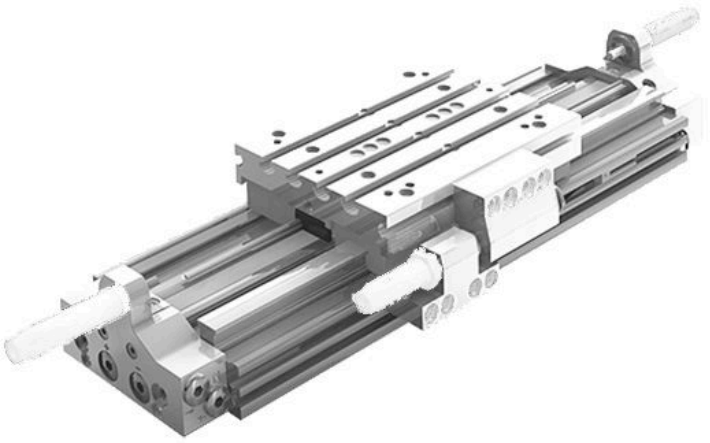
Series CKP



AVENTICS™

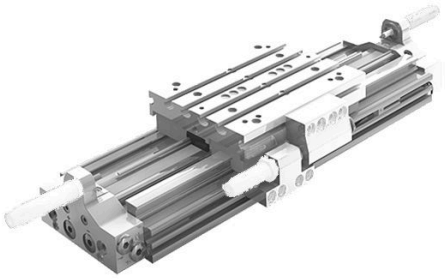
AVENTICS Series CKP Rodless cylinders

EMERSON™

Series CKP

The AVENTICS Series CKP cylinders provide sturdy, ultra-precise guiding with excellent repeatability and are ideal for applications requiring the movement of heavy loads in space-critical machine environments. The AVENTICS Series CKP cylinders provide sturdy, ultra-precise guiding with excellent repeatability and are ideal for applications requiring the movement of heavy loads in space-critical machine environments.

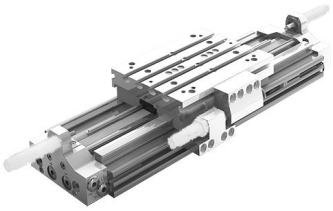
- Optimal stroke length in a compact size
- High load capacity with 2 linear guides clearance free
- One-piece profile solution
- Easy-2-Combine Interface
- Stroke adjustment flexibility

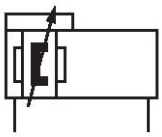


Product overview

Rodless cylinders, Series CKP

Guide: ball rail guide
Cushioning: Pneumatically
Functional principle: Double-acting
: with magnetic piston
Ambient temperature min./max.: -10 °C ... 60 °C
Medium temperature min./max.: -10 °C ... 60 °C
Working pressure min./max.: 3 bar ... 8 bar

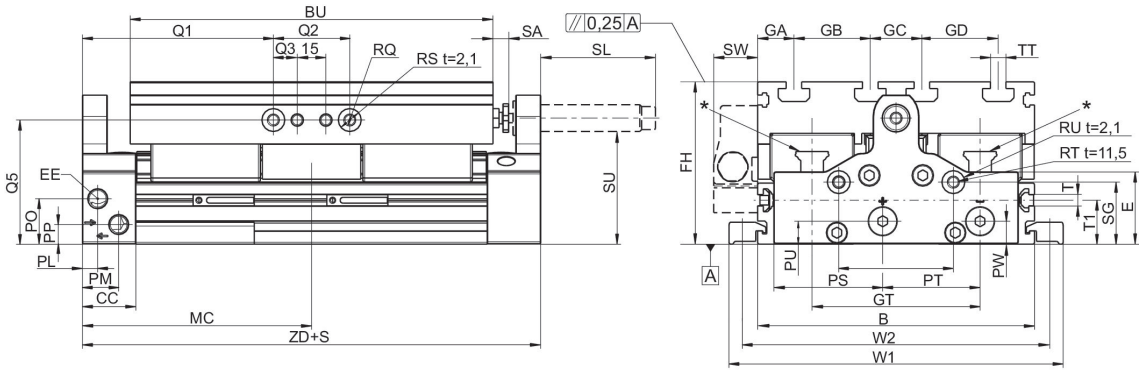


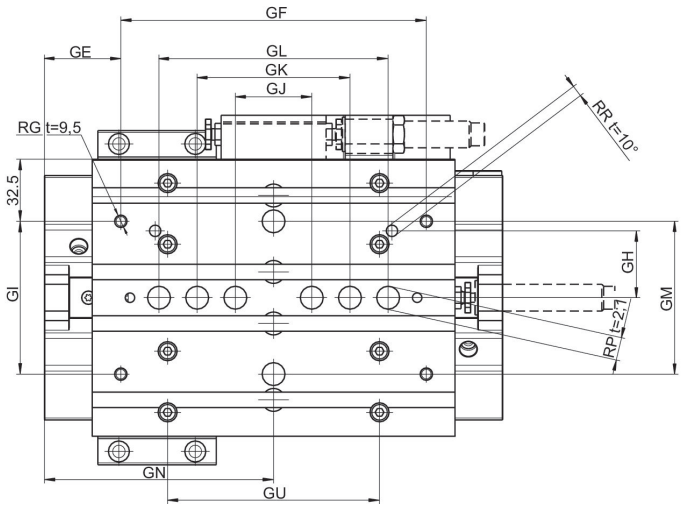


Piston Ø	16 mm	25 mm	32 mm
Ports	M7	G 1/8	G 1/8
Stroke 100	R480163938	R480163948	R480163958
200	R480163939	R480163949	R480163959
300	R480163940	R480163950	R480163960
400	R480163941	R480163951	R480163961
500	R480163942	R480163952	R480163962
600	R480163943	R480163953	R480163963
700	R480163944	R480163954	R480163964
800	R480163945	R480163955	R480163965
900	R480163946	R480163956	R480163966
1000	R480163947	R480163957	R480163967

Piston Ø	16 mm	25 mm	32 mm
Piston force	127 N	309 N	507 N
Cushion-ing energy	1.5 J	4 J	7 J
Cushioning length	20 mm	20 mm	20 mm

Dimensions





t = depth
* CKP 16: 2x Lube ports on each runner block, CKP 25 / 30: Lube nipple of funnel type with thread connection M3

Piston Ø	B	Ø RW t=depth of thread	RX t=depth of thread	GX	E	BU	CC	EE	FH
16	90	9 H7 t=2,1	M4 t=7,5	38	27.3	125	28	M7	56
25	110	9 H7 t=2,1	M5 t=9	46	31.4	155	28	G 1/8	66
32	145	12 H7 t=2,1	M6 t=13	62	37.8	190	28	G 1/8	85

Piston Ø	GA	GB	GC	GD	GN	GE	GF	GH	GI
16	15	20	20	20	93.5	38.5	110	20	40
25	25	20	20	20	107.5	47.5	120	42	80
32	19	40	27	40	120	40	160	35	80

Piston Ø	GJ	GK	GL	GM	GT	GU	MC	PL	PM
16	40	60	80	–	57	80	93.5	8	21
25	40	60	80	–	66	106	107.5	8	20
32	40	80	120	80	88	111	120	8	19

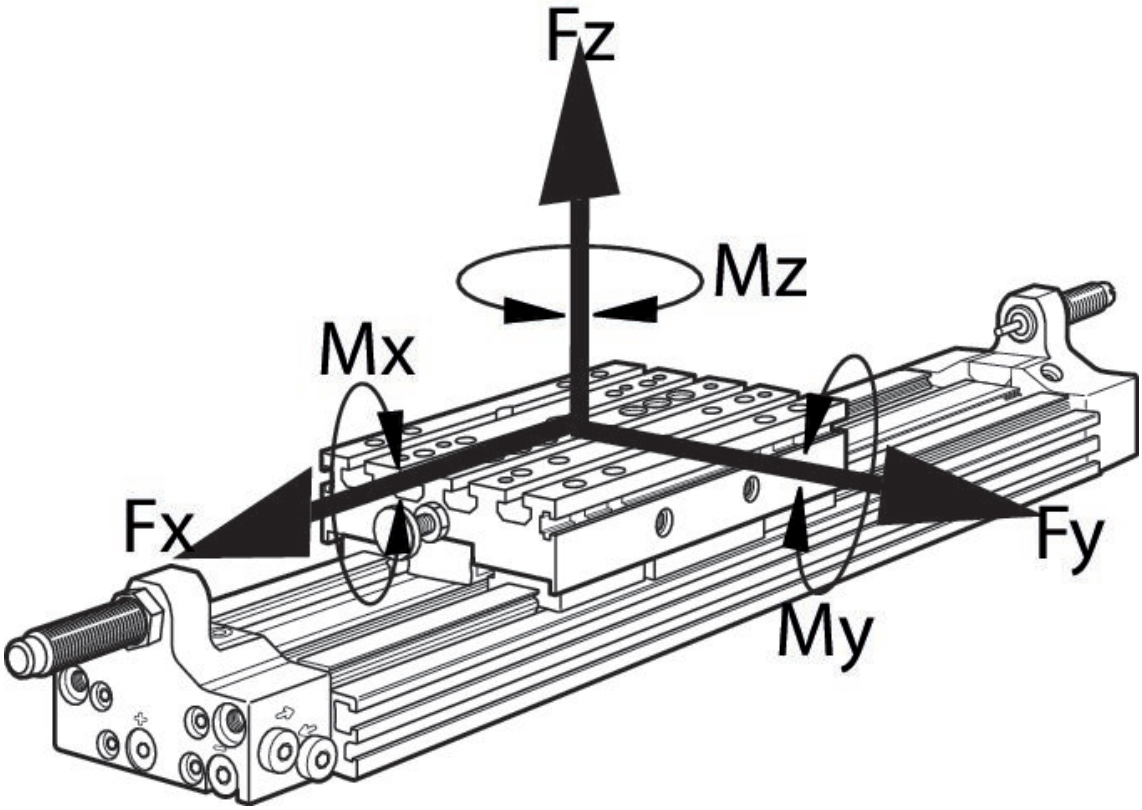
Piston Ø	PO	PP	PS	PT	PU	PW	Q1	Q2	Q3
16	12.8	6.8	33	29.8	6.8	6	73.5	40	–
25	22	10.5	37.5	24	10.5	10.5	87.5	40	12.5
32	23.8	10.3	57	51	12	12	100	40	12.5

