

## Series CVI



AVENTICS™ Series CVI



# Cylinder valve units, Series CVI

- with PRA cylinder series
- Ø 32-125 mm
- double-acting
- retracted or extended
- with magnetic piston
- Cushioning pneumatically
- ATEX optional
- For valve series: CD07, CD12, TC08, TC15, 740



Standards	ISO 15552
Connector standard	ISO 6952
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m <sup>3</sup>
Pressure for determining piston forces	6.3 bar
Cylinder series	PRA
Cylinder series	Profile cylinder

## Technical data

Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm	125 mm
Retracting piston force	435 N	660 N	1035 N	1765 N	2855 N	4635 N	7220 N
Extracting piston force	505 N	790 N	1235 N	1960 N	3165 N	4945 N	7725 N
Cushioning length	11.5 mm	15 mm	17 mm	16.5 mm	19.5 mm	19.5 mm	22 mm
Weight 0 mm stroke	0.7 kg	0.89 kg	1.3 kg	1.68 kg	2.9 kg	4.06 kg	7.27 kg
+10 mm stroke	0.02 kg	0.03 kg	0.04 kg	0.05 kg	0.09 kg	0.1 kg	0.15 kg
Stroke max.	1600 mm	1900 mm	2100 mm	2500 mm	2800 mm	2800 mm	2750 mm

## Technical information

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

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

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

For technical data and valve materials, see the technical data for the cylinder valve unit and the configuration overview with a link to the valve catalog pages.

ATEX-certified cylinder valve units can be generated for series CD07 and 740 using the Internet configurator.

ATEX ID:

Only mechanical components: II 2G2D c IIB T4 IP65 T135 °C X

With electrical components: II 3G3D c IIB T4 IP65 T135 °C X

For ATEX-certified cylinders, the stated temperature range does not apply, but instead:  $-10^{\circ}\text{C} \leq T_a \leq 50^{\circ}\text{C}$

For the CD07 series with 5/3-directional valve, the temperature range is  $0^{\circ}\text{C} \leq T_a \leq 50^{\circ}\text{C}$ !

NOTICE:

For the part numbers 5727515302 and 5727565302 in the 740 series with 5/4-directional valve, the minimum working pressure of 3 bar must be observed!

\*Weight = weight of the assembly, consisting of valve, fitting, tubing and mountings. See above table for cylinder weight.

\*\*°C = ambient and medium temperature. With 5/3-directional valve: 0 ... [50 °C ]

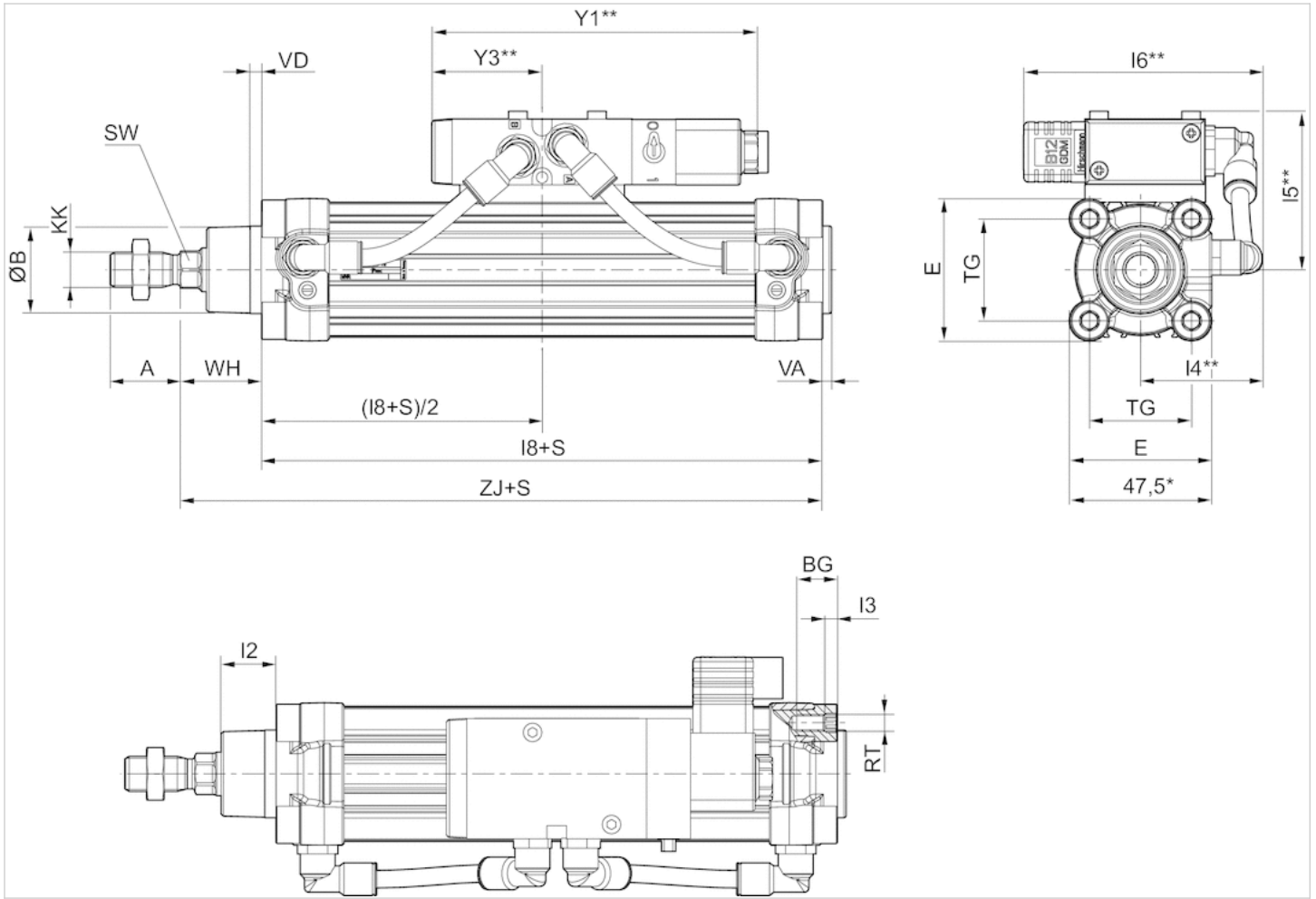
\*\*\* With 5/2-directional valve: min. working pressure = 1.5 bar or 2 bar , with 5/3-directional valve: min. working pressure = 3 bar

## Technical information

Material	
Cylinder tube	Aluminum, anodized
Front cover	Aluminum
End cover	Aluminum
Piston rod	Stainless steel
Nut for piston rod	Steel, galvanized
Seal	Polyurethane
Connector	Brass, nickel-plated
Plastic tubing	Polyamide
Mounting plate	Aluminum, 0
mounting screws	Steel, galvanized
Scraper	0, Polyurethane

## Dimensions

### Dimensions of cylinder/valve unit with single solenoid valve

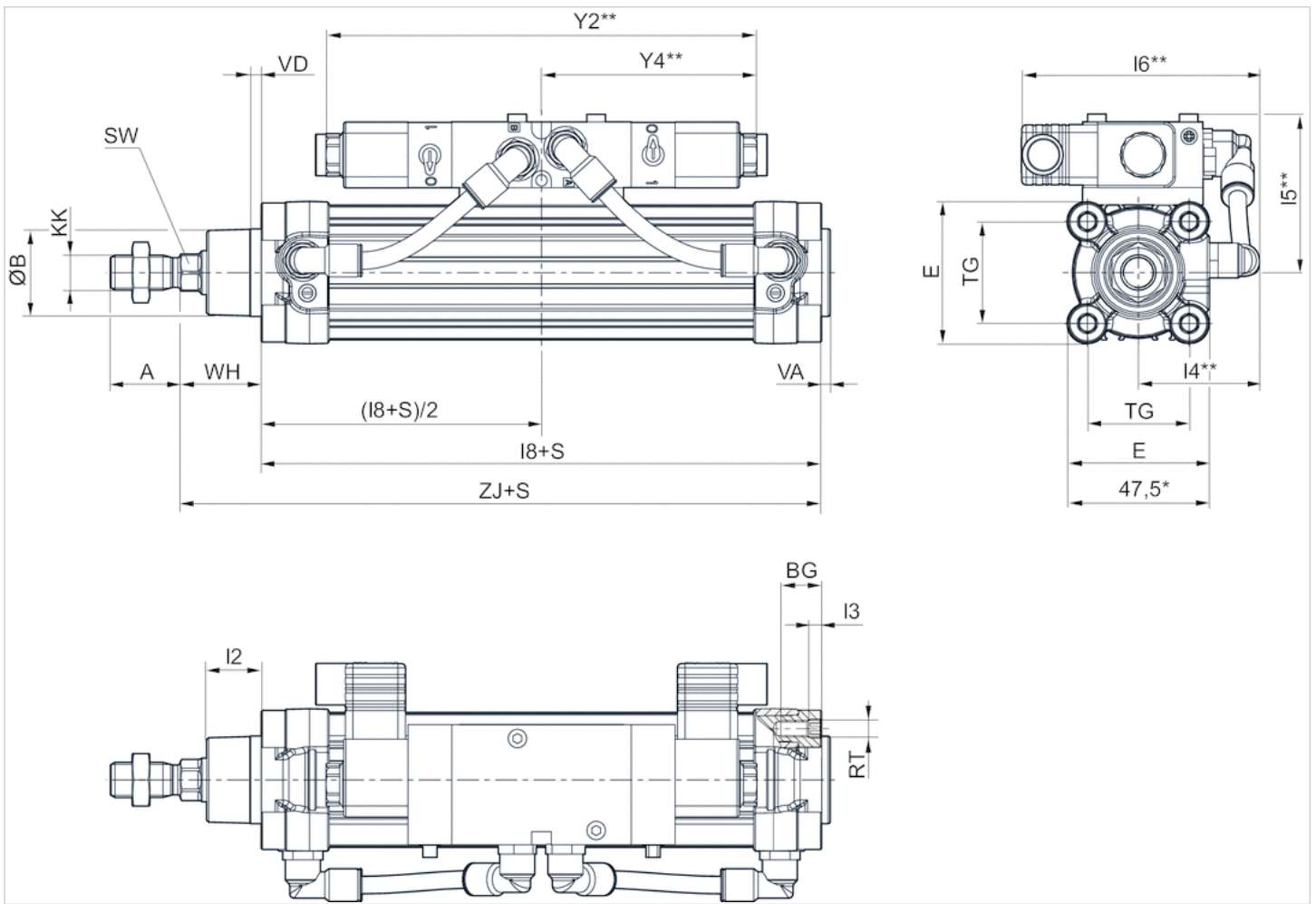


S=stroke

\* Only for  $\text{Ø}32$

\*\* See valve dimensions

Dimensions of cylinder/valve unit with double solenoid valve



S=stroke  
 \* Only for Ø32  
 \*\* See valve dimensions

Technical data for the cylinder valve unit

Valve series	740	740	TC08	CD07
Cylinders Ø [mm]	32 - 63	40 - 125	32 - 50	32 - 63
Tubing connection [mm]	Ø8x1	Ø10x1	Ø8x1	Ø8x1
Valve flow rate [l/min]	700	950	700 - 800	950 - 1200
Operating pressure [bar]	1,5 / 3 - 10***	1,5 / 3 - 10***	3 - 10	3 - 10
°C**	-15 - 50	-15 - 50	-10 - 50	-20 - 50**
Weight* [kg]	0,19 - 0,27	0,19 - 0,28	0,15 - 0,19	0,50 - 0,58

CD07	TC15	CD12	CD12
40 - 125	50 - 125	80	80 - 125
Ø10x1	Ø10x1	Ø10x1 Ø14x1,5	Ø10x1 Ø14x1,5
950 - 1200	1300 - 1500	3800 - 4100	3800 - 4100
3 - 10	3 - 10	2 / 3 - 10***	2 / 3 - 10***
-20 - 50**	-10 - 50	-15 - 70	-15 - 70
0,50 - 0,58	0,24 - 0,29	0,86 - 0,95	0,86 - 0,95

## Dimensions

Ø	32	40	50	63	80	100	125
A -2	22	24	32	32	40	40	54
ØB d11	30	35	40	45	45	55	60
min. BG	16	16	16	16	17	17	20
E	46.5	53	65	75	95	115	140
KK	M10x1,25	M12x1,25	M16x1,5	M16x1,5	M20x1,5	M20x1,5	M27x2
I2	16.25	18.25	25	25	33	36	45
max. I3	4.5	4.5	4.5	4.5	0	0	0
I8	94±0,4	105±0,7	106±0,7	121±0,8	128±0,8	138±1	160±1
RT	M6	M6	M8	M8	M10	M10	M12
Smin. / max.	40 / 1600	40 / 1900	40 / 2100	40 / 2500	40 / 2800	40 / 2800	40 / 2750
SW	10	13	17	17	22	22	27
TG	32,5±0,5	38±0,5	46,5±0,6	56,5±0,7	72±0,7	89±0,7	110±1,1
VA -1	4	4	4	4	4	4	6
min. VD	5	5	5	5	5	5	7
WH	26±1,4	30±1,4	37±1,4	37±1,8	46±1,8	51±1,8	65±2,2
ZJ	120	135	143	158	174	189	225

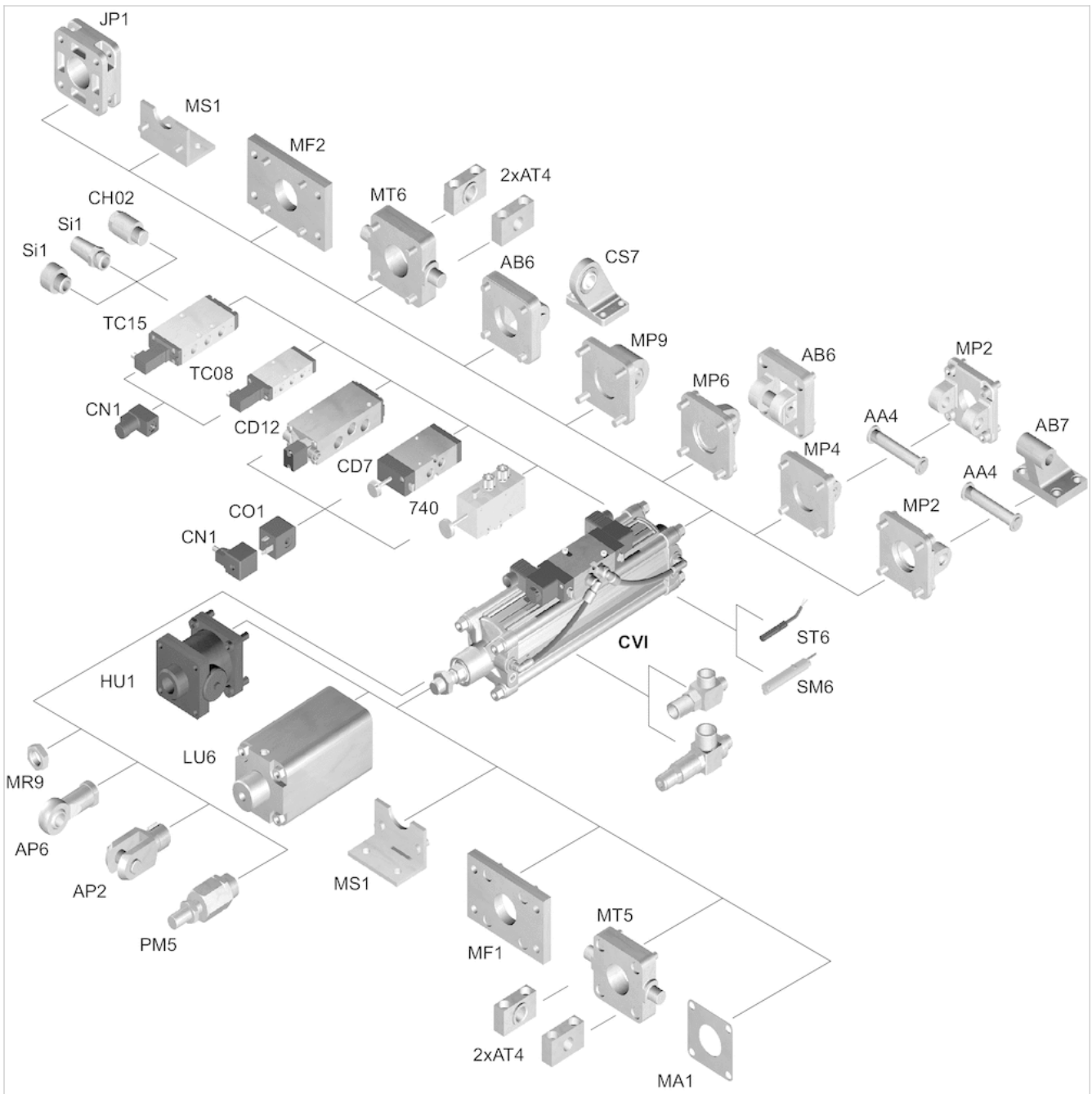
## valve dimensions

CD07-Ø	32	40	50	63	80	100	125	CD12-Ø	80	120	125	TC08-Ø	32	40	50	TC15-Ø
Y1	149	149	149	149	149	149	149	Y1	237	237	237	Y1	147	147	147	Y1
Y2	198	198	198	198	198	198	198	Y2	317	317	317	Y2	214	214	214	Y2
Y3	50.5	50.5	50.5	50.5	50.5	50.5	50.5	Y3	72	72	72	Y3	43	43	43	Y3
Y4	98.5	98.5	98.5	98.5	98.5	98.5	98.5	Y4	164.5	164.5	164.5	Y4	104	104	104	Y4
I4	51	53	60	65	78	87	99	I4	83	90	102	I4	48	51	56	I4
I5	64	68	73	78	92	99	109	I5	104	115	125	I5	50	54	59	I5
I6	111	113	114	114	118	118	120	I6	106	106	107	I6	62	62	65	I6

50	63	80	100	125	740-Ø	32	40	50	63	80	100	125
167	167	167	167	167	Y1	120	120	120	120	120	120	120
234	234	234	234	234	Y2	187	187	187	187	187	187	187
54	54	54	54	54	Y3	33.5	33.5	33.5	33.5	33.5	33.5	33.5
113	113	113	113	113	Y4	86	86	86	86	86	86	86
57	63	73	84	97	I4	51	55	61	67	78	90	100
64	69	83	90	100	I5	69	73	78	83	96	104	114
82	82	82	82	82	I6	113	115	117	117	120	121	123

# Accessories overview

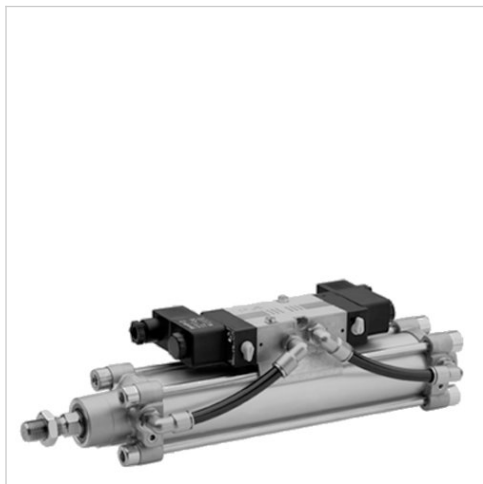
## CVI series with PRA cylinder series



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

# Cylinder valve units, Series CVI

- with TRB cylinder series
- Ø 32-125 mm
- double-acting
- retracted or extended
- with magnetic piston
- Cushioning pneumatically
- ATEX optional
- For valve series: CD07, CD12, TC08, TC15, 740



Standards	ISO 15552
Connector standard	EN 175301-803
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m <sup>3</sup>
Pressure for determining piston forces	6.3 bar
Cylinder series	TRB
Cylinder series	Tie rod cylinder

## Technical data

Piston Ø	32 mm	40 mm	50 mm	63 mm	80 mm	100 mm	125 mm
Retracting piston force	435 N	660 N	1035 N	1765 N	2855 N	4635 N	7220 N
Extracting piston force	505 N	790 N	1235 N	1960 N	3165 N	4945 N	7725 N
Cushioning length	11.5 mm	15 mm	17 mm	16.5 mm	19.5 mm	19.5 mm	22 mm
Weight 0 mm stroke	0.7 kg	0.89 kg	1.3 kg	1.68 kg	2.9 kg	4.06 kg	7.27 kg
+10 mm stroke	0.02 kg	0.03 kg	0.04 kg	0.05 kg	0.06 kg	0.07 kg	0.21 kg
Stroke max.	1600 mm	1900 mm	2100 mm	2500 mm	2800 mm	2800 mm	2750 mm

## Technical information

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

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

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



For technical data and valve materials, see the technical data for the cylinder valve unit and the configuration overview with a link to the valve catalog pages.

ATEX-certified cylinder valve units can be generated for series CD07 and 740 using the Internet configurator.

ATEX ID:

Only mechanical components: II 2G2D c IIB T4 IP65 T135 °C X

With electrical components: II 3G3D c IIB T4 IP65 T135 °C X

For ATEX-certified cylinders, the stated temperature range does not apply, but instead:  $-10^{\circ}\text{C} \leq T_a \leq 50^{\circ}\text{C}$

For the CD07 series with 5/3-directional valve, the temperature range is  $0^{\circ}\text{C} \leq T_a \leq 50^{\circ}\text{C}$ !

NOTICE:

For the part numbers 5727515302 and 5727565302 in the 740 series with 5/4-directional valve, the minimum working pressure of 3 bar must be observed!

\*Weight = weight of the assembly, consisting of valve, fitting, tubing and mountings. See above table for cylinder weight.

\*\*°C = ambient and medium temperature. With 5/3-directional valve: 0 ... [50 °C ]

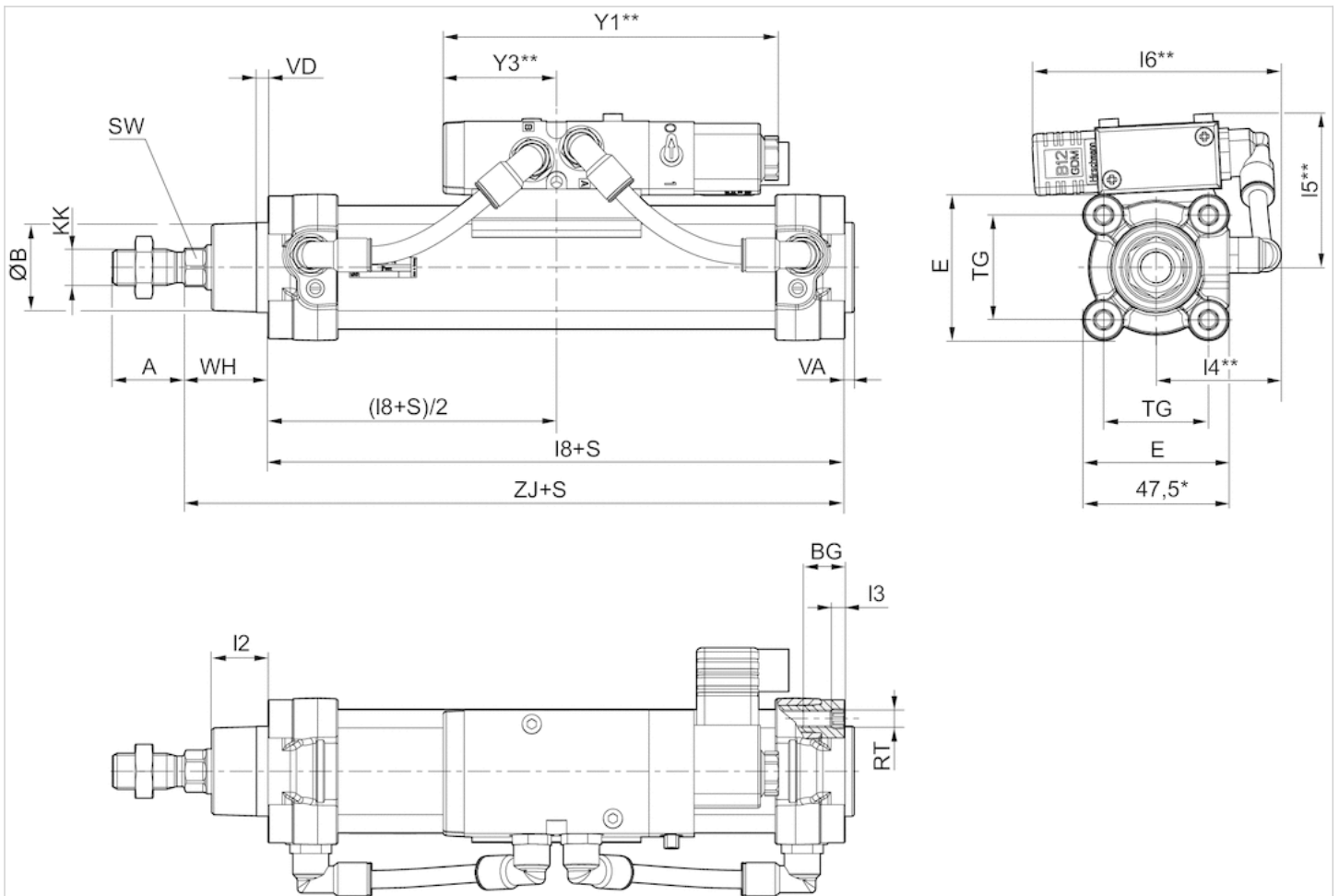
\*\*\* With 5/2-directional valve: min. working pressure = 1.5 bar or 2 bar , with 5/3-directional valve: min. working pressure = 3 bar

## Technical information

Material	
Cylinder tube	Aluminum, anodized
Front cover	Aluminum
End cover	Aluminum
Piston rod	Stainless steel
Nut for piston rod	Steel, galvanized
Seal	Polyurethane
Connector	Brass, nickel-plated
Plastic tubing	Polyamide
Mounting plate	Aluminum, 0
mounting screws	Steel, galvanized
Scraper	0, Polyurethane

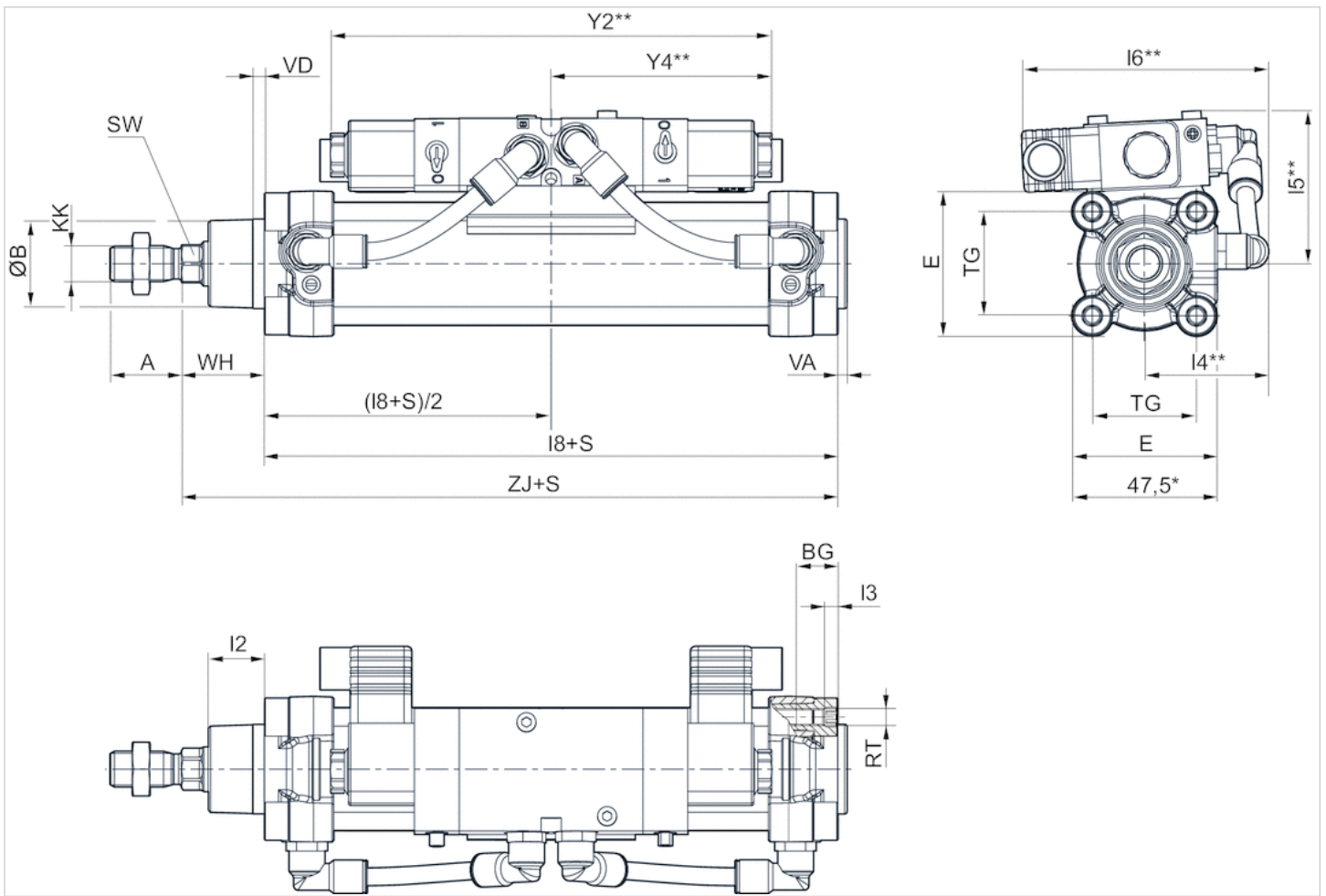
## Dimensions

### Dimensions of cylinder/valve unit with single solenoid valve



S = stroke  
 \* Only for  $\text{Ø}32$   
 \*\* See valve dimensions

Dimensions of cylinder/valve unit with double solenoid valve



S = stroke  
 \* Only for Ø32  
 \*\* See valve dimensions

Technical data for the cylinder valve unit

Valve series	740	740	TC08	CD07
Cylinders Ø [mm]	32 - 125	40 -125	32 - 50	32 - 80
Tubing connection [mm]	Ø8x1	Ø10x1	Ø8x1	Ø8x1
Valve flow rate [l/min]	700	950	700 - 800	950 - 1200
Operating pressure [bar]	1,5 / 3 - 10***	1,5 / 3 - 10***	3 - 10	3 - 10
°C**	-15 - 50	-15 - 50	-10 - 50	-20 - 50**
Weight* [kg]	0,19 - 0,27	0,19 - 0,28	0,15 - 0,19	0,50 - 0,58

CD07	TC15	CD12	CD12
40 - 125	50 - 125	100 - 125	80 - 125
Ø10x1	Ø10x1	Ø10x1 Ø14x1,5	Ø10x1 Ø14x1,5
950 - 1200	1300 - 1500	3800 - 4100	3800 - 4100
3 - 10	3 - 10	2 / 3 - 10***	2 / 3 - 10***
-20 - 50**	-10 - 50	-15 - 70	-15 - 70
0,50 - 0,58	0,24 - 0,29	0,86 - 0,95	0,86 - 0,95

## Dimensions

Ø	32	40	50	63	80	100	125
A -2	22	24	32	32	40	40	54
ØB d11	30	35	40	45	45	55	60
min. BG	16	16	16	16	17	17	20
E	46.5	53	65	75	95	115	140
KK	M10x1,25	M12x1,25	M16x1,5	M16x1,5	M20x1,5	M20x1,5	M27x2
I2	16.25	18.25	25	25	33	36	45
max. I3	4.5	4.5	4.5	4.5	0	0	0
I8	94±0,4	105±0,7	106±0,7	121±0,8	128±0,8	138±1	160±1
RT	M6	M6	M8	M8	M10	M10	M12
Smin. / max.	40 / 1600	40 / 1900	40 / 2100	40 / 2500	40 / 2800	40 / 2800	40 / 2750
SW	10	13	17	17	22	22	27
TG	32,5±0,5	38±0,5	46,5±0,6	56,5±0,7	72±0,7	89±0,7	110±1,1
VA -1	4	4	4	4	4	4	6
min. VD	5	5	5	5	5	5	7
WH	26±1,4	30±1,4	37±1,4	37±1,8	46±1,8	51±1,8	65±2,2
ZJ	120	135	143	158	174	189	225

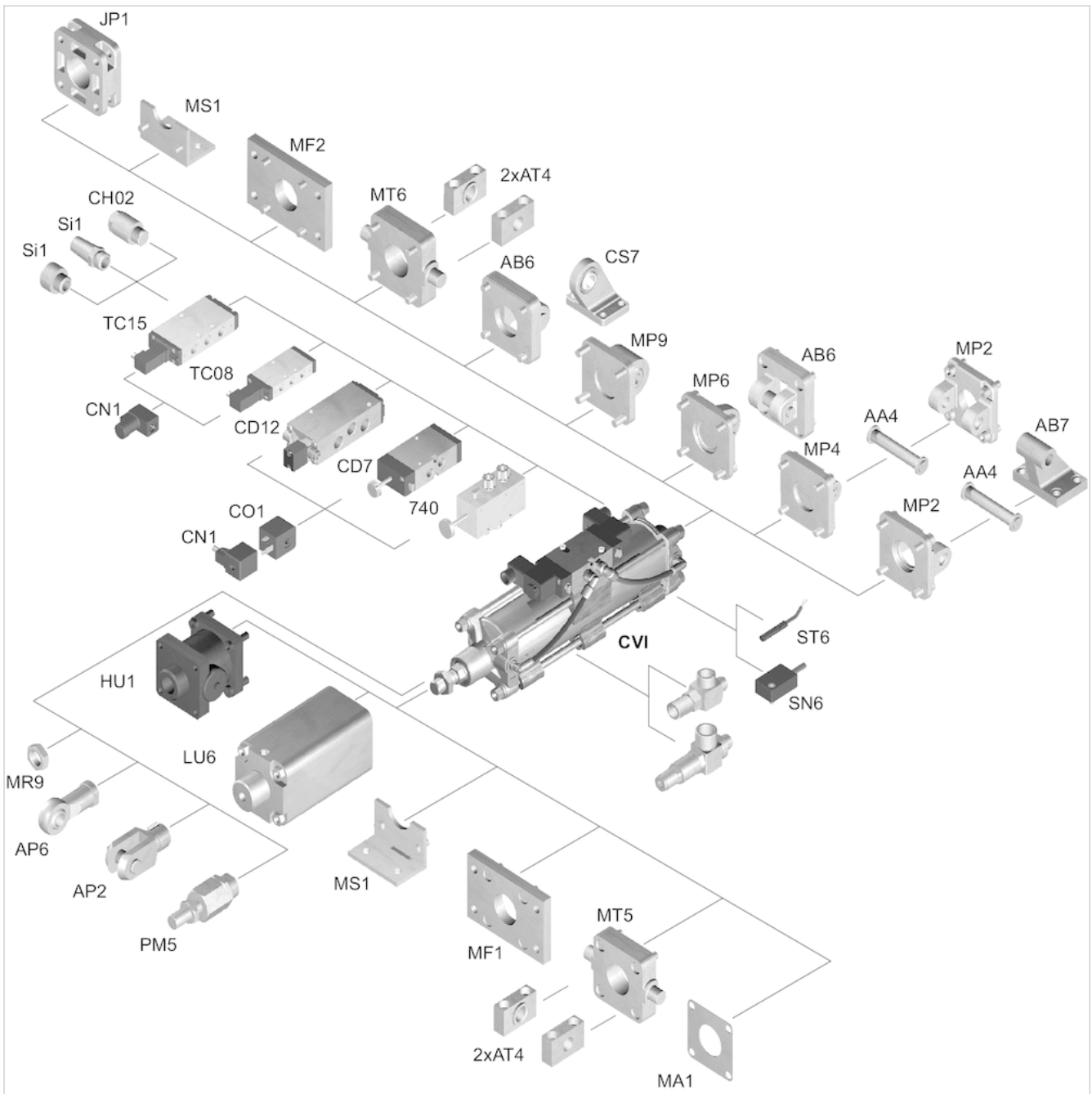
## valve dimensions

CD07-Ø	32	40	50	63	80	100	125	CD12-Ø	80	120	125	TC08-Ø	32	40	50	TC15-Ø
Y1	149	149	149	149	149	149	149	Y1	237	237	237	Y1	147	147	147	Y1
Y2	198	198	198	198	198	198	198	Y2	317	317	317	Y2	214	214	214	Y2
Y3	50.5	50.5	50.5	50.5	50.5	50.5	50.5	Y3	72	72	72	Y3	43	43	43	Y3
Y4	98.5	98.5	98.5	98.5	98.5	98.5	98.5	Y4	164.5	164.5	164.5	Y4	104	104	104	Y4
I4	51	53	60	65	78	87	99	I4	83	90	102	I4	48	51	56	I4
I5	64	68	73	78	92	99	109	I5	104	115	125	I5	50	54	59	I5
I6	111	113	114	114	118	118	120	I6	106	106	107	I6	62	62	65	I6

50	63	80	100	125	740-Ø	32	40	50	63	80	100	125
167	167	167	167	167	Y1	120	120	120	120	120	120	120
234	234	234	234	234	Y2	187	187	187	187	187	187	187
54	54	54	54	54	Y3	33.5	33.5	33.5	33.5	33.5	33.5	33.5
113	113	113	113	113	Y4	86	86	86	86	86	86	86
57	63	73	84	97	I4	51	55	61	67	78	90	100
64	69	83	90	100	I5	69	73	78	83	96	104	114
82	82	82	82	82	I6	113	115	117	117	120	121	123

# Accessories overview

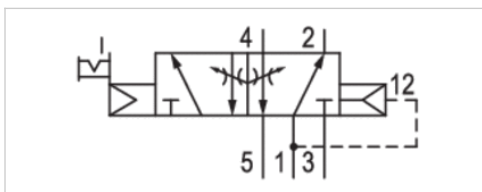
## CVI series with TRB cylinder series



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

# 5/2-directional valve, Series 740

- ATEX optional
- 5/2
- Qn = 700-950 l/min
- Pipe connection
- Compressed air connection output : Ø 8x1 Ø 10x1
- Electrical connection : Plug, EN 175301-803, form A
- -25 °C cold-resistant
- Can be assembled into blocks
- Manual override : without detent, with detent
- single solenoid
- With air spring return
- Pilot : Internal
- ATEX optional



Version	Diaphragm poppet valve
Activation	Electrically
Pilot	Internal
Sealing principle	Soft sealing
Blocking principle	Single base plate principle Plate principle
Working pressure min./max.	1.5 ... 10 bar
Ambient temperature min./max.	-25 ... 50 °C
Medium temperature min./max.	-25 ... 50 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m <sup>3</sup>
Nominal flow Qn	See table below
Connector standard	EN 175301-803:2006
Protection class with connection	IP65
Compatibility index	14
Duty cycle	100 %
Typ. switch-on time	17 ms
Typ. switch-off time	24 ms
Mounting on manifold strip	PRS strip
Weight	See table below

## Technical data

Part No.	MO	Compressed air connection	
		Input	Output
5727405302	P-R-T-R-	Ø 8x1	Ø 8x1
5727455302		Ø 10x1	Ø 10x1

Part No.	Compressed air connection		Nominal flow Qn	Throttle
	Exhaust			
5727405302	M14x1		700 l/min	with throttle
5727455302	M14x1		950 l/min	with throttle

Part No.	basic valve with electrical connector	ATEX	Weight
5727405302	Basic valve without coil	ATEX optional	0.221 kg
5727455302	Basic valve without coil	ATEX optional	0.22 kg

Nominal flow Qn at 6 bar and  $\Delta p = 1$  bar, MO = Manual override

## Technical information

The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!  
 The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .  
 The oil content of compressed air must remain constant during the life cycle.  
 Use only the approved oils from AVENTICS. Further information can be found in the "Technical information" document (available in the MediaCentre).

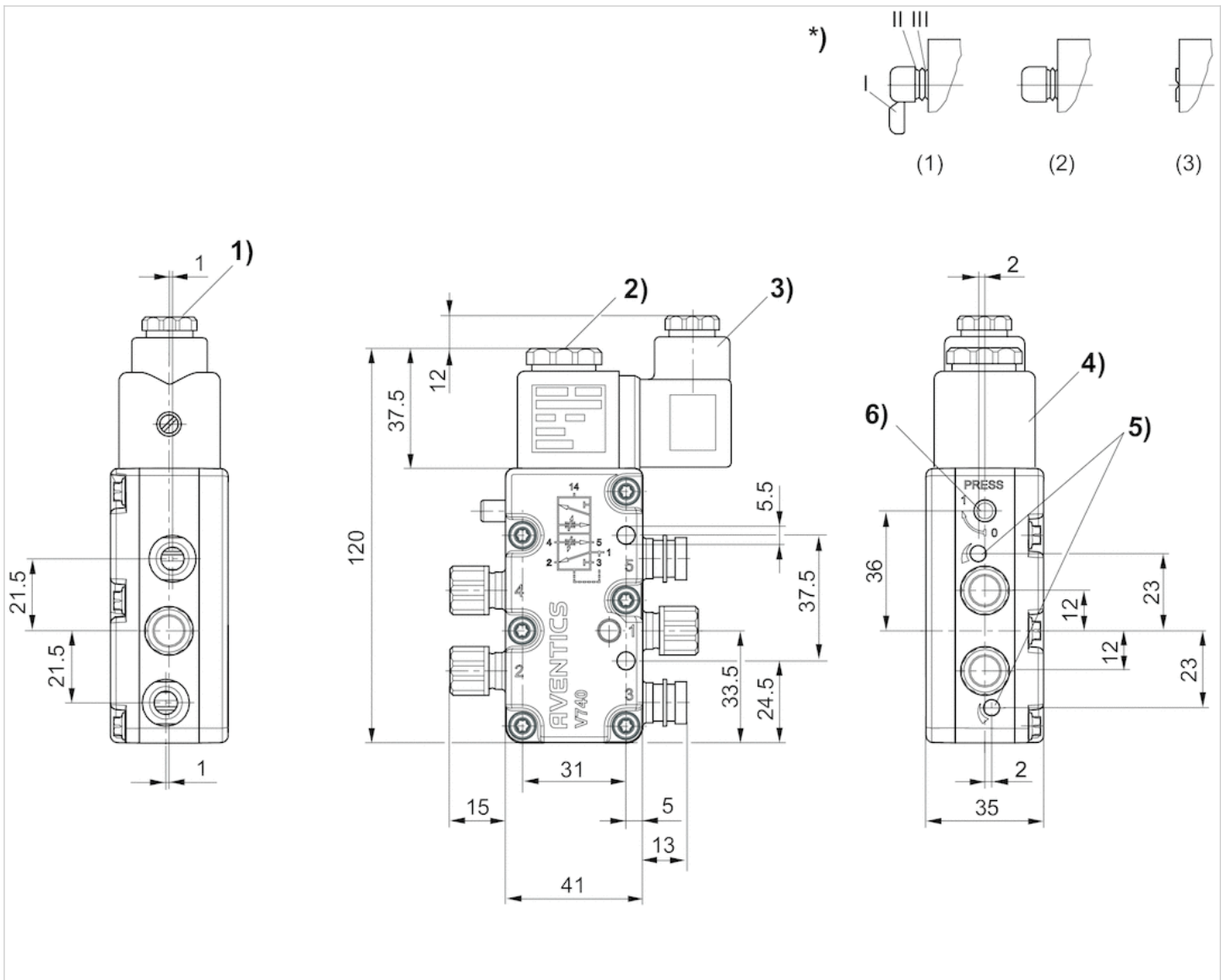
ATEX optional: ATEX version can be produced by combining the basic valve without coil with an ATEX coil. ATEX ID: see ATEX coils catalog page.

## Technical information

Material	
Housing	Polyarylamide Polyoxymethylene
Seals	Acrylonitrile butadiene rubber

## Dimensions

### Dimensions

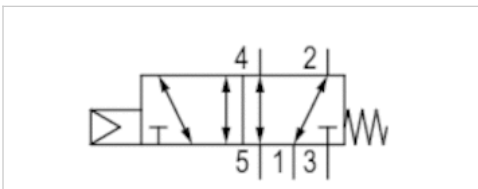


- 1) Gland fitting M16x1.52) M5 internal thread accessible under cap  
 3) Valve plug connector can be rotated at 90° intervals  
 4) Coil can be plugged at 45° intervals  
 5) Flow control screw for exhausts 5 (R) and 3 (S)  
 6) Manual override and position indicator\*)  
 Manual override: Manual actuation: (1) with detent - push and turn into position 1 (2) without detent - remove segment I - push only  
 Actuation with tool: (3) with detent - remove segments up to II - push with tool and turn into position 1



# 5/2-directional valve, Series CD12

- 5/2
- $Q_n = 4100 \text{ l/min}$
- Pilot valve width : 30 mm
- Pipe connection
- Compressed air connection output : G 1/2
- Electrical connection : Plug, EN 175301-803, form A, 3-pin
- single solenoid
- With spring return
- Pilot : Internal
- ATEX optional



Version	Spool valve, positive overlapping
Activation	Electrically
Pilot	Internal
Sealing principle	Soft sealing
Working pressure min./max.	2 ... 10 bar
Control pressure min./max.	2 ... 10 bar
Ambient temperature min./max.	-15 ... 50 °C
Medium temperature min./max.	-15 ... 50 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>
Nominal flow $Q_n$	4100 l/min
Compressed air connection	according to ISO 228-1
Pilot control exhaust	with directional pilot air exhaust
Compatibility index	13 14
Duty cycle	100 %
Weight	0.85 kg

## Technical data

Part No.	Compressed air connection	
	Input	Output
R412008096	G 1/2	G 1/2

Part No.	Compressed air connection		basic valve with electrical connector	ATEX
	Exhaust			
R412008096	G 1/2		Basic valve without coil	ATEX optional

Nominal flow  $Q_n$  at 6 bar and  $\Delta p = 1 \text{ bar}$ , MO = Manual override

Exhaust cap

## Technical information

The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!

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

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

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

ATEX optional: ATEX version can be produced by combining the basic valve without coil with an ATEX coil. ATEX ID: see ATEX coils catalog page.

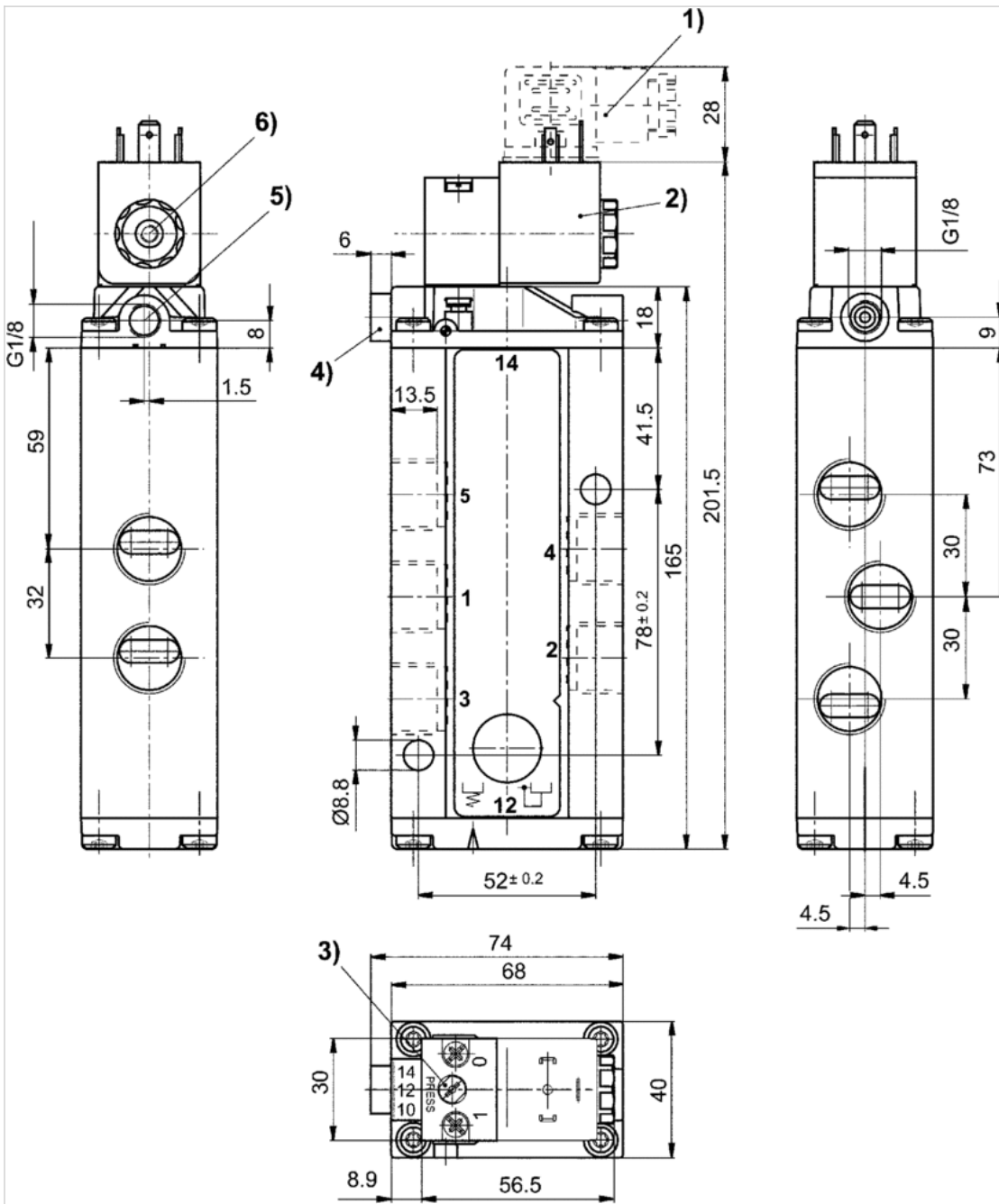
\*Note: Basic valves feature a maximum working pressure of 16 bar. When combined with standard CNOMO pilots, the maximum working pressure is 10 bar.

## Technical information

Material	
Housing	Aluminum Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber Polyurethane

# Dimensions

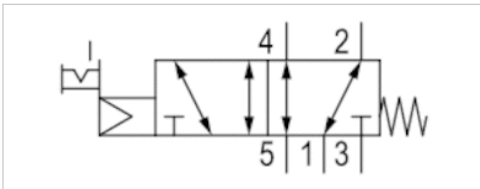
## Dimensions



1) Valve plug connector 2) Coil can be rotated at 90° intervals 3) Manual override 4) Port X (only for externally piloted valves) 5) Exhaust port of piston 6) Pilot valve exhaust, M5


# 5/2-directional valve, Series CD07

- 5/2
- Qn = 1200 l/min
- Pilot valve width : 30 mm
- Pipe connection
- Compressed air connection output : G 1/4
- Electrical connection : Plug, EN 175301-803, form A, 3-pin
- Manual override : with detent
- single solenoid
- With spring return
- Pilot : Internal
- ATEX optional



Version	Spool valve, positive overlapping
Activation	Electrically
Pilot	Internal
Sealing principle	Soft sealing
Working pressure min./max.	3 ... 10 bar
Control pressure min./max.	3 ... 10 bar
Ambient temperature min./max.	-25 ... 50 °C
Medium temperature min./max.	-25 ... 50 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>
Nominal flow Qn	1200 l/min
Nominal flow 1 ► 2	1200 l/min
Nominal flow 2 ► 3	1200 l/min
Compressed air connection	according to ISO 228-1
Pilot control exhaust	with directional pilot air exhaust
Connector standard	EN 175301-803:2006
Reverse polarity protection	Protected against polarity reversal
Compatibility index	13 14
Duty cycle	100 %
Mounting on manifold strip	P-strip PRS strip

## Technical data

Part No.	MO	Compressed air connection	
		Input	Output
5776075302		G 1/4	G 1/4

Part No.	Compressed air connection		basic valve with electrical connector	ATEX
	Exhaust			
5776075302	G 1/4		Basic valve without coil	ATEX optional

Nominal flow Qn at 6 bar and  $\Delta p = 1$  bar, MO = Manual override, Nickel-plated armature guide (only suitable for DC variant), i.e. the base must not be equipped with AC coils.

## Technical information

The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!  
 The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .  
 The oil content of compressed air must remain constant during the life cycle.  
 Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

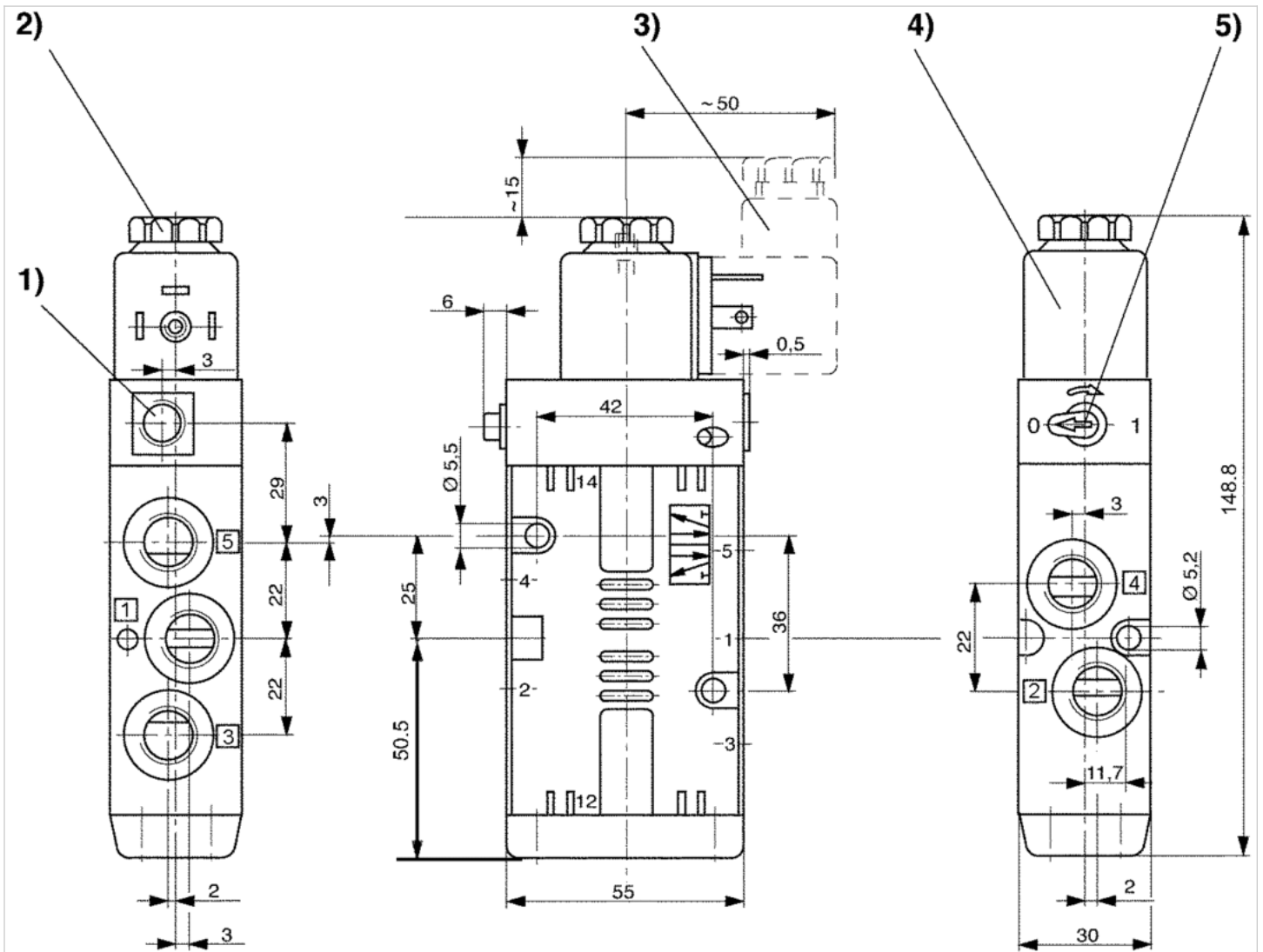
ATEX optional: ATEX version can be produced by combining the basic valve without coil with an ATEX coil. ATEX ID: see ATEX coils catalog page.

