

Series ICM



AVENTICS™ Series ICM

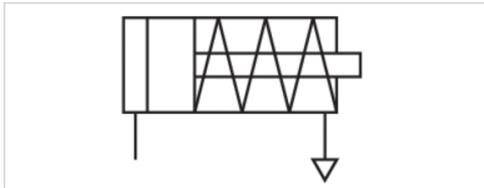


Mini cylinder, Series ICM

- Ø 8-25 mm
- Ports M5 G 1/8
- Single-acting, retracted without pressure
- Cushioning elastic
- corrosion-resistant
- with integrated rear eye
- Piston rod External thread
- suitable for use in food processing



Compressed air connection	Internal thread
Working pressure min./max.	3 ... 10 bar
Ambient temperature min./max.	-20 ... 70 °C
Medium temperature min./max.	-20 ... 70 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 mg/m³
Pressure for determining piston forces	6.3 bar
Weight	See table below



Technical data

Piston Ø Piston rod thread Ports	8 mm M4 M5	10 mm M4 M5	12 mm M6 M5	16 mm M6 M5	20 mm M8 G 1/8	25 mm M10x1,25 G 1/8
Stroke 25	1326108020	1326110020	1326112020	1326116020	1326120020	1326125020

Technical data

Piston Ø	8 mm	10 mm	12 mm	16 mm	20 mm
Extracting piston force	26 N	40 N	58 N	90 N	136 N
Spring force min. - max.	4 ... 6 N	6 ... 9 N	7 ... 13 N	24 ... 37 N	28 ... 62 N
Stroke max.	25 mm	25 mm	25 mm	25 mm	25 mm

Piston Ø	25 mm
Extracting piston force	250 N
Spring force min. - max.	28 ... 62 N
Stroke max.	25 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).

Nut MR3 included in supply

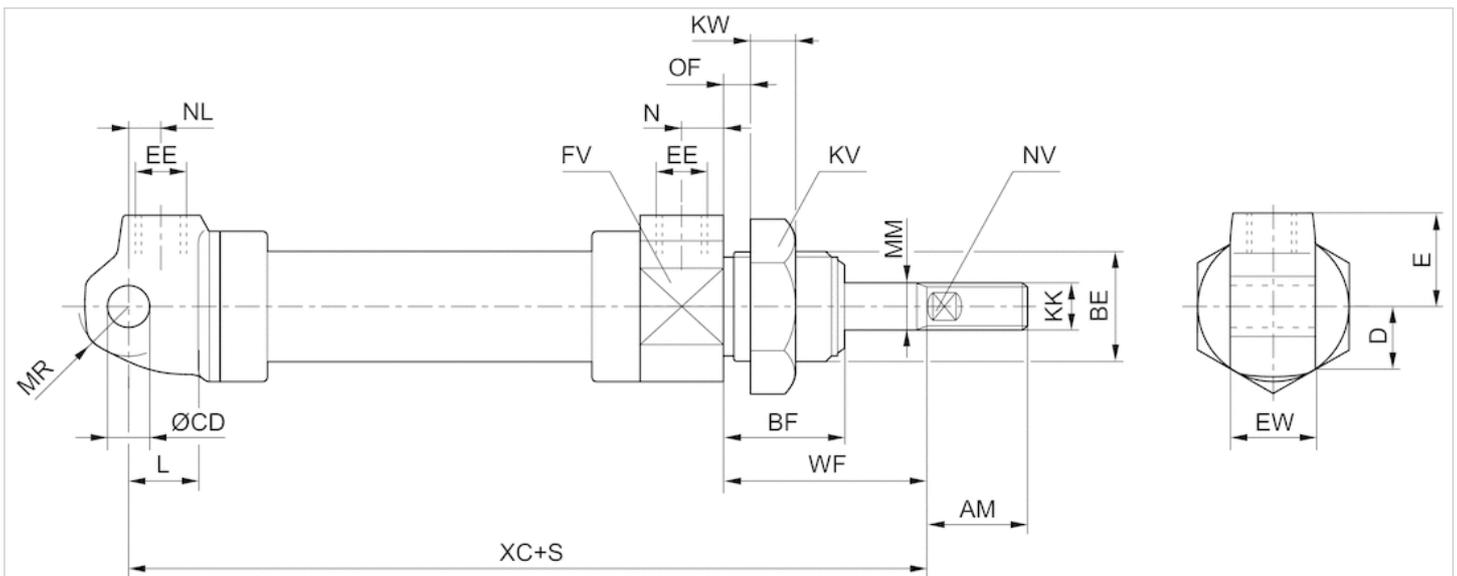
Technical information

Material

Cylinder tube	Stainless steel
Piston rod	Stainless steel
Front cover	Polyoxymethylene
End cover	Polyoxymethylene
Connection thread	Stainless steel
Seal	Acrylonitrile butadiene rubber
Nut for cylinder mounting	Polyamide
Nut for piston rod	Stainless steel
Scraper	Polyurethane

Dimensions

Dimensions



S = stroke

Dimensions

Piston Ø	AM +0 -2	BE	BF	CD H11	D	E	EE	EW d13	FV	KK	KV	KW	L	MM
8 mm	12	M12x1,25	14	4	7.5	12	M5	8	14	M4	17	7	7	4
10 mm	12	M12x1,25	14	4	8	12	M5	8	16	M4	17	7	7	4
12 mm	16	M16x1,5	20	6	10	13.5	M5	12	20	M6	24	7	9	6
16 mm	16	M16x1,5	20	6	12	14	M5	12	24	M6	24	7	9	6
20 mm	20	M22x1,5	22	8	15	18	G 1/8	16	30	M8	30	8	12	8
25 mm	27	M22x1,5	22	8	17	18	G 1/8	16	34	M10x1,25	30	8	12	10

Piston Ø	MR	N	NL	NV	OF max.	WF ±1,2	XC ±1
8 mm	5	5	12	3	4.5	16	114
10 mm	5	5	12	3	4.5	16	114
12 mm	7.5	5	7	4	10	22	112
16 mm	7.5	5	6	4	10	22	108
20 mm	10	8	7	6	10	24	123
25 mm	10	8	6.5	8	10	23	127

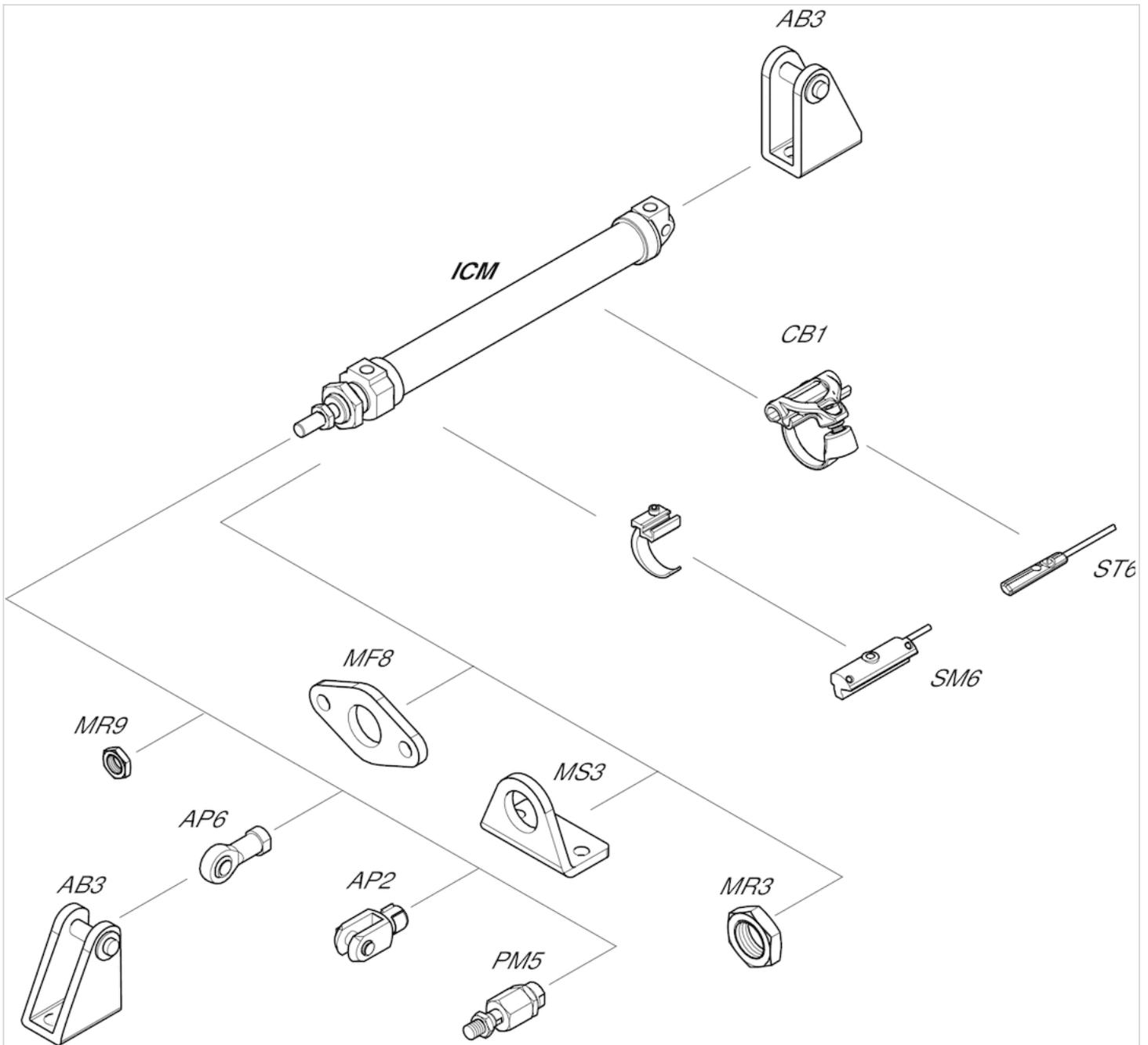
Weight [kg]

Part No.	Piston Ø	S	Weight kg
1326108020	8 mm	25	0.043 kg
1326110020	10 mm	25	0.046 kg
1326112020	12 mm	25	0.072 kg
1326116020	16 mm	25	0.08 kg
1326120020	20 mm	25	0.14 kg
1326125020	25 mm	25	0.18 kg

S = stroke

Accessories overview

Overview drawing

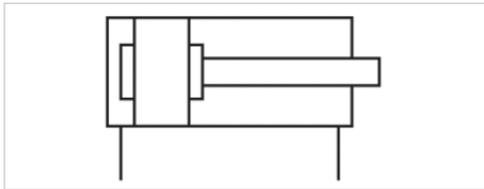


NOTE:

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.

Mini cylinder, Series ICM

- Ø 8-32 mm
- Ports M5 G 1/8
- double-acting
- Cushioning elastic
- corrosion-resistant
- with integrated rear eye
- Piston rod External thread
- suitable for use in food processing



Compressed air connection	Internal thread
Ambient temperature min./max.	-20 ... 70 °C
Medium temperature min./max.	-20 ... 70 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 mg/m³
Pressure for determining piston forces	6.3 bar

Technical data

Piston Ø Piston rod thread Ports	8 mm M4 M5	10 mm M4 M5	12 mm M6 M5	16 mm M6 M5	20 mm M8 G 1/8	25 mm M10x1,25 G 1/8
Stroke 12	1320801000	1321001000	1321201000	1321601000	1322001000	1322501000
15	-	-	-	R404056204	R402001534	R404052262
20	-	-	-	R402001217	R402001222	R404062718
25	1320802000	1321002000	1321202000	1321602000	1322002000	1322502000
30	-	-	-	R404050535	R404050958	R404050434
35	-	-	-	R402001399	R402001018	R404009112
40	-	R412019436	-	R404051299	R404051300	R404050929
50	1320805000	1321005000	1321205000	1321605000	1322005000	1322505000
60	-	-	R404069622	R404050901	R402001220	R402001223
70	-	-	-	R404052041	-	R404055008
80	1320808000	1321008000	1321208000	1321608000	1322008000	1322508000
100	-	-	1321210000	1321610000	1322010000	1322510000
125	-	-	-	R404052590	1322012000	1322512000
160	-	-	-	-	1322016000	1322516000
200	-	-	-	R404050903	R402001221	R402001225

Piston Ø Piston rod thread Ports	8 mm M4 M5	10 mm M4 M5	12 mm M6 M5	16 mm M6 M5	20 mm M8 G 1/8	25 mm M10x1,25 G 1/8
250	-	-	-	-	-	R404050418
300	-	-	-	-	R404008665	R404058499
320	-	-	-	-	-	R404008358
400	-	-	-	-	-	R404050620

Piston Ø Piston rod thread Ports	32 mm M10x1,25 G 1/8
Stroke 12	R404059486
15	R402001401
20	R404051563
25	1323202000
30	R404052299
35	R402001229
40	R404062567
50	1323205000
60	-
70	-
80	1323208000
100	1323210000
125	1323212000
160	1323216000
200	1323220000
250	R402001226
300	R404009040
320	R404058773
400	-

Technical data

Piston Ø	8 mm	10 mm	12 mm	16 mm
Retracting piston force	24 N	42 N	53 N	109 N
Extracting piston force	32 N	49 N	71 N	127 N
Weight 0 mm stroke	0.025 kg	0.035 kg	0.048 kg	0.054 kg
Weight +10 mm stroke	0.003 kg	0.004 kg	0.005 kg	0.005 kg
Working pressure min./max.	2 ... 10 bar	1.5 ... 10 bar	1.5 ... 10 bar	2 ... 10 bar
Stroke max.	80 mm	80 mm	100 mm	200 mm

Piston Ø	20 mm	25 mm	32 mm
Retracting piston force	166 N	260 N	435 N
Extracting piston force	198 N	309 N	506 N
Weight 0 mm stroke	0.08 kg	0.1 kg	0.26 kg
Weight +10 mm stroke	0.01 kg	0.014 kg	0.022 kg
Working pressure min./max.	2 ... 10 bar	2 ... 10 bar	2 ... 10 bar
Stroke max.	400 mm	400 mm	400 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).

Nut MR3 included in supply

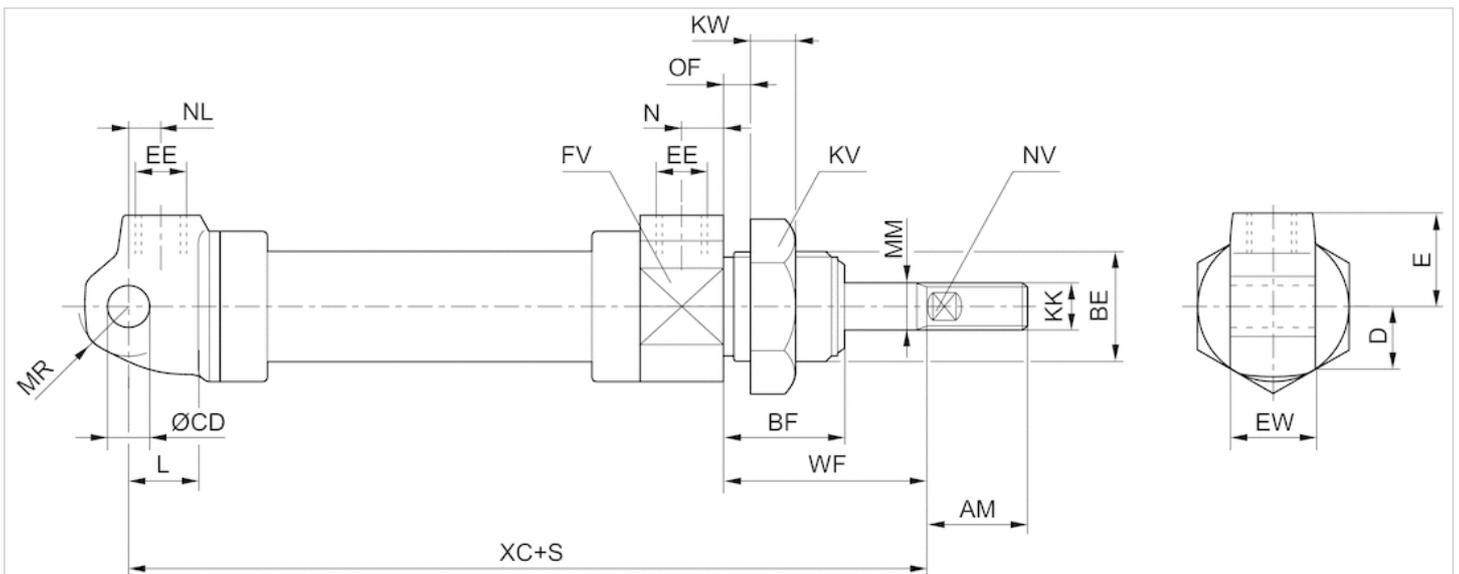
Technical information

Material

Cylinder tube	Stainless steel
Piston rod	Stainless steel
Front cover	Polyoxymethylene
End cover	Polyoxymethylene
Connection thread	Stainless steel
Seal	Acrylonitrile butadiene rubber
Nut for cylinder mounting	Polyamide
Nut for piston rod	Stainless steel
Scraper	Polyurethane

Dimensions

Dimensions



S = stroke

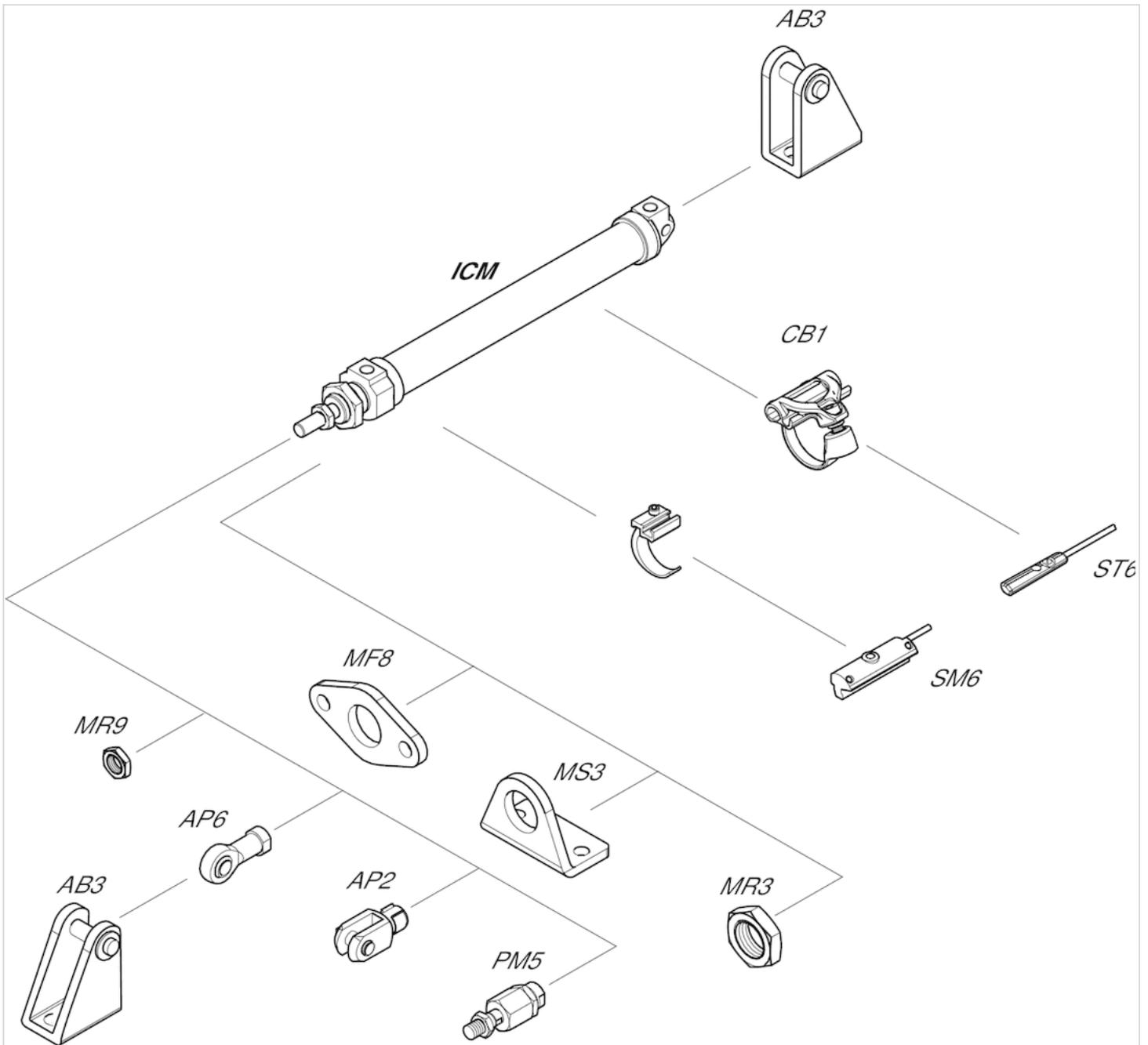
Dimensions

Piston Ø	AM +0/-2	BE	BF	CD H11	D	E	EE	EW d13	FV	KK	KV	KW	L	MM
8 mm	12	M12x1,25	14	4	7.5	12	M5	8	14	M4	17	7	7	4
10 mm	12	M12x1,25	14	4	8	12	M5	8	16	M4	17	7	7	4
12 mm	16	M16x1,5	20	6	10	13.5	M5	12	20	M6	24	7	9	6
16 mm	16	M16x1,5	20	6	12	14	M5	12	24	M6	24	7	9	6
20 mm	20	M22x1,5	22	8	15	18	G1/8	16	30	M8	30	8	12	8
25 mm	27	M22x1,5	22	8	17	18	G1/8	16	34	M10x1,25	30	8	12	10
32 mm	32	M30x1,5	29	10	22.5	24	G1/8	26	46	M10x1,25	41	11	13	12

Piston Ø	MR	N	NL	NV	OF max.	WF ±1,2	XC ±1
8 mm	5	5	12	3	4.5	16	64
10 mm	5	5	12	3	4.5	16	64
12 mm	7.5	5	7	4	10	22	62
16 mm	7.5	5	6	4	10	22	58
20 mm	10	8	7	6	10	24	73
25 mm	10	8	6.5	8	10	23	72
32 mm	15	10	10.5	11	14	38	98

Accessories overview

Overview drawing



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.