Piston Ø	RG	Ø RP	RQ t=depth of thread	Ø RR	Ø RS	RT	Ø RU	SG	SL
16	M5	9 F7	M5 t=10,5	4 F7	9 F7	M6	12 F7	20.3	43
25	M5	9 F7	M6 t=14,5	5 F7	12 F7	M6	12 F7	14	60
32	M6	12 F7	M6 t=14,5	6 F7	12 F7	M6	12 F7	32.5	60

Piston Ø	SU	SW	T	TT	W1	W2	T1	ZD	SA
16	37	20	M4	N6	112	102	16	187	0–10
25	43	23	N6	N6	140	126	20	215	0–10
32	59	23	N6	N8	175	161	23	240	0–10

Piston Ø	Moving mass kg
16	0.64
25	1.11
32	2.62

Permissible forces Fx, Fy, Fz and torques Mx, My, Mz



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.

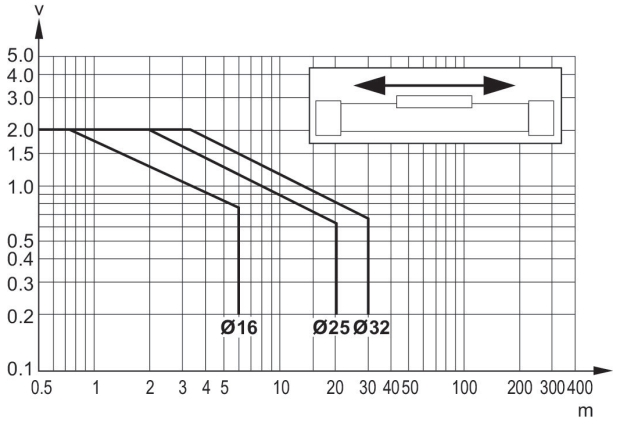
Permissible forces Fx, Fy, Fz and torques Mx, My, Mz

$$\frac{Mx}{Mx_{max.}} + \frac{My}{My_{max.}} + \frac{Mz}{Mz_{max.}} \leq 1$$

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.

Horizontally mounted

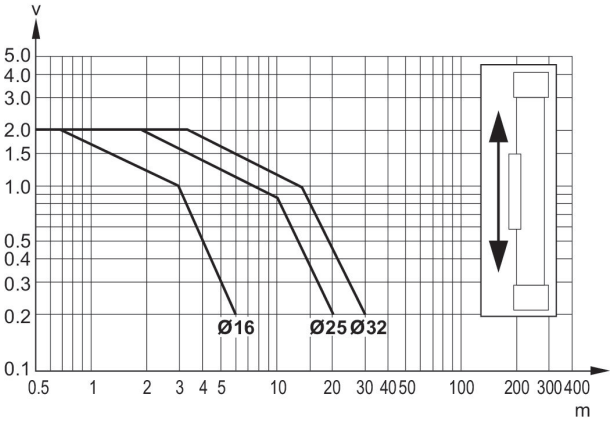
with pneumatic cushioning



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

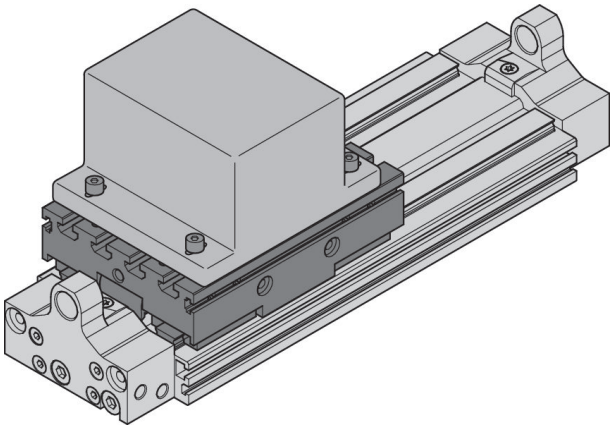
Vertically mounted

with pneumatic cushioning

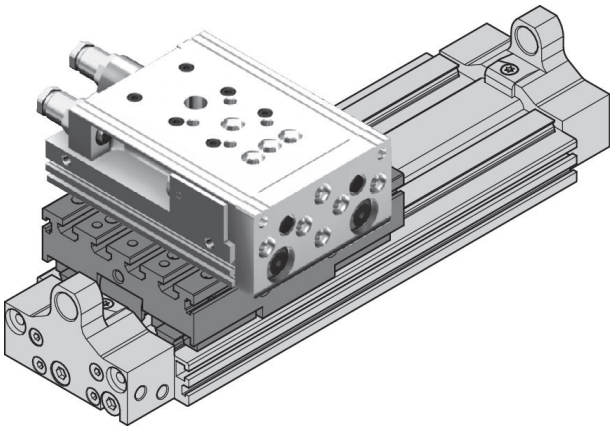


v_t = Piston velocity [m/s] m = Cushionable mass [kg]

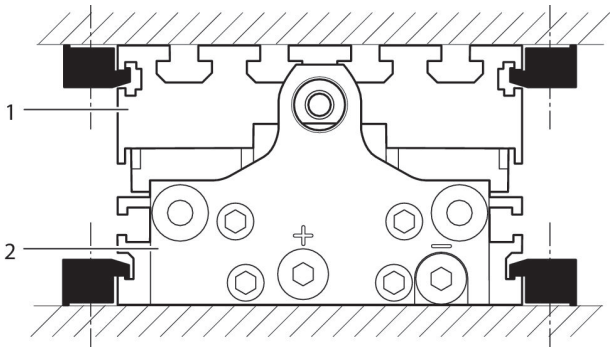
fastening a customer attachment onto the CKP with T-groove nuts.



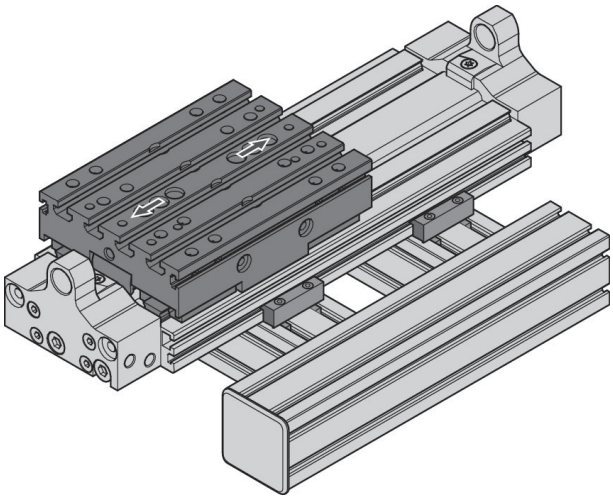
fastening of automation system Easy2Combine to CKP using center rings and T-groove nuts (example: mini slide MSC)



fastening of CKP to customer-built mounting base via clamping fixtures

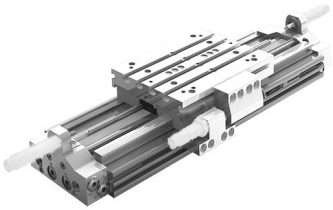


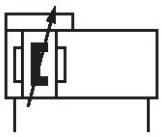
fastening of CKP on BME (Basic mechanical elements) profile construction via connection plates and clamping fixtures



Rodless cylinders, Series CKP-CL

Guide: ball rail guide
Cushioning: Pneumatically
Functional principle: Double-acting
: with magnetic piston
Ambient temperature min./max.: -10 °C ... 60 °C
Medium temperature min./max.: -10 °C ... 60 °C
Working pressure min./max.: 3 bar ... 8 bar

