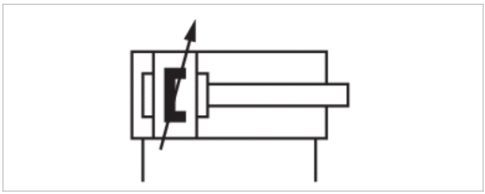
Stainless steel round cylinder, Series CSL-RD

AVENTICS™ Series CSL-RD

EMERSON.

Stainless steel round cylinder, Series CSL-RD

- Version: standard type
- ISO 6432 (Ø 16-25 mm)
- Ø 16-63 mm
- Ports M5, G 1/8, G 1/4, G 3/8
- double-acting
- with magnetic piston
- pneumatic adjustable cushioning
- with integrated rear eye
- Piston rod External thread
- ATEX optional
- suitable for use in food processing (FDA/NSF/ Ec No 1935/2004)



Standards	ISO 6432 (Ø 16-25 mm)
Certificates	EC NO 1935/2004, ATEX optional
Compressed air connection	Internal thread
Working pressure min./max.	1 ... 10 bar
Ambient temperature min./max.	-20 ... 80 °C
Medium temperature min./max.	-20 ... 80 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m³
Pressure for determining piston forces	6,3 bar

Technical data

Piston Ø Piston rod thread Ports Piston rod Ø	16 mm M6 M5 6 mm	20 mm M8 G 1/8 8 mm	25 mm M10x1,25 G 1/8 10 mm	32 mm M10x1,25 G 1/8 12 mm	40 mm M12x1,25 G 1/4 16 mm	50 mm M16x1,5 G 1/4 20 mm	63 mm M16x1,5 G 3/8 20 mm
Stroke 25	R412020409	R412020453	R412020497	R481624742	R481624753	R481624764	R481624775
50	R412020410	R412020454	R412020498	R481624743	R481624754	R481624765	R481624776
80	R412020411	R412020455	R412020499	R481624744	R481624755	R481624766	R481624777
100	R412020412	R412020456	R412020500	R481624745	R481624756	R481624767	R481624778
125	R412020413	R412020457	R412020501	R481624746	R481624757	R481624768	R481624779
160	R412020414	R412020458	R412020502	R481624747	R481624758	R481624769	R481624780
200	R412020415	R412020459	R412020503	R481624748	R481624759	R481624770	R481624781
250	R412020416	R412020460	R412020504	R481624749	R481624760	R481624771	R481624782
320	R412020417	R412020461	R412020505	R481624750	R481624761	R481624772	R481624783
400	R412020418	R412020462	R412020506	R481624751	R481624762	R481624773	R481624784
500	R412020419	R412020463	R412020507	R481624752	R481624763	R481624774	R481624785

Technical data

Piston Ø	16 mm	20 mm	25 mm	32 mm	40 mm	50 mm	63 mm
Retracting piston force	109 N	166 N	260 N	435 N	660 N	1035 N	1765 N
Extracting piston force	127 N	198 N	309 N	505 N	790 N	1235 N	1960 N
Cushioning length	11,5 mm	13 mm	14 mm	16 mm	18 mm	16 mm	16 mm
Cushioning energy	1 J	1,7 J	2,7 J	4,8 J	9 J	15 J	27 J
Weight 0 mm stroke	0,034 kg	0,063 kg	0,082 kg	0,699 kg	1,372 kg	2,044 kg	2,890 kg
Weight +10 mm stroke	0,002 kg	0,005 kg	0,006 kg	0,015 kg	0,024 kg	0,040 kg	0,044 kg
Stroke max.	800 mm	1100 mm	1200 mm	1200 mm	1200 mm	1200 mm	1200 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).

