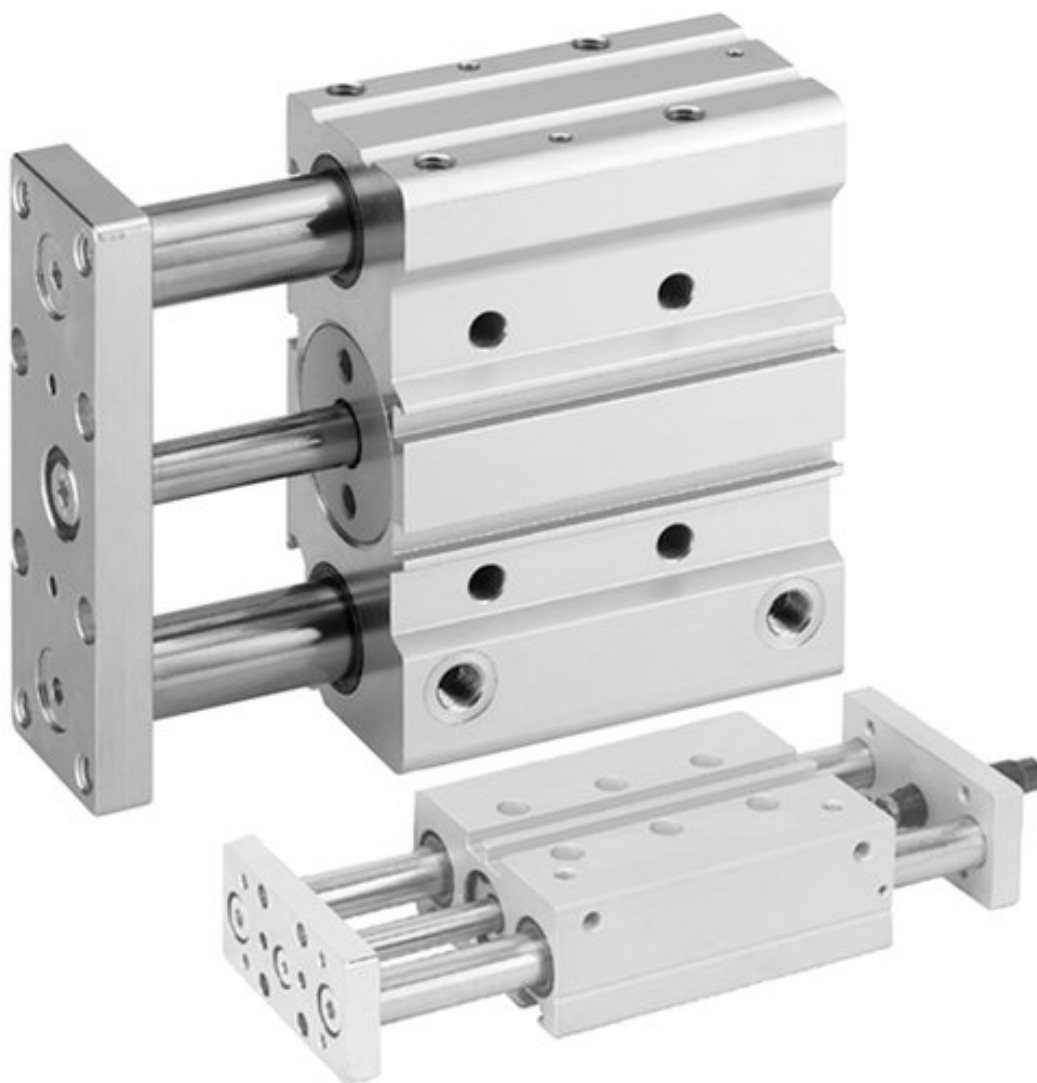


## Series GPC



AVENTICS™ Series GPC



# Guide cylinders, Series GPC-BV

- Ø 10-100 mm
- double-acting
- Plain bearing
- Cushioning elastic
- with magnetic piston



Working pressure min./max.	See table below
Ambient temperature min./max.	-10 ... 70 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m <sup>3</sup>
Pressure for determining piston forces	6.3 bar
Weight	See table below



## Technical data

Piston Ø	10 mm	12 mm	16 mm	20 mm	25 mm	32 mm	40 mm
Stroke 10	R402000294	0822060000	0822061000	0822062000	0822063000	-	-
20	R402000296	0822060001	0822061001	0822062001	0822063001	-	-
25	R402000297	0822060007	0822061007	0822062007	0822063007	0822064000	0822065000
30	R402000298	0822060002	0822061002	0822062002	0822063002	-	-
40	R402000300	0822060003	0822061003	0822062003	0822063003	-	-
50	R402000302	0822060004	0822061004	0822062004	0822063004	0822064001	0822065001
75	R402000307	0822060005	0822061005	0822062005	0822063005	0822064002	0822065002
100	R402000312	0822060006	0822061006	0822062006	0822063006	0822064003	0822065003
125	-	0822060024	0822061024	0822062024	0822063024	0822064004	0822065004
150	-	0822060029	0822061029	0822062029	0822063029	-	-
160	-	-	-	-	0822063031	0822064005	0822065005
200	-	-	-	-	0822063039	0822064006	0822065006

Piston Ø	50 mm	63 mm	80 mm	100 mm
Stroke 10	-	-	-	-
20	-	-	-	-
25	0822066000	0822067000	R402000914	R402000928
30	-	-	-	-

Piston Ø	50 mm	63 mm	80 mm	100 mm
40	-	-	-	-
50	0822066001	0822067001	R402000915	R402000929
75	0822066002	0822067002	R402000916	R402000930
100	0822066003	0822067003	R402000917	R402000931
125	0822066004	0822067004	R402000918	R402000932
150	-	-	-	-
160	0822066005	0822067005	R402000919	R402000933
200	0822066006	0822067006	R402000920	R402000934

## Technical data

Piston Ø	10 mm	12 mm	16 mm	20 mm
Port	M5	M5	M5	M5
Working pressure min./max.	2 ... 8 bar	2 ... 8 bar	2 ... 8 bar	2 ... 8 bar
Retracting piston force	42 N	53 N	95 N	148 N
Extracting piston force	49 N	71 N	127 N	198 N
Speed max.	0.5 m/s	0.5 m/s	0.5 m/s	0.5 m/s
Impact energy	0.04 J	0.1 J	0.11 J	0.15 J

Piston Ø	25 mm	32 mm	40 mm	50 mm
Port	G 1/8	G 1/8	G 1/8	G 1/4
Working pressure min./max.	1.5 ... 8 bar	1.3 ... 8 bar	1 ... 8 bar	1 ... 8 bar
Retracting piston force	260 N	435 N	720 N	1110 N
Extracting piston force	309 N	507 N	792 N	1237 N
Speed max.	0.8 m/s	0.6 m/s	0.6 m/s	0.6 m/s
Impact energy	0.35 J	0.4 J	0.52 J	0.64 J

Piston Ø	63 mm	80 mm	100 mm
Port	G 1/4	G 1/4	G 3/8
Working pressure min./max.	1 ... 8 bar	1 ... 8 bar	1 ... 8 bar
Retracting piston force	1837 N	2969 N	4639 N
Extracting piston force	1964 N	3167 N	4948 N
Speed max.	0.6 m/s	0.4 m/s	0.4 m/s
Impact energy	0.75 J	0.75 J	1 J

## Technical information

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

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

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

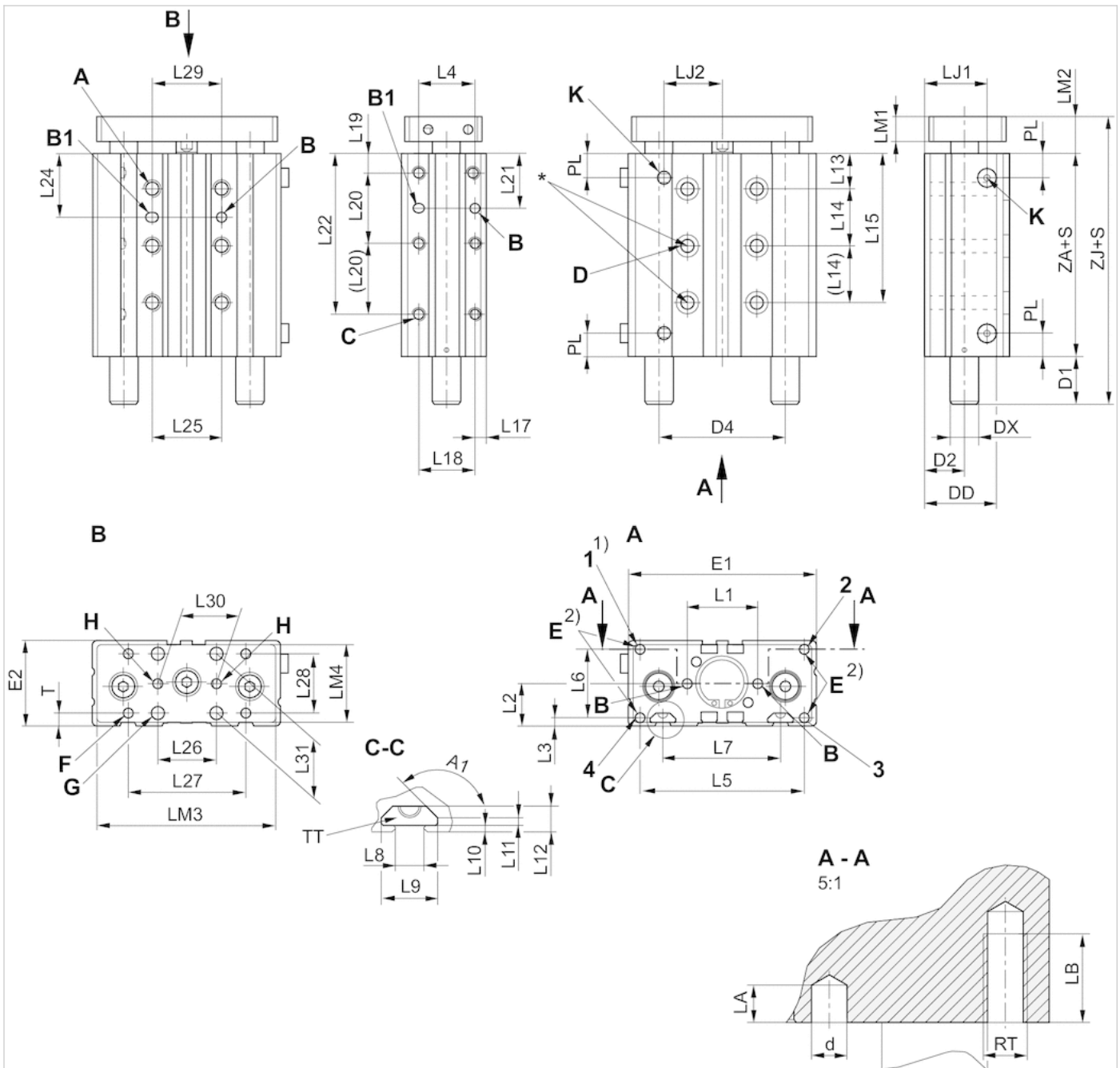
Note: Only the Ø10 variants fits to sensor series ST4. The sensor series ST6 and SN3 can be used for all other Ø variants.

## Technical information

Material	
Housing	Aluminum, anodized
Seal	Polyurethane
Front plate	Steel, galvanized
Guide rod	Stainless steel
Bearing	Sintered bronze
Piston rod	Stainless steel

# Dimensions

## Dimensions, Ø 10 ... 20



\* Suitable for screws according to ISO 4762

1) Only Ø 20 threaded hole

2) M4 mounting hole for GPC-E accessories

1, 2, 3, 4: threaded holes

S = stroke

Note: Only the Ø10 variants fits to sensor series ST4. The sensor series ST6 and SN3 can be used for all other Ø variants.

## Dimensions

Piston Ø	A RTxLB	A1	B ØdxLA	B1 ØdxDxLA	C RTxLB	D Ø
10 mm	M4x6	–	4H7x4	4H7x5x4	M4x6	3.2
12 mm	M5x8	–	4H7x4	4H7x5x4	M5x8	4.2
16 mm	M5x8	135°	4H7x4	4H7x5x4	M5x8	4.2
20 mm	M6x10	135°	4H7x4	4H7x5x4	M6x10	5.2

Piston Ø	D1 S=10-30	D1 S=40-100	D1 S>100	D2	D4	DD	DX
10 mm	13.5	13.5	13.5	7	–	17.4	8
12 mm	0	17.6	32.6	14.5	40	20	10
16 mm	0	20	35	15.8	47	28.5	12
20 mm	0	20	35	16.5	54	30.5	12

Piston Ø	E RTxLB	E1	E2	F Ø 1)	G Ø 2)	H Ø 2)	K	L1
10 mm	M4x8	50	21	M4	–	–	M5	20 ±0,04
12 mm	M5x8	58	30.5	M4	4.5	4H9	M5	23 ±0,04
16 mm	M5x8	68	33	M4	5.5	4H9	M5	28 ±0,04
20 mm	M5x10	80	36	M5	5.5	4H9	M5	30 ±0,04

Piston Ø	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11
10 mm	10.5	3	–	20	15	–	–	–	–	–
12 mm	15	4	22	50	22	–	–	–	–	–
16 mm	16.5	4	25	61	25	43	6.15	12	1.5	1.5
20 mm	18	3.5	24	70	29	50	6.15	12	1.5	1.5

Piston Ø	L12	L13	L14 S=10	L14 S=20	L14 S>20	L15 S=40	L15 S>40
10 mm	–	15	–	20	20	55	55
12 mm	–	14.5	–	18	22	–	58.5
16 mm	5.5	14	18	25	25	–	64
20 mm	5.5	15	16	24	24	–	63

Piston Ø	L17	L18	L19	L20 S=10	L20 S>10	L21 S=10	L21 S>10
10 mm	15	–	8	20	20	13	13
12 mm	4	22	8	20	20	18	18
16 mm	4	25	8	18	25	20.5	20.5
20 mm	4.5	24	8	20	30	18	23

Piston Ø	L22 S≤40	L22 S>40	L24 S=10	L24 S>10	L25	L26	L27
10 mm	48	48	25	25	20	–	20
12 mm	–	48	25.5	25.5	20	–	40
16 mm	–	58	26.5	26.5	25	20	40
20 mm	–	68	23	27	30	25	50

Piston Ø	L28	L29	L30	L31	LJ1	LJ2	LM1	LM2	LM3
10 mm	10	20	–	–	15.5	15	5	13.5	48

Piston Ø	L28	L29	L30	L31	LJ1	LJ2	LM1	LM2	LM3
12 mm	20	20	–	–	24.8	17.5	8	12.7	55
16 mm	20	25	20 ±0,04	22	27	21	8	13.5	65
20 mm	25	30	25 ±0,04	25	26.5	25	10	15.5	77

Piston Ø	LM4	PL	T	TT	ZA	ZJ S=10-30	ZJ S=40-100
10 mm	19	8	5.5	–	36	63	63
12 mm	27	8.5	5	–	34.4	47.1	64.7
16 mm	30	8.8	6.5	N6	36	49.5	69.5
20 mm	33	10	5.5	N6	36	51.5	71.5

S = stroke

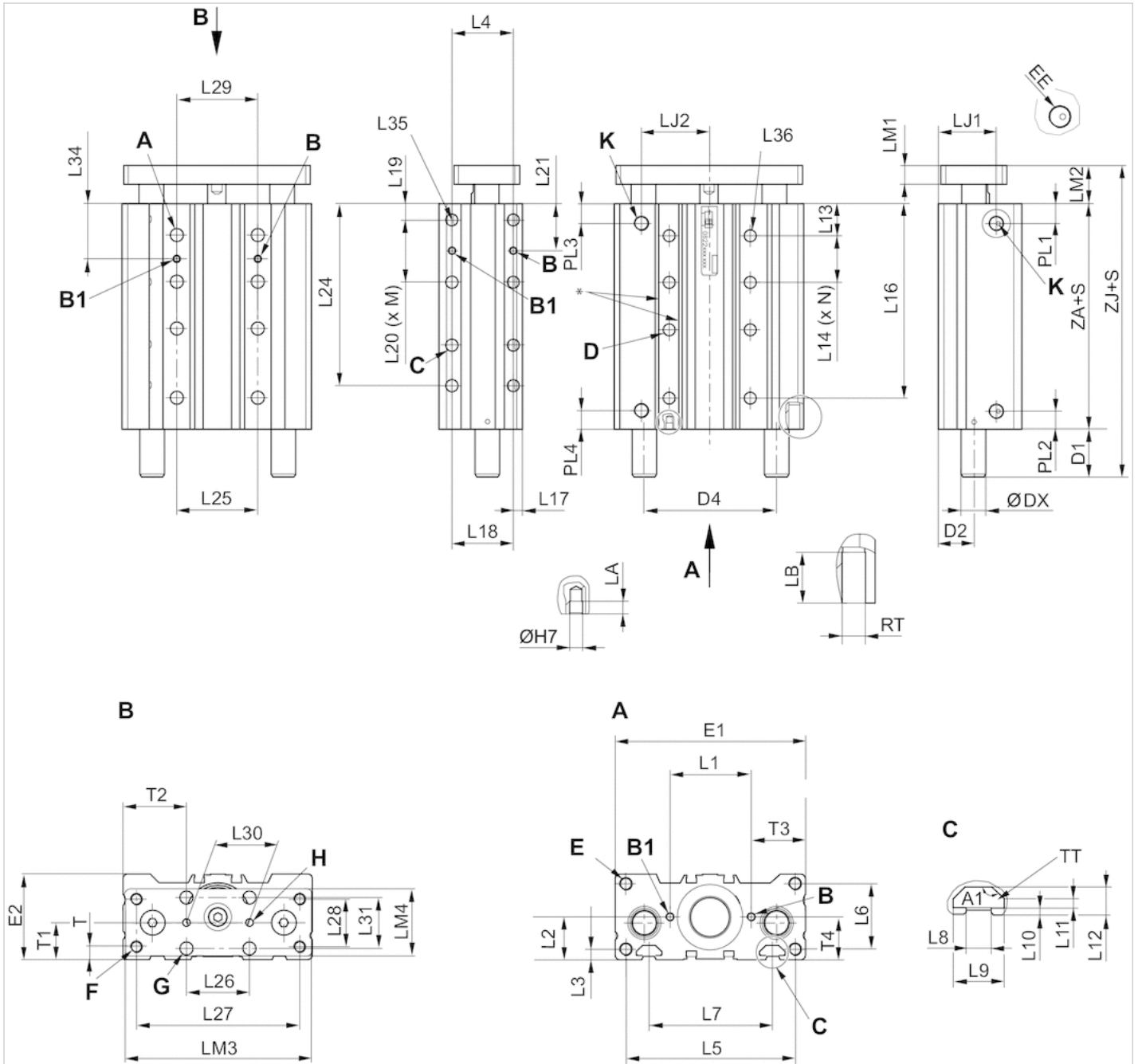
To determine the cylinder length (ZA) for intermediate strokes (i.e. stroke 10 with dia. 40), the next available standard stroke size must be used

- 1) Through hole with thread
- 2) through-hole

Two holes C-C 10 mm.

# Dimensions

## Dimensions, Ø 25 ... 100



\* Suitable for screws according to ISO 4762

S = stroke

Note: Only the Ø10 variants fits to sensor series ST4. The sensor series ST6 and SN3 can be used for all other Ø variants.



## Dimensions

Piston Ø	A RTxLB	A1	B ØdxLA	B1 ØdxD	C RTxLB	D Ø 1)	D2	D4	DX	E RTxLB	E1	E2
25 mm	M6x10	135°	4x4	4x5	M6x10	5.5	18	59	16	M6x12	95	43
32 mm	M8x14	135°	4x4	4x5	M8x14	7.4	23	75.6	20	M6x12	114	48.5
40 mm	M8x14	135°	4x4	4x5	M8x14	7.4	23	86	20	M8x16	124	54.5
50 mm	M10x20	135°	5x5	5x6	M10x20	9.3	27.5	104	25	M8x16	148	64
63 mm	M10x20	135°	5x5	5x6	M10x20	9.3	35	124	25	M10x20	162	78.5
80 mm	M12x24	135°	6x6	6x7	M12x25	11.2	39.5	152	32	M12x25	202	91.5
100 mm	M12x24	135°	6x6	6x7	M12x25	11.2	39.5	174	32	M12x25	226	111

Piston Ø	F Ø 1)	G Ø 2)	H Ø 2)	K EE	L1	L2	L3	L4	L5	L6	L7	L8	L9
25 mm	M6	6.5	4H8	G 1/8	35 ±0,1	20.5	4.5	25 ±0,1	85	34	52	6.15	12
32 mm	M8	6.5	4H8	G 1/8	44 ±0,1	24	5	33 ±0,1	105	26	70	8.2	16.7
40 mm	M8	8.5	4H8	G 1/8	53 ±0,15	27	6	40 ±0,15	110	42	80	8.2	16.7
50 mm	M8	8.5	4H8	G 1/4	66 ±0,15	32	8	48 ±0,15	133	34.5	93	8.2	16.7
63 mm	M10	10.5	5H8	G 1/4	84 ±0,15	39	8	60 ±0,15	147	62	112	10.2	20.3
80 mm	M12	10.5	5H8	G 1/4	100 ±0,15	46	9	60 ±0,15	182	54.5	132	10.2	20.3
100 mm	M12	12.5	6H8	G 3/8	120 ±0,15	55.5	9	60 ±0,15	206	76	155	10.2	20.3

Piston Ø	L10	L11	L12	L13	L15	L17	L18	L19	L22	L25	L26	L27	L28	L29	L30	L31	LJ1
25 mm	1.5	1.5	5.5	16.5	25	5.5	25	8	32	32	30	81	23	32 ±0,1	30 ±0,2	24	29.6
32 mm	2.2	2.8	9	20.5	33	6.5	33	10	42	42	32	97	30	42 ±0,1	32 ±0,2	25	40
40 mm	2.2	2.8	9	20	40	6	40	10	53	53	42	107	30	53 ±0,15	42 ±0,2	32.5	37.8
50 mm	2.2	2.8	9	23	48	7.5	48	12	63	63	53	134	40	63 ±0,15	53 ±0,2	40	54.5
63 mm	6	6	16	24	60	11	60	12	80	80	63	140	48	80 ±0,15	63 ±0,2	48	57
80 mm	6	6	16	33.5	60	12	60	13	96	96	80	176	52	96 ±0,15	80 ±0,2	60	77.5
100 mm	6	6	16	32.5	60	12	60	13	119	119	96	204	64	119 ±0,15	96 ±0,2	60	68.5

Piston Ø	LJ2	LM1	LM2	LM3	LM4	PL1	PL2	PL3	PL4	T	T1	T2	T3
25 mm	32	10	15.5	93	33	11	11	11	11	6.5	18 ±0,4	32,5 ±0,4	30 ±0,05
32 mm	40.5	12	18.5	112	43	13.5	13.5	13.5	13.5	8	23 ±0,4	41 ±0,4	35 ±0,05
40 mm	44	12	19.5	122	43	12	12	12	12	8	23 ±0,4	41 ±0,4	35,5 ±0,1
50 mm	50.5	15	23.5	146	52	13	13	13	13	7.5	27,5 ±0,4	47,5 ±0,4	41 ±0,1
63 mm	59	15	24	160	67	13.7	13.7	13.7	13.7	11	35 ±0,4	49,5 ±0,5	39 ±0,1
80 mm	74.5	20	30	200	76	23	23	23	23	13.5	39,5 ±0,45	61 ±0,5	51 ±0,2
100 mm	86.5	20	31	224	84	21.5	21.5	21.5	21.5	18.5	50,5 ±0,45	65 ±0,5	53 ±0,2

Piston Ø	T4	TT	ZA
25 mm	20,5 ±0,05	N6	42 3)
32 mm	24 ±0,05	N8	46.5
40 mm	27 ±0,1	N8	44
50 mm	32 ±0,1	N8	46
63 mm	39 ±0,1	N10	51
80 mm	46 ±0,2	N10	77
100 mm	55,5 ±0,2	N10	77

S = stroke

To determine the cylinder length (ZA) for intermediate strokes (i.e. stroke 10 with dia. 40), the next available standard stroke size must be used

1) Through hole with thread

2) through-hole

3) For stroke 10/150, ZA = 52, for stroke 25, ZA = 47

Two holes C-C 10 mm.

## Dimensions

Piston Ø	S=10 D1	S=20 D1	S=25 D1	S=30 D1	S=40 D1	S=50 D1
25 mm	0	0	0	0	0	0
32 mm	-	-	17	17	17	17
40 mm	-	-	19	19	19	19
50 mm	-	-	25	25	25	25
63 mm	-	-	19	19	19	19
80 mm	-	-	10.5	10.5	10.5	10.5
100 mm	-	-	9.5	9.5	9.5	9.5

Piston Ø	S=75 D1	S=100 D1	S=125 D1	S=150 D1	S=160 D1	S=200 D1
25 mm	11	11	27	27	27	27
32 mm	17	17	35	35	35	35
40 mm	19	19	37	37	37	37
50 mm	25	25	55	55	55	55
63 mm	19	19	49	49	49	49
80 mm	10.5	10.5	38.5	38.5	38.5	38.5
100 mm	9.5	9.5	37.5	37.5	37.5	37.5

Piston Ø	S=10 L14	S=20 L14	S=25 L14	S=30 L14	S=40 L14	S=50 L14
25 mm	19	25	25	25	25	25
32 mm	30	30	30	33	33	33
40 mm	30	30	30	40	40	40
50 mm	25	25	25	48	48	48
63 mm	28	28	28	28	28	28
80 mm	35	35	35	60	60	60
100 mm	37	37	37	60	60	60

Piston Ø	S=75 L14	S=100 L14	S=125 L14	S=160 L14	S=200 L14
25 mm	25	25	25	25	25
32 mm	33	33	33	33	33
40 mm	40	40	40	40	40
50 mm	48	48	48	48	48
63 mm	60	60	60	60	60
80 mm	60	60	60	60	60
100 mm	60	60	60	60	60

S = stroke

## Dimensions

Piston Ø	S=10 N	S=20 N	S=25 N	S=30 N	S=40 N	S=50 N	S=75 N
25 mm	1	1	1	1	1	2	3
32 mm	-	-	1	1	1	1	2
40 mm	-	-	1	1	1	1	2
50 mm	-	-	1	1	1	1	1
63 mm	-	-	1	1	1	1	1
80 mm	-	-	1	1	1	1	1
100 mm	-	-	1	1	1	1	1

Piston Ø	S=100 N	S=125 N	S=160 N	S=200 N	S=40 L16	S=50 L16
25 mm	3	3	3	3	65.5	-
32 mm	3	3	3	3	-	76
40 mm	2	3	3	3	-	-
50 mm	2	2	3	3	-	-
63 mm	1	2	2	3	-	-
80 mm	1	2	2	3	-	-
100 mm	1	2	2	3	-	-

Piston Ø	S=100 L16	S=125 L16	S=160 L16	S=200 L16
25 mm	125.5	150.5	185.5	225.5
32 mm	-	151	186	226
40 mm	-	-	184	224
50 mm	-	148	-	223
63 mm	127	-	187	-
80 mm	143.5	-	203.5	-
100 mm	144.5	-	204.5	-

S = stroke

## Dimensions

Piston Ø	S=20 L20	S=25 L20	S=30 L20	S=40 L20	S=50 L20	S=75 L20
25 mm	22	32	32	32	32	32
32 mm	35	35	42	42	42	42
40 mm	30	30	53	53	53	53
50 mm	30	30	30	30	30	63
63 mm	30	30	30	30	30	80
80 mm	47	47	47	47	47	96
100 mm	49	49	49	49	49	49

Piston Ø	S=100 L20	S=125 L20	S=160 L20	S=200 L20	S=20 L21	S=25 L21
25 mm	32	32	32	32	19	24
32 mm	42	42	42	42	27.5	27.5
40 mm	53	53	53	53	25	25
50 mm	63	63	63	63	27	27

Piston Ø	S=100 L20	S=125 L20	S=160 L20	S=200 L20	S=20 L21	S=25 L21
63 mm	80	80	80	80	27	27
80 mm	96	96	96	96	36.5	36.5
100 mm	119	119	119	119	37.5	37.5

Piston Ø	S=30 L21	S=40 L21	S=50 L21	S=75 L21	S=100 L21	S=125 L21
25 mm	24	24	24	24	24	24
32 mm	31	31	31	31	31	31
40 mm	36.5	36.5	36.5	36.5	36.5	36.5
50 mm	27	27	27	43.5	43.5	43.5
63 mm	27	27	27	52	52	52
80 mm	36.5	36.5	36.5	61	61	61
100 mm	37.5	37.5	37.5	37.5	72.5	72.5

Piston Ø	S=160 L21	S=200 L21
25 mm	24	24
32 mm	31	31
40 mm	36.5	36.5
50 mm	43.5	43.5
63 mm	52	52
80 mm	61	61
100 mm	72.5	72.5

S = stroke

## Dimensions

Piston Ø	S10 M	S20 M	S25 M	S30 M	S40 M	S50 M	S75 M
25 mm	1	1	1	1	1	1	2
32 mm	-	-	1	1	1	1	2
40 mm	-	-	1	1	1	1	1
50 mm	-	-	1	1	1	1	1
63 mm	-	-	1	1	1	1	1
80 mm	-	-	1	1	1	1	1
100 mm	-	-	1	1	1	1	1

Piston Ø	S100 M	S125 M	S160 M	S200 M	S40 L24	S50 L24	S75 L24
25 mm	3	3	3	3	60	70	95
32 mm	2	3	3	3	-	-	-
40 mm	2	2	3	3	-	-	91
50 mm	1	2	2	3	-	-	-
63 mm	1	1	2	2	-	-	-
80 mm	1	1	1	2	-	-	-
100 mm	1	1	1	1	-	-	-

Piston Ø	S100 L24	S125 L24	S160 L24	S200 L24
25 mm	-	145	180	220
32 mm	122.5	-	182.5	222.5

Piston Ø	S100 L24	S125 L24	S160 L24	S200 L24
40 mm	-	-	-	216
50 mm	116	-	176	-
63 mm	-	142	-	217
80 mm	-	160	195	-
100 mm	-	-	195	235

S = stroke

## Dimensions

Piston Ø	S10 L34	S20 L34	S25 L34	S30 L34	S40 L34	S50 L34
25 mm	26	29	29	29	29	29
32 mm	35.5	35.5	35.5	37	37	37
40 mm	35	35	35	40	40	40
50 mm	35.5	35.5	35.5	47	47	47
63 mm	38	38	38	38	38	38
80 mm	51	51	51	51	51	63.5
100 mm	51	51	51	51	51	62.5

Piston Ø	S75 L34	S100 L34	S125 L34	S160 L34	S200 L34	S10 L35
25 mm	29	29	29	29	29	4
32 mm	37	37	37	37	37	4
40 mm	40	40	40	40	40	4
50 mm	47	47	47	47	47	4
63 mm	54	54	54	54	54	4
80 mm	63.5	63.5	63.5	63.5	63.5	4
100 mm	62.5	62.5	62.5	62.5	62.5	4

Piston Ø	S20 L35	S25 L35	S30 L35	S40 L35	S50 L35	S75 L35
25 mm	4	4	4	6	6	8
32 mm	4	4	4	4	4	6
40 mm	4	4	4	4	4	6
50 mm	4	4	4	4	4	4
63 mm	4	4	4	4	4	4
80 mm	4	4	4	4	4	4
100 mm	4	4	4	4	4	4

Piston Ø	S100 L35	S125 L35	S160 L35	S200 L35
25 mm	8	10	10	10
32 mm	8	8	10	10
40 mm	6	6	8	10
50 mm	6	6	8	8
63 mm	4	6	6	8
80 mm	4	6	6	6
100 mm	4	4	6	6

S = stroke

## Dimensions

Piston Ø	S10 L36	S20 L36	S25 L36	S30 L36	S40 L36	S50 L36
25 mm	4	4	4	4	6	6
32 mm	4	4	4	4	4	6
40 mm	4	4	4	4	4	4
50 mm	4	4	4	4	4	4
63 mm	4	4	4	4	4	4
80 mm	4	4	4	4	4	4
100 mm	4	4	4	4	4	4

S75 L36	S100 L36	S125 L36	S160 L36	S200 L36	S10 ZJ	S20 ZJ
8	10	10	10	10	57.5	57.5
6	8	10	10	10	-	-
6	6	8	10	10	-	-
4	6	8	8	10	-	-
4	6	6	8	10	-	-
4	6	6	8	8	-	-
4	6	6	8	8	-	-

S25 ZJ	S30 ZJ	S40 ZJ	S50 ZJ	S75 ZJ	S100 ZJ	S125 ZJ	S160 ZJ
57.5	57.5	57.5	57.5	68.5	68.5	84.5	84.5
82	-	-	82	82	82	100	100
82.6	-	-	82.6	82.6	82.6	124.5	124.5
94.5	-	-	94.5	94.5	94.5	124.6	124.6
94.6	-	-	94.6	94.6	94.6	145.5	145.5
117.5	-	-	117.5	117.5	117.5	145.5	145.5
117.5	-	-	117.5	117.5	117.5	145.5	145.5

S200 ZJ
84.5
100
124.5
124.6
145.5
145.5
145.5

S = stroke

## Weight [kg]

Piston Ø	S	Weight kg
10 mm	10 mm	0.19 kg
10 mm	20 mm	0.22 kg
10 mm	25 mm	0.23 kg
10 mm	30 mm	0.24 kg
10 mm	40 mm	0.27 kg

Piston Ø	S	Weight kg
10 mm	50 mm	0.29 kg
10 mm	75 mm	0.36 kg
10 mm	100 mm	0.42 kg
12 mm	10 mm	0.3 kg
12 mm	20 mm	0.34 kg
12 mm	25 mm	0.37 kg
12 mm	30 mm	0.39 kg
12 mm	40 mm	0.45 kg
12 mm	50 mm	0.49 kg
12 mm	75 mm	0.61 kg
12 mm	100 mm	0.73 kg
12 mm	125 mm	0.85 kg
12 mm	150 mm	0.97 kg
16 mm	10 mm	0.38 kg
16 mm	20 mm	0.44 kg
16 mm	25 mm	0.46 kg
16 mm	30 mm	0.49 kg
16 mm	40 mm	0.57 kg
16 mm	50 mm	0.63 kg
16 mm	75 mm	0.77 kg
16 mm	100 mm	0.91 kg
16 mm	125 mm	1.06 kg
16 mm	150 mm	1.2 kg
20 mm	10 mm	0.5 kg
20 mm	20 mm	0.57 kg
20 mm	25 mm	0.6 kg
20 mm	30 mm	0.64 kg
20 mm	40 mm	0.73 kg
20 mm	50 mm	0.8 kg
20 mm	75 mm	0.98 kg
20 mm	100 mm	1.16 kg
20 mm	125 mm	1.35 kg
20 mm	150 mm	1.52 kg
25 mm	10 mm	0.82 kg
25 mm	20 mm	0.92 kg
25 mm	25 mm	-
25 mm	30 mm	1.05 kg
25 mm	40 mm	1.14 kg
25 mm	50 mm	1.25 kg
25 mm	75 mm	1.56 kg
25 mm	100 mm	1.83 kg
25 mm	125 mm	2.15 kg
25 mm	150 mm	-
25 mm	160 mm	2.53 kg
25 mm	200 mm	2.97 kg
32 mm	25 mm	1.56 kg
32 mm	50 mm	1.93 kg
32 mm	75 mm	2.26 kg
32 mm	100 mm	2.62 kg

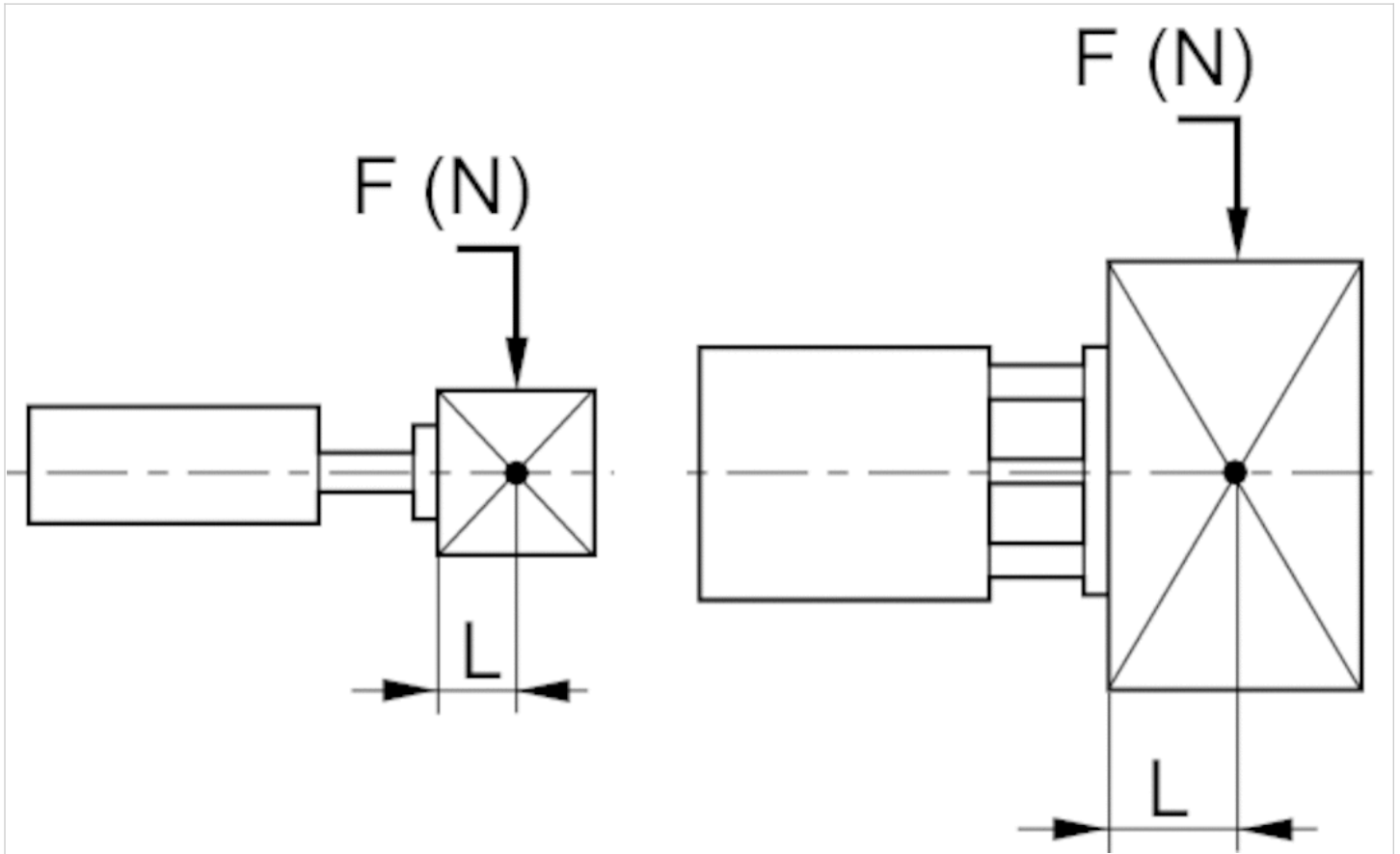
Piston Ø	S	Weight kg
32 mm	125 mm	3.06 kg
32 mm	160 mm	3.57 kg
32 mm	200 mm	4.17 kg
40 mm	25 mm	1.8 kg
40 mm	50 mm	2.2 kg
40 mm	75 mm	2.6 kg
40 mm	100 mm	3.08 kg
40 mm	125 mm	3.6 kg
40 mm	160 mm	4.1 kg
40 mm	200 mm	4.8 kg
50 mm	25 mm	3 kg
50 mm	50 mm	3.6 kg
50 mm	75 mm	4.2 kg
50 mm	100 mm	4.8 kg
50 mm	125 mm	5.6 kg
50 mm	160 mm	6.4 kg
50 mm	200 mm	7.3 kg
63 mm	25 mm	3.8 kg
63 mm	50 mm	4.5 kg
63 mm	75 mm	5.2 kg
63 mm	100 mm	5.9 kg
63 mm	125 mm	6.86 kg
63 mm	160 mm	7.78 kg
63 mm	200 mm	8.9 kg
80 mm	25 mm	7.3 kg
80 mm	50 mm	8.3 kg
80 mm	75 mm	9.3 kg
80 mm	100 mm	10.3 kg
80 mm	125 mm	11.6 kg
80 mm	160 mm	12.9 kg
80 mm	200 mm	14.5 kg
100 mm	25 mm	8.8 kg
100 mm	50 mm	10 kg
100 mm	75 mm	11.1 kg
100 mm	100 mm	12.2 kg
100 mm	125 mm	13.7 kg
100 mm	160 mm	15.2 kg
100 mm	200 mm	17 kg