Mini cylinder, Series ICM

- Ø 12-32 mm
- Ports M5 G 1/8
- double-acting
- with magnetic piston
- Cushioning elastic
- corrosion-resistant
- with integrated rear eye
- Piston rod External thread
- suitable for use in food processing



Standards	ISO 6432
Compressed air connection	Internal thread
Working pressure min./max.	1 ... 10 bar
Ambient temperature min./max.	-20 ... 70 °C
Medium temperature min./max.	-20 ... 70 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 mg/m ³
Pressure for determining piston forces	6.3 bar



Technical data

Piston Ø Piston rod thread Ports	12 mm M6 M5	16 mm M6 M5	20 mm M8 G 1/8	25 mm M10x1,25 G 1/8	32 mm M10x1,25 G 1/8
Stroke 12	1331201000	1331601000	1332001000	1332501000	-
15	-	R404062574	R402001231	R404050979	-
20	-	-	-	R404054477	-
25	1331202000	1331602000	1332002000	1332502000	1333202000
30	-	-	R402001533	R404052834	R404050547
35	-	R404053760	R404063867	-	R404050533
40	-	-	R404051010	R402001019	-
50	1331205000	1331605000	1332005000	1332505000	1333205000
60	-	R404052973	R402001230	-	-
70	-	-	-	R404051389	R404051564
80	1331208000	1331608000	1332008000	1332508000	1333208000
100	1331210000	1331610000	1332010000	1332510000	1333210000
125	-	-	1332012000	1332512000	1333212000
160	-	R404063245	1332016000	1332516000	1333216000

Piston Ø Piston rod thread Ports	12 mm M6 M5	16 mm M6 M5	20 mm M8 G 1/8	25 mm M10x1,25 G 1/8	32 mm M10x1,25 G 1/8
200	-	R404065638	R402001232	R402001235	1333220000
250	-	-	R404051220	R402001236	R404051390
300	-	-	R404053499	R404050518	-
320	-	-	R404008517	R404009055	-
400	-	-	R404001788	-	R404009214

Technical data

Piston Ø	12 mm	16 mm	20 mm	25 mm	32 mm
Retracting piston force	53 N	109 N	166 N	260 N	435 N
Extracting piston force	71 N	127 N	198 N	309 N	506 N
Weight 0 mm stroke	0.048 kg	0.054 kg	0.08 kg	0.1 kg	0.26 kg
Weight +10 mm stroke	0.005 kg	0.005 kg	0.01 kg	0.014 kg	0.022 kg
Stroke max.	100 mm	200 mm	400 mm	400 mm	400 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).

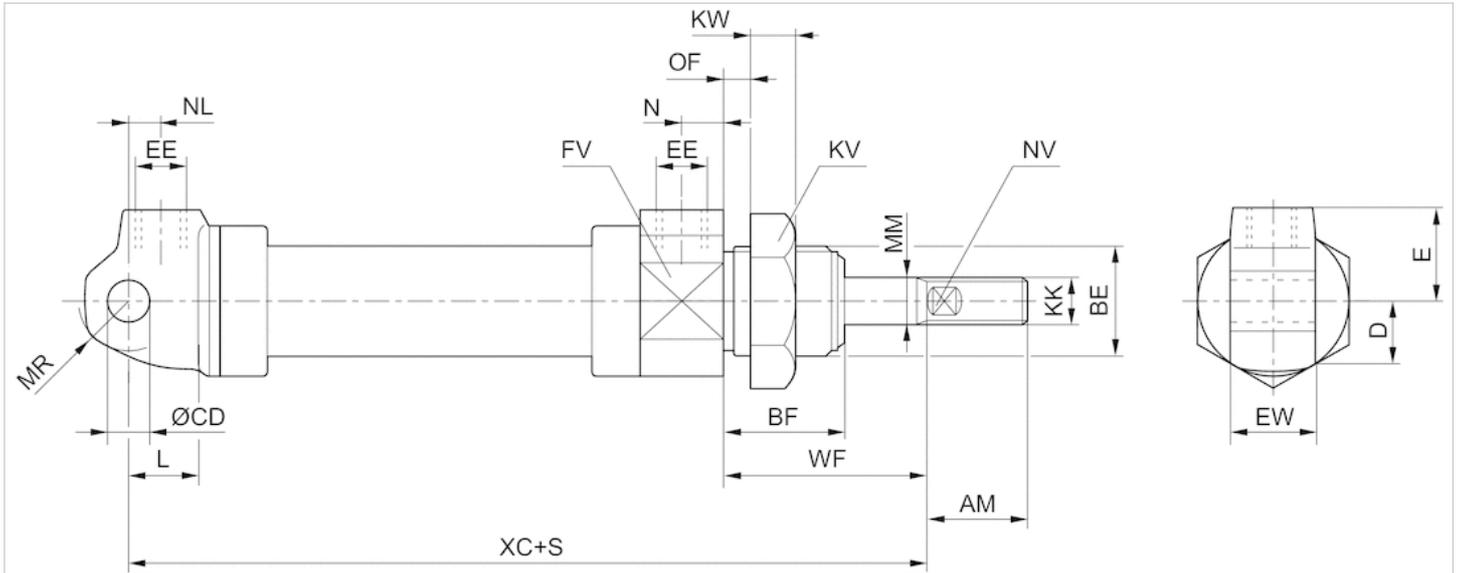
Nut MR3 included in supply

Technical information

Material	
Cylinder tube	Stainless steel
Piston rod	Stainless steel
Front cover	Polyoxymethylene
End cover	Polyoxymethylene
Connection thread	Stainless steel
Seal	Acrylonitrile butadiene rubber
Nut for cylinder mounting	Polyamide
Nut for piston rod	Stainless steel
Scraper	Polyurethane

Dimensions

Dimensions



S = stroke

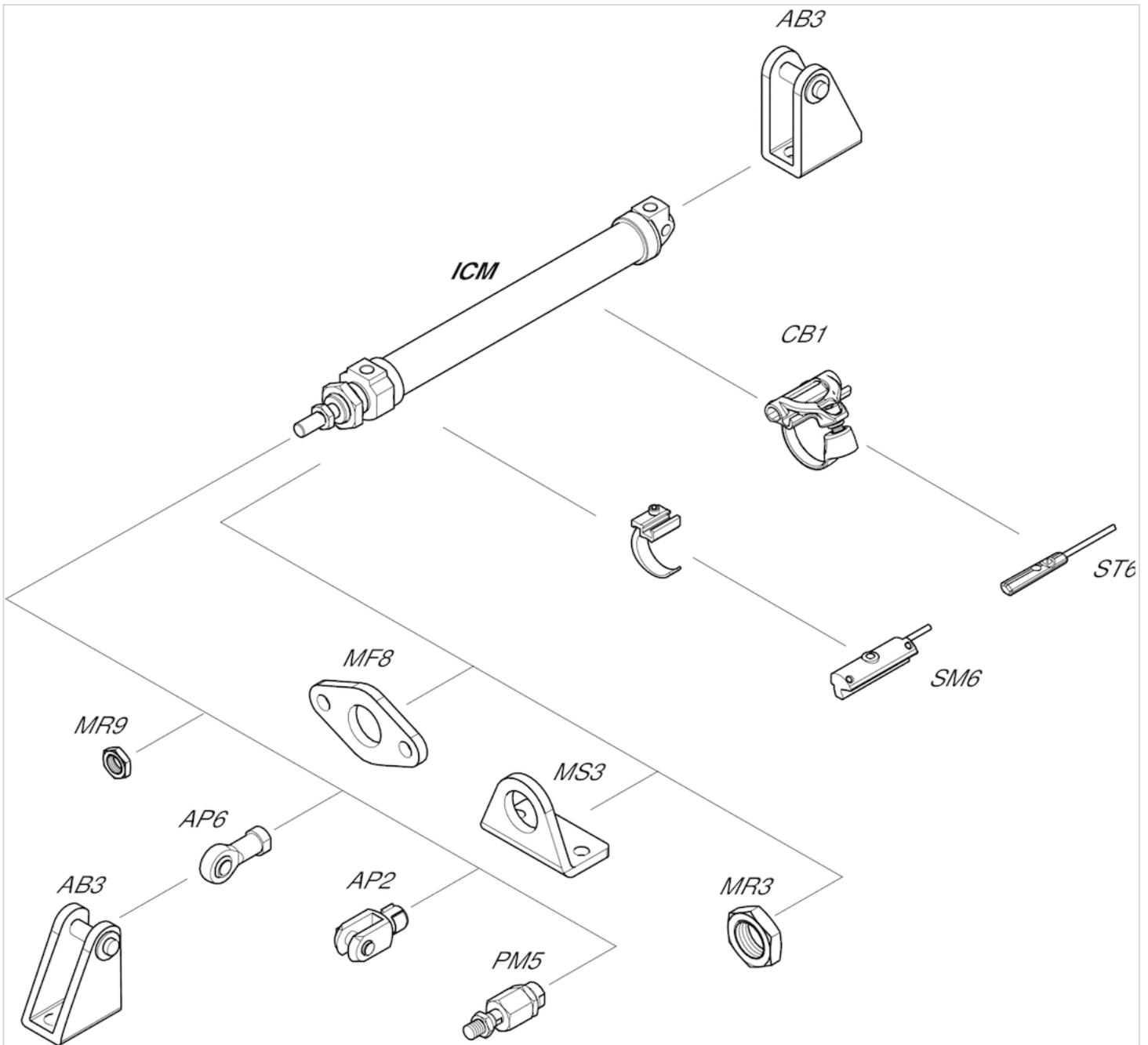
Dimensions

Piston Ø	AM +0/-2	BE	BF	CD H11	D	E	EE	EW d13	FV	KK	KV	KW	L	MM
12 mm	16	M16x1,5	20	6	10	13.5	M5	12	20	M6	24	7	9	6
16 mm	16	M16x1,5	20	6	12	14	M5	12	24	M6	24	7	9	6
20 mm	20	M22x1,5	22	8	15	18	G 1/8	16	30	M8	30	8	12	8
25 mm	27	M22x1,5	22	8	17	18	G 1/8	16	34	M10x1,25	30	8	12	10
32 mm	32	M30x1,5	29	10	22.5	24	G 1/8	26	46	M10x1,25	41	11	13	12

Piston Ø	MR	N	NL	NV	OF max.	WF ±1,2	XC ±1
12 mm	7.5	5	7	4	10	22	75
16 mm	7.5	5	6	4	10	22	82
20 mm	10	8	7	6	10	24	95
25 mm	10	8	6.5	8	10	23	104
32 mm	15	10	10.5	11	14	38	128

Accessories overview

Overview drawing

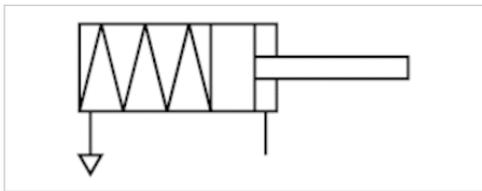


NOTE:

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Mini cylinder, Series ICM

- Ø 16-25 mm
- Ports M5 G 1/8
- Single-acting, extended without pressure
- Cushioning elastic
- corrosion-resistant
- with integrated rear eye
- Piston rod External thread
- suitable for use in food processing



Compressed air connection	Internal thread
Working pressure min./max.	3 ... 10 bar
Ambient temperature min./max.	-20 ... 70 °C
Medium temperature min./max.	-20 ... 70 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 mg/m ³
Pressure for determining piston forces	6.3 bar
Weight	See table below

Technical data

Piston Ø Piston rod thread Ports	16 mm M6 M5	20 mm M8 G 1/8	25 mm M10x1,25 G 1/8
Stroke 25	1326216020	1326220020	1326225020

Technical data

Piston Ø	16 mm	20 mm	25 mm
Retracting piston force	72 N	104 N	198 N
Spring force min. - max.	24 ... 37 N	28 ... 62 N	28 ... 62 N
Stroke max.	25 mm	25 mm	25 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.

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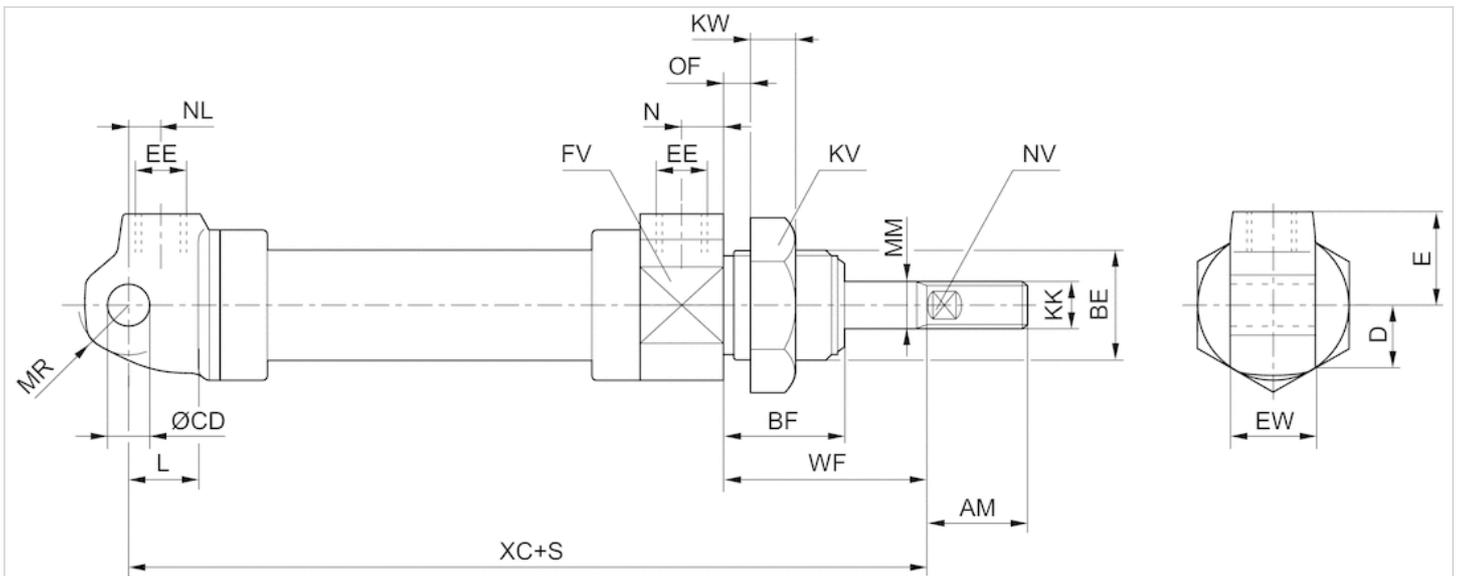
Nut MR3 included in supply

Technical information

Material	
Cylinder tube	Stainless steel
Piston rod	Stainless steel
Front cover	Polyoxymethylene
End cover	Polyoxymethylene
Connection thread	Stainless steel
Seal	Acrylonitrile butadiene rubber
Nut for cylinder mounting	Polyamide
Nut for piston rod	Stainless steel
Scraper	Polyurethane

Dimensions

Dimensions



S = stroke

Dimensions

Piston Ø	AM	BE	BF	CD H11	D	E	EE	EW d13	FV	KK	KV	KW	L	MM	MR	N	NL	NV
16 mm	16	M16x1,5	20	6	12	14	M5	12	24	M6	24	7	9	6	7.5	5	6	4
20 mm	20	M22x1,5	22	8	15	18	G1/8	16	30	M8	30	8	12	8	10	8	7	6
25 mm	27	M22x1,5	22	8	17	18	G1/8	16	34	M10x1,25	30	8	12	10	10	8	6.5	8

Piston Ø	OF max.	WF ±1,2	XC ±1
16 mm	10	47	133
20 mm	10	49	148

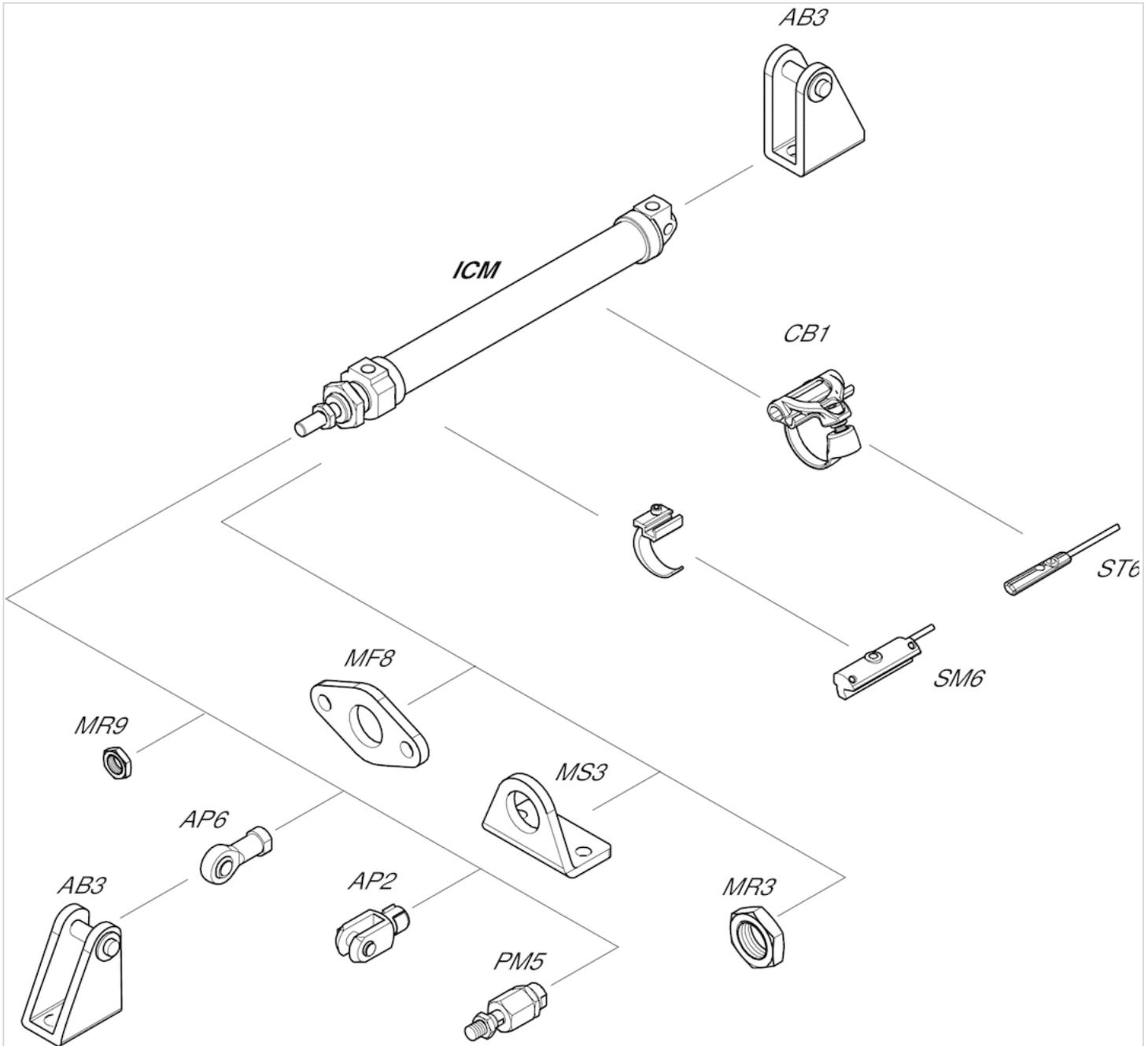
Piston Ø	OF max.	WF ±1,2	XC ±1
25 mm	10	53	152

Weight [kg]

Part No.	Piston Ø	S	Weight kg
1326216020	16 mm	25	0.08 kg
1326220020	20 mm	25	0.14 kg
1326225020	25 mm	25	0.18 kg

Accessories overview

Overview drawing



NOTE:
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illustration has been simplified for this purpose. It is thus not possible to derive the dimensions from this overview.