Clamping piece for magnetic field sensor necessary

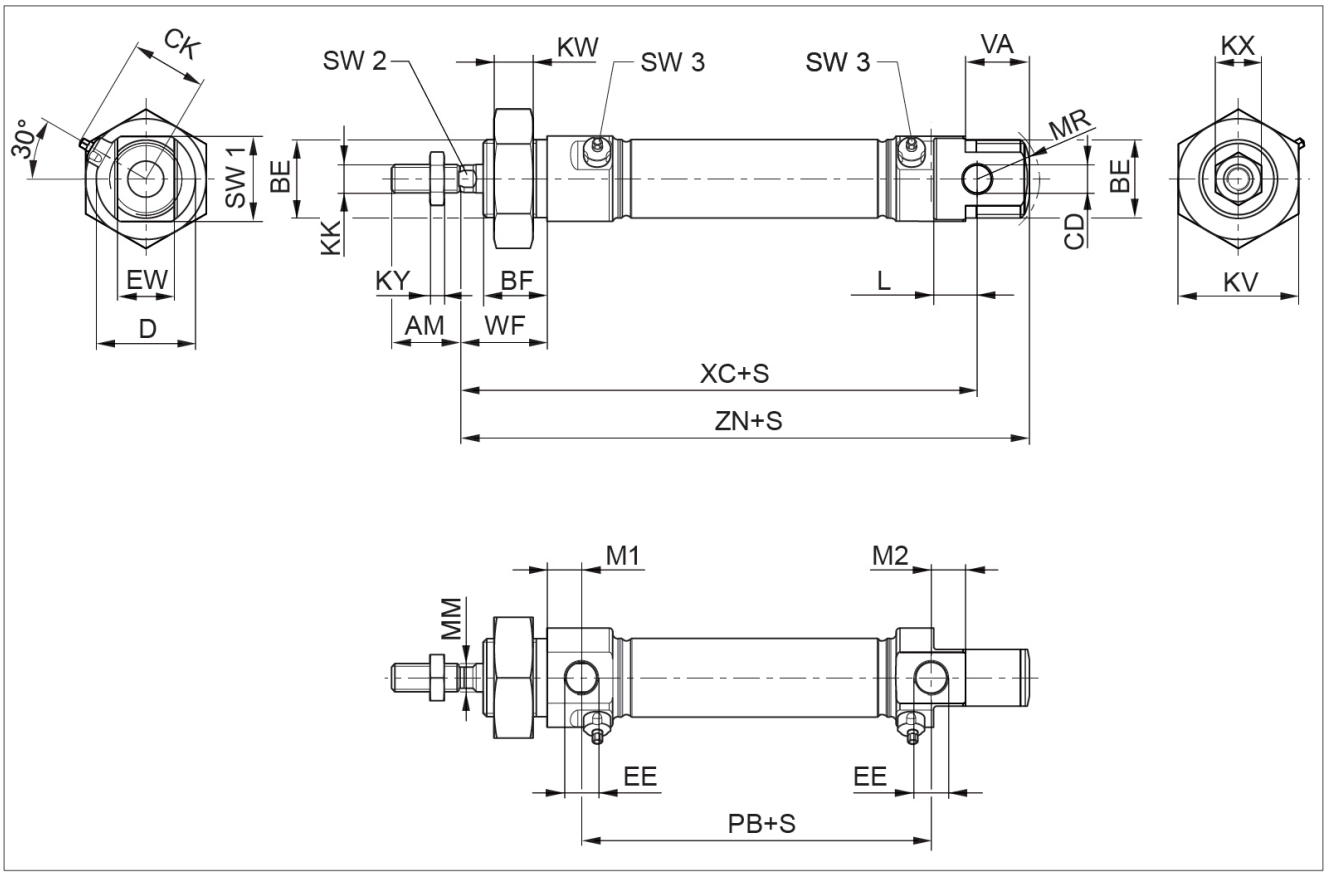
ATEX-certified cylinders with identification II 2G Ex h IIC T4 Gb / II 2D Ex h IIIC T135°C Db_X can be generated in the Internet configurator.
The operating temperature range for ATEX-certified cylinders is -20°C ... 60°C.

Technical information

Material	
Cylinder tube	Stainless steel
Piston rod	Stainless steel
Front cover	Stainless steel, Electropolished
End cover	Stainless steel, Electropolished
Piston Seal	Nitrile butadiene rubber
Nut for cylinder mounting	Stainless steel
Nut for piston rod	Stainless steel
Scraper	Thermoplastic polyurethane (TPU), Ultra-high-molecular-weight polyethylene/ Thermoplastic polyurethane (UHMW-PE/TPU)
Guide bushing	Plastic

Dimensions

Dimensions



S = stroke

Dimensions

Piston Ø	AM	BE	BF	CD H9	CK max.	D	EE	EW d13	KK
16 mm	16	M16x1,5	16	6	19,5	22	M5	12	M6
20 mm	20	M22x1,5	18	8	23	28	G 1/8	16	M8
25 mm	22	M22x1,5	20	8	25,5	33	G 1/8	16	M10x1,25
32 mm	22	M30x1,5	25	10	28	38	G 1/8	16	M10x1,25
40 mm	24	M38x1,5	28	12	36,5	49	G 1/4	18	M12x1,25
50 mm	32	M45x1,5	32	16	40,5	57	G 1/4	21	M16x1,5
63 mm	32	M45x1,5	32	16	47	70	G 3/8	21	M16x1,5