## Technical information

Material	
Housing	Die cast zinc Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber

## Dimensions

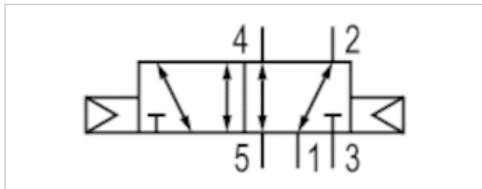
### Dimensions



1) Only with separate pilot control G 1/8 2) After removal of cap M5 internal thread 3) Valve plug connector 4) Coil can be plugged at 45° intervals 5) Manual override

# 5/2-directional valve, Series CD12

- 5/2
- Qn = 4100 l/min
- Pilot valve width : 30 mm
- Pipe connection
- Compressed air connection output : G 1/2
- Electrical connection : Plug, EN 175301-803, form A, 3-pin
- -25 °C cold-resistant
- Manual override : with detent, without detent
- double solenoid
- Pilot : Internal
- ATEX optional



Version	Spool valve, positive overlapping
Activation	Electrically
Pilot	Internal
Sealing principle	Soft sealing
Working pressure min./max.	2 ... 10 bar
Control pressure min./max.	2 ... 10 bar
Ambient temperature min./max.	-25 ... 50 °C
Medium temperature min./max.	-25 ... 50 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>
Nominal flow Qn	4100 l/min
Compressed air connection	according to ISO 228-1
Pilot control exhaust	with directional pilot air exhaust
Connector standard	EN 175301-803:2006
Compatibility index	13 14
Duty cycle	100 %
Weight	0.9 kg

## Technical data

Part No.	MO	Compressed air connection	
		Input	Output
R412008097	IT R	G 1/2	G 1/2

Part No.	Compressed air connection		basic valve with electrical connector	ATEX
	Exhaust			
R412008097	G 1/2		Basic valve without coil	ATEX optional

Nominal flow Qn at 6 bar and Δp = 1 bar, MO = Manual override

Exhaust cap

## Technical information

The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!  
 The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .  
 The oil content of compressed air must remain constant during the life cycle.  
 Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in the MediaCentre).

ATEX optional: ATEX version can be produced by combining the basic valve without coil with an ATEX coil. ATEX ID: see ATEX coils catalog page.

\*Note: Basic valves feature a maximum working pressure of 16 bar. When combined with standard CNOMO pilots, the maximum working pressure is 10 bar.

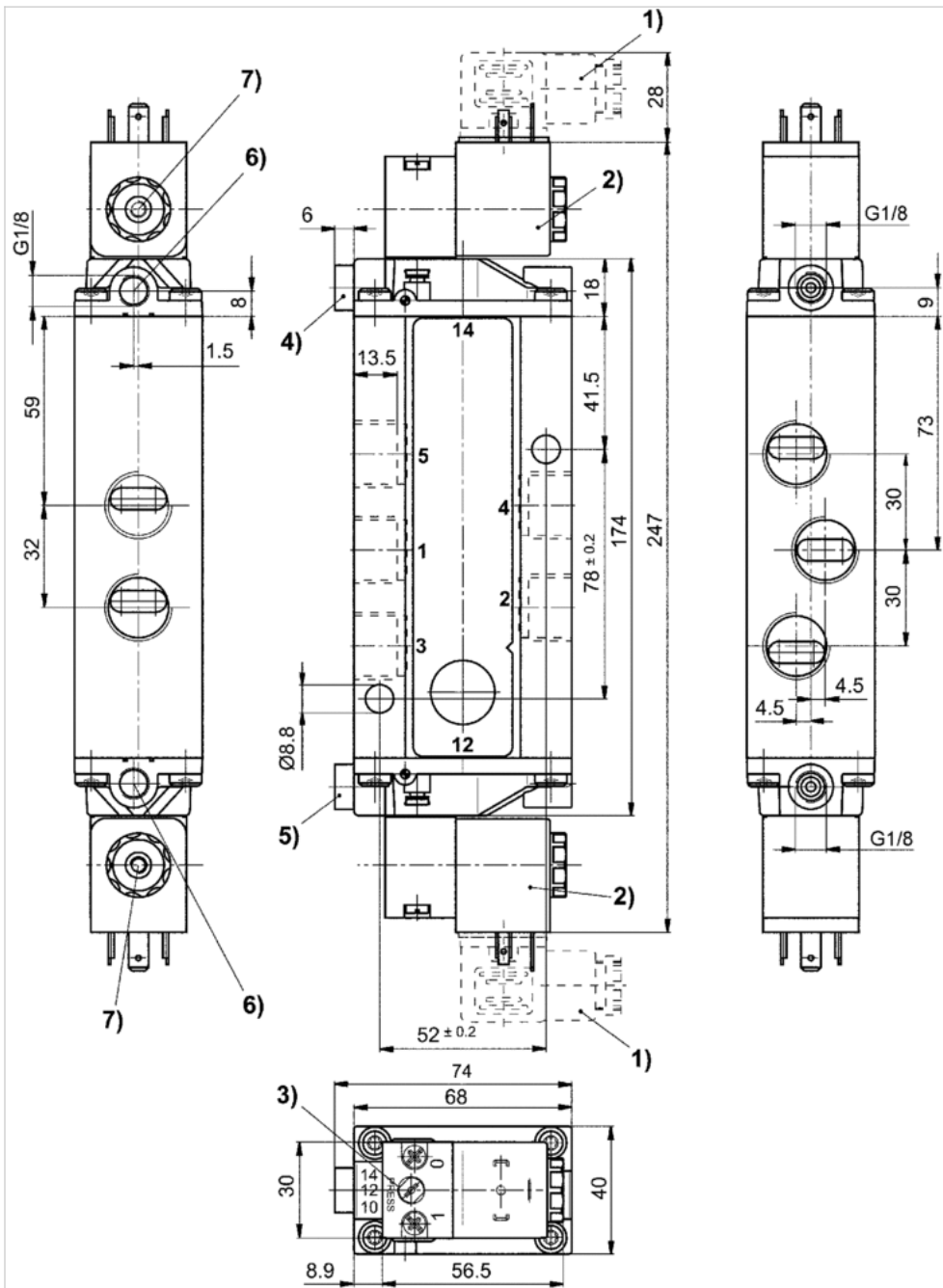
## Technical information

Material	
Housing	Aluminum Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber Polyurethane



# Dimensions

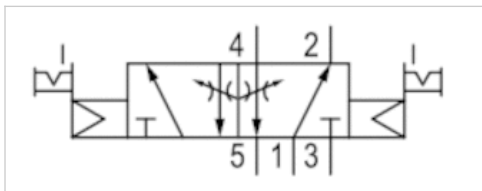
## Dimensions



1) Valve plug connector 2) Coil can be rotated at 90° intervals 3) Manual override 4) Port X, side 14 5) Port X, side 12 6) Port without function 7) Pilot valve exhaust, M5

# 5/2-directional valve, Series 740

- ATEX optional
- 5/2
- Qn = 700-950 l/min
- Pipe connection
- Compressed air connection output : Ø 8x1 Ø 10x1
- Electrical connection : Plug, EN 175301-803, form A
- Can be assembled into blocks
- Manual override : with detent
- double solenoid
- Pilot : Internal
- ATEX optional



Version	Diaphragm poppet valve
Activation	Electrically
Pilot	Internal
Sealing principle	Soft sealing
Blocking principle	Plate principle Single base plate principle
Working pressure min./max.	1.5 ... 10 bar
Ambient temperature min./max.	-15 ... 50 °C
Medium temperature min./max.	-15 ... 50 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m <sup>3</sup>
Nominal flow Qn	See table below
Connector standard	EN 175301-803:2006
Protection class with connection	IP65
Compatibility index	14
Duty cycle	100 %
Typ. switch-on time	40 ms
Mounting on manifold strip	PRS strip
Weight	See table below

## Technical data

Part No.	MO	Compressed air connection	
		Input	Output
5727415302		Ø 8x1	Ø 8x1
5727465302		Ø 10x1	Ø 10x1

Part No.	Compressed air connection		Nominal flow Qn	Throttle
	Exhaust			
5727415302	M14x1		700 l/min	with throttle
5727465302	M14x1		950 l/min	with throttle

Part No.	basic valve with electrical connector	ATEX	Weight
5727415302	Basic valve without coil	ATEX optional	0.319 kg
5727465302	Basic valve without coil	ATEX optional	0.316 kg

Nominal flow  $Q_n$  at 6 bar and  $\Delta p = 1$  bar, MO = Manual override

## Technical information

The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!

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

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

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

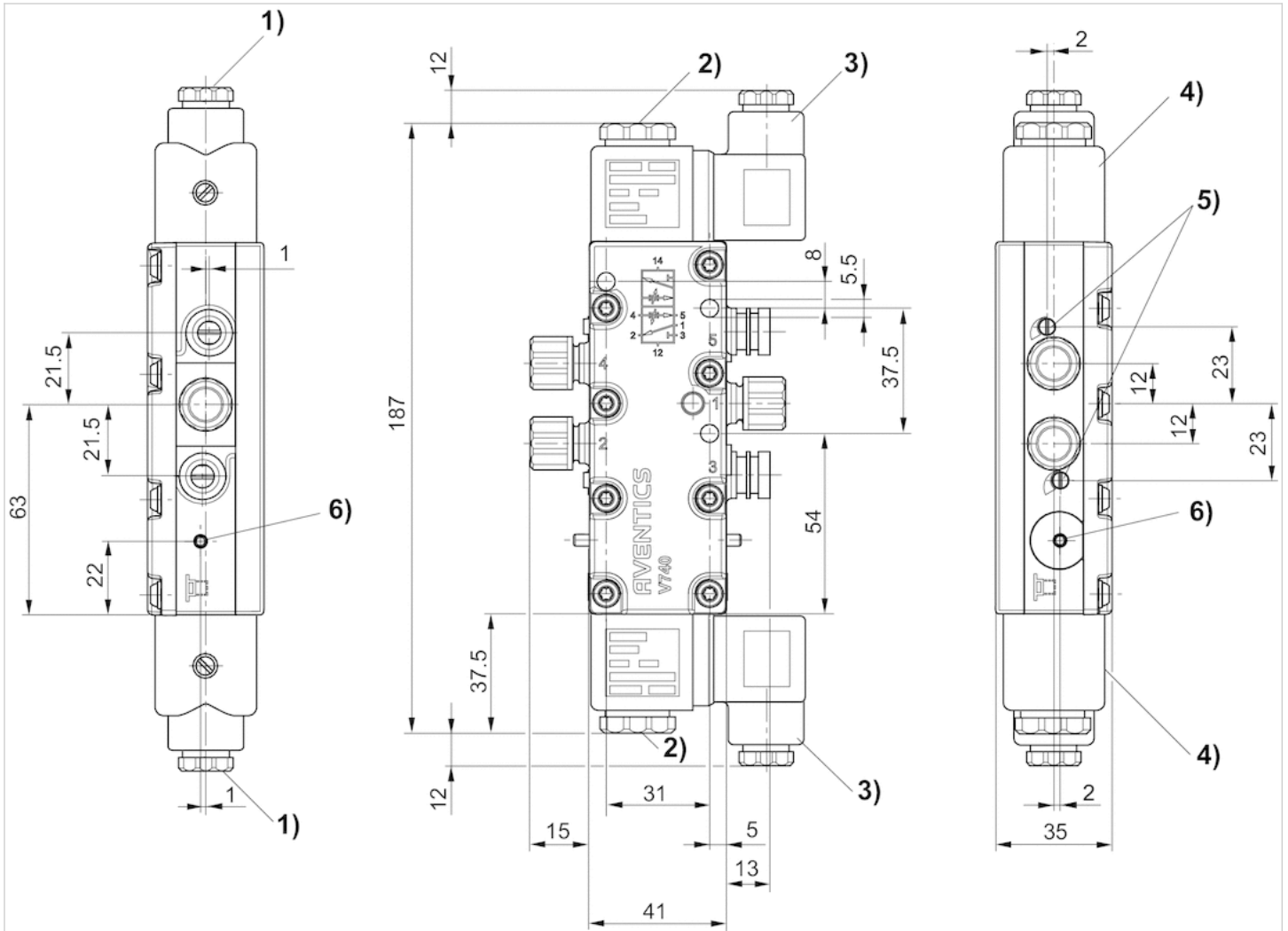
ATEX optional: ATEX version can be produced by combining the basic valve without coil with an ATEX coil. ATEX ID: see ATEX coils catalog page.

## Technical information

Material	
Housing	Polyoxymethylene
Seals	Acrylonitrile butadiene rubber

## Dimensions

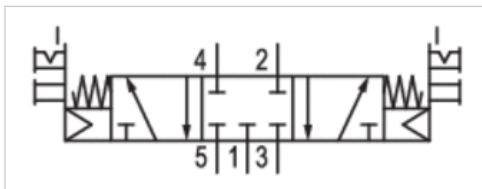
### Dimensions



1) Gland fitting M16x1.52) M5 internal thread accessible under cap3) Valve plug connector can be rotated at 90° intervals4) Coil can be plugged at 45° intervals5) Flow control screw for exhausts 5 (R) and 3 (S)6) Manual override and position indicator

# 5/3-directional valve, Series CD12

- 5/3
- Qn = 3800 l/min
- Pilot valve width : 30 mm
- closed center
- Pipe connection
- Compressed air connection output : G 1/2
- Electrical connection : Plug, EN 175301-803, form A, 3-pin
- Manual override : with detent, without detent
- double solenoid
- With spring return
- Pilot : Internal
- ATEX optional



Version	Spool valve, positive overlapping
Activation	Electrically
Pilot	Internal
Sealing principle	Soft sealing
Working pressure min./max.	3 ... 10 bar
Control pressure min./max.	3 ... 10 bar
Ambient temperature min./max.	-15 ... 50 °C
Medium temperature min./max.	-15 ... 50 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>
Nominal flow Qn	3800 l/min
Nominal flow 1 ▶ 2	3800 l/min
Nominal flow 2 ▶ 3	3800 l/min
Compressed air connection	according to ISO 228-1
Pilot control exhaust	with directional pilot air exhaust
Connector standard	EN 175301-803:2006
Compatibility index	13 14
Duty cycle	100 %
Weight	1 kg

## Technical data

Part No.	MO		Compressed air connection
			Input
R412008098	ITR	closed center	G 1/2

Part No.	Compressed air connection	Compressed air connection
	Output	Exhaust
R412008098	G 1/2	G 1/2

Part No.	Compressed air connection	basic valve with electrical connector	ATEX
	Pilot Exhaust		
R412008098	M5	Basic valve without coil	ATEX optional

Nominal flow Qn at 6 bar and Δp = 1 bar, MO = Manual override

Exhaust cap

## Technical information

The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!

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

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

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

ATEX optional: ATEX version can be produced by combining the basic valve without coil with an ATEX coil. ATEX ID: see ATEX coils catalog page.

\*Note: Basic valves feature a maximum working pressure of 16 bar. When combined with standard CNOMO pilots, the maximum working pressure is 10 bar.

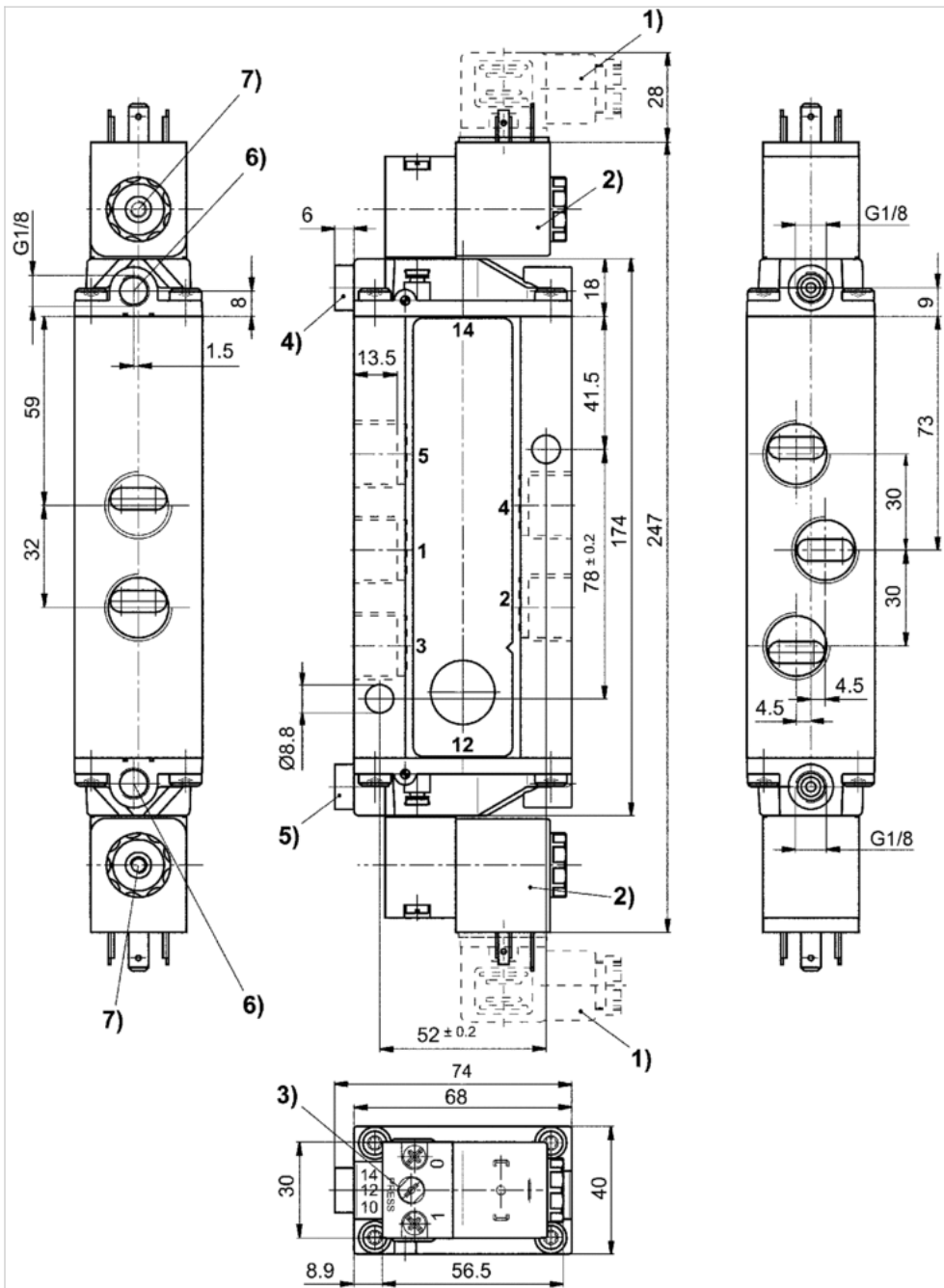
## Technical information

### Material

Housing	Aluminum Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber Polyurethane

# Dimensions

## Dimensions



1) Valve plug connector 2) Coil can be rotated at 90° intervals 3) Manual override 4) Port X, side 14 5) Port X, side 12 6) Port without function 7) Pilot valve exhaust, M5





# 5/4-directional valve, Series 740

- ATEX optional
- 5/4
- Qn = 700-950 l/min
- closed center
- Pipe connection
- Compressed air connection output : Ø 8x1 Ø 10x1
- Electrical connection : Plug, EN 175301-803, form A
- Can be assembled into blocks
- Manual override : without detent
- Pilot : Internal
- ATEX optional



Version	Diaphragm poppet valve
Activation	Electrically
Pilot	Internal
Sealing principle	Soft sealing
Blocking principle	Plate principle Single base plate principle
Working pressure min./max.	3 ... 10 bar
Ambient temperature min./max.	-15 ... 50 °C
Medium temperature min./max.	-15 ... 50 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m <sup>3</sup>
Nominal flow Qn	See table below
Connector standard	EN 175301-803:2006
Protection class with connection	IP65
Compatibility index	14
Duty cycle	100 %
Typ. switch-on time	20 ms
Typ. switch-off time	54 ms
Mounting on manifold strip	PRS strip
Weight	See table below

## Technical data

Part No.	MO	Compressed air connection	
		Input	
5727505302		closed center	Ø 8x1
5727555302		closed center	Ø 10x1
5727515302		-	Ø 8x1
5727565302		-	Ø 10x1

Part No.	Compressed air connection		Nominal flow Qn
	Output	Exhaust	
5727505302	Ø 8x1	M14x1	700 l/min
5727555302	Ø 10x1	M14x1	950 l/min
5727515302	Ø 8x1	M14x1	700 l/min
5727565302	Ø 10x1	M14x1	950 l/min



Part No.	basic valve with electrical connector	ATEX	Weight	Fig.
5727505302	Basic valve without coil	ATEX optional	0.318 kg	Fig. 1
5727555302	Basic valve without coil	ATEX optional	0.317 kg	Fig. 1
5727515302	Basic valve without coil	ATEX optional	0.317 kg	Fig. 1
5727565302	Basic valve without coil	ATEX optional	0.318 kg	Fig. 1

Nominal flow Qn at 6 bar and  $\Delta p = 1$  bar, MO = Manual override

## Technical information

The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!

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

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

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

ATEX optional: ATEX version can be produced by combining the basic valve without coil with an ATEX coil. ATEX ID: see ATEX coils catalog page.

NOTE:

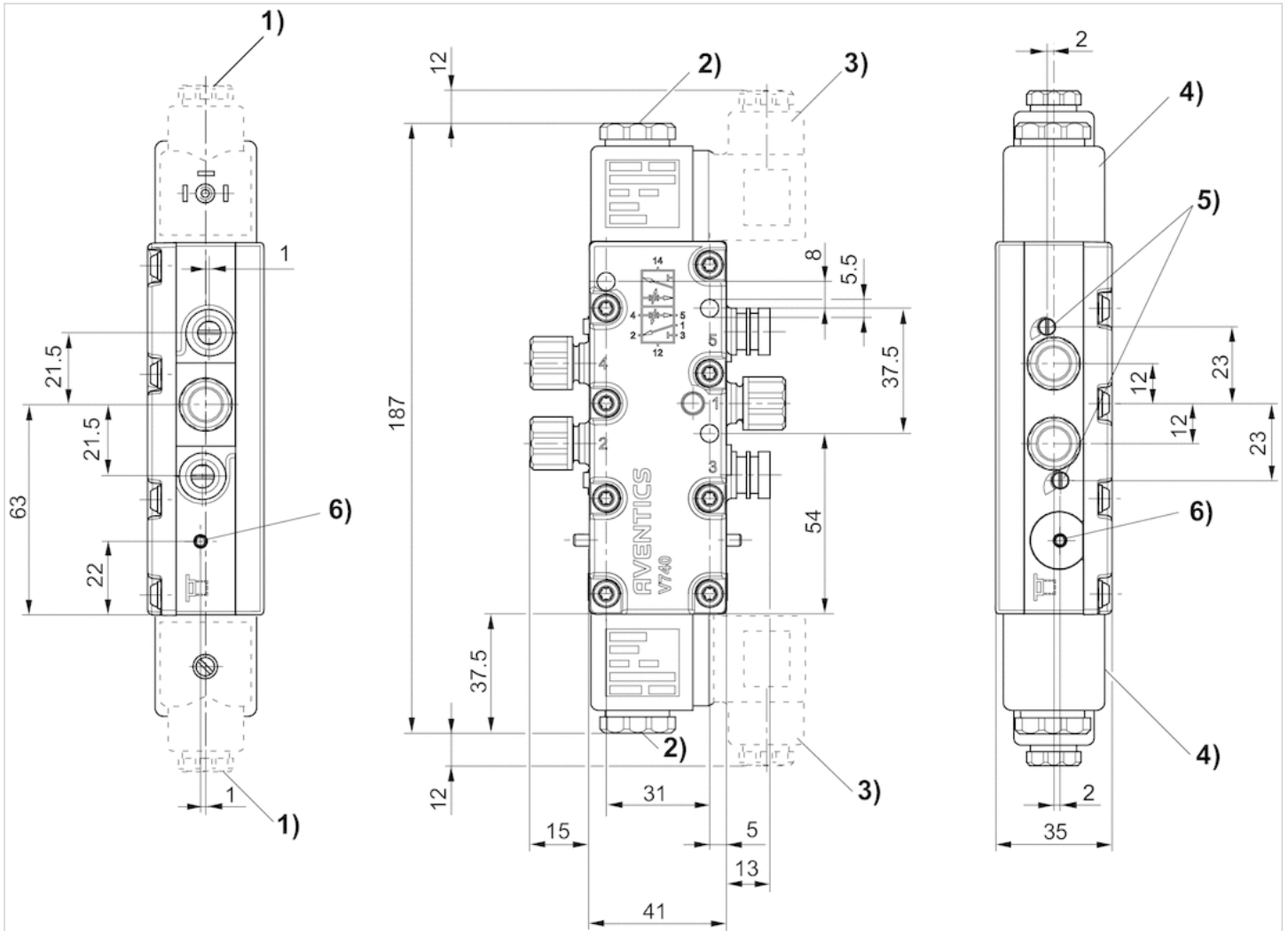
In order to ensure the operating function of the valve, do not fall below the minimum operating pressure of 3 bar !

## Technical information

Material	
Housing	Polyoxymethylene
Seals	Acrylonitrile butadiene rubber

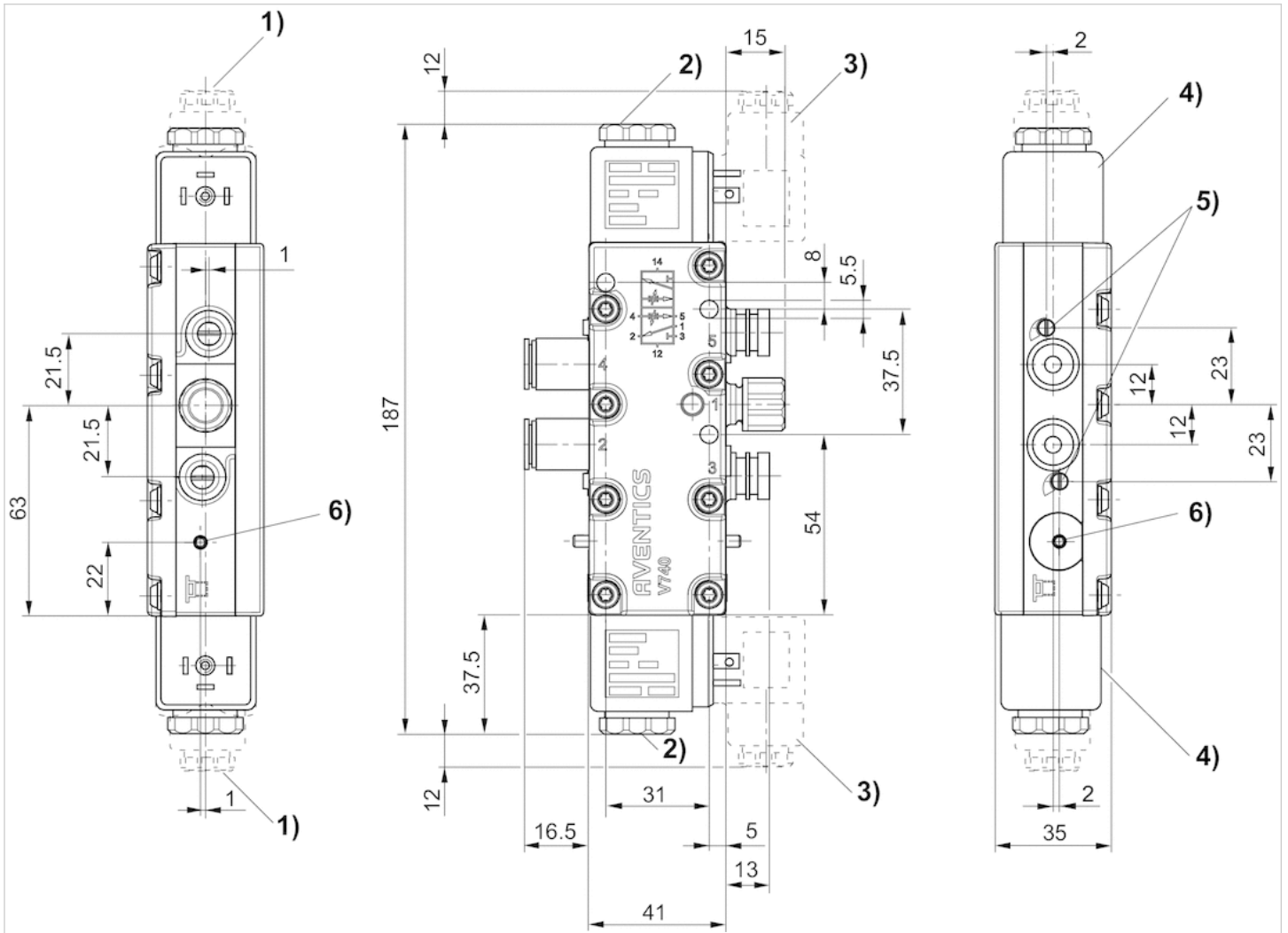
# Dimensions

Dimensions, Fig. 1



- 1) gland fitting M16x1,5
- 2) M5 internal thread accessible under cap
- 3) el. connector can be fixed at 90° intervals
- 4) coil can be mounted at 45° intervals
- 5) throttle screw for exhausts 5 (R) and 3 (S)
- 6) manual override and position indicator

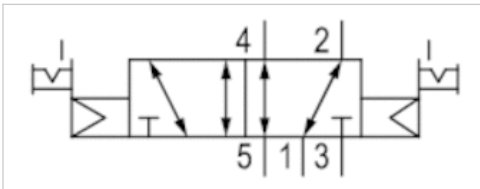
Dimensions, Fig. 2



1) Gland fitting M16x1.52) M5 internal thread accessible under cap3) Valve plug connector can be rotated at 90° intervals4) Coil can be plugged at 45° intervals5) Flow control screw for exhausts 5 (R) and 3 (S)6) Manual override and position indicator


# 5/2-directional valve, Series CD07

- 5/2
- Qn = 1200 l/min
- Pilot valve width : 30 mm
- Pipe connection
- Compressed air connection output : G 1/4
- Electrical connection : Plug, EN 175301-803, form A, 3-pin
- -25 °C cold-resistant
- Manual override : with detent
- double solenoid
- Pilot : Internal
- ATEX optional



Version	Spool valve, positive overlapping
Activation	Electrically
Pilot	Internal
Sealing principle	Soft sealing
Working pressure min./max.	2 ... 10 bar
Control pressure min./max.	2 ... 10 bar
Ambient temperature min./max.	-25 ... 50 °C
Medium temperature min./max.	-25 ... 50 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>
Nominal flow Qn	1200 l/min
Nominal flow 1 ▶ 2	1200 l/min
Nominal flow 2 ▶ 3	1200 l/min
Compressed air connection	according to ISO 228-1
Pilot control exhaust	with directional pilot air exhaust
Connector standard	EN 175301-803:2006
Reverse polarity protection	Protected against polarity reversal
Compatibility index	13 14
Duty cycle	100 %
Mounting on manifold strip	P-strip PRS strip

## Technical data

Part No.	MO	Compressed air connection	
		Input	Output
5776275302		G 1/4	G 1/4

Part No.	Compressed air connection		basic valve with electrical connector	ATEX
	Exhaust			
5776275302	G 1/4		Basic valve without coil	ATEX optional

Nominal flow Qn at 6 bar and  $\Delta p = 1$  bar, MO = Manual override

## Technical information

The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!

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

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

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

ATEX optional: ATEX version can be produced by combining the basic valve without coil with an ATEX coil. ATEX ID: see ATEX coils catalog page.

## Technical information

Material	
Housing	Die cast zinc Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber






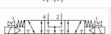

## 5/3-directional valve, Series CD07

- 5/3
- $Q_n = 900$  l/min
- Pilot valve width : 30 mm
- closed center pressurized center
- Pipe connection
- Compressed air connection output : G 1/4
- Electrical connection : Plug, EN 175301-803, form A, 3-pin
- -25 °C cold-resistant
- Manual override : with detent
- double solenoid
- With spring return
- Pilot : Internal
- ATEX optional



Version	Spool valve, positive overlapping
Activation	Electrically
Pilot	Internal
Sealing principle	Soft sealing
Working pressure min./max.	3 ... 10 bar
Control pressure min./max.	3 ... 10 bar
Ambient temperature min./max.	See table below
Medium temperature min./max.	See table below
Medium	Compressed air
Max. particle size	50 $\mu\text{m}$
Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>
Nominal flow $Q_n$	900 l/min
Nominal flow 1 ▶ 2	See table below
Nominal flow 2 ▶ 3	See table below
Compressed air connection	according to ISO 228-1
Pilot control exhaust	with directional pilot air exhaust
Connector standard	EN 175301-803:2006
Reverse polarity protection	Protected against polarity reversal
Compatibility index	13 14
Duty cycle	100 %
Mounting on manifold strip	P-strip PRS strip

## Technical data

Part No.		MO		Compressed air connection	
				Input	
577775302				closed center	G 1/4
577775302				pressurized center	G 1/4

Part No.	Compressed air connection		Compressed air connection	
	Output		Exhaust	
577775302	G 1/4		G 1/4	
577775302	G 1/4		G 1/4	

Part No.	Compressed air connection		Nominal flow 1 ▶ 2	Nominal flow 2 ▶ 3	Ambient temperature min./max.
	Pilot Exhaust				
577775302	M5		1070 l/min	950 l/min	-25 ... 50 °C
577775302	M5		960 l/min	900 l/min	0 ... 50 °C

Part No.	Medium temperature min./max.	basic valve with electrical connector	ATEX	Fig.
577775302	-25 ... 50 °C	Basic valve without coil	ATEX optional	Fig. 2
577775302	0 ... 50 °C	Basic valve without coil	ATEX optional	Fig. 1

Nominal flow Qn at 6 bar and  $\Delta p = 1$  bar, MO = Manual override

## Technical information

The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!

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

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

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

ATEX optional: ATEX version can be produced by combining the basic valve without coil with an ATEX coil. ATEX ID: see ATEX coils catalog page.

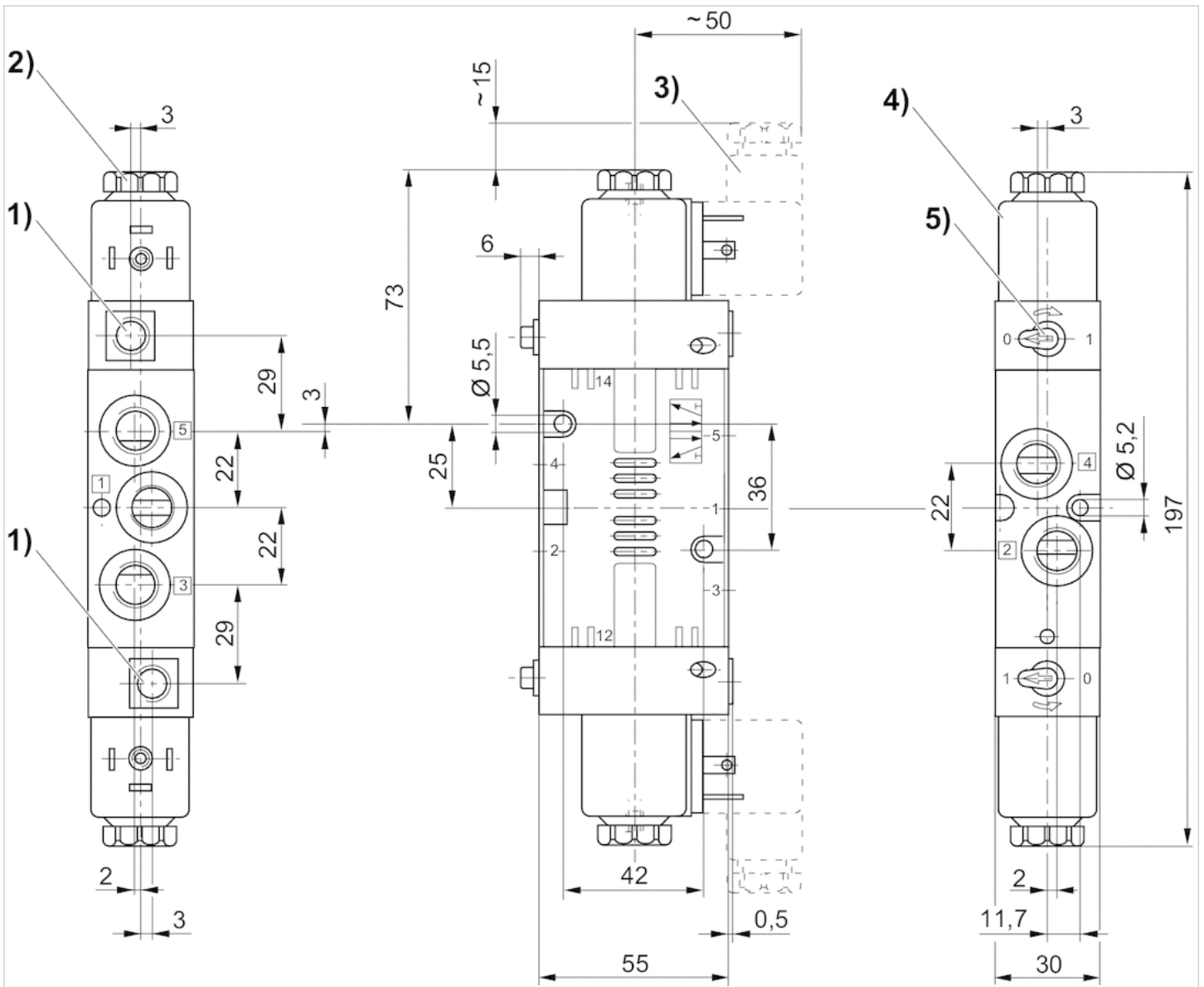
## Technical information

Material	
Housing	Die cast zinc Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber



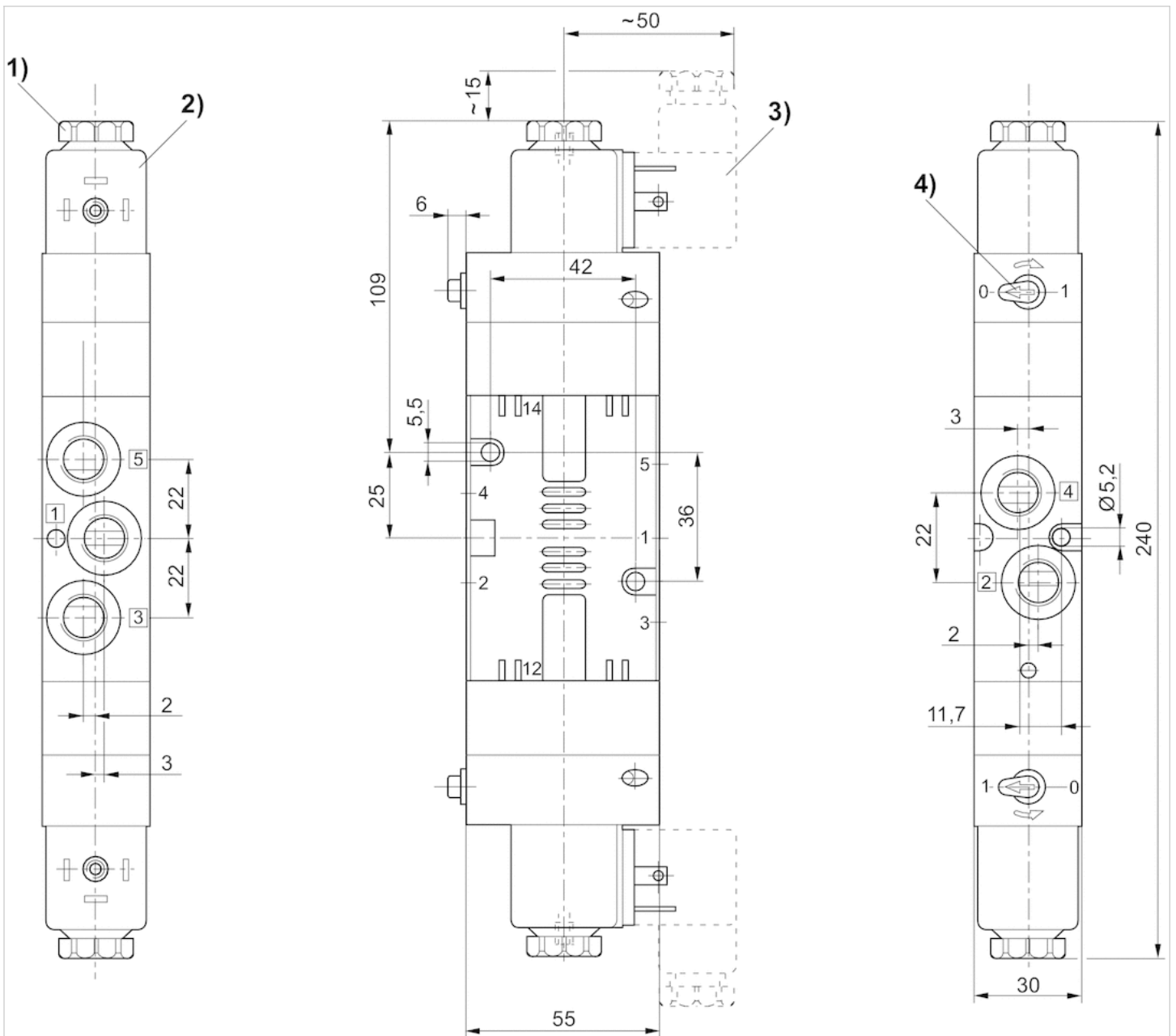
## Dimensions

Dimensions, Fig. 1



1) Only with separate pilot control G 1/8 2) After removal of cap M5 internal thread 3) Valve plug connector 4) Coil can be plugged at 45° intervals 5) Manual override

Fig. 2



1) After removal of cap M5 internal thread 2) Coil can be plugged at 45° intervals 3) Valve plug connector 4) Manual override






## 5/2-directional valve, Series TC15

- Operating voltage 24 V AC, 110 V AC, 230 V AC
- 5/2
- $Q_n = 1500$  l/min
- Pilot valve width : 15 mm
- Pipe connection
- Compressed air connection output : G 1/4
- Electrical connection : Plug, ISO 15217, form C
- Manual override : with detent
- double solenoid
- Pilot : Internal



Version	Spool valve, positive overlapping
Activation	Electrically
Pilot	Internal
Sealing principle	Soft sealing
Working pressure min./max.	See table below
Control pressure min./max.	See table below
Ambient temperature min./max.	-10 ... 50 °C
Medium temperature min./max.	-10 ... 50 °C
Medium	Compressed air
Max. particle size	5 µm
Oil content of compressed air	0 ... 5 mg/m <sup>3</sup>
Nominal flow $Q_n$	1500 l/min
Connector standard	ISO 15217
Protection class with connection	IP65
Duty cycle	100 %
Generic emission standard in accordance with	EN 50081:1992
Mounting on manifold strip	P-strip
Mounting screw tightening torque	2.5 Nm
Weight	See table below
Comment	An example configuration is illustrated. The delivered product may thus deviate from the illustration.

## Technical data

Part No.		MO	Compressed air connection	
			Input	Output
0820058028			G 1/4	G 1/4
0820058503			G 1/4	G 1/4

Part No.	Compressed air connection		Operational voltage	
	Exhaust		AC 50 Hz	AC 60 Hz
0820058028	G 1/4		230 V	230 V
0820058503	G 1/4		230 V	230 V

Part No.	Voltage tolerance		Holding power	
	AC 50 Hz	AC 60 Hz	AC 50 Hz	AC 60 Hz
0820058028	-10% / +10%	-10% / +10%	1.6 VA	1.4 VA
0820058503	-10% / +10%	-10% / +10%	1.6 VA	1.4 VA

Part No.	Switch-on power		Flow conductance	
	AC 50 Hz	AC 60 Hz	b	C-value
0820058028	2.2 VA	2 VA	0.33	6.8 l/(s*bar)
0820058503	2.2 VA	2 VA	0.33	6.8 l/(s*bar)

Part No.	Nominal resistance	Working pressure min./max.	Control pressure min./max.	Typ. switch-on time
0820058028	14700 Ω	3 ... 10 bar	3 ... 10 bar	12 ms
0820058503	14700 Ω	2 ... 10 bar	2 ... 10 bar	10 ms

Part No.	Typ. switch-off time	Weight
0820058028	35 ms	0.235 kg
0820058503	10 ms	0.263 kg

Nominal flow Q<sub>n</sub> at 6 bar and Δp = 1 bar, MO = Manual override

## Technical information

The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!

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

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

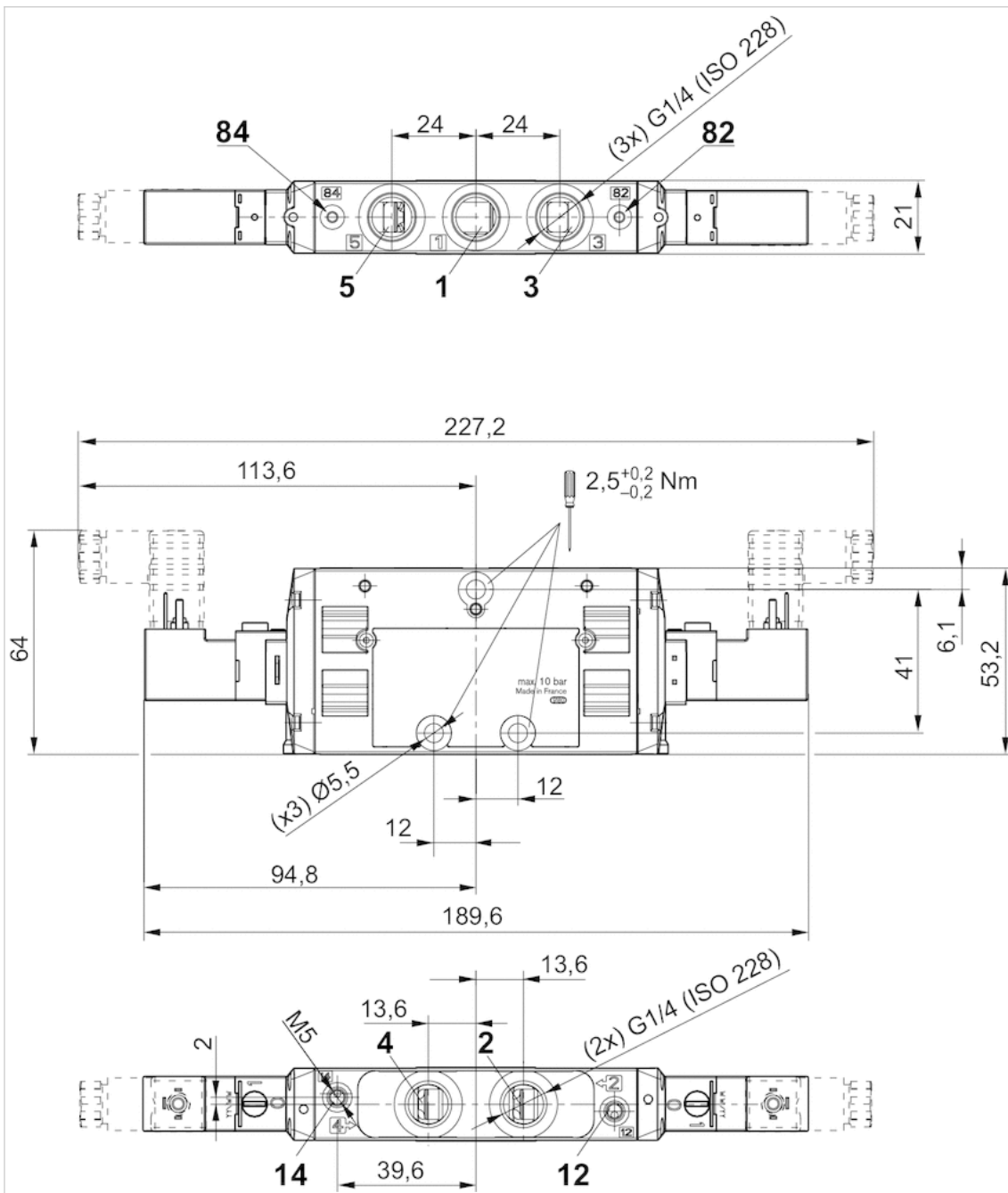
Use only the approved oils from AVENTICS. Further information can be found in the "Technical information" document (available in the MediaCentre).

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber Hydrogenated nitrile butadiene rubber
Front plate	Polyamide fiber-glass reinforced
Threaded bushing	Brass Die cast zinc, nickel-plated chrome-plated



Dimensions, double solenoid








## 5/2-directional valve, Series TC15

- Operating voltage 24 V DC
- 5/2
- $Q_n = 1500$  l/min
- Pilot valve width : 15 mm
- Pipe connection
- Compressed air connection output : G 1/4
- Electrical connection : Plug, ISO 15217, form C
- Manual override : with detent
- single solenoid double solenoid
- Pilot : Internal



Version	Spool valve, positive overlapping
Activation	Electrically
Pilot	Internal
Sealing principle	Soft sealing
Working pressure min./max.	See table below
Control pressure min./max.	See table below
Ambient temperature min./max.	-10 ... 50 °C
Medium temperature min./max.	-10 ... 50 °C
Medium	Compressed air
Max. particle size	5 µm
Oil content of compressed air	0 ... 5 mg/m <sup>3</sup>
Nominal flow $Q_n$	1500 l/min
Connector standard	ISO 15217
Protection class with connection	IP65
Duty cycle	100 %
Mounting on manifold strip	P-strip
Mounting screw tightening torque	2.5 Nm
Weight	See table below
Comment	An example configuration is illustrated. The delivered product may thus deviate from the illustration.

## Technical data

Part No.		MO	Compressed air connection	
			Input	Output
0820058026			G 1/4	G 1/4
0820058501			G 1/4	G 1/4

Part No.	Compressed air connection		Operational voltage	Voltage tolerance
	Exhaust			
0820058026	G 1/4		DC 24 V	DC -10% / +10%
0820058501	G 1/4		DC 24 V	DC -10% / +10%

Part No.	Power consumption	Flow conductance	Flow conductance	Nominal resistance
	DC	b	C-value	
0820058026	2 W	0.33	6.8 l/(s*bar)	280 Ω
0820058501	2 W	0.33	6.8 l/(s*bar)	280 Ω

Part No.	Working pressure min./max.	Control pressure min./max.	Typ. switch-on time	Typ. switch-off time
0820058026	3 ... 10 bar	3 ... 10 bar	12 ms	35 ms
0820058501	2 ... 10 bar	2 ... 10 bar	10 ms	10 ms

Part No.	Weight
0820058026	0.235 kg
0820058501	0.263 kg

Nominal flow  $Q_n$  at 6 bar and  $\Delta p = 1$  bar, MO = Manual override

## Technical information

The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!

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

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

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

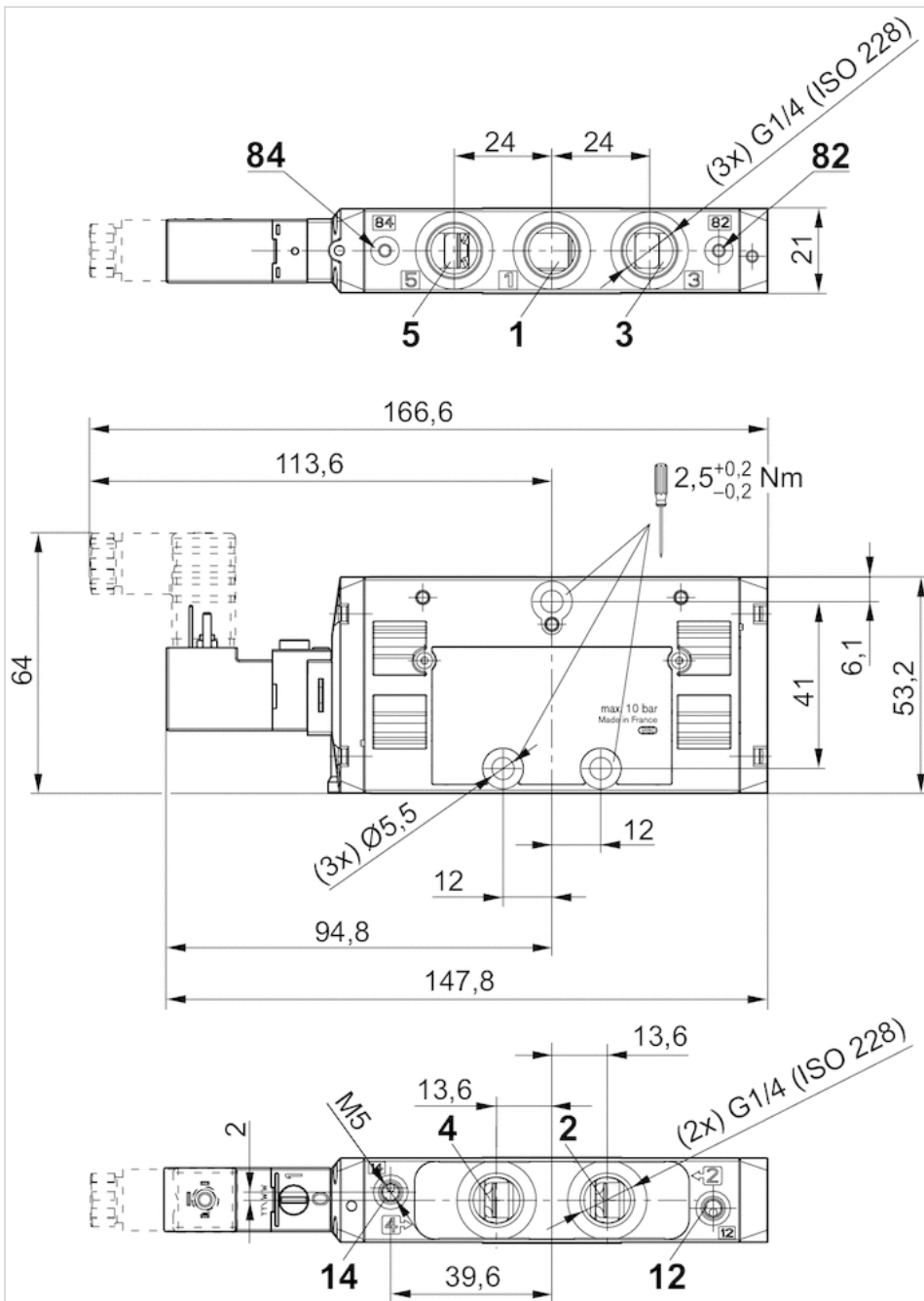
## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber Hydrogenated nitrile butadiene rubber
Front plate	Polyamide fiber-glass reinforced
Threaded bushing	Brass Die cast zinc, nickel-plated chrome-plated

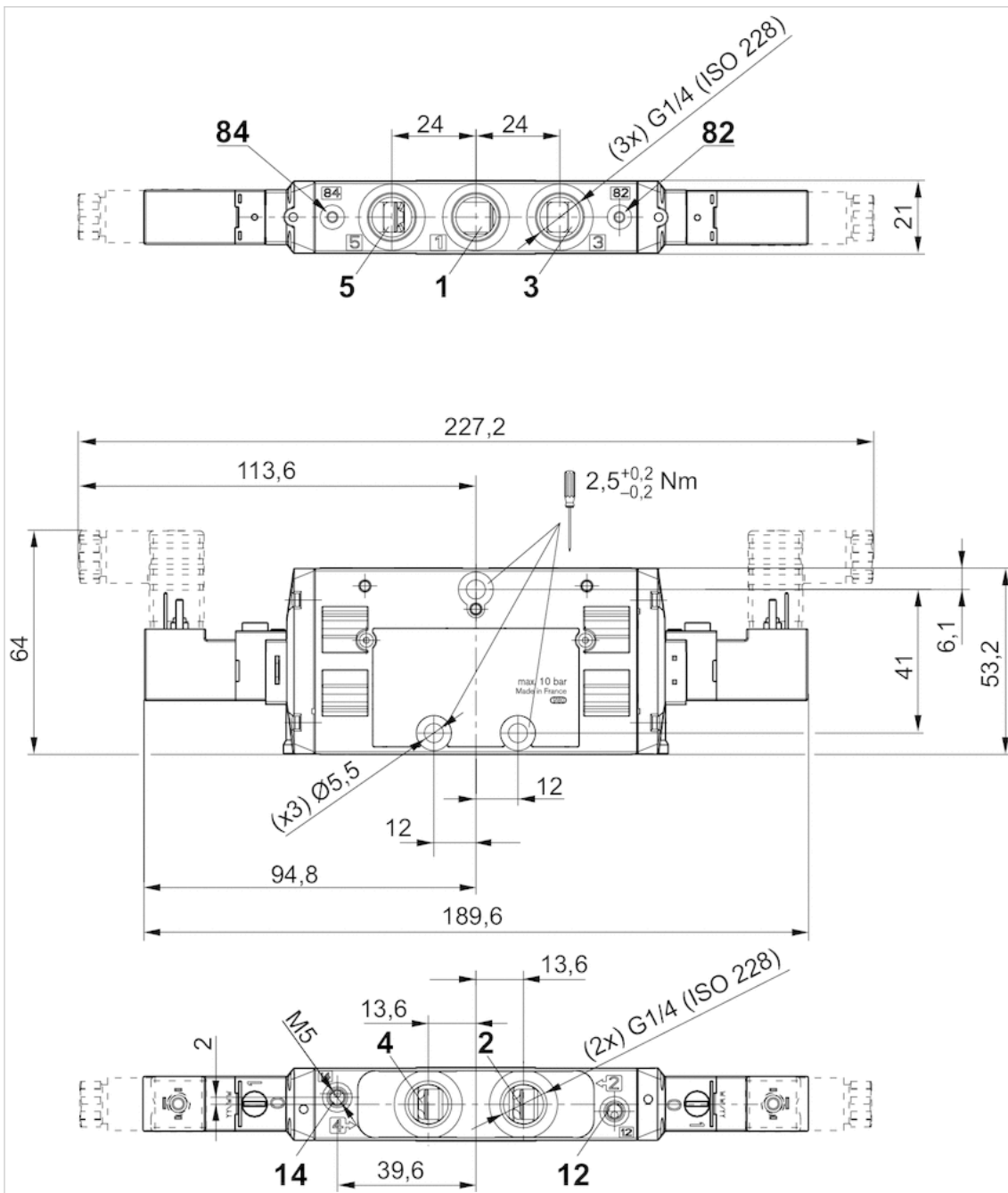


# Dimensions

## Dimensions, single solenoid

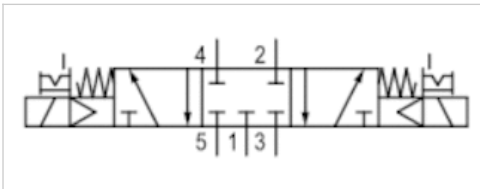


Dimensions, double solenoid



# 5/3-directional valve, Series TC15

- Operating voltage 24 V AC, 110 V AC, 230 V AC
- 5/3
- $Q_n = 1300$  l/min
- Pilot valve width : 15 mm
- closed center
- Pipe connection
- Compressed air connection output : G 1/4
- Electrical connection : Plug, ISO 15217, form C
- Manual override : with detent
- double solenoid
- Pilot : Internal



Version	Spool valve, positive overlapping
Activation	Electrically
Pilot	Internal
Sealing principle	Soft sealing
Working pressure min./max.	3 ... 10 bar
Control pressure min./max.	3 ... 10 bar
Ambient temperature min./max.	-10 ... 50 °C
Medium temperature min./max.	-10 ... 50 °C
Medium	Compressed air
Max. particle size	5 µm
Oil content of compressed air	0 ... 5 mg/m <sup>3</sup>
Nominal flow $Q_n$	1300 l/min
Connector standard	ISO 15217
Protection class with connection	IP65
Duty cycle	100 %
Typ. switch-on time	12 ms
Typ. switch-off time	13 ms
Generic emission standard in accordance with	EN 50081:1992
Mounting on manifold strip	P-strip
Mounting screw tightening torque	2.5 Nm
Weight	0.278 kg

## Technical data

Part No.	MO		Compressed air connection
			Input
0820059003		closed center	G 1/4

Part No.	Compressed air connection	Compressed air connection
	Output	Exhaust
0820059003	G 1/4	G 1/4

Part No.	Operational voltage	Operational voltage	Voltage tolerance
	AC 50 Hz	AC 60 Hz	AC 50 Hz
0820059003	230 V	230 V	-10% / +10%

Part No.	Voltage tolerance	Holding power	Holding power	Switch-on power
	AC 60 Hz	AC 50 Hz	AC 60 Hz	AC 50 Hz
0820059003	-10% / +10%	1.6 VA	1.4 VA	2.2 VA

Part No.	Switch-on power	Flow conductance	Flow conductance	Nominal resistance
	AC 60 Hz	b	C-value	
0820059003	2 VA	0.31	5.9 l/(s*bar)	14700 Ω

Nominal flow Qn at 6 bar and  $\Delta p = 1$  bar, MO = Manual override

## Technical information

The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!

