



Piston diameter [mm]	Material	Part No.
32	Nodular graphite iron	1827001609
40	Nodular graphite iron	1827001610
50	Nodular graphite iron	1827001611
63	Nodular graphite iron	1827002046
80	Nodular graphite iron	1827001613
100	Nodular graphite iron	1827001614
125	Nodular graphite iron	1827001615

Dimensions



Piston Ø	Part No.	Ø d H11	Ø d1	Ø d2	L1	TD e9	TG ±0,2	TK	TL h14
20	1825805360	18	5.5	10	8	12	22	14	12
25	1825805361	22	5.5	10	8	12	26	14	12
25	R412026354	24	5.5	10	8	12	26	14	12
32	1825805362	32	6.6	10.5	7	12	32	14	12
32	1827001609	30	6.6	11	7.5	12	32.5	16	12
40	1825805363	46	6.6	11	12	16	42	19	16
40	1827001610	35	6.6	11	7.5	16	38	20	16
50	1825805364	53	9	14	10	16	50	19	16
50	1827001611	40	9	15	10	16	46.5	24	16
63	1825805365	69	9	15	15	20	62	24	20
63	1827002046	45	9	15	10	20	56.5	24	20
80	1825805366	87	11	18	13	20	82	24	20
80	1827001613	45	11	18	16	20	72	28	20
100	1825805367	55	11	18	18	25	103	29	25
100	1827001614	55	11	18	25.5	25	89	38	25
125	1827001615	60	14	20	34	25	110	46	25
160	1827001616	65	18	26	38	32	140	50	32
200	1827001617	75	18	26	40	32	175	60	32
250	1827001618	90	22	33	57	40	220	70	40

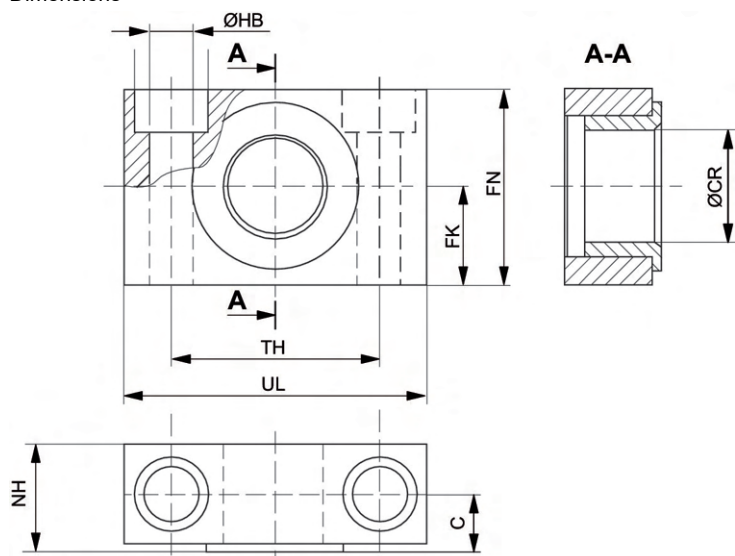
Piston Ø	TM h14	UW
20	38	35
25	42	39
25	42	39
32	52	46
32	50	48
40	63	59
40	63	56
50	75	69
50	75	65
63	90	84
63	90	75
80	110	102
80	110	100
100	132	125
100	132	120
125	160	145
160	200	184
200	250	224
250	320	286

**Bearing AT4, Series CM1**



Piston diameter [mm]	Swivel bearing Ø [mm]	Standardization	Material	Part No.
20, 25, 32	12	ISO 15552	Steel, chrome-plated	1827001603
40, 50	16	ISO 15552	Steel, chrome-plated	1827001604
63, 80	20	ISO 15552	Steel, chrome-plated	1827001605
100, 125	25	ISO 15552	Steel, chrome-plated	1827001606

Dimensions



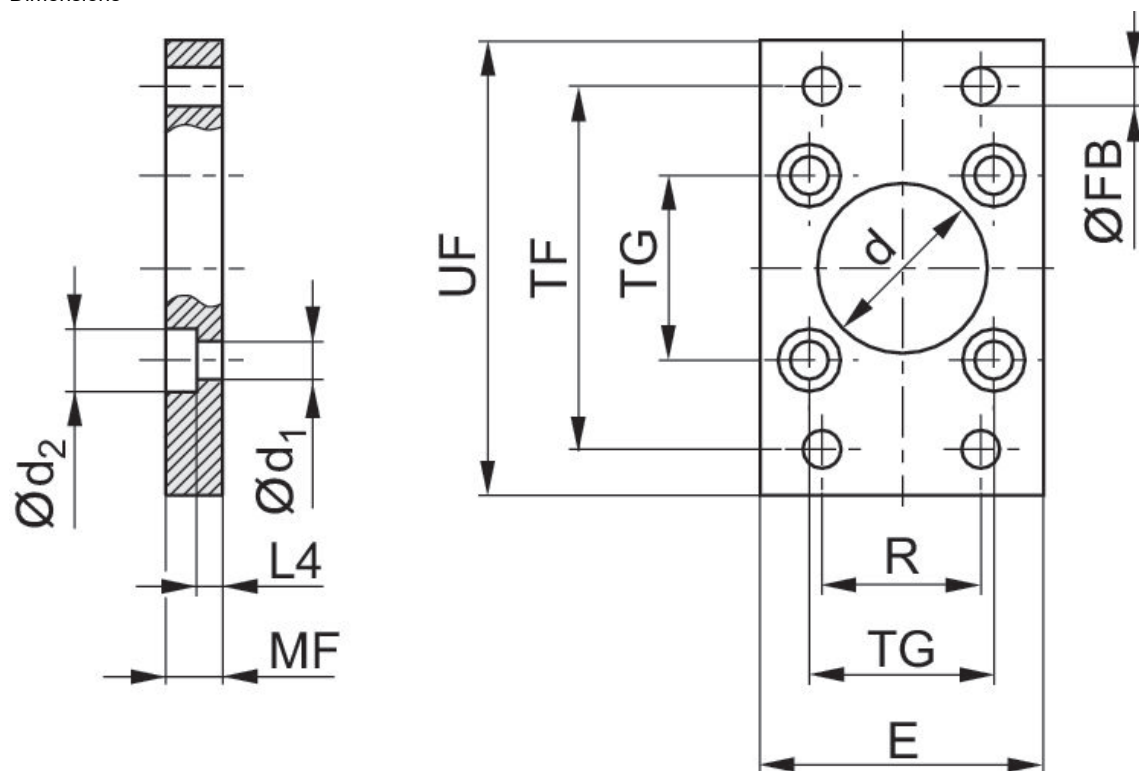
Piston Ø	Part No.	UL	NH	TH	C	CR H9	HB H13	FN	FK
20, 25, 32	1827001603	46	18	32 ±0,2	10.5	12	6.6	30	15 ±0,1
40, 50	1827001604	55	21	36 ±0,2	12	16	9	36	18 ±0,1
63, 80	1827001605	65	23	42 ±0,2	13	20	11	40	20 ±0,1
100, 125	1827001606	75	28.5	50 ±0,2	16	25	14	50	25 ±0,1
160, 200	1827001607	92	40	60 ±0,3	22.5	32	18	60	30 ±0,2
250	1827001608	140	50	90 ±0,3	27.5	40	22	70	35 ±0,2
320	R412018903	150	60	100	32.5	50	26	80	40

**Flange mounting MF1, MF2, Series CM1**



Piston diameter [mm]	Standard-ization	Material	Part No.
32	ISO 15552	Steel, chrome-plated	1827001277
40	ISO 15552	Steel, chrome-plated	1827001278
50	ISO 15552	Steel, chrome-plated	1827001279
63	ISO 15552	Steel, chrome-plated	1827001499
80	ISO 15552	Steel, chrome-plated	1827001281
100	ISO 15552	Steel, chrome-plated	1827001282
125	ISO 15552	Steel, chrome-plated	1827004861

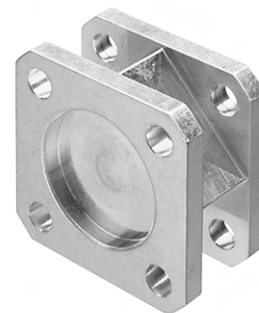
Dimensions



Piston $\varnothing$	Part No.	$\varnothing d$ H11	$\varnothing d_1$	$\varnothing d_2$	E max.	$\varnothing FB$	$L_4$	$MF$	$R$
32	1827001277	30	6.6	11	50	7	4.5	10	32
40	1827001278	35	6.6	11	55	9	4.5	10	36
50	1827001279	40	9	15	65	9	6	12	45
63	1827001499	45	9	15	75	9	6	12	50
80	1827001281	45	11	18	100	12	9	16	63
100	1827001282	55	11	18	120	14	9	16	75
125	1827004861	60	14	20	140	16	10.5	20	90
160	1827001460	65	18	26	180	18	9.5	20	115
200	1827001461	75	18	26	220	22	12.5	25	135
250	1827001462	90	22	33	280	26	10.5	25	165
320	5239016012	110	26	40	350	33	15	30	200

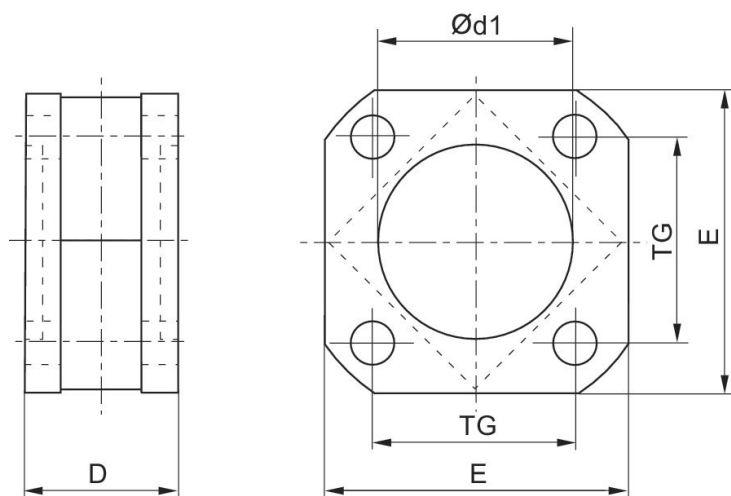
Piston Ø	TF	TG	UF
32	64	32,5 ±0,2	80
40	72	38 ±0,2	90
50	90	46,5 ±0,2	110
63	100	56,5 ±0,2	125
80	126	72 ±0,2	154
100	150	89 ±0,2	186
125	180	110 ±0,3	220
160	230	140 ±0,3	275
200	270	175 ±0,3	312
250	330	220 ±0,3	380
320	270	270 ±0,3	400

**Intermediate flange JP1, Series CM1**



Suitable piston Ø [mm]	Material	Part No.
32	Aluminum	1827020247
40	Aluminum	1827020248
50	Aluminum	1827020249
63	Aluminum	1827020250
80	Aluminum	1827020251
100	Aluminum	1827020252
125	Aluminum	1827020253

Dimensions



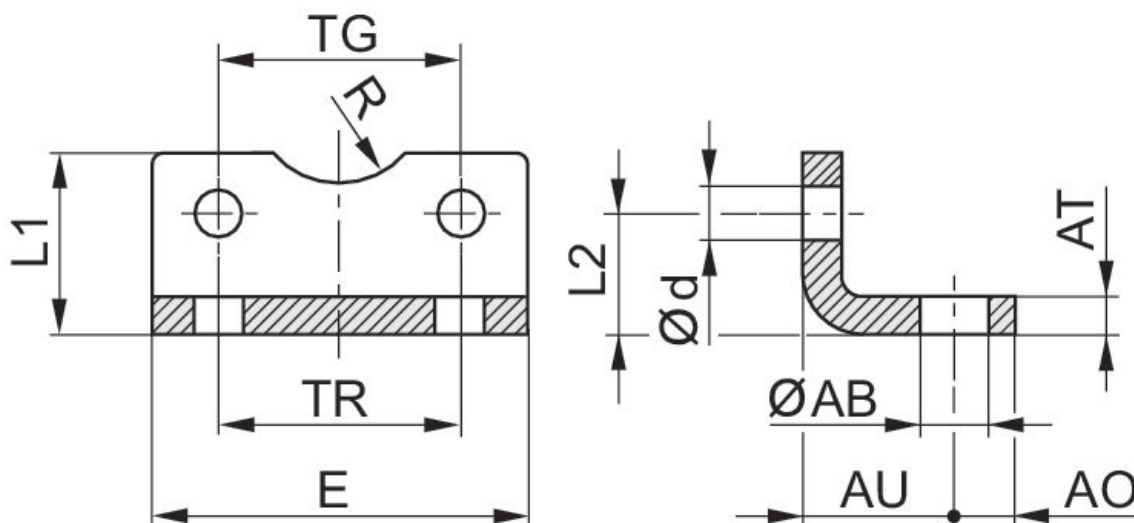
Piston Ø	Part No.	D	Ø d1 N7	E	TG
32	1827020247	27	30	47	32.5
40	1827020248	27	35	53	38
50	1827020249	32	40	65	46.5
63	1827020250	28	45	75	56.5
80	1827020251	38	45	95	72
100	1827020252	38	55	115	89
125	1827020253	44	60	140	110

**Foot mounting MS1, Series CM1**



Piston diameter [mm]	for series	Standardization	Material	Part No.
32	PRA/TRB, CCI, CVI	ISO 15552	Steel, chrome-plated	1827001271
40	PRA/TRB, CCI, CVI	ISO 15552	Steel, chrome-plated	1827001272
50	PRA/TRB, CCI, CVI	ISO 15552	Steel, chrome-plated	1827001273
63	PRA/TRB, CCI, CVI	ISO 15552	Steel, chrome-plated	1827001498
80	PRA/TRB, CCI, CVI	ISO 15552	Steel, chrome-plated	1827001275
100	CCI, PRA/TRB, CVI	ISO 15552	Steel, chrome-plated	1827001276
125	PRA/TRB, CVI	ISO 15552	Steel, chrome-plated	1827001310

Dimensions



Piston Ø	Part No.	ØAB H14	AO	AT	AU ±0,2	Ød H13	E	L1	L2
20	1827002284	6.6	6	4 ±0,5	16	5.4	36	22	16
25	1827002285	6.6	6	4 ±0,5	16	5.4	40	23	17
32	1827002286	6.6	8	5 ±0,5	18	6.6	50	24	16
32	1827001271	7	8	4 ±0,3	24	6.6	48	25	15,75
40	1827001272	10	10	4 ±0,3	28	6.6	56	26	17
50	1827001273	10	11	5 ±0,3	32	9	68	32	21.75
63	1827001498	10	13	5 ±0,3	32	9	78	34	21.75
80	1827001275	12	16	6 ±0,5	41	11	98	47	27
100	1827001276	14.5	19	6 ±0,5	41	11	117	52	26.5
125	1827001310	16.5	20	8 ±1,0	45	13.5	144	69	35
160	1827001457	18.5	23	10 ±1,0	60	17.5	185	100	45
200	1827001458	24	26	12 ±1,0	70	17.5	220	120	47.5
250	1827001459	28	33	20 ±1,0	75	22	280	135	55

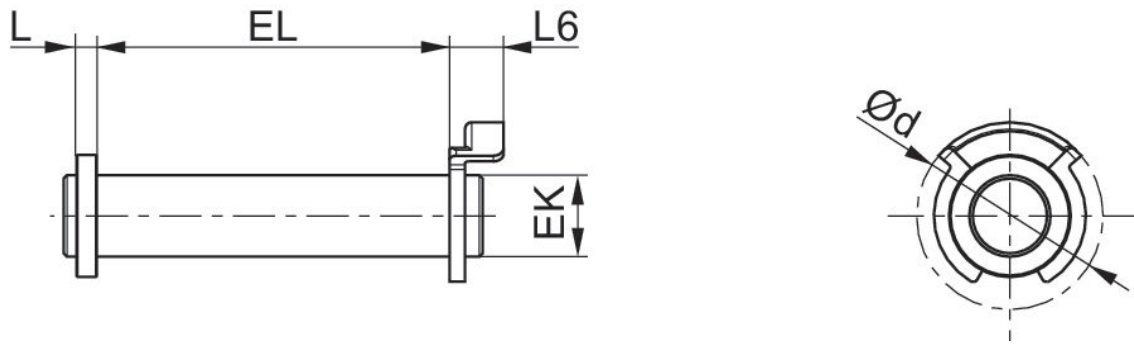
Piston Ø	R H15	TG	TR JS14
20	10	22 ±0,2	22
25	11	26 ±0,2	26
32	12	32 ±0,2	32
32	15	32,5 ±0,2	32
40	17.5	38 ±0,2	36
50	20	46.5 ±0,2	45
63	22.5	56.5 ±0,2	50
80	22.5	72 ±0,2	63
100	27.5	89 ±0,2	75
125	30	110 ±0,3	90
160	32.5	140 ±0,3	115
200	37.5	175 ±0,3	135
250	45	220 ±0,3	165

**Bolts AA4, Series CM1**



Piston diameter [mm]	Material	Surface	Part No.
32	Steel, chrome-plated	galvanized	1823120020
40	Steel, chrome-plated	galvanized	1823120021
50	Steel, chrome-plated	galvanized	1823120022
63	Steel, chrome-plated	galvanized	1823120023
80	Steel, chrome-plated	galvanized	1823120024
100	Steel, chrome-plated	galvanized	1823120025

Dimensions



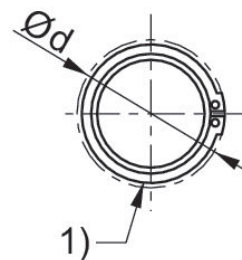
Piston Ø	Part No.	Ø d max.	EK e8	EL	L max.	L6 max.
32	1823120020	20	10	45.2 +0,3	3.5	9
40	1823120021	22	12	52.2 +0,3	4	9
50	1823120022	22	12	60.2 +0,3	4	9
63	1823120023	28	16	70.2 +0,3	4.5	11
80	1823120024	28	16	90.2 +0,3	4.5	11
100	1823120025	38	20	110.2 +0,3	5	11

**Bolts AA4, Series CM1**



Piston diameter [mm]	Standardization	Material	Surface	Part No.
125	ISO 15552	Steel, chrome-plated	galvanized	5236000092

Dimensions



1) circlip DIN 471

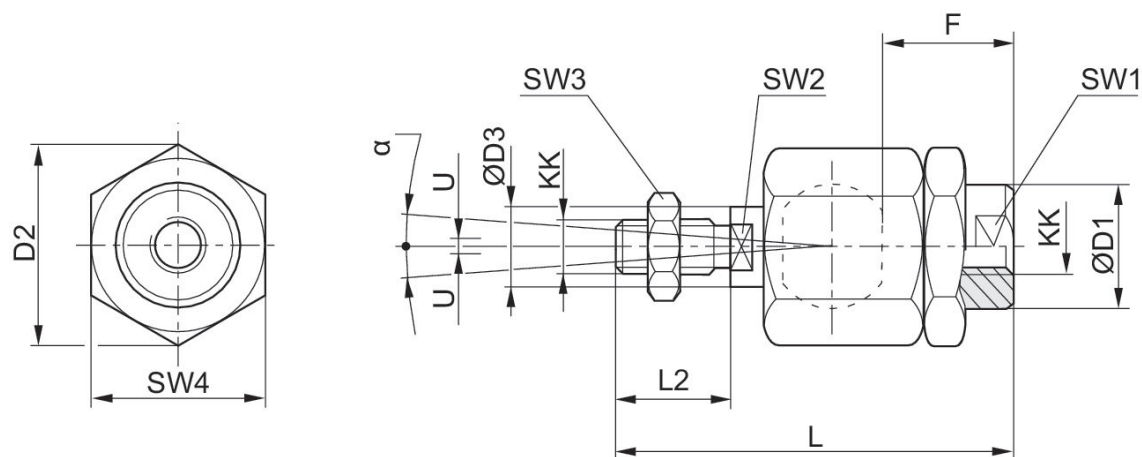
Piston Ø	Part No.	Ø d max.	EK e8	EL	L6 max.
25, 30	3661302000	19	10	29.2	2.4
40, 50	3661303000	21	12	34.4	2.8
63, 80	3661304000	28	16	48.4	2.8
100	3661306000	40	20	58.4	3.3
125	5236000092	34.2	25	132 +0,5	3.75
160, 200	5237000092	40.5	30	172 +0,5	4.25
250	5239000092	52.6	40	202 +0,5	6.75
320	5239010092	59.1	45	222 +0,5	7.25

**Flexible spherical coupling, Series PM5**



Suitable piston rod thread	for series	Weight [kg]	Part No.
M10x1,25	PRA/TRB, CCL-IC/-IS, CCI, SSI, KPZ, 167, CVI, RPC	0.21	R412026142
M12x1,25	PRA/TRB, CCL-IC/-IS, CCI, SSI, KPZ, 167, CVI, RPC	0.21	R412026143
M16x1,5	PRA/TRB, CCL-IC/-IS, CCI, KPZ, 167, CVI, RPC, RDC	0.65	R412026144
M20x1,5	PRA/TRB, CCL-IS, SSI, KPZ, 167, CVI	0.68	R412026145
M27x2	PRA/TRB, CCL-IS, CVI	1.7	1826409006

Dimensions



\* Radial joint

Part No.	KK	Ø D1	D2	Ø D3	F	L ±2	L2	SW1	SW2
1826409008	M4	12	13.5	4	13	33	8	12	3.2
R412007860	M5	8.5	14.8	6	12	38.5	13.5	7	5
R412026140	M6x1	8.5	14.5	6	11	36.5	11	7	5
R412026141	M8x1.25	12.5	19	8	21	58	21	11	7
R412026142	M10x1.25	22	32	14	23	74.5	23	19	12
R412026143	M12x1.25	22	32	14	24	75	24	19	12
R412026144	M16x1.5	32	45	22	30	103	30	30	20
R412026145	M20x1.5	32	45	22	40	119	40	30	20
1826409006	M27x2	62	62	28	48	147	54	32	24
1826409007	M36x2	80	80	38	86	241	72	50	32
R412007729	M42x2	64	98	42	96	271	82	60	36

Part No.	SW3	SW4	U	α [°]	1)
1826409008	7	11	0,5	8	0.05-0.2
R412007860	8	13	0,5	8	0.05-0.2
R412026140	10	13	0,7	6	0.05-0.5
R412026141	13	17	0,7	8	0.05-0.5
R412026142	17	30	1	8	0.05-0.5
R412026143	19	30	1	7	0.05-0.5
R412026144	24	41	1	6	0.05-0.5
R412026145	30	41	1	6	0.05-0.5
1826409006	41	55	1	8	0.05-0.2
1826409007	55	75	1	8	0.05-0.2
R412007729	65	85	1	8	0.05-0.2

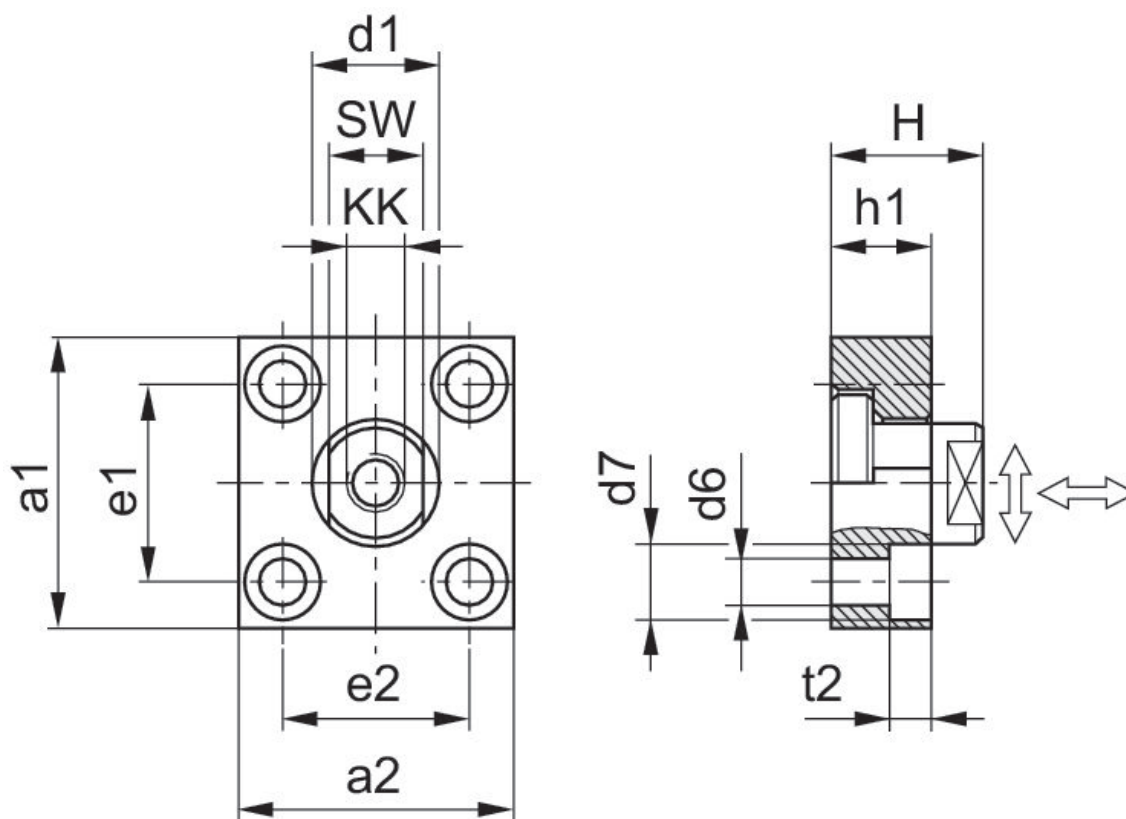
1) Axial play

**Flexible plate coupling, Series PM7**



Suitable piston rod thread	for series	Weight [kg]	Part No.
M10x1,25	PRA/TRB, CCL-IC/-IS, CCI, SSI, KPZ, 167, RPC	0.3	1827001629
M12x1,25	PRA/TRB, CCL-IC/-IS, CCI, SSI, KPZ, 167, RPC	0.4	1827001630
M16x1,5	PRA/TRB, CCL-IC/-IS, CCI, SSI, KPZ, 167, RPC	0.9	1827001631
M20x1,5	PRA/TRB, CCL-IS, SSI, KPZ, CVI, 167	1.15	1827001632
M27x2	PRA/TRB, CCL-IS, CVI	1.1	1827001633
M36x2	ITS	3.4	1827001634

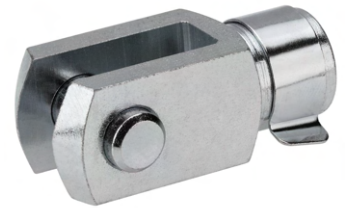
Dimensions



Part No.	KK	a1	a2	d1 h11	d6 H13	d7 H13	e1 H13	e2	h1
1827001629	M10x1.25	60	37	20	6.6	11	36 ±0,15	23 ±0,15	15
1827001630	M12x1.25	60	56	25	9	15	42 ±0,2	38 ±0,2	20
1827001631	M16x1.5	80	80	30	11	18	58 ±0,2	58 ±0,2	20
1827001632	M20x1.5	90	90	40	14	20	65 ±0,3	65 ±0,3	20
1827001633	M27x2	90	90	40	14	20	65 ±0,3	65 ±0,3	20
1827001634	M36x2	125	125	60	18	26	90 ±0,3	90 ±0,3	30

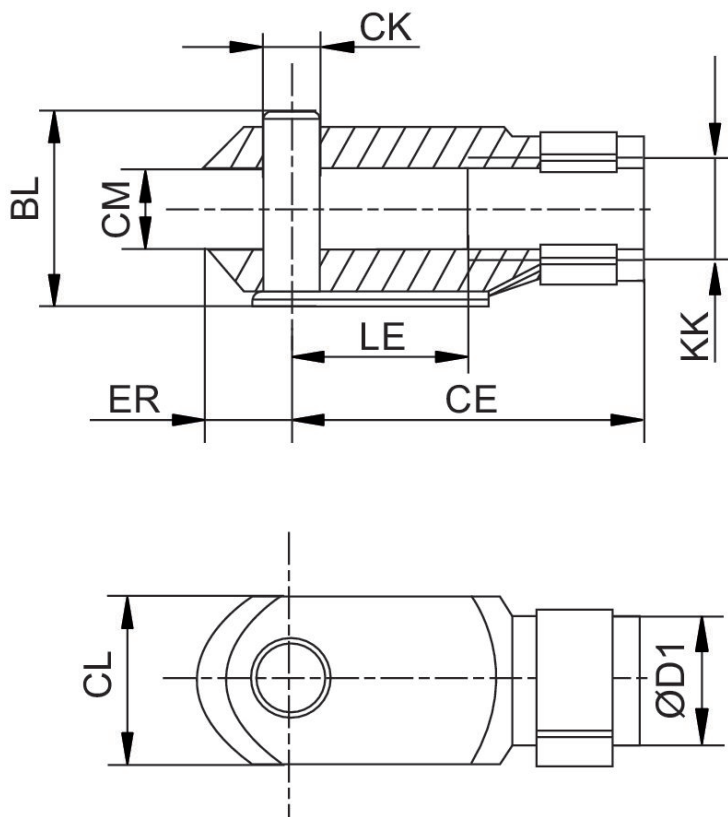
Part No.	t2	H	SW	Tightening torque for the coupling pin $M_a \pm 5\%$	Axial play min./max.	Radial play min./max.
1827001629	7	24	17	17 Nm	0,4 - 0,8 mm	1,9 - 2,3 mm
1827001630	9	30	19	29 Nm	0,4 - 0,8 mm	1,9 - 2,3 mm
1827001631	11	32	24	71 Nm	0,4 - 0,8 mm	1,9 - 2,3 mm
1827001632	13	35	36	138 Nm	0,4 - 0,8 mm	1,9 - 2,3 mm
1827001633	13	35	36	350 Nm	0,4 - 20,31 mm	1,9 - 2,3 mm
1827001634	17	55	50	1080 Nm	0,4 - 0,95 mm	2,8 - 3,4 mm

**Rod clevis with lock washer, Series AP2, Galvanized Steel**



Suitable piston rod thread	for series	Weight [kg]	Part No.
M10x1,25	PRA, TRB, CCI, MNI, ICM, KPZ, 167, CVI, RPC, RDC	0.1	1822122024
M12x1,25	PRA, TRB, CCI, KPZ, 167, CVI, RPC, 102	0.16	1822122025
M16x1,5	PRA, TRB, CCI, KPZ, 167, CVI, RPC, RDC, 102	0.4	1822122005
M20x1,5	PRA, TRB, KPZ, 167, CVI, 102	0.7	1822122004