S = stroke



## Dimensions

Permissible static side load  $F$  [N] at distance  $L$



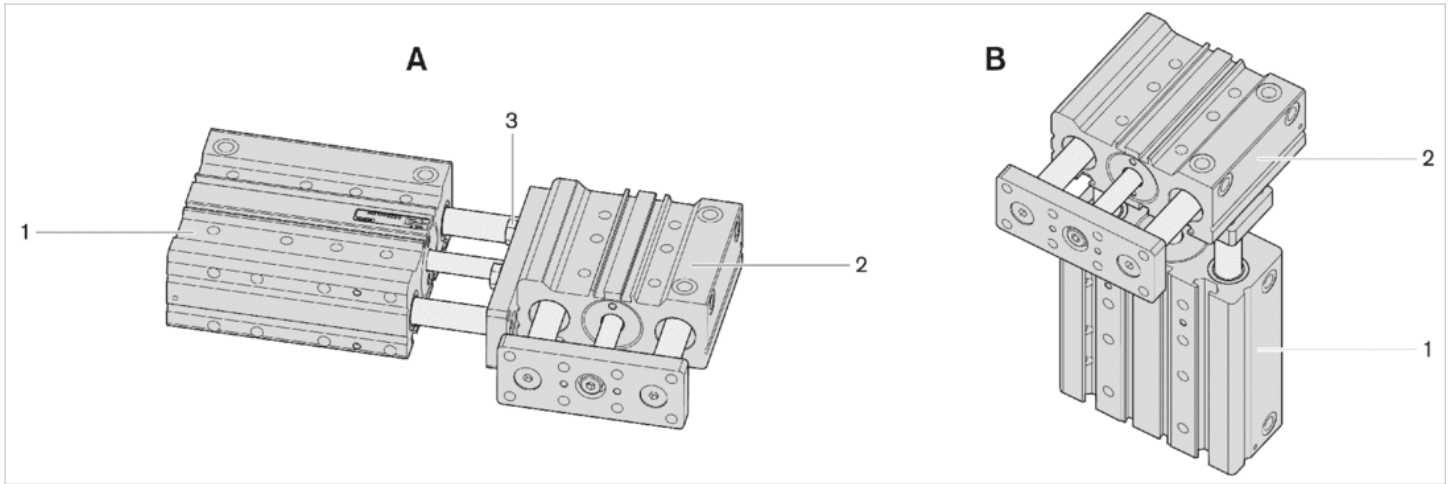
## Dimensions

Piston Ø	L	S=10	S=20	S=25	S=30	S=40	S=50	S=75	S=100	S=125	S=150	S=160	S=200
10 mm	25	12	11	11	10	10	9	8	7	-	-	-	-
12 mm	25	28	24	23	21	31	28	22	19	16	13	-	-
16 mm	50	63	56	53	51	73	67	55	49	42	35	-	-
20 mm	50	63	56	53	51	73	67	55	49	42	35	-	-
25 mm	50	53.2	48.4	-	44.4	41	38.1	59	51.9	65.4	-	57.3	50.1
32 mm	50	-	-	139	-	-	118	103	90.8	116	-	102	90.2
40 mm	50	-	-	138	-	-	118	102	90.4	116	-	102	89.9
50 mm	50	-	-	218	-	-	187	164	146	215	-	191	169
63 mm	50	-	-	217	-	-	186	163	145	214	-	190	169
80 mm	50	-	-	392	-	-	342	304	273	356	-	318	284
100 mm	50	-	-	390	-	-	341	302	272	354	-	318	284

S = stroke

## Dimensions

### GPC combinations



- 1) Cylinder 1
- 2) Cylinder 2
- 3) Screw

### Minimum strokes for cylinder 1 when using 2 assembled guide cylinders

Piston Ø	S
32 mm	25
40 mm	25
50 mm	30
63 mm	30
80 mm	35
100 mm	40

S = stroke

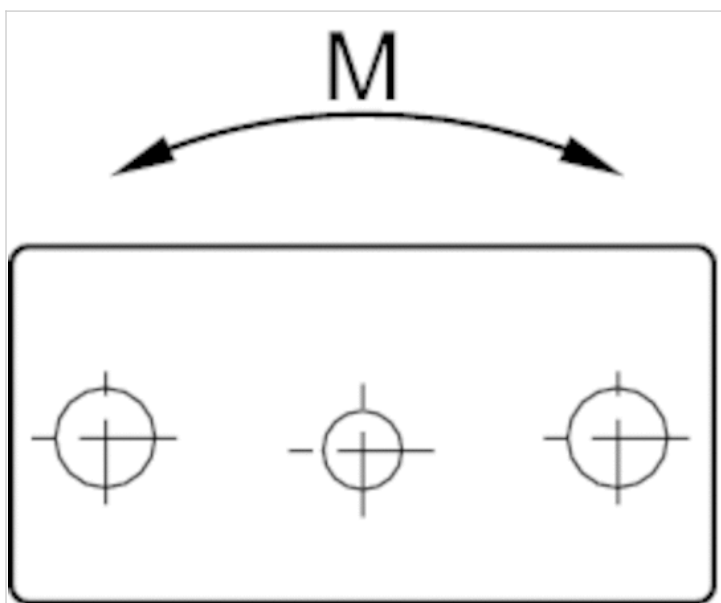
### Minimum strokes for cylinder 2 when using 2 assembled guide cylinders

Piston Ø	Ø 2	A	B	3
10 mm	12	–	–	M4x12
12 mm	16	–	–	M5x15
16 mm	20	–	–	M5x18
20 mm	25	–	–	M6x20
25 mm	32	25	15	M6x20
32 mm	40	30	30	M8x25
40 mm	50	30	30	M8x30
50 mm	63	55	30	M10x30
63 mm	80	55	55	M10x35
80 mm	100	55	30	M12x40

A = min.stroke: assembly A↔B = min.stroke: assembly B↔3 = screw

## Dimensions

### Permissible static moment M [Nm]



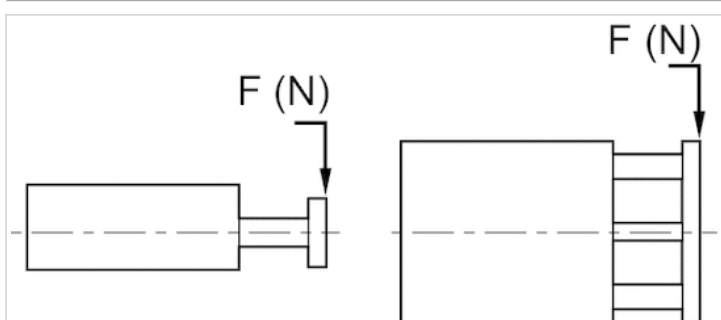
## Dimensions

Piston Ø	S=10	S=20	S=25	S=30	S=40	S=50	S=75	S=100	S=125	S=160	S=200
10 mm	1.75	1.5	1.4	1.3	1.2	1.1	0.85	0.75	–	–	–
12 mm	0.56	0.48	0.46	0.42	0.62	0.56	0.44	0.38	0.32	0.26	–
16 mm	1.48	1.32	1.25	1.2	1.72	1.57	1.29	1.15	0.99	0.82	–
20 mm	1.7	1.51	1.43	1.38	1.97	1.81	1.49	1.32	1.13	0.95	–
25 mm	3.11	2.6	–	2.23	1.96	1.74	2.41	2.02	2.42	2.05	1.75
32 mm	–	–	8.17	–	–	6.4	5.26	4.47	5.45	4.67	4.01
40 mm	–	–	9.19	–	–	7.22	5.95	5.05	6.17	5.29	4.55
50 mm	–	–	17	–	–	13.6	11.4	9.73	13.6	11.8	10.3
63 mm	–	–	20.1	–	–	16.1	13.4	11.5	16.1	14	12.2
80 mm	–	–	42.1	–	–	34.9	29.8	26	32.4	28.5	24.9
100 mm	–	–	47.8	–	–	39.7	33.9	29.6	37	32.5	28.5

S = stroke

## Dimensions

### Permissible static side force F [N]



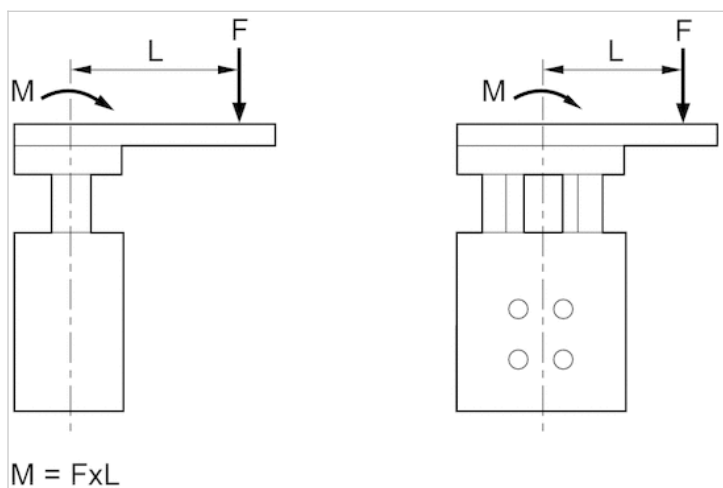
## Dimensions

Piston Ø	S=10	S=20	S=25	S=30	S=40	S=50	S=75	S=100	S=125	S=150	S=160	S=200
25 mm	106	88	–	76	66	59	82	69	82	–	70	59
32 mm	–	–	216	–	–	169	139	118	144	–	124	106
40 mm	–	–	214	–	–	168	138	118	144	–	123	106
50 mm	–	–	327	–	–	262	218	187	261	–	227	197
63 mm	–	–	324	–	–	260	217	186	260	–	226	196
80 mm	–	–	554	–	–	459	392	342	427	–	374	328
100 mm	–	–	549	–	–	456	390	341	425	–	373	327

S = stroke

## Dimensions

Permissible static moment M [Nm]



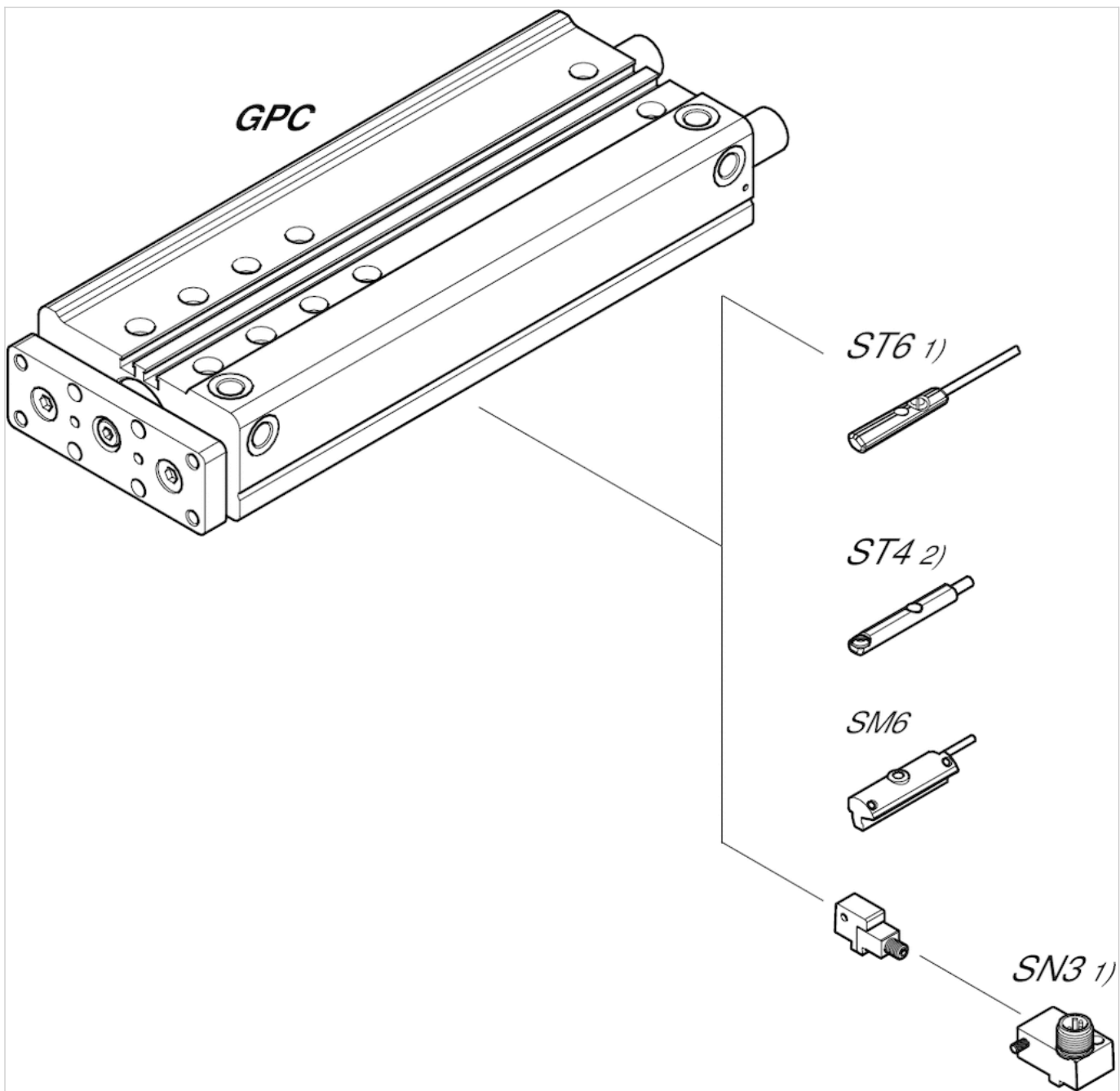
## Dimensions

Piston Ø	S 5–30	S >30	S 35–50	S 55–100	S >100
10 mm	1,5	1,5	–	–	–
12 mm	2	3,5	–	–	–
16 mm	4,5	14	–	–	–
20 mm	4,5	14	–	–	–
25 mm	4,6	–	4,9	9,4	14,5
32 mm	15,2	–	16,5	17,2	26,4
40 mm	15,3	–	15,3	17,2	26,4
50 mm	26	–	26	28,9	51,6
63 mm	26	–	26	28,9	51,6
80 mm	52,1	–	52,1	57,9	90,3
100 mm	52,3	–	52,3	57,9	90,4

S = stroke

## Accessories overview

## Overview drawing



1)  $\leq \text{Ø}12$  mm (GPC-BV, GPC-E, GPC-TL)

2) Only for  $\text{Ø}10$  mm (GPC-BV) and all  $\text{Ø}$  (GPC-ST)

NOTE:

This overview drawing is only for orientation to indicate where the various accessory parts can be fastened to the cylinder. The illustration has been simplified for this purpose. It is thus not possible to derive the dimensions from this overview.

# Guide cylinders, Series GPC-BV

- Ø 10-63 mm
- double-acting
- ball bearing
- Cushioning elastic
- with magnetic piston



Working pressure min./max.	See table below
Ambient temperature min./max.	-10 ... 70 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m <sup>3</sup>
Pressure for determining piston forces	6.3 bar
Weight	See table below



## Technical data

Piston Ø	10 mm	12 mm	16 mm	20 mm	25 mm	32 mm	40 mm
Stroke 10	R402000314	0822060100	0822061100	0822062100	0822063100	-	-
20	R402000316	0822060101	0822061101	0822062101	0822063101	-	-
25	R402000317	0822060107	0822061107	0822062107	0822063107	0822064100	0822065100
30	R402000318	0822060102	0822061102	0822062102	0822063102	-	-
40	R402000320	0822060103	0822061103	0822062103	0822063103	-	-
50	R402000322	0822060104	0822061104	0822062104	0822063104	0822064101	0822065101
75	R402000327	0822060105	0822061105	0822062105	0822063105	0822064102	0822065102
100	R402000332	0822060106	0822061106	0822062106	0822063106	0822064103	0822065103
125	-	0822060124	0822061124	0822062124	0822063124	0822064104	0822065104
150	-	0822060129	0822061129	0822062129	0822063129	-	-
160	-	-	-	-	0822063131	0822064105	0822065105
200	-	-	-	-	0822063139	0822064106	0822065106

Piston Ø	50 mm	63 mm
Stroke 10	-	-
20	-	-
25	0822066100	0822067100
30	-	-

Piston Ø	50 mm	63 mm
40	-	-
50	0822066101	0822067101
75	0822066102	0822067102
100	0822066103	0822067103
125	0822066104	0822067104
150	-	-
160	0822066105	0822067105
200	0822066106	0822067106

## Technical data

Piston Ø	10 mm	12 mm	16 mm	20 mm
Port	M5	M5	M5	M5
Working pressure min./max.	2 ... 8 bar	2 ... 8 bar	2 ... 10 bar	2 ... 10 bar
Retracting piston force	42 N	53 N	95 N	148 N
Extracting piston force	49 N	71 N	127 N	198 N
Speed max.	0.5 m/s	0.5 m/s	0.5 m/s	0.5 m/s
Impact energy	0.04 J	0.1 J	0.11 J	0.15 J

Piston Ø	25 mm	32 mm	40 mm	50 mm
Port	G 1/8	G 1/8	G 1/8	G 1/4
Working pressure min./max.	1.5 ... 10 bar	1.3 ... 10 bar	1 ... 10 bar	1 ... 10 bar
Retracting piston force	260 N	435 N	720 N	1110 N
Extracting piston force	309 N	507 N	792 N	1237 N
Speed max.	0.8 m/s	0.6 m/s	0.6 m/s	0.6 m/s
Impact energy	0.35 J	0.4 J	0.52 J	0.64 J

Piston Ø	63 mm
Port	G 1/4
Working pressure min./max.	1 ... 10 bar
Retracting piston force	1837 N
Extracting piston force	1964 N
Speed max.	0.6 m/s
Impact energy	0.75 J

## Technical information

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

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

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

Note: Only the Ø10 variants fits to sensor series ST4. The sensor series ST6 and SN3 can be used for all other Ø variants.

## Technical information

Material	
Housing	Aluminum, anodized
Seal	Polyurethane
Front plate	Steel, galvanized
Guide rod	Steel, hardened
Bearing	Steel, hardened
Piston rod	Stainless steel





## Dimensions

Piston Ø	A RTxLB	A1	B ØdxLA	B1 ØdxDxLA	C RTxLB	D Ø
10 mm	M4x6	–	4H7x4	4H7x5x4	M4x6	3.2
12 mm	M5x8	–	4H7x4	4H7x5x4	M5x8	4.2
16 mm	M5x8	135°	4H7x4	4H7x5x4	M5x8	4.2
20 mm	M6x10	135°	4H7x4	4H7x5x4	M6x10	5.2

Piston Ø	D1 S=10-30	D1 S=40-100	D1 S>100	D2	D4	DD	DX
10 mm	13.5	13.5	13.5	7	–	17.4	6
12 mm	0	18.4	33.4	14.5	40	20	8
16 mm	0	20.8	35.8	15.8	47	28.5	10
20 mm	0	20.8	35.8	16.5	54	30.5	10

Piston Ø	E RTxLB	E1	E2	F Ø 1)	G Ø 2)	H Ø 2)	K	L1
10 mm	M4x8	50	21	M4	–	–	M5	20 ±0,04
12 mm	M5x8	58	30.5	M4	4.5	4H9	M5	23 ±0,04
16 mm	M5x8	68	33	M4	5.5	4H9	M5	28 ±0,04
20 mm	M5x10	80	36	M5	5.5	4H9	M5	30 ±0,04

Piston Ø	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11
10 mm	10.5	3	–	20	15	–	–	–	–	–
12 mm	15	4	22	50	22	–	–	–	–	–
16 mm	16.5	4	25	61	25	43	6.15	12	1.5	1.5
20 mm	18	3.5	24	70	29	50	6.15	12	1.5	1.5

Piston Ø	L12	L13	L14 S=10	L14 S=20	L14 S>20	L15 S=40	L15 S>40
10 mm	–	15	–	20	20	55	55
12 mm	–	14.5	–	18	22	–	58.5
16 mm	5.5	14	18	25	25	–	64
20 mm	5.5	15	16	24	24	–	63

Piston Ø	L17	L18	L19	L20 S=10	L20 S>10	L21 S=10	L21 S>10
10 mm	15	–	8	20	20	13 1)	13
12 mm	4	22	8	20	20	18	18
16 mm	4	25	8	18	25	20.5	20.5
20 mm	4.5	24	8	20	30	18	23

Piston Ø	L22 S≤40	L22 S>40	L24 S=10	L24 S>10	L25	L26	L27
10 mm	48	48	25	25	20	–	20
12 mm	–	48	25.5	25.5	20	–	40
16 mm	–	58	26.5	26.5	25	20	40
20 mm	–	68	23	27	30	25	50

Piston Ø	L28	L29	L30	L31	LJ1	LJ2	LM1	LM2	LM3
10 mm	10	20	–	–	15.5	15	5	13.5	48

Piston Ø	L28	L29	L30	L31	LJ1	LJ2	LM1	LM2	LM3
12 mm	20	20	–	–	24.8	17.5	8	12.7	55
16 mm	20	25	20 ±0,04	22	27	21	8	13.5	65
20 mm	25	30	25 ±0,04	25	26.5	25	10	15.5	77

Piston Ø	LM4	PL	T	TT	ZA	ZJ S=10-30	ZJ S=40-100
10 mm	19	8	5.5	–	36	63	63
12 mm	27	8.5	5	–	34.4	47.1	65.5
16 mm	30	8.8	6.5	N6	36	49.5	70.3
20 mm	33	10	5.5	N6	36	51.5	72.3

S = stroke

To determine the cylinder length (ZA) for intermediate strokes (i.e. stroke 10 with dia. 40), the next available standard stroke size must be used

- 1) Through hole with thread
- 2) through-hole

Two holes C-C 10 mm.



## Dimensions

Piston Ø	A RTxLB	A1	B ØdxLA	B1 ØdxD	C RTxLB	D Ø 1)	D2	D4	DX	E RTxLB	E1	E2
25 mm	M6x10	135°	4x4	4x5	M6x10	5.5	18	59	12	M6x12	95	43
32 mm	M8x14	135°	4x4	4x5	M8x14	7.4	23	75.6	16	M6x12	114	48.5
40 mm	M8x14	135°	4x4	4x5	M8x14	7.4	23	86	16	M8x16	124	54.5
50 mm	M10x20	135°	5x5	5x6	M10x20	9.3	27.5	104	20	M8x16	148	64
63 mm	M10x20	135°	5x5	5x6	M10x20	9.3	35	124	20	M10x20	162	78.5

Piston Ø	F Ø 1)	G Ø 2)	H Ø 2)	K EE	L1	L2	L3	L4	L5	L6	L7	L8	L9
25 mm	M6	6.5	4H8	G 1/8	35 ±0,1	20.5	4.5	25 ±0,1	85	34	52	6.15	12
32 mm	M8	6.5	4H8	G 1/8	44 ±0,1	24	5	33 ±0,1	105	26	70	8.2	16.7
40 mm	M8	8.5	4H8	G 1/8	53 ±0,15	27	6	40 ±0,15	110	42	80	8.2	16.7
50 mm	M8	8.5	4H8	G 1/4	66 ±0,15	32	8	48 ±0,15	133	34.5	93	8.2	16.7
63 mm	M10	10.5	5H8	G 1/4	84 ±0,15	39	8	60 ±0,15	147	62	112	10.2	20.3

Piston Ø	L10	L11	L12	L13	L15	L17	L18	L19	L22	L25	L26	L27	L28	L29	L30	L31	LJ1
25 mm	1.5	1.5	5.5	16.5	25	5.5	25	8	32	32	30	81	23	32 ±0,1	30 ±0,2	24	29.6
32 mm	2.2	2.8	9	20.5	33	6.5	33	10	42	42	32	97	30	42 ±0,1	32 ±0,2	25	40
40 mm	2.2	2.8	9	20	40	6	40	10	53	53	42	107	30	53 ±0,15	42 ±0,2	32.5	37.8
50 mm	2.2	2.8	9	23	48	7.5	48	12	63	63	53	134	40	63 ±0,15	53 ±0,2	40	54.5
63 mm	6	6	16	24	60	11	60	12	80	80	63	140	48	80 ±0,15	63 ±0,2	48	57

Piston Ø	LJ2	LM1	LM2	LM3	LM4	PL1	PL2	PL3	PL4	T	T1	T2	T3
25 mm	32	10	15.5	93	33	11	11	11	11	6.5	18 ±0,4	32,5 ±0,4	30 ±0,05
32 mm	40.5	12	18.5	112	43	13.5	13.5	13.5	13.5	8	23 ±0,4	41 ±0,4	35 ±0,05
40 mm	44	12	19.5	122	43	12	12	12	12	8	23 ±0,4	41 ±0,4	35,5 ±0,1
50 mm	50.5	15	23.5	146	52	13	13	13	13	7.5	27,5 ±0,4	47,5 ±0,4	41 ±0,1
63 mm	59	15	24	160	67	13.7	13.7	13.7	13.7	11	35 ±0,4	49,5 ±0,5	39 ±0,1

Piston Ø	T4	TT	ZA
25 mm	20,5 ±0,05	N6	42 3)
32 mm	24 ±0,05	N8	46.5
40 mm	27 ±0,1	N8	44
50 mm	32 ±0,1	N8	46
63 mm	39 ±0,1	N10	51

S = stroke

To determine the cylinder length (ZA) for intermediate strokes (i.e. stroke 10 with dia. 40), the next available standard stroke size must be used

1) Through hole with thread

2) through-hole

3) For stroke 10/150, ZA = 52, for stroke 25, ZA = 47

Two holes C-C 10 mm.

## Dimensions

Piston Ø	S=10 D1	S=20 D1	S=25 D1	S=30 D1	S=40 D1	S=50 D1
25 mm	19	19	19	19	29	29
32 mm	-	-	20	20	20	20
40 mm	-	-	21.5	21.5	21.5	21.5
50 mm	-	-	20	20	20	20
63 mm	-	-	14	14	14	14

Piston Ø	S=75 D1	S=100 D1	S=125 D1	S=150 D1	S=160 D1	S=200 D1
25 mm	29	29	47	47	47	47
32 mm	35	35	51	51	51	51
40 mm	37	37	53	53	53	53
50 mm	46	46	64	64	64	64
63 mm	40	40	58	58	58	58

Piston Ø	S=10 L14	S=20 L14	S=25 L14	S=30 L14	S=40 L14	S=50 L14
25 mm	25	25	25	25	25	25
32 mm	30	30	30	33	33	33
40 mm	30	30	30	40	40	40
50 mm	25	25	25	48	48	48
63 mm	28	28	28	28	28	28

Piston Ø	S=75 L14	S=100 L14	S=125 L14	S=160 L14	S=200 L14
25 mm	25	25	25	25	25
32 mm	33	33	33	33	33
40 mm	40	40	40	40	40
50 mm	48	48	48	48	48
63 mm	60	60	60	60	60

S = stroke

## Dimensions

Piston Ø	S=10 N	S=20 N	S=25 N	S=30 N	S=40 N	S=50 N	S=75 N
25 mm	1	1	1	1	1	2	3
32 mm	-	-	1	1	1	1	2
40 mm	-	-	1	1	1	1	2
50 mm	-	-	1	1	1	1	1
63 mm	-	-	1	1	1	1	1

Piston Ø	S=100 N	S=125 N	S=160 N	S=200 N	S=40 L16	S=50 L16
25 mm	3	3	3	3	65.5	-
32 mm	3	3	3	3	-	76
40 mm	2	3	3	3	-	-
50 mm	2	2	3	3	-	-
63 mm	1	2	2	3	-	-

Piston Ø	S=100 L16	S=125 L16	S=160 L16	S=200 L16
25 mm	12.5	150.5	185.5	225.5
32 mm	-	151	186	226
40 mm	-	-	184	224
50 mm	-	148	-	223
63 mm	127	-	187	-

## Dimensions

Piston Ø	S=10 M	S=20 M	S=25 M	S=30 M	S=40 M	S=50 M	S=75 M
25 mm	1	1	1	1	1	1	2
32 mm	-	-	1	1	1	1	2
40 mm	-	-	1	1	1	1	1
50 mm	-	-	1	1	1	1	1
63 mm	-	-	1	1	1	1	1

Piston Ø	S=100 M	S=125 M	S=160 M	S=200 M	S=40 L24	S=50 L24
25 mm	3	3	3	3	60	70
32 mm	2	3	3	3	-	-
40 mm	2	2	3	3	-	-
50 mm	1	2	2	3	-	-
63 mm	1	1	2	2	-	-

Piston Ø	S=75 L24	S=100 L24	S=125 L24	S=160 L24	S=200 L24
25 mm	95	-	145	180	220
32 mm	-	122.5	-	182.5	222.5
40 mm	91	-	-	-	216
50 mm	-	116	-	176	-
63 mm	-	-	140	-	217

S = stroke

## Dimensions

Piston Ø	S=20 L20	S=25 L20	S=30 L20	S=40 L20	S=50 L20	S=75 L20
25 mm	22	32	32	32	32	32
32 mm	35	35	42	42	42	42
40 mm	30	30	53	53	53	53
50 mm	30	30	30	30	30	63
63 mm	30	30	30	30	30	30

Piston Ø	S=100 L20	S=125 L20	S=160 L20	S=200 L20	S=20 L21	S=25 L21
25 mm	32	32	32	32	19	24
32 mm	42	42	42	42	27.5	27.5
40 mm	53	53	53	53	25	25
50 mm	63	63	63	63	27	27
63 mm	30	30	30	30	27	27

Piston Ø	S=30 L21	S=40 L21	S=50 L21	S=75 L21	S=100 L21	S=125 L21
25 mm	24	24	24	24	24	24
32 mm	31	31	31	31	31	31
40 mm	36.5	36.5	36.5	36.5	36.5	36.5
50 mm	27	27	27	43.5	43.5	43.5
63 mm	27	27	27	52	52	52

Piston Ø	S=160 L21	S=200 L21
25 mm	24	24
32 mm	31	31
40 mm	36.5	36.5
50 mm	43.5	43.5
63 mm	52	52

S = stroke

## Dimensions

Piston Ø	S=10 L34	S=20 L34	S=25 L34	S=30 L34	S=40 L34	S=50 L34
25 mm	26	29	29	29	29	29
32 mm	35.5	35.5	35.5	37	37	37
40 mm	35	35	35	40	40	40
50 mm	35.5	35.5	35.5	47	47	47
63 mm	38	38	38	38	38	38

Piston Ø	S=75 L34	S=100 L34	S=125 L34	S=160 L34	S=200 L34	S=10 L35
25 mm	29	29	29	29	29	4
32 mm	37	37	37	37	37	4
40 mm	40	40	40	40	40	4
50 mm	47	47	47	47	47	4
63 mm	54	54	54	54	54	4

Piston Ø	S=20 L35	S=25 L35	S=30 L35	S=40 L35	S=50 L35	S=75 L35
25 mm	4	4	4	6	6	8
32 mm	4	4	4	4	4	6
40 mm	4	4	4	4	4	6
50 mm	4	4	4	4	4	4
63 mm	4	4	4	4	4	4

Piston Ø	S=100 L35	S=125 L35	S=160 L35	S=200 L35
25 mm	8	10	10	10
32 mm	8	8	10	10
40 mm	6	6	8	10
50 mm	6	6	8	8
63 mm	4	6	6	8

S = stroke



## Dimensions

Piston Ø	S=10 L36	S=20 L36	S=25 L36	S=30 L36	S=40 L36	S=50 L36
25 mm	4	4	4	4	6	6
32 mm	4	4	4	4	4	6
40 mm	4	4	4	4	4	4
50 mm	4	4	4	4	4	4
63 mm	4	4	4	4	4	4

Piston Ø	S=75 L36	S=100 L36	S=125 L36	S=160 L36	S=200 L36	S=10 ZJ
25 mm	8	10	10	10	10	76.5
32 mm	6	8	10	10	10	-
40 mm	6	6	8	10	10	-
50 mm	4	6	8	8	10	-
63 mm	4	6	6	8	10	-

Piston Ø	S=20 ZJ	S=25 ZJ	S=30 ZJ	S=40 ZJ	S=50 ZJ	S=75 ZJ
25 mm	76.5	76.5	76.5	86.5	86.5	86.5
32 mm	-	85	-	-	85	100
40 mm	-	85	-	-	85	100.5
50 mm	-	89.5	-	-	89.5	115.5
63 mm	-	89.5	-	-	89.5	115.5

Piston Ø	S=100 ZJ	S=125 ZJ	S=160 ZJ	S=200 ZJ
25 mm	86.5	104.5	104.5	104.5
32 mm	100	116	116	116
40 mm	100.5	116.5	116.5	116.5
50 mm	115.5	133.5	133.5	133.5
63 mm	115.5	133.5	133.5	133.5

## Weight [kg]

Piston Ø	S	Weight kg
10 mm	10 mm	0.19 kg
10 mm	20 mm	0.22 kg
10 mm	25 mm	0.23 kg
10 mm	30 mm	0.24 kg
10 mm	40 mm	0.27 kg
10 mm	50 mm	0.29 kg
10 mm	75 mm	0.36 kg
10 mm	100 mm	0.42 kg
12 mm	10 mm	0.28 kg
12 mm	20 mm	0.32 kg
12 mm	25 mm	0.35 kg
12 mm	30 mm	0.35 kg
12 mm	40 mm	0.37 kg
12 mm	50 mm	0.43 kg

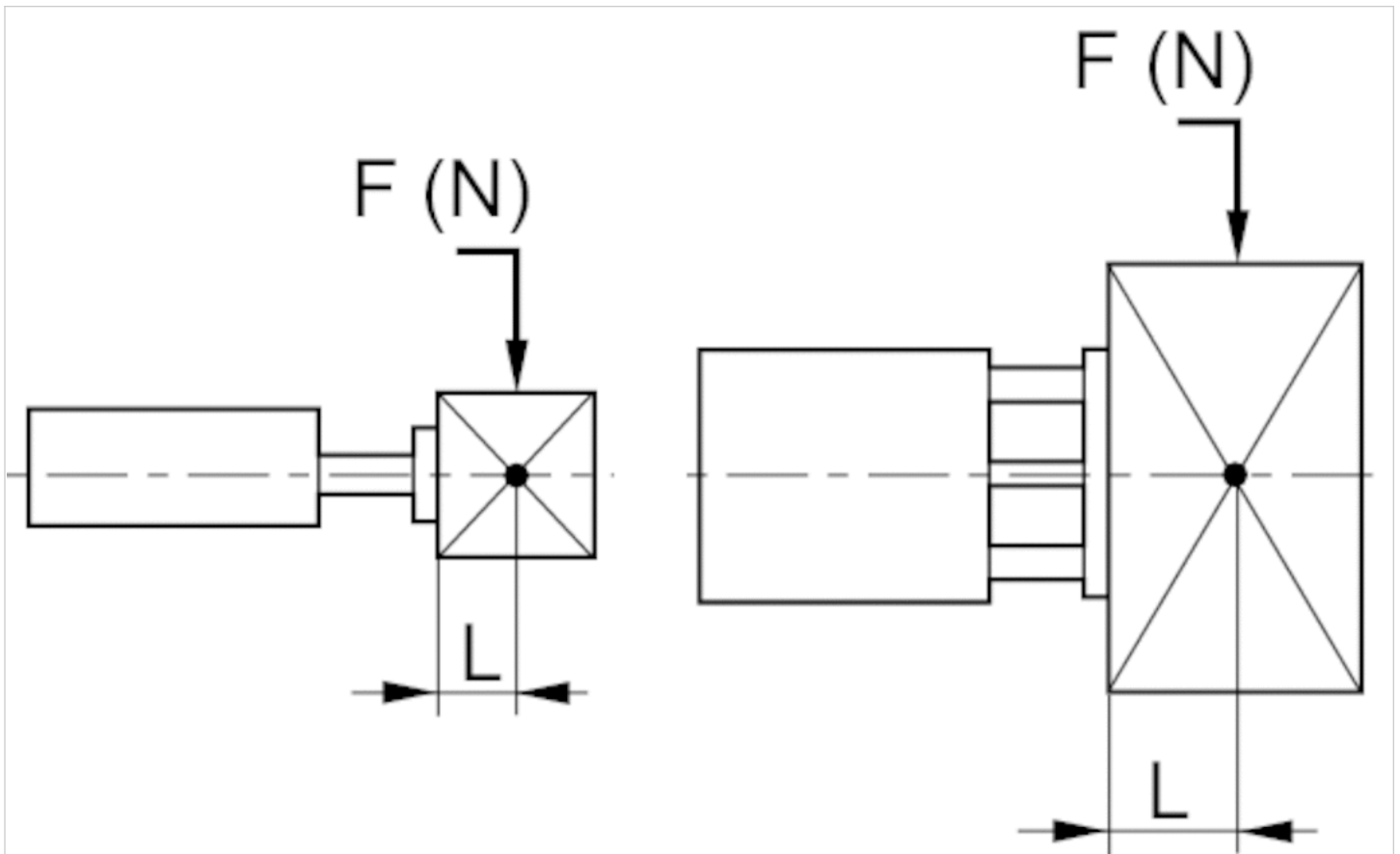
Piston Ø	S	Weight kg
12 mm	75 mm	0.48 kg
12 mm	100 mm	0.7 kg
12 mm	125 mm	0.82 kg
12 mm	150 mm	0.94 kg
16 mm	10 mm	0.36 kg
16 mm	20 mm	0.41 kg
16 mm	25 mm	0.44 kg
16 mm	30 mm	0.47 kg
16 mm	40 mm	0.56 kg
16 mm	50 mm	0.61 kg
16 mm	75 mm	0.74 kg
16 mm	100 mm	0.88 kg
16 mm	125 mm	1.03 kg
16 mm	150 mm	1.16 kg
20 mm	10 mm	0.48 kg
20 mm	20 mm	0.54 kg
20 mm	25 mm	0.58 kg
20 mm	30 mm	0.61 kg
20 mm	40 mm	0.72 kg
20 mm	50 mm	0.79 kg
20 mm	75 mm	0.95 kg
20 mm	100 mm	1.12 kg
20 mm	125 mm	1.35 kg
20 mm	150 mm	1.47 kg
25 mm	10 mm	0.9 kg
25 mm	20 mm	0.93 kg
25 mm	25 mm	-
25 mm	30 mm	1.03 kg
25 mm	40 mm	1.13 kg
25 mm	50 mm	1.22 kg
25 mm	75 mm	1.45 kg
25 mm	100 mm	1.69 kg
25 mm	125 mm	1.95 kg
25 mm	150 mm	-
25 mm	160 mm	2.28 kg
25 mm	200 mm	2.67 kg
32 mm	25 mm	1.44 kg
32 mm	50 mm	1.77 kg
32 mm	75 mm	2.1 kg
32 mm	100 mm	2.41 kg
32 mm	125 mm	2.77 kg
32 mm	160 mm	3.22 kg
32 mm	200 mm	3.74 kg
40 mm	25 mm	1.72 kg
40 mm	50 mm	2.1 kg
40 mm	75 mm	2.5 kg
40 mm	100 mm	2.9 kg
40 mm	125 mm	3.3 kg
40 mm	160 mm	3.76 kg

Piston Ø	S	Weight kg
40 mm	200 mm	4.4 kg
50 mm	25 mm	2.7 kg
50 mm	50 mm	3.2 kg
50 mm	75 mm	3.9 kg
50 mm	100 mm	4.4 kg
50 mm	125 mm	5 kg
50 mm	160 mm	5.8 kg
50 mm	200 mm	6.6 kg
63 mm	25 mm	3.55 kg
63 mm	50 mm	4.2 kg
63 mm	75 mm	4.96 kg
63 mm	100 mm	5.56 kg
63 mm	125 mm	6.27 kg
63 mm	160 mm	7.1 kg
63 mm	200 mm	8 kg