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

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

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

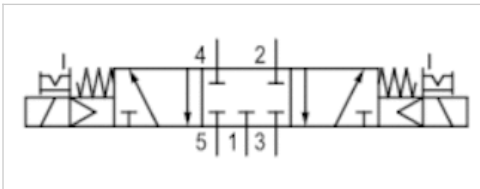
## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber Hydrogenated nitrile butadiene rubber
Front plate	Polyamide fiber-glass reinforced
Threaded bushing	Brass Die cast zinc, nickel-plated chrome-plated




## 5/3-directional valve, Series TC15

- Operating voltage 24 V DC
- 5/3
- $Q_n = 1300 \text{ l/min}$
- Pilot valve width : 15 mm
- closed center
- Pipe connection
- Compressed air connection output : G 1/4
- Electrical connection : Plug, ISO 15217, form C
- Manual override : with detent
- double solenoid
- Pilot : Internal



Version	Spool valve, positive overlapping
Activation	Electrically
Pilot	Internal
Sealing principle	Soft sealing
Working pressure min./max.	3 ... 10 bar
Control pressure min./max.	3 ... 10 bar
Ambient temperature min./max.	-10 ... 50 °C
Medium temperature min./max.	-10 ... 50 °C
Medium	Compressed air
Max. particle size	5 $\mu\text{m}$
Oil content of compressed air	0 ... 5 $\text{mg/m}^3$
Nominal flow $Q_n$	1300 l/min
Connector standard	ISO 15217
Protection class with connection	IP65
Duty cycle	100 %
Typ. switch-on time	12 ms
Typ. switch-off time	13 ms
Mounting on manifold strip	P-strip
Mounting screw tightening torque	2.5 Nm
Weight	0.278 kg

## Technical data

Part No.	MO	Part No.	Compressed air connection
			Input
0820059001		closed center	G 1/4

Part No.	Compressed air connection	Compressed air connection
	Output	Exhaust
0820059001	G 1/4	G 1/4

Part No.	Operational voltage	Voltage tolerance	Power consumption
	DC	DC	DC
0820059001	24 V	-10% / +10%	2 W

Part No.	Flow conductance	Flow conductance	Nominal resistance
	b	C-value	
0820059001	0.31	5.9 l/(s*bar)	280 Ω

Nominal flow Qn at 6 bar and  $\Delta p = 1$  bar, MO = Manual override

## Technical information

The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!

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

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

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

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber Hydrogenated nitrile butadiene rubber
Front plate	Polyamide fiber-glass reinforced
Threaded bushing	Brass Die cast zinc, nickel-plated chrome-plated





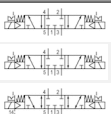
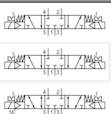



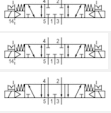

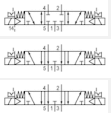

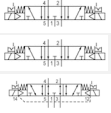

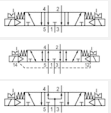

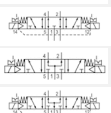

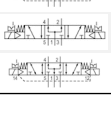

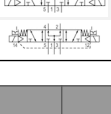

## 5/3-directional valve, Series TC08

- Operating voltage 24 V DC
- 5/3
- $Q_n = 700$  l/min
- Pilot valve width : 15 mm
- closed center exhausted center pressurized center
- Pipe connection
- Compressed air connection output : G 1/8
- Electrical connection : Plug, ISO 15217, form C
- Manual override : with detent
- double solenoid
- Pilot : Internal External



Version	Spool valve, positive overlapping
Activation	Electrically
Sealing principle	Soft sealing
Working pressure min./max.	See table below
Control pressure min./max.	3 ... 10 bar
Ambient temperature min./max.	-10 ... 50 °C
Medium temperature min./max.	-10 ... 50 °C
Medium	Compressed air
Max. particle size	5 µm
Oil content of compressed air	0 ... 5 mg/m <sup>3</sup>
Nominal flow $Q_n$	700 l/min
Connector standard	ISO 15217
Protection class with connection	IP65
Duty cycle	100 %
Typ. switch-on time	10 ms
Typ. switch-off time	11 ms
Mounting on manifold strip	P-strip
Mounting screw tightening torque	2 Nm
Weight	0.178 kg

## Technical data

Part No.		MO	Compressed air connection	
				Input
0820061001			closed center	G 1/8
R422103054			closed center	G 1/8
0820061051			closed center	G 1/8
R422103056			closed center	G 1/8
0820061011			exhausted center	G 1/8
R422103058			exhausted center	G 1/8
0820061061			exhausted center	G 1/8
0820061021			pressurized center	G 1/8
0820061071			pressurized center	G 1/8

Part No.	Compressed air connection	
	Output	Exhaust
0820061001	G 1/8	G 1/8
R422103054	G 1/8	G 1/8
0820061051	G 1/8	G 1/8
R422103056	G 1/8	G 1/8
0820061011	G 1/8	G 1/8
R422103058	G 1/8	G 1/8
0820061061	G 1/8	G 1/8
0820061021	G 1/8	G 1/8
0820061071	G 1/8	G 1/8

Part No.	Operational voltage	Voltage tolerance	Power consumption	Pilot
	DC	DC	DC	
0820061001	24 V	-10% / +10%	2 W	Internal
R422103054	-	-	-	Internal
0820061051	24 V	-10% / +10%	2 W	External
R422103056	-	-	-	External
0820061011	24 V	-10% / +10%	2 W	Internal
R422103058	-	-	-	Internal
0820061061	24 V	-10% / +10%	2 W	External
0820061021	24 V	-10% / +10%	2 W	Internal
0820061071	24 V	-10% / +10%	2 W	External

Part No.	Flow conductance	Flow conductance	Nominal resistance	Working pressure min./max.
	b	C-value		
0820061001	0.34	3 l/(s*bar)	280 Ω	3 ... 10 bar
R422103054	0.34	3 l/(s*bar)	-	3 ... 10 bar
0820061051	0.34	3 l/(s*bar)	280 Ω	-0.9 ... 10 bar
R422103056	0.34	3 l/(s*bar)	-	-0.9 ... 10 bar
0820061011	0.34	3 l/(s*bar)	280 Ω	3 ... 10 bar
R422103058	0.34	3 l/(s*bar)	-	3 ... 10 bar
0820061061	0.34	3 l/(s*bar)	280 Ω	-0.9 ... 10 bar
0820061021	0.34	3 l/(s*bar)	280 Ω	3 ... 10 bar
0820061071	0.34	3 l/(s*bar)	280 Ω	-0.9 ... 10 bar

Part No.	basic valve with electrical connector
0820061001	-
R422103054	Basic valve without coil
0820061051	-
R422103056	Basic valve without coil
0820061011	-
R422103058	Basic valve without coil
0820061061	-
0820061021	-
0820061071	-

Nominal flow Qn at 6 bar and  $\Delta p = 1$  bar, MO = Manual override

## Technical information

The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!

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

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

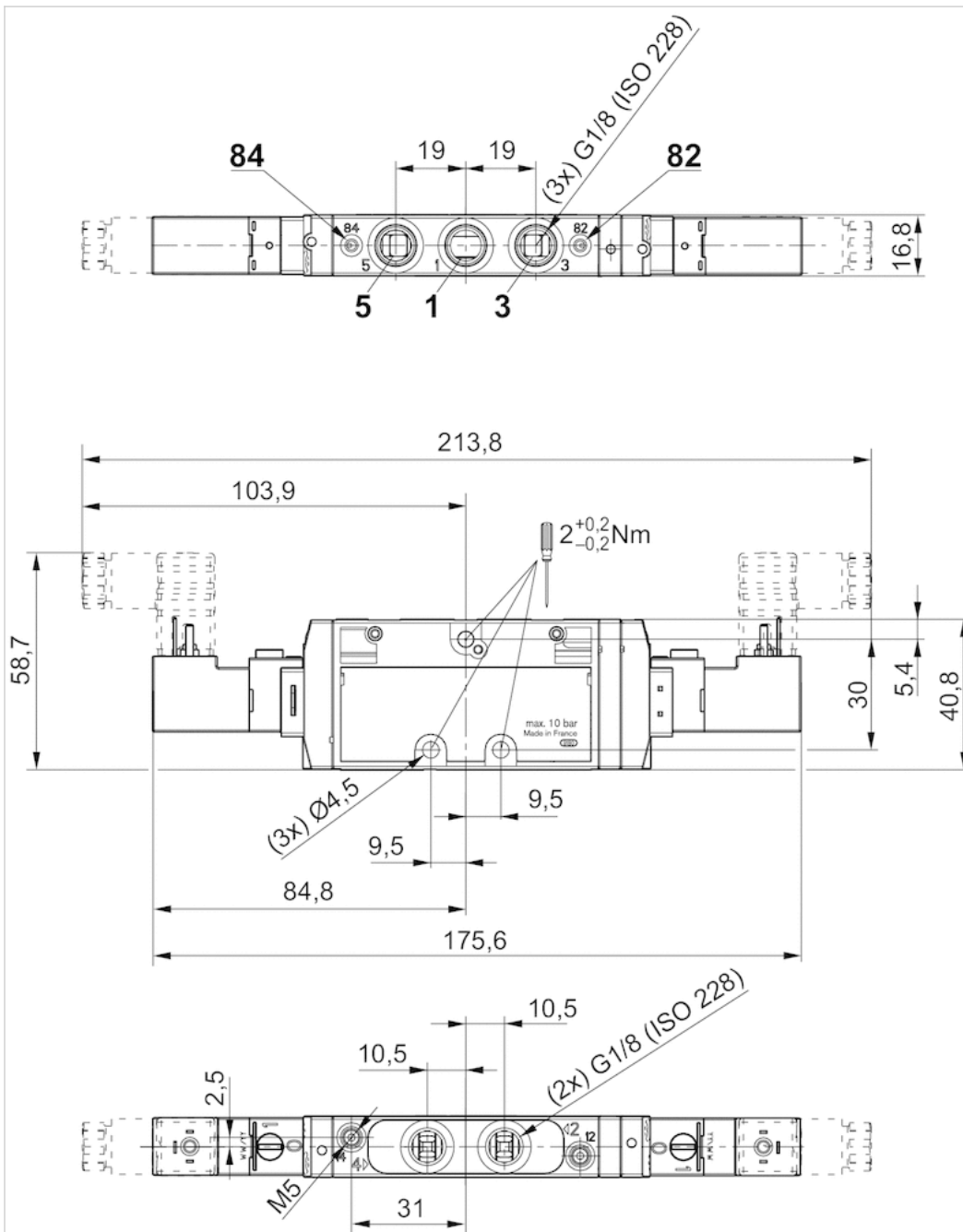
Use only the approved oils from AVENTICS. Further information can be found in the "Technical information" document (available in the MediaCentre).

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Seals	Acrylonitrile butadiene rubber Polyurethane
Front plate	Polyamide fiber-glass reinforced
Threaded bushing	Brass Die cast zinc, nickel-plated chrome-plated

# Dimensions

## Dimensions



# Pilot valve

- CNOMO / NFE 49-003-1

- 581, Modular system



## Standards

Working pressure min./max.

Ambient temperature min./max.

Medium

Protection class with connection

Duty cycle

Weight

CNOMO / NFE 49-003-1

0 ... 10 bar

-10 ... 50 °C

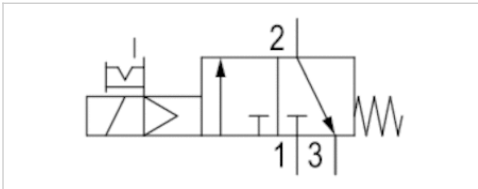
Compressed air

IP65



100 %

0.17 kg

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



## Technical data

Part No.	MO	Operational voltage DC	Operational voltage AC 50 Hz	Voltage tolerance DC
5428110080		-	230 V	-
5420890020		24 V	-	-10% / +10%

Part No.	Voltage tolerance AC 50 Hz	Power consumption DC	Holding power AC 50 Hz	Switch-on power AC 50 Hz
5428110080	-20% / +10%	-	8 VA	10 VA
5420890020	-	2 W	-	-

Part No.	Power consumption
5428110080	-
5420890020	Low power consumption

MO = Manual override, pilot valve 30x22 mm with CNOMO porting configuration

## Technical information

The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!

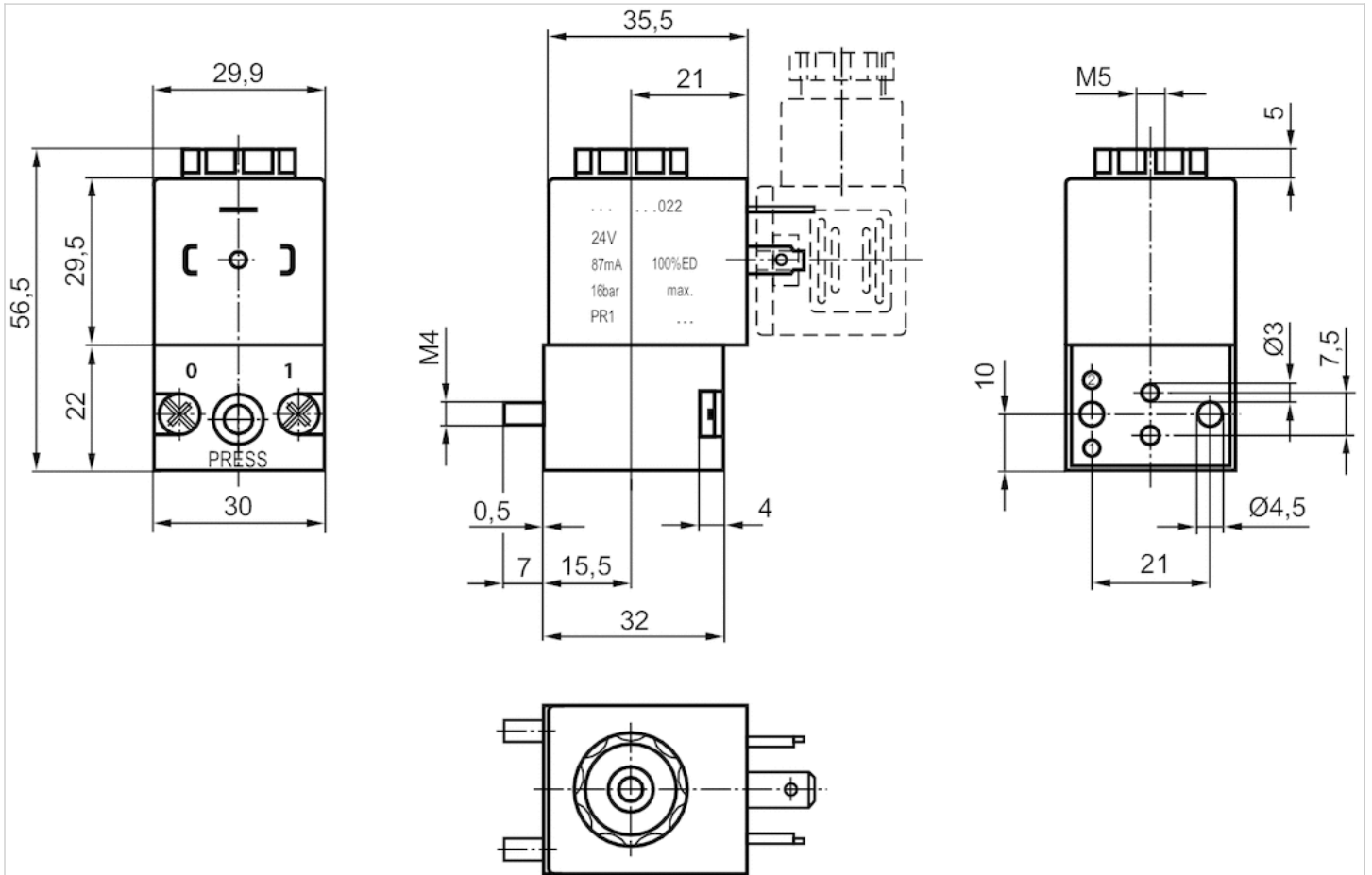
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .

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

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

# Dimensions

## Dimensions

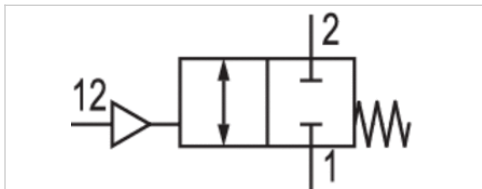


# Stop valve

- Qn 2→1 = 340-680 l/min
- Internal thread / External thread
- thread-in



Version	Poppet valve
Working pressure min./max.	2 ... 10 bar
Ambient temperature min./max.	-20 ... 80 °C
Medium temperature min./max.	-20 ... 80 °C
Medium	Compressed air
Weight	See table below



## Technical data

Part No.	Port 1	Port 2	Port 12	Flow	Weight
				Qn 2→1	
0821003075	G 1/8	G 1/8	G 1/8	340 l/min	0.059 kg
0821003076	G 1/4	G 1/4	G 1/4	680 l/min	0.103 kg

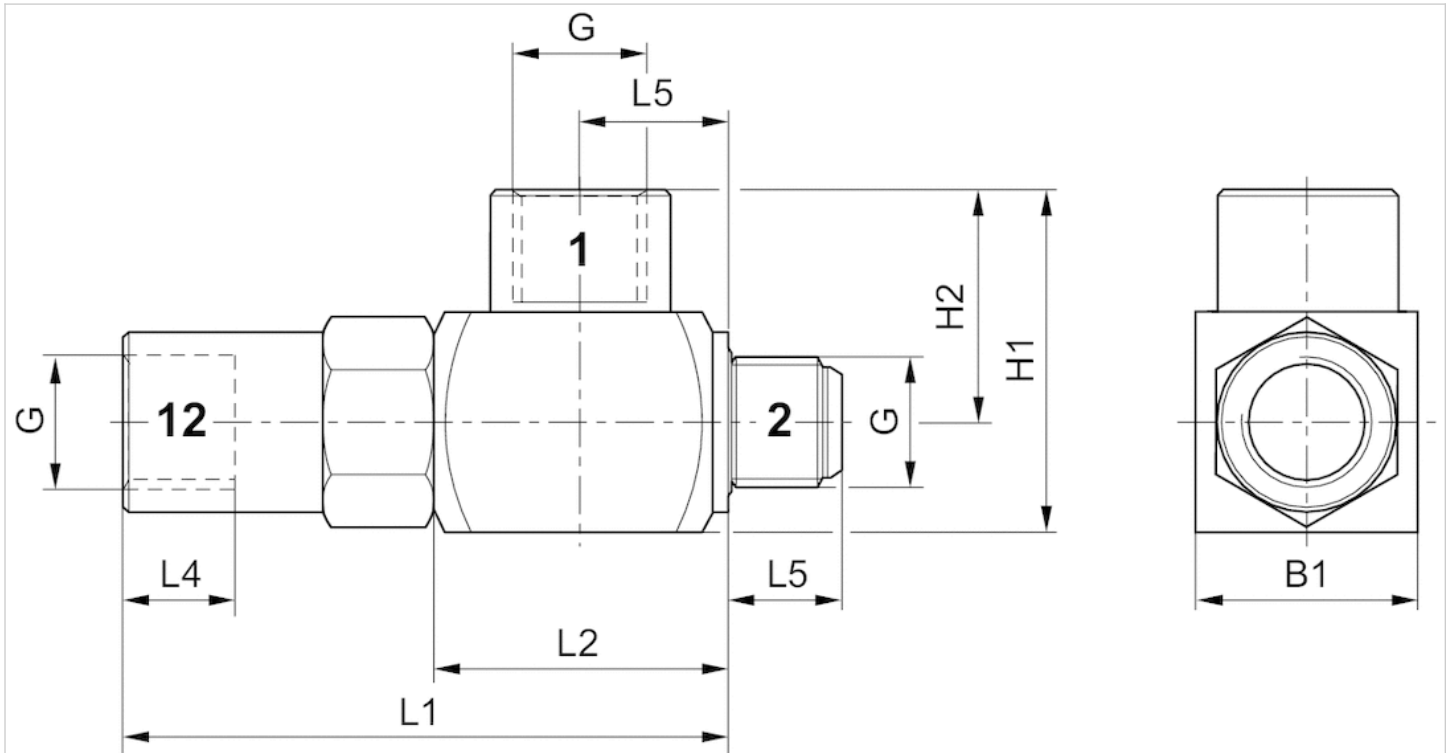
Nominal flow Qn at 6 bar and Δp = 1 bar

## Technical information

Material	
Housing	Brass, nickel-plated
Seals	Acrylonitrile butadiene rubber

Dimensions

Dimensions



Dimensions

Part No.	Port G	L1	L2	L3	L4	L5	H1	H2	B1	SW
0821003075	G 1/8	50.5	25.4	12.7	8	7.5	24.5	16	17	15
0821003076	G 1/4	59.6	29	14.5	12	11.4	34	23	22	18

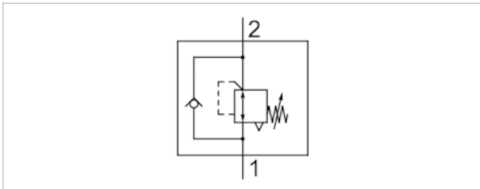


# Pressure regulator

- Qn 1►2 = 400-750 l/min
- Internal thread / External thread
- Poppet valve



Version	Poppet valve
Working pressure min./max.	1 ... 16 bar
Adjustment range min./max.	1 ... 8 bar
Ambient temperature min./max.	-10 ... 70 °C
Medium temperature min./max.	-10 ... 70 °C
Medium	Compressed air
Weight	See table below



## Technical data

Part No.	Compressed air connection Input	Compressed air connection type Input	Compressed air connection Output
0821302078	G 1/8	Internal thread	G 1/8
0821302080	G 1/4	Internal thread	G 1/4
0821302082	G 1/2	Internal thread	G 1/2

Part No.	Compressed air connection type Output	Flow	Weight	Fig.
		Qn 1►2		
0821302078	External thread	400 l/min	0.08 kg	Fig. 1
0821302080	External thread	600 l/min	0.11 kg	Fig. 1
0821302082	External thread	750 l/min	0.075 kg	Fig. 1

Nominal flow Qn at 6 bar and  $\Delta p = 1$  bar

## Technical information

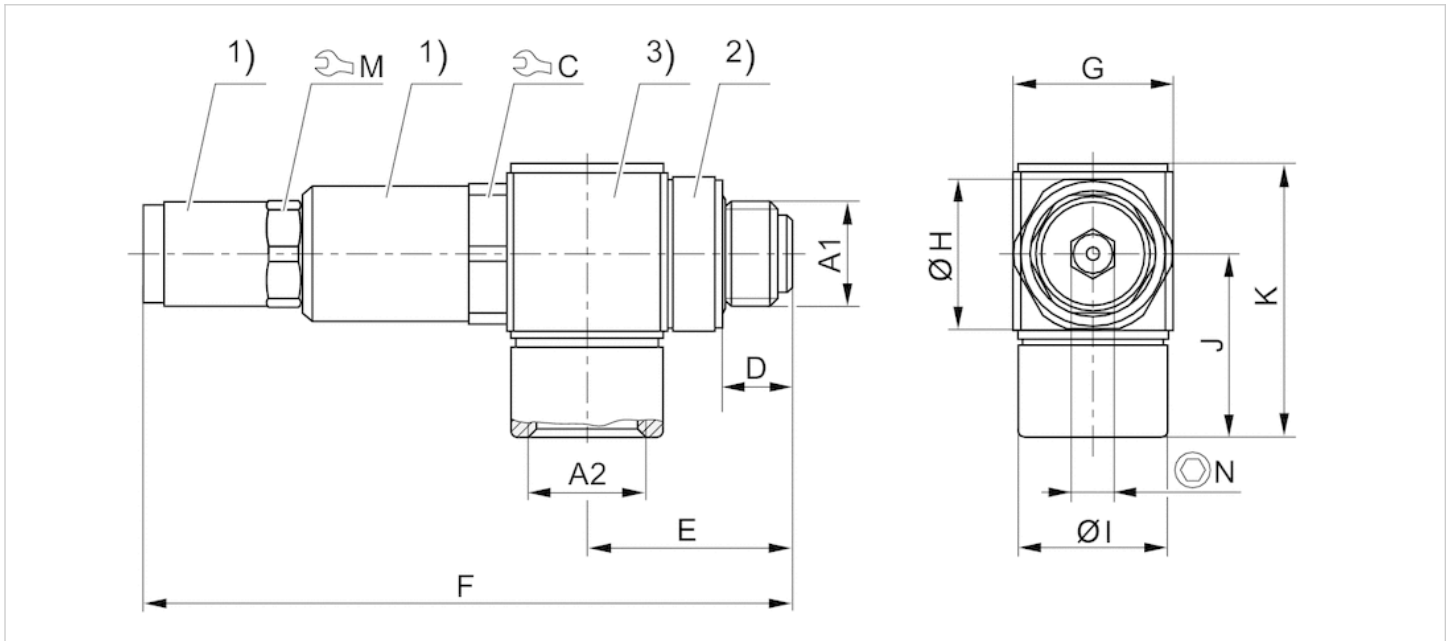
The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C .

## Technical information

Material	
Housing	Brass Polyamide Aluminum, galvanized black anodized
Seals	Acrylonitrile butadiene rubber

## Dimensions

Fig. 1



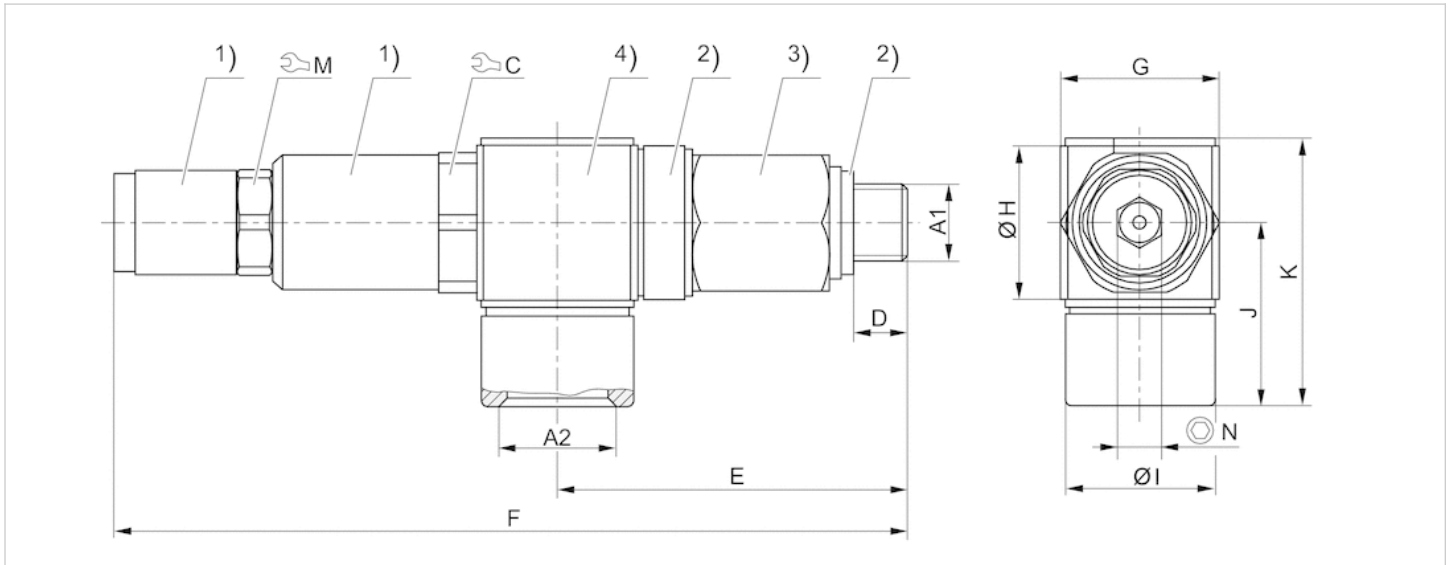
- 1) galvanized brass
- 2) polyamide
- 3) anodized black aluminum

## Dimensions

Part No.	A1	A2	C	D	E	F	G	H	I	J	K	M	N
0821302078	G 1/8	G 1/8	17	6.3	19.8	70.8	15	15	13	18.5	26.7	13	5
0821302080	G 1/4	G 1/4	17	9.5	25.8	78.8	19	19	18	22.5	32.9	13	5
0821302082	G 1/2	G 1/2	27	11.5	34	86.2	28	28	25	31	46.3	17	6

## Dimensions

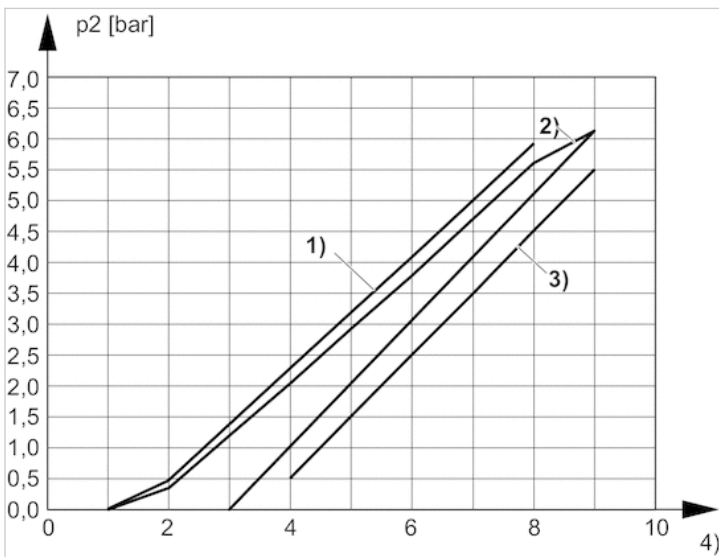
Fig. 2



- 1) galvanized brass
- 2) polyamide
- 3) galvanized brass
- 4) anodized black aluminum
- A1 = input
- A2 = output

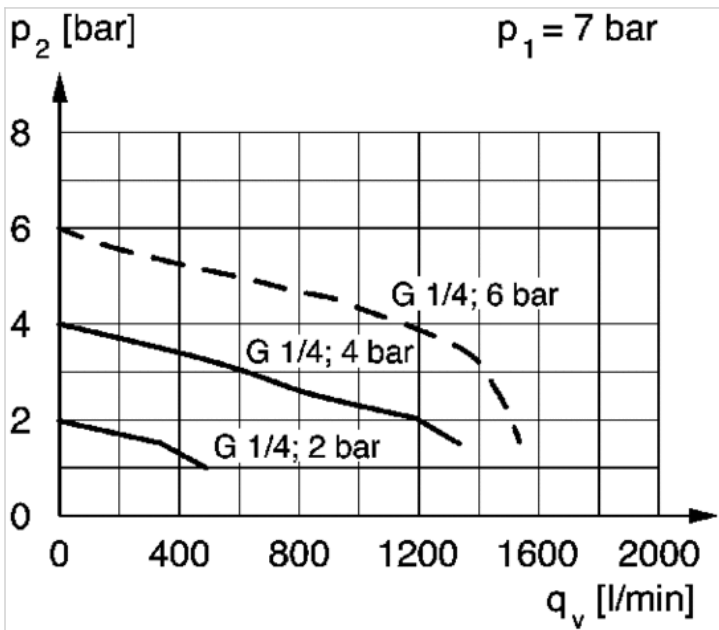
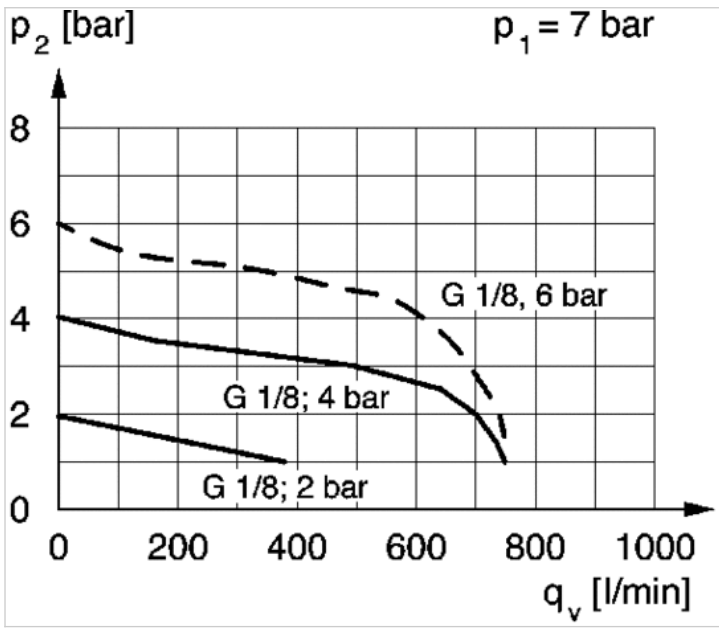
## Diagrams

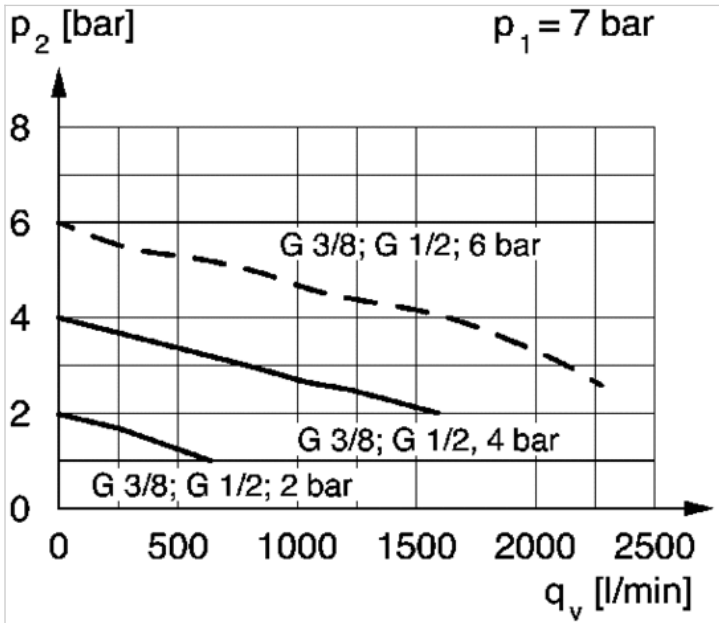
### Hysteresis



- 1) Overfill hysteresis
- 2) Control hysteresis
- 3) Refill hysteresis
- 4) Adjustment screw rotations

Pressure characteristics curve (flow rate from 1 to 2)

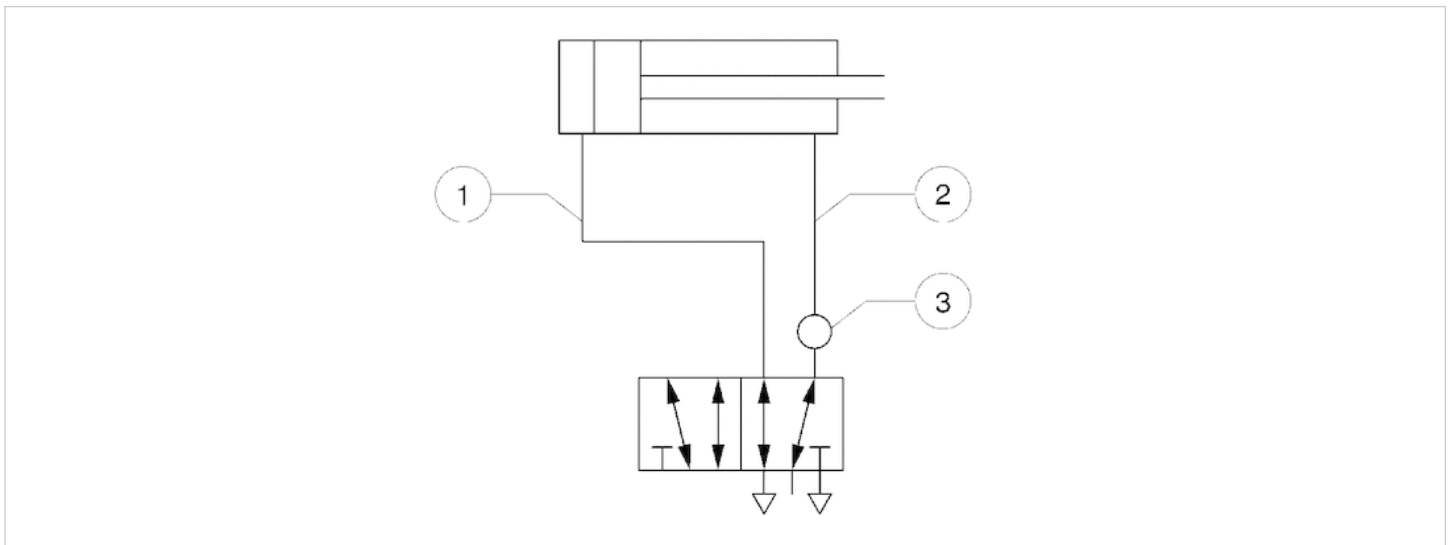




$p_1$  = working pressure,  $p_2$  = secondary pressure,  $q_v$  = nominal flow

## Circuit diagram

### Application example



1) e.g. forward stroke with max. pressure

2) return stroke with reduced pressure

3) installation point on directional control valve

At low tightening torque, the sealing ring enables the banjo union to swivel through 360°. Further tightening locks the banjo union into position.

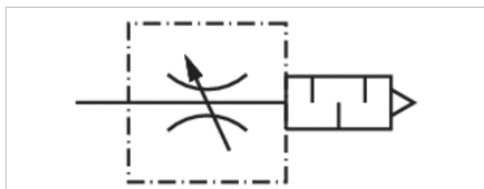
Adjust pressure via adjustment screw with hexagon socket. Lock using counter nuts.

# Throttle valve, Series CH02

- Qn = 700-4100 l/min
- Throttle valve with silencer
- External thread



Working pressure min./max.	0 ... 10 bar
Ambient temperature min./max.	-25 ... 80 °C
Medium temperature min./max.	-25 ... 80 °C
Medium	Compressed air
Weight	See table below



## Technical data

Part No.	Port 1	Flow	Tightening torque for silencer	Weight
		Qn	max.	
0821201102	G 1/8	700 l/min	3 Nm	0.025 kg
0821201103	G 1/4	1700 l/min	8 Nm	0.045 kg
0821201105	G 1/2	4100 l/min	16 Nm	0.135 kg

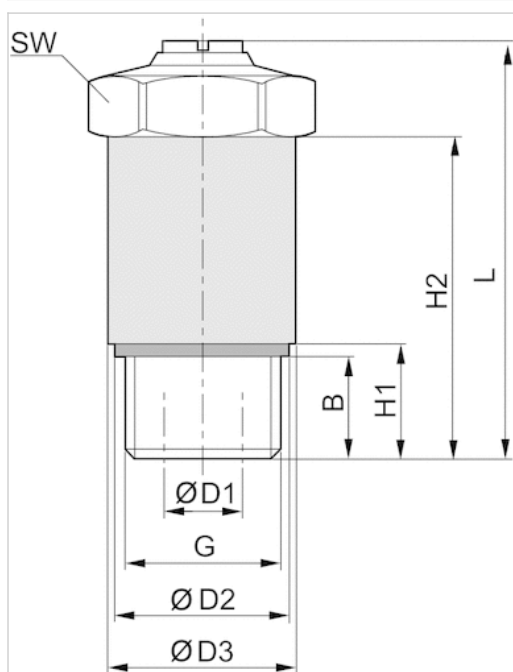
Nominal flow Qn at 6 bar and  $\Delta p = 1$  bar

## Technical information

Material	
Housing	Brass, galvanized
Seals	Acrylonitrile butadiene rubber
Silencer	Stainless steel

## Dimensions

### Dimensions



## Dimensions

Part No.	Port G	Ø D1	Ø D2	Ø D3	H1	H2	B	L 1)	SW
0821201102	G 1/8	4	13	16	7	24	5.5	31.5	13
0821201103	G 1/4	6.5	17.9	20	10	30	8	37.5	17
0821201105	G 1/2	12	26.5	30	12	42	10	52	24

1) Max.

## Fittings - Accessories, Series 740

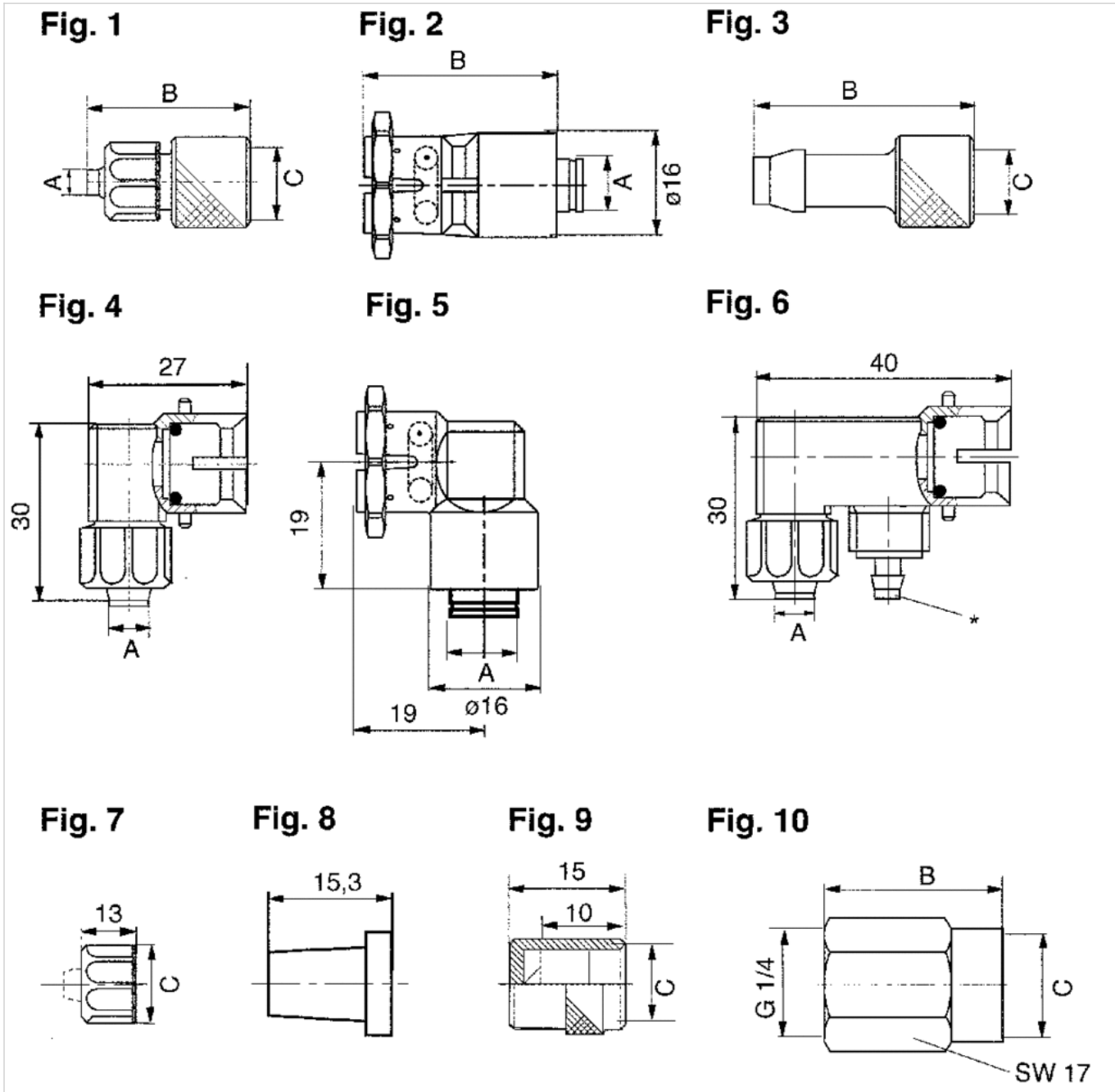


### Technical data

Part No.	Fig.	Type
8919905414	Fig. 7	Tube nut Ø 10x1 for silencer
8993809904	Fig. 8	Silencer
8919905404	Fig. 7	tube nut, Ø 8x1



## Dimensions



## Dimensions

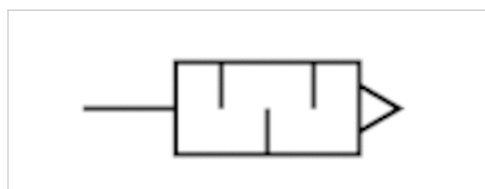
Part No.	$\varnothing A$	B	C	Fig.
8919905414	-	-	M14x1	Fig. 7
8993809904	-	-	-	Fig. 8
8919905404	-	-	M12x1	Fig. 7

# Exhaust cap, Series SI1

- R 1/4



Working pressure min./max.	0 ... 10 bar
Ambient temperature min./max.	-5 ... 50 °C
Medium	Compressed air
Weight	0.007 kg



## Technical data

Part No.	Compressed air connection	Delivery unit	Fig.
8994701900	R 1/4	10 piece	Fig. 1

## Technical information

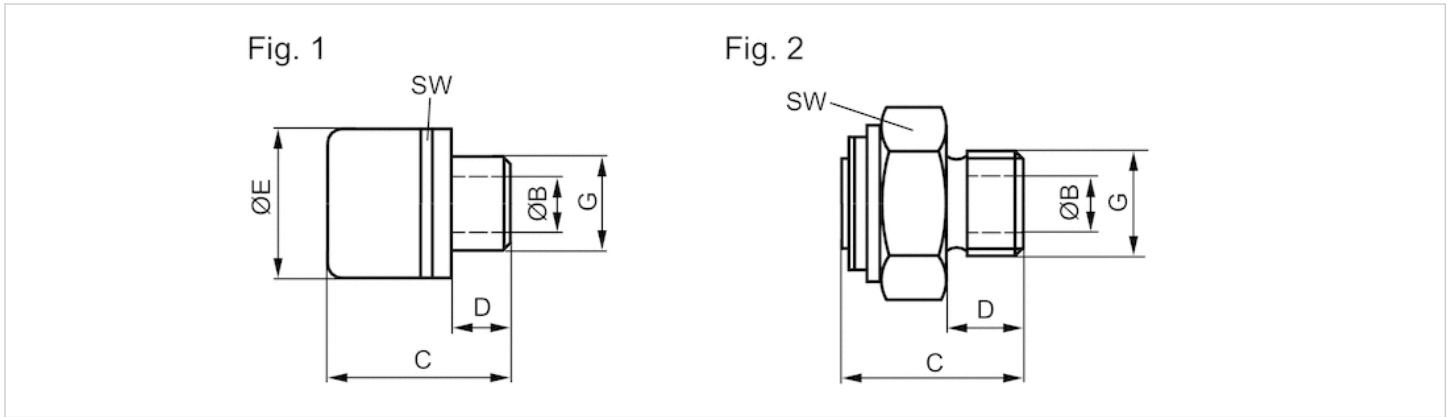
An example configuration is illustrated. The delivered product may thus deviate from the illustration.