Dimensions



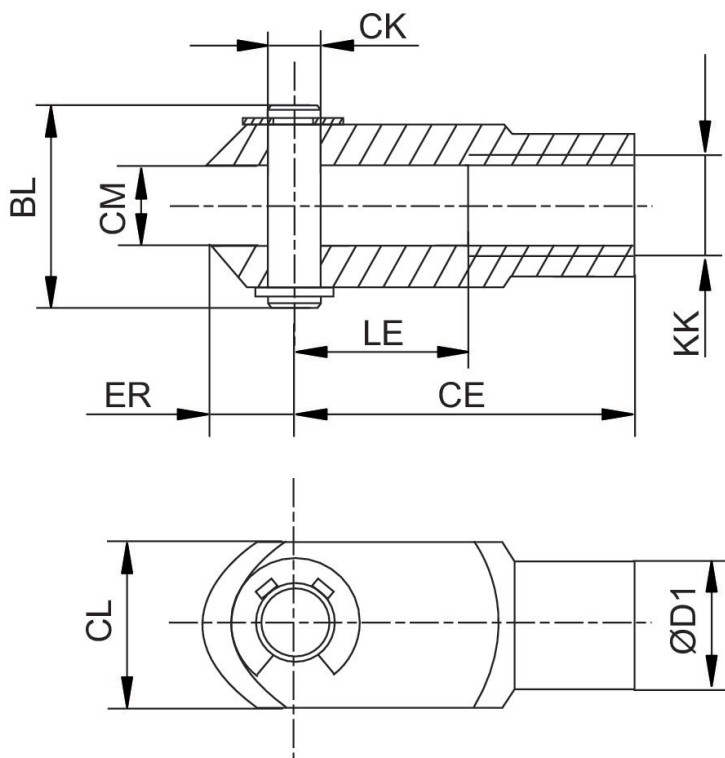
Part No.	BL	CE	ØCK h11	CL	CM	ØD1	ER	KK	LE
1822122028	11	16	4	8	4	8	5	M4	8
1822122008	13.5	20	5	10	5	9	6	M5	10
1822122009	16	24	6	12	6	10	7	M6	12
1822122010	21,5	32	8	16	8	14	10	M8	16
8958000122	26	40	10	20	10	18	12	M10	20
1822122024	26	40	10	20	10	18	12	M10x1,25	20
8958000132	31	48	12	24	12	20	14	M12	24
1822122025	31	48	12	24	12	20	14	M12x1,25	24
1822122005	39	64	16	32	16	26	19	M16x1,5	32
1822122004	50	80	20	40	20	34	20	M20x1,5	40

**Rod clevis with circlip, Series AP2**



Suitable piston rod thread	for series	Weight [kg]	Part No.
M27x2	PRA, TRB, CCL-IS, 167, CVI	2	1827001493

Dimensions



Part No.	BL	CE	ØCK	CL	CM	ØD1	ER	KK	LE
1827001493	68	110	30 *	55	30	48	38	M27x2	54
1827001471	80	144	35 *	70	35	60	44	M36x2	72
1827001472	98	168	40 **	85	40	70	64	M42x2	84

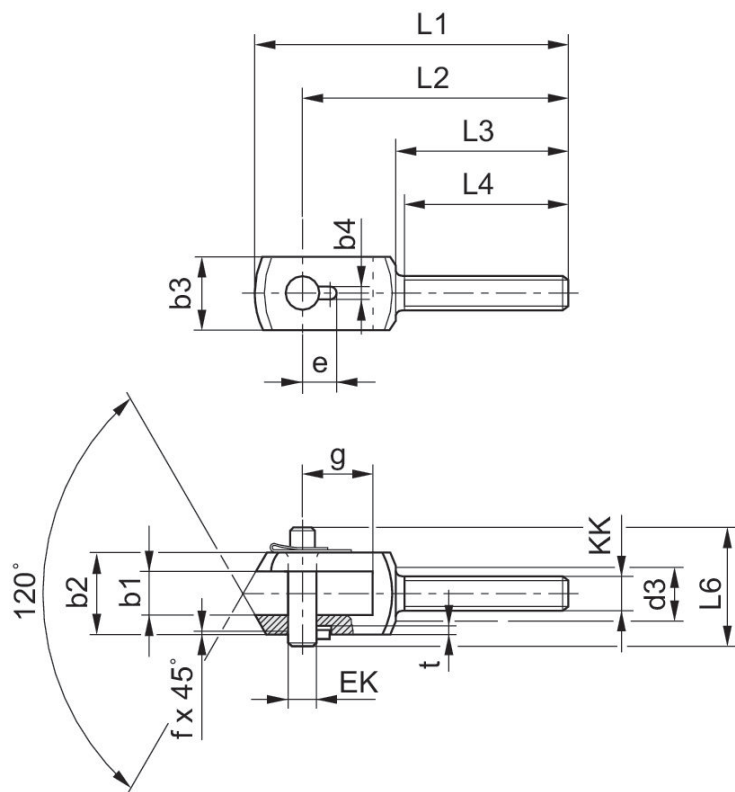
\* ØCK h11  
\*\* ØCK f8

**Rod clevis, Series PM6**



for series	Swivel bearing Ø [mm]	Part No.
AP6	14	1822122032
AP6	16	1822122033
AP6	21	1822122034
AP6	25	1822122035
AP6	30	1822122036

Dimensions



Part No.	b1 B12	b2 d12	b3	b4 +0,2	d3	e +0,3	EK	f	g
1822122032	14	28	20	3.3	17	11.5	10	0.7	20
1822122033	16	30	25	4.3	19	12	12	1	26
1822122034	21	40	35	4.3	24	14	16	1	31
1822122035	25	50	40	4.3	30	16	20	1	43
1822122036	37	67	60	6.3	38	24	30	1.5	54

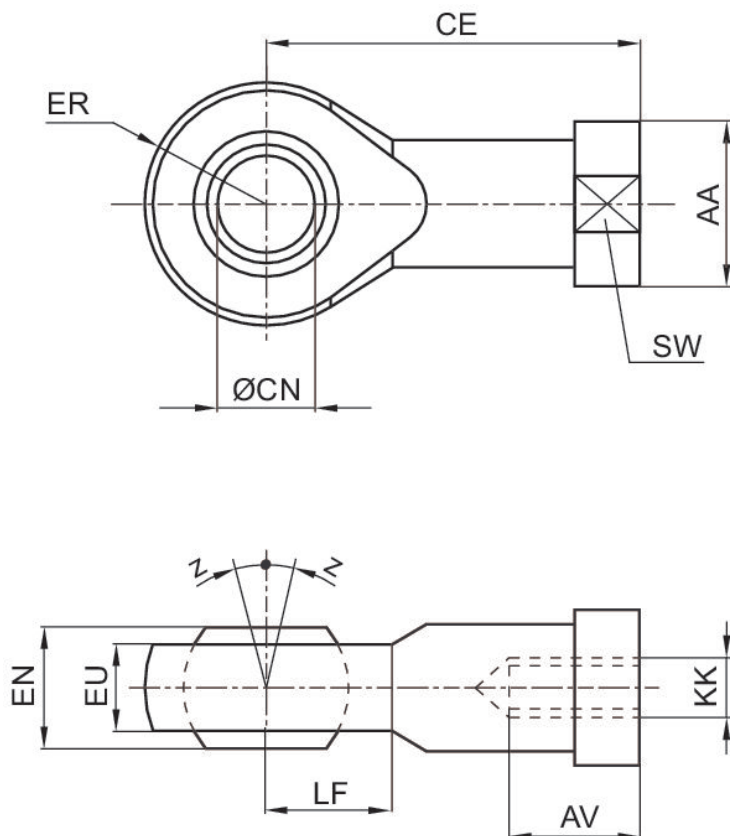
Part No.	L1	L2	L3	L4 +1	L6	KK	t +0,2
1822122032	90	78	53	50	35	14	3
1822122033	108	92	58	55	39	16	3
1822122034	129	108	65	62	50	21	3
1822122035	156	131	73	69	60	25	3
1822122036	200	168	98	92	77	30	5

**Ball eye rod end AP6, galvanized Steel**



Suitable piston rod thread	for series	Swivel bearing Ø [mm]	Weight [kg]	Part No.
M10x1,25	PRA, TRB, MNI, CCI, SSI, RPC, KPZ, 167, CVI, RDC	10	0.07	1822124003
M12x1,25	PRA, TRB, CCI, SSI, RPC, KPZ, 167, CVI, 102	12	0.12	1822124004
M16x1,5	PRA, TRB, CCI, SSI, RPC, KPZ, 167, CVI, RDC, 102	16	0.21	1822124005
M20x1,5	PRA, TRB, KPZ, 167, CVI, 102	20	0.38	1822124006
M27x2	PRA, TRB, 167, CVI	30	1.17	1822124013

Dimensions



KK	Part No.	AA	AV min.	CE	Ø CN H7	EN -0,1	ER	EU max.	LF
M4	1822124000	12	8	27	5	8	9	7.5	9
M6	1822124001	13	9	30	6	9	10	7.5	10
M8	1822124002	16	12	36	8	12	12	9.5	12
M10	8958206402	19	20	43	10	14	14	10.5	13
M12	8958208852	22	22	50	12	16	16	12	16
M10x1,25	1822124003	19	15	43	10	14	14	11.5	14
M12x1,25	1822124004	22	18	50	12	16	16	12.5	16
M16x1,5	1822124005	27	24	64	16	21	21	15.5	21
M20x1,5	1822124006	34	30	77	20	25	25	18.5	25
M24x2	8958208002	42	36	94	25	31	30	23	30
M27x2	1822124013	50	45	110	30	37	35	27	35
M36x2	1822124008	60	56	125	35	43	40	32	40
M42x2	1822124009	69	60	142	40	49	45.5	37	45
M48x2	8958208842	75	65	160	50	60	58	45	60

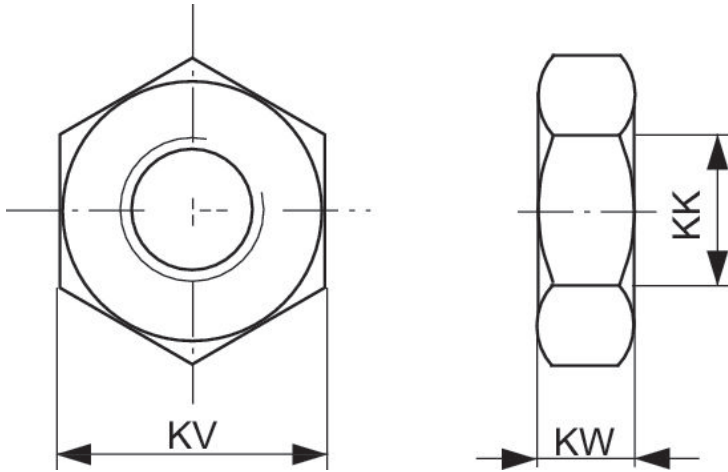
KK	SW	Z [°] max.
M4	9	4
M6	11	4
M8	14	4
M10	17	6
M12	19	13
M10x1,25	17	4
M12x1,25	19	4
M16x1,5	22	4
M20x1,5	30	4
M24x2	36	15
M27x2	41	4
M36x2	50	4
M42x2	55	4
M48x2	65	6

**Piston rod nut MR9**



Thread size	Material	Part No.
M10x1,25	Steel, chrome-plated	1823A00020
M12x1,25	Steel, chrome-plated	8103190344
M16x1,5	Steel, chrome-plated	1823300030
M20x1,5	Steel, chrome-plated	1823300031
M27x2	Steel, chrome-plated	1823A00029
M36x2	Steel, chrome-plated	8103190414
M42x2	Steel, chrome-plated	8103190424

Dimensions

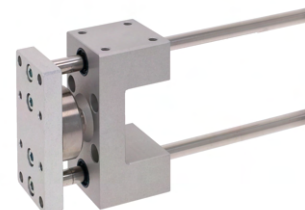


Part No.	KK	KV	KW
8103040114	M4		
1823300033	M6	10	3.2
1823300034	M8	13	4
8103040224	M10	17	8
1823A00020	M10x1,25		
8103060064	M12	19	10
1823A00021	M12x1,25	19	6
8103190344	M12x1,25	19	6
1823300030	M16x1,5	24	8
1823300031	M20x1,5	30	10
8103040344	M20x1,5	30	10
8103190394	M24x2	36	12
1823A00029	M27x2	41	13.5
8103190414	M36x2	50	16
8103190424	M42x2	60	21
8103190434	M48x2	65	25
3330310000	M4	7	2.2
8103190644	M6	10	3.2
3330316000	M6		
8103190164	M8	13	4
3330320000	M8		
8103190464	M10x1,25	17	5
3590302000	M10x1,25		
3590304000	M12x1,25	19	6
3590305000	M16x1,5	24	8
3590308000	M20x1,5	30	10
2990600303	M10x1,25	17	5
2990600304	M12x1,25	19	6
2990600305	M16x1,5	24	8
2990600308	M20x1,5	30	10
2990600312	M27x2	41	13.5
2990600316	M36x2	50	16
2990600325	M42x2	60	21

**Guide unit GU1, Series CG1**

Bearing type: Plain bearing

Ambient temperature min./max.: -20 °C ... 80 °C

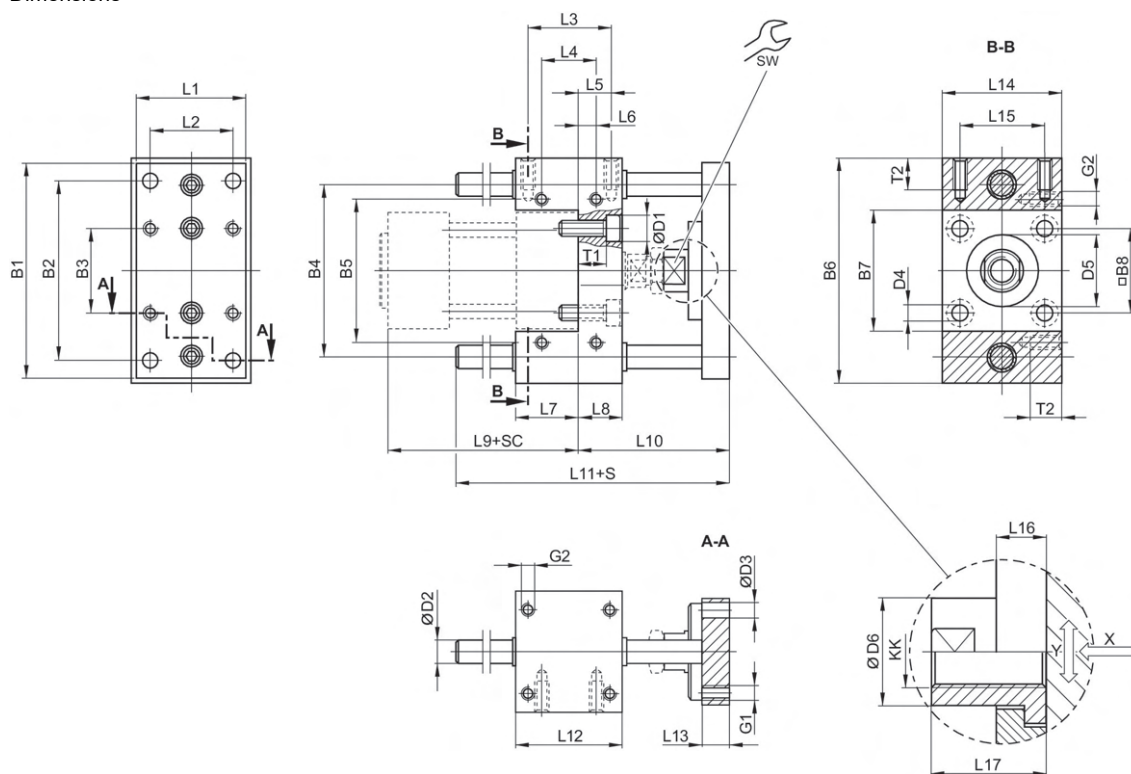


Piston diameter [mm]	Stroke [mm]	Weight 0 mm stroke [kg]	Weight +10 mm stroke [kg]	Part No.
32	50	0.63	0.0122	0821401010
32	100	0.63	0.0122	0821401011
32	160	0.63	0.0122	0821401012
32	200	0.63	0.0122	0821401013
32	250	0.63	0.0122	0821401014
32	320	0.63	0.0122	0821401015
32	400	0.63	0.0122	0821401016
32	500	0.63	0.0122	0821401017
32	600	0.63	0.0122	0821401018
32	800	0.63	0.0122	0821401019
32	1000	0.63	0.0122	0821401500
32	1200	0.63	0.0122	0821401501
40	50	0.946	0.0176	0821401020
40	100	0.946	0.0176	0821401021
40	160	0.946	0.0176	0821401022
40	200	0.946	0.0176	0821401023
40	250	0.946	0.0176	0821401024
40	320	0.946	0.0176	0821401025
40	400	0.946	0.0176	0821401026
40	500	0.946	0.0176	0821401027
40	600	0.946	0.0176	0821401028
40	800	0.946	0.0176	0821401029
40	1000	0.946	0.0176	0821401502
40	1200	0.946	0.0176	0821401503
50	50	1.36	0.0176	0821401030
50	100	1.36	0.0176	0821401031
50	160	1.36	0.0176	0821401032
50	200	1.36	0.0176	0821401033
50	250	1.36	0.0176	0821401034
50	320	1.36	0.0176	0821401035

Piston diameter [mm]	Stroke [mm]	Weight 0 mm stroke [kg]	Weight +10 mm stroke [kg]	Part No.
50	400	1.36	0.0176	0821401036
50	500	1.36	0.0176	0821401037
50	600	1.36	0.0176	0821401038
50	800	1.36	0.0176	0821401039
50	1000	1.36	0.0176	0821401504
50	1200	1.36	0.0176	0821401505
63	50	1.66	0.0176	0821401480
63	100	1.66	0.0176	0821401481
63	160	1.66	0.0176	0821401482
63	200	1.66	0.0176	0821401483
63	250	1.66	0.0176	0821401484
63	320	1.66	0.0176	0821401485
63	400	1.66	0.0176	0821401486
63	500	1.66	0.0176	0821401487
63	600	1.66	0.0176	0821401488
63	800	1.66	0.0176	0821401489
63	1000	1.66	0.0176	0821401490
63	1200	1.66	0.0176	0821401491
80	50	3.45	0.0222	0821401050
80	100	3.45	0.0222	0821401051
80	160	3.45	0.0222	0821401052
80	200	3.45	0.0222	0821401053
80	250	3.45	0.0222	0821401054
80	320	3.45	0.0222	0821401055
80	400	3.45	0.0222	0821401056
80	500	3.45	0.0222	0821401057
80	600	3.45	0.0222	0821401058
80	800	3.45	0.0222	0821401059
80	1000	3.45	0.0222	0821401508
80	1200	3.45	0.0222	0821401509
100	50	4.69	0.0222	0821401060
100	100	4.69	0.0222	0821401061
100	200	4.69	0.0222	0821401063
100	160	4.69	0.0222	0821401062
100	250	4.69	0.0222	0821401064
100	320	4.69	0.0222	0821401065
100	400	4.69	0.0222	0821401066
100	500	4.69	0.0222	0821401067
100	600	4.69	0.0222	0821401068
100	800	4.69	0.0222	0821401069
100	1000	4.69	0.0222	0821401510

Piston diameter [mm]	Stroke [mm]	Weight 0 mm stroke [kg]	Weight +10 mm stroke [kg]	Part No.
100	1200	4.69	0.0222	0821401511

Dimensions



S = stroke  
SC = cylinder stroke  
X = max. play (axial)  
Y = min. play (radial)

Piston Ø	B1	B2	B3	B4	B5	B6	B7	B8	D1
32	90	78	32.5	74	58	100	48	32.5	11
40	100	84	38	80	64	106	54	38	11
50	120	100	46.5	96	80	125	66	46.5	15
63	125	105	56.5	104	95	132	76	56.5	15
80	155	130	72	130	130	165	98	72	18
100	175	150	89	150	150	185	118	89	18

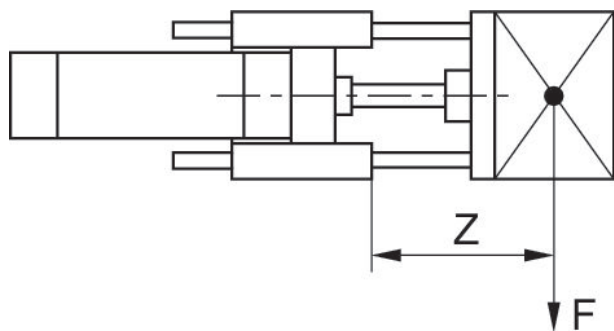
Piston Ø	D2	D3	D4	D5	D6	G1	G2	KK	L1
32	10	6.6	6.6	30 M8	18	M6	M6	M10x1,25	45
40	12	6.6	6.6	35 M8	18	M6	M6	M12x1,25	50
50	12	9	9	40 M8	24	M8	M8	M16x1,5	60
63	12	9	9	45 M8	24	M8	M8	M16x1,5	70
80	16	11	11	45 M8	30	M10	M10	M20x1,5	90
100	16	11	11	55 M8	30	M10	M10	M20x1,5	110

Piston Ø	L2	L3	L4	L5	L6	L7	L8	L9	L10
32	32.5	32.5	32.5	9.25	9.25	31	17	94	69
40	38	38	38	11	11	37	21	105	74
50	46.5	46.5	46.5	18.75	18.75	34	25	106	89
63	56.5	56.5	56.5	15.25	15.25	51	25	121	89
80	72	72	50	25	14	56	34	128	106
100	89	89	70	28.5	19	71	39	138	111

Piston Ø	L11	L12	L13	L14	L15	L16	L17	SW	T1
32	106	48	12	48	32.5	14	22	15	10
40	117	58	12	56	38	14	22	15	14
50	129	59	15	66	46.5	14	26	22	16
63	146	76	15	76	56.5	14	26	22	16
80	170	90	16	98	72	14	32	27	24
100	190	110	16	118	89	14	32	27	29

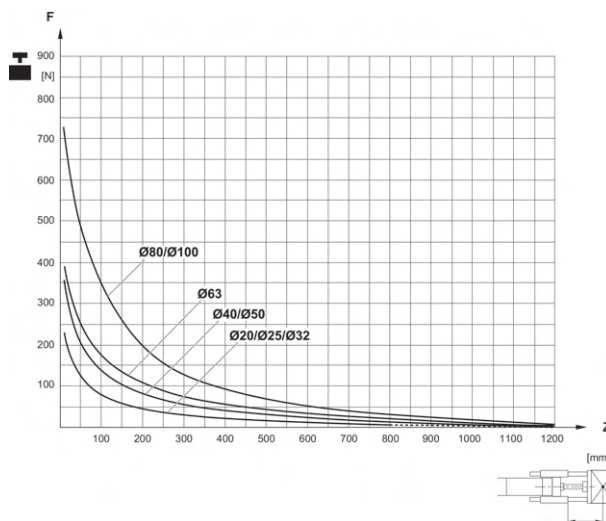
Piston Ø	T2
32	14
40	14
50	16
63	16
80	20
100	20

**Useful load**



F = Useful load, Z = Projection

**Useful load**

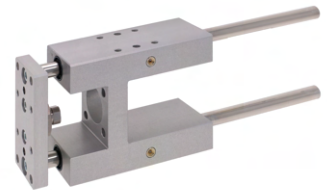


F = Useful load, Z = Projection

**Guide unit GH1, Series CG1**

Bearing type: Plain bearing

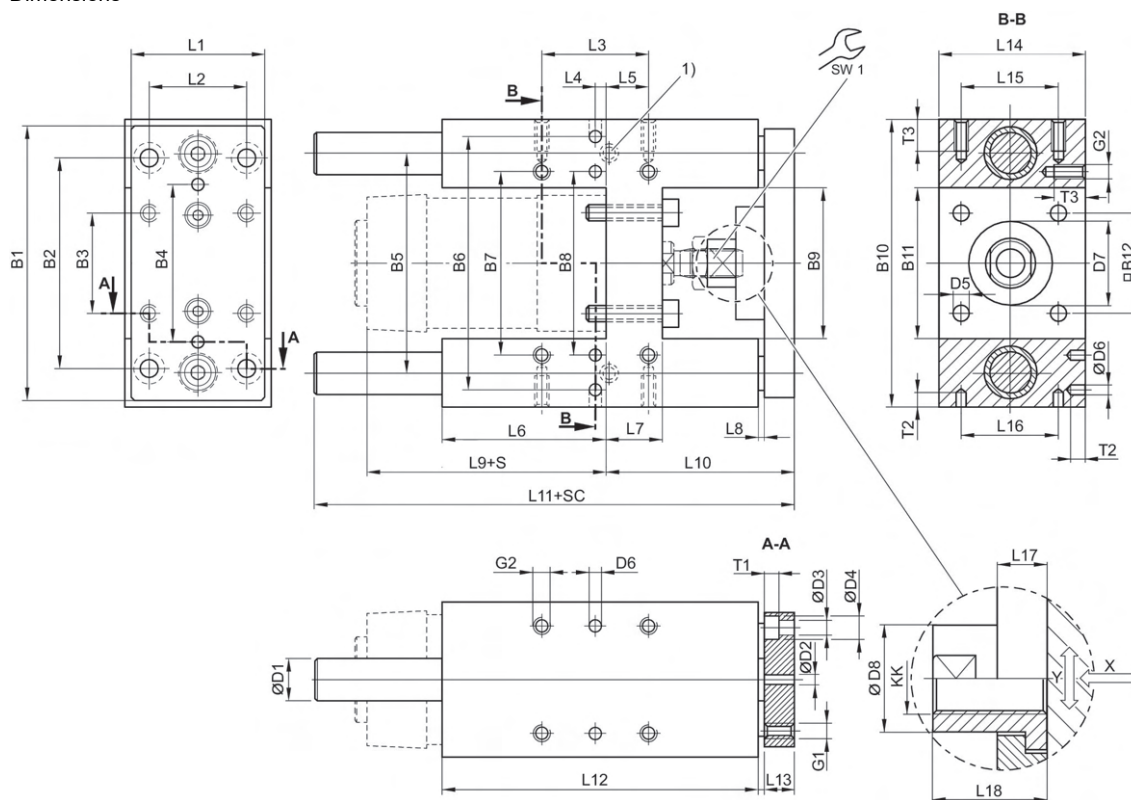
Ambient temperature min./max.: -20 °C ... 80 °C



Piston diameter [mm]	Stroke [mm]	Weight 0 mm stroke [kg]	Weight +10 mm stroke [kg]	Part No.
32	50	1.3	0.009	0821401220
32	100	1.3	0.009	0821401221
32	160	1.3	0.009	0821401222
32	200	1.3	0.009	0821401223
32	250	1.3	0.009	0821401224
32	320	1.3	0.009	0821401225
32	400	1.3	0.009	0821401226
32	500	1.3	0.009	0821401227
32	600	1.3	0.009	0821401228
32	800	1.3	0.009	0821401229
32	1000	1.3	0.009	0821401470
32	1200	1.3	0.009	0821401471
40	50	2.3	0.016	0821401230
40	100	2.3	0.016	0821401231
40	160	2.3	0.016	0821401232
40	200	2.3	0.016	0821401233
40	250	2.3	0.016	0821401234
40	320	2.3	0.016	0821401235
40	400	2.3	0.016	0821401236
40	500	2.3	0.016	0821401237
40	600	2.3	0.016	0821401238
40	800	2.3	0.016	0821401239
40	1000	2.3	0.016	0821401472
40	1200	2.3	0.016	0821401473
50	50	3.7	0.025	0821401240
50	100	3.7	0.025	0821401241
50	160	3.7	0.025	0821401242
50	200	3.7	0.025	0821401243
50	250	3.7	0.025	0821401244
50	320	3.7	0.025	0821401245

Piston diameter [mm]	Stroke [mm]	Weight 0 mm stroke [kg]	Weight +10 mm stroke [kg]	Part No.
50	400	3.7	0.025	0821401246
50	500	3.7	0.025	0821401247
50	600	3.7	0.025	0821401249
50	800	3.7	0.025	0821401474
50	1000	3.7	0.025	0821401475
50	1200	3.7	0.025	0821401476
63	50	4.7	0.025	0821401280
63	100	4.7	0.025	0821401281
63	160	4.7	0.025	0821401285
63	200	4.7	0.025	0821401282
63	250	4.7	0.025	0821401286
63	320	4.7	0.025	0821401283
63	400	4.7	0.025	0821401287
63	500	4.7	0.025	0821401284
63	600	4.7	0.025	0821401288
63	800	4.7	0.025	0821401289
63	1000	4.7	0.025	0821401290
63	1200	4.7	0.025	0821401291
80	100	8.8	0.039	0821401260
80	200	8.8	0.039	0821401261
80	320	8.8	0.039	0821401262
80	500	8.8	0.039	0821401263
80	600	8.8	0.039	0821401264
80	800	8.8	0.039	0821401265
80	1000	8.8	0.039	0821401266
80	1200	8.8	0.039	0821401267
100	100	11.1	0.039	0821401270
100	200	11.1	0.039	0821401271
100	320	11.1	0.039	0821401272
100	500	11.1	0.039	0821401273
100	600	11.1	0.039	0821401274
100	800	11.1	0.039	0821401275
100	1000	11.1	0.039	0821401276
100	1200	11.1	0.039	0821401277

Dimensions



1) Lube nipple  
S = stroke  
SC = cylinder stroke  
X = max. play (axial)  
Y = min. play (radial)

Piston Ø	B1	B2	B3	B4	B5	B6	B7	B8	B9
32	90	78	32.5	50	74	81	61	61	50.2
40	110	84	38	54	87	99	69	69	58.2
50	130	100	46.5	72	104	119	85	85	70.2
63	145	105	56.5	82	119	132	100	100	85.2
80	180	130	72	106	148	166	130	130	105.4
100	200	150	89	131	172	190	150	150	130.4

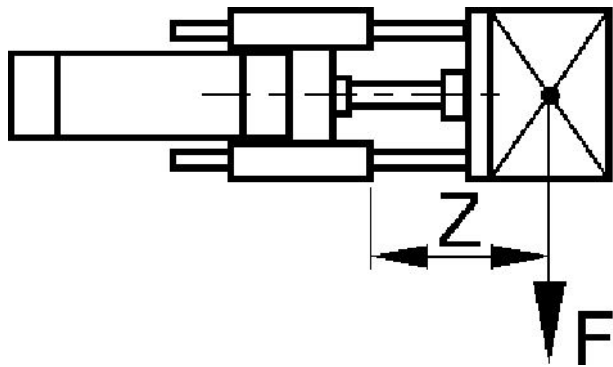
Piston Ø	B10	B11	B12	D1	D2 H7	D3	D4	D5	D6 H7
32	97	50.2	32.5	12	6	6.6	11	6.6	6
40	115	58.2	38	16	6	6.6	11	6.6	6
50	137	70.2	46.5	20	6	9	15	9	6
63	152	85.2	56.5	20	6	9	15	9	6
80	189	105.4	72	25	6	11	18	11	6
100	213	130.4	89	25	6	11	18	11	6