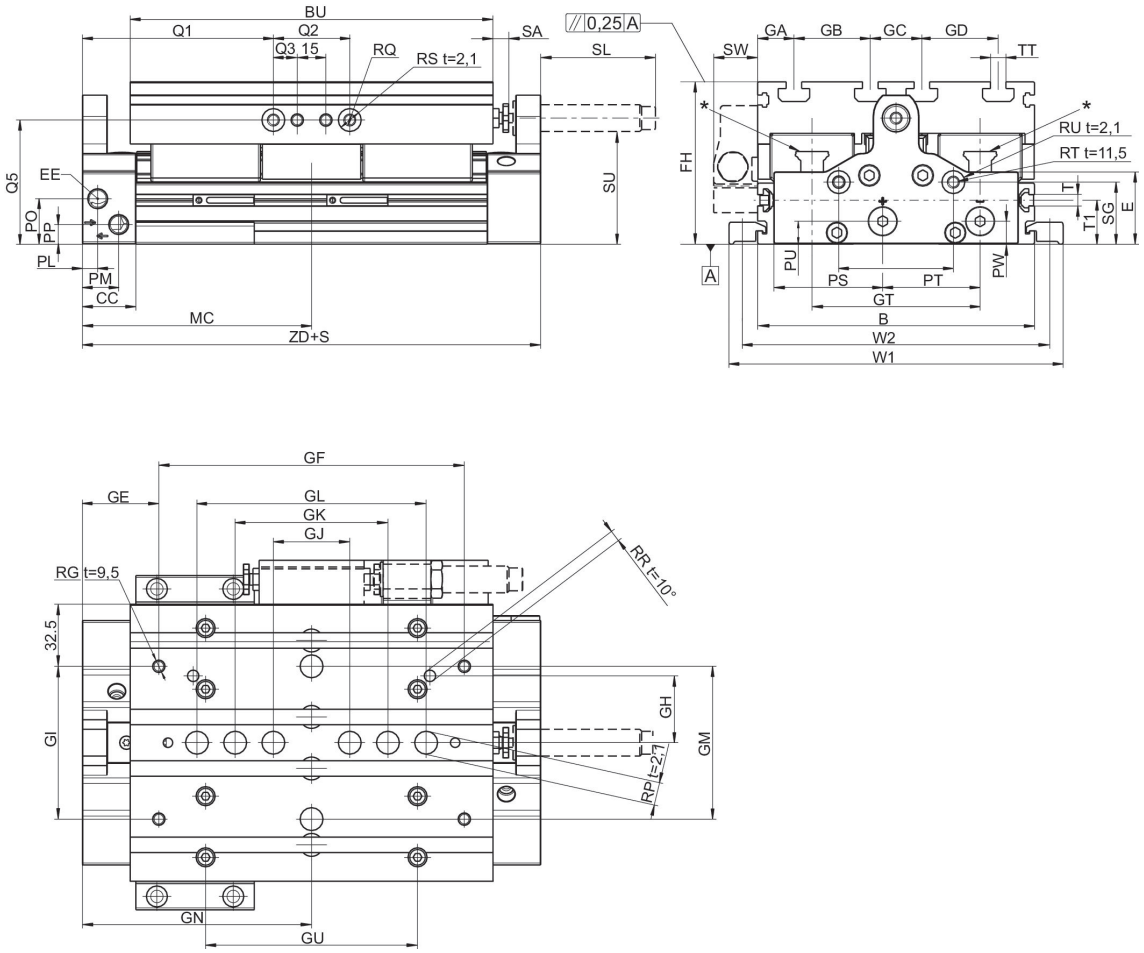




Piston Ø	16 mm	25 mm	32 mm
Ports	M7	G 1/8	G 1/8
Stroke 200	R480163968	R480163978	R480163988
320	R480163969	R480163979	R480163989
400	R480163970	R480163980	R480163990
520	R480163971	R480163981	R480163991
600	R480163972	R480163982	R480163992
800	R480163973	R480163983	R480163993
1000	R480163974	R480163984	R480163994
1240	R480163975	R480163985	R480163995

Piston Ø	16 mm	25 mm	32 mm
Piston force	127 N	309 N	507 N
Cushioning energy	1.5 J	4 J	7 J
Cushioning length	20 mm	20 mm	20 mm

Dimensions



t = depth
* CKP 16: 2x Lube ports on each runner block, CKP 25 / 30: Lube nipple of funnel type with thread connection M3

Piston Ø	B	Ø RW t=depth of thread	RX t=depth of thread	GX	E	BU	CC	EE	FH
16	90	9 H7 t=2,1	M4 t=7,5	38	27.3	125	28	M7	56
25	110	9 H7 t=2,1	M5 t=9	46	31.4	155	28	G 1/8	66
32	145	12 H7 t=2,1	M6 t=13	62	37.8	190	28	G 1/8	85

Piston Ø	GA	GB	GC	GD	GN	GE	GF	GH	GI
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25	25	20	20	20	107.5	47.5	120	42	80
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Piston Ø	GJ	GK	GL	GM	GT	GU	MC	PL	PM
16	40	60	80	–	57	80	93.5	8	21
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Piston Ø	PO	PP	PS	PT	PU	PW	Q1	Q2	Q3
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Piston Ø	RG	Ø RP	RQ t=depth of thread	Ø RR	Ø RS	RT	Ø RU	SG	SL
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25	M5	9 F7	M6 t=14,5	5 F7	12 F7	M6	12 F7	14	60
32	M6	12 F7	M6 t=14,5	6 F7	12 F7	M6	12 F7	32.5	60

Piston Ø	SU	SW	T	TT	W1	W2	T1	ZD	SA
16	37	20	M4	N6	112	102	16	187	0–10
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32	59	23	N6	N8	175	161	23	240	0–10

Piston Ø	Moving mass kg
16	0.64
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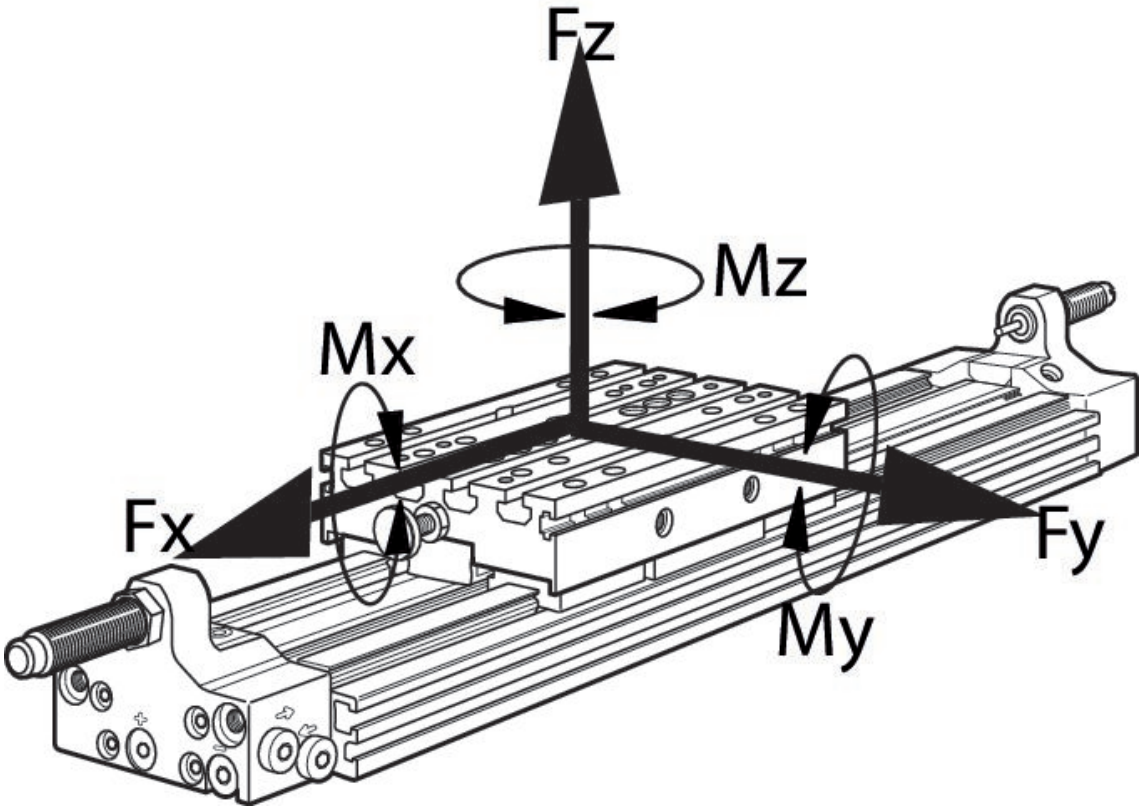
32	2.62

Permissible forces Fx, Fy, Fz and torques Mx, My, Mz



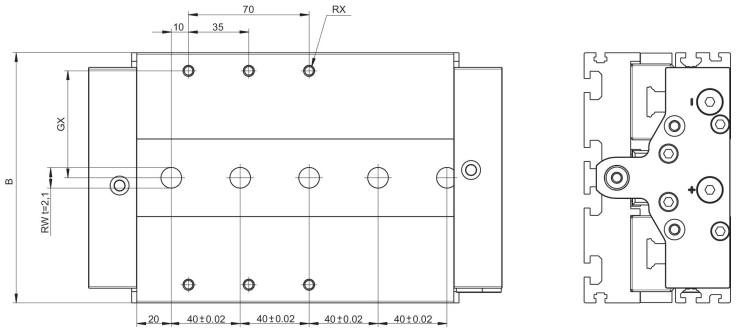
With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders.

Permissible forces Fx, Fy, Fz and torques Mx, My, Mz

$$\frac{Mx}{Mx_{max.}} + \frac{My}{My_{max.}} + \frac{Mz}{Mz_{max.}} \leq 1$$

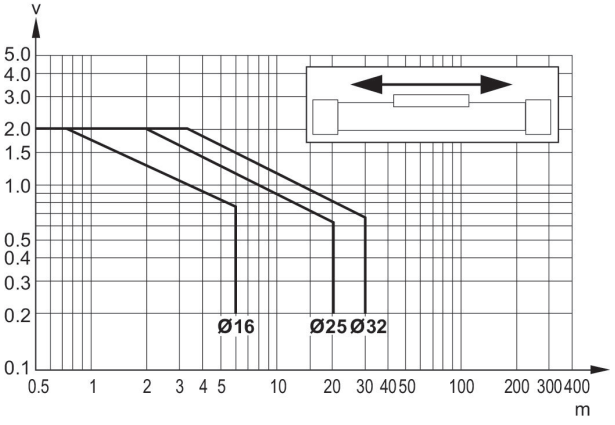
With simultaneously moments on the cylinder this equation must be used in addition to the maximum moments check. In the cushioning phase of the movement additional forces occur and must be considered. Please use our calculation tool for rodless cylinders.