Clevis mounting AB3, Series CM1

- Suitable piston Ø 8, 10 12, 16 20, 25 32 mm



The delivered product may vary from that in the illustration.

Technical data

Part No.	Piston Ø	Swivel bearing Ø	Fig.
3323410000	8, 10 mm	4 mm	Fig. 1
3323416000	12, 16 mm	6 mm	Fig. 2
3323420000	20, 25 mm	8 mm	Fig. 2
3323432000	32 mm	10 mm	Fig. 1

Scope of delivery: clevis mounting incl. pivot pins

Technical information

Material	
Material	Stainless steel

Dimensions

Fig. 1

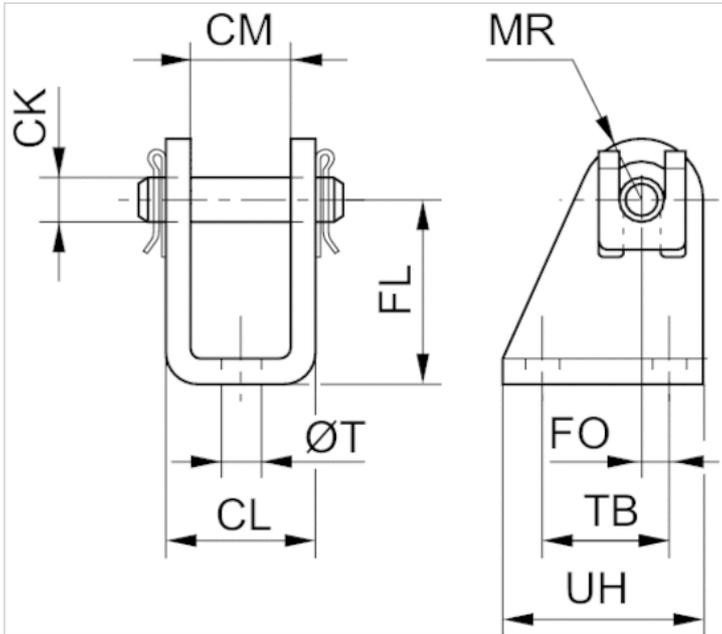
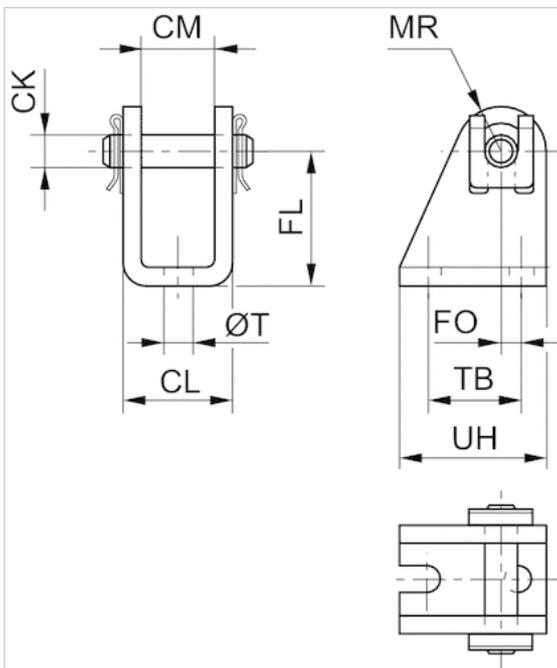


Fig. 2



Dimensions

Part No.	Piston Ø	Fig.	CM	Ø CK	CL	FL	FO	MR	Ø T	TB	UH
3323410000	8, 10 mm	Fig. 1	8	4	13	24	1,5	5	4.5	12	20
3323416000	12, 16 mm	Fig. 2	12	6	18	27	2,0	7	5.5	15	25
3323420000	20, 25 mm	Fig. 2	16	8	24	30	4,0	10	6.6	22	34
3323432000	32 mm	Fig. 1	26	10	36	32	6,0	12	6.6	24	36

Flange mounting MF8, Series CM1

- Cylinder mounting in accordance with ISO 6432

- Suitable piston Ø 8, 10 12, 16 20, 25 mm



Standards

ISO 6432

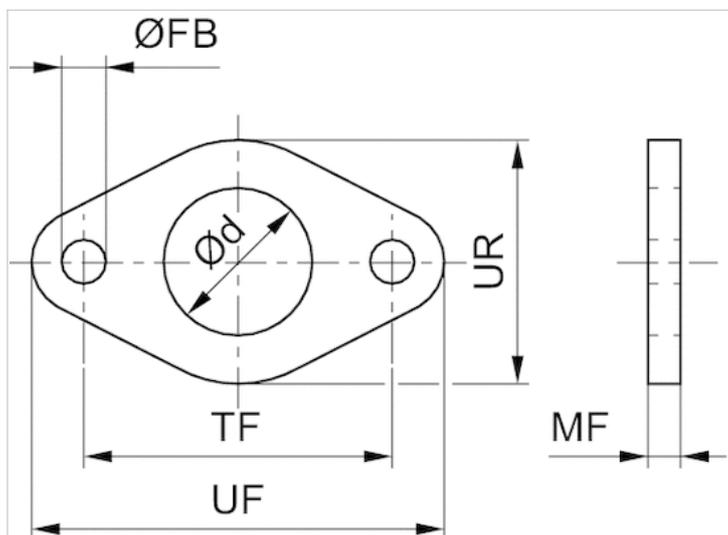
Technical data

Part No.	Piston Ø	Housing material	Surface
1821036012	8, 10 mm	Steel	galvanized
1821036011	12, 16 mm	Steel	galvanized
1821036010	20, 25 mm	Steel	galvanized
3322010000	8, 10 mm	Stainless steel	-
3322016000	12, 16 mm	Stainless steel	-
3322020000	20, 25 mm	Stainless steel	-

Technical information

Material	
Material	Steel Stainless steel
	galvanized

Dimensions



Dimensions

Part No.	Piston Ø	Ø d	Ø FB	MF	TF js14	UF	UR
1821036012	8, 10 mm	12	4.5	3	30	40	25
1821036011	12, 16 mm	16	5.5	4	40	52	30
1821036010	20, 25 mm	22	6.6	5	50	66	40
3322010000	8, 10 mm	12	4.5	3	30	40	22
3322016000	12, 16 mm	16	5.5	4	40	52	30
3322020000	20, 25 mm	22	6.6	5	50	66	40

Foot mounting MS3, Series CM1

- Cylinder mounting in accordance with ISO 6432

- Suitable piston Ø 8, 10 12, 16 20, 25 32 mm



Standards

ISO 6432

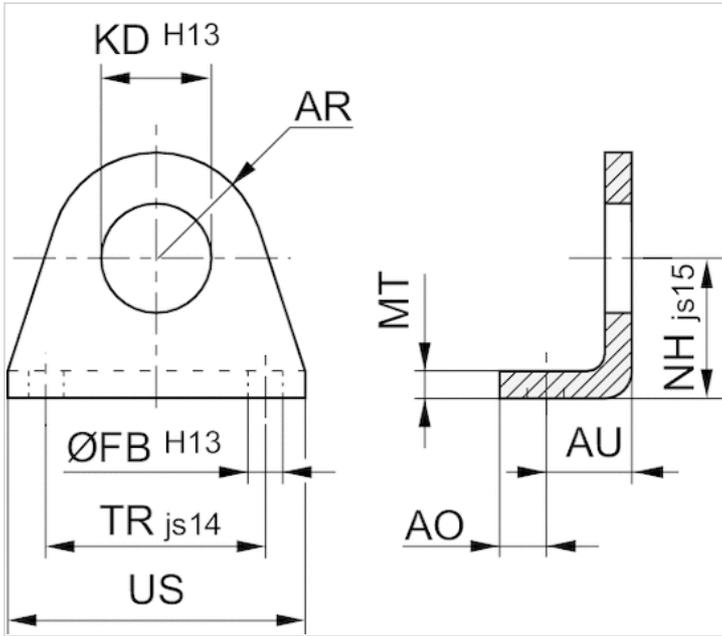
Technical data

Part No.	Piston Ø
3322210000	8, 10 mm
3322216000	12, 16 mm
3322220000	20, 25 mm
3322232000	32 mm

Technical information

Material	
Material	Stainless steel

Dimensions



Dimensions

Part No.	Piston Ø	AO	AR	AU	Ø FB H13	Ø KD H13	MT	NH ±0,3 js15	TR js14	US
3322210000	8, 10 mm	5	10	11	4.5	12	3	16	25	35
3322216000	12, 16 mm	6	12.5	14	5.5	16.1	4	20	32	42
3322220000	20, 25 mm	8	20	17.5	6.6	22.1	5	25	40	54
3322232000	32 mm	9	24	20	6.6	30.1	5	32	48	65

Nut MR3, series CM1

- for cylinder mounting
- Suitable piston Ø 8, 10 16 20, 25 32 mm
- for series ICM



Weight

See table below

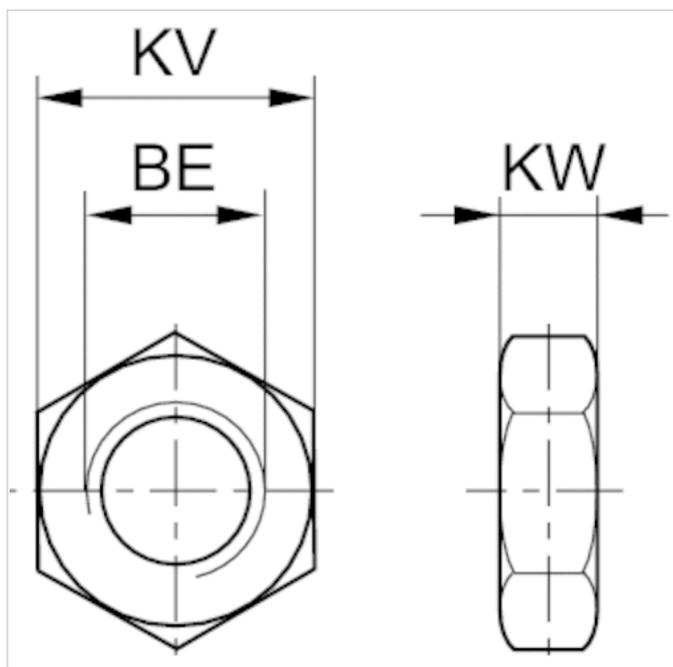
Technical data

Part No.	Piston Ø	Thread size	Weight
0413215803	8, 10 mm	M12x1,25	0.05 kg
0413214505	16 mm	M16x1,5	0.004 kg
0413214602	20, 25 mm	M22x1,5	0.004 kg
0413214718	32 mm	M30x1,5	0.01 kg

Technical information

Material	
Material	Polyamide fiber-glass reinforced

Dimensions



Dimensions

Part No.	Piston Ø	For series	BE	KV	KW
0413215803	8, 10 mm	ICM	M12x1,25	17	6.75
0413214505	16 mm	ICM	M16x1,5	24	7
0413214602	20, 25 mm	ICM	M22 x1,5	30	8
0413214718	32 mm	ICM	M30x1,5	41	11

Piston rod nut MR9



Weight

See table below

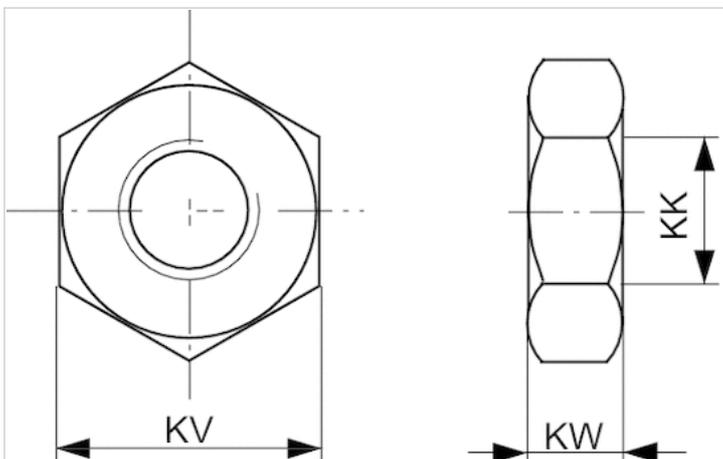
Technical data

Part No.	Suitable piston rod thread	Weight
3330310000	M4	0.001 kg
3330316000	M6	0.004 kg
3330320000	M8	0.006 kg
3590302000	M10x1,25	0.01 kg

Technical information

Material
Stainless steel

Dimensions



Dimensions

Part No.	KK	KV	KW
3330310000	M4	7	2.2
3330316000	M6	10	3.2
3330320000	M8	13	4
3590302000	M10x1,25	16	5

Rod clevis AP2, Series CM2

- with circlip to mount on cylinder CCL-IS/IC, CCI, SSI, CSL-RD, ICM, ICS-D2, 167



Weight

See table below

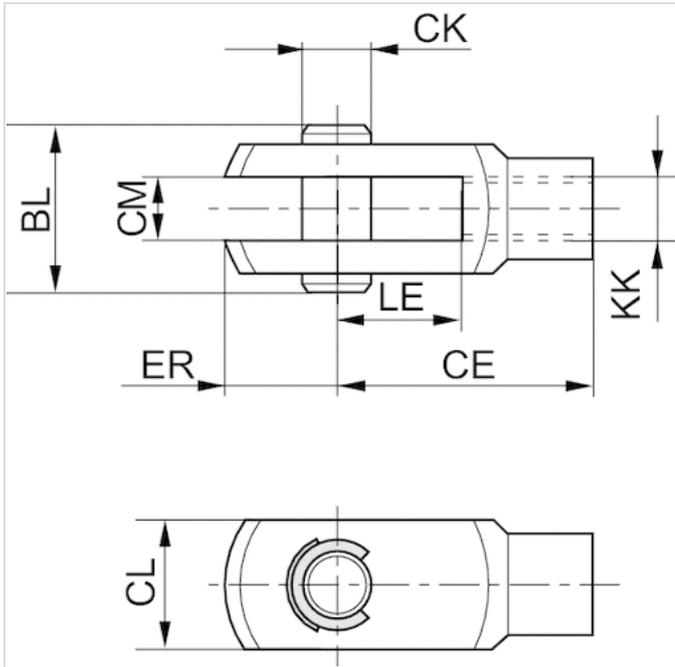
Technical data

Part No.	Suitable piston rod thread	for	Weight
3330510000	M4	SSI ICM	0.01 kg
3330516000	M6	CSL-RD SSI ICM	0.02 kg
3330520000	M8	CCL-IC CSL-RD CCI ICM	0.05 kg
3590502000	M10x1,25	CCL-IS CCL-IC CCI CSL-RD SSI ICM ICS-D2 167	0.1 kg

Technical information

Material
Stainless steel

Dimensions



Dimensions

Part No.	KK	CE	CK e8	CL	CM B12	ER	BL	LE
3330510000	M4	16	4	10	5	6	15	8
3330516000	M6	24	6	12	6	7	17	12
3330520000	M8	32	8	16	8	10	22	16
3590502000	M10x1,25	40	10	20	10	12	26	20

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

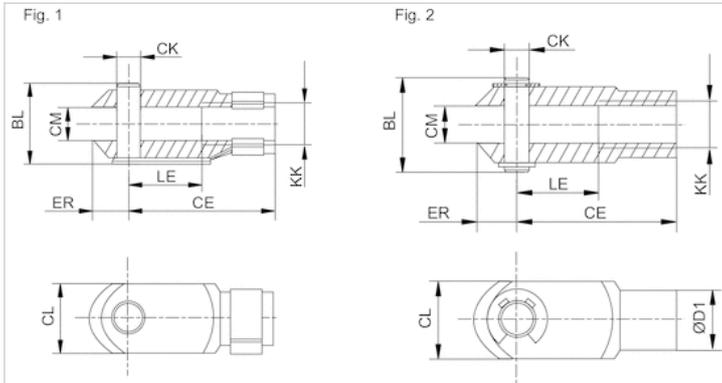
Part No.	Suitable piston rod thread	for	Weight
1822122028	M4	MNI ICM	0.01 kg
1822122009	M6	CCI MNI ICM KHZ	0.02 kg
1822122010	M8	CCI MNI ICM KHZ	0.05 kg
1822122024	M10x1,25	PRA TRB CCI MNI ICM KPZ 167 CVI RPC RDC	0.1 kg

Part No.	Fig.
1822122028	Fig. 1
1822122009	Fig. 1
1822122010	Fig. 1
1822122024	Fig. 1

Technical information

Material	
	Steel
	galvanized

Dimensions



Dimensions

Part No.	KK	BL	CE	ØCK e11	CL	CM	ØD1	ER	LE	Fig.
1822122028	M4	11	16	4	8	4	8	5	8	Fig. 1
1822122009	M6	16	24	6	12	6	10	7	12	Fig. 1
1822122010	M8	21,5	32	8	16	8	14	10	16	Fig. 1
1822122024	M10x1,25	26	40	10	20	10	18	12	20	Fig. 1

