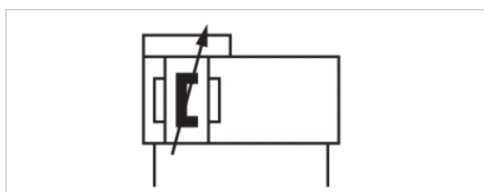


# Rodless cylinder, Series RTC-BV

- Ø 16-80 mm
- Ports M7 G 1/8 G 1/4 G 3/8
- double-acting
- with magnetic piston
- integrated guide
- Basic Version
- Cushioning Pneumatically adjustable



Working pressure min./max.	2 ... 8 bar
Ambient temperature min./max.	-10 ... 60 °C
Medium	Compressed air
Max. particle size	5 µm
Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>
Pressure for determining piston forces	6.3 bar

## Technical data

Piston Ø	16 mm	25 mm	32 mm	40 mm	50 mm	63 mm	80 mm
Stroke 100	R480143252	R480141454	-	-	-	-	-
200	R480143255	R480141455	R480141462	-	-	-	-
300	R480143256	R480141456	R480141463	-	-	-	-
400	R480143257	R480141457	R480141464	R480141472	R480148854	R480147730	R480147731
500	R480143258	R480141458	R480141465	R480141473	R480146166	R480147713	R480147714
600	R480143259	R480141459	R480141466	R480141474	R480149081	R480146014	R480146210
700	R480143260	R480141460	R480141468	R480141475	R480145947	R480145948	R480155522
800	-	R480141461	R480141469	R480141476	R480148600	R480147223	R480147699
900	-	-	R480141470	R480141477	R480147023	R480146204	R480156948
1000	-	-	R480141471	R480141478	R480149199	R480147036	R480147700

## Technical data

Piston Ø	16 mm	25 mm	32 mm	40 mm	50 mm	63 mm	80 mm
Piston force	127 N	309 N	507 N	792 N	1237 N	1964 N	3146 N
Cushioning length	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm
Cushioning energy	1,5 J	4 J	7 J	10 J	15 J	25 J	40 J

Piston Ø	16 mm	25 mm	32 mm	40 mm	50 mm	63 mm	80 mm
Speed max.	5,5 m/s	6,5 m/s	4 m/s	5 m/s	3 m/s	3 m/s	3 m/s
Weight 0 mm stroke	0,45 kg	0,82 kg	1,39 kg	2,09 kg	3,37 kg	5,65 kg	9,71 kg
+10 mm stroke	0,014 kg	0,023 kg	0,031 kg	0,044 kg	0,065 kg	0,098 kg	0,157 kg
Stroke max.	6600 mm	7000 mm	9900 mm	9900 mm	9900 mm	5800 mm	4800 mm

## Technical information

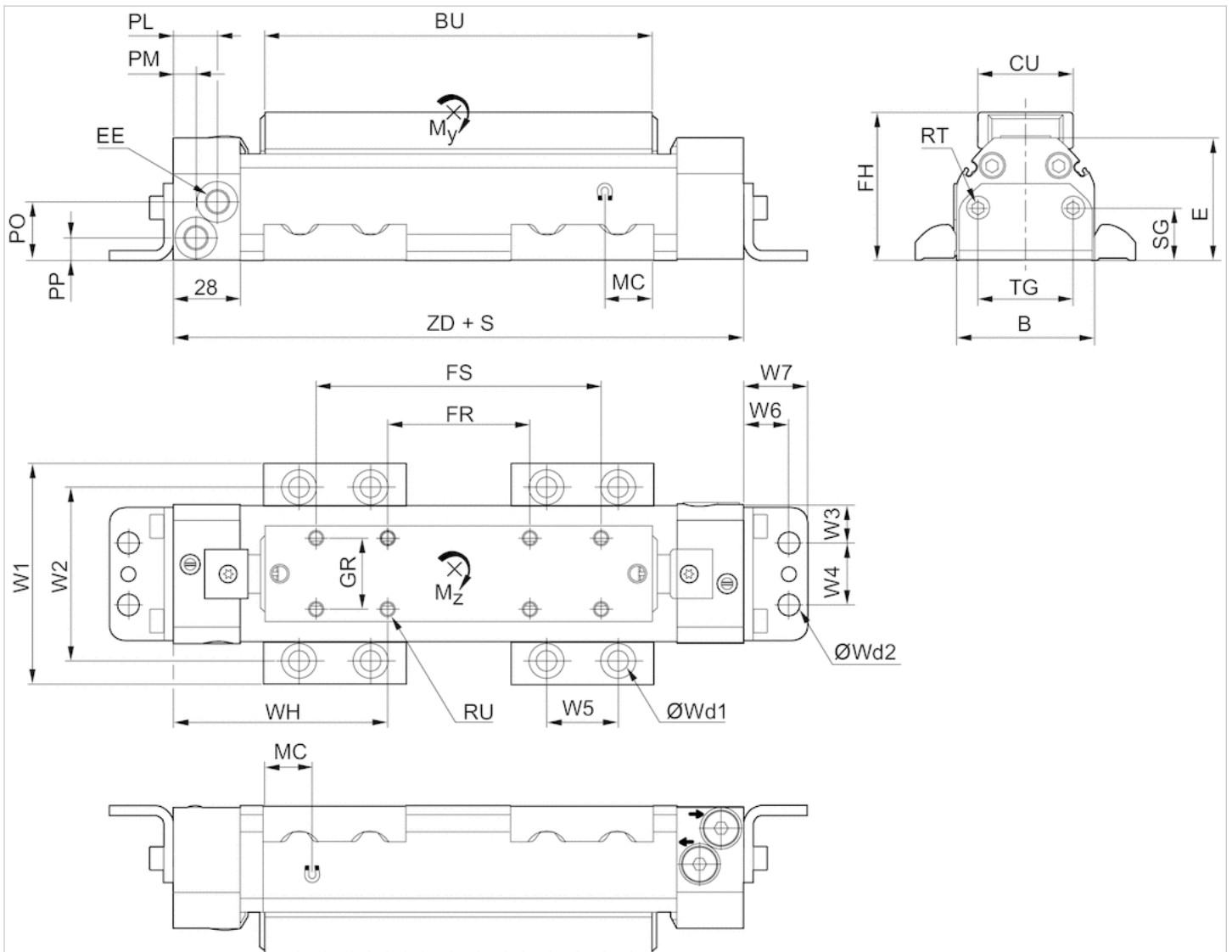
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .  
The delivered product is lubricated for lifetime.

## Technical information

Material	
Cylinder tube	Aluminum, anodized
Cap	Aluminum, anodized
Seal	Polyurethane
Sealing strips	Polyurethane Stainless steel
Ball rail table	Aluminum, anodized

## Dimensions

Piston Ø 16 ... 80, Dimensions in mm



S = stroke

## Dimensions

Piston Ø	B	BU	CU	E	EE	FH	FR	FS	GR	MC	PL	PM	PO	PP	RT 1)	RU 2)	SG	TG
16 mm	34	118	26	36	M7	41	60	100	20	12	21.5	9	13.1	7.5	M5	M4	17.3	19
25 mm	44	147	26	45.5	G 1/8	50.6	40	100	20	15	20	8	21.5	9.3	M5	M4	17.3	19
32 mm	58	163	40	51.5	G 1/8	62.1	60	120	30	20	18.5	9.5	24.5	9.5	M6	M6	22	40
40 mm	70	182	40	60.5	G 1/4	71.1	60	120	30	17	18	10	31.5	11	M6	M6	22	40
50 mm	92	205	40	67.5	G 1/4	78.3	60	140	30	23	16	16	35.5	12.5	M8	M6	22	40
63 mm	112	233	55	82.5	G 3/8	93.3	100	180	40	25	14	14	45.5	14.5	M8	M8	30	80
80 mm	140	269	55	103.5	G 3/8	114.2	100	180	40	27	14	14	59.5	16.5	M8	M8	30	80

Piston Ø	W1	W2	W3	W4	W5	W6	W7	Wd1	Wd2	WH	ZD	M [kg] 3)
16 mm	63	45.5	8	18	30	13.5	19.8	M6	M6	63.5	187	0.08
25 mm	73	55.5	13	18	30	13.5	19.8	M6	M6	87.5	215	0.16
32 mm	93	72.5	16	26	30	19	26.8	M8	M8	90	240	0.32

Piston Ø	W1	W2	W3	W4	W5	W6	W7	Wd1	Wd2	WH	ZD	M [kg] 3)
40 mm	105	84.5	22	26	30	19	26.8	M8	M8	101.5	263	0.49
50 mm	140	114.5	11	70	40	22	32.7	M12	M12	117.1	294.2	0.73
63 mm	160	134.5	31	50	40	22	32.7	M12	M12	116.5	333.2	1.31
80 mm	188	162.5	45	50	40	22	32.7	M12	M12	130.5	361	2.14

1) thread depth: 9 mm for piston Ø 16–40 mm, 12 mm for piston Ø 50–80 mm

2) thread depth: 6 mm for piston Ø 16–25 mm, 10 mm for piston Ø 32–50 mm, 15 mm for piston Ø 63–80 mm

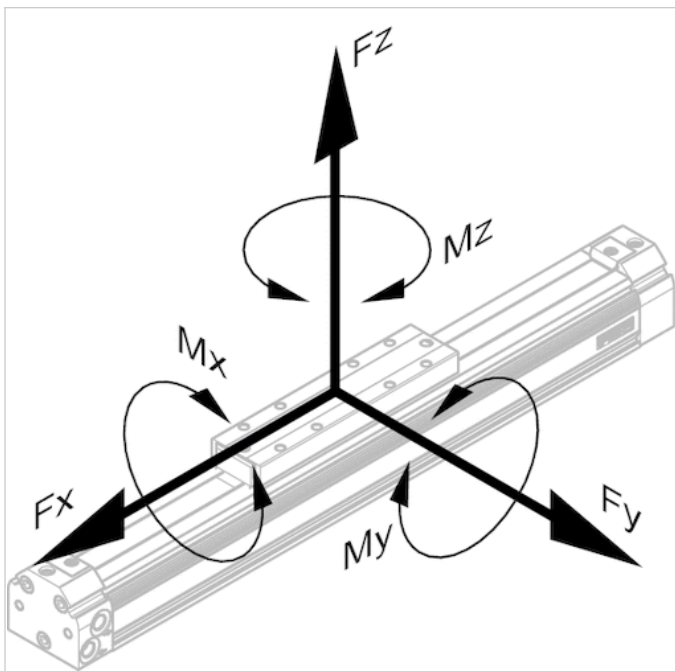
3) M = moving mass

## Dimensions

### Permissible forces $F_x, F_y, F_z$ and torques $M_x, M_y, M_z$

$$\frac{M_x}{M_{x_{max.}}} + \frac{M_y}{M_{y_{max.}}} + \frac{M_z}{M_{z_{max.}}} \leq 1$$

With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders on the <http://www.aventics.com>.



### dynamic

Piston Ø	$M_x$ [Nm]	$M_y$ [Nm]	$M_z$ [Nm]
16 mm	0.4	10	2
25 mm	1	24	3
32 mm	4	42	12
40 mm	6	75	15
50 mm	9	128	20
63 mm	15	195	24

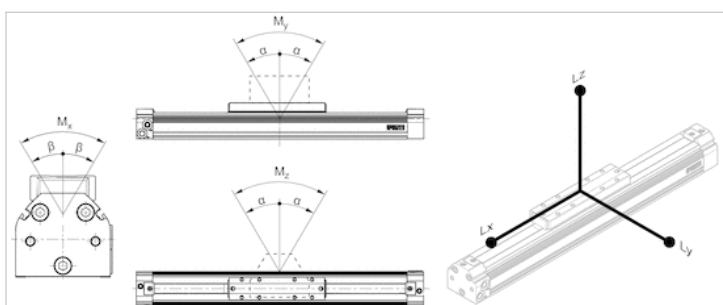
Piston Ø	Mx [Nm]	My [Nm]	Mz [Nm]
80 mm	20	300	28

static

Piston Ø	Fx [N]	Fy [N]	Fz [N]	Mx [Nm]	My [Nm]	Mz [Nm]
16 mm	800	150	1100	2	25	8
25 mm	1800	210	3800	6	50	12
32 mm	2200	550	6600	18	80	43
40 mm	3500	650	8000	28	140	55
50 mm	5000	750	9000	35	230	70
63 mm	6800	850	13000	45	340	90
80 mm	9500	1000	13000	55	500	110

## Dimensions

Max. play and recommended max. lever arm length



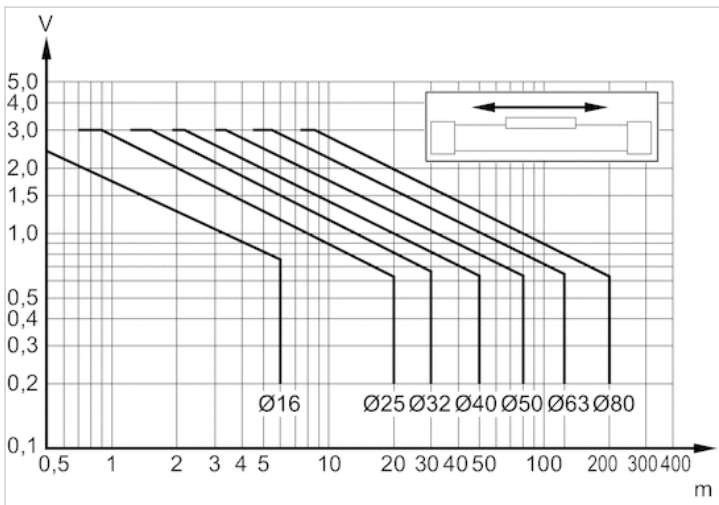
L = lever arm  
M = Torques

Max. play and recommended max. lever arm length

Piston Ø	$\alpha$	$\beta$	Lx	Ly	Lz
16 mm	0,5°	2,0° ±1°	162	94	162
25 mm	0,5°	2,0° ±1°	217	123	217
32 mm	0,6°	1,5° ±0,5°	240	139	240
40 mm	0,4°	1,0° ±0,3°	275	158	275
50 mm	0,4°	1,0° ±0,3°	317	181	317
63 mm	0,3°	1,0° ±0,3°	368	209	368
80 mm	0,3°	1,0° ±0,3°	435	245	435

## Diagrams

### Limit diagram for pneumatic cushioning with horizontal mounting

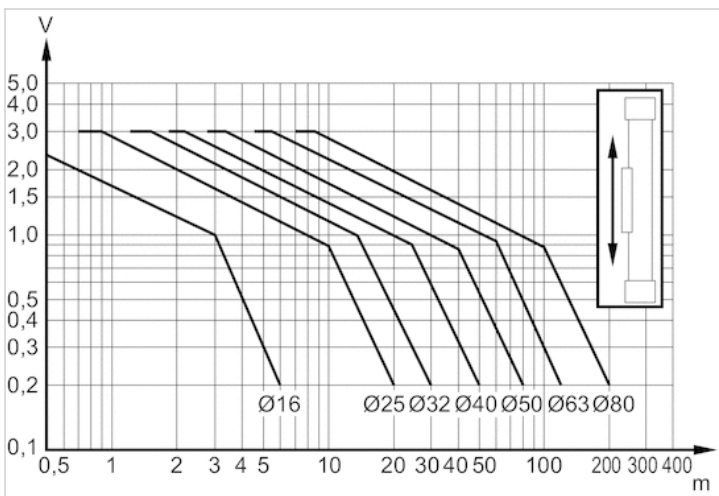


$v$  = Piston velocity [m/s]

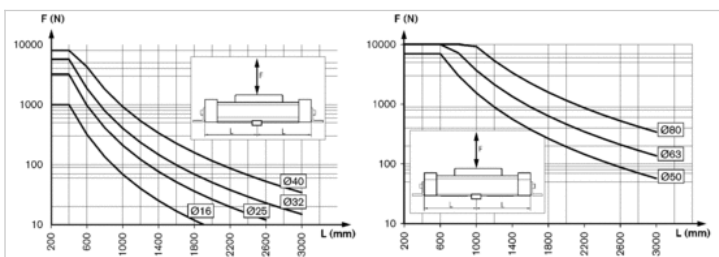
$m$  = Cushionable mass [kg]

The values for the cushionable mass  $m$  and piston velocity  $v$  must be on or below the graph for the selected piston diameter.

### Limit diagram for pneumatic cushioning with vertical mounting



### Support span



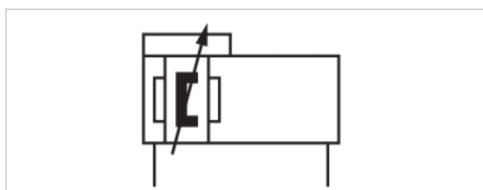
Max. support span  $L$  [mm] as a function of  $F$  [N] at a deflection of 0.5 mm

# Rodless cylinder, Series RTC-SB

- Ø 25-40 mm
- Ports G 1/8 G 1/4
- double-acting
- with magnetic piston
- Slide bearing guide
- Cushioning Pneumatically adjustable



Working pressure min./max.	2 ... 8 bar
Ambient temperature min./max.	-10 ... 60 °C
Medium	Compressed air
Max. particle size	5 µm
Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>
Pressure for determining piston forces	6.3 bar



## Technical data

Piston Ø	25 mm	32 mm	40 mm
Stroke 100	R480470710	R480677234	R480470700
200	R480470711	R480470720	R480470701
300	R480470712	R480470721	R480470702
400	R480470713	R480470722	R480470703
500	R480470714	R480470723	R480470704
600	R480470715	R480470724	R480470705
700	R480470716	R480470725	R480470706
800	R480470717	R480470726	R480470707
900	R480470718	R480470727	R480470708
1000	R480470719	R480470728	R480470709

## Technical data

Piston Ø	25 mm	32 mm	40 mm
Piston force	309 N	507 N	792 N
Cushioning length	20 mm	20 mm	20 mm
Cushioning energy	4 J	7 J	10 J
Speed max.	6,5 m/s	4 m/s	5 m/s

Piston Ø	25 mm	32 mm	40 mm
Weight 0 mm stroke	1,34 kg	2,1 kg	2,85 kg
+10 mm stroke	0,033 kg	0,04 kg	0,049 kg
Stroke max.	7000 mm	9900 mm	9900 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 delivered product is lubricated for lifetime.

## Technical information

Material	
Cylinder tube	Aluminum, anodized
Cap	Aluminum, anodized
Seal	Polyurethane
Sealing strips	Polyurethane Stainless steel
Ball rail table	Aluminum, anodized



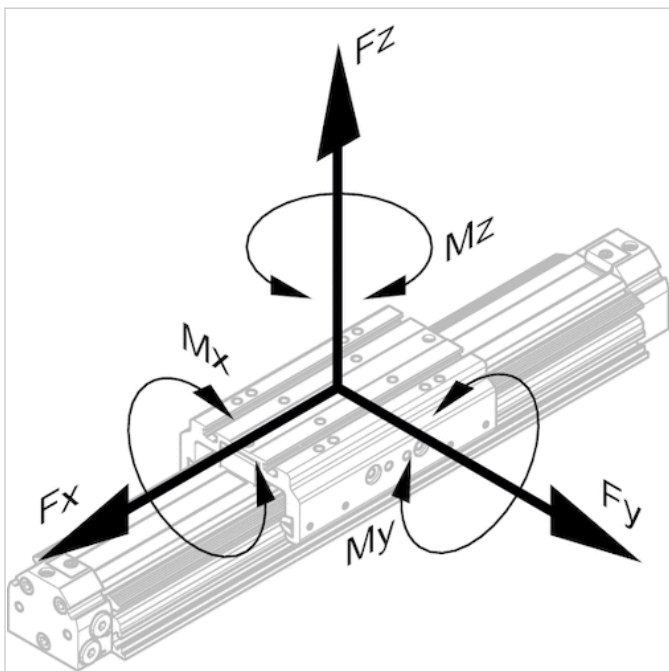


## Dimensions

Permissible forces  $F_x, F_y, F_z$  and torques  $M_x, M_y, M_z$

$$\frac{M_x}{M_{x_{max.}}} + \frac{M_y}{M_{y_{max.}}} + \frac{M_z}{M_{z_{max.}}} \leq 1$$

With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders on the <http://www.aventics.com>.



### dynamic

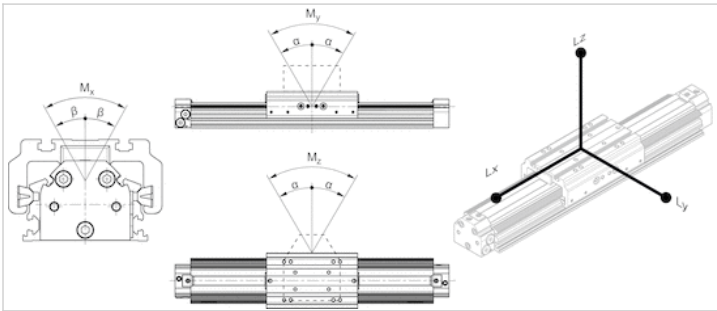
Piston Ø	$M_x$ [Nm]	$M_y$ [Nm]	$M_z$ [Nm]
25 mm	1.4	30	30
32 mm	6	45	45
40 mm	8	50	50

### static

Piston Ø	$F_x$ [N]	$F_y$ [N]	$F_z$ [N]	$M_x$ [Nm]	$M_y$ [Nm]	$M_z$ [Nm]
25 mm	1800	700	2300	32	50	50
32 mm	2200	1000	2600	73	91	91
40 mm	2700	1000	2600	83	111	111

## Dimensions

### Max. play and recommended max. lever arm length



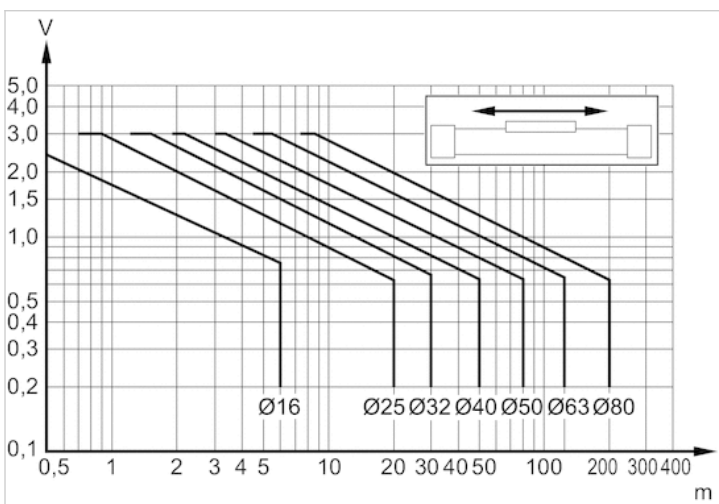
L = lever arm  
M = Torques

## Dimensions

Piston Ø	$\alpha$	$\beta$	Lx	Ly	Lz
25 mm	$\leq 0,2^\circ$	$\leq 0,3^\circ$	200	110	200
32 mm	$\leq 0,2^\circ$	$\leq 0,3^\circ$	240	120	240
40 mm	$\leq 0,2^\circ$	$\leq 0,3^\circ$	240	120	240

## Diagrams

### Limit diagram for pneumatic cushioning with horizontal mounting

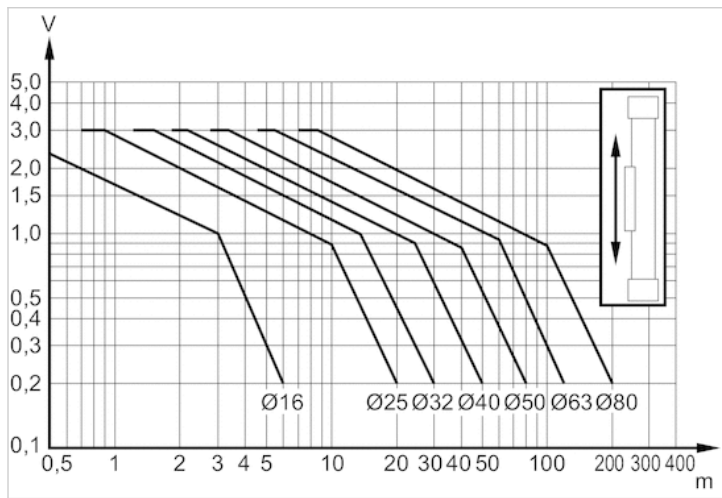


$v$  = Piston velocity [m/s]

$m$  = Cushionable mass [kg]

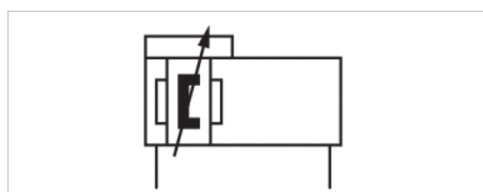
The values for the cushionable mass  $m$  and piston velocity  $v$  must be on or below the graph for the selected piston diameter.

Limit diagram for pneumatic cushioning with vertical mounting



# Rodless cylinder, Series RTC-LB

- Ø 25-40 mm
- Ports G 1/8 G 1/4
- double-acting
- with magnetic piston
- Slide bearing guide with long slide
- Cushioning Pneumatically adjustable



Working pressure min./max.	2 ... 8 bar
Ambient temperature min./max.	-10 ... 60 °C
Medium	Compressed air
Max. particle size	5 µm
Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>
Pressure for determining piston forces	6.3 bar

## Technical data

Piston Ø	25 mm	32 mm	40 mm
Stroke 100	R480470739	R480677235	R480470729
200	R480470740	R480470749	R480470730
300	R480470741	R480470750	R480470731
400	R480470742	R480470751	R480470732
500	R480470743	R480470752	R480470733
600	R480470744	R480470753	R480470734
700	R480470745	R480470754	R480470735
800	R480470746	R480470755	R480470736
900	R480470747	R480470756	R480470737
1000	R480470748	R480470757	R480470738

## Technical data

Piston Ø	25 mm	32 mm	40 mm
Piston force	309 N	507 N	792 N
Cushioning length	20 mm	20 mm	20 mm
Cushioning energy	4 J	7 J	10 J
Speed max.	6,5 m/s	4 m/s	5 m/s

Piston Ø	25 mm	32 mm	40 mm
Weight 0 mm stroke	2,38 kg	3,7 kg	5,04 kg
+10 mm stroke	0,033 kg	0,04 kg	0,049 kg
Stroke max.	7000 mm	9900 mm	9900 mm

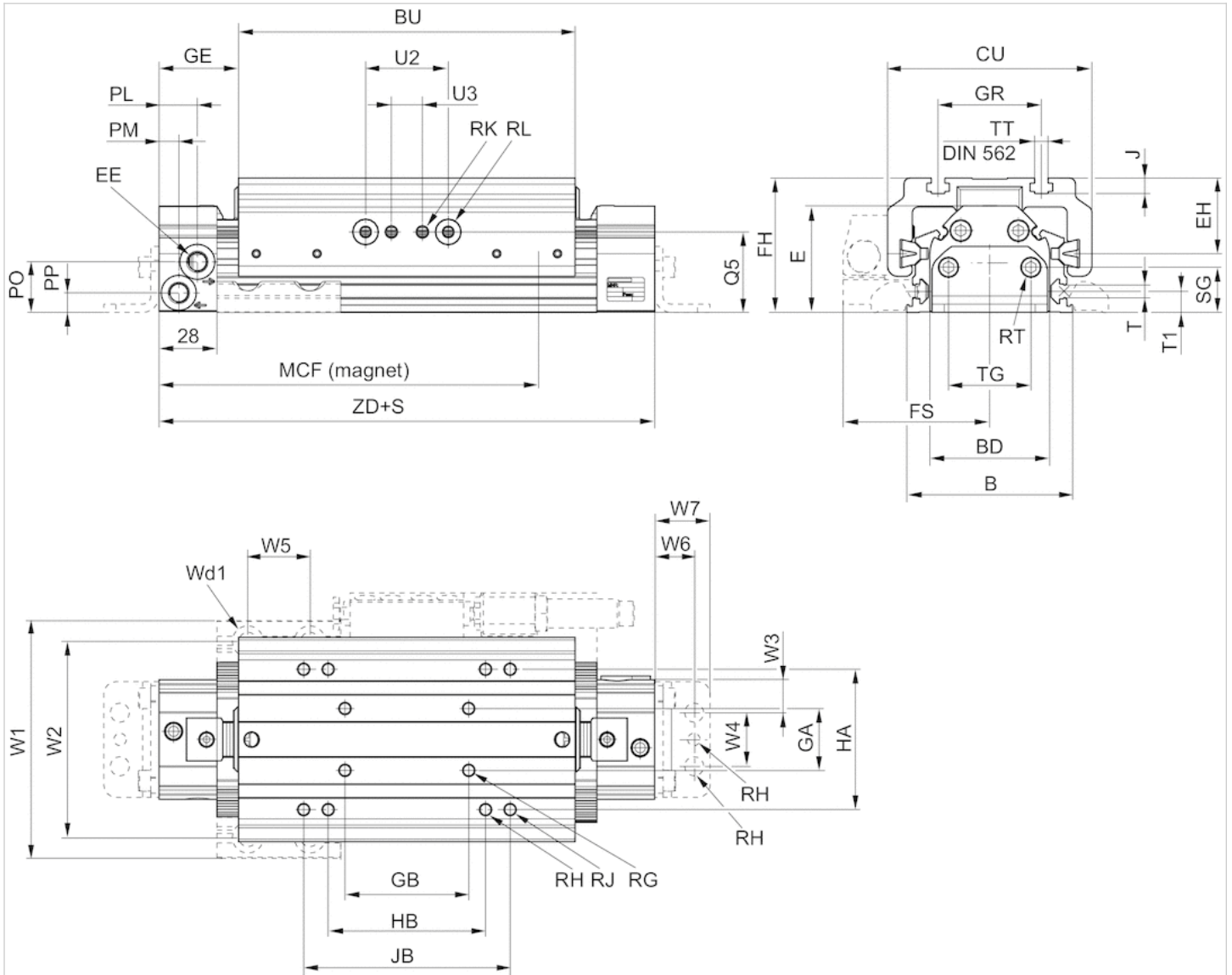
## Technical information

The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .  
The delivered product is lubricated for lifetime.

## Technical information

Material	
Cylinder tube	Aluminum, anodized
Cap	Aluminum, anodized
Seal	Polyurethane
Sealing strips	Polyurethane Stainless steel
Ball rail table	Aluminum, anodized

# Dimensions



# Dimensions

Piston Ø	B	BU	BD	CU	EE	EH	FH	FS	GA	GB	GE	GR	HA	HB	J	JB	MCF	PL	PM
25 mm	67,3	294	44	81	G 1/8	28	55.1	62	18	60	34	40	54.4	101.6	5.9	160	312	20	8
32 mm	80,3	326	58	99	G 1/8	36,6	65.1	71	30	60	38.5	50	68	101.6	7.5	200	345	18.5	9.5
40 mm	89,3	364	70	108	G 1/4	41	71	75.5	30	60	40.5	50	80	127	7.5	240	388	18	10

Piston Ø	PO	PP	Q5	RG	RH	RJ	RK	RL	RT 1)	SG	T	TT	T1	TG	U2	U3	W1
25 mm	21.5	9.3	38.8	M4	1/4-28 UNF	M6	M6	Ø12.01 H7	M5	17.3	N6	N6	10.1	19	40	15	96
32 mm	24.5	9.5	39	M6	1/4-28 UNF	M6	M6	Ø12.01 H7	M6	22	N6	N6	10.1	40	40	15	115
40 mm	31.5	11	44.6	M6	1/4-28 UNF	M6	M6	Ø12.01 H7	M6	22	N6	N6	11.2	40	40	15	124

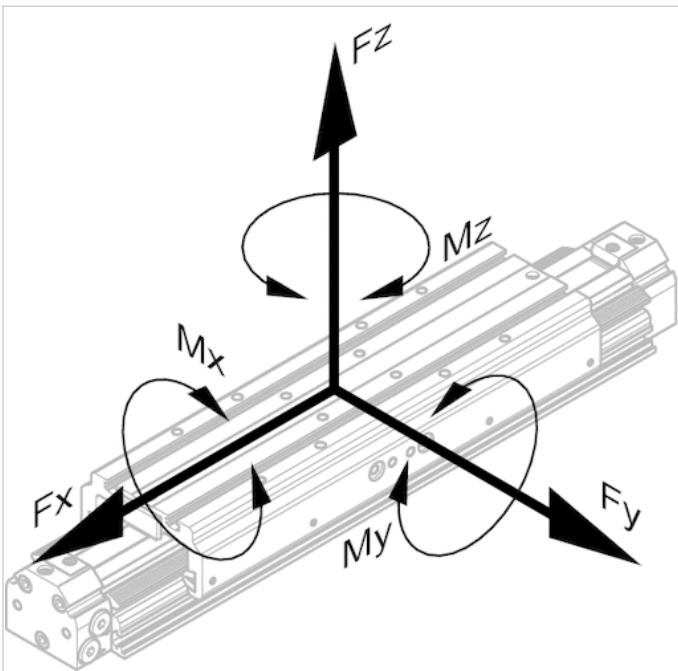
Piston Ø	W2	W3	W4	W5	W6	W7	Wd1	Wd2	Wd3	ZD
25 mm	79	7	18	30	13.5	19.8	Ø6.8	Ø6.8	Ø4G8	362
32 mm	95	15	26	30	19	26.8	Ø8.8	Ø9.2	Ø6G8	403
40 mm	104	15	26	30	19	26.8	Ø8.8	Ø9.2	Ø6G8	445

## Dimensions

Permissible forces  $F_x, F_y, F_z$  and torques  $M_x, M_y, M_z$

$$\frac{M_x}{M_{x_{max.}}} + \frac{M_y}{M_{y_{max.}}} + \frac{M_z}{M_{z_{max.}}} \leq 1$$

With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders on the <http://www.aventics.com>.



### dynamic

Piston Ø	$M_x$ [Nm]	$M_y$ [Nm]	$M_z$ [Nm]
25 mm	1.4	60	60
32 mm	6	90	90
40 mm	8	100	100

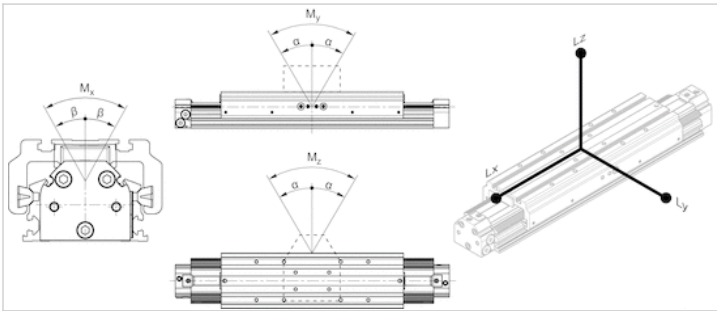
### static

Piston Ø	$F_x$ [N]	$F_y$ [N]	$F_z$ [N]	$M_x$ [Nm]	$M_y$ [Nm]	$M_z$ [Nm]
25 mm	1800	1200	3200	42	160	160
32 mm	2200	1400	3800	96	310	310
40 mm	2700	1400	3800	109	362	362



## Dimensions

### Max. play and recommended max. lever arm length



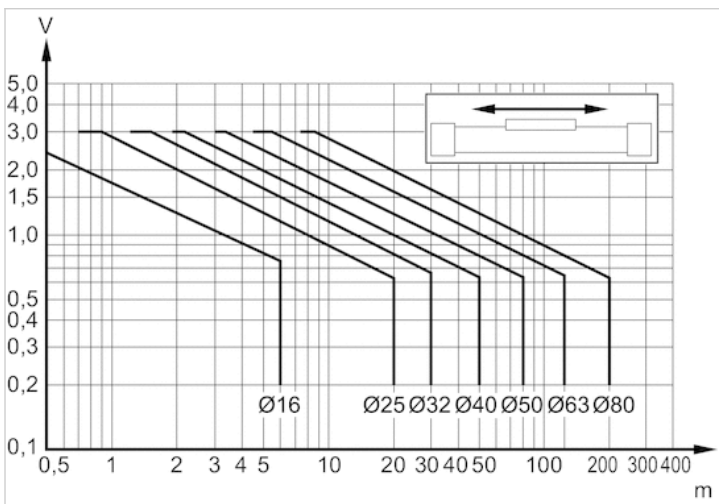
L = lever arm  
M = Torques

## Dimensions

Piston Ø	$\alpha$	$\beta$	Lx	Ly	Lz
25 mm	$\leq 0,2^\circ$	$\leq 0,3^\circ$	551	280	551
32 mm	$\leq 0,1^\circ$	$\leq 0,3^\circ$	612	320	612
40 mm	$\leq 0,1^\circ$	$\leq 0,3^\circ$	612	320	612

## Diagrams

### Limit diagram for pneumatic cushioning with horizontal mounting

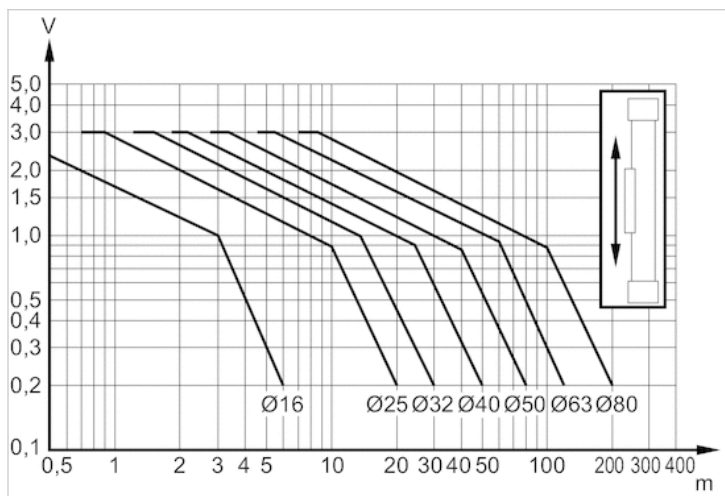


v = Piston velocity [m/s]

m = Cushionable mass [kg]

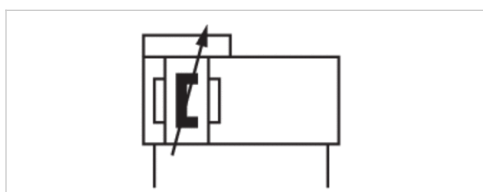
The values for the cushionable mass m and piston velocity v must be on or below the graph for the selected piston diameter.

Limit diagram for pneumatic cushioning with vertical mounting



# Rodless cylinder, Series RTC-CG

- Ø 16-40 mm
- Ports M7 G 1/8 G 1/4
- double-acting
- with magnetic piston
- ball rail guide
- Compact Guide
- Cushioning Pneumatically adjustable
- Easy2Combine capable with connection kit



Working pressure min./max.	2 ... 8 bar
Ambient temperature min./max.	-10 ... 60 °C
Medium	Compressed air
Max. particle size	5 µm
Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>
Pressure for determining piston forces	6.3 bar

An example configuration is illustrated.  
The delivered product may thus deviate from the illustration.

## Technical data

Piston Ø	16 mm	25 mm	32 mm	40 mm
Stroke 200	R480148169	R480146993	R480154848	R480156966
300	R480148470	R480146765	R480154708	R480150407
400	R480153838	R480147184	R480148680	R480153577
500	R480147715	R480146182	R480146674	R480146348
600	R480146105	R480147519	R480146692	R480149794
700	R480156308	R480146193	R480146396	R480156967
800	-	R480148254	R480153429	R480146347
900	-	-	R480156962	R480156968
1000	-	-	R480153428	R480147888

## Technical data

Piston Ø	16 mm	25 mm	32 mm	40 mm
Piston force	127 N	309 N	507 N	792 N
Cushioning length	20 mm	20 mm	20 mm	20 mm
Cushioning energy	1,5 J	4 J	7 J	10 J

Piston Ø	16 mm	25 mm	32 mm	40 mm
Speed max.	2 m/s	2 m/s	2 m/s	2 m/s
Weight 0 mm stroke	0,94 kg	1,64 kg	2,43 kg	3,92 kg
+10 mm stroke	0,026 kg	0,041 kg	0,056 kg	0,075 kg
Stroke max.	1800 mm	1800 mm	1800 mm	2000 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 delivered product is lubricated for lifetime.