Additional Easy2Combine interface on CKP-CL



Horizontally mounted

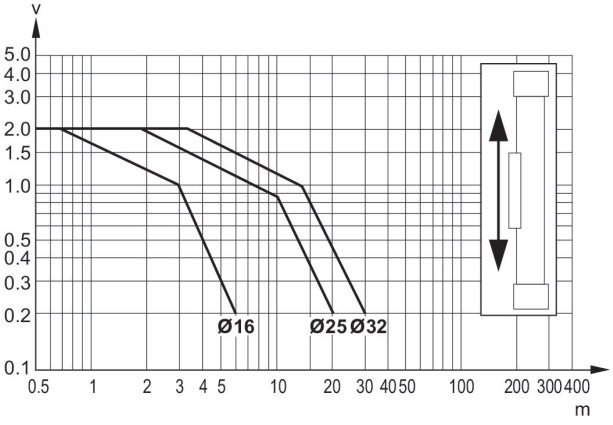
with pneumatic cushioning



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

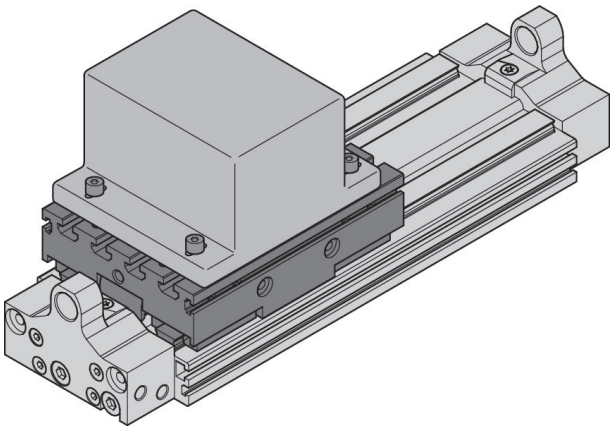
Vertically mounted

with pneumatic cushioning

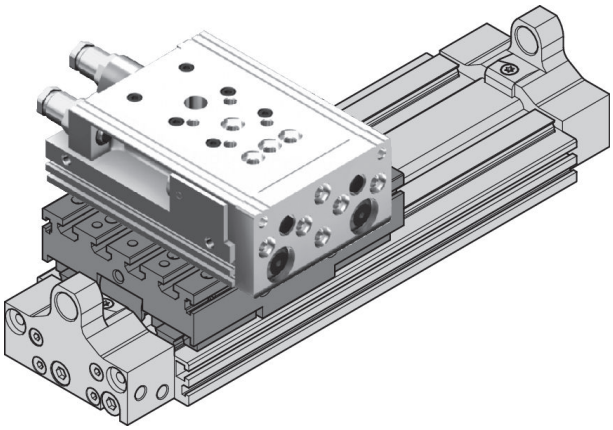


v_t = Piston velocity [m/s] m = Cushionable mass [kg]

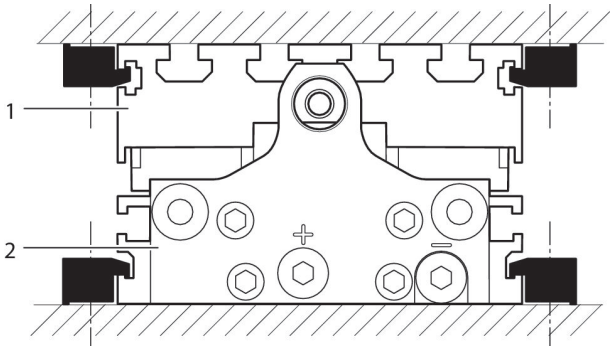
fastening a customer attachment onto the CKP with T-groove nuts.



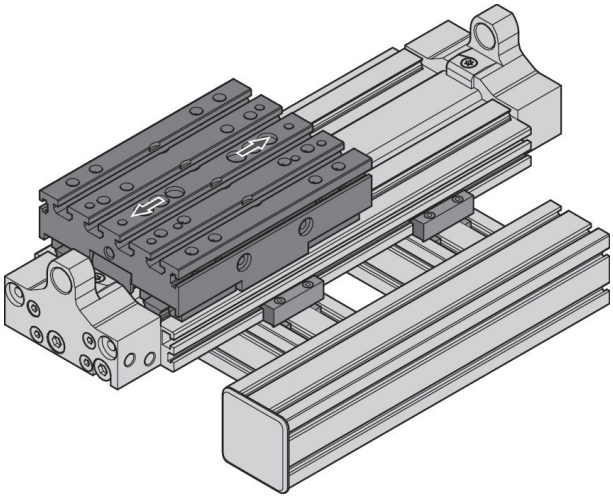
fastening of automation system Easy2Combine to CKP using center rings and T-groove nuts (example: mini slide MSC)



fastening of CKP to customer-built mounting base via clamping fixtures



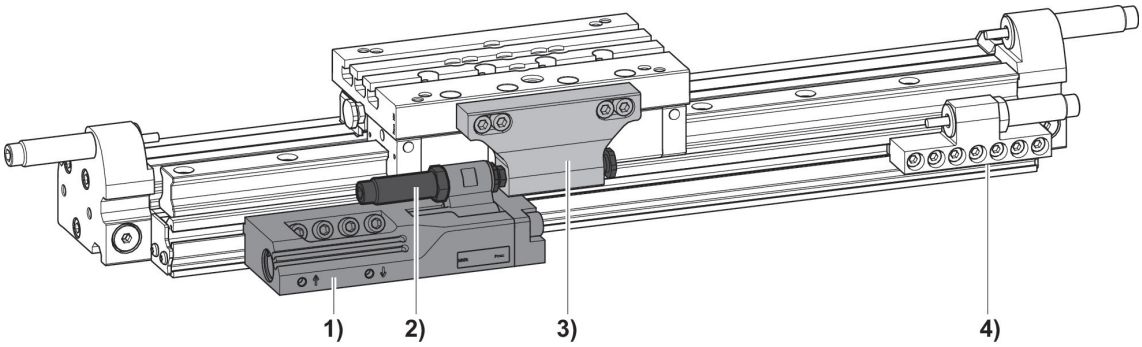
fastening of CKP on BME (Basic mechanical elements) profile construction via connection plates and clamping fixtures



Kit for intermediate position

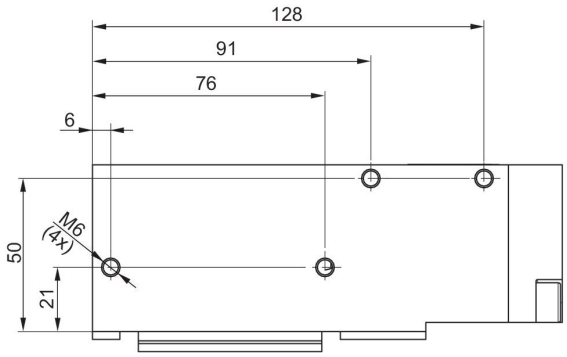
Piston	Functional principle	Part No.
with magnetic piston	Double-acting	R412024700

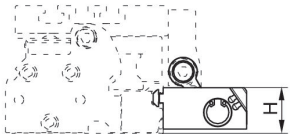
Overview drawing

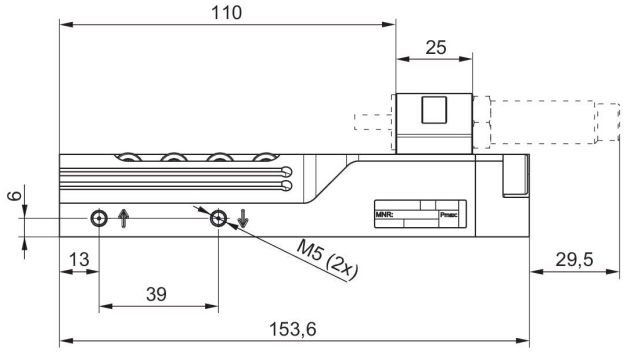


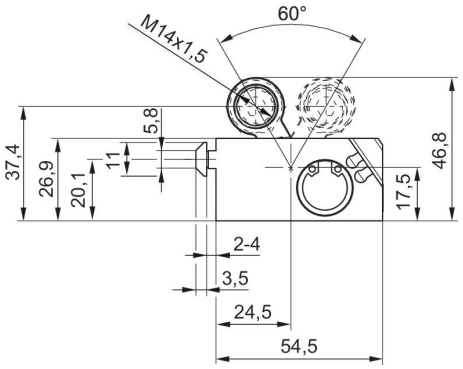
1) Intermediate stop
2) Shock absorber kit
3) Stop
4) Holder for the shock absorber: see stroke length adjustment kit for details