Ball eye rod end AP6, series CM2

- with flange to mount on cylinder CCL-IS/IC, SSI, CSL-RD, ICM, ICS-D2



Weight

See table below

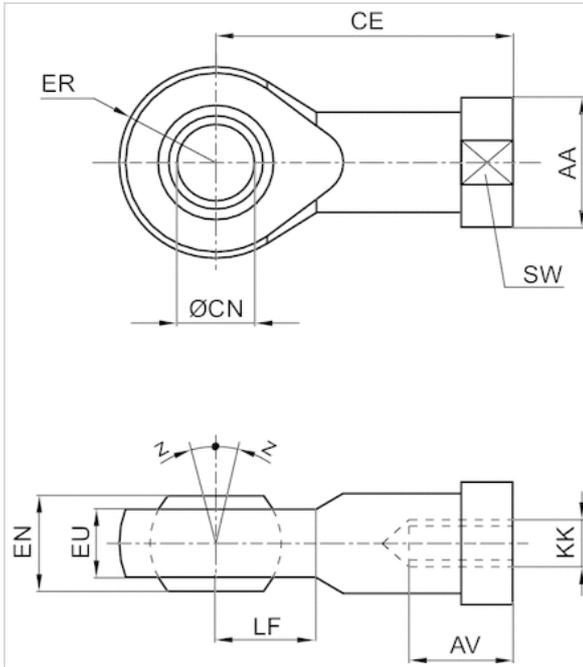
Technical data

Part No.	Suitable piston rod thread	for	Swivel bearing Ø	Weight
8958209002	M4	ICM	127 mm	0.02 kg
8958209012	M6	CCL-IC CSL-RD ICM	152.4 mm	0.04 kg
8958209022	M8	CCL-IC CSL-RD ICM	203.2 mm	0.06 kg
8958209032	M10x1,25	CCL-IS CCL-IC SSI CSL-RD ICM ICS-D2	254 mm	0.09 kg

Technical information

Material
Stainless steel

Dimensions



Dimensions

Part No.	KK	AA	AV min.	CE	Ø CN H7	EN -0,1	ER	EU max.	LF	SW	Z [°] max.
8958209002	M4	11	8	27	5	8	9	6	9	9	6,5
8958209012	M6	13	9	30	6	9	10	6,75	10	11	6,5
8958209022	M8	16	12	36	8	12	12	9	12	14	6,5
8958209032	M10x1,25	19	15	43	10	14	14	10.5	14	17	6,5

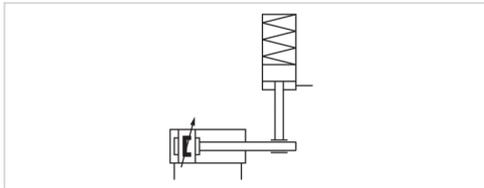
Holding unit, Series HU1

- Ø 20-25 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 ³
Weight	0.11 kg



Technical data

Part No.	Piston Ø	suitable piston rod Ø	Piston rod extension	Compressed air connection	Static holding force
0821401163	20 mm	8 mm	54 mm	M5	300 N
0821401164	25 mm	10 mm	51 mm	M5	400 N

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:

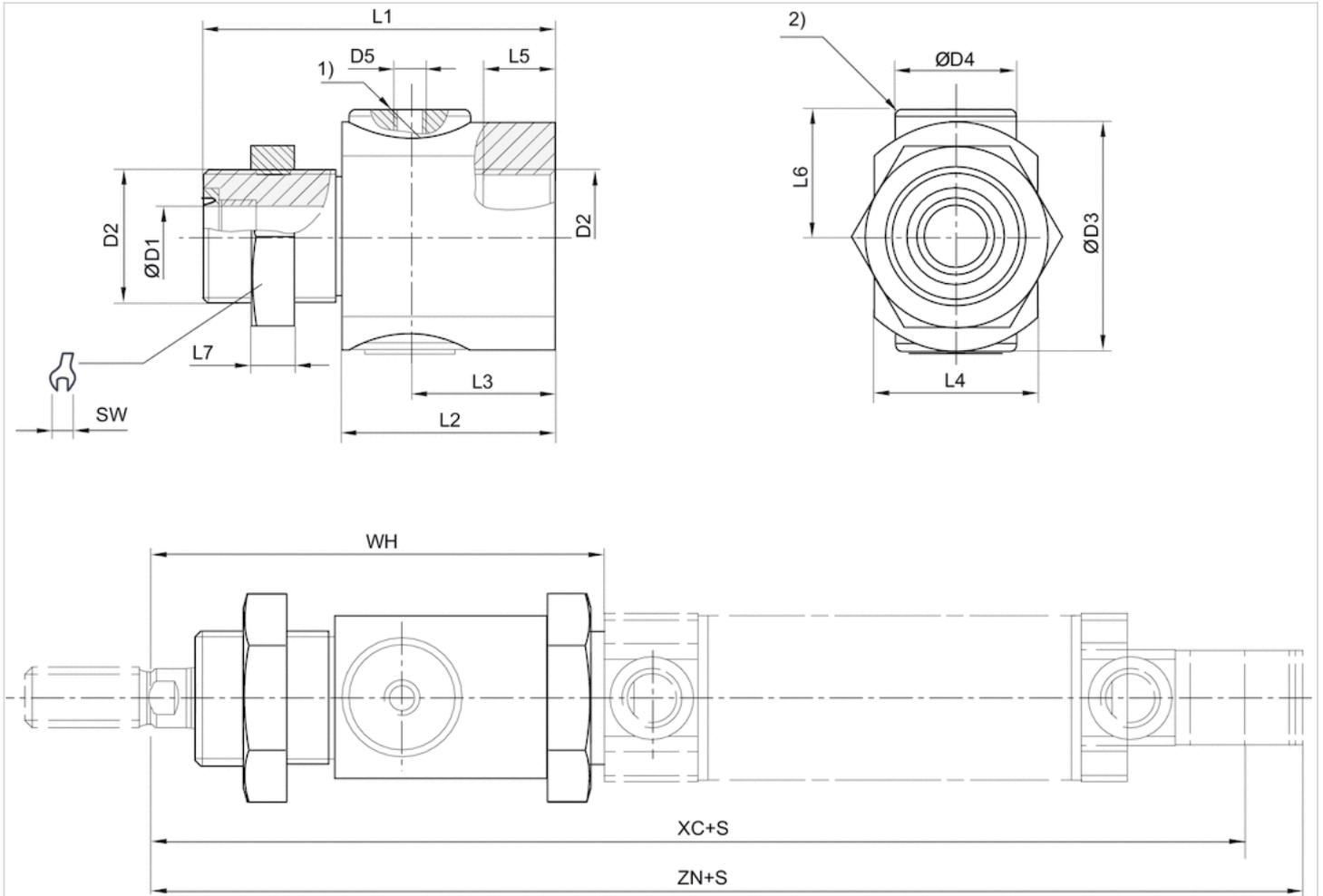
The minimum control pressure is \geq the working pressure of the cylinder!

Technical information

Material	
Housing	Aluminum, black anodized

Dimensions

Dimensions



- 1) air connection
- 2) Holding cartridge
- S = stroke

Dimensions

Piston Ø	ØD1	D2	ØD3	ØD4	D5	L1	L2	L3	L4	L5	L6	L7	SW	WH	XC	ZN
20 mm	8	M22x1,5	38	20	M5	58	35	24	27	12	21	7	30	78	149	163.5
25 mm	10	M22x1,5	38	20	M5	58	35	24	27	12	21	7	30	79	155	170.5

Check-choke valve, stainless steel, Series CC02-SL

- suitable for use in food processing
- $Q_n 2 \rightarrow 1 = 50-200 \text{ l/min}$
- direction of throttle $2 \rightarrow 1$
- exhaust air throttling
- push-in fitting / External thread
- Heat resistant

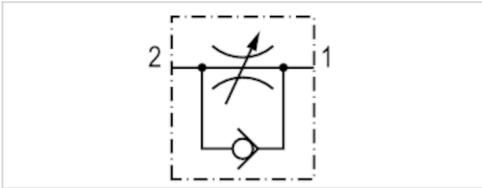


Certificates

Working pressure min./max.
Ambient temperature min./max.
Medium temperature min./max.
Medium

NSF/ANSI 169, FDA conform, EU
Regulation 1935/2004

0.5 ... 10 bar
0 ... 150 °C
0 ... 150 °C
Compressed air



Technical data

Part No.	Port 1	Port 2	Flow	Delivery unit	Fig.
			$Q_n 2 \rightarrow 1$		
R412024736	Ø 4	M5	50 l/min	1 piece	Fig. 1
R412024737	Ø 4	G 1/8	150 l/min	1 piece	Fig. 2
R412024738	Ø 6	G 1/8	190 l/min	1 piece	Fig. 3
R412024739	Ø 8	G 1/8	200 l/min	1 piece	Fig. 4

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

Technical information

Materials according to AISI/FDA:

Housing ▶ Stainless steel AISI 316L (1.4404)

Flow control screw ▶ Stainless steel AISI 316L (1.4404)

Seal ▶ FKM (FDA-compliant)

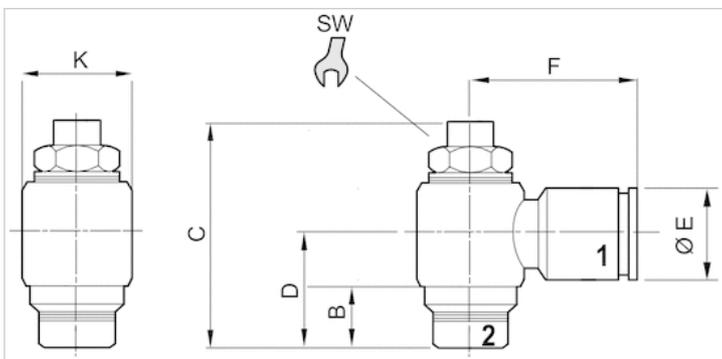
Stainless steel connection ▶ AISI 316L (1.4404)

Technical information

Material	
Housing	Stainless steel
Flow control screw	Stainless steel
Seals	Fluorocaoutchouc

Dimensions

Dimensions

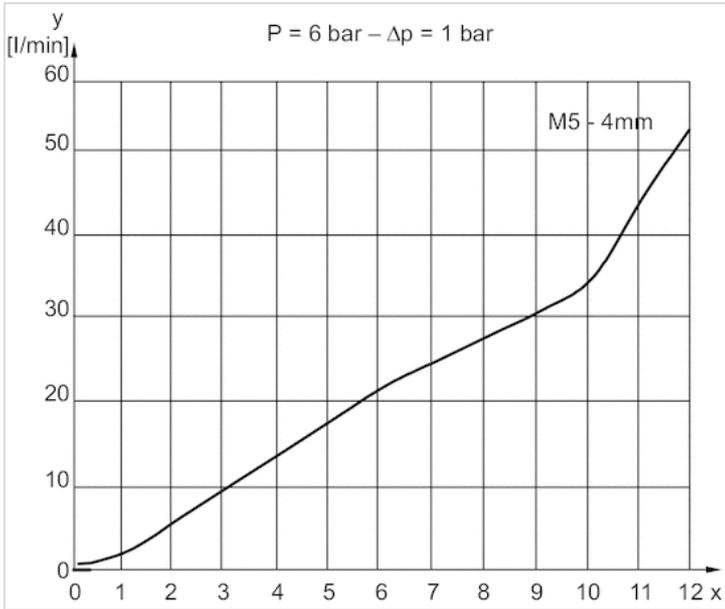


Dimensions

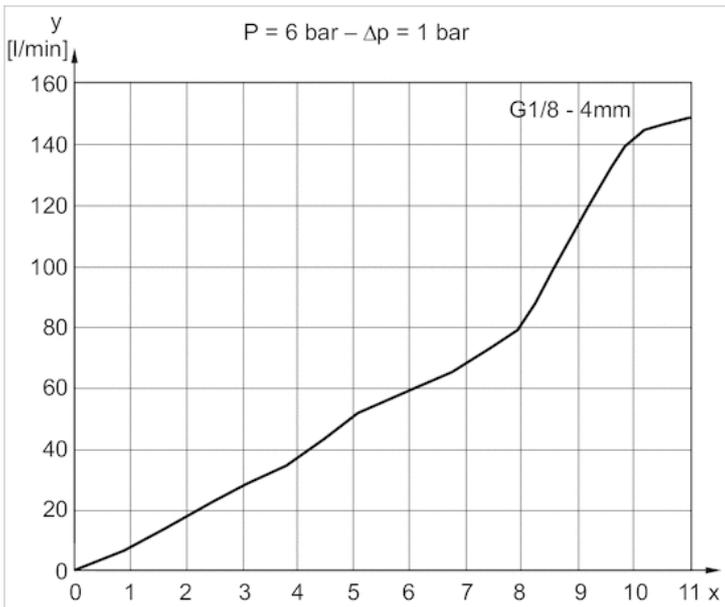
Part No.	Port 1	Port 2	B	C	D	ØE	F	ØK	SW
R412024736	Ø 4	M5	5	28.5	12.5	9	18	10	6
R412024737	Ø 4	G 1/8	5	32	15.5	9	19.5	14	9
R412024738	Ø 6	G 1/8	5	32	15.5	12	22	14	9
R412024739	Ø 8	G 1/8	5	32	15.5	14	22.5	14	9

Diagrams

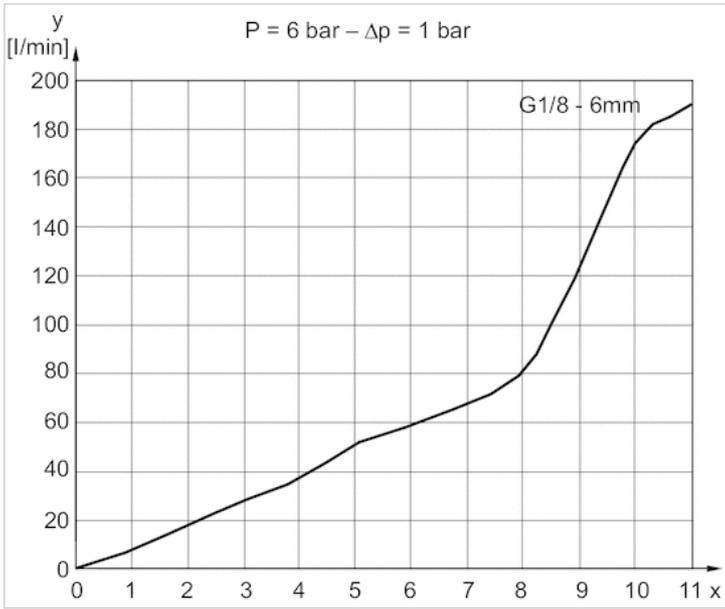
Flow diagram, Fig. 1



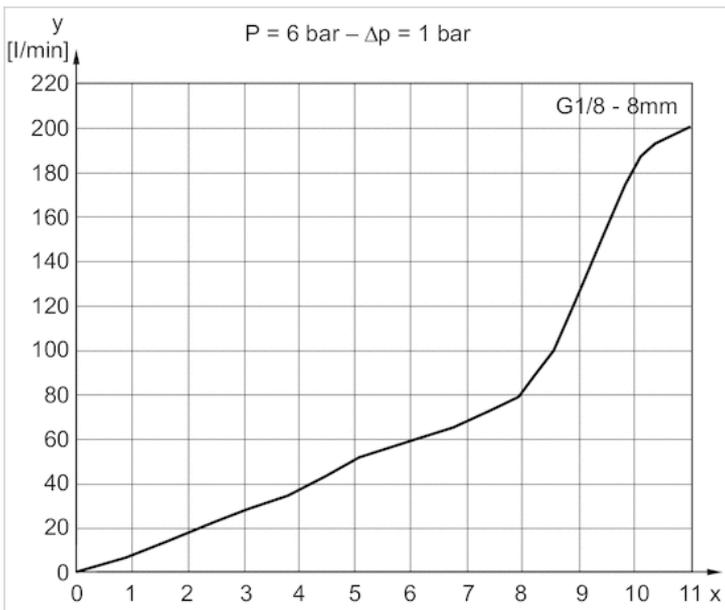
Flow diagram, Fig. 2



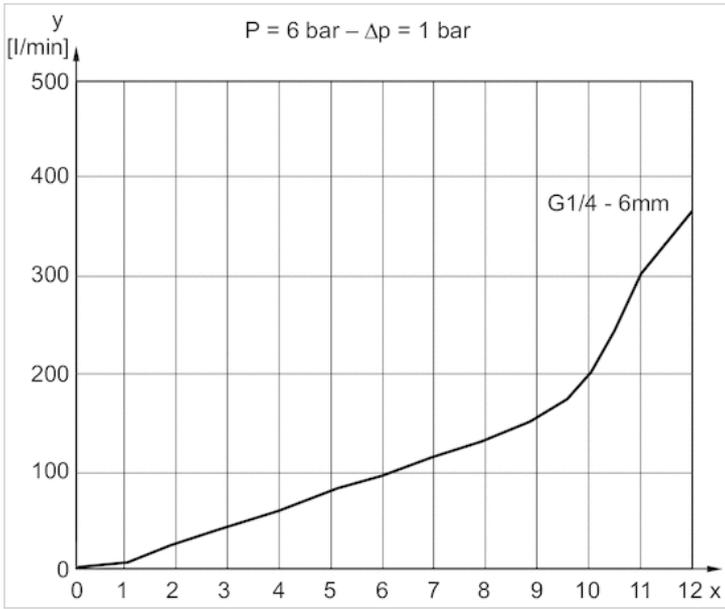
Flow diagram, Fig. 3



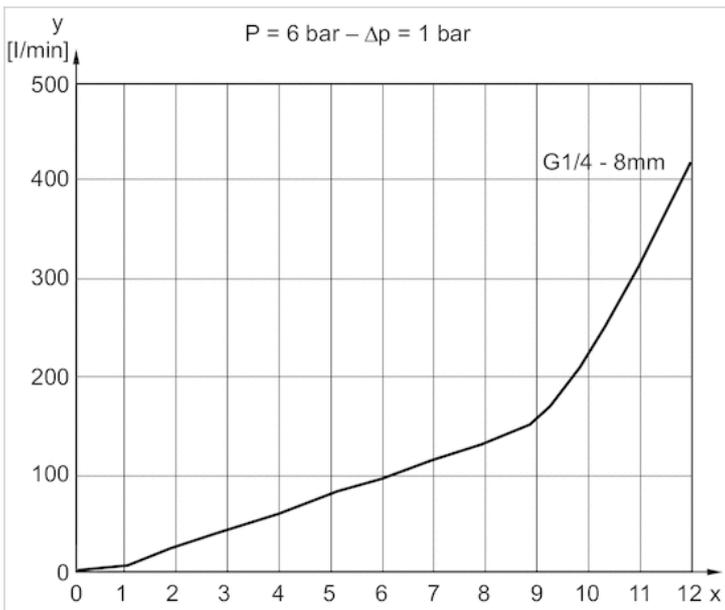
Flow diagram, Fig. 4



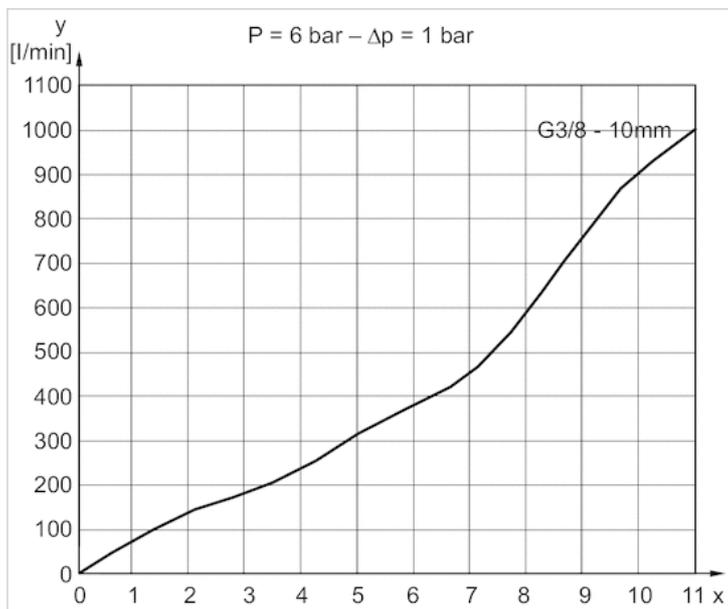
Flow diagram, Fig. 5



Flow diagram, Fig. 6



Flow diagram, Fig. 7

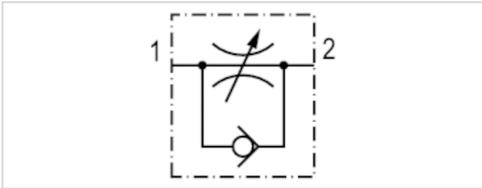


Check-choke valve, stainless steel, Series CC02-SL

- $Q_n 1 \rightarrow 2 = 150-190 \text{ l/min}$
- direction of throttle $1 \rightarrow 2$
- inlet-side throttling
- push-in fitting / External thread
- Heat resistant