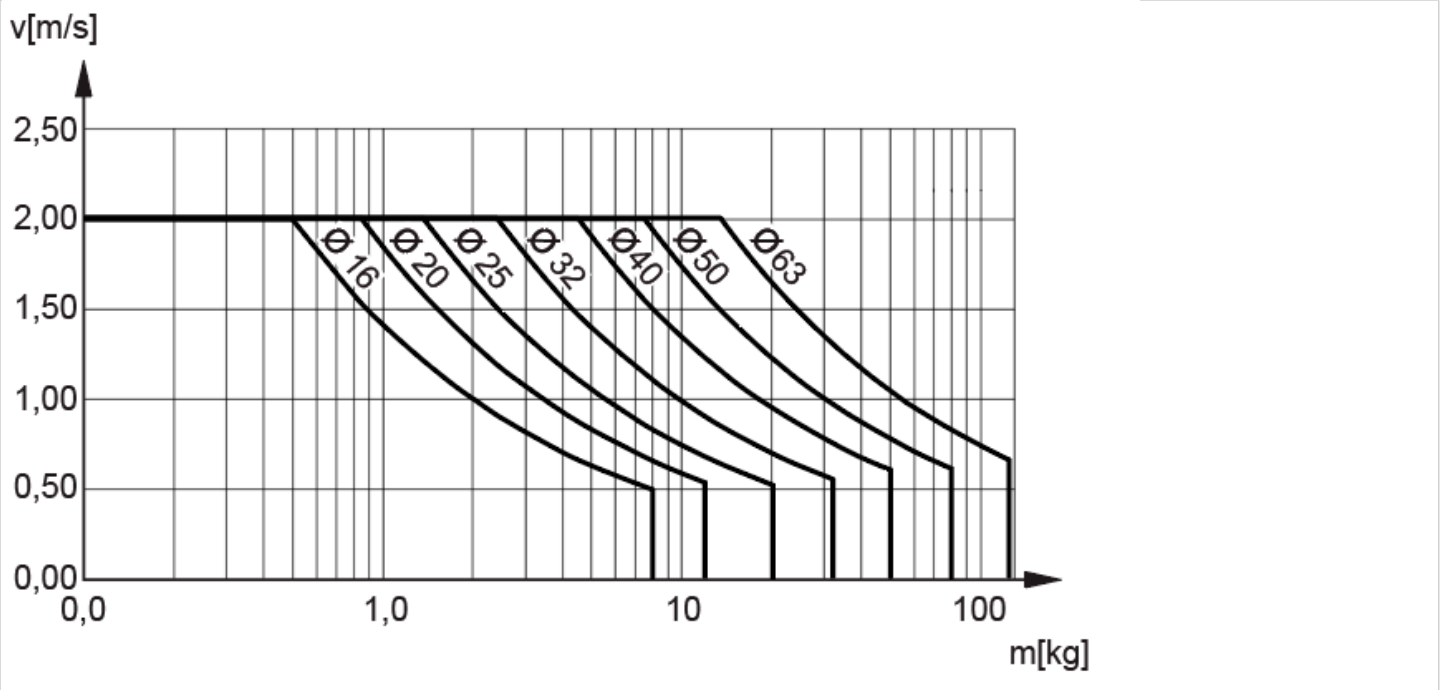
Dimensions

Piston Ø	KV	KW	KX	KY	L min.	M1/M2	MM f8	MR	PB ±1	VA	WF ±1,4	XC ±1	ZN ± 1	SW 1
16 mm	24	8	10	3,2	9	6,7	6	16	43,6	16	22	82	94,7	20
20 mm	34	11	13	4	12	9,7	8	18	48,6	18	24	95	109,7	24
25 mm	34	11	17	5	12	9,7	10	19	51,8	20	28	104	119,7	28
32 mm	36	8	17	5	14	9,5/11,7	12	12	46	-	34	117,5	129,5	35
40 mm	46	10	18	6	16	9,8/8,7	16	13,9	66	-	39	139,6	153,5	45
50 mm	55	10	24	8	17	9,8/8,3	20	15,8	68	-	44	147,2	163	53
63 mm	55	10	24	8	17	13/9,4	20	16	71,5	-	44	155	171	66