Dimensions

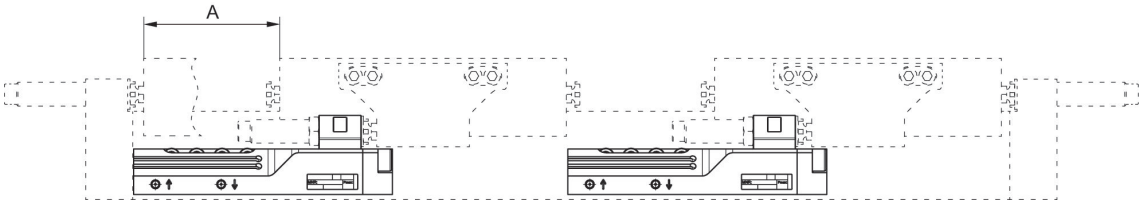






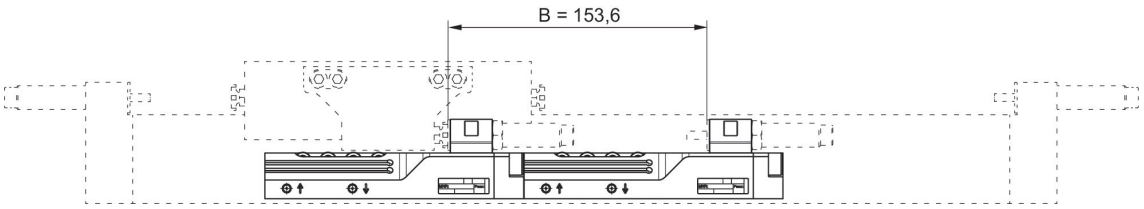


Direction of travel: left
Stopper position A restricted



Direction of travel: right
No restriction of the stopper position

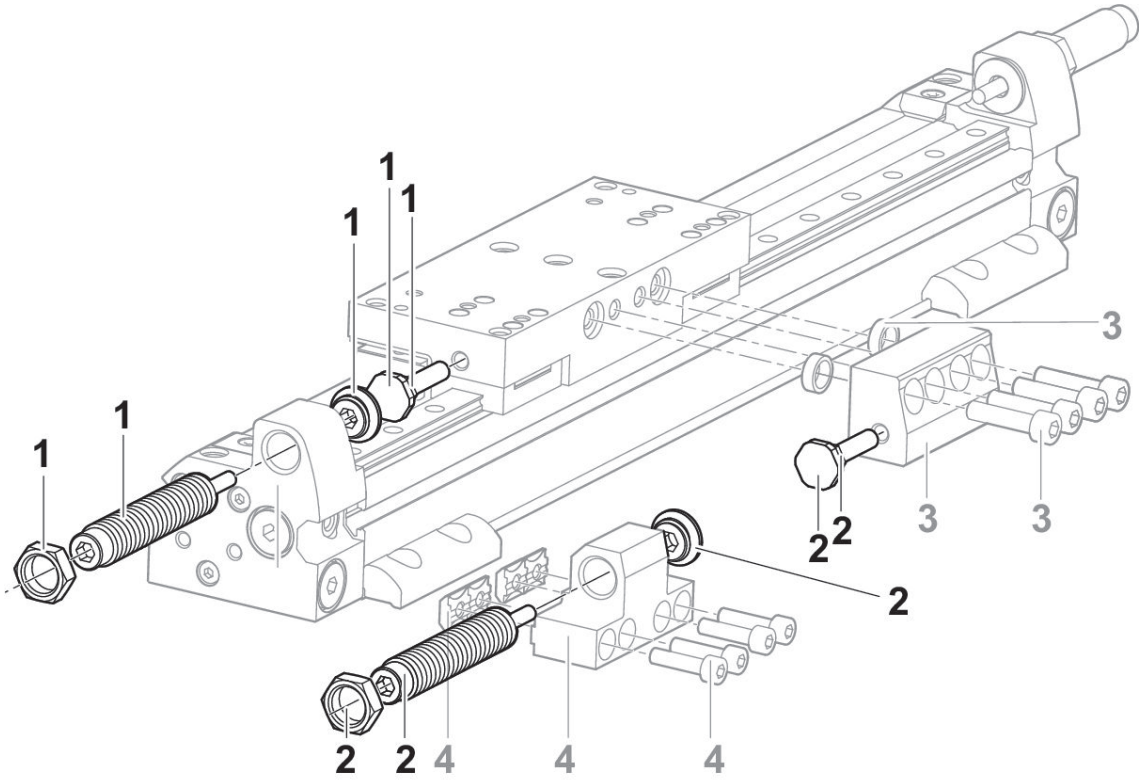
Multiple installation
Minimum stopper distance B



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

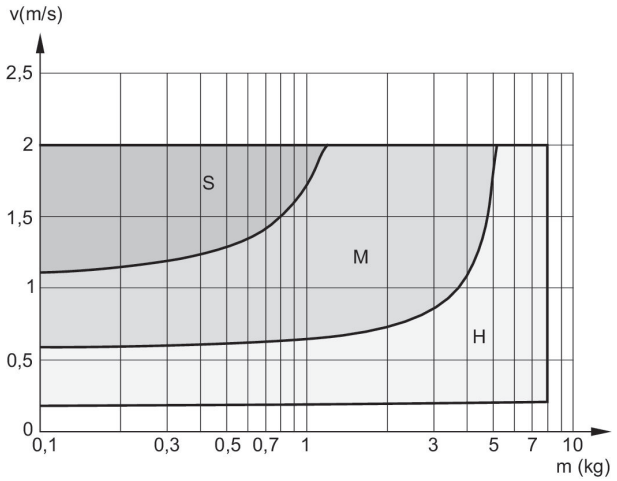
Shock absorber kit for stroke length adjustment

Moving mass	Diameter	Part No.
< 4 kg	Ø 16 mm	R402002804
> 4 kg	Ø 16 mm	R402003618
< 8 kg	Ø 25 mm, Ø 32 mm, Ø 40	R402002805
> 8 kg	Ø 25 mm, Ø 32 mm, Ø 40	R402003619



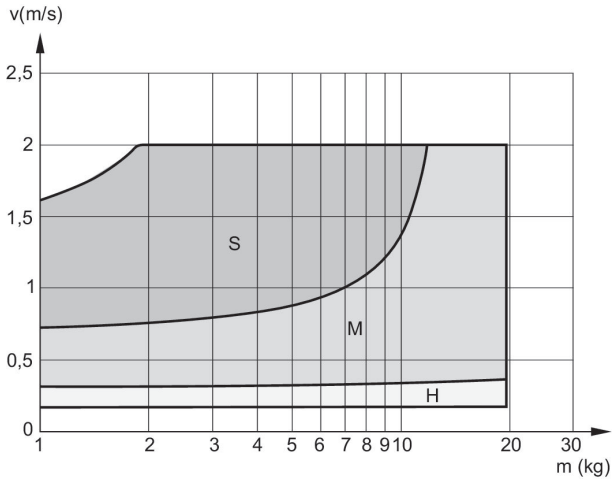
1) Shock absorber kit
2) Shock absorber kit
3) Stop
4) Holder for shock absorber

Cushioning diagram Ø 16 mm



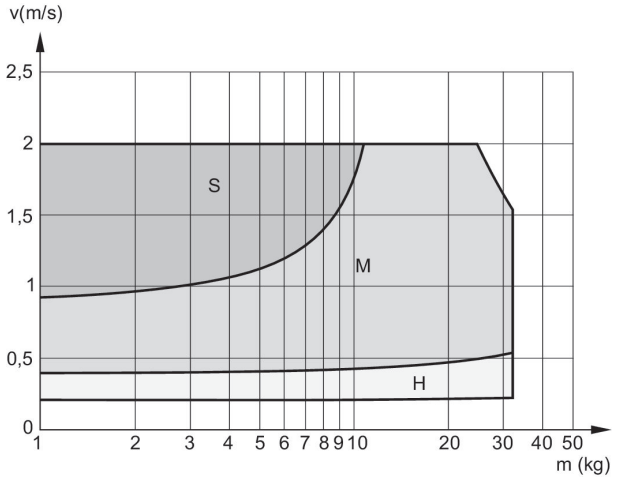
V = velocity [m/s]
M = moving mass
S = soft
M = medium
H = hard

Cushioning diagram Ø 25 mm



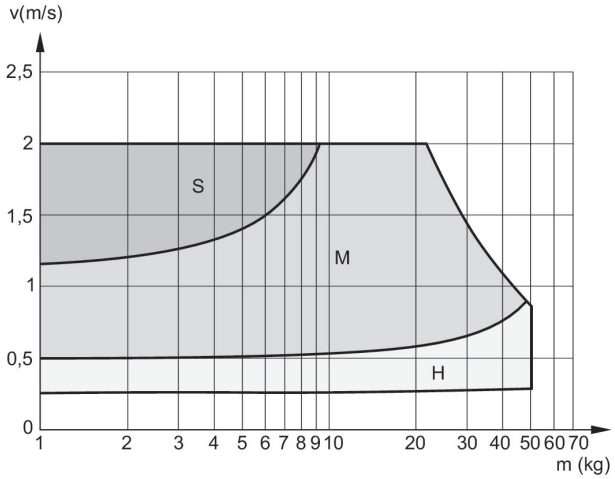
V = velocity [m/s]
M = moving mass
S = soft
M = medium
H = hard

Cushioning diagram Ø 32 mm



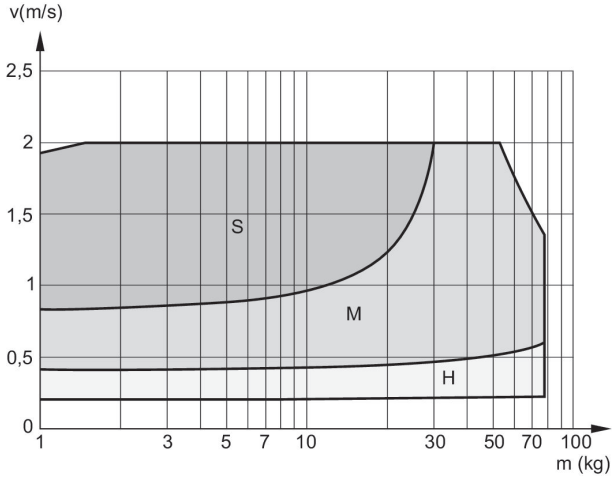
V = velocity [m/s]
M = moving mass
S = soft
M = medium
H = hard

Cushioning diagram Ø 40 mm



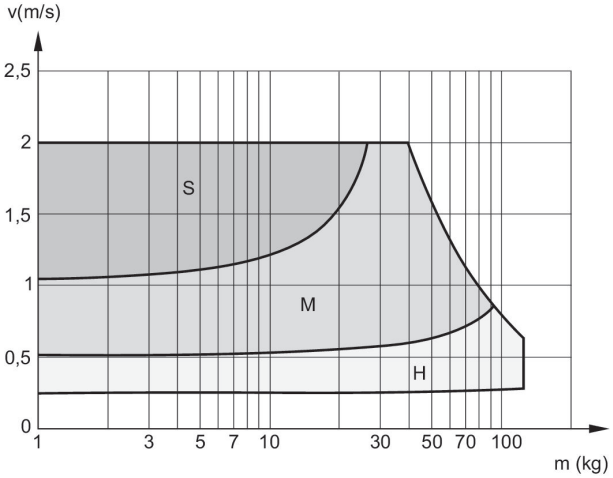
V = velocity [m/s]
M = moving mass
S = soft
M = medium
H = hard