## Technical information

Material	
Thread	Polyamide

## Dimensions

### Dimensions



## Dimensions

Part No.	Port G	B	C	D	E	SW	Fig.
8994701900	R 1/4	8	20.5	8	20	19	1

# Bearing block AB7-HD, Series CM1

- Suitable for robust mechanical engineering applications, with fixed bearing
- Cylinder mounting in accordance with ISO 15552
- Suitable piston  $\varnothing$  32 40 50 63 80 100 125 160 200 mm



Standards

ISO 15552

## Technical data

Part No.	Piston $\varnothing$	Swivel bearing $\varnothing$
1825805275	32 mm	10 mm
1825805276	40 mm	12 mm
1825805277	50 mm	12 mm
1825805278	63 mm	16 mm
1825805279	80 mm	16 mm
1825805280	100 mm	20 mm
1825805281	125 mm	25 mm
1825805282	160 mm	30 mm
1825805283	200 mm	30 mm

## Technical information

Material	
Material	Nodular graphite iron
	galvanized
Screws	galvanized steel



# Bearing block CS7, Series CM1

- With ball joint and foot
- Cylinder mounting in accordance with VDMA 24562 part 2
- Suitable piston Ø 32 40 50 63 80 100 125 160 200 mm



Standards

VDMA 24562 part 2

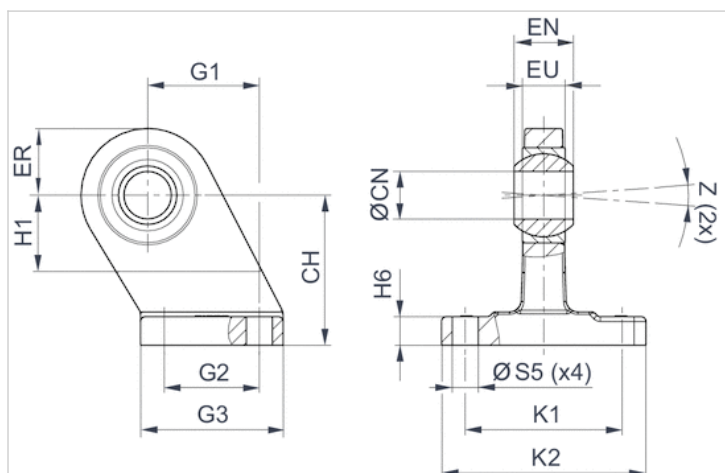
## Technical data

Part No.	Piston Ø	Swivel bearing Ø
1827001784	32 mm	10 mm
1827001785	40 mm	12 mm
1827001786	50 mm	16 mm
1827001787	63 mm	16 mm
1827001788	80 mm	20 mm
1827001789	100 mm	20 mm
1827001790	125 mm	30 mm
1827001791	160 mm	35 mm
1827001792	200 mm	35 mm

## Technical information

Material	
Material	Nodular graphite iron galvanized

## Dimensions



## Dimensions

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

H1 min.	H6	K1 JS14	K2 max.	ØS5 H13	Z min.
16	9 ±1	38	51	6.6	4°
20	9 ±1	41	54	6.6	4°
22	11 ±1	50	65	9	4°
27	11 ±1	52	67	9	4°
31	12 ±1,5	66	86	11	4°
38	13 ±1,5	76	96	11	4°
40	17 ±1,5	94	124	14	4°
45	22 ±1,5	118	156	14	4°
45	27 ±2	122	162	18	4°

# Clevis mounting AB6, Series CM1

- Cylinder mounting in accordance with ISO 15552
- Suitable piston Ø 32 40 50 63 80 100 125 160 200 mm



Standards

ISO 15552

## Technical data

Part No.	Piston Ø	Swivel bearing Ø	Housing material	Surface
1827001593	32 mm	10 mm	Aluminum (forged)	-
1827001594	40 mm	12 mm	Aluminum (forged)	-
1827001595	50 mm	16 mm	Aluminum (forged)	-
1827002024	63 mm	16 mm	Aluminum (forged)	-
1827001597	80 mm	20 mm	Aluminum (forged)	-
1827001598	100 mm	20 mm	Aluminum (forged)	-
1827001599	125 mm	30 mm	Aluminum (forged)	-
1827001600	160 mm	35 mm	Nodular graphite iron	galvanized
1827001601	200 mm	35 mm	Nodular graphite iron	galvanized

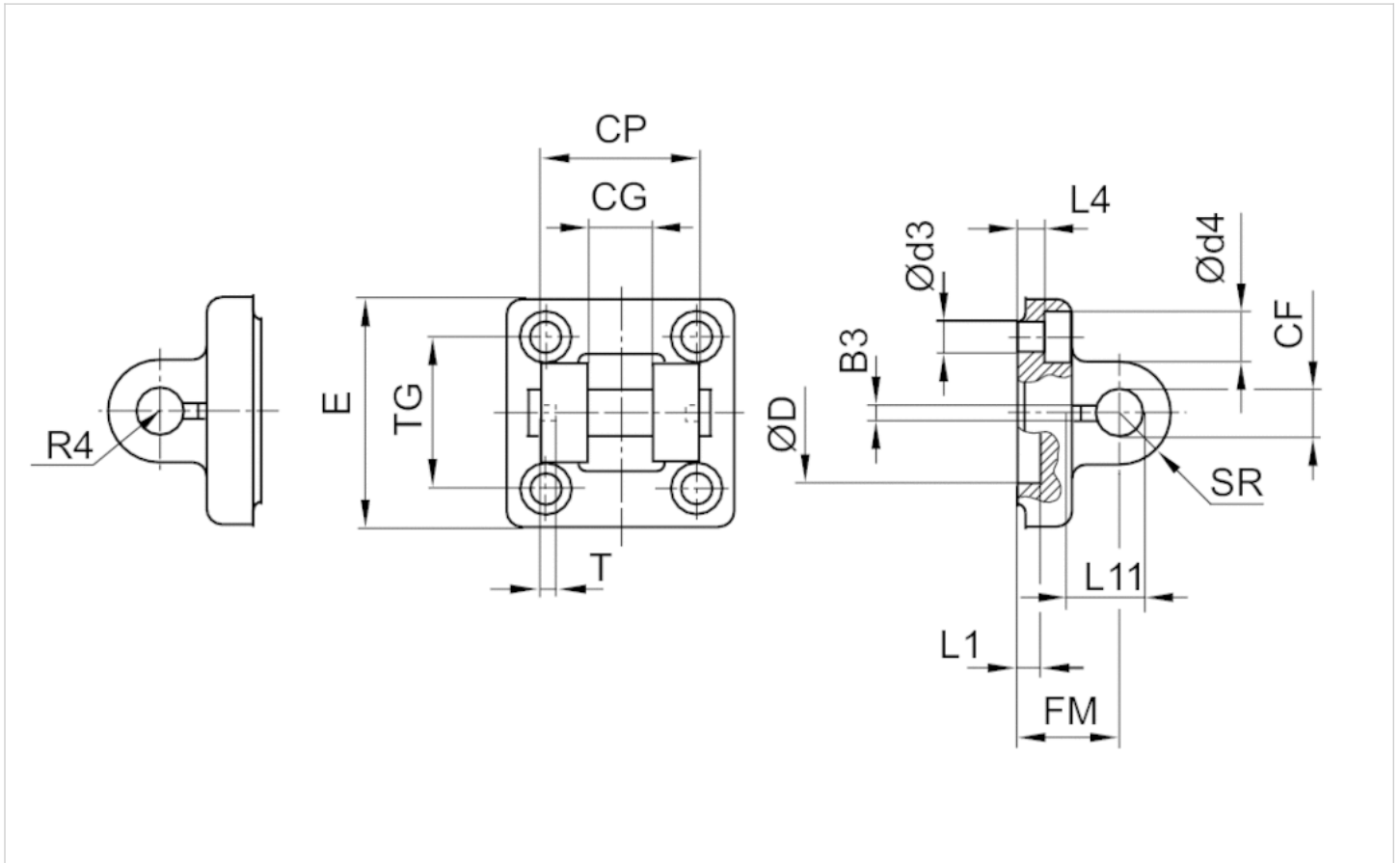
Scope of delivery: clevis mounting incl. pivot pins and mounting screws

## Technical information

Material	
Material	Aluminum (forged) Nodular graphite iron
	galvanized
Screws	Steel
	galvanized



## Dimensions



## Dimensions

Part No.	Piston Ø	B3 ±0,2	Ø CF F7	CG D10	CP d12	Ø d3	Ø d4	Ø D	E	FM ±0,2
1827001593	32 mm	3.3	10	14	34	6.6	11	30	49	22
1827001594	40 mm	4.3	12	16	40	6.6	11	35	55	25
1827001595	50 mm	4.3	16	21	45	9	15	40	67	27
1827002024	63 mm	4.3	16	21	51	9	15	45	77	32
1827001597	80 mm	4.3	20	25	65	11	18	45	97	36
1827001598	100 mm	4.3	20	25	75	11	18	55	117	41
1827001599	125 mm	6.3	30	37	97	14	20	60	140	50
1827001600	160 mm	6.3	35	43	122	18	26	65	180	55
1827001601	200 mm	6.3	35	43	122	18	26	75	220	60

L1 min.	L4 ±0,5	L11 -0,5	R4	SR	T ±0,2	TG
4.5	5.5	16.5	17	11	3	32,5 ±0,2
4.5	5.5	18	20	12	4	38 ±0,2
4.5	6.5	23	22	15	4	46,5 ±0,2
4.5	6.5	23	25	15	4	56,5 ±0,2
4.5	10	27	30	20	4	72 ±0,2
4.5	10	27	32	20	4	89 ±0,2
7	10	40	42	26	6	110 ±0,3
10	10	45	46	32.5	6	140 ±0,3

L1 min.	L4 $\pm 0,5$	L11 $-0,5$	R4	SR	T $\pm 0,2$	TG
10	11	45	49	32.5	6	175 $\pm 0,3$

# Clevis mounting MP2-HD, Series CM1

- Suitable for robust mechanical engineering applications
- Cylinder mounting in accordance with ISO 15552
- Suitable piston Ø 32 40 50 63 80 100 125 160 200 mm



Standards

ISO 15552

## Technical data

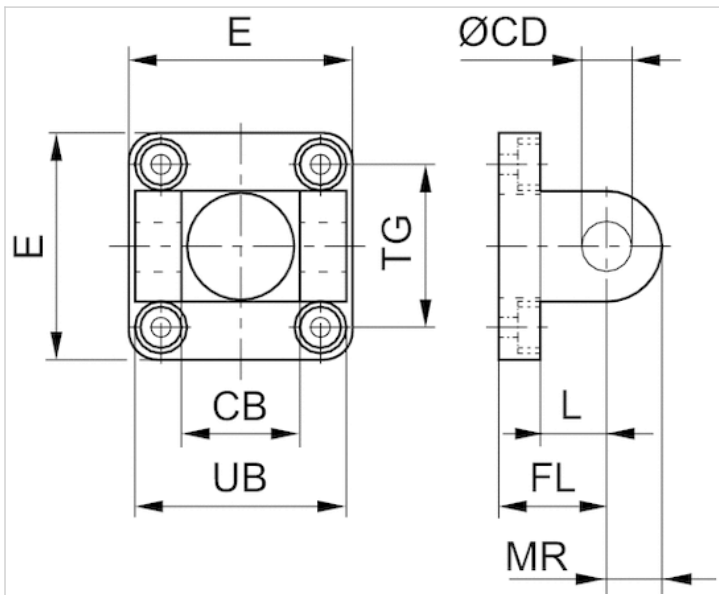
Part No.	Piston Ø	Swivel bearing Ø	Housing material	Surface
1827001289	32 mm	10 mm	Aluminum (forged)	-
1827001290	40 mm	12 mm	Aluminum (forged)	-
1827001291	50 mm	12 mm	Aluminum (forged)	-
1827001500	63 mm	16 mm	Aluminum (forged)	-
1827001293	80 mm	16 mm	Aluminum (forged)	-
1827001294	100 mm	20 mm	Aluminum (forged)	-
1827004862	125 mm	25 mm	Aluminum (forged)	-
1827004863	160 mm	30 mm	Nodular graphite iron	galvanized
1827004864	200 mm	30 mm	Nodular graphite iron	galvanized

Scope of delivery: clevis mounting incl. mounting screws

## Technical information

Material	
Material	Aluminum (forged) Nodular graphite iron
	galvanized
Screws	Steel
	galvanized

## Dimensions



## Dimensions

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

# Rear eye MP4-HD, Series CM1

- Suitable for robust mechanical engineering applications, for clevis mounting MP2 and AB3
- Cylinder mounting in accordance with ISO 15552
- Suitable piston  $\varnothing$  32 40 50 63 80 100 125 160 200 mm



Standards

ISO 15552

## Technical data

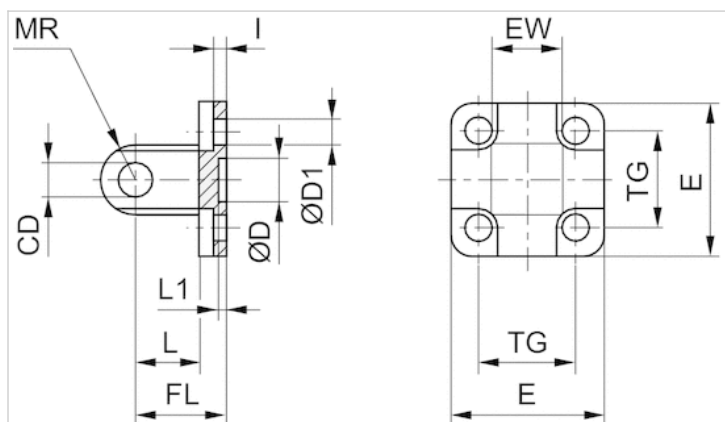
Part No.	Piston $\varnothing$	Swivel bearing $\varnothing$	Housing material	Surface
1827001283	32 mm	10 mm	Aluminum (forged)	-
1827001284	40 mm	12 mm	Aluminum (forged)	-
1827001285	50 mm	12 mm	Aluminum (forged)	-
1827020086	63 mm	16 mm	Aluminum (forged)	-
1827001287	80 mm	16 mm	Aluminum (forged)	-
1827001288	100 mm	20 mm	Aluminum (forged)	-
1827004866	125 mm	25 mm	Aluminum (forged)	-
1827004867	160 mm	30 mm	Nodular graphite iron	galvanized
1827004868	200 mm	30 mm	Nodular graphite iron	galvanized

Scope of delivery: clevis incl. mounting screws

## Technical information

Material	
Material	Aluminum (forged) Nodular graphite iron
	galvanized
Screws	Steel
	galvanized

## Dimensions



## Dimensions

Part No.	Piston Ø	CD H9	Ø D	Ø D1	E	EW	FL ±0,2	I ±0,5	L min.	L1 min.
1827001283	32 mm	10	30 H11	6.6	48	26 -0,2/-0,6	22	5.5	12	4.5
1827001284	40 mm	12	35 H11	6.6	53	28 -0,2/-0,6	25	5.5	15	4.5
1827001285	50 mm	12	40 H11	9	63	32 -0,2/-0,6	27	6.5	15	4.5
1827020086	63 mm	16	45 H11	9	73	40 -0,2/-0,6	32	6.5	20	4.5
1827001287	80 mm	16	45 H11	11	98	50 -0,2/-0,6	36	10	20	4.5
1827001288	100 mm	20	55 H11	11	115	60 -0,2/-0,6	41	10	25	4.5
1827004866	125 mm	25	60 H11	14	140	70 -0,5/-1,2	50	10	30	7
1827004867	160 mm	30	65 H11	18	180	90 -0,5/-1,2	55	10	35	7
1827004868	200 mm	30	75 H11	18	220	90 -0,5/-1,2	60	11	35	7

MR max.	TG
10	32,5 ±0,2
12	38 ±0,2
12	46,5 ±0,2
16	56,5 ±0,2
16	72 ±0,2
20	89 ±0,2
26	110 ±0,3
31	140 ±0,3
31	175 ±0,3

# Rear eye MP6, Series CM1

- With ball joint and foot
- Cylinder mounting in accordance with ISO 15552
- Suitable piston Ø 50 63 80 100 125 160 200 mm



Standards  
Weight

ISO 15552  
See table below

## Technical data

Part No.	Piston Ø	Swivel bearing Ø	Housing material	Bearing material, inner ring
1827001621	50 mm	16 mm	Aluminum (forged)	Stainless steel
1827020087	63 mm	16 mm	Aluminum (forged)	Stainless steel
1827001623	80 mm	20 mm	Aluminum (forged)	Stainless steel
1827001624	100 mm	20 mm	Aluminum (forged)	Stainless steel
1827001625	125 mm	30 mm	Aluminum (forged)	Stainless steel
1827001626	160 mm	35 mm	Nodular graphite iron (galvanized)	Stainless steel
1827001627	200 mm	35 mm	Nodular graphite iron (galvanized)	Stainless steel

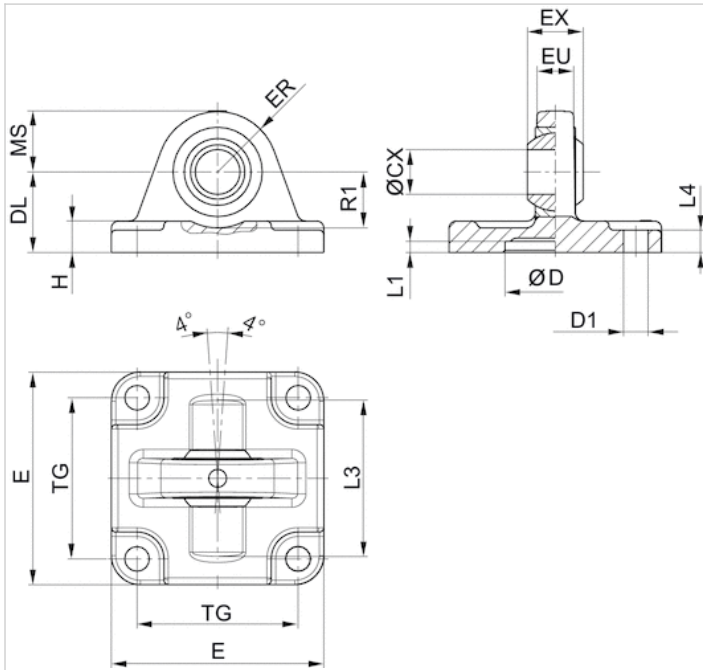
Part No.	Bearing material, outer ring	Bearing material	Weight
1827001621	Brass with PTFE coating	Stainless steel	0.2 kg
1827020087	Brass with PTFE coating	Stainless steel	0.3 kg
1827001623	Brass with PTFE coating	Stainless steel	0.6 kg
1827001624	Brass with PTFE coating	Stainless steel	0.8 kg
1827001625	Brass with PTFE coating	Stainless steel	1.4 kg
1827001626	Brass with PTFE coating	-	5.6 kg
1827001627	Brass with PTFE coating	-	8.5 kg

Scope of delivery: clevis incl. mounting screws

## Technical information

Material	
Material	Aluminum (forged) Nodular graphite iron (galvanized)
Screws	galvanized steel
Bearing	Stainless steel

## Dimensions



## Dimensions

Part No.	Piston Ø	ØCX H7	ØD H11	ØD1 H13	DL ±0,2	E	EX -0,1	ER	EU	H	L1 min.	L3
1827001621	50 mm	16	40	9	27	65	21	20	15	10.5	4.5	48
1827020087	63 mm	16	45	9	32	75	21	23	15	10.5	4.5	55
1827001623	80 mm	20	45	11	36	95	25	27	18	14	4.5	70
1827001624	100 mm	20	55	11	41	115	25	30	18	15	4.5	80
1827001625	125 mm	30	60	14	50	140	37	40	25	16	7	100
1827001626	160 mm	35	65	18	55	176	43	44	30	17	7	130
1827001627	200 mm	35	75	18	60	216	43	47	30	19.5	7	130

L4	MS -0,5	R1 min.	TG
6.5	21	19	46,5 ±0,2
6.5	23	21	56,5 ±0,2
10	27	24	72 ±0,2
10	30	25	89 ±0,2
10	40	33	110 ±0,3
10	44	39	140 ±0,3
11	47	41	175 ±0,3



# Rear eye MP9, Series CM1

- With rubber bushing
- Cylinder mounting in accordance with ISO 15552
- Suitable piston Ø 32 40 50 63 80 100 125 mm



Standards  
Weight

ISO 15552  
See table below

## Technical data

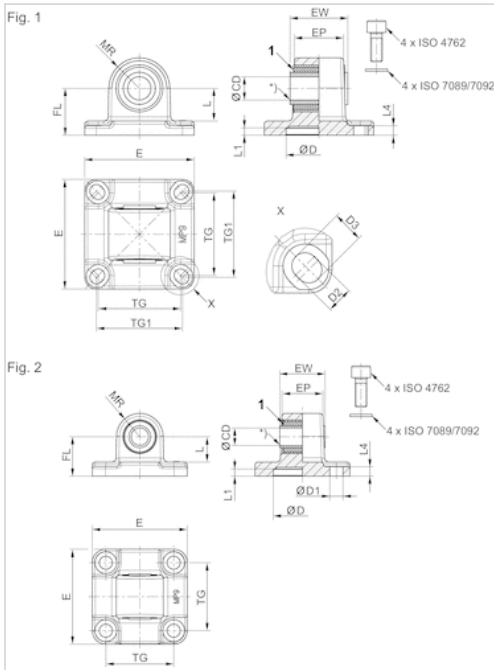
Part No.	Piston Ø	Swivel bearing Ø	Bearing material	Weight	Fig.
3683203000	32 mm	10 mm	Bronze	0.092 kg	Fig. 2
3683204000	40 mm	12 mm	Bronze	0.143 kg	Fig. 1
3683205000	50 mm	12 mm	Bronze	0.217 kg	Fig. 2
3683206000	63 mm	16 mm	Bronze	0.411 kg	Fig. 1
3683208000	80 mm	16 mm	Bronze	0.64 kg	Fig. 2
3683210000	100 mm	20 mm	Bronze	0.956 kg	Fig. 1
R412015973	125 mm	25 mm	steel, galvanized	1.37 kg	Fig. 2

Scope of delivery: clevis incl. mounting screws

## Technical information

Material	
Material	Aluminum (forged)
Bearing	Bronze steel, galvanized

# Dimensions



1) Rubber bushing

# Dimensions

Part No.	Piston Ø	CD H11	CD H9	E	EW	EP	TG	TG1 ±0,2	FL ±0,2	L 1)	MR	L1	L4
3683203000	32 mm	10	-	46	25.5	18,9	32.5	–	22	13.8	12.5	5	5.5
3683204000	40 mm	-	12	53	27	23,5	38	40	25	16.3	15	5	5.5
3683205000	50 mm	-	12	65	31	28	46.5	–	27	17.3	16	5	6.5
3683206000	63 mm	-	16	75	39.5	33.5	56.5	59	32	22.3	21	5	6.5
3683208000	80 mm	-	16	94.5	49.5	43	72	–	36	21.8	22	5	10
3683210000	100 mm	-	20	114	59.5	54	89	90	41	25.8	25	5	10
R412015973	125 mm	-	25	138	69.5	60	110	–	50	33.8	34	7.5	10

D H11	D1 H13	D2 -0,2	D3 -0,2	Fig.
30	6.6	–	–	Fig. 2
35	–	6.6	8	Fig. 1
40	9	–	–	Fig. 2
45	6.6	–	–	Fig. 1
45	11	–	–	Fig. 2
55	–	11	11.7	Fig. 1
60	13.5	–	–	Fig. 2

# Trunnion mounting MT5, MT6, Series CM1

- for mounting to the cylinder cover or base
- Suitable piston Ø 32 40 50 63 80 100 125 mm
- for series CCI, CVI, CCL-IC/-IS, PRA/TRB CVI, CCL-IS, PRA, TRB



Weight

See table below

The delivered product may vary from that in the illustration.

## Technical data

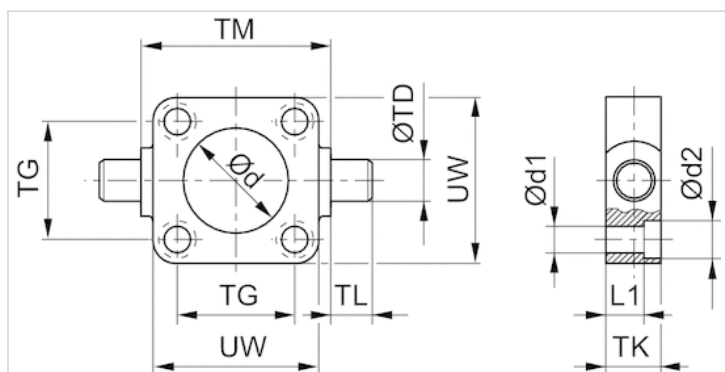
Part No.	Piston Ø	Weight
1827001609	32 mm	0.29 kg
1827001610	40 mm	0.5 kg
1827001611	50 mm	0.7 kg
1827002046	63 mm	1.1 kg
1827001613	80 mm	1.5 kg
1827001614	100 mm	2.7 kg
1827001615	125 mm	3.8 kg

Scope of delivery: trunnion mounting incl. mounting screws

## Technical information

Material	
Material	Nodular graphite iron
	galvanized
Screws	Steel
	galvanized

## Dimensions



## Dimensions

Part No.	Piston $\varnothing$	$\varnothing d$ H11	$\varnothing d1$	$\varnothing d2$	L1	TD e9	TG $\pm 0,2$	TK	TL h14	TM h14	UW
1827001609	32 mm	30	6.6	11	7.5	12	32.5	16	12	50	48
1827001610	40 mm	35	6.6	11	7.5	16	38	20	16	63	56
1827001611	50 mm	40	9	15	10	16	46.5	24	16	75	65
1827002046	63 mm	45	9	15	10	20	56.5	24	20	90	75
1827001613	80 mm	45	11	18	16	20	72	28	20	110	100
1827001614	100 mm	55	11	18	25.5	25	89	38	25	132	120
1827001615	125 mm	60	14	20	34	25	110	46	25	160	145

# Bearing AT4, Series CM1

- for trunnion mounting MT4, MT5, MT6
- Cylinder mounting in accordance with ISO 15552
- Suitable piston Ø 20, 25, 32 40, 50 63, 80 100, 125 160, 200 mm
- for series CCI, CCL-IC, ICL, KPZ, PRA/TRB CCI, CCL-IC, KPZ, PRA/TRB ITS



Standards

ISO 15552

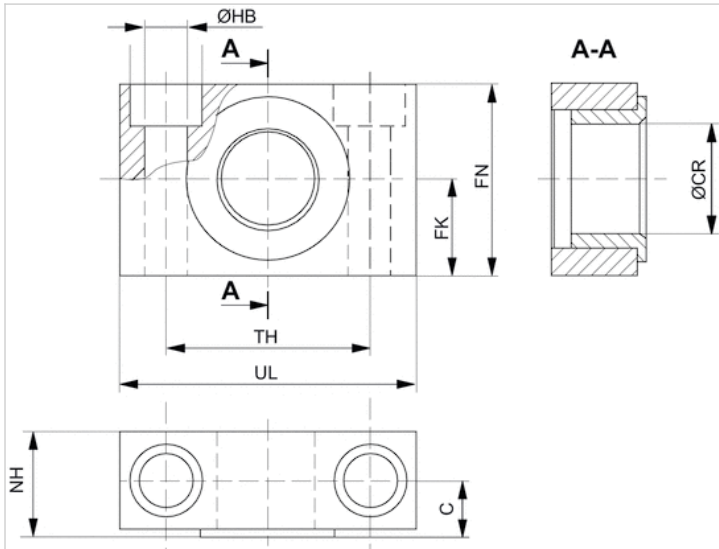
## Technical data

Part No.	Piston Ø	Swivel bearing Ø	Scope of delivery
1827001603	20, 25, 32 mm	12 mm	2 piece
1827001604	40, 50 mm	16 mm	2 piece
1827001605	63, 80 mm	20 mm	2 piece
1827001606	100, 125 mm	25 mm	2 piece
1827001607	160, 200 mm	32 mm	2 piece

## Technical information

Material	
Material	Steel
	galvanized
Guide bushing	Sintered bronze

## Dimensions



## Dimensions

Part No.	Piston Ø	UL	NH	TH	C	CR H9	HB H13	FN	FK	Plain bearing
1827001603	20, 25, 32 mm	46	18	32 ±0,2	10.5	12	6.6	30	15 ±0,1	Sintered bronze
1827001604	40, 50 mm	55	21	36 ±0,2	12	16	9	36	18 ±0,1	Sintered bronze
1827001605	63, 80 mm	65	23	42 ±0,2	13	20	11	40	20 ±0,1	Sintered bronze
1827001606	100, 125 mm	75	28.5	50 ±0,2	16	25	14	50	25 ±0,1	Sintered bronze
1827001607	160, 200 mm	92	40	60 ±0,3	22.5	32	18	60	30 ±0,2	Sintered bronze

# Flange mounting MF1, MF2, Series CM1

- Cylinder mounting in accordance with ISO 15552
- Suitable piston Ø 32 40 50 63 80 100 125 160 200 mm



Standards

ISO 15552

## Technical data

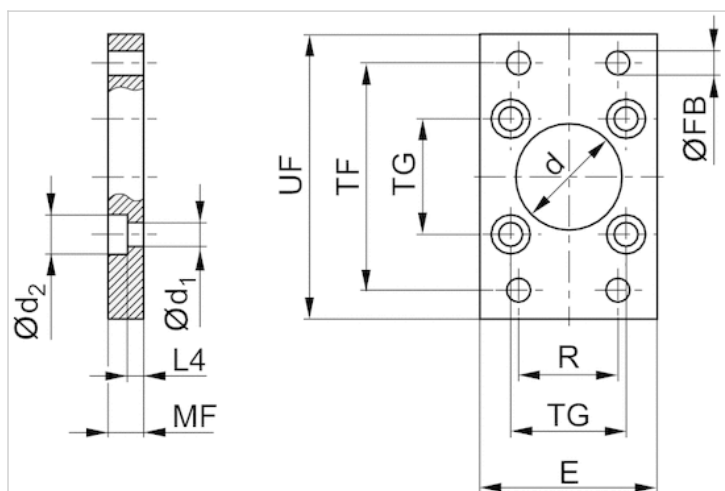
Part No.	Piston Ø	Swivel bearing Ø
1827001277	32 mm	30 mm
1827001278	40 mm	35 mm
1827001279	50 mm	40 mm
1827001499	63 mm	45 mm
1827001281	80 mm	45 mm
1827001282	100 mm	55 mm
1827004861	125 mm	60 mm
1827001460	160 mm	65 mm
1827001461	200 mm	75 mm

Scope of delivery: flange mounting incl. mounting screws

## Technical information

Material	
Material	Steel
	galvanized
Screws	Steel
	galvanized

## Dimensions



## Dimensions

Part No.	Piston Ø	Ød H11	Ød1	Ød2	E max.	ØFB	L4	MF	R	TF	TG	UF
1827001277	32 mm	30	6.6	11	50	7	4.5	10	32	64	32,5 ±0,2	80
1827001278	40 mm	35	6.6	11	55	9	4.5	10	36	72	38 ±0,2	90
1827001279	50 mm	40	9	15	65	9	6	12	45	90	46,5 ±0,2	110
1827001499	63 mm	45	9	15	75	9	6	12	50	100	56,5 ±0,2	125
1827001281	80 mm	45	11	18	100	12	9	16	63	126	72 ±0,2	154
1827001282	100 mm	55	11	18	120	14	9	16	75	150	89 ±0,2	186
1827004861	125 mm	60	14	20	140	16	10.5	20	90	180	110 ±0,3	220
1827001460	160 mm	65	18	26	180	18	9.5	20	115	230	140 ±0,3	275
1827001461	200 mm	75	18	26	220	22	12.5	25	135	270	175 ±0,3	312



# Intermediate flange JP1, Series CM1

- for multi-position cylinders

- Suitable piston Ø 32 40 50 63 80 100 125 mm



## Technical data

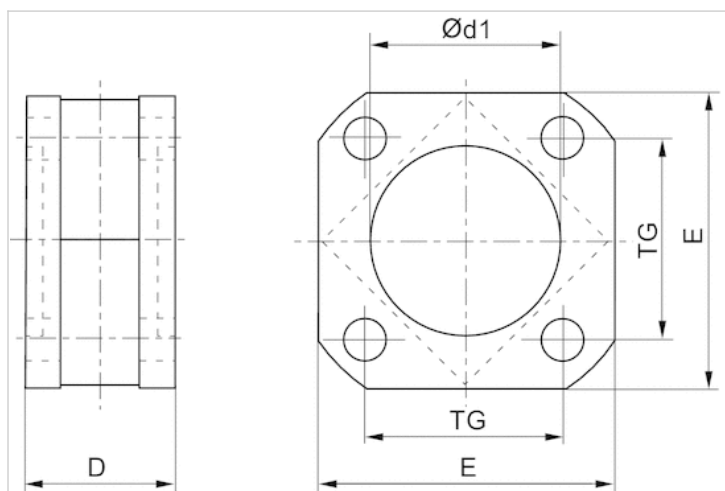
Part No.	Piston Ø
1827020247	32 mm
1827020248	40 mm
1827020249	50 mm
1827020250	63 mm
1827020251	80 mm
1827020252	100 mm
1827020253	125 mm

Scope of delivery incl. mounting screws

## Technical information

Material	
Material	Aluminum

## Dimensions



## Dimensions

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

# Foot mounting MS1, Series CM1

- to mount on cylinder PRA, TRB, CCL-IS/-IC, CCI, KPZ, 167, CVI, ITS
- Cylinder mounting in accordance with ISO 15552
- Suitable piston Ø 32 40 50 63 80 100 125 160 200 mm



Standards

ISO 15552

## Technical data

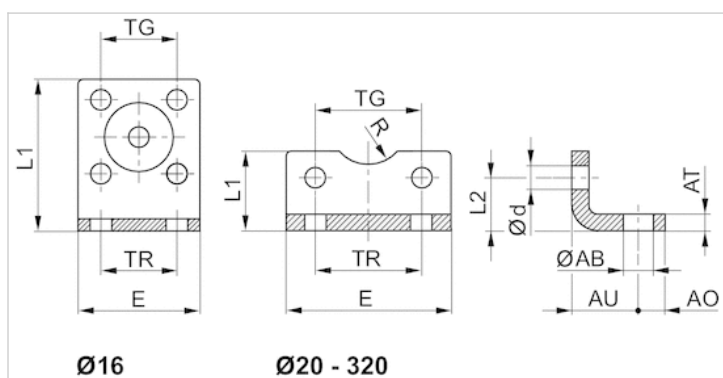
Part No.	Piston Ø	For series
1827001271	32 mm	PRA/TRB CCL-IC/-IS CCI CVI
1827001272	40 mm	PRA/TRB CCL-IC/-IS CCI CVI
1827001273	50 mm	PRA/TRB CCL-IC/-IS CCI CVI
1827001498	63 mm	PRA/TRB CCL-IC/-IS CCI CVI
1827001275	80 mm	PRA/TRB CCL-IC/-IS CCI CVI
1827001276	100 mm	CCI CCL-IC/-IS PRA/TRB CVI
1827001310	125 mm	PRA/TRB CCL-IS CVI
1827001457	160 mm	ITS
1827001458	200 mm	ITS

Scope of delivery: 2 foot mountings incl. mounting screws

## Technical information

Material	
Material	Steel
	galvanized
Screws	Steel
	galvanized

## Dimensions



## Dimensions

Part No.	Piston Ø	ØAB	AO	AT	AU ±0,2	Ød	E	L1	L2	R	TG	TR
1827001271	32 mm	7	8	4 ±0,3	24	6.6	48	25	15.5	15	32,5 ±0,2	32
1827001272	40 mm	10	10	4 ±0,3	28	6.6	56	26	17	17.5	38 ±0,2	36
1827001273	50 mm	10	11	5 ±0,3	32	9	68	32	21.5	20	46,5 ±0,2	45
1827001498	63 mm	10	13	5 ±0,3	32	9	78	34	21.5	22.5	56,5 ±0,2	50
1827001275	80 mm	12	16	6 ±0,5	41	11	98	47	27	22.5	72 ±0,2	63
1827001276	100 mm	14.5	19	6 ±0,5	41	11	117	52	26.5	27.5	89 ±0,2	75
1827001310	125 mm	16.5	20	8 ±1,0	45	13.5	144	69	35	30	110 ±0,3	90
1827001457	160 mm	18.5	23	10 ±1,0	60	17.5	185	100	45	32.5	140 ±0,3	115
1827001458	200 mm	24	26	12 ±1,0	70	17.5	220	120	47.5	37.5	175 ±0,3	135

# Bolts AA4, Series CM1

- Cylinder mounting in accordance with ISO 15552
- Suitable piston Ø 32 40 50 63 80 100 125 160, 200 mm



Standards  
Weight

See table below  
See table below

## Technical data

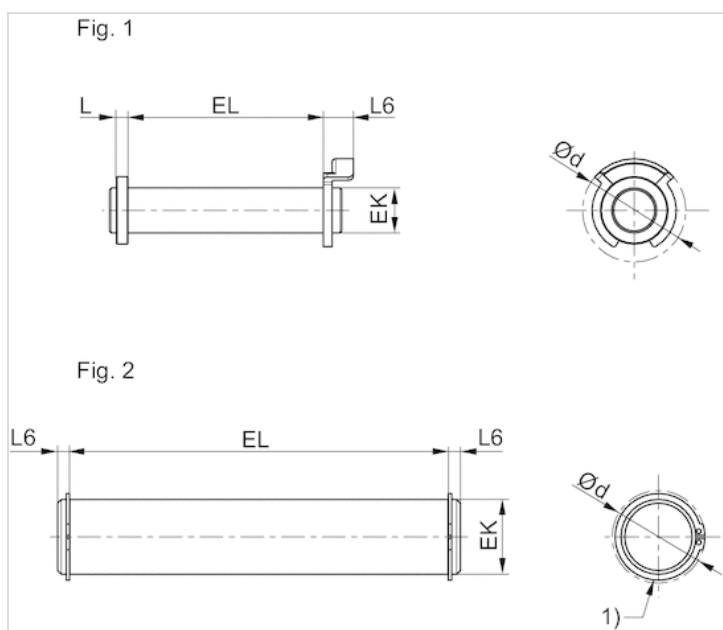
Part No.	Piston Ø	Standardization	Weight	Fig.
1823120020	32 mm	-	0.03 kg	Fig. 1
1823120021	40 mm	-	0.05 kg	Fig. 1
1823120022	50 mm	-	0.06 kg	Fig. 1
1823120023	63 mm	-	0.12 kg	Fig. 1
1823120024	80 mm	-	0.15 kg	Fig. 1
1823120025	100 mm	-	0.29 kg	Fig. 1
5236000092	125 mm	ISO 15552	0.53 kg	Fig. 2
5237000092	160, 200 mm	ISO 15552	0.99 kg	Fig. 2

Scope of delivery: pivot pins incl. circlips

## Technical information

Material	
Material	Steel
	galvanized

## Dimensions



1) circlip DIN 471

## Dimensions

Part No.	Piston Ø	Fig.	Ø d max.	EK e8	EL	L max.	L6 max.
1823120020	32 mm	Fig. 1	20	10	45.2 +0,3	3.5	9
1823120021	40 mm	Fig. 1	22	12	52.2 +0,3	4	9
1823120022	50 mm	Fig. 1	22	12	60.2 +0,3	4	9
1823120023	63 mm	Fig. 1	28	16	70.2 +0,3	4.5	11
1823120024	80 mm	Fig. 1	28	16	90.2 +0,3	4.5	11
1823120025	100 mm	Fig. 1	38	20	110.2 +0,3	5	11
5236000092	125 mm	Fig. 2	34.2	25	132 +0,5	-	3.75
5237000092	160, 200 mm	Fig. 2	40.5	30	172 +0,5	-	4.25

# Non-rotating axle AA6, series CM1

- For clevis mountings AB6
- Cylinder mounting in accordance with ISO 15552
- Suitable piston Ø 32 40 50 63 80 100 125 mm



Standards

See table below

## Technical data

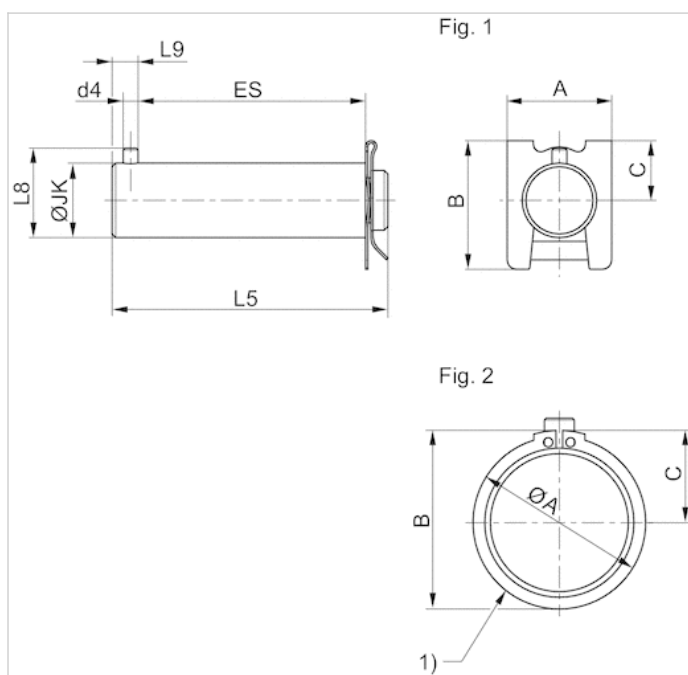
Part No.	Piston Ø	Standardization	Fig.
523000082	32 mm	ISO 15552	Fig. 1
523100082	40 mm	-	Fig. 1
523200082	50 mm	-	Fig. 1
523300082	63 mm	-	Fig. 1
523400082	80 mm	-	Fig. 1
523500082	100 mm	ISO 15552	Fig. 1
523600082	125 mm	ISO 15552	Fig. 2

Scope of delivery: bolt incl. locking ring or locking washer

## Technical information

Material	
Material	Stainless steel

## Dimensions



1) circlip DIN 471

## Dimensions

Part No.	Piston Ø	Fig.	A	B	C	Ø d4 H12	JK h9	ES	L5	L8	L9
523000082	32 mm	Fig. 1	18	22	10	3	10	31	41	14	5.5
523100082	40 mm	Fig. 1	22	26	12	4	12	36	48	16	7
523200082	50 mm	Fig. 1	28	34.5	16	4	16	41	54	20	7
523300082	63 mm	Fig. 1	28	34.5	16	4	16	47	60	20	7
523400082	80 mm	Fig. 1	28	34.5	16	4	20	63	74	24	5
523500082	100 mm	Fig. 1	28	34.5	16	4	20	71	84	24	7
523600082	125 mm	Fig. 2	36	37.5	19.5	6	30	88	106	36	13



# Piston rod nut MR9



Weight

See table below

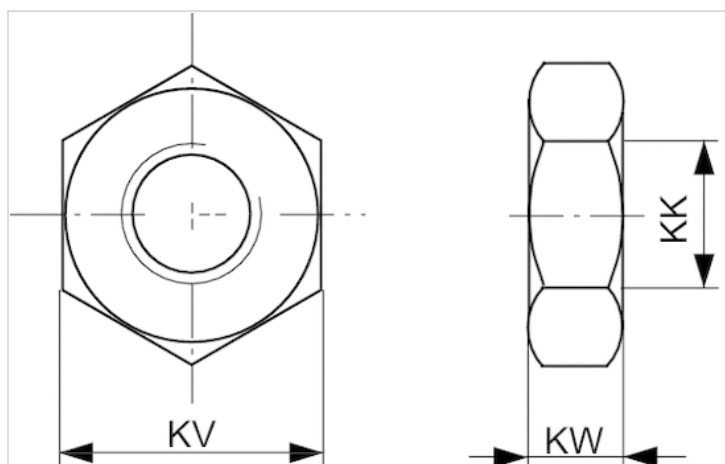
## Technical data

Part No.	Suitable piston rod thread	Weight
1823A00020	M10x1,25	0.01 kg
8103190344	M12x1,25	0.012 kg
1823300030	M16x1,5	0.017 kg
1823300031	M20x1,5	0.03 kg
1823A00029	M27x2	0.108 kg
8103190414	M36x2	0.175 kg
8103190424	M42x2	0.37 kg

## Technical information

Material	
	Steel
	galvanized

## Dimensions



## Dimensions

Part No.	KK	KV	KW
8103190344	M12x1,25	19	6
1823300030	M16x1,5	24	8
1823300031	M20x1,5	30	10
1823A00029	M27x2	41	13.5
8103190414	M36x2	50	16
8103190424	M42x2	60	21

# Rod clevis AP2, Series CM2

- to mount on cylinder PRA, TRB, CCI, MNI, ICM, KPZ, KHZ, 167, CVI, RPC, RDC, ITS



Weight

See table below

## Technical data

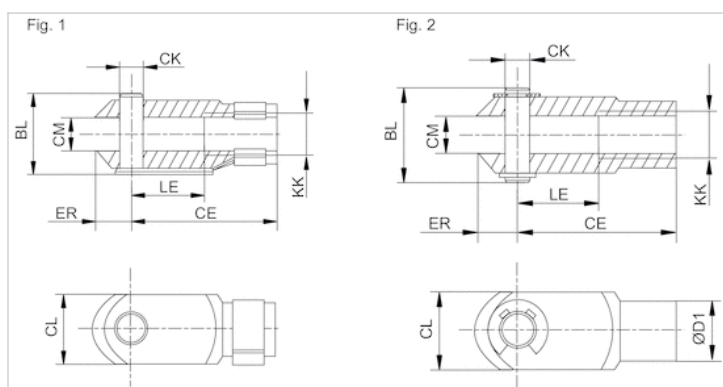
Part No.	Suitable piston rod thread	for	Weight
1822122024	M10x1,25	PRA TRB CCI MNI ICM KPZ 167 CVI RPC RDC	0.1 kg
1822122025	M12x1,25	PRA TRB CCI KPZ 167 CVI RPC 102	0.16 kg
1822122005	M16x1,5	PRA TRB CCI KPZ 167 CVI RPC RDC 102	0.4 kg
1822122004	M20x1,5	PRA TRB KPZ 167 CVI 102	0.7 kg
1827001493	M27x2	PRA TRB CCL-IS 167 CVI	2 kg

Part No.	Fig.
1822122024	Fig. 1
1822122025	Fig. 1
1822122005	Fig. 1
1822122004	Fig. 1
1827001493	Fig. 2

## Technical information

Material	
	Steel
	galvanized

## Dimensions



## Dimensions

Part No.	KK	BL	CE	ØCK e11	CL	CM	ØD1	ER	LE	Fig.
1822122024	M10x1,25	26	40	10	20	10	18	12	20	Fig. 1
1822122025	M12x1,25	31	48	12	24	12	20	14	24	Fig. 1
1822122005	M16x1,5	39	64	16	32	16	26	19	32	Fig. 1
1822122004	M20x1,5	50	80	20	40	20	34	20	40	Fig. 1
1827001493	M27x2	68	110	30	55	30	48	38	54	Fig. 2

# Rod clevis PM6, Series CM2

- for ball eye rod end AP6



## Technical data

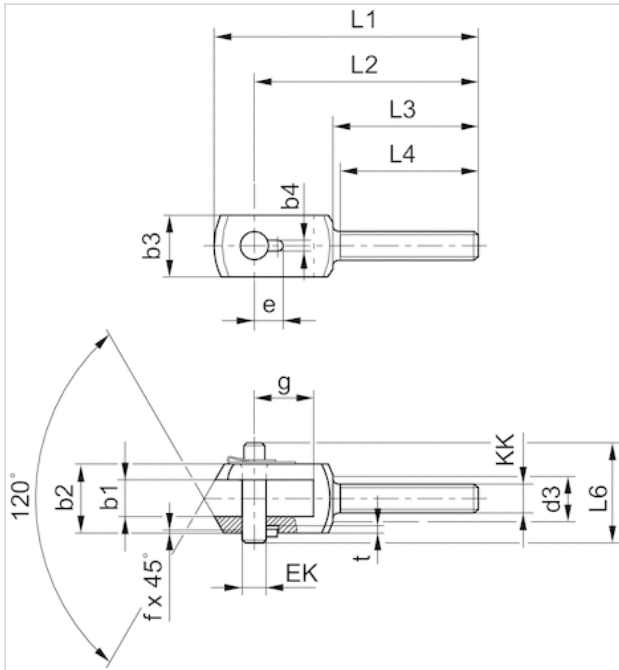
Part No.	for	Swivel bearing Ø
1822122032	AP6	14 mm
1822122033	AP6	16 mm
1822122034	AP6	21 mm
1822122035	AP6	25 mm
1822122036	AP6	30 mm

Scope of delivery incl. bolt

## Technical information

Material	
	Steel
	galvanized

## Dimensions



## Dimensions

Part No.	b1 B12	b2 d12	b3	b4 +0,2	d3	e +0,3	EK	f	g	L1	L2	L3	L4 +1	L6	t +0,2
1822122032	14	28	20	3.3	17	11.5	10	0.7	20	90	78	53	50	35	3
1822122033	16	30	25	4.3	19	12	12	1	26	108	92	58	55	39	3
1822122034	21	40	35	4.3	24	14	16	1	31	129	108	65	62	50	3
1822122035	25	50	40	4.3	30	16	20	1	43	156	131	73	69	60	3
1822122036	37	67	60	6.3	38	24	30	1.5	54	200	168	98	92	77	5

# Ball eye rod end AP6, series CM2

- with flange, to mount on cylinder PRA, TRB, CCI, SSI, MNI, RPC, KPZ, 167, CVI, RDC, 102, ITS



Weight

See table below

## Technical data

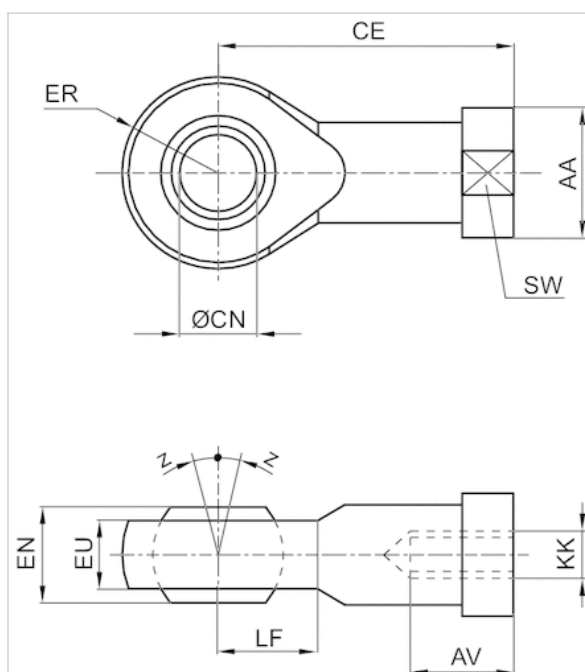
Part No.	Suitable piston rod thread	for	Swivel bearing Ø
1822124003	M10x1,25	PRA TRB MNI CCI SSI RPC KPZ 167 CVI RDC	254 mm
1822124004	M12x1,25	PRA TRB CCI SSI RPC KPZ 167 CVI 102	304.8 mm
1822124005	M16x1,5	PRA TRB CCI SSI RPC KPZ 167 CVI RDC 102	406.4 mm
1822124006	M20x1,5	PRA TRB KPZ 167 CVI 102	508 mm
1822124013	M27x2	PRA TRB 167 CVI	762 mm

Part No.	Weight
1822124003	0.07 kg
1822124004	0.12 kg
1822124005	0.21 kg
1822124006	0.38 kg
1822124013	1.17 kg

## Technical information

Material	
	Steel
	galvanized

## Dimensions



## Dimensions

Part No.	KK	AA	AV min.	CE	$\varnothing CN H7$	EN $-0,1$	ER	EU max.	LF	SW	Z [°] max.
1822124003	M10x1,25	19	15	43	10	14	14	11.5	14	17	4
1822124004	M12x1,25	22	18	50	12	16	16	12.5	16	19	4
1822124005	M16x1,5	27	24	64	16	21	21	15.5	21	22	4
1822124006	M20x1,5	34	30	77	20	25	25	18.5	25	30	4
1822124013	M27x2	50	45	110	30	37	35	27	35	41	4



# Compensating coupling PM5, series CM2

- to mount on cylinder PRA, TRB, CCL-IS/-IC, CCI, SSI, MNI, KPZ, KHZ, 167, CVI, RPC, RDC, ITS, spherical



Weight

See table below

## Technical data

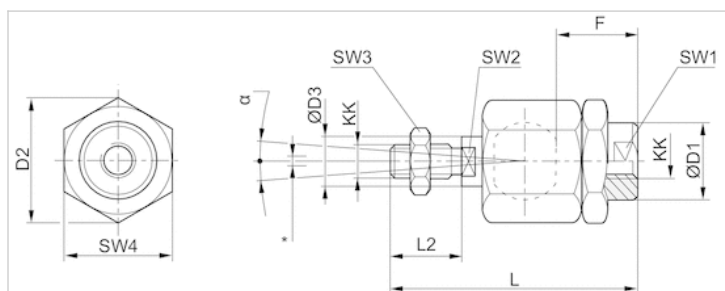
Part No.	Suitable piston rod thread	for
R412026142	M10x1,25	PRA TRB CCL-IS CCL-IC CCI SSI KPZ 167 CVI RPC
R412026143	M12x1,25	PRA TRB CCI CCL-IS CCL-IC SSI KPZ 167 CVI RPC
R412026144	M16x1,5	PRA TRB CCI CCL-IS CCL-IC KPZ 167 CVI RPC RDC
R412026145	M20x1,5	PRA TRB CCL-IS SSI KPZ 167 CVI
1826409006	M27x2	PRA TRB CCL-IS CVI

Part No.	Weight
R412026142	0.21 kg
R412026143	0.21 kg
R412026144	0.65 kg
R412026145	0.68 kg
1826409006	1.7 kg

## Technical information

Material
Steel
galvanized

## Dimensions



\* Radial joint

## Dimensions

Part No.	KK	$\varnothing D1$	$D2$	$\varnothing D3$	F	$L \pm 2$	$L2$	SW1	SW2	SW3	SW4	$\alpha$ [°]	1)	2)
R412026142	M10x1,25	22	32	14	23	74.5	23	19	12	17	30	8	0.05-0.5	0-2
R412026143	M12x1,25	22	32	14	24	75	24	19	12	19	30	7	0.05-0.5	0-2
R412026144	M16x1,5	32	45	22	30	103	30	30	20	24	41	6	0.05-0.5	0-2
R412026145	M20x1,5	32	45	22	40	119	40	30	20	30	41	6	0.05-0.5	0-2
1826409006	M27x2	62	62	28	48	147	54	32	24	41	55	8	0.05-0.2	0-2

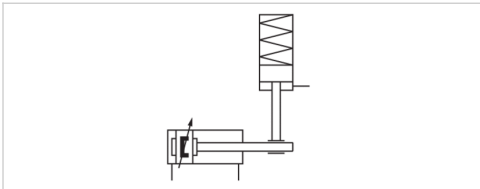
1) Axial play

2) Radial play

# Holding unit, Series HU1

- Ø 32-100 mm

- hold: spring force, release: compressed air



Function	Hold with clamping jaws
Release pressure	4 ... 8 bar
Ambient temperature min./max.	-10 ... 60 °C
Medium temperature min./max.	-10 ... 60 °C
Medium	Compressed air
Max. particle size	5 µm
Oil content of compressed air	0 ... 5 mg/m <sup>3</sup>
Weight	See table below

## Technical data

Part No.	Piston Ø	suitable piston rod Ø	Piston rod extension	Compressed air connection	Static holding force	Weight
0821401165	32 mm	12 mm	42 mm	M5	650 N	0.2 kg
0821401166	40 mm	16 mm	45 mm	G 1/8	1100 N	0.27 kg
0821401167	50 mm	20 mm	57 mm	G 1/8	1600 N	0.57 kg
0821401168	63 mm	20 mm	57 mm	G 1/8	2500 N	0.8 kg
0821401169	80 mm	25 mm	77 mm	G 1/8	4000 N	1.85 kg
0821401170	100 mm	25 mm	77 mm	G 1/8	6300 N	2.9 kg

Holding force at 0 bar

## Technical information

Warning: The holding unit may not be used for the following applications:

- 1) for dynamic holding
- 2) in or as safety equipment

Holding unit may only be unlocked when turned off.

Make sure that the load direction does not change during a holding interval. A change in the direction of force, as well as external forces such as impacts, strong vibrations, or torsional forces, will briefly release the piston rod and may destroy the HU1 holding unit. When clamped, there must be no residual pressure on the holding unit ( 0 bar ).

Note:

The minimum control pressure is  $\geq$  the working pressure of the cylinder!