Piston Ø	SW 2 h13	SW 3
16 mm	5	2,5
20 mm	6	2,5
25 mm	8	2,5
32 mm	10	3
40 mm	13	3
50 mm	17	3
63 mm	17	3

Diagrams

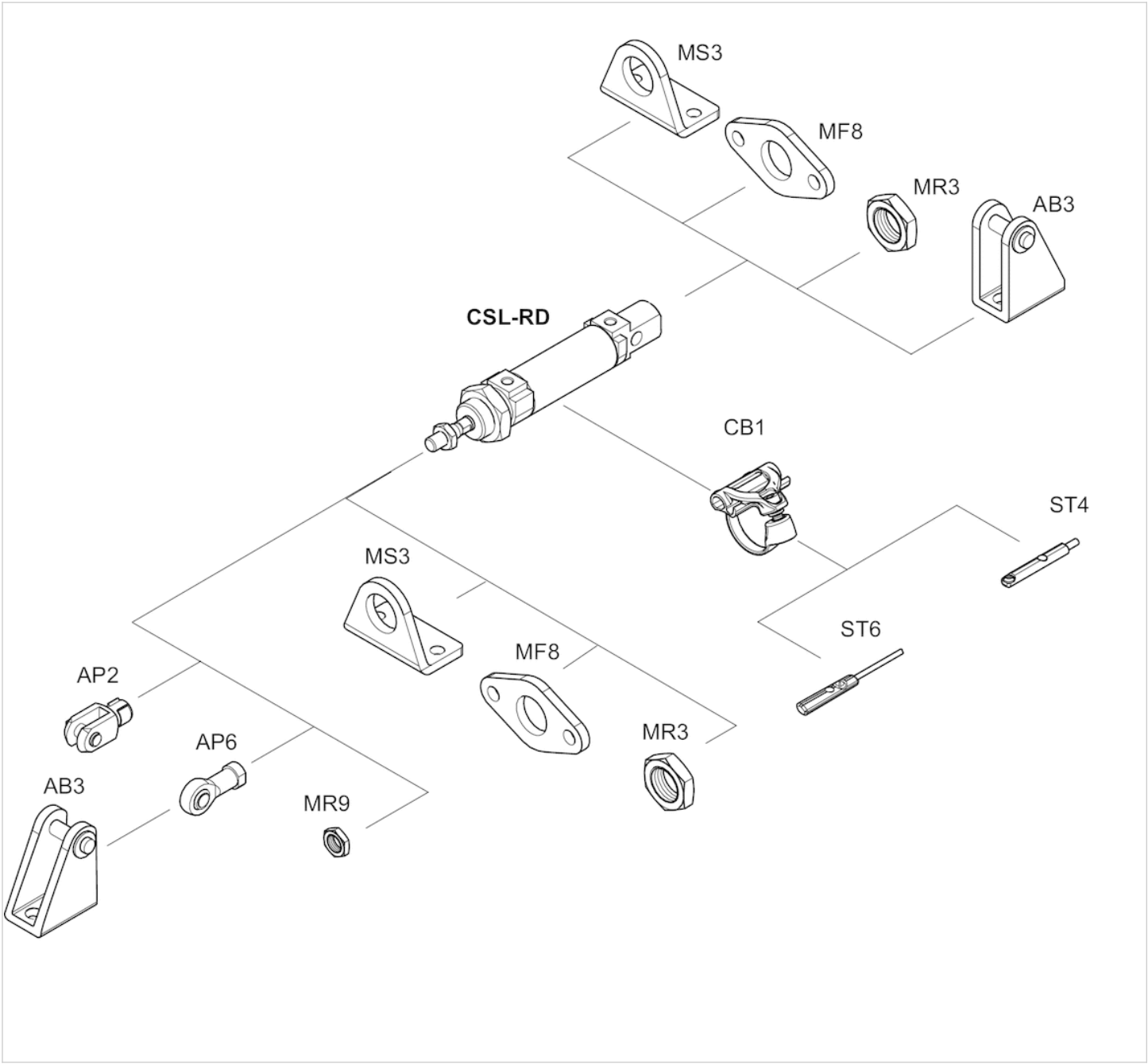
Cushioning diagram



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

Accessories overview

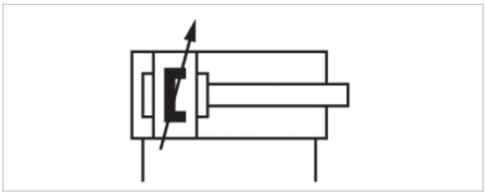
Overview drawing



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.