Piston Ø	D7 M8	D8	G1	G2	KK	L1	L2	L3	L4
32	30	14.5	M6	M6	M10x1,25	45	32.5	32.5	12
40	35	18	M6	M6	M12x1,25	54	38	38	8
50	40	24	M8	M8	M16x1,5	63	46.5	46.5	4.5
63	45	24	M8	M8	M16x1,5	80	56.5	56.5	13
80	45	30	M10	M10	M20x1,5	100	72	72	15
100	55	30	M10	M10	M20x1,5	120	89	89	20

Piston Ø	L5	L6	L7	L8	L9	L10	L11	L12	L13
32	4.25	76	17	3	94	64	177.5	125	12
40	11	81	21	3	105	74	192.5	140	12
50	18.75	79	26	3	106	89	205	150	15
63	15.25	111	26	3	121	89	237	182	15
80	21	128	34	3	128	110	280	215	20
100	24.5	128	39	3	138	115	280	220	20

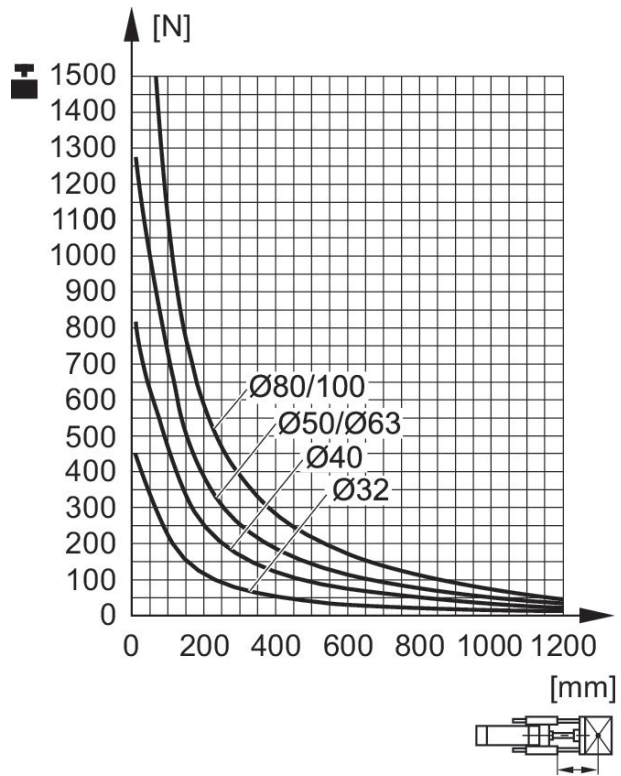
Piston Ø	L14	L15	L16	L17	L18	T1	T2	T3	SW1
32	50	32.5	32.5	6	17	6.5	10	15	13
40	58	38	38	14	22	6.5	10	15	15
50	70	46.5	46.5	14	26	9	10	16	22
63	85	56.5	56.5	14	26	9	10	16	22
80	105	72	72	14	32	11	10	20	27
100	130	89	89	14	32	11	10	20	27

**Useful load**



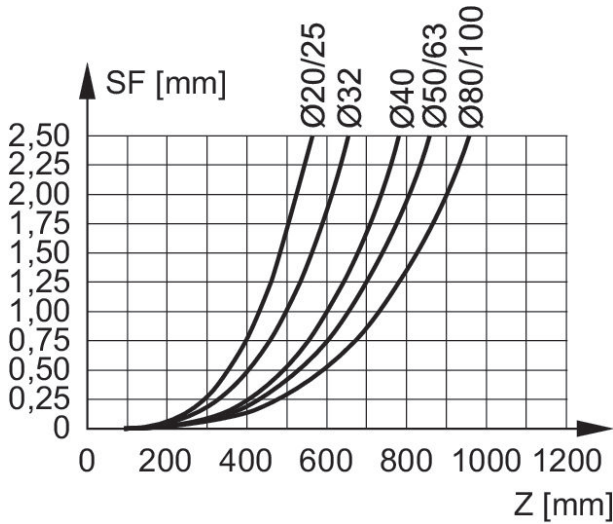
F = Useful load, Z = Projection

**Useful load**



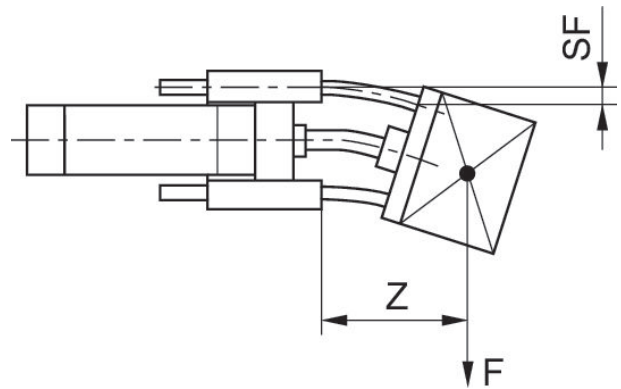
F = Useful load, Z = Projection

**Bending due to own load**



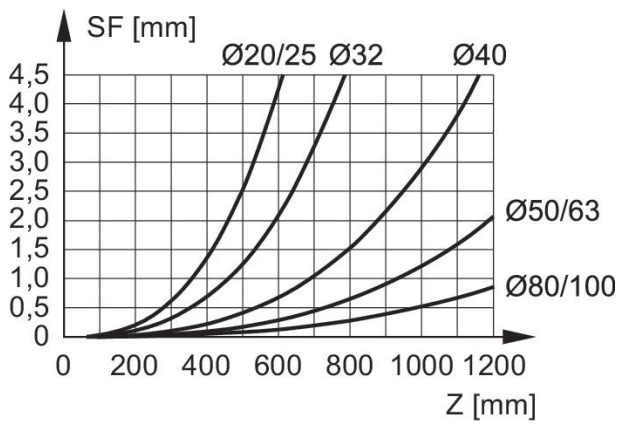
F = useful load (at the load center), SF = bending, Z = projection

**Bending due to 10 N load**



F = useful load (at the load center), SF = bending, Z = projection

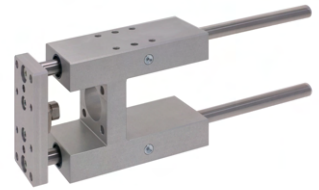
**Bending due to 10 N load**



F = useful load (at the load center), SF = bending, Z = projection

**Guide unit GH2, Series CG1**

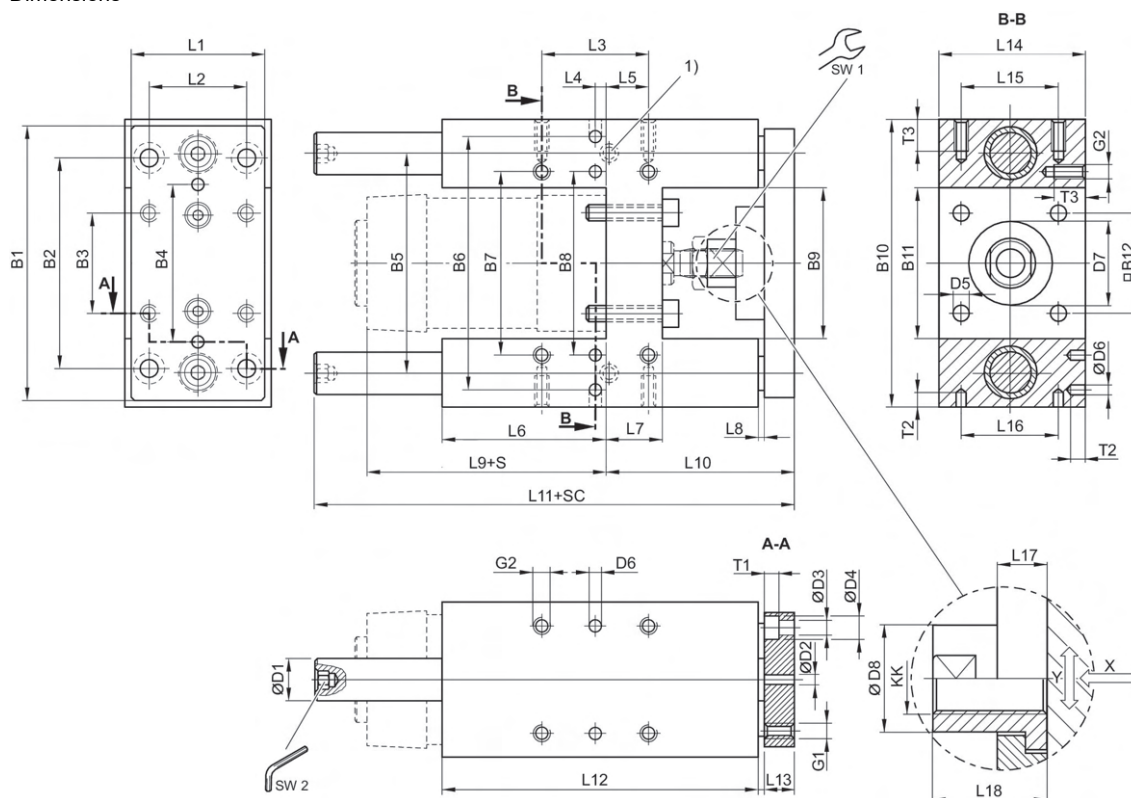
Bearing type: Linear ball bearing  
Ambient temperature min./max.: -20 °C ... 80 °C



Piston diameter [mm]	Stroke [mm]	Weight 0 mm stroke [kg]	Weight +10 mm stroke [kg]	Part No.
32	50	1.3	0.009	0821401320
32	100	1.3	0.009	0821401321
32	200	1.3	0.009	0821401322
32	320	1.3	0.009	0821401323
32	500	1.3	0.009	0821401324
32	600	1.3	0.009	0821401325
32	800	1.3	0.009	0821401326
32	1000	1.3	0.009	0821401327
32	1200	1.3	0.009	0821401328
40	50	2.3	0.016	0821401330
40	100	2.3	0.016	0821401331
40	200	2.3	0.016	0821401332
40	320	2.3	0.016	0821401333
40	500	2.3	0.016	0821401334
40	600	2.3	0.016	0821401335
40	800	2.3	0.016	0821401336
40	1000	2.3	0.016	0821401337
40	1200	2.3	0.016	0821401338
50	50	3.7	0.025	0821401340
50	100	3.7	0.025	0821401341
50	200	3.7	0.025	0821401342
50	320	3.7	0.025	0821401343
50	500	3.7	0.025	0821401344
50	600	3.7	0.025	0821401345
50	800	3.7	0.025	0821401346
50	1000	3.7	0.025	0821401347
50	1200	3.7	0.025	0821401348
63	50	4.7	0.025	0821401380
63	100	4.7	0.025	0821401381
63	200	4.7	0.025	0821401382

Piston diameter [mm]	Stroke [mm]	Weight 0 mm stroke [kg]	Weight +10 mm stroke [kg]	Part No.
63	320	4.7	0.025	0821401383
63	500	4.7	0.025	0821401384
63	600	4.7	0.025	0821401385
63	800	4.7	0.025	0821401386
63	1000	4.7	0.025	0821401387
63	1200	4.7	0.025	0821401388
80	100	8.8	0.039	0821401360
80	200	8.8	0.039	0821401361
80	320	8.8	0.039	0821401362
80	500	8.8	0.039	0821401363
80	600	8.8	0.039	0821401364
80	800	8.8	0.039	0821401365
80	1000	8.8	0.039	0821401366
80	1200	8.8	0.039	0821401367
100	100	11.1	0.039	0821401370
100	200	11.1	0.039	0821401371
100	320	11.1	0.039	0821401372
100	500	11.1	0.039	0821401373
100	600	11.1	0.039	0821401374
100	800	11.1	0.039	0821401375
100	1000	11.1	0.039	0821401376
100	1200	11.1	0.039	0821401377

Dimensions



- 1) Lube nipple
- S = stroke
- SC = cylinder stroke
- X = max. play (axial)
- Y = min. play (radial)
- Hexagon in guide rod

Piston Ø	B1	B2	B3	B4	B5	B6	B7	B8	B9
32	90	78	32.5	50	74	81	61	61	50.2
40	110	84	38	54	87	99	69	69	58.2
50	130	100	46.5	72	104	119	85	85	70.2
63	145	105	56.5	82	119	132	100	100	85.2
80	180	130	72	106	148	166	130	130	105.4
100	200	150	89	131	172	190	150	150	130.4

Piston Ø	B10	B11	B12	D1	D2 H7	D3	D4	D5	D6 H7
32	97	50.2	32.5	12	6	6.6	11	6.6	6
40	115	58.2	38	16	6	6.6	11	6.6	6
50	137	70.2	46.5	20	6	9	15	9	6
63	152	85.2	56.5	20	6	9	15	9	6
80	189	105.4	72	25	6	11	18	11	6
100	213	130.4	89	25	6	11	18	11	6

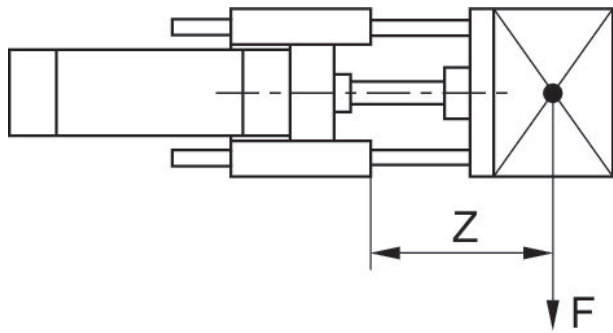
Piston Ø	D7 M8	D8	G1	G2	KK	L1	L2	L3	L4
32	30	14.5	M6	M6	M10x1,25	45	32.5	32.5	12
40	35	18	M6	M6	M12x1,25	54	38	38	8
50	40	24	M8	M8	M16x1,5	63	46.5	46.5	4.5
63	45	24	M8	M8	M16x1,5	80	56.5	56.5	13
80	45	30	M10	M10	M20x1,5	100	72	72	15
100	55	30	M10	M10	M20x1,5	120	89	89	20

Piston Ø	L5	L6	L7	L8	L9	L10	L11	L12	L13
32	4.25	76	17	3	94	64	177.5	125	12
40	11	81	21	3	105	74	192.5	140	12
50	18.75	79	26	3	106	89	237	150	15
63	15.25	111	26	3	121	89	237	182	15
80	21	128	34	3	128	110	280	215	20
100	24.5	128	39	3	138	115	280	220	20

Piston Ø	L14	L15	L16	L17	L18	T1	T2	T3	SW1
32	50	32.5	32.5	6	17	6.5	10	15	13
40	58	38	38	14	22	6.5	10	15	15
50	70	46.5	46.5	14	26	9	10	16	22
63	85	56.5	56.5	14	26	9	10	16	22
80	105	72	72	14	32	11	10	20	27
100	130	89	89	14	32	11	10	20	27

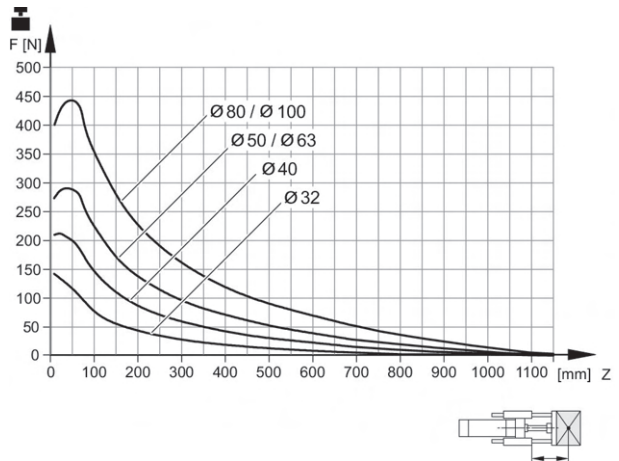
Piston Ø	SW2
32	5
40	6
50	6
63	6
80	8
100	8

**Useful load**



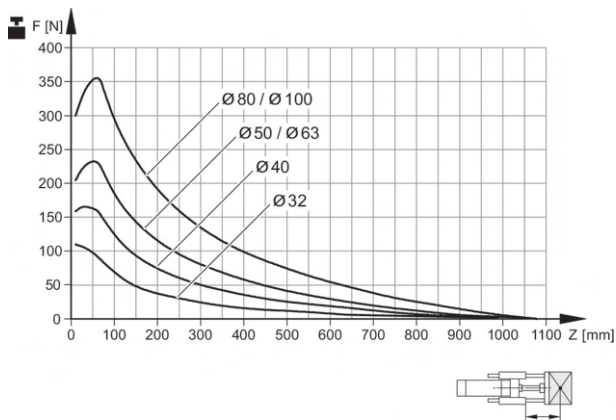
F = Useful load, Z = Projection

**Useful load**



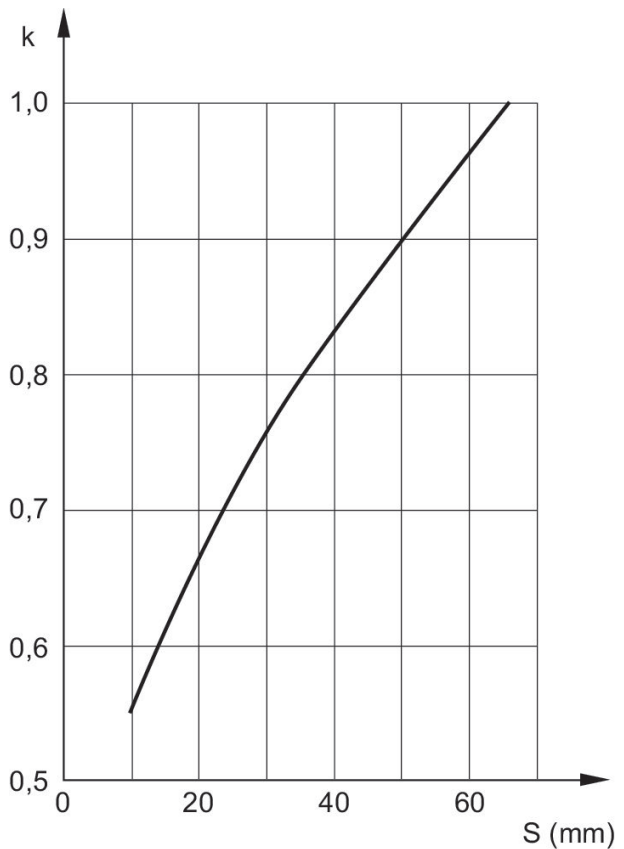
Service life  $2 \times 10^6$  m  
F = Useful load, Z = Projection

**Useful load**



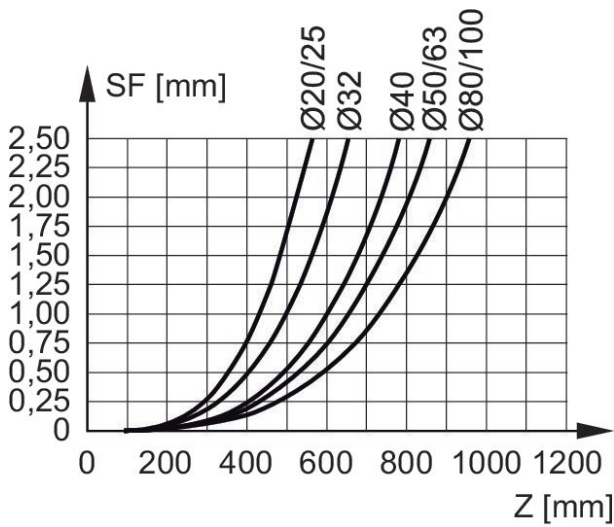
Service life  $5 \times 10^6$  m  
F = Useful load, Z = Projection

**Reduction of useful load for short-stroke**



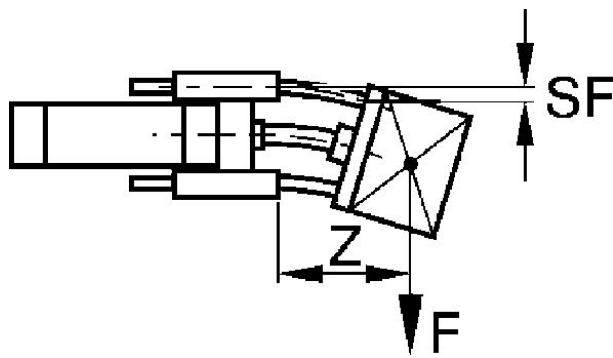
S = stroke  
k = correction factor: normal=1, shock loaded=2 With a short stroke, the useful load figures determined from the diagram must be multiplied by the correction factor k. These short-stroke adjustments are already included in the load diagram for a displacement of up to 60 mm.

**Bending due to own load**



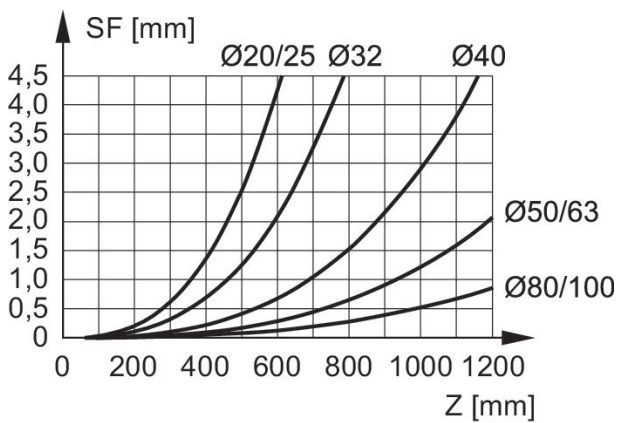
F = useful load (at the load center), SF = bending, Z = projection

**Bending due to 10 N load**



F = useful load (at the load center), SF = bending, Z = projection

**Bending due to 10 N load**



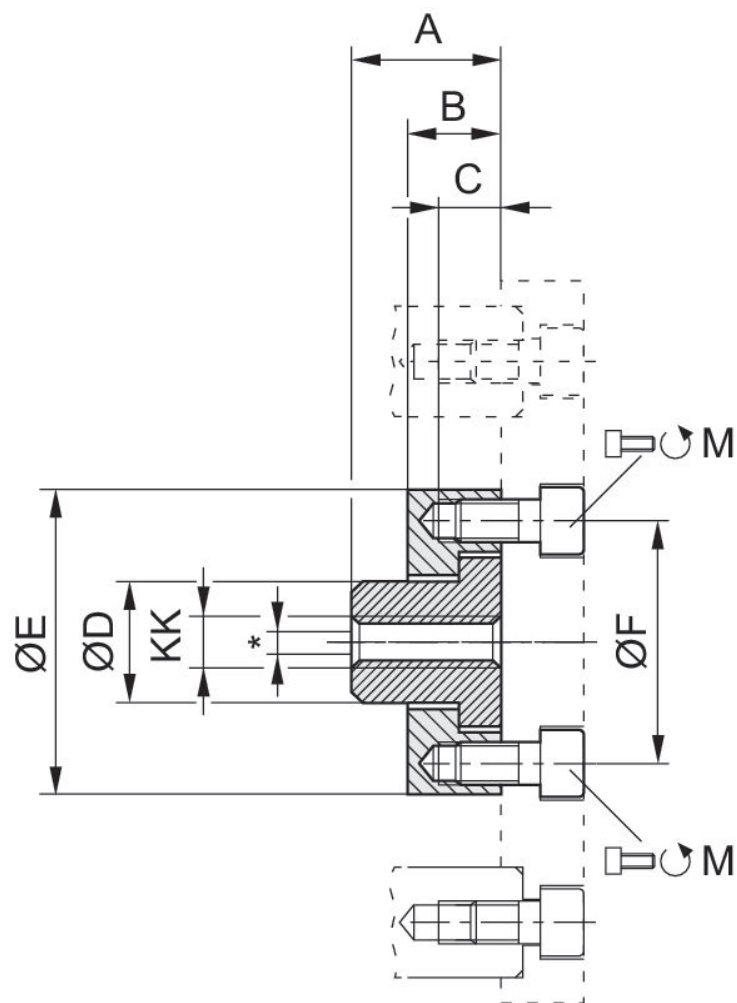
F = useful load (at the load center), SF = bending, Z = projection

**Compensating coupling GU3 form B, series CG1**



Suitable piston rod thread	Part No.
M8	R413000283
M10x1,25	R413000284
M20x1,5	R413000285

Dimensions



\* Radial joint from 1,5 ... 1,8 mm

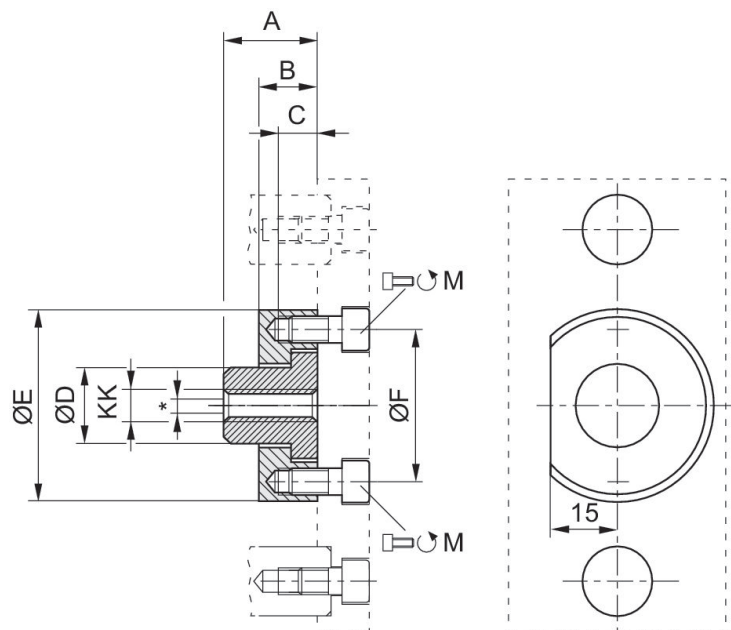
Part No.	KK	Cylinders Ø	M	A	B	C	D	ØE	ØF
R413000283	M8	20	2x M5x12	22	6	6	14.5	SW 30	26
R413000284	M10x1,25	25/32	2x M5x12	17	6	6	14.5	SW 30	26
R413000285	M20x1,5	80/100	4x M6x20	32	14	9.5	30	60	51

**Compensating coupling GU3 form C, series CG1**



Suitable piston rod thread	Part No.
M6	R413000276
M12x1,25	R413000280
M16x1,5	R413000281

Dimensions

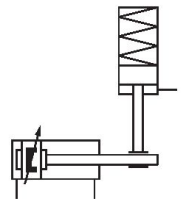


\* Radial joint from 1,0 ... 2,5 mm

Part No.	KK	Cylinders Ø	M	A	B	C	D	ØE	ØF
R413000276	M6	12/16	2x M4x10	18	7	7	10	22	15
R413000280	M12x1,25	40	2x M6x12	22	14	8	18	45	36
R413000281	M16x1,5	50/63	4x M6x14	26	14	8	24	54	45

**Holding unit, Series HU1**

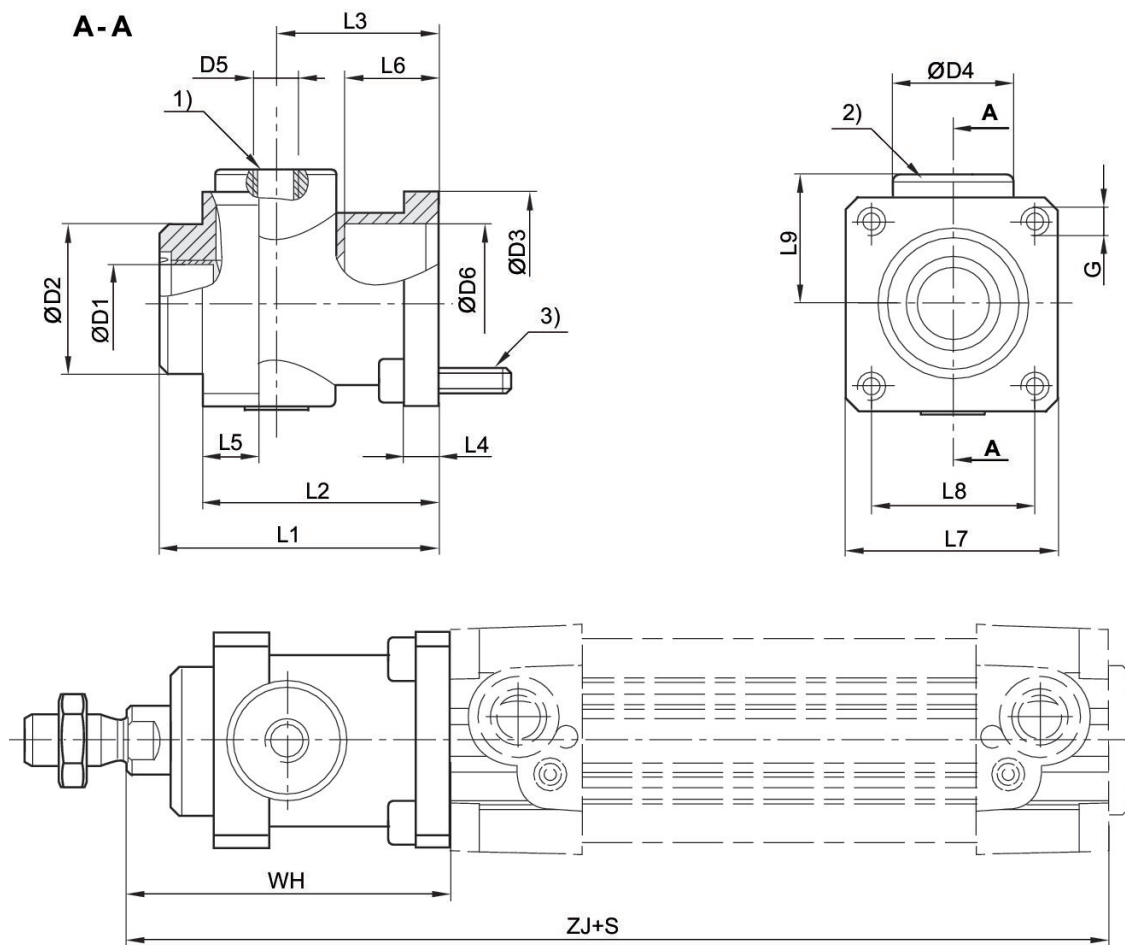
Ambient temperature min./max.: -10 °C ... 60 °C  
Medium temperature min./max.: -10 °C ... 60 °C



Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
Compressed air connection	M5	G 1/8	G 1/8	G 1/8	G 1/8	G 1/8
-	0821401165	0821401166	0821401167	0821401168	0821401169	0821401170

Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
Static holding force	650 N	1100 N	1600 N	2500 N	4000 N	6300 N
suitable piston rod Ø	12 mm	16 mm	20 mm	20 mm	25 mm	25 mm
Piston rod extension	42 mm	45 mm	57 mm	57 mm	77 mm	77 mm