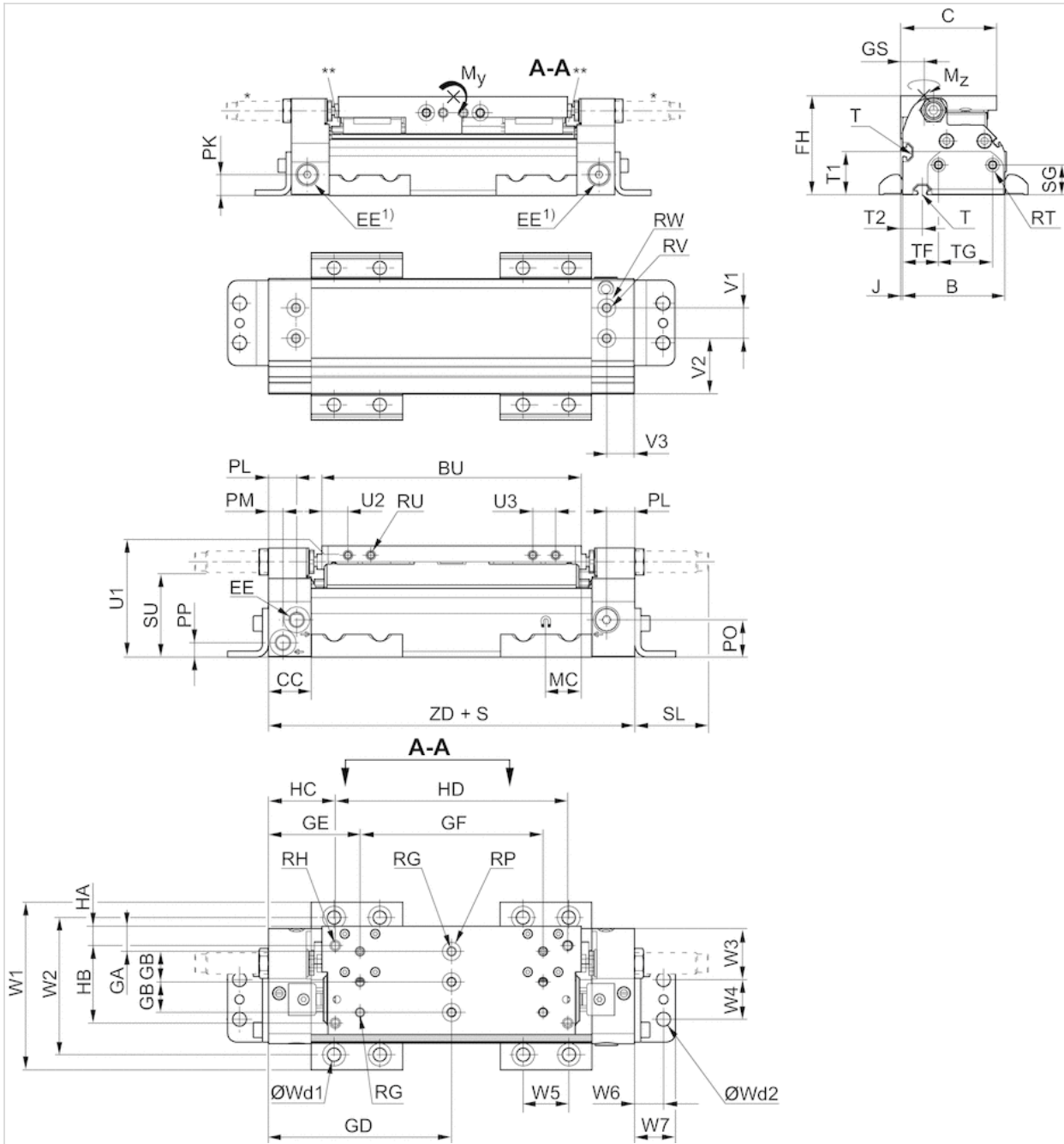
Use hydraulic shock absorbers for precise end position adjustment.

## Technical information

Material	
Cylinder tube	Aluminum, anodized
Cap	Aluminum, anodized
Seal	Polyurethane
Sealing strips	Polyurethane Stainless steel
Ball rail table	Aluminum, anodized
Guide rail	Steel, hardened

# Dimensions

## Dimensions



S = stroke

T = Type of t-groove nut

1) Auxiliary air feeding

An example configuration is illustrated. The delivered product may thus deviate from the illustration.

\* Shock absorber optional in end cover for diameters 16-40

\*\* RTC-CG 16 & 25: 2x Lube ports on each runner block, RTC-CG 32 & 40: Lube nipple of funnel type with thread connection M3

## Dimensions

Piston Ø	B	C	BU	CC	EE	FH	GA	GB	GD	GE	GF	GS	HA	HB	HC	HD	J	MC
16 mm	50	51	122	28	3xM7	54	7	20	93.5	38.5	110	11.5	7.6	38.1	68.1	50.8	2	12
25 mm	62.5	58.1	147	28	3xG 1/8	65	6	20	107.5	53.5	108	15	5.1	45.7	38.9	137.2	1.5	15
32 mm	75.5	71	170	28	3xG 1/8	73	16.5	20	120	60	120	17.5	12.7	50.8	43.8	152.4	1.5	20
40 mm	85.5	74	186	28	3xG 1/4	94.4	16.5	20	131.6	71.6	120	18.5	12.7	50.8	55.4	152.4	1.5	17

Piston Ø	PK	PL	PM	PN	PO	PP	RG 1)	RH 2)	RP	RT 3)	RU 4)	RV	RW
16 mm	11.9	18	7	7	13.3	7.3	M5	UNC 1/4-20	Ø 9	M5	M5	M5x8	Ø 9H8x1,6
25 mm	10.1	20	8	9	21.5	9.3	M5	UNC 1/4-20	Ø 9	M5	M6	M5x8	Ø 9H8x1,6
32 mm	15	18.5	9.5	12	24.5	9.5	M6	UNC 1/4-20	Ø 12	M6	M6	M6x10	Ø 12H8x2,1
40 mm	18	18	10	11	31.5	10.5	M6	UNC 1/4-20	Ø 12	M6	M6	M6x10	Ø 12H8x2,1

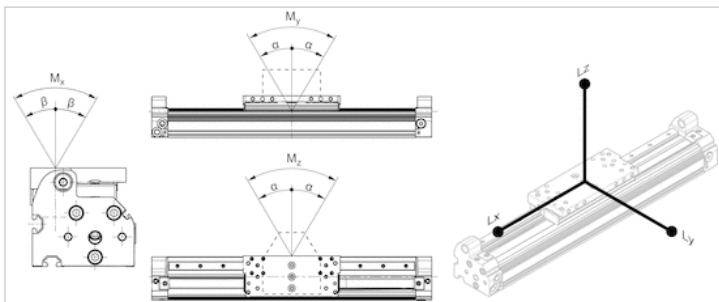
Piston Ø	SG	SL	SU	T	V1	V2	V3	W1	W2	W3	W4	W5	W6	W7	Wd1	Wd2	T1	T2	TF
16 mm	17.3	33.2	38.6	N4	20	6	14	78.4	61.4	24	18	30	13.5	19.8	M6	M6	18.5	10.5	25.5
25 mm	17.3	49.3	47.1	N6	20	26.5	18	90.9	73.9	31.5	18	30	13.5	19.8	M6	M6	26.6	13.5	31
32 mm	22	48.3	55.5	N6	20	36.5	18	109.9	89.9	33.5	26	30	19	26.8	M8	M8	31.5	14.5	26.5
40 mm	22	45.1	73.4	N6	20	40.5	18	119.9	99.9	37.5	26	30	19	26.8	M8	M8	41.4	13	30.5

Piston Ø	TG	U1	U2	U3	ZD	M [kg] 5)
16 mm	19	48	13	15	187	0.22
25 mm	19	59	12.5	27	215	0.4
32 mm	40	67	17	34	240	0.47
40 mm	40	79.4	25	34	263.1	0.97

- 1) thread depth: 12 mm for piston Ø 16, 25 & 40 mm, 10,5 mm for piston Ø 32
- 2) thread depth: 12,7 mm for piston Ø 16–40 mm
- 3) thread depth: 9 mm for piston Ø 16–40 mm
- 4) thread depth: 10 mm for piston Ø 16–40 mm
- 5) M = moving mass

## Dimensions

### Max. play and recommended max. lever arm length



L = lever arm  
M = Torques

## Dimensions

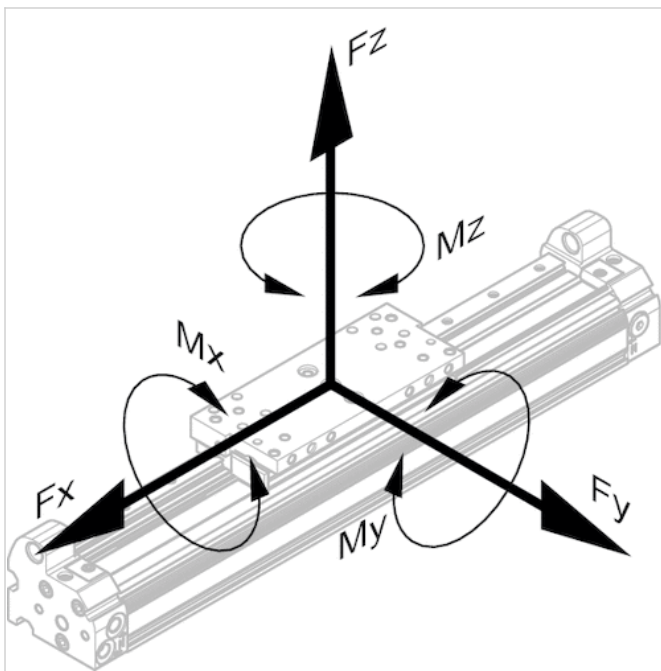
Piston Ø	α	β	Lx	Ly	Lz
16 mm	0,1°	0,2°	328	328	328
25 mm	0,1°	0,2°	424	424	424
32 mm	0,1°	0,2°	480	480	480
40 mm	0,1°	0,2°	532	532	532

## Dimensions

### Permissible forces $F_x, F_y, F_z$ and torques $M_x, M_y, M_z$

$$\frac{M_x}{M_{x_{max.}}} + \frac{M_y}{M_{y_{max.}}} + \frac{M_z}{M_{z_{max.}}} \leq 1$$

With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders on the <http://www.aventics.com>.



## dynamic

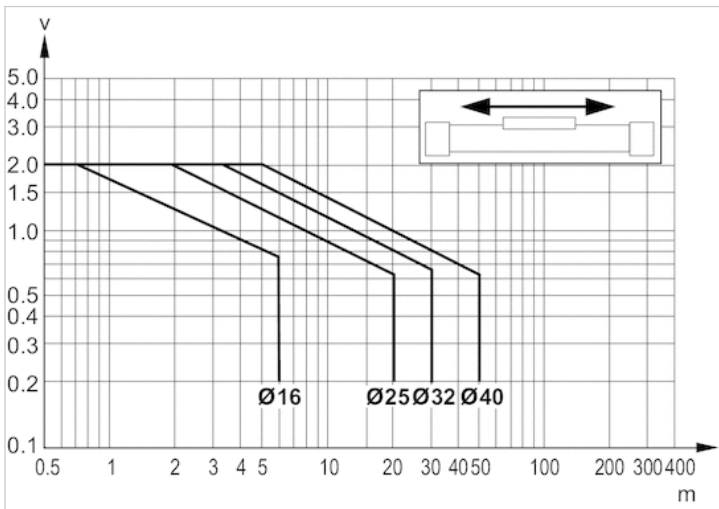
Piston Ø	$M_x$ [Nm]	$M_y$ [Nm]	$M_z$ [Nm]
16 mm	4	30	30
25 mm	10	78	78
32 mm	22	158	110
40 mm	36	284	109

static

Piston Ø	F <sub>x</sub> [N]	F <sub>y</sub> [N]	F <sub>z</sub> [N]	M <sub>x</sub> [Nm]	M <sub>y</sub> [Nm]	M <sub>z</sub> [Nm]
16 mm	744	744	744	4	30	30
25 mm	1456	1456	1456	10	78	78
32 mm	1840	1840	2646	22	158	110
40 mm	1640	1640	4284	36	284	109

Diagrams

Limit diagram for pneumatic cushioning with horizontal mounting

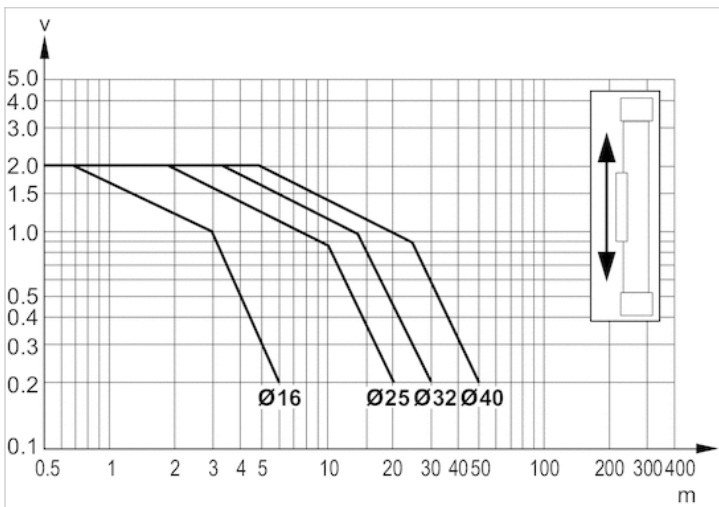


$v$  = Piston velocity [m/s]

$m$  = Cushionable mass [kg]

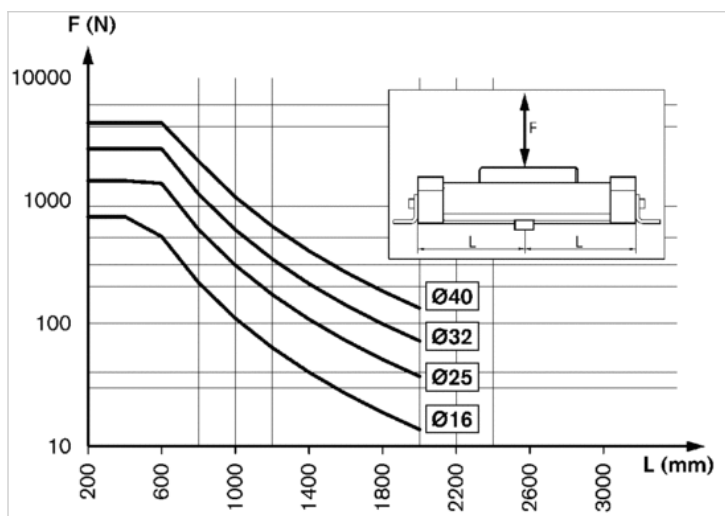
The values for the cushionable mass  $m$  and piston velocity  $v$  must be on or below the graph for the selected piston diameter.

Limit diagram for pneumatic cushioning with vertical mounting





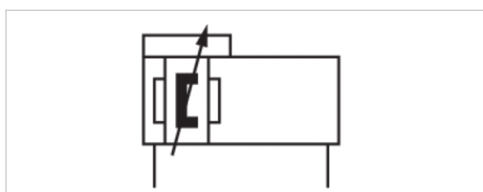
Support span



Max. support span L [mm] as a function of F [N] at a deflection of 0.5 mm

# Rodless cylinder, Series RTC-HD

- Ø 16-63 mm
- Ports M7 G 1/8 G 1/4 G 3/8
- double-acting
- with magnetic piston
- ball rail guide
- Heavy Duty
- Cushioning Pneumatically adjustable
- Easy2Combine capable with connection kit



Working pressure min./max.	4 ... 8 bar
Ambient temperature min./max.	-10 ... 60 °C
Medium	Compressed air
Max. particle size	5 µm
Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>
Pressure for determining piston forces	6.3 bar

An example configuration is illustrated.  
The delivered product may thus deviate  
from the illustration.

## Technical data

Piston Ø	16 mm	25 mm	32 mm	40 mm	50 mm	63 mm
Stroke 200	R480156949	R480149659	R480154726	R480155259	-	-
300	R480156950	R480149553	R480148820	R480154424	-	-
400	R480156951	R480150759	R480148602	R480154425	R480155175	R480156946
500	R480147724	R480147725	R480147726	R480147727	R480147728	R480147729
600	R480156953	R480153574	R480148603	R480148971	R480146987	R480156947
700	R480156954	R480156959	R480154001	R480149554	R480156943	R480149638
800	-	R480155572	R480150325	R480156710	R480149774	R480154379
900	-	-	R480156963	R480156969	R480156944	R480149592
1000	-	-	R480148582	R480150515	R480149030	R480149031

## Technical data

Piston Ø	16 mm	25 mm	32 mm	40 mm	50 mm	63 mm
Piston force	127 N	309 N	507 N	792 N	1237 N	1964 N
Cushioning length	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm
Cushioning energy	1,5 J	4 J	7 J	10 J	15 J	25 J

Piston Ø	16 mm	25 mm	32 mm	40 mm	50 mm	63 mm
Speed max.	2 m/s	2 m/s	2 m/s	2 m/s	2 m/s	2 m/s
Weight 0 mm stroke	1,62 kg	2,96 kg	3,9 kg	6,58 kg	8,94 kg	11,75 kg
+10 mm stroke	0,047 kg	0,071 kg	0,086 kg	0,128 kg	0,162 kg	0,193 kg
Stroke max.	1800 mm	4300 mm	4300 mm	4300 mm	4300 mm	3700 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 delivered product is lubricated for lifetime.

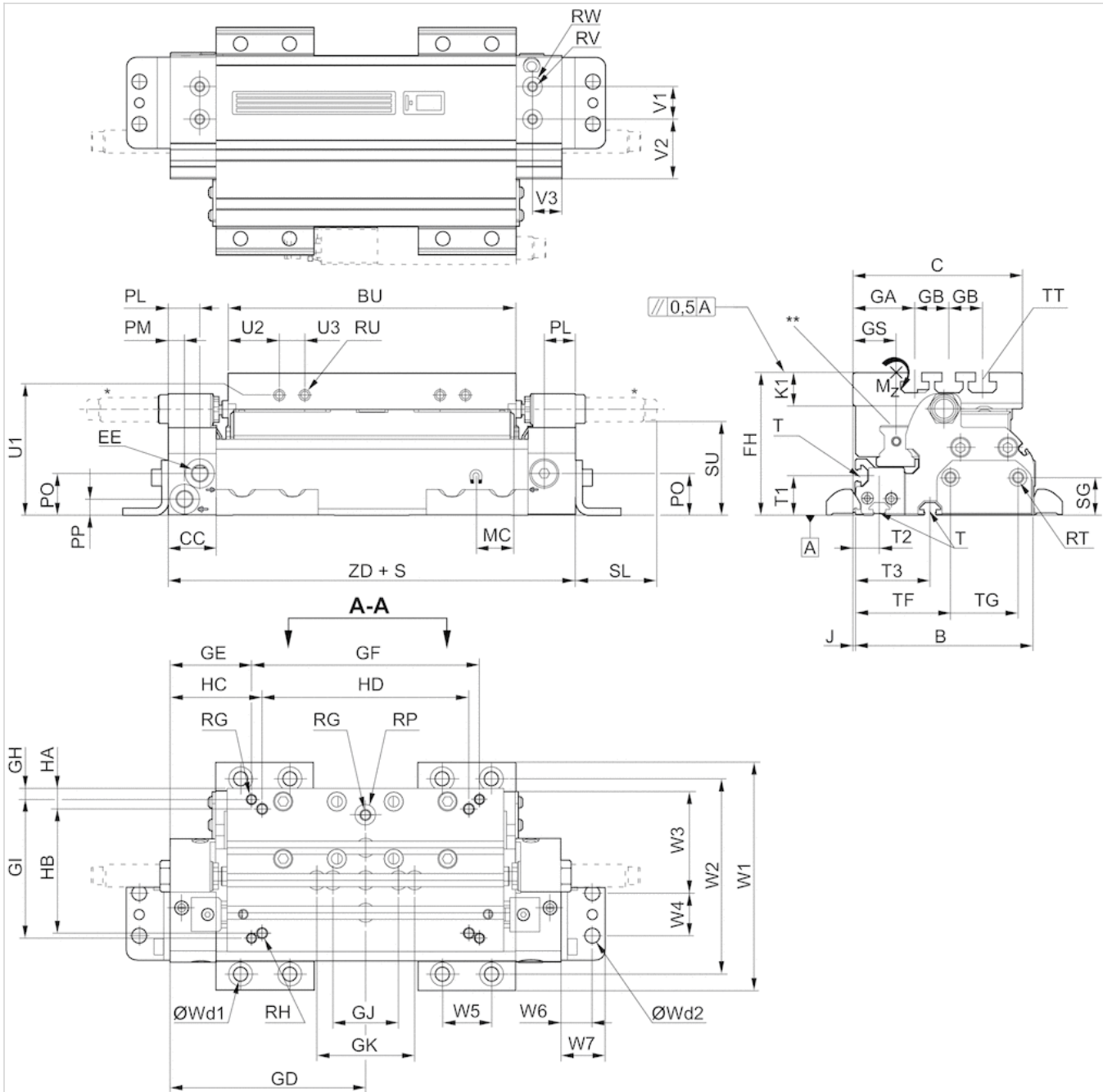
Use hydraulic shock absorbers for precise end position adjustment.

## Technical information

Material	
Cylinder tube	Aluminum, anodized
Cap	Aluminum, anodized
Seal	Polyurethane
Sealing strips	Polyurethane Stainless steel
Ball rail table	Aluminum, anodized
Guide rail	Steel, hardened

# Dimensions

Ø 16 ... 63 mm



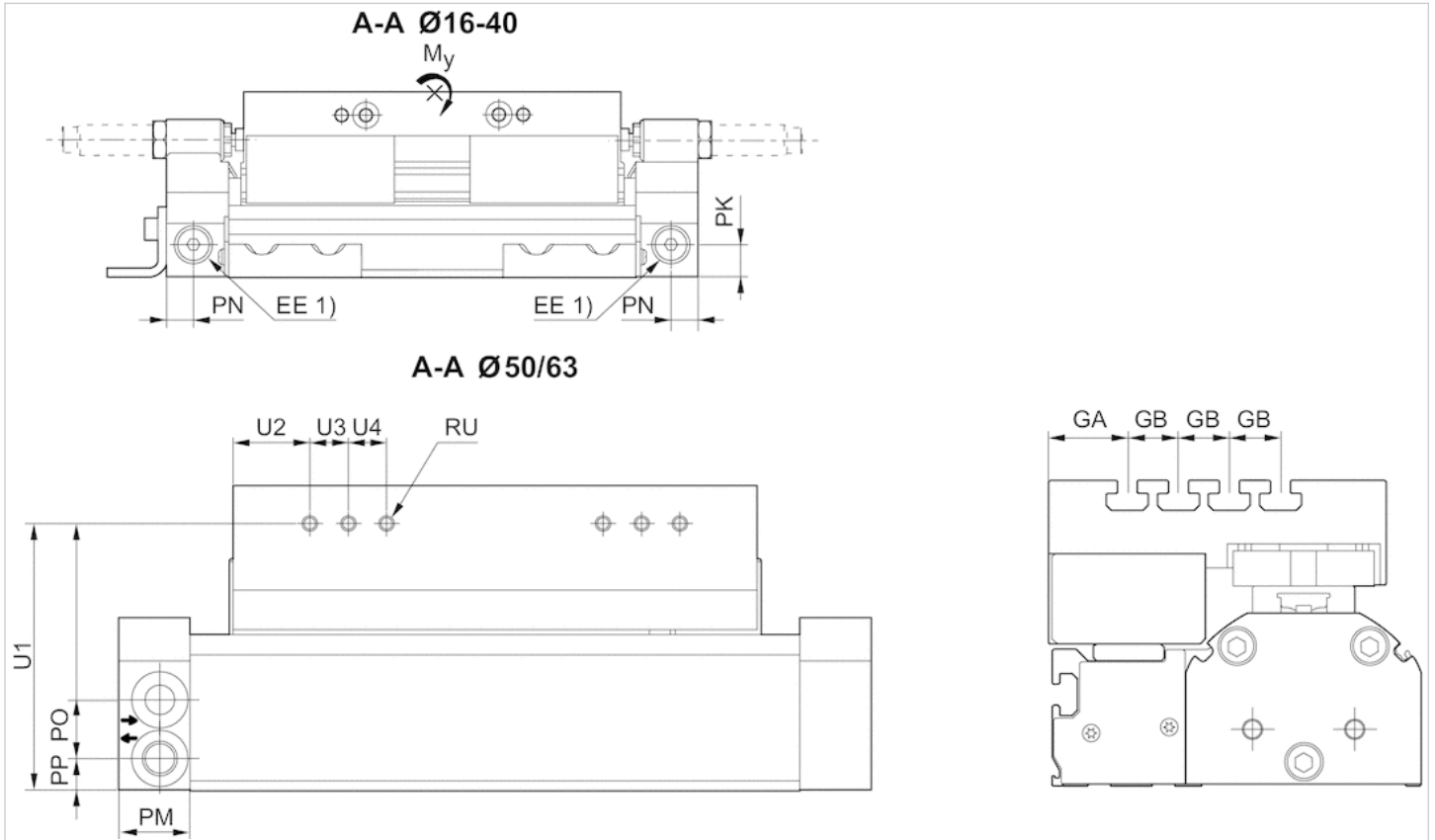
S = stroke

T = Type of t-groove nut

TT = Type of t-groove nut

\* Shock absorber optional in end cover for diameters 16-40

\*\* RTC-HD 16 & 25: funnel type lube nipple with thread M3, RTC-HD 32 - 63: lube nipple DIN 71412 with thread M6



1) Auxiliary air feeding

An example configuration is illustrated. The delivered product may thus deviate from the illustration.

## Dimensions

Piston Ø	B	C	BU	CC	EE	FH	GA	GB	GD	GE	GF	GH	GI	GJ	GK	GS	HA
16 mm	82	82	122	28	M7	60	27	20	93.5	43.5	100	5	20/20/20	40	-	32	7.6
25 mm	103	99.5	147	28	G 1/8	70	26	20	107.5	52.5	110	16	20/40	40	-	37	6.4
32 mm	105	100	170	28	G 1/8	83.8	36.5	20	120	50	140	6.7	85	40	60	25.5	12.7
40 mm	132	122	186	28	G 1/4	97.7	36.5	20	131.5	46.5	170	12	100	40	60	31.5	12.7
50 mm	144.5	132.5	205	28	G 1/4	119.4	31	20	147.3	52.3	190	10	100	40	60	31.5	15.2
63 mm	161	139	233	28	G 3/8	129.4	31	20	166.5	71.5	190	10	100	40	60	31.5	15.2

Piston Ø	HB	HC	HD	J	K1	MC	PK	PL	PM	PN	PO	PP	RG 1)	RH 2)	RP
16 mm	69.9	55.4	76.2	1.5	20.7	12	11.9	18	7	7	13.3	7.3	M5	UNC 1/4-20	Ø 9
25 mm	83.8	44	127	1.5	21.4	15	10.1	20	8	9	21.5	9.3	M5	UNC 1/4-20	Ø 9
32 mm	76.2	56.5	127	1.5	19.7	20	15	18.5	9.5	12	24.5	9.5	M6	UNC 1/4-20	Ø 12
40 mm	101.6	55.4	152.4	1.5	25.6	17	18	18	10	11	31.5	10.5	M6	UNC 1/4-20	Ø 12
50 mm	99.06	66	162.6	1.5	28.6	23	N/A	16	16	N/A	35	12	M8	UNC 5/16-18	Ø 12
63 mm	101.6	59.8	213.4	1.5	28.6	25	N/A	14	14	N/A	45.5	14.5	M8	UNC 5/16-18	Ø 12

Piston Ø	RT 3)	RU 4)	RV	RW	SG	SL	SU	T	TT	V1	V2	V3	W1	W2	W3	W4
16 mm	M5	M5	M5x8	Ø 9H8x1,6	17.3	33.2	38.6	N4	N6	20	6	14	110.4	93.4	56	18
25 mm	M5	M6	M5x8	Ø 9H8x1,6	17.3	49.3	47.1	N6	N6	20	26.5	18	131.4	114.4	72	18
32 mm	M6	M6	M6x10	Ø 12H8x2,1	22	48.3	55.5	N6	N8	20	36.5	18	139.4	119.4	63	26
40 mm	M6	M6	M6x10	Ø 12H8x2,1	22	45.1	73.4	N6	N8	20	40.5	18	166.4	146.4	84	26
50 mm	M8	M5	-	-	22	N/A	N/A	N8	N8	-	-	-	192.1	166.9	63.5	70

Piston Ø	RT 3)	RU 4)	RV	RW	SG	SL	SU	T	TT	V1	V2	V3	W1	W2	W3	W4
63 mm	M8	M5	-	-	30	N/A	N/A	N8	N8	-	-	-	208.6	183.4	80	50

Piston Ø	W5	W6	W7	Wd1	Wd2	T1	T2	T3	TF	TG	U1	U2	U3	U4	ZD	M [kg] 5)
16 mm	30	13.5	19.8	M6	M6	20.8	13.7	-	55.5	19	47	16.5	15	15	187	0.64
25 mm	30	16.5	19.8	M6	M6	20	14	54	71.5	19	60	18	21.5	15	215	1.25
32 mm	30	19	26.8	M8	M8	23	14	44	56	40	71	30	21	15	240	1.4
40 mm	30	19	26.8	M8	M8	24.7	29.5	59.5	77	40	82.7	30	29	15	263.1	2.57
50 mm	40	22	32.7	M12	M12	35.6	18.5	43.5	78.5	40	104.4	30	15	15	294.6	3.19
63 mm	40	22	32.7	M12	M12	45.6	17	39.5	65	80	114.4	30	15	15	333	3.46

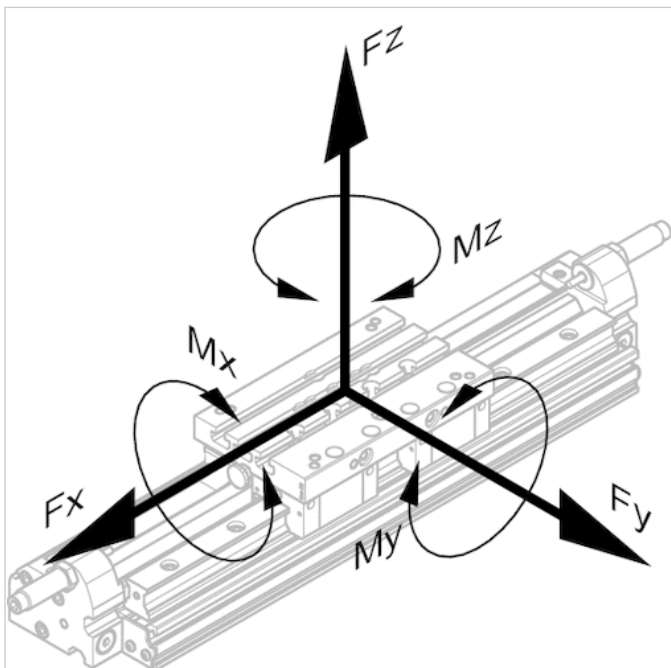
- 1) thread depth: 12 mm for piston Ø 16–25, 16 mm for piston Ø 32–40, 14 mm for piston Ø 50–63
- 2) thread depth: 12,7 mm for piston Ø 16–63 mm
- 3) thread depth: 9 mm for piston Ø 16–40 mm, 12 mm for piston Ø 50–63 mm
- 4) thread depth: 10 mm for piston Ø 16–63 mm
- 5) M = moving mass

## Dimensions

Permissible forces  $F_x, F_y, F_z$  and torques  $M_x, M_y, M_z$

$$\frac{M_x}{M_{x_{max.}}} + \frac{M_y}{M_{y_{max.}}} + \frac{M_z}{M_{z_{max.}}} \leq 1$$

With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders on the <http://www.aventics.com>.



dynamic

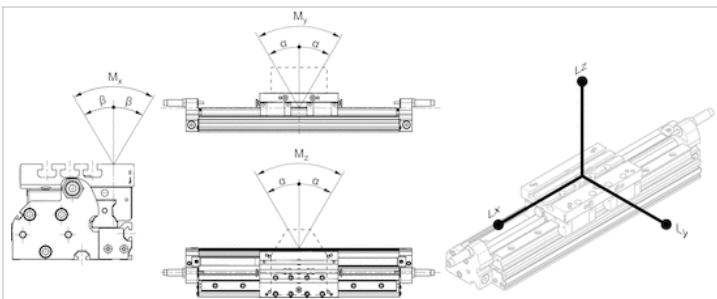
Piston Ø	Mx [Nm]	My [Nm]	Mz [Nm]
16 mm	34	138	53
25 mm	100	336	114
32 mm	154	502	190
40 mm	254	764	376
50 mm	254	924	455
63 mm	254	1120	551

static

Piston Ø	Fx [N]	Fy [N]	Fz [N]	Mx [Nm]	My [Nm]	Mz [Nm]
16 mm	1640	1640	4284	34	138	53
25 mm	2640	2640	7810	100	336	114
32 mm	3760	3760	9952	154	502	190
40 mm	6840	6840	13922	254	764	376
50 mm	6840	6840	13922	254	924	455
63 mm	6840	6840	13922	254	1120	551

Dimensions

Max. play and recommended max. lever arm length



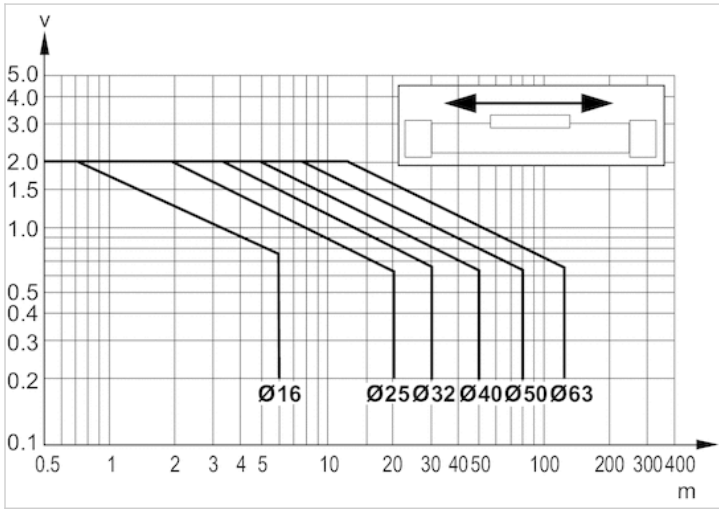
L = lever arm  
M = Torques

Dimensions

Piston Ø	$\alpha$	$\beta$	Lx	Ly	Lz
16 mm	0,1°	0,2°	260	260	260
25 mm	0,1°	0,2°	344	344	344
32 mm	0,1°	0,2°	404	404	404
40 mm	0,1°	0,2°	440	440	440
50 mm	0,1°	0,2°	532	532	532
63 mm	0,1°	0,2°	644	644	644

## Diagrams

### Limit diagram for pneumatic cushioning with horizontal mounting

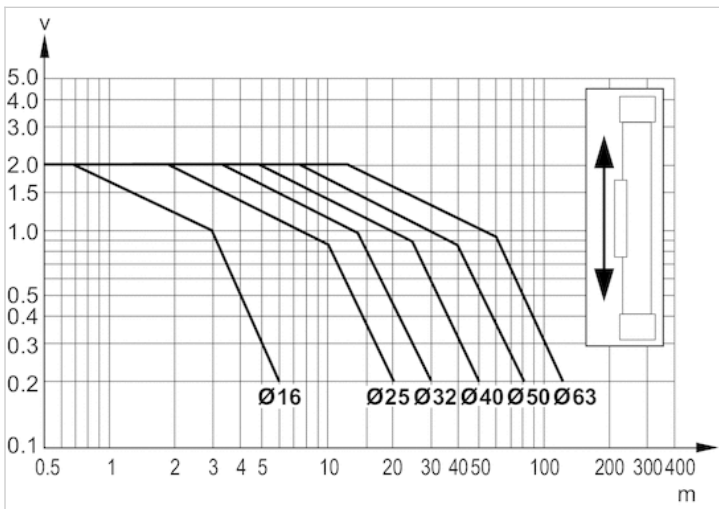


$v$  = Piston velocity [m/s]

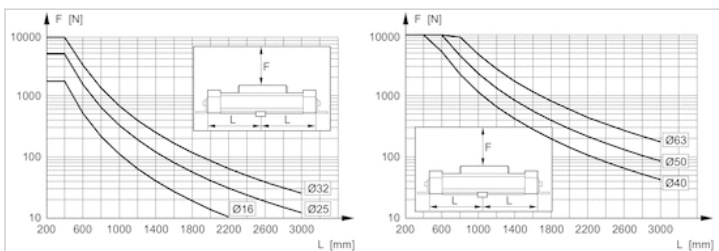
$m$  = Cushionable mass [kg]

The values for the cushionable mass  $m$  and piston velocity  $v$  must be on or below the graph for the selected piston diameter.

### Limit diagram for pneumatic cushioning with vertical mounting



### Support span



Max. support span  $L$  [mm] as a function of  $F$  [N] at a deflection of 0.5 mm

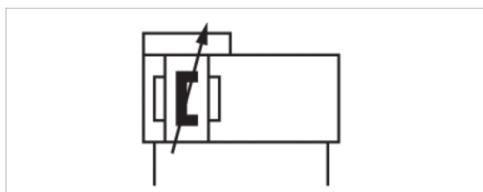


# Rodless cylinder, Series RTC-BV

- Ports 10-32 UNF - 3/8 NPTF
- Ø 16-80 mm
- double-acting
- with magnetic piston
- integrated guide
- Basic Version
- Cushioning Pneumatically adjustable



Working pressure min./max.	2 ... 8 bar
Ambient temperature min./max.	-10 ... 60 °C
Medium	Compressed air
Max. particle size	5 µm
Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>
Pressure for determining piston forces	6.3 bar



## Technical data

Piston Ø	16 mm	25 mm	32 mm	40 mm	50 mm	63 mm	80 mm
Stroke 203.2	R480676512	R480671858	R480676497	R480608664	R480676501	R480676505	R480676498
304.8	R480675040	R480166639	R480619494	R480625302	R480676502	R480676506	R480676500
406.4	R480667889	R480650963	R480626326	R480620235	R480624463	R480639391	R480676503
508	R480672796	R480647667	R480172271	R480183023	R480622115	R480676508	R480676507
609.6	R480165989	R480165988	R480156697	R480163516	R480167039	R480166465	R480166464
762	R480676513	R480636912	R480609968	R480676499	R480663900	R480624024	R480676509
1219.2	R480163786	R480671651	R480635630	R480635629	R480627034	R480182176	R480642983
1371.6	R480676514	R480178373	R480175775	R480178601	R480676504	R480165501	R480676510
1524	R480676515	R480635887	R480651961	R480607963	R480636843	R480619999	R480676511

## Technical data

Piston Ø	16 mm	25 mm	32 mm	40 mm	50 mm	63 mm	80 mm
Piston force	127 N	309 N	507 N	792 N	1237 N	1964 N	3146 N
Cushioning length	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm	20 mm
Cushioning energy	1,5 J	4 J	7 J	10 J	15 J	25 J	40 J
Speed max.	5,5 m/s	6,5 m/s	4 m/s	5 m/s	3 m/s	3 m/s	3 m/s
Weight 0 mm stroke	0,45 kg	0,82 kg	1,39 kg	2,09 kg	3,37 kg	5,65 kg	9,71 kg

Piston Ø	16 mm	25 mm	32 mm	40 mm	50 mm	63 mm	80 mm
+10 mm stroke	0,014 kg	0,023 kg	0,031 kg	0,044 kg	0,065 kg	0,098 kg	0,157 kg
Stroke max.	6600 mm	7000 mm	9900 mm	9900 mm	9900 mm	5800 mm	4800 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 delivered product is lubricated for lifetime.