Working pressure min./max.	0.5 ... 10 bar
Ambient temperature min./max.	0 ... 150 °C
Medium temperature min./max.	0 ... 150 °C
Medium	Compressed air



Technical data

Part No.	Port 1	Port 2	Flow	Delivery unit	Fig.
			$Q_n 1 \rightarrow 2$		
R412024749	Ø 4	G 1/8	150 l/min	1 piece	Fig. 1
R412024750	Ø 6	G 1/8	190 l/min	1 piece	Fig. 2

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

Technical information

Materials according to AISI/FDA:
 Housing ▶ Stainless steel AISI 316L (1.4404)
 Flow control screw ▶ Stainless steel AISI 316L (1.4404)
 Seal ▶ FKM (FDA-compliant)
 Stainless steel connection ▶ AISI 316L (1.4404)

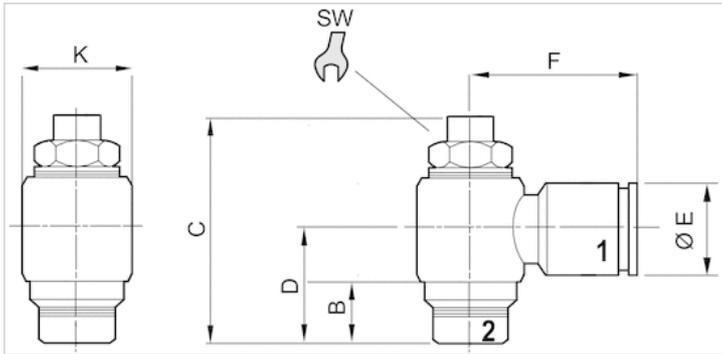
Technical information

Material	
Housing	Stainless steel
Flow control screw	Stainless steel

Material	
Seals	Fluorocaoutchouc

Dimensions

Dimensions

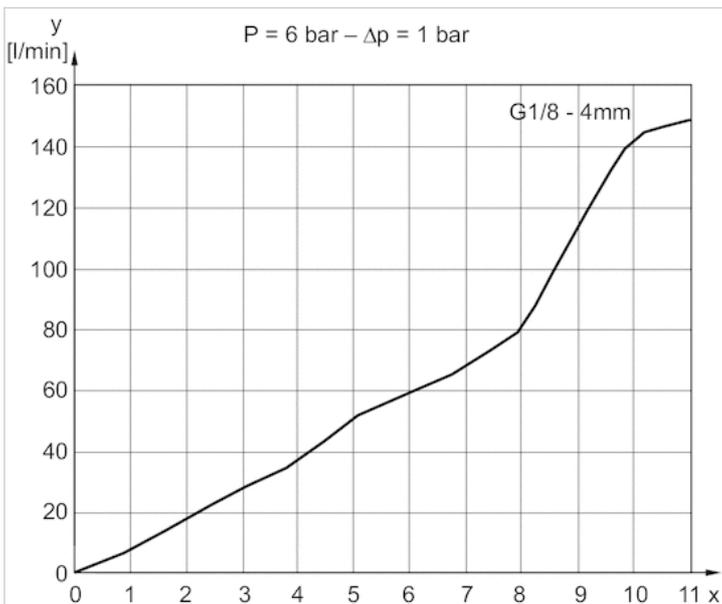


Dimensions

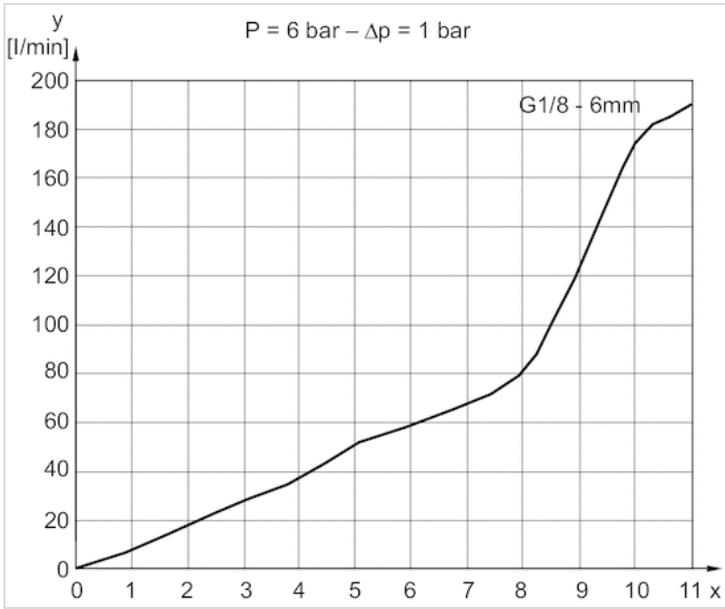
Part No.	Port 1	Port 2	B	C	D	ØE	F	ØK	SW
R412024749	Ø 4	G 1/8	5	32	15.5	9	19.5	14	9
R412024750	Ø 6	G 1/8	5	32	15.5	12	22	14	9

Diagrams

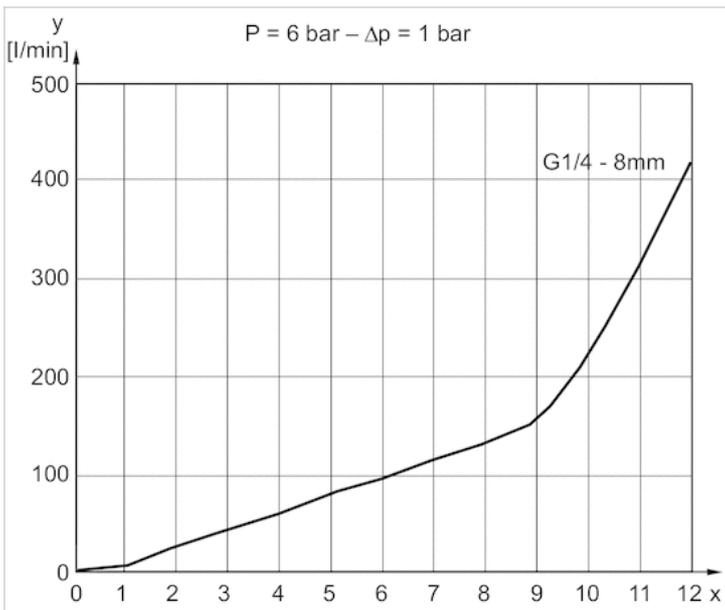
Flow diagram, Fig. 1



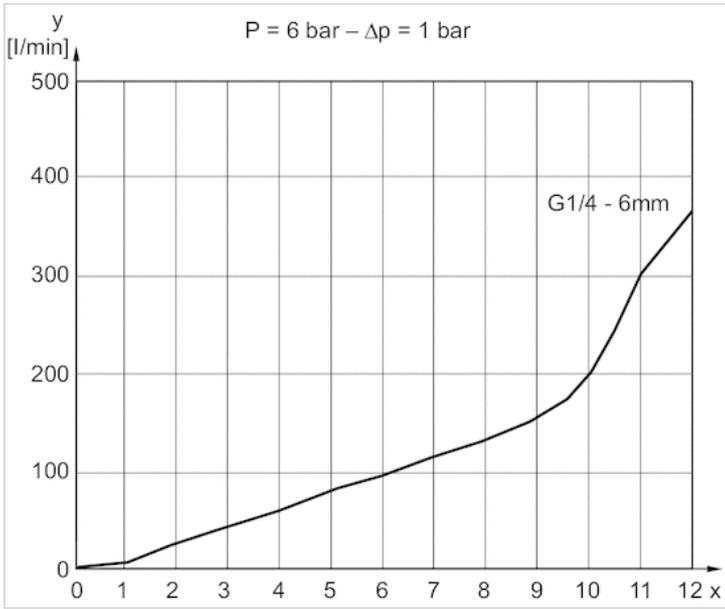
Flow diagram, Fig. 3



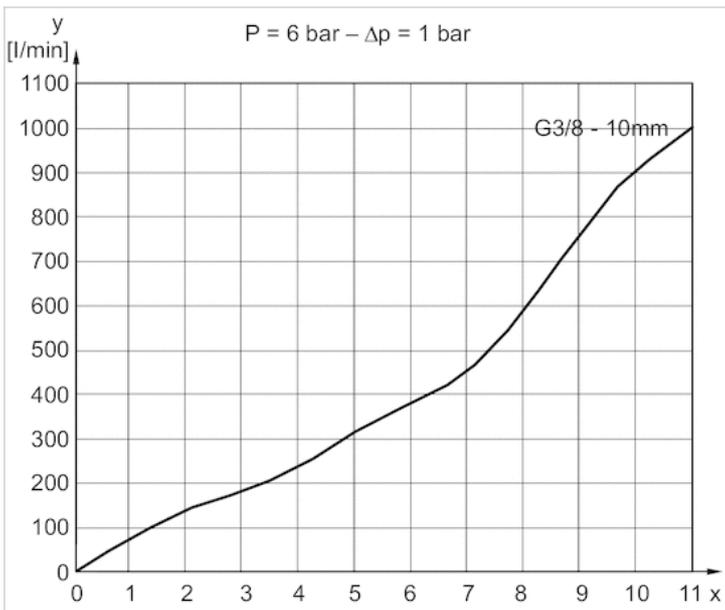
Flow diagram, Fig. 4



Flow diagram, Fig. 5



Flow diagram, Fig. 5



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 _{max}	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 _{max}	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

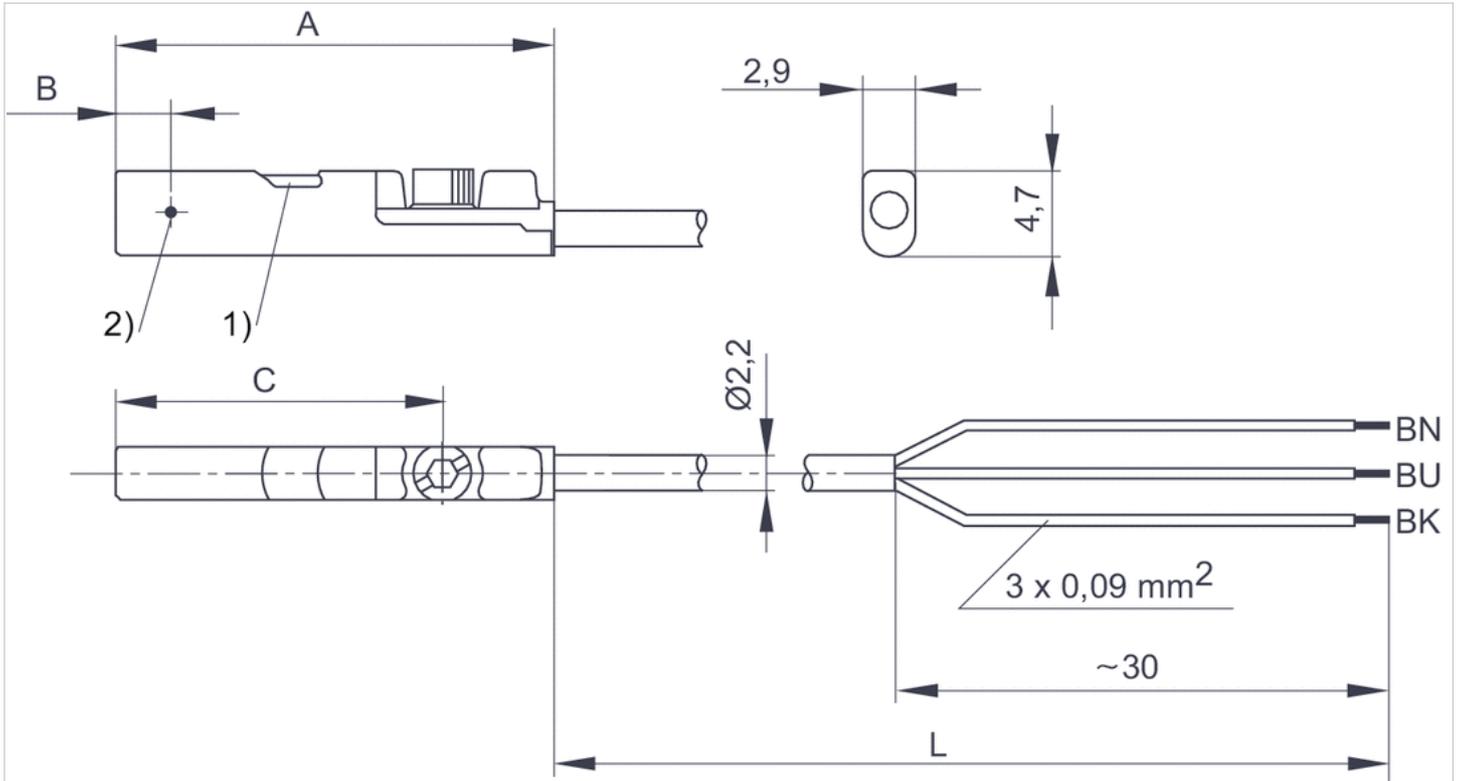
The max. switching capacity must not be exceeded.

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

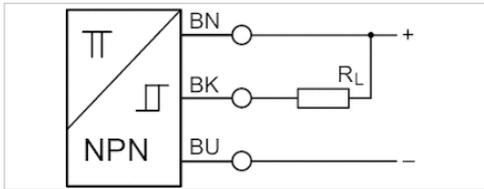
Part No.	A	B	C
R412019488	26.3	6.3	20.3
R412019489	26.3	6.3	20.3
R412019680	23.7	2.8	17.7
R412019681	23.7	2.8	17.7
R412019684	23.7	2.8	17.7
R412019685	23.7	2.8	17.7

Sensor, Series ST4

- 4 mm T-slot
- with cable
- 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 _{max}	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.

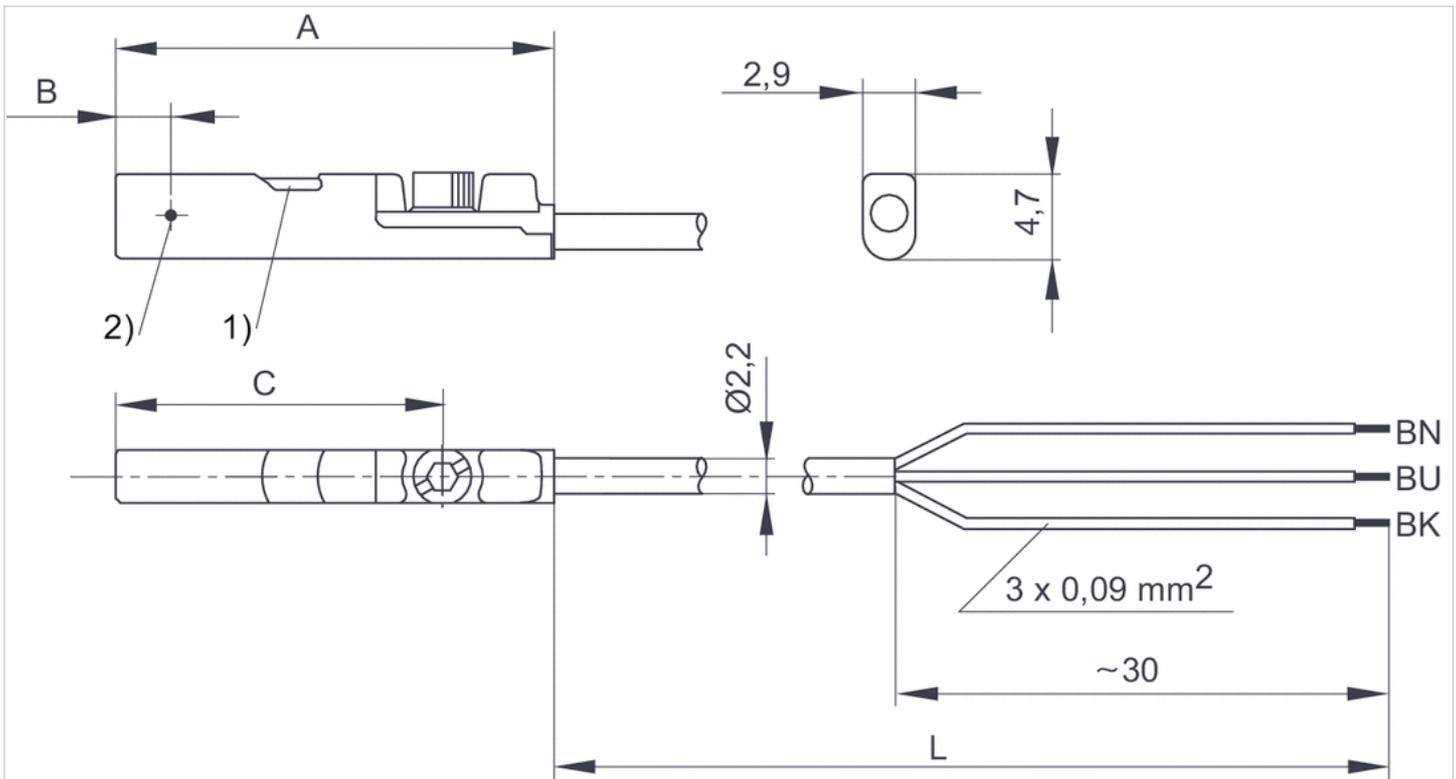
Technical information

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
- 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 _{max}	DC switching current, max.
R412019682	≤ 0,5 V	0.13 A
R412019683	≤ 2,5 V	0.1 A
R412019694	≤ 2,5 V	0.1 A

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

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

Technical information

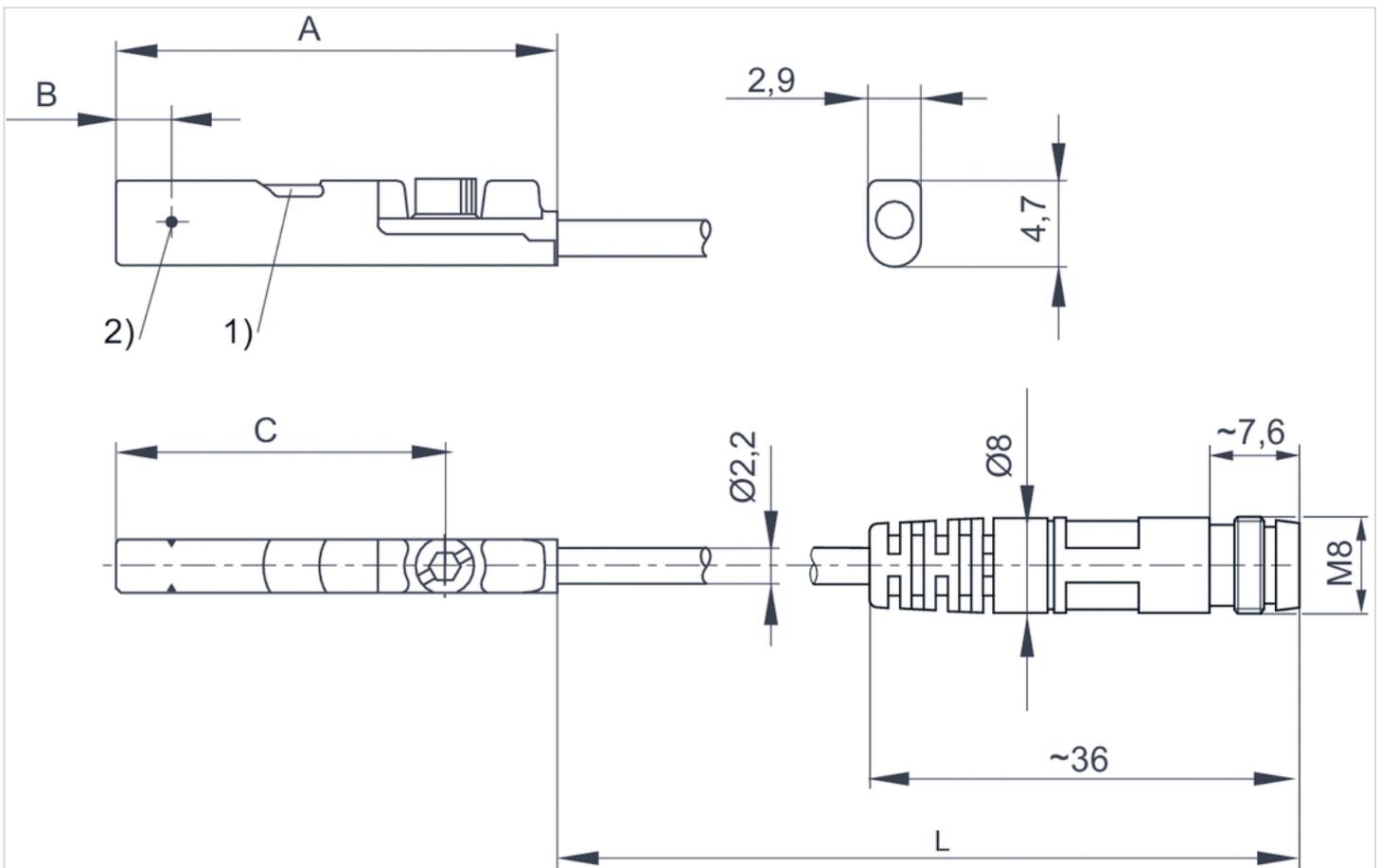
The max. switching capacity must not be exceeded.