Dimensions



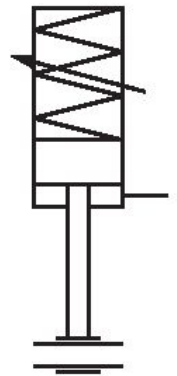
- 1) air connection
  - 2) Holding cartridge
  - 3) mounting screws 4x
- S = stroke

Piston Ø	Part No.	Ø D1	Ø D2	Ø D3	Ø D4	D5	L1	L2	L3
32	0821401165	12	30	35	25	M5	58	48	34
40	0821401166	16	35	40	28	G 1/8	65	55	38
50	0821401167	20	40	50	35	G 1/8	82	70	48
63	0821401168	20	45	60	38	G 1/8	82	70	49.5
80	0821401169	25	45	80	48	G 1/8	110	90	61
100	0821401170	25	55	100	58	G 1/8	115	100	69

Piston Ø	L4	L5	L6	L7	L8	L9	G	WH	ZJ
32	8	13	20.5	45	32.5	25.5	M6	68	162
40	8	13	22.5	50	38	30	M6	75	180
50	15	16	29.5	60	46.5	36	M8	94	200
63	15	16	29.5	70	56.5	40	M8	94	215
80	18	20	35	90	72	50	M10	123	251
100	18	20	-	105	89	58	M10	128	266

**Locking unit, Series LU1**

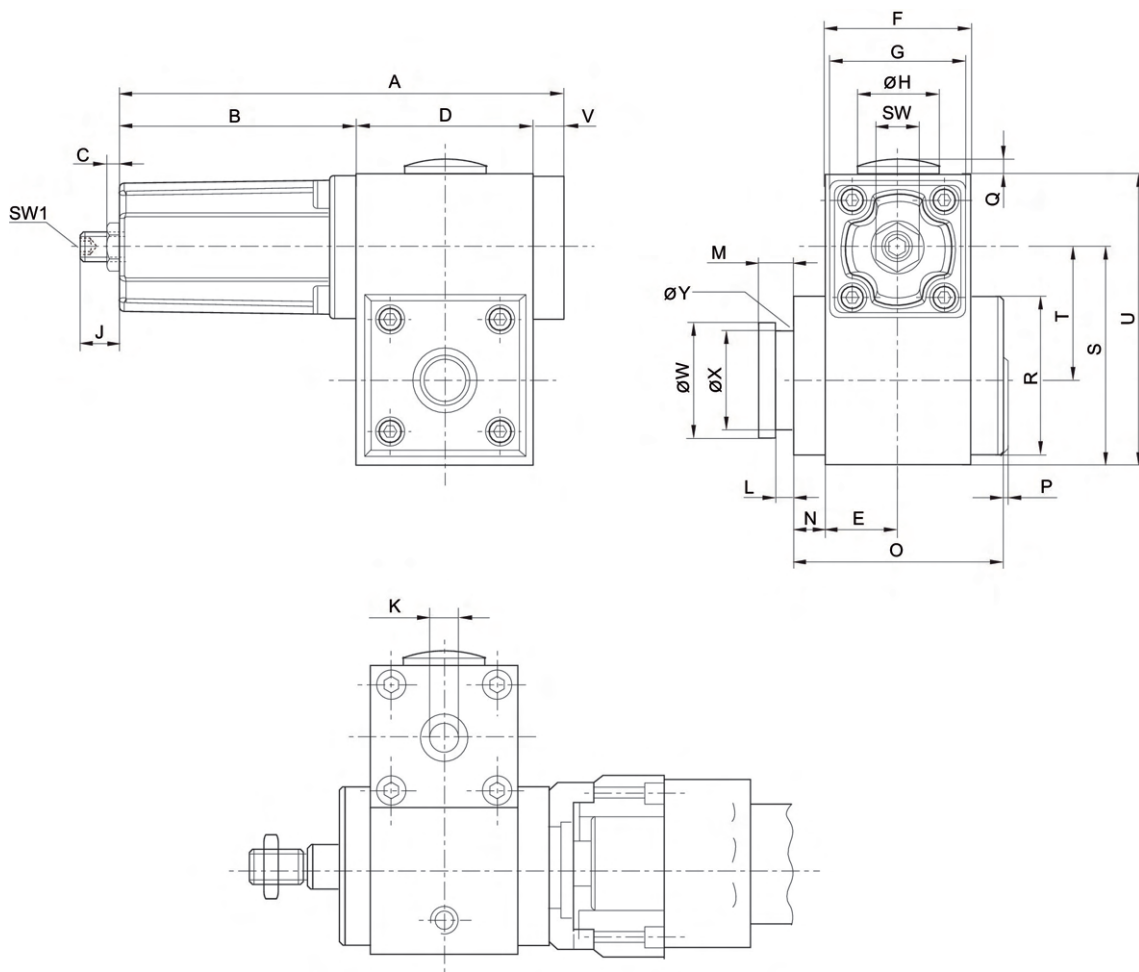
Ambient temperature min./max.: -20 °C ... 80 °C  
Medium temperature min./max.: -20 °C ... 80 °C



Piston Ø	32 mm	40 mm	50 mm63 mm	80 mm100 mm
Compressed air connection	G 1/8	G 1/8	G 1/8	G 1/8
-	0821401130	0821401131	0821401132	0821401133

Piston Ø	32 mm	40 mm	50 mm63 mm	80 mm100 mm
Static holding force	840 N	1100 N	2700 N	5800 N
suitable piston rod diameter	12 mm	16 mm	20 mm	25 mm
Piston rod extension	79 mm	81 mm	100 mm	140 mm

Dimensions



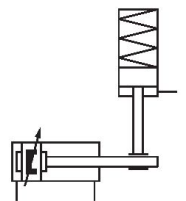
Piston Ø	Part No.	A	B	C	D	E	F	G	ØH
32	0821401130	135	69	10	56	23	46	45	30
40	0821401131	135	69	10	56	23	46	45	30
50, 63	0821401132	169	90	10	69	30	60	55	30
80, 100	0821401133	208	98	16.7	100	40	80	65	37.5

Piston Ø	J	K	L	M	N	O	P	Q	R
32	19	G 1/8	4.1	8	9	65	3	2.5	50
40	18	G 1/8	5.1	10	9	65	3	2.5	50
50, 63	17	G 1/8	5.1	10	9	84	3	2.5	60
80, 100	15	G 1/8	8.1	16	13	118	3	2	90

Piston Ø	S	SW	SW1	T	U	V	ØW	ØX	ØY
32	69	15	5	41.9	92	10	29.9	24	3
40	69	15	5	40.5	92	10	39.9	30	3
50, 63	80	15	5	48	111	10	39.9	30	3
80, 100	119	24	8	72	155	10	54.9	40	5

**Locking unit, Series LU1**

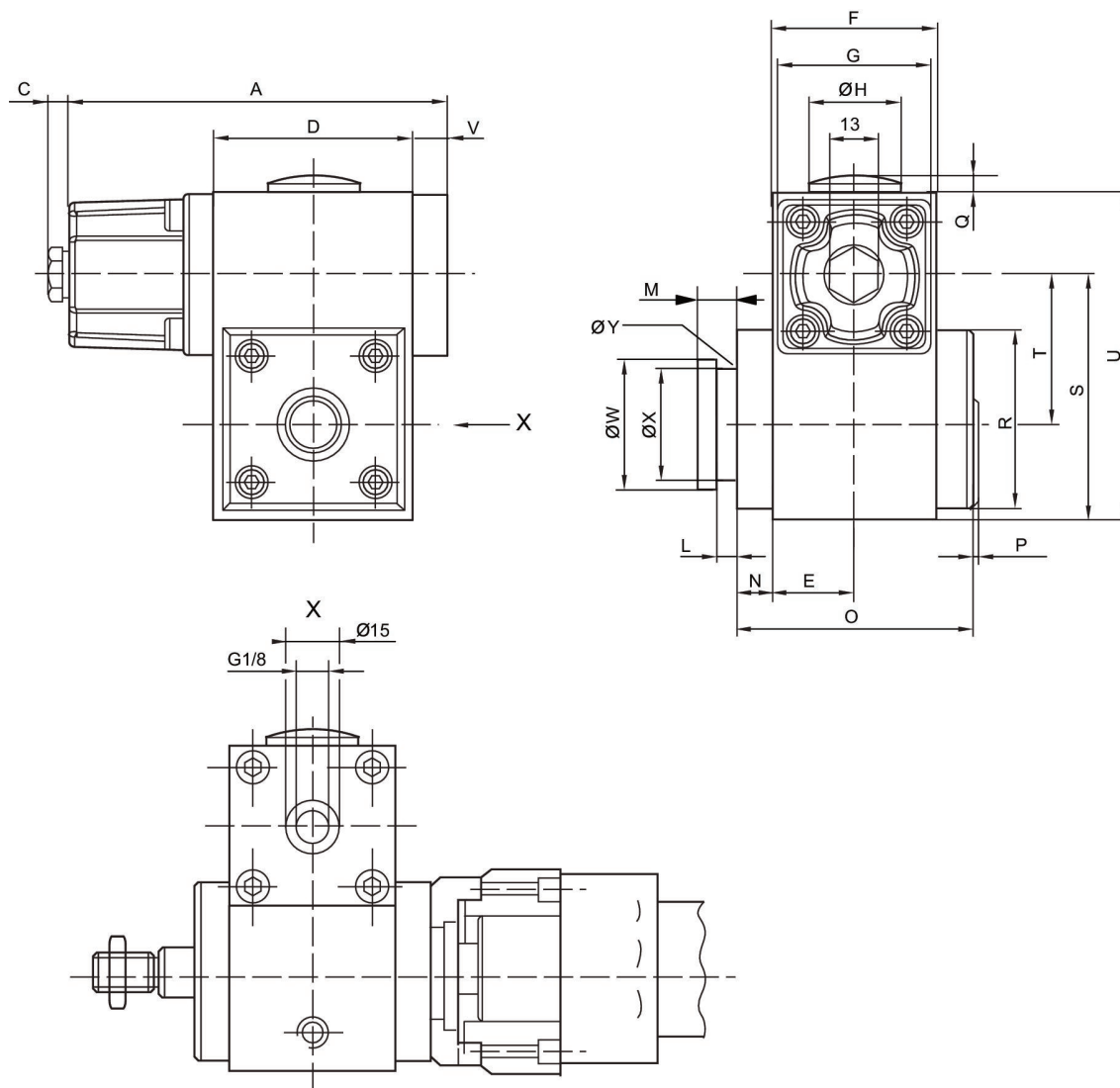
Ambient temperature min./max.: -20 °C ... 80 °C  
Medium temperature min./max.: -20 °C ... 80 °C



Piston Ø	32 mm	40 mm	50 mm63 mm	80 mm100 mm
Compressed air connection	G 1/8	G 1/8	G 1/8	G 1/8
-	R412003730	R412003731	R412003732	R412003733

Piston Ø	32 mm	40 mm	50 mm63 mm	80 mm100 mm
Static holding force	740 N	1000 N	2300 N	4000 N
suitable piston rod diameter	12 mm	16 mm	20 mm	25 mm
Piston rod extension	79 mm	81 mm	100 mm	140 mm

Dimensions



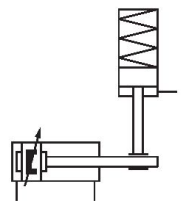
Piston Ø	Part No.	A	C	D	E	F	G	Ø H	L
32	R412003730	106	6	56	23	46	45	30	4.1
40	R412003731	106	6	56	23	46	45	30	5.1
50, 63	R412003732	139.5	6	69	30	60	55	30	5.1
80, 100	R412003733	176.5	6	100	40	80	65	37.5	8.1

Piston Ø	M	N	O	P	Q	R	S	T	U
32	8	9	65	3	2.5	50	68.5	41.9	91.5
40	10	9	65	3	2.5	50	68.5	40.5	91.5
50, 63	10	9	83.5	3	2.5	60	79.5	48	110
80, 100	16	13	118	3	2	90	119	72	155

Piston Ø	V	Ø W	Ø X	Ø Y
32	10	29.9	24	3
40	10	39.9	30	3
50, 63	10	39.9	30	3
80, 100	10	54.9	40	5

**Locking unit, Series LU1**

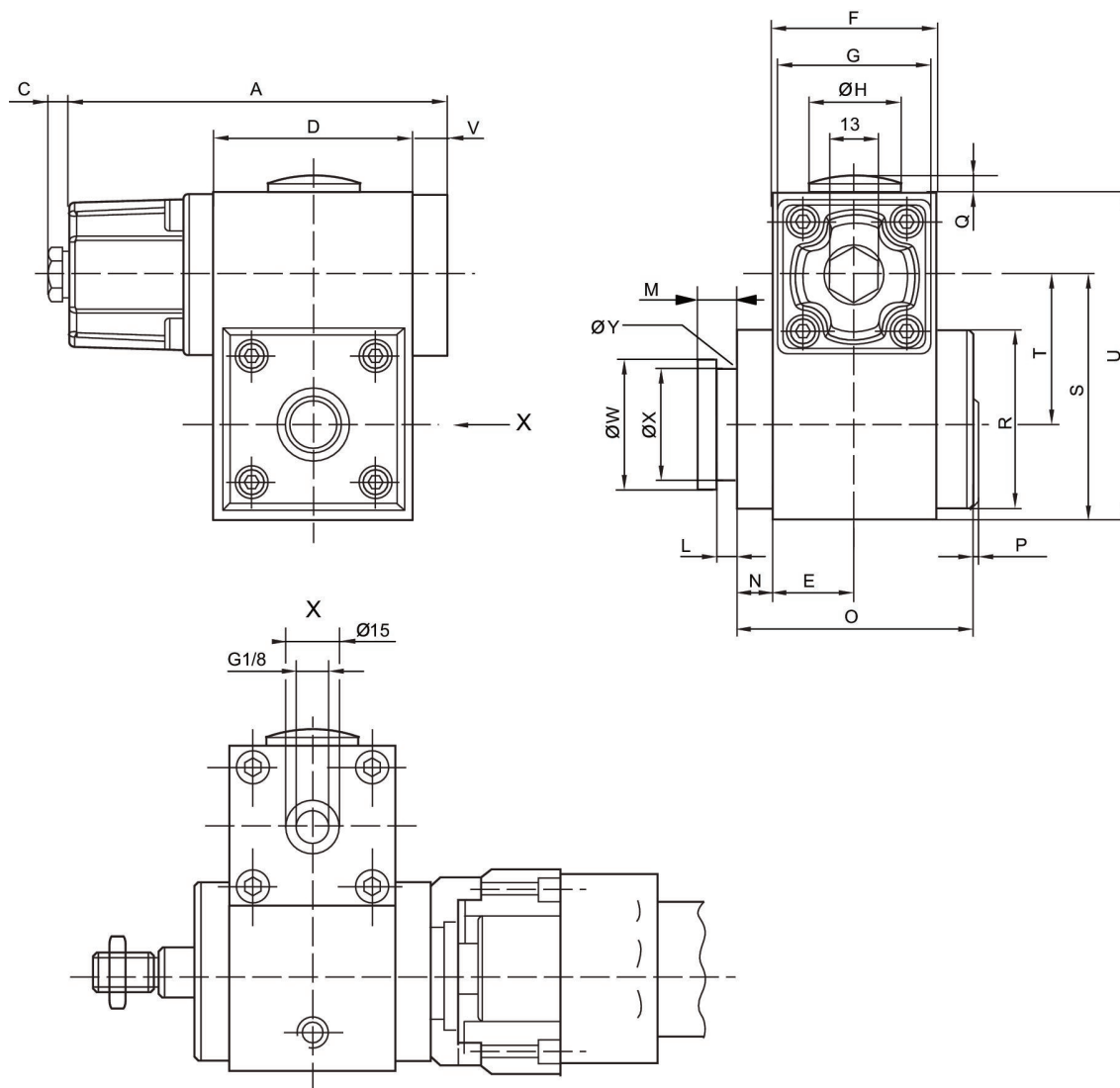
Ambient temperature min./max.: -20 °C ... 80 °C  
Medium temperature min./max.: -20 °C ... 80 °C



Piston Ø	32 mm	40 mm	50 mm63 mm	80 mm100 mm
Compressed air connection	G 1/8	G 1/8	G 1/8	G 1/8
-	0821401134	0821401135	0821401136	0821401137

Piston Ø	32 mm	40 mm	50 mm63 mm	80 mm100 mm
Static holding force	840 N	1100 N	2700 N	5800 N
suitable piston rod diameter	12 mm	16 mm	20 mm	25 mm
Piston rod extension	79 mm	81 mm	100 mm	140 mm

Dimensions



Piston Ø	Part No.	A	C	D	E	F	G	Ø H	L
32	0821401134	106	6	56	23	46	45	30	4.1
40	0821401135	106	6	56	23	46	45	30	5.1
50, 63	0821401136	139.5	6	69	30	60	55	30	5.1
80, 100	0821401137	176.5	6	100	40	80	65	37.5	8.1

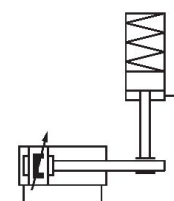
Piston Ø	M	N	O	P	Q	R	S	T	U
32	8	9	65	3	2.5	50	68.5	41.9	91.5
40	10	9	65	3	2.5	50	68.5	40.5	91.5
50, 63	10	9	83.5	3	2.5	60	79.5	48	110
80, 100	16	13	118	3	2	90	119	72	155

Piston Ø	V	Ø W	Ø X	Ø Y
32	10	29.9	24	3
40	10	39.9	30	3
50, 63	10	39.9	30	3
80, 100	10	54.9	40	5

**Locking unit, Series LU6**

Ambient temperature min./max.: -25 °C ... 80 °C

Medium temperature min./max.: -25 °C ... 80 °C



Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
Compressed air connection	G 1/8	G 1/8	G 1/8	G 1/8	G 1/8	G 1/8
-	5230996402	5231996402	5232996402	5233996402	5234996402	5235996402

Piston Ø	125 mm
Compressed air connection	G 1/4
-	5236996402

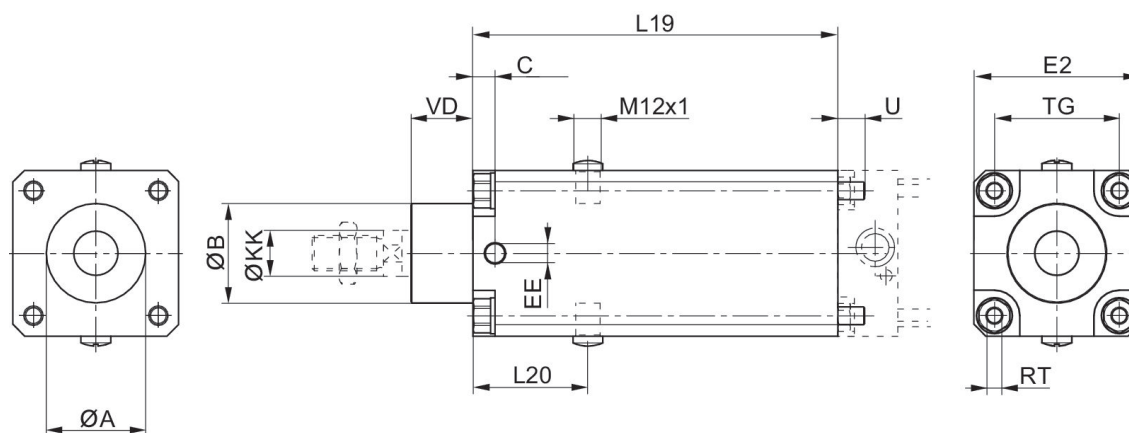
Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
Max. moving mass, external	77 kg	122 kg	194 kg	306 kg	510 kg	815 kg
Max. torsional moment of piston rod	0.5 Nm	1 Nm	2 Nm	2.5 Nm	5 Nm	9 Nm
Max. holding/braking force FLU6	760 N	1200 N	1900 kN	3000 N	5000 N	8000 N
suitable piston rod diameter	12 mm	16 mm	20 mm	20 mm	25 mm	25 mm
Piston rod extension	125 mm	125 mm	145 mm	165 mm	185 mm	220 mm
Required flow rate Qn	50 l/min	70 l/min	140 l/min	240 l/min	450 l/min	700 l/min
Buckling protection of the piston rod 1), max. cylinder stroke for Euler case 1	750 mm	1100 mm	1350 mm	950 mm	1350 mm	950 mm
Buckling protection of the piston rod 1), max.	400 mm	550 mm	700 mm	500 mm	700 mm	500 mm

Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
cylinder stroke for Euler case 2						
Max. piston speed	1 m/s	1 m/s	1 m/s	1 m/s	1 m/s	1 m/s
Max. total braking energy $E_{total}$	3.2 MJ	6 MJ	10 MJ	18 MJ	36 MJ	58 MJ
Max. braking energy per hour	720 J	1350 J	2250 J	4050 J	8100 J	13200 J
Max. braking energy per braking cycle	4.8 J	9 J	15 J	27 J	54 J	88 J
Braking energy per braking cycle related to B10d, EB10d	1.6 J	3 J	5 J	9 J	18 J	29 J
Brake response time (4 bar)	0.08 s	0.08 s	0.08 s	0.08 s	0.08 s	0.09 s
Brake response time (6.3 bar)	0.1 s	0.1 s	0.1 s	0.1 s	0.1 s	0.11 s
Brake response time (10 bar)	0.12 s	0.12 s	0.12 s	0.12 s	0.12 s	0.13 s

Piston Ø	125 mm
Max. moving mass, external	1223 kg
Max. torsional moment of piston rod	15 Nm
Max. holding/braking force FLU6	12000 N
suitable piston rod diameter	32 mm
Piston rod extension	220 mm
Required flow rate $Q_n$	1200 l/min
Buckling protection of the piston rod 1), max. cylinder stroke for Euler case 1	1500 mm
Buckling protection of the piston rod 1), max. cylinder stroke for Euler case 2	800 mm
Max. piston speed	1 m/s
Max. total braking energy $E_{total}$	93 MJ
Max. braking energy per hour	21000 J

Piston Ø	125 mm
Max. braking energy per braking cycle	140 J
Braking energy per braking cycle related to B10d, EB10d	47 J
Brake response time (4 bar)	0.09 s
Brake response time (6.3 bar)	0.11 s
Brake response time (10 bar)	0.13 s

Dimensions



Piston Ø	Part No.	ØA	ØB d11	C	EE	E2	L19	L20	ØKK e8-h9
32	5230996402	30,5	30	9	G1/8	48	125	44	12
40	5231996402	35,5	35	9	G1/8	53	125	44	16
50	5232996402	40,5	40	9	G1/8	63	145	49	20
63	5233996402	45,5	45	10	G1/8	75	165	52	20
80	5234996402	45,5	45	11	G1/8	98	185	61.5	25
100	5235996402	55,5	55	13	G1/8	118	220	68	25
125	5236996402	60,5	60	13	G1/4	142	220	75	32

Piston Ø	TG	RT	U	VD
32	32,5	M6	10	19
40	38	M6	10	21
50	46,5	M8	11	28
63	56,5	M8	11	28
80	72	M10	16	34
100	89	M10	16	37
125	110	M12	16	45

### Mounting flange, Series LU1

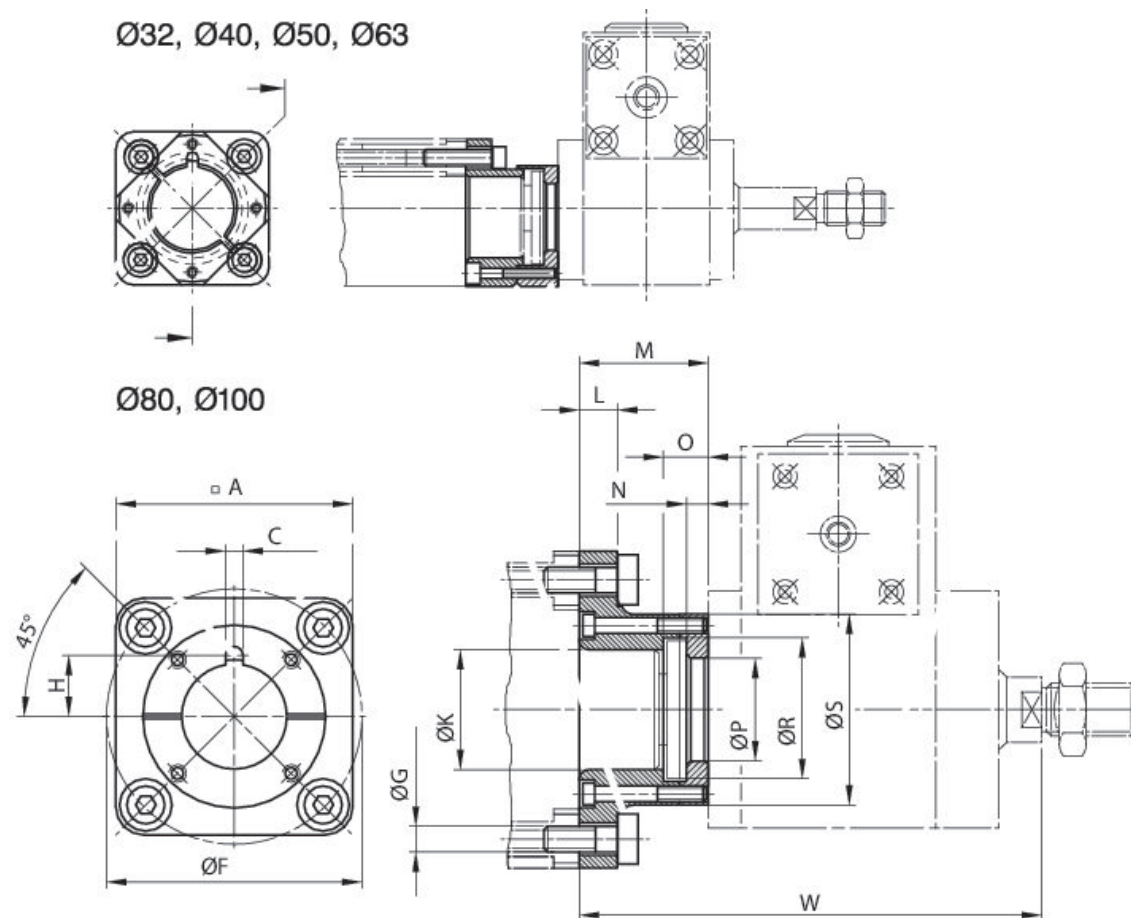
Ambient temperature min./max.: -20 °C ... 80 °C  
Medium temperature min./max.: -20 °C ... 80 °C



Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm
-	1827001504	1827001505	1827001506	1827001508	1827001433	1827001434

Keine Attribute mit Inhalt in Tabelle!

Dimensions



Screws included in scope of delivery  
The locking unit can be rotated by 4x90°.