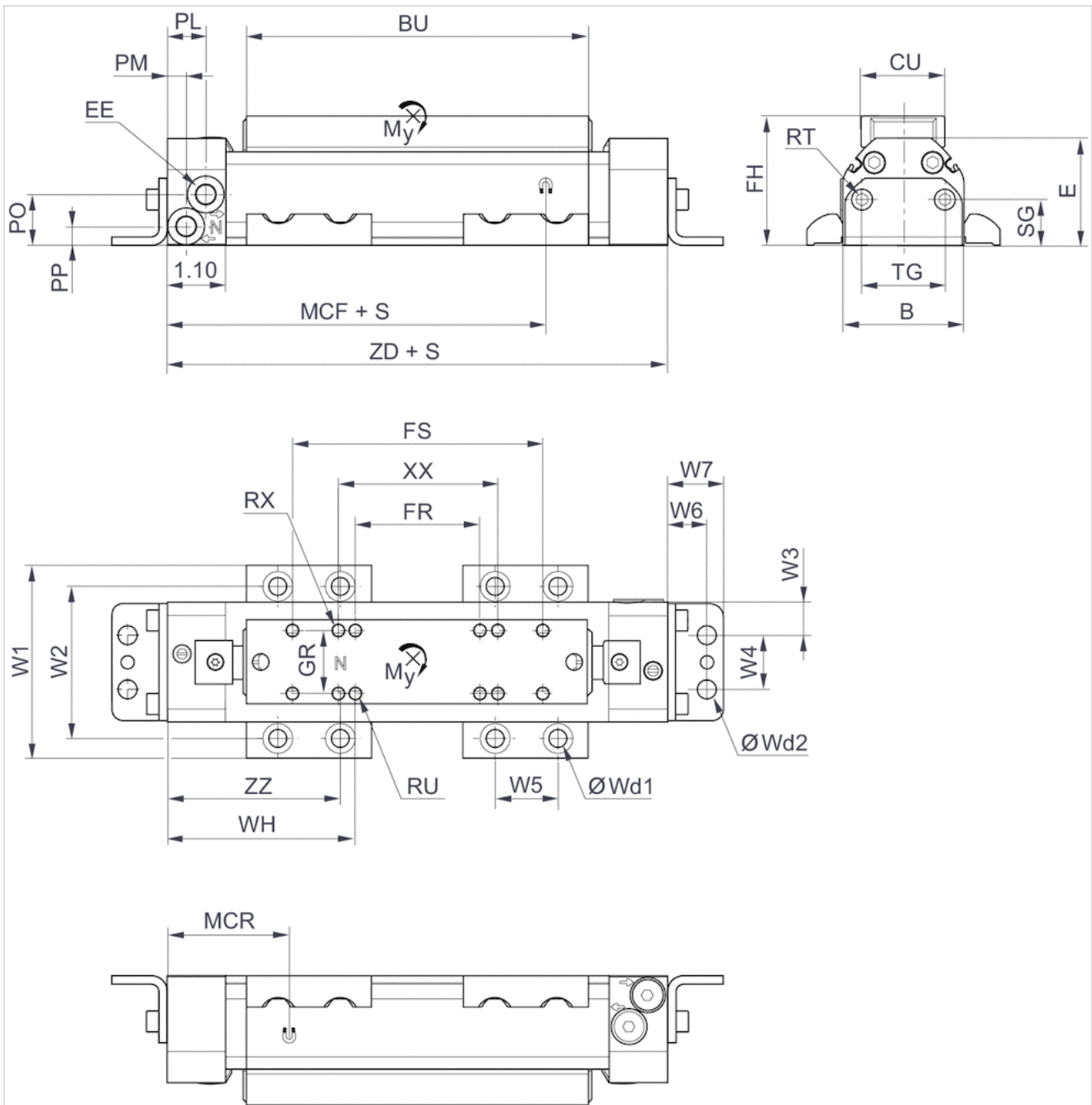
These pneumatic components with NPT or inch thread dimensions are only available from our US sales organization.

## Technical information

Material	
Cylinder tube	Aluminum, anodized
Cap	Aluminum, anodized
Seal	Polyurethane
Sealing strips	Polyurethane Stainless steel
Ball rail table	Aluminum, anodized

# Dimensions

## Dimensions in inches



S = stroke

## Dimensions in inches

Piston Ø	B	BU	CU	E	EE	FH	FR	FS	GR	PL	PM	PO	PP	RT 1)	RU 2)
16 mm	1.34	4.65	1.02	1.42	*10-32 UNF/M7	1.61	2.36	3.94	0.79	0.85	0.35	13,1	0.52	M4	M4
25 mm	1.73	5.79	1.02	1.79	1/8 NPTF	1.99	1.57	3.94	0.79	0.79	0.31	21,5	0.85	M5	M4
32 mm	2.28	6.42	1.57	2.03	1/8 NPTF	2.44	2.36	4.72	1.18	0.73	0.37	24,5	0.96	M6	M6
40 mm	2.76	7.17	1.57	2.38	1/4 NPTF	2.8	2.36	4.72	1.18	0.71	0.39	31,5	1.24	M6	M6
50 mm	3.62	8.07	1.57	2.66	1/4 NPTF	3.08	2.36	5.51	1.18	0.63	0.63	35,5	1.4	M8	M6
63 mm	4.41	9.17	2.17	3.25	3/8 NPTF	3.67	3.94	7.09	1.57	0.55	0.55	45,5	1.79	M8	M8
80 mm	5.51	10.59	2.17	4.07	3/8 NPTF	4.5	3.94	7.09	1.57	0.55	0.55	59,5	2.34	M8	M8

Piston Ø	RX	SG	TG	W1	W2	W3	W4	W5	W6	W7	Wd1	Wd2	ZZ	WH	ZD
16 mm	8-36 UNF	0.68	0.75	2.48	1.79	0.31	0.71	1.18	0.53	0.78	M6	M6	2.68	2.5	7.36
25 mm	8-36 UNF	0.68	0.75	2.87	2.19	0.51	0.71	1.18	0.53	0.78	M6	M6	2.73	3.44	8.46
32 mm	1/4-20 UNC	0.87	1.57	3.66	2.85	0.63	1.02	1.18	0.75	1.06	M8	M8	3.22	3.54	9.45
40 mm	1/4-20 UNC	0.87	1.57	4.13	3.33	0.87	1.02	1.18	0.75	1.06	M8	M8	3.68	4	10.35
50 mm	1/4-20 UNC	0.87	1.57	5.51	4.51	0.43	2.76	1.57	0.87	1.29	M12	M12	4.29	4.61	9.82
63 mm	1/4-20 UNC	1.18	3.15	6.3	5.3	1.22	1.97	1.57	0.87	1.29	M12	M12	5.06	4.59	13.12
80 mm	1/4-20 UNC	1.18	3.15	7.4	6.4	1.77	1.97	1.57	0.87	1.29	M12	M12	5.61	5.14	14.21

Piston Ø	M [lbs] 3)
16 mm	0.17
25 mm	0.35
32 mm	0.71
40 mm	1.08
50 mm	1.61
63 mm	2.29
80 mm	4.71

1) Thread depth: 0.35 inch for piston Ø 5/8 - 1 1/2, 0.47 inch for piston Ø 5/8 - 3

2) Thread depth: 0.24 inch for piston Ø 5/8 - 1, 0.40 inch for piston Ø 1 1/4 - 2, 0.59 inch for piston Ø 2 1/2 - 3

3) M = moving mass

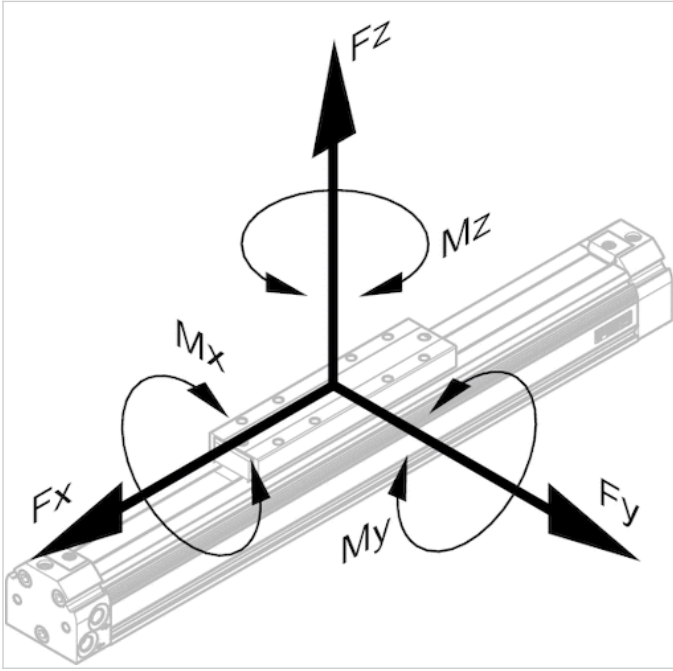
\* Can be selected in the configurator (M7 for high-speed applications)

## Dimensions

Permissible forces  $F_x$ ,  $F_y$ ,  $F_z$  and torques  $M_x$ ,  $M_y$ ,  $M_z$ 

$$\frac{M_x}{M_{x_{\max.}}} + \frac{M_y}{M_{y_{\max.}}} + \frac{M_z}{M_{z_{\max.}}} \leq 1$$

With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders on the <http://www.aventics.com>.



dynamic

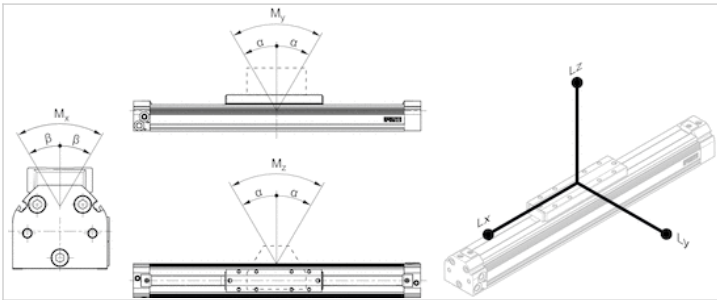
Piston Ø	Ø [inch]	Mx [Nm]	My [Nm]	Mz [Nm]
16 mm	5/8	0.42	10	2
25 mm	1	1	24	3
32 mm	1 1/4	3.8	42	12
40 mm	1 1/2	6	75	15
50 mm	2	9.1	128	20
63 mm	2 1/2	14.5	195	24
80 mm	3	20	300	28

static

Piston Ø	Ø [inch]	Fx [N]	Fy [N]	Fz [N]	Mx [Nm]	My [Nm]	Mz [Nm]
16 mm	5/8	800	150	1100	2	25	8
25 mm	1	1800	210	3800	6	50	12
32 mm	1 1/4	2200	550	6600	18	80	43
40 mm	1 1/2	3500	650	8000	28	140	55
50 mm	2	5000	750	9000	35	230	70
63 mm	2 1/2	6800	850	13000	45	340	90
80 mm	3	9500	1000	13000	55	500	110

## Dimensions

### Max. play and recommended max. lever arm length



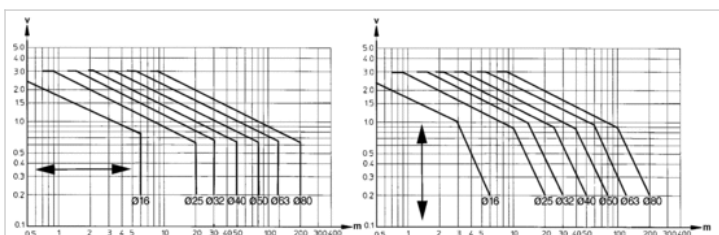
L = lever arm  
M = Torques

## Dimensions

Piston Ø	Ø [inch]	$\alpha$	$\beta$
16 mm	5/8	0.5°	0.2°
25 mm	1	0.5°	0.2°
32 mm	1 1/4	0.6°	1.5°
40 mm	1 1/2	0.4°	1.0°
50 mm	2	0.4°	1.0°
63 mm	2 1/2	0.3°	1.0°
80 mm	3	0.3°	1.0°

## Diagrams

### Limit diagram for pneumatic cushioning for horizontal or vertical mounting

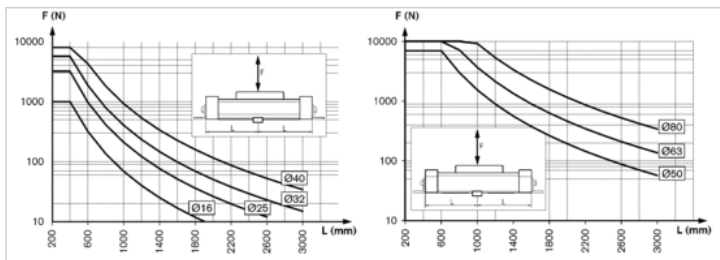


$v$  = Piston velocity [m/s]

$m$  = Cushionable mass [kg]

The values for the cushionable mass  $m$  and piston velocity  $v$  must be on or below the graph for the selected piston diameter.

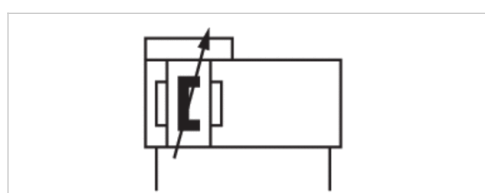
## Support span



Max. support span L [mm] as a function of F [N] at a deflection of 0.5 mm

# Rodless cylinder, Series RTC-CG

- Ports 10-32 UNF - 3/8 NPTF
- Ø 16-40 mm
- double-acting
- with magnetic piston
- ball rail guide
- Compact Guide
- Cushioning Pneumatically adjustable
- Easy2Combine capable with connection kit



Working pressure min./max.	2 ... 8 bar
Ambient temperature min./max.	-10 ... 60 °C
Medium	Compressed air
Max. particle size	5 µm
Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>
Pressure for determining piston forces	6.3 bar

An example configuration is illustrated.  
The delivered product may thus deviate from the illustration.

## Technical data

Piston Ø	16 mm	25 mm	32 mm	40 mm
Stroke 152.4	R480161097	R480676520	R480639375	R480676522
304.8	R480676516	R480635761	R480610198	R480676523
609.6	R480676517	R480656723	R480168891	R480174815
1016	R480676518	R480639928	R480676521	R480676524
1524	R480676519	R480625335	R480608061	R480606820

## Technical data

Piston Ø	16 mm	25 mm	32 mm	40 mm
Piston force	127 N	309 N	507 N	792 N
Cushioning length	20 mm	20 mm	20 mm	20 mm
Cushioning energy	1,5 J	4 J	7 J	10 J
Speed max.	2 m/s	2 m/s	2 m/s	2 m/s
Weight 0 mm stroke	0,94 kg	1,64 kg	2,43 kg	3,92 kg
+10 mm stroke	0,026 kg	0,041 kg	0,056 kg	0,075 kg
Stroke max.	1800 mm	1800 mm	1800 mm	2000 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 delivered product is lubricated for lifetime.

Use hydraulic shock absorbers for precise end position adjustment.

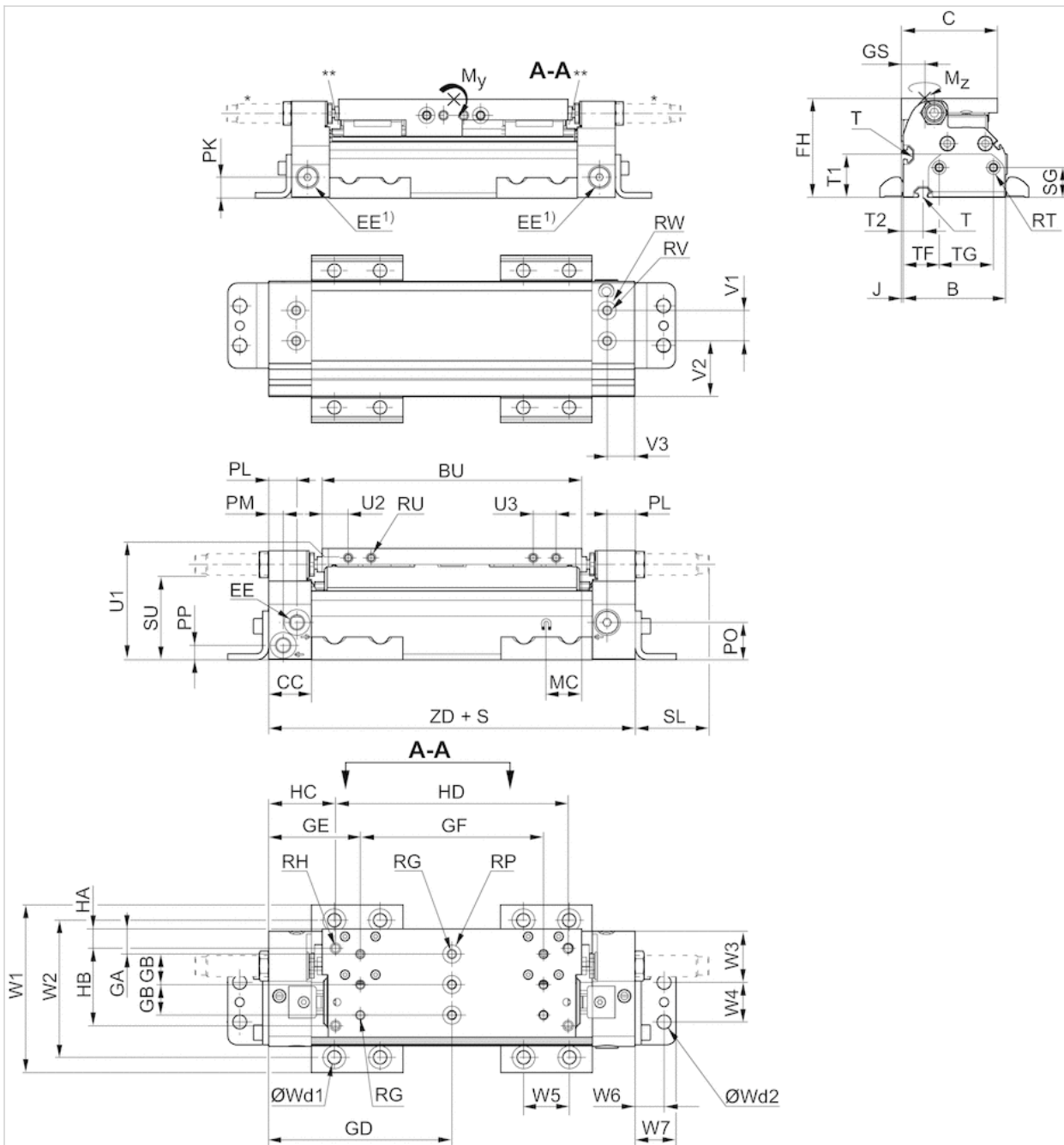
These pneumatic components with NPT or inch thread dimensions are only available from our US sales organization.

## Technical information

Material	
Cylinder tube	Aluminum, anodized
Cap	Aluminum, anodized
Seal	Polyurethane
Sealing strips	Polyurethane Stainless steel
Ball rail table	Aluminum, anodized
Guide rail	Steel, hardened

# Dimensions

## Dimensions in inches



S = stroke

T = Type of t-groove nut

1) Auxiliary air feeding

An example configuration is illustrated. The delivered product may thus deviate from the illustration.

\* Shock absorber optional in end cover for diameters 16-40

\*\* RTC-CG 16 & 25: 2x Lube ports on each runner block, RTC-CG 32 & 40: Lube nipple of funnel type with thread connection M3

Dimensions in inches

Piston Ø	B	C	BU	CC	EE	FH	GA	GB	GD	GE	GF	GS	HA	HB	HC	HD	J	MC
16 mm	1.97	2.01	4.8	1.1	*10-32/M7	2.13	0.28	0.79	3.68	1.52	4.33	0.45	0.3	1.5	2.68	2	0.08	0.47
25 mm	2.46	2.29	5.79	1.1	1/8 NPTF	2.56	0.24	0.79	4.23	2.11	4.25	0.59	0.2	1.8	1.53	5.4	0.06	0.59
32 mm	2.97	2.8	6.69	1.1	1/8 NPTF	2.87	0.65	0.79	4.72	2.36	4.72	0.69	0.5	2	1.72	6	0.06	0.79
40 mm	3.37	2.91	7.32	1.1	1/8 NPTF	3.72	0.65	0.79	5.18	2.82	4.72	0.73	0.5	2	2.18	6	0.06	0.67

Piston Ø	PK	PL	PM	PN	PO	PP	RG 1)	RH 2)	RP	RT 3)	RU 4)	SG	SL	SU	T
16 mm	0.47	0.71	0.28	0.28	0.52	0.29	M5	4xUNC 1/4-20	Ø 9	M5	M5	0.68	1.31	1.52	N4
25 mm	0.4	0.79	0.31	0.35	0.85	0.37	M5	4xUNC 1/4-20	Ø 9	M5	M6	0.68	1.94	1.85	N6
32 mm	0.59	0.73	0.37	0.47	0.96	0.37	M6	4xUNC 1/4-20	Ø 12	M6	M6	0.87	1.9	2.19	N6
40 mm	0.71	0.71	0.39	0.43	1.24	0.41	M6	4xUNC 1/4-20	Ø 12	M6	M6	0.87	1.78	2.89	N6

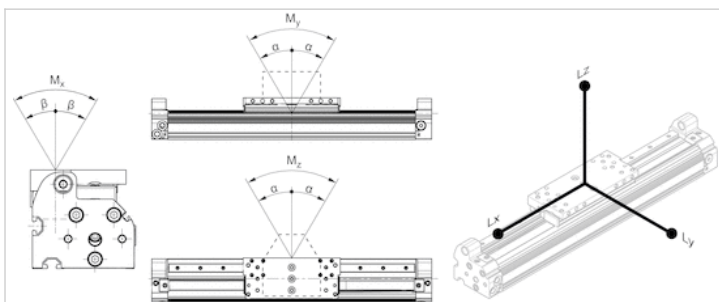
Piston Ø	W1	W2	W3	W4	W5	W6	W7	Wd1	Wd2	T1	T2	TF	TG	U1	U2	U3	ZD
16 mm	3.09	2.42	0.94	0.71	1.18	0.53	0.78	M6	M6	0.73	0.41	1	0.75	1.89	0.51	0.59	7.36
25 mm	3.58	2.91	0.14	0.71	1.18	0.53	0.78	M6	M6	1.05	0.53	1.22	0.75	2.32	0.51	1.06	8.46
32 mm	4.33	3.54	1.32	1.02	1.18	0.75	1.06	M8	M8	1.24	0.57	1.04	1.57	2.64	0.67	1.34	9.45
40 mm	4.72	3.93	1.48	1.02	1.18	0.75	1.06	M8	M8	1.63	0.51	1.2	1.57	3.13	0.98	1.34	10.36

Piston Ø	M [lb] 5)
16 mm	0.485
25 mm	0.882
32 mm	1.036
40 mm	2.138

- 1) Thread depth: 0.47 inch for piston Ø 5/8, 1 and 1 1/2. 0.41 inch for piston Ø 1 1/4
- 2) Thread depth: 0.50 inch for piston Ø 5/8 - 1 1/2
- 3) Thread depth: 0.35 inch for piston Ø 5/8 - 1 1/2
- 4) Thread depth: 0.40 inch for piston Ø 5/8 - 1 1/2
- 5) M = moving mass
- \* Can be selected in the configurator (M7 for high-speed applications)

Dimensions

Max. play and recommended max. lever arm length



L = lever arm  
M = Torques

## Dimensions

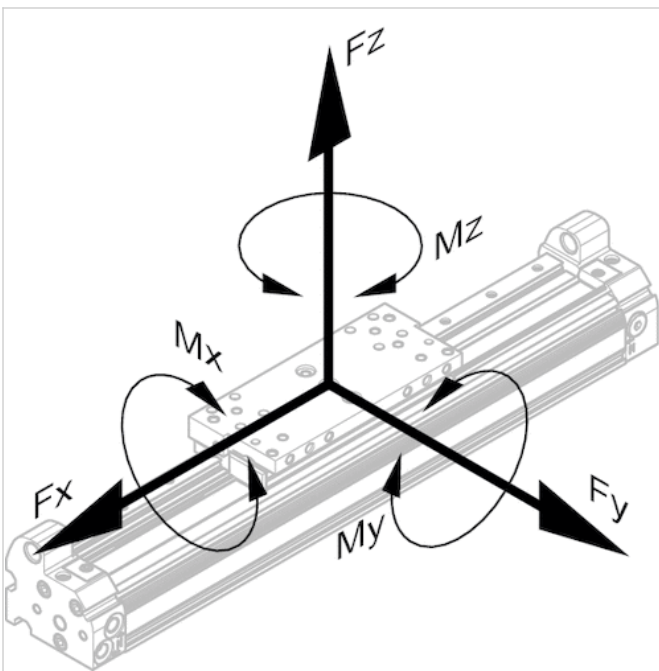
Piston Ø	Ø [inch]	α	β	Lx	Ly	Lz
16 mm	5/8	0,1°	0,2°	328	328	328
25 mm	1	0,1°	0,2°	424	424	424
32 mm	1 1/4	0,1°	0,2°	480	480	480
40 mm	1 1/2	0,1°	0,2°	532	532	532

## Dimensions

Permissible forces  $F_x, F_y, F_z$  and torques  $M_x, M_y, M_z$

$$\frac{M_x}{M_{x_{\max.}}} + \frac{M_y}{M_{y_{\max.}}} + \frac{M_z}{M_{z_{\max.}}} \leq 1$$

With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders on the <http://www.aventics.com>.



## dynamic

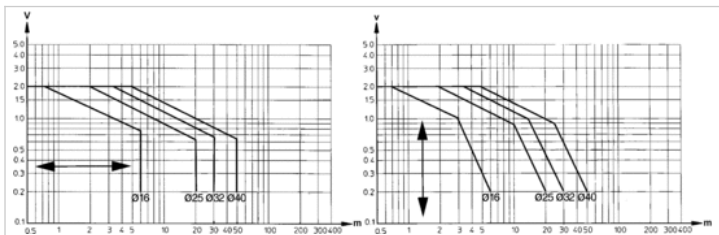
Piston Ø	Ø [inch]	$M_x$ [Nm]	$M_y$ [Nm]	$M_z$ [Nm]
16 mm	5/8	4	30	30
25 mm	1	10	78	78
32 mm	1 1/4	22	158	110
40 mm	1 1/2	36	284	109

static

Piston Ø	Ø [inch]	F <sub>x</sub> [N]	F <sub>y</sub> [N]	F <sub>z</sub> [N]	M <sub>x</sub> [Nm]	M <sub>y</sub> [Nm]	M <sub>z</sub> [Nm]
16 mm	5/8	744	744	744	4	30	30
25 mm	1	1456	1456	1456	10	78	78
32 mm	1 1/4	1840	1840	2646	22	158	110
40 mm	1 1/2	1640	1640	4284	36	284	109

Diagrams

Limit diagram for pneumatic cushioning for horizontal or vertical mounting

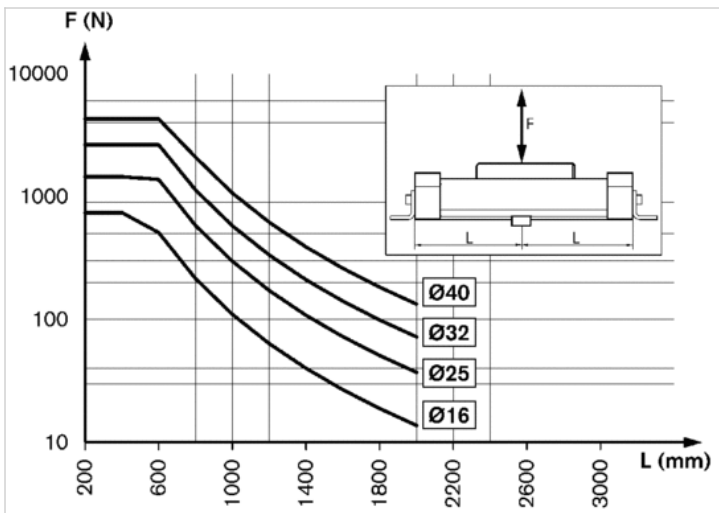


v = Piston velocity [m/s]

m = Cushionable mass [kg]

The values for the cushionable mass m and piston velocity v must be on or below the graph for the selected piston diameter.

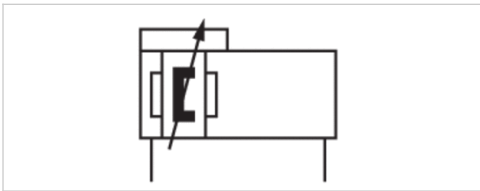
Support span



Max. support span L [mm] as a function of F [N] at a deflection of 0.5 mm

# Rodless cylinder, Series RTC-HD

- Ports 10-32 UNF - 3/8 NPTF
- Ø 25-63 mm
- double-acting
- with magnetic piston
- ball rail guide
- Heavy Duty
- Cushioning Pneumatically adjustable
- Easy2Combine capable with connection kit



Working pressure min./max.	4 ... 8 bar
Ambient temperature min./max.	-10 ... 60 °C
Medium	Compressed air
Max. particle size	5 µm
Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>
Pressure for determining piston forces	6.3 bar

An example configuration is illustrated.  
The delivered product may thus deviate  
from the illustration.

## Technical data

Piston Ø	25 mm	32 mm	40 mm	50 mm	63 mm
Stroke 203.2	R480676537	R480676527	R480676548	R480636524	R480676533
304.8	R480676538	R480676542	R480676549	R480676530	R480172938
406.4	R480676539	R480676543	R480676550	R480676553	R480624465
508	R480641671	R480628417	R480676551	R480676554	R480653340
609.6	R480165994	R480165995	R480619943	R480669357	R480172944
762	R480676540	R480676544	R480676529	R480676555	R480676557
1219.2	R480673624	R480676545	R480180094	R480644142	R480641138
1371.6	R480676541	R480676546	R480627168	R480676531	R480676534
1524	R480625336	R480607665	R480181358	R480676556	R480181400
2540	R480676526	R480676547	R480676552	R480676532	R480676535

## Technical data

Piston Ø	25 mm	32 mm	40 mm	50 mm	63 mm
Piston force	309 N	507 N	792 N	1237 N	1964 N
Cushioning length	20 mm	20 mm	20 mm	20 mm	20 mm
Cushioning energy	4 J	7 J	10 J	15 J	25 J

Piston Ø	25 mm	32 mm	40 mm	50 mm	63 mm
Speed max.	2 m/s	2 m/s	2 m/s	2 m/s	2 m/s
Weight 0 mm stroke	2,96 kg	3,9 kg	6,58 kg	8,94 kg	11,75 kg
+10 mm stroke	0,071 kg	0,086 kg	0,128 kg	0,162 kg	0,193 kg
Stroke max.	4300 mm	4300 mm	4300 mm	4300 mm	4300 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 delivered product is lubricated for lifetime.

Use hydraulic shock absorbers for precise end position adjustment.

These pneumatic components with NPT or inch thread dimensions are only available from our US sales organization.

## Technical information

Material	
Cylinder tube	Aluminum, anodized
Cap	Aluminum, anodized
Seal	Polyurethane
Sealing strips	Polyurethane Stainless steel
Ball rail table	Aluminum, anodized
Guide rail	Steel, hardened





## Dimensions in inches

Piston Ø	Ø [inch]	B	C	BU	CC	EE	EF	EG	FH	GA	GB	GD	GE	GF	GH
25 mm	1	4.6	3.92	5.79	1.1	1/8 NPTF	–	–	2.76	1.02	0.79	4.23	4.23	4.33	0.63
32 mm	1 1/4	4.13	3.94	6.69	1.1	1/8 NPTF	–	–	3.3	1.44	0.79	4.72	4.72	5.51	0.26
40 mm	1 1/2	5.2	4.8	7.32	1.1	1/4 NPTF	–	–	3.85	1.44	0.79	5.18	5.18	6.69	0.47
50 mm	2	5.69	5.22	8.07	1.1	1/4 NPTF	Ø 4,59	Ø 0,91	4.7	1.22	0.79	5.8	5.8	7.48	0.39
63 mm	2 1/2	6.34	5.47	9.17	1.1	3/8 NPTF	Ø 0,59	Ø 1,04	5.09	1.22	0.79	6.56	6.56	7.48	0.39

Piston Ø	GI	GJ	GK	GS	HA	HB	HC	HD	J	K1	MC	PK	PL	PM	PN	PO	PP	PR
25 mm	20/40	1.57	–	1.46	0,25	3,3	1,732	5	0.06	0.84	0.59	0.4	0.79	0.31	0.35	0.85	0.37	–
32 mm	85	1.57	2.36	1	0,5	3	2,224	5	0.06	0.78	0.79	0.59	0.73	0.37	0.47	0.96	0.37	–
40 mm	100	1.57	2.36	1.24	0,5	4	2,181	6	0.06	1.01	0.67	0.71	0.71	0.39	0.43	1.24	0.41	–
50 mm	100	1.57	2.36	1.24	0,6	3,9	2,598	6.4	0.06	1.3	0.91	–	0.63	0.63	–	1.38	0.47	0.84
63 mm	100	1.57	2.36	1.24	0,6	4	2,354	8.4	0.06	1.3	0.98	–	0.55	0.55	–	1.79	0.57	1.06

Piston Ø	PQ	RG 1)	RH 2)	RP	RQ	RT 3)	RU 4)	SG	SL	SU	T	TT	W1	W2	W3
25 mm	–	M5	4xUNC 1/4-20	Ø 9	M6	M5	M6	0.68	1.94	1.85	N6	N6	5.17	4.5	2.83
32 mm	–	M6	4xUNC 1/4-20	Ø 12	M6	M6	M6	0.87	1.9	2.19	N6	N8	5.49	4.7	2.48
40 mm	–	M6	4xUNC 1/4-20	Ø 12	M8	M6	M6	0.87	1.78	2.89	N6	N8	6.55	5.76	3.31
50 mm	1.22	M8	4xUNC 5/16-18	Ø 12	M8	M8	M5	0.87	–	–	N8	N8	7.56	6.57	2.5
63 mm	0.98	M8	4xUNC 5/16-18	Ø 12	M8	M8	M5	1.18	–	–	N8	N8	8.21	7.22	3.15

Piston Ø	W4	W5	W6	W7	Wd1	Wd2	T1	T2	T3	TF	TG	U1	U2	U3	U4	ZD
25 mm	0.71	0.05	0.53	0.78	M6	M6	0.79	0.55	2.13	2.81	0.75	2.24	0,7	0,85	0.59	8.46
32 mm	1.02	0.05	0.75	1.06	M8	M8	0.91	0.55	1.73	2.2	1.57	2.8	1.18	0,83	0.59	9.45
40 mm	1.02	0.05	0.75	1.06	M8	M8	0.97	1.16	2.34	3.03	1.57	3.26	1.18	1,14	0.59	9.3
50 mm	2.76	0.06	0.87	1.29	M12	M12	1.4	0.73	1.71	3.09	1.57	4,1	1.18	0.59	0.59	11.6
63 mm	1.97	0.06	0.87	1.29	M12	M12	1.8	0.67	1.56	2.56	3.15	4.5	1.18	0.59	0.59	13.11

Piston Ø	M [lb] 5)
25 mm	2.75
32 mm	3.09
40 mm	5.67
50 mm	7.03
63 mm	7.63

1) Thread depth: 0.47 inch for piston Ø 5/8 - 1, 0.63 inch for piston Ø 5/8 - 1 1/2, 0.55 inch for piston Ø 5/8 - 3

2) Thread depth: 0.50 inch for piston Ø 5/8 - 3

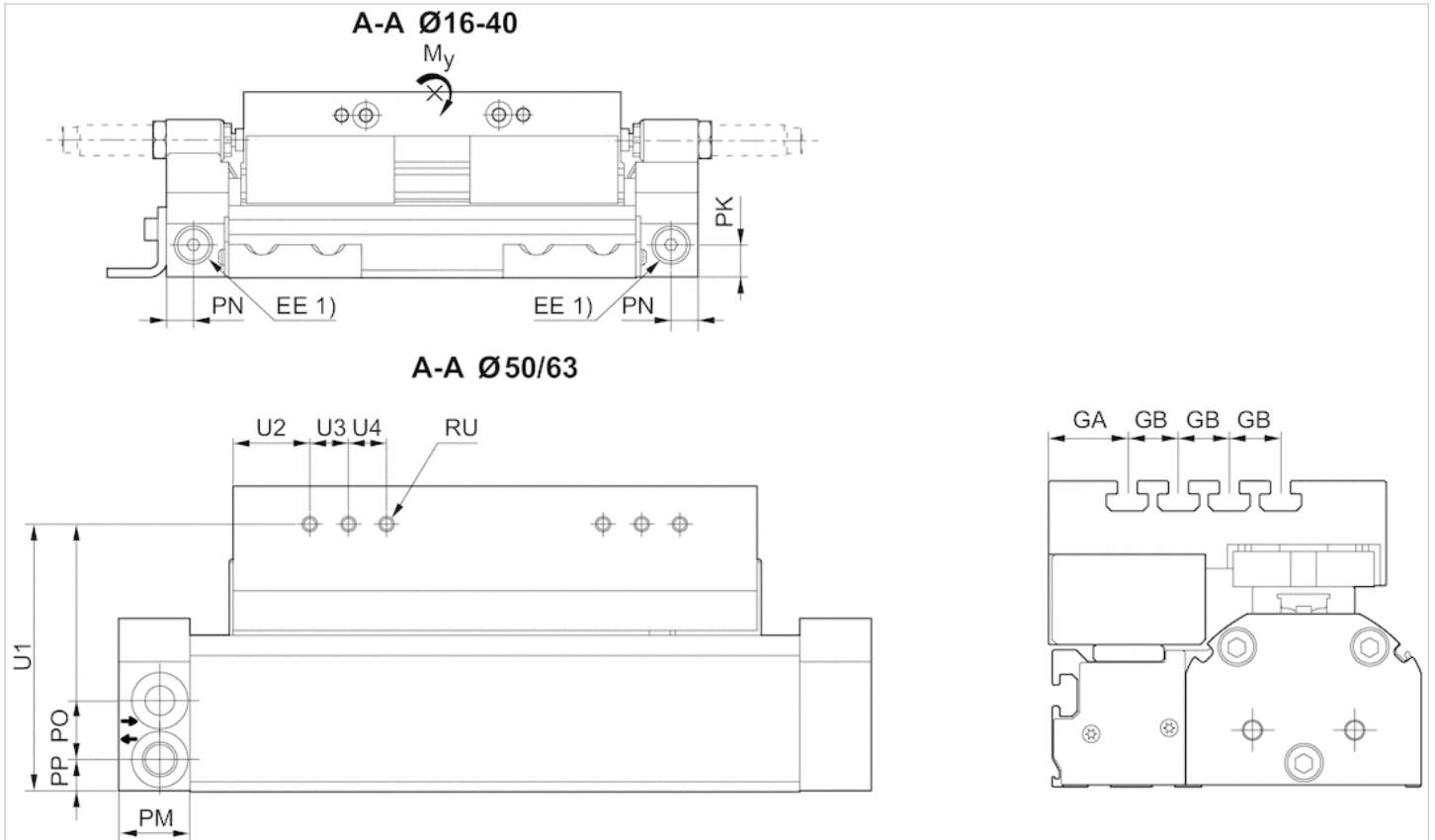
3) Thread depth: 0.35 inch for piston Ø 5/8 - 1 1/2, 0.47 inch for piston Ø 5/8 - 3

4) Thread depth: 0.40 inch for piston Ø 5/8 - 3

5) M = moving mass

\* Can be selected in the configurator (M7 for high-speed applications)

## Dimensions



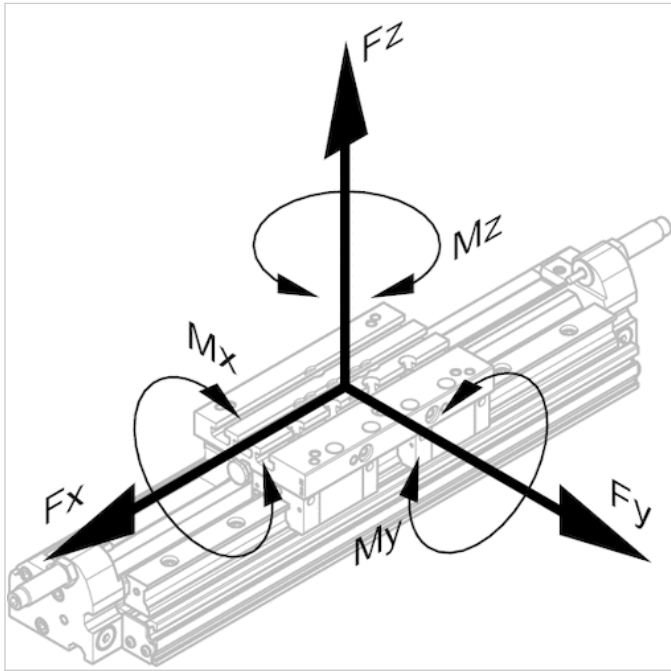
1) Auxiliary air feeding

An example configuration is illustrated. The delivered product may thus deviate from the illustration.