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

Dimensions

Dimensions



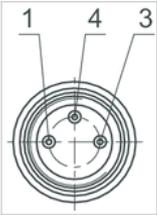
1) LED 2) Switching point
L = cable length

Dimensions

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

Pin assignments

Pin assignments



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

Sensor, Series ST4

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



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

Technical data

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

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

Part No.	Voltage drop U at I _{max}	DC switching current, max.
R412019490	≤ 0,5 V	0.13 A
R412019686	≤ 0,5 V	0.13 A
R412019493	≤ 2,5 V	0.1 A
R412019687	≤ 2,5 V	0.1 A

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

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

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

Technical information

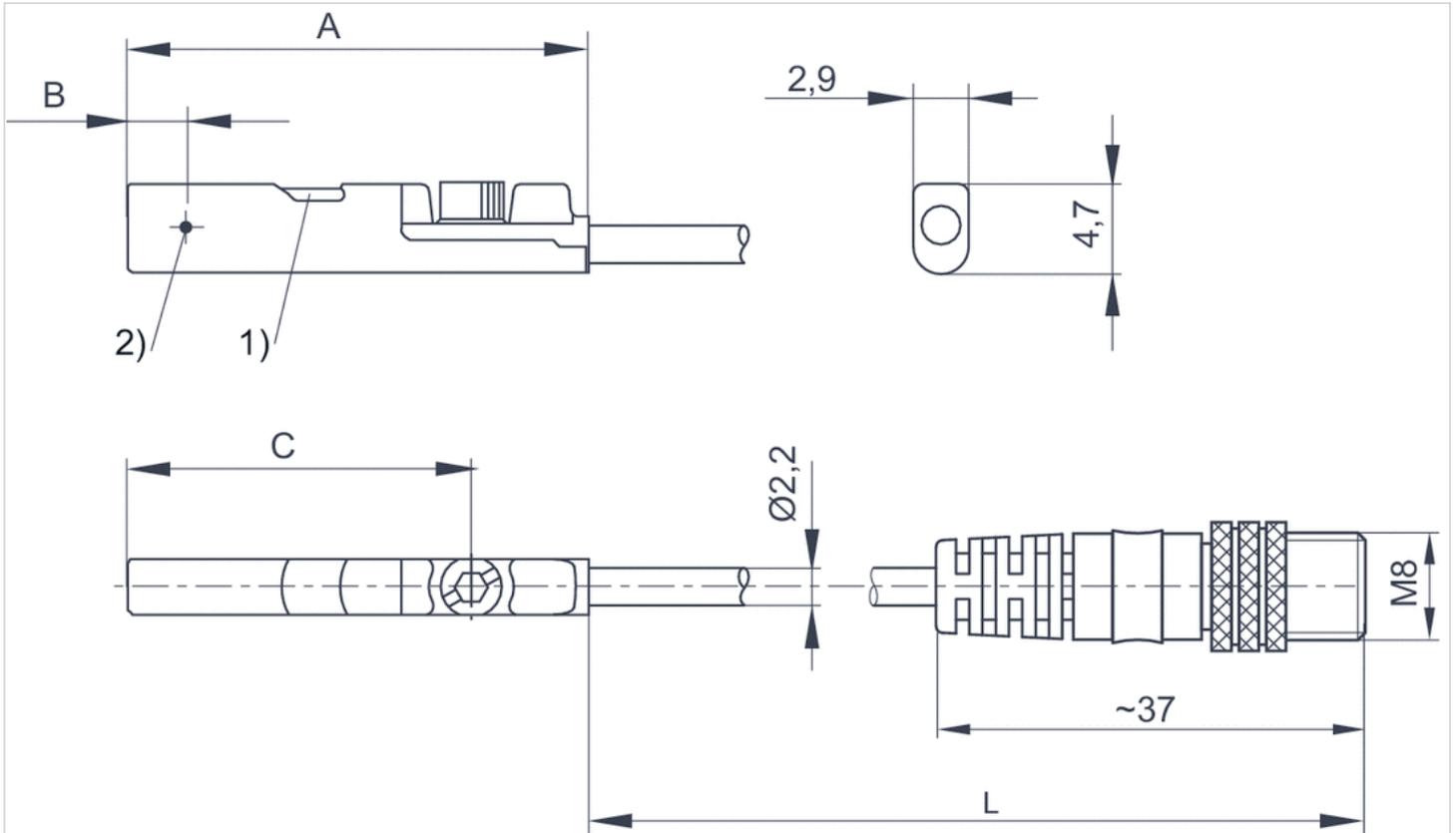
The max. switching capacity must not be exceeded.

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

Dimensions

Dimensions



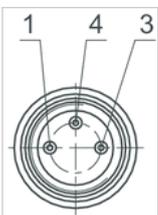
1) LED 2) Switching point
L = cable length

Dimensions

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

Pin assignments

Pin assignments



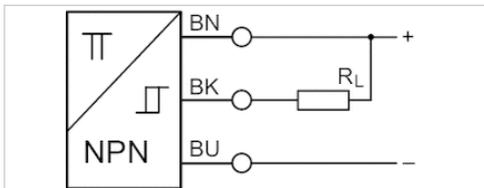
Pin	1	3	4
Allocation	(+)	(-)	(OUT)

Sensor, Series ST4

- 4 mm T-slot
- with cable
- Plug, M8, 3-pin 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 _{max}	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.

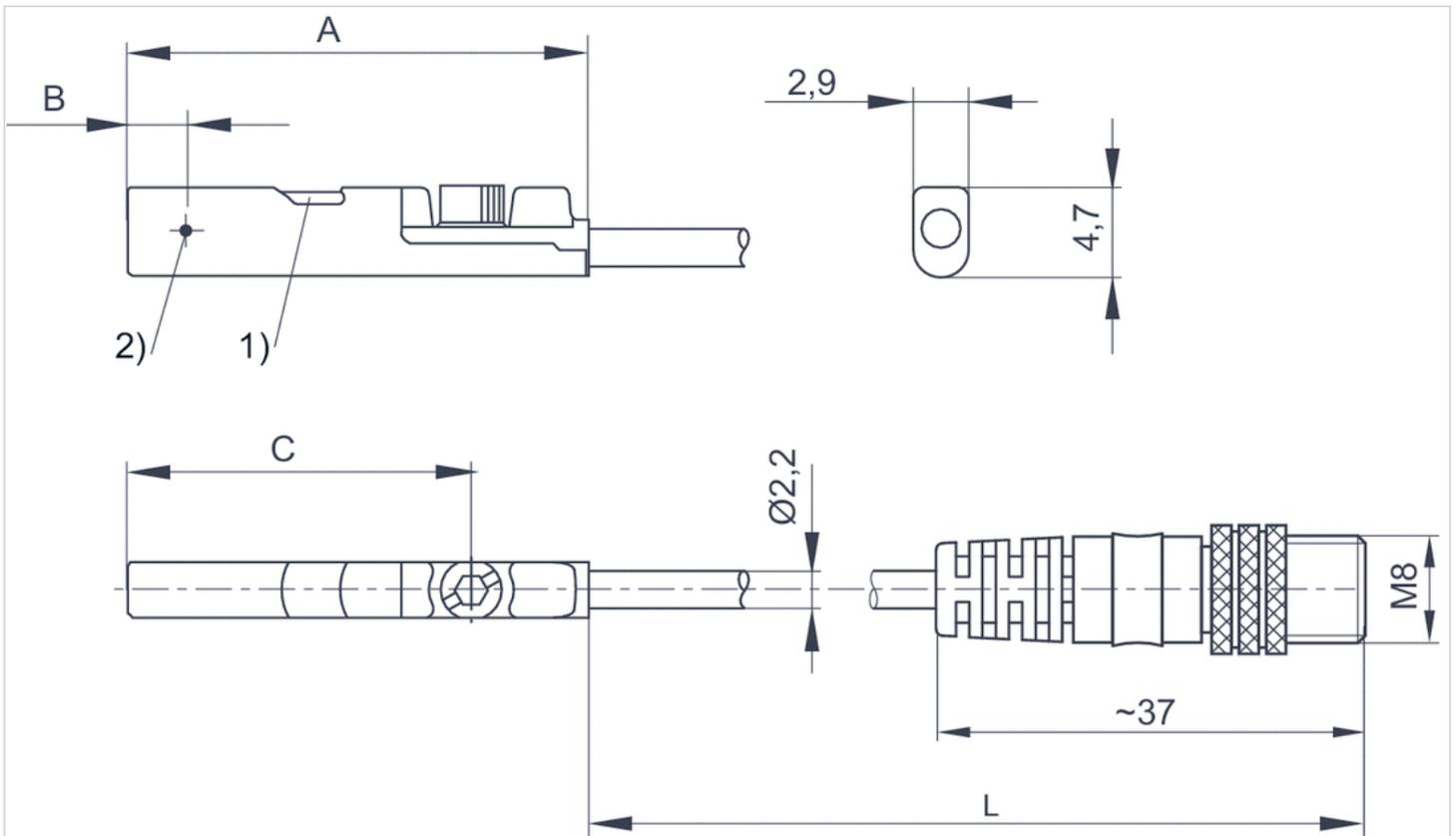
Technical information

Material

Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

Dimensions

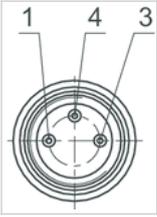
Dimensions



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, 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 _{max}	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

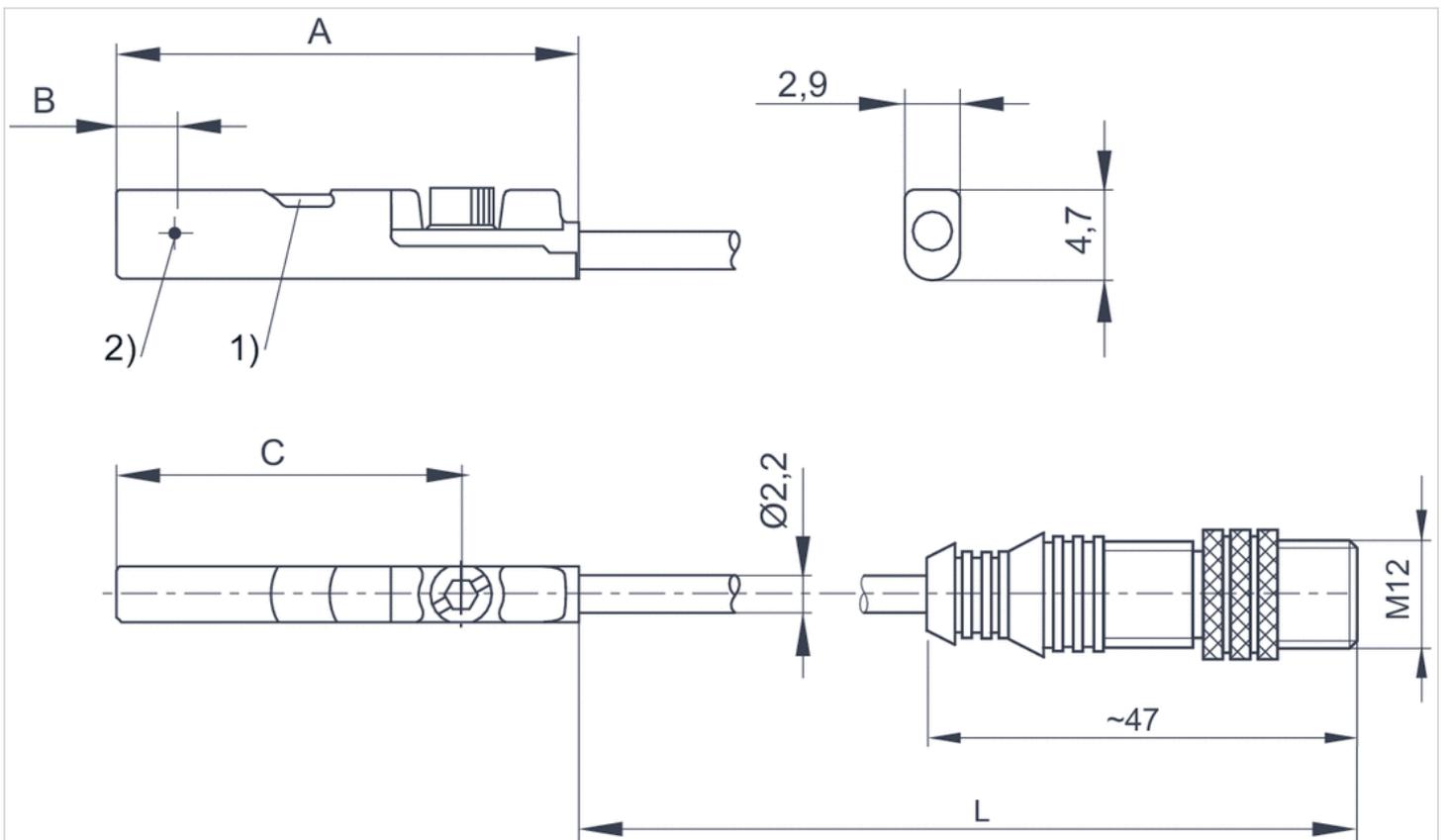
The max. switching capacity must not be exceeded.

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

Dimensions

Dimensions

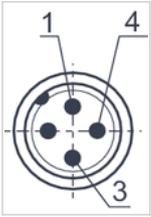


1) LED 2) Switching point
L = cable length

Dimensions

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

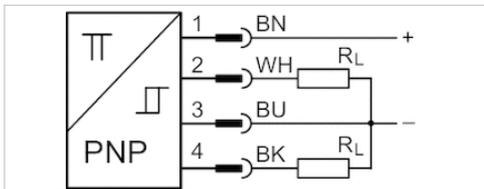
Pin assignments



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 _{max}	DC switching current, max.
R412010139	50 mm	≤ 2,2 V	0.15 A

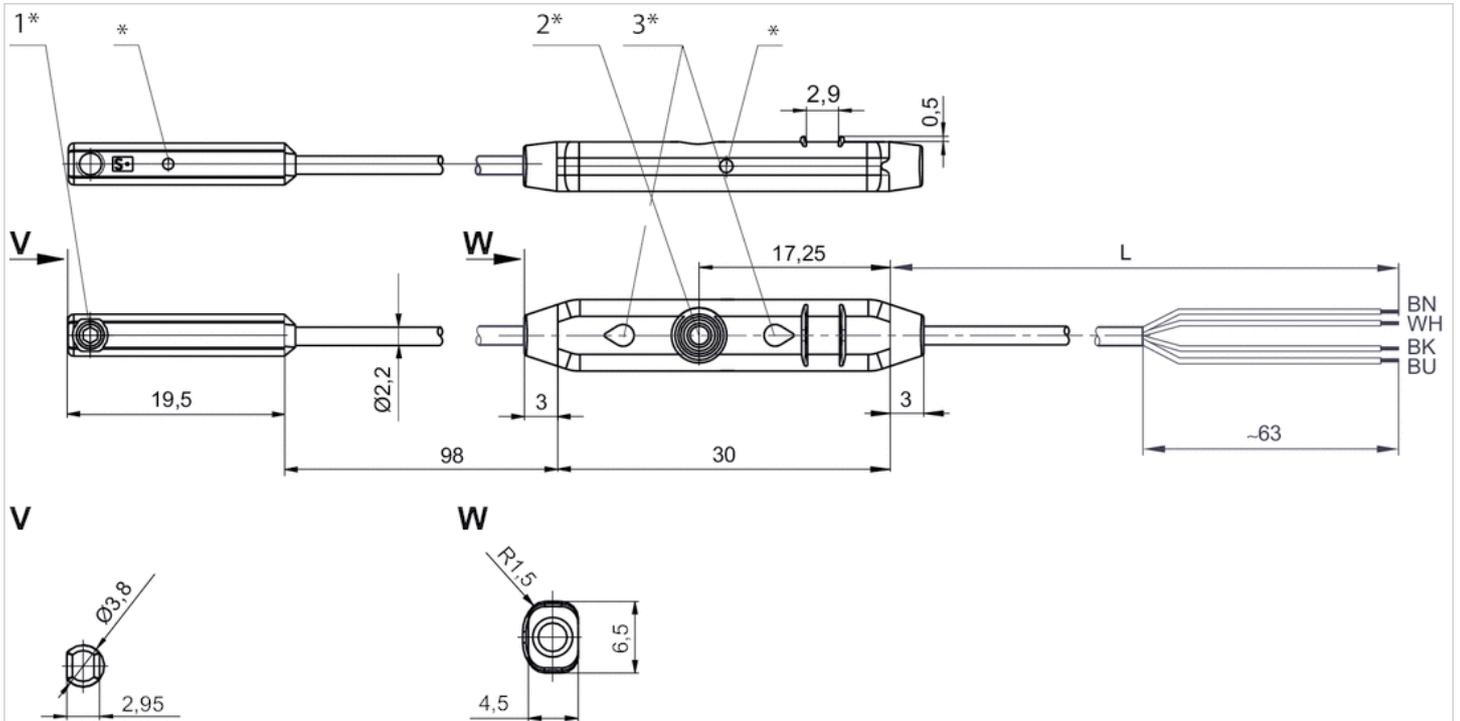
Part No.	Function	Version
R412010139	electronic PNP	short circuit resistant Protected against polarity reversal