S = stroke

## Dimensions

Permissible static side load  $F$  [N] at distance  $L$



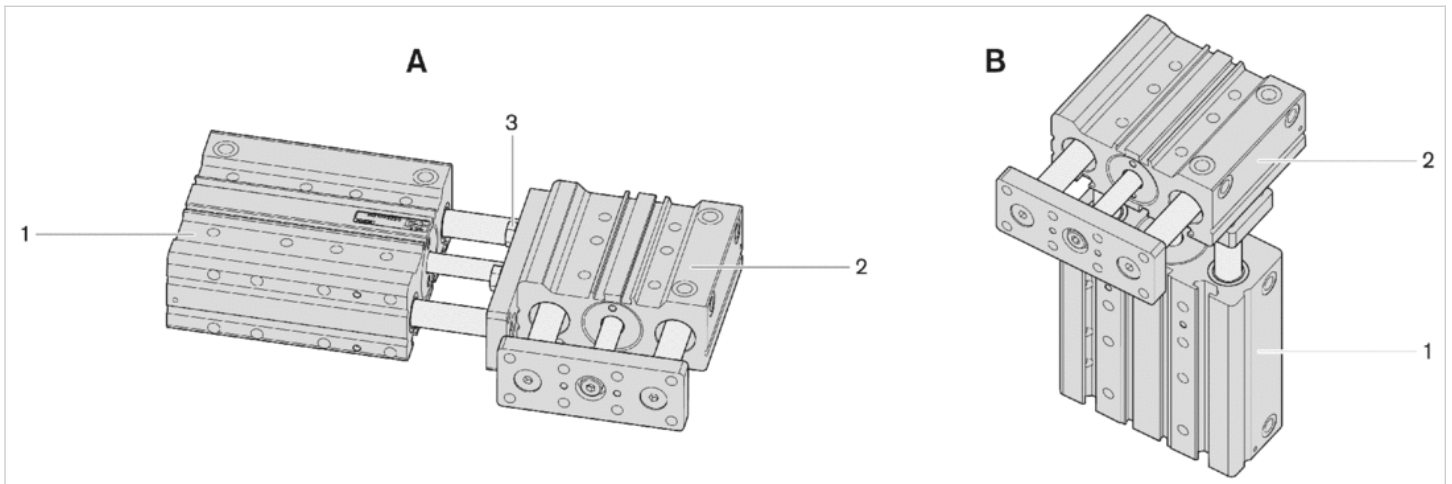
## Dimensions

Piston Ø	L	S=10	S=20	S=25	S=30	S=40	S=50	S=75	S=100	S=125	S=150	S=160	S=200
10 mm	25	10	9	8	8	7	6	5	5	-	-	-	-
12 mm	25	19	17	16	15	23	22	20	19	19	17	-	-
16 mm	50	27	24	23	22	58	56	51	48	44	40	-	-
20 mm	50	27	24	23	22	58	56	51	48	44	40	-	-
25 mm	50	81.4	75	-	69.5	82.3	77.4	67.3	59.5	73.2	-	64.5	56.8
32 mm	50	-	-	89.9	-	-	76.1	93.2	83	94.9	-	84	74.3
40 mm	50	-	-	89.2	-	-	75.6	92.7	82.7	94.5	-	83.7	74.1
50 mm	50	-	-	110	-	-	94	135	121	136	-	121	108
63 mm	50	-	-	110	-	-	93.5	134	120	135	-	121	107

S = stroke

## Dimensions

### GPC combinations



- 1) Cylinder 1
- 2) Cylinder 2
- 3) Screw

### Minimum strokes for cylinder 1 when using 2 assembled guide cylinders

Piston Ø	S
32 mm	25
40 mm	25
50 mm	30
63 mm	30

S = stroke

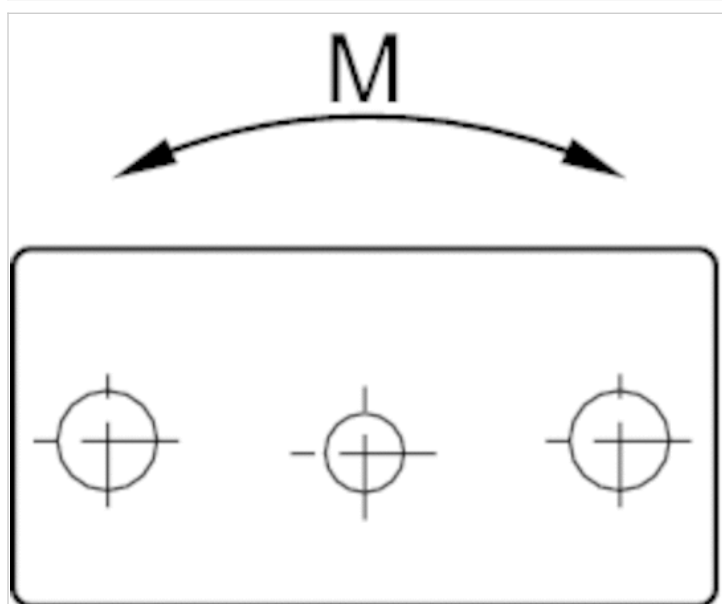
### Minimum strokes for cylinder 2 when using 2 assembled guide cylinders

Piston Ø	Ø 2	A	B	3
10 mm	12	–	–	M4x12
12 mm	16	–	–	M5x15
16 mm	20	–	–	M5x18
20 mm	25	–	–	M6x20
25 mm	32	25	15	M6x20
32 mm	40	30	30	M8x25
40 mm	50	30	30	M8x30
50 mm	63	55	30	M10x30

A = min.stroke: assembly A↔B = min.stroke: assembly B↔3 = screw

## Dimensions

### Permissible static moment M [Nm]



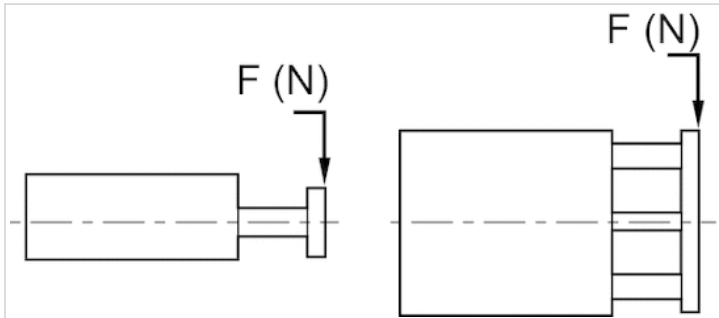
## Dimensions

Piston Ø	S=10	S=20	S=25	S=30	S=40	S=50	S=75	S=100	S=125	S=160	S=200
10 mm	0.35	0.31	0.29	0.27	0.25	0.23	0.17	0.14	–	–	–
12 mm	0.38	0.34	0.32	0.3	0.46	0.44	0.4	0.38	0.36	0.34	–
16 mm	0.63	0.56	0.54	0.52	1.36	1.32	1.2	1.13	1.03	0.94	–
20 mm	0.73	0.65	0.62	0.59	1.57	1.51	1.38	1.3	1.19	1.08	–
25 mm	4.19	3.65	3.23	3.23	3.56	3.26	2.68	2.28	2.67	2.29	1.97
32 mm	–	–	5.33	–	–	4.15	4.67	4.02	4.4	3.8	3.28
40 mm	–	–	5.99	–	–	4.68	5.27	4.54	4.99	4.3	3.72
50 mm	–	–	8.83	–	–	6.96	9.07	7.91	8.55	7.45	6.5
63 mm	–	–	10.4	–	–	8.23	10.8	9.38	10.2	8.85	7.72

S = stroke

## Dimensions

### Permissible static side force F [N]

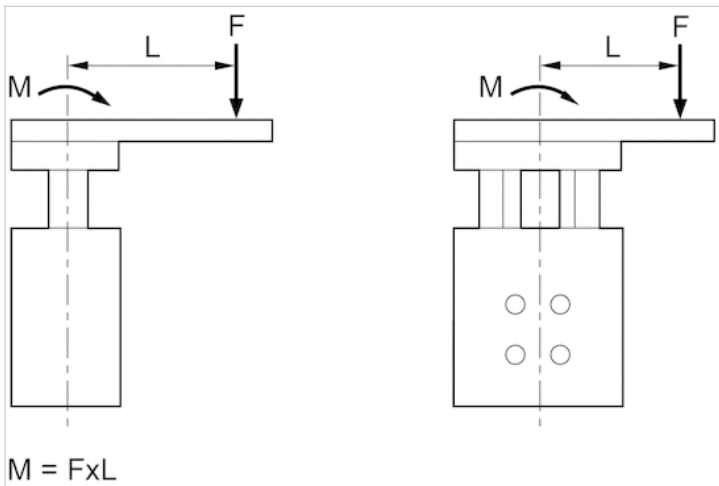


## Dimensions

Piston Ø	S=10	S=20	S=25	S=30	S=40	S=50	S=75	S=100	S=125	S=150	S=160	S=200
25 mm	142	124	-	109	121	110	91	77	90	-	77	66
32 mm	-	-	141	-	-	110	123	106	116	-	100	86
40 mm	-	-	139	-	-	109	123	106	116	-	100	86
50 mm	-	-	170	-	-	134	175	152	164	-	143	125
63 mm	-	-	168	-	-	133	173	151	164	-	143	125

## Dimensions

### Permissible static moment M [Nm]



## Dimensions

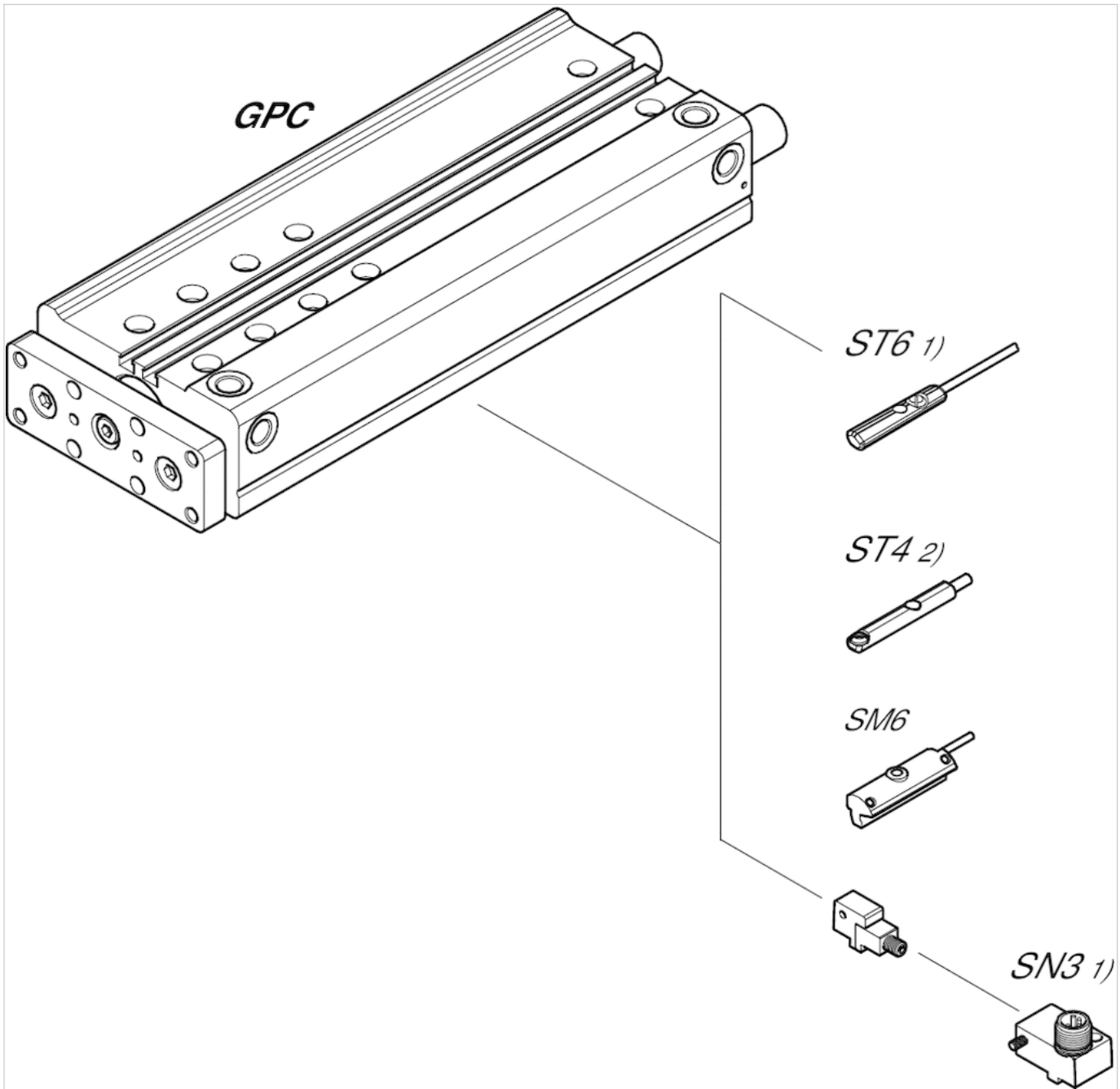
Piston Ø	S=5-30	S>30	S=35-50	S=55-100	S>100
10 mm	0.8	0.8	-	-	-
12 mm	1.5	2	-	-	-
16 mm	2	5	-	-	-
20 mm	2	5	-	-	-
25 mm	7.5	-	10.6	10.8	16.5
32 mm	9.9	-	10.6	16.2	22
40 mm	9.9	9.9	9.9	16.2	22

Piston Ø	S=5-30	S>30	S=35-50	S=55-100	S>100
50 mm	12.8	12.8	12.8	24.6	32.9
63 mm	12.8	12.8	12.8	24.6	32.9

S = stroke

## Accessories overview

### Overview drawing



1) ≤ Ø12 mm (GPC-BV, GPC-E, GPC-TL)

2) Only for Ø10 mm (GPC-BV) and all Ø (GPC-ST)

NOTE:

This overview drawing is only for orientation to indicate where the various accessory parts can be fastened to the cylinder. The illustration has been simplified for this purpose. It is thus not possible to derive the dimensions from this overview.

# Guide cylinders, Series GPC-E

- Ø 12-20 mm
- double-acting
- Plain bearing
- Cushioning hydraulic non-adjustable
- with magnetic piston
- Easy2Combine capable with connection kit



Working pressure min./max.	See table below
Ambient temperature min./max.	0 ... 65 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m <sup>3</sup>
Pressure for determining piston forces	6.3 bar
Weight	See table below



## Technical data

Piston Ø	12 mm	16 mm	20 mm
Stroke 25	0822060407	0822061407	0822062407
50	0822060404	0822061404	0822062404
75	0822060405	0822061405	0822062405
100	0822060406	0822061406	0822062406
125	0822060424	0822061424	0822062424
150	0822060429	0822061429	0822062429

## Technical data

Piston Ø	12 mm	16 mm	20 mm
Port	M5	M5	M5
Working pressure min./max.	2 ... 8 bar	2 ... 10 bar	2 ... 10 bar
Retracting piston force	53 N	95 N	148 N
Extracting piston force	71 N	127 N	198 N
Speed max.	0.5 m/s	0.5 m/s	0.5 m/s
Impact energy	0.1 J	0.11 J	0.15 J



## Technical information

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

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

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

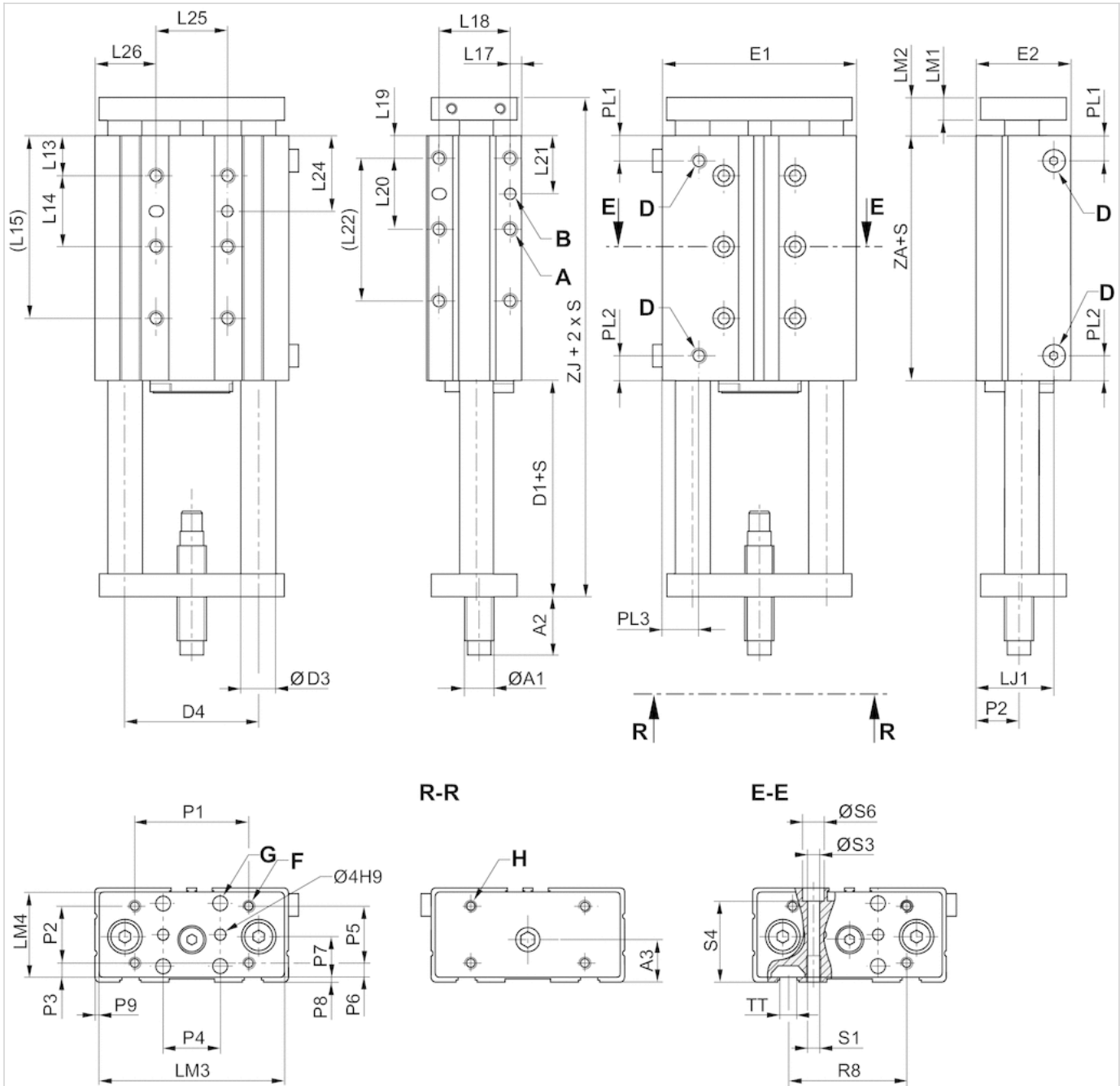
Note: Hydraulic shock absorber on rear side are included in scope of delivery

## Technical information

Material	
Housing	Aluminum, anodized
Seal	Polyurethane
Front plate	Steel, galvanized
Guide rod	Stainless steel
Bearing	Sintered bronze
Piston rod	Stainless steel

# Dimensions

## Dimensions



S = stroke

## Dimensions

Piston Ø	A 1)	Ø A1	A2 2)	A2 3)	A3	B 1)	D	D1	D3	D4	E1	E2	F	G	H	L 4)	L13
12 mm	M5x8	M8	5	19	13.5	4 H7x4	M5	19.2	10	40	58	30.5	M4	4.5	M4	14	14.5
16 mm	M5x8	M10	5	29	14.8	4 H7x4	M5	25.8	12	47	68	33	M4	5.5	M4	24	14
20 mm	M6x10	M10	5	28	18.5	4 H7x4	M5	26.8	12	54	80	36	M5	5.5	M5	23	15

L14	L15 S=50-150	L17	L18	L19	L20	L21	L22 S=50-150	L24	L25	L26	LJ1	LM1	LM2	LM3
22	58.5	4	22	8	20	18	48	25.5	20	19	24.8	8	12.7	55
25	64	4	25	8	25	20.5	58	26.5	25	21.5	27	8	13.5	65
24	63	4.5	24	8	30	23	68	27	30	25	26.5	10	15.5	77

LM4	P1	P2	P3	P4	P5	P6	P7	P8	P9	PL1	PL2	PL3	R8	S1 1)	S3	S4	S6	TT	ZJ	ZA
27	40	20	3.5	-	-	-	-	1.5	1.5	8.5	8.5	11.5	-	M5x8	4.2	20.3	7.6	-	66.3	34.4
30	40	20	5	20	22	4	15	1.5	1.5	8.8	8.8	13	43	M5x8	4.2	28.5	7.6	N6	75.3	36
33	50	25	4	25	25	4	16.5	1.5	1.5	10	10	15	50	M6x10	5.2	30.5	9.5	N6	78.3	36

S = stroke

1) Dimension x depth

2) Min.

3) Max.

4) Adjustment length L = A2 max. ... A2 min.

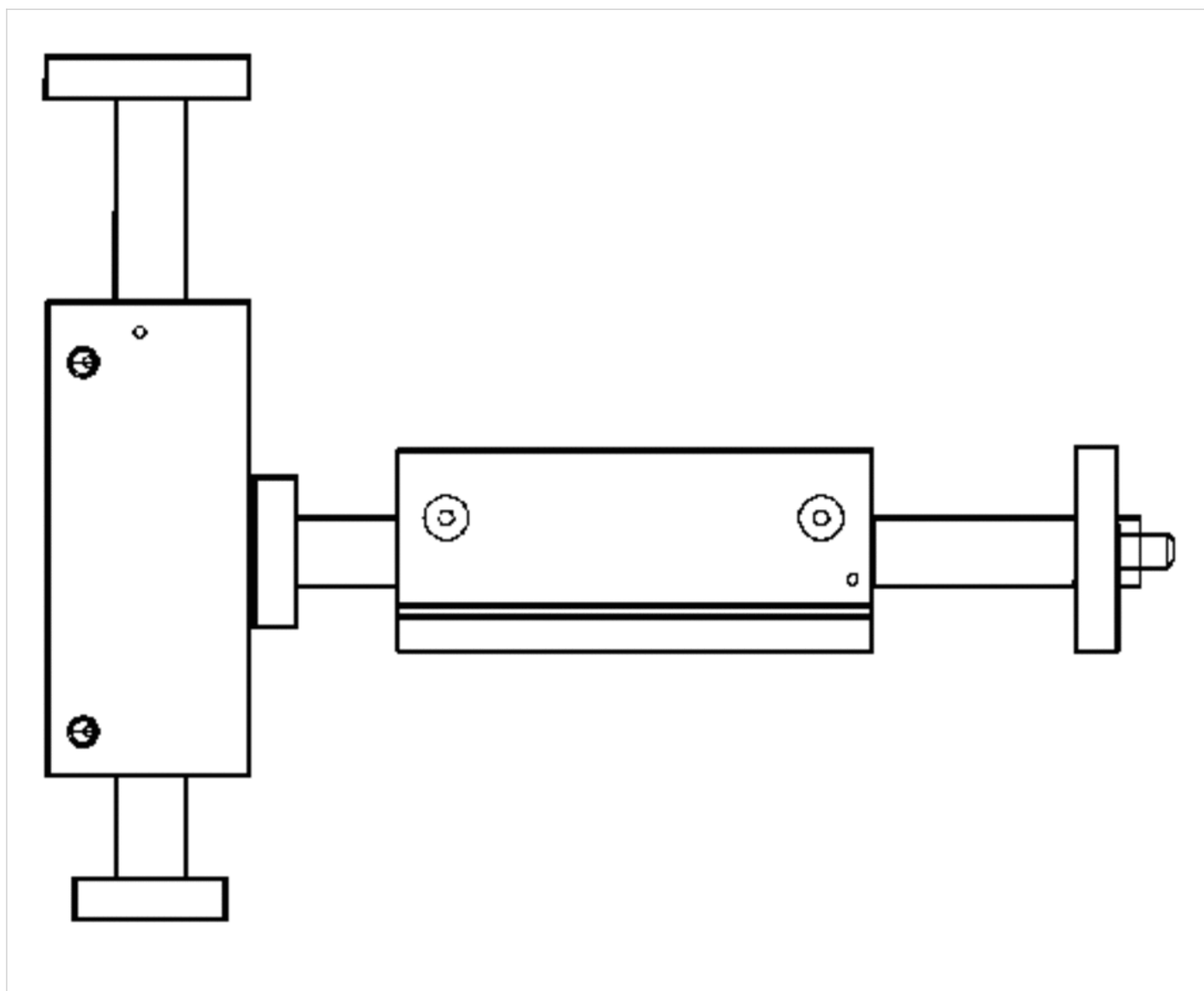
## Weight [kg]

Piston Ø	S	Weight kg
12 mm	25 mm	0.49 kg
12 mm	50 mm	0.64 kg
12 mm	75 mm	0.78 kg
12 mm	100 mm	0.93 kg
12 mm	125 mm	1.07 kg
12 mm	150 mm	1.22 kg
16 mm	25 mm	0.64 kg
16 mm	50 mm	0.84 kg
16 mm	75 mm	1.02 kg
16 mm	100 mm	1.19 kg
16 mm	125 mm	1.38 kg
16 mm	150 mm	1.55 kg
20 mm	25 mm	0.79 kg
20 mm	50 mm	1.02 kg
20 mm	75 mm	1.23 kg
20 mm	100 mm	1.44 kg
20 mm	125 mm	1.66 kg
20 mm	150 mm	1.86 kg

S = stroke

## Dimensions

### GPC combinations



The GPC-E can be directly mounted on the front plate of next bigger standard GPC or GPC-E in radial direction.

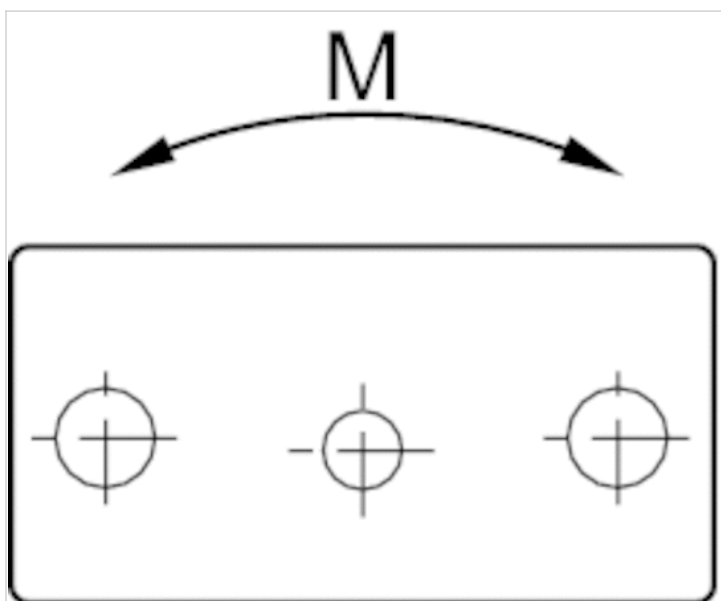
## Dimensions

Piston Ø		GPC 16, GPC-E 16	GPC 20, GPC-E 20	GPC 25
12 mm	GPC-E 12	M5x15 1)	–	–
16 mm	GPC-E 16	–	M5x15 1)	–
20 mm	GPC-E 20	–	–	M6x15 1)

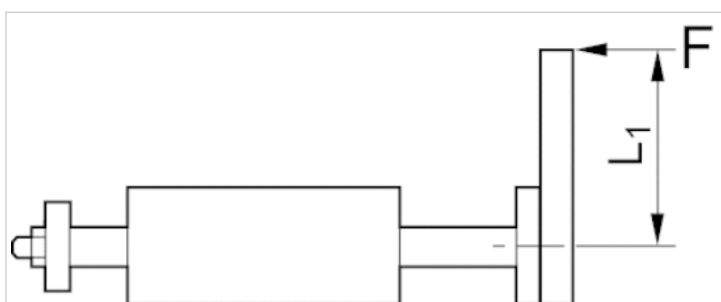
1) Screw according to ISO 4762 - M4x25

## Dimensions

Permissible static moment  $M$  [Nm]



Permissible lever arm length  $L_1$  at 6 bar with static load



## Dimensions

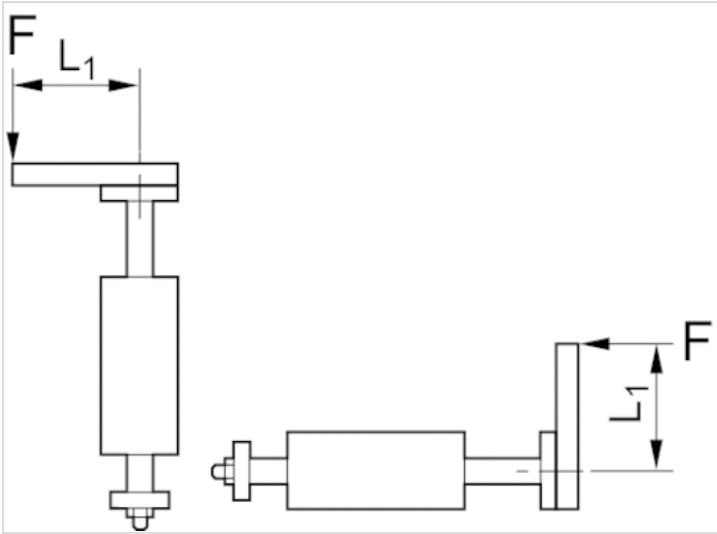
Piston $\varnothing$	S=25	S=50	S=75	S=100	S=125	S=150
12 mm	0.46	0.56	0.44	0.38	0.32	0.26
16 mm	1.25	1.57	1.29	1.15	0.99	0.82
20 mm	1.43	1.81	1.49	1.32	1.13	0.95

## Dimensions

Piston $\varnothing$	F [N]	L1	L2
12 mm	67	290	22
16 mm	120	215	23.7
20 mm	180	140	27

## Dimensions

### Permissible lever arm length $L_1$ at 6 bar with dynamic load



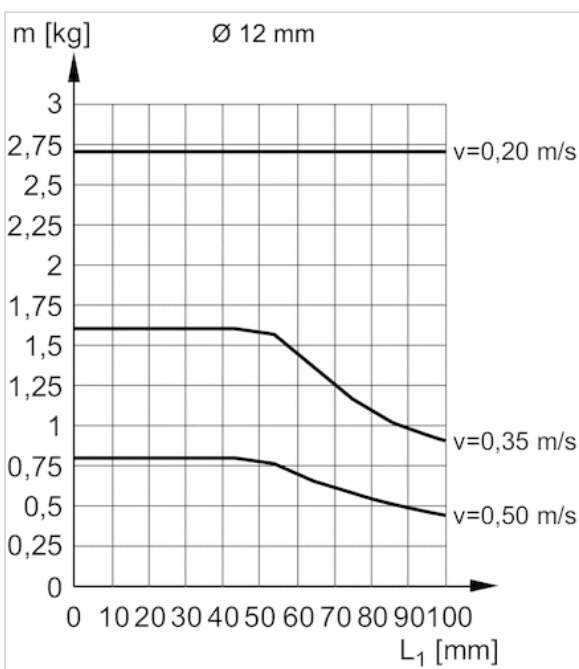
## Dimensions

Piston Ø	F [N]	F [N] 1)	L1	L2
12 mm	67	23	250	22
16 mm	120	40	200	23,7
20 mm	180	65	125	27

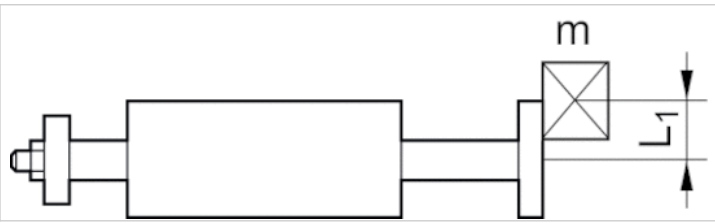
1) Horizontal situation max. force [N]

## Diagrams

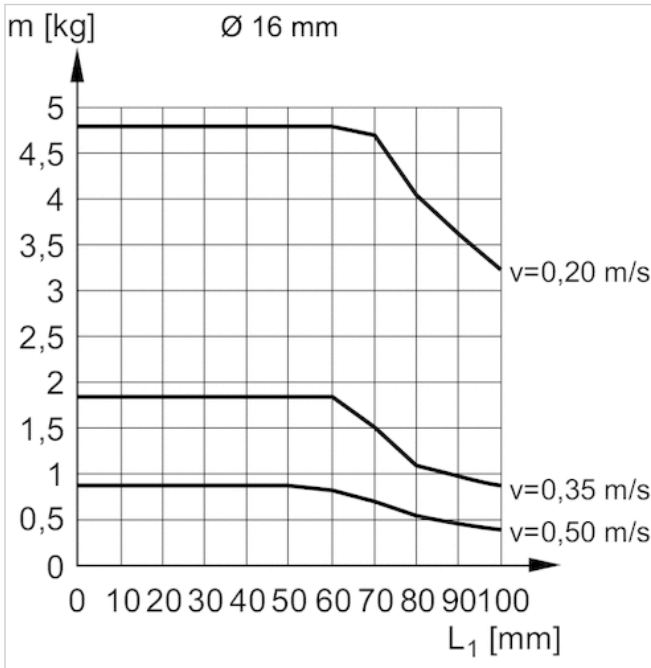
### Permissible dynamic load $m$ [kg], Ø12 mm



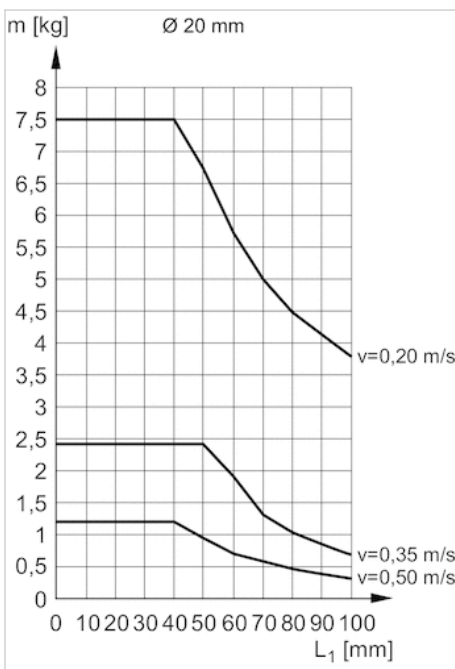
Permissible dynamic load  $m$  [kg]



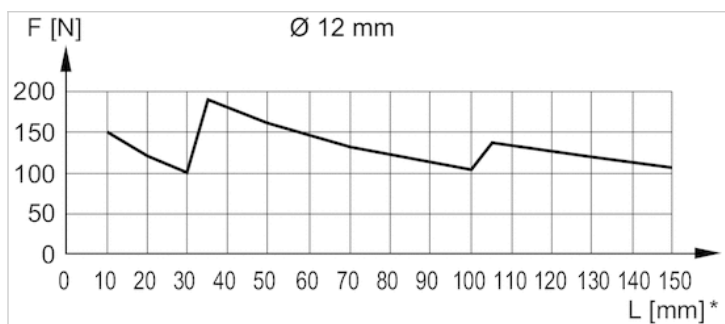
Permissible dynamic load  $m$  [kg],  $\varnothing 16$  mm



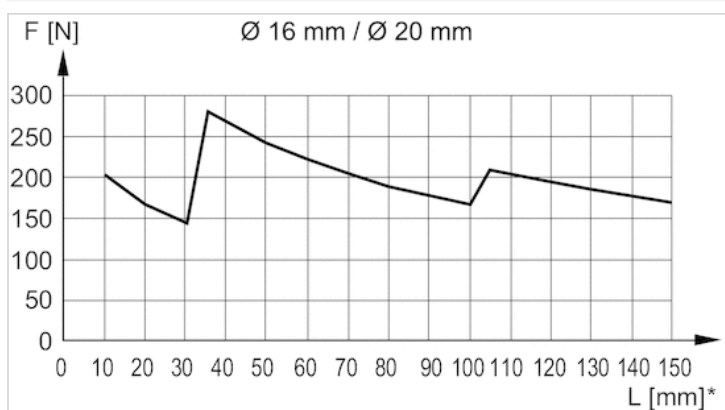
Permissible dynamic load  $m$  [kg],  $\varnothing 20$  mm



Permissible static side force F [N], Ø12 mm



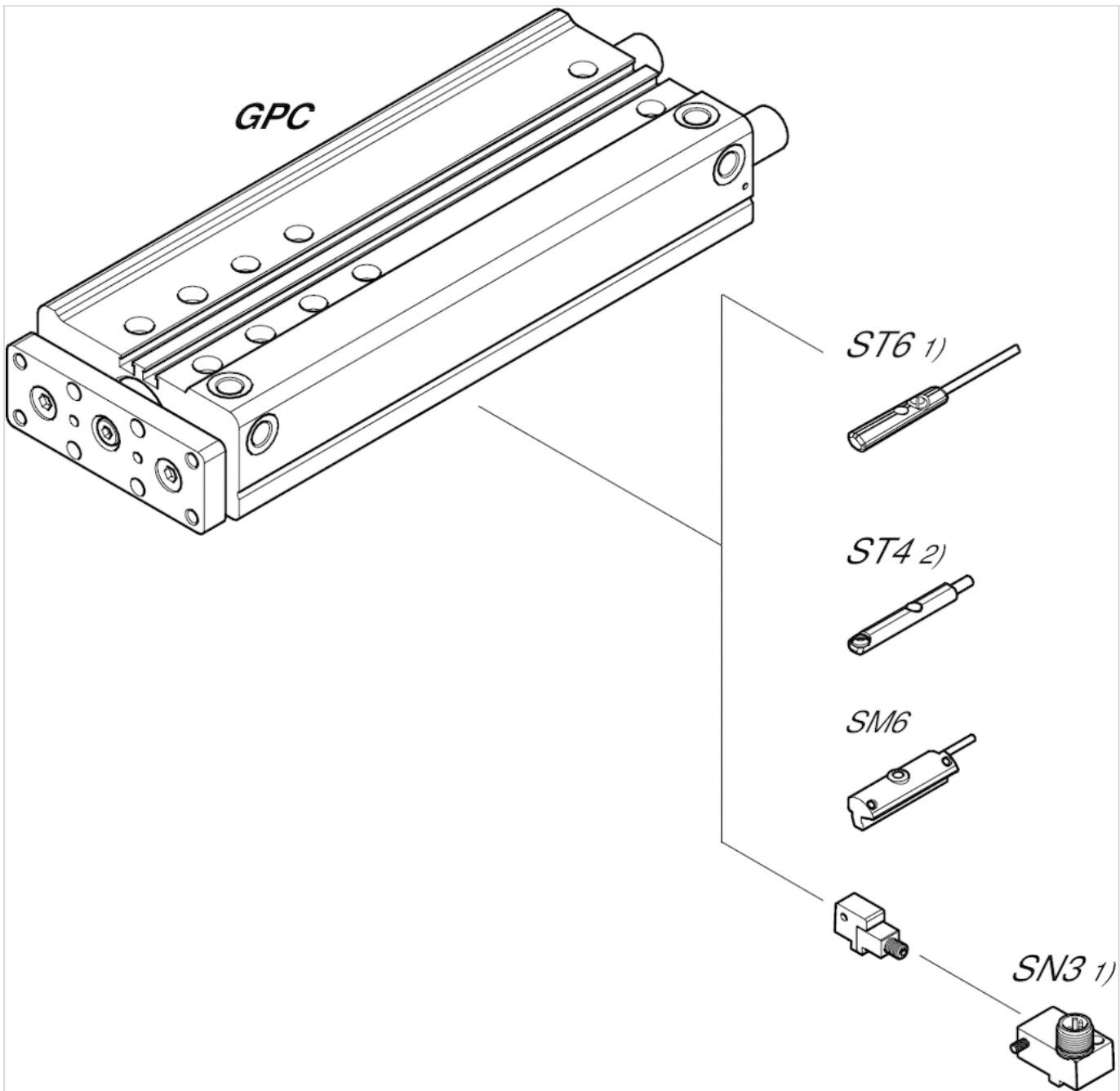
Permissible static side force F [N], Ø 16 mm and 20 mm





## Accessories overview

## Overview drawing



1)  $\leq \text{Ø}12$  mm (GPC-BV, GPC-E, GPC-TL)

2) Only for  $\text{Ø}10$  mm (GPC-BV) and all  $\text{Ø}$  (GPC-ST)

## NOTE:

This overview drawing is only for orientation to indicate where the various accessory parts can be fastened to the cylinder. The illustration has been simplified for this purpose. It is thus not possible to derive the dimensions from this overview.