### Permissible forces $F_x, F_y, F_z$ and torques $M_x, M_y, M_z$

$$\frac{M_x}{M_{x_{\max.}}} + \frac{M_y}{M_{y_{\max.}}} + \frac{M_z}{M_{z_{\max.}}} \leq 1$$

With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders on the <http://www.aventics.com>.



dynamic

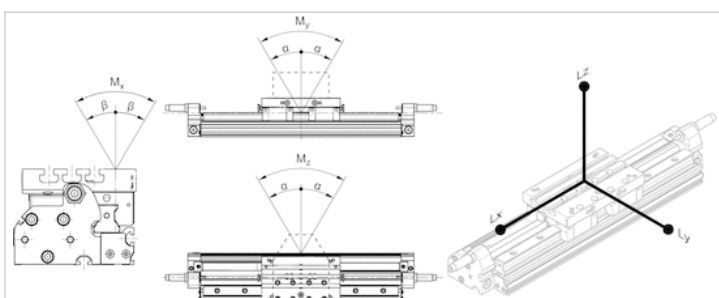
Piston Ø	Ø [inch]	Mx [Nm]	My [Nm]	Mz [Nm]
25 mm	1	100	336	114
32 mm	1 1/4	154	502	190
40 mm	1 1/2	254	764	376
50 mm	2	254	924	455
63 mm	2 1/2	254	1120	551

static

Piston Ø	Ø [inch]	Fx [N]	Fy [N]	Fz [N]	Mx [Nm]	My [Nm]	Mz [Nm]
25 mm	1	2640	2640	7810	100	336	114
32 mm	1 1/4	3760	3760	9952	154	502	190
40 mm	1 1/2	6840	6840	13922	254	764	376
50 mm	2	6840	6840	13922	254	924	455
63 mm	2 1/2	6840	6840	13922	254	1120	551

Dimensions

Max. play and recommended max. lever arm length



L = lever arm

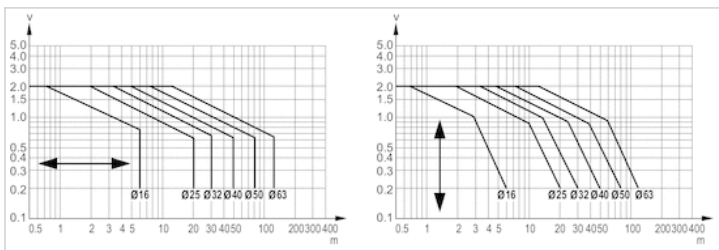
M = Torques

## Dimensions

Piston Ø	Ø [inch]	$\alpha$	$\beta$	Lx	Ly	Lz
25 mm	1	0,1°	0,2°	344	344	344
32 mm	1 1/4	0,1°	0,2°	404	404	404
40 mm	1 1/2	0,1°	0,2°	440	440	440
50 mm	2	0,1°	0,2°	532	532	532
63 mm	2 1/2	0,1°	0,2°	644	644	644

## Diagrams

### Limit diagram for pneumatic cushioning for horizontal or vertical mounting

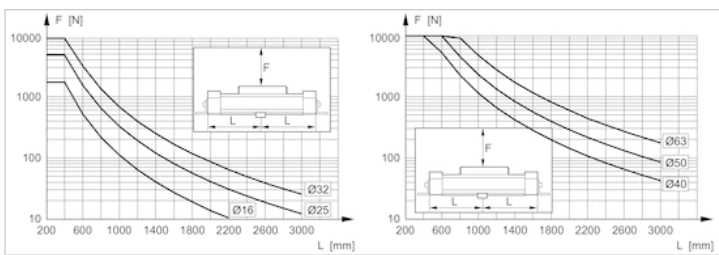


$v$  = Piston velocity [m/s]

$m$  = Cushionable mass [kg]

The values for the cushionable mass  $m$  and piston velocity  $v$  must be on or below the graph for the selected piston diameter.

### Support span

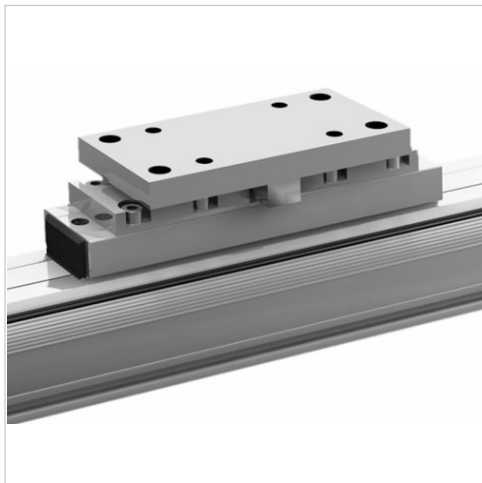


Max. support span  $L$  [mm] as a function of  $F$  [N] at a deflection of 0.5 mm

# Compensating coupling, Series S44

- Suitable piston Ø 16 25 32 40 50 63 80 mm

- for series RTC-BV



Weight

See table below

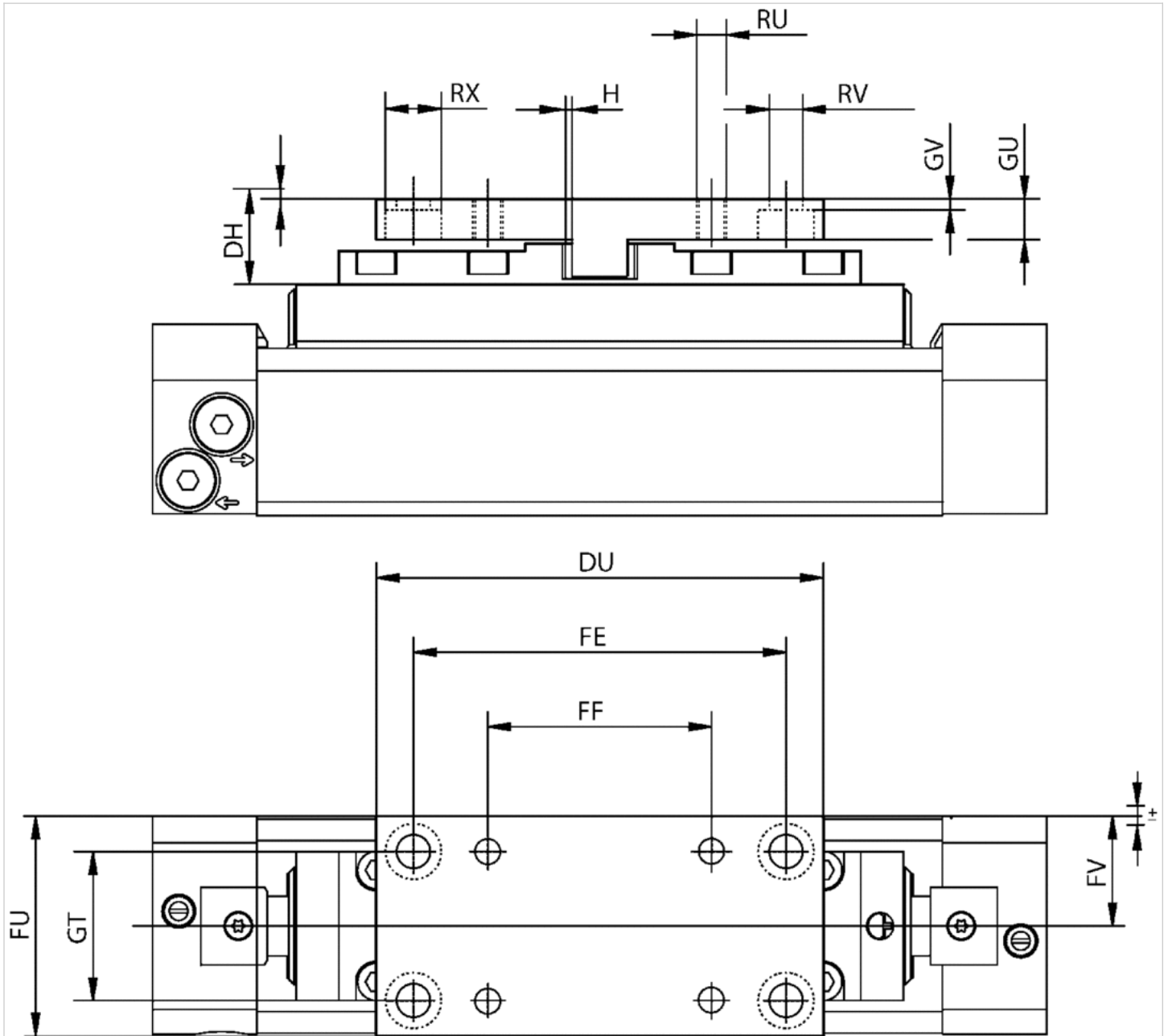
## Technical data

Part No.	Piston Ø	Weight
R402002403	16 25 mm	0,1 kg
R402002404	32 40 mm	0,3 kg
R402002405	50 63 80 mm	0,8 kg

## Technical information

Material	
Material	Aluminum

## Dimensions



## Dimensions

Part No.	Piston Ø	DH	DU	FU	FV	FE	FF	GT	GU	GV	H	RU	RV	RX
R402002403	16 25 mm	17,5-20	95	34	17 ±8	80	60	20	9	3	0,15-0,4	M6	6.6	11
R402002404	32 40 mm	23-27	120	59	29,5 ±14	100	60	40	11	3	0,15-0,4	M8	9	15
R402002405	50 63 80 mm	30,5-35	150	90	45 ±24	120	80	60	15	5	0,15-0,4	M10	11	15

# End cover mounting, Series MF1

- Suitable piston Ø 16 25 32 40 50 63 80 mm

- for series RTC-BV RTC-CG RTC-HD



Weight

See table below

## Technical data

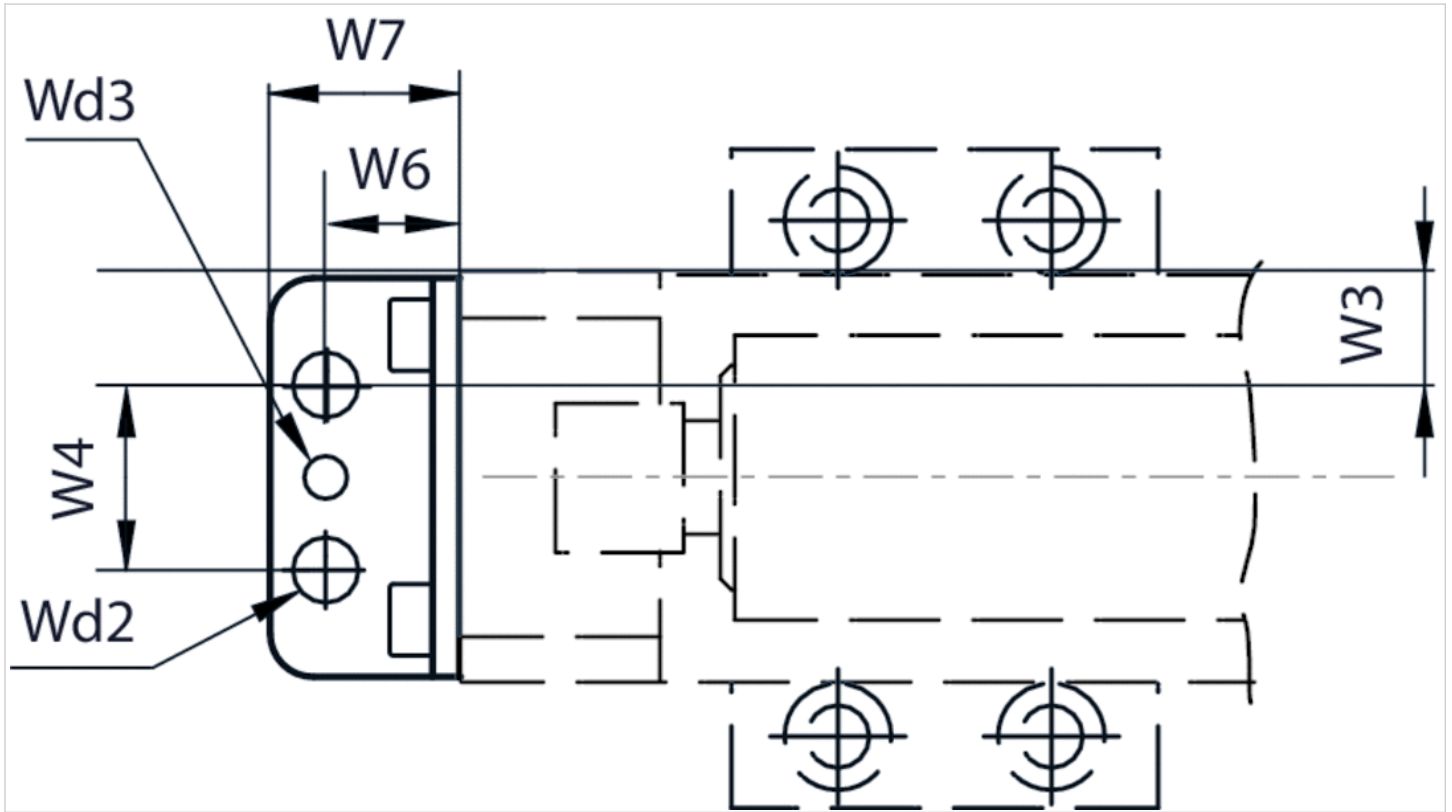
Part No.	Piston Ø	Scope of delivery	Weight
R402002728	16 25 mm	2 piece	0,2 kg
R402002729	32 40 mm	2 piece	0,3 kg
R402002730	50 mm	2 piece	0,4 kg
R402002731	63 80 mm	2 piece	0,5 kg

## Technical information

Material

Material	Steel
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## Dimensions



## Dimensions

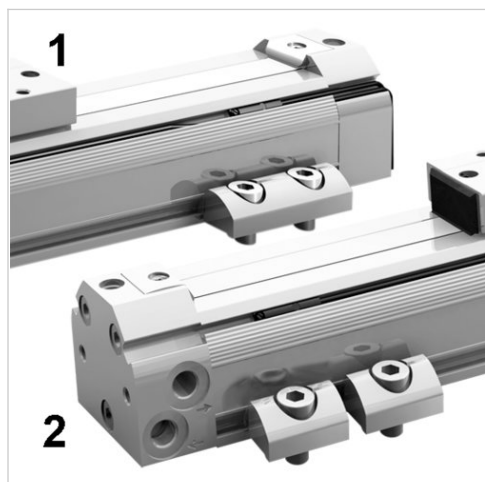
Part No.	Piston Ø	For series	W3	W4	W6	W7	Wd2	Wd3
R402002728	16 25 mm	RTC-BV RTC-CG RTC-HD	8 / 13	18	13,5	19,8	M6	Ø4 G8
R402002729	32 40 mm	RTC-BV RTC-CG RTC-HD	16 / 22	26	19	26,8	M8	Ø6 G8
R402002730	50 mm	RTC-BV RTC-CG RTC-HD	11	70	22	32,7	Ø13,7	Ø6 G8
R402002731	63 80 mm	RTC-BV RTC-CG RTC-HD	31 / 45	50	22	32,7	Ø13,7	Ø6 G8



# Foot mounting, Series M41, M48

- Suitable piston Ø 16 25 32 40 50 63 80 mm

- for series RTC-BV RTC-CG RTC-HD



Weight

See table below

## Technical data

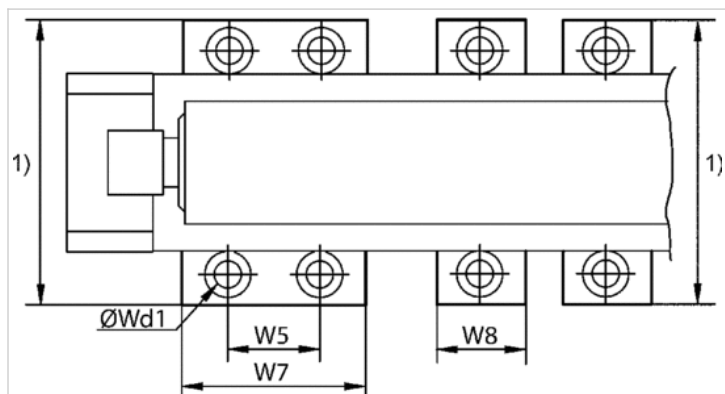
Part No.	Piston Ø	Scope of delivery	Weight	Fig.
R402003401	16 25 mm	2 piece	0,05 kg	Fig. 1
R402003402	32 40 mm	2 piece	0,07 kg	Fig. 1
R402003403	50 63 80 mm	2 piece	0,2 kg	Fig. 1
R402003404	16 25 mm	4 piece	0,03 kg	Fig. 2
R402003405	32 40 mm	4 piece	0,04 kg	Fig. 2
R402005912	50 63 80 mm	4 piece	0,04 kg	Fig. 2

## Technical information

Material

Material	Aluminum
----------	----------

## Dimensions



1) see data sheet for the respective product variant

## Dimensions

Part No.	Piston Ø	For series	Wd1	W5	W7	W8	Fig.
R402003401	16 25 mm	RTC-BV RTC-CG RTC-HD	6,8	30	60	–	Fig. 1
R402003402	32 40 mm	RTC-BV RTC-CG RTC-HD	8,8	30	60	–	Fig. 1
R402003403	50 63 80 mm	RTC-BV RTC-CG RTC-HD	13	40	80	–	Fig. 1
R402003404	16 25 mm	RTC-BV RTC-CG RTC-HD	6,8	–	–	30	Fig. 2
R402003405	32 40 mm	RTC-BV RTC-CG RTC-HD	8,8	–	–	30	Fig. 2
R402005912	50 63 80 mm	RTC-BV RTC-CG RTC-HD	13	–	–	40	Fig. 2

Fig. 1 M41

Fig. 2 M48

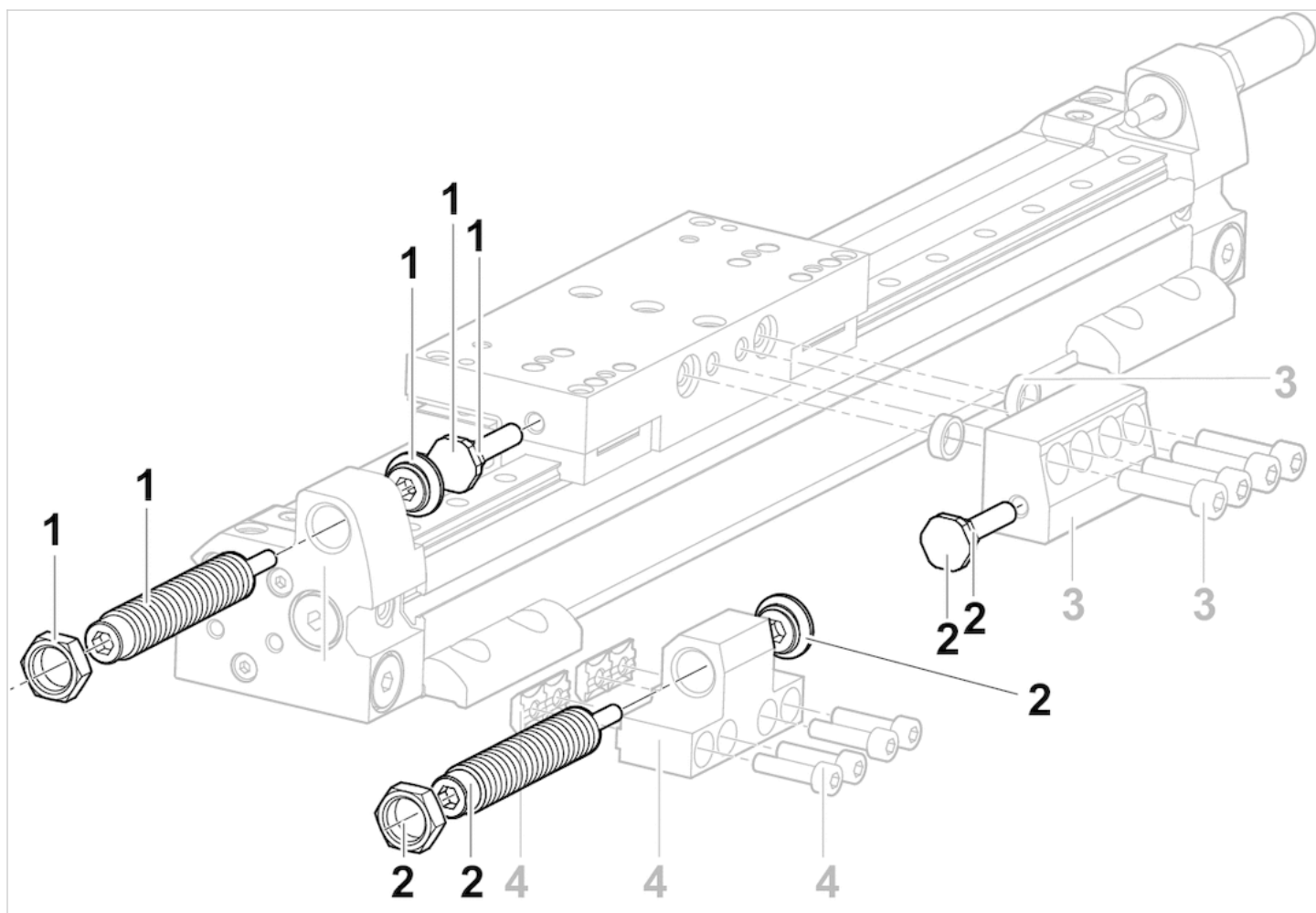
# Shock absorber kit for stroke length adjustment



## Technical data

Part No.	for series	Cushioning hardness	Diameter
R412019543	RTC-HD RTC-CG CKP	S = soft	Ø 16 mm
R402002804	RTC-HD RTC-CG CKP	M = medium	Ø 16 mm
R402003618	RTC-HD RTC-CG CKP	H = hard	Ø 16 mm
R402002805	RTC-HD RTC-CG CKP	S = soft	Ø 25 mm, Ø 32 mm, Ø 40
R402003619	RTC-HD RTC-CG CKP	M = medium	Ø 25 mm, Ø 32 mm, Ø 40
R412019544	RTC-HD RTC-CG CKP	H = hard	Ø 25 mm, Ø 32 mm, Ø 40 mm
R402002806	RTC-HD RTC-CG	S = soft	Ø 50 ... 63 mm
R402003620	RTC-HD RTC-CG	M = medium	Ø 50 ... 63 mm
R412019545	RTC-HD RTC-CG CKP	H = hard	Ø 50 mm, Ø 63 mm

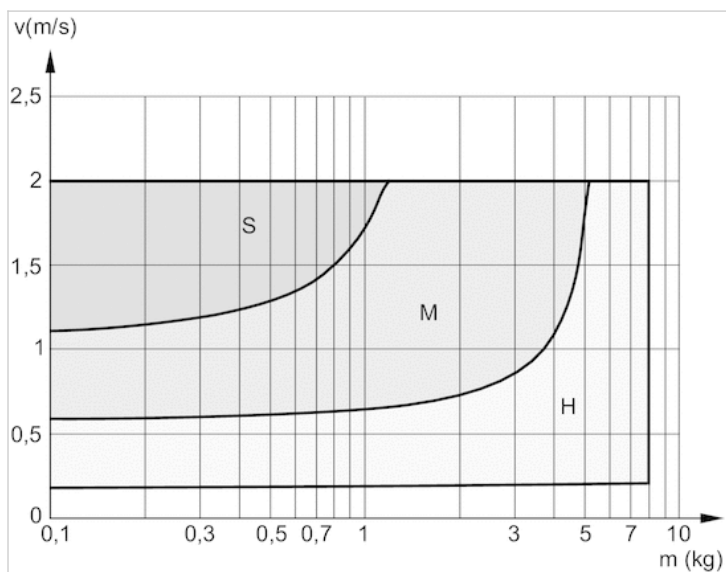
## Dimensions



- 1) Shock absorber kit
- 2) Shock absorber kit
- 3) Stop
- 4) Holder for shock absorber

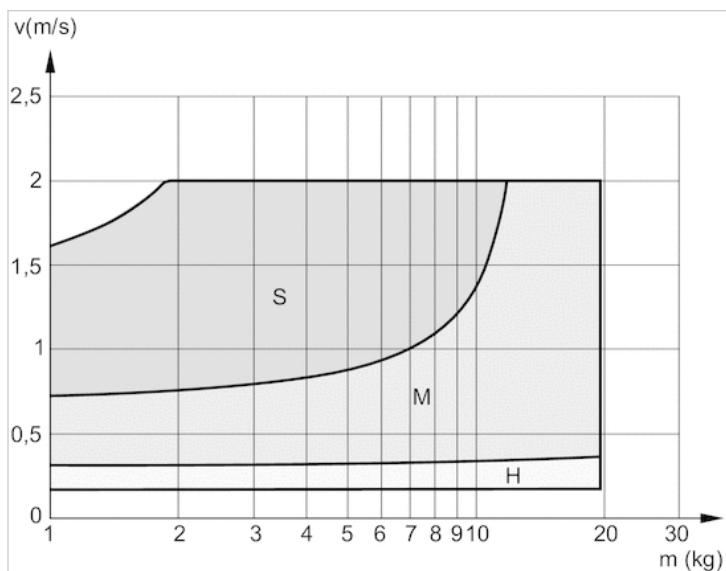
## Diagrams

### Cushioning diagram, Ø 16 mm



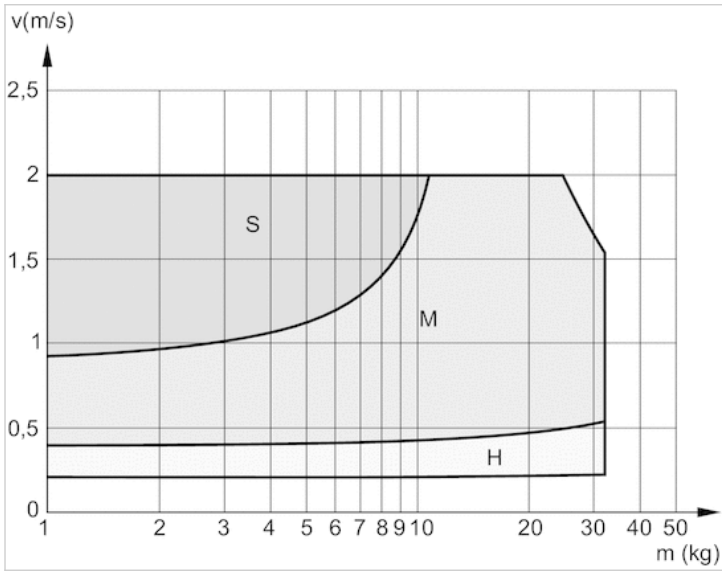
V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

### Cushioning diagram, Ø 25 mm



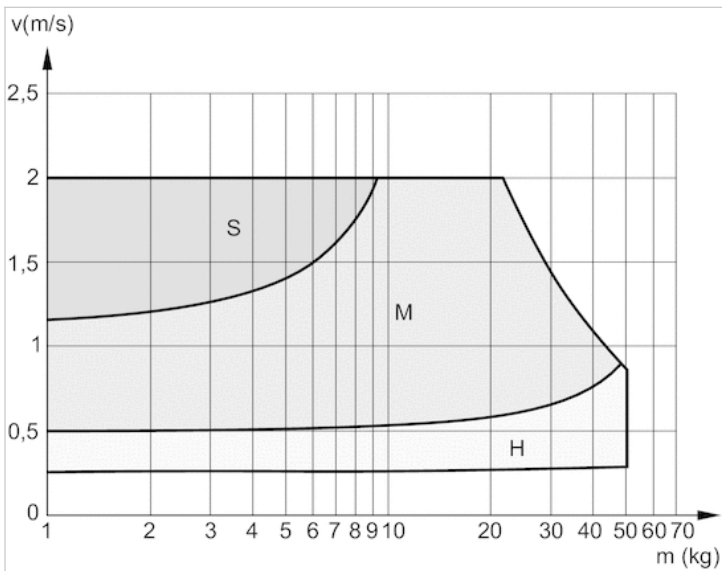
V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

Cushioning diagram, Ø 32 mm



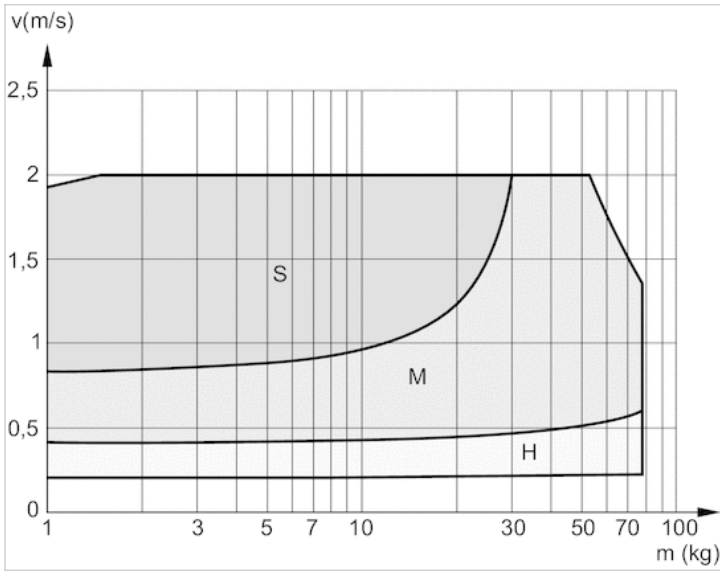
V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

Cushioning diagram, Ø 40 mm



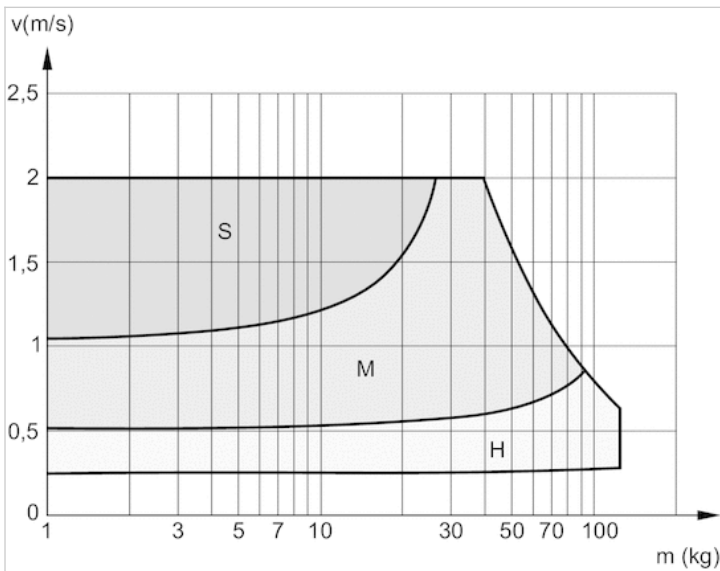
V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

Cushioning diagram, Ø 50 mm



V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

Cushioning diagram, Ø 63 mm



V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

# Stop for stroke length adjustment

- Ø 16 mm Ø 25 mm (-HD), Ø 25, 32 mm (-CG,-SB/LB) Ø 32 mm Ø 40 Ø 50 ... 63 mm

- for RTC-HD RTC-CG RTC-HD RTC-CG RTC-SB RTC-HD RTC-CG RTC-SB RTC-LB

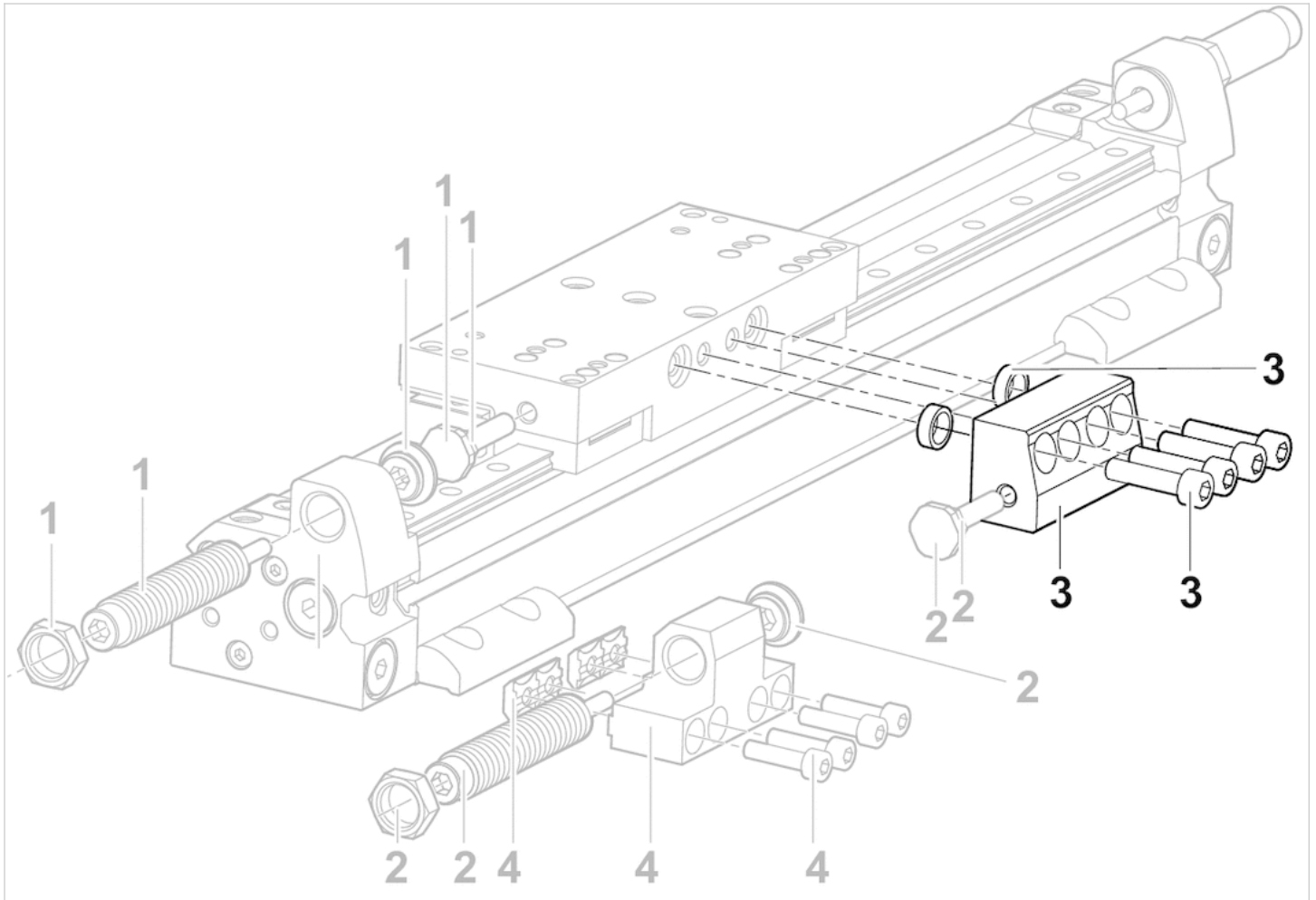


## Technical data

Part No.	for series	Diameter
R402002695	RTC-HD RTC-CG	Ø 16 mm
R402002696	RTC-HD RTC-CG RTC-SB	Ø 25 mm (-HD), Ø 25, 32 mm (-CG,-SB/LB)
R402002698	RTC-HD	Ø 32 mm
R402002699	RTC-CG RTC-SB RTC-LB	Ø 40
R402002700	RTC-HD	Ø 40
R402002701	RTC-HD	Ø 50 ... 63 mm



## Dimensions



- 1) Shock absorber kit
- 2) Shock absorber kit
- 3) Stop
- 4) Holder for shock absorber

# Holder for the shock absorber for stroke length adjustment

- Ø 16 mm Ø 25 mm Ø 32 mm, Ø 40 mm Ø 50 mm, Ø 63 mm

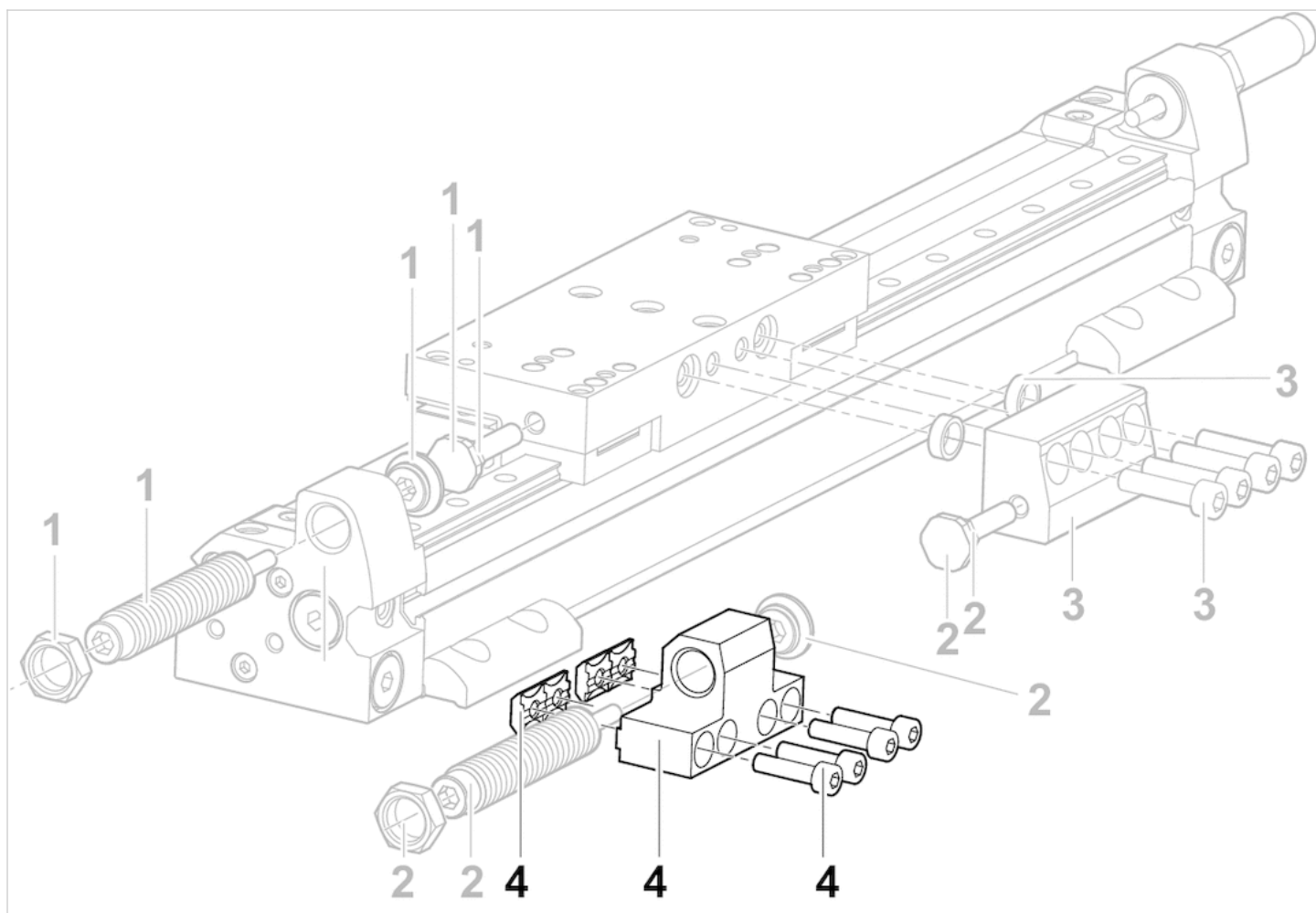
- for RTC-HD RTC-CG CKP RTC-HD RTC-SB RTC-LB



## Technical data

Part No.	for series	Diameter
R402002702	RTC-HD RTC-CG CKP	Ø 16 mm
R402002703	RTC-HD RTC-CG CKP	Ø 25 mm
R402002704	RTC-HD RTC-CG CKP	Ø 32 mm, Ø 40 mm
R402003397	RTC-HD	Ø 50 mm, Ø 63 mm
R412025646	RTC-SB RTC-LB	Ø 25 mm
R412025647	RTC-SB RTC-LB	Ø 32 mm, Ø 40 mm

## Dimensions



- 1) Shock absorber kit
- 2) Shock absorber kit
- 3) Stop
- 4) Holder for shock absorber

# Kit for intermediate position

- for RTC-CG, RTC-HD, CKP
- double-acting
- with magnetic piston



Weight

0,87 kg

## Technical data

Part No.