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

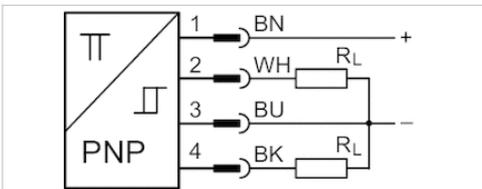
(3) BU=blue

(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 _{max}	Function
R412010140	50 mm	≤ 2,2 V	electronic PNP

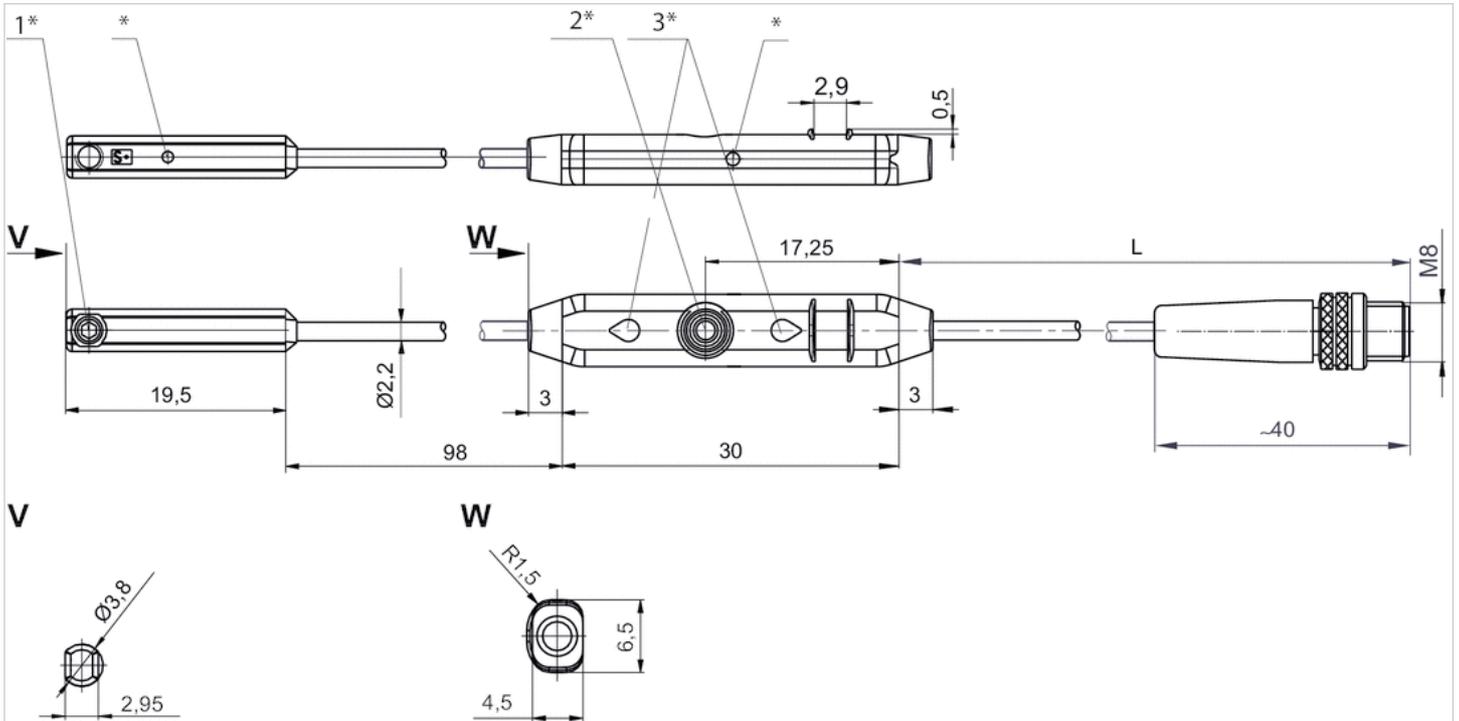
Part No.	Version
R412010140	short circuit resistant Protected against polarity reversal

Technical information

Material	
Housing	Polyamide
Cable sheath	Polyurethane

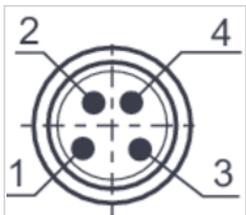
Dimensions

Dimensions



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

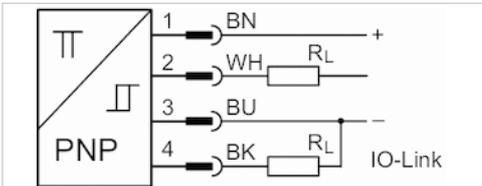
Pin assignments



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 _{max}
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.

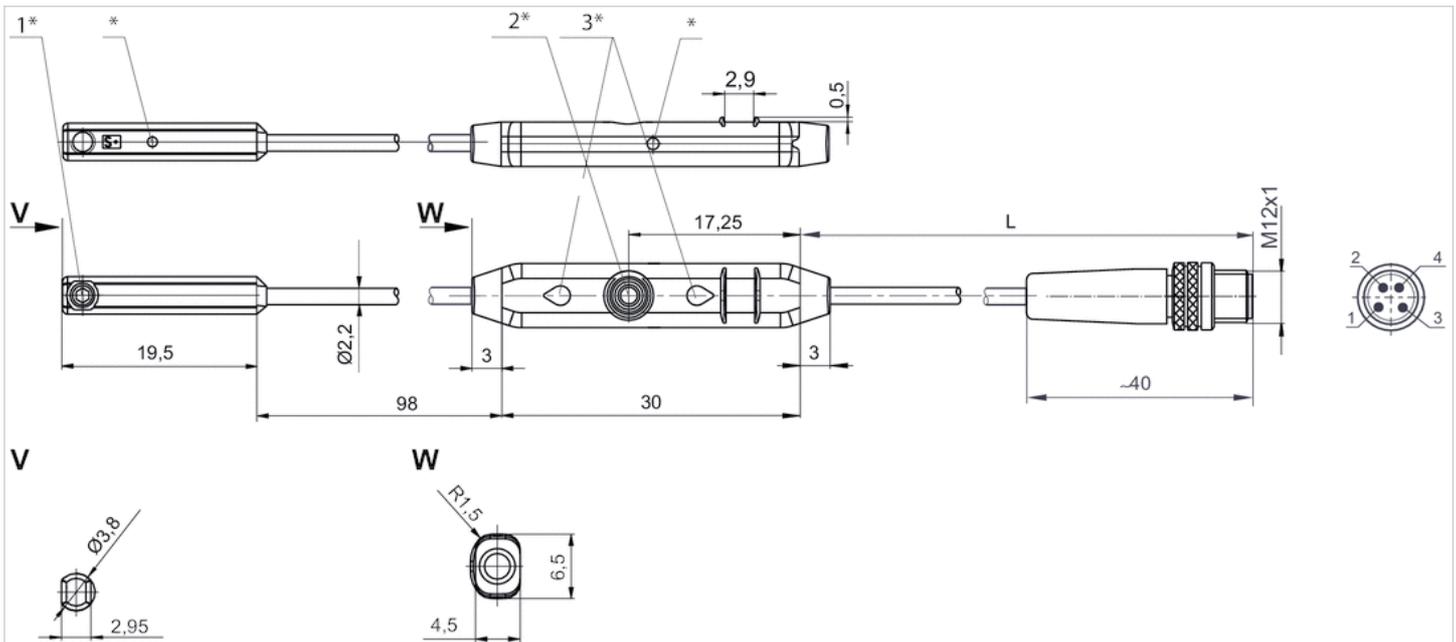
Technical information

Material

Housing	Polyamide
Cable sheath	Polyurethane

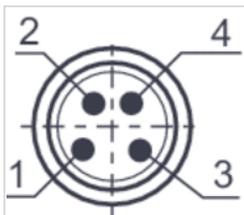
Dimensions

Dimensions



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

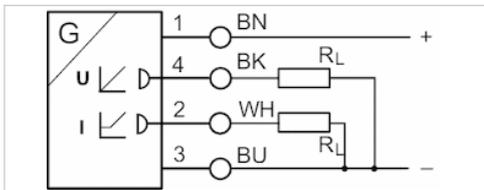
Pin assignments



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

Sensors, Series SM6

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



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

Technical data

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

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

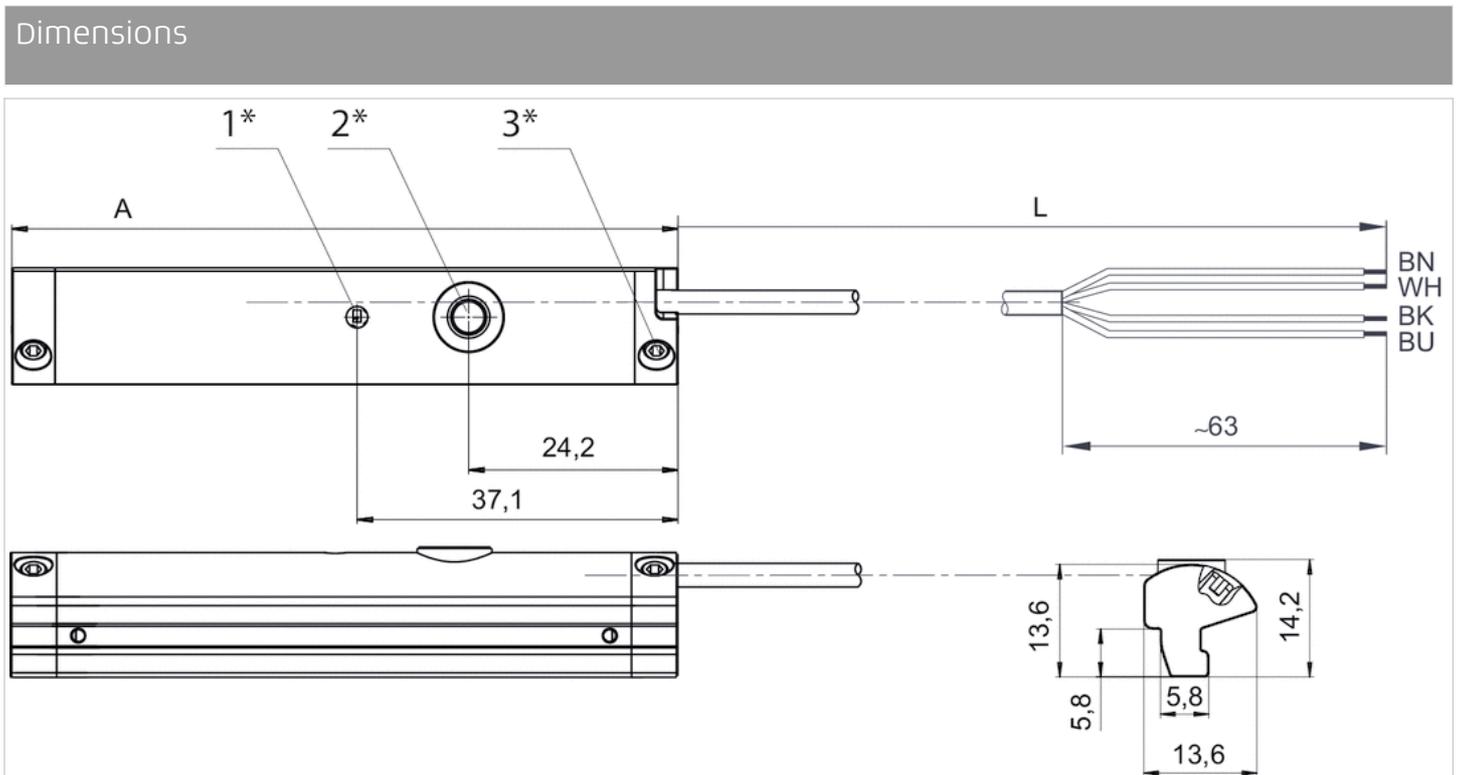
Part No.	max. measuring range	Overall length Sensor A
R412010415	224 mm	237 mm
R412010417	256 mm	269 mm

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

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

Dimensions

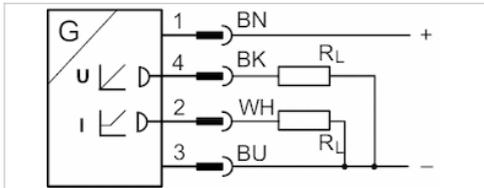


- 1* = LED 2* = teach button 3* = threaded pin M3x11
- L = cable length
- (1) BN=brown
- (2) WH=white
- (3) BU=blue

(4) BK=black
A = sensor length

Sensors, Series SM6

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



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

Technical data

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

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

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

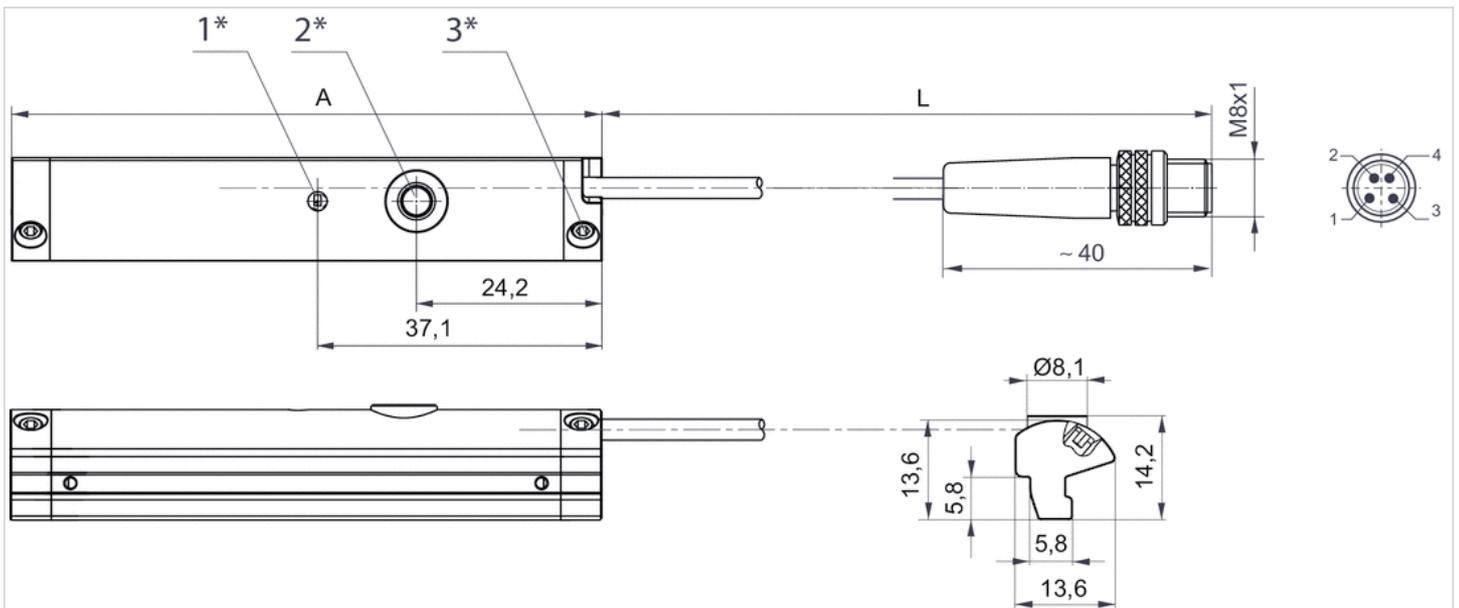
Part No.	Version
R412010142	short circuit resistant Protected against polarity reversal Overload protection
R412010144	short circuit resistant Protected against polarity reversal Overload protection
R412010263	short circuit resistant Protected against polarity reversal Overload protection
R412010265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

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

Dimensions

Dimensions



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

Sensor mounting, Series CB1

- for series ST4, ST6

- to mount on cylinder MNI, ICM, CSL-RD



Ambient temperature min./max.

-30 ... 80 °C

Weight

0.007 kg

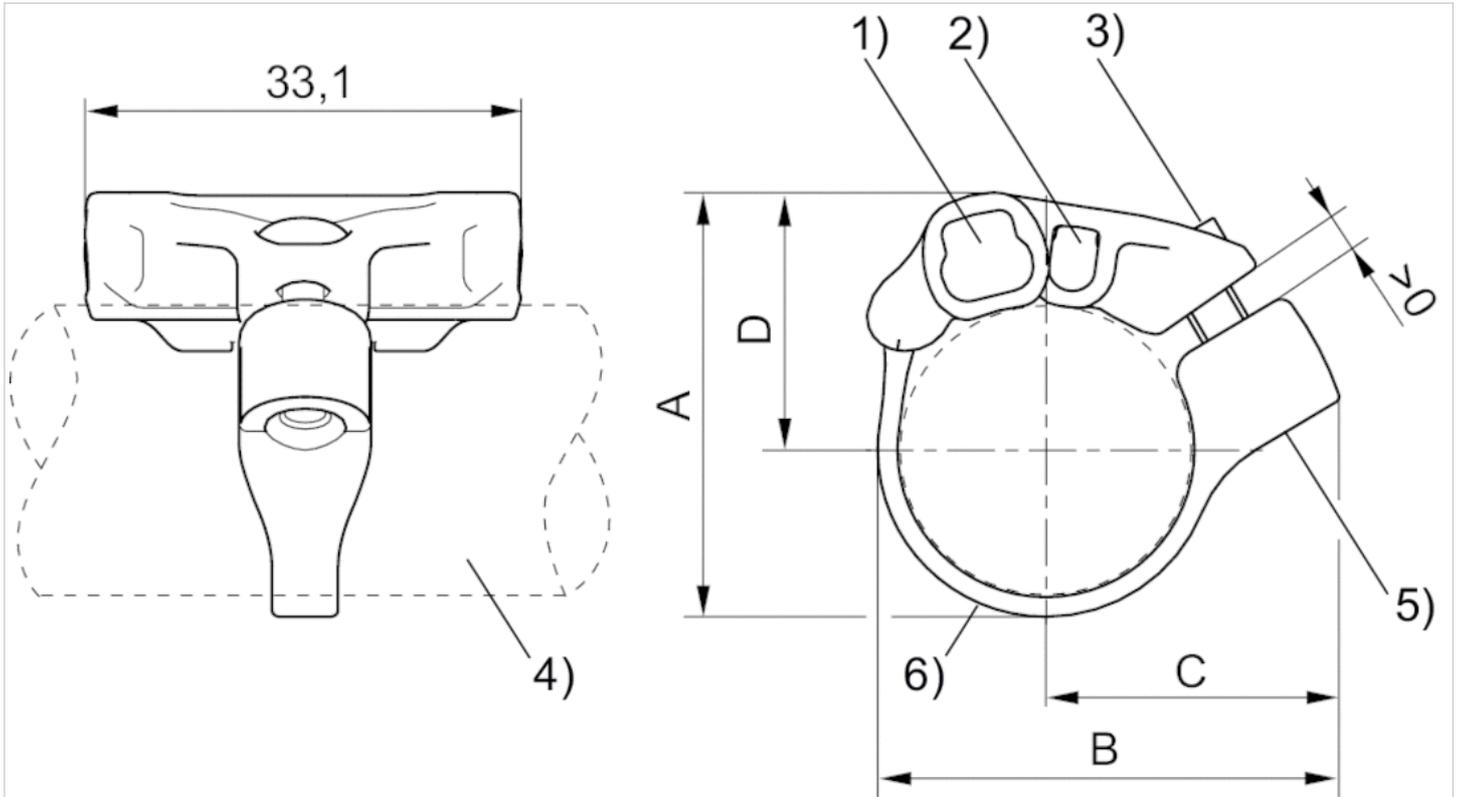
Technical data

Part No.	Cylinders Ø	for series	Scope of delivery
	min.		
R412021791	16 mm	ST4, ST6	1 piece
R412021792	20 mm	ST4, ST6	1 piece
R412021793	25 mm	ST4, ST6	1 piece