Stainless steel round cylinder, Series CSL-RD

- Version: hygienic design
- ISO 6432 (Ø 16-25 mm)
- Ø 16-63 mm
- Ports M5, G 1/8, G 1/4, G 3/8
- double-acting
- with magnetic piston
- pneumatic adjustable cushioning
- with integrated rear eye
- Piston rod External thread
- ATEX optional
- suitable for use in food processing (FDA/NSF/ EC 1935/2004)



Standards	ISO 6432 (Ø 16-25 mm)
Certificates	EC No 1935/2004, ATEX optional
Compressed air connection	Internal thread
Working pressure min./max.	1 ... 10 bar
Ambient temperature min./max.	-20 ... 80 °C
Medium temperature min./max.	-20 ... 80 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m³
Pressure for determining piston forces	6,3 bar

Technical data

Piston Ø Piston rod thread Ports Piston rod Ø	16 mm M6 M5 6 mm	20 mm M8 G 1/8 8 mm	25 mm M10x1,25 G 1/8 10 mm	32 mm M10x1,25 G 1/8 12 mm	40 mm M12x1,25 G 1/4 16 mm	50 mm M16x1,5 G 1/4 20 mm	63 mm M16x1,5 G 3/8 20 mm
Stroke 25	R412020431	R412020475	R412020519	R481624852	R481624863	R481624874	R481624885
50	R412020432	R412020476	R412020520	R481624853	R481624864	R481624875	R481624886
80	R412020433	R412020477	R412020521	R481624854	R481624865	R481624876	R481624887
100	R412020434	R412020478	R412020522	R481624855	R481624866	R481624877	R481624888
125	R412020435	R412020479	R412020523	R481624856	R481624867	R481624878	R481624889
160	R412020436	R412020480	R412020524	R481624857	R481624868	R481624879	R481624890
200	R412020437	R412020481	R412020525	R481624858	R481624869	R481624880	R481624891
250	R412020438	R412020482	R412020526	R481624859	R481624870	R481624881	R481624892
320	R412020439	R412020483	R412020527	R481624860	R481624871	R481624882	R481624893
400	R412020440	R412020484	R412020528	R481624861	R481624872	R481624883	R481624894
500	R412020441	R412020485	R412020529	R481624862	R481624873	R481624884	R481624895

Technical data

Piston Ø	16 mm	20 mm	25 mm	32 mm	40 mm	50 mm	63 mm
Retracting piston force	109 N	166 N	260 N	435 N	660 N	1035 N	1765 N
Extracting piston force	127 N	198 N	309 N	505 N	790 N	1235 N	1960 N
Cushioning length	11,5 mm	13 mm	14 mm	16 mm	18 mm	16 mm	16 mm
Cushioning energy	1 J	1,7 J	2,7 J	4,8 J	9 J	15 J	27 J
Weight 0 mm stroke	0,034 kg	0,063 kg	0,082 kg	0,699 kg	1,372 kg	2,044 kg	2,890 kg
Weight +10 mm stroke	0,002 kg	0,005 kg	0,006 kg	0,015 kg	0,024 kg	0,040 kg	0,044 kg
Stroke max.	800 mm	1100 mm	1200 mm	1200 mm	1200 mm	1200 mm	1200 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).