## Technical information

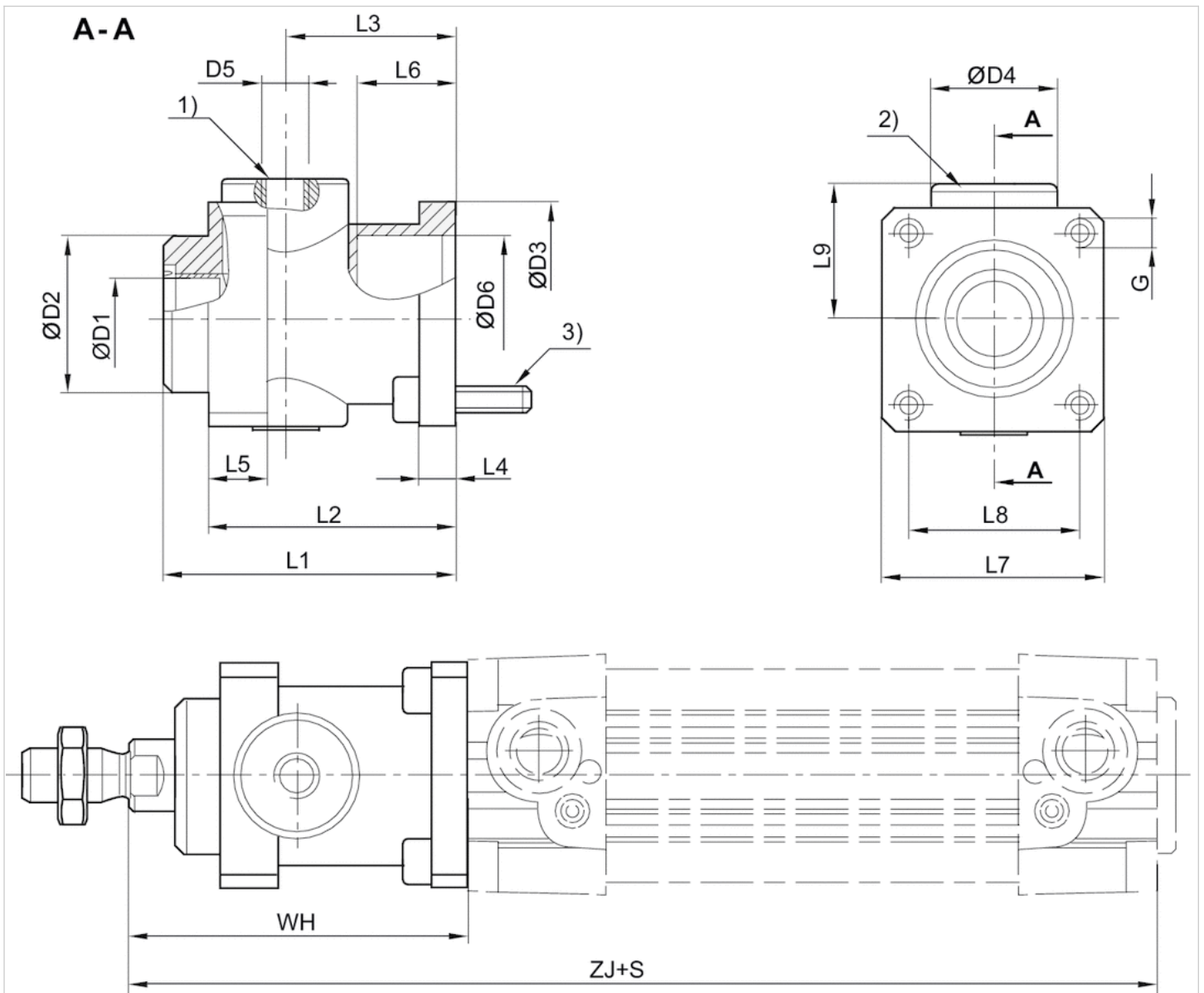
Material

Housing

Aluminum, black anodized

## Dimensions

### Dimensions



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

## Dimensions

Part No.	Piston Ø	Ø D1	Ø D2	Ø D3	Ø D4	D5	L1	L2	L3	L4	L5	L6	L7	L8	L9	G
0821401165	32 mm	12	30	35	25	M5	58	48	34	8	13	20.5	45	32.5	25.5	M6
0821401166	40 mm	16	35	40	28	G 1/8	65	55	38	8	13	22.5	50	38	30	M6
0821401167	50 mm	20	40	50	35	G 1/8	82	70	48	15	16	29.5	60	46.5	36	M8
0821401168	63 mm	20	45	60	38	G 1/8	82	70	49.5	15	16	29.5	70	56.5	40	M8
0821401169	80 mm	25	45	80	48	G 1/8	110	90	61	18	20	35	90	72	50	M10
0821401170	100 mm	25	55	100	58	G 1/8	115	100	69	18	20	-	105	89	58	M10

WH	ZJ
68	162
75	180
94	200
94	215
123	251
128	266

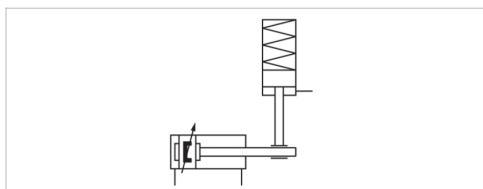
# Locking unit, Series LU6

- Ø 32-125 mm

- Holding and braking: non-adjustable spring, Release: compressed air



Version	Clamping jaw lock
Function	Static holding Dynamic braking
Release pressure	4 ... 10 bar
Ambient temperature min./max.	-25 ... 80 °C
Medium temperature min./max.	-25 ... 80 °C
Medium	Compressed air
Max. particle size	5 µm
Oil content of compressed air	0 mg/m <sup>3</sup>
Weight	See table below



## Technical data

Part No.	Piston Ø	suitable piston rod Ø	Piston rod extension	Compressed air connection	Required flow rate
					Q <sub>n</sub>
5230996402	32 mm	12 mm	125 mm	G 1/8	50 l/min
5231996402	40 mm	16 mm	125 mm	G 1/8	70 l/min
5232996402	50 mm	20 mm	145 mm	G 1/8	140 l/min
5233996402	63 mm	20 mm	165 mm	G 1/8	240 l/min
5234996402	80 mm	25 mm	185 mm	G 1/8	450 l/min
5235996402	100 mm	25 mm	220 mm	G 1/8	700 l/min
5236996402	125 mm	32 mm	220 mm	G 1/4	1200 l/min

Part No.	Max. torsional moment of piston rod	B10d value static	B10d value dynamic
5230996402	0.5 Nm	5.000.000	2.000.000
5231996402	1 Nm	5.000.000	2.000.000
5232996402	2 Nm	5.000.000	2.000.000
5233996402	2.5 Nm	5.000.000	2.000.000
5234996402	5 Nm	5.000.000	2.000.000
5235996402	9 Nm	5.000.000	2.000.000
5236996402	15 Nm	5.000.000	2.000.000

Part No.	Buckling protection of the piston rod 1)		Weight	
	Max. cylinder stroke for Euler case 1	Max. cylinder stroke for Euler case 2		
5230996402	750 mm	400 mm	0.8 kg	1)
5231996402	1100 mm	550 mm	1 kg	1)
5232996402	1350 mm	700 mm	1.8 kg	1)
5233996402	950 mm	500 mm	2.8 kg	1)

Part No.	Buckling protection of the piston rod 1)		Weight	
	Max. cylinder stroke for Euler case 1	Max. cylinder stroke for Euler case 2		
5234996402	1350 mm	700 mm	5.5 kg	1)
5235996402	950 mm	500 mm	9.5 kg	1)
5236996402	1500 mm	800 mm	13.8 kg	2)

1) Only applies in dynamic cases, and only retracting, DGUV certified

2) Only applies in dynamic cases, and only retracting

## Technical data

Piston Ø	32 mm	40 mm	50 mm
Max. holding/braking force FLU6	760 N	1200 N	1900 N
Max. moving mass, external mmax	77 kg	122 kg	194 kg
Max. piston speed vmax	1 m/s	1 m/s	1 m/s
Max. total braking energy (MJ) Etotal	3.2 MJ	6 MJ	10 MJ
Max. braking energy per hour PLU6	720 J	1350 J	2250 J
Max. braking energy per braking cycle ELU6	4.8 J	9 J	15 J
Braking energy per braking cycle related to B10d EB10d	1.6 J	3 J	5 J
Brake response time (4 bar) tbrake	0.08 s	0.08 s	0.08 s
Brake response time (6.3 bar) tbrake	0.1 s	0.1 s	0.1 s
Brake response time (10 bar) tbrake	0.12 s	0.12 s	0.12 s

Piston Ø	63 mm	80 mm	100 mm
Max. holding/braking force FLU6	3000 N	5000 N	8000 N
Max. moving mass, external mmax	306 kg	510 kg	815 kg
Max. piston speed vmax	1 m/s	1 m/s	1 m/s
Max. total braking energy (MJ) Etotal	18 MJ	36 MJ	58 MJ
Max. braking energy per hour PLU6	4050 J	8100 J	13200 J
Max. braking energy per braking cycle ELU6	27 J	54 J	88 J
Braking energy per braking cycle related to B10d EB10d	9 J	18 J	29 J
Brake response time (4 bar) tbrake	0.08 s	0.08 s	0.09 s
Brake response time (6.3 bar) tbrake	0.1 s	0.1 s	0.11 s
Brake response time (10 bar) tbrake	0.12 s	0.12 s	0.13 s

Piston Ø	125 mm
Max. holding/braking force FLU6	12000 N
Max. moving mass, external mmax	1223 kg
Max. piston speed vmax	1 m/s
Max. total braking energy (MJ) Etotal	93 MJ
Max. braking energy per hour PLU6	21000 J
Max. braking energy per braking cycle ELU6	140 J
Braking energy per braking cycle related to B10d EB10d	47 J
Brake response time (4 bar) tbrake	0.09 s
Brake response time (6.3 bar) tbrake	0.11 s
Brake response time (10 bar) tbrake	0.13 s

The values for the max. braking energy per braking cycle are equivalent to the cushioning energy for cylinder series PRA and TRB.

## Technical information

The maximum ambient and medium temperature is + 70 °C for the dynamic braking function.

Note:

Before pressurizing the locking unit, make sure that there is a balance of forces at the piston on the drive cylinder. Please see the operating instructions for further safety-relevant information. The locking unit can be used in controls with a max. performance level e in accordance with DIN EN ISO 13849-1 ("basic and well-tried safety principles"). For applications in category 2 to 4 controls, additional control measures according to DIN EN ISO 13849-1 are required.

The locking unit can be used as an individual component or pre-mounted on a cylinder..

Scope of delivery: LU6, each with 4 flange nuts, washers, and tie rods

For technical reasons, formulas and sample calculations have been moved to the MediaCentre (link to operating instructions).

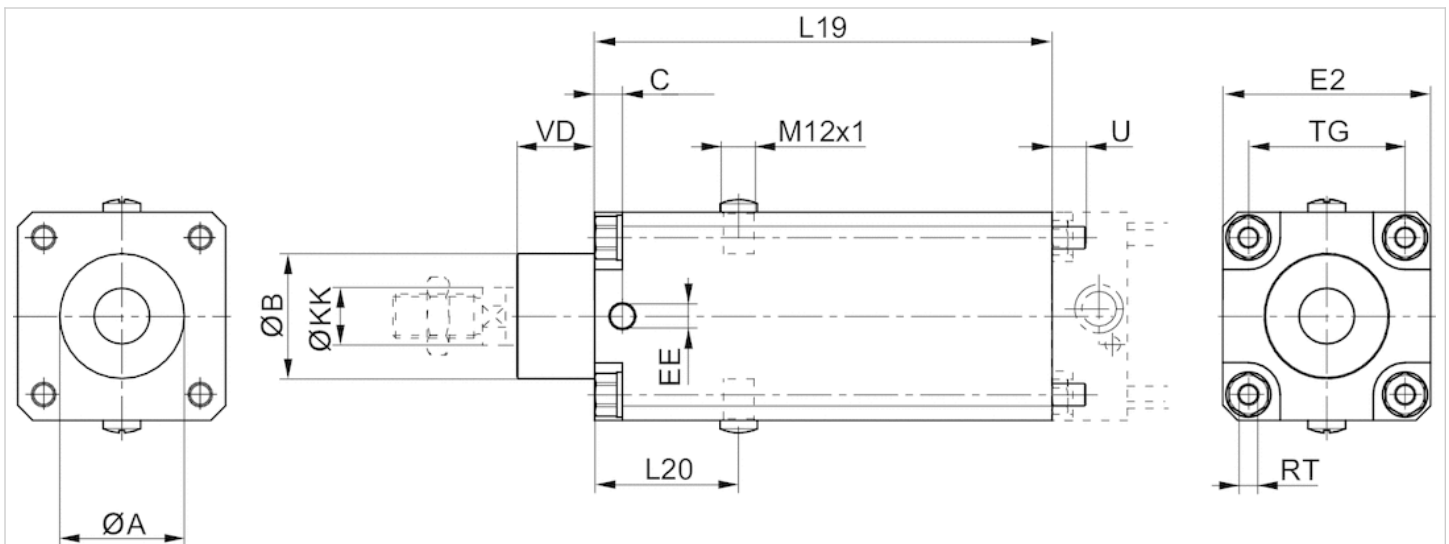
## Technical information

### Material

Housing	Aluminum, anodized
Seal	Nitrile butadiene rubber
Scraper	Nitrile butadiene rubber

## Dimensions

### Dimensions



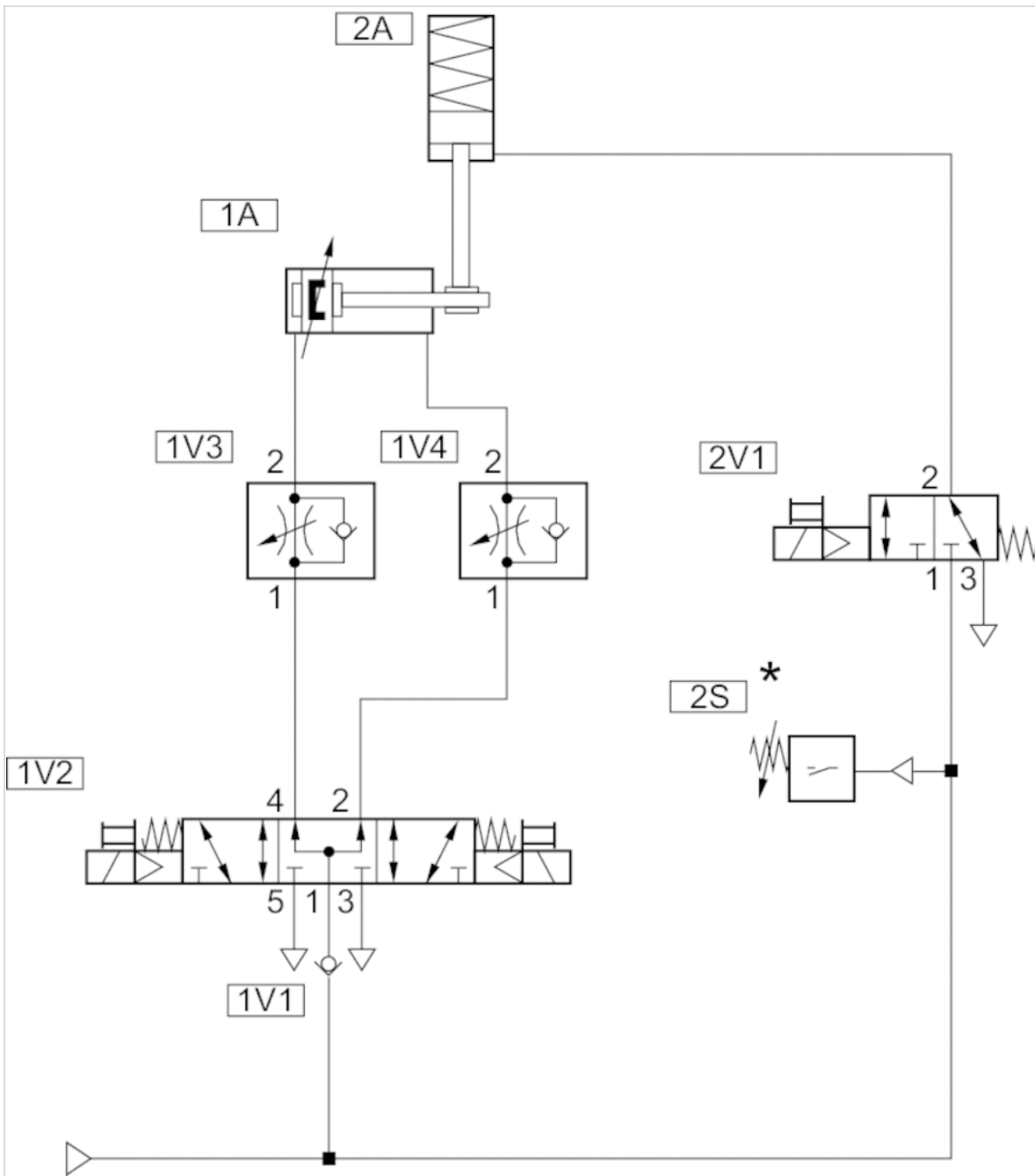
### Dimensions

Piston $\varnothing$	$\varnothing A$	$\varnothing B$ d11	C	EE	E2	L19	L20	$\varnothing KK$ e8-h9	TG	RT	U	VD
32 mm	30,5	30	9	G1/8	48	125	44	12	32,5	M6	10	19
40 mm	35,5	35	9	G1/8	53	125	44	16	38	M6	10	21
50 mm	40,5	40	9	G1/8	63	145	49	20	46,5	M8	11	28
63 mm	45,5	45	10	G1/8	75	165	52	20	56,5	M8	11	28
80 mm	45,5	45	11	G1/8	98	185	61.5	25	72	M10	16	34
100 mm	55,5	55	13	G1/8	118	220	68	25	89	M10	16	37
125 mm	60,5	60	13	G1/4	142	220	75	32	110	M12	16	45



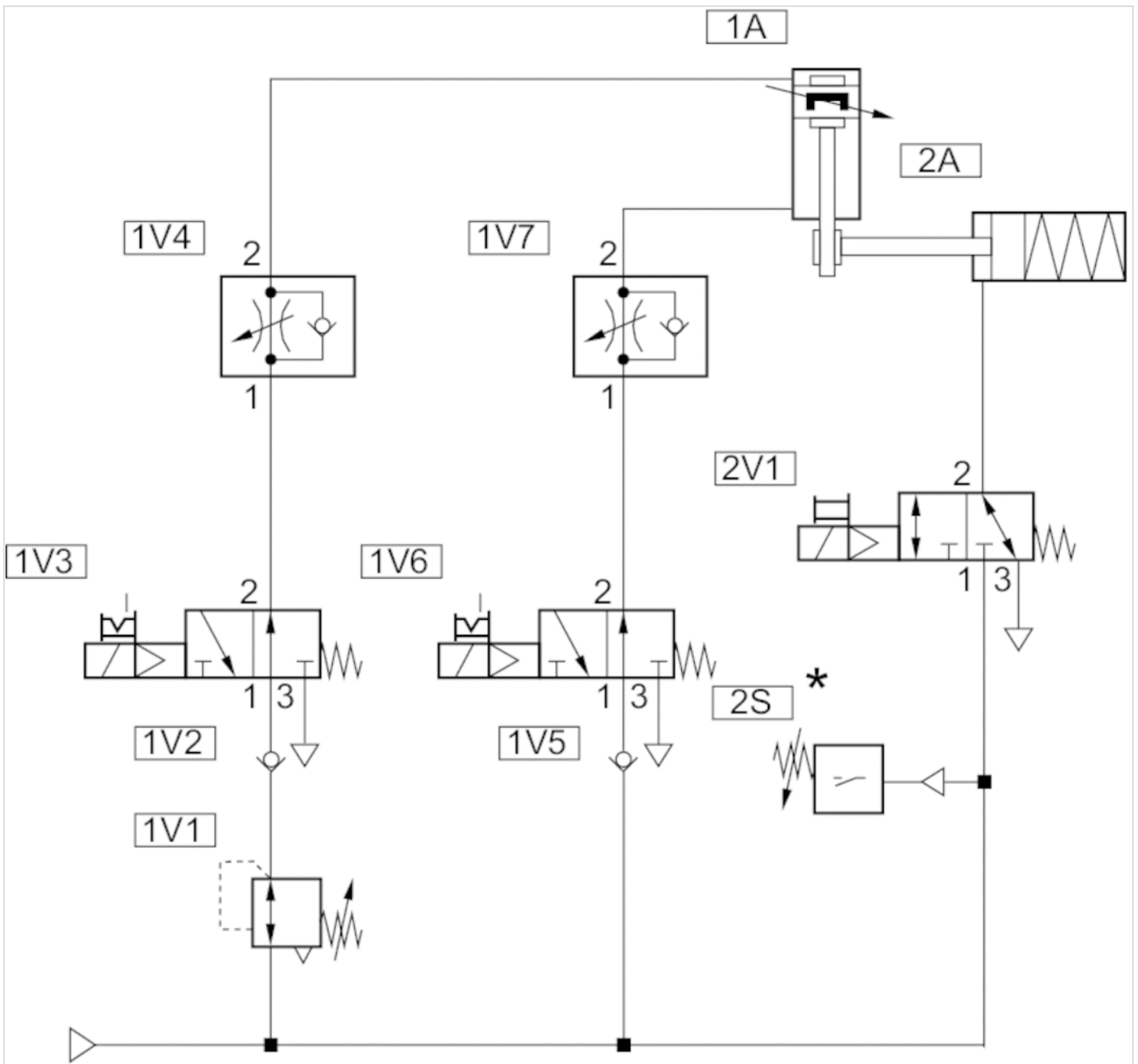
# Circuit diagram

Circuit example for non-safety relevant functions; horizontal installation position



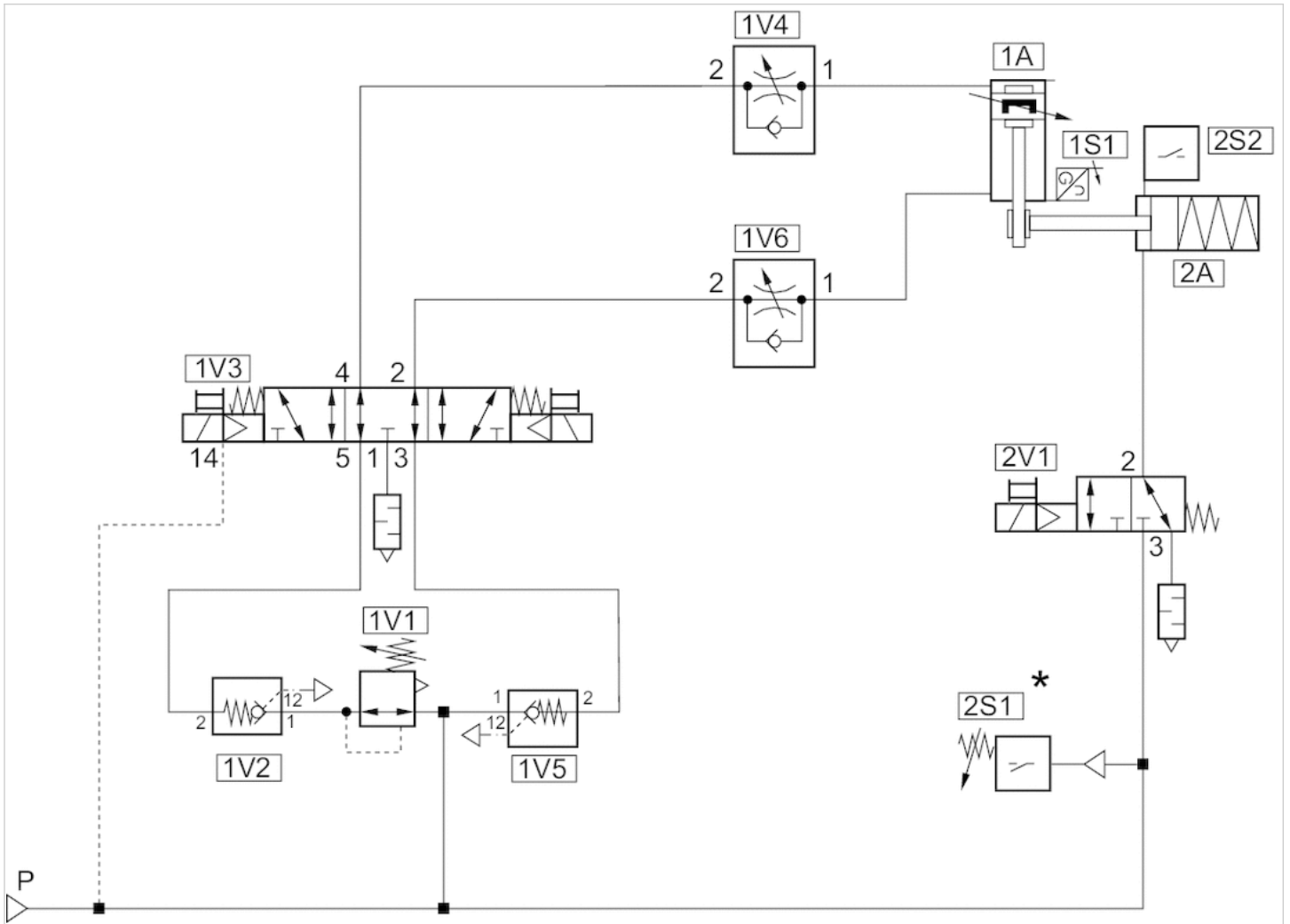
\* From 4 bar : release of 2V1

Circuit example for non-safety relevant functions; Vertical mounting orientation



\* From 4 bar : release of 2V1

Circuit example for safety-related stop functions; horizontal installation position

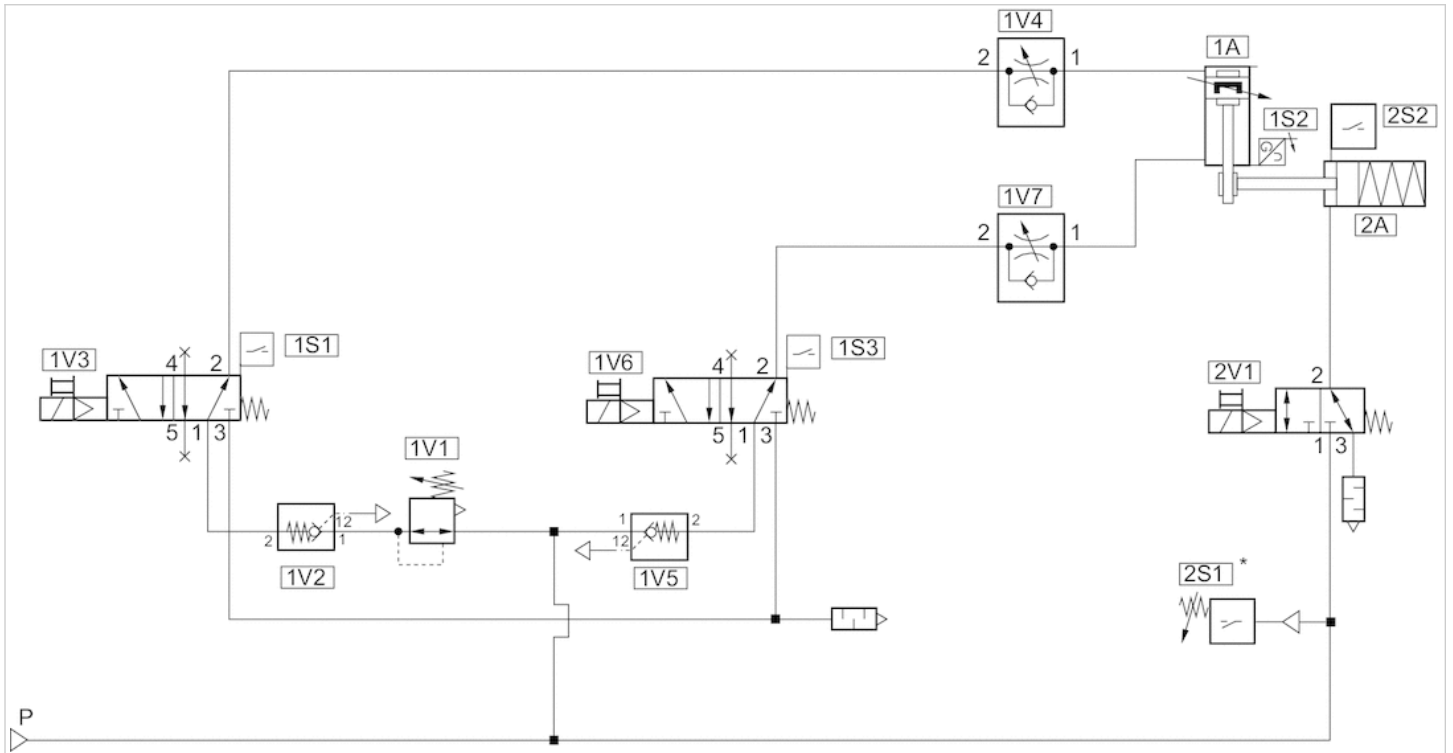


Channel 1: Safe stopping and closing

Channel 2: Safe brake control

\* From 4 bar : release of 2V1

Circuit example for safety-related stop functions; Vertical mounting orientation



Channel 1: Safe stopping and closing

Channel 2: Safe brake control

\* From 4 bar : release of 2V1

# 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

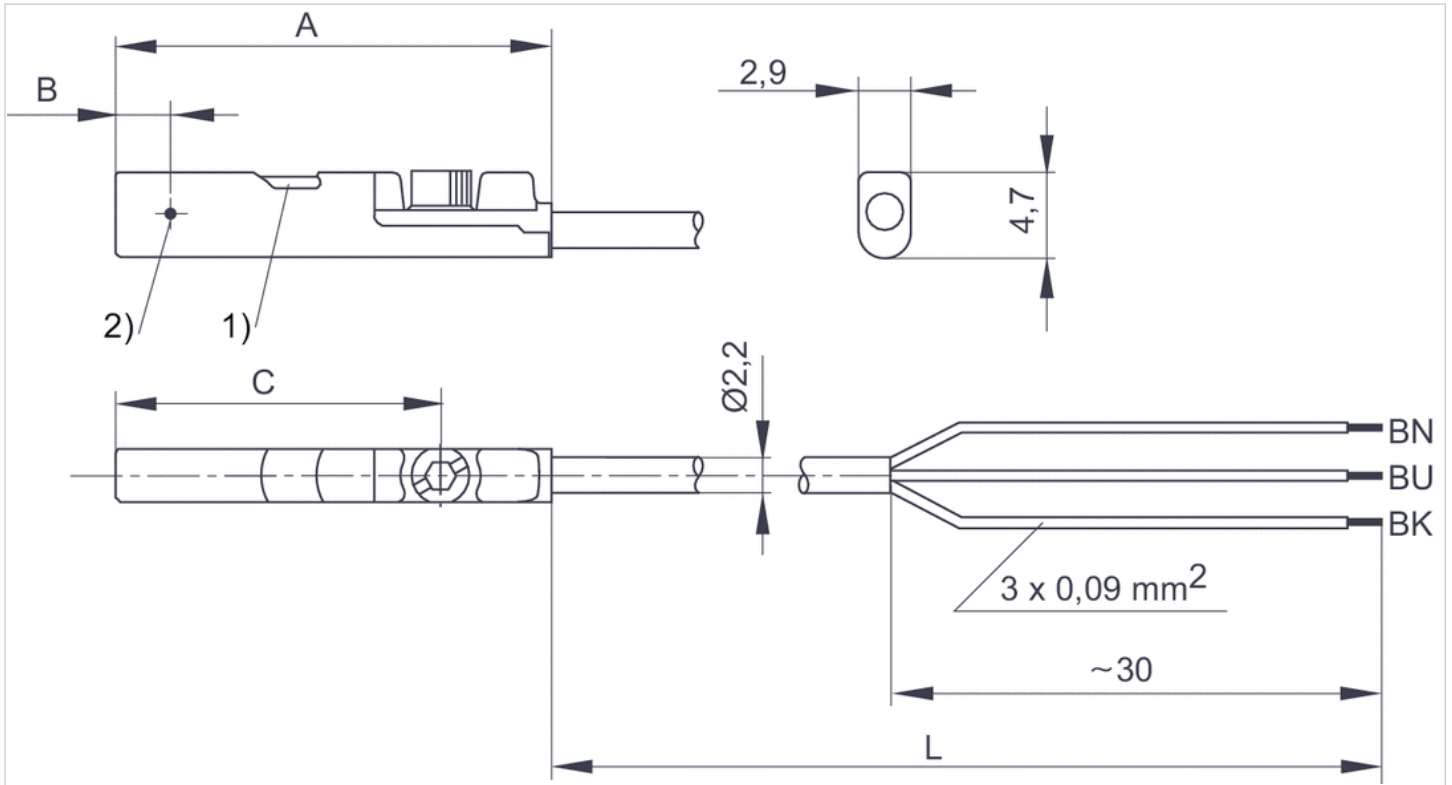
The max. switching capacity must not be exceeded.

## 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
- 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

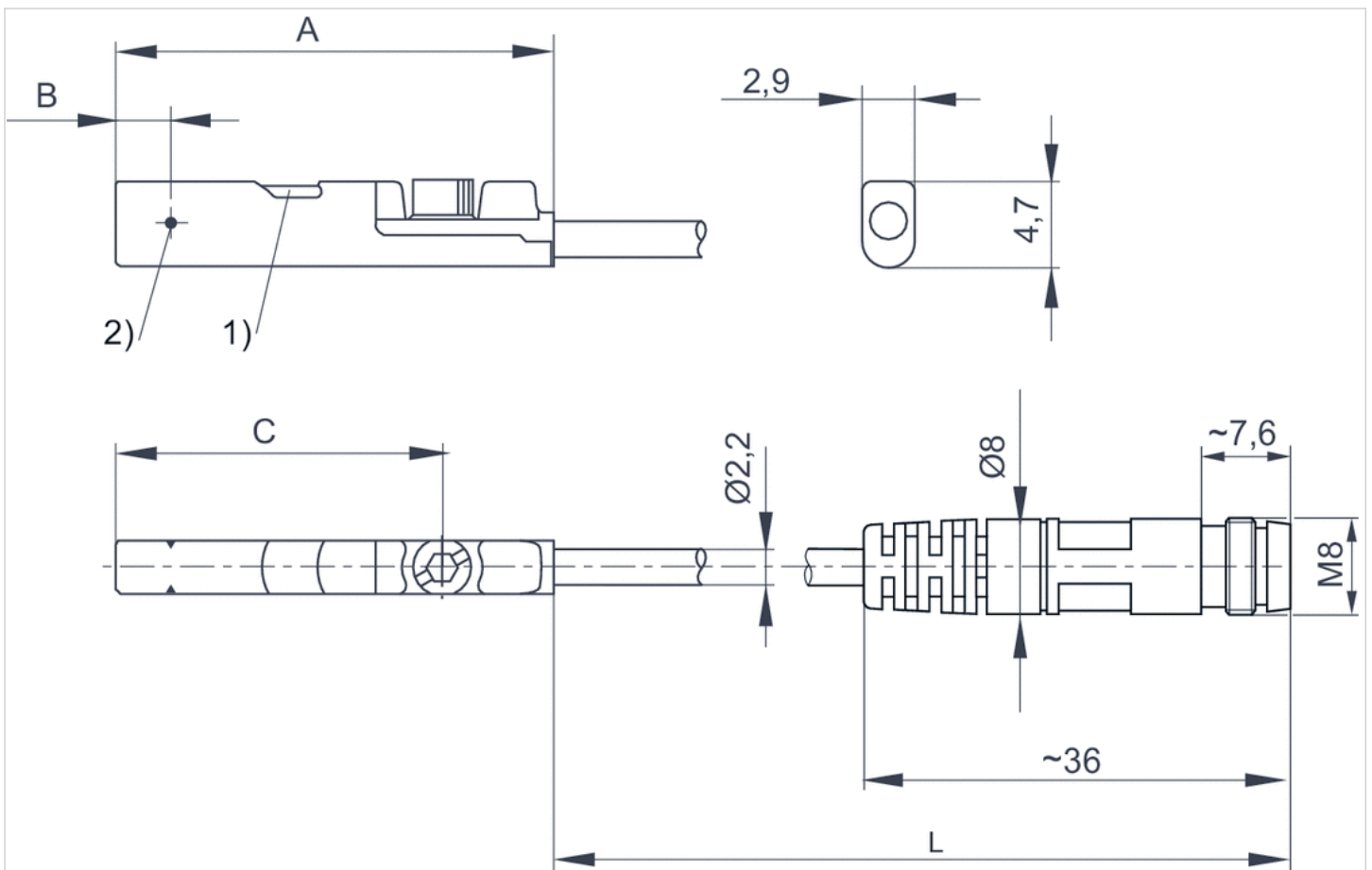
The max. switching capacity must not be exceeded.

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

## Dimensions

### Dimensions



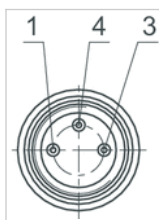
1) LED 2) Switching point  
L = cable length

## 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



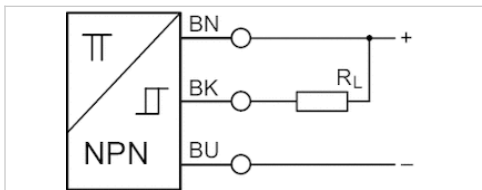
Pin	1	3	4
Allocation	(+)	(-)	(OUT)

# Sensor, Series ST4

- 4 mm T-slot
- with cable
- open cable ends
- With stretched impulse
- With stretched impulse
- 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	RoHS
Ambient temperature min./max.	-30 ... 80 °C
Protection class	IP65 IP67
Switching point precision	±0,1 mT
Min./max. DC operating voltage	10 ... 30 V DC
Switching logic	NO (make contact)
Pulse stretching	20 ms
Display	LED
LED status display	Yellow
Vibration resistance	10 - 55 Hz, 1 mm
Shock resistance	30 g / 11 ms
Cable length L	5 m
Mounting screw	Combination: slotted and hexagon socket



## Technical data

Part No.	for	Type of contact
R412024124	PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI	electronic PNP

Part No.	Cable length L	Voltage drop U at I <sub>max</sub>	DC switching current, max.
R412024124	5 m	≤ 2,5 V	0.1 A

Part No.	Switch signal
R412024124	With stretched impulse

## Technical information

The max. switching capacity must not be exceeded.

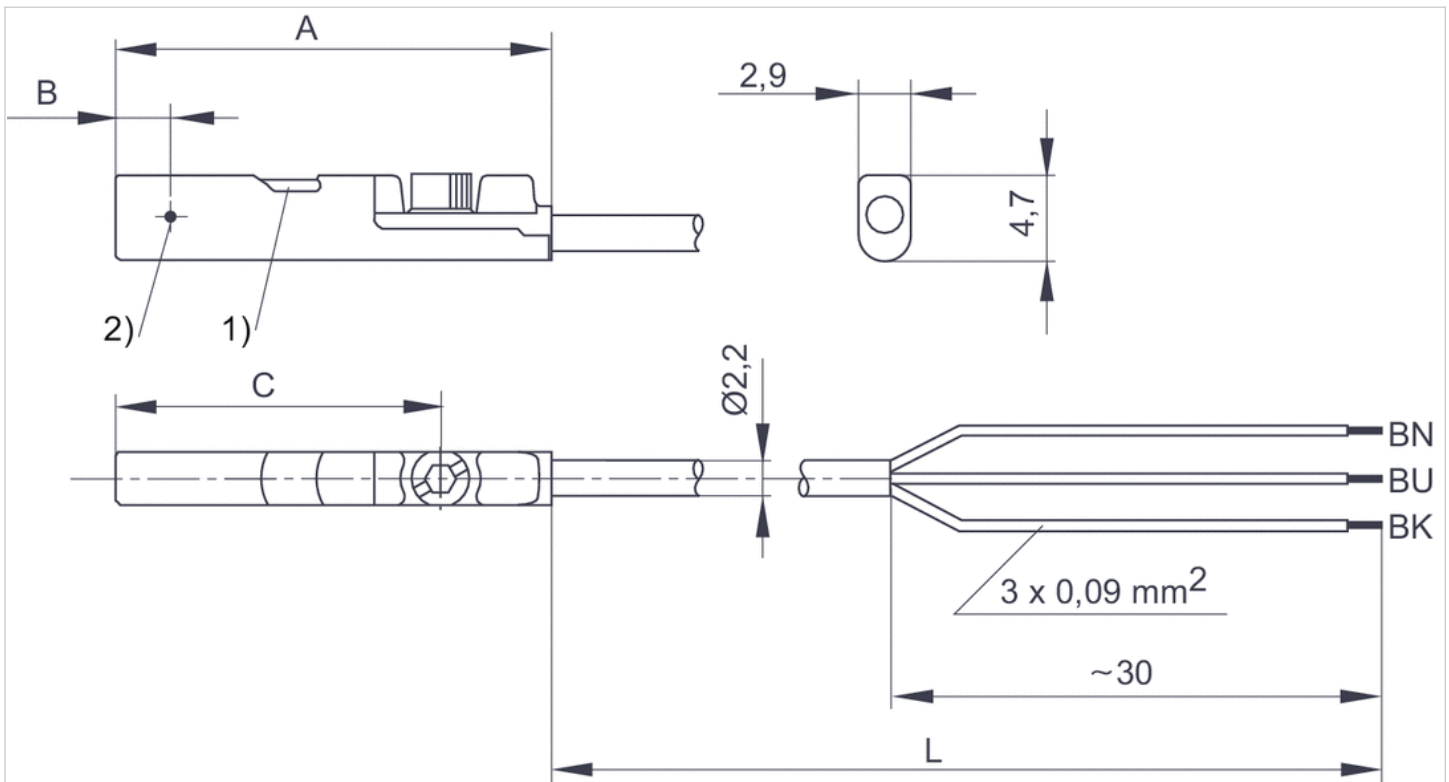
## Technical information

### 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

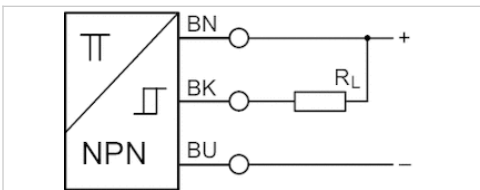
Part No.	A	B	C
R412024124	23.7	2.8	17.7

# Sensor, Series ST4

- 4 mm T-slot
- with cable
- Plug, M8, 3-pin Plug, M8, 3-pin, with knurled screw
- With stretched impulse
- With stretched impulse
- electronic NPN 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	RoHS
Ambient temperature min./max.	-30 ... 80 °C
Protection class	IP65 IP67
Switching point precision	±0,1 mT
Min./max. DC operating voltage	10 ... 30 V DC
Switching logic	NO (make contact)
Pulse stretching	20 ms
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	Type of contact
R412024123	PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI	electronic NPN
R412024125	PRA, SSI, GSU, RTC, CKP, GPC, MSC, MSN, RCM, CVI	electronic PNP

Part No.	Cable length L	Voltage drop U at I <sub>max</sub>	DC switching current, max.
R412024123	0.3 m	≤ 2,5 V	0.1 A
R412024125	0.3 m	≤ 2,5 V	0.1 A

Part No.	Switch signal	
R412024123	With stretched impulse	1)
R412024125	With stretched impulse	2)

1) Plug M8, 3-pin

2) Plug M8, 3-pin, with knurled screw

## Technical information

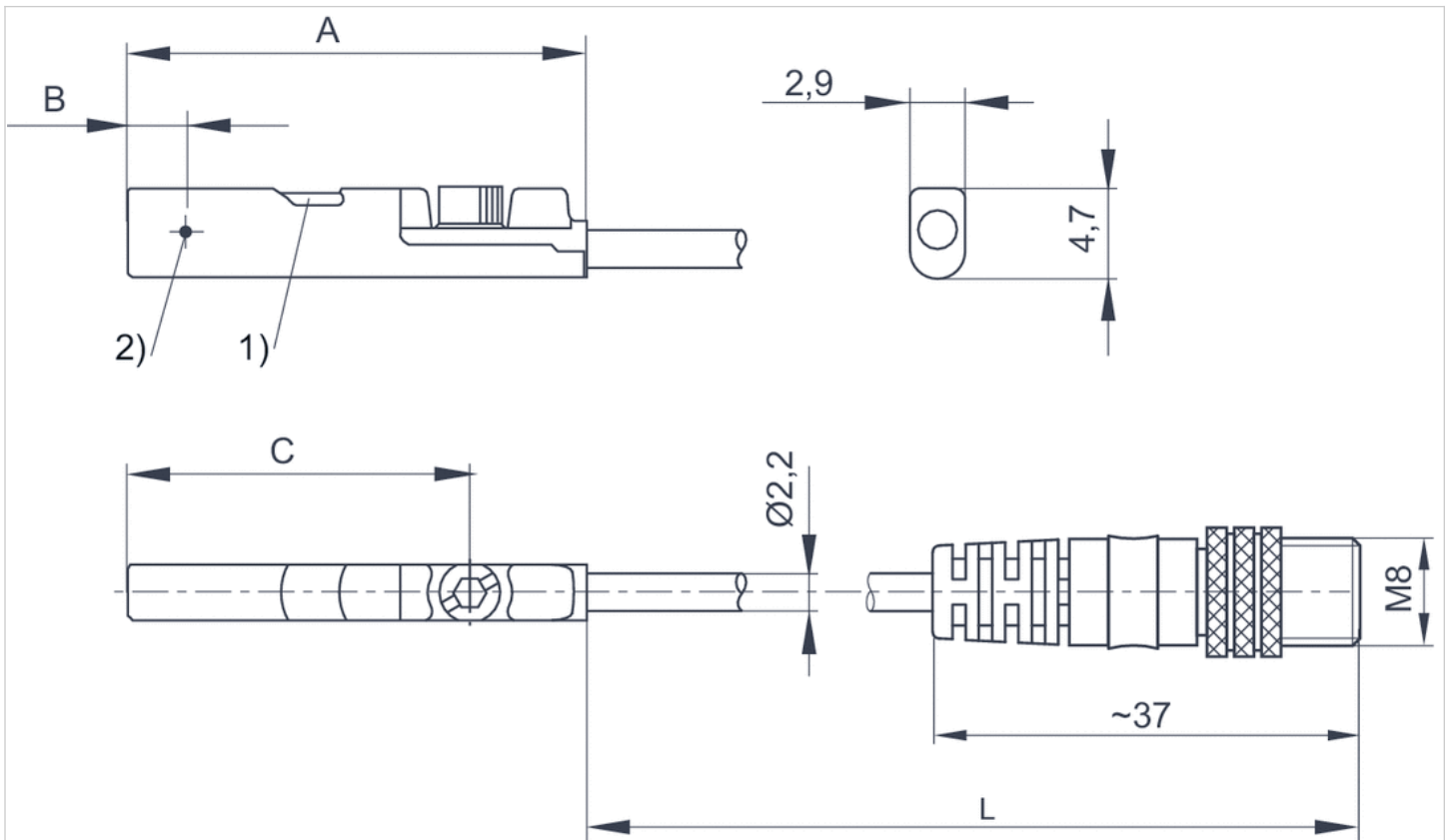
The max. switching capacity must not be exceeded.

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

## Dimensions

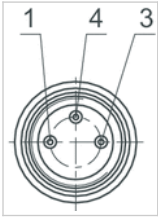
### Dimensions



1) LED 2) Switching point  
L = cable length

## 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

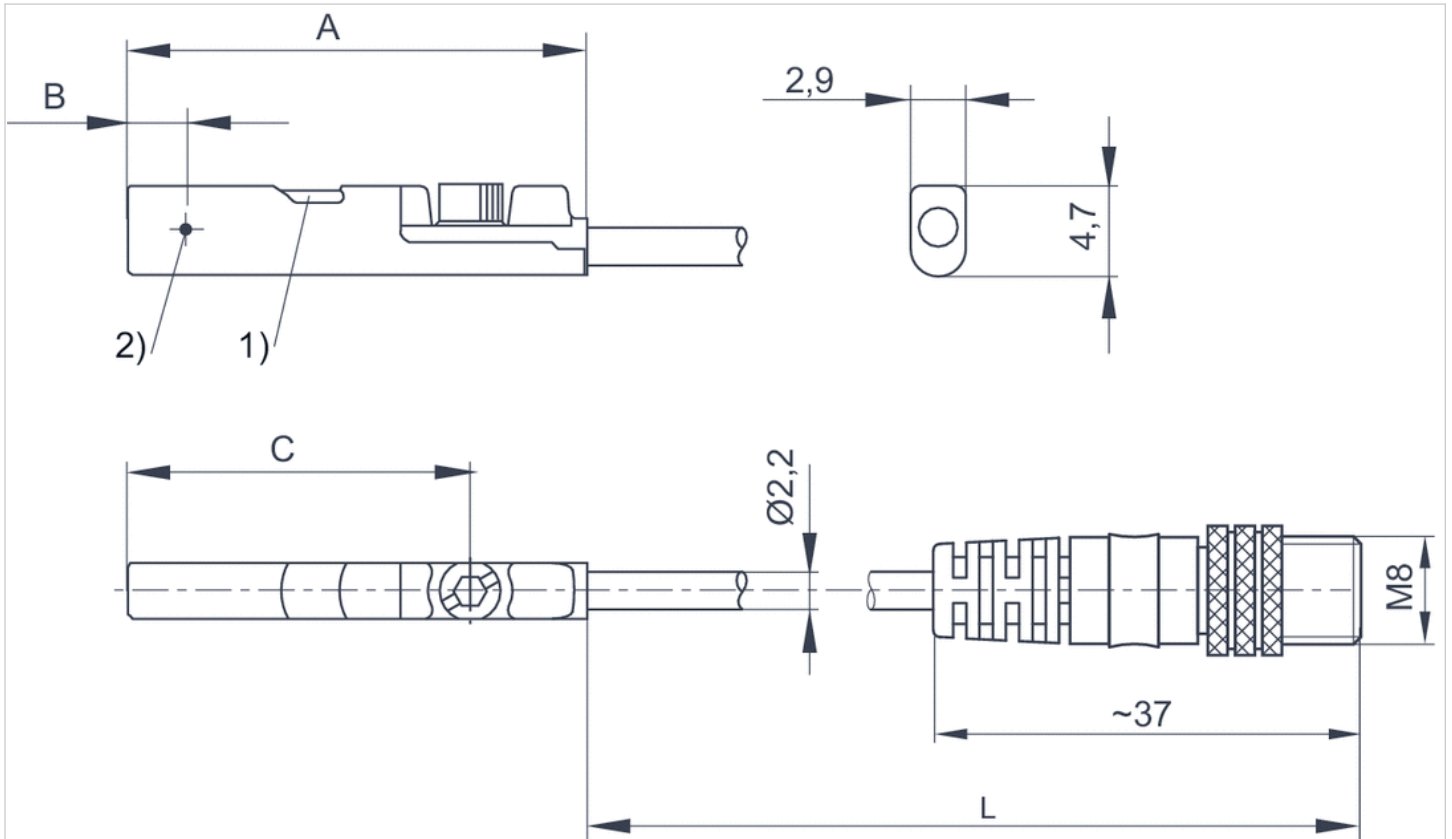
The max. switching capacity must not be exceeded.

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

## Dimensions

### Dimensions



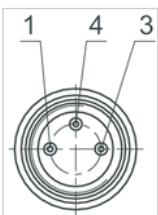
1) LED 2) Switching point  
L = cable length

## 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

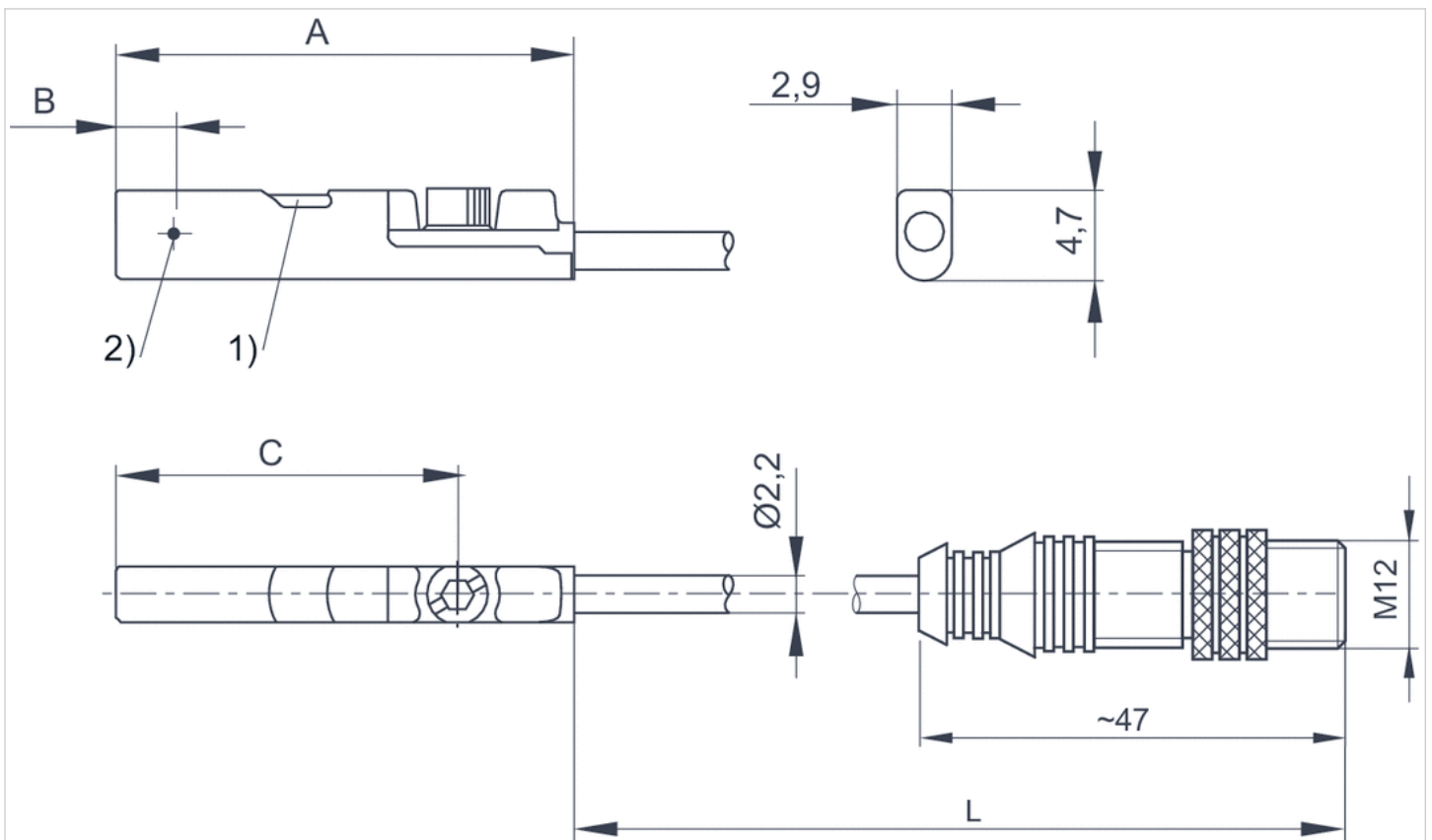
The max. switching capacity must not be exceeded.