# Guide cylinders, Series GPC-E

- Ø 12-20 mm
- double-acting
- ball bearing
- Cushioning hydraulic non-adjustable
- with magnetic piston
- Easy2Combine capable with connection kit



Working pressure min./max.	See table below
Ambient temperature min./max.	0 ... 65 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m <sup>3</sup>
Pressure for determining piston forces	6.3 bar
Weight	See table below



## Technical data

Piston Ø	12 mm	16 mm	20 mm
Stroke 25	0822060507	0822061507	0822062507
50	0822060504	0822061504	0822062504
75	0822060505	0822061505	0822062505
100	0822060506	0822061506	0822062506
125	0822060524	0822061524	0822062524
150	0822060529	0822061529	0822062529

## Technical data

Piston Ø	12 mm	16 mm	20 mm
Port	M5	M5	M5
Working pressure min./max.	2 ... 8 bar	2 ... 10 bar	2 ... 10 bar
Retracting piston force	53 N	95 N	148 N
Extracting piston force	71 N	127 N	198 N
Speed max.	0.5 m/s	0.5 m/s	0.5 m/s
Impact energy	0.1 J	0.11 J	0.15 J

## Technical information

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

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

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

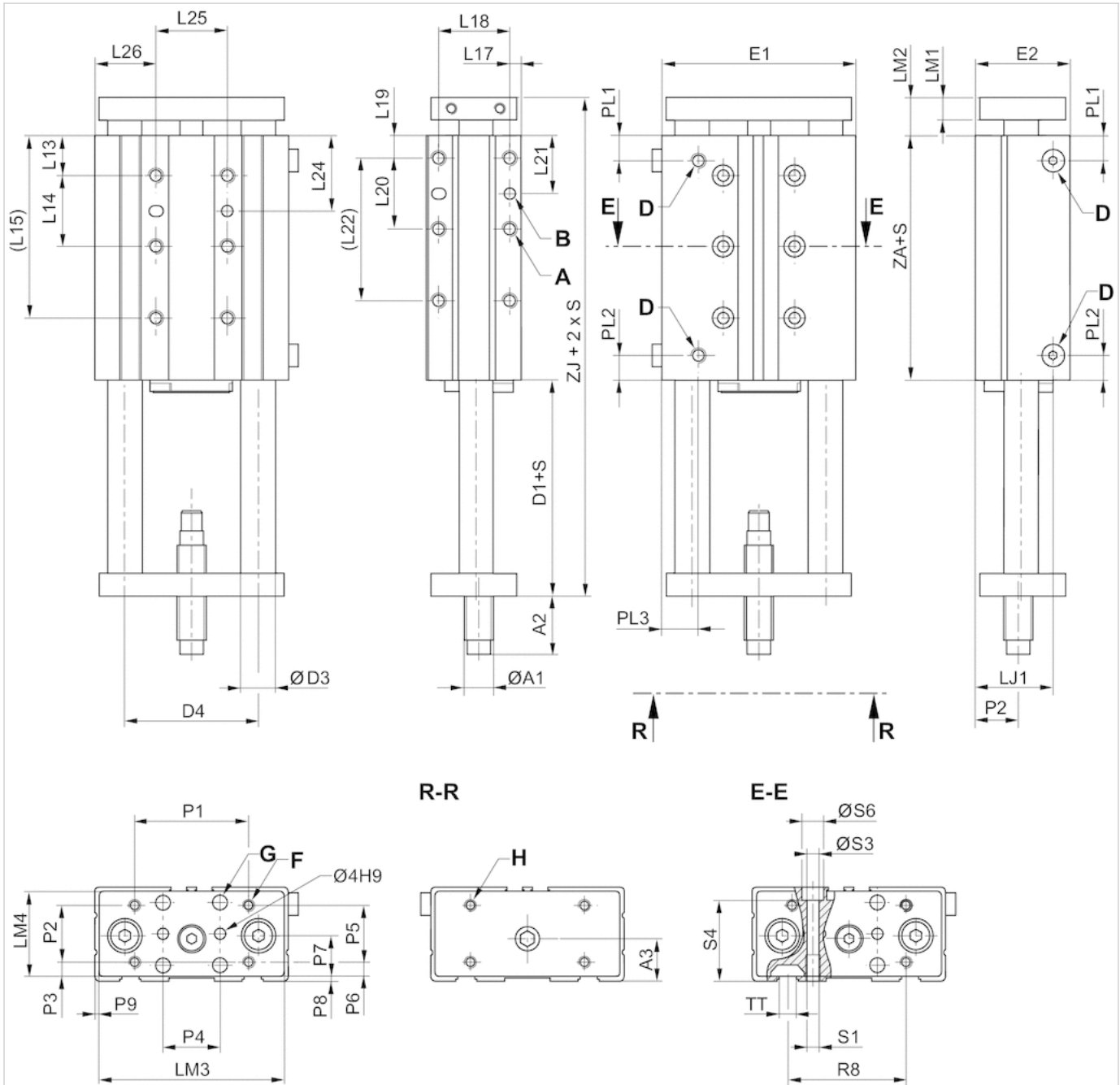
Note: Hydraulic shock absorber on rear side are included in scope of delivery

## Technical information

Material	
Housing	Aluminum, anodized
Seal	Polyurethane
Front plate	Steel, galvanized
Guide rod	Steel, hardened
Bearing	Steel, hardened
Piston rod	Stainless steel

# Dimensions

## Dimensions



S = stroke

## Dimensions

Piston Ø	A 1)	Ø A1	A2 2)	A2 3)	A3	B 1)	D	D1	D3	D4	E1	E2	F	G	H	L 4)	L13
12 mm	M5x8	M8	5	19	13.5	4 H7x4	M5	19.2	8	40	58	30.5	M4	4.5	M4	14	14.5
16 mm	M5x8	M10	5	29	14.8	4 H7x4	M5	25.8	10	47	68	33	M4	5.5	M4	24	14
20 mm	M6x10	M10	5	28	18.5	4 H7x4	M5	26.8	10	54	80	36	M5	5.5	M5	23	15

Piston Ø	L14	L15 S=50-150		L17	L18	L19	L20	L21	L22 S=50-150		L24	L25	L26	LJ1	LM1
12 mm	22	58.5		4	22	8	20	18	48		25.5	20	19	24.8	8
16 mm	25	64		4	25	8	25	20.5	58		26.5	25	21.5	27	8
20 mm	24	63		4.5	24	8	30	23	68		27	30	25	26.5	10

Piston Ø	LM2	LM3	LM4	P1	P2	P3	P4	P5	P6	P7	P8	P9	PL1	PL2	PL3	R8	S1 1)	S3	S4	S6	TT
12 mm	12.7	55	27	40	20	3.5	-	-	-	-	1.5	1.5	8.5	8.5	11.5	-	M5x8	4.2	20.3	7.6	-
16 mm	13.5	65	30	40	20	5	20	22	4	15	1.5	1.5	8.8	8.8	13	43	M5x8	4.2	28.5	7.6	N6
20 mm	15.5	77	33	50	25	4	25	25	4	16.5	1.5	1.5	10	10	15	50	M6x10	5.2	30.5	9.5	N6

Piston Ø	ZA	ZJ
12 mm	34.4	66.3
16 mm	36	75.3
20 mm	36	78.3

S = stroke

1) Dimension x depth

2) Min.

3) Max.

4) Adjustment length L = A2 max. ... A2 min.

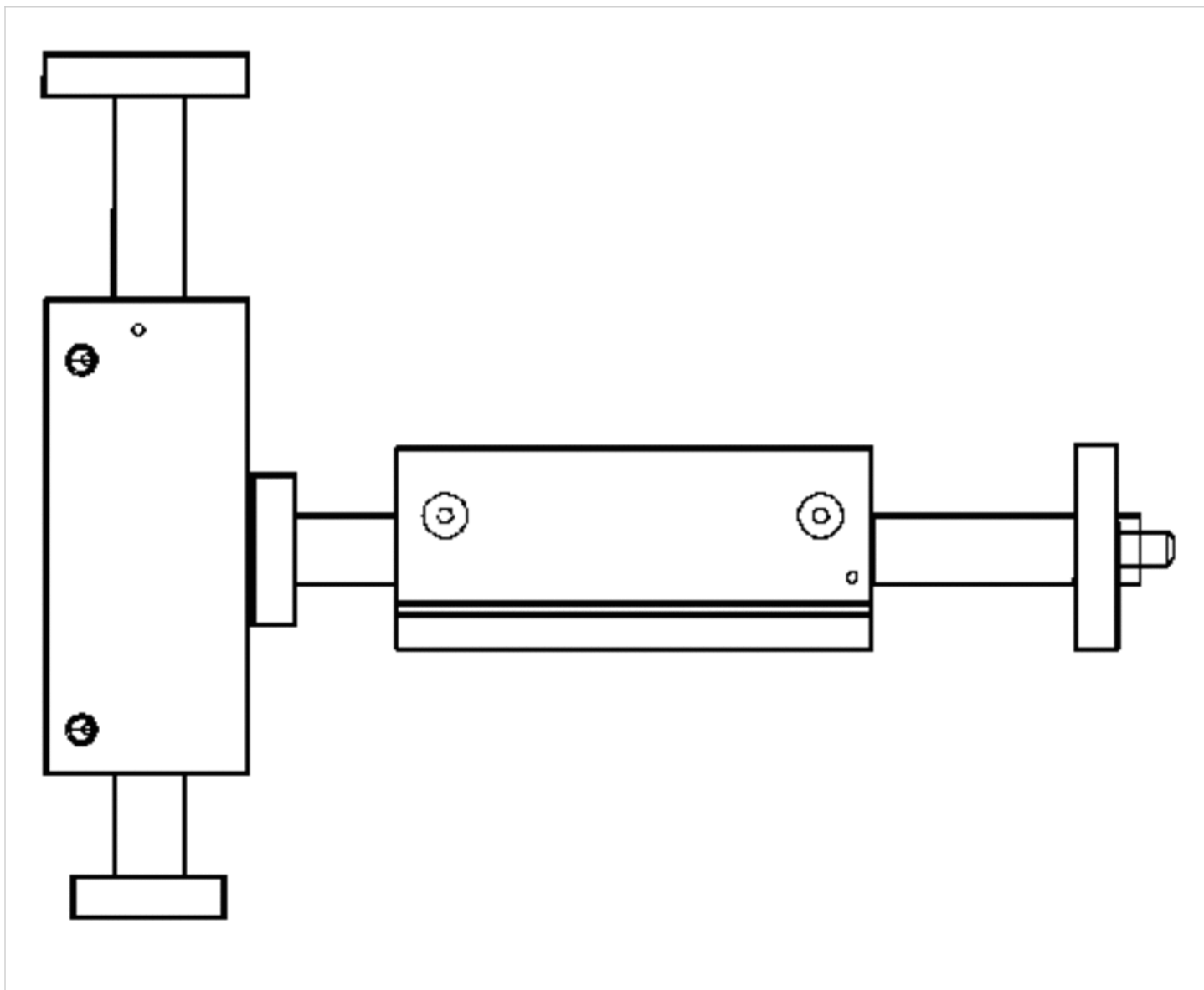
## Weight [kg]

Piston Ø	S	Weight kg
12 mm	25 mm	0.43 kg
12 mm	50 mm	0.58 kg
12 mm	75 mm	0.7 kg
12 mm	100 mm	0.82 kg
12 mm	125 mm	0.95 kg
12 mm	150 mm	1.07 kg
16 mm	25 mm	0.57 kg
16 mm	50 mm	0.76 kg
16 mm	75 mm	0.91 kg
16 mm	100 mm	1.07 kg
16 mm	125 mm	1.23 kg
16 mm	150 mm	1.38 kg
20 mm	25 mm	0.72 kg
20 mm	50 mm	0.95 kg
20 mm	75 mm	1.12 kg
20 mm	100 mm	1.31 kg
20 mm	125 mm	1.5 kg
20 mm	150 mm	1.69 kg

S = stroke

## Dimensions

### GPC combinations



The GPC-E can be directly mounted on the front plate of next bigger standard GPC or GPC-E in radial direction.

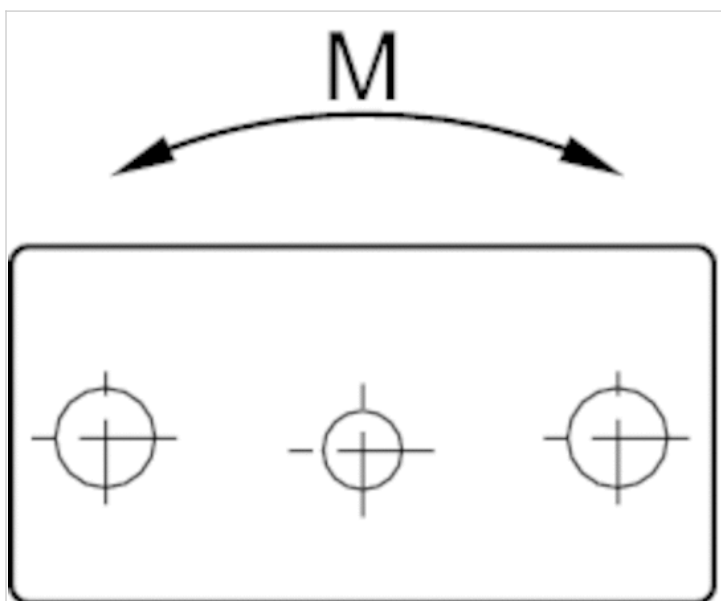
## Dimensions

Piston Ø		GPC 16, GPC-E 16	GPC 20, GPC-E 20	GPC 25
12 mm	GPC-E 12	M5x15 1)	–	–
16 mm	GPC-E 16	–	M5x15 1)	–
20 mm	GPC-E 20	–	–	M6x15 1)

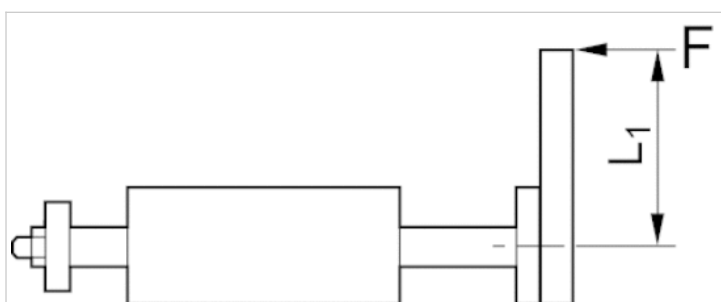
1) Screw according to ISO 4762 - M4x25

## Dimensions

Permissible static moment  $M$  [Nm]



Permissible lever arm length  $L_1$  at 6 bar with static load

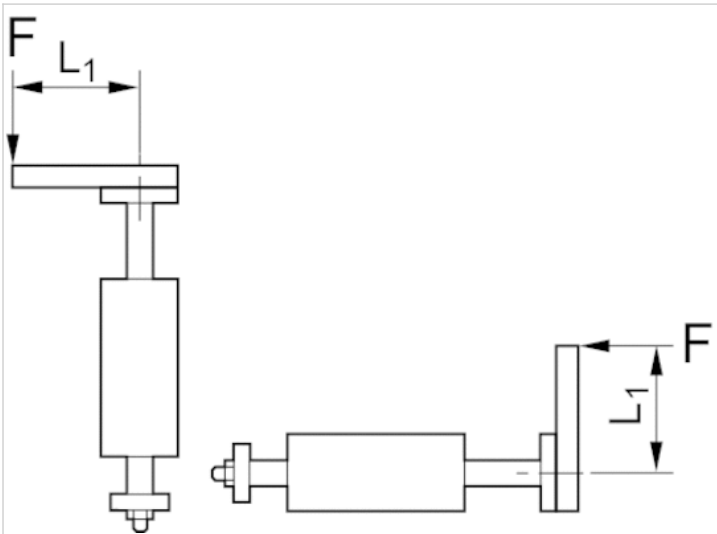


## Dimensions

Piston $\varnothing$	$F$ [N]	$L_1$
12 mm	67	115
16 mm	120	80
20 mm	180	55

## Dimensions

Permissible lever arm length  $L_1$  at 6 bar with dynamic load



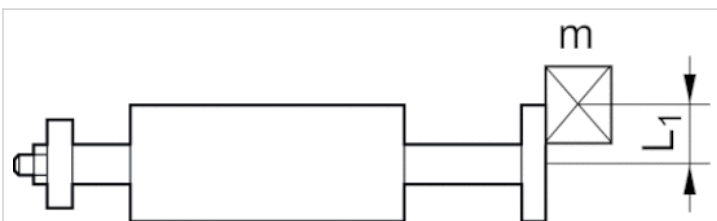
## Dimensions

Piston Ø	F [N]	F [N] 1)	L1
12 mm	67	23	100
16 mm	120	40	75
20 mm	180	65	50

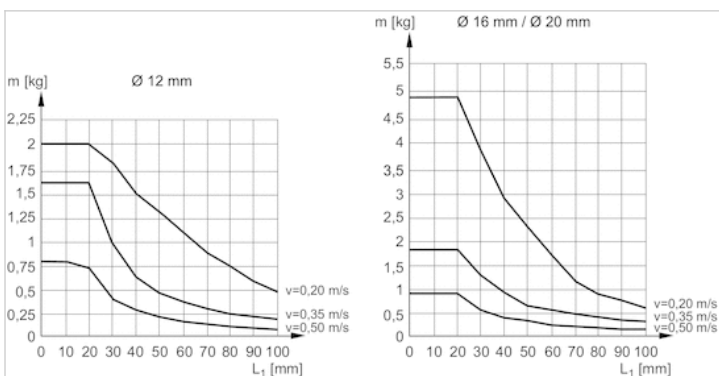
1) Horizontal situation max. force [N]

## Diagrams

Permissible dynamic load  $m$  [kg]

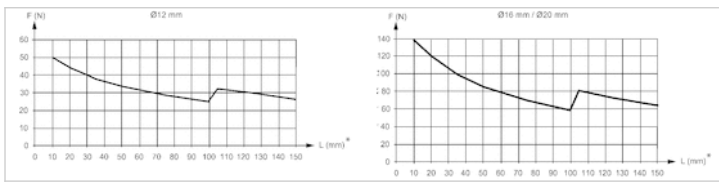


Permissible dynamic load  $m$  [kg]



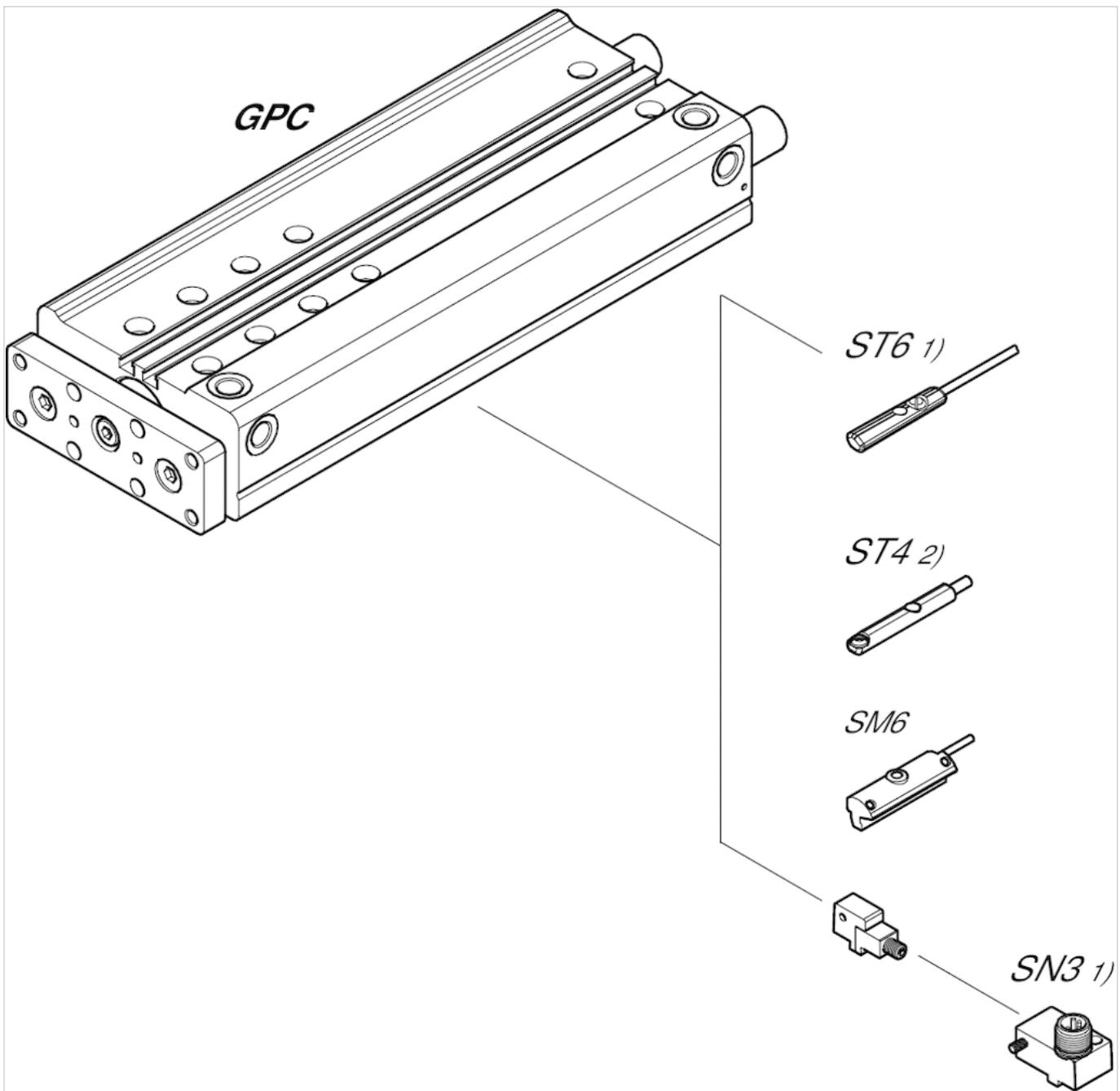


Permissible static side force F [N]



Accessories overview

Overview drawing



1) ≤ Ø12 mm (GPC-BV, GPC-E, GPC-TL)

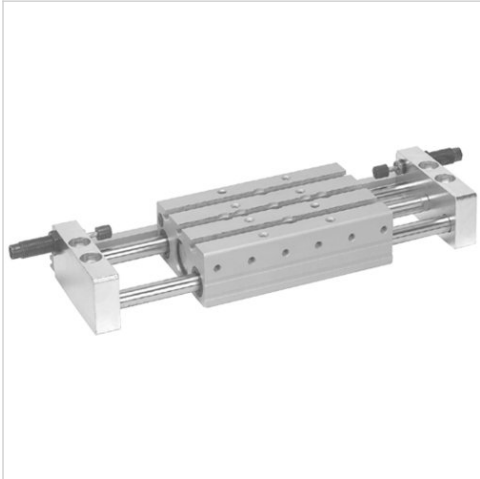
2) Only for Ø10 mm (GPC-BV) and all Ø (GPC-ST)

NOTE:

This overview drawing is only for orientation to indicate where the various accessory parts can be fastened to the cylinder. The illustration has been simplified for this purpose. It is thus not possible to derive the dimensions from this overview.

# Guide cylinders, Series GPC-ST

- Ø 12-20 mm
- double-acting
- ball bearing
- Cushioning hydraulic non-adjustable
- with magnetic piston
- Easy2Combine capable with connection kit



Working pressure min./max.	See table below
Ambient temperature min./max.	0 ... 65 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m <sup>3</sup>
Pressure for determining piston forces	6.3 bar
Weight	See table below



## Technical data

Piston Ø	12 mm	20 mm
Stroke 35	R402000243	R402000249
50	R402000244	R402000250
75	R402000245	R402000251
100	R402000246	R402000252
125	R402000247	R402000253
150	R402000248	R402000254

## Technical data

Piston Ø	12 mm	20 mm
Port	M5	M5
Working pressure min./max.	2 ... 8 bar	2 ... 10 bar
Retracting piston force	53 N	148 N
Extracting piston force	71 N	198 N
Speed max.	0.5 m/s	0.5 m/s
Impact energy	0.1 J	0.15 J
Max. play with locked end position	0.08 mm	0.07 mm

## Technical information

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

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

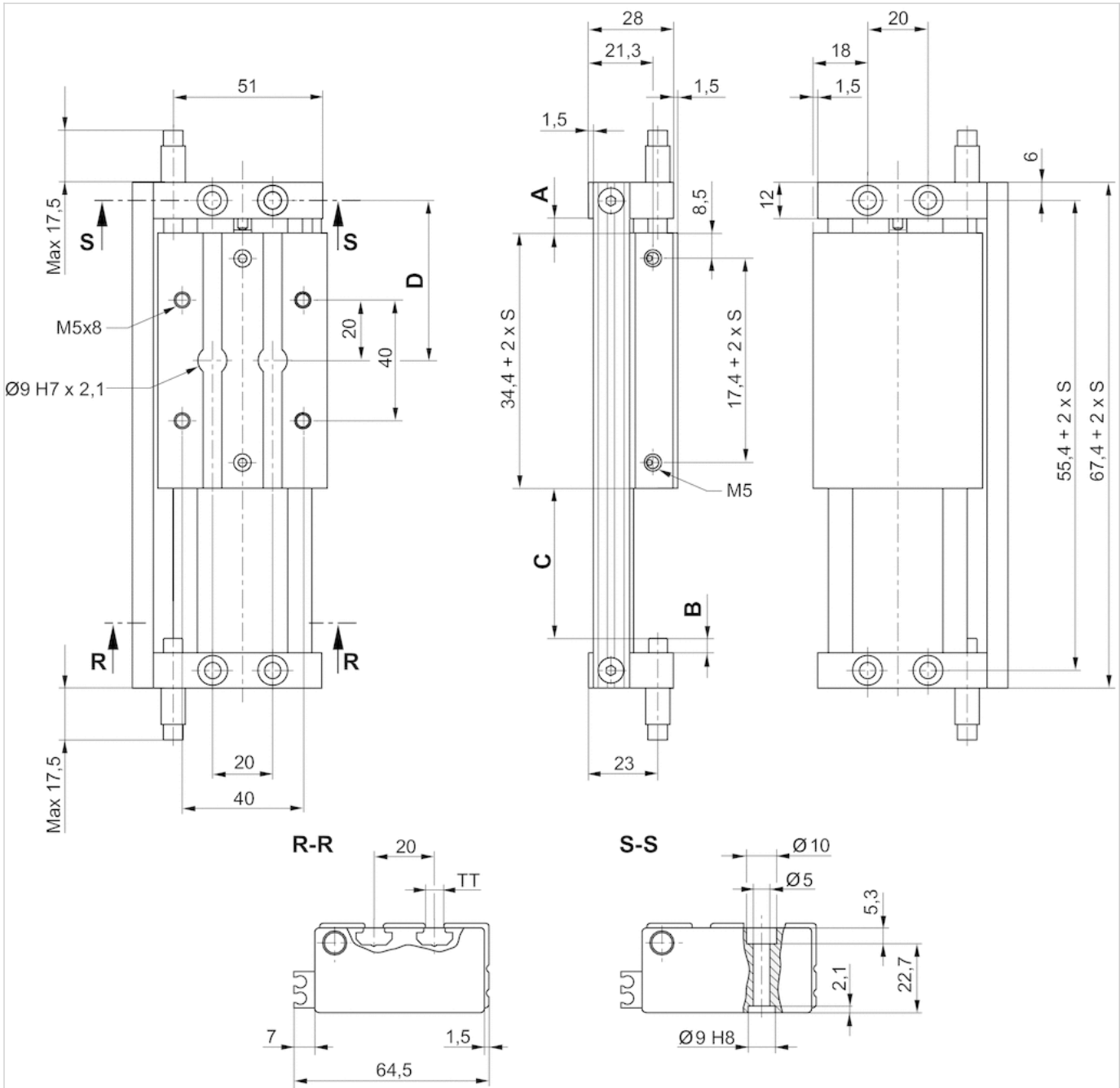
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

## Technical information

Material	
Housing	Aluminum, anodized
Seal	Polyurethane
Front plate	Steel, galvanized
Guide rod	Steel, hardened
Bearing	Steel, hardened
Piston rod	Stainless steel

## Dimensions

Ø 12



S = stroke

## Dimensions

Piston Ø	A 1)	A 2)	B 1)	B 2)	C 1)	C 2)	D 1)	D 2)
12 mm	4.7	24.7	4.2	24.2	S-40	S	25+0,5xS	48+0,5xS

1) Min. ↔ 2) Max. ↔ S = stroke



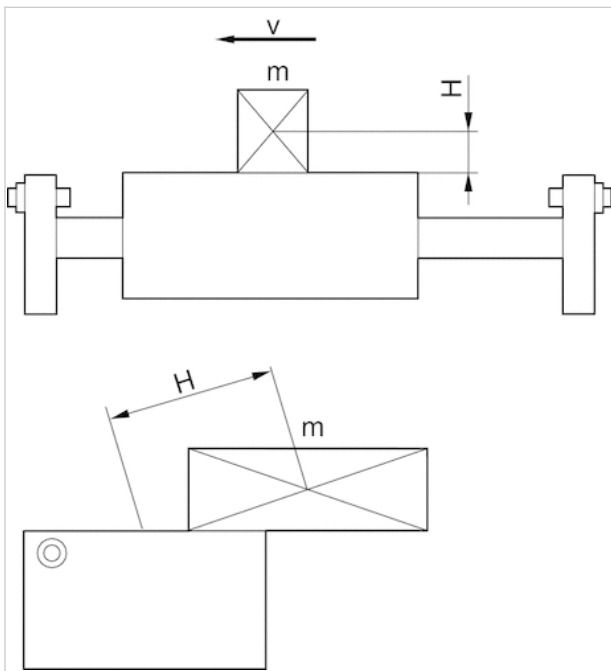
Weight [kg]

Piston Ø	S	Weight kg
12 mm	35 mm	0.43 kg
12 mm	50 mm	0.58 kg
12 mm	75 mm	0.7 kg
12 mm	100 mm	0.82 kg
12 mm	125 mm	0.95 kg
12 mm	150 mm	1.07 kg
20 mm	35 mm	0.72 kg
20 mm	50 mm	0.95 kg
20 mm	75 mm	1.12 kg
20 mm	100 mm	1.31 kg
20 mm	125 mm	1.5 kg
20 mm	150 mm	1.69 kg

S = stroke

Dimensions

Permissible dynamic load m [kg]



The load creates a high moment on the unit when reaching the end positions. It is therefore necessary not to exceed the limitations showed below.

Following parameters must be considered: velocity, distance to center of mass and size of GPC-ST. When multiplying the mass  $m$  [kg] with the distance  $H$  [mm] the result must not exceed the values below.

Example: A load of 2,3 kg shall be mounted with L 52 mm on a GPC-ST dia. 20 stroke 50.  
 $m \times H, 2,3 \times 52 = 120$ . From the table below we can see that this is allowed for a velocity of 0,3 m/s.

## Dimensions

Piston Ø	S	0,2 [m/s]	0,3 [m/s]	0,4 [m/s]	0,5 [m/s]
12 mm	35	155	75	60	50
12 mm	50	225	100	90	60
12 mm	75	310	160	110	85
12 mm	100	350	170	130	105
12 mm	125	450	250	180	140
12 mm	150	600	300	200	160

S = stroke

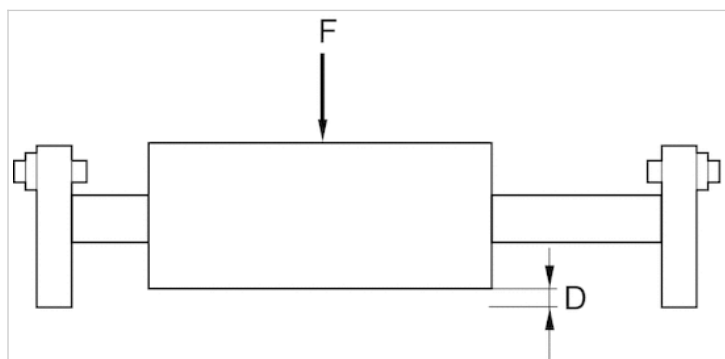
## Dimensions

Piston Ø	S	0,2 [m/s]	0,3 [m/s]	0,4 [m/s]	0,5 [m/s]
20 mm	35	195	95	75	95
20 mm	50	28	125	110	75
20 mm	75	390	200	140	110
20 mm	100	440	210	160	130
20 mm	125	560	310	225	175
20 mm	150	750	375	250	200

S = stroke

## Dimensions

Maximum permissible force F and deflection D with static load



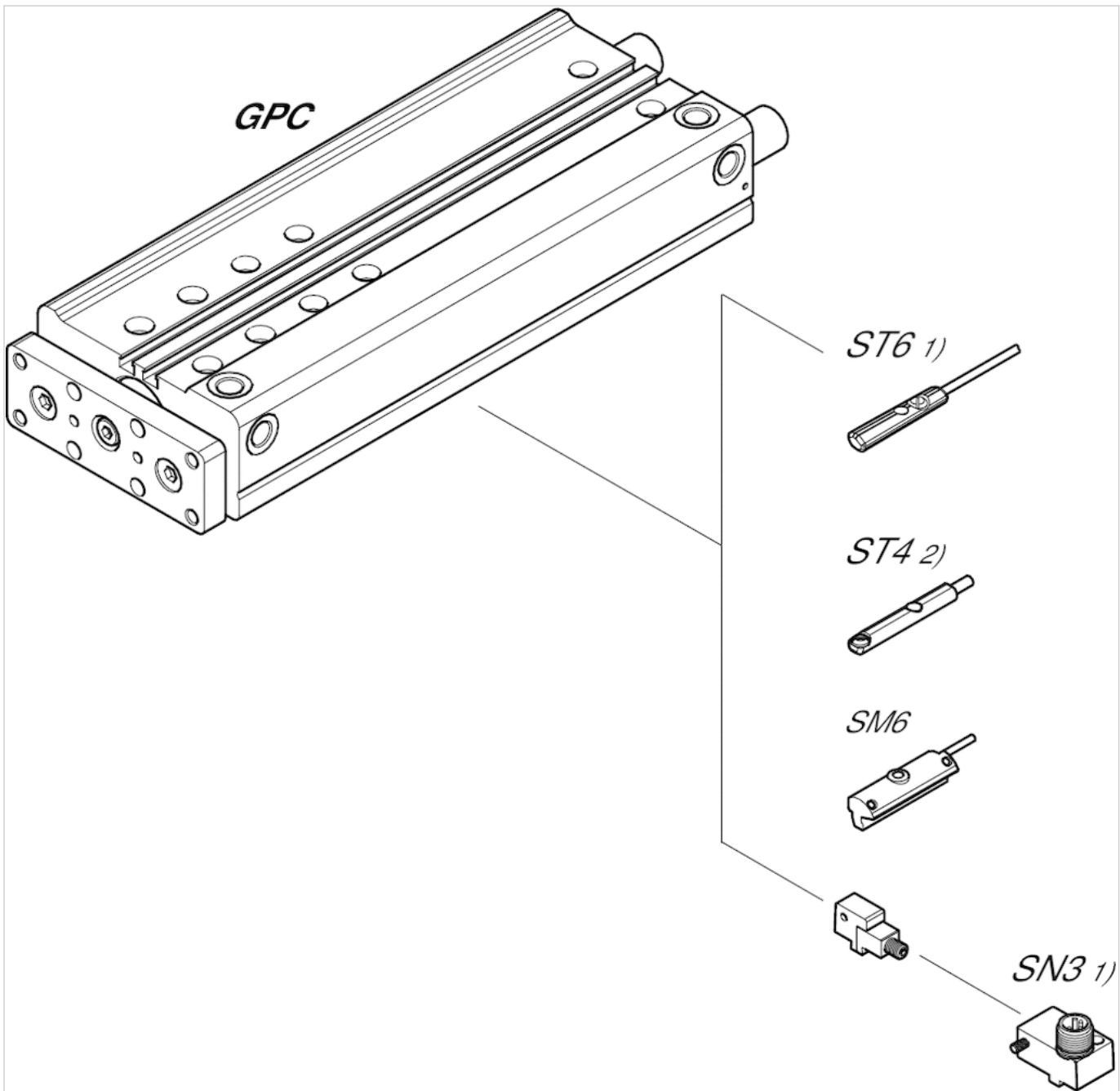
## Dimensions

Piston Ø	F [N]	S=35 D	S=50 D	S=75 D	S=100 D	S=125 D	S=150 D
12 mm	170	0.02	0.02	0.05	0.09	0.15	0.23
20 mm	260	0.01	0.02	0.04	0.07	0.12	0.19

S = stroke

## Accessories overview

## Overview drawing



1)  $\leq \text{Ø}12 \text{ mm}$  (GPC-BV, GPC-E, GPC-TL)

2) Only for  $\text{Ø}10 \text{ mm}$  (GPC-BV) and all  $\text{Ø}$  (GPC-ST)

## NOTE:

This overview drawing is only for orientation to indicate where the various accessory parts can be fastened to the cylinder. The illustration has been simplified for this purpose. It is thus not possible to derive the dimensions from this overview.