Clamping piece for magnetic field sensor necessary

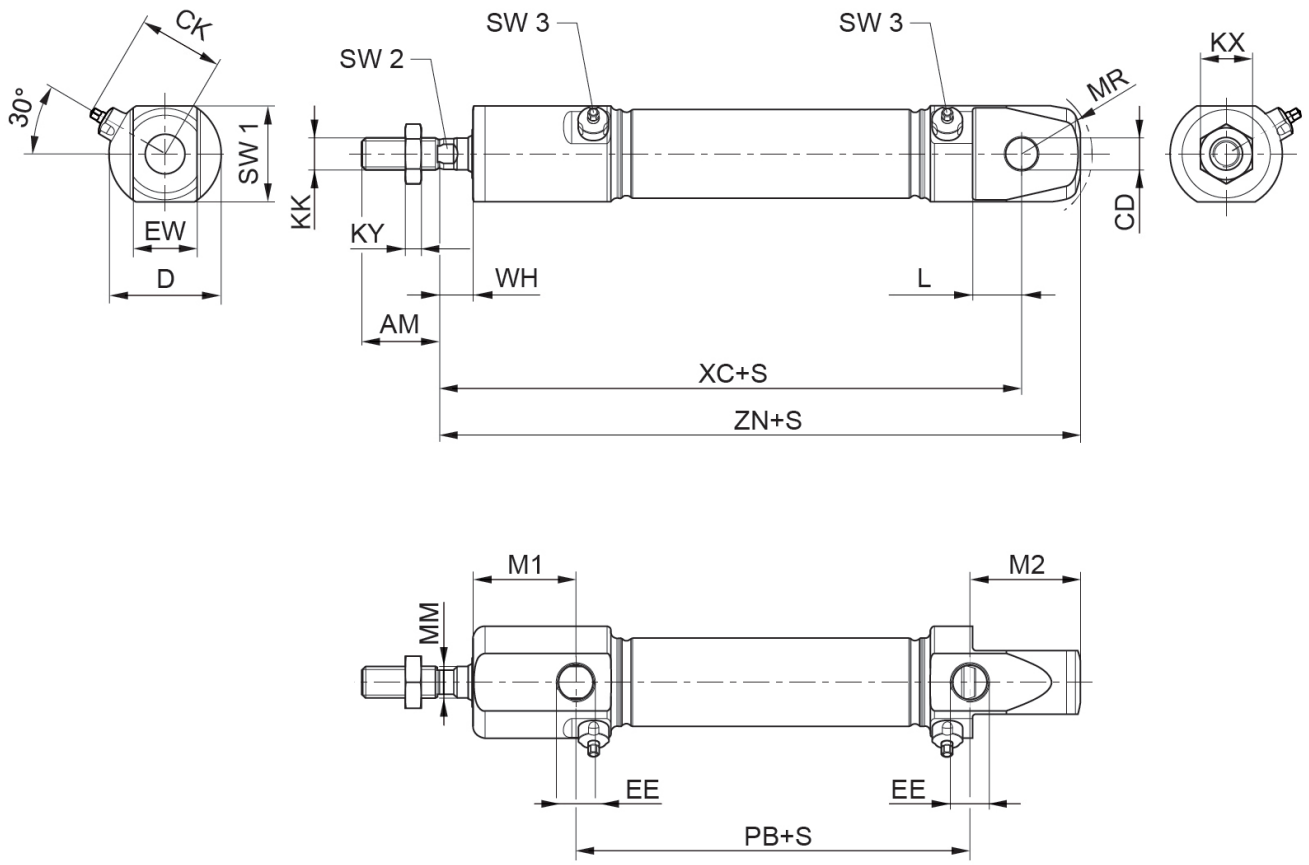
ATEX-certified cylinders with identification II 2G Ex h IIC T4 Gb / II 2D Ex h IIIC T135°C Db_X can be generated in the Internet configurator.
The operating temperature range for ATEX-certified cylinders is -20°C ... 60°C.

Technical information

Material	
Cylinder tube	Stainless steel
Piston rod	Stainless steel
Front cover	Stainless steel, Electropolished
End cover	Stainless steel, Electropolished
Piston Seal	Nitrile butadiene rubber
Nut for cylinder mounting	Stainless steel
Nut for piston rod	Stainless steel
Scraper	Thermoplastic polyurethane (TPU), Ultra-high-molecular-weight polyethylene/ Thermoplastic polyurethane (UHMW-PE/TPU)
Guide bushing	Plastic