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

## Dimensions

### Dimensions

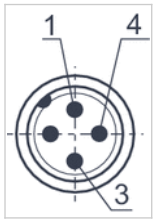


1) LED 2) Switching point  
L = cable length

## Dimensions

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

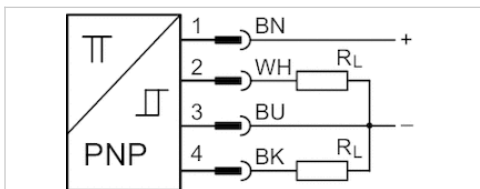
## Pin assignments



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

# Sensors, Series ST4-2P

- 4 mm T-slot
- number of switching points 2
- with cable
- without wire end ferrule, tin-plated, 4-pin
- electronic PNP
- 2 switching points
- electronic PNP
- Direct mounting for series PRA, SSI, RTC, GPC, MSC, MSN, RCM, CVI
- Indirect mounting for series MNI, CSL-RD, ICM



Certificates	RoHS
Ambient temperature min./max.	-20 ... 75 °C
Protection class	IP65 IP67
number of switching points	2
Power consumption	15 mA
Min./max. DC operating voltage	12 ... 30 V DC
Repetitive precision max. measuring range	0,1 mT
Hysteresis	1 mT
Switching logic	NO (make contact)
Display	LED
LED status display	Yellow
Display	2 LED
Vibration resistance	10 - 55 Hz, 1 mm
Shock resistance	30 g / 11 ms
Cable length L	2 m
Mounting screw	with hexagon socket

## Technical data

Part No.	for	Type of contact	Cable length L
R412010139	PRA, SSI, RTC, GPC, MSC, MSN, RCM, CVI	electronic PNP	2 m

Part No.	Detection range max.	Voltage drop U at I <sub>max</sub>	DC switching current, max.
R412010139	50 mm	≤ 2,2 V	0.15 A

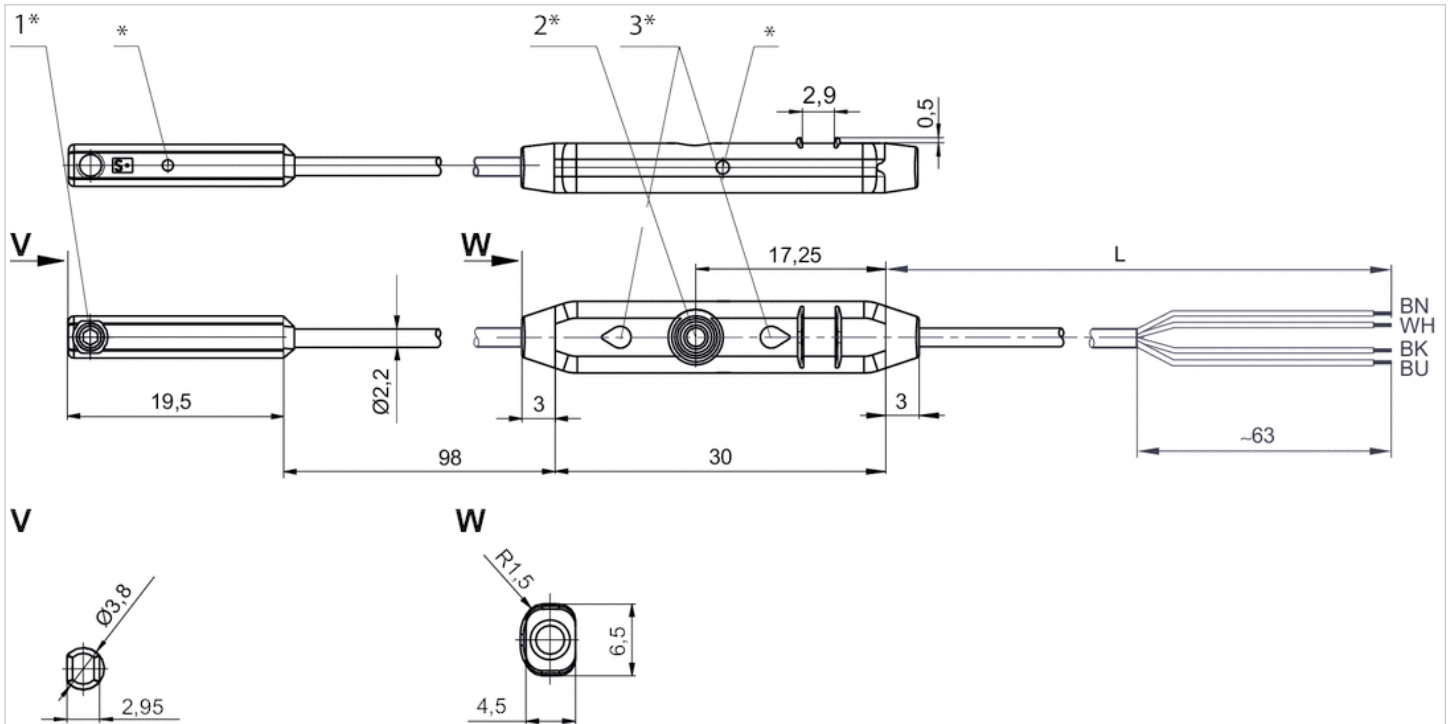
Part No.	Function	Version
R412010139	electronic PNP	short circuit resistant Protected against polarity reversal

## Technical information

Material	
Housing	Polyamide
Cable sheath	Polyurethane

# Dimensions

## Dimensions



1\* = mounting screw 2\* = teach button 3\* = LED

L = cable length

(1) BN=brown

(2) WH=white

(3) BU=blue

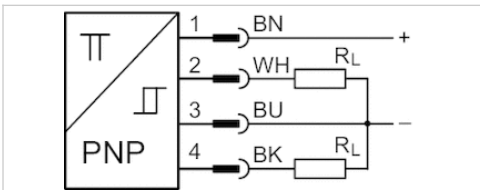
(4) BK=black

\* Switching point



# Sensors, Series ST4-2P

- 4 mm T-slot
- number of switching points 2
- with cable
- Plug, M8x1, 4-pin, with knurled screw
- electronic PNP
- 2 switching points
- electronic PNP
- Direct mounting for series PRA, SSI, RTC, GPC, MSC, MSN, RCM, CVI
- Indirect mounting for series MNI, CSL-RD, ICM



Certificates	RoHS
Ambient temperature min./max.	-20 ... 75 °C
Protection class	IP65 IP67
number of switching points	2
Power consumption	15 mA
Min./max. DC operating voltage	12 ... 30 V DC
Repetitive precision max. measuring range	0,1 mT
Hysteresis	1 mT
Switching logic	NO (make contact)
Display	LED
LED status display	Yellow
Display	2 LED
Vibration resistance	10 - 55 Hz, 1 mm
Shock resistance	30 g / 11 ms
Cable length L	0.3 m
Mounting screw	with hexagon socket

## Technical data

Part No.	for	Type of contact	Cable length L
R412010140	PRA, SSI, RTC, GPC, MSC, MSN, RCM, CVI	electronic PNP	0.3 m

Part No.	Detection range max.	Voltage drop U at I <sub>max</sub>	Function
R412010140	50 mm	≤ 2,2 V	electronic PNP

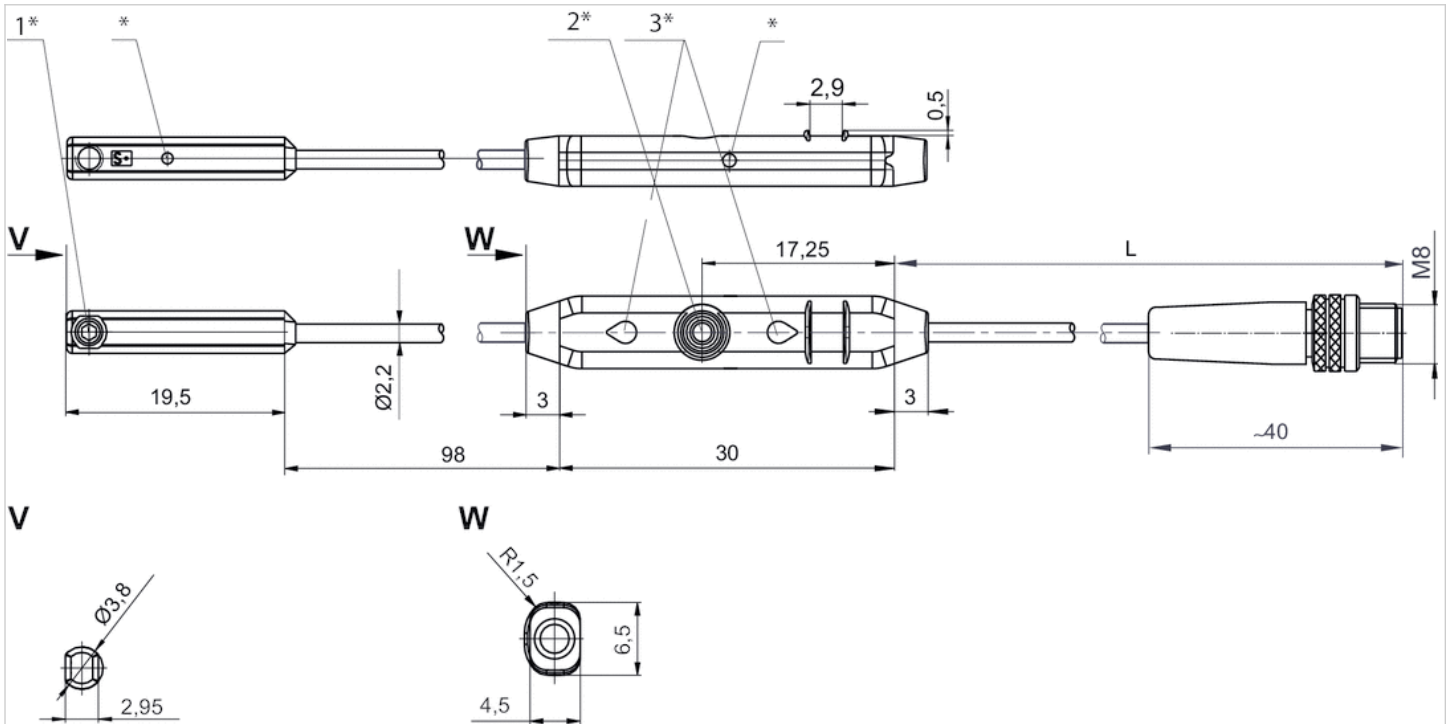
Part No.	Version
R412010140	short circuit resistant Protected against polarity reversal

## Technical information

Material	
Housing	Polyamide
Cable sheath	Polyurethane

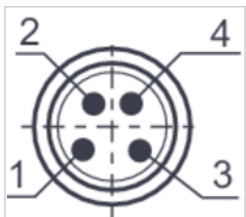
## Dimensions

### Dimensions



1\* = mounting screw 2\* = teach button 3\* = LED  
 L = cable length  
 \* Switching point

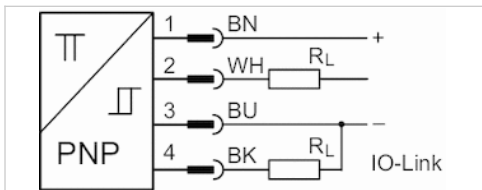
## Pin assignments



Pin	1	2	3	4
Allocation	(+)	(OUT)	(-)	(OUT)

# Sensors, Series ST4-2P

- 4 mm T-slot
- number of switching points 2
- with cable
- Plug, M12x1, 4-pin, with knurled screw
- IO-Link, 2 switching points
- electronic PNP
- Direct mounting for series PRA, SSI, RTC, GPC, MSC, MSN, RCM, CVI
- Indirect mounting for series MNI, CSL-RD, ICM



Certificates	RoHS
Ambient temperature min./max.	-20 ... 75 °C
Protection class	IP67
number of switching points	2
Power consumption	15 mA
Min./max. DC operating voltage	12 ... 30 V DC
Repetitive precision max. measuring range	0,1 mT
Hysteresis	1 mT
Switching logic	NO (make contact)
LED status display	Yellow
Display	2 LED
Vibration resistance	10 - 55 Hz, 1 mm
Shock resistance	30 g / 11 ms
Cable length L	0.3 m
Mounting screw	with hexagon socket

## Technical data

Part No.	for	Type of contact	Cable length L
R412023459	PRA, SSI, RTC, GPC, MSC, MSN, RCM, CVI	electronic PNP	0.3 m

Part No.	Detection range max.	Voltage drop U at I <sub>max</sub>
R412023459	50 mm	≤ 2,2 V

Part No.	Version
R412023459	Wire break protection Short circuit resistance Reverse polarity protection Switch-on pulse suppression

## Technical information

The IO-Link device description (IODD) for the ST4-2P proximity sensor is available for download in the Media Centre.

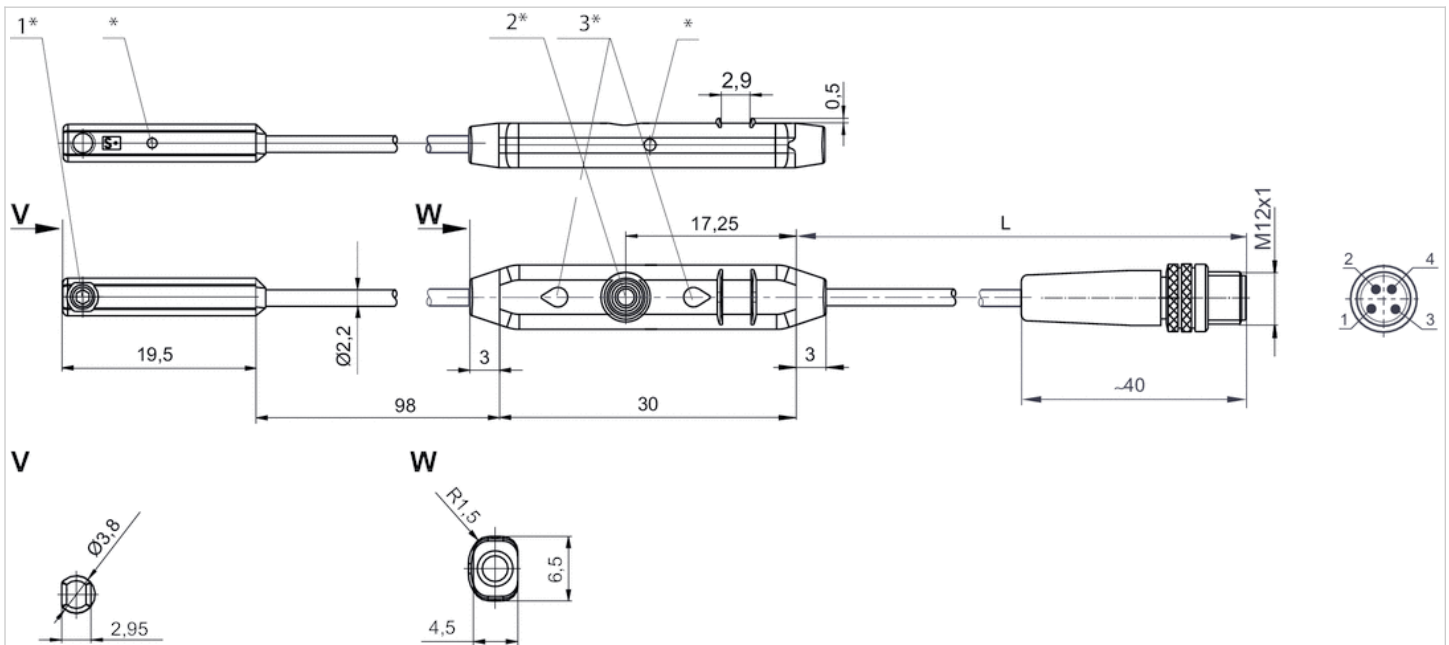
## Technical information

### Material

Housing	Polyamide
Cable sheath	Polyurethane

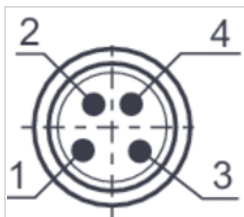
## Dimensions

### Dimensions



1\* = mounting screw 2\* = teach button 3\* = LED  
 L = cable length  
 PIN assignment: 1 = (+), 2 = (OUT), 3 = (-), 4 = (OUT) IO-Link  
 \* Switching point

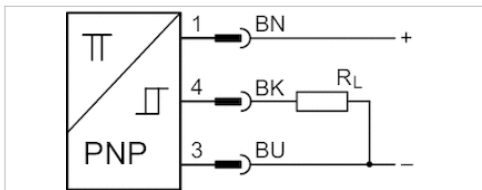
## Pin assignments



Pin	1	2	3	4
Allocation	(+)	(OUT)	(-)	IO-Link (OUT)

# Sensor, Series ST6

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



### Certificates

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

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

## Technical data

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

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

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

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

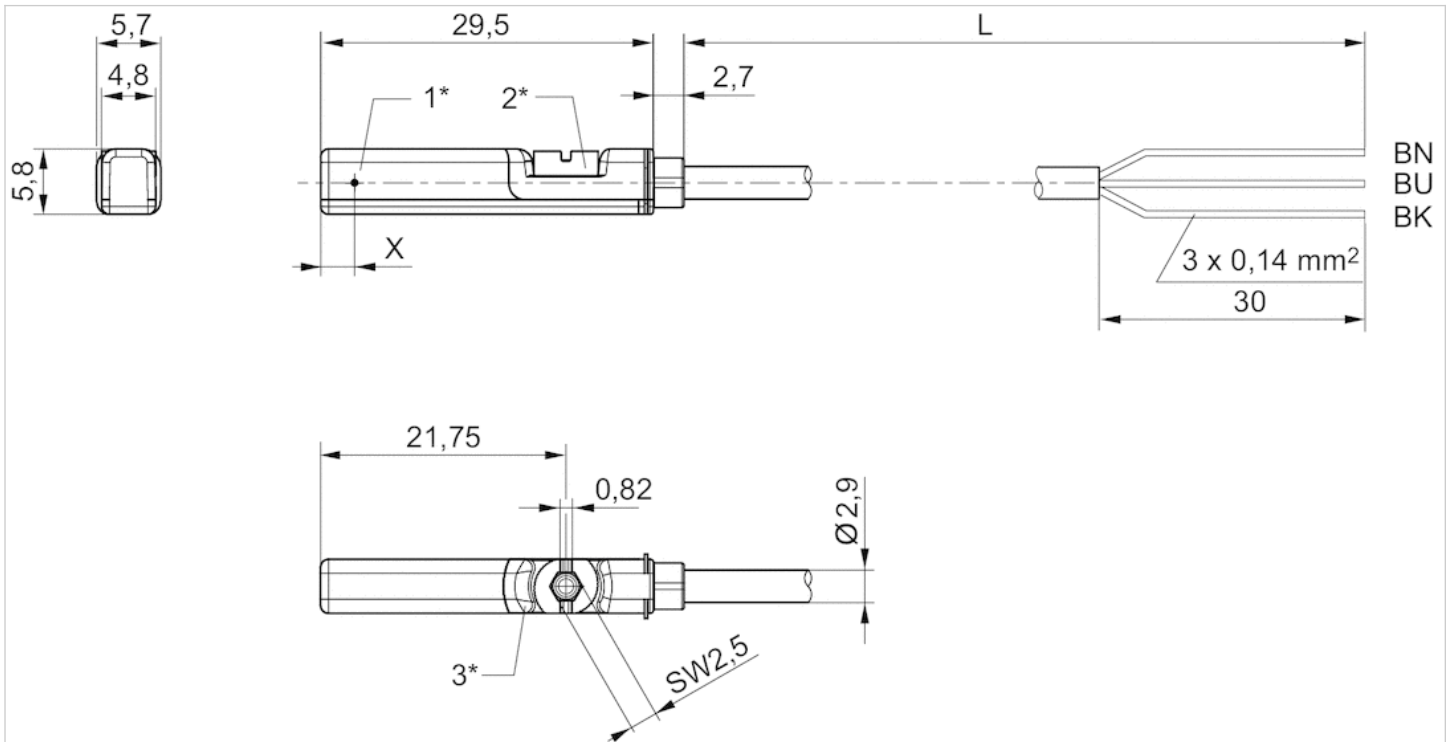
Part No.	Version
R412022856	short circuit resistant Protected against polarity reversal

## Technical information

Material	
Housing	Polyamide
Cable sheath	Polyurethane
Locking screw	Stainless steel

## Dimensions

Fig. 2



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

L = cable length

BN = brown, BK = black, BU = blue

X = electronic: 11.6 mm











## Sensor, Series ST6

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



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

## Technical data

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

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

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

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



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

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

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

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

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

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

3) open cable ends, 3-pin

## Technical information

No cULus certification for 230 V variant.

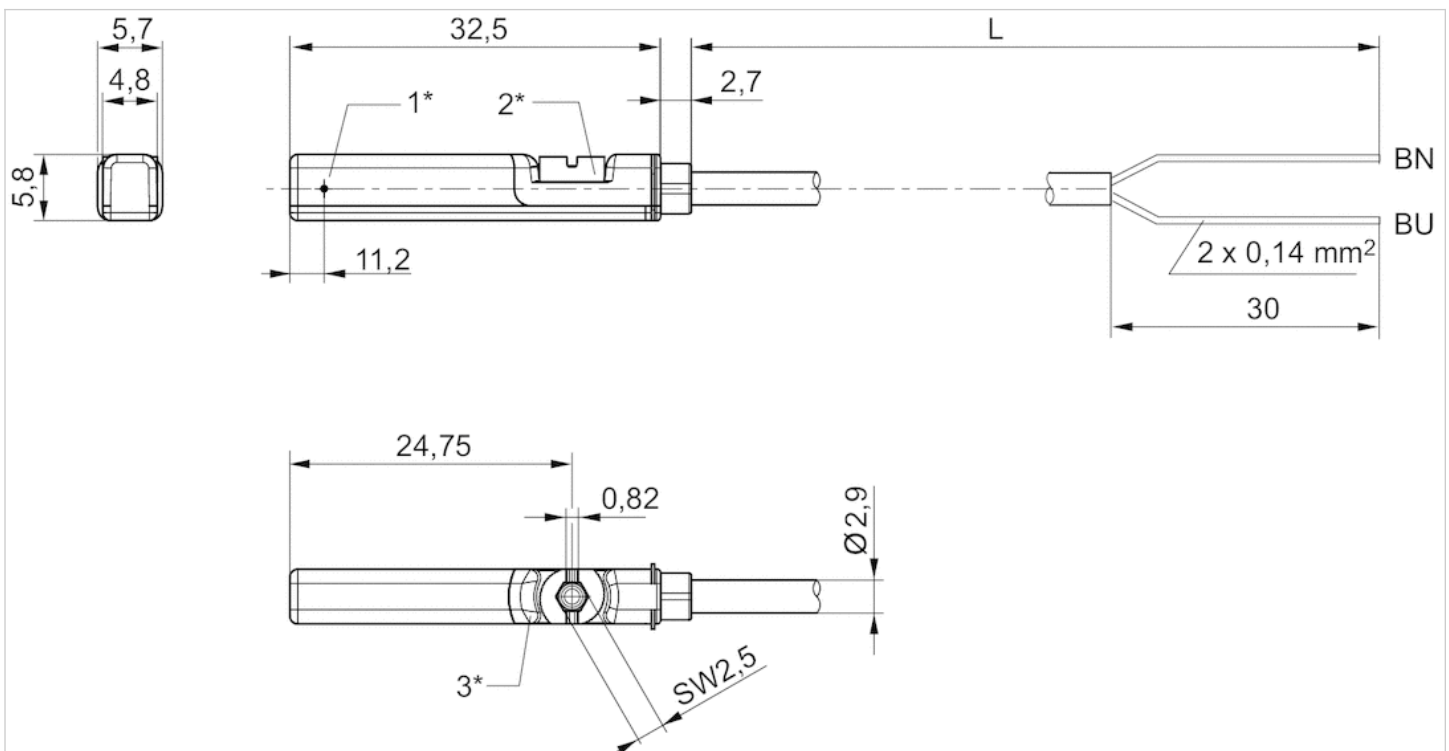
## Technical information

### Material

Housing	Polyamide
Cable sheath	Polyurethane
Locking screw	Stainless steel

## Dimensions

Fig. 1

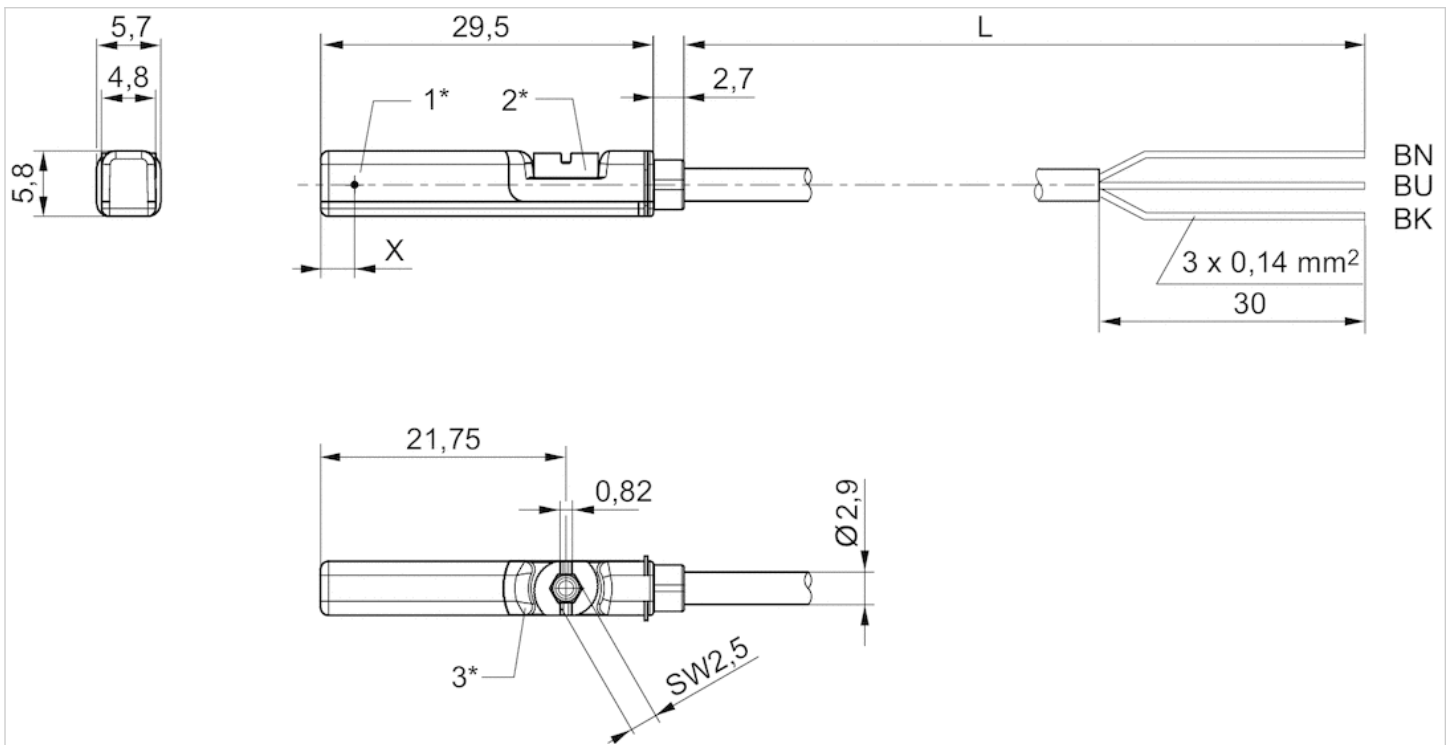


1\* = switching point 2\* = locking screw 3\* = LED window, transparent

L = cable length

BN=brown, BU=blue

Fig. 2



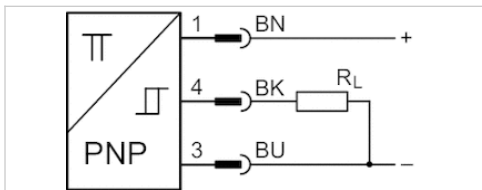
1\* = switching point 2\* = locking screw 3\* = LED window, transparent  
 L = cable length  
 BN = brown, BK = black, BU = blue  
 X = electronic: 11.6 mm

# Sensor, Series ST6

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



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



## Technical data

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

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

Part No.	Max. switching frequency
R412022864	1000 Hz

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

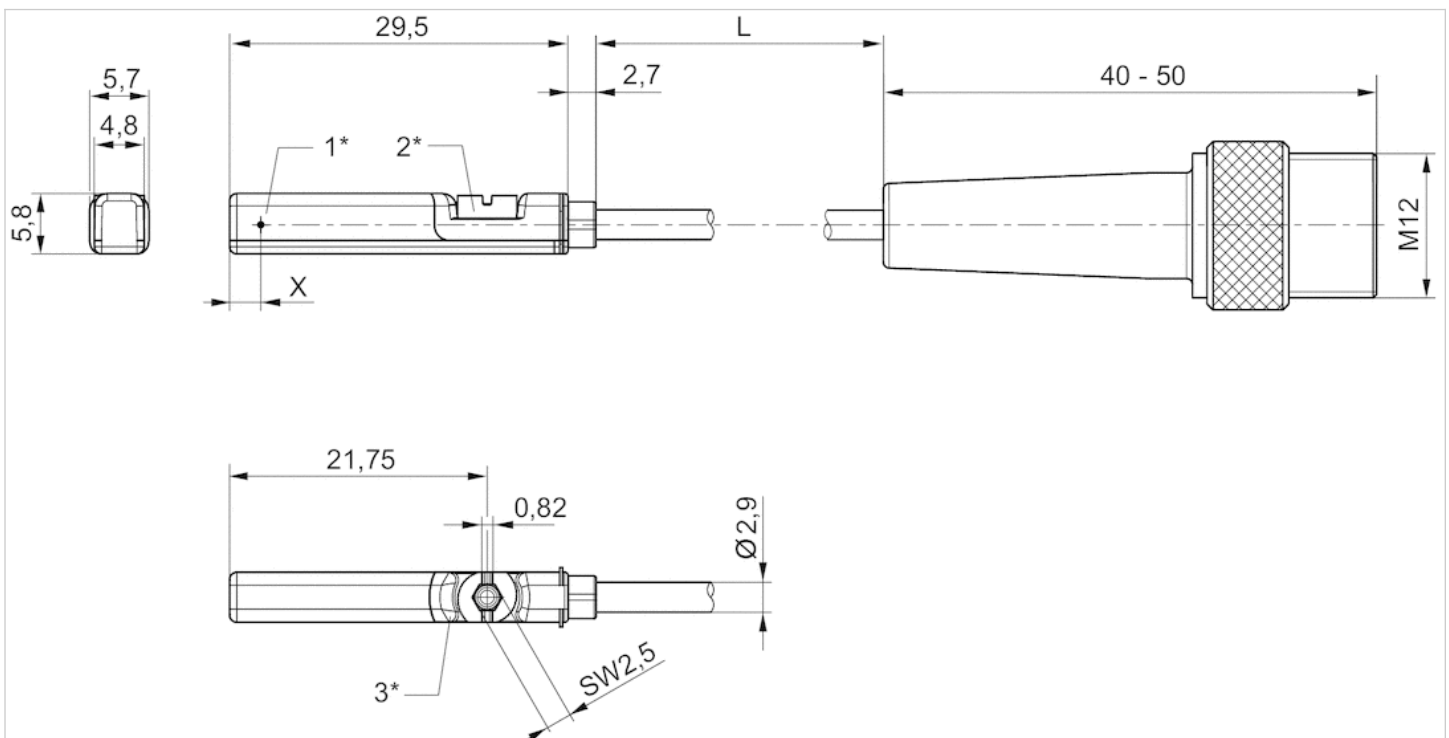
## Technical information

### Material

Housing	Polyamide
Cable sheath	Polyurethane
Locking screw	Stainless steel

## Dimensions

### Dimensions



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

L = cable length

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

## Pin assignments

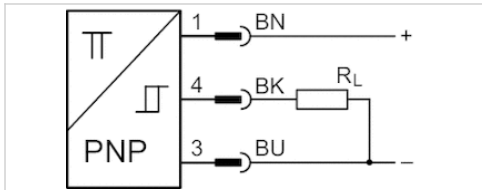
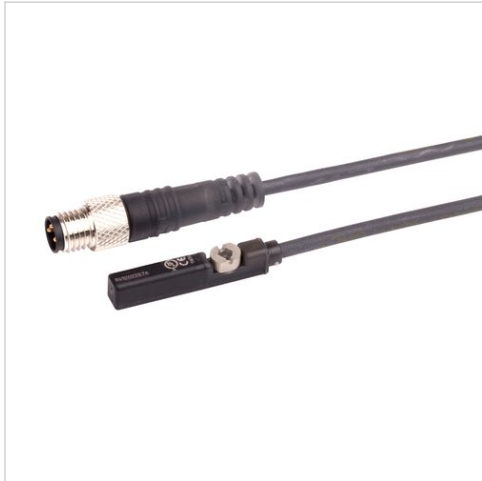
### Pin assignments



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

# Sensor, Series ST6

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



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

## Technical data

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

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

Part No.	Max. switching frequency
R412022860	1000 Hz

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

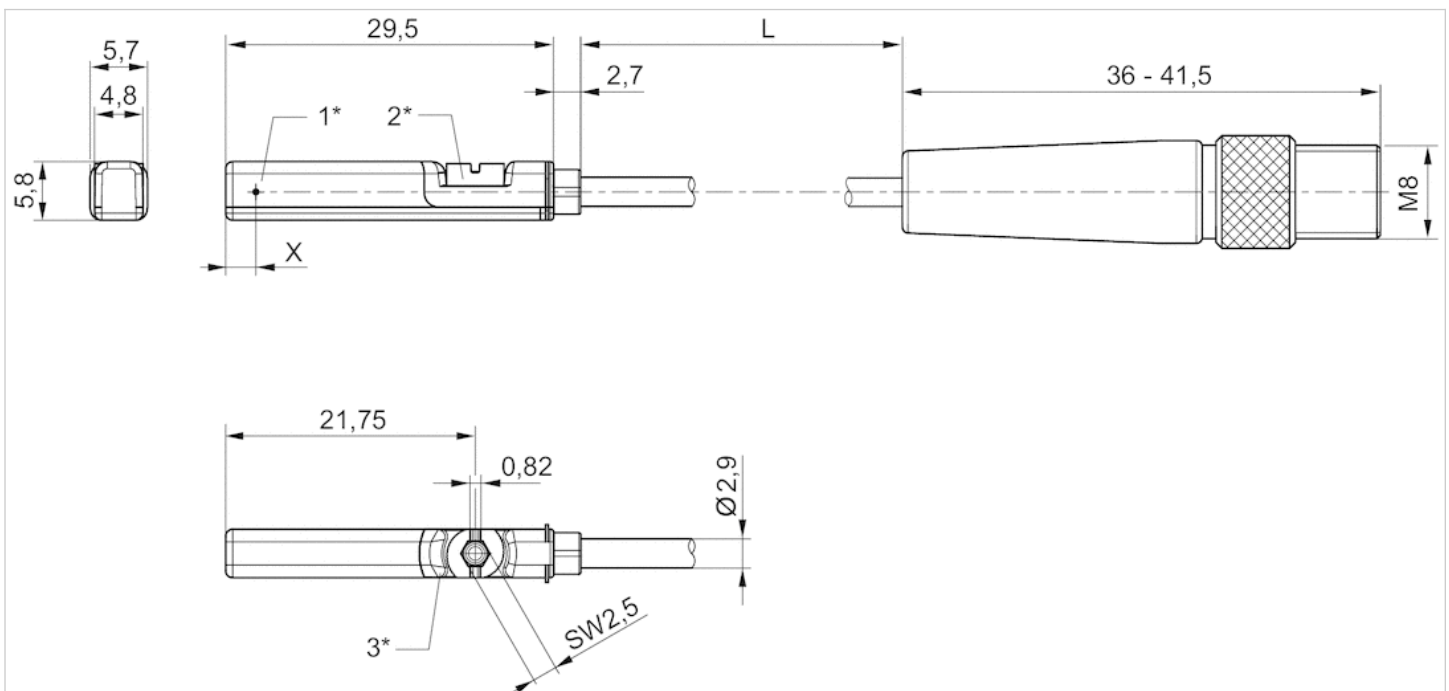
## Technical information

### Material

Housing	Polyamide
Cable sheath	Polyurethane
Locking screw	Stainless steel

## Dimensions

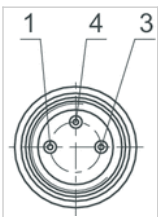
### Dimensions



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

## Pin assignments

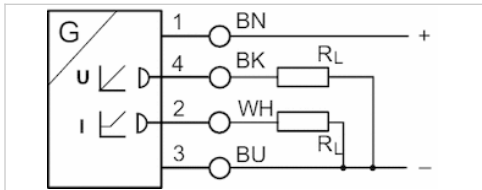
### Pin assignments



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

# Sensors, Series SM6

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



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

## Technical data

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

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



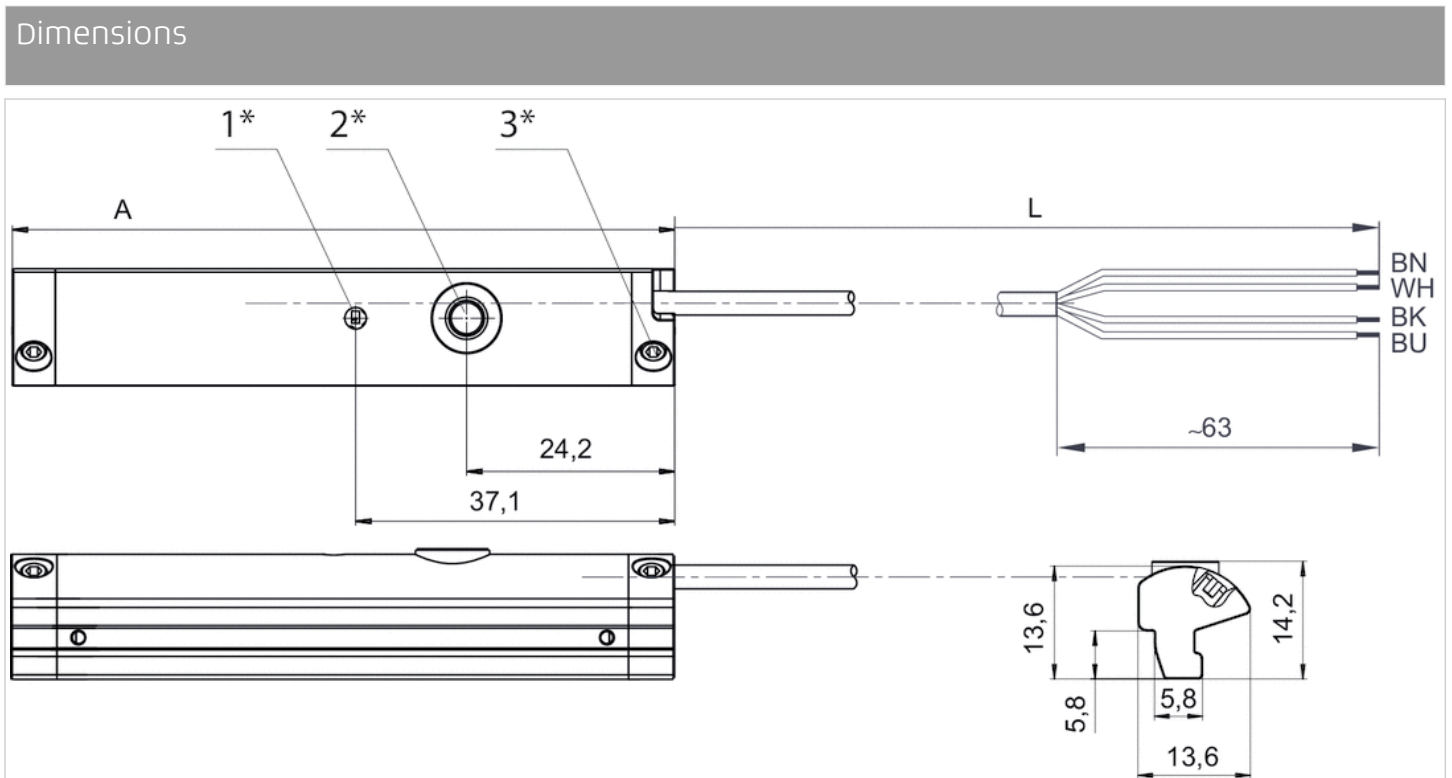
Part No.	max. measuring range	Overall length Sensor A
R412010415	224 mm	237 mm
R412010417	256 mm	269 mm

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

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

## Dimensions

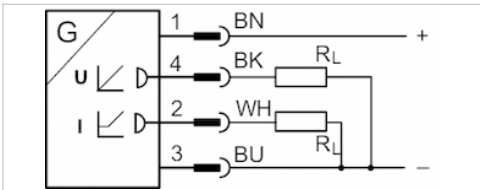


- 1\* = LED 2\* = teach button 3\* = threaded pin M3x11
- L = cable length
- (1) BN=brown
- (2) WH=white
- (3) BU=blue

(4) BK=black  
A = sensor length

# Sensors, Series SM6

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



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

## Technical data

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

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

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

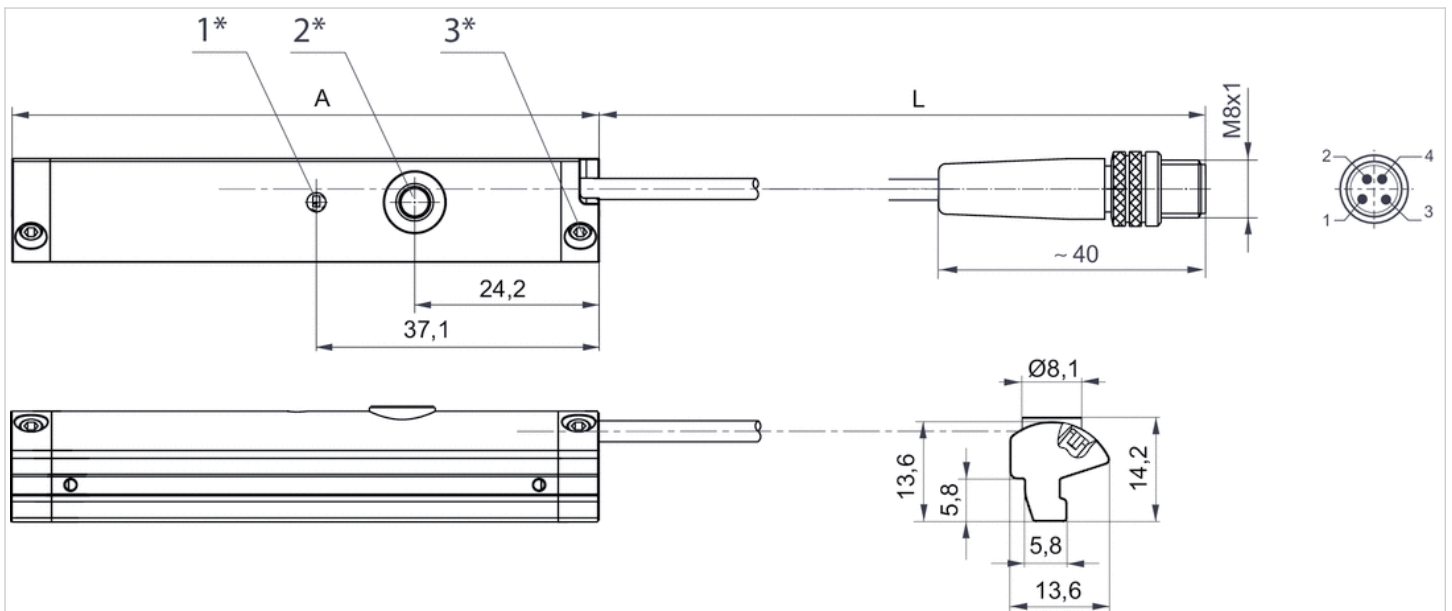
Part No.	Version
R412010142	short circuit resistant Protected against polarity reversal Overload protection
R412010144	short circuit resistant Protected against polarity reversal Overload protection
R412010263	short circuit resistant Protected against polarity reversal Overload protection
R412010265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

## Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

## Dimensions

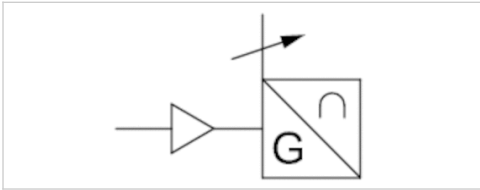
### Dimensions



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

# 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

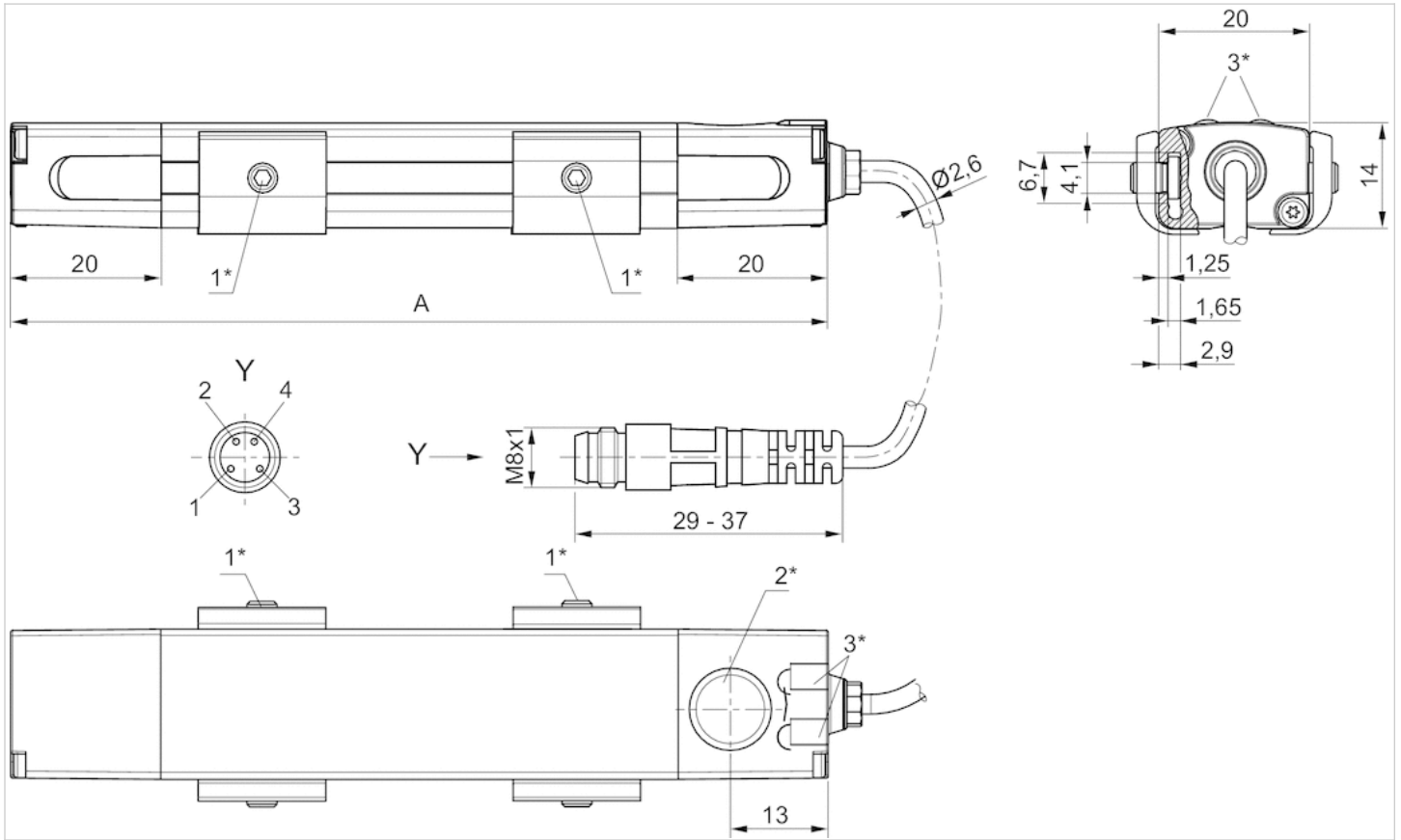
The IO-Link device description (IODD) for the SM6-AL distance measuring sensor is available for download in the Media Centre.

## 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 SN2

- with cable
- without wire end ferrule, tin-plated, 2-pin without wire end ferrule, tin-plated, 3-pin
- Heat resistant
- Reed electronic PNP
- Indirect mounting for series TRB, PRA, ITS, MNI, CSL-RD, ICM, RPC, TRR, FLT, CVI



Ambient temperature min./max.	See table below
Protection class	IP67
Switching point precision	±0,1 mT
Nominal current, actuated state	15 mA
Quiescent current (without load)	10 mA
Min./max. DC operating voltage	See table below
Min./max. AC operating voltage	See table below
LED status display	See table below
Cable length L	3 5 7 10 11 20 m

## Technical data

Part No.		Type of contact	Cable sheath	Cable length L
0830100315		Reed	Polyvinyl chloride	3 m
0830100365		Reed	Polyvinyl chloride	3 m
0830100368		Reed	Polyvinyl chloride	3 m
0830100370		Reed	Polyurethane	3 m
0830100316		Reed	-	3 m
0830100373		Reed	-	3 m
0830100367		Reed	Polyurethane	3 m
0830100317		Reed	Thermoplastic elastomer	3 m
0830100366		Reed	Polyvinyl chloride	5 m
0830100369		Reed	Polyvinyl chloride	5 m
0830100327		Reed	Polyvinyl chloride	7 m
0830100325		Reed	Polyvinyl chloride	10 m
0830100326		Reed	Thermoplastic elastomer	11 m
R412004848		Reed	Polyvinyl chloride	20 m
0830100371		Reed	Polyvinyl chloride	3 m
0830100372		Reed	Polyvinyl chloride	5 m
0830100375		electronic PNP	Polyvinyl chloride	3 m
0830100378		electronic PNP	Thermoplastic elastomer	3 m
0830100377		electronic PNP	Polyurethane	3 m
0830100376		electronic PNP	Polyvinyl chloride	5 m

Part No.	Min./max. DC operating voltage	Min./max. AC operating voltage
0830100315	0 ... 60 V DC	0 ... 240 V AC
0830100365	12 ... 60 V DC	12 ... 240 V AC
0830100368	12 ... 60 V DC	12 ... 240 V AC
0830100370	12 ... 60 V DC	12 ... 240 V AC
0830100316	0 ... 60 V DC	0 ... 240 V AC
0830100373	0 ... 60 V DC	0 ... 240 V AC
0830100367	12 ... 60 V DC	12 ... 240 V AC
0830100317	12 ... 60 V DC	12 ... 240 V AC
0830100366	12 ... 60 V DC	12 ... 240 V AC
0830100369	12 ... 60 V DC	12 ... 240 V AC
0830100327	12 ... 60 V DC	12 ... 240 V AC
0830100325	12 ... 60 V DC	12 ... 240 V AC
0830100326	12 ... 60 V DC	12 ... 240 V AC
R412004848	12 ... 60 V DC	12 ... 240 V AC
0830100371	12 ... 42 V DC	12 ... 42 V AC
0830100372	12 ... 42 V DC	12 ... 42 V AC
0830100375	10 ... 30 V DC	10 ... 30 V AC
0830100378	10 ... 30 V DC	-
0830100377	10 ... 30 V DC	10 ... 30 V AC
0830100376	10 ... 30 V DC	10 ... 30 V AC

Part No.	Voltage drop U at I <sub>max</sub>	DC switching current, max.
0830100315	$R_s \cdot I_{max}$ .	0.13 A
0830100365	2,1 V + I*Rs	0.13 A
0830100368	2,1 V + I*Rs	0.3 A
0830100370	2,1 V + I*Rs	0.3 A
0830100316	$R_s \cdot I_{max}$ .	0.13 A
0830100373	$R_s \cdot I_{max}$ .	0.13 A
0830100367	2,1 V + I*Rs	0.13 A
0830100317	2,1 V + I*Rs	0.12 A
0830100366	2,1 V + I*Rs	0.13 A
0830100369	2,1 V + I*Rs	0.3 A
0830100327	2,1 V + I*Rs	0.3 A
0830100325	2,1 V + I*Rs	0.13 A
0830100326	2,1 V + I*Rs	0.12 A
R412004848	2,1 V + I*Rs	0.13 A
0830100371	I*Rs	0.13 A
0830100372	I*Rs	0.13 A
0830100375	≤ 2,0 V	0.13 A
0830100378	2,1 V + I*Rs	0.12 A
0830100377	≤ 2,0 V	0.13 A
0830100376	≤ 2,0 V	0.13 A

Part No.	AC switching current, max.	Ambient temperature min./max.	Switching capacity
0830100315	0.13 A	-20 ... 80 °C	10 W / 10 VA
0830100365	0.13 A	-20 ... 80 °C	10 W / 10 VA
0830100368	0.5 A	-20 ... 80 °C	10 W / 10 VA
0830100370	0.5 A	-20 ... 80 °C	10 W / 10 VA
0830100316	-	-20 ... 80 °C	10 W / 10 VA
0830100373	-	-20 ... 80 °C	10 W / 10 VA
0830100367	0.13 A	-20 ... 80 °C	10 W / 10 VA
0830100317	0.12 A	-20 ... 120 °C	10 W / 10 VA
0830100366	0.13 A	-20 ... 80 °C	10 W / 10 VA
0830100369	0.5 A	-20 ... 80 °C	10 W / 10 VA
0830100327	0.5 A	-20 ... 80 °C	10 W / 10 VA
0830100325	0.13 A	-20 ... 80 °C	10 W / 10 VA
0830100326	0.12 A	-20 ... 120 °C	10 W / 10 VA
R412004848	0.13 A	-20 ... 80 °C	10 W / 10 VA
0830100371	0.13 A	-20 ... 80 °C	5,5 W / 5,5 VA
0830100372	0.13 A	-20 ... 80 °C	5,5 W / 5,5 VA
0830100375	-	-10 ... 70 °C	-
0830100378	-	-20 ... 120 °C	10 W / 10 VA
0830100377	-	-10 ... 70 °C	-
0830100376	-	-10 ... 70 °C	-

Part No.	Protective resistor for reed	Vibration resistance	Shock resistance
0830100315	27 Ω	-	-

Part No.	Protective resistor for reed	Vibration resistance	Shock resistance
0830100365	27 Ω	30 g (50 - 1000 Hz)	50 g / 11 ms
0830100368	1,3 Ω	30 g (50 - 1000 Hz)	50 g / 11 ms
0830100370	1,3 Ω	30 g (50 - 1000 Hz)	50 g / 11 ms
0830100316	1,3 Ω	-	-
0830100373	100 Ω	-	-
0830100367	27 Ω	30 g (50 - 1000 Hz)	50 g / 11 ms
0830100317	27 Ω	30 g (50 - 1000 Hz)	100 g / 11 ms
0830100366	27 Ω	30 g (50 - 1000 Hz)	50 g / 11 ms
0830100369	1,3 Ω	30 g (50 - 1000 Hz)	50 g / 11 ms
0830100327	1,3 Ω	30 g (50 - 1000 Hz)	50 g / 11 ms
0830100325	27 Ω	30 g (50 - 1000 Hz)	50 g / 11 ms
0830100326	27 Ω	30 g (50 - 1000 Hz)	100 g / 11 ms
R412004848	27 Ω	30 g (50 - 1000 Hz)	50 g / 11 ms
0830100371	27 Ω	30 g (50 - 1000 Hz)	100 g / 11 ms
0830100372	27 Ω	30 g (50 - 1000 Hz)	100 g / 11 ms
0830100375	-	-	-
0830100378	27 Ω	30 g (50 - 1000 Hz)	100 g / 11 ms
0830100377	-	-	-
0830100376	-	-	-

Part No.	Max. switching frequency	Operating current, not switched
0830100315	300 Hz	-
0830100365	-	-
0830100368	-	-
0830100370	-	-
0830100316	300 Hz	-
0830100373	300 Hz	-
0830100367	-	-
0830100317	-	-
0830100366	-	-
0830100369	-	-
0830100327	-	-
0830100325	-	-
0830100326	-	-
R412004848	-	-
0830100371	-	-
0830100372	-	-
0830100375	2000 Hz	10 mA
0830100378	-	-
0830100377	2000 Hz	10 mA
0830100376	2000 Hz	10 mA

Part No.	Operating current, switched	Material Housing	LED status display
0830100315	-	Polyamide	-
0830100365	-	Polyamide	Yellow

Part No.	Operating current, switched	Material Housing	LED status display
0830100368	-	Polyamide	Yellow
0830100370	-	Polyamide	Yellow
0830100316	-	Polyamide	-
0830100373	-	Polyamide	-
0830100367	-	Polyamide	Yellow
0830100317	-	Polyamide	-
0830100366	-	Polyamide	Yellow
0830100369	-	Polyamide	Yellow
0830100327	-	Polyamide	Yellow
0830100325	-	Polyamide	Yellow
0830100326	-	Polyamide	-
R412004848	-	epoxy resin	Yellow
0830100371	-	Polyamide	Yellow
0830100372	-	Polyamide	Yellow
0830100375	15 mA	Polyamide	Yellow
0830100378	-	Polyamide	-
0830100377	15 mA	Polyamide	Yellow
0830100376	15 mA	Polyamide	Yellow

Part No.	Version	
0830100315	Protected against polarity reversal	1)
0830100365	Protected against polarity reversal	1)
0830100368	Protected against polarity reversal	1)
0830100370	Protected against polarity reversal	1)
0830100316	Protected against polarity reversal	1)
0830100373	Protected against polarity reversal	1)
0830100367	Protected against polarity reversal	1)
0830100317	Protected against polarity reversal	1)
0830100366	Protected against polarity reversal	1)
0830100369	Protected against polarity reversal	1)
0830100327	Protected against polarity reversal	1)
0830100325	Protected against polarity reversal	1)
0830100326	Protected against polarity reversal	1)
R412004848	Protected against polarity reversal	1)
0830100371	Protected against polarity reversal	1)
0830100372	Protected against polarity reversal	1)
0830100375	short circuit resistant Protected against polarity reversal	2)
0830100378	Protected against polarity reversal	2)
0830100377	short circuit resistant Protected against polarity reversal	2)
0830100376	short circuit resistant Protected against polarity reversal	2)

1) without wire end ferrule, tin-plated, 2-pin

2) without wire end ferrule, tin-plated, 3-pin

## Technical information

If reed sensors are used, we recommend using a short-circuit protective device (SCPD).