Technical information

Material	
	Polyamide Stainless steel

Dimensions



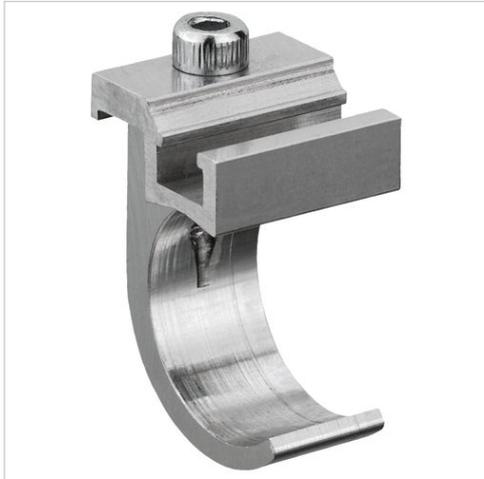
1) Sensor slot for ST6 2) Sensor slot for ST4 3) Mounting screw (made of stainless steel) 4) Cylinder profile 5) Thread insert (made of stainless steel) 6) Tightening strap

Dimensions

Part No.	A	B	C	D
R412021791	27.7	32.5	22.1	17.3
R412021792	32.4	35	22.4	19.7
R412021793	37.4	39.5	24.3	22.2

Sensor mounting, Series CB1

- for series ST6, SM6
- to mount on cylinder MNI, ICM



Weight

See table below

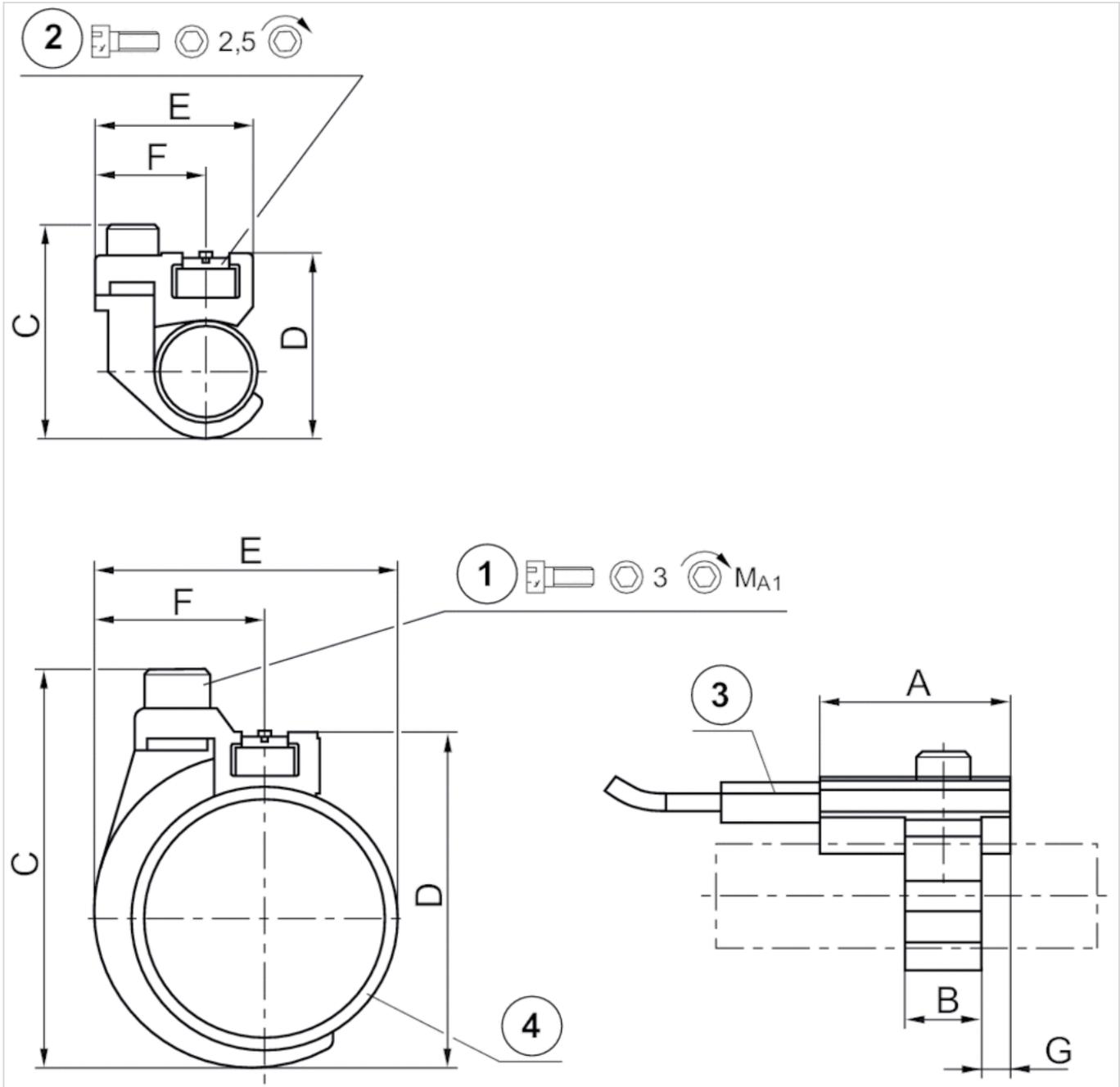
Technical data

Part No.	Cylinders Ø	for series	Weight
	min.		
1827020296	10 mm	ST6, SM6	0.009 kg
1827020297	12 mm	ST6, SM6	0.01 kg
1827020298	16 mm	ST6, SM6	0.014 kg
1827020299	20 mm	ST6, SM6	0.014 kg
1827020300	25 mm	ST6, SM6	0.015 kg

Technical information

Material	
	Aluminum

Dimensions



1) Mounting screw 2) Mounting screw for sensor 3) Sensor 4) Cylinder pipe

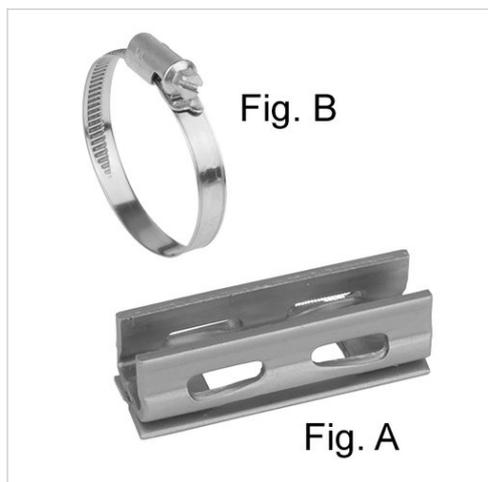
Dimensions

Part No.	A	B	C	D	E	F	G	1)	MA1 [Nm]
1827020296	20	8	24	19	17.5	11.8	3	M3x8	1 +0,2
1827020297	20	8	26	22	19	11.8	3	M3x8	1 +0,2
1827020298	20	12	34	30	23	13.8	4	M4x10	2 +0,3
1827020299	20	12	38	32	26	13.8	4	M4x10	2 +0,3
1827020300	20	12	43	37	31	13.8	4	M4x10	2 +0,3

Sensor mounting, Series CB1

- for series ST6

- to mount on cylinder CSL-RD, ICM, ICS-D1, ICS-D2, RPC



Weight

See table below

Technical data

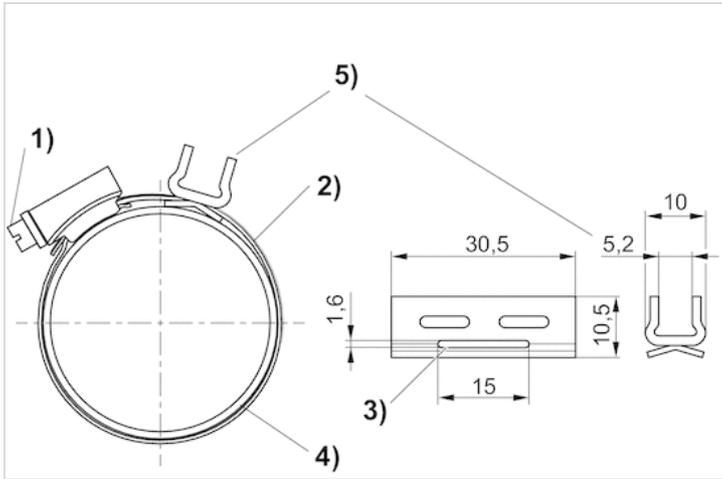
Part No.	Cylinders Ø	Cylinders Ø	for series	Weight	Fig.
	min.	max.			
R412024050	25 mm	32 mm	ST6	-	Fig. B
R412024054	25 mm	63 mm	ST6	0.011 kg	Fig. A

Sensor holder (Fig. A) and tightening strap (Fig. B) must be ordered separately.

Technical information

Material	
	Stainless steel

Dimensions



1) Mounting screw 2) Tightening strap 3) Opening for tightening strap 4) Cylinder tube 5) Sensor holder

Dimensions

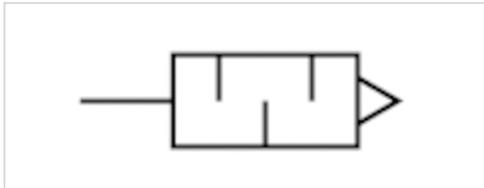
Part No.	Cylinder tube Ø	For series	Fig.
R412024050	25 40 mm	ST6	Fig. B
R412024054	-	ST6	Fig. A

Silencers, series SI1

- M5 G 1/8
- Stainless steel



Working pressure min./max.	0 ... 12 bar
Ambient temperature min./max.	-20 ... 150 °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		
R412010090	M5	85 dB	73 l/min	1 piece	0.003 kg
R412010081	G 1/8	90 dB	1312 l/min	1 piece	0.011 kg

Weight per piece

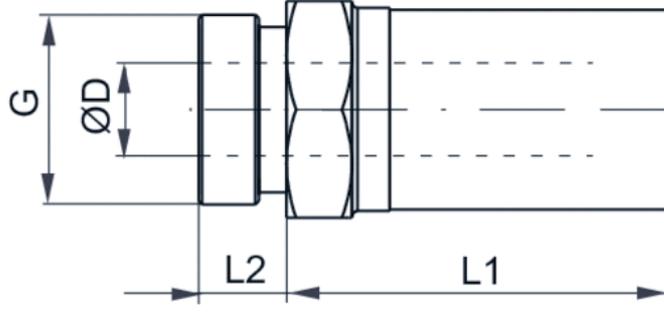
Nominal flow Qn at p1 = 6 bar (absolute) freely discharged. Sound pressure level measured at 6 bar against atmosphere at 1 m distance.

Technical information

Material	
Silencer	Stainless steel
Thread	Stainless steel

Dimensions

Dimensions

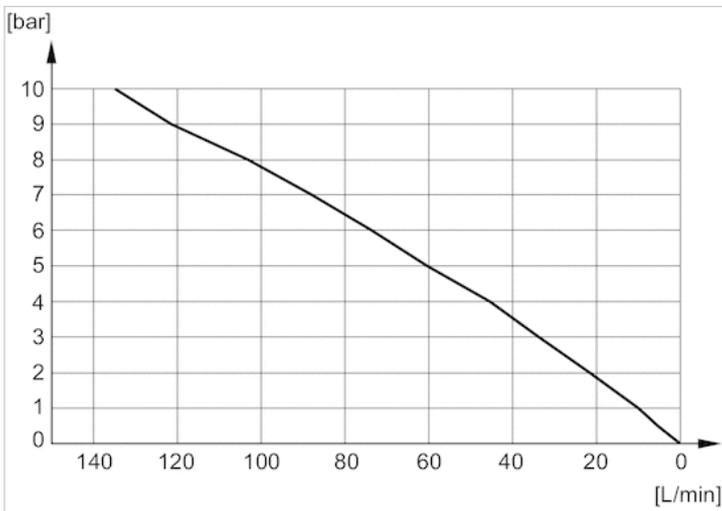


Dimensions

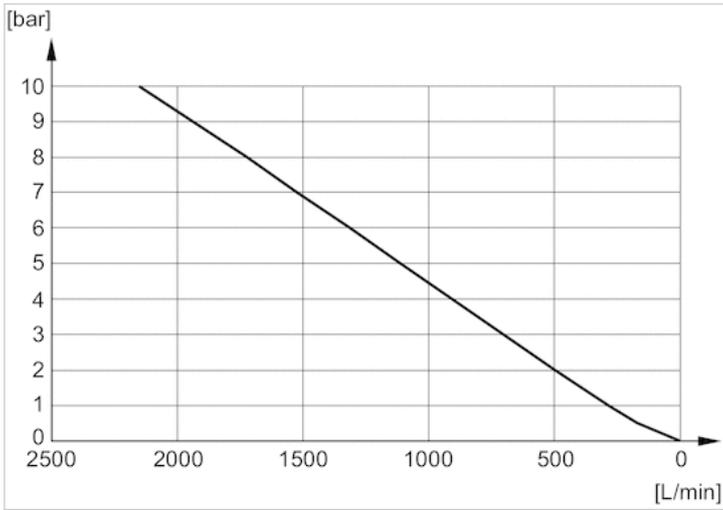
Part No.	Port G	SW	Ø D	L1	L2
R412010090	M5	8	3.1	10.5	3.5
R412010081	G 1/8	13	6.6	20	6

Diagrams

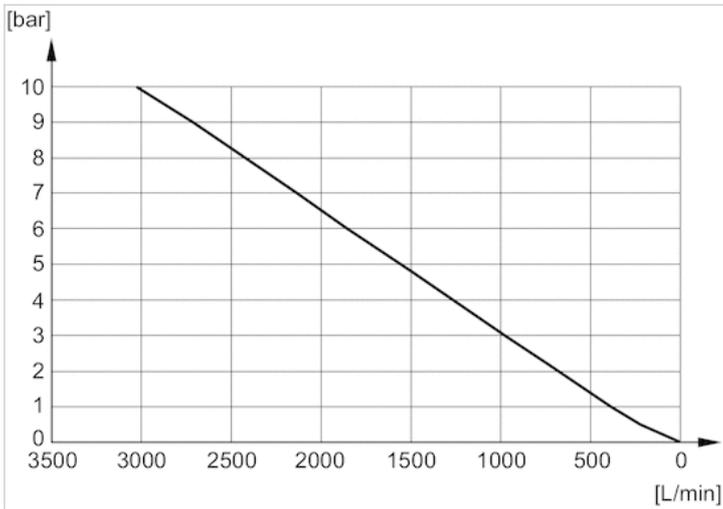
Flow diagram, R412010090



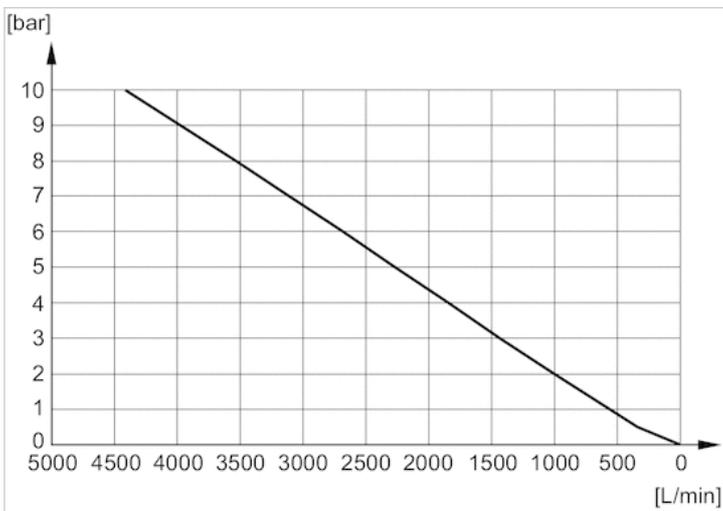
Flow diagram, R412010081



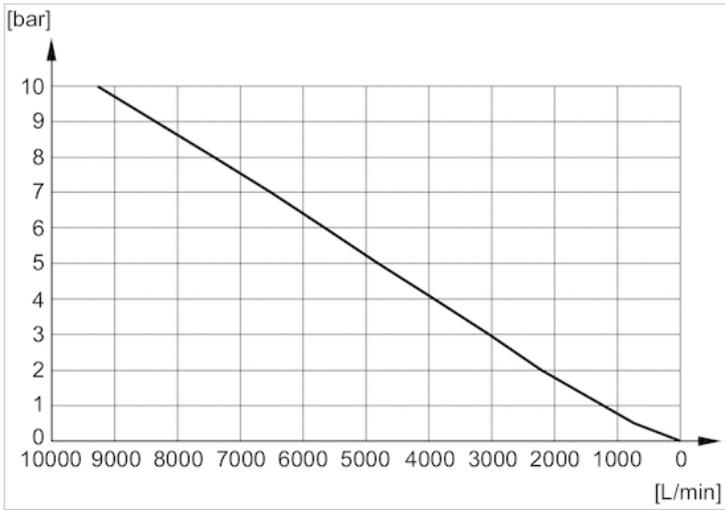
Flow diagram, R412010082



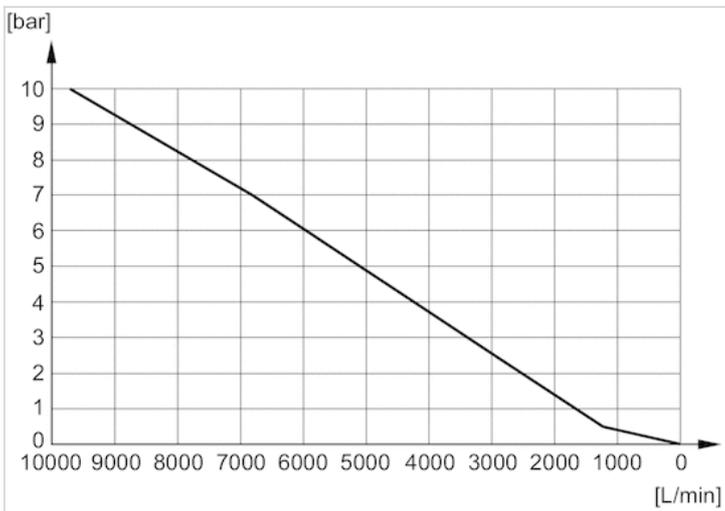
Flow diagram, R412010083



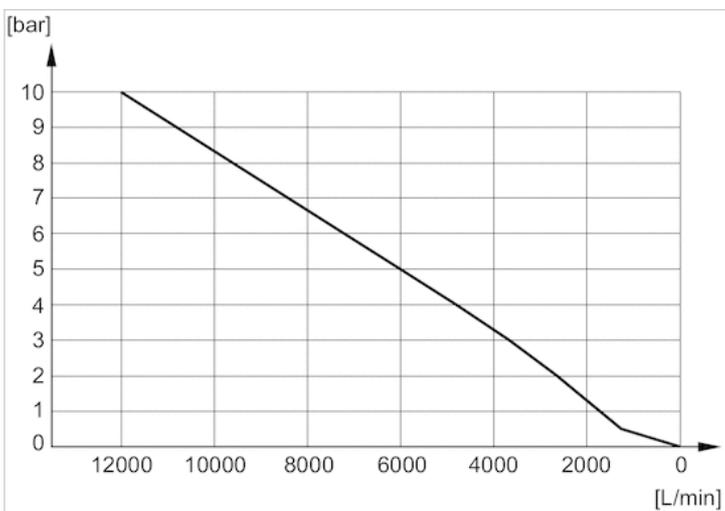
Flow diagram, R412010084



Flow diagram, R412010085



Flow diagram, R412010086



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