R412024700

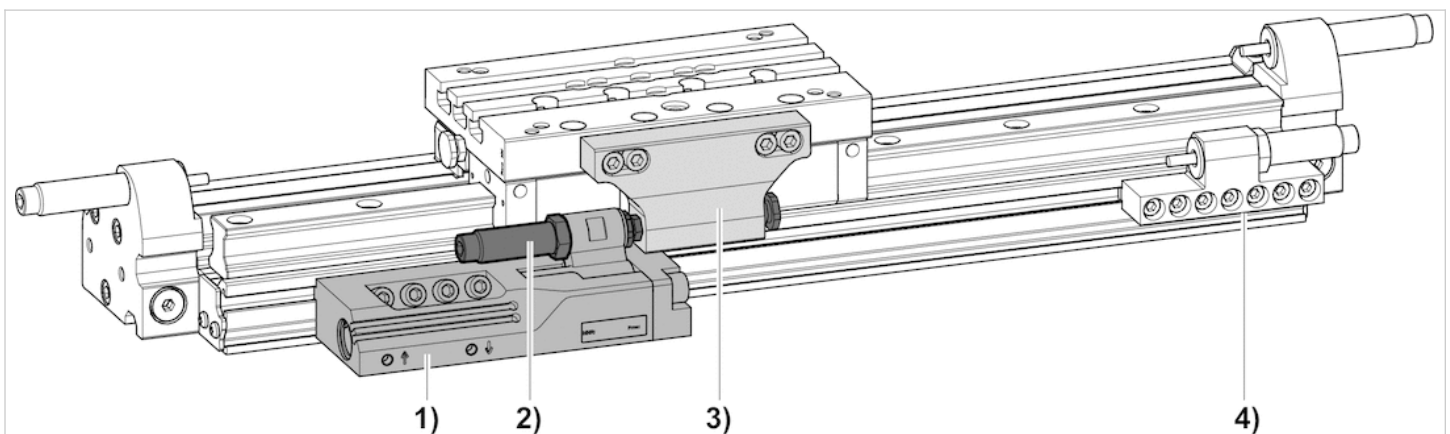
for RTC-CG (25, 32, 40 mm), RTC-HD (25, 32, 40 mm), CKP

## Technical information

The volume per stroke is 4.6 cm<sup>3</sup>.  
 Returning from the stop position is only permissible when not under power.  
 The stopper must not be operated without a shock absorber.

## Dimensions

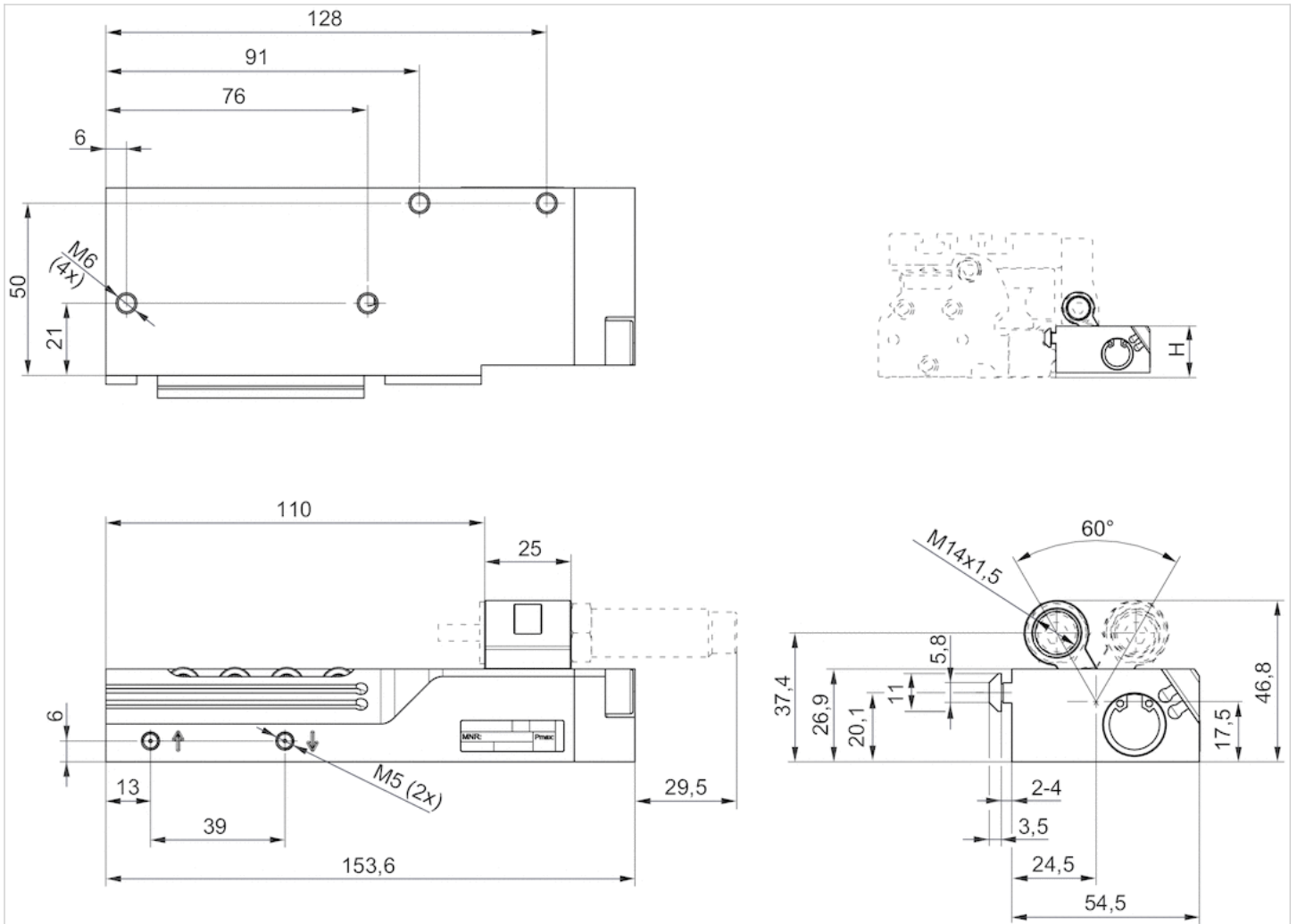
### Overview drawing



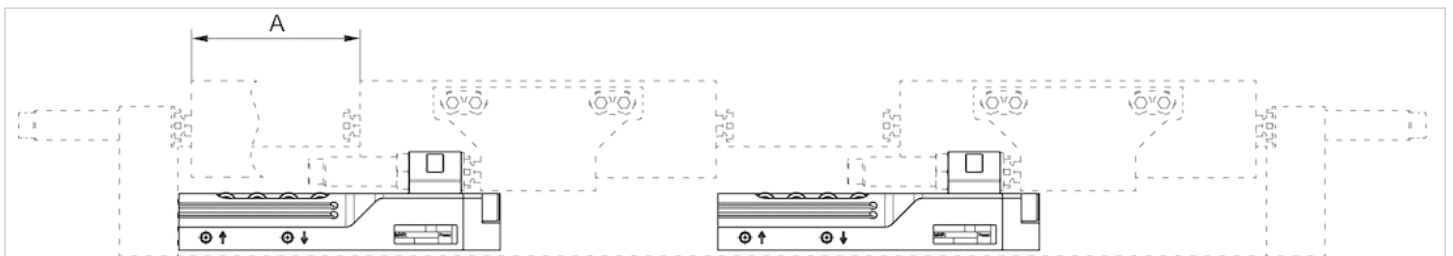
- 1) Intermediate stop
- 2) Shock absorber kit

- 3) Stop
- 4) Holder for the shock absorber: see stroke length adjustment kit for details

Dimensions



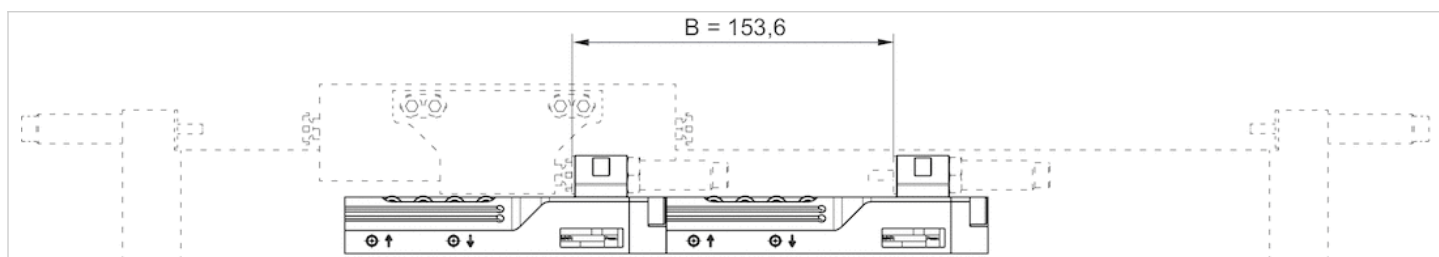
Direction of travel: left, Stopper position A restricted



Direction of travel: right, No restriction of the stopper position



## Multiple installation, Minimum stopper distance B



## Dimensions

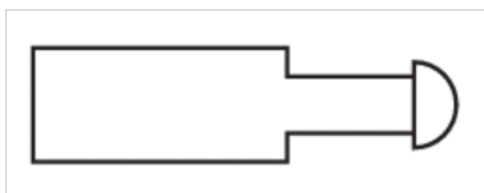
	RTC-CG25	RTC-CG32	RTC-CG40	RTC-HD25	RTC-HD32	RTC-HD40
A	92,5	80	79,5	92,5	80	79,5
H	33,5	38,5	48,5	27	30	31,5

# Industrial shock absorber, Series SA2-RT

- for RTC-16 RTC-25,-32,-40 RTC-50,-63
- Cushioning self-compensating
- Mounting Lock nut
- Mounting thread M12x1 M14x1,5 M20x1,5
- SA2-RT



Ambient temperature min./max.	-10 ... 60 °C
Medium	Oil
Impact speed, min./max.	See table below
Mounting	Lock nut
Weight	See table below



## Technical data

Part No.	for series	Cushioning hardness	Mounting thread	Stroke	Max. energy absorption/stroke
R412010695	RTC-16	S = soft	M12x1	10 mm	14 Nm
R412010696	RTC-16	M = medium	M12x1	10 mm	14 Nm
R412010697	RTC-16	H = hard	M12x1	10 mm	14 Nm
R412010698	RTC-25,-32,-40	S = soft	M14x1,5	14 mm	30 Nm
R412010699	RTC-25,-32,-40	M = medium	M14x1,5	14 mm	30 Nm
R412010700	RTC-25,-32,-40	H = hard	M14x1,5	14 mm	30 Nm
R412010701	RTC-50,-63	S = soft	M20x1,5	13 mm	65 Nm
R412010702	RTC-50,-63	M = medium	M20x1,5	13 mm	65 Nm
R412010703	RTC-50,-63	H = hard	M20x1,5	13 mm	65 Nm

Part No.	Max. energy absorption/hour	Effective mass me		Return spring force	
		min./max.		min./max.	
R412010695	30000 Nm	0,5 ... 1,8 kg		3,5 ... 7 N	
R412010696	30000 Nm	1,5 ... 7,7 kg		3,5 ... 7 N	
R412010697	30000 Nm	5 ... 57 kg		3,5 ... 7 N	
R412010698	50000 Nm	3,5 ... 17 kg		13 ... 23 N	
R412010699	50000 Nm	9,9 ... 76 kg		13 ... 23 N	
R412010700	50000 Nm	62 ... 252 kg		13 ... 23 N	
R412010701	52000 Nm	7,5 ... 36 kg		12 ... 23 N	

Part No.	Max. energy absorption/hour	Effective mass me	Return spring force
		min./max.	min./max.
R412010702	52000 Nm	20 ... 160 kg	12 ... 23 N
R412010703	52000 Nm	130 ... 610 kg	12 ... 23 N

Part No.	impact speed	Weight
	min./max.	
R412010695	3,5 ... 5 m/s	0,04 kg
R412010696	1,9 ... 4,3 m/s	0,04 kg
R412010697	0,7 ... 2,4 m/s	0,04 kg
R412010698	1,9 ... 4,1 m/s	0,05 kg
R412010699	0,9 ... 2,5 m/s	0,05 kg
R412010700	0,5 ... 1 m/s	0,05 kg
R412010701	1,9 ... 4,2 m/s	0,15 kg
R412010702	0,9 ... 2,6 m/s	0,15 kg
R412010703	0,5 ... 1 m/s	0,15 kg

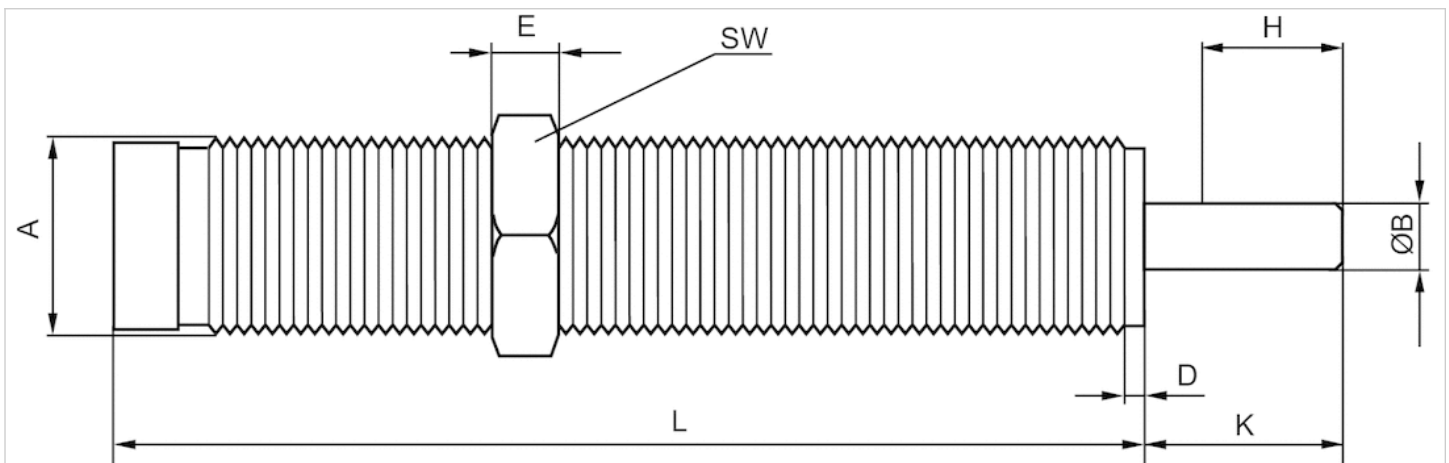
## Technical information

### Material

Cylinder tube	Steel, bronzed
Piston rod	Stainless steel, hardened
Lock nut	Steel, bronzed

## Dimensions

### Dimensions



H = stroke  
A = mounting thread

## Dimensions

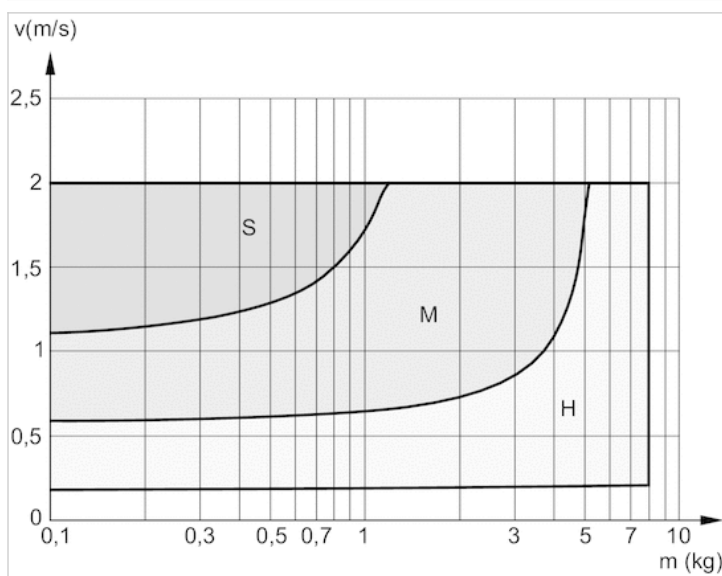
Part No.	Type	Mounting thread	ØB	D	E	H	K	L	SW
R412010695	SA2-RT	M12x1	4	2.5	4	10	15	52	14
R412010696	SA2-RT	M12x1	4	2.5	4	10	15	52	14



Part No.	Type	Mounting thread	ØB	D	E	H	K	L	SW
R412010697	SA2-RT	M12x1	4	2.5	4	10	15	52	14
R412010698	SA2-RT	M14x1,5	4	2.5	5	14	18.5	69	17
R412010699	SA2-RT	M14x1,5	4	2.5	5	14	18.5	69	17
R412010700	SA2-RT	M14x1,5	4	2.5	5	14	18.5	69	17
R412010701	SA2-RT	M20x1,5	6	2.5	6	13	18	75	24
R412010702	SA2-RT	M20x1,5	6	2.5	6	13	18	75	24
R412010703	SA2-RT	M20x1,5	6	2.5	6	13	18	75	24

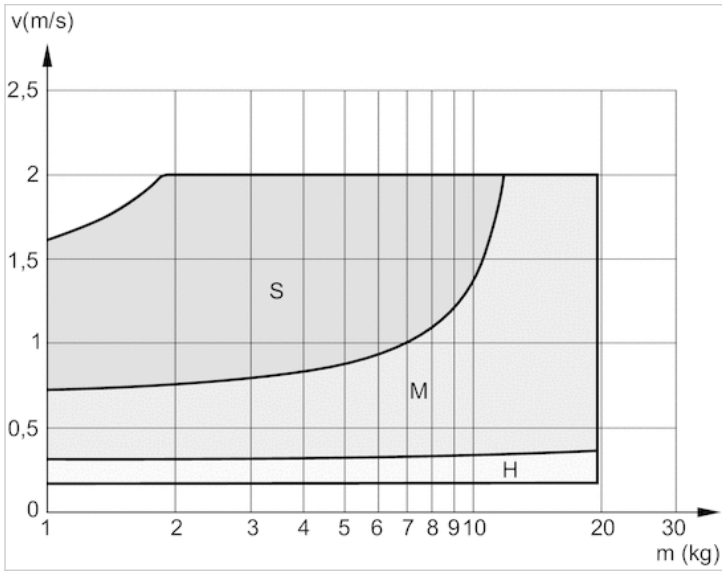
## Diagrams

### Cushioning diagram, Ø 16 mm



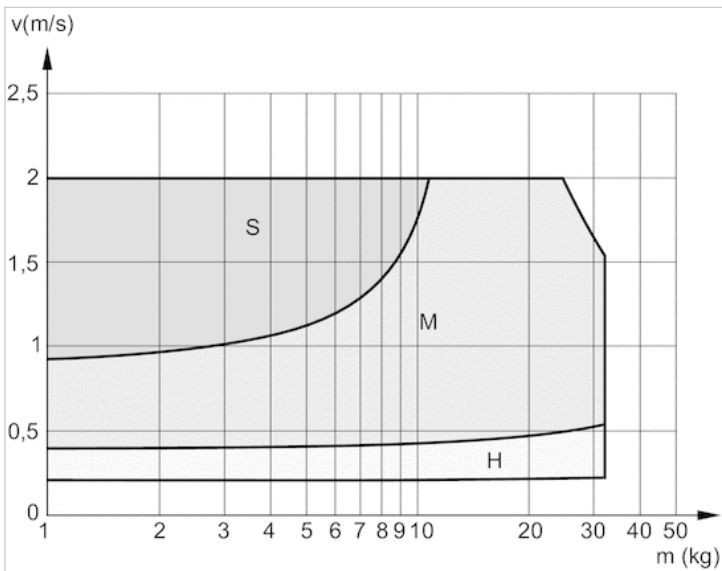
$V$  = velocity [m/s]  
 $M$  = moving mass  
 $S$  = soft  
 $M$  = medium  
 $H$  = hard

Cushioning diagram, Ø 25 mm



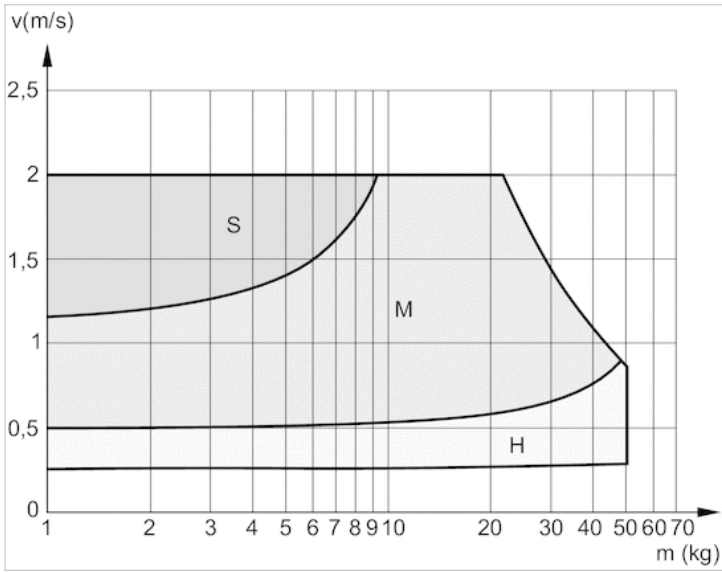
V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

Cushioning diagram, Ø 32 mm



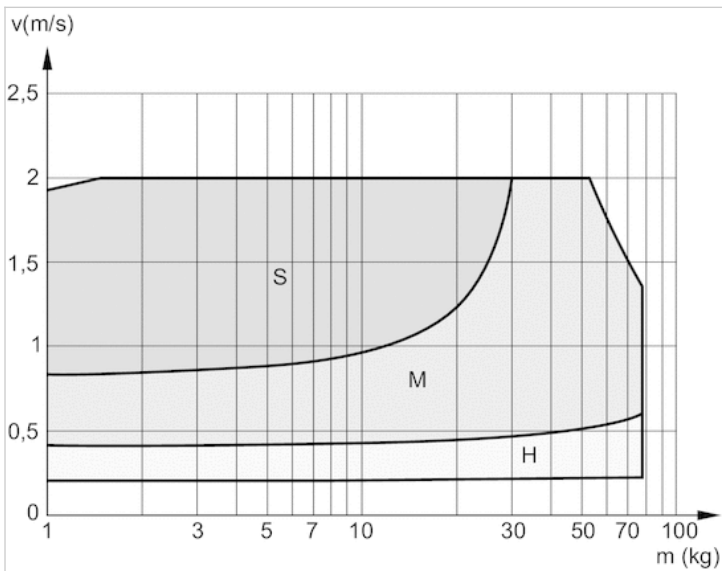
V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

Cushioning diagram, Ø 40 mm



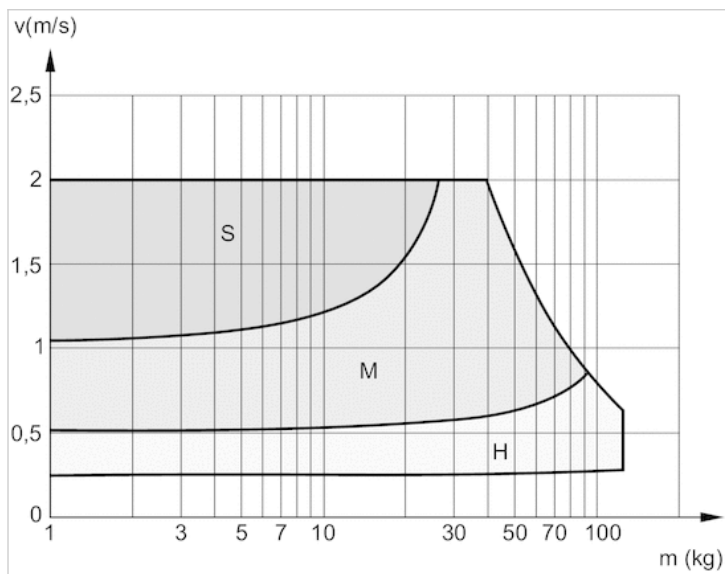
V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

Cushioning diagram, Ø 50 mm



V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

Cushioning diagram, Ø 63 mm



- V = velocity [m/s]
- M = moving mass
- S = soft
- M = medium
- H = hard

# 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

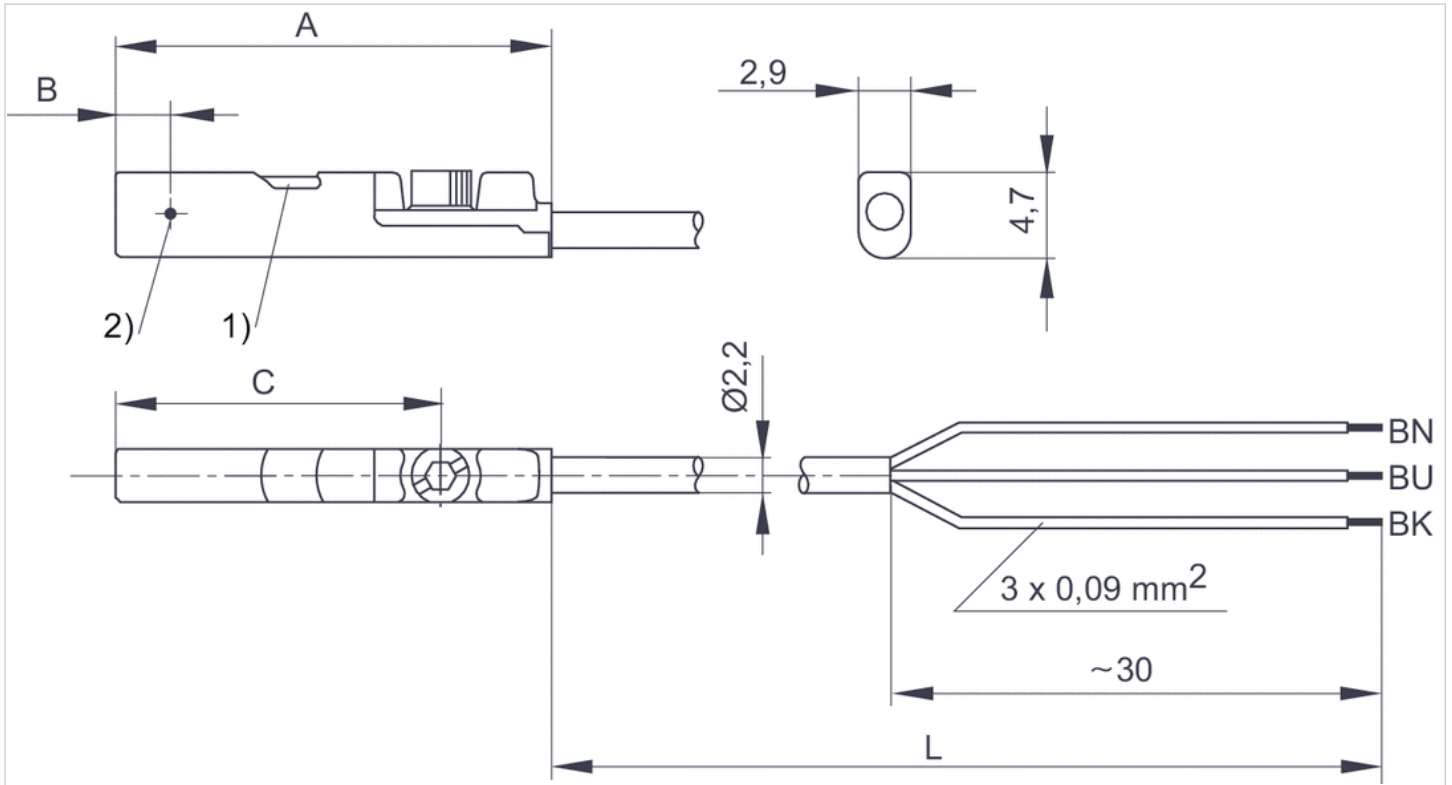
The max. switching capacity must not be exceeded.

## 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, 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

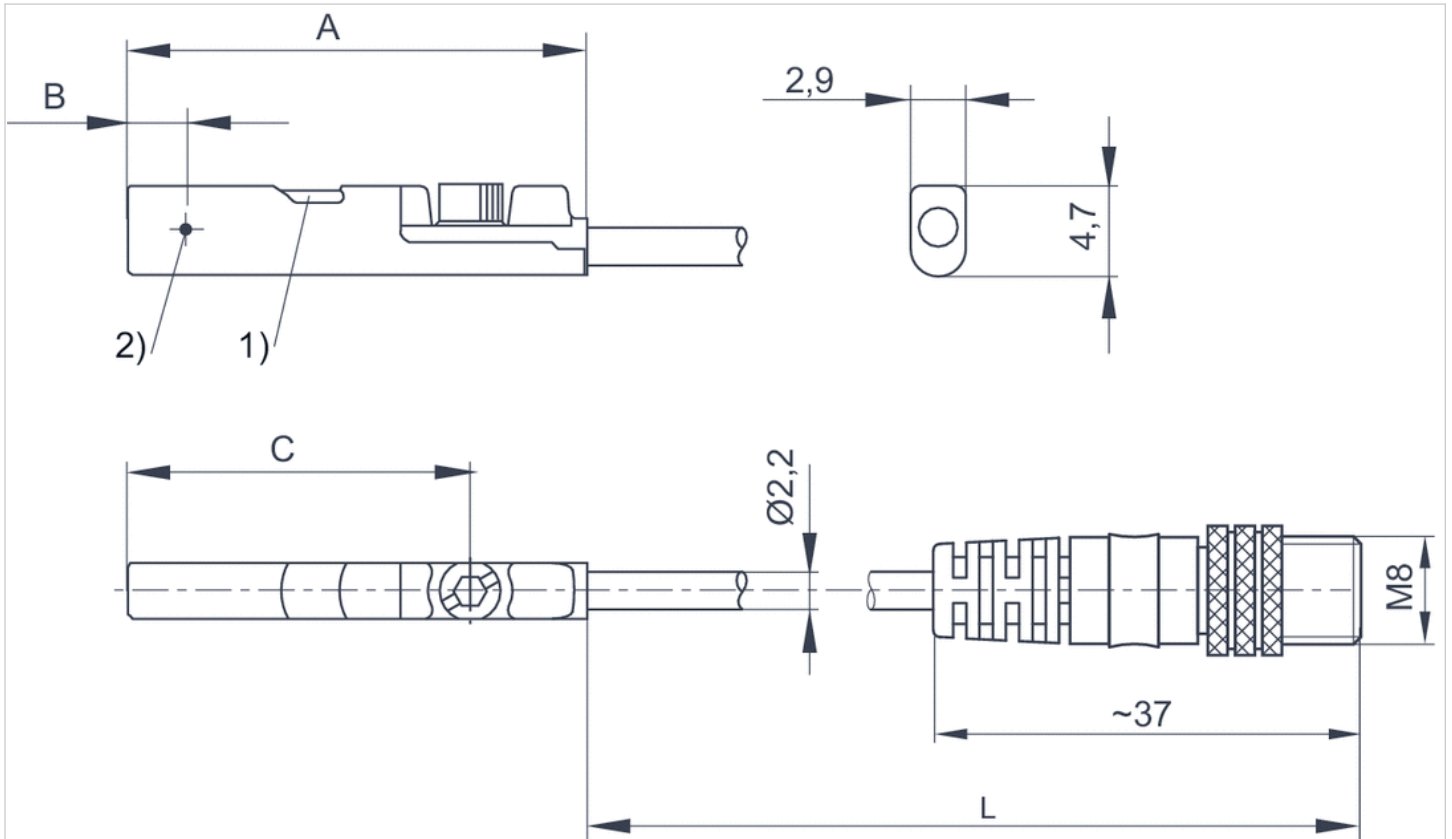
The max. switching capacity must not be exceeded.

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

## Dimensions

### Dimensions



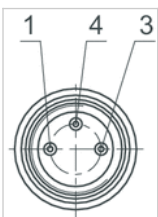
1) LED 2) Switching point  
L = cable length

## 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
- 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

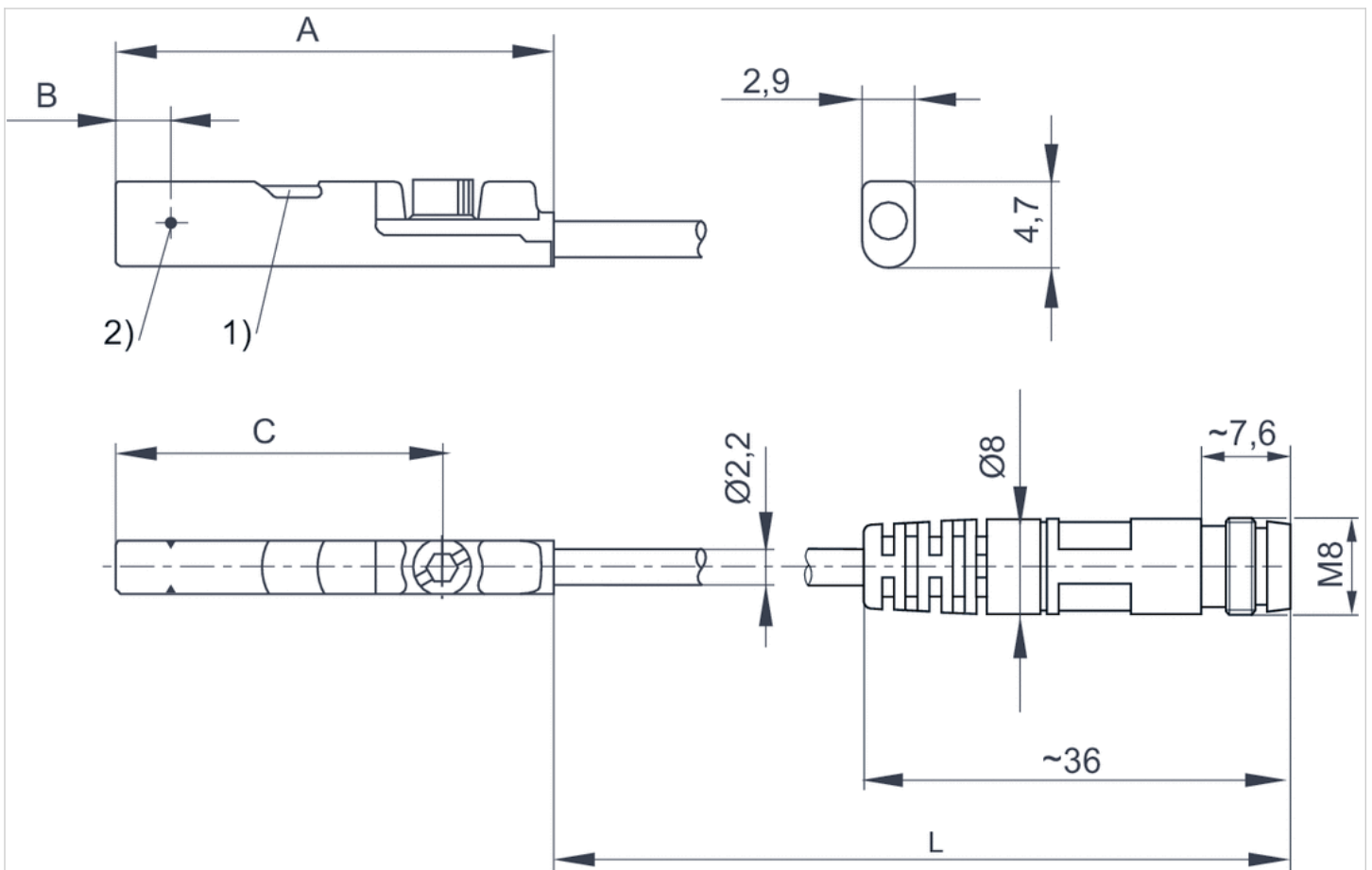
The max. switching capacity must not be exceeded.