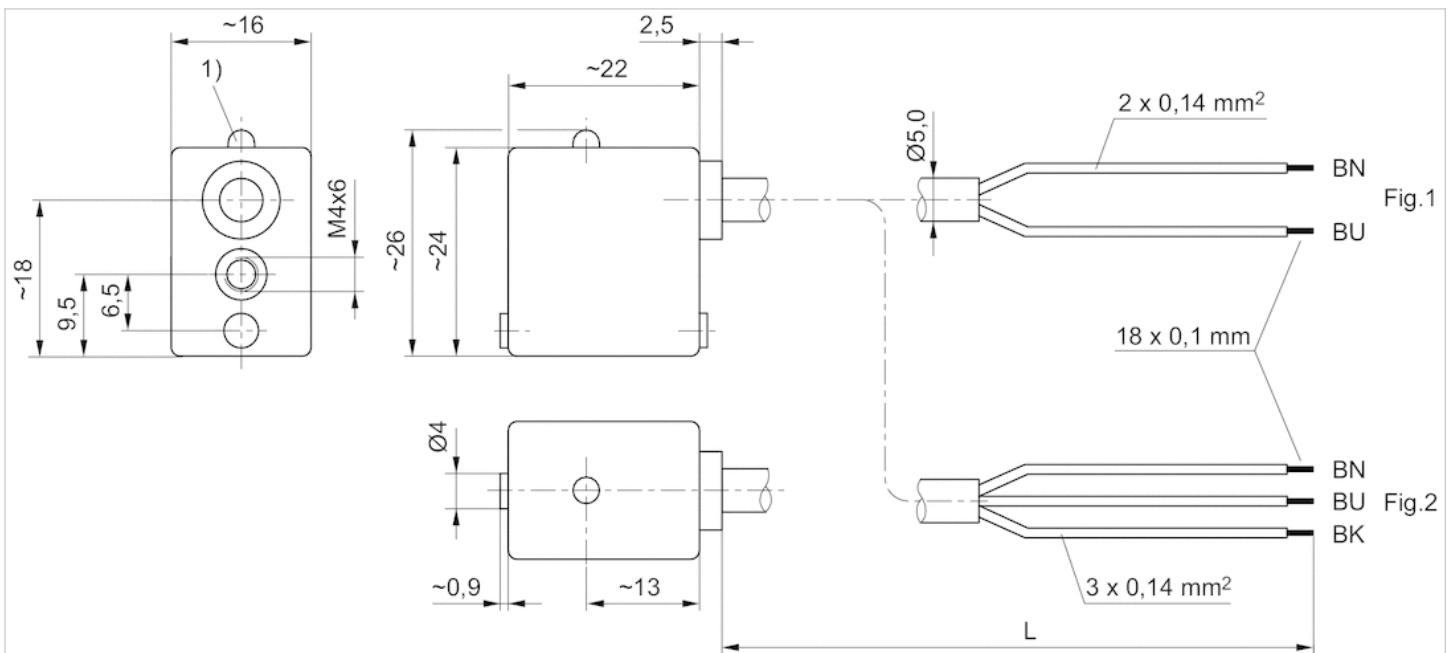
## Technical information

### Material

Housing	Polyamide epoxy resin
Cable sheath	Polyvinyl chloride Polyurethane Thermoplastic elastomer

## Dimensions

### Dimensions



1) LED

L = cable length

BN = brown, BK = black, BU = blue











## Sensor, Series SN2

- Plug, M8, 2-pin Plug, M8, 3-pin Plug, M8, 4-pin
- Reed 2-Wire Reed 3-Wire Reed 3-Wire, with pulse stretching Reed 4-Wire electronic PNP
- With stretched impulse
- With stretched impulse
- Reed electronic PNP
- Indirect mounting for series TRB, PRA, ITS, MNI, CSL-RD, ICM, RPC, TRR, FLT, CVI



Ambient temperature min./max.	See table below
Protection class	IP67
Switching point precision	±0,1 mT
Nominal current, actuated state	15 mA
Quiescent current (without load)	10 mA
Min./max. DC operating voltage	See table below
Min./max. AC operating voltage	See table below
LED status display	See table below

## Technical data

Part No.		Type of contact	Min./max. DC operating voltage
0830100465		Reed	12 ... 36 V DC
0830100468		Reed	12 ... 36 V DC
R412004299		Reed	12 ... 36 V DC
0830100466		Reed	12 ... 36 V DC
0830100469		Reed	12 ... 36 V DC
R412004820		Reed	12 ... 36 V DC
0830100472		Reed	12 ... 36 V DC
0830100467		Reed	12 ... 36 V DC
0830100480		electronic PNP	10 ... 30 V DC
R412004800		electronic PNP	10 ... 30 V DC

Part No.	Min./max. AC operating voltage	Voltage drop U at I <sub>max</sub>
0830100465	12 ... 30 V AC	2,1 V + I*Rs
0830100468	12 ... 30 V AC	2,1 V + I*Rs
R412004299	12 ... 30 V AC	2,1 V + I*Rs
0830100466	12 ... 30 V AC	2,1 V + I*Rs
0830100469	12 ... 30 V AC	≤ 0,5 V
R412004820	12 ... 30 V AC	I*Rs
0830100472	12 ... 30 V AC	≤ 1,5 V
0830100467	12 ... 30 V AC	≤ 3,5 V
0830100480	12 ... 30 V AC	≤ 2,0 V
R412004800	-	≤ 2,0 V

Part No.	DC switching current, max.	AC switching current, max.
0830100465	0.13 A	0.13 A
0830100468	0.3 A	0.5 A
R412004299	0.13 A	0.13 A
0830100466	0.13 A	0.13 A
0830100469	0.13 A	0.13 A
R412004820	0.13 A	0.13 A
0830100472	0.2 A	0.13 A
0830100467	0.13 A	0.13 A
0830100480	0.13 A	-
R412004800	0.13 A	-

Part No.	Function	Ambient temperature min./max.
0830100465	Reed 2-Wire	-20 ... 80 °C
0830100468	Reed 2-Wire	-20 ... 80 °C
R412004299	Reed 3-Wire	-20 ... 80 °C
0830100466	Reed 3-Wire	-20 ... 80 °C
0830100469	Reed 3-Wire	-20 ... 80 °C



Part No.	Function	Ambient temperature min./max.
R412004820	Reed 3-Wire	-20 ... 80 °C
0830100472	Reed 3-Wire, with pulse stretching	-20 ... 70 °C
0830100467	Reed 4-Wire	-20 ... 80 °C
0830100480	electronic PNP	-10 ... 70 °C
R412004800	electronic PNP	-10 ... 70 °C

Part No.	Switching capacity	Protective resistor for reed	Vibration resistance
0830100465	10 W / 10 VA	27 Ω	30 g (50 - 2000 Hz)
0830100468	10 W / 10 VA	1,3 Ω	30 g (50 - 2000 Hz)
R412004299	10 W / 10 VA	27 Ω	30 g (50 - 2000 Hz)
0830100466	10 W / 10 VA	100 Ω	30 g (50 - 2000 Hz)
0830100469	5,5 W / 5,5 VA	27 Ω	30 g (50 - 1000 Hz)
R412004820	10 W / 10 VA	27 Ω	30 g (50 - 2000 Hz)
0830100472	5 W / 5 VA	-	35 g (50 - 2000 Hz)
0830100467	10 W / 10 VA	27 Ω	35 g (50 - 2000 Hz)
0830100480	-	-	-
R412004800	-	-	-

Part No.	Shock resistance	Max. switching frequency	Operating current, not switched
0830100465	100 g / 11 ms	-	-
0830100468	100 g / 11 ms	-	-
R412004299	100 g / 11 ms	-	-
0830100466	100 g / 11 ms	-	-
0830100469	100 g / 11 ms	-	-
R412004820	100 g / 11 ms	-	-
0830100472	50 g / 11 ms	-	-
0830100467	50 g / 11 ms	-	-
0830100480	-	2000 Hz	10 mA
R412004800	-	2000 Hz	10 mA

Part No.	Operating current, switched	Material Housing	LED status display
0830100465	-	Polyamide	Yellow
0830100468	-	Polyamide	Yellow
R412004299	-	Polyamide	Yellow
0830100466	-	Polyamide	Yellow
0830100469	-	Polyamide	Yellow
R412004820	-	epoxy resin	Yellow
0830100472	-	-	Red
0830100467	-	epoxy resin	Red
0830100480	15 mA	Polyamide	Yellow
R412004800	15 mA	epoxy resin	Yellow

Part No.	Version
0830100465	Protected against polarity reversal
0830100468	Protected against polarity reversal
R412004299	Protected against polarity reversal
0830100466	Protected against polarity reversal
0830100469	Protected against polarity reversal
R412004820	Protected against polarity reversal
0830100472	Protected against polarity reversal
0830100467	Protected against polarity reversal
0830100480	short circuit resistant Protected against polarity reversal
R412004800	short circuit resistant Protected against polarity reversal

Part No.	Switch signal	Fig.	
0830100465	-	Fig. 1	1)
0830100468	-	Fig. 1	1)
R412004299	-	Fig. 1	2)
0830100466	-	Fig. 1	1)
0830100469	-	Fig. 1	2)
R412004820	-	Fig. 1	2)
0830100472	With stretched impulse	Fig. 1	2)
0830100467	-	Fig. 2	3)
0830100480	-	Fig. 1	2)
R412004800	-	Fig. 1	2)

1) Plug M8, 2-pin

2) Plug M8, 3-pin

3) Plug M8, 4-pin

## Technical information

If reed sensors are used, we recommend using a short-circuit protective device (SCPD).

## Technical information

### Material

Housing	Polyamide epoxy resin
---------	-----------------------

## Dimensions

Fig. 1

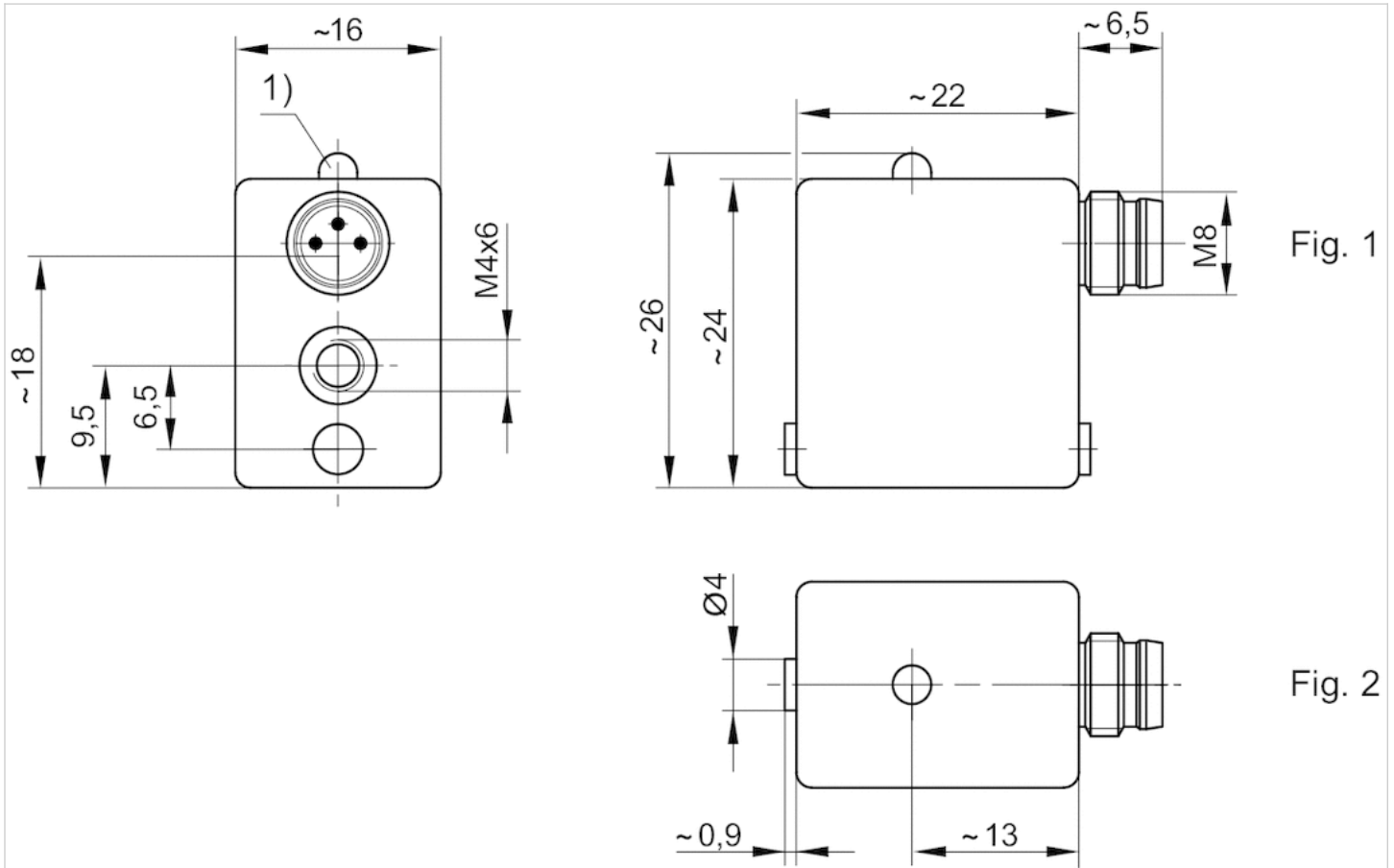


Fig. 1

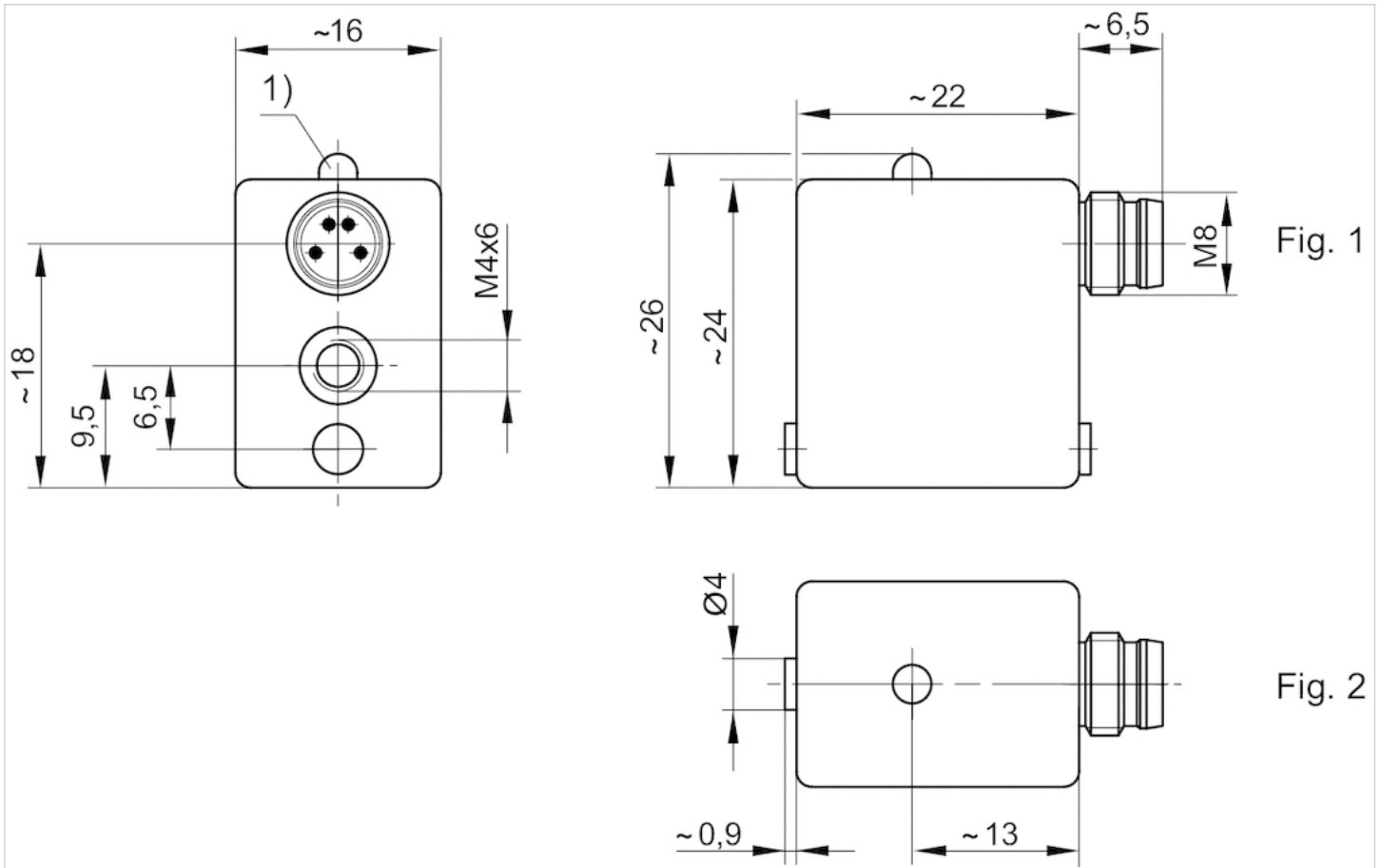
Fig. 2

1) LED

M8: combination plug can be combined with valve plug connectors  $\varnothing 6.5$  mm and M8.

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

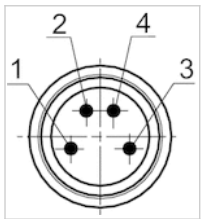
Fig. 2



1) LED

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

### Pin assignments

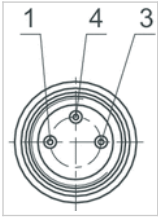


Pin	1	3	4
Allocation	(+)	(-)	(OUT)

EN 60947-5-2:1998

## Pin assignments

### Pin assignments



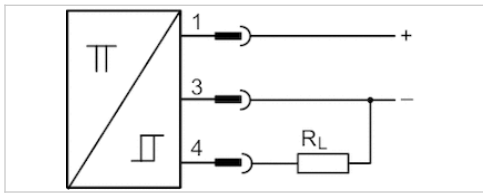
Pin	1	3	4
Allocation	(+)	(-)	(OUT)

# Sensor, Series SN3

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



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



## Technical data

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

Part No.	Max. switching frequency
0830100438	20 Hz

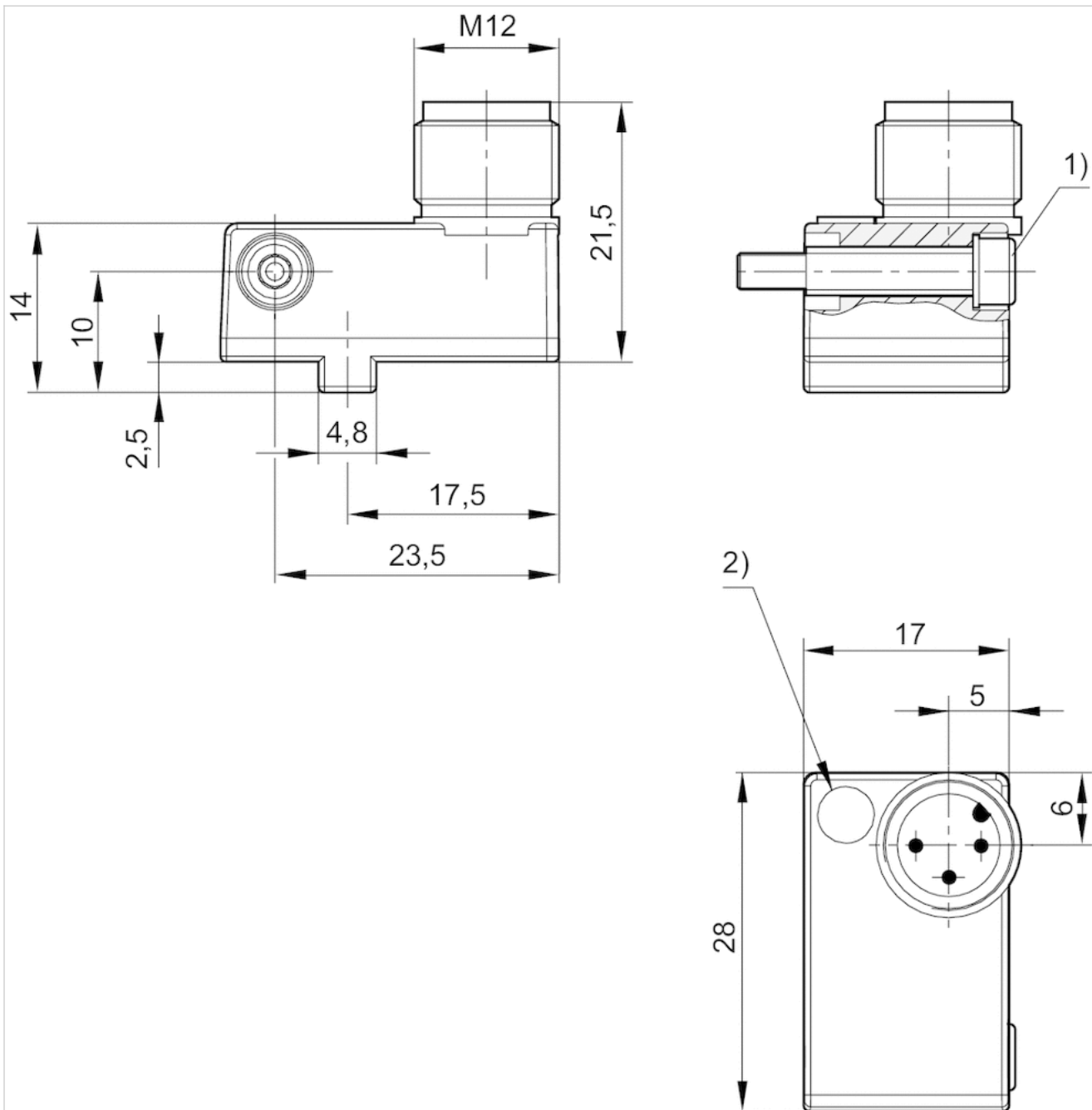
Part No.	Version	welding-proof
0830100438	short circuit resistant Protected against polarity reversal	welding-proof

## Technical information

Material	
Housing	Polyamide

## Dimensions

### Dimensions



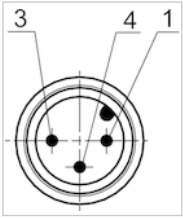
1) Clamping screw

2) LED

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

## Pin assignments

### Pin assignments



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



# Sensor, Series SN6

- Plug, Form B, industry, 2-pin
- Reed
- Indirect mounting for series TRB, ITS, 523



Ambient temperature min./max.	-25 ... 75 °C
Protection class	IP65
Switching point precision	±0,1 mT
Min./max. DC operating voltage	10 ... 48 V DC
Min./max. AC operating voltage	10 ... 48 V AC
LED status display	See table below
Vibration resistance	35 g (50 - 2000 Hz)
Shock resistance	50 g / 11 ms

## Technical data

Part No.		Type of contact	DC switching current, max.
8940410602		Reed	3 A
8940410612		Reed	0.5 A

Part No.	AC switching current, max.	Switching capacity	LED status display
8940410602	3 A	60 W / 60 VA	-
8940410612	0.5 A	50 W / 50 VA	Yellow

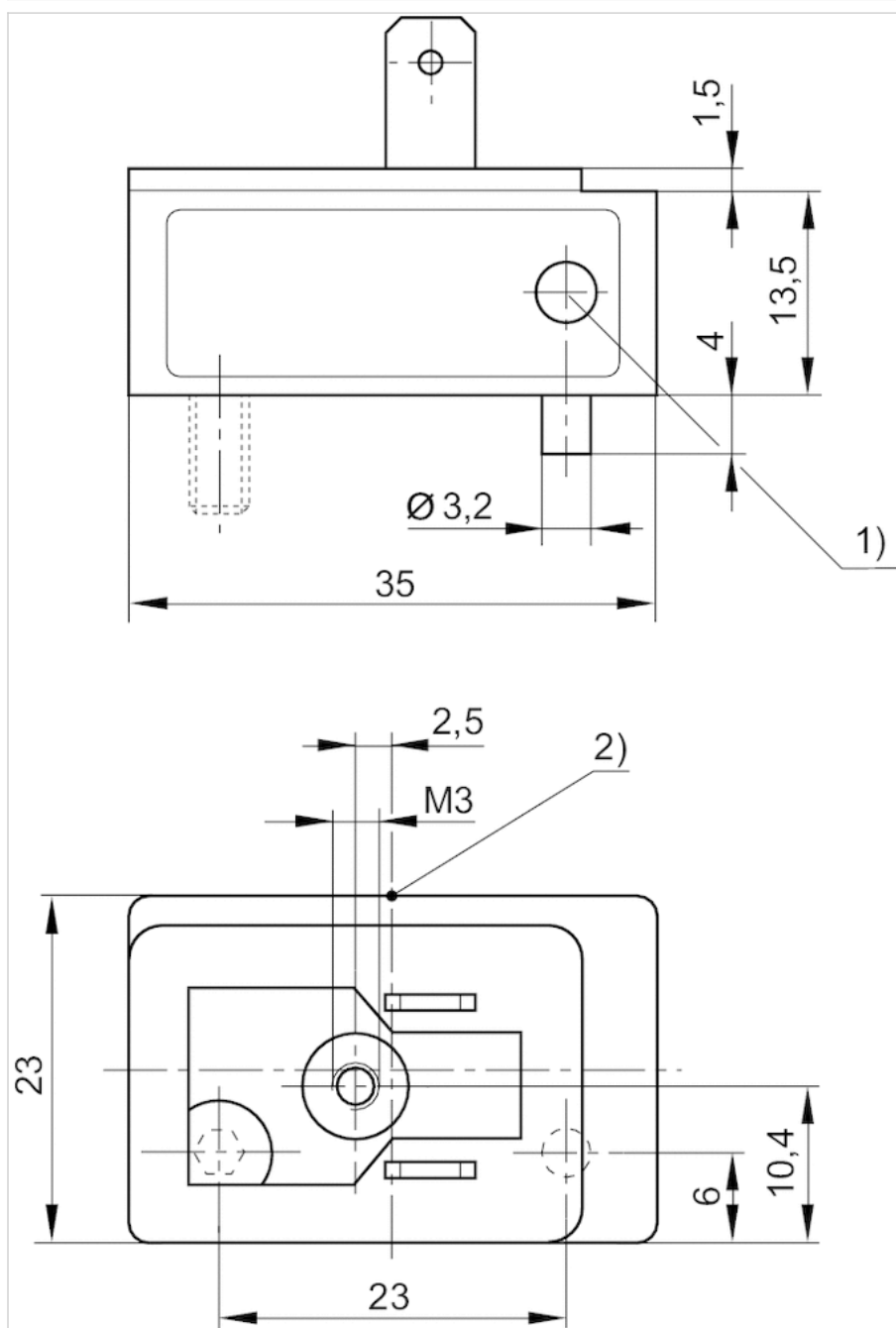
Part No.	Version
8940410602	-
8940410612	Protected against polarity reversal

## Technical information

Material	
Housing	Polyester amide

## Dimensions

## Dimensions



1) LED

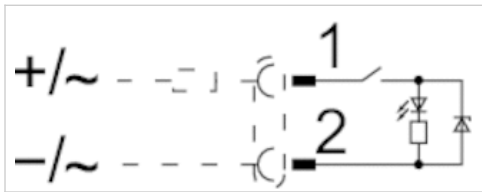
2) Switching point

# Sensor, Series SN6

- Plug, Form B, industry, 2-pin
- ATEX
- Reed
- Indirect mounting for series TRB, ITS



Certificates	ATEX
ATEX class G	II 3G Ex nC nA IIC T4 Gc
ATEX class D	II 3D Ex tc IIIB/IIIC T125°C Dc
Ambient temperature min./max.	-10 ... 50 °C
Protection class	IP65
Switching point precision	±0,1 mT
Min./max. DC operating voltage	21.6 ... 26.4 V DC
Min./max. AC operating voltage	210 ... 240 V AC
LED status display	Yellow



## Technical data

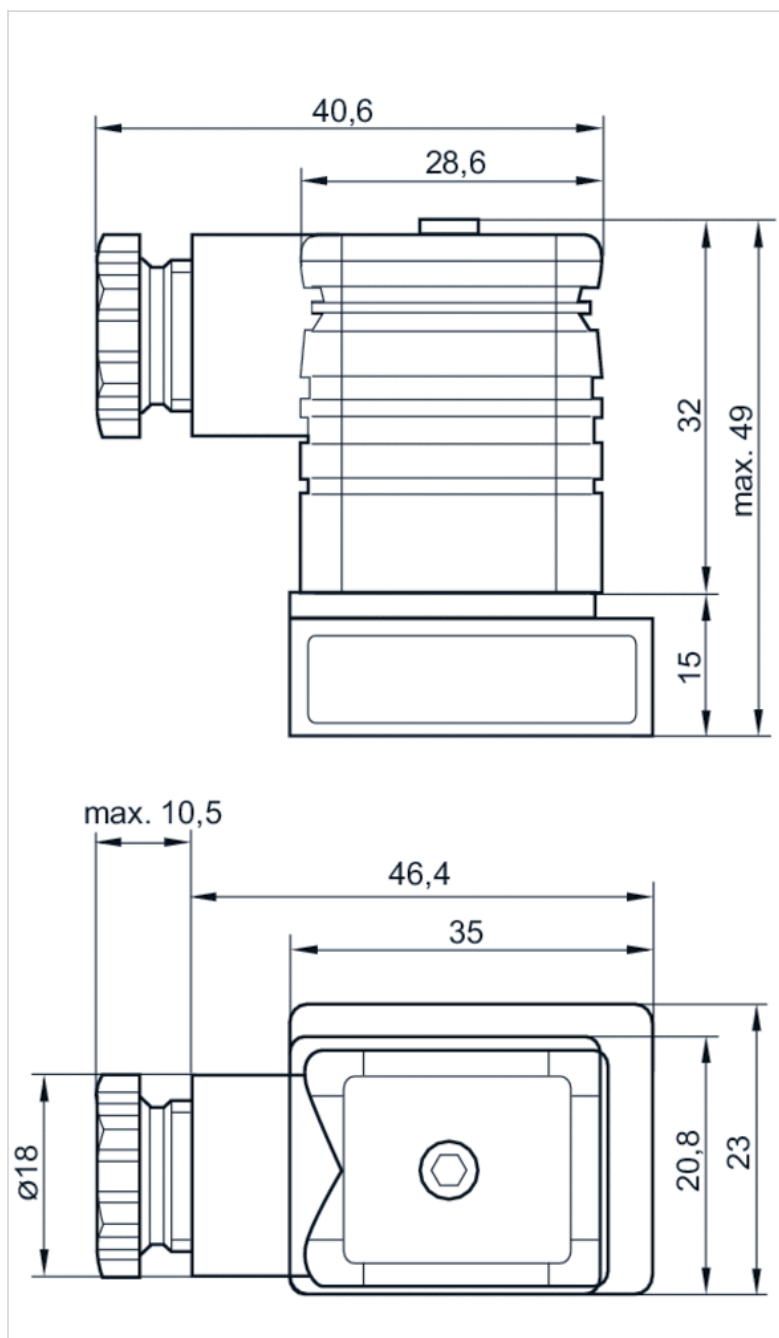
Part No.	Type of contact	DC switching current, max.	AC switching current, max.
R412000823	Reed	0.1 A	0.1 A

Part No.	Version
R412000823	Protected against polarity reversal

## Technical information

Material	
Housing	Polyester amide

# Dimensions






# Sensor, Series SN6

- with cable
- without wire end ferrule, tin-plated, 2-pin
- Heat resistant
- Reed
- Indirect mounting for series TRB, ITS



Ambient temperature min./max.	See table below
Protection class	IP67 IP65
Switching point precision	±0,1 mT
Min./max. DC operating voltage	10 ... 48 V DC
Min./max. AC operating voltage	10 ... 48 V AC
LED status display	Yellow
Vibration resistance	35 g (50 - 2000 Hz)
Shock resistance	50 g / 11 ms
Cable length L	2.5 6 m

## Technical data

Part No.		Type of contact	Cable length L	DC switching current, max.
8940412022		Reed	2.5 m	0.5 A
8940412032		Reed	6 m	0.5 A
8940411902		Reed	2.5 m	3 A

Part No.	AC switching current, max.	Ambient temperature min./max.	Switching capacity
8940412022	0.5 A	-25 ... 75 °C	50 W / 50 VA
8940412032	0.5 A	-25 ... 75 °C	50 W / 50 VA
8940411902	3 A	-20 ... 105 °C	60 W / 60 VA

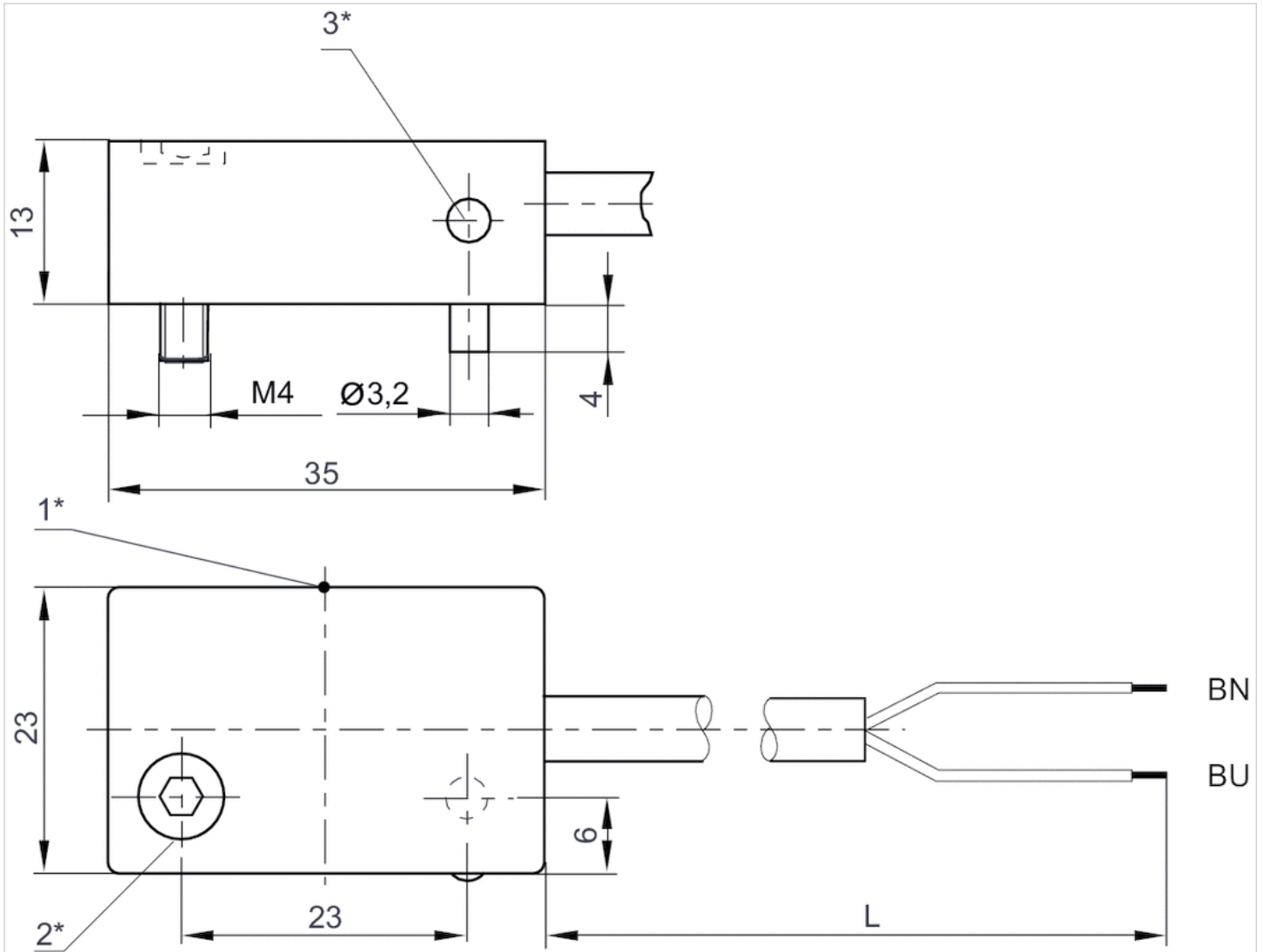
Part No.	Version
8940412022	Protected against polarity reversal
8940412032	Protected against polarity reversal
8940411902	Protected against polarity reversal

## Technical information

Material	
Housing	Polyester amide
Cable sheath	Polyvinyl chloride

## Dimensions

### Dimensions



1\* = switching point 2\* = clamping screw 3\* = LED

L = cable length

BN=brown, BU=blue

# Sensor mounting, Series CB1

- for series ST6, SM6, SN1, SN2

- to mount on cylinder TRB, C12P, CVI, 523



Weight

0.031 kg

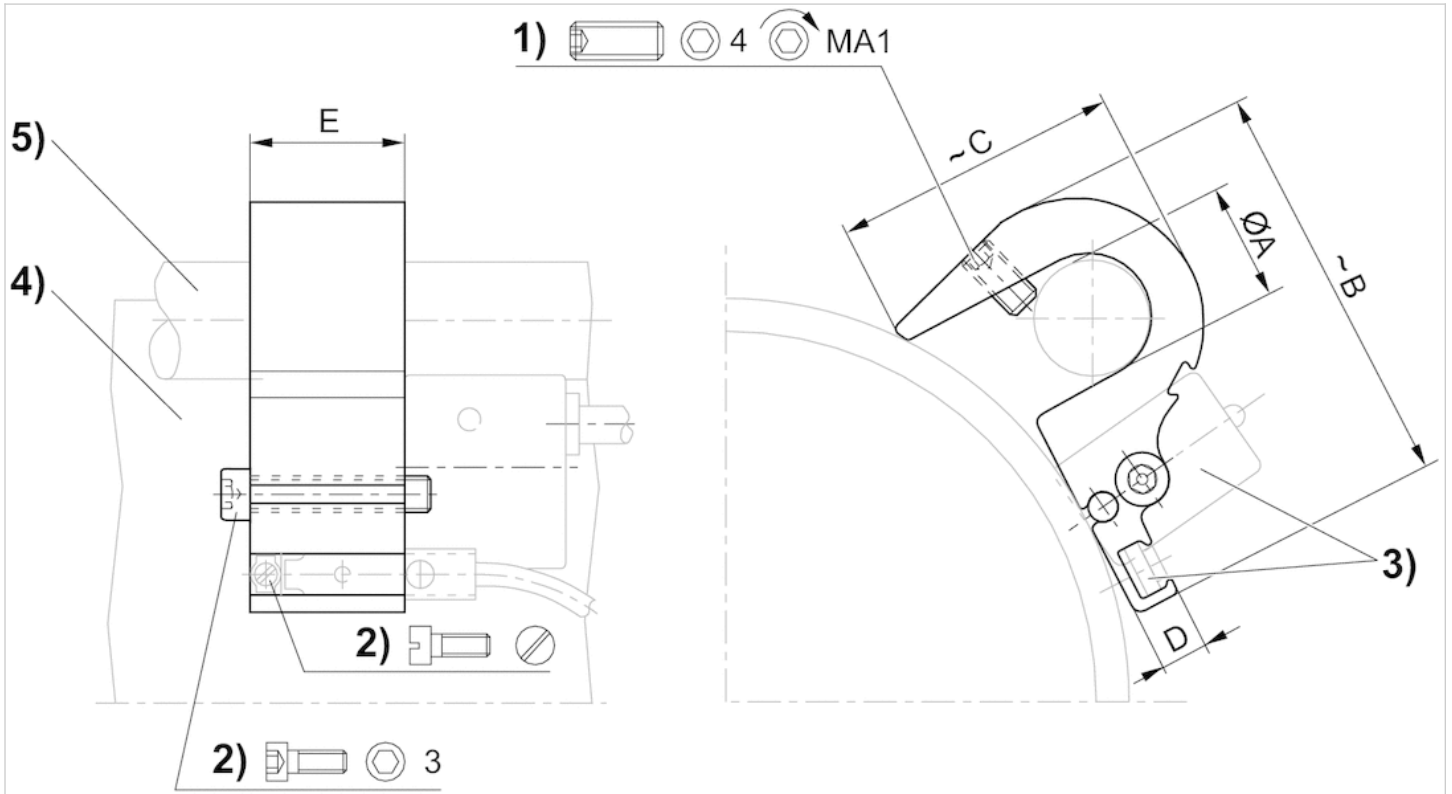
## Technical data

Part No.	Cylinders Ø		for series
	min.	max.	
1827020292	125 mm	125 mm	ST6, SM6, SN1, SN2

## Technical information

Material	
	Aluminum

## Dimensions



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

## Dimensions

Part No.	Ø A	B	C	D	E	1)	MA1 [Nm]
1827020292	12	45	29	6.5	21	M5x10	2

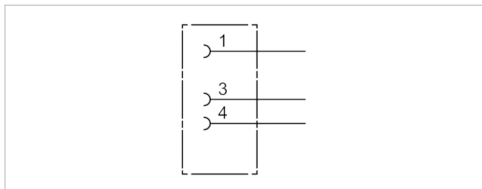


# Round plug connector, Series CON-RD

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



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



## Technical data

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

## Technical information

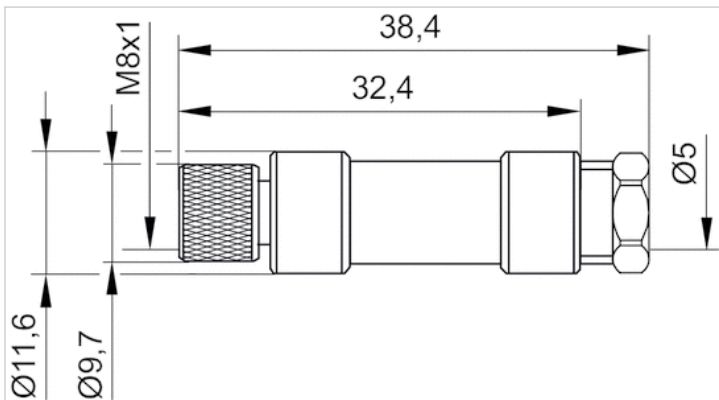
The specified protection class is only valid in assembled and tested state.

## Technical information

Material	
Housing	Polyamide

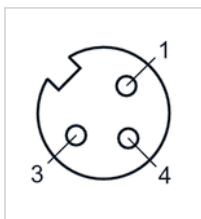
## Dimensions

### Dimensions



## Pin assignments

### Pin assignment, socket

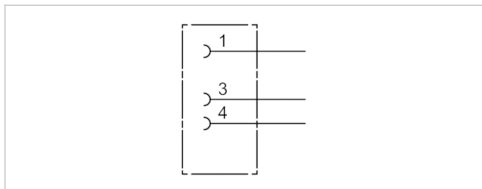


# Round plug connector, Series CON-RD

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



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



## Technical data

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

## Technical information

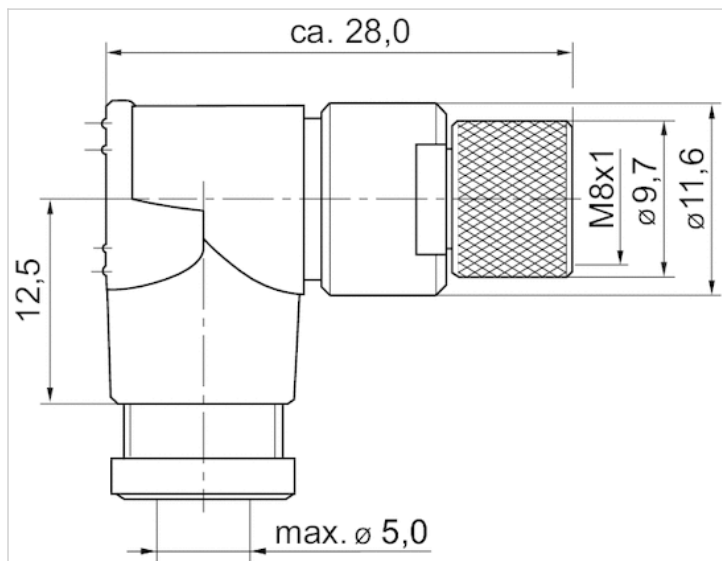
The specified protection class is only valid in assembled and tested state.

## Technical information

Material	
Housing	Polyamide

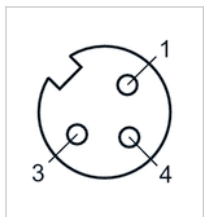
## Dimensions

### Dimensions



## Pin assignments

### Pin assignment, socket



# Sensor mounting, Series CB1

- for series SN6

- to mount on cylinder TRB, CVI, 523



Weight

0.028 kg

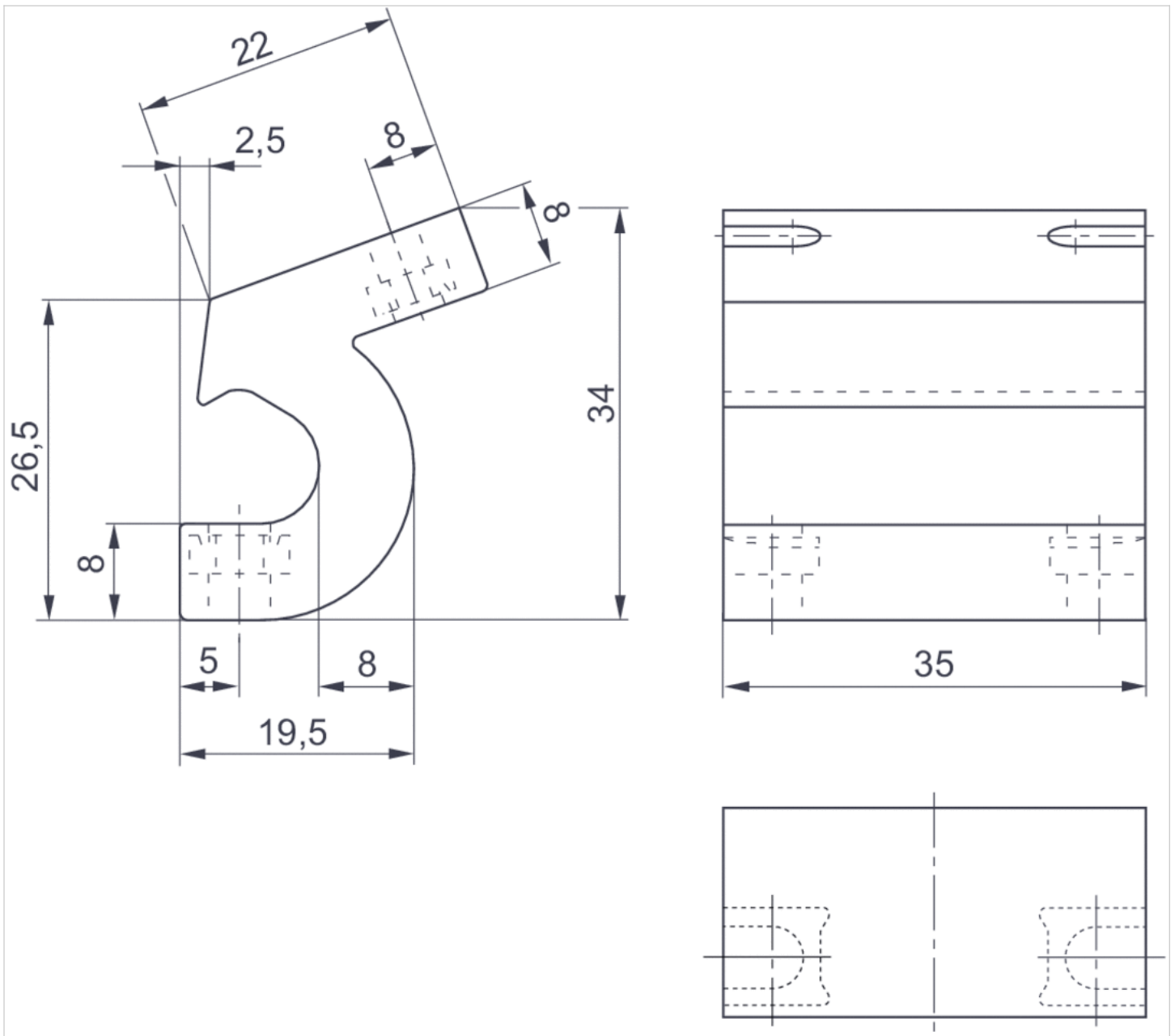
## Technical data

Part No.	Cylinders Ø		for series
	min.	max.	
5230033502	32 mm	63 mm	SN6

## Technical information

Material	
	Polyamide

## Dimensions



## Dimensions

Part No.	Cylinders Ø
5230033502	32 63 mm

# Sensor mounting, Series CB1

- for series SN6

- to mount on cylinder TRB, C12P, CVI, 523



Weight

0.034 kg

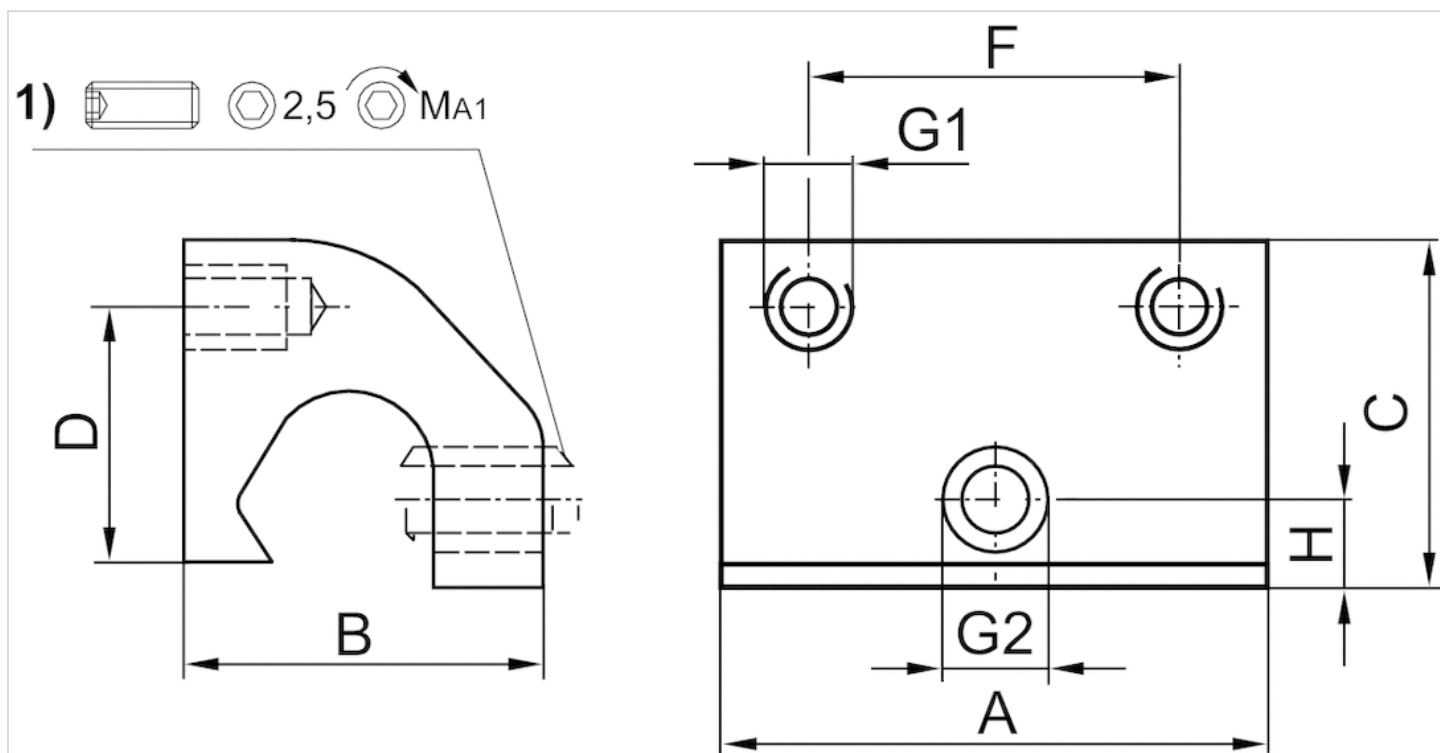
## Technical data

Part No.	Cylinders Ø		for series
	min.	max.	
3220643562	80 mm	125 mm	SN6

## Technical information

Material	
	Aluminum

## Dimensions



1) Clamping threaded pin

## Dimensions

Part No.	Cylinders Ø	A	B	C	D	F	G1	G2	H	MA1 [Nm]
3220643562	125 mm	35	22	21	12	23	M4	M5	5	1,8 +0,4



# Sensor mounting, Series CB1

- for series ST6, SM6

- to mount on cylinder TRB, C12P, 167, CVI, TRR, 523



Weight

See table below

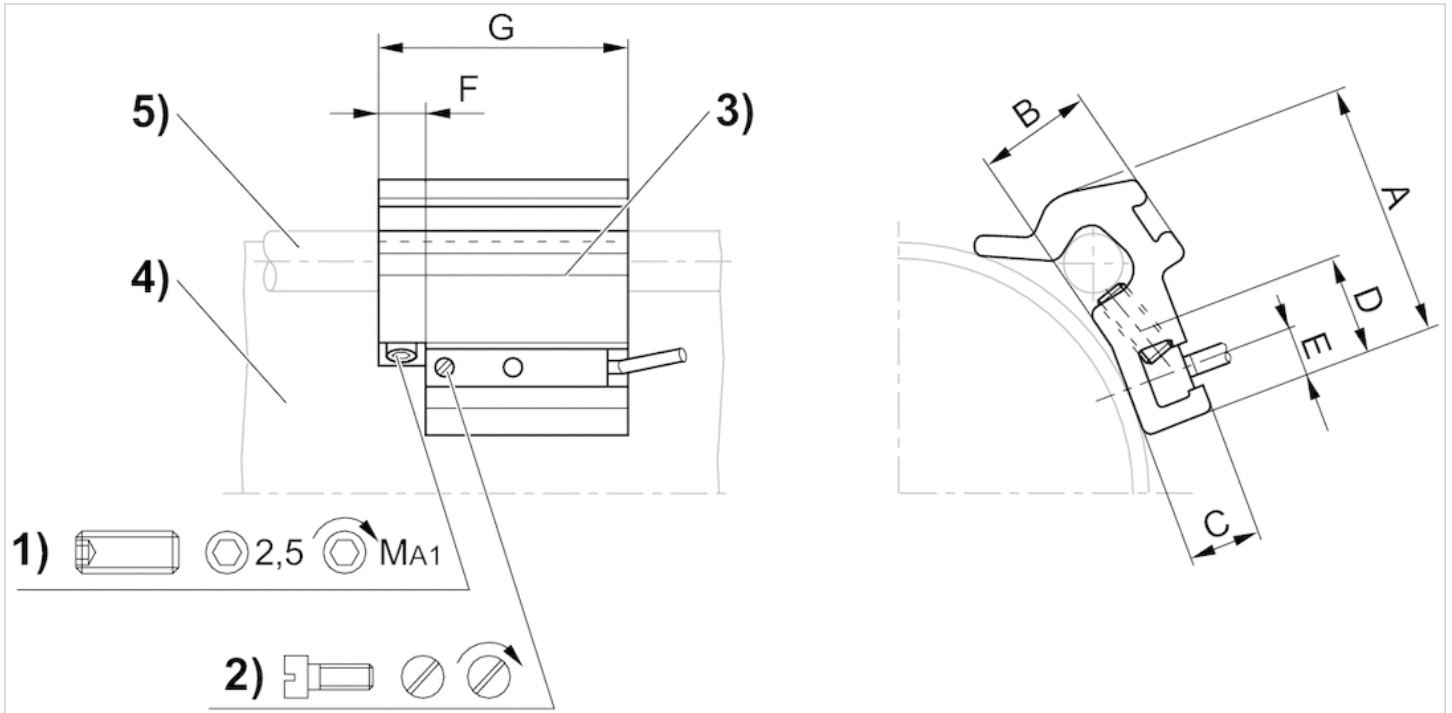
## Technical data

Part No.	Cylinders Ø		for series	Weight
	min.	max.		
1827020282	32 mm	40 mm	ST6, SM6	0.016 kg
1827020283	50 mm	63 mm	ST6, SM6	0.029 kg
1827020284	80 mm	100 mm	ST6, SM6	0.042 kg

## Technical information

Material	
	Aluminum

## Dimensions



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

## Dimensions

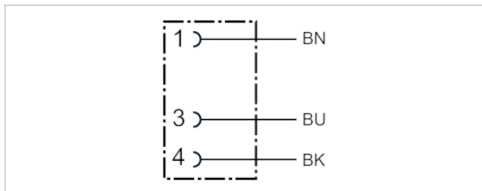
Part No.	A	B	C	D	E	F	G	1)	MA1 [Nm]
1827020282	26	10	7	14	5	8	40	M5x8	2 ±0,2
1827020283	32.5	15.5	7	14	5	8	40	M5x10	2 ±0,2
1827020284	43	17	6.9	14	5	8	40	M5x16	2 ±0,2

# Round plug connector, Series CON-RD

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



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



## Technical data

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

## Technical information

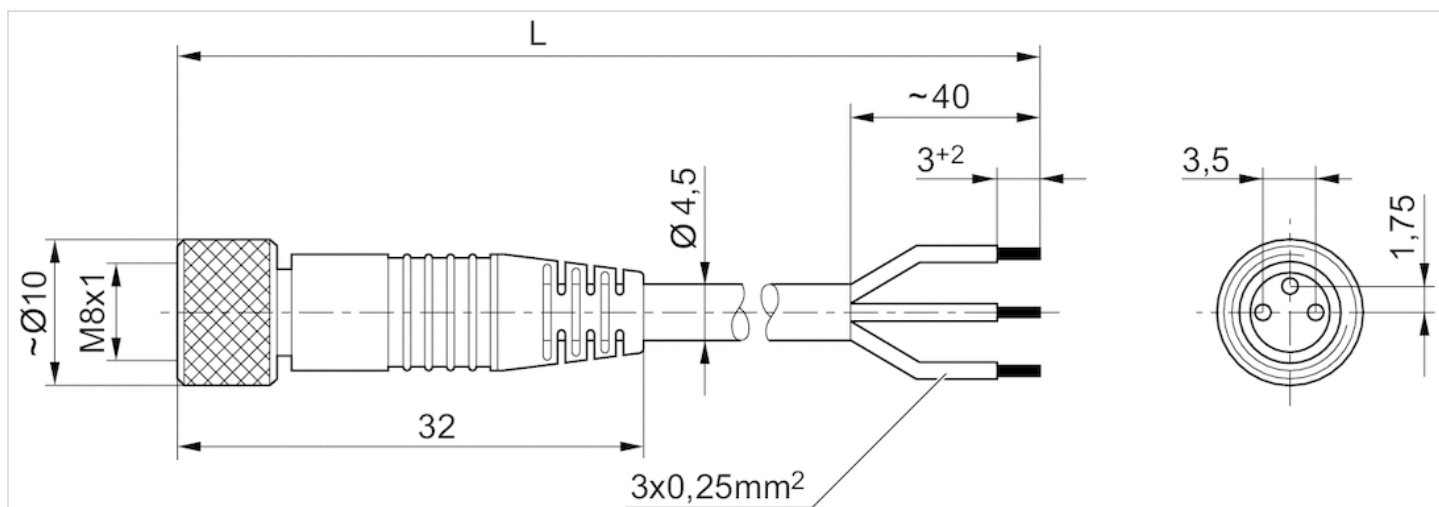
The specified protection class is only valid in assembled and tested state.