Cushioning diagram Ø 50 mm



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

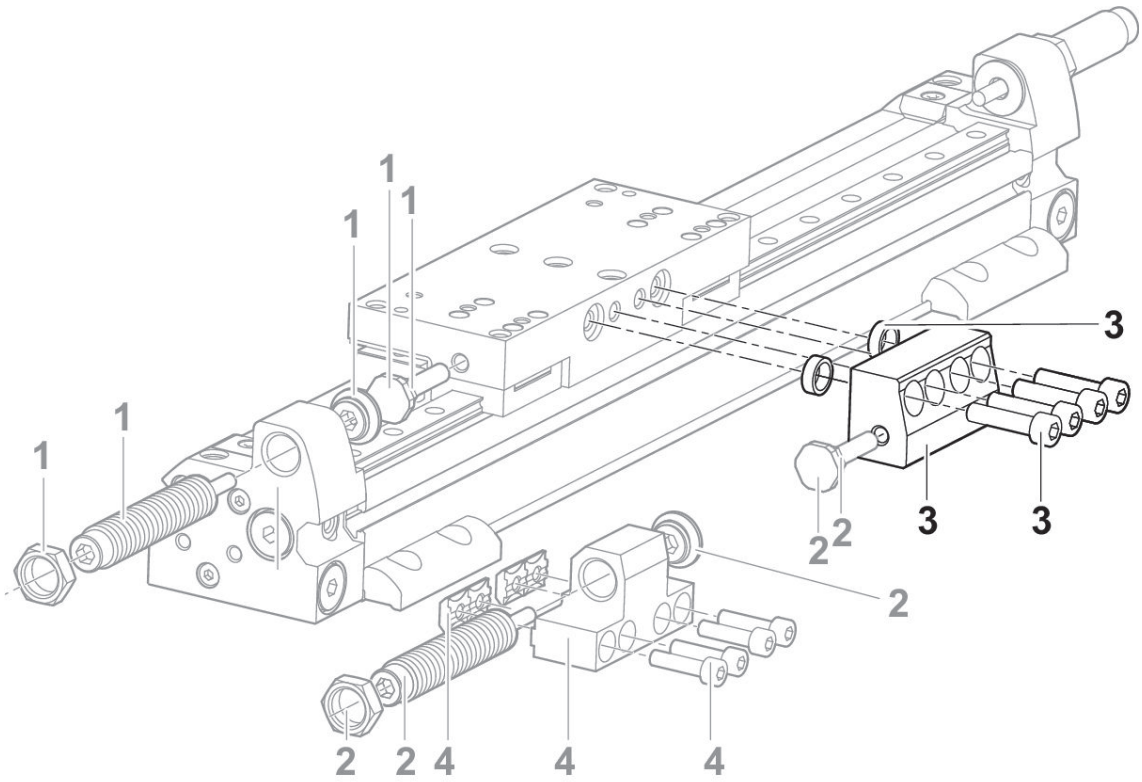
Cushioning diagram Ø 63 mm



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

Stop for stroke length adjustment

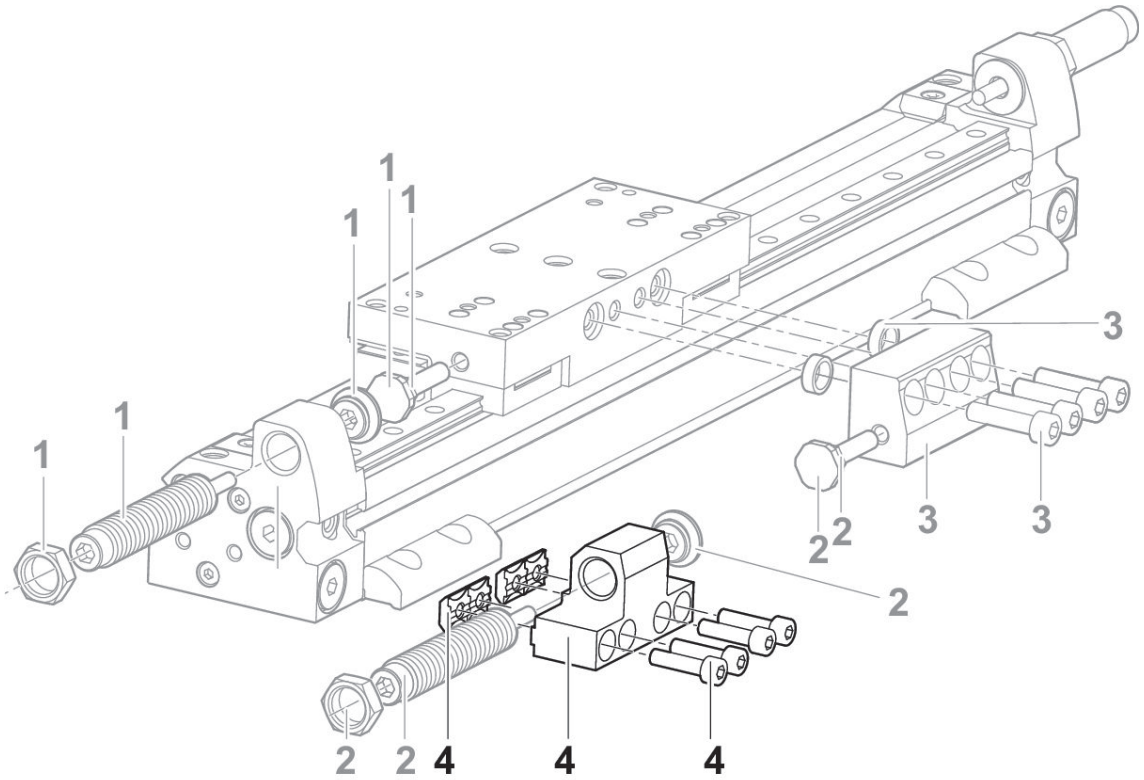
Diameter	Part No.
Ø 16 mm	R402004156
Ø 25 mm	R402004157
Ø 32 mm	R402004158



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

Holder for the shock absorber for stroke length adjustment

Diameter	Part No.
Ø 16 mm	R402002702
Ø 25 mm	R402002703
Ø 32 mm, Ø 40 mm	R402002704

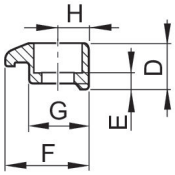


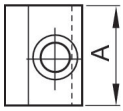
1) Shock absorber kit
2) Shock absorber kit
3) Stop
4) Holder for shock absorber

Clamping fixtures for rodless cylinder Series CKP

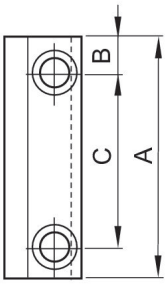
Material	Part No.
Aluminum	R037531000
Aluminum	R037531032
Aluminum	R037531033
Aluminum	R037531026
Aluminum	R037541026
Aluminum	R037551000
Aluminum	R037551033
Aluminum	R037551034

Clamping fixtures

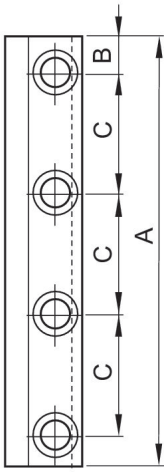




Typ 1



Typ 2



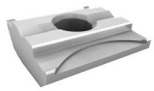
Typ 3

Part No.	1)	Typ	A	B	C	D	E	F	G
R037531000	M4	1	25	–	–	9	4.6	14.5	10.5
R037531002	M4	3	87	6	25	9	4.6	14.5	10.5
R037531003	M4	3	107	8.5	30	9	4.6	14.5	10.5
R037531032	M4	2	72	11	50	9	4.6	14.5	10.5
R037531033	M4	2	62	11	40	9	4.6	14.5	10.5
R037531026	M4	3	77	8.5	20	9	4.6	14.5	10.5
R037541002	M5	3	107	8.5	30	11.5	4.8	19.3	14
R037541026	M5	3	77	8.5	20	11.5	4.8	19.3	14
R037551000	M6	1	25	–	–	11.5	5.3	19.3	14
R037551002	M6	3	142	11	40	11.5	5.3	19.3	14
R037551033	M6	2	72	11	50	11.5	5.3	19.3	14
R037551034	M6	2	62	11	40	11.5	5.3	19.3	14
R037551023	M6	2	47	8.5	30	11.5	5.3	19.3	14

Part No.	H
R037531000	5
R037531002	5
R037531003	5
R037531032	5
R037531033	5
R037531026	5
R037541002	7
R037541026	7
R037551000	7
R037551002	7
R037551033	7
R037551034	7
R037551023	7