Dimensions

Dimensions



S = stroke

Dimensions

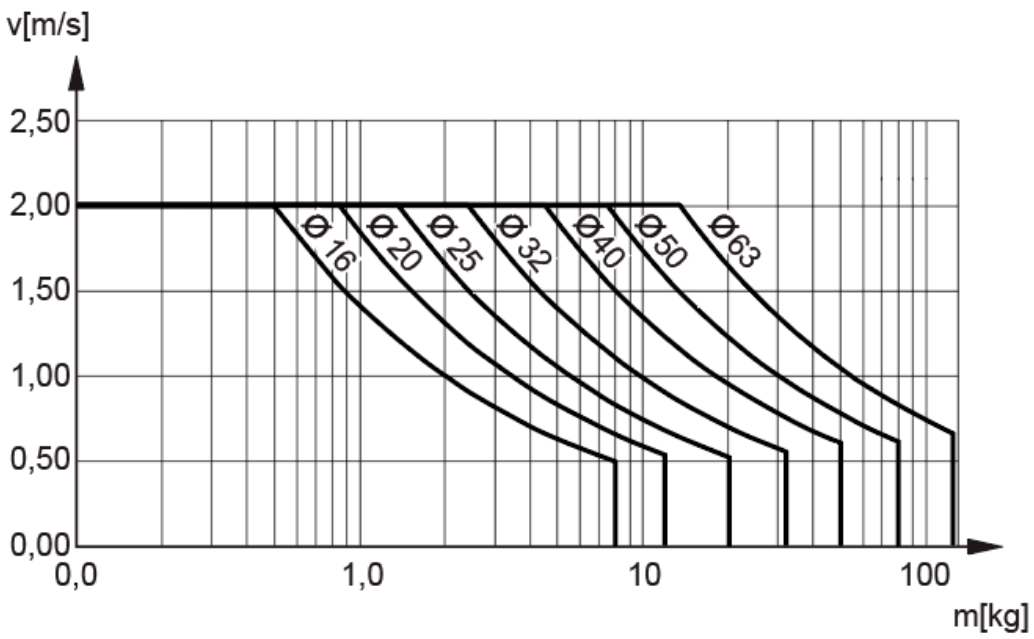
Piston Ø	AM	CD H9	CK max.	D	EE	EW d13	KK	KX	KY
16 mm	16	6	19,5	22	M5	12	M6	10	3.2
20 mm	20	8	23	28	G 1/8	16	M8	13	4
25 mm	22	8	25,5	33	G 1/8	16	M10x1,25	17	5
32 mm	22	10	28	38	G 1/8	16	M10x1,25	17	5
40 mm	24	12	36,5	49	G 1/4	18	M12x1,25	18	6
50 mm	32	16	40,5	57	G 1/4	21	M16x1,5	24	8
63 mm	32	16	47	70	G 3/8	21	M16x1,5	24	8

Dimensions

Piston Ø	L min.	M1	M2	MM f8	MR	PB ±1	WH ±1,4	XC ±1	ZN ± 1	SW 1	SW 2 h13	SW 3
16 mm	9	21,2	22,7	6	16	43,6	7.5	82	94,7	20	5	2,5
20 mm	12	25,7	27,7	8	18	48,6	8	95	109,7	24	6	2,5
25 mm	12	28,2	29,7	10	19	51,8	9.5	104	119,7	28	8	2,5
32 mm	14	34,6	11,7	12	12	46	8,9	117,5	129,5	35	10	3
40 mm	16	38	8,7	16	13,9	66	10,8	139,6	153,5	45	13	3
50 mm	17	42,1	8,3	20	15,8	68	11,7	147,2	163	53	17	3
63 mm	17	45,3	9,4	20	16	71,5	11,7	155	171	66	17	3