# Guide cylinders, Series GPC-TL

- Ø 12-20 mm
- double-acting
- Plain bearing
- Cushioning elastic
- with magnetic piston



Working pressure min./max.	See table below
Ambient temperature min./max.	-10 ... 70 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m <sup>3</sup>
Pressure for determining piston forces	6.3 bar
Weight	See table below



## Technical data

Piston Ø	12 mm	16 mm	20 mm
Stroke 10	0822060600	0822061600	0822062600
20	0822060601	0822061601	0822062601
25	0822060607	0822061607	0822062607
30	0822060602	0822061602	0822062602
40	0822060603	0822061603	0822062603
50	0822060604	0822061604	0822062604
75	0822060605	0822061605	0822062605
100	0822060606	0822061606	0822062606

## Technical data

Piston Ø	12 mm	16 mm	20 mm
Port	M5	M5	M5
Working pressure min./max.	2 ... 8 bar	2 ... 10 bar	2 ... 10 bar
Retracting piston force	53 N	95 N	148 N
Extracting piston force	71 N	127 N	198 N
Speed max.	0.5 m/s	0.5 m/s	0.5 m/s
Impact energy	0.1 J	0.11 J	0.15 J

## Technical information

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

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

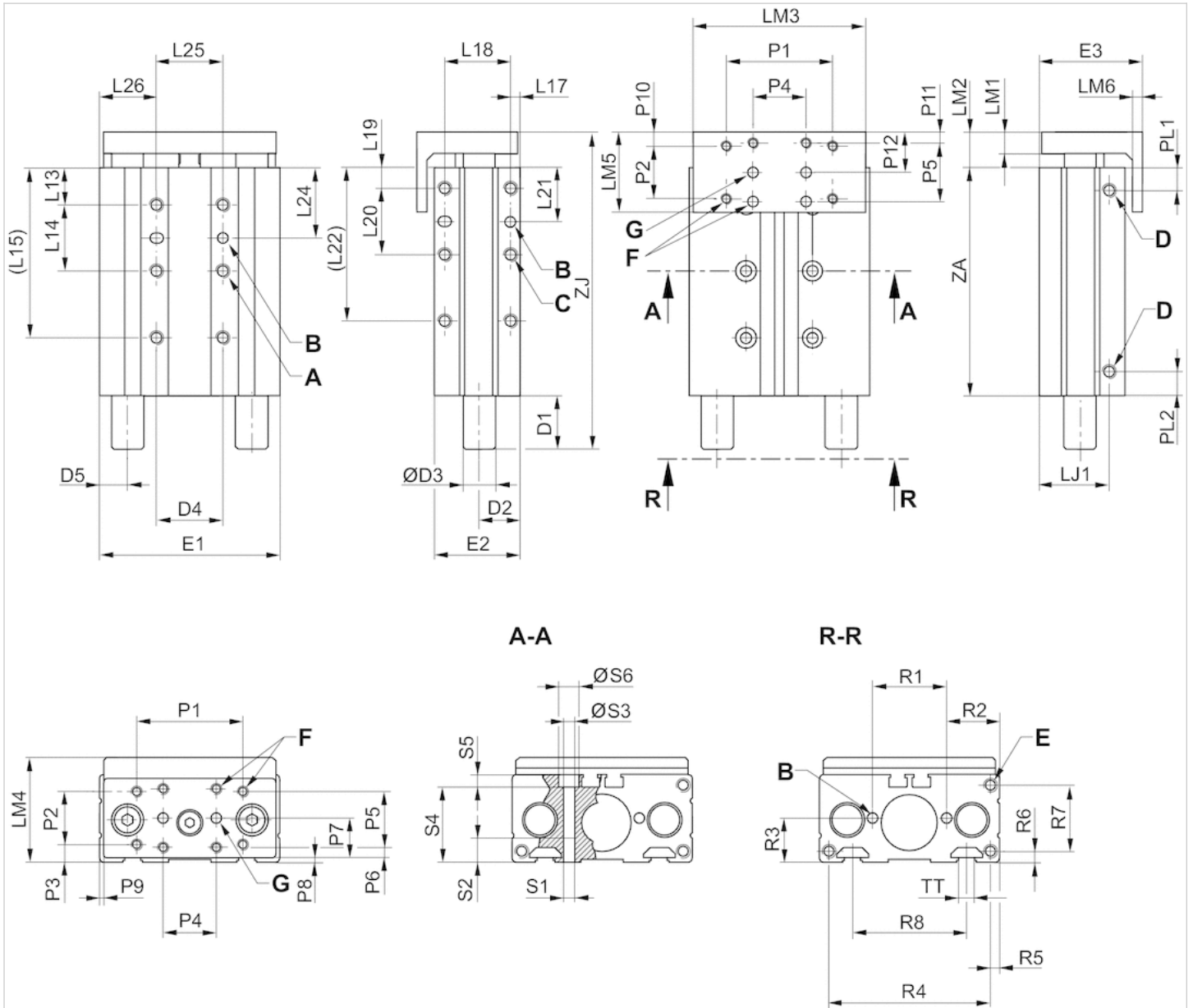
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

## Technical information

Material	
Housing	Aluminum, anodized
Seal	Polyurethane
Front plate	Steel, galvanized
Guide rod	Stainless steel
Bearing	Sintered bronze
Piston rod	Stainless steel

# Dimensions

## Dimensions



## Dimensions

Piston Ø	A 1)	B 1)	C 1)	D	D1 S>30	D2	D3	D4	D5	E 1)	E1	E2	E3	F	G
12 mm	M5x8	4 H7x4	M5x8	M5	17.6	14.5	10	40	9	M5x8	58	30.5	36.5	M4	4 H9
16 mm	M5x8	4 H7x4	M5x8	M5	20	15.8	12	47	10.5	M5x8	68	33	39.5	M4	4 H9
20 mm	M6x10	4 H7x4	M5x10	M5	20	16.5	12	54	13	M5x10	80	36	43.5	M5	4 H9

Piston Ø	L13	L14 S=10	L14 S=20	L14 S>20	L15 S=50-150	L17	L18	L19
12 mm	14.5	-	18	22	58.5	4	22	8
16 mm	14	18	25	25	64	4	25	8
20 mm	15	16	24	24	63	4.5	24	8

Piston Ø	L20 S=10	L20 S=20-150	L21 S=10	L21 S>10	L22 S=50-150
12 mm	20	20	18	18	48
16 mm	18	25	20.5	20.5	58
20 mm	20	30	18	23	68

Piston Ø	L24 S=10	L24 S>10	L25	L26	LJ1	LM1	LM2	LM3	LM4	LM5	LM6	P1	P2	P3	P4
12 mm	25.5	25.5	20	19	24.8	8	12.7	55	35	28	4	40	20	3.5	20
16 mm	26.5	26.5	25	21.5	27	8	13.5	65	38	30	4	40	20	5	20
20 mm	23	27	30	25	26.5	10	15.5	77	42	35	5	50	25	4	25

Piston Ø	P5	P6	P7	P8	P9	P10	P11	P12	PL1	PL2	R1±0,04	R2	R3	R4	R5	R6	R7	R8	S1	S2	S3
12 mm	20	3.5	13.5	1.5	1.5	4	4	14	8.5	8.5	23	17.5	15	50	4	4	22	-	M5	8	4.2
16 mm	22	4	15	1.5	1.5	5	4	15	8.8	8.8	28	20	16.5	61	3.5	4	25	43	M5	8	4.2
20 mm	25	4	16.5	1.5	1.5	5	5	17.5	10	10	30	25	18	70	5	3.5	29	50	M6	10	5.2

Piston Ø	S4	S5	S6	TT	ZA	ZJ S=10-30	ZJ S>30
12 mm	20	10.2	7.6	-	34.4	47.1	64.7
16 mm	28.5	4.6	7.6	N6	36	49.5	69.5
20 mm	30.5	5.5	9.5	N6	36	51.5	71.5

S = stroke

1) Dimension x depth

## Weight [kg]

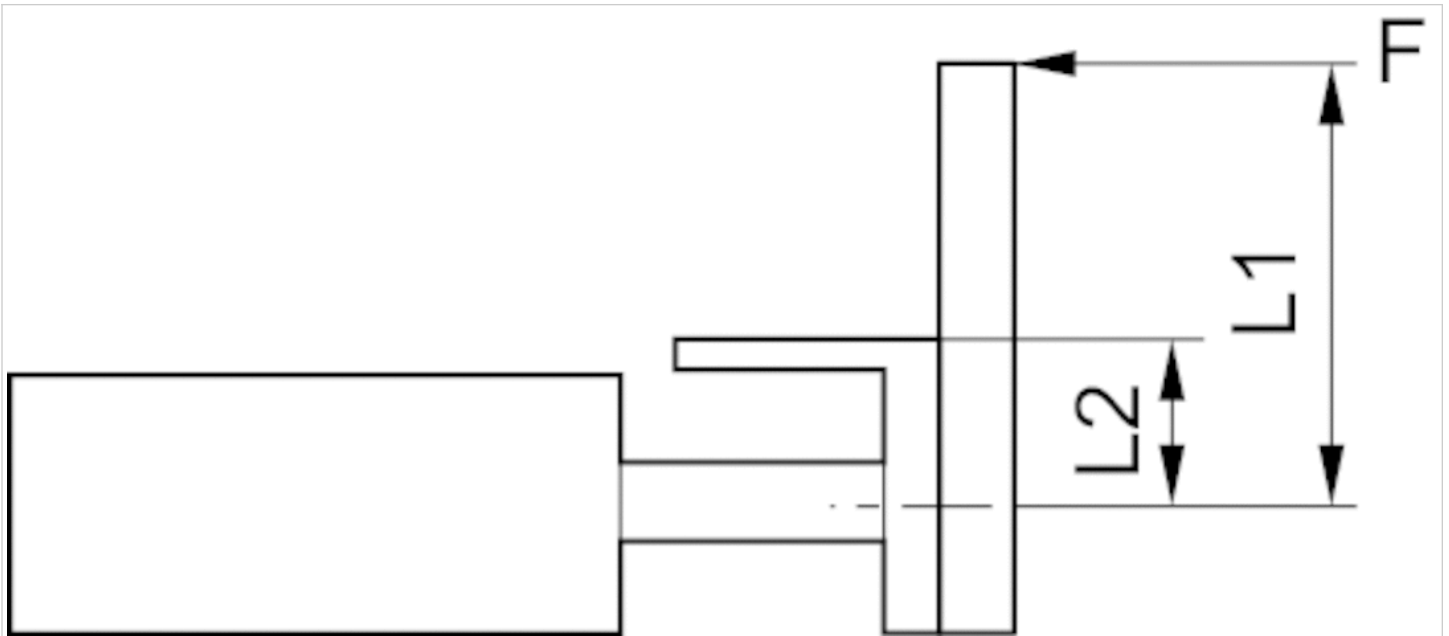
Piston Ø	S	Weight kg
12 mm	10 mm	0.48 kg
12 mm	20 mm	0.48 kg
12 mm	25 mm	0.48 kg
12 mm	30 mm	0.48 kg
12 mm	40 mm	0.45 kg
12 mm	50 mm	0.49 kg
12 mm	75 mm	0.61 kg
12 mm	100 mm	0.73 kg
16 mm	10 mm	0.49 kg
16 mm	20 mm	0.49 kg

Piston Ø	S	Weight kg
16 mm	25 mm	0.49 kg
16 mm	30 mm	0.49 kg
16 mm	40 mm	0.57 kg
16 mm	50 mm	0.63 kg
16 mm	75 mm	0.77 kg
16 mm	100 mm	0.91 kg
20 mm	10 mm	0.6 kg
20 mm	20 mm	0.6 kg
20 mm	25 mm	0.6 kg
20 mm	30 mm	0.64 kg
20 mm	40 mm	0.73 kg
20 mm	50 mm	0.8 kg
20 mm	75 mm	0.98 kg
20 mm	100 mm	1.16 kg

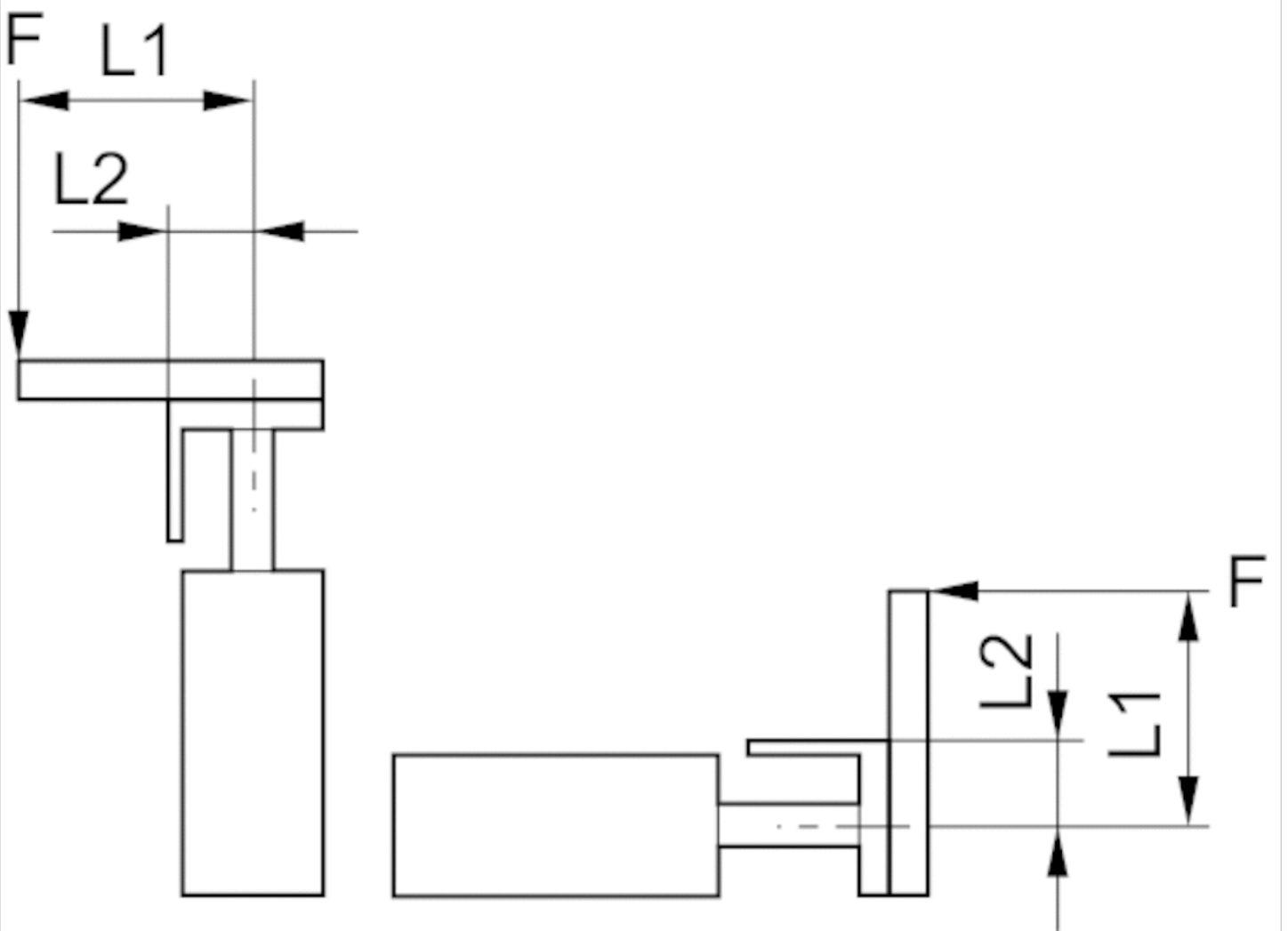
S = stroke

## Dimensions

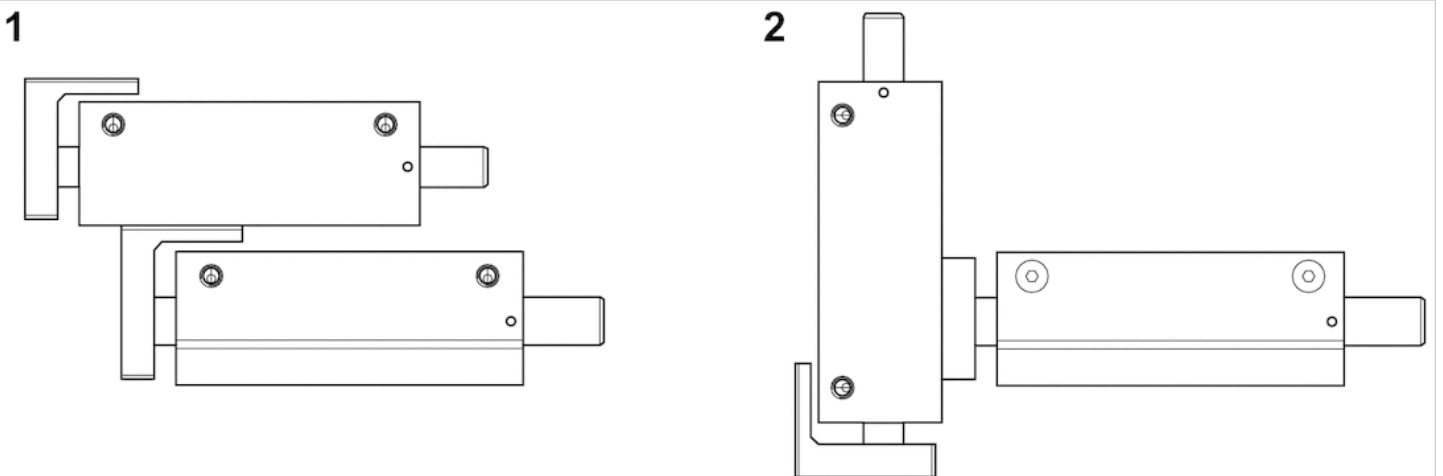
Permissible lever arm length L1 at 6 bar with static load



Permissible lever arm length  $L_1$  at 6 bar with dynamic load



GPC combinations



The GPC-TL can be directly mounted on the front plate of next bigger standard GPC in radial direction, and on next bigger GPC-TL in axial direction.

### Combination radial direction (2)

Piston Ø		GPC 16	GPC 20	GPC 25
12 mm	GPC-TL 12	M5x15 1)	–	–
16 mm	GPC-TL 16	–	M5x15 1)	–
20 mm	GPC-TL 20	–	–	M6x15 1)

1) Screw according to ISO 4762 - M4x25

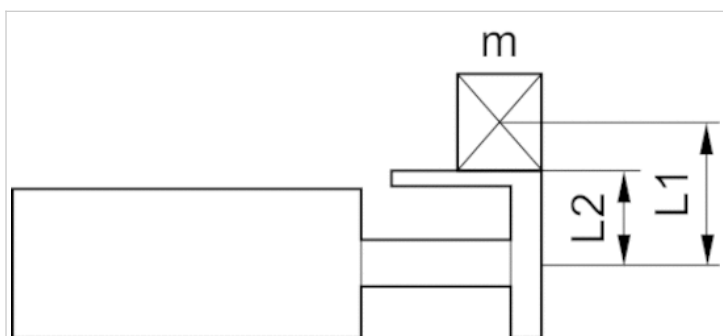
### Combination in axial direction (1)

Piston Ø		GPC-TL 16	GPC-TL 20
16 mm	GPC-TL 12	M4x25 1)	–
20 mm	GPC-TL 16	–	M5x35 1)

1) Screw according to ISO 4762 - M4x25

## Dimensions

### Permissible dynamic load m [kg]

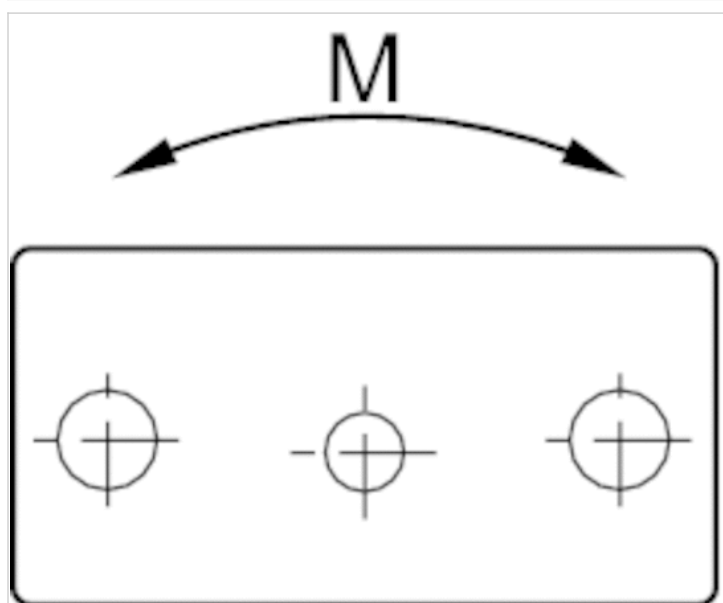


## Dimensions

Piston Ø	L2
12 mm	22
16 mm	23.7
20 mm	27

## Dimensions

Permissible static moment  $M$  [Nm]



## Dimensions

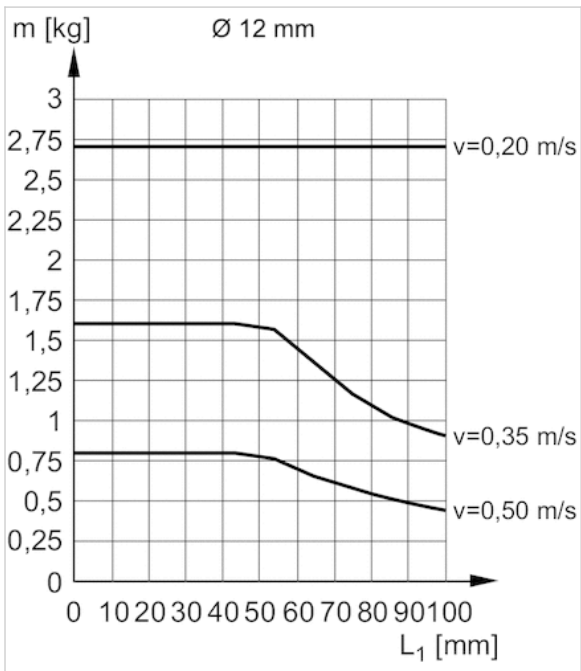
Piston $\varnothing$	S=10	S=20	S=25	S=30	S=40	S=50	S=75	S=100
12 mm	0.56	0.48	0.46	0.42	0.62	0.56	0.44	0.38
16 mm	1.48	1.32	1.25	1.2	1.72	1.57	1.29	1.15
20 mm	1.7	1.51	1.43	1.38	1.97	1.81	1.49	1.32

S = stroke

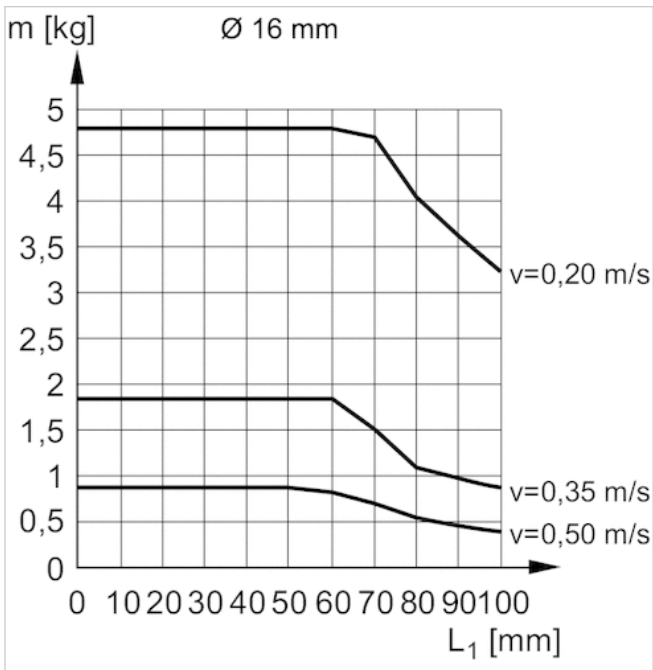


## Diagrams

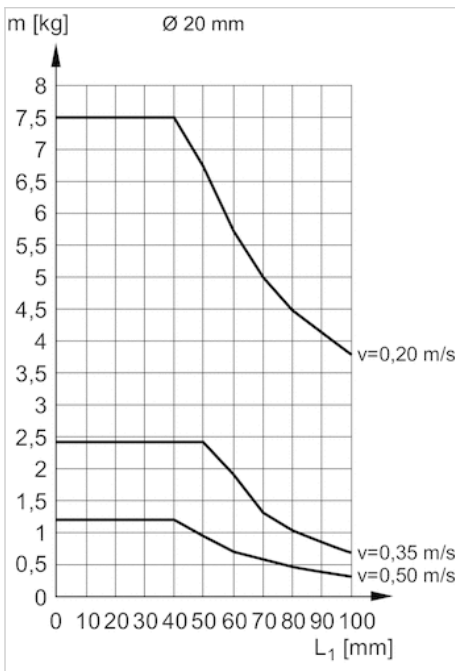
### Permissible dynamic load $m$ [kg], $\varnothing 12$ mm



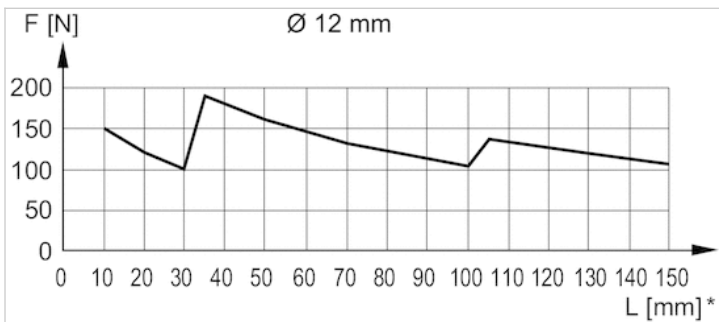
### Permissible dynamic load $m$ [kg], $\varnothing 16$ mm



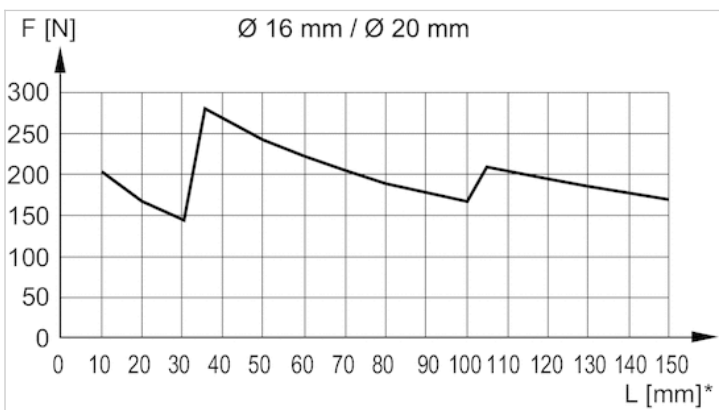
Permissible dynamic load  $m$  [kg],  $\varnothing 20$  mm



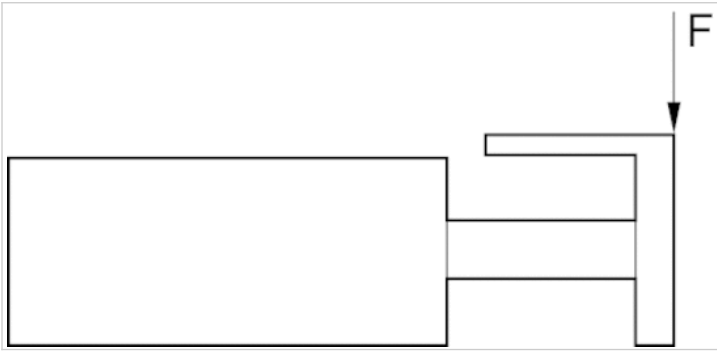
Permissible static side force  $F$  [N],  $\varnothing 12$  mm



Permissible static side force  $F$  [N],  $\varnothing 16$  mm and  $\varnothing 20$  mm

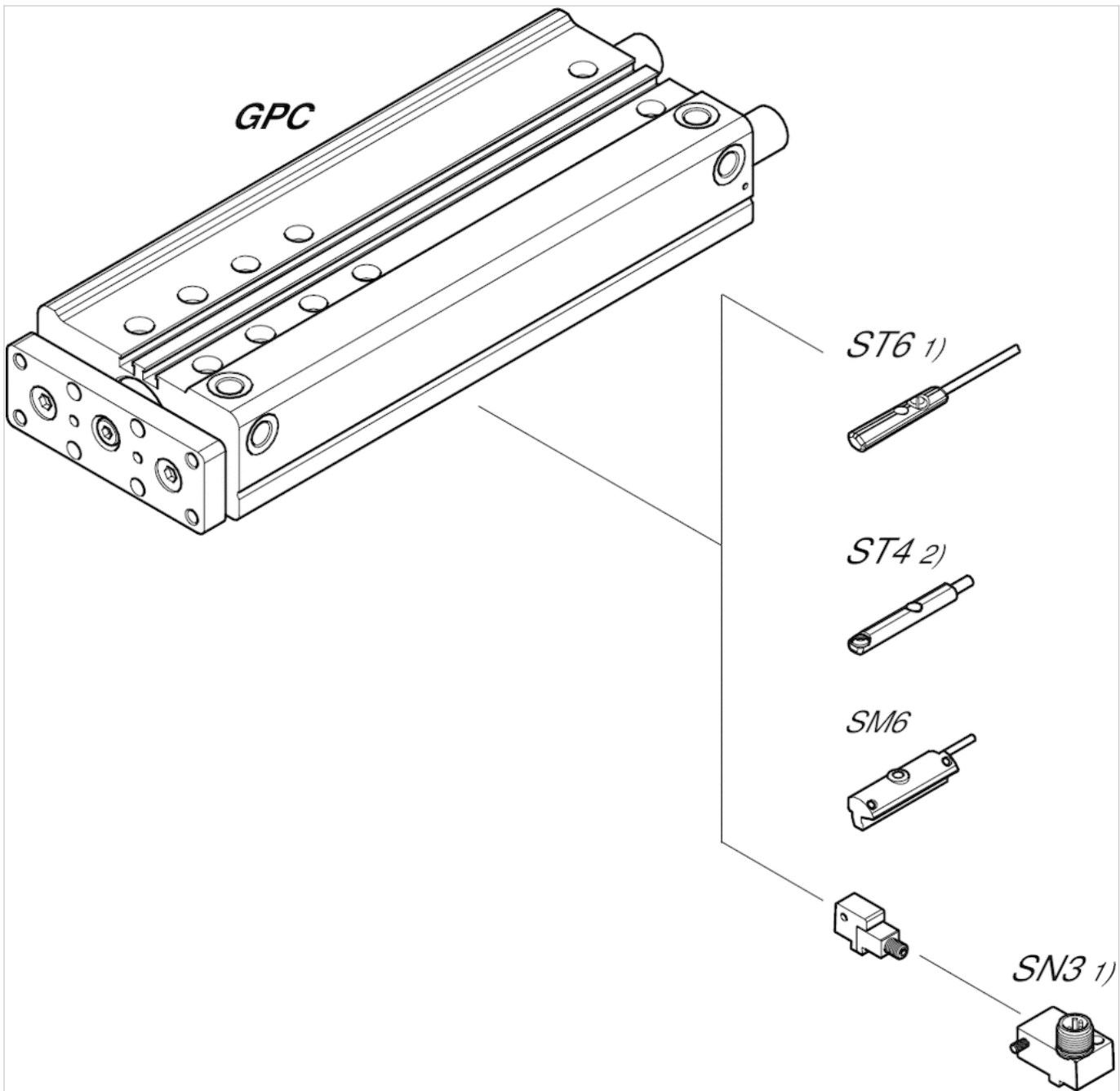


Permissible static side force F [N]



## Accessories overview

## Overview drawing



1)  $\leq \text{Ø}12$  mm (GPC-BV, GPC-E, GPC-TL)

2) Only for  $\text{Ø}10$  mm (GPC-BV) and all  $\text{Ø}$  (GPC-ST)

## NOTE:

This overview drawing is only for orientation to indicate where the various accessory parts can be fastened to the cylinder. The illustration has been simplified for this purpose. It is thus not possible to derive the dimensions from this overview.

# Guide cylinders, Series GPC-TL

- Ø 12-20 mm
- double-acting
- ball bearing
- Cushioning elastic
- with magnetic piston



Working pressure min./max.	See table below
Ambient temperature min./max.	-10 ... 70 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m <sup>3</sup>
Pressure for determining piston forces	6.3 bar
Weight	See table below



## Technical data

Piston Ø	12 mm	16 mm	20 mm
Stroke 10	0822060700	0822061700	0822062700
20	0822060701	0822061701	0822062701
25	0822060707	0822061707	0822062707
30	0822060702	0822061702	0822062702
40	0822060703	0822061703	0822062703
50	0822060704	0822061704	0822062704
75	0822060705	0822061705	0822062705
100	0822060706	0822061706	0822062706

## Technical data

Piston Ø	12 mm	16 mm	20 mm
Port	M5	M5	M5
Working pressure min./max.	2 ... 8 bar	2 ... 10 bar	2 ... 10 bar
Retracting piston force	53 N	95 N	148 N
Extracting piston force	71 N	127 N	198 N
Speed max.	0.5 m/s	0.5 m/s	0.5 m/s
Impact energy	0.1 J	0.11 J	0.15 J

## Technical information

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

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

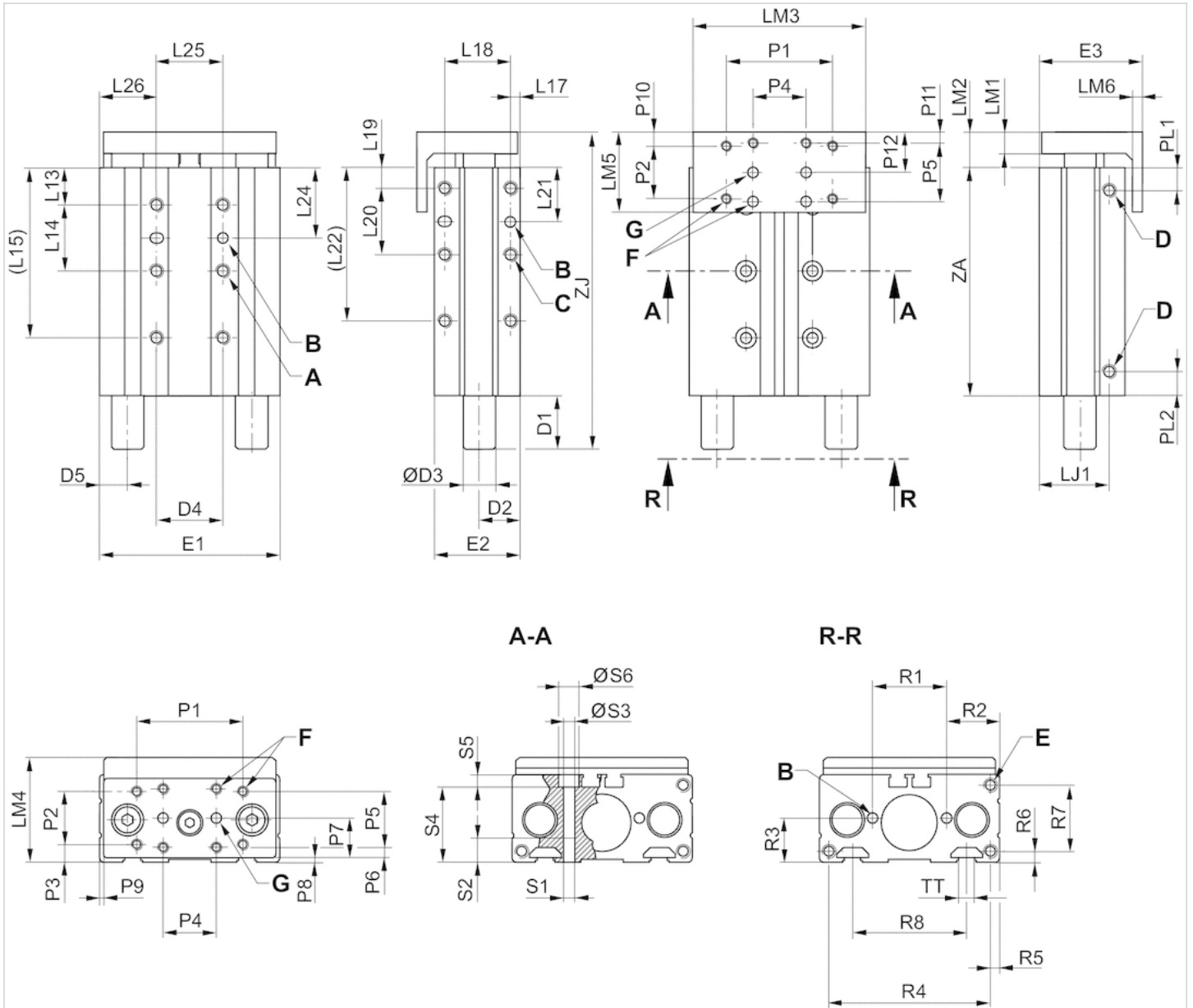
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

## Technical information

Material	
Housing	Aluminum, anodized
Seal	Polyurethane
Front plate	Steel, galvanized
Guide rod	Steel, hardened
Bearing	Steel, hardened
Piston rod	Stainless steel

# Dimensions

## Dimensions



## Dimensions

Piston Ø	A 1)	B 1)	C 1)	D	D1	D2	D3	D4	D5	E 1)	E1	E2	E3	F	G	L13
12 mm	M5x8	4 H7x4	M5x8	M5	19	14.5	8	40	9	M5x8	58	30.5	36.5	M4	4 H9	14.5
16 mm	M5x8	4 H7x4	M5x8	M5	21	15.8	10	47	10.5	M5x8	68	33	39.5	M4	4 H9	14
20 mm	M6x10	4 H7x4	M6x10	M5	21	16.5	10	54	13	M5x10	80	36	43.5	M5	4 H9	15

Piston Ø	L14 S=10	L14 S=20	L14 S>20	L15 S=50-150	L17	L18	L19	L20 S=10
12 mm	-	18	22	58.5	4	22	8	20
16 mm	18	25	25	64	4	25	8	18
20 mm	16	24	24	63	4.5	24	8	20

Piston Ø	L20 S=20-150	L21 S=10	L21 S>10	L22 S=50-150	L24 S=10
12 mm	20	18	18	48	25.5
16 mm	25	20.5	20.5	58	26.5
20 mm	30	18	23	68	23

Piston Ø	L24 S>10	L25	L26	LJ1	LM1	LM2	LM3	LM4	LM5	LM6	P1	P2	P3	P4	P5	P6	P7	P8
12 mm	25.5	20	19	24.8	8	12.7	55	35	28	4	40	20	3.5	20	20	3.5	13.5	1.5
16 mm	26.5	25	21.5	27	8	13.5	65	38	30	4	40	20	5	20	22	4	15	1.5
20 mm	27	30	25	26.5	10	15.5	77	42	35	5	50	25	4	25	25	4	16.5	1.5

Piston Ø	P9	P10	P11	P12	PL1	PL2	R1±0,04	R2	R3	R4	R5	R6	R7	R8	S1	S2	S3	S4	S5	S6
12 mm	1.5	4	4	14	8.5	8.5	23	17.5	15	50	4	4	22	-	M5	8	4.2	20	10.2	7.6
16 mm	1.5	5	4	15	8.8	8.8	28	20	16.5	61	3.5	4	25	43	M5	8	4.2	28.5	4.6	7.6
20 mm	1.5	5	5	17.5	10	10	30	25	18	70	5	3.5	29	50	M6	10	5.2	30.5	5.5	9.5

Piston Ø	TT	ZA	ZJ S=10-30	ZJ S>30
12 mm	-	34.4	47.1	65.5
16 mm	N6	36	49.5	70.3
20 mm	N6	36	51.5	72.3

S = stroke

1) Dimension x depth

## Weight [kg]

Piston Ø	S	Weight kg
12 mm	10 mm	0.45 kg
12 mm	20 mm	0.45 kg
12 mm	25 mm	0.35 kg
12 mm	30 mm	0.45 kg
12 mm	40 mm	0.43 kg
12 mm	50 mm	0.48 kg
12 mm	75 mm	0.59 kg
12 mm	100 mm	0.7 kg
16 mm	10 mm	0.47 kg
16 mm	20 mm	0.47 kg

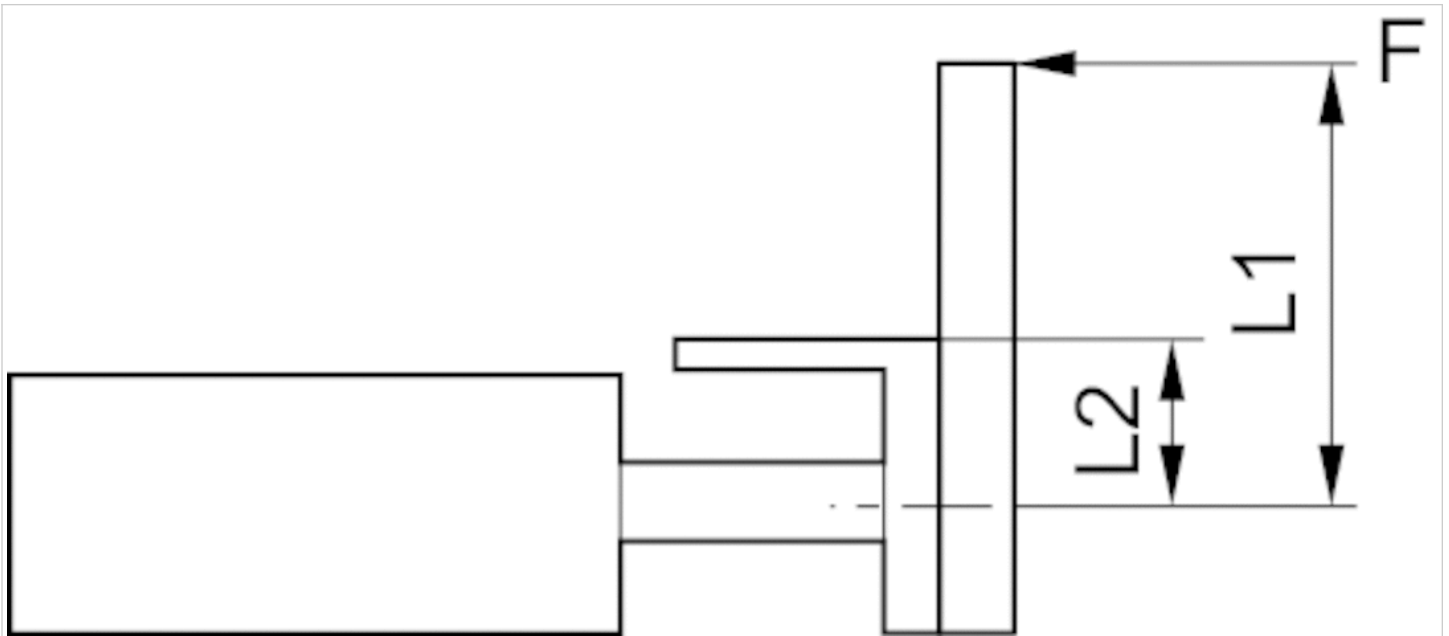


Piston Ø	S	Weight kg
16 mm	25 mm	0.44 kg
16 mm	30 mm	0.47 kg
16 mm	40 mm	0.56 kg
16 mm	50 mm	0.61 kg
16 mm	75 mm	0.74 kg
16 mm	100 mm	0.88 kg
20 mm	10 mm	0.61 kg
20 mm	20 mm	0.61 kg
20 mm	25 mm	0.58 kg
20 mm	30 mm	0.61 kg
20 mm	40 mm	0.72 kg
20 mm	50 mm	0.79 kg
20 mm	75 mm	0.95 kg
20 mm	100 mm	1.12 kg

S = stroke

## Dimensions

Permissible lever arm length L1 at 6 bar with static load

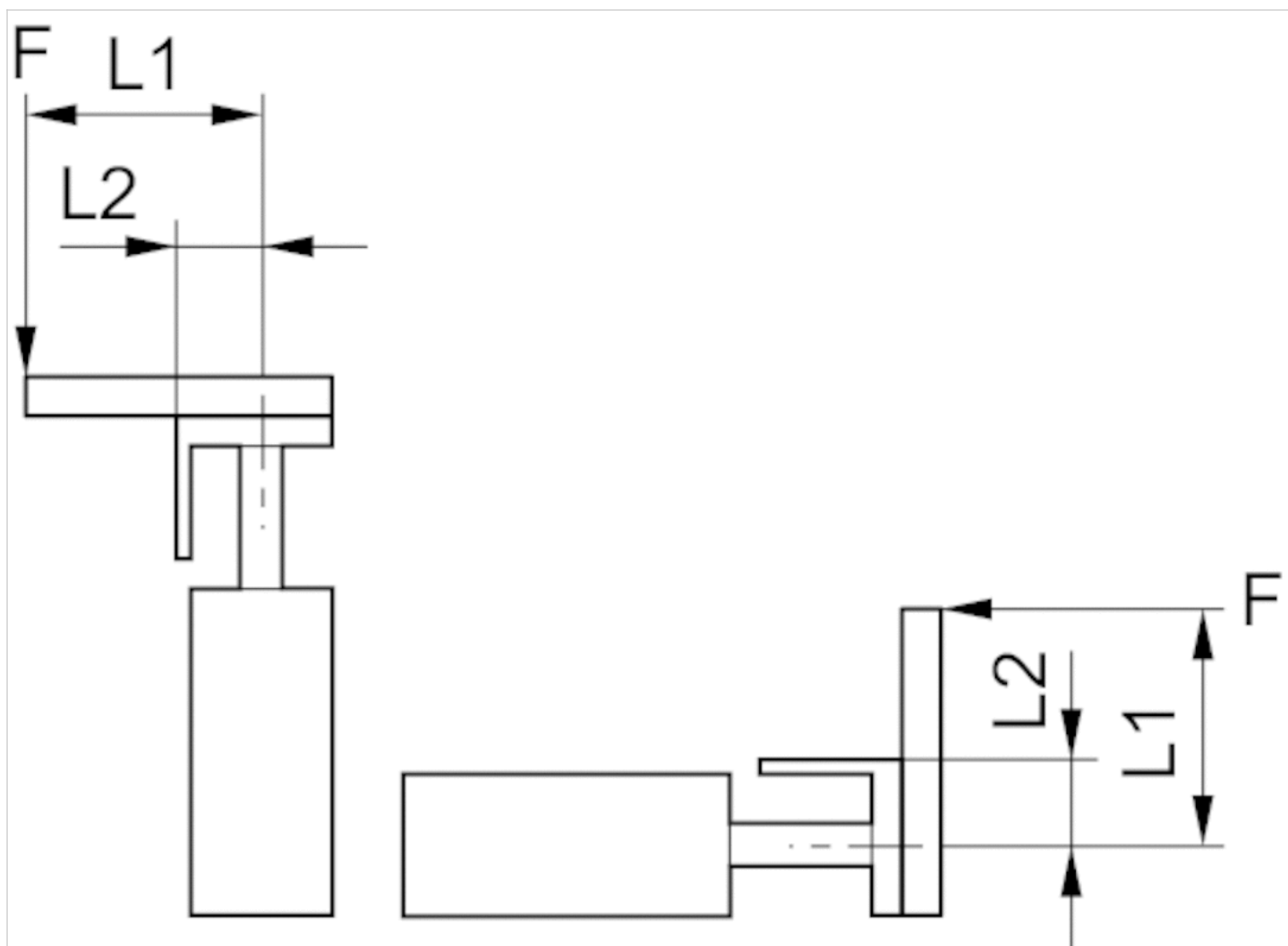


## Dimensions

Piston Ø	F [N]	L1	L2
12 mm	67	115	22
16 mm	120	80	23.7
20 mm	180	55	27

## Dimensions

Permissible lever arm length  $L_1$  at 6 bar with dynamic load



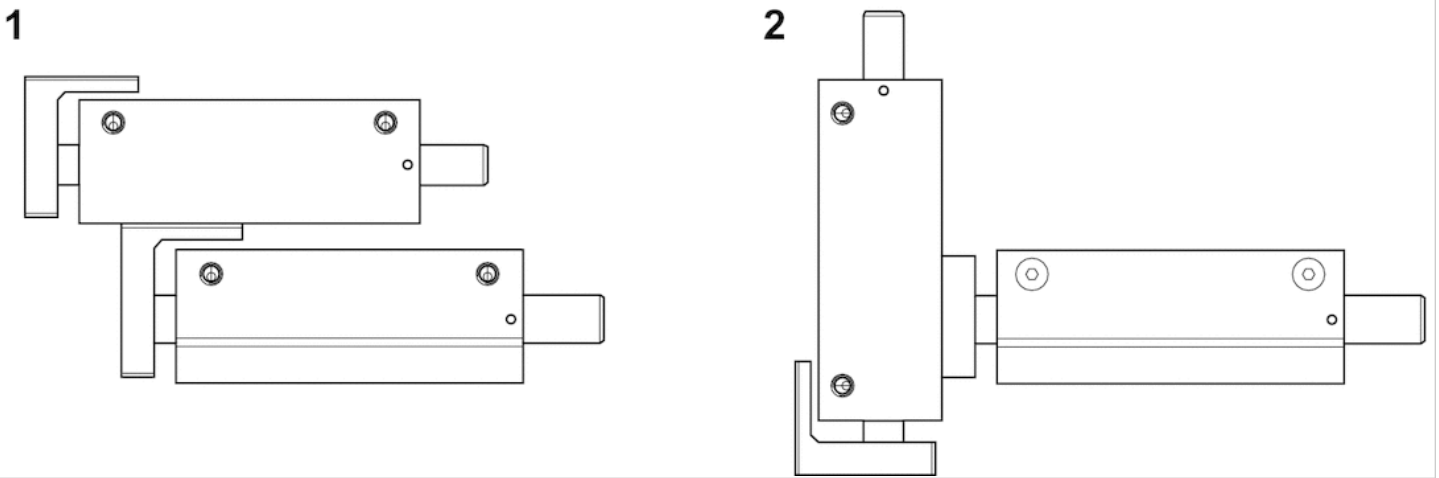
## Dimensions

Piston $\varnothing$	F [N]	F [N] 1)	L1	L2
12 mm	67	23	100	22
16 mm	120	40	75	23.7
20 mm	180	65	50	27

1) Horizontal situation max. force [N]

## Dimensions

### GPC combinations



The GPC-TL can be directly mounted on the front plate of next bigger standard GPC in radial direction, and on next bigger GPC-TL in axial direction.