Piston Ø	Part No.	A	C +0,1	Ø F ±0,2	G H13	H	Ø K H10	L	M
32	1827001504	50	3.6	46	6.6	13.2	30	7	27.2
40	1827001505	57	3.6	54	6.6	18.2	35	9.5	33.3
50	1827001506	68	3.6	66	8.4	18.2	40	11	38.3
63	1827001508	75	3.6	80	8.4	18.2	45	11	38.3
80	1827001433	95	6	102	10.5	24.5	45	15	52
100	1827001434	115	6	126	10.5	24.6	55	15	57

Piston Ø	N -0,1	O	Ø P +0,2	Ø R +0,5	Ø S	W
32	3.9	8	24.2	33	46.5	105
40	4.9	10	30.2	40	55.5	111
50	4.9	10	30.2	40	66	137
63	4.9	10	30.2	40	71	137
80	7.9	16	40.2	55	75	186
100	7.9	16	40.2	55	80	191

**Modular scraper system**

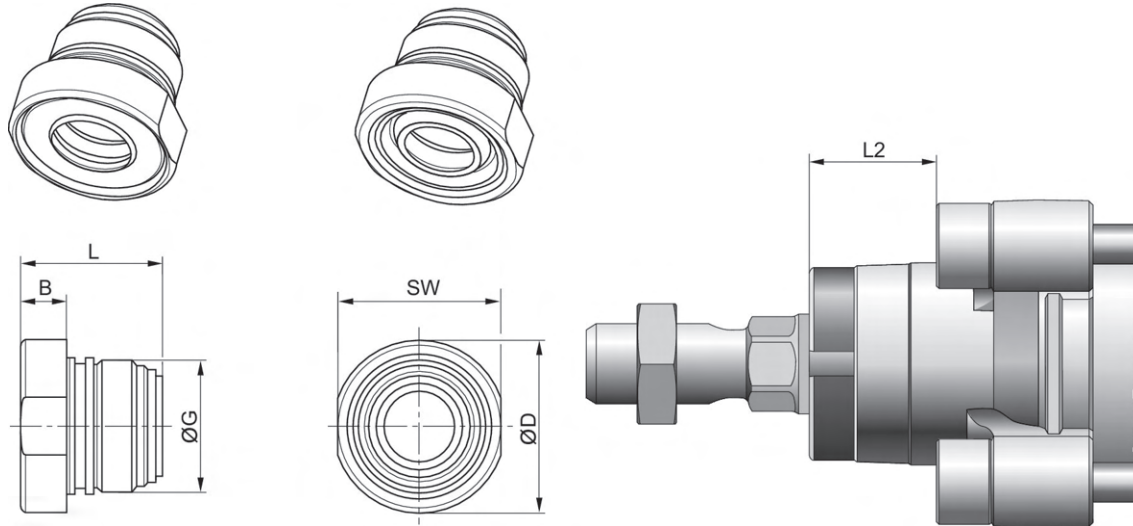
For series: PRA, TRB, CCL-IS  
Working pressure min./max.: 1.5 bar ... 10 bar



Piston diameter [mm]	Piston rod seal	Scraper	Application area	Min. ambient temperature [°C]	Max. ambient temperature [°C]	Part No.
32	Acrylonitrile butadiene rubber	Polyester elastomer	Paper/printing industry, Textile industry	-20	80	0496400704
32	Acrylonitrile butadiene rubber	Polytetrafluorethylene	Textile industry, Food industry, Chemical industry, Sugar production	-20	80	0496401107
32	Fluorocautchouc	Polytetrafluorethylene	Textile industry, Food industry, Chemical industry, Sugar production	-10	150	0496401700
40	Acrylonitrile butadiene rubber	Brass	Chemical industry, Sugar production, Steel construction, Automotive industry, Woodworking industry	-20	80	0496400402
40	Fluorocautchouc	Brass	Chemical industry, Sugar production, Steel construction, Automotive industry, Woodworking industry	-10	150	0496401409
40	Acrylonitrile butadiene rubber	Polyester elastomer	Paper/printing industry, Textile industry	-20	80	0496400801
40	Acrylonitrile butadiene rubber	Polytetrafluorethylene	Textile industry, Food industry, Chemical industry, Sugar production	-20	80	0496401204

Piston diameter [mm]	Piston rod seal	Scraper	Application area	Min. ambient temperature [°C]	Max. ambient temperature [°C]	Part No.
40	Fluorocautchouc	Polytetrafluorethylene	Textile industry, Food industry, Chemical industry, Sugar production	-10	150	0496401808

Dimensions



Piston Ø	B	ØD	G	L	L2	SW
32	6.7	24.5	M22x1	23	16.25	23
40	9.2	34	M26x1,5	28.1	18.25	32

**Modular scraper system**

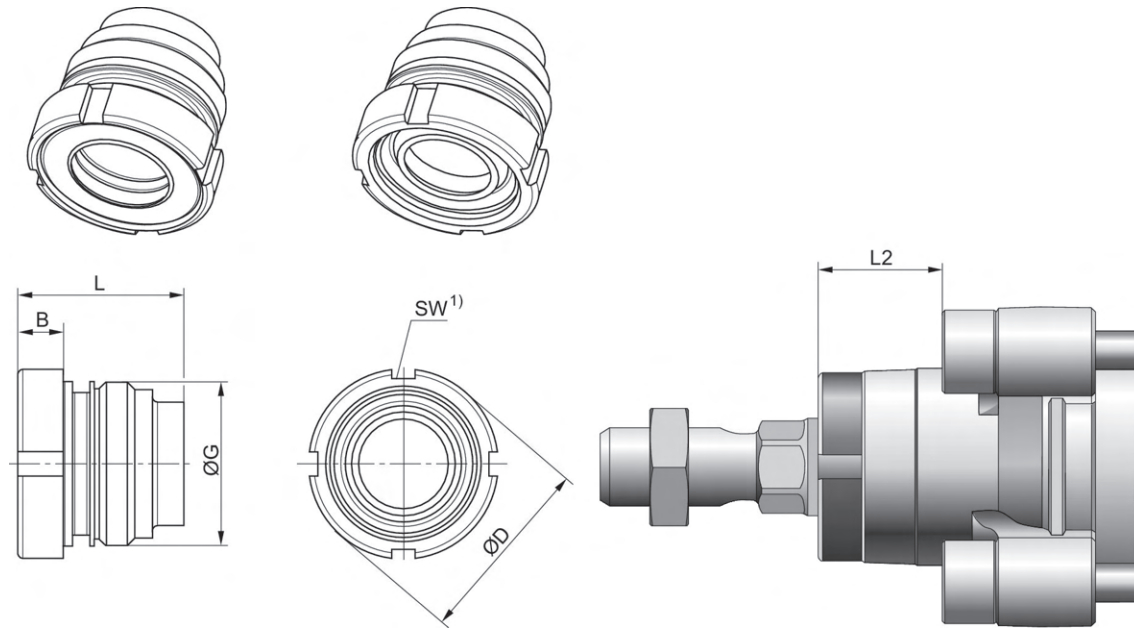
For series: PRA, TRB, CCL-IS  
Working pressure min./max.: 1.5 bar ... 10 bar



Piston diameter [mm]	Piston rod seal	Scraper	Application area	Min. ambient temperature [°C]	Max. ambient temperature [°C]	Part No.
50, 63	Acrylonitrile butadiene rubber	Brass	Chemical industry, Sugar production, Steel construction, Automotive industry, Woodworking industry	-20	80	0496400518
50, 63	Fluorocautchouc	Brass	Chemical industry, Sugar production, Steel construction, Automotive industry, Woodworking industry	-10	150	0496401506
50, 63	Acrylonitrile butadiene rubber	Polyester elastomer	Paper/printing industry, Textile industry	-20	80	0496400909
50, 63	Acrylonitrile butadiene rubber	Polytetrafluorethylene	Textile industry, Food industry, Chemical industry, Sugar production	-20	80	0496402103
50, 63	Fluorocautchouc	Polytetrafluorethylene	Textile industry, Food industry, Chemical industry, Sugar production	-10	150	0496401905
80, 100	Acrylonitrile butadiene rubber	Brass	Chemical industry, Sugar production, Steel construction, Automotive industry, Woodworking industry	-20	80	0496400607
80, 100	Fluorocautchouc	Brass	Chemical industry, Sugar	-10	150	0496401603

Piston diameter [mm]	Piston rod seal	Scraper	Application area	Min. ambient temperature [°C]	Max. ambient temperature [°C]	Part No.
			production, Steel construction, Automotive industry, Woodworking industry			
80, 100	Acrylonitrile butadiene rubber	Polyester elastomer	Paper/printing industry, Textile industry	-20	80	0496401018
80, 100	Acrylonitrile butadiene rubber	Polytetrafluorethylene	Textile industry, Food industry, Chemical industry, Sugar production	-20	80	0496402200
80, 100	Fluorocautchouc	Polytetrafluorethylene	Textile industry, Food industry, Chemical industry, Sugar production	-10	150	0496402006
125	Acrylonitrile butadiene rubber	Brass	Chemical industry, Sugar production, Steel construction, Automotive industry, Woodworking industry	-20	80	0496301404
125	Fluorocautchouc	Brass	Chemical industry, Sugar production, Steel construction, Automotive industry, Woodworking industry	-10	150	0496303105
125	Acrylonitrile butadiene rubber	Polyester elastomer	Paper/printing industry, Textile industry	-20	80	0496301307
125	Acrylonitrile butadiene rubber	Polytetrafluorethylene	Textile industry, Food industry, Chemical industry, Sugar production	-20	80	0496301706
125	Fluorocautchouc	Polytetrafluorethylene	Textile industry, Food industry, Chemical industry, Sugar production	-10	150	0496303202

Dimensions



1) Can be mounted with hook wrench in accordance with DIN 1810 A

Piston Ø	B	ØD	G	L	L2	SW
50, 63	9	38.5	M33x2	33.5	25	40-42
80, 100	10	44	M40x2	44	33	45-50
125	12	57	M50x2	56	45	58-62

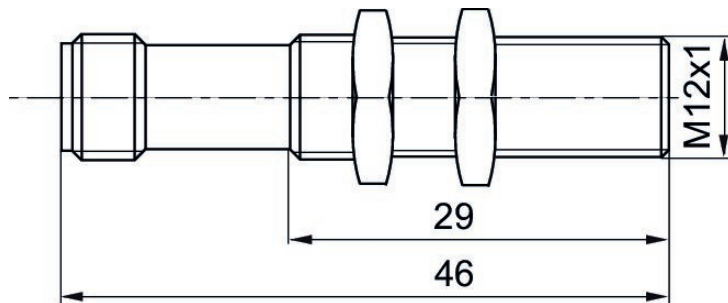
**Sensor, Series IN1**

For series: LU6  
 Electrical connection 2, thread size: M12x1  
 Certificates: cULus  
 Electrical connection 2, number of poles: 3-pin  
 Ambient temperature min./max.: -20 °C ... 65 °C



Direct mounting for series	Switch descr.	Electrical connection size	Electrical connection number of poles	Electrical connection coding	Part No.
LU6	Inductive	M12x1	3-pin	B-coded	R412010426

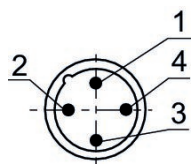
Dimensions



**R412010426**

Pin assignments

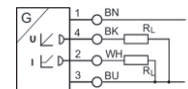
M12x1



Pin	Allocation
1	Pin 1: operational voltage + UB
2	not assigned
3	m = mass
4	switch output Out

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

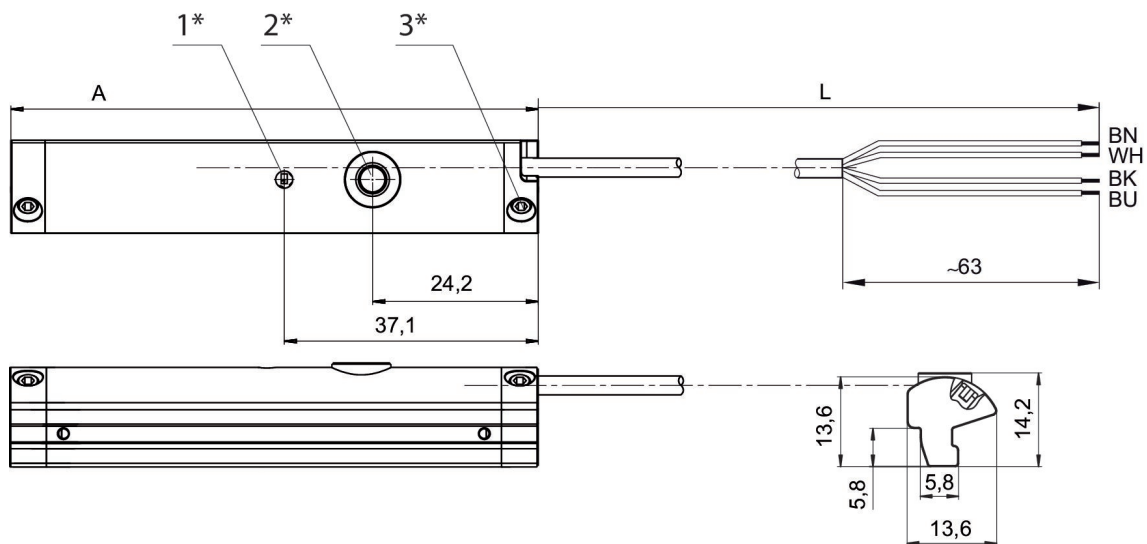
For series: PRA, PRE, CCI, KPZ, SSI, GPC, CVI  
 Certificates: cULus  
 Ambient temperature min./max.: -20 °C ... 70 °C



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 reversal	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	

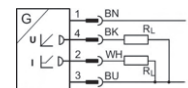
Dimensions



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**

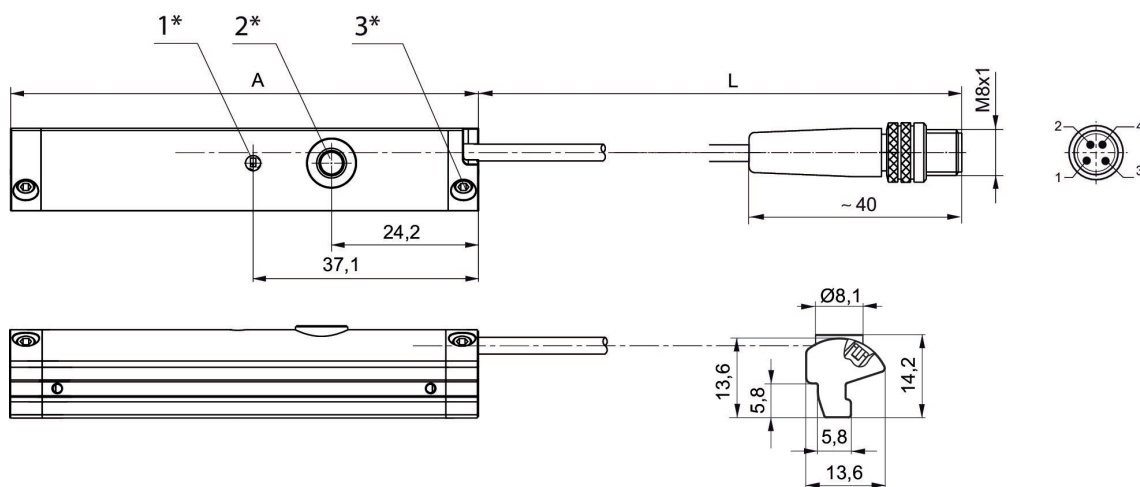
For series: PRA, PRE, CCI, KPZ, SSI, GPC, CVI  
 Electrical connection 2, thread size: M8x1  
 Certificates: cULus  
 Electrical connection 2, number of poles: 4-pin  
 Ambient temperature min./max.: -20 °C ... 70 °C



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					olarity 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

Sensor, Series SN2, open cable ends

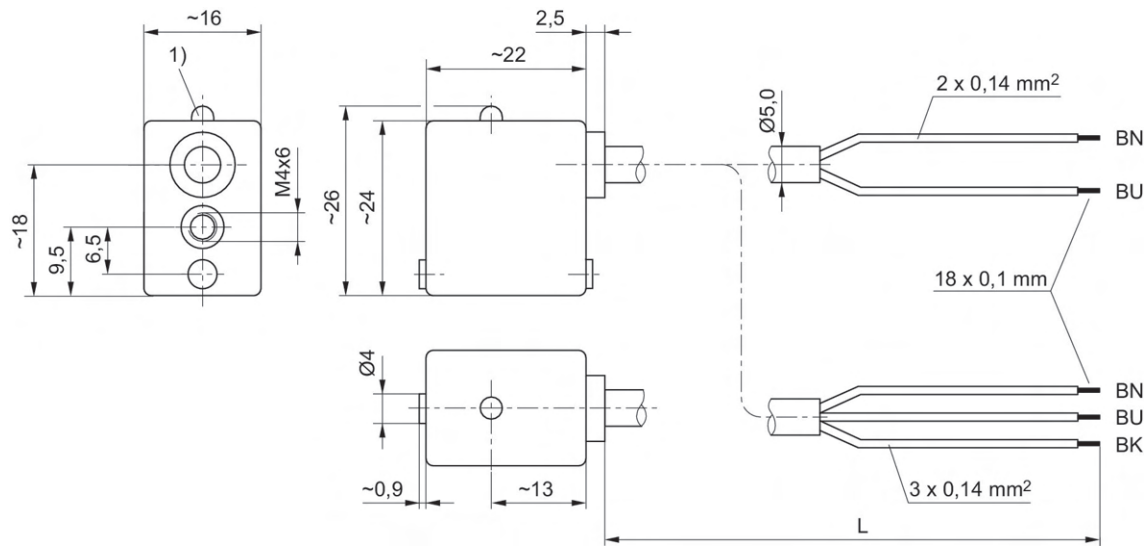


	Switch descr.	Protective resistor for reed	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Min. operating voltage AC [V AC]	Max. operational voltage AC [V AC]	Max. DC switching current [A]	Part No.
	Reed	27 Ω	0	60	0	240	0.13	0830100315
	Reed	27 Ω	12	60	12	240	0.13	0830100365
	Reed	1,3 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 I <sub>max</sub>	Electrical connection number of poles	Cable length L [m]	Cable sheath	Part No.
0.13	10 W / 10 VA	Rs*I <sub>max</sub> .	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*I <sub>max</sub> .	2-pin	3		0830100316
	10 W / 10 VA	Rs*I <sub>max</sub> .	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**

Electrical connection 2, thread size: M8

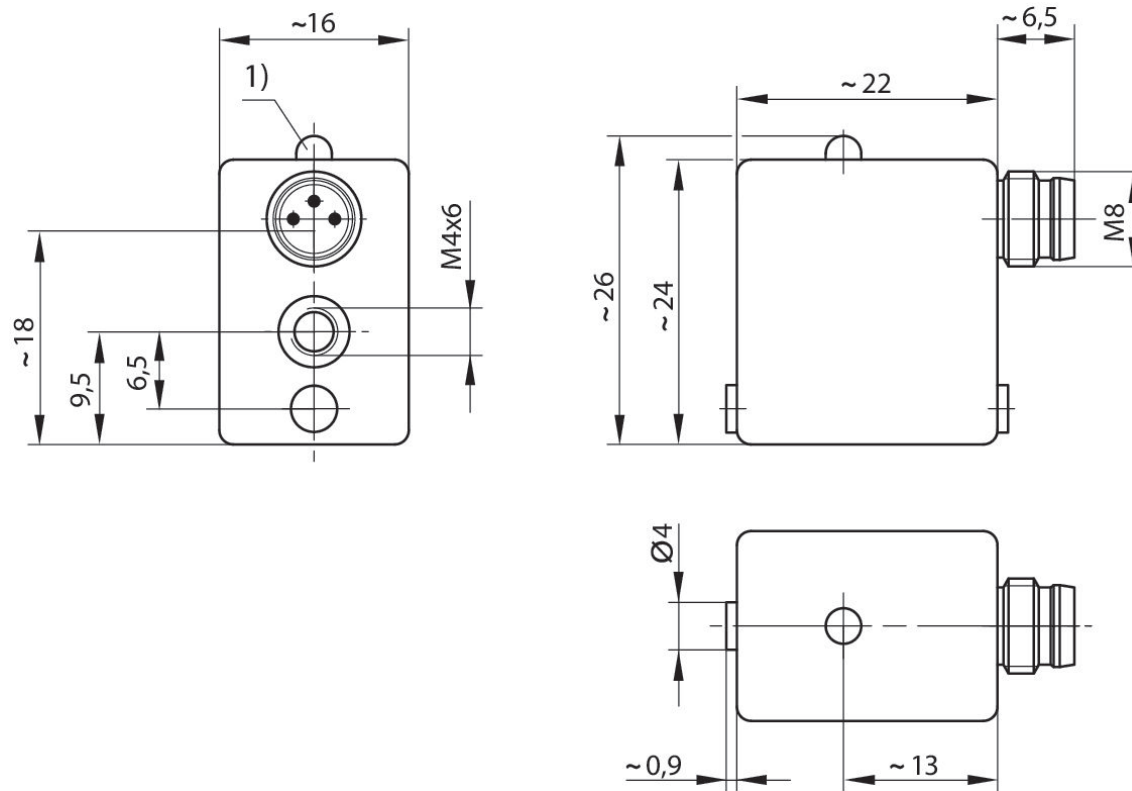


	Switch descr.	Protective resistor for reed	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Min. operating voltage AC [V AC]	Max. operational voltage AC [V AC]	Max. DC switching current [A]	Part No.
	Reed	27 Ω	12	36	12	30	0.13	0830100465
	Reed	1,3 Ω	12	36	12	30	0.3	0830100468
	Reed	27 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 I <sub>max</sub>	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 I <sub>max</sub>	Electrical connection number of poles	Part No.
		≤ 2,0 V	3-pin	0830100480
		≤ 2,0 V	3-pin	R412004800

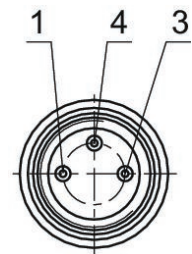
Dimensions



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**

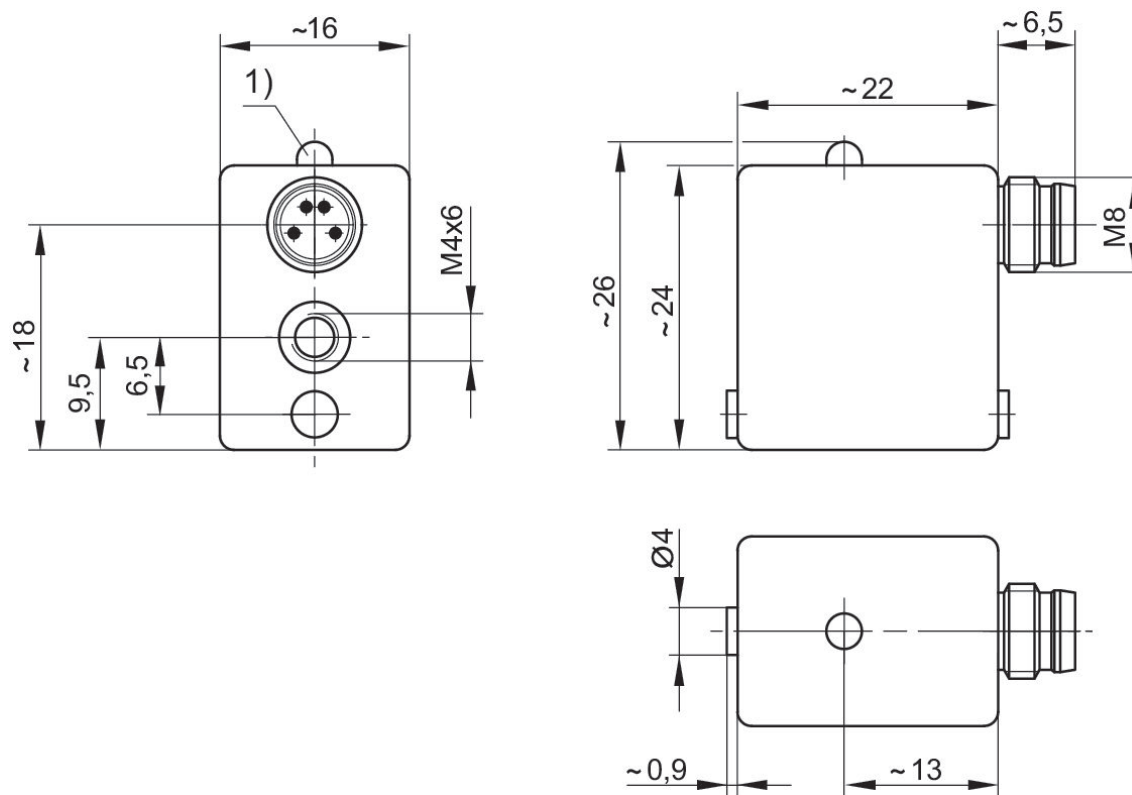
Electrical connection 2, thread size: M8



	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 I <sub>max</sub>	Electrical connection number of poles	Part No.
0.13	10 W / 10 VA	≤ 3,5 V	4-pin	0830100467

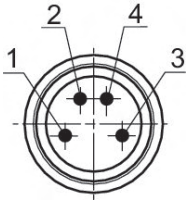
Dimensions



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)

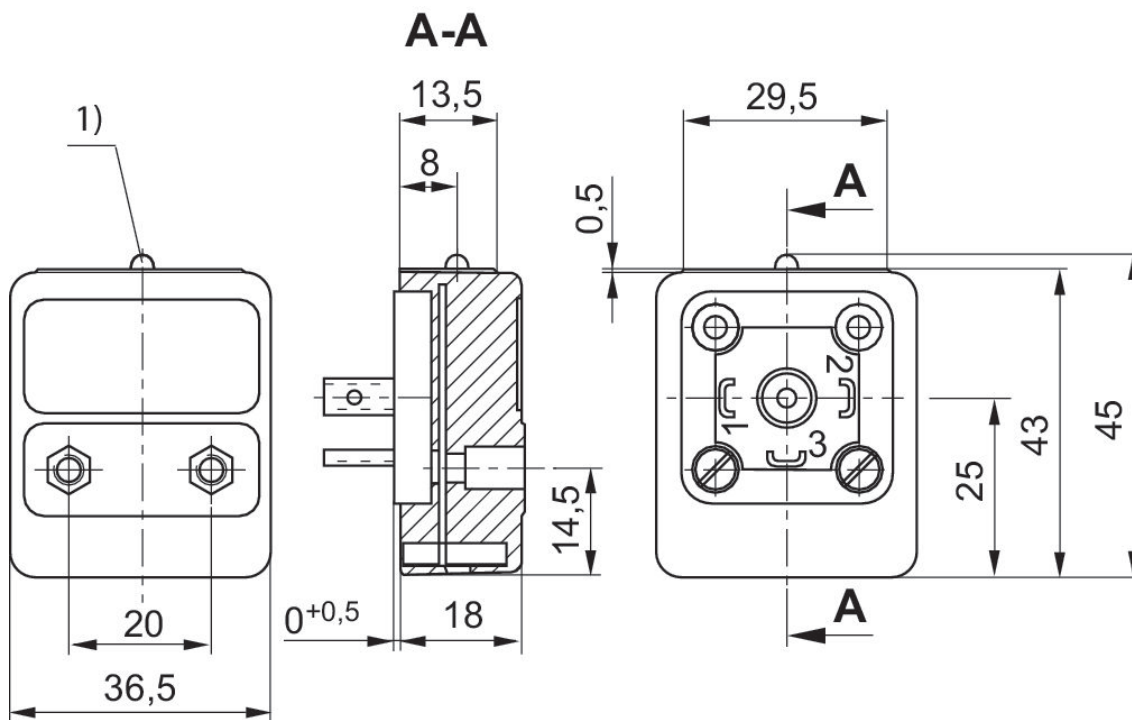
**Sensor, Series SN5-X, With stretched impulse**

Ambient temperature min./max.: -10 °C ... 70 °C



Switch descr.	Electrical connection number of poles	Version	LED status display	Part No.
electronic PNP	3-pin	Protected against polarity reversal	Red	0830100500
electronic PNP	3-pin	Protected against polarity reversal	Red, Green	0830100502

Dimensions



1) LED

**Sensor, Series SN5-X, welding-proof**

Electrical connection 2, thread size: M12

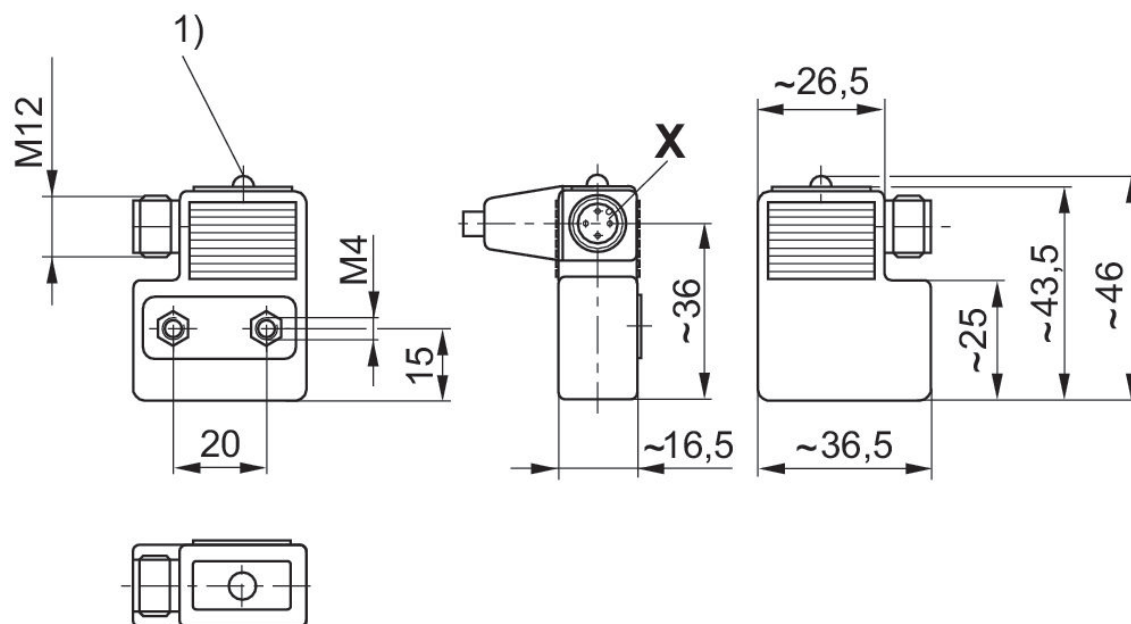
Electrical connection 2, number of poles: 3-pin

Ambient temperature min./max.: -10 °C ... 70 °C



Switch descr.	Electrical connection number of poles	Max. DC switching current [A]	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Version	LED status display	Part No.
electronic PNP	3-pin	0.2	15	30	Protected against polarity reversal	Yellow	0830100525
electronic PNP	3-pin	0.2	15	30	short circuit resistant, Protected against polarity reversal	Yellow, Green	0830100534

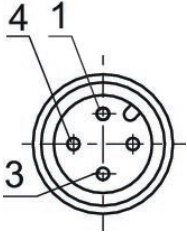
Dimensions



1) LED

**0830100525, 0830100534**

Pin assignments



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

**Sensor, Series SN6, Form B, industry**

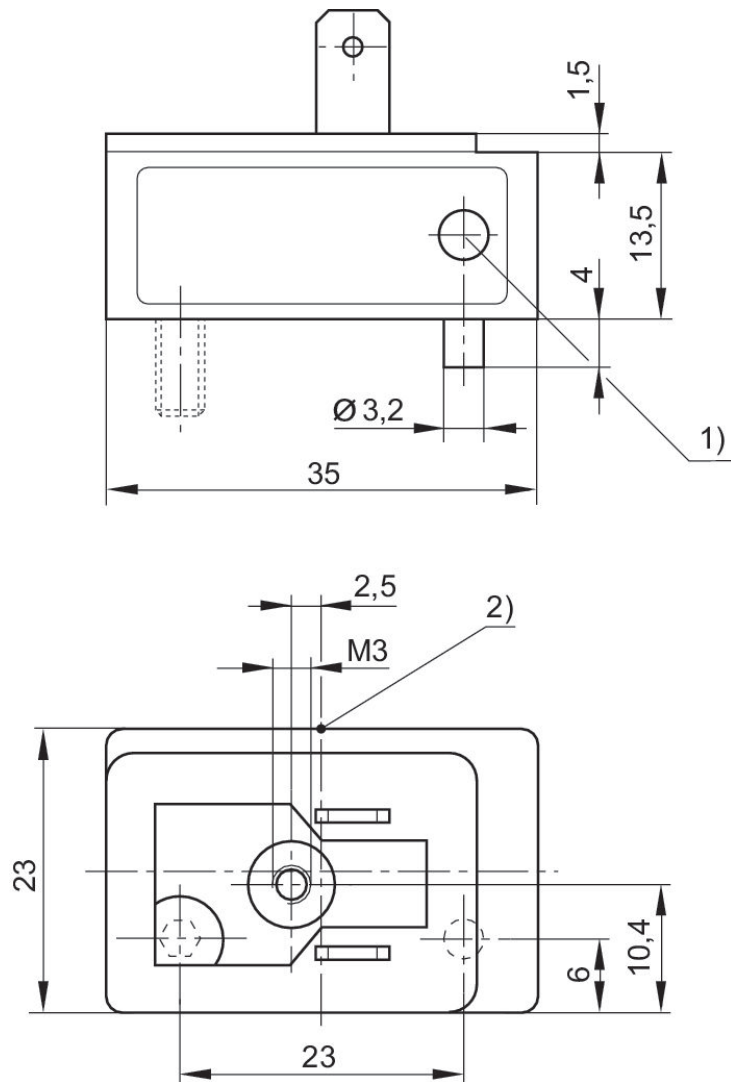
Electrical connection 2, thread size: Form B, industry



	Switch descr.	Electrical connection 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	2-pin	3	3	10	48	10	8940410602
	Reed	2-pin	0.5	0.5	10	48	10	8940410612

Max. operational voltage AC [V AC]	Version	Part No.
48		8940410602
48	Protected against polarity reversal	8940410612