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

## Dimensions

### Dimensions



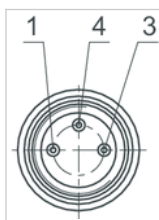
1) LED 2) Switching point  
L = cable length

## 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, 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

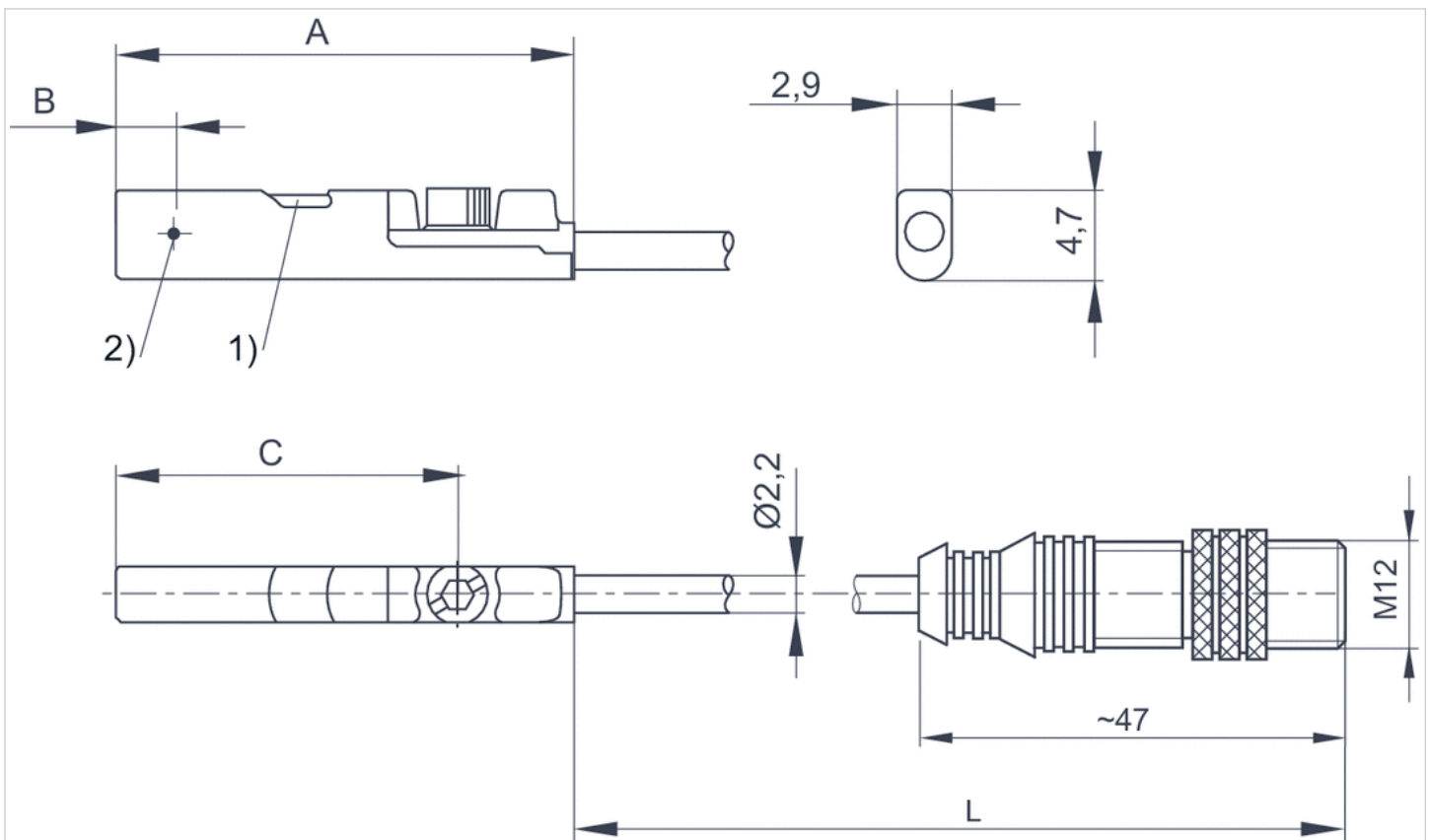
The max. switching capacity must not be exceeded.

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

## Dimensions

### Dimensions



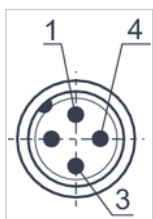
1) LED 2) Switching point  
L = cable length



## 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)

## Sensors, Series SM6-AL

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



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

### Technical data

Part No.	Type of contact	Cable length L	max. measuring range	Overall length Sensor A
R412010880	Analog	0,3 m	107 mm	109 mm
R412010881	Analog	0,3 m	143 mm	145 mm
R412010882	Analog	0,3 m	179 mm	181 mm
R412010883	Analog	0,3 m	215 mm	217 mm
R412010884	Analog	0,3 m	251 mm	253 mm
R412010885	Analog	0,3 m	287 mm	289 mm
R412010886	Analog	0,3 m	323 mm	325 mm
R412010887	Analog	0,3 m	359 mm	361 mm
R412010888	Analog	0,3 m	395 mm	397 mm
R412010889	Analog	0,3 m	431 mm	433 mm
R412010890	Analog	0,3 m	467 mm	469 mm
R412010891	Analog	0,3 m	503 mm	505 mm
R412010892	Analog	0,3 m	539 mm	541 mm
R412010893	Analog	0,3 m	575 mm	577 mm
R412010894	Analog	0,3 m	611 mm	613 mm
R412010895	Analog	0,3 m	647 mm	649 mm
R412010896	Analog	0,3 m	683 mm	685 mm

Part No.	Type of contact	Cable length L	max. measuring range	Overall length Sensor A
R412010897	Analog	0,3 m	719 mm	721 mm
R412010898	Analog	0,3 m	755 mm	757 mm
R412010899	Analog	0,3 m	791 mm	793 mm
R412010900	Analog	0,3 m	827 mm	829 mm
R412010901	Analog	0,3 m	863 mm	865 mm
R412010902	Analog	0,3 m	899 mm	901 mm
R412010903	Analog	0,3 m	935 mm	937 mm
R412010904	Analog	0,3 m	971 mm	973 mm
R412010905	Analog	0,3 m	1007 mm	1009 mm

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

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

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

## Technical information

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

FSR: Full Scale Range, max. measurement range

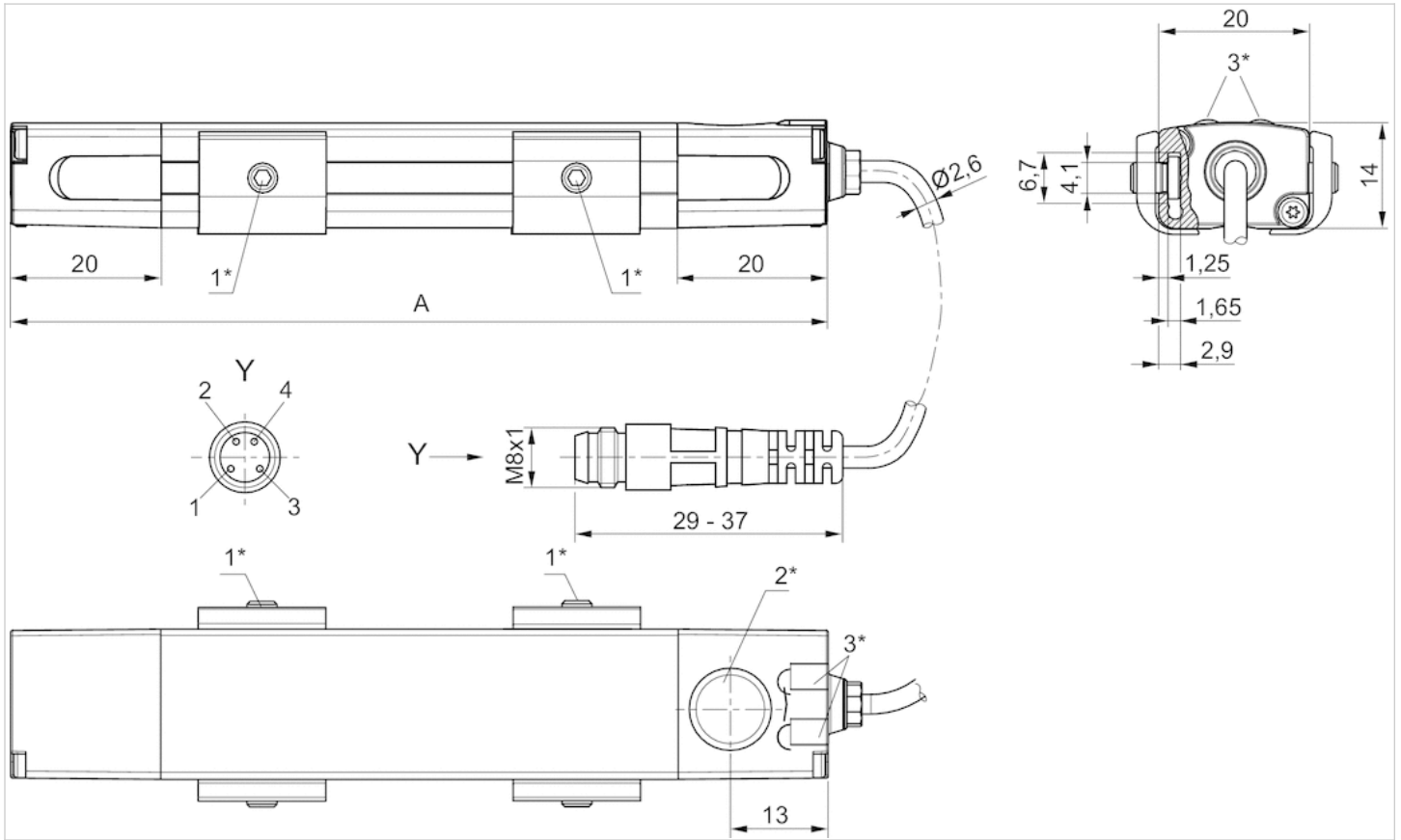
The IO-Link device description (IODD) for the SM6-AL distance measuring sensor is available for download in the Media Centre.

## Technical information

Material	
Housing	Aluminum
Cable sheath	Polyurethane
End caps	Polyamide

## Dimensions

### Dimensions



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

A = sensor length

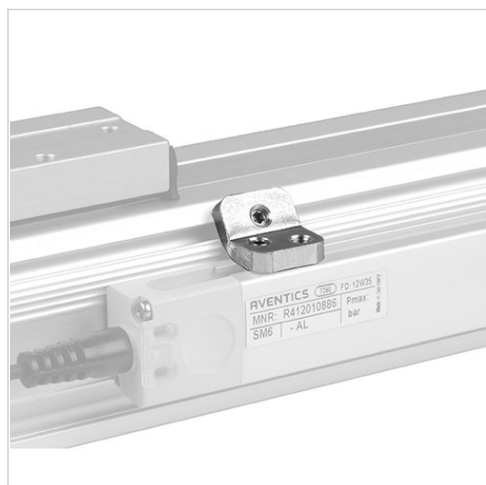
Pin assignment: 1 = (+), 2 = (OUT 1) 3 = (GND), 4 = (OUT 2/IO-Link), EN 60947-5-7

LED 1: yellow = measuring operation, red = error

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

# Sensor mounting, Series CB1

- for series SM6-AL
- to mount on cylinder RTC



Weight

0,007 kg

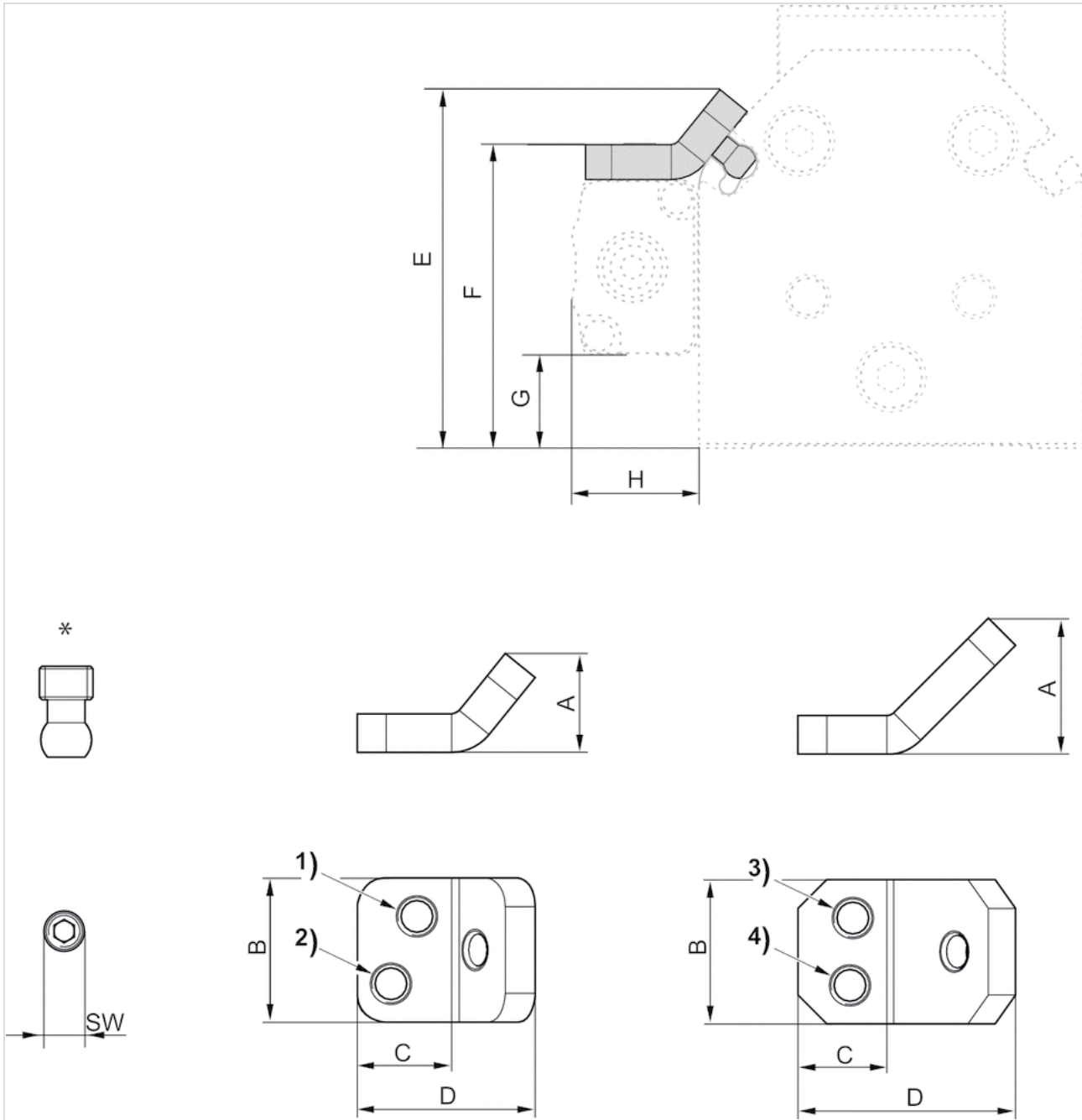
## Technical data

Part No.	for series	Scope of delivery
R412022298	SM6-AL	1 piece

## Technical information

Material
Aluminum

# Dimensions



- \* Threaded pin (brass)
- 2 clamp mounting sets for SM6-AL 109 - 469 mm
- 3 clamp mounting sets for SM6-AL 505 - 793 mm
- 4 clamp mounting sets for SM6-AL 829 - 1009 mm

## Dimensions

Part No.	Piston Ø		A
R412022298	25	1)	10,3
	32	2)	10,3
	40	3)	14,2
	50	4)	14,2

B	C	D
15	9,8	18,5
15	9,8	18,5
15	9,2	22,6
15	9,2	22,6

E	F	G
41	34,7	10,7
46,7	40,4	16,4
55	45,2	21,1
60,6	50,5	26,5

H	SW
14,4	2
14,4	2
14,4	2
14,4	2



# T-groove nut

- for series CKP GPC RTC



Weight

See table below

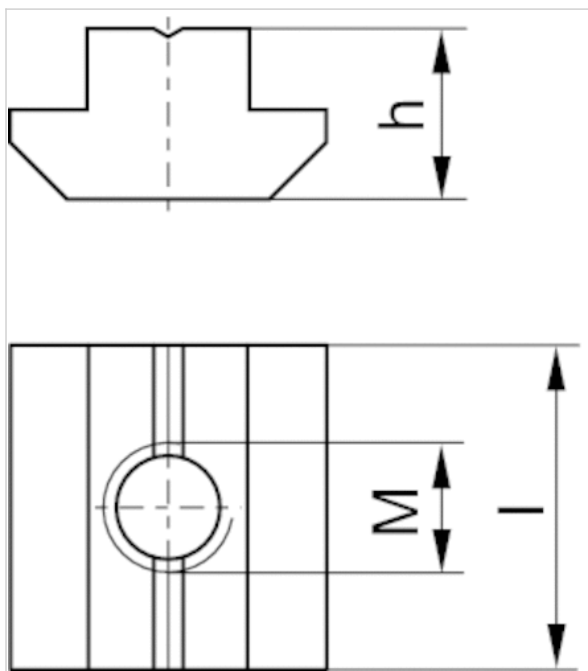
## Technical data

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

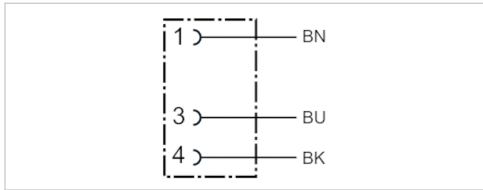
For N4 grooves on CKP 16 a square nut according to DIN 557 can be used.

# Round plug connector, Series CON-RD

- Socket M8x1 3-pin A-coded straight 180°
- open cable ends
- with cable
- unshielded



Operational voltage	30 / 36 V AC/DC
Protection class	IP67
Wire cross-section	0,34 mm <sup>2</sup>
Weight	See table below



## Technical data

Part No.	Max. current	Number of wires	Cable-Ø	Cable length	Weight
8946201312	2,5 A	3	3,5 mm	2 m	0,066 kg
8946201332	2,5 A	3	3,5 mm	15 m	0,466 kg

## Technical information

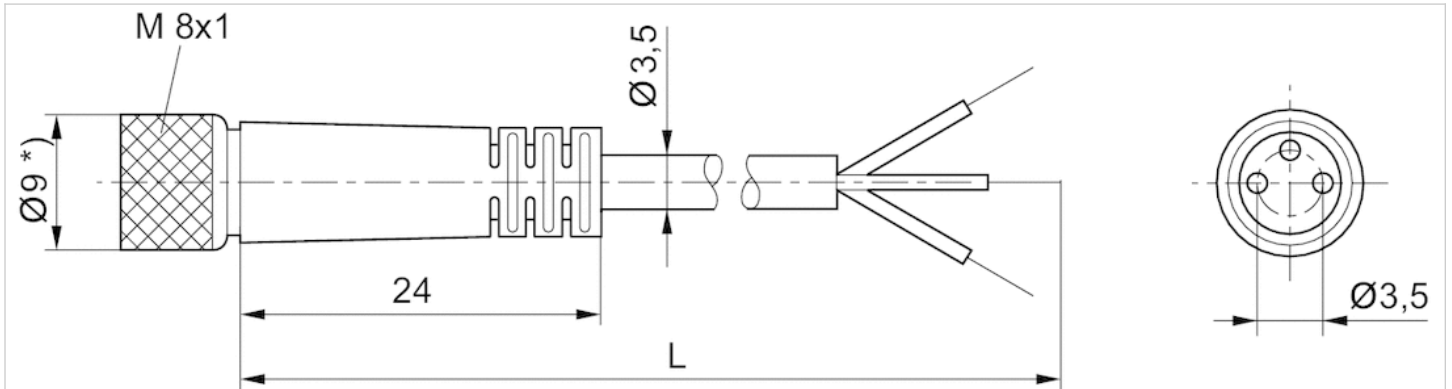
The specified protection class is only valid in assembled and tested state.

## Technical information

Material	
Cable sheath	Polyvinyl chloride

## Dimensions

### Dimensions

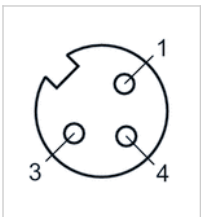


L = length

\*) With 15 m cable length  $\varnothing 12$

## Pin assignments

### Pin assignment, socket



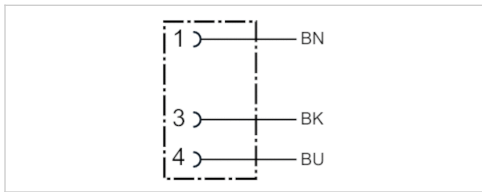
- (1) BN=brown
- (3) BU=blue
- (4) BK=black

# Round plug connector, Series CON-RD

- Socket Snap Ø8 3-pin with detent straight 180°
- open cable ends
- with cable
- unshielded



Operational voltage	48 V AC/DC
Protection class	IP65
Weight	0,058 kg



## Technical data

Part No.	Max. current	Number of wires	Cable-Ø	Cable length
8946016112	3 A	3	4,5 mm	2,5 m

## Technical information

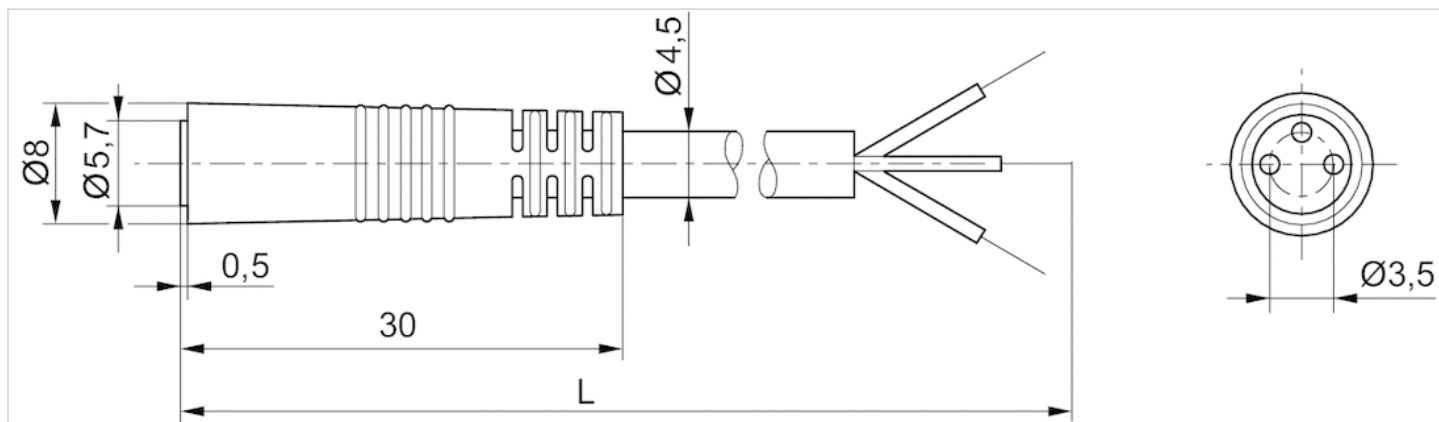
The specified protection class is only valid in assembled and tested state.

## Technical information

Material	
Cable sheath	Polyvinyl chloride

## Dimensions

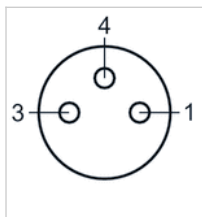
### Dimensions



L = length

## Pin assignments

### Pin assignment, socket

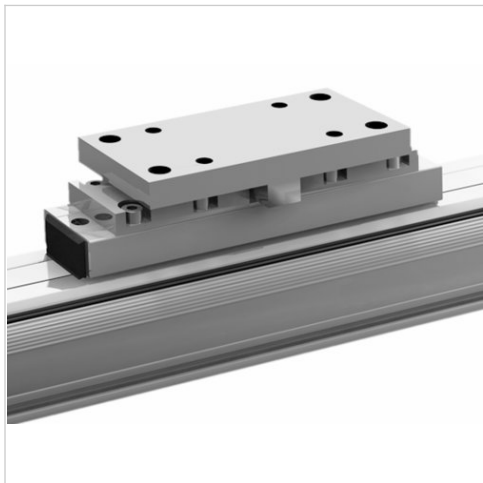


- (1) BN=brown
- (2) BK=black
- (3) BU=blue

# Compensating coupling, Series S44

- Suitable piston Ø 16 25 32 40 50 63 80 mm

- for series RTC-BV



Weight

See table below

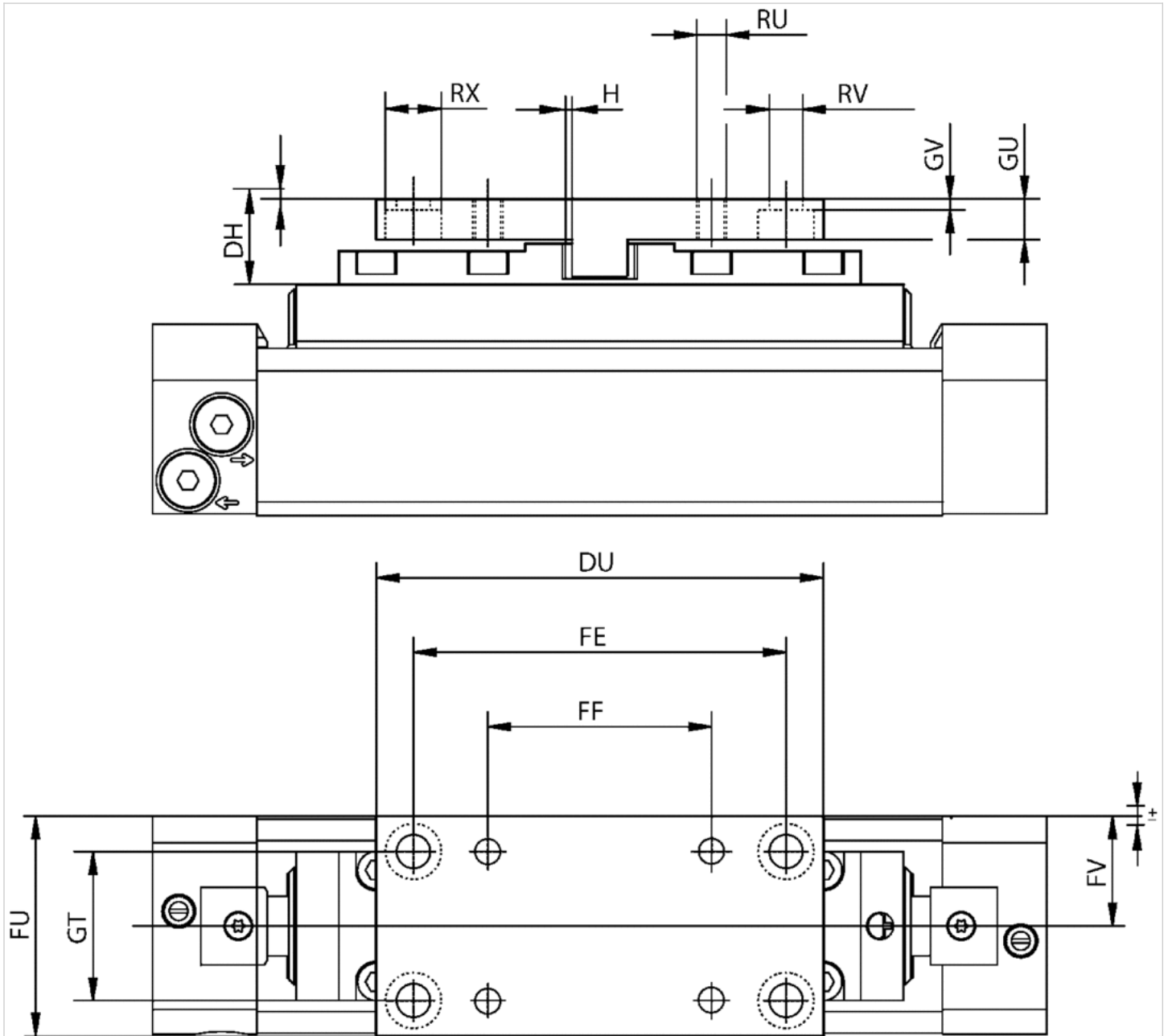
## Technical data

Part No.	Piston Ø	Weight
R402002403	16 25 mm	0,1 kg
R402002404	32 40 mm	0,3 kg
R402002405	50 63 80 mm	0,8 kg

## Technical information

Material	
Material	Aluminum

## Dimensions



## Dimensions

Part No.	Piston Ø	DH	DU	FU	FV	FE	FF	GT	GU	GV	H	RU	RV	RX
R402002403	16 25 mm	17,5–20	95	34	17 ±8	80	60	20	9	3	0,15–0,4	M6	6.6	11
R402002404	32 40 mm	23–27	120	59	29,5 ±14	100	60	40	11	3	0,15–0,4	M8	9	15
R402002405	50 63 80 mm	30,5–35	150	90	45 ±24	120	80	60	15	5	0,15–0,4	M10	11	15



# End cover mounting, Series MF1

- Suitable piston Ø 16 25 32 40 50 63 80 mm

- for series RTC-BV RTC-CG RTC-HD



Weight

See table below

## Technical data

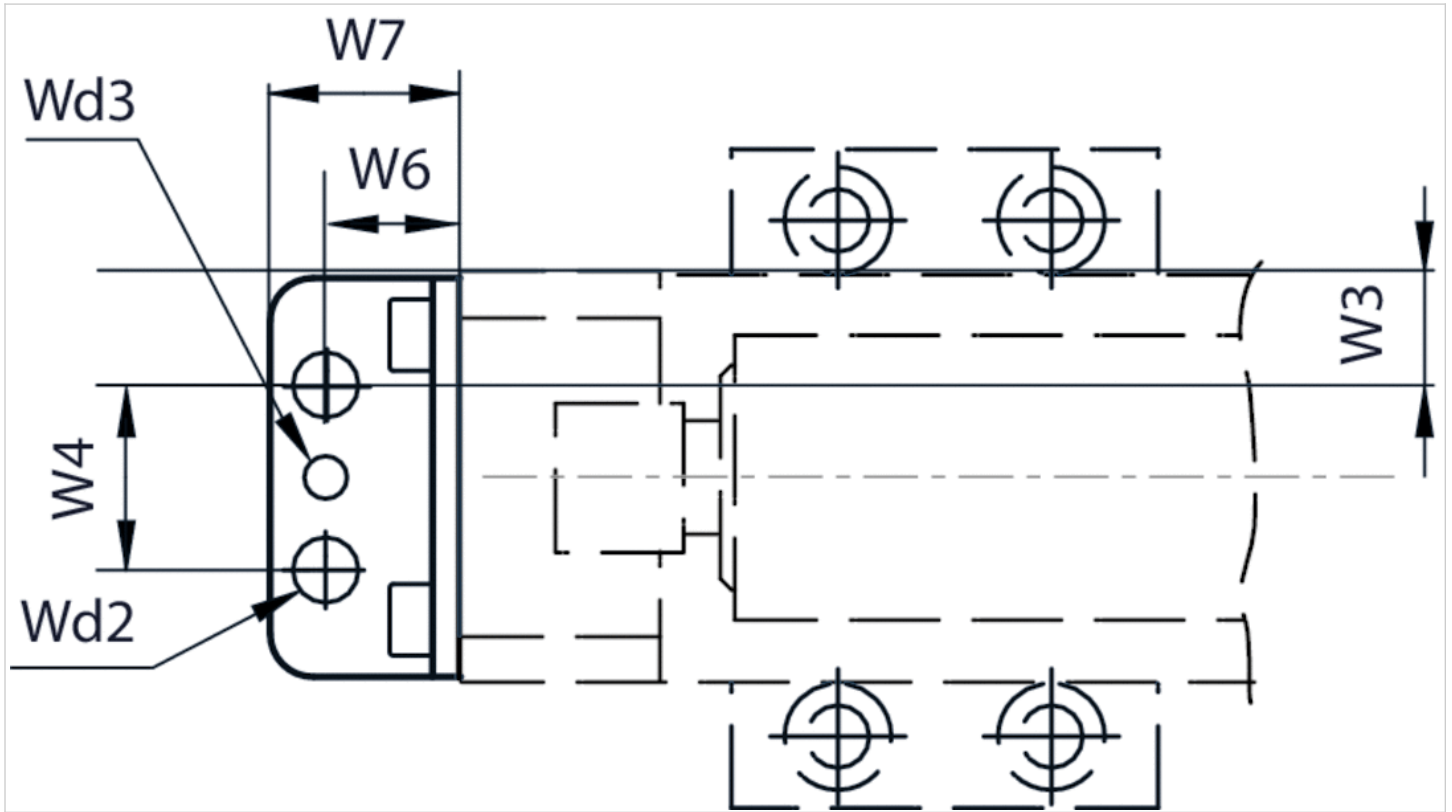
Part No.	Piston Ø	Scope of delivery	Weight
R402002728	16 25 mm	2 piece	0,2 kg
R402002729	32 40 mm	2 piece	0,3 kg
R402002730	50 mm	2 piece	0,4 kg
R402002731	63 80 mm	2 piece	0,5 kg

## Technical information

Material

Material	Steel
----------	-------

## Dimensions



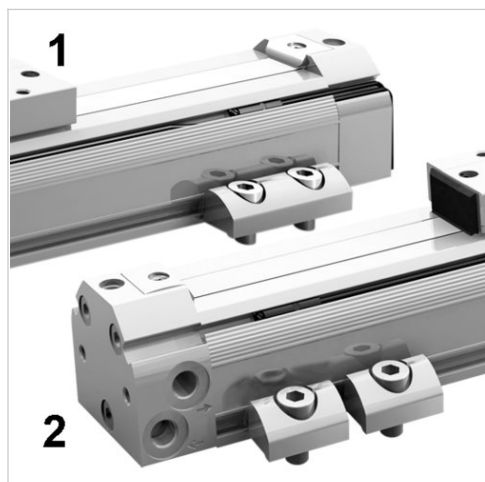
## Dimensions

Part No.	Piston Ø	For series	W3	W4	W6	W7	Wd2	Wd3
R402002728	16 25 mm	RTC-BV RTC-CG RTC-HD	8 / 13	18	13,5	19,8	M6	Ø4 G8
R402002729	32 40 mm	RTC-BV RTC-CG RTC-HD	16 / 22	26	19	26,8	M8	Ø6 G8
R402002730	50 mm	RTC-BV RTC-CG RTC-HD	11	70	22	32,7	Ø13,7	Ø6 G8
R402002731	63 80 mm	RTC-BV RTC-CG RTC-HD	31 / 45	50	22	32,7	Ø13,7	Ø6 G8

# Foot mounting, Series M41, M48

- Suitable piston Ø 16 25 32 40 50 63 80 mm

- for series RTC-BV RTC-CG RTC-HD



Weight

See table below

## Technical data

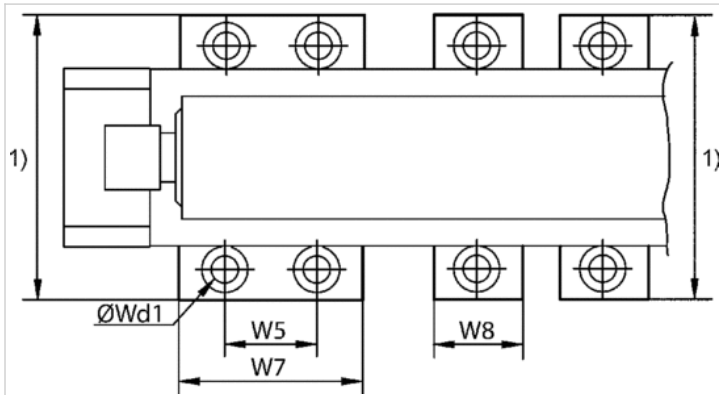
Part No.	Piston Ø	Scope of delivery	Weight	Fig.
R402003401	16 25 mm	2 piece	0,05 kg	Fig. 1
R402003402	32 40 mm	2 piece	0,07 kg	Fig. 1
R402003403	50 63 80 mm	2 piece	0,2 kg	Fig. 1
R402003404	16 25 mm	4 piece	0,03 kg	Fig. 2
R402003405	32 40 mm	4 piece	0,04 kg	Fig. 2
R402005912	50 63 80 mm	4 piece	0,04 kg	Fig. 2

## Technical information

Material

Material	Aluminum
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## Dimensions



1) see data sheet for the respective product variant

## Dimensions

Part No.	Piston Ø	For series	Wd1	W5	W7	W8	Fig.
R402003401	16 25 mm	RTC-BV RTC-CG RTC-HD	6,8	30	60	–	Fig. 1
R402003402	32 40 mm	RTC-BV RTC-CG RTC-HD	8,8	30	60	–	Fig. 1
R402003403	50 63 80 mm	RTC-BV RTC-CG RTC-HD	13	40	80	–	Fig. 1
R402003404	16 25 mm	RTC-BV RTC-CG RTC-HD	6,8	–	–	30	Fig. 2
R402003405	32 40 mm	RTC-BV RTC-CG RTC-HD	8,8	–	–	30	Fig. 2
R402005912	50 63 80 mm	RTC-BV RTC-CG RTC-HD	13	–	–	40	Fig. 2

Fig. 1 M41

Fig. 2 M48

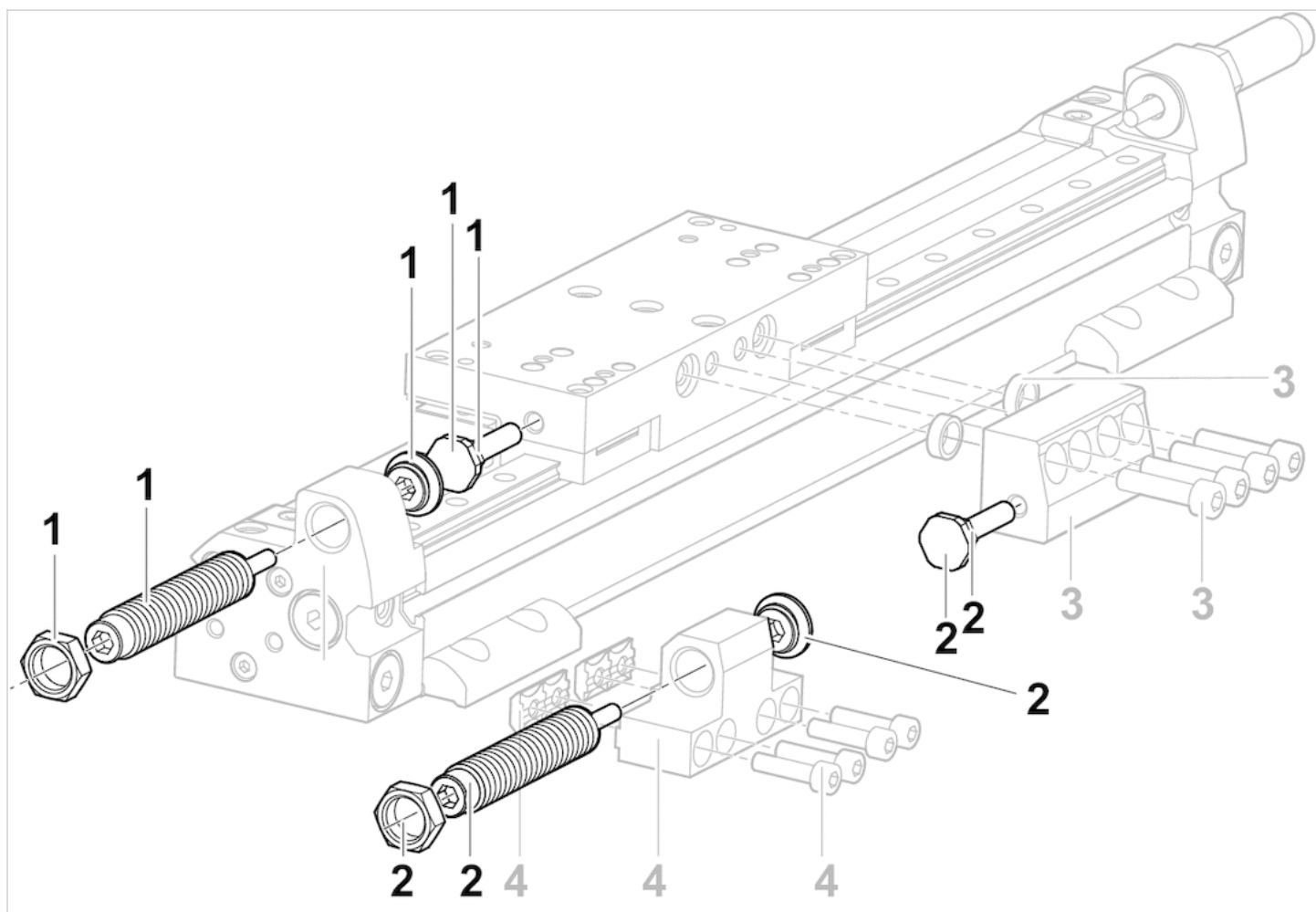
# Shock absorber kit for stroke length adjustment