### Combination radial direction (2)

Piston Ø		GPC 16	GPC 20	GPC 25
12 mm	GPC-TL 12	M5x15 1)	-	-
16 mm	GPC-TL 16	-	M5x15 1)	-
20 mm	GPC-TL 20	-	-	M6x15 1)

1) Screw according to ISO 4762 - M4x25

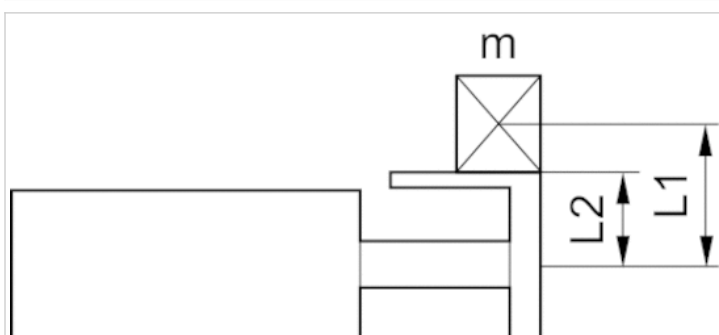
### Combination in axial direction (1)

Piston Ø		GPC-TL 16	GPC-TL 20
12 mm	GPC-TL 12	M4x25 1)	-
16 mm	GPC-TL 16	-	M5x35 1)

1) Screw according to ISO 4762 - M4x25

## Dimensions

### Permissible dynamic load m [kg]

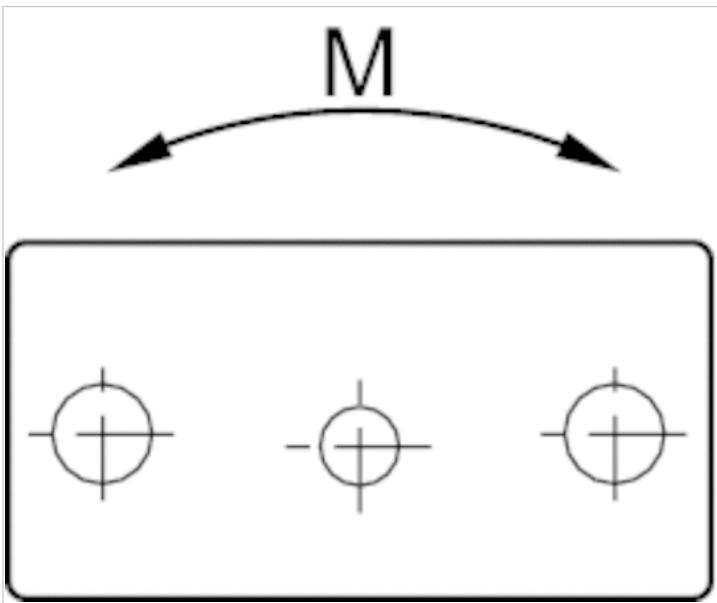


## Dimensions

Piston Ø	L2
12 mm	22
16 mm	23.7
20 mm	27

## Dimensions

### Permissible static moment M [Nm]

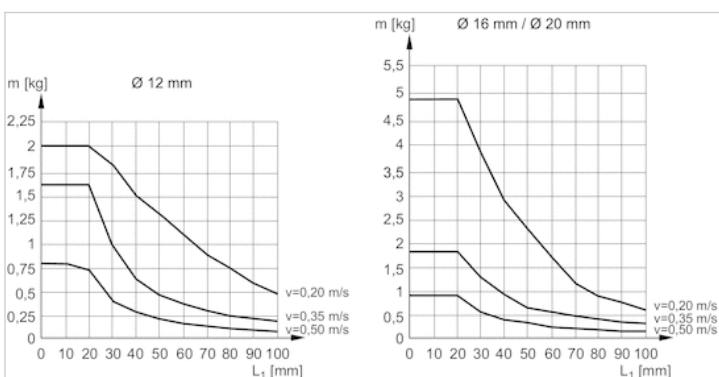


## Dimensions

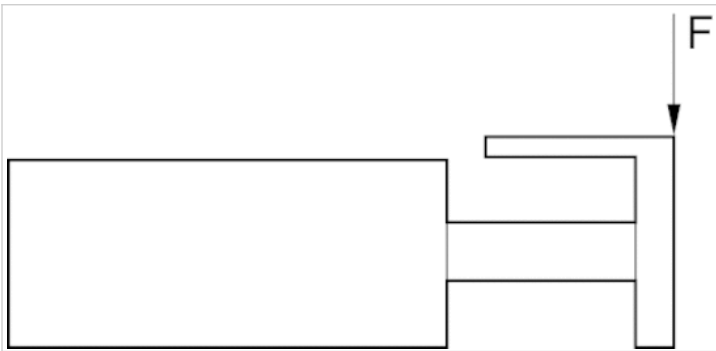
Piston Ø	S=10	S=20	S=25	S=30	S=40	S=50	S=75	S=100
12 mm	0.38	0.34	0.32	0.3	0.46	0.44	0.4	0.38
16 mm	0.63	0.56	0.54	0.52	1.36	1.32	1.2	1.13
20 mm	0.73	0.65	0.62	0.59	1.57	1.51	1.38	1.3

## Diagrams

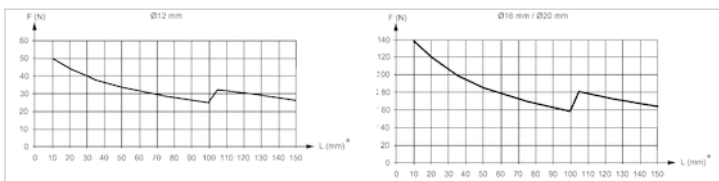
### Permissible dynamic load m [kg]



Permissible static side force F [N]

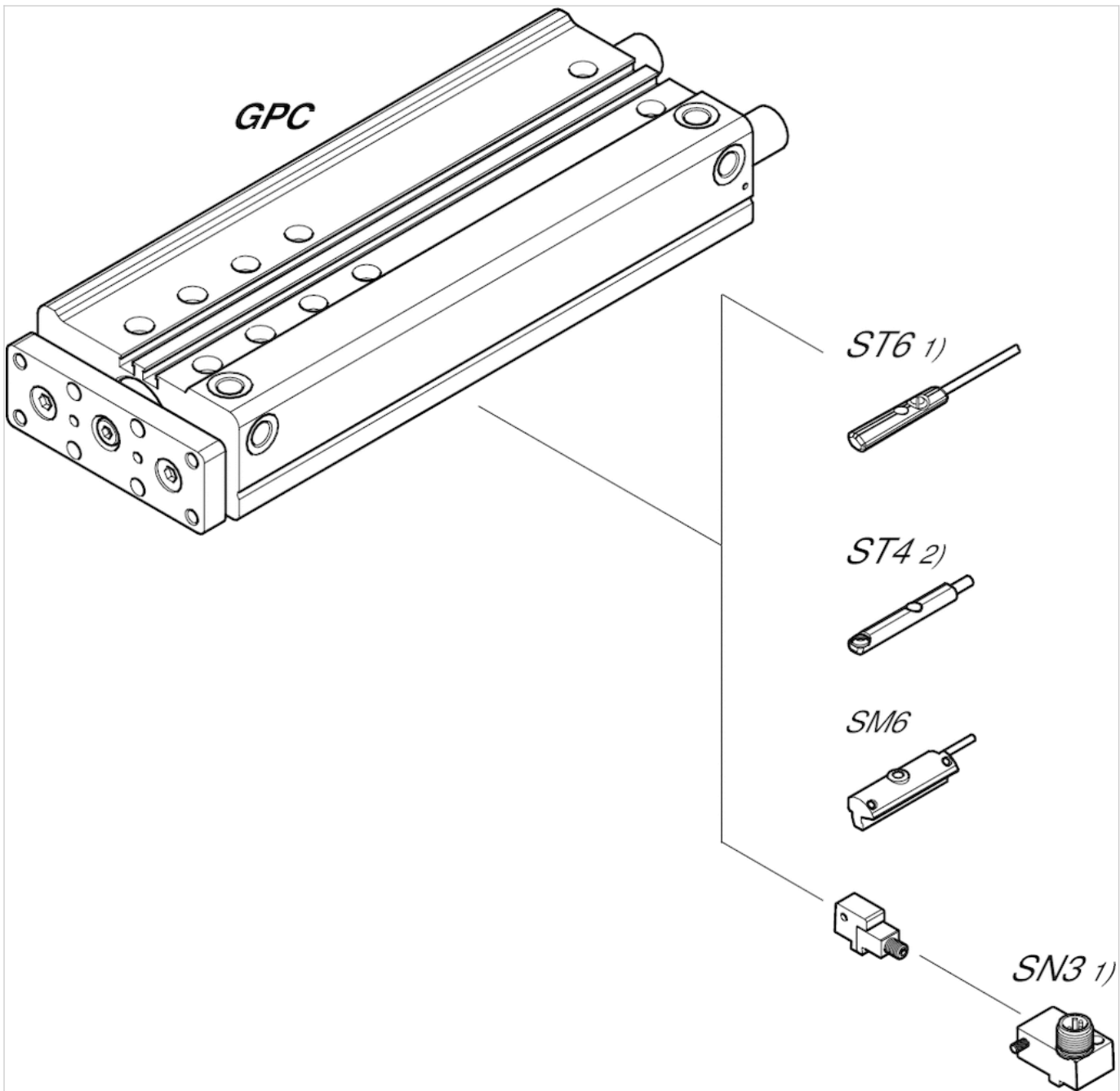


Permissible static side force F [N]



## Accessories overview

## Overview drawing



1)  $\leq \text{Ø}12 \text{ mm}$  (GPC-BV, GPC-E, GPC-TL)

2) Only for  $\text{Ø}10 \text{ mm}$  (GPC-BV) and all  $\text{Ø}$  (GPC-ST)

## NOTE:

This overview drawing is only for orientation to indicate where the various accessory parts can be fastened to the cylinder. The illustration has been simplified for this purpose. It is thus not possible to derive the dimensions from this overview.

# Sensor, Series ST4

- 4 mm T-slot
- with cable
- Plug, M8, 3-pin
- UL certification
- Reed electronic PNP electronic NPN
- Direct mounting for series PRA, SSI, GSU, RTC, CKP, GSP, MSC, MSN, RCM, CVI
- Indirect mounting for series MNI, CSL-RD, ICM



Certificates	UL (Underwriters Laboratories) cULus RoHS
Ambient temperature min./max.	-30 ... 80 °C
Protection class	IP65, IP67
Switching point precision	±0,1 mT
Min./max. DC operating voltage	See table below
Switching logic	NO (make contact)
Display	LED
LED status display	Yellow
Vibration resistance	10 - 55 Hz, 1 mm
Shock resistance	30 g / 11 ms
Cable length L	0.3 m
Mounting screw	Combination: slotted and hexagon socket

## Technical data

Part No.		for
R412019682		PRA, SSI, GSU, RTC, CKP, GSP, MSC, MSN, RCM, CVI
R412019683		PRA, SSI, GSU, RTC, CKP, GSP, MSC, MSN, RCM, CVI
R412019694		PRA, SSI, GSU, RTC, CKP, GSP, MSC, MSN, RCM, CVI

Part No.	Type of contact	Cable length L	Min./max. DC operating voltage
R412019682	Reed	0.3 m	5 ... 30 V DC
R412019683	electronic PNP	0.3 m	10 ... 30 V DC
R412019694	electronic NPN	0.3 m	10 ... 30 V DC

Part No.	Voltage drop U at I <sub>max</sub>	DC switching current, max.
R412019682	≤ 0,5 V	0.13 A
R412019683	≤ 2,5 V	0.1 A
R412019694	≤ 2,5 V	0.1 A

Part No.	AC switching current, max.	Switching capacity
R412019682	0.13 A	3 W / 3 VA
R412019683	-	-
R412019694	-	-

Part No.	Version
R412019682	Protected against polarity reversal
R412019683	short circuit resistant Protected against polarity reversal
R412019694	short circuit resistant Protected against polarity reversal

## Technical information

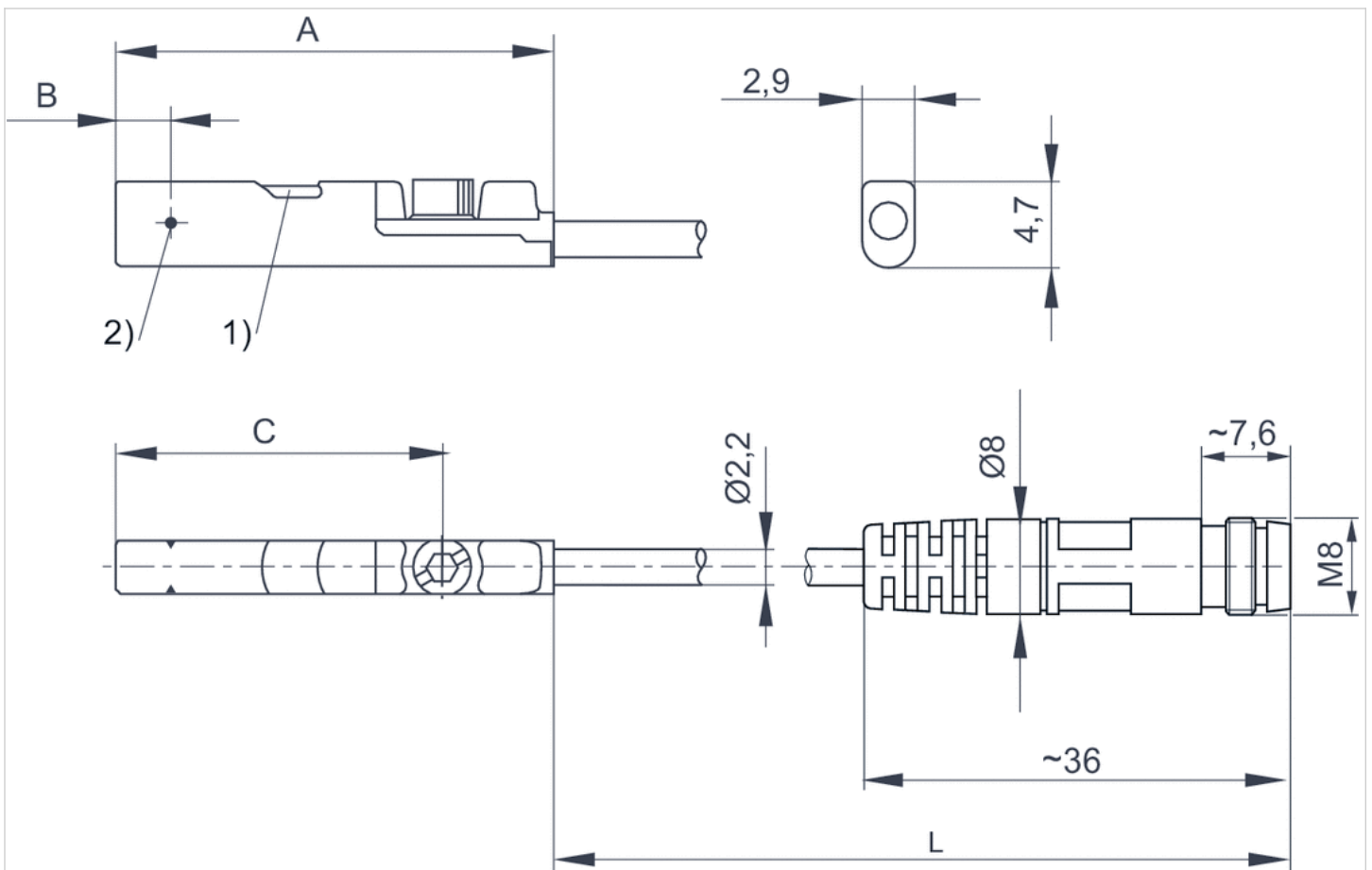
The max. switching capacity must not be exceeded.

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

## Dimensions

### Dimensions



1) LED 2) Switching point  
L = cable length

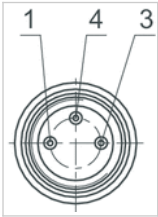


## Dimensions

Part No.	A	B	C
R412019682	26.3	6.3	20.3
R412019683	23.7	2.8	17.7
R412019694	23.7	2.8	17.7

## Pin assignments

### Pin assignments



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

# Sensor, Series ST4

- 4 mm T-slot
- with cable
- Plug, M8, 3-pin, with knurled screw
- UL certification
- Reed electronic PNP
- Direct mounting for series PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI
- Indirect mounting for series MNI, CSL-RD, ICM



Certificates	UL (Underwriters Laboratories) cULus RoHS
Ambient temperature min./max.	-30 ... 80 °C
Protection class	IP65, IP67
Switching point precision	±0,1 mT
Min./max. DC operating voltage	See table below
Switching logic	NO (make contact)
Display	LED
LED status display	Yellow
Vibration resistance	10 - 55 Hz, 1 mm
Shock resistance	30 g / 11 ms
Cable length L	0.3 0.5 m
Mounting screw	Combination: slotted and hexagon socket

## Technical data

Part No.		for
R412019490		PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI
R412019686		PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI
R412019493		PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI
R412019687		PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI

Part No.	Type of contact	Cable length L	Min./max. DC operating voltage
R412019490	Reed	0.3 m	5 ... 30 V DC
R412019686	Reed	0.5 m	5 ... 30 V DC
R412019493	electronic PNP	0.3 m	10 ... 30 V DC
R412019687	electronic PNP	0.5 m	10 ... 30 V DC

Part No.	Voltage drop U at I <sub>max</sub>	DC switching current, max.
R412019490	≤ 0,5 V	0.13 A
R412019686	≤ 0,5 V	0.13 A
R412019493	≤ 2,5 V	0.1 A
R412019687	≤ 2,5 V	0.1 A

Part No.	AC switching current, max.	Switching capacity
R412019490	0.13 A	3 W / 3 VA

Part No.	AC switching current, max.	Switching capacity
R412019686	0.13 A	3 W / 3 VA
R412019493	-	-
R412019687	-	-

Part No.	Version
R412019490	Protected against polarity reversal
R412019686	Protected against polarity reversal
R412019493	short circuit resistant Protected against polarity reversal
R412019687	short circuit resistant Protected against polarity reversal

## Technical information

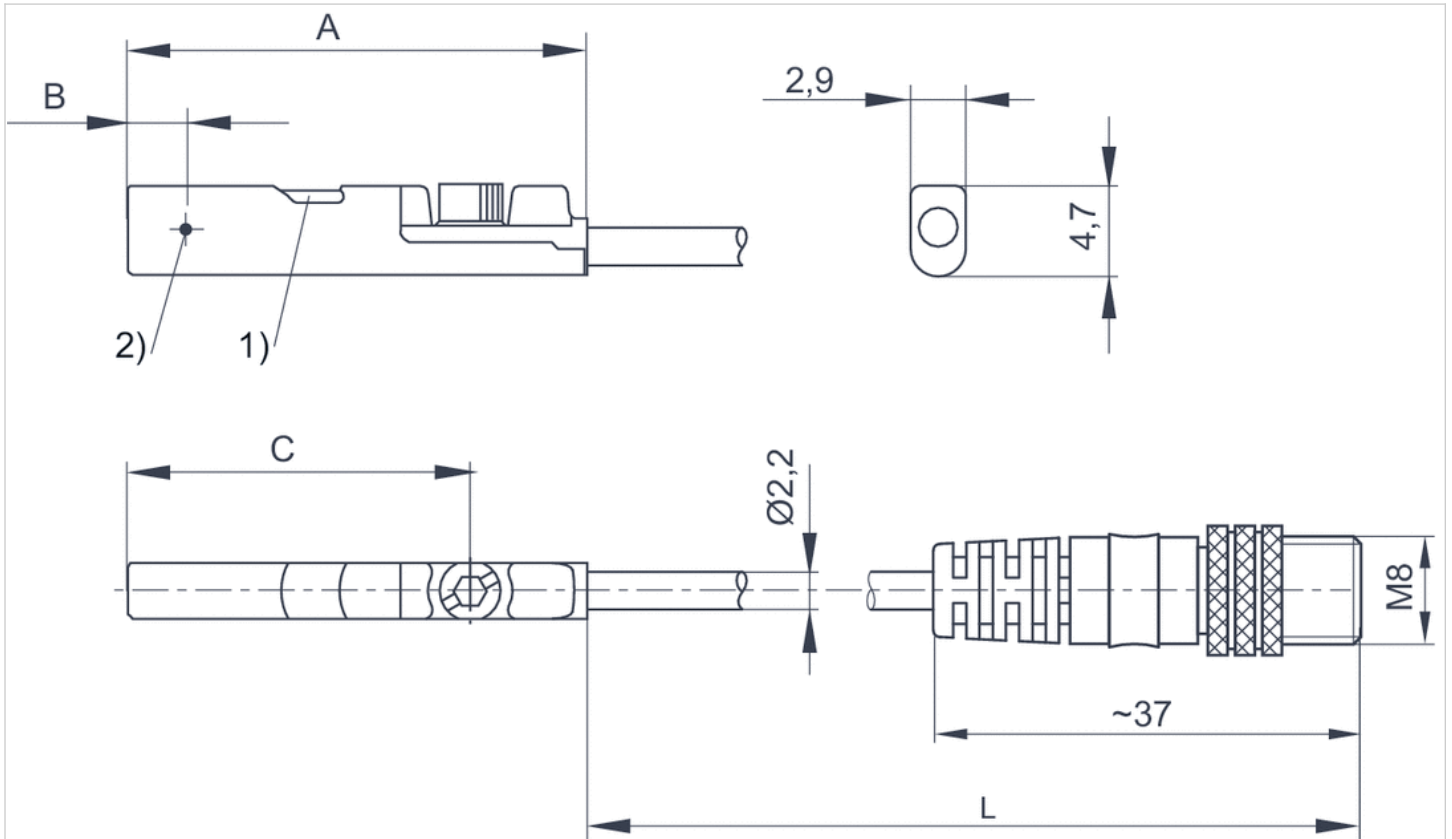
The max. switching capacity must not be exceeded.

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

## Dimensions

### Dimensions



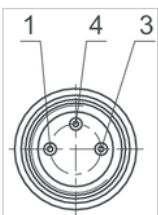
1) LED 2) Switching point  
L = cable length

## Dimensions

Part No.	A	B	C
R412019490	26.3	6.3	20.3
R412019686	26.3	6.3	20.3
R412019493	23.7	2.8	17.7
R412019687	23.7	2.8	17.7

## Pin assignments

### Pin assignments



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

# Sensor, Series ST4

- 4 mm T-slot
- with cable
- open cable ends, 3-pin
- UL certification
- Reed electronic PNP electronic NPN
- Direct mounting for series PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI
- Indirect mounting for series MNI, CSL-RD, ICM



Certificates	UL (Underwriters Laboratories) cULus RoHS
Ambient temperature min./max.	-30 ... 80 °C
Protection class	IP65, IP67
Switching point precision	±0,1 mT
Min./max. DC operating voltage	See table below
Switching logic	NO (make contact)
Display	LED
LED status display	Yellow
Vibration resistance	10 - 55 Hz, 1 mm
Shock resistance	30 g / 11 ms
Cable length L	3 5 m
Mounting screw	Combination: slotted and hexagon socket

## Technical data

Part No.		for
R412019488		PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI
R412019489		PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI
R412019680		PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI
R412019681		PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI
R412019684		PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI
R412019685		PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI

Part No.	Type of contact	Cable length L	Min./max. DC operating voltage
R412019488	Reed	3 m	5 ... 30 V DC
R412019489	Reed	5 m	5 ... 30 V DC
R412019680	electronic PNP	3 m	10 ... 30 V DC
R412019681	electronic PNP	5 m	10 ... 30 V DC
R412019684	electronic NPN	3 m	10 ... 30 V DC
R412019685	electronic NPN	5 m	10 ... 30 V DC

Part No.	Voltage drop U at I <sub>max</sub>	DC switching current, max.
R412019488	≤ 0,5 V	0.13 A
R412019489	≤ 0,5 V	0.13 A
R412019680	≤ 2,5 V	0.1 A
R412019681	≤ 2,5 V	0.1 A

Part No.	Voltage drop U at I <sub>max</sub>	DC switching current, max.
R412019684	≤ 2,5 V	0.1 A
R412019685	≤ 2,5 V	0.1 A

Part No.	AC switching current, max.	Switching capacity
R412019488	0.13 A	3 W / 3 VA
R412019489	0.13 A	3 W / 3 VA
R412019680	-	-
R412019681	-	-
R412019684	-	-
R412019685	-	-

Part No.	Version
R412019488	Protected against polarity reversal
R412019489	Protected against polarity reversal
R412019680	short circuit resistant Protected against polarity reversal
R412019681	short circuit resistant Protected against polarity reversal
R412019684	short circuit resistant Protected against polarity reversal
R412019685	short circuit resistant Protected against polarity reversal

## Technical information

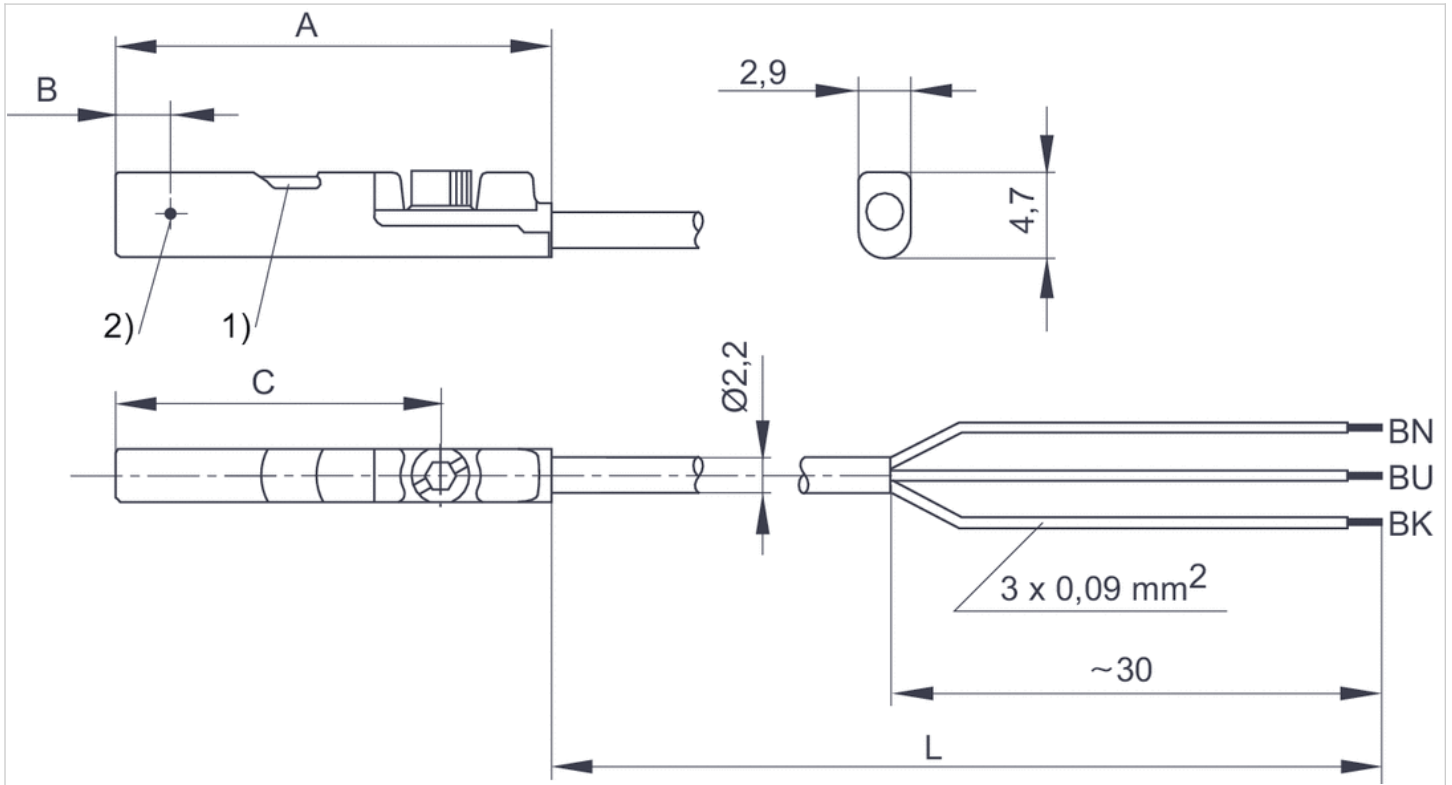
The max. switching capacity must not be exceeded.

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

## Dimensions

### Dimensions



1) LED 2) Switching point

L = cable length

BN = brown, BK = black, BU = blue

## Dimensions

Part No.	A	B	C
R412019488	26.3	6.3	20.3
R412019489	26.3	6.3	20.3
R412019680	23.7	2.8	17.7
R412019681	23.7	2.8	17.7
R412019684	23.7	2.8	17.7
R412019685	23.7	2.8	17.7



# Sensor, Series ST4

- 4 mm T-slot
- with cable
- Plug, M12, 3-pin, with knurled screw
- UL certification
- Reed electronic PNP
- Direct mounting for series PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI
- Indirect mounting for series MNI, CSL-RD, ICM



## Certificates

UL (Underwriters Laboratories) cULus  
RoHS

Ambient temperature min./max.

-30 ... 80 °C

Protection class

IP65, IP67

Switching point precision

±0,1 mT

Min./max. DC operating voltage

See table below

Switching logic

NO (make contact)

Display

LED

LED status display

Yellow

Vibration resistance

10 - 55 Hz, 1 mm

Shock resistance

30 g / 11 ms



Cable length L

0.3 m

Mounting screw

Combination: slotted and hexagon socket

## Technical data

Part No.		for
R412019688		PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI
R412019689		PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI

Part No.	Type of contact	Cable length L	Min./max. DC operating voltage
R412019688	Reed	0.3 m	5 ... 30 V DC
R412019689	electronic PNP	0.3 m	10 ... 30 V DC

Part No.	Voltage drop U at I <sub>max</sub>	DC switching current, max.
R412019688	≤ 0,5 V	0.13 A
R412019689	≤ 2,5 V	0.1 A

Part No.	AC switching current, max.	Switching capacity
R412019688	0.13 A	3 W / 3 VA
R412019689	-	-

Part No.	Version
R412019688	Protected against polarity reversal

Part No.	Version
R412019689	short circuit resistant Protected against polarity reversal

## Technical information

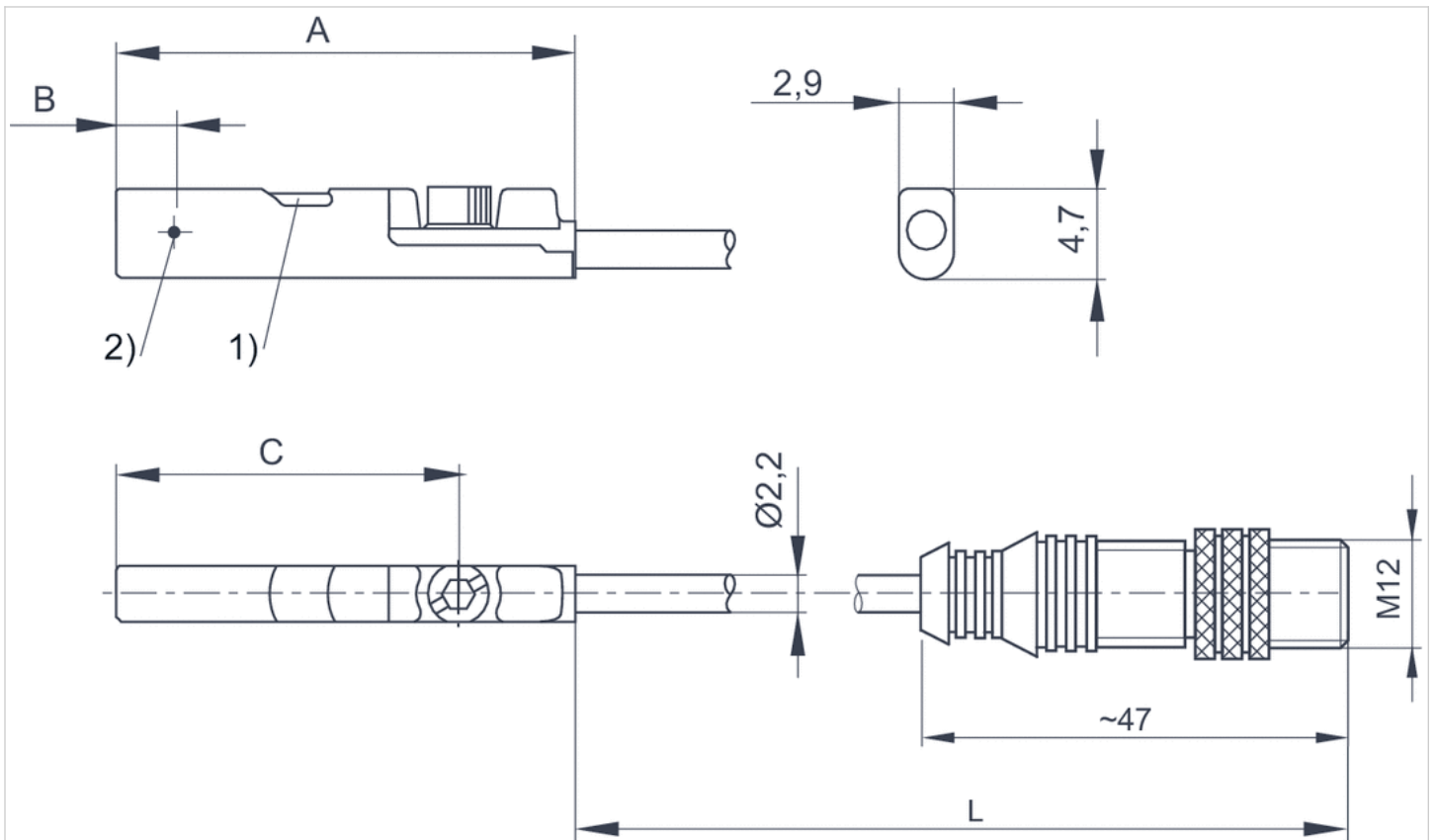
The max. switching capacity must not be exceeded.