Dimensions



- 1) LED
- 2) Switching point

**Sensor, Series SN6, Form B, industry, ATEX**

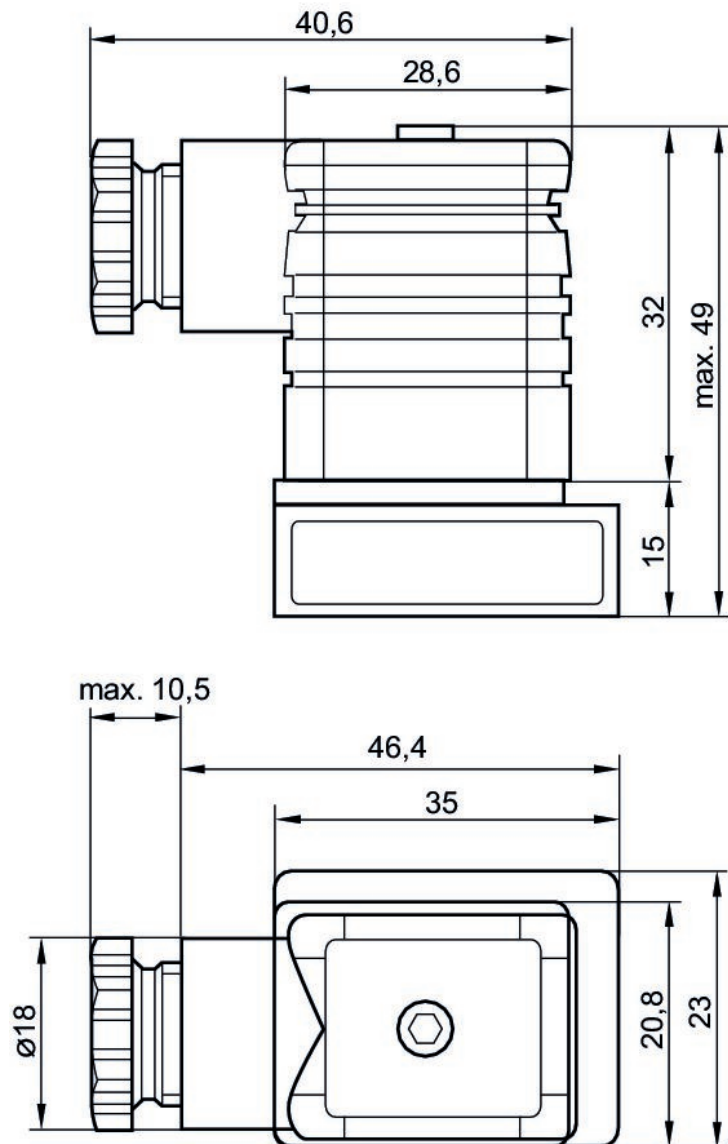
Electrical connection 2, thread size: Form B, industry  
 Certificates: ATEX  
 Ambient temperature min./max.: -10 °C ... 50 °C



Switch descr.	Electrical connection 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]	Max. operational voltage AC [V AC]	Part No.
Reed	2-pin	0.1	0.1	21.6	26.4	210	240	R412000823



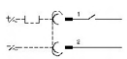
Version	Part No.
Protected against polarity reversal	R412000823

Dimensions



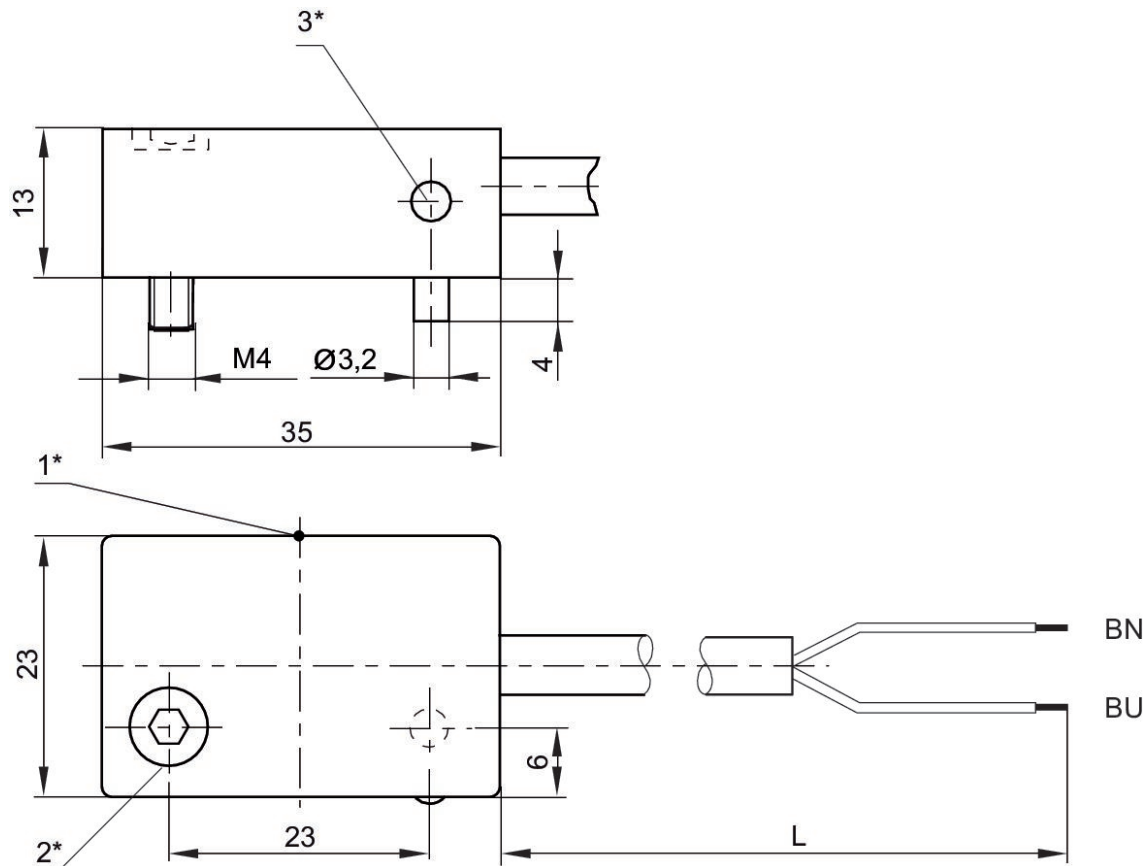
**Sensor, Series SN6, open cable ends**



	Switch descr.	Electrical connection 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	2-pin	0.5	0.5	10	48	10	8940412022
	Reed	2-pin	0.5	0.5	10	48	10	8940412032
	Reed	2-pin	3	3	10	48	10	8940411902

Max. operational voltage AC [V AC]	Cable sheath	Cable length L [m]	Version	Part No.
48	Polyvinyl chloride	2.5	Protected against polarity reversal	8940412022
48	Polyvinyl chloride	6	Protected against polarity reversal	8940412032
48	Polyvinyl chloride	2.5	Protected against polarity reversal	8940411902

Dimensions



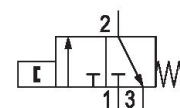
1\* = switching point 2\* = clamping screw 3\* = LED  
L = cable length BN=brown, BU=blue

**Pneumatic sensor, Series SP1**

Flow: 40 l/min

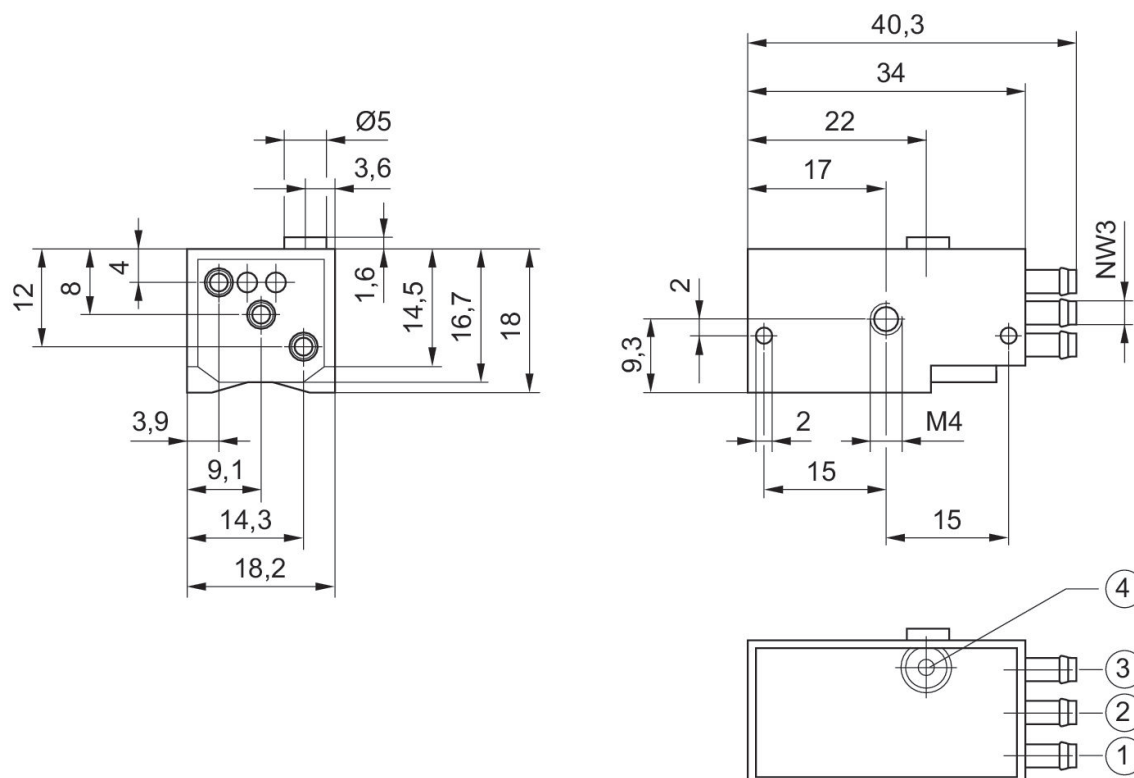
Ambient temperature min./max.: -15 °C ... 60 °C

Working pressure min./max.: 2 bar ... 6 bar



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

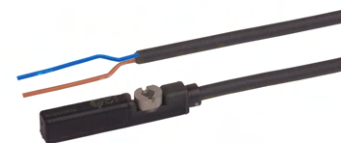
**Dimensions**



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

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

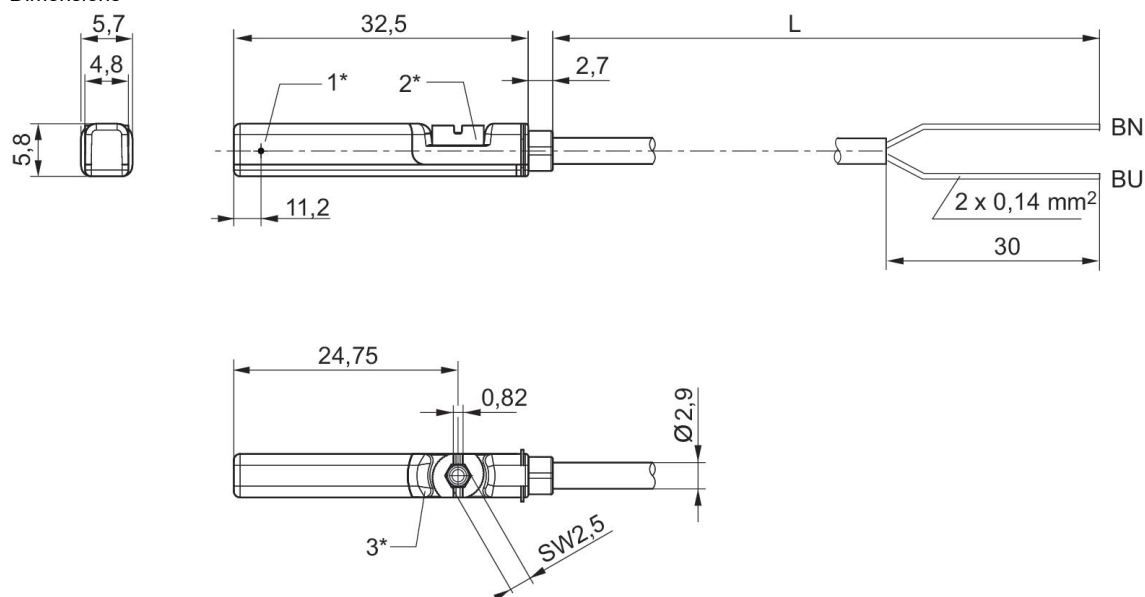
For series: PRA, CCI, KPZ, SSI, GPC, CVI  
 Certificates: CE declaration of conformity, cULus, RoHS, UL (Underwriters Laboratories)  
 Ambient temperature min./max.: -30 °C ... 80 °C



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

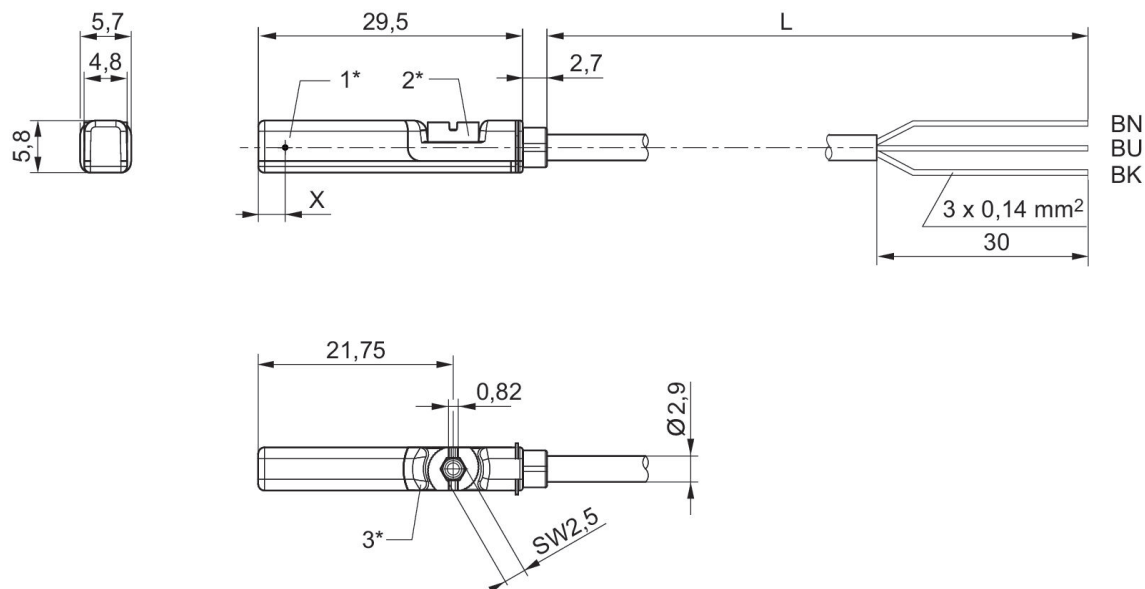
**Sensors, Series ST6, open cable ends, 3-pin, NPN**

For series: PRA, PRE, CCI, KPZ, SSI, GPC, CVI  
 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**

For series: PRA, PRE, CCI, KPZ, SSI, GPC, CVI

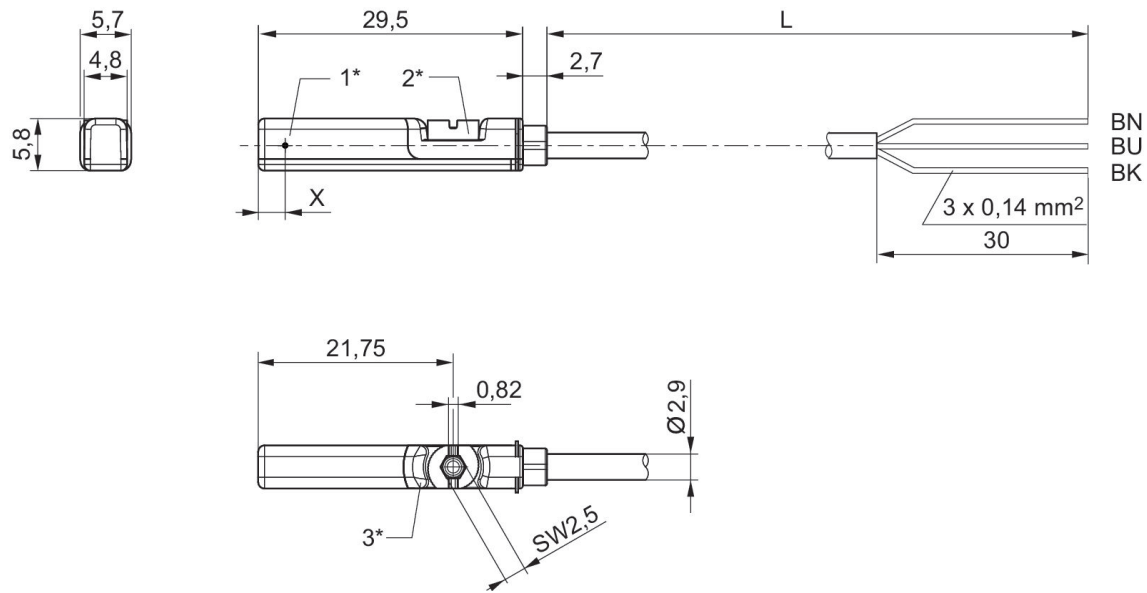
Certificates: CE declaration of conformity, cULus, RoHS, UL (Underwriters Laboratories)

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**

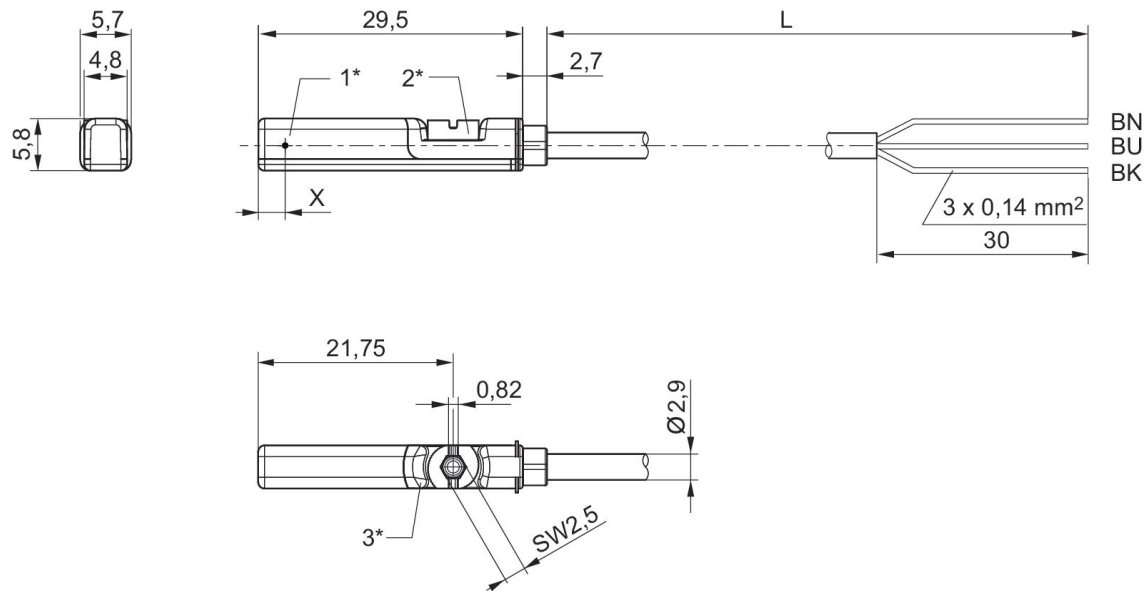
For series: PRA, PRE, CCI, KPZ, SSI, GPC, CVI  
 Certificates: CE declaration of conformity, cULus, RoHS, UL (Underwriters Laboratories)  
 Ambient temperature min./max.: -30 °C ... 80 °C



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**

For series: PRA, PRE, CCI, KPZ, SSI, GPC, CVI

Electrical connection 2, thread size: M8

Certificates: CE declaration of conformity, cULus, RoHS, UL (Underwriters Laboratories)

Electrical connection 2, number of poles: 3-pin

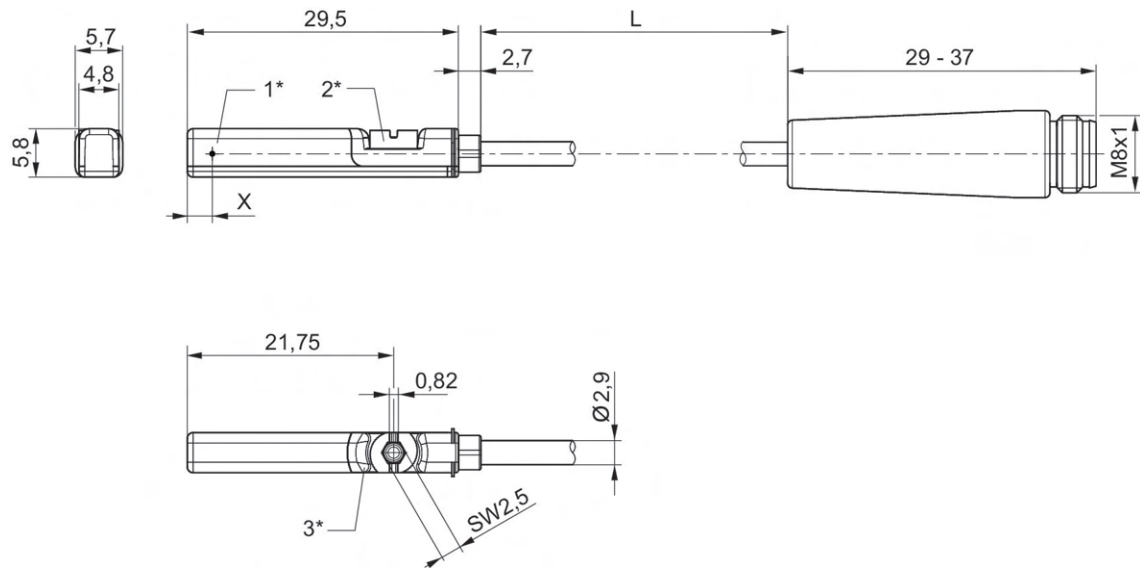
Ambient temperature min./max.: -30 °C ... 80 °C



	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**

For series: PRA, PRE, CCI, KPZ, SSI, GPC, CVI  
 Electrical connection 2, thread size: M12  
 Certificates: CE declaration of conformity, cULus, RoHS, UL (Underwriters Laboratories)  
 Electrical connection 2, number of poles: 3-pin  
 Ambient temperature min./max.: -30 °C ... 80 °C

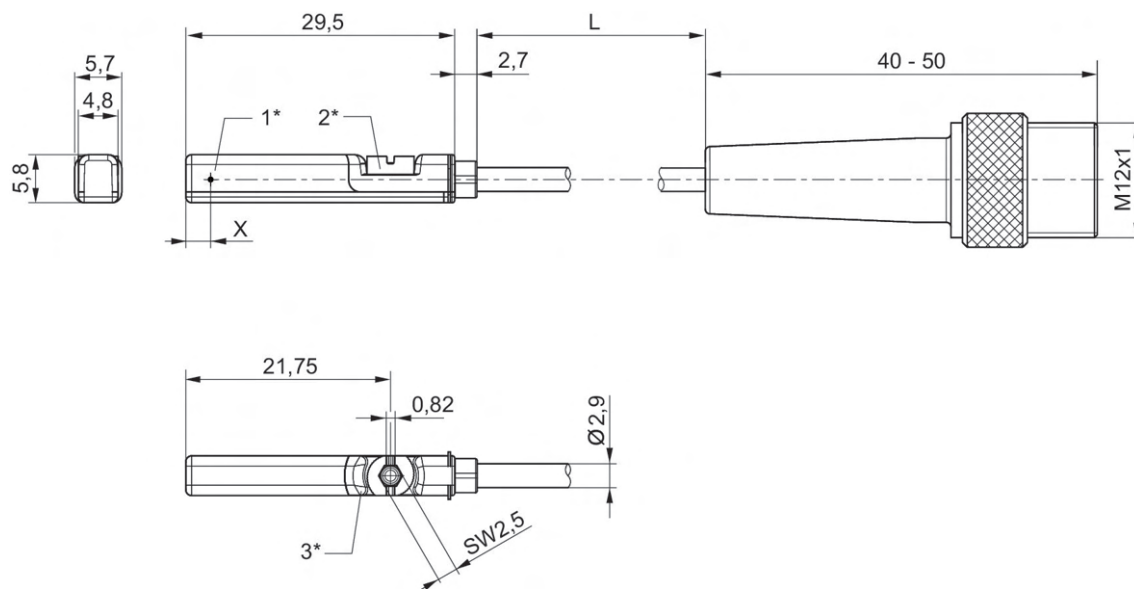


	Switch descr.	Cable sheath	Electrical interface 2	Number of poles	Max. DC switching current [A]	Max. AC switching current [A]	Min. operating voltage DC [V DC]	Part No.
■	Reed	Polyurethane	M12x1	2-pin	0.13	0.13	10	R412027171
■	Reed	Polyurethane	M12x1	3-pin	0.3	0.5	10	R412022876
■	electronic PNP	Polyurethane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

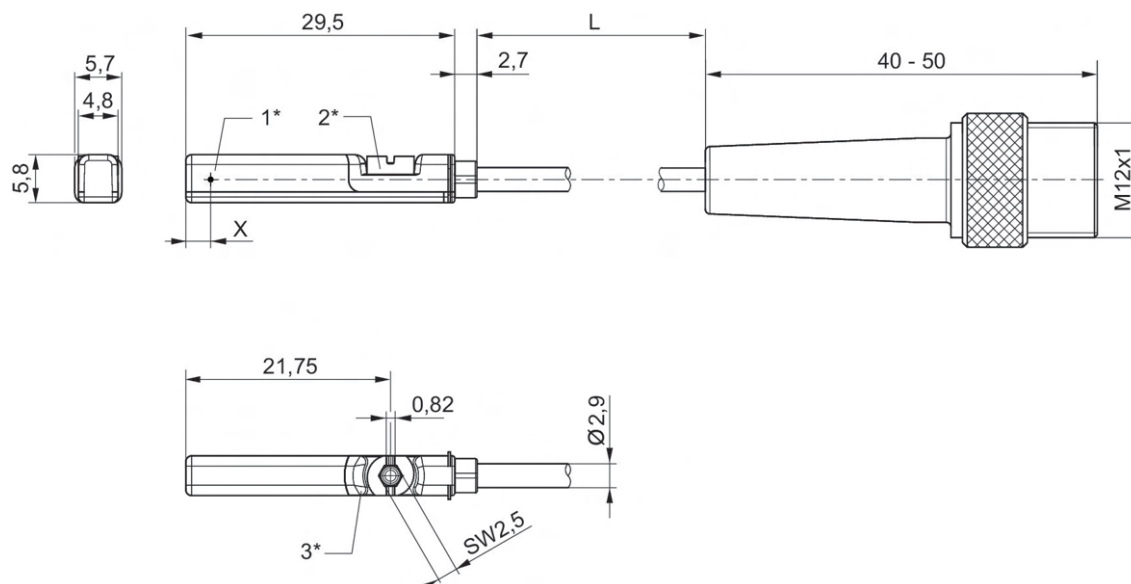
For series: PRA, PRE, CCI, KPZ, SSI, GPC, CVI  
 Electrical connection 2, thread size: M12  
 Certificates: ATEX, CE declaration of conformity, cULus, RoHS, UL (Underwriters Laboratories)  
 Electrical connection 2, number of poles: 3-pin  
 Ambient temperature min./max.: -20 °C ... 50 °C



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

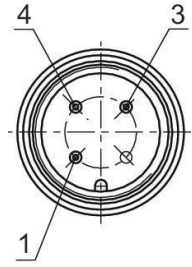
**Dimensions**



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**

For series: PRA, PRE, CCI, KPZ, SSI, GPC, CVI

Certificates: CE declaration of conformity, cULus, RoHS, UL (Underwriters Laboratories)

Electrical connection 2, number of poles: 3-pin

Ambient temperature min./max.: -30 °C ... 80 °C

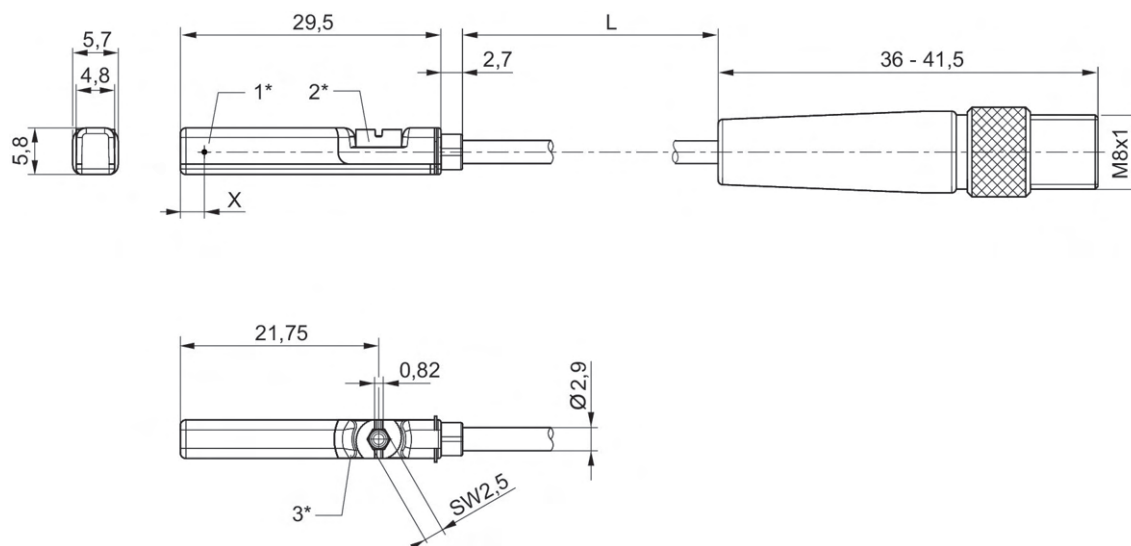


	Switch descr.	Cable sheath	Electrical interface 2	Number of poles	Max. DC switching current [A]	Max. AC switching current [A]	Min. operating voltage DC [V DC]	Part No.
	Reed	Polyurethane	M8x1	3-pin	0.3	0.5	10	R412022873
	Reed	Polyvinyl chloride	M8x1	3-pin	0.3	0.5	10	R412022875
	Reed	Polyurethane	M8x1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