## Technical data

Part No.	for series	Cushioning hardness	Diameter
R412019543	RTC-HD RTC-CG CKP	S = soft	Ø 16 mm
R402002804	RTC-HD RTC-CG CKP	M = medium	Ø 16 mm
R402003618	RTC-HD RTC-CG CKP	H = hard	Ø 16 mm
R402002805	RTC-HD RTC-CG CKP	S = soft	Ø 25 mm, Ø 32 mm, Ø 40
R402003619	RTC-HD RTC-CG CKP	M = medium	Ø 25 mm, Ø 32 mm, Ø 40
R412019544	RTC-HD RTC-CG CKP	H = hard	Ø 25 mm, Ø 32 mm, Ø 40 mm
R402002806	RTC-HD RTC-CG	S = soft	Ø 50 ... 63 mm
R402003620	RTC-HD RTC-CG	M = medium	Ø 50 ... 63 mm
R412019545	RTC-HD RTC-CG CKP	H = hard	Ø 50 mm, Ø 63 mm

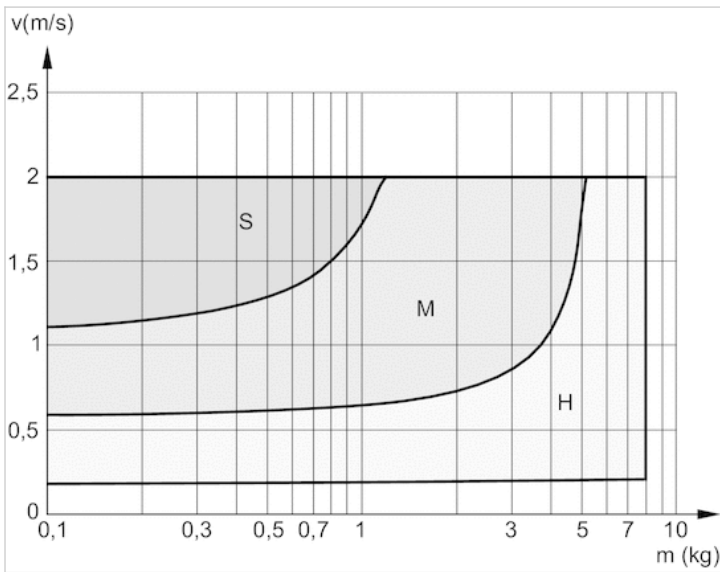
## Dimensions



- 1) Shock absorber kit
- 2) Shock absorber kit
- 3) Stop
- 4) Holder for shock absorber

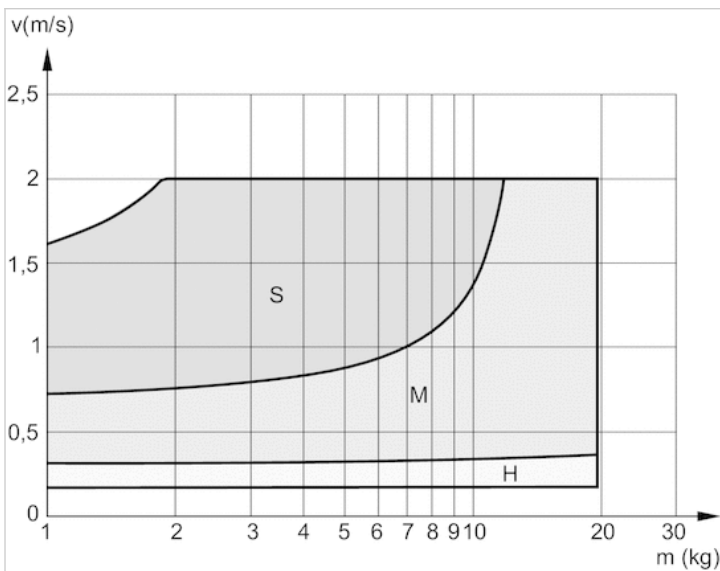
## Diagrams

### Cushioning diagram, Ø 16 mm



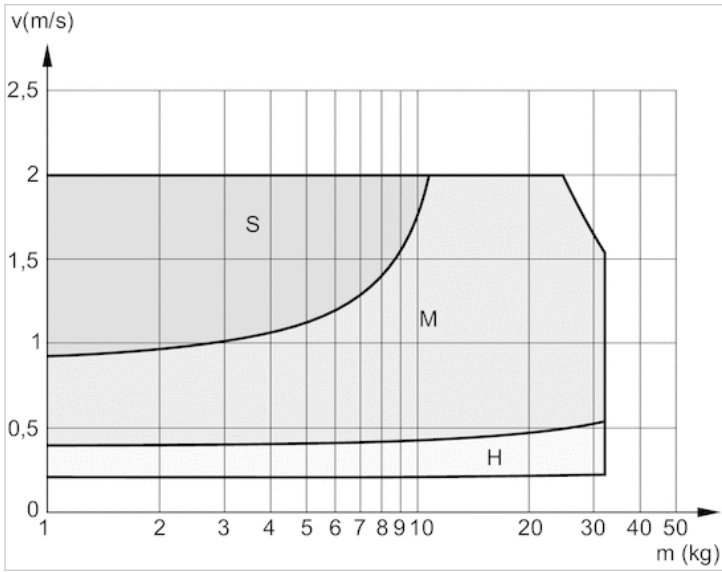
V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

### Cushioning diagram, Ø 25 mm



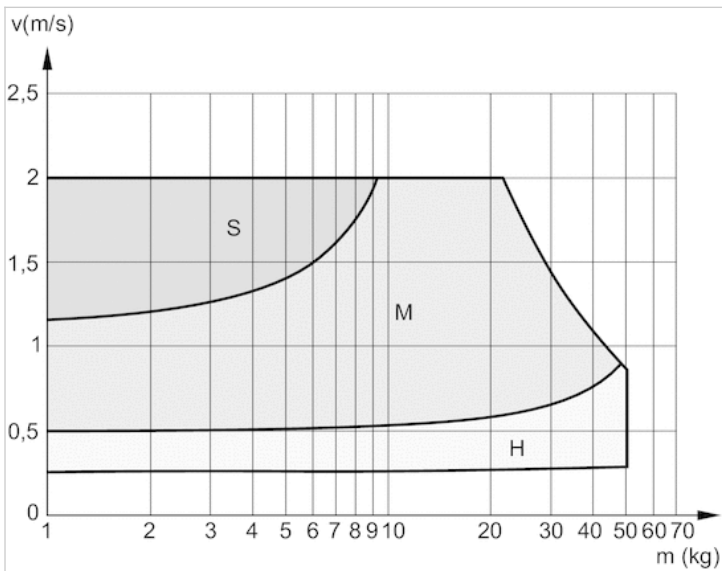
V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

Cushioning diagram, Ø 32 mm



V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

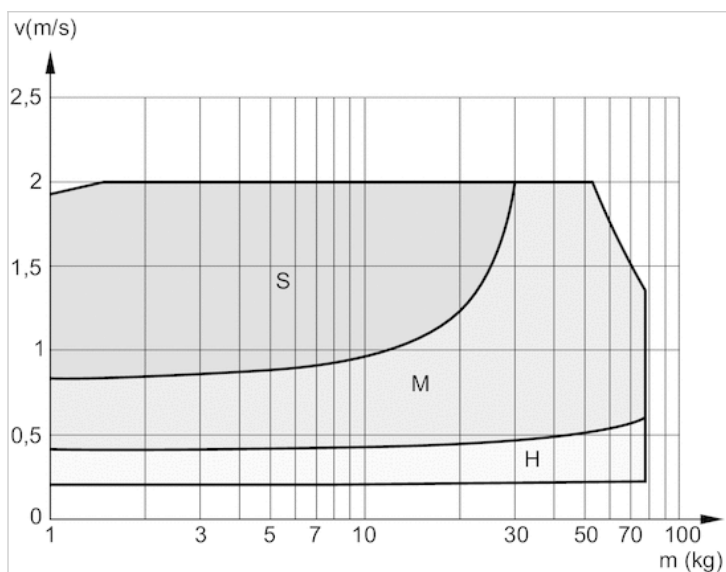
Cushioning diagram, Ø 40 mm



V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

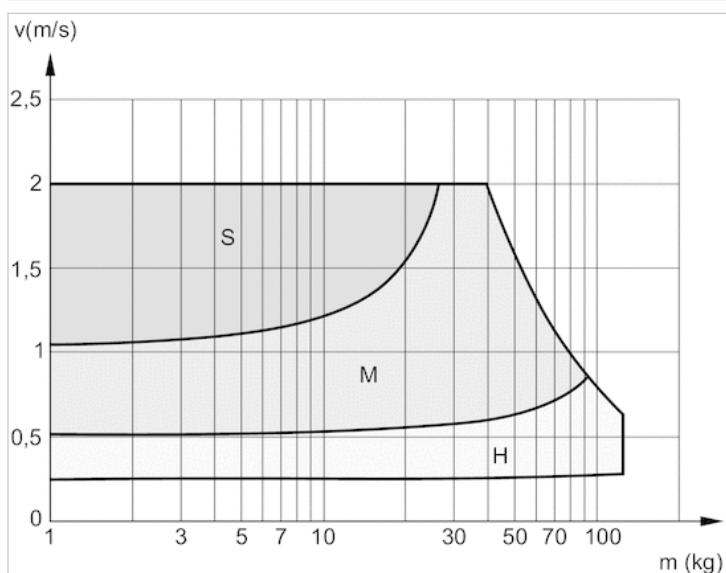


Cushioning diagram, Ø 50 mm



V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

Cushioning diagram, Ø 63 mm



V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

# Stop for stroke length adjustment

- Ø 16 mm Ø 25 mm (-HD), Ø 25, 32 mm (-CG,-SB/LB) Ø 32 mm Ø 40 Ø 50 ... 63 mm

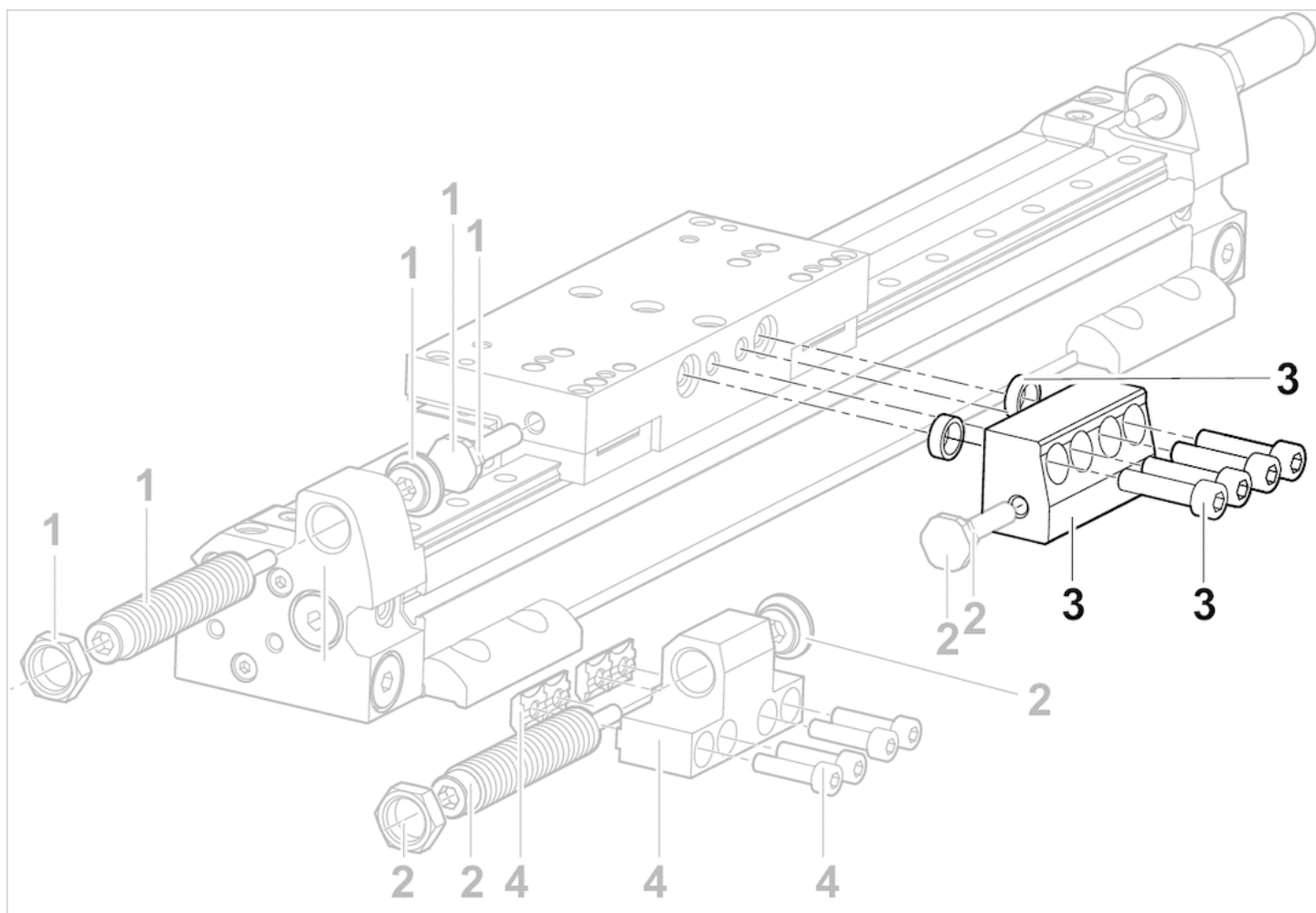
- for RTC-HD RTC-CG RTC-HD RTC-CG RTC-SB RTC-HD RTC-CG RTC-SB RTC-LB



## Technical data

Part No.	for series	Diameter
R402002695	RTC-HD RTC-CG	Ø 16 mm
R402002696	RTC-HD RTC-CG RTC-SB	Ø 25 mm (-HD), Ø 25, 32 mm (-CG,-SB/LB)
R402002698	RTC-HD	Ø 32 mm
R402002699	RTC-CG RTC-SB RTC-LB	Ø 40
R402002700	RTC-HD	Ø 40
R402002701	RTC-HD	Ø 50 ... 63 mm

## Dimensions



- 1) Shock absorber kit
- 2) Shock absorber kit
- 3) Stop
- 4) Holder for shock absorber

# Holder for the shock absorber for stroke length adjustment

- Ø 16 mm Ø 25 mm Ø 32 mm, Ø 40 mm Ø 50 mm, Ø 63 mm

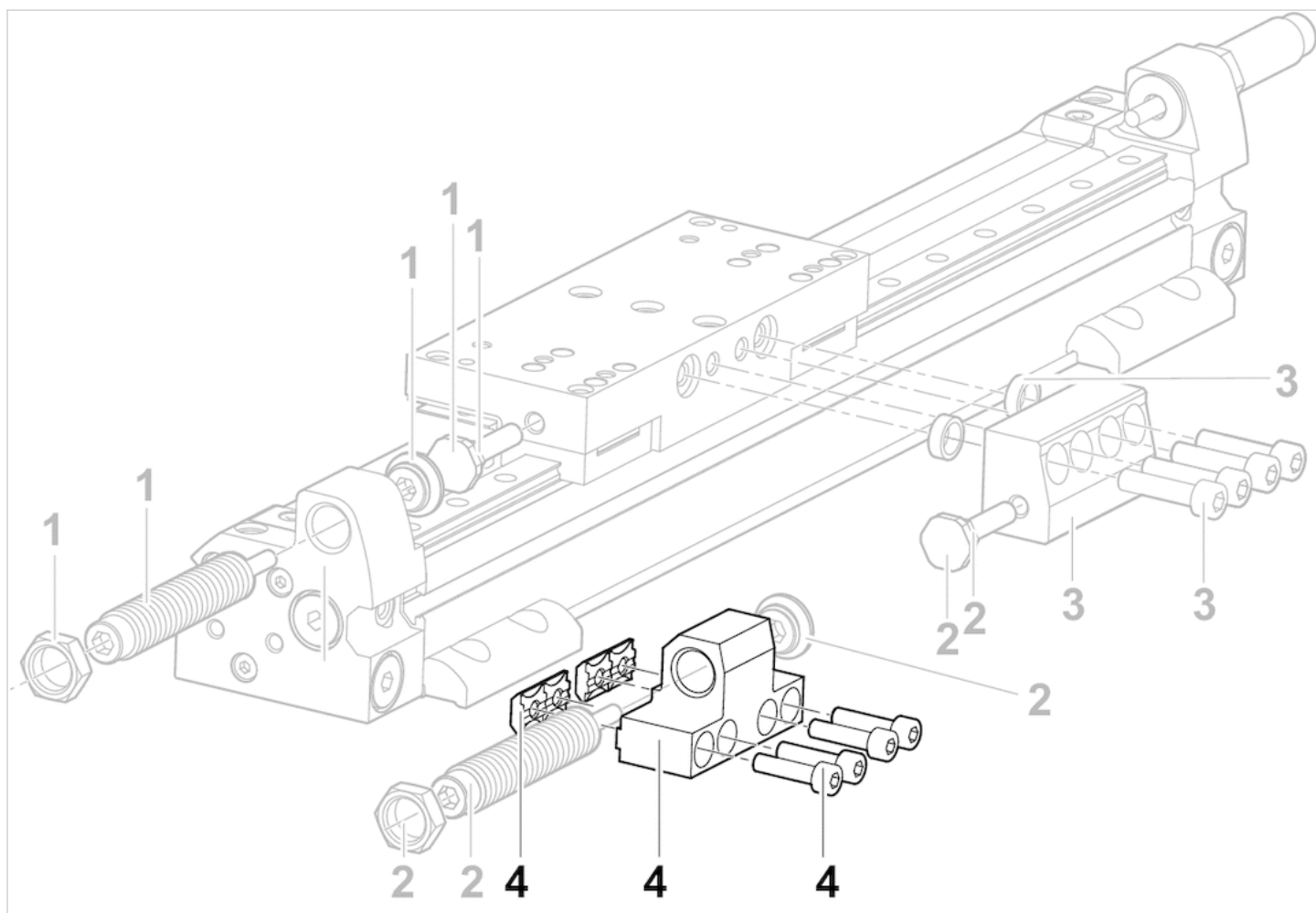
- for RTC-HD RTC-CG CKP RTC-HD RTC-SB RTC-LB



## Technical data

Part No.	for series	Diameter
R402002702	RTC-HD RTC-CG CKP	Ø 16 mm
R402002703	RTC-HD RTC-CG CKP	Ø 25 mm
R402002704	RTC-HD RTC-CG CKP	Ø 32 mm, Ø 40 mm
R402003397	RTC-HD	Ø 50 mm, Ø 63 mm
R412025646	RTC-SB RTC-LB	Ø 25 mm
R412025647	RTC-SB RTC-LB	Ø 32 mm, Ø 40 mm

## Dimensions



- 1) Shock absorber kit
- 2) Shock absorber kit
- 3) Stop
- 4) Holder for shock absorber

# Kit for intermediate position

- for RTC-CG, RTC-HD, CKP
- double-acting
- with magnetic piston



Weight

0,87 kg

## Technical data

Part No.

R412024700

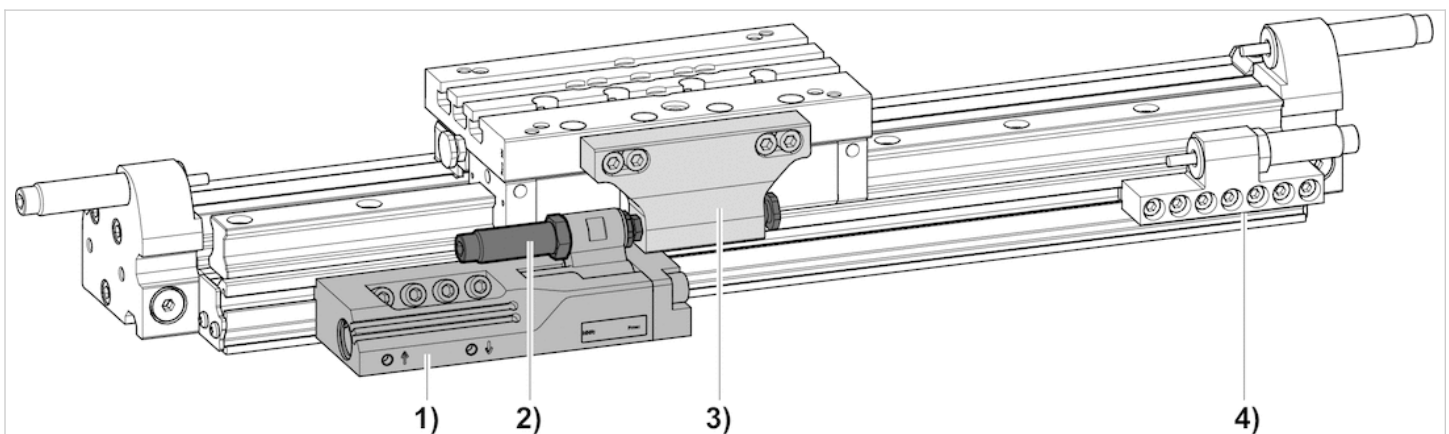
for RTC-CG (25, 32, 40 mm), RTC-HD (25, 32, 40 mm), CKP

## Technical information

The volume per stroke is 4.6 cm<sup>3</sup>.  
 Returning from the stop position is only permissible when not under power.  
 The stopper must not be operated without a shock absorber.

## Dimensions

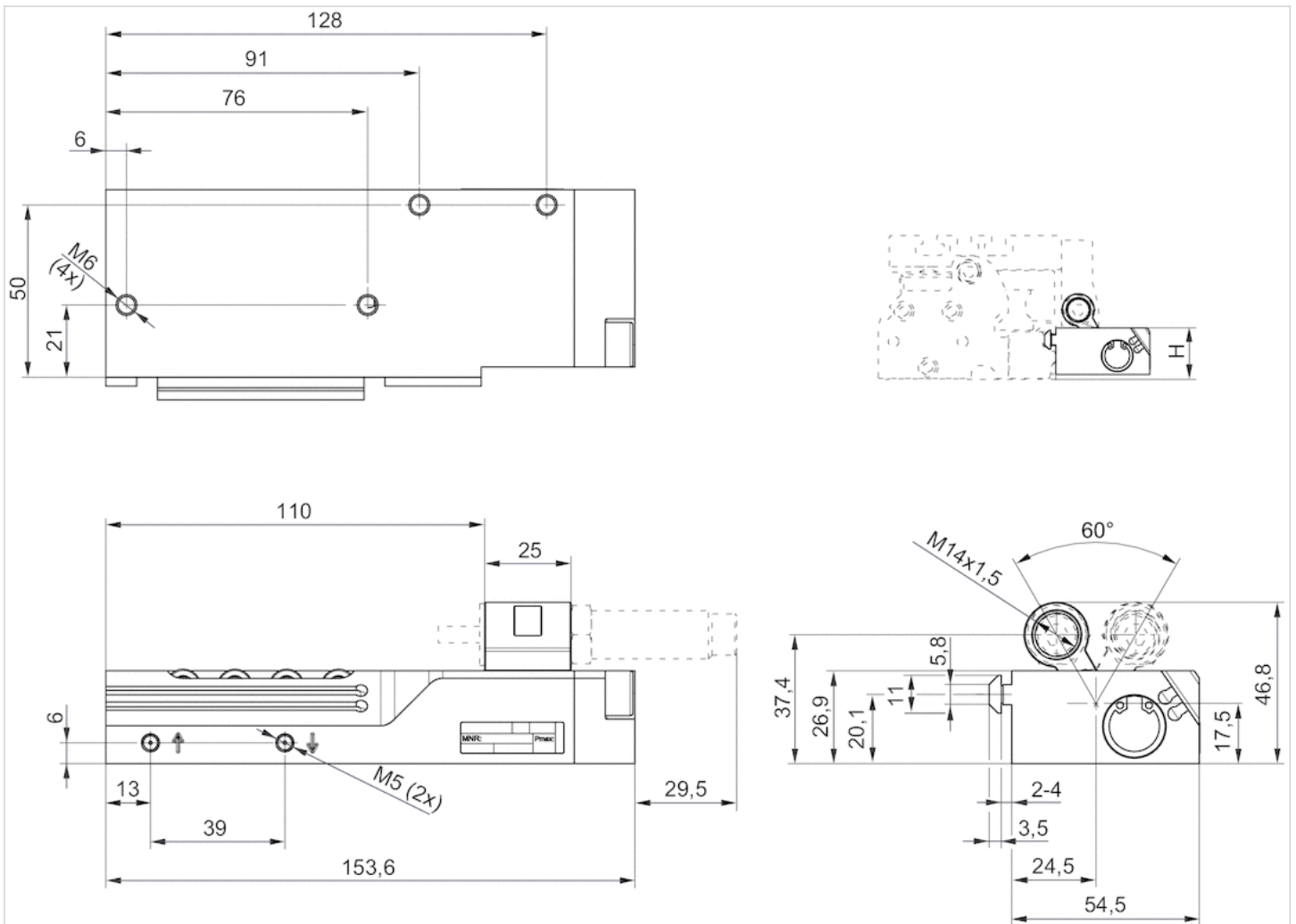
### Overview drawing



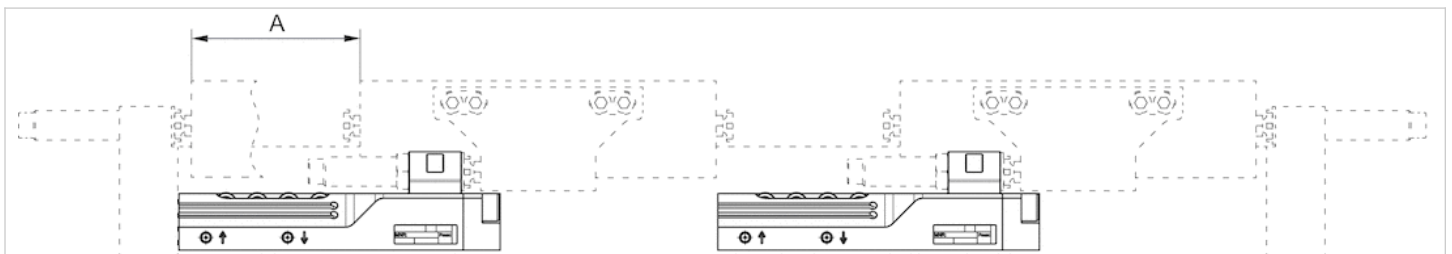
- 1) Intermediate stop
- 2) Shock absorber kit

- 3) Stop
- 4) Holder for the shock absorber: see stroke length adjustment kit for details

Dimensions



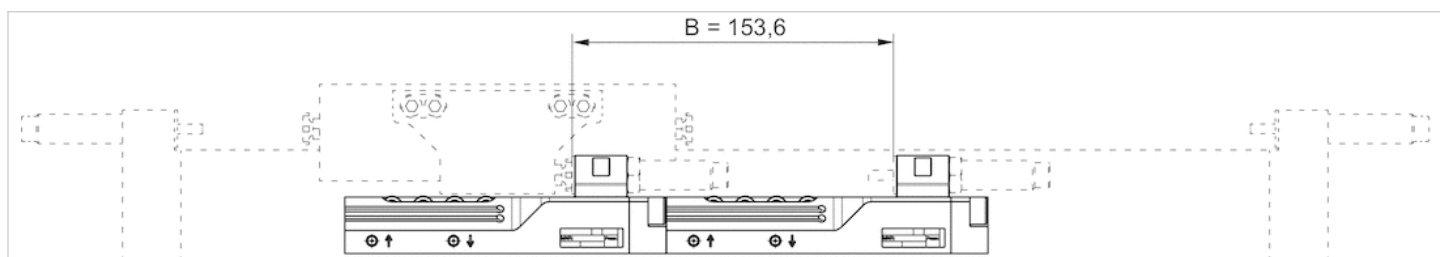
Direction of travel: left, Stopper position A restricted



Direction of travel: right, No restriction of the stopper position



Multiple installation, Minimum stopper distance B



Dimensions

	RTC-CG25	RTC-CG32	RTC-CG40	RTC-HD25	RTC-HD32	RTC-HD40
A	92,5	80	79,5	92,5	80	79,5
H	33,5	38,5	48,5	27	30	31,5

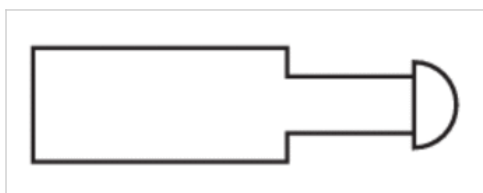


# Industrial shock absorber, Series SA2-RT

- for RTC-16 RTC-25,-32,-40 RTC-50,-63
- Cushioning self-compensating
- Mounting Lock nut
- Mounting thread M12x1 M14x1,5 M20x1,5
- SA2-RT



Ambient temperature min./max.	-10 ... 60 °C
Medium	Oil
Impact speed, min./max.	See table below
Mounting	Lock nut
Weight	See table below



## Technical data

Part No.	for series	Cushioning hardness	Mounting thread	Stroke	Max. energy absorption/stroke
R412010695	RTC-16	S = soft	M12x1	10 mm	14 Nm
R412010696	RTC-16	M = medium	M12x1	10 mm	14 Nm
R412010697	RTC-16	H = hard	M12x1	10 mm	14 Nm
R412010698	RTC-25,-32,-40	S = soft	M14x1,5	14 mm	30 Nm
R412010699	RTC-25,-32,-40	M = medium	M14x1,5	14 mm	30 Nm
R412010700	RTC-25,-32,-40	H = hard	M14x1,5	14 mm	30 Nm
R412010701	RTC-50,-63	S = soft	M20x1,5	13 mm	65 Nm
R412010702	RTC-50,-63	M = medium	M20x1,5	13 mm	65 Nm
R412010703	RTC-50,-63	H = hard	M20x1,5	13 mm	65 Nm

Part No.	Max. energy absorption/hour	Effective mass me		Return spring force	
		min./max.		min./max.	
R412010695	30000 Nm	0,5 ... 1,8 kg		3,5 ... 7 N	
R412010696	30000 Nm	1,5 ... 7,7 kg		3,5 ... 7 N	
R412010697	30000 Nm	5 ... 57 kg		3,5 ... 7 N	
R412010698	50000 Nm	3,5 ... 17 kg		13 ... 23 N	
R412010699	50000 Nm	9,9 ... 76 kg		13 ... 23 N	
R412010700	50000 Nm	62 ... 252 kg		13 ... 23 N	
R412010701	52000 Nm	7,5 ... 36 kg		12 ... 23 N	

Part No.	Max. energy absorption/hour	Effective mass me	Return spring force
		min./max.	min./max.
R412010702	52000 Nm	20 ... 160 kg	12 ... 23 N
R412010703	52000 Nm	130 ... 610 kg	12 ... 23 N

Part No.	impact speed	Weight
	min./max.	
R412010695	3,5 ... 5 m/s	0,04 kg
R412010696	1,9 ... 4,3 m/s	0,04 kg
R412010697	0,7 ... 2,4 m/s	0,04 kg
R412010698	1,9 ... 4,1 m/s	0,05 kg
R412010699	0,9 ... 2,5 m/s	0,05 kg
R412010700	0,5 ... 1 m/s	0,05 kg
R412010701	1,9 ... 4,2 m/s	0,15 kg
R412010702	0,9 ... 2,6 m/s	0,15 kg
R412010703	0,5 ... 1 m/s	0,15 kg

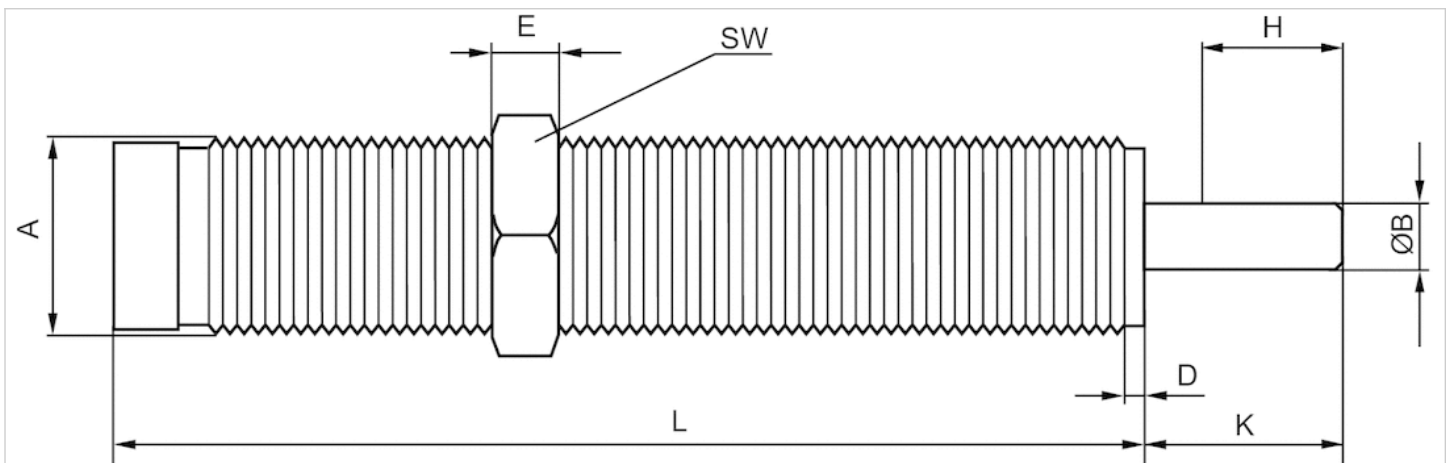
## Technical information

### Material

Cylinder tube	Steel, bronzed
Piston rod	Stainless steel, hardened
Lock nut	Steel, bronzed

## Dimensions

### Dimensions



H = stroke  
A = mounting thread

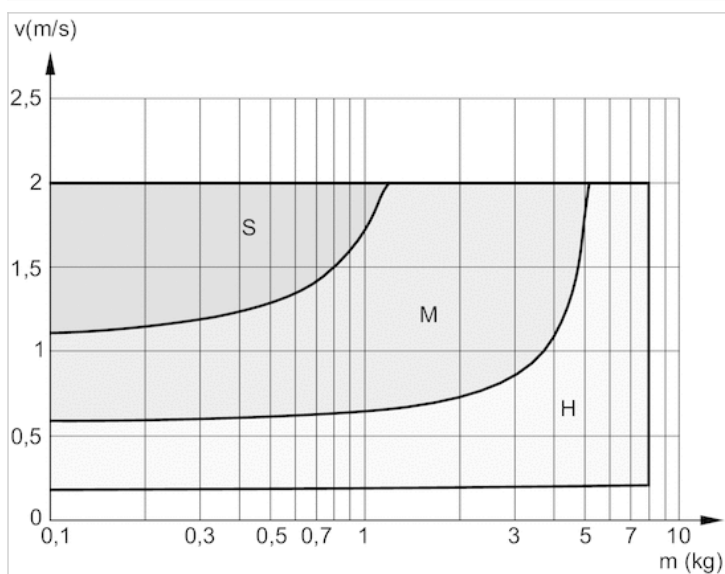
## Dimensions

Part No.	Type	Mounting thread	ØB	D	E	H	K	L	SW
R412010695	SA2-RT	M12x1	4	2.5	4	10	15	52	14
R412010696	SA2-RT	M12x1	4	2.5	4	10	15	52	14

Part No.	Type	Mounting thread	ØB	D	E	H	K	L	SW
R412010697	SA2-RT	M12x1	4	2.5	4	10	15	52	14
R412010698	SA2-RT	M14x1,5	4	2.5	5	14	18.5	69	17
R412010699	SA2-RT	M14x1,5	4	2.5	5	14	18.5	69	17
R412010700	SA2-RT	M14x1,5	4	2.5	5	14	18.5	69	17
R412010701	SA2-RT	M20x1,5	6	2.5	6	13	18	75	24
R412010702	SA2-RT	M20x1,5	6	2.5	6	13	18	75	24
R412010703	SA2-RT	M20x1,5	6	2.5	6	13	18	75	24

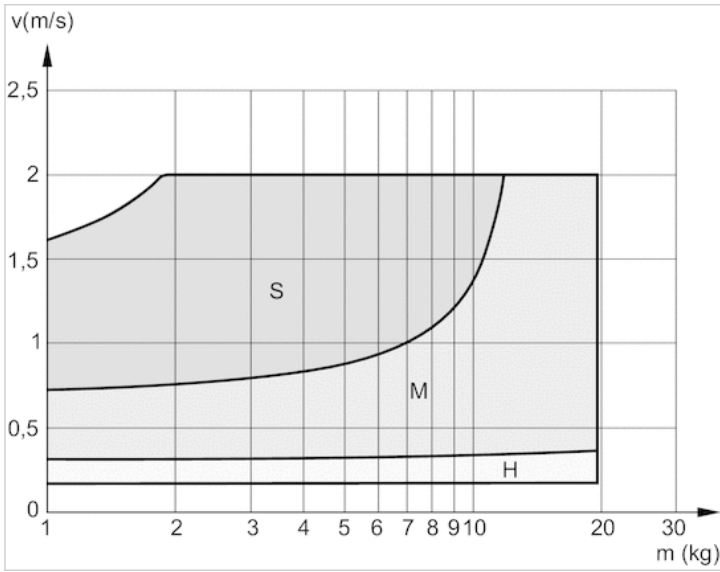
## Diagrams

### Cushioning diagram, Ø 16 mm



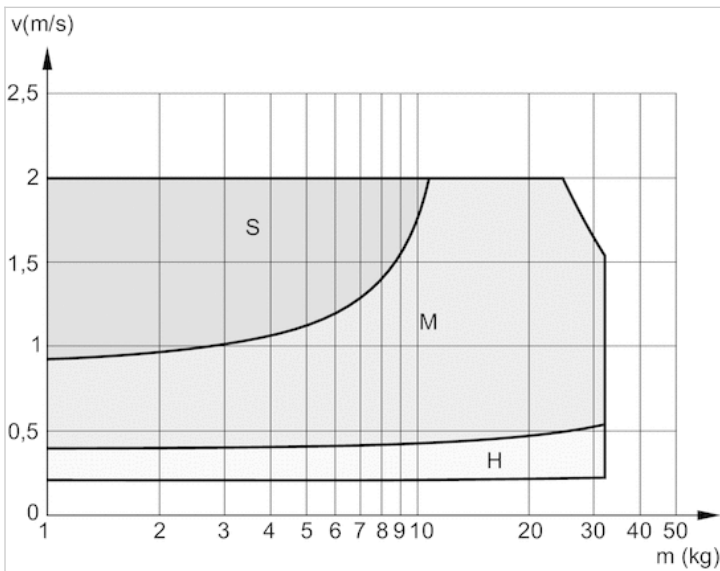
V = velocity [m/s]  
M = moving mass  
S = soft  
M = medium  
H = hard