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

## Dimensions

### Dimensions

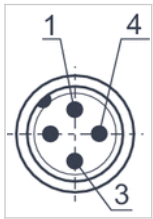


1) LED 2) Switching point  
L = cable length

## Dimensions

Part No.	A	B	C
R412019688	26.3	6.3	20.3
R412019689	23.7	2.8	17.7

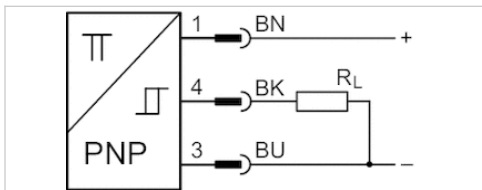
## Pin assignments



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

# Sensor, Series ST6

- 6 mm T-slot
- with cable
- open cable ends, 3-pin
- ATEX
- UL certification, ATEX
- electronic PNP
- Direct mounting for series PRA, PRE, CCI, KPZ, SSI, GPC, CVI
- Indirect mounting for series TRB, ITS, CCL-IS, MNI, CSL-RD, RPC, ICS-D2, ICM, KHZ, TRR



### Certificates

- ATEX class G
- ATEX class D
- Ambient temperature min./max.
- Protection class
- Switching point precision
- Quiescent current (without load)
- Min./max. DC operating voltage
- Switching logic
- LED status display
- Vibration resistance
- Shock resistance
- Cable length L

- ATEX CE declaration of conformity cULus
- RoHS
- II 3G Ex nA IIC T4 Gc X
- II 3D Ex tc IIIC T135°C Dc X
- 20 ... 50 °C
- IP67
- ±0,1 mT
- 10 mA
- 10 ... 30 V DC
- NO (make contact)
- Yellow
- 10 - 55 Hz, 1 mm
- 30 g / 11 ms
- 3 5 m

## Technical data

Part No.	for	Type of contact	Cable length L
R412022854	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic PNP	3 m
R412022856	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic PNP	5 m

Part No.	Voltage drop U at I <sub>max</sub>	DC switching current, max.
R412022854	≤ 2,5 V	0.1 A
R412022856	≤ 2,5 V	0.1 A

Part No.	Max. switching frequency
R412022854	1000 Hz
R412022856	1000 Hz

Part No.	Version
R412022854	short circuit resistant Protected against polarity reversal

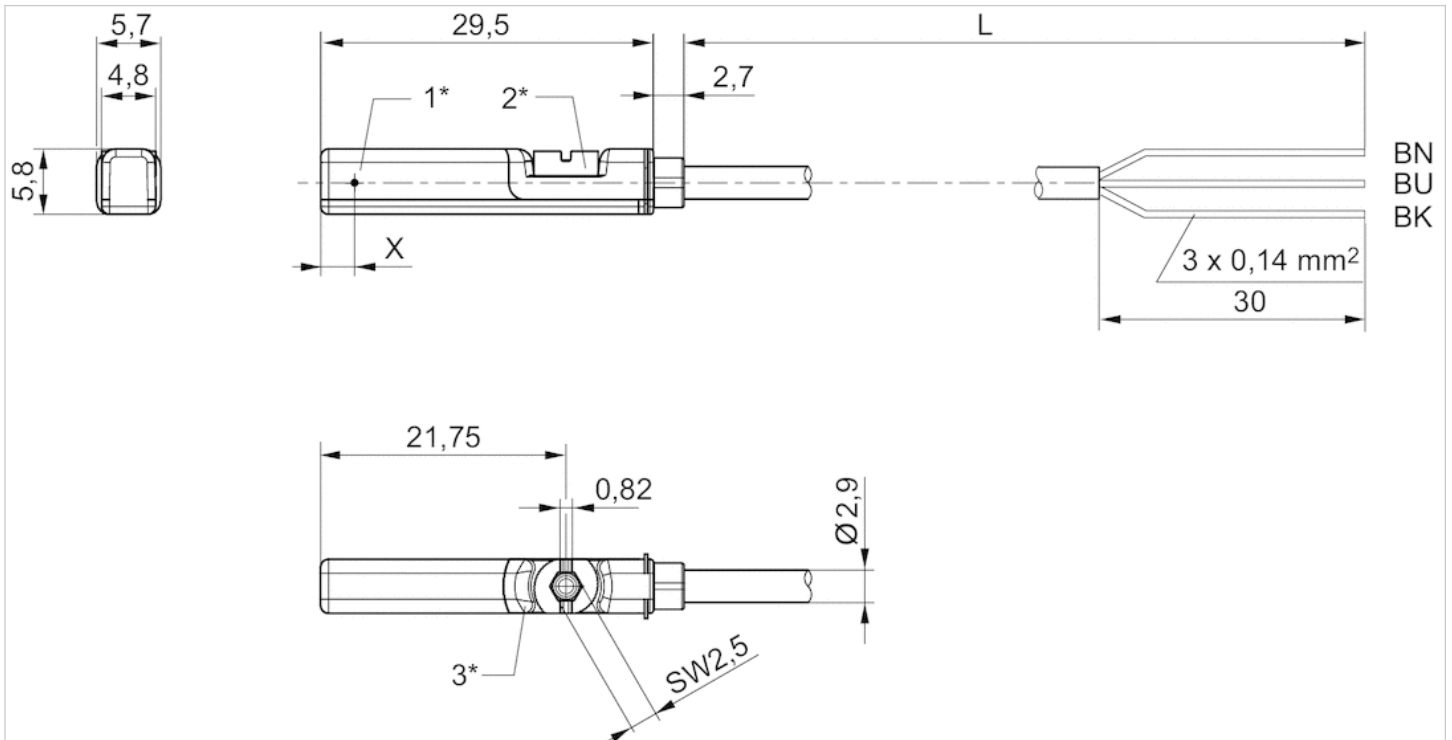
Part No.	Version
R412022856	short circuit resistant Protected against polarity reversal

## Technical information

Material	
Housing	Polyamide
Cable sheath	Polyurethane
Locking screw	Stainless steel

## Dimensions

Fig. 2



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

L = cable length

BN = brown, BK = black, BU = blue

X = electronic: 11.6 mm











## Sensor, Series ST6

- 6 mm T-slot
- with cable
- open cable ends, 2-pin open cable ends, 3-pin
- UL certification
- Reed electronic PNP electronic NPN
- Direct mounting for series PRA, PRE, CCI, KPZ, SSI, GPC, CVI
- Indirect mounting for series TRB, ITS, CCL-IS, MNI, CSL-RD, RPC, ICS-D2, ICM, KHZ, TRR



Ambient temperature min./max.	-30 ... 80 °C
Protection class	IP65, IP67, IP69K
Switching point precision	±0,1 mT
Nominal current, actuated state	30 mA
Quiescent current (without load)	8 mA
Min./max. DC operating voltage	See table below
Min./max. AC operating voltage	See table below
Hysteresis	≥ 0,2 mT
Switching logic	NO (make contact)
LED status display	Yellow
Vibration resistance	10 - 55 Hz, 1 mm
Shock resistance	30 g / 11 ms
Cable length L	3 5 10 m

## Technical data

Part No.		for	Type of contact
R412022866		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Reed
R412027170		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Reed
R412022869		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Reed
R412022870		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Reed
R412022871		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Reed
R412022853		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic PNP
R412022855		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic PNP
R412022857		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic PNP
R412022849		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic NPN
R412022850		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic NPN

Part No.	Cable length L	Min./max. DC operating voltage	Min./max. AC operating voltage
R412022866	3 m	10 ... 230 V DC	10 ... 230 V AC
R412027170	5 m	10 ... 230 V DC	10 ... 230 V AC
R412022869	3 m	10 ... 30 V DC	10 ... 30 V AC
R412022870	5 m	10 ... 30 V DC	10 ... 30 V AC
R412022871	10 m	10 ... 30 V DC	10 ... 30 V AC
R412022853	3 m	10 ... 30 V DC	-
R412022855	5 m	10 ... 30 V DC	-
R412022857	10 m	10 ... 30 V DC	-
R412022849	3 m	10 ... 30 V DC	-
R412022850	5 m	10 ... 30 V DC	-

Part No.	Voltage drop U at I <sub>max</sub>	DC switching current, max.
R412022866	≤ 3,5 V	0.13 A
R412027170	≤ 3,5 V	0.13 A
R412022869	I*Rs	0.3 A
R412022870	≤ 0,1 V	0.3 A
R412022871	I*Rs	0.3 A
R412022853	≤ 2,5 V	0.13 A
R412022855	≤ 2,5 V	0.13 A
R412022857	≤ 2,5 V	0.13 A
R412022849	≤ 2,5 V	0.13 A
R412022850	≤ 2,5 V	0.13 A

Part No.	AC switching current, max.	Switching capacity
R412022866	0.13 A	Reed, 2-pin: max. 10 W
R412027170	0.13 A	Reed, 2-pin: max. 10 W
R412022869	0.5 A	Reed, 3-pin: max. 6 W
R412022870	0.5 A	Reed, 3-pin: max. 6 W
R412022871	0.5 A	Reed, 3-pin: max. 6 W

Part No.	AC switching current, max.	Switching capacity
R412022853	-	-
R412022855	-	-
R412022857	-	-
R412022849	-	-
R412022850	-	-

Part No.	Max. switching frequency	Operating current, not switched
R412022866	400 Hz	-
R412027170	400 Hz	-
R412022869	400 Hz	-
R412022870	400 Hz	-
R412022871	400 Hz	-
R412022853	1000 Hz	8 mA
R412022855	1000 Hz	8 mA
R412022857	1000 Hz	8 mA
R412022849	1000 Hz	8 mA
R412022850	1000 Hz	8 mA

Part No.	Operating current, switched
R412022866	-
R412027170	-
R412022869	-
R412022870	-
R412022871	-
R412022853	30 mA
R412022855	30 mA
R412022857	30 mA
R412022849	30 mA
R412022850	30 mA

Part No.	Version	Fig.	
R412022866	Protected against polarity reversal	Fig. 1	1)
R412027170	Protected against polarity reversal	Fig. 1	1)
R412022869	Protected against polarity reversal	Fig. 2	2)
R412022870	Protected against polarity reversal	Fig. 2	2)
R412022871	Protected against polarity reversal	Fig. 2	2)
R412022853	short circuit resistant Protected against polarity reversal	Fig. 2	3)
R412022855	short circuit resistant Protected against polarity reversal	Fig. 2	3)
R412022857	short circuit resistant Protected against polarity reversal	Fig. 2	3)
R412022849	short circuit resistant Protected against polarity reversal	Fig. 2	3)
R412022850	short circuit resistant Protected against polarity reversal	Fig. 2	3)

1) open cable ends, 2-pin, The product of operating voltage and continuous current must not exceed the maximum switching capacity.

2) open cable ends, 3-pin, The product of operating voltage and continuous current must not exceed the maximum switching capacity.

3) open cable ends, 3-pin



## Technical information

No cULus certification for 230 V variant.

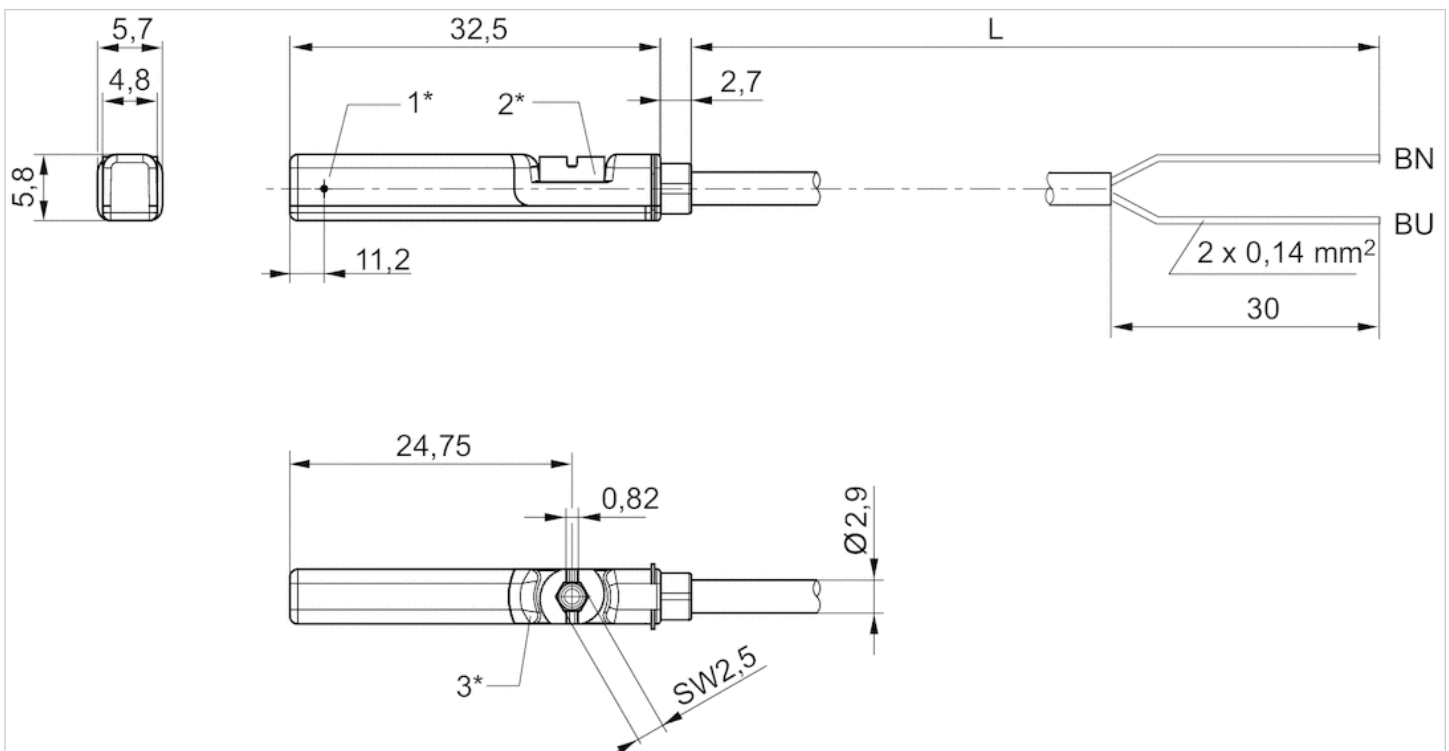
## Technical information

### Material

Housing	Polyamide
Cable sheath	Polyurethane
Locking screw	Stainless steel

## Dimensions

Fig. 1

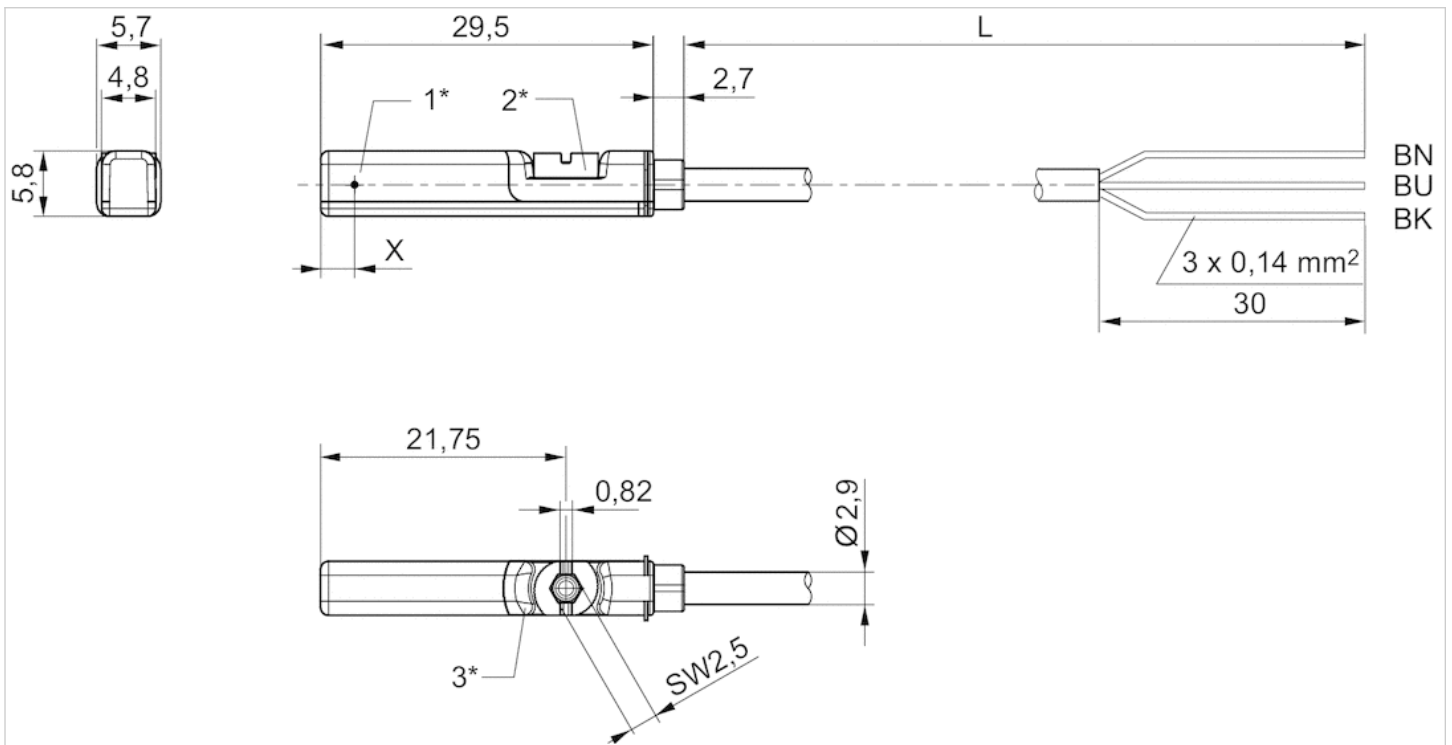


1\* = switching point 2\* = locking screw 3\* = LED window, transparent

L = cable length

BN=brown, BU=blue

Fig. 2



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






# Sensor, Series ST6

- 6 mm T-slot
- with cable
- Plug, M8, 3-pin Plug, M8, 2-pin
- UL certification
- Reed electronic PNP electronic NPN
- Direct mounting for series PRA, PRE, CCI, KPZ, SSI, GPC, CVI
- Indirect mounting for series TRB, ITS, CCL-IS, MNI, CSL-RD, RPC, ICS-D2, ICM, KHZ, TRR



Certificates	CE declaration of conformity cULus RoHS
Ambient temperature min./max.	-30 ... 80 °C
Protection class	IP65, IP67
Switching point precision	±0,1 mT
Nominal current, actuated state	30 mA
Quiescent current (without load)	8 mA
Min./max. DC operating voltage	10 ... 30 V DC
Min./max. AC operating voltage	See table below
Hysteresis	≥ 0,2 mT
Switching logic	NO (make contact)
LED status display	Yellow
Vibration resistance	10 - 55 Hz, 1 mm
Shock resistance	30 g / 11 ms
Cable length L	0.3 m

## Technical data

Part No.		for	Type of contact
R412022868		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Reed
R412027172		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Reed
R412022872		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Reed
R412022858		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic PNP
R412022851		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic NPN

Part No.	Cable length L	Min./max. AC operating voltage	Voltage drop U at I <sub>max</sub>
R412022868	0.3 m	10 ... 30 V AC	≤ 3,5 V
R412027172	0.3 m	10 ... 30 V AC	≤ 3,5 V
R412022872	0.3 m	10 ... 30 V AC	≤ 0,1 V
R412022858	0.3 m	-	≤ 2,5 V
R412022851	0.3 m	-	≤ 2,5 V

Part No.	DC switching current, max.	AC switching current, max.
R412022868	0.13 A	0.13 A
R412027172	0.13 A	0.13 A
R412022872	0.3 A	0.5 A
R412022858	0.13 A	-

Part No.	DC switching current, max.	AC switching current, max.
R412022851	0.13 A	-

Part No.	Switching capacity	Max. switching frequency
R412022868	Reed, 2-pin: max. 10 W	400 Hz
R412027172	Reed, 2-pin: max. 10 W	400 Hz
R412022872	Reed, 3-pin: max. 6 W	400 Hz
R412022858	-	1000 Hz
R412022851	-	1000 Hz

Part No.	Operating current, not switched	Operating current, switched
R412022868	-	-
R412027172	-	-
R412022872	-	-
R412022858	8 mA	30 mA
R412022851	8 mA	30 mA

Part No.	Version	
R412022868	Protected against polarity reversal	1)
R412027172	Protected against polarity reversal	1)
R412022872	Protected against polarity reversal	1)
R412022858	short circuit resistant Protected against polarity reversal	-
R412022851	short circuit resistant Protected against polarity reversal	-

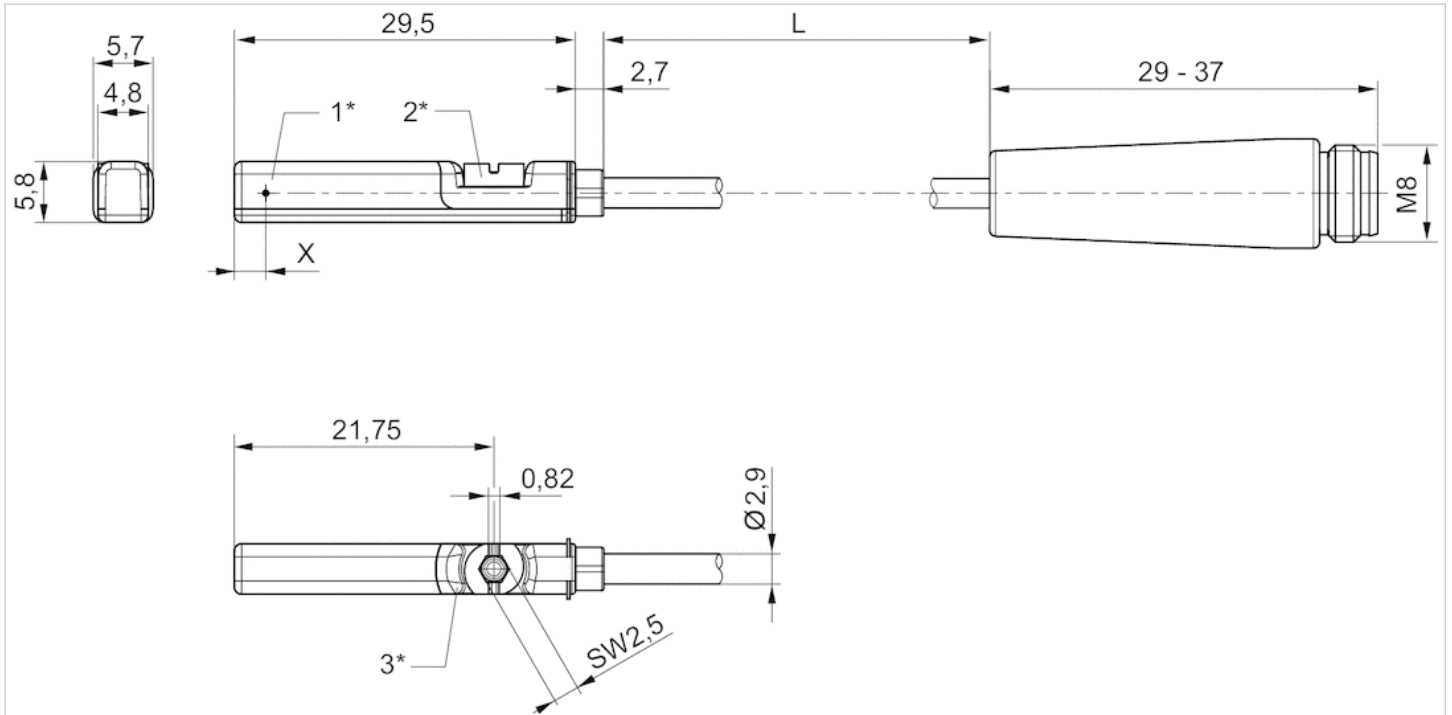
1) The product of operating voltage and continuous current must not exceed the maximum switching capacity.

## Technical information

Material	
Housing	Polyamide
Cable sheath	Polyurethane
Locking screw	Stainless steel

## Dimensions

### Dimensions



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

L = cable length

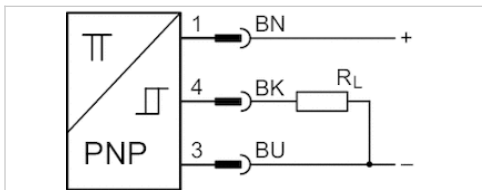
X = electronic: 11,6 mm, Reed: 8,3 mm

# Sensor, Series ST6

- 6 mm T-slot
- with cable
- Plug, M12, 3-pin, with knurled screw
- ATEX
- UL certification, ATEX
- electronic PNP
- Direct mounting for series PRA, PRE, CCI, KPZ, SSI, GPC, CVI
- Indirect mounting for series TRB, ITS, CCL-IS, MNI, CSL-RD, RPC, ICS-D2, ICM, KHZ, TRR



Certificates	ATEX CE declaration of conformity cULus RoHS
ATEX class G	II 3G Ex nA IIC T4 Gc X
ATEX class D	II 3D Ex tc IIIC T135°C Dc X
Ambient temperature min./max.	-20 ... 50 °C
Protection class	IP67
Switching point precision	±0,1 mT
Quiescent current (without load)	10 mA
Min./max. DC operating voltage	10 ... 30 V DC
Switching logic	NO (make contact)
LED status display	Yellow Yellow
Vibration resistance	10 - 55 Hz, 1 mm
Shock resistance	30 g / 11 ms
Cable length L	0.3 m



## Technical data

Part No.	for	Type of contact	Cable length L
R412022864	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic PNP	0.3 m

Part No.	Voltage drop U at I <sub>max</sub>	DC switching current, max.
R412022864	≤ 2,5 V	0.1 A

Part No.	Max. switching frequency
R412022864	1000 Hz

Part No.	Version
R412022864	short circuit resistant Protected against polarity reversal

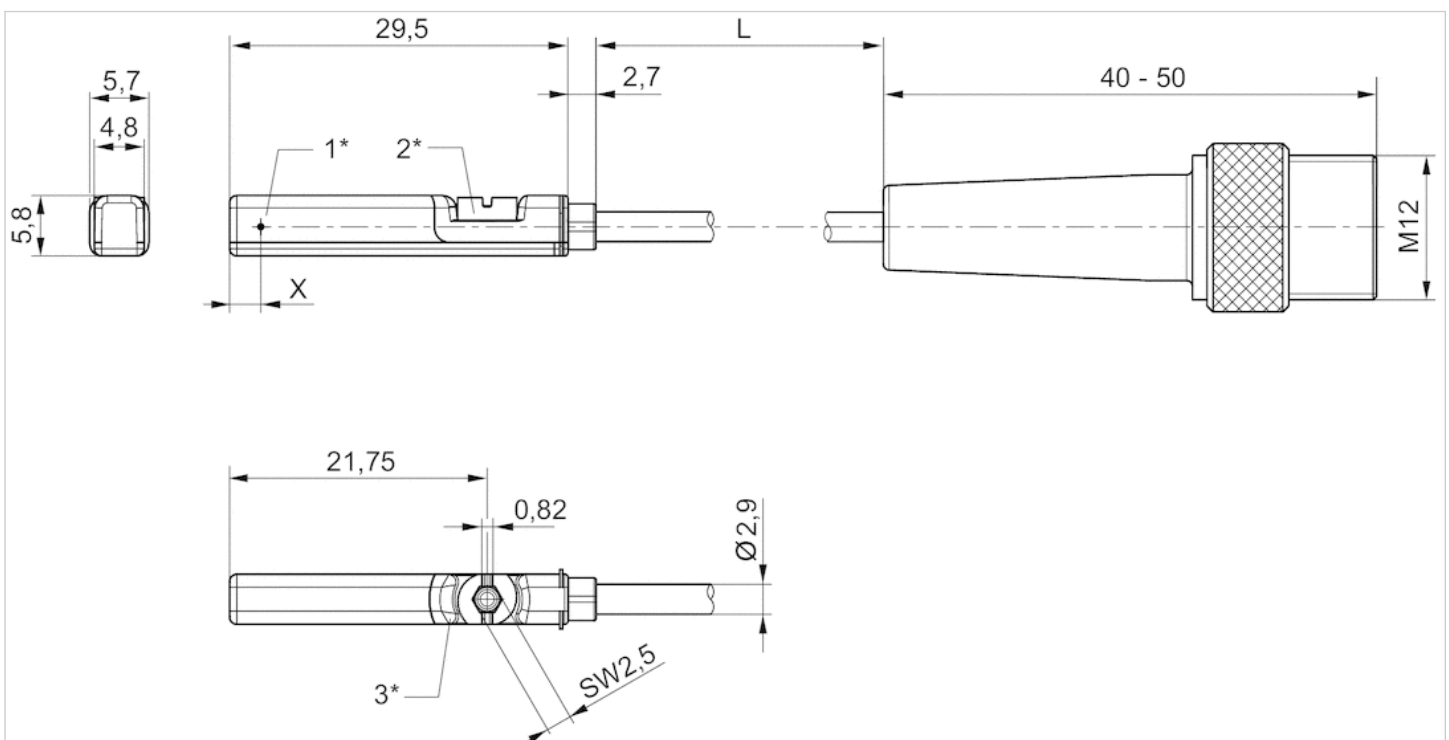
## Technical information

### Material

Housing	Polyamide
Cable sheath	Polyurethane
Locking screw	Stainless steel

## Dimensions

### Dimensions



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

L = cable length

X = PNP: 11,6 mm, reed: 8,3 mm

## Pin assignments

### Pin assignments



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







# Sensor, Series ST6

- 6 mm T-slot
- with cable
- Plug, M12, 2-pin, with knurled screw Plug, M12, 4-pin, with knurled screw
- UL certification
- Reed electronic PNP
- Direct mounting for series PRA, PRE, CCI, KPZ, SSI, GPC, CVI
- Indirect mounting for series TRB, ITS, CCL-IS, MNI, CSL-RD, RPC, ICS-D2, ICM, KHZ, TRR



Certificates	CE declaration of conformity cULus RoHS
Ambient temperature min./max.	-30 ... 80 °C
Protection class	See table below
Switching point precision	±0,1 mT
Nominal current, actuated state	30 mA
Quiescent current (without load)	8 mA
Min./max. DC operating voltage	10 ... 30 V DC
Min./max. AC operating voltage	See table below
Hysteresis	≥ 0,2 mT
Switching logic	NO (make contact)
LED status display	Yellow
Vibration resistance	10 - 55 Hz, 1 mm
Shock resistance	30 g / 11 ms
Cable length L	0.3 0.1 3 5 m

## Technical data

Part No.		for	Type of contact
R412027171		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Reed
R412022876		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Reed
R412022879		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic PNP
R412022863		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic PNP
R412022877		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic PNP
R412022878		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic PNP

Part No.	Cable length L	Min./max. AC operating voltage	Voltage drop U at I <sub>max</sub>
R412027171	0.3 m	10 ... 30 V AC	≤ 3,5 V
R412022876	0.3 m	10 ... 30 V AC	≤ 0,1 V
R412022879	0.1 m	-	≤ 2,5 V
R412022863	0.3 m	-	≤ 2,5 V
R412022877	3 m	-	≤ 2,5 V
R412022878	5 m	-	≤ 2,5 V

Part No.	DC switching current, max.	AC switching current, max.
R412027171	0.13 A	0.13 A
R412022876	0.3 A	0.5 A



Part No.	DC switching current, max.	AC switching current, max.
R412022879	0.13 A	-
R412022863	0.13 A	-
R412022877	0.13 A	-
R412022878	0.13 A	-

Part No.	Switching capacity	Max. switching frequency
R412027171	Reed, 2-pin: max. 10 W	400 Hz
R412022876	Reed, 3-pin: max. 6 W	400 Hz
R412022879	-	1000 Hz
R412022863	-	1000 Hz
R412022877	-	1000 Hz
R412022878	-	1000 Hz

Part No.	Operating current, not switched	Operating current, switched	Protection class
R412027171	-	-	IP65, IP67
R412022876	-	-	IP65, IP67
R412022879	8 mA	30 mA	IP65, IP67
R412022863	8 mA	30 mA	IP65, IP67, IP69K
R412022877	8 mA	30 mA	IP65, IP67
R412022878	8 mA	30 mA	IP65, IP67

Part No.	Version	
R412027171	Protected against polarity reversal	1)
R412022876	Protected against polarity reversal	1)
R412022879	short circuit resistant Protected against polarity reversal	-
R412022863	short circuit resistant Protected against polarity reversal	-
R412022877	short circuit resistant Protected against polarity reversal	-
R412022878	short circuit resistant Protected against polarity reversal	-

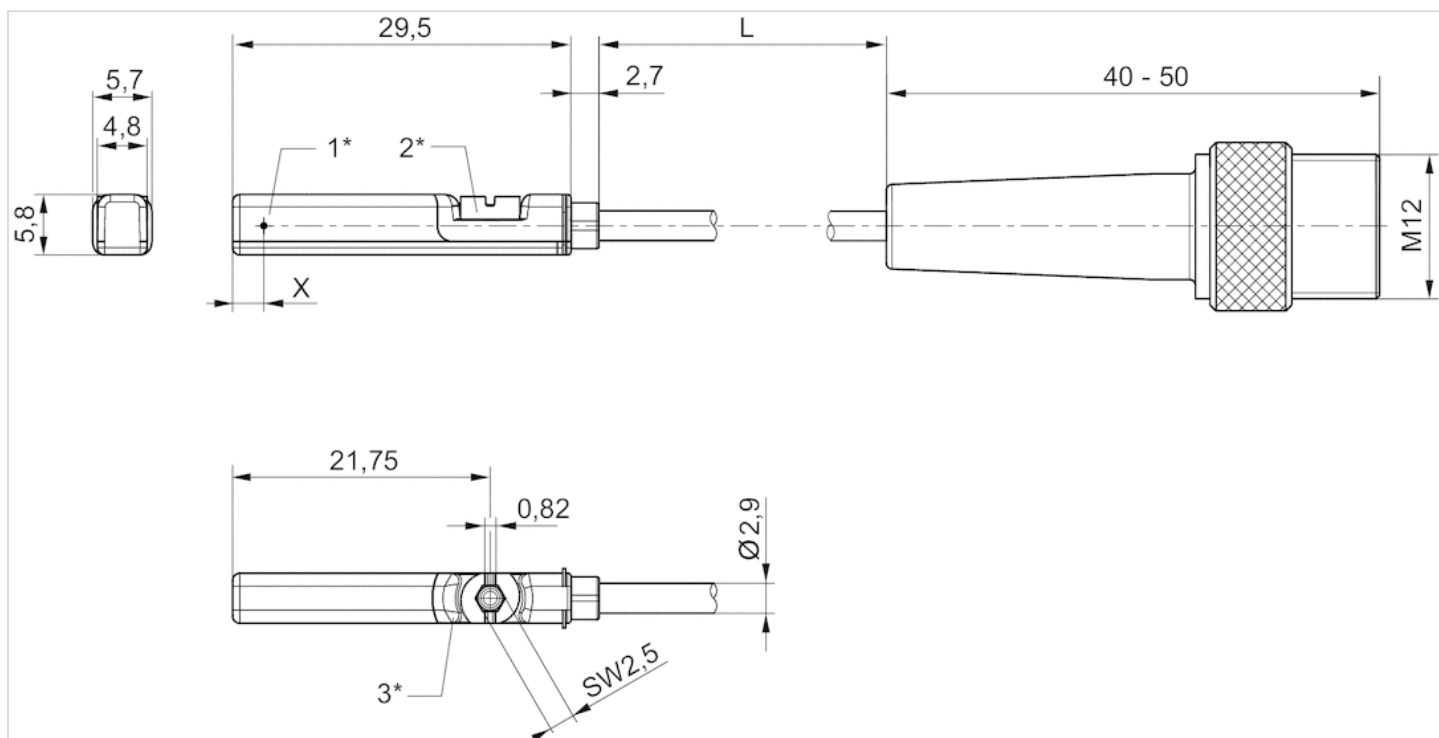
1) The product of operating voltage and continuous current must not exceed the maximum switching capacity.

## Technical information

Material	
Housing	Polyamide
Cable sheath	Polyurethane
Locking screw	Stainless steel

## Dimensions

### Dimensions



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

L = cable length

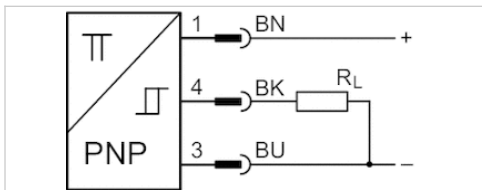
X = PNP: 11,6 mm, reed: 8,3 mm

# Sensor, Series ST6

- 6 mm T-slot
- with cable
- Plug, M8, 3-pin, with knurled screw
- ATEX
- UL certification, ATEX
- electronic PNP
- Direct mounting for series PRA, PRE, CCI, KPZ, SSI, GPC, CVI
- Indirect mounting for series TRB, ITS, CCL-IS, MNI, CSL-RD, RPC, ICS-D2, ICM, KHZ, TRR



Certificates	ATEX CE declaration of conformity cULus RoHS
ATEX class G	II 3G Ex nA IIC T4 Gc X
ATEX class D	II 3D Ex tc IIIC T135°C Dc X
Ambient temperature min./max.	-20 ... 50 °C
Protection class	IP65, IP67
Switching point precision	±0,1 mT
Quiescent current (without load)	10 mA
Min./max. DC operating voltage	10 ... 30 V DC
Switching logic	NO (make contact)
LED status display	Yellow Yellow
Vibration resistance	10 - 55 Hz, 1 mm
Shock resistance	30 g / 11 ms
Cable length L	0.3 m



## Technical data

Part No.	for	Type of contact	Cable length L
R412022860	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic PNP	0.3 m

Part No.	Voltage drop U at I <sub>max</sub>	DC switching current, max.
R412022860	≤ 2,5 V	0.1 A

Part No.	Max. switching frequency
R412022860	1000 Hz

Part No.	Version
R412022860	short circuit resistant Protected against polarity reversal

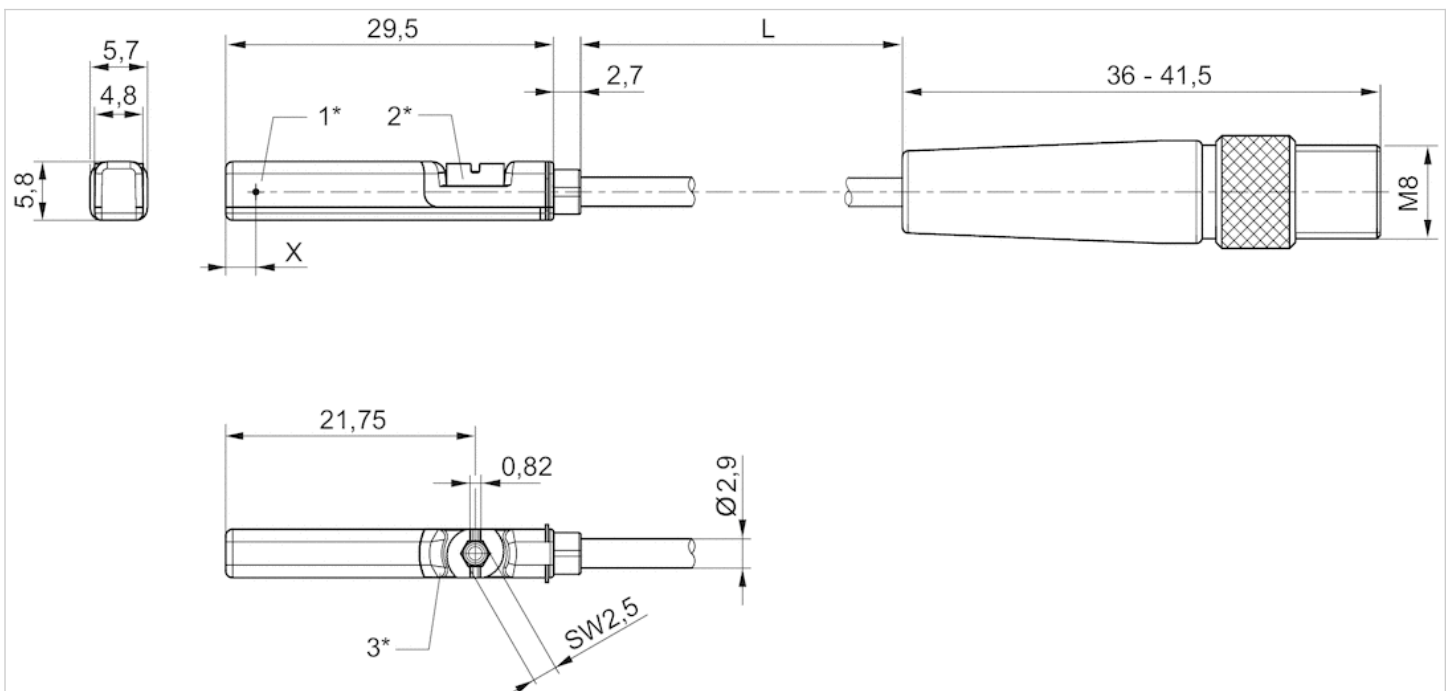
## Technical information

### Material

Housing	Polyamide
Cable sheath	Polyurethane
Locking screw	Stainless steel

## Dimensions

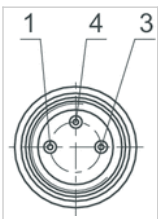
### Dimensions



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

## Pin assignments

### Pin assignments



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








# Sensor, Series ST6

- 6 mm T-slot
- with cable
- Plug, M8, 3-pin, with knurled screw
- UL certification
- Reed electronic PNP electronic NPN
- Direct mounting for series PRA, PRE, CCI, KPZ, SSI, GPC, CVI
- Indirect mounting for series TRB, ITS, CCL-IS, MNI, CSL-RD, RPC, ICS-D2, ICM, KHZ, TRR



Certificates	CE declaration of conformity cULus RoHS
Ambient temperature min./max.	-30 ... 80 °C
Protection class	IP65, IP67
Switching point precision	±0,1 mT
Nominal current, actuated state	30 mA
Quiescent current (without load)	8 mA
Min./max. DC operating voltage	10 ... 30 V DC
Min./max. AC operating voltage	See table below
Hysteresis	≥ 0,2 mT
Switching logic	NO (make contact)
Switching capacity	Reed, 3-pin: max. 6 W
LED status display	Yellow
Vibration resistance	10 - 55 Hz, 1 mm
Shock resistance	30 g / 11 ms
Cable length L	0.3 0.5 m

## Technical data

Part No.		for	Type of contact
R412022873		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Reed
R412022875		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Reed
R412022874		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Reed
R412022859		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic PNP
R412022862		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic PNP
R412022861		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic PNP
R412022852		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic NPN

Part No.	Cable sheath	Cable length L	Min./max. AC operating voltage
R412022873	Polyurethane	0.3 m	10 ... 30 V AC
R412022875	Polyvinyl chloride	0.3 m	10 ... 30 V AC
R412022874	Polyurethane	0.5 m	10 ... 30 V AC
R412022859	Polyurethane	0.3 m	-
R412022862	Polyvinyl chloride	0.3 m	-
R412022861	Polyurethane	0.5 m	-
R412022852	Polyurethane	0.3 m	-

Part No.	Voltage drop U at I <sub>max</sub>	DC switching current, max.
R412022873	I*Rs	0.3 A
R412022875	I*Rs	0.3 A
R412022874	I*Rs	0.3 A
R412022859	≤ 2,5 V	0.13 A
R412022862	≤ 2,5 V	0.13 A
R412022861	≤ 2,5 V	0.13 A
R412022852	≤ 2,5 V	0.13 A

Part No.	AC switching current, max.	Max. switching frequency
R412022873	0.5 A	400 Hz
R412022875	0.5 A	400 Hz
R412022874	0.5 A	400 Hz
R412022859	-	1000 Hz
R412022862	-	1000 Hz
R412022861	-	1000 Hz
R412022852	-	1000 Hz

Part No.	Operating current, not switched	Operating current, switched
R412022873	-	-
R412022875	-	-
R412022874	-	-
R412022859	8 mA	30 mA
R412022862	8 mA	30 mA
R412022861	8 mA	30 mA
R412022852	8 mA	30 mA