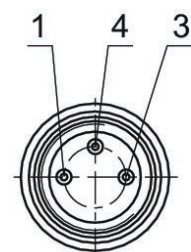
**Dimensions**



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**

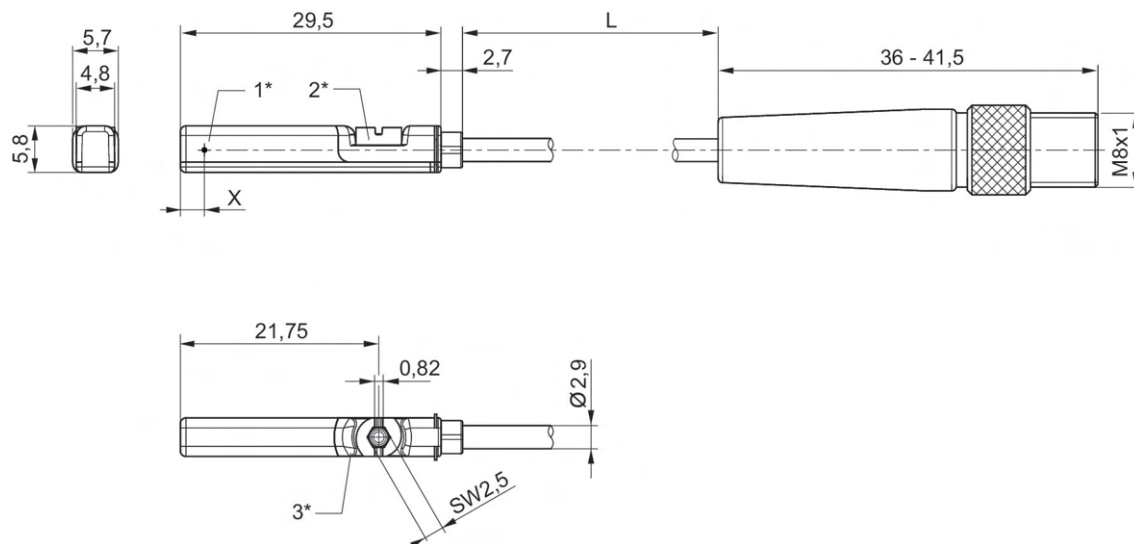
For series: PRA, PRE, CCI, KPZ, SSI, GPC, CVI  
 Electrical connection 2, thread size: M8  
 Certificates: ATEX, CE declaration of conformity, cULus, RoHS, UL (Underwriters Laboratories)  
 Electrical connection 2, number of poles: 3-pin  
 Ambient temperature min./max.: -20 °C ... 50 °C



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

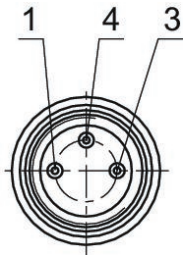
**Dimensions**



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)

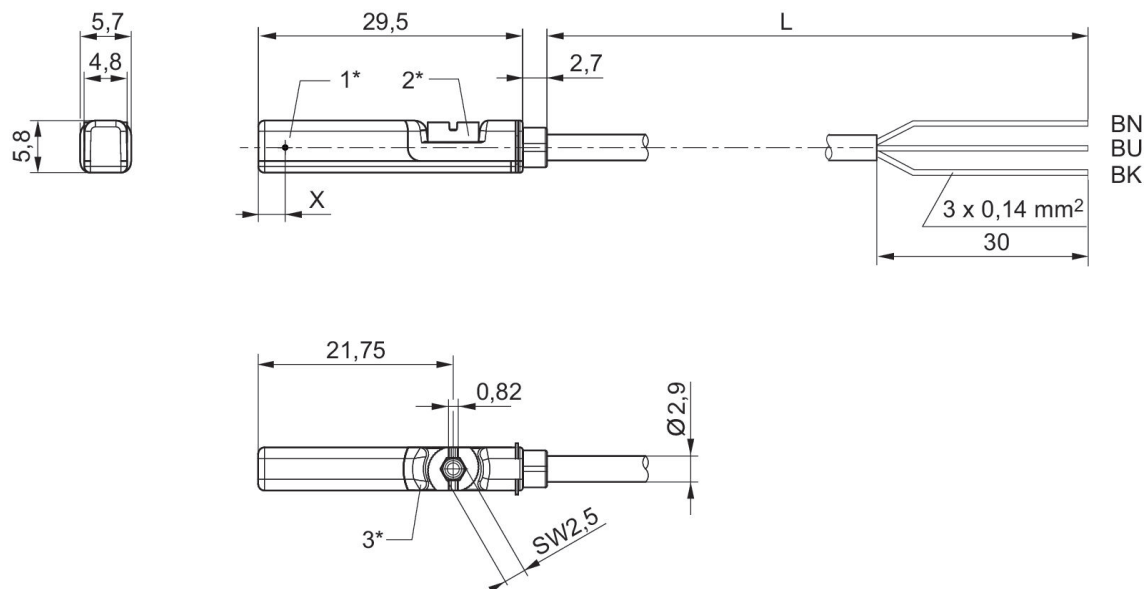
**Sensors, Series ST6, open cable ends, 3-pin, PNP, ATEX**

For series: PRA, PRE, CCI, KPZ, SSI, GPC, CVI  
 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

**Sensors, Series ST6, open cable ends, 3-pin, cold-resistant**

For series: PRA

Temperature resistance: -40 °C cold-resistant

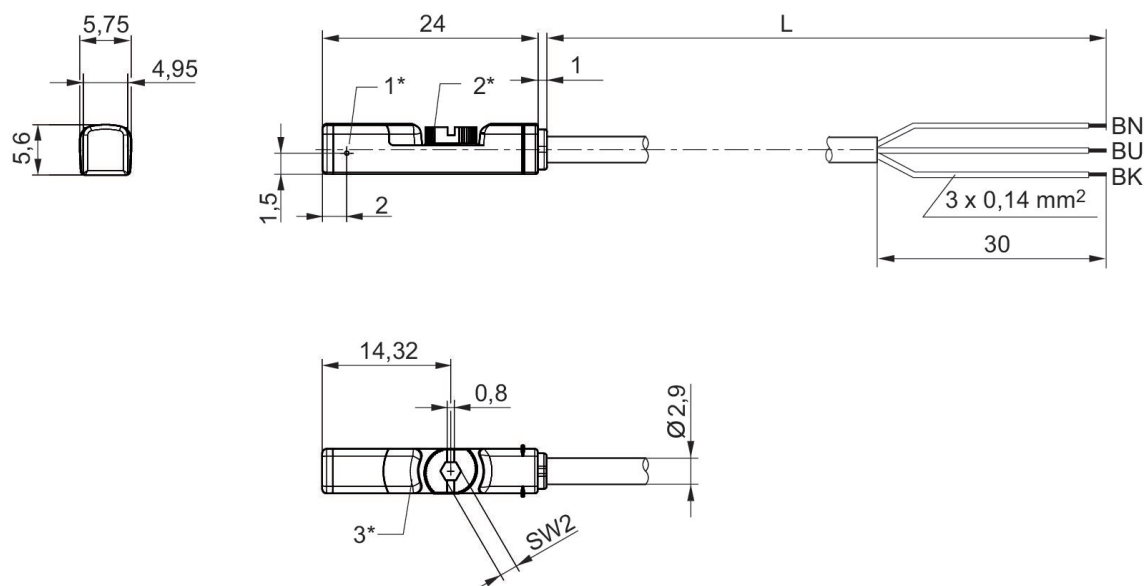
Certificates: RoHS, UL (Underwriters Laboratories), cULus

Ambient temperature min./max.: -40 °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.
PNP	Polyurethane	3-pin	0.2	10	30	short circuit resistant	5	R412024011

**Dimensions**



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

**Sensors, Series ST6, open cable ends, 3-pin, M12, cold-resistant**

For series: PRA

Temperature resistance: -40 °C cold-resistant

Certificates: RoHS, UL (Underwriters Laboratories), cULus

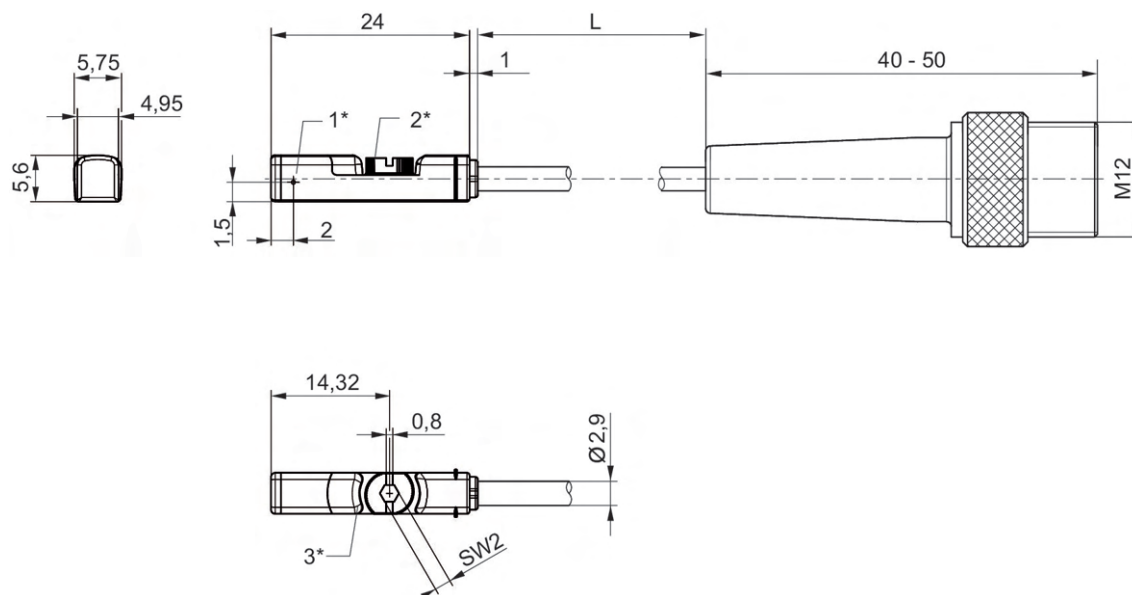
Ambient temperature min./max.: -40 °C ... 80 °C



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	0.2	10	30	short circuit resistant	R412024670

Cable length L [m]	Part No.
0.3	R412024670

Dimensions



1\* = switching point 2\* = locking screw 3\* = LED window, transparent  
L = cable length

**Sensors, Series ST6, open cable ends, 3-pin, M8, cold-resistant**

For series: PRA

Temperature resistance: -40 °C cold-resistant

Certificates: RoHS, UL (Underwriters Laboratories), cULus

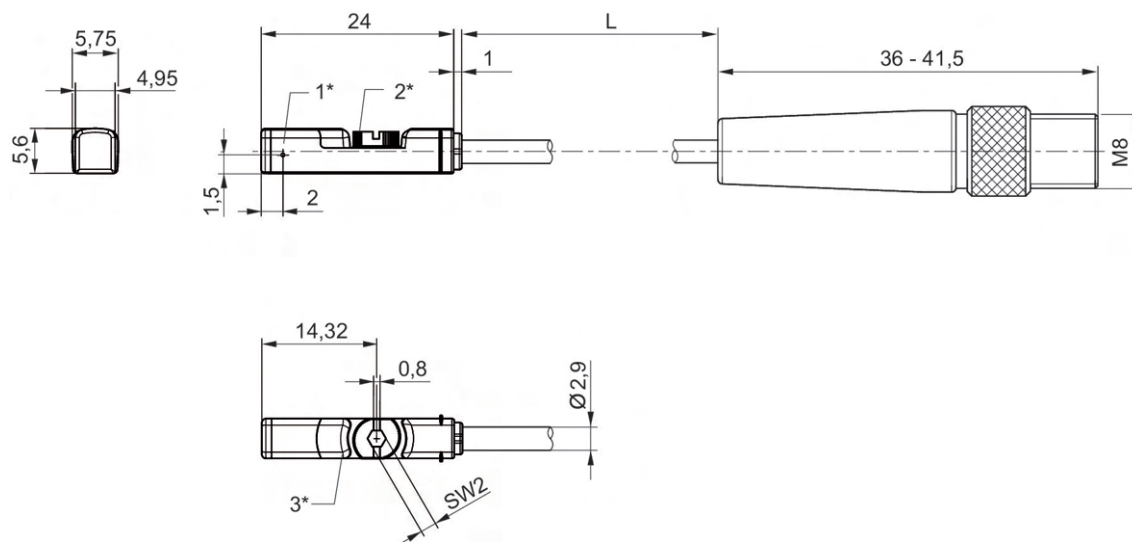
Ambient temperature min./max.: -40 °C ... 80 °C



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	0.2	10	30	short circuit resistant	R412024669

Cable length L [m]	Part No.
0.3	R412024669

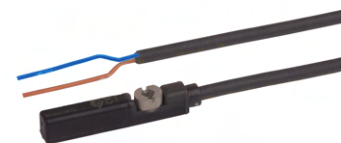
**Dimensions**



1\* = switching point 2\* = locking screw 3\* = LED window, transparent  
L = cable length

**Sensors, Series ST6, open cable ends, 2-pin, Heat resistant**

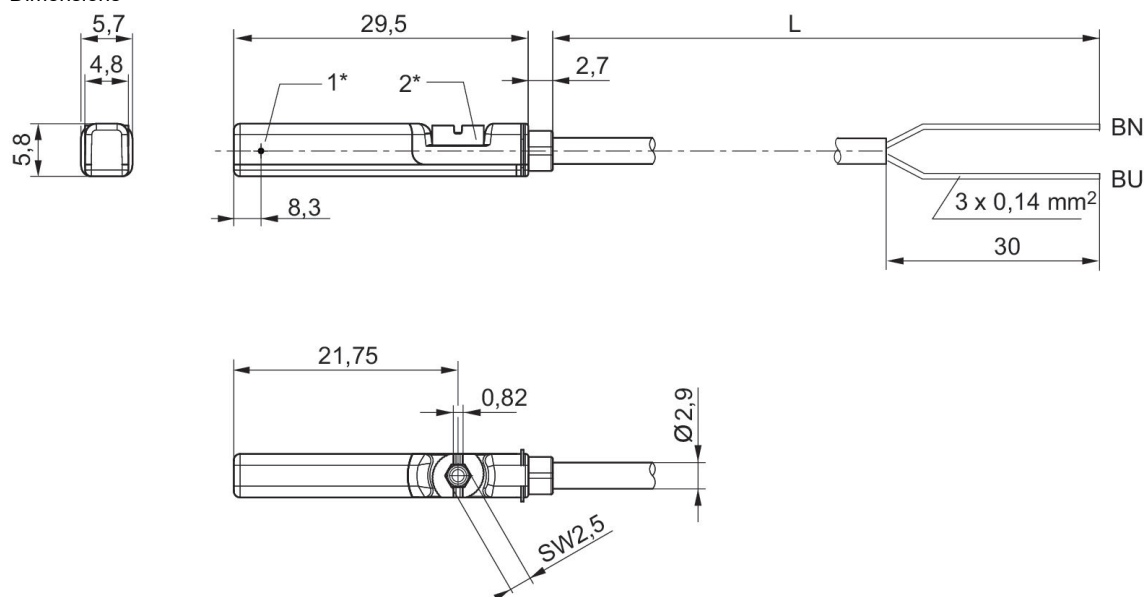
For series: PRA, PRE, CCI, KPZ  
 Temperature resistance: Heat resistant  
 Certificates: RoHS, UL (Underwriters Laboratories)  
 Ambient temperature min./max.: -20 °C ... 120 °C



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	0	30	0	R412022865
Reed	Polyurethane	2-pin	0.13	0.13	0	30	0	R412022867

Max. operational voltage AC [V AC]	Version	Cable length L [m]	Part No.
30	Protected against polarity reversal	3	R412022865
30	Protected against polarity reversal	10	R412022867

**Dimensions**



1\* = switching point 2\* = locking screw  
 L = cable length BN=brown, BU=blue

### Sensor mounting, Series CB1

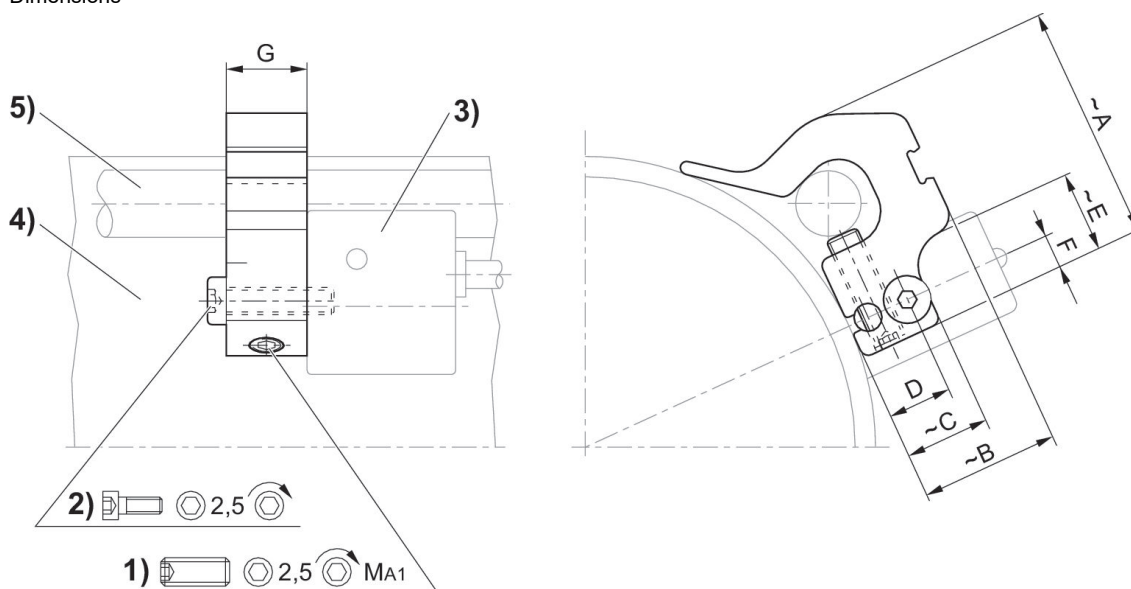
To mount on series: SN1, SN2

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

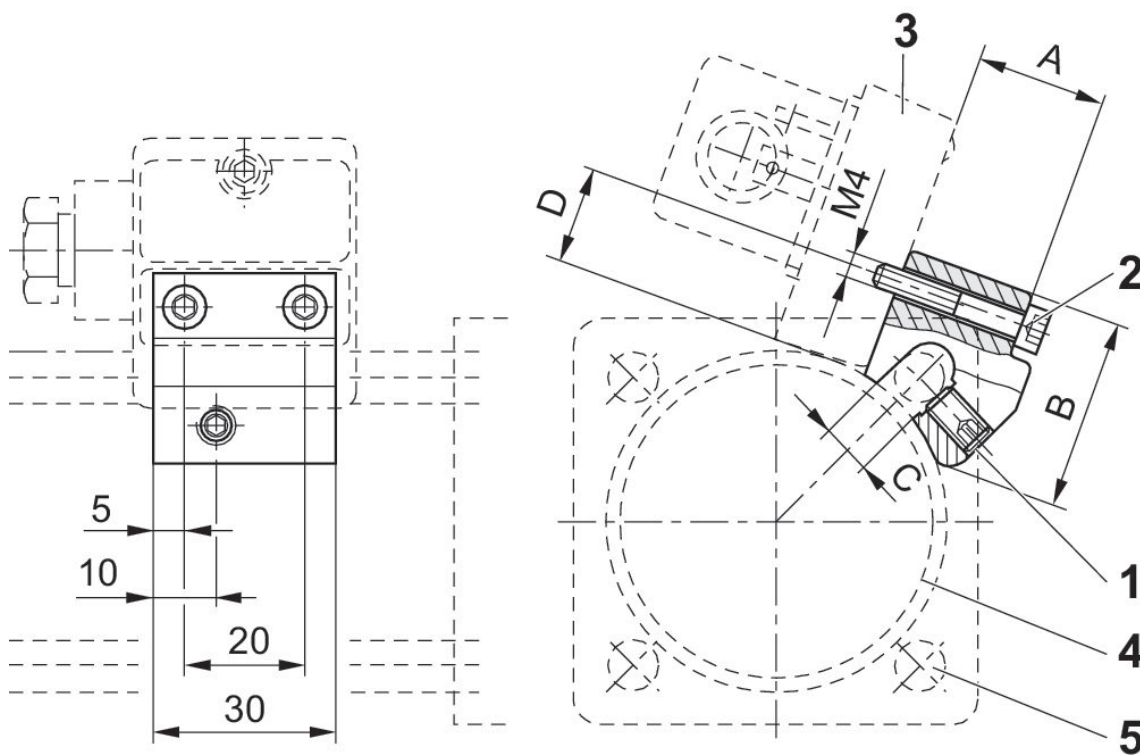
**Sensor mounting, Series CB1**

To mount on series: TRB



Min. cylinder Ø [mm]	Max. cylinder Ø [mm]	Material	Part No.
32	40	Aluminum	1827020056
50	63	Aluminum	1827020057
80	100	Aluminum	1827020058

Dimensions



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

Part No.	A	B	C	D	SW
1827020056	19.5	30	6	15	3
1827020057	24.5	30	8	15	3
1827020058	29.5	31	10	15	3

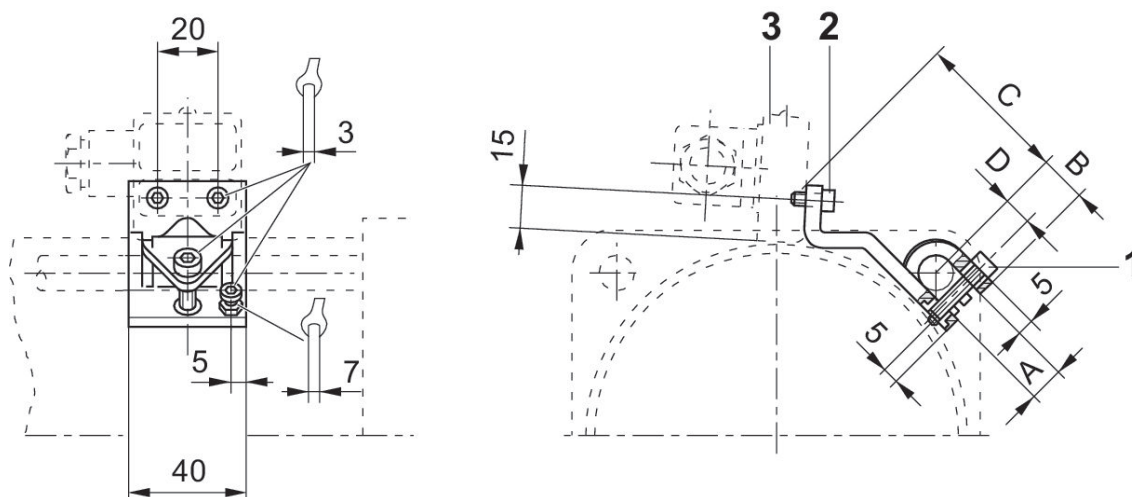
**Sensor mounting, Series CB1**

To mount on series: TRB, ITS



Min. cylinder Ø [mm]	Max. cylinder Ø [mm]	Material	Part No.
125	125	Aluminum	1827020076
160	200	Aluminum	1827020077
250	250	Aluminum	1827020078

Dimensions



1) Mounting screw 2) Mounting screw for sensor 3) Sensor

Part No.	A +0,5	B ±1	C ±2	D
1827020076	12	15	54	9
1827020077	16	17	53	11
1827020078	20	19	60	13

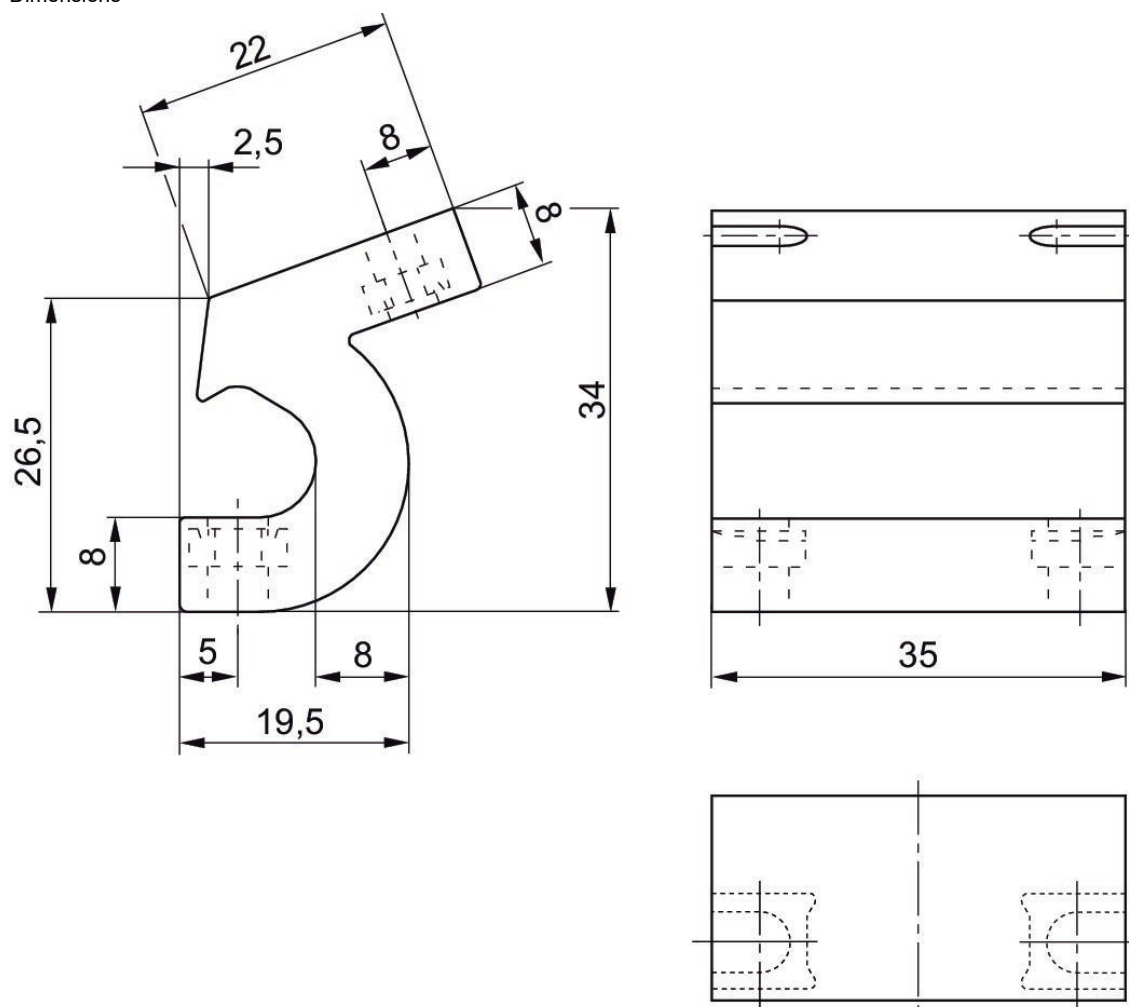
**Sensor mounting, Series CB1**

To mount on series: SN6  
To mount on series: TRB, CVI, 523



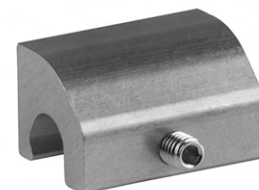
Min. cylinder Ø [mm]	Max. cylinder Ø [mm]	Material	Part No.
32	63	Polyamide	5230033502

Dimensions



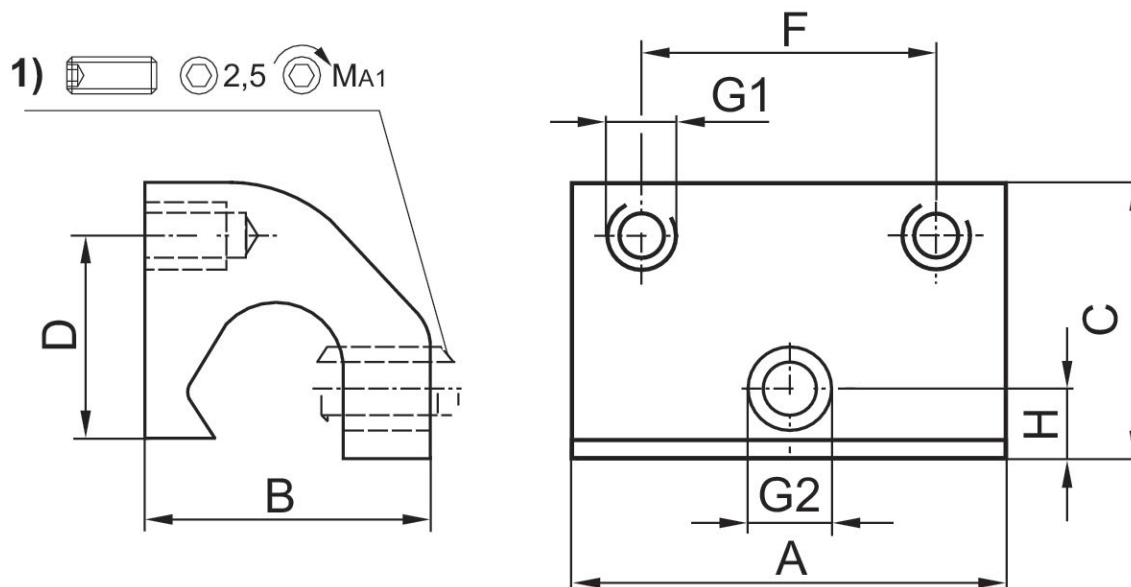
**Sensor mounting, Series CB1**

To mount on series: SN6  
To mount on series: TRB, C12P, CVI, 523



Min. cylinder Ø [mm]	Max. cylinder Ø [mm]	Material	Part No.
80	125	Aluminum	3220643562

Dimensions



1) Clamping threaded pin

Part No.	Cylinders Ø	A	B	C	D	F	G1	G2	H
3220643562	80 - 125 mm	35	22	21	12	23	M4	M5	5
3220613562	32 - 63 mm	35	22	21	16	23	M4	M5	5