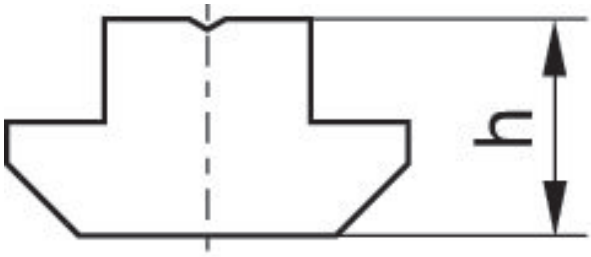
1) countersink for screw

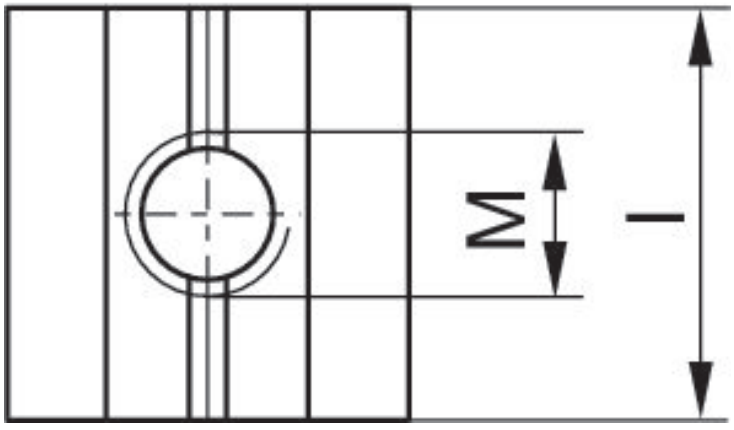
T-groove nut



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

Dimensions



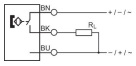
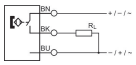
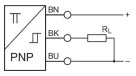
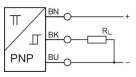
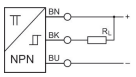
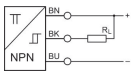


Part No.	Type	M	h	l
3842523142	N6	M5	4	20
3842514931	N8	M8	6	16

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

Sensors, Series ST4, open cable ends, Certificate UL (Underwriters Laboratories)

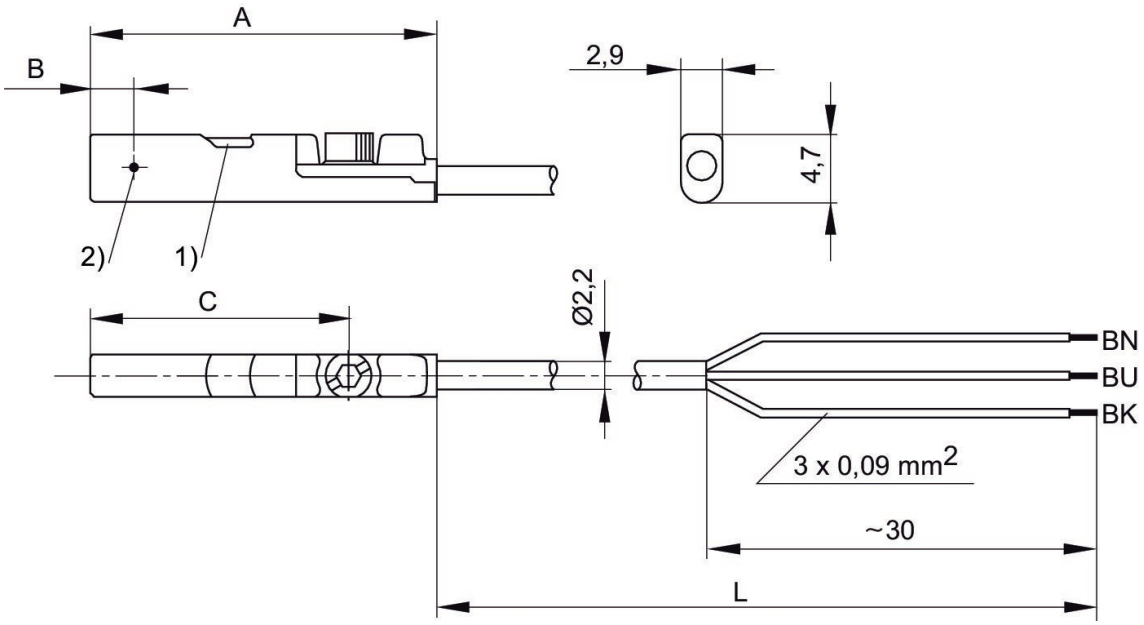
: 4 mm C-slot
: with cable
Direct mounting for series: PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI
Indirect mounting for series: MNI, CSL-RD, ICM
Certificates: UL (Underwriters Laboratories), cULus, RoHS
Ambient temperature min./max.: -30 °C ... 80 °C

	Direct mounting for series	Switch descr.	Cable length L [m]	Max. DC switching current [A]	Max. AC switching current [A]	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Part No.
	PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI	Reed	3	0.13	0.13	5	30	R412019488
	PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI	Reed	5	0.13	0.13	5	30	R412019489
	PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI	electronic PNP	3	0.1		10	30	R412019680
	PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI	electronic PNP	5	0.1		10	30	R412019681
	PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI	NPN	3	0.1		10	30	R412019684
	PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI	NPN	5	0.1		10	30	R412019685

Version	Part No.
Protected against polarity reversal	R412019488
Protected against polarity reversal	R412019489
short circuit resistant, Protected against	R412019680

Version	Part No.
polarity reversal	
short circuit resistant, Protected against polarity reversal	R412019681
short circuit resistant, Protected against polarity reversal	R412019684
short circuit resistant, Protected against polarity reversal	R412019685

Dimensions

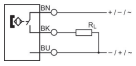
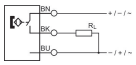
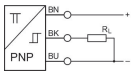
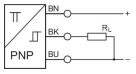


1) LED 2) Switching point
L = cable length BN = brown, BK = black, BU = blue

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

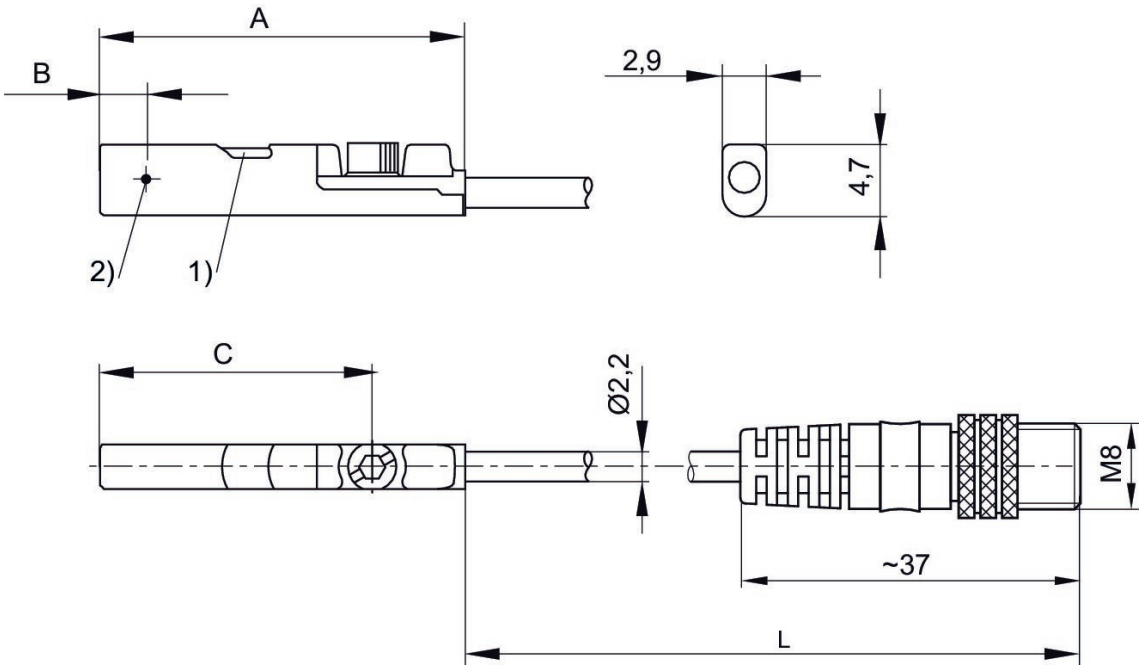
Sensors, Series ST4, plug M8, with knurled screw

: 4 mm C-slot
: with cable
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 °C ... 80 °C

	Direct mounting for series	Switch descr.	Cable length L [m]	Max. DC switching current [A]	Max. AC switching current [A]	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Part No.
	PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI	Reed	0.3	0.13	0.13	5	30	R412019490
	PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI	Reed	0.5	0.13	0.13	5	30	R412019686
	PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI	electronic PNP	0.3	0.1		10	30	R412019493
	PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI	electronic PNP	0.5	0.1		10	30	R412019687

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

Dimensions

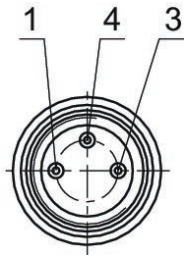


1) LED 2) Switching point
L = cable length

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

R412019490, R412019686, R412019493, R412019687

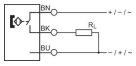
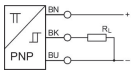
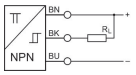
Pin assignment M8x1 (3-pin)