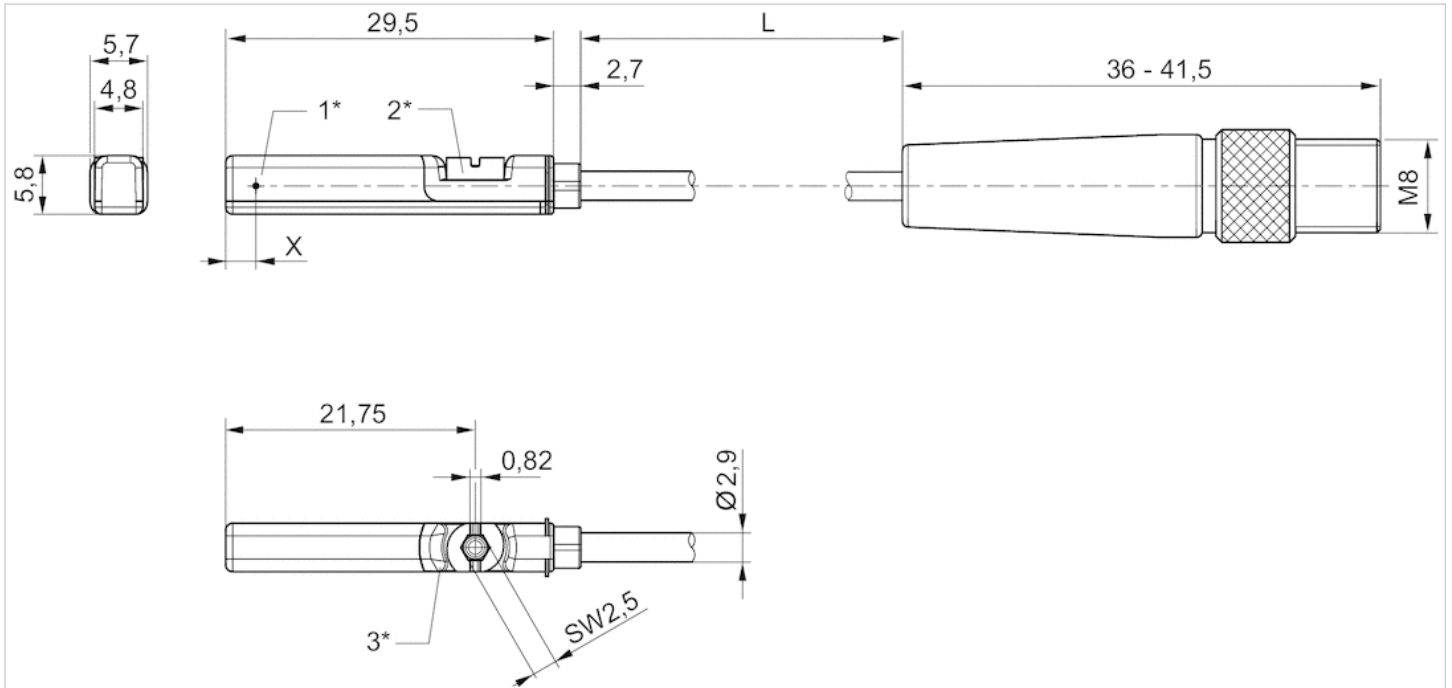
Part No.	Version
R412022873	Protected against polarity reversal
R412022875	Protected against polarity reversal
R412022874	Protected against polarity reversal
R412022859	short circuit resistant Protected against polarity reversal
R412022862	short circuit resistant Protected against polarity reversal
R412022861	short circuit resistant Protected against polarity reversal
R412022852	short circuit resistant Protected against polarity reversal

## Technical information

Material	
Housing	Polyamide
Cable sheath	Polyurethane Polyvinyl chloride
Locking screw	Stainless steel

## Dimensions

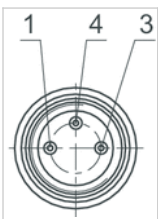
### Dimensions



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

## Pin assignments

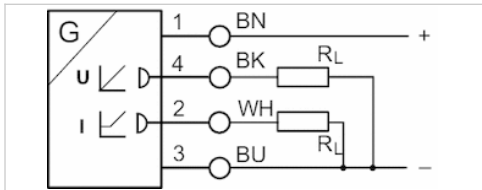
### Pin assignments



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

# Sensors, Series SM6

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



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

## Technical data

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

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



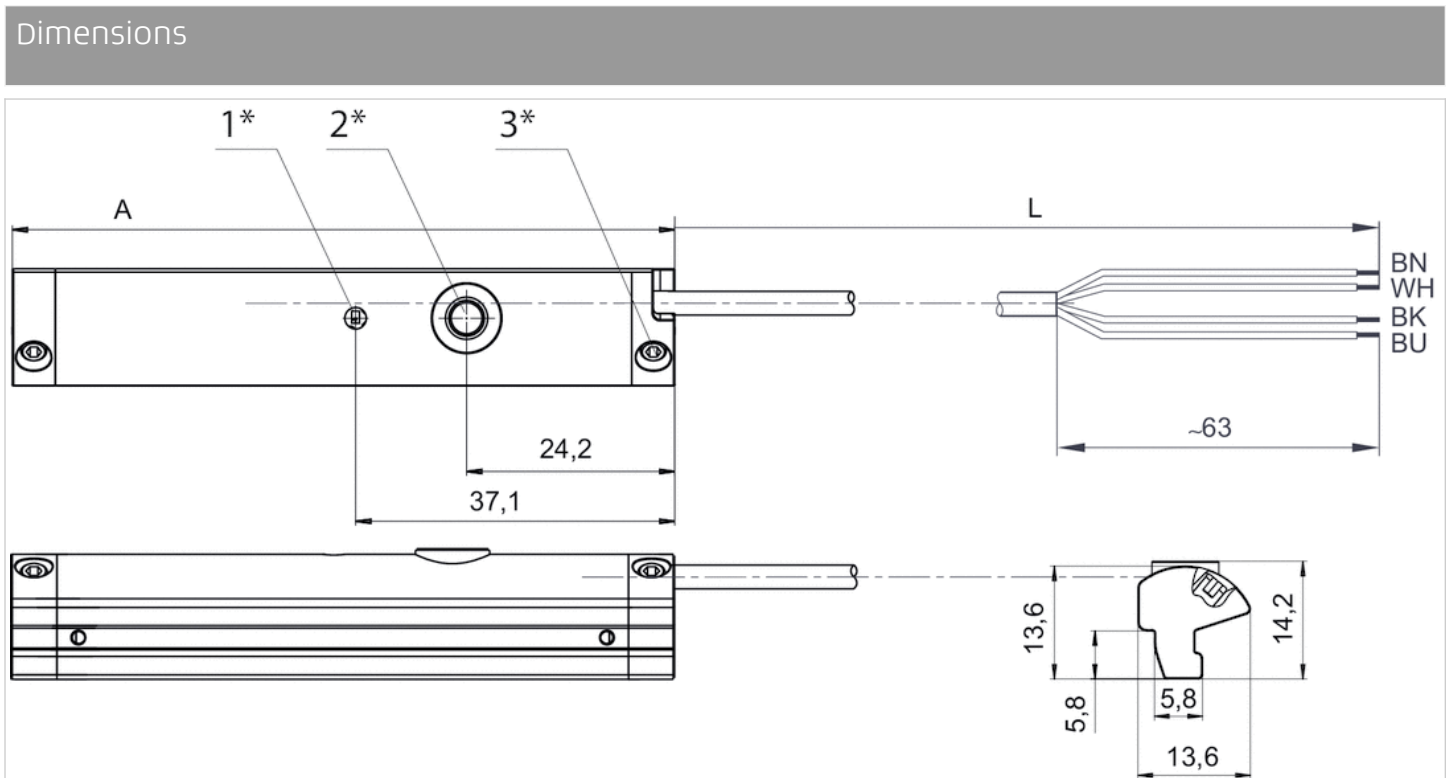
Part No.	max. measuring range	Overall length Sensor A
R412010415	224 mm	237 mm
R412010417	256 mm	269 mm

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

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

## Dimensions

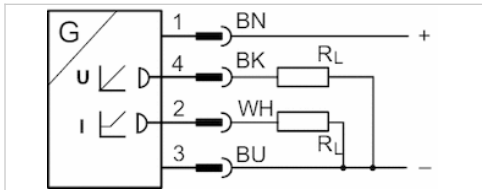


- 1\* = LED 2\* = teach button 3\* = threaded pin M3x11
- L = cable length
- (1) BN=brown
- (2) WH=white
- (3) BU=blue

(4) BK=black  
A = sensor length

# Sensors, Series SM6

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



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

## Technical data

Part No.	for	Type of contact	Cable length L
R412010142	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	0.3 m
R412010144	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	0.3 m
R412010263	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	0.3 m
R412010265	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	0.3 m
R412010410	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	0.3 m
R412010412	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	0.3 m
R412010414	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	0.3 m
R412010416	PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Analog	0.3 m

Part No.	max. measuring range	Overall length Sensor A
R412010142	32 mm	45 mm
R412010144	64 mm	77 mm
R412010263	96 mm	109 mm
R412010265	128 mm	141 mm
R412010410	160 mm	173 mm
R412010412	192 mm	205 mm

Part No.	max. measuring range	Overall length Sensor A
R412010414	224 mm	237 mm
R412010416	256 mm	269 mm

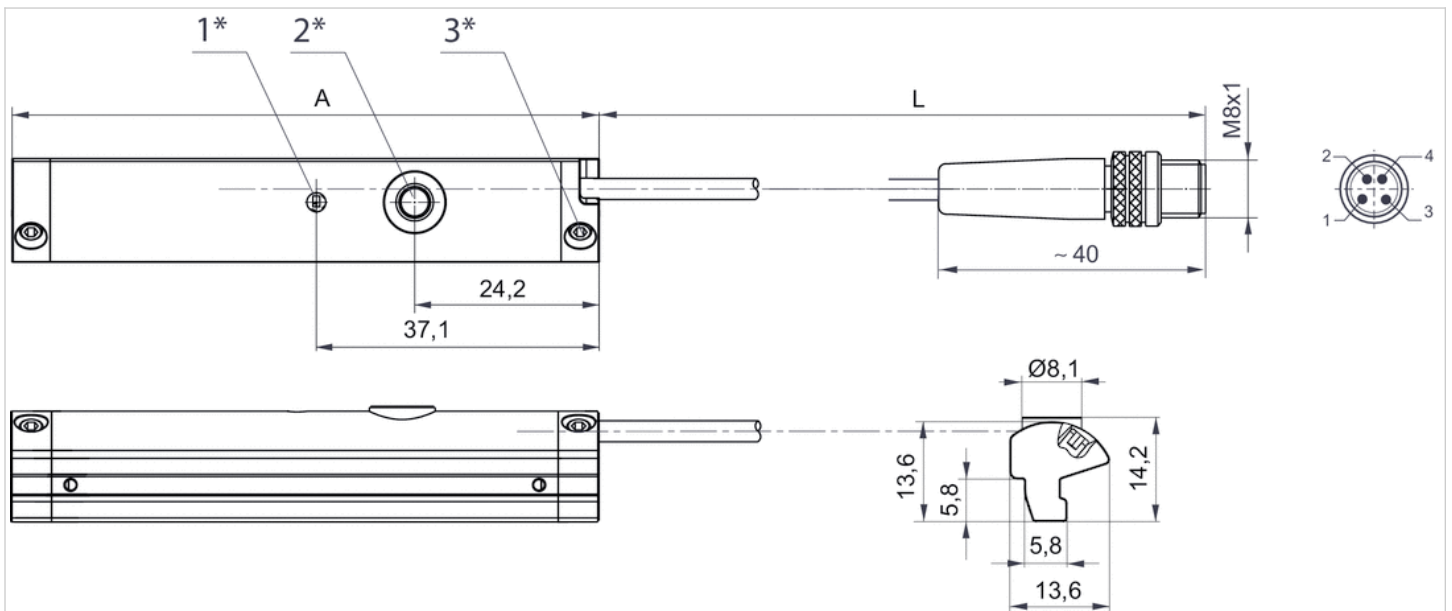
Part No.	Version
R412010142	short circuit resistant Protected against polarity reversal Overload protection
R412010144	short circuit resistant Protected against polarity reversal Overload protection
R412010263	short circuit resistant Protected against polarity reversal Overload protection
R412010265	short circuit resistant Protected against polarity reversal Overload protection
R412010410	short circuit resistant Protected against polarity reversal Overload protection
R412010412	short circuit resistant Protected against polarity reversal Overload protection
R412010414	short circuit resistant Protected against polarity reversal Overload protection
R412010416	short circuit resistant Protected against polarity reversal Overload protection

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

## Dimensions

### Dimensions



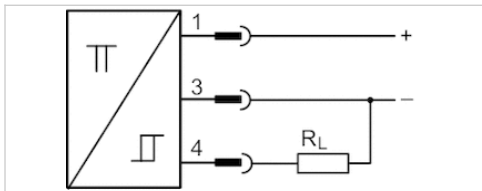
1\* = LED 2\* = teach button 3\* = threaded pin M3x11  
 L = cable length  
 Pin assignment: 1 = (+), 2 = (OUT 1) 3 = (GND), 4 = (OUT 2), EN 60947-5-7  
 A = sensor length

# Sensor, Series SN3

- welding-proof
- Plug, M12, 3-pin
- welding-proof
- electronic PNP
- Indirect mounting for series PRA, PRE, CCI, KPZ, KHZ, FLT, GPC, CVI



Ambient temperature min./max.	-25 ... 70 °C
Protection class	IP67, IP65
Switching point precision	±0,1 mT
Nominal current, actuated state	≤ 10 mA
Quiescent current (without load)	≤ 5 mA
Min./max. DC operating voltage	10 V DC
LED status display	Yellow
Vibration resistance	55 Hz, 1 mm
Shock resistance	30 g / 11 ms



## Technical data

Part No.	Type of contact	Voltage drop U at I <sub>max</sub>	DC switching current, max.
0830100438	electronic PNP	≤ 1,8 V	0.2 A

Part No.	Max. switching frequency
0830100438	20 Hz

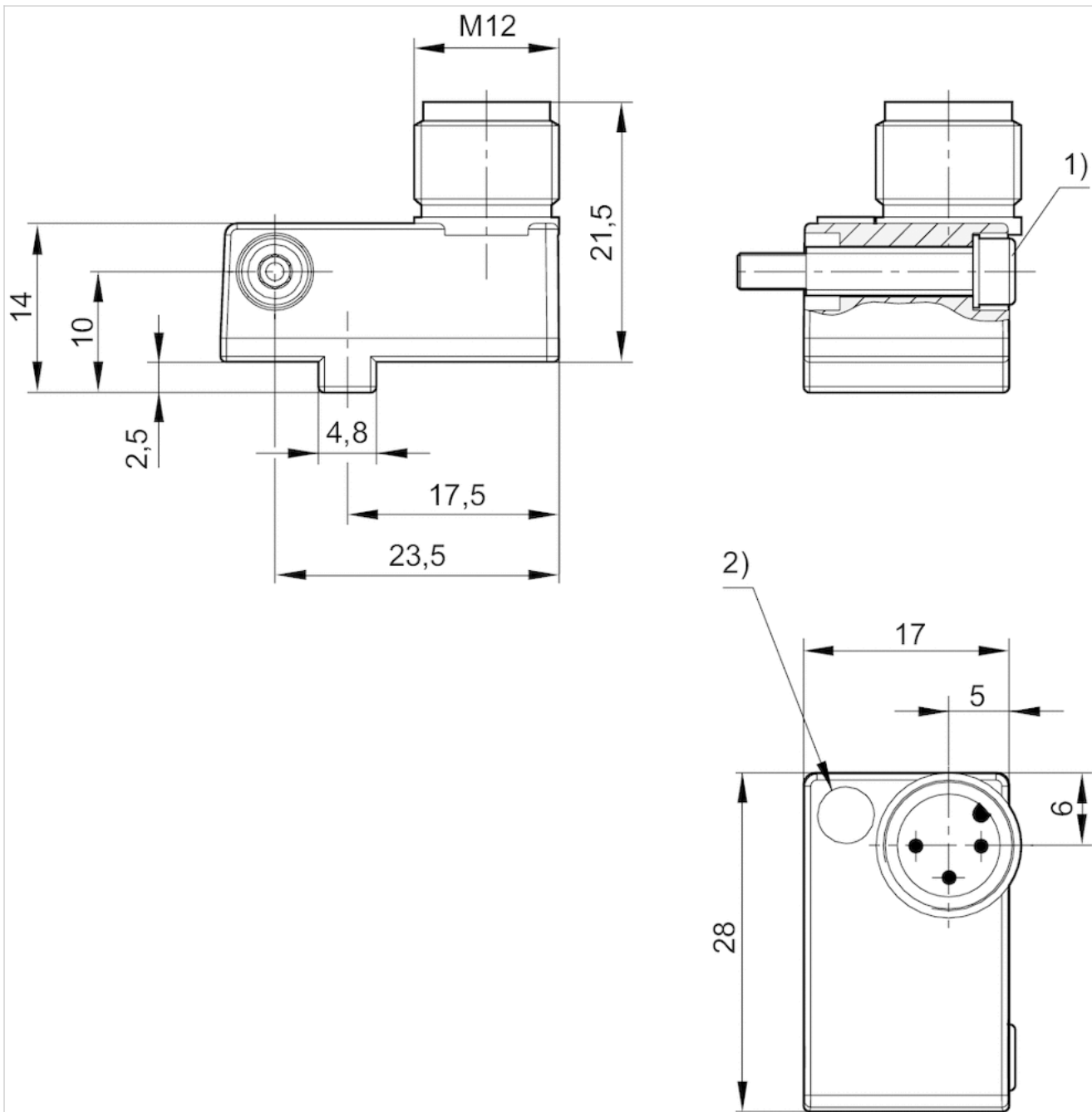
Part No.	Version	welding-proof
0830100438	short circuit resistant Protected against polarity reversal	welding-proof

## Technical information

Material	
Housing	Polyamide

Dimensions

Dimensions



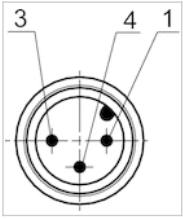
1) Clamping screw

2) LED

Pin assignments: 1 = (+), 3 = (-), 4 = (OUT), EN 60947-5-2:1998

## Pin assignments

### Pin assignments



Pin	1	3	4
Allocation	(+)	(-)	(OUT)
EN 60947-5-2:1998			

# Sensor mounting, Series CB1

- for series SN3

- to mount on cylinder PRA, KPZ, GPC, CCI, KHZ



Weight

0.007 kg

## Technical data

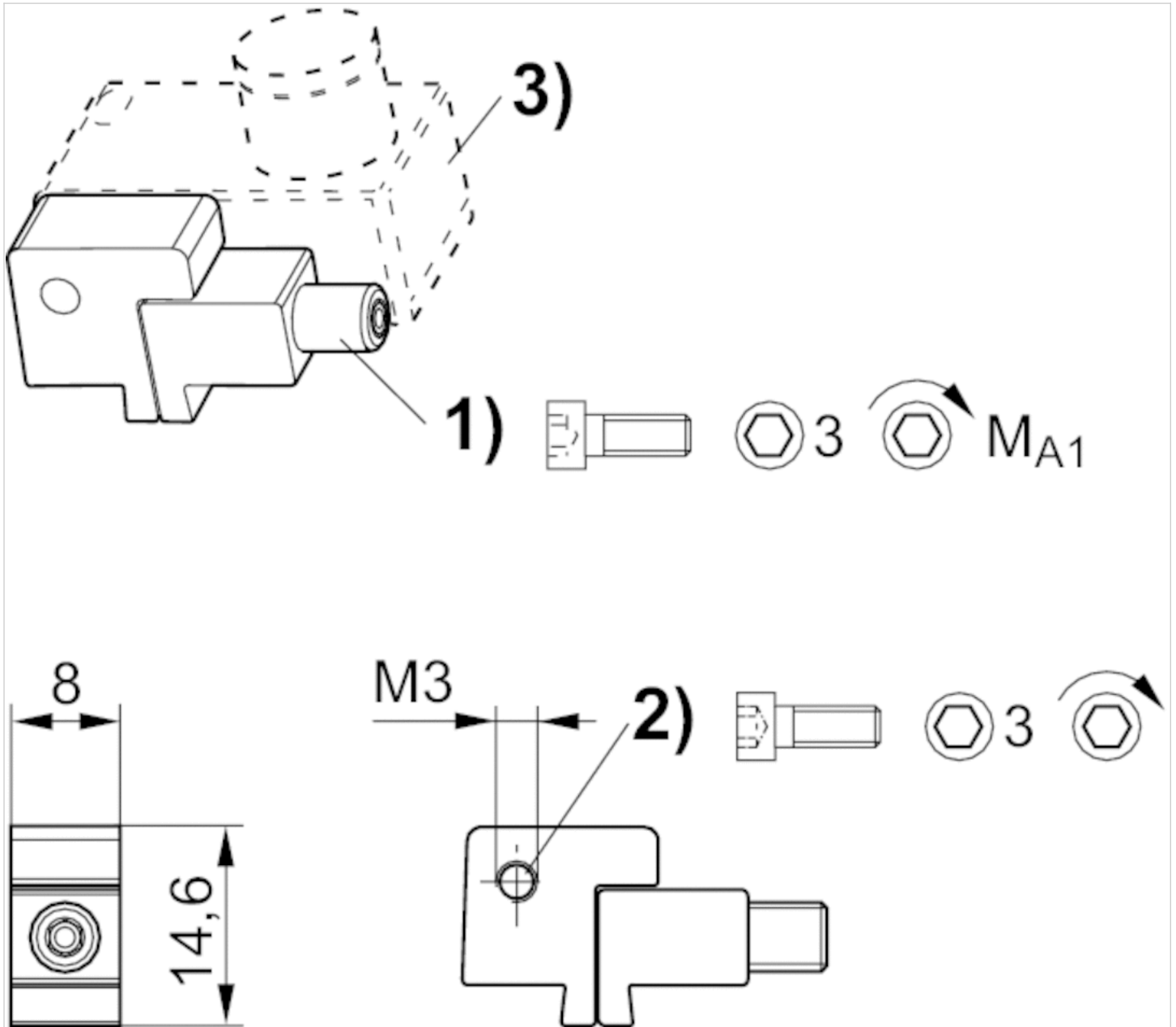
Part No.	for series
1827020386	SN3

## Technical information

Material
Aluminum



## Dimensions



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

## Dimensions

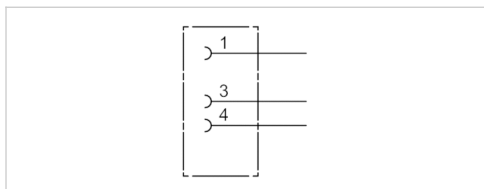
Part No.	1)	MA1 [Nm]
1827020386	M3x25	1,8 +0,4

# Round plug connector, Series CON-RD

- Socket, M8x1, 3-pin, A-coded, straight, 180°
- UL (Underwriters Laboratories)
- unshielded



Connection type	Soldering
Ambient temperature min./max.	-25 ... 80 °C
Operational voltage	48 V AC/DC
Protection class	IP67
Weight	0.009 kg



## Technical data

Part No.	Max. current	suitable cable-Ø min./max
1834484173	4 A	3.5 / 5 mm

## Technical information

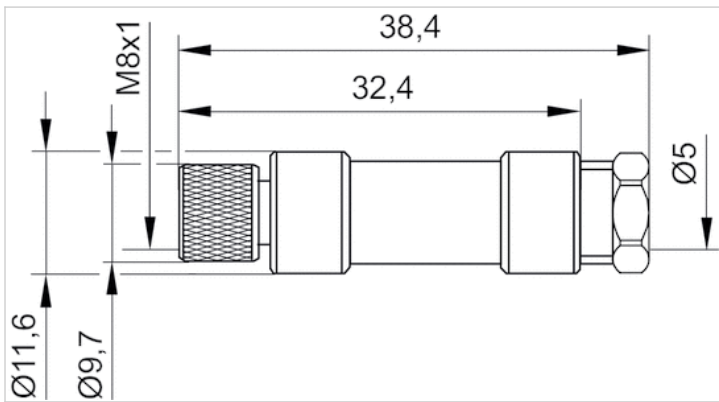
The specified protection class is only valid in assembled and tested state.

## Technical information

Material	
Housing	Polyamide

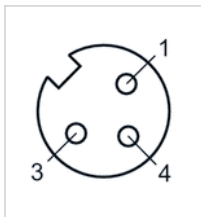
## Dimensions

### Dimensions



## Pin assignments

### Pin assignment, socket

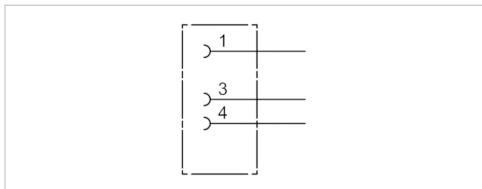


# Round plug connector, Series CON-RD

- Socket, M8x1, 3-pin, A-coded, angled, 90°
- UL (Underwriters Laboratories)
- unshielded



Connection type	Soldering
Ambient temperature min./max.	-40 ... 85 °C
Operational voltage	48 V AC/DC
Protection class	IP67
Weight	0.01 kg



## Technical data

Part No.	Max. current	Contact assignment	suitable cable-Ø min./max
1834484174	4 A	3	3.5 / 5 mm

## Technical information

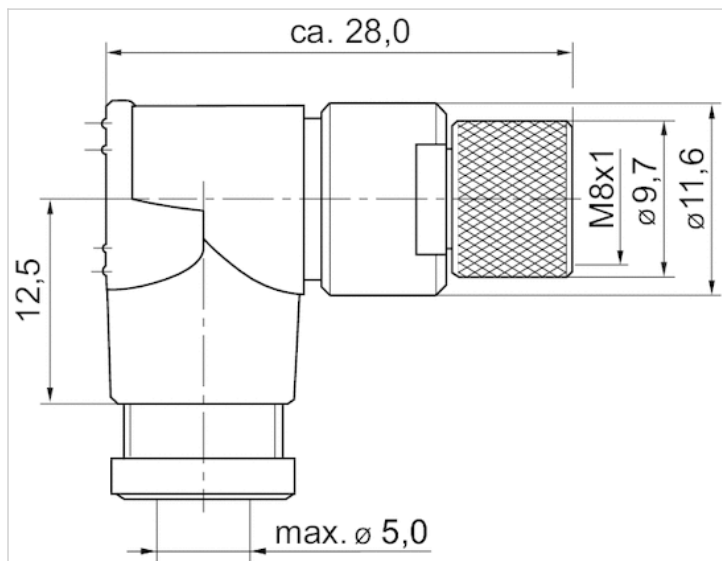
The specified protection class is only valid in assembled and tested state.

## Technical information

Material	
Housing	Polyamide

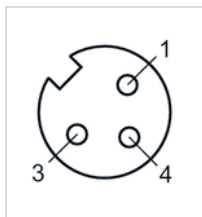
## Dimensions

### Dimensions



## Pin assignments

### Pin assignment, socket



# T-groove nut

- for series CKP, GPC, RTC



Weight

See table below

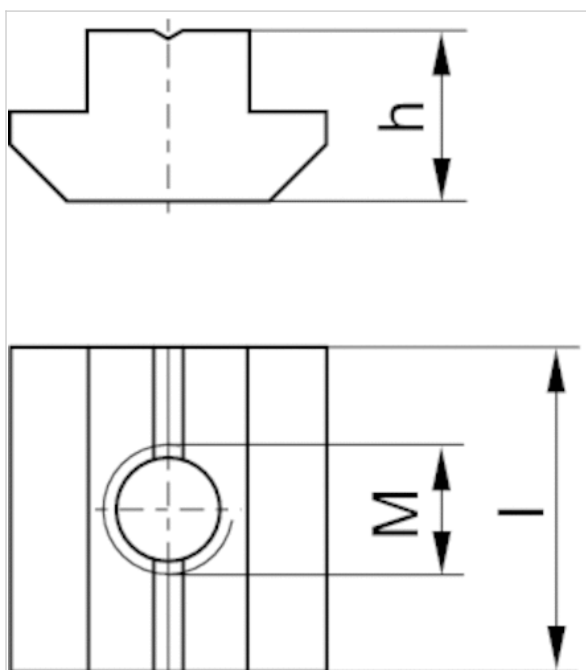
## Technical data

Part No.	Type	for series	Material	Scope of delivery	Weight
3842523142	N6	CKP, GPC, RTC	Stainless steel	10 piece	0.003 kg
3842514931	N8	CKP, GPC, RTC	Steel	100 piece	0.007 kg

## Technical information

Material	
Housing	Stainless steel Steel, galvanized

## Dimensions



## Dimensions

Part No.	Type	M	h	l
3842523142	N6	M5	4	20
3842514931	N8	M8	6	16

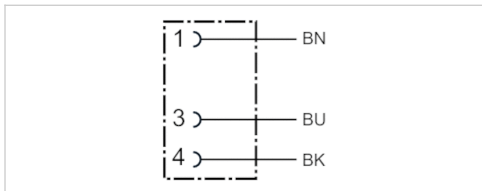
For N4 grooves on CKP 16 a square nut according to DIN 557 can be used.

# Round plug connector, Series CON-RD

- Socket M8x1 3-pin A-coded straight 180°
- open cable ends
- with cable
- UL (Underwriters Laboratories)
- unshielded



Ambient temperature min./max.	-25 ... 85 °C
Operational voltage	48 V AC/DC
Protection class	IP67
Wire cross-section	0.24 mm <sup>2</sup>
Weight	See table below



## Technical data

Part No.	Max. current	Number of wires	Cable-Ø	Cable length	Certification	Weight
1834484166	4 A	3	4.5 mm	3 m	UL (Underwriters Laboratories)	0.087 kg
1834484168	4 A	3	4.5 mm	5 m	UL (Underwriters Laboratories)	0.141 kg
1834484247	4 A	3	4.5 mm	10 m	UL (Underwriters Laboratories)	0.277 kg

## Technical information

The specified protection class is only valid in assembled and tested state.

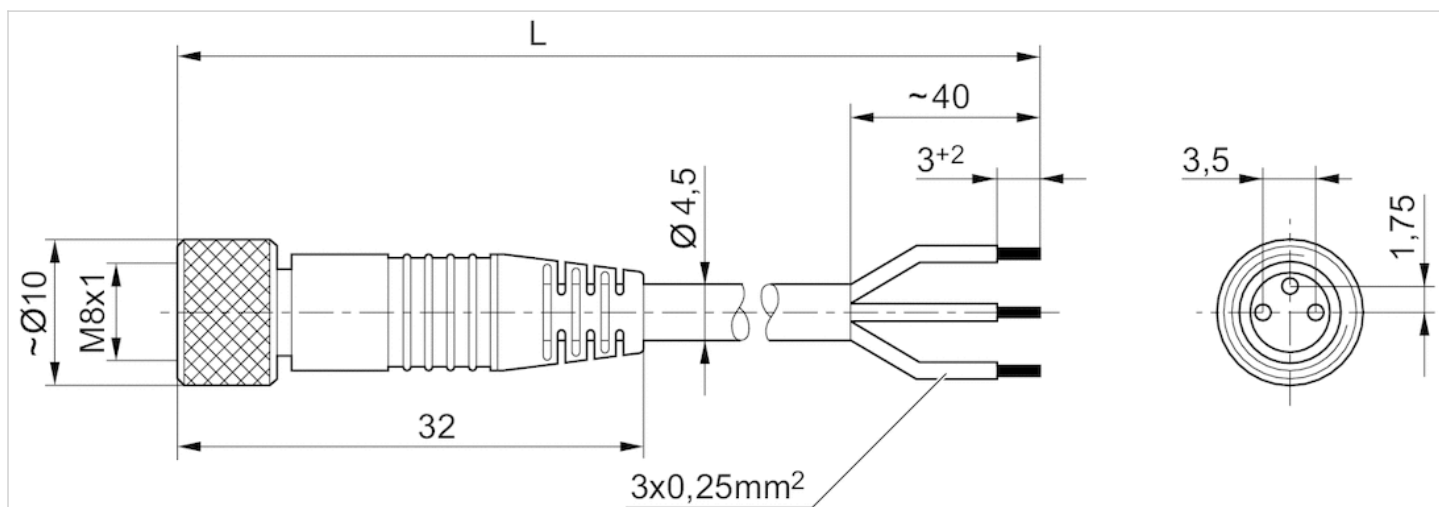
## Technical information

Material	
Housing	Polyurethane
Cable sheath	Polyurethane



## Dimensions

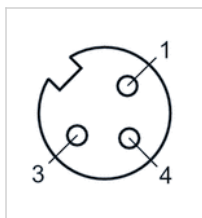
### Dimensions



L = length

## Pin assignments

### Pin assignment, socket



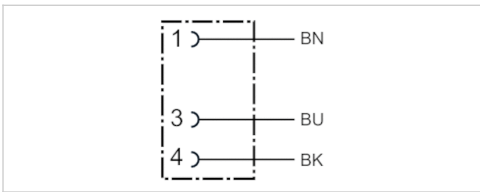
- (1) BN=brown
- (3) BU=blue
- (4) BK=black

# Round plug connector, Series CON-RD

- Socket M8x1 3-pin A-coded angled 90°
- open cable ends
- with cable
- unshielded



Ambient temperature min./max.	-40 ... 85 °C
Operational voltage	48 V AC/DC
Protection class	IP67
Wire cross-section	0.24 mm <sup>2</sup>
Weight	See table below



## Technical data

Part No.	Max. current	Number of wires	Cable-Ø	Cable length	Weight
1834484167	4 A	3	4.5 mm	3 m	0.087 kg
1834484169	4 A	3	4.5 mm	5 m	0.139 kg
1834484248	4 A	3	4.5 mm	10 m	0.279 kg

## Technical information

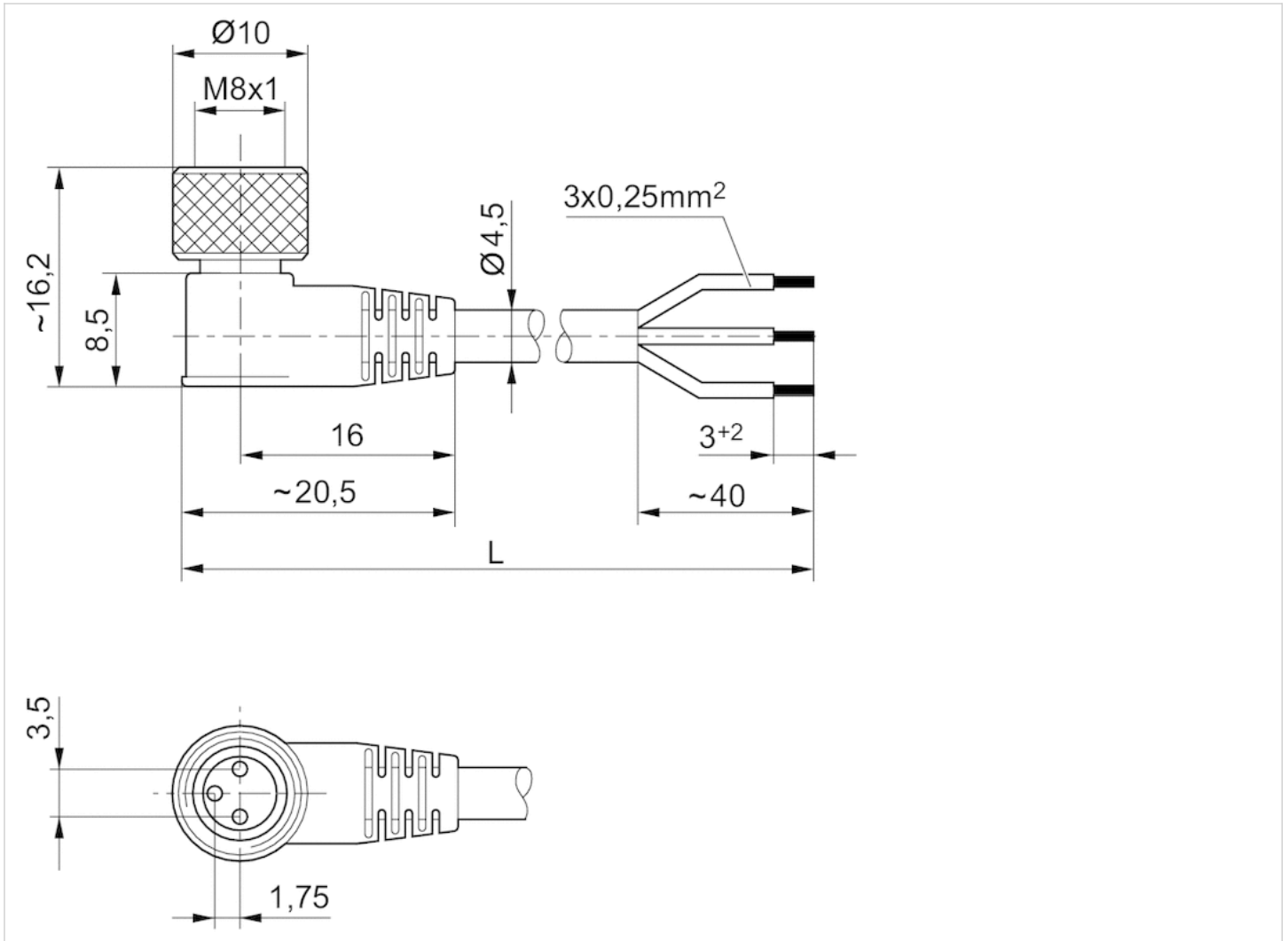
The specified protection class is only valid in assembled and tested state.

## Technical information

Material	
Housing	Polyurethane
Cable sheath	Polyurethane

## Dimensions

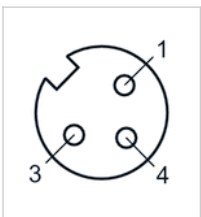
### Dimensions



L = length

## Pin assignments

### Pin assignment, socket



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

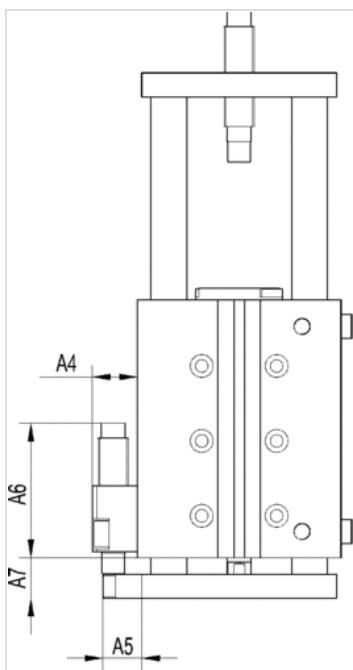
# Kit for stroke length adjustment



## Technical data

Part No.	Piston Ø
R402000134	12 mm
R402000135	16 mm
R402000136	20 mm

## Dimensions



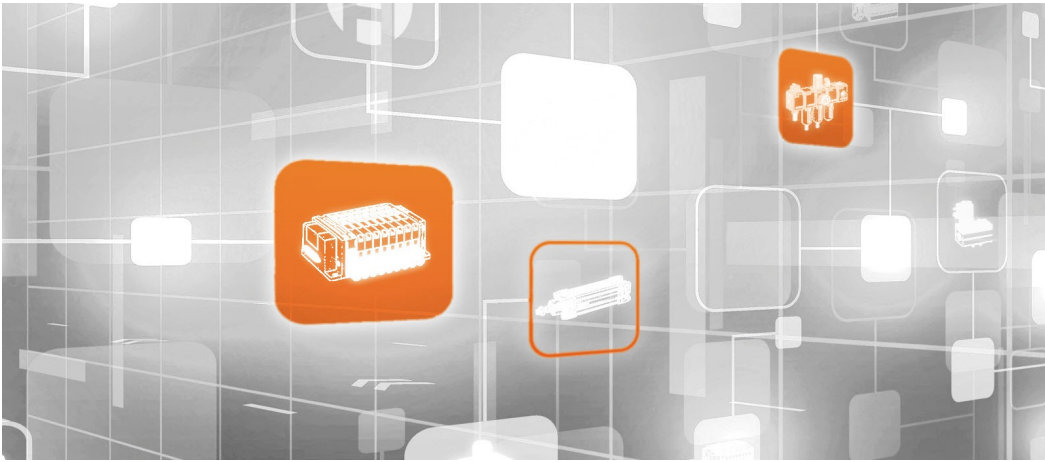
## Dimensions

Part No.	Ø	A4	A5	A6 1)	A6 2)	A7 1)	A7 2)	L 3)
R402000134	12	13	13	21	29	13	25	12
R402000135	16	15	13	24	45	13.5	43.5	30

Part No.	Ø	A4	A5	A6 1)	A6 2)	A7 1)	A7 2)	L 3)
R402000136	20	15	13	26	44	15.5	45.5	30

- 1) Min.
- 2) Max.
- 3) Adjustment length  $L = A7 \text{ max.} \dots A7 \text{ min.}$
- 4) Shock absorber 0821005002 included in scope of delivery
- 5) Shock absorber 0821005013 included in scope of delivery

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