Part No.	MA1 [Nm]
3220643562	1,8 +0,4
3220613562	1,8 +0,4

### Sensor mounting, Series CB1

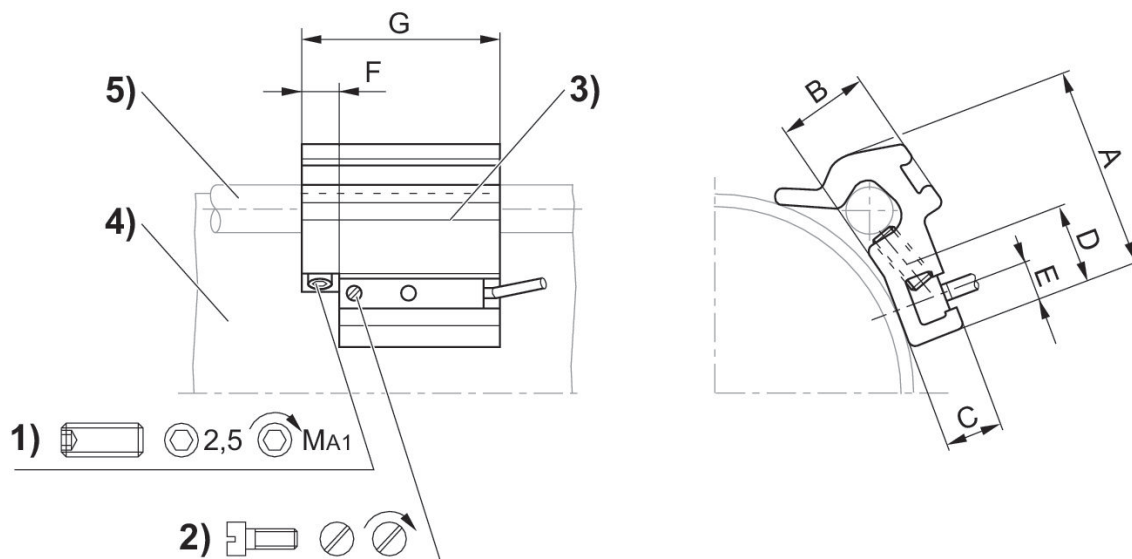
To mount on series: ST6, SM6

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

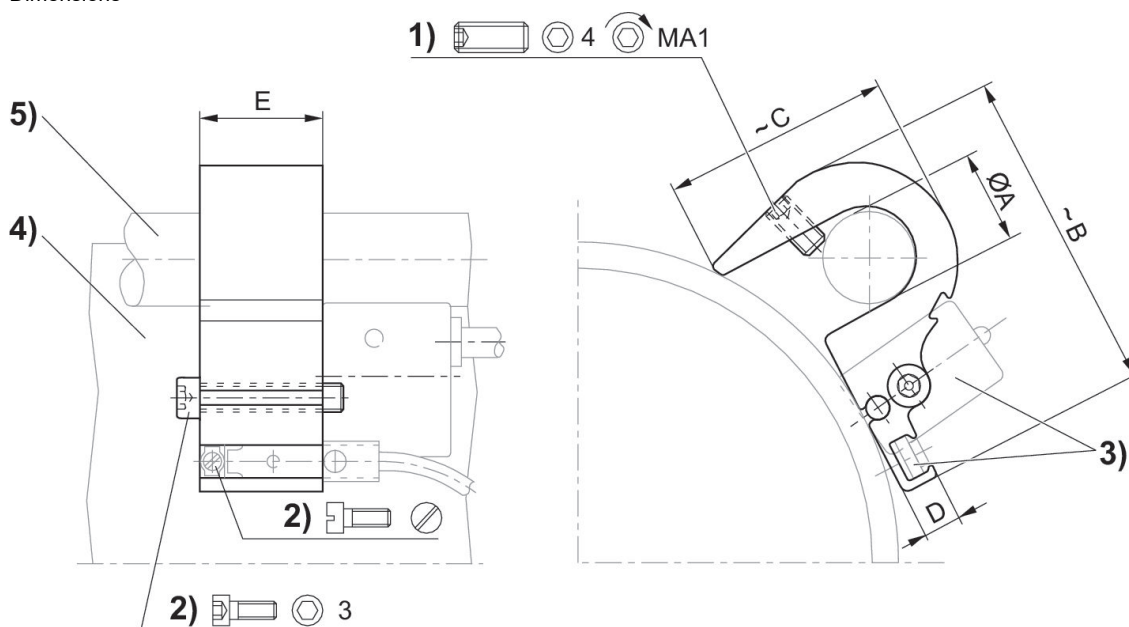
**Sensor mounting, Series CB1**

To mount on series: ST6, SM6, SN1, SN2  
To mount on series: TRB, C12P, CVI, 523



Min. cylinder Ø [mm]	Max. cylinder Ø [mm]	Material	Part No.
125	125	Aluminum	1827020292

Dimensions

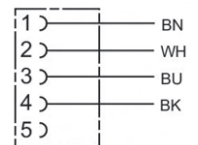


1) Clamping threaded pin 2) Mounting screw for sensor 3) Sensor 4) Cylinder profile 5) Tie rod

Part No.	Cylinders Ø	Ø A	B	C	D	E	Clamping threaded pin	MA1 [Nm]
1827020292	125 mm	12	45	29	6.5	21	M5x10	2

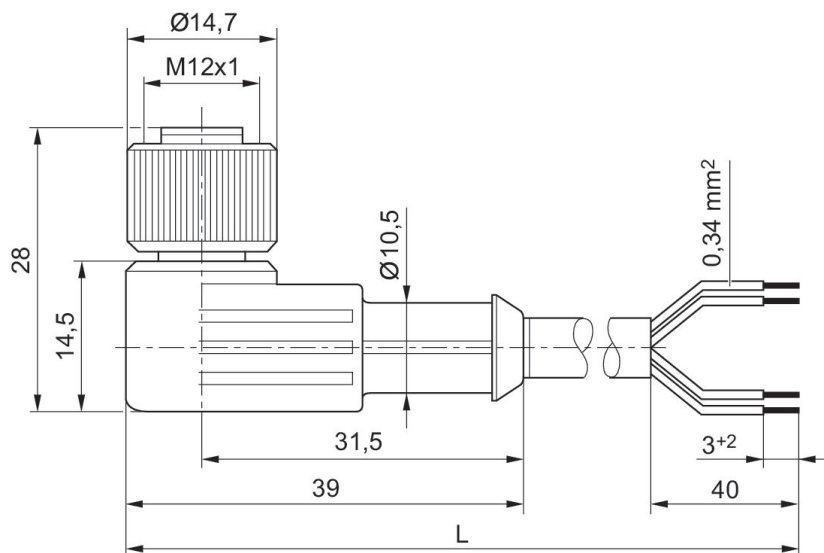
**Round plug connector, Series CON-RD, 5-pin, angled, unshielded**

Electrical connection 1: Socket ... M12x1 ... 5-pin ... angled  
 Electrical connection 2: without wire end ferrule, tin-plated ... 4-pin  
 Ambient temperature min./max.: -40 °C ... 85 °C



Operational voltage	Electrical connection 1, type	Electrical connection 1, thread size	Electrical connection 1, number of poles	Electrical connection 1, coding	Electrical connection 2, type	Electrical connection 2, number of poles	Cable length [m]	Part No.
48 V AC/DC	Socket	M12x1	5-pin	A-coded	open cable ends	4-pin	3	1834484259
48 V AC/DC	Socket	M12x1	5-pin	A-coded	open cable ends	4-pin	5	1834484260
48 V AC/DC	Socket	M12x1	5-pin	A-coded	open cable ends	4-pin	10	1834484261

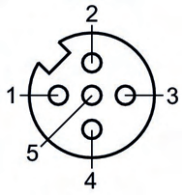
**Dimensions**



L = length

**1834484259, 1834484260, 1834484261**

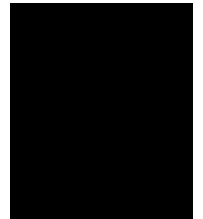
Pin assignment, socket



(1) BN=brown (2) WH=white (3) BU=blue (4) BK=black  
(5) not assigned

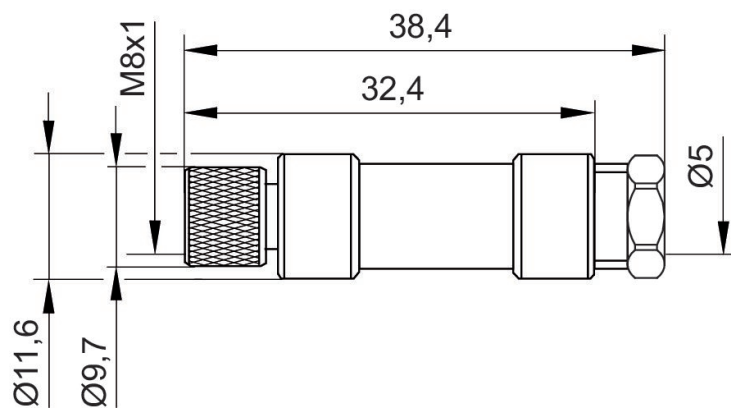
**Round plug connector, Series CON-RD**

Electrical connection 1: Socket ... M8x1 ... 3-pin ... straight  
 Connection type: Soldering  
 Ambient temperature min./max.: -25 °C ... 80 °C



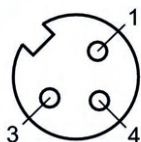
Operational voltage	Coding	Shielding	Connection type	Max. current [A]	min. suitable cable Ø [mm]	max. suitable cable Ø [mm]	Part No.
48 V AC/DC	A-coded	unshielded	Soldering	4	3.5	5	1834484173

Dimensions



**1834484173**

Pin assignment, socket



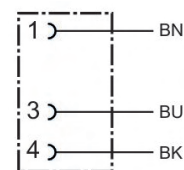
**Round plug connector, Series CON-RD**

Electrical connection 1: Socket ... M8x1 ... 3-pin ... straight

Electrical connection 2: open cable ends ... 3-pin

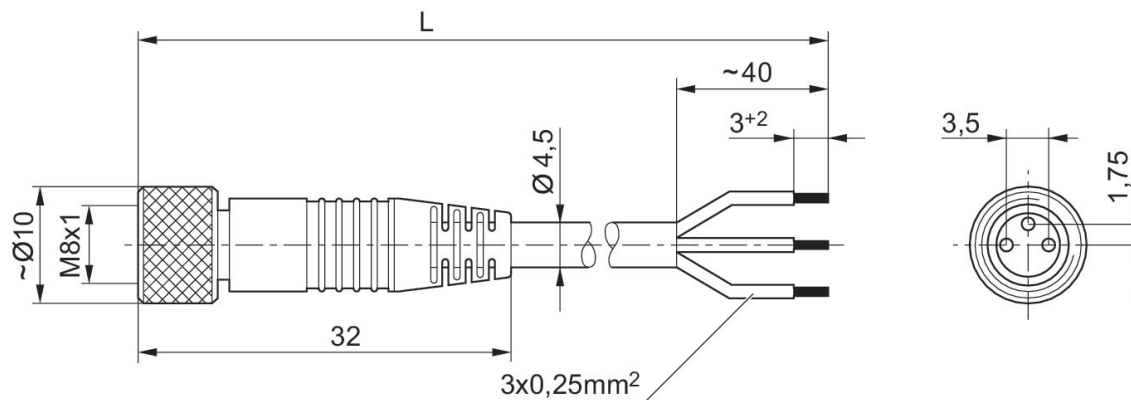
Certification: UL (Underwriters Laboratories)

Ambient temperature min./max.: -25 °C ... 85 °C



Operational voltage	Electrical connection 1, type	Electrical connection 1, thread size	Electrical connection 1, number of poles	Electrical connection 1, coding	Electrical connection 2, type	Electrical connection 2, number of poles	Cable length [m]	Part No.
48 V AC/DC	Socket	M8x1	3-pin	A-coded	open cable ends	3-pin	3	1834484166
48 V AC/DC	Socket	M8x1	3-pin	A-coded	open cable ends	3-pin	5	1834484168
48 V AC/DC	Socket	M8x1	3-pin	A-coded	open cable ends	3-pin	10	1834484247

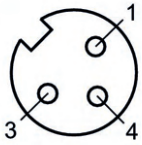
Dimensions



L = length

**1834484166, 1834484168, 1834484247**

Pin assignment, socket



(1) BN=brown (3) BU=blue (4) BK=black

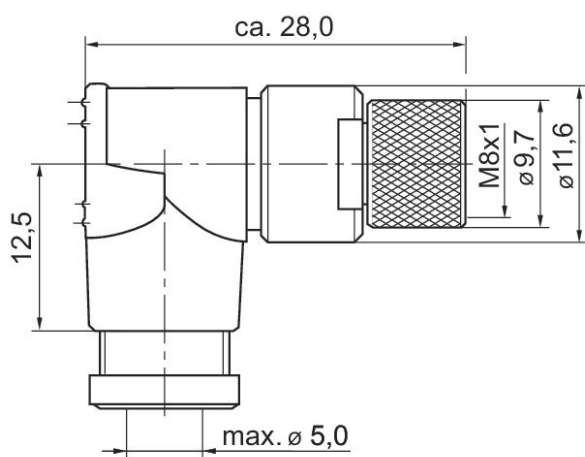
**Round plug connector, Series CON-RD**

Electrical connection 1: Socket ... M8x1 ... 3-pin ... angled  
 Connection type: Soldering  
 Ambient temperature min./max.: -25 °C ... 80 °C



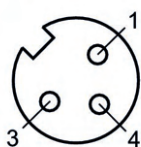
Operational voltage	Coding	Shielding	Connection type	Max. current [A]	min. suitable cable Ø [mm]	max. suitable cable Ø [mm]	Part No.
48 V AC/DC	A-coded	unshielded	Soldering	4	3.5	5	1834484174

Dimensions in mm



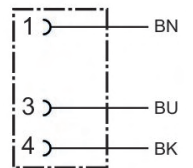
**1834484174**

Pin assignment, socket



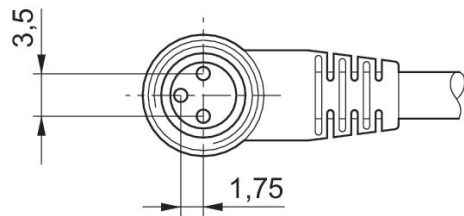
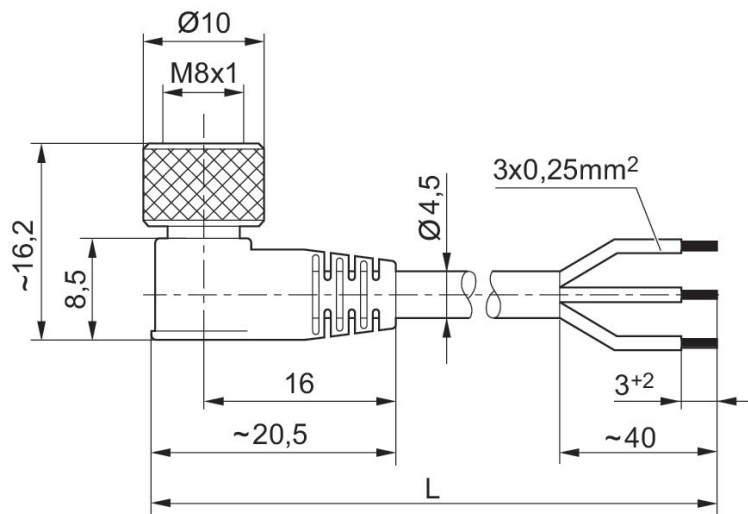
**Round plug connector, Series CON-RD**

Electrical connection 1: Socket ... M8x1 ... 3-pin ... angled  
 Electrical connection 2: open cable ends ... 3-pin  
 Ambient temperature min./max.: -40 °C ... 85 °C



Operational voltage	Electrical connection 1, type	Electrical connection 1, thread size	Electrical connection 1, number of poles	Electrical connection 1, coding	Electrical connection 2, type	Electrical connection 2, number of poles	Cable length [m]	Part No.
48 V AC/DC	Socket	M8x1	3-pin	A-coded	open cable ends	3-pin	3	1834484167
48 V AC/DC	Socket	M8x1	3-pin	A-coded	open cable ends	3-pin	5	1834484169
48 V AC/DC	Socket	M8x1	3-pin	A-coded	open cable ends	3-pin	10	1834484248

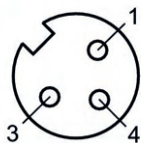
Dimensions



L = length

**1834484167, 1834484169, 1834484248**

Pin assignment, socket



(1) BN=brown (3) BU=blue (4) BK=black

**Silencers, series SI1, Sintered bronze**

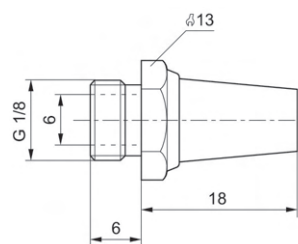
Compressed air connection type: External thread  
 Silencer material: Sintered bronze  
 Ambient temperature min./max.: -25 °C ... 80 °C  
 Working pressure min./max.: 0 bar ... 10 bar



G	Sound pressure level [dB]	Nominal flow [l/min]	Delivery unit [piece]	Weight [kg]	Part No.
G 1/8	75	1623	10	0.01	1827000000
G 1/4	98	5950	10	0.013	R412004817
G 1/4	79	3390	10	0.02	1827000001
G 3/8	84	6554	5	0.05	1827000002
G 1/2	90	7223	2	0.08	1827000003
G 3/4	92	8394	1	0.13	1827000004

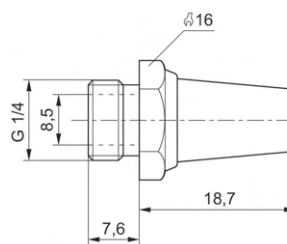
**1827000000**

Dimensions in mm



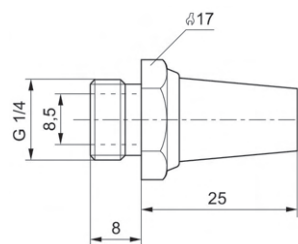
**R412004817**

Dimensions in mm



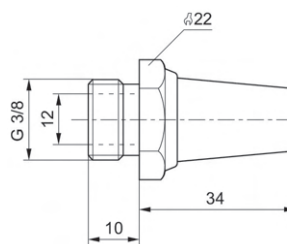
**1827000001**

Dimensions in mm



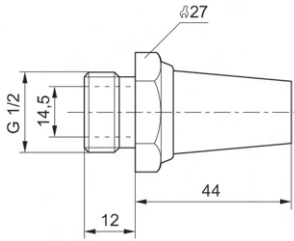
**1827000002**

Dimensions in mm



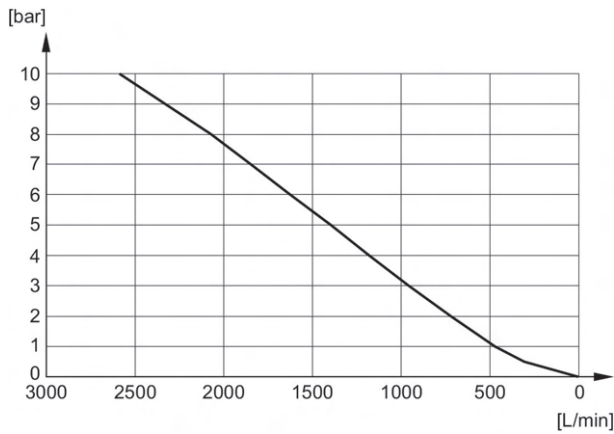
**1827000003**

Dimensions in mm



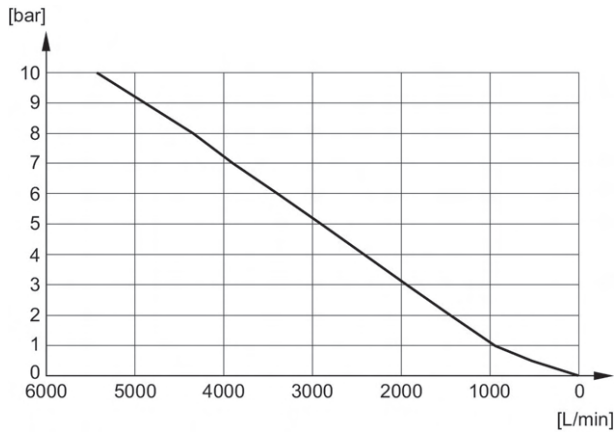
**Flow diagram**

**1827000000**



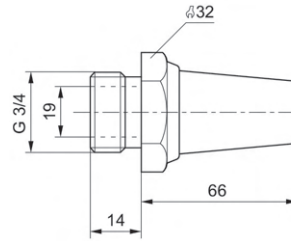
**Flow diagram**

**1827000001**



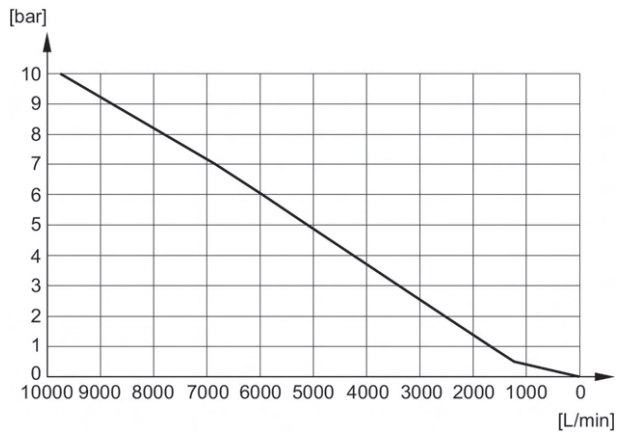
**1827000004**

Dimensions in mm



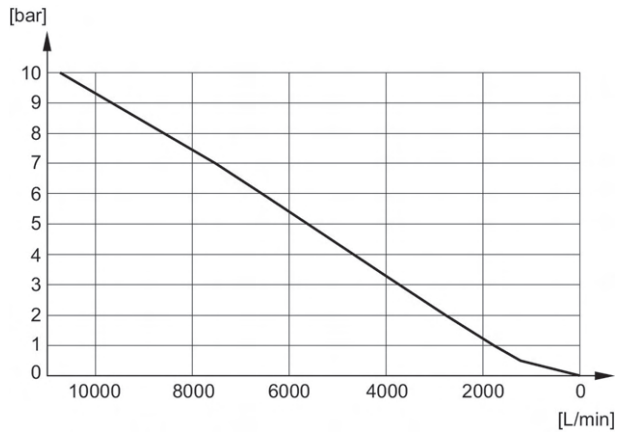
**Flow diagram**

**R412004817**



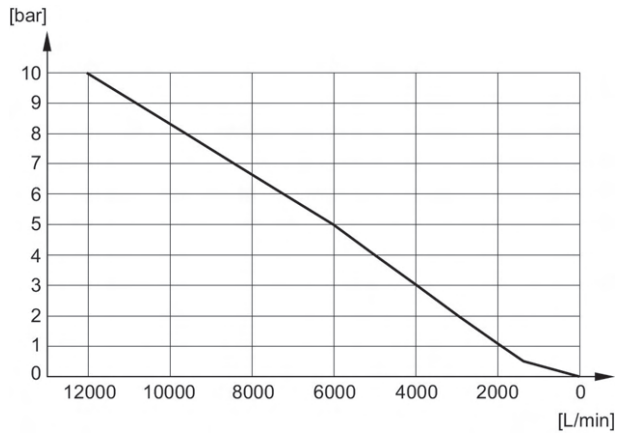
**Flow diagram**

**1827000002**



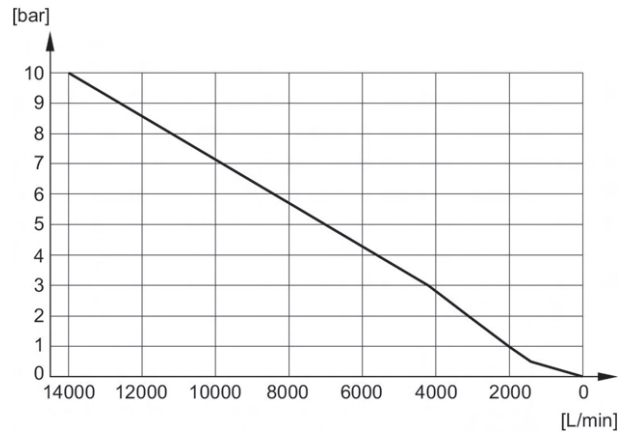
**Flow diagram**

**1827000003**



**Flow diagram**

**1827000004**



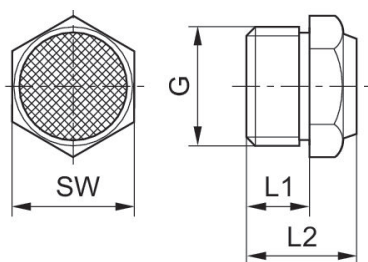
**Silencers, series SI1, Sintered bronze**

Compressed air connection type: External thread  
 Silencer material: Sintered bronze  
 Ambient temperature min./max.: -25 °C ... 80 °C  
 Working pressure min./max.: 0 bar ... 10 bar



G	Sound pressure level [dB]	Nominal flow [l/min]	Delivery unit [piece]	Weight [kg]	Part No.
G 1/8	85	700	10	0.001	1827000031
G 1/4	88	1116	10	0.01	1827000033
G 3/8	90	1706	5	0.016	1827000034
G 1/2	85	2568	2	0.035	1827000035

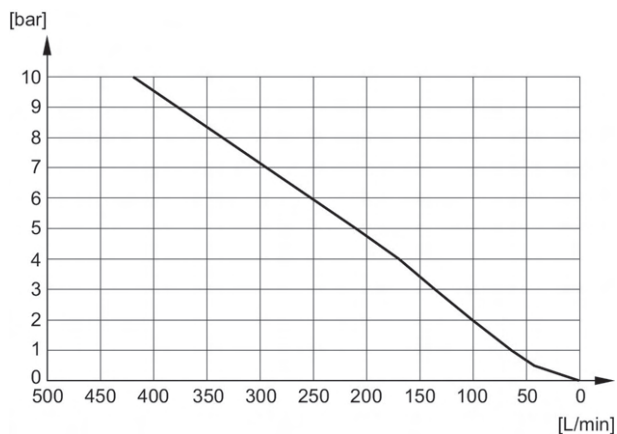
**Dimensions**



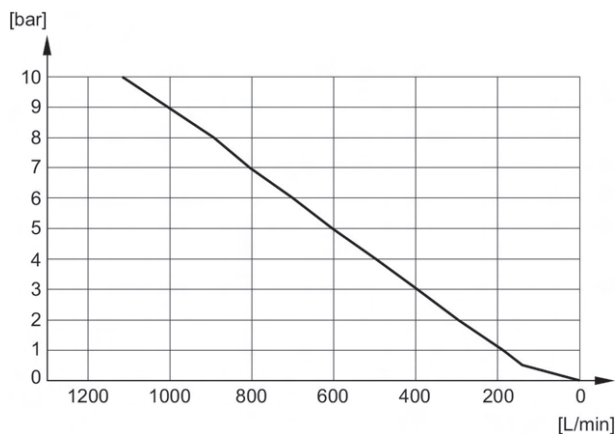
Part No.	Port G	L1	L2	SW
1827000032	M5	5	10.3	7
1827000031	G 1/8	6	11.5	13
1827000033	G 1/4	8	13.5	17
1827000034	G 3/8	10	17.5	22
1827000035	G 1/2	12	19.5	27
8145003400	G 3/4	14	22.5	32
8145001000	G 1	16	22.5	41

Sound pressure level measured at 6 bar at 1 m distance

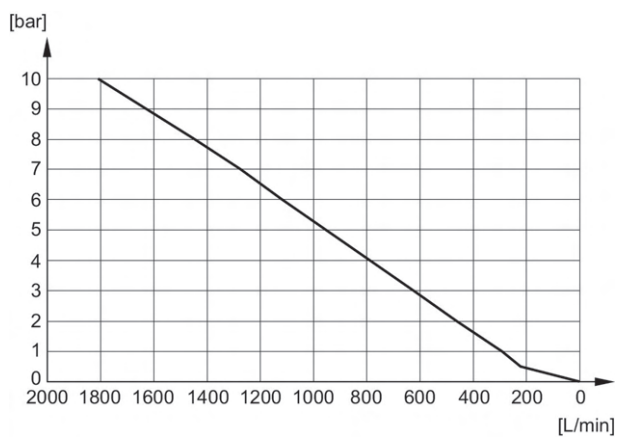
**Flow diagram 1827000032**



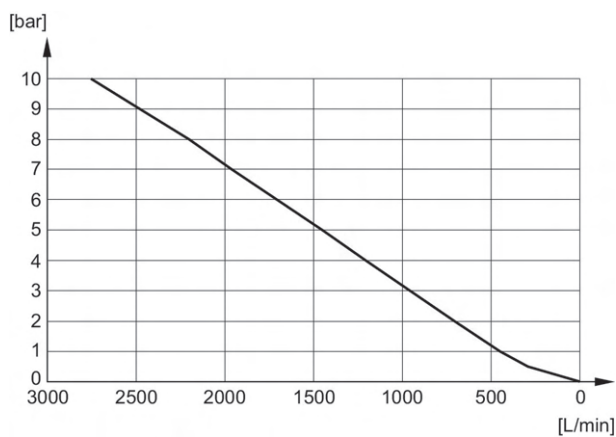
**Flow diagram 1827000031**



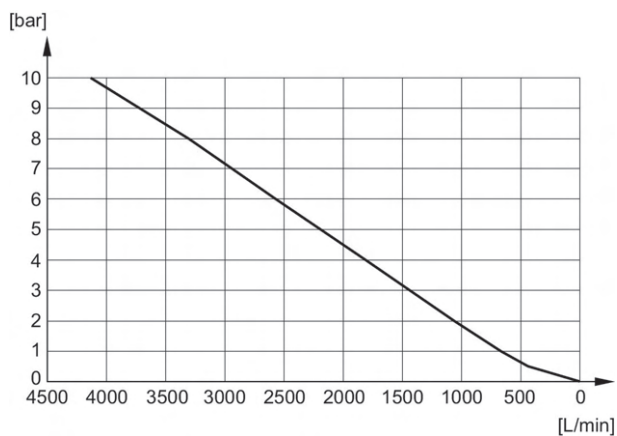
**Flow diagram 1827000033**



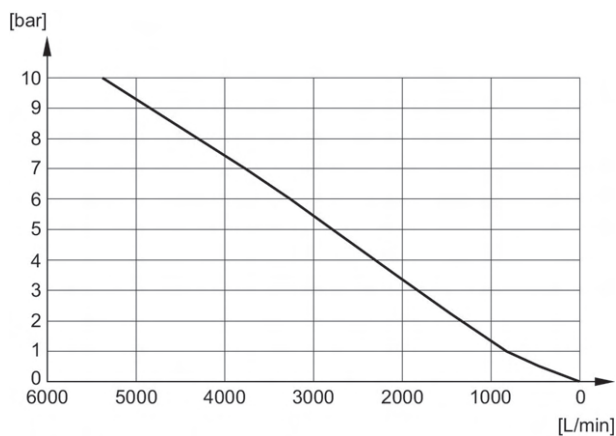
**Flow diagram 1827000034**



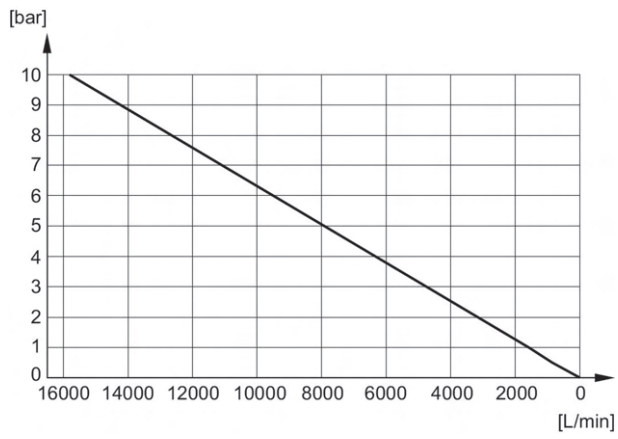
**Flow diagram 1827000035**



**Flow diagram 8145003400**







**Flow diagram 8145001000**



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air supply management, proportional pressure  
control valves



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