Cushioning diagram, Ø 25 mm



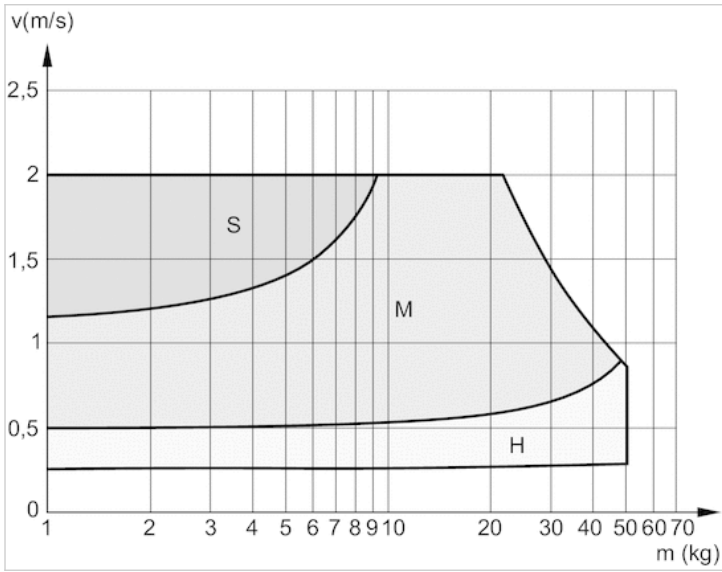
V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

Cushioning diagram, Ø 32 mm



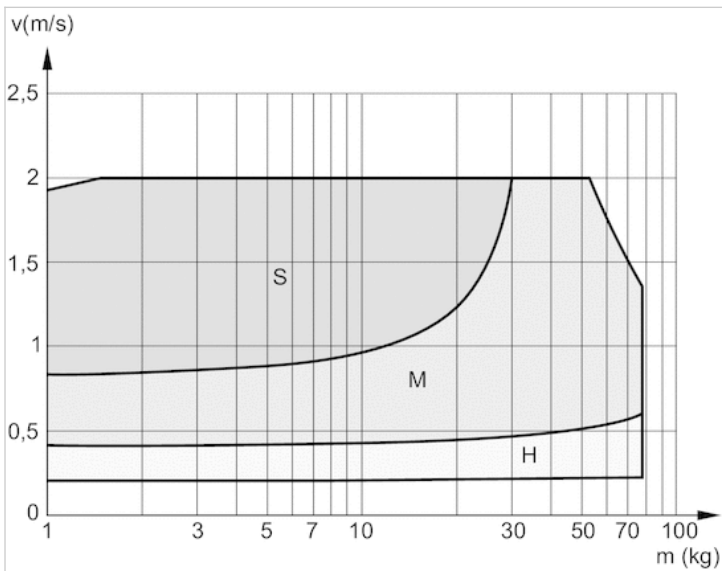
V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

Cushioning diagram, Ø 40 mm



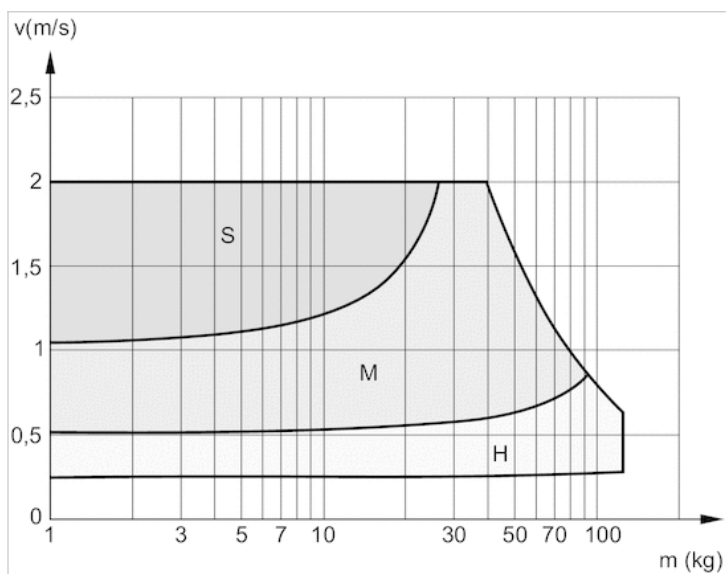
V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

Cushioning diagram, Ø 50 mm



V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard

Cushioning diagram, Ø 63 mm



V = velocity [m/s]  
 M = moving mass  
 S = soft  
 M = medium  
 H = hard







# 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.

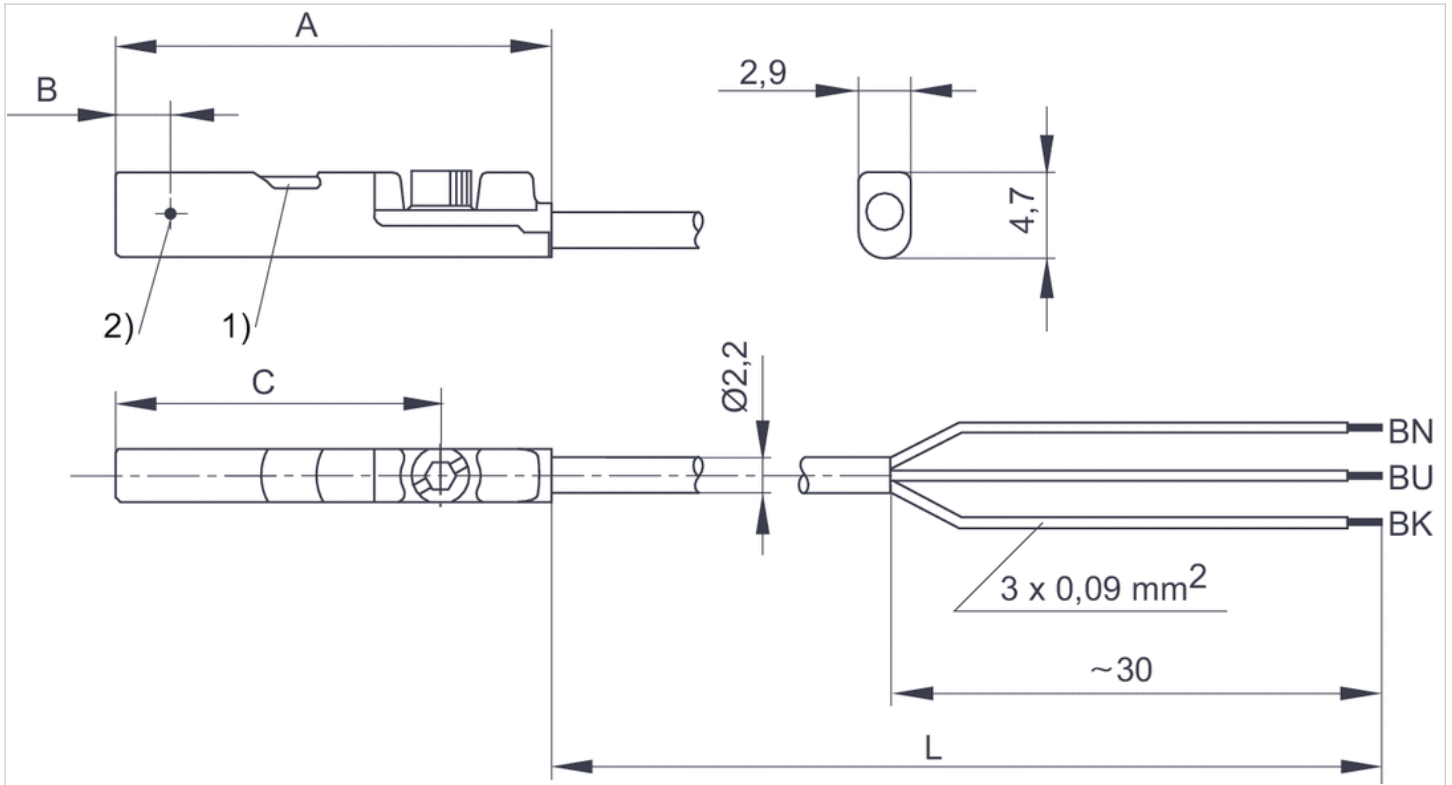
## Technical information

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

# Sensors, Series SM6-AL

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



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

## Technical data

Part No.	Type of contact	Cable length L	max. measuring range	Overall length Sensor A
R412010880	Analog	0,3 m	107 mm	109 mm
R412010881	Analog	0,3 m	143 mm	145 mm
R412010882	Analog	0,3 m	179 mm	181 mm
R412010883	Analog	0,3 m	215 mm	217 mm
R412010884	Analog	0,3 m	251 mm	253 mm
R412010885	Analog	0,3 m	287 mm	289 mm
R412010886	Analog	0,3 m	323 mm	325 mm
R412010887	Analog	0,3 m	359 mm	361 mm
R412010888	Analog	0,3 m	395 mm	397 mm
R412010889	Analog	0,3 m	431 mm	433 mm
R412010890	Analog	0,3 m	467 mm	469 mm
R412010891	Analog	0,3 m	503 mm	505 mm
R412010892	Analog	0,3 m	539 mm	541 mm
R412010893	Analog	0,3 m	575 mm	577 mm
R412010894	Analog	0,3 m	611 mm	613 mm
R412010895	Analog	0,3 m	647 mm	649 mm
R412010896	Analog	0,3 m	683 mm	685 mm

Part No.	Type of contact	Cable length L	max. measuring range	Overall length Sensor A
R412010897	Analog	0,3 m	719 mm	721 mm
R412010898	Analog	0,3 m	755 mm	757 mm
R412010899	Analog	0,3 m	791 mm	793 mm
R412010900	Analog	0,3 m	827 mm	829 mm
R412010901	Analog	0,3 m	863 mm	865 mm
R412010902	Analog	0,3 m	899 mm	901 mm
R412010903	Analog	0,3 m	935 mm	937 mm
R412010904	Analog	0,3 m	971 mm	973 mm
R412010905	Analog	0,3 m	1007 mm	1009 mm

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

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

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

## Technical information

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

FSR: Full Scale Range, max. measurement range

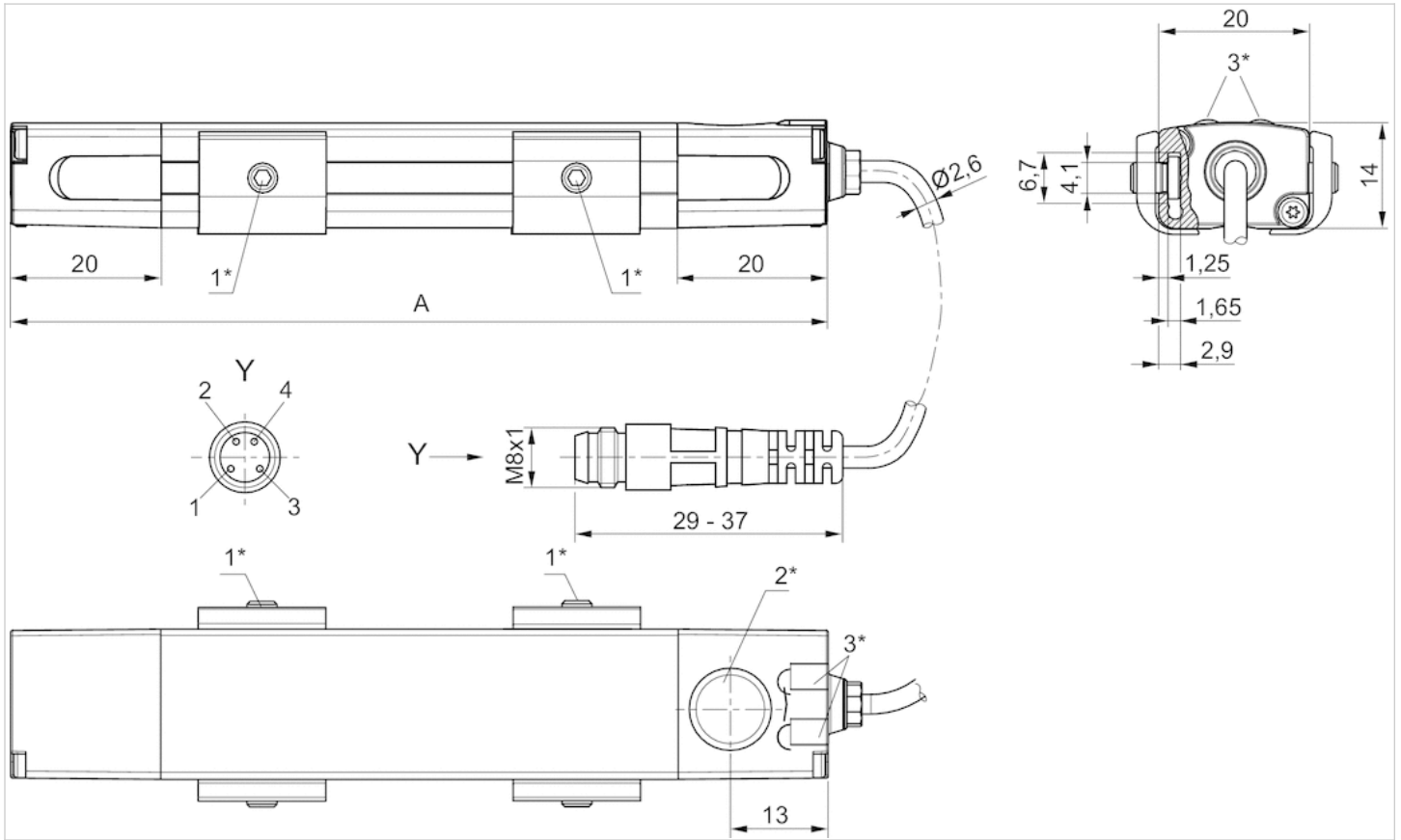
The IO-Link device description (IODD) for the SM6-AL distance measuring sensor is available for download in the Media Centre.

## Technical information

Material	
Housing	Aluminum
Cable sheath	Polyurethane
End caps	Polyamide

## Dimensions

### Dimensions



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

A = sensor length

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

LED 1: yellow = measuring operation, red = error

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




# 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

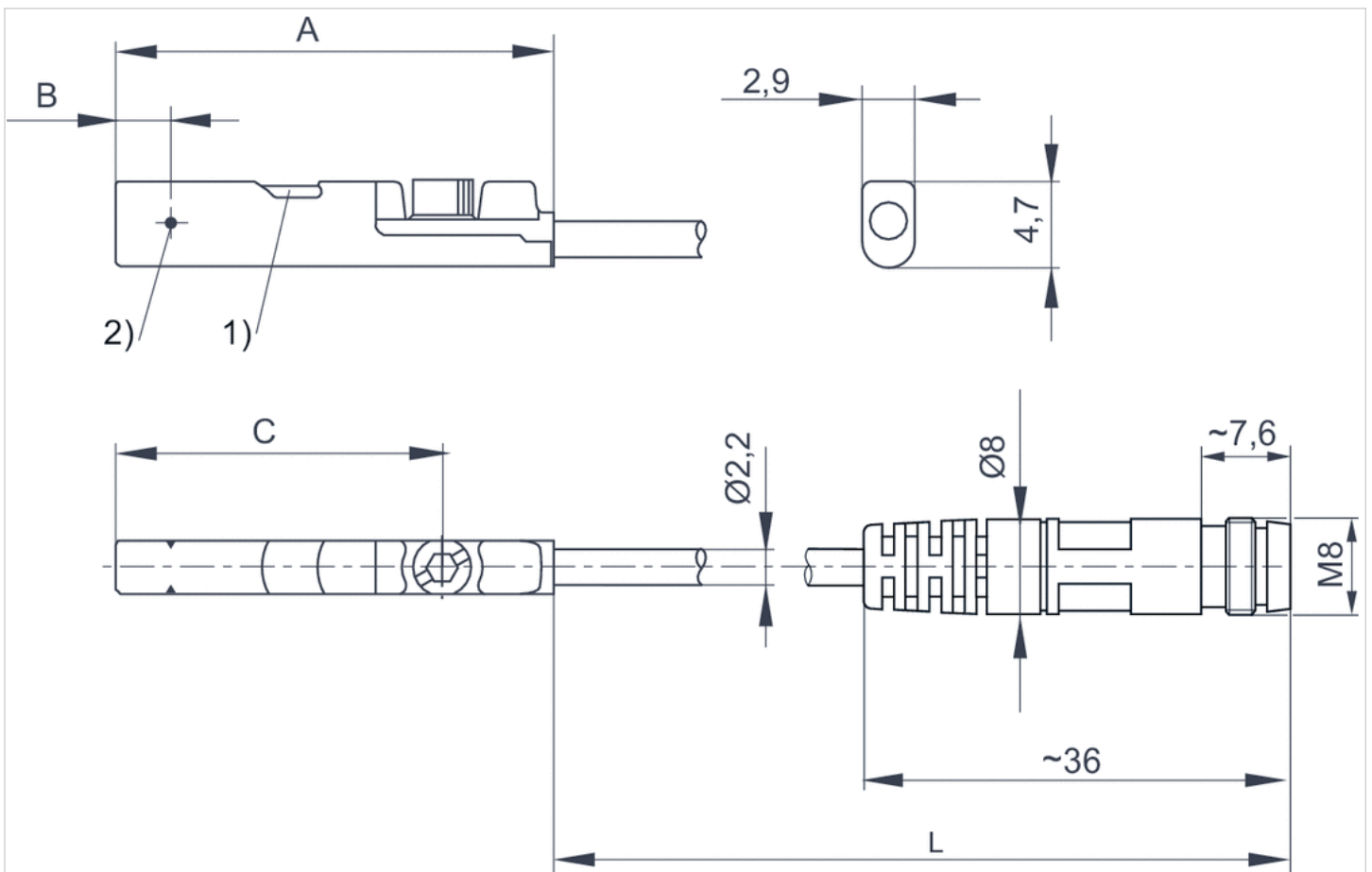
The max. switching capacity must not be exceeded.

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

## Dimensions

### Dimensions



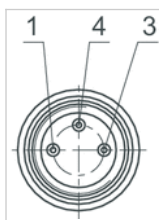
1) LED 2) Switching point  
L = cable length

## 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

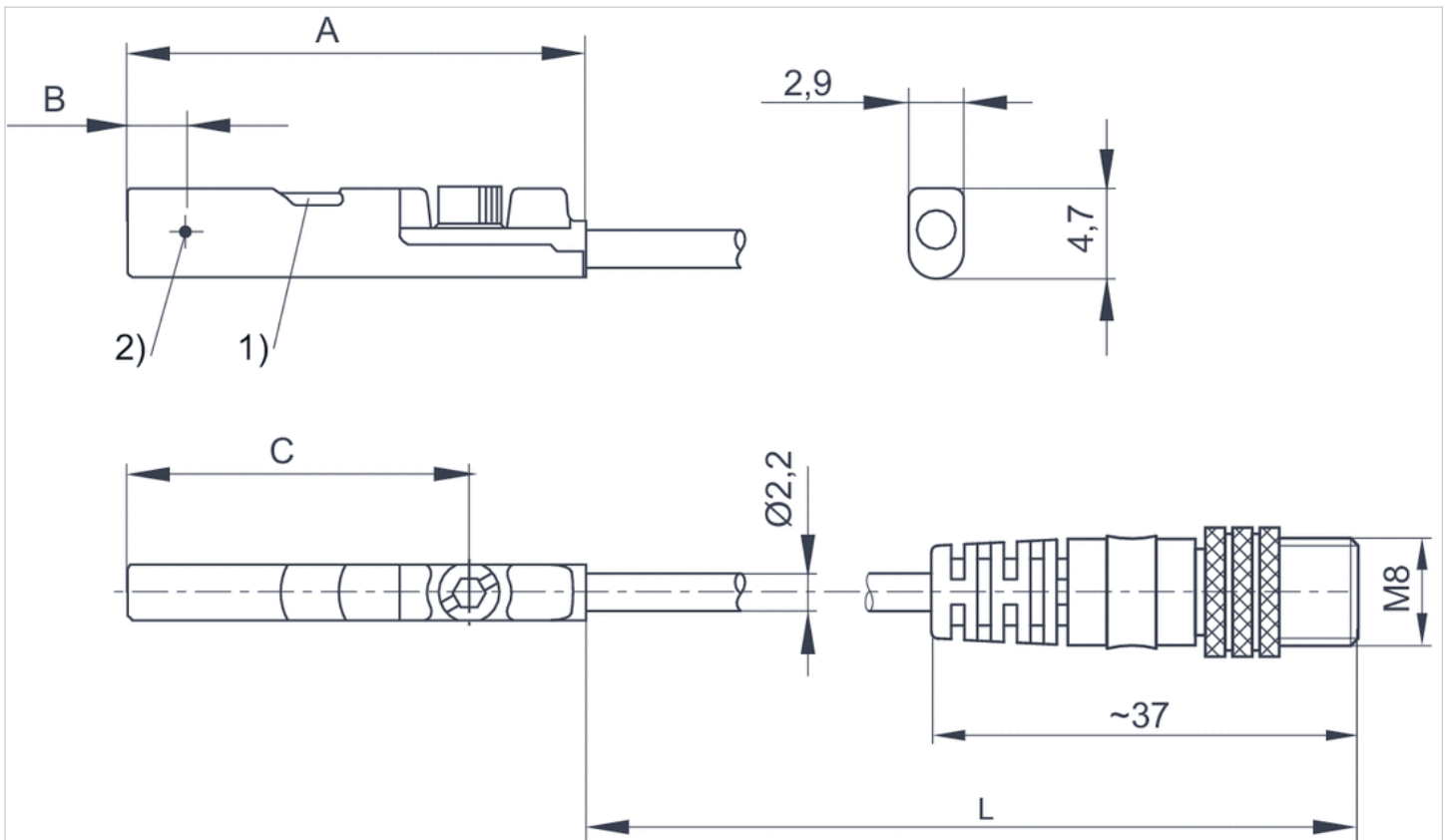
The max. switching capacity must not be exceeded.

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

## Dimensions

### Dimensions



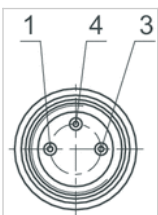
1) LED 2) Switching point  
L = cable length

## 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
- 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

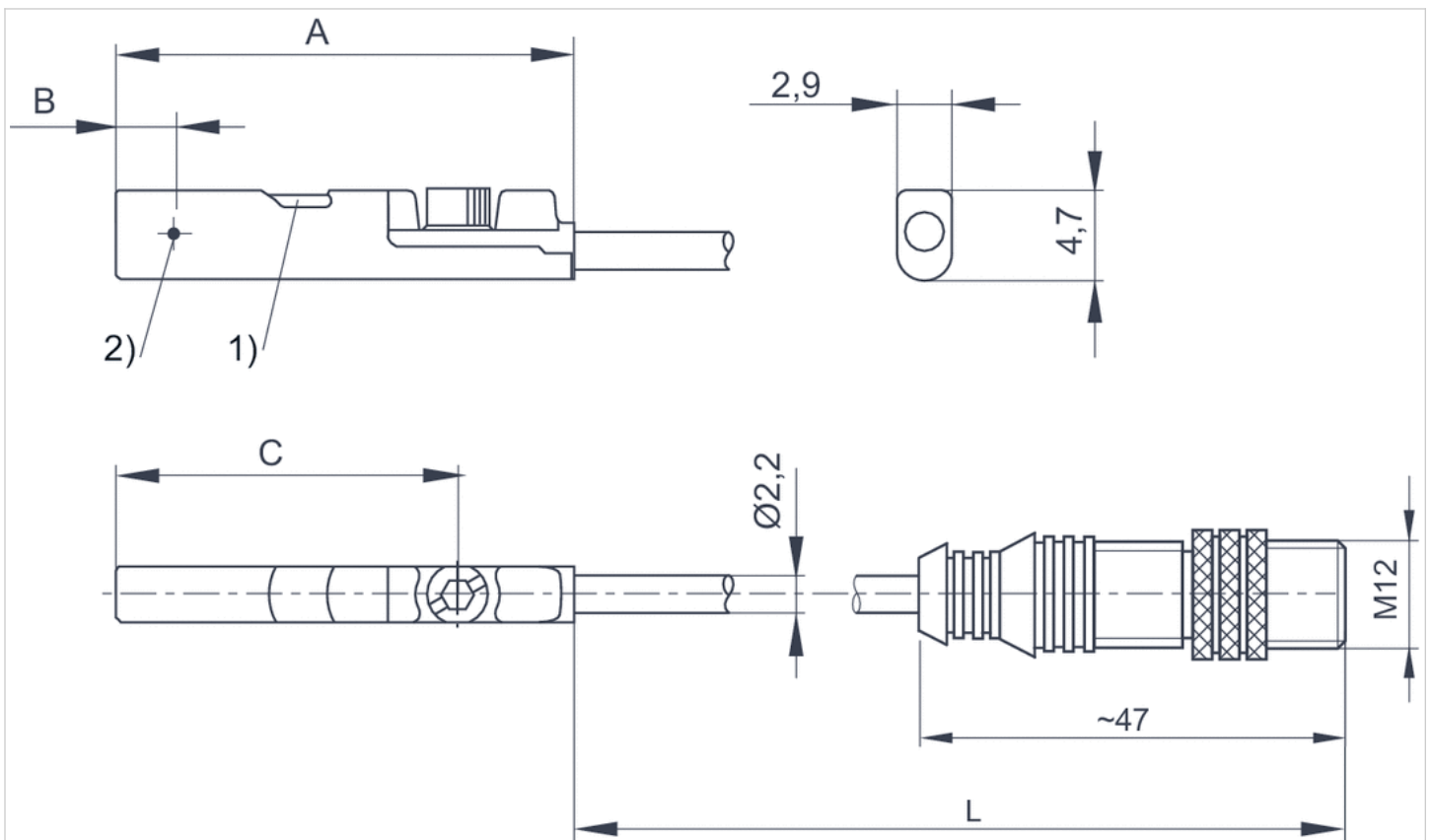
The max. switching capacity must not be exceeded.

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

## Dimensions

### Dimensions

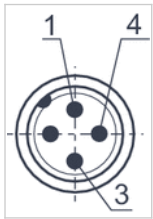


1) LED 2) Switching point  
L = cable length

## Dimensions

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

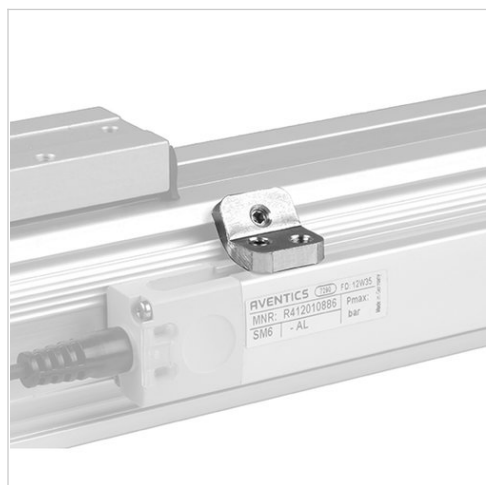
## Pin assignments



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

# Sensor mounting, Series CB1

- for series SM6-AL
- to mount on cylinder RTC



Weight

0,007 kg

## Technical data

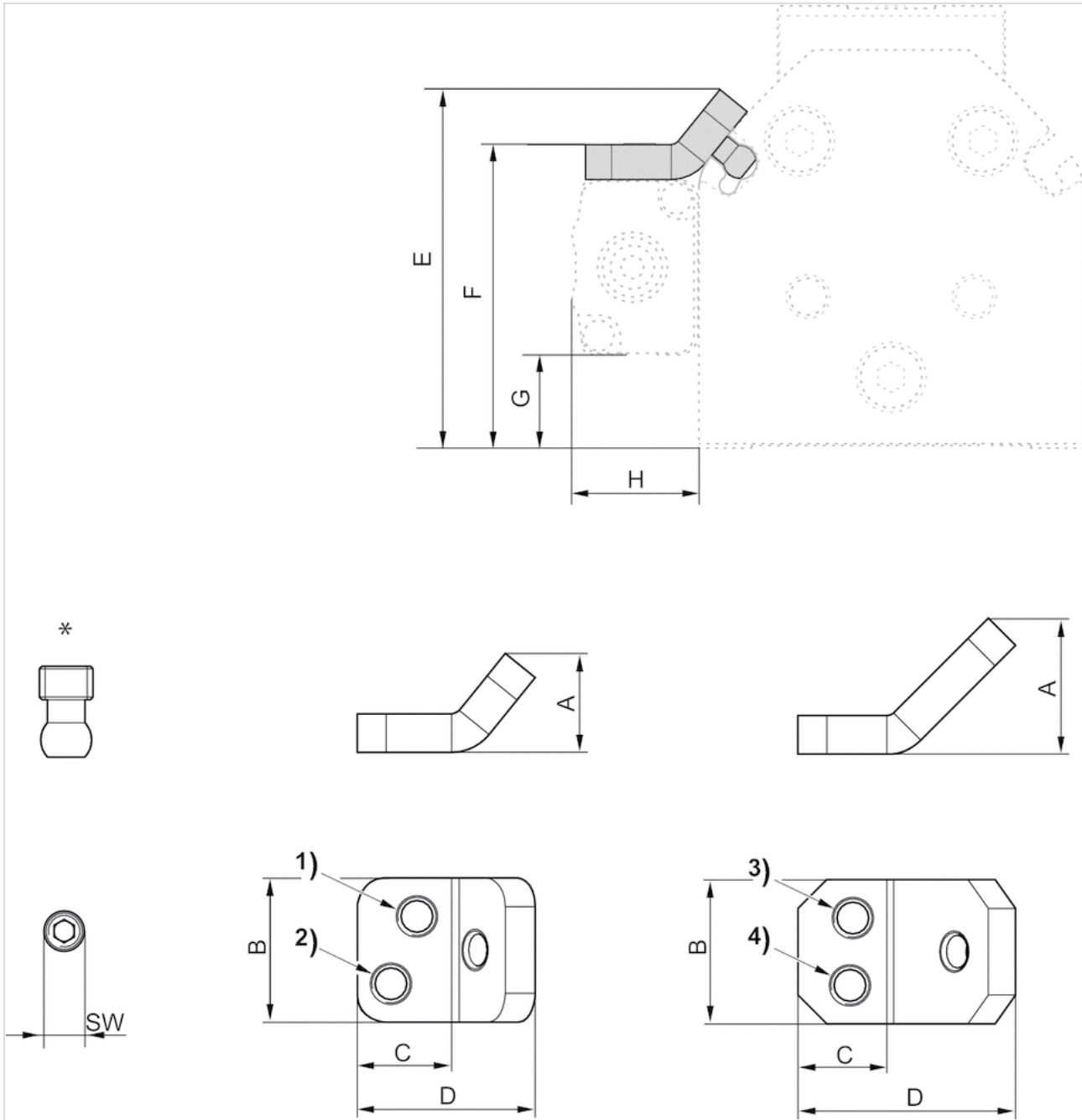
Part No.	for series	Scope of delivery
R412022298	SM6-AL	1 piece

## Technical information

Material
Aluminum



# Dimensions



- \* Threaded pin (brass)
- 2 clamp mounting sets for SM6-AL 109 - 469 mm
- 3 clamp mounting sets for SM6-AL 505 - 793 mm
- 4 clamp mounting sets for SM6-AL 829 - 1009 mm

## Dimensions

Part No.	Piston Ø		A
R412022298	25	1)	10,3
	32	2)	10,3
	40	3)	14,2
	50	4)	14,2

B	C	D
15	9,8	18,5
15	9,8	18,5
15	9,2	22,6
15	9,2	22,6

E	F	G
41	34,7	10,7
46,7	40,4	16,4
55	45,2	21,1
60,6	50,5	26,5

H	SW
14,4	2
14,4	2
14,4	2
14,4	2

# T-groove nut

- for series CKP GPC RTC



Weight

See table below

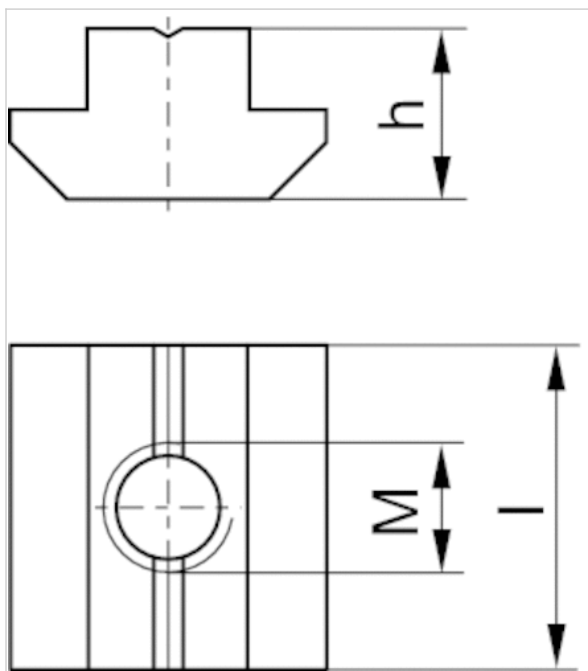
## Technical data

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



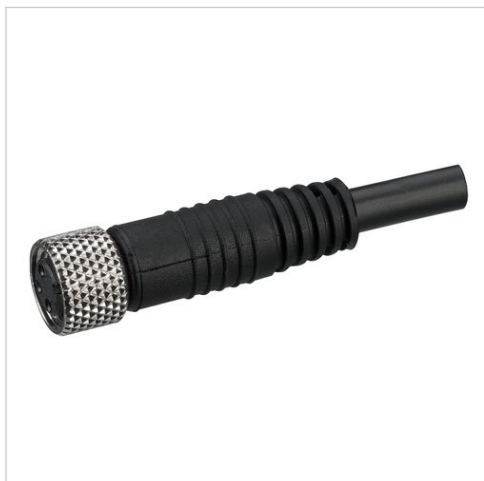
## Dimensions

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

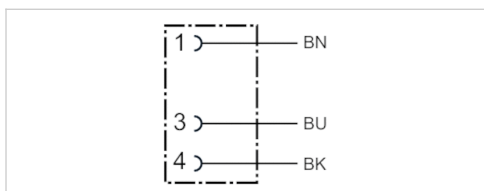
For N4 grooves on CKP 16 a square nut according to DIN 557 can be used.

# Round plug connector, Series CON-RD

- Socket M8x1 3-pin A-coded straight 180°
- open cable ends
- with cable
- unshielded



Operational voltage	30 / 36 V AC/DC
Protection class	IP67
Wire cross-section	0,34 mm <sup>2</sup>
Weight	See table below



## Technical data

Part No.	Max. current	Number of wires	Cable-Ø	Cable length	Weight
8946201312	2,5 A	3	3,5 mm	2 m	0,066 kg
8946201332	2,5 A	3	3,5 mm	15 m	0,466 kg

## Technical information

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

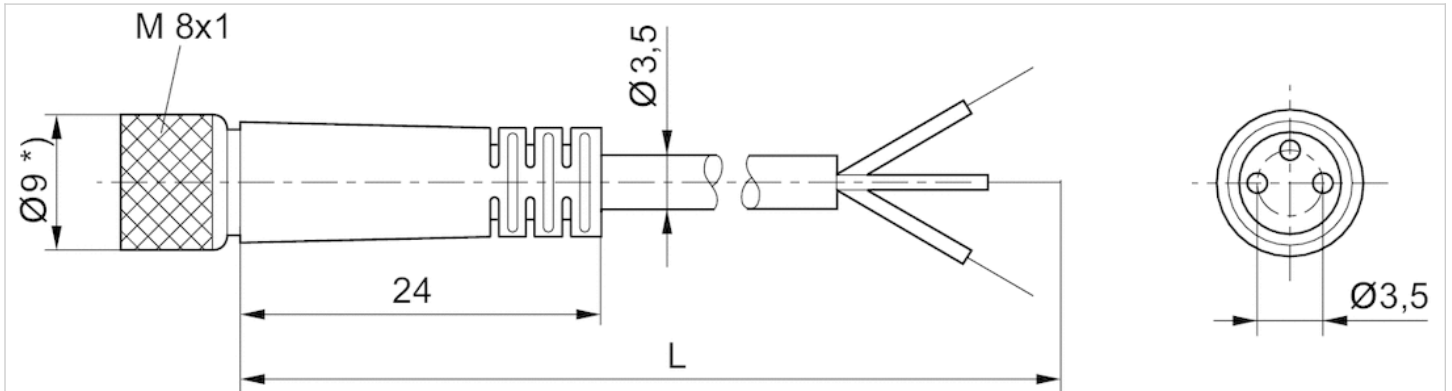
## Technical information

### Material

Cable sheath	Polyvinyl chloride
--------------	--------------------

## Dimensions

### Dimensions

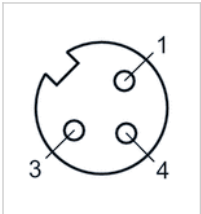


L = length

\*) With 15 m cable length  $\text{Ø}12$

## Pin assignments

### Pin assignment, socket



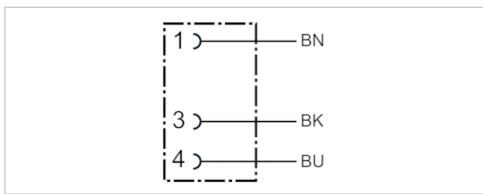
- (1) BN=brown
- (3) BU=blue
- (4) BK=black

# Round plug connector, Series CON-RD

- Socket Snap Ø8 3-pin with detent straight 180°
- open cable ends
- with cable
- unshielded



Operational voltage	48 V AC/DC
Protection class	IP65
Weight	0,058 kg



## Technical data

Part No.	Max. current	Number of wires	Cable-Ø	Cable length
8946016112	3 A	3	4,5 mm	2,5 m

## Technical information

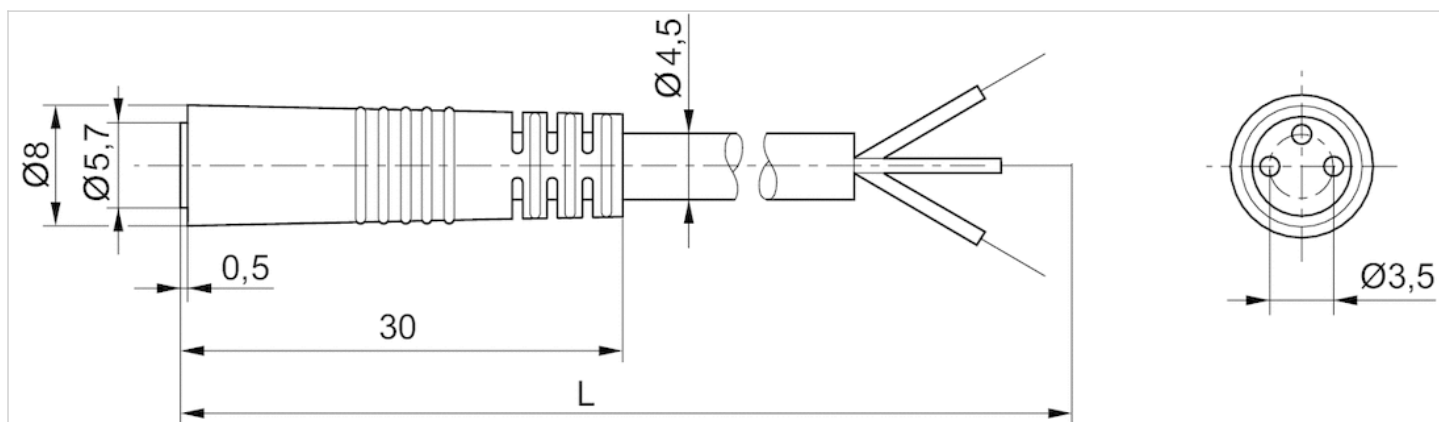
The specified protection class is only valid in assembled and tested state.

## Technical information

Material	
Cable sheath	Polyvinyl chloride

## Dimensions

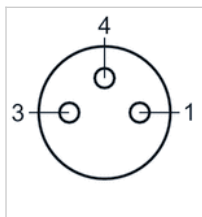
### Dimensions



L = length

## Pin assignments

### Pin assignment, socket



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