## Technical information

Material	
Housing	Polyurethane
Cable sheath	Polyurethane

## Dimensions

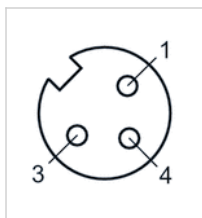
### Dimensions



$L$  = length

## Pin assignments

### Pin assignment, socket



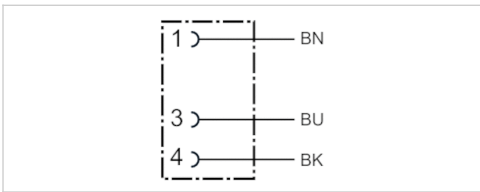
- (1) BN=brown
- (3) BU=blue
- (4) BK=black

# Round plug connector, Series CON-RD

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



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



## Technical data

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

## Technical information

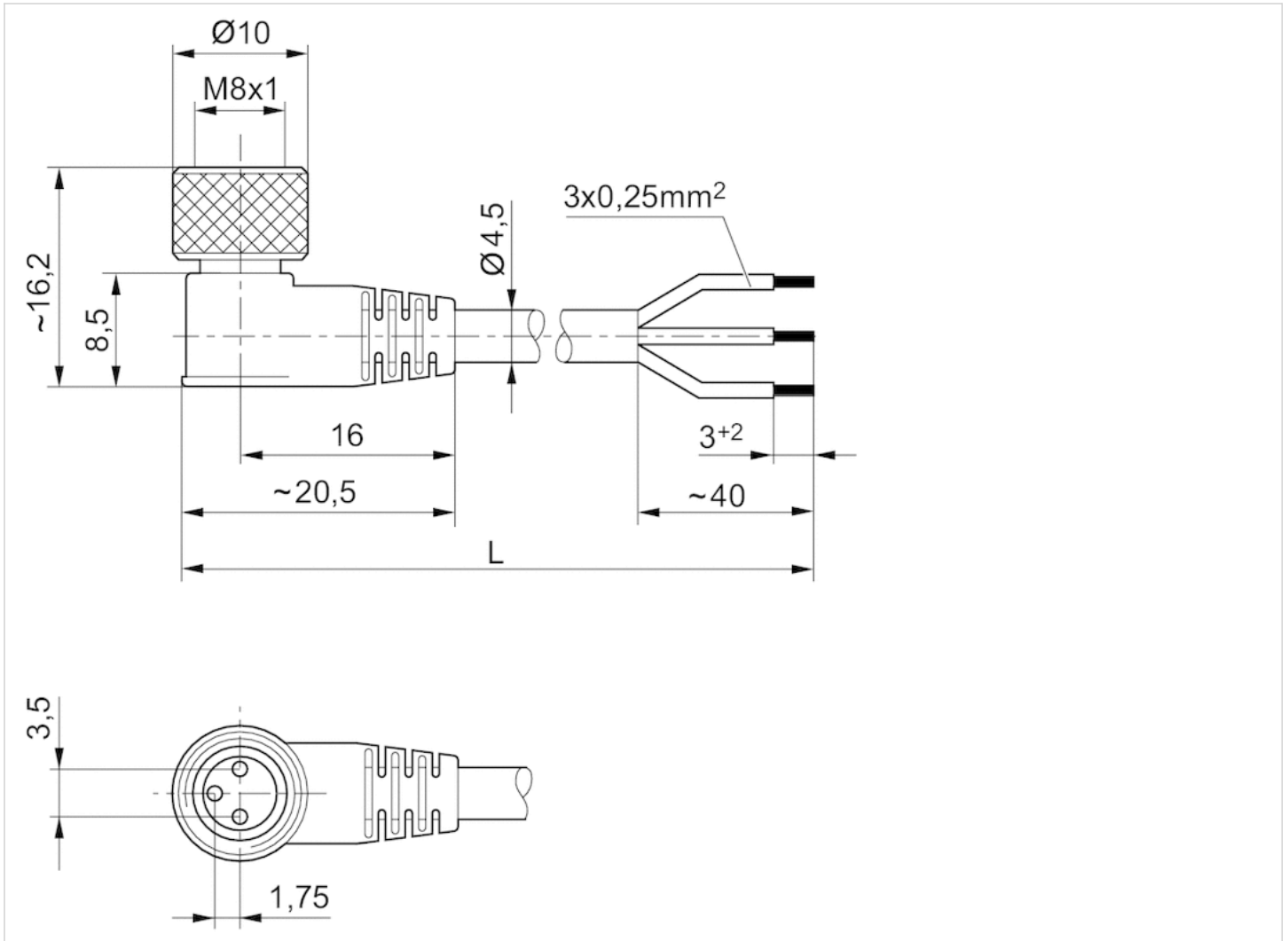
The specified protection class is only valid in assembled and tested state.

## Technical information

Material	
Housing	Polyurethane
Cable sheath	Polyurethane

## Dimensions

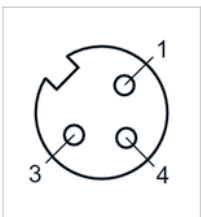
### Dimensions



L = length

## Pin assignments

### Pin assignment, socket



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

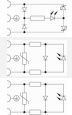


# Valve plug connector, series CON-VP

- Socket, 2+E, angled, 90°
- EN 175301-803
- unshielded
- with LED Yellow Red



Connection type	Screws
Ambient temperature min./max.	-40 ... 90 °C
Operational voltage	See table below
Protection class	IP65
Mounting screw tightening torque	0.4 Nm
Weight	See table below

## Technical data

Part No.		Operational voltage	Protective circuit	Contact assignment	LED status display
1834484101		24 V AC/DC	Z-diode	2+E	Yellow
1834484102		110 V AC	Varistor	2+E	Red
1834484103		230 V AC	Varistor	2+E	Red

Part No.	suitable cable-Ø min./max	Seal	Weight	
1834484101	6 / 8 mm	Silicone caoutchouc	0.03 kg	1)
1834484102	6 / 8 mm	caoutchouc/butadiene caoutchouc	0.03 kg	2)
1834484103	6 / 8 mm	Silicone caoutchouc	0.025 kg	2)

1) Flat gasket

2) Profile seal

## Technical information

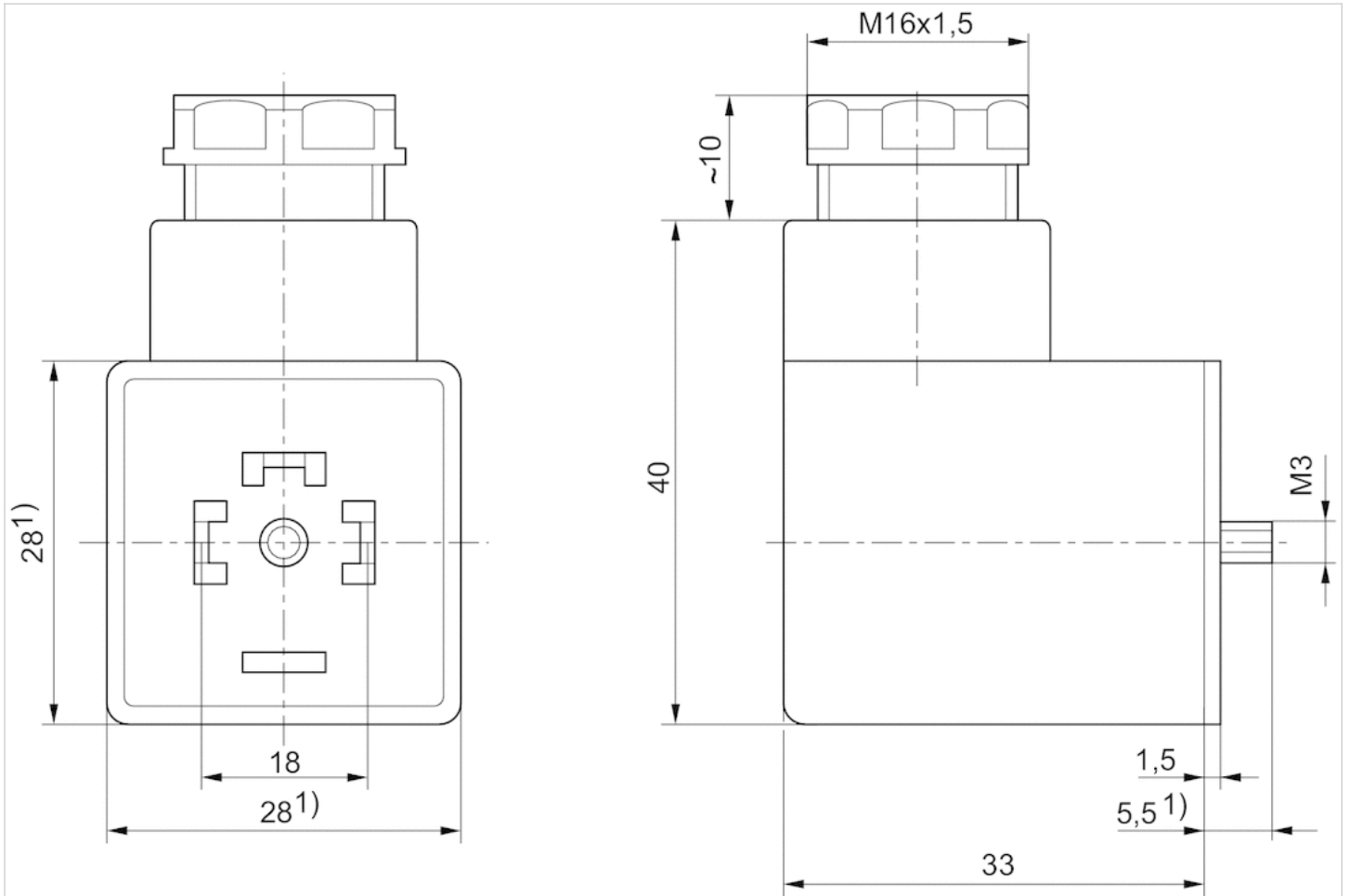
The specified protection class is only valid in assembled and tested state.

## Technical information

Material	
Seals	Silicone caoutchouc caoutchouc/butadiene caoutchouc

## Dimensions

### Dimensions



1) Max.



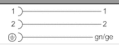

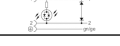
# Valve plug connector, series CON-VP

- Socket, form C, 2+E, angled, 90°
- ISO 15217
- unshielded
- with LED Green



Connection type	Screws
Ambient temperature min./max.	-40 ... 90 °C
Operational voltage	See table below
Protection class	IP65
Mounting screw tightening torque	0.4 Nm
Weight	See table below

## Technical data

Part No.		Operational voltage	Max. current	Protective circuit	Contact assignment
1834484187		250 / 300 V AC/DC	6 A	-	2+E
8941012202		250 / 300 V AC/DC	6 A	-	2+E
4402050330		24 V AC/DC	-	Z-diode	2+E

Part No.	LED status display	suitable cable-Ø min./max	Seal	Weight
1834484187	-	4 / 8 mm	caoutchouc/butadiene caoutchouc	0.012 kg
8941012202	-	4 / 8 mm	-	0.012 kg
4402050330	Green	-	-	0.014 kg

Part No.	Fig.	
1834484187	Fig. 1	-
8941012202	Fig. 2	-
4402050330	Fig. 3	1)

1)

## Technical information

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

## Technical information

Material

Seals

caoutchouc/butadiene caoutchouc

## Dimensions

Fig. 1

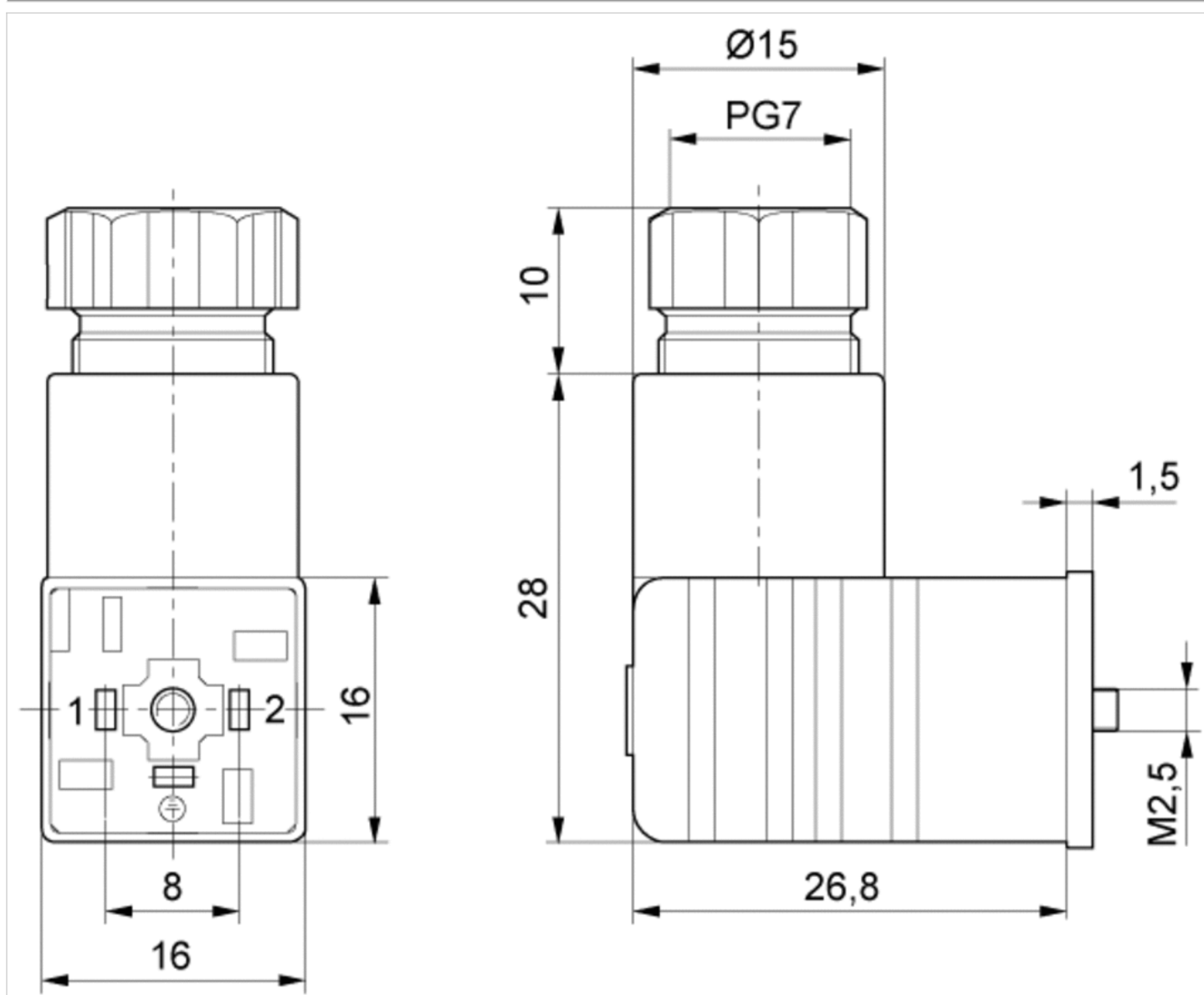


Fig. 2

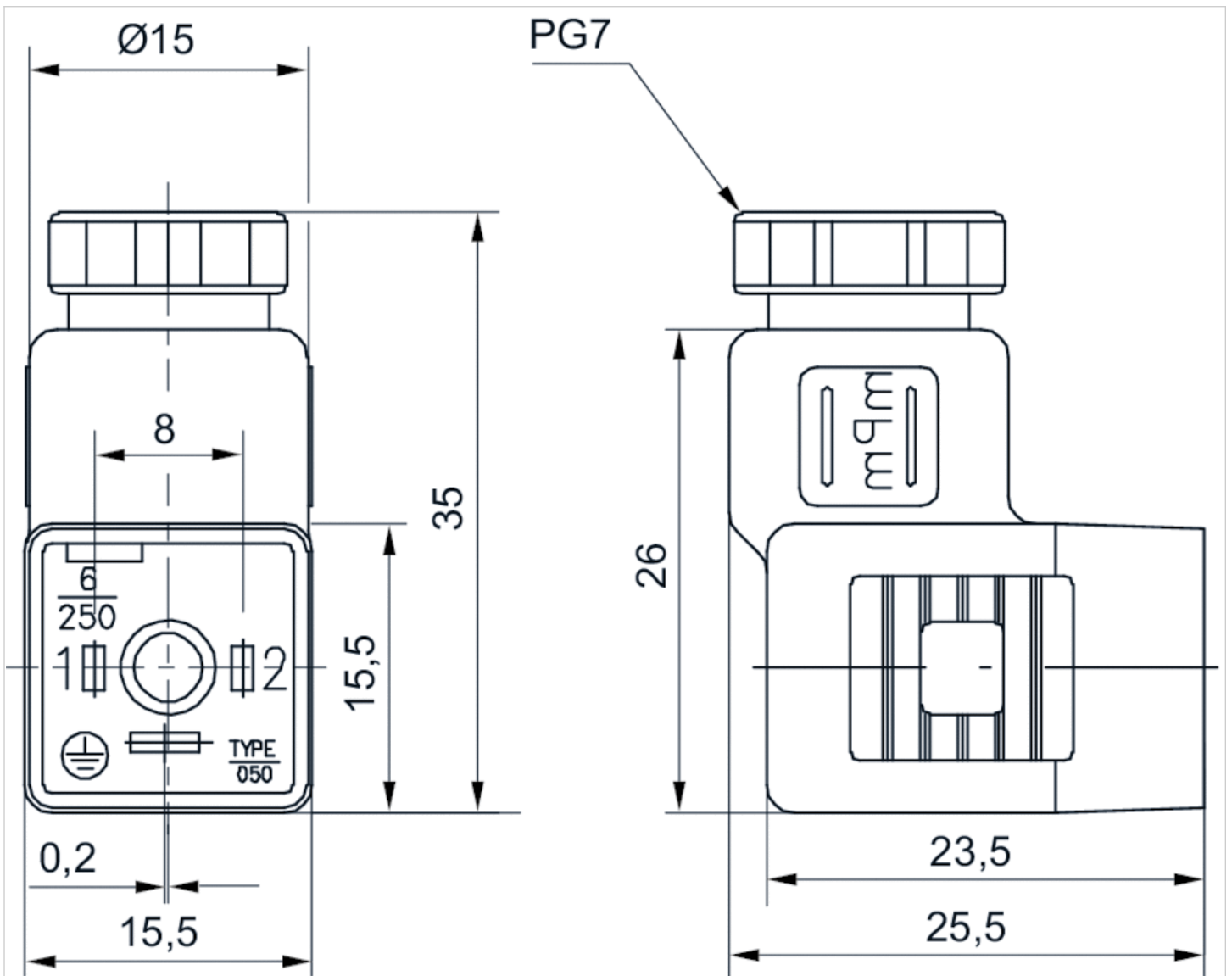
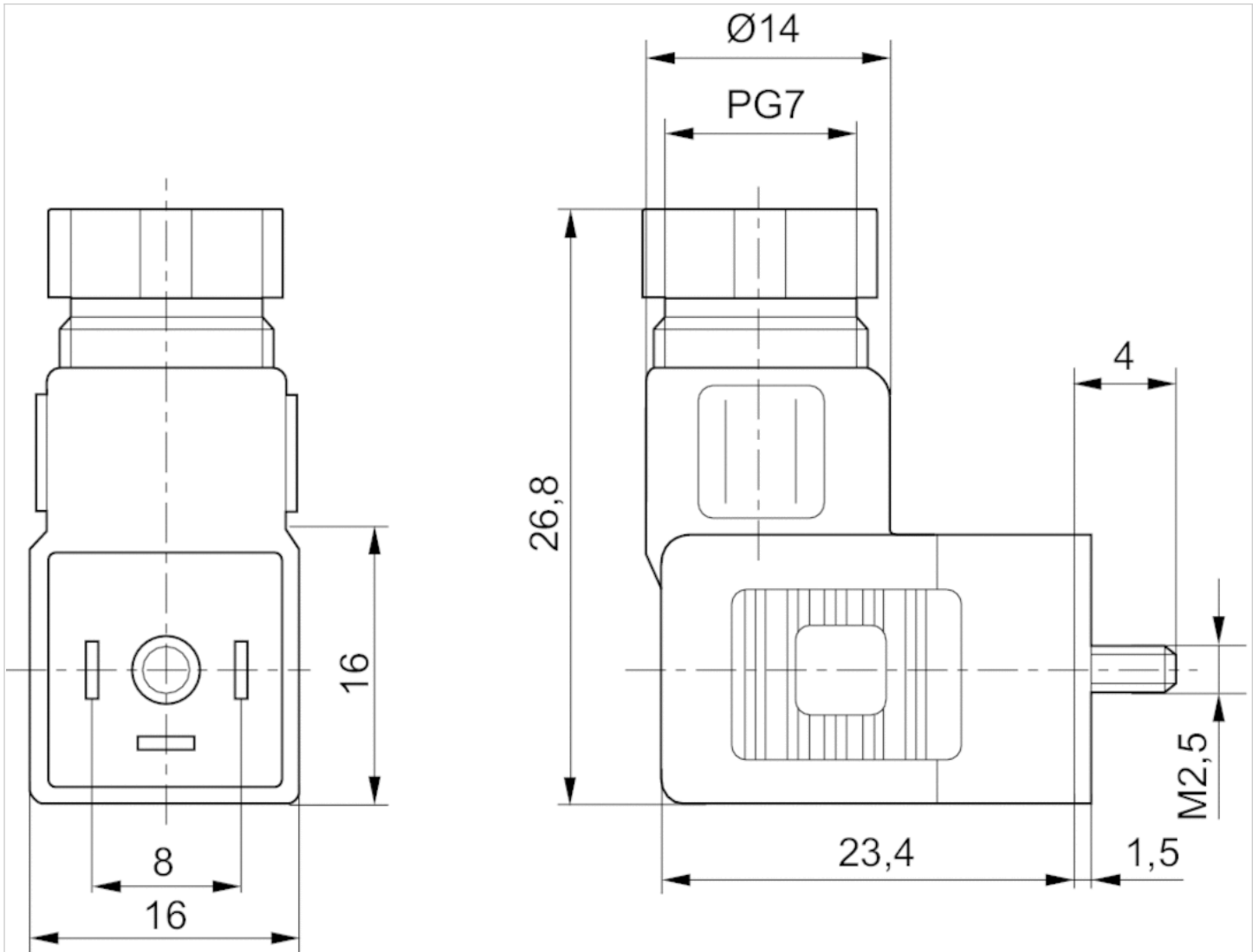


Fig. 3

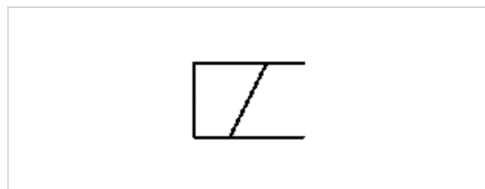


# Coil, Series C01

- form A
- Coil width 30 mm
- Power consumption DC 2.1 W



Connector standard electrical connections	EN 175301-803, form A Plug, 3-pin
Ambient temperature min./max.	50 °C
Protection class With valve plug connector/plug	IP65
Duty cycle ED	100 %
Compatibility index	13
Weight	0.096 kg



## Technical data

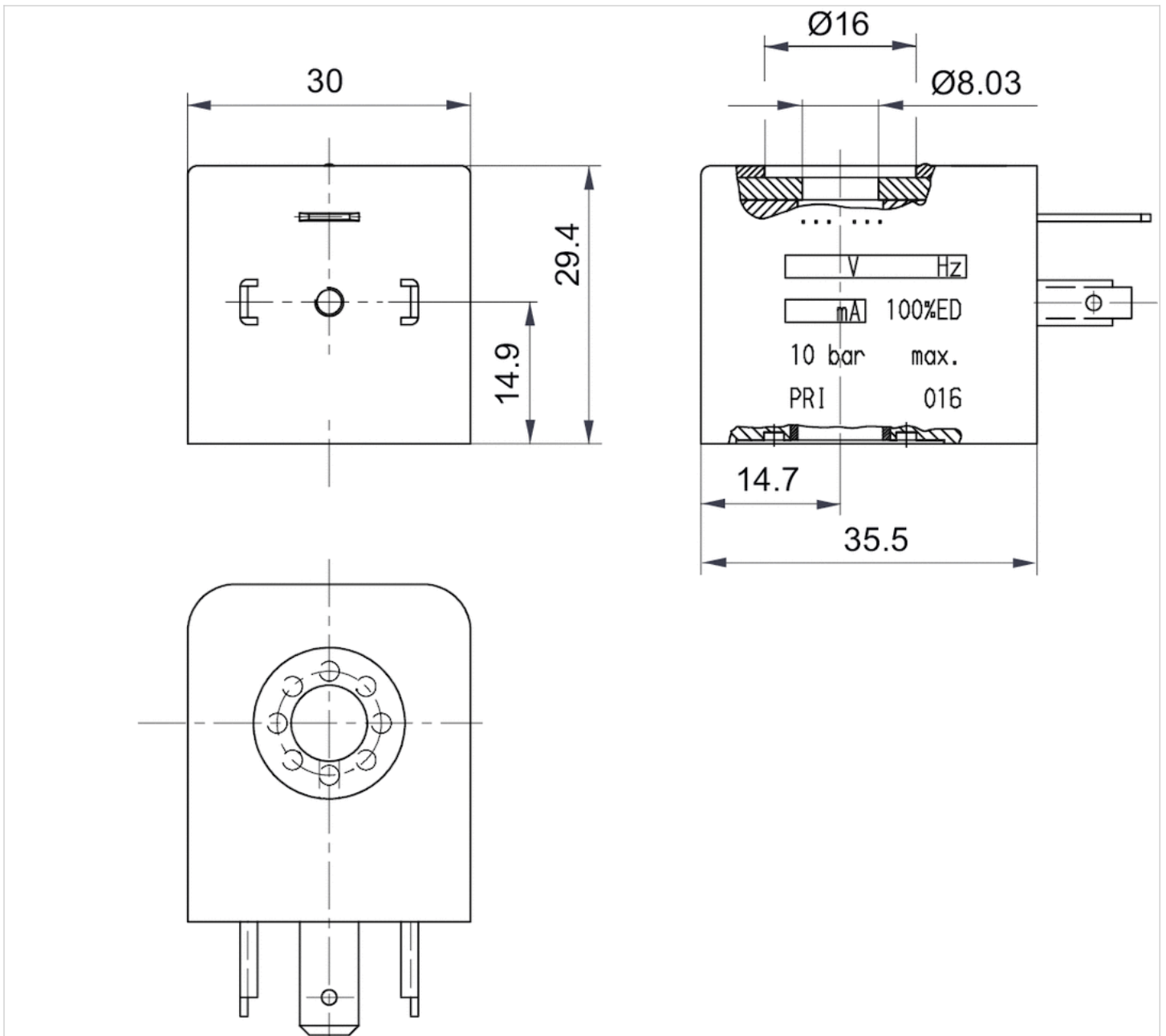
Part No.	Operational voltage	Voltage tolerance	Power consumption
		DC	DC
5420507022	24 V	-10% / +10%	2.1 W

## Technical information

Material	
Housing	Thermoplastic elastomer

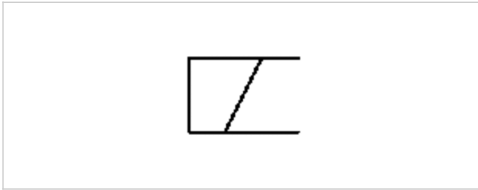
# Dimensions

## Dimensions



# Coil, Series C01

- With valve plug connector
- Coil width 30 mm
- Power consumption DC 2.1 W
- Holding power AC 4.1 VA
- Switch-on power AC 4.1 VA
- ATEX



Certificates	ATEX
ATEX class G	II 3G Ex nA IIC T4 Gc X
ATEX class D	II 3D Ex tc IIIC T125°C Dc X
Ambient temperature min./max.	-10 ... 50 °C
Protection class	IP65
Duty cycle ED	100 %
Compatibility index	13
Weight	See table below

## Technical data

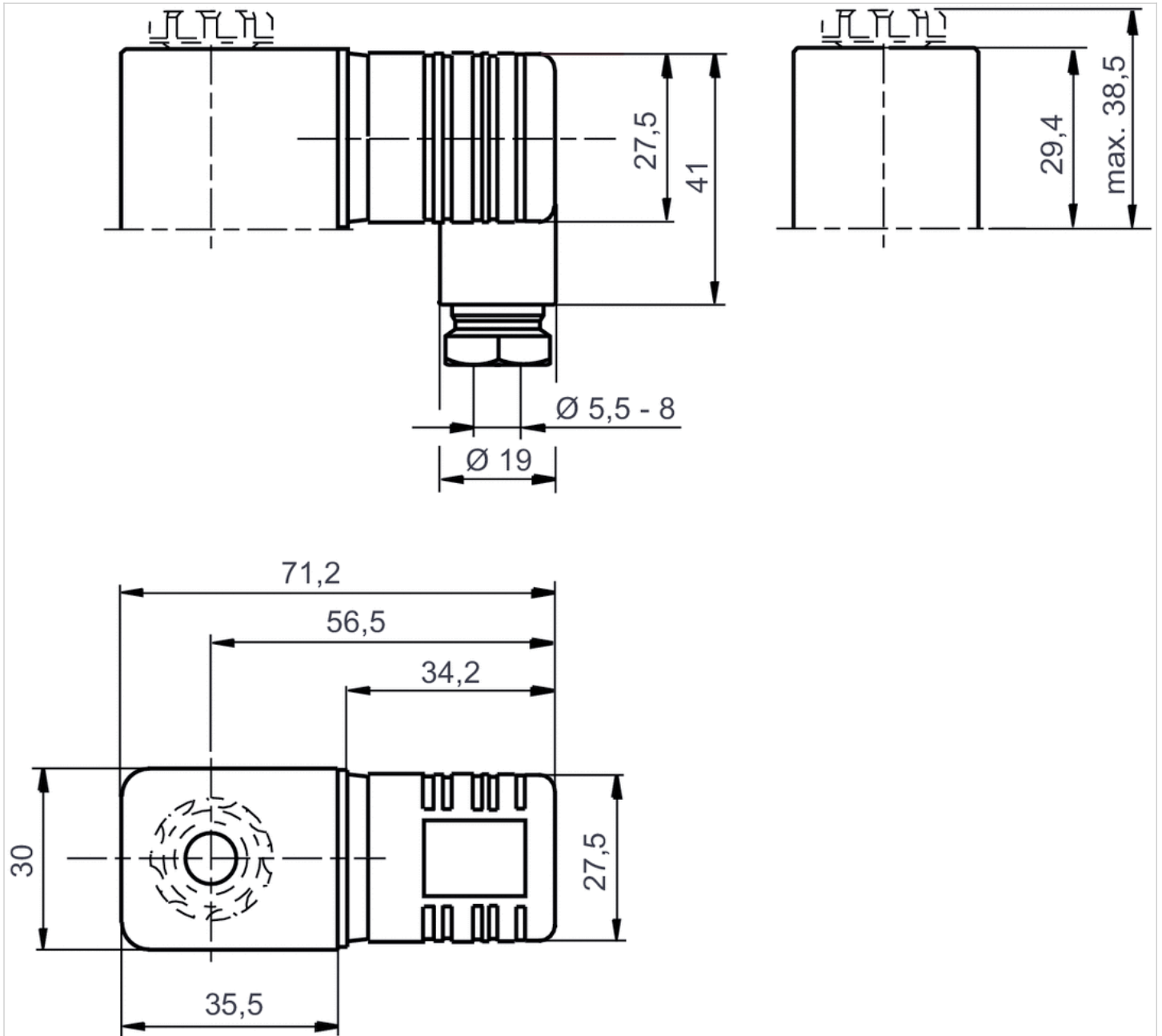
Part No.	Operational voltage	Operational voltage	Operational voltage
	DC	AC 50 Hz	AC 60 Hz
R412000147	-	230 V	230 V
R412000144	24 V	-	-

Part No.	Voltage tolerance	Voltage tolerance	Voltage tolerance	Power consumption
	DC	AC 50 Hz	AC 60 Hz	DC
R412000147	-	-20% / +10%	-10% / +20%	-
R412000144	-10% / +10%	-	-	2.1 W

Part No.	Holding power	Switch-on power	Weight
	AC 50 Hz	AC 50 Hz	
R412000147	4.1 VA	4.1 VA	0.137 kg
R412000144	-	-	0.14 kg

## Dimensions

### Dimensions



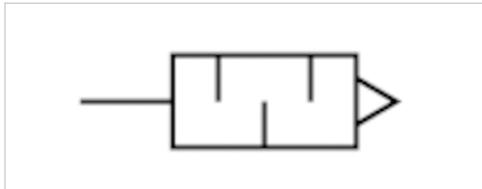


# Silencers, series SI1

- G 1/8
- Sintered bronze



Working pressure min./max.	0 ... 10 bar
Ambient temperature min./max.	-25 ... 80 °C
Medium	Compressed air
Sound pressure level	75 dB
Weight	0.01 kg
Comment	Flow characteristic curves can be found under "Diagrams".



## Technical data

Part No.	Compressed air connection	Flow	Delivery unit
		Qn	
1827000000	G 1/8	1623 l/min	10 piece

Weight per piece

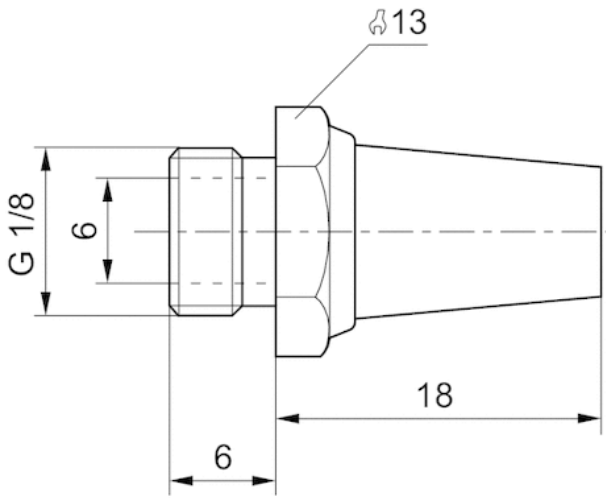
Nominal flow Qn at p1 = 6 bar (absolute) freely discharged. Sound pressure level measured at 6 bar against atmosphere at 1 m distance.

## Technical information

Material	
Silencer	Sintered bronze
Thread	Brass

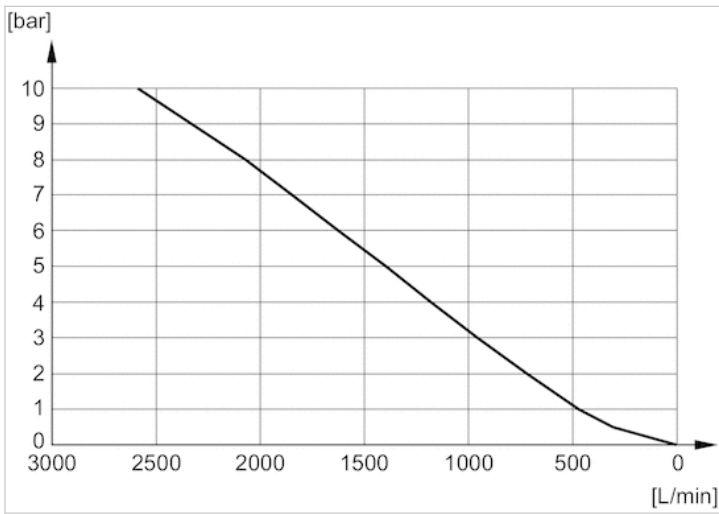
## Dimensions

### Dimensions in mm



## Diagrams

### Flow diagram, 1827000000

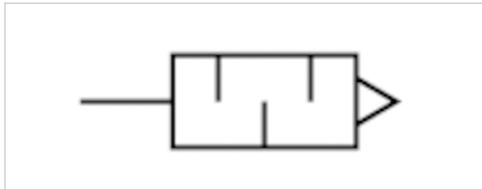


# Silencers, series SI1

- G 1/4
- Sintered bronze



Working pressure min./max.	0 ... 10 bar
Ambient temperature min./max.	-25 ... 80 °C
Medium	Compressed air
Sound pressure level	79 dB
Weight	0.02 kg
Comment	Flow characteristic curves can be found under "Diagrams".



## Technical data

Part No.	Compressed air connection	Flow	Delivery unit
		Qn	
1827000001	G 1/4	3390 l/min	10 piece

Weight per piece

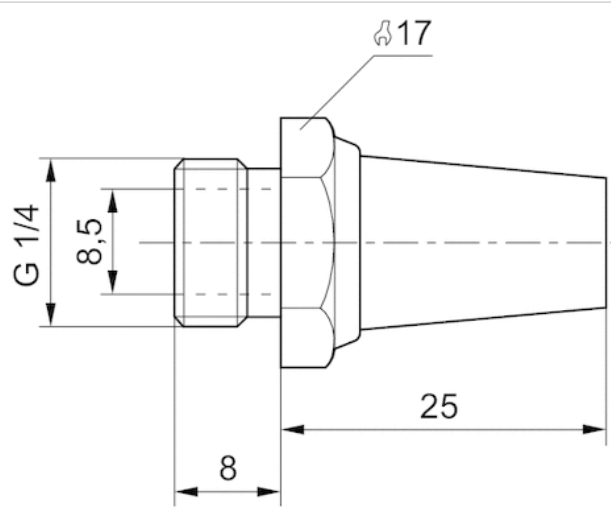
Nominal flow Qn at p1 = 6 bar (absolute) freely discharged. Sound pressure level measured at 6 bar against atmosphere at 1 m distance.

## Technical information

Material	
Silencer	Sintered bronze
Thread	Brass

## Dimensions

### Dimensions in mm

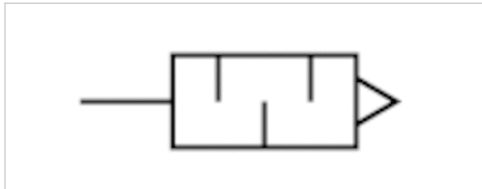


# Silencers, series SI1

- G 3/8
- Sintered bronze



Working pressure min./max.	0 ... 10 bar
Ambient temperature min./max.	-25 ... 80 °C
Medium	Compressed air
Sound pressure level	84 dB
Weight	0.05 kg
Comment	Flow characteristic curves can be found under "Diagrams".



## Technical data

Part No.	Compressed air connection	Flow	Delivery unit
		Qn	
1827000002	G 3/8	6554 l/min	5 piece

Weight per piece

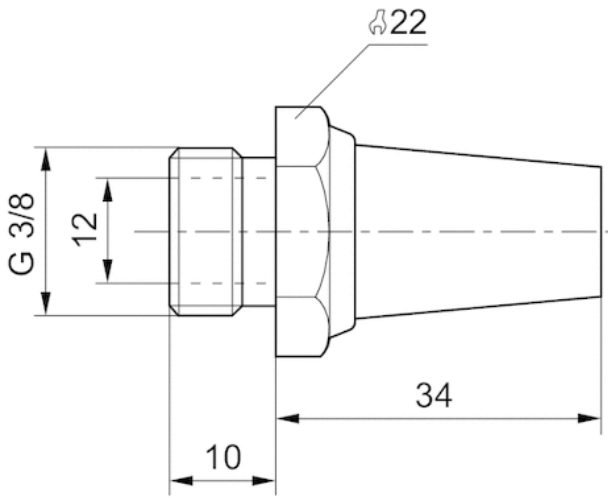
Nominal flow Qn at p1 = 6 bar (absolute) freely discharged. Sound pressure level measured at 6 bar against atmosphere at 1 m distance.

## Technical information

Material	
Silencer	Sintered bronze
Thread	Brass

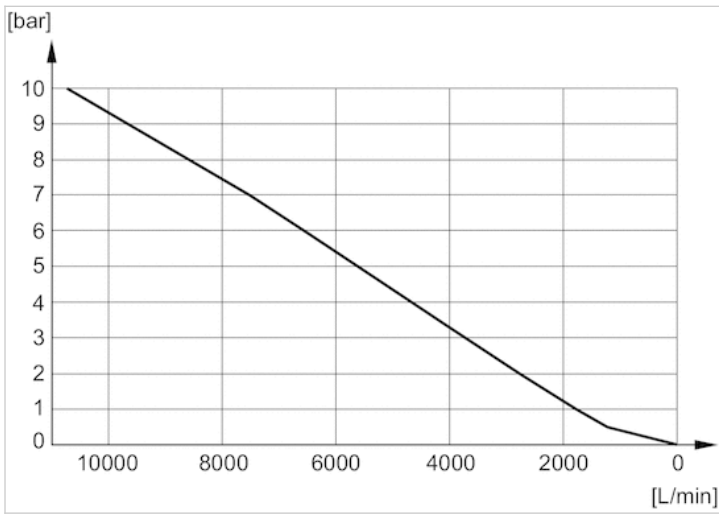
## Dimensions

### Dimensions in mm



## Diagrams

### Flow diagram, 1827000002

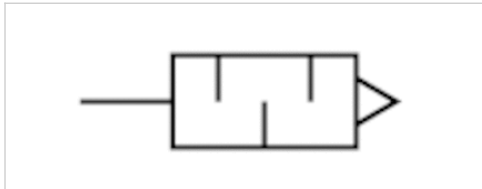


# Silencers, series SI1

- G 1/2
- Sintered bronze



Working pressure min./max.	0 ... 10 bar
Ambient temperature min./max.	-25 ... 80 °C
Medium	Compressed air
Sound pressure level	90 dB
Weight	0.08 kg
Comment	Flow characteristic curves can be found under "Diagrams".



## Technical data

Part No.	Compressed air connection	Flow	Delivery unit
		Qn	
1827000003	G 1/2	7223 l/min	2 piece

Weight per piece

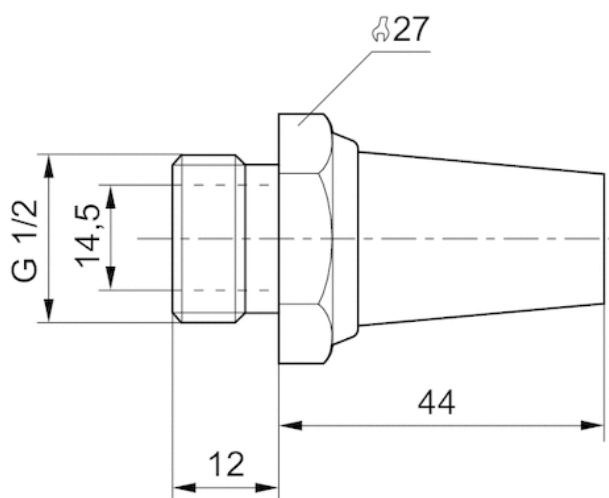
Nominal flow Qn at p1 = 6 bar (absolute) freely discharged. Sound pressure level measured at 6 bar against atmosphere at 1 m distance.

## Technical information

Material	
Silencer	Sintered bronze
Thread	Brass

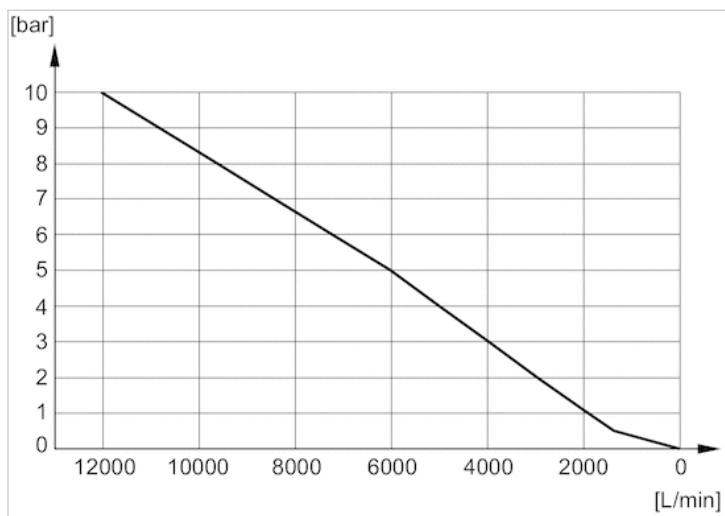
## Dimensions

### Dimensions in mm



## Diagrams

### Flow diagram, 1827000003

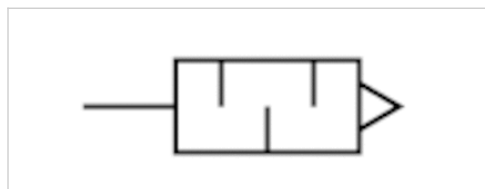




# Silencers, series SI1

- G 1/8 G 1/4 G 3/8 G 1/2

- Sintered bronze



Working pressure min./max.

0 ... 10 bar

Ambient temperature min./max.

-25 ... 80 °C

Medium

Compressed air

Sound pressure level

See table below

Weight

See table below

Comment

Flow characteristic curves can be found under "Diagrams".

## Technical data

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

Weight per piece

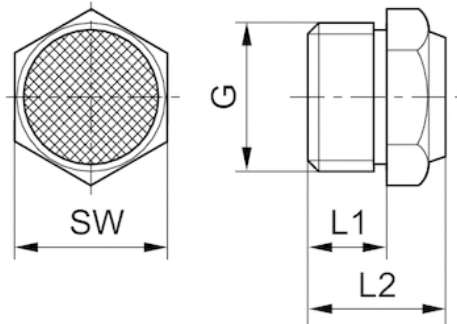
Nominal flow Qn at p1 = 6 bar (absolute) freely discharged. Sound pressure level measured at 6 bar against atmosphere at 1 m distance.

## Technical information

Material	
Silencer	Sintered bronze
Thread	Brass

## Dimensions

### Dimensions



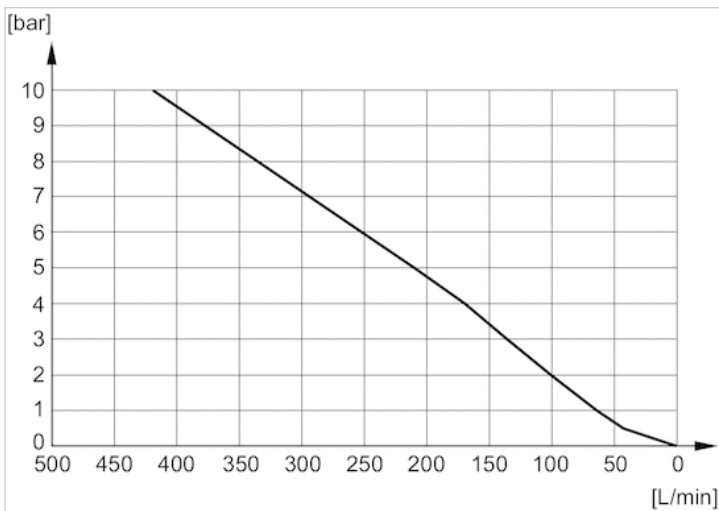
## Dimensions

Part No.	Port G	L1	L2	SW
1827000031	G 1/8	6	11.5	13
1827000033	G 1/4	8	13.5	17
1827000034	G 3/8	10	17.5	22
1827000035	G 1/2	12	19.5	27

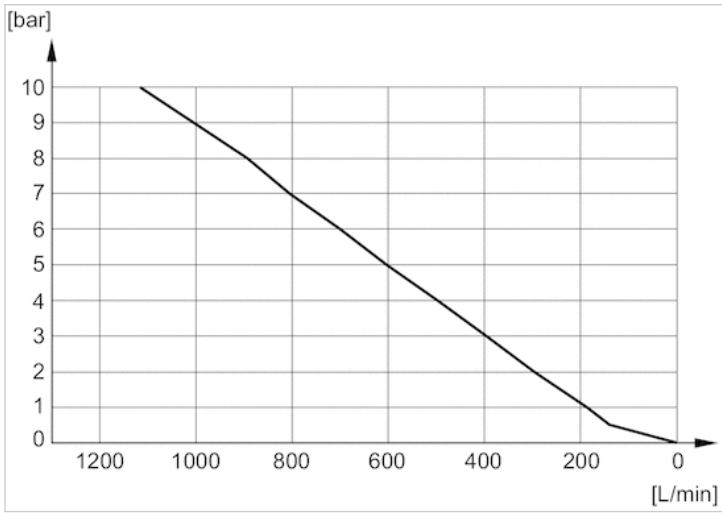
Sound pressure level measured at 6 bar at 1 m distance

## Diagrams

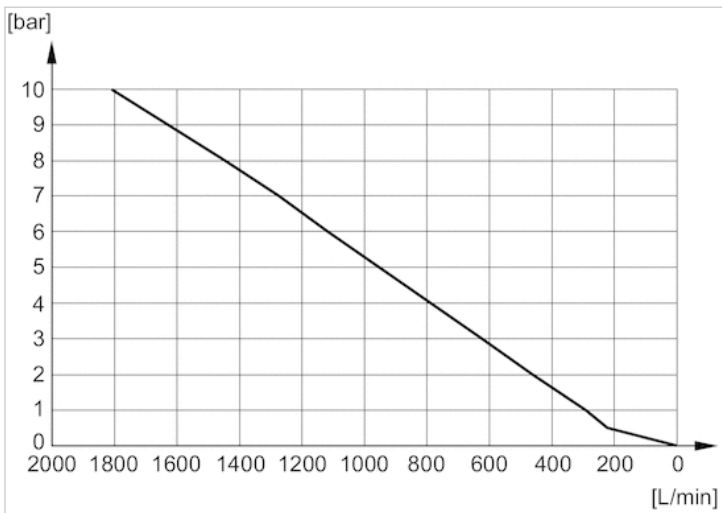
### Flow diagram, 1827000032



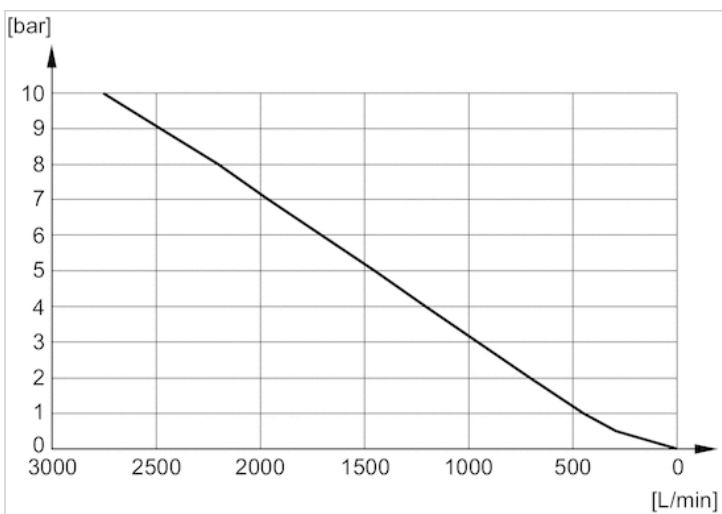
Flow diagram, 1827000031



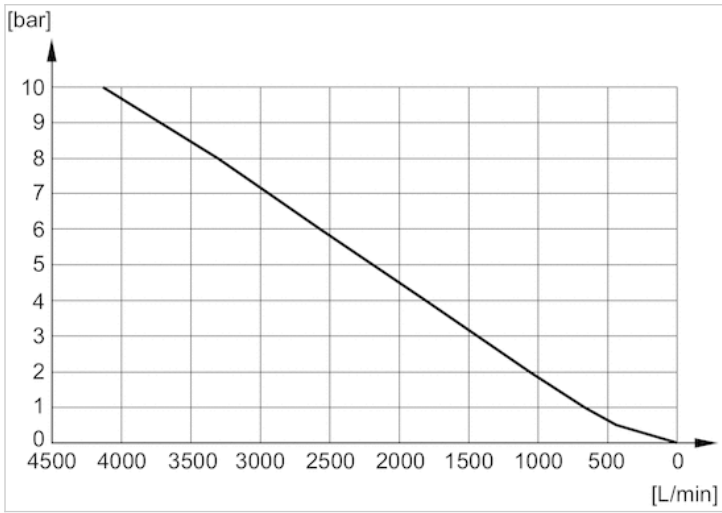
Flow diagram, 1827000033



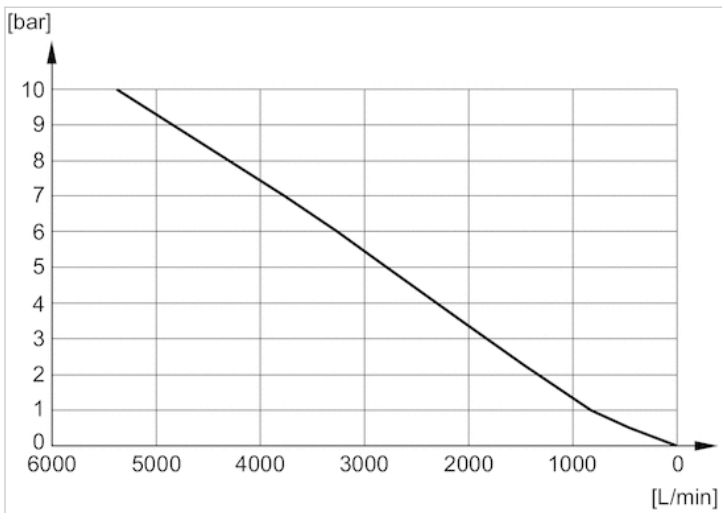
Flow diagram, 1827000034



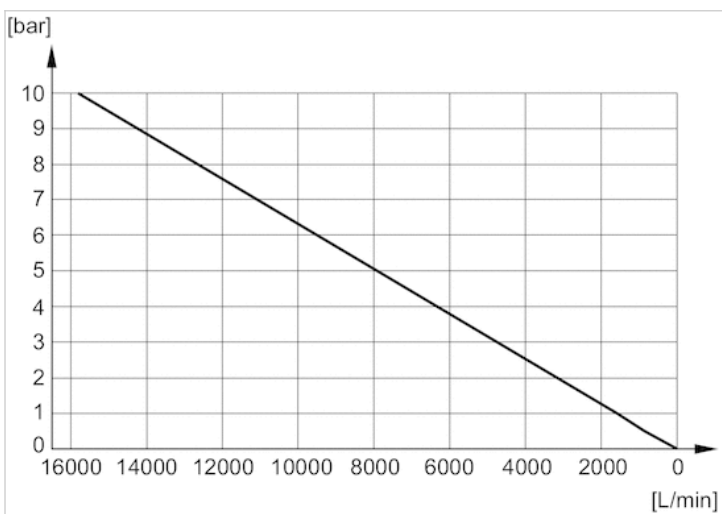
Flow diagram, 1827000035



Flow diagram, 8145003400



Flow diagram, 8145001000



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