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

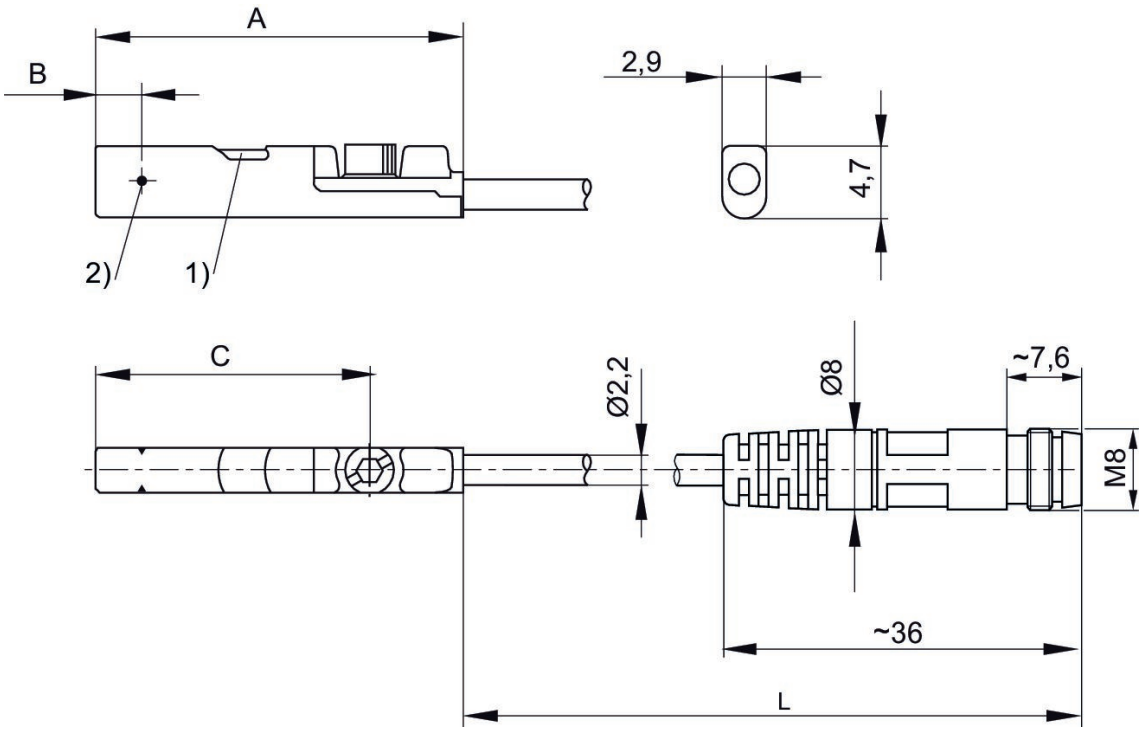
Sensors, Series ST4, plug M8

: 4 mm C-slot
: with cable
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 °C ... 80 °C

	Direct mounting for series	Switch descr.	Cable length L [m]	Max. DC switching current [A]	Max. AC switching current [A]	Min. operating voltage DC [V DC]	Max. operating voltage DC [V DC]	Part No.
	PRA, SSI, GSU, RTC, CKP, GSP, MSC, MSN, RCM, CVI	Reed	0.3	0.13	0.13	5	30	R412019682
	PRA, SSI, GSU, RTC, CKP, GSP, MSC, MSN, RCM, CVI	electronic PNP	0.3	0.1		10	30	R412019683
	PRA, SSI, GSU, RTC, CKP, GSP, MSC, MSN, RCM, CVI	NPN	0.3	0.1		10	30	R412019694

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

Dimensions

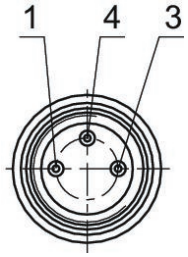


1) LED 2) Switching point
L = cable length

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

R412019682, R412019683, R412019694

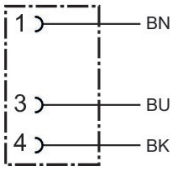
Pin assignment M8x1 (3-pin)



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

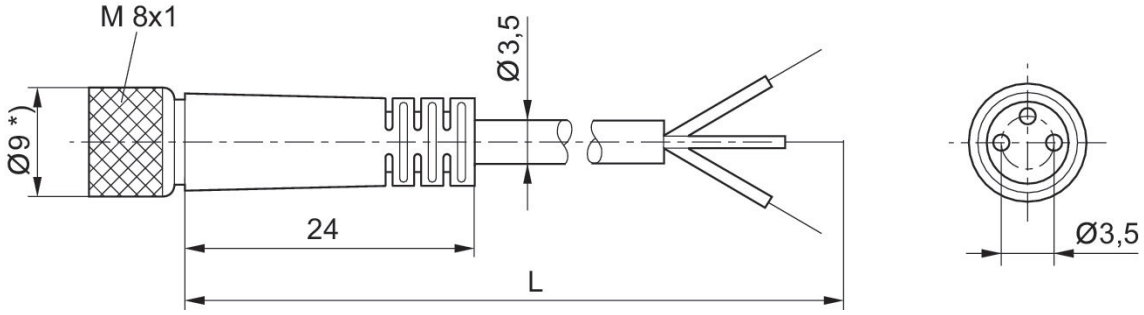
Round plug connector, Series CON-RD, open cable ends, straight

Electrical connection 1: Socket ... M8x1 ... 3-pin ... A-coded ... straight
Electrical connection 2: open cable ends ... 3-pin
Shielding: unshielded



Operational voltage	Electrical connection 1, type	Electrical connection 1, thread size	Electrical connection 1, number of poles	Electrical connection 1, coding	Electrical connection 2, type	Electrical connection 2, number of poles	Cable length [m]	Part No.
36 V DC / 30 V AC	Socket	M8x1	3-pin	A-coded	open cable ends	3-pin	2	8946201312
60 V DC / 110 V AC	Socket	M8x1	3-pin	A-coded	open cable ends	3-pin	15	8946201332

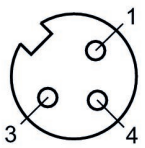
Dimensions



L = length
*) With 15 m cable length Ø12

8946201312, 8946201332

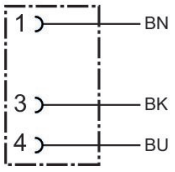
Pin assignment, socket



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

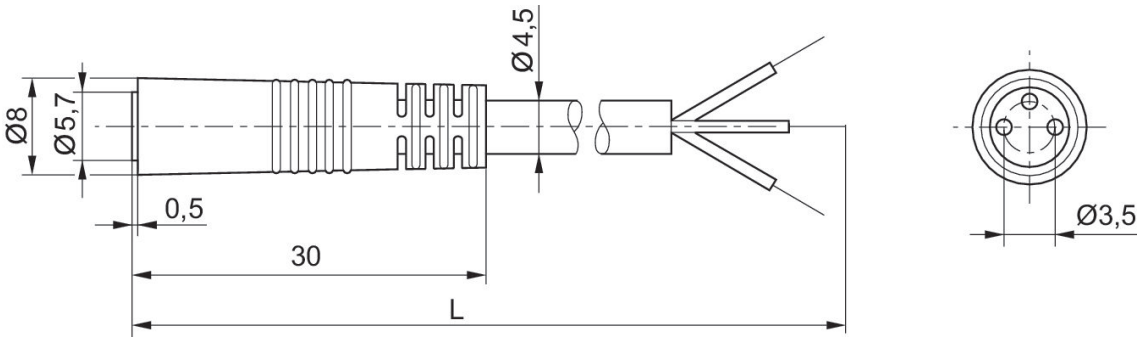
Round plug connector, Series CON-RD

Electrical connection 1: Socket ... Snap Ø8 ... 3-pin ... straight
Electrical connection 2: without wire end ferrule, tin-plated ... 3-pin



Operational voltage	Electrical connection 1, type	Electrical connection 1, thread size	Electrical connection 1, number of poles	Electrical connection 2, type	Electrical connection 2, number of poles	Cable length [m]	Part No.
48 V AC/DC	Socket	Snap Ø8	3-pin	open cable ends	3-pin	2.5	8946016112

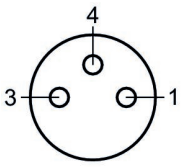
Dimensions



L = length

8946016112

Pin assignment, socket

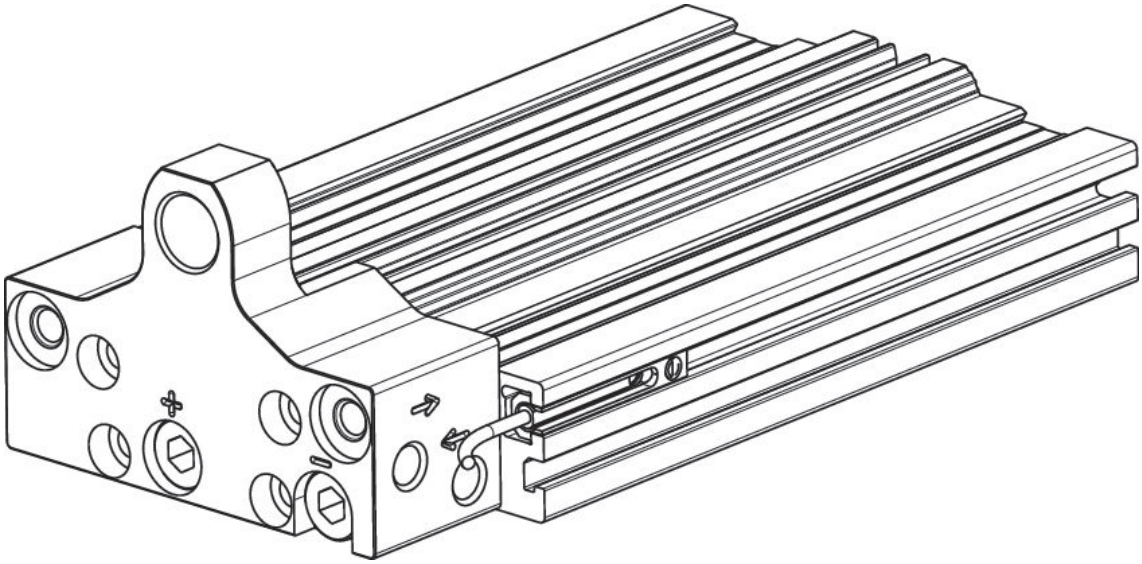


(1) BN=brown (2) BK=black (3) BU=blue

Sensor mounting, Series ST4

To mount on series: ST4
To mount on series: CKP

Min. cylinder Ø [mm]	Material	Part No.
16	Aluminum	R402004226
25	Aluminum	R402004227



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