Diagrams

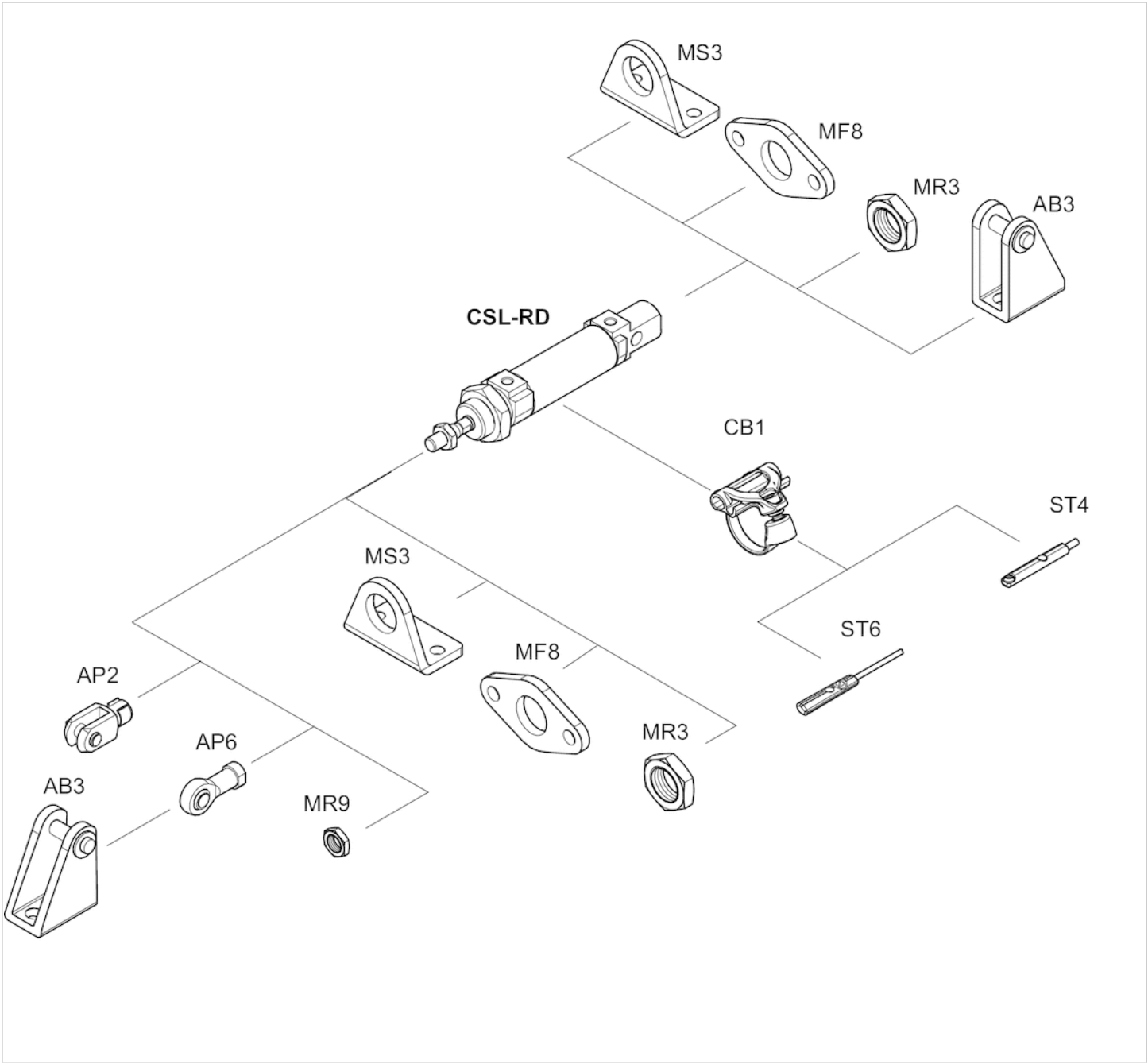
Cushioning diagram



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

Accessories overview

Overview drawing



NOTE:
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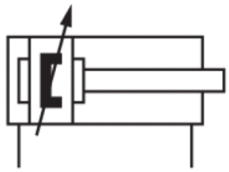
Stainless steel round cylinder, Series CSL-RD

- Version: short type
- Ø 32-63 mm
- Ports G 1/8, G1/4, G 3/4
- double-acting
- with magnetic piston
- pneumatic adjustable cushioning
- Piston rod External thread
- ATEX optional
- suitable for use in food processing (FDA/NSF/ EC No 1935/2004



Certificates	EC No 1935/2004, ATEX optional
Compressed air connection	Internal thread
Working pressure min./max.	1 ... 10 bar
Ambient temperature min./max.	-20 ... 80 °C
Medium temperature min./max.	-20 ... 80 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m³
Pressure for determining piston forces	6,3 bar

Technical data

Piston Ø Piston rod thread Ports Piston rod Ø	32 mm M10x1,25 G 1/8 12 mm	40 mm M12x1,25 G 1/4 16 mm	50 mm M16x1,5 G 1/4 20 mm	63 mm M16x1,5 G 3/8 20 mm
Stroke 25	R481624918	R481624929	R481624940	R481624951
50	R481624919	R481624930	R481624941	R481624952
80	R481624920	R481624931	R481624942	R481624953
100	R481624921	R481624932	R481624943	R481624954
125	R481624922	R481624933	R481624944	R481624955
160	R481624923	R481624934	R481624945	R481624956
200	R481624924	R481624935	R481624946	R481624957
250	R481624925	R481624936	R481624947	R481624958
320	R481624926	R481624937	R481624948	R481624959
400	R481624927	R481624938	R481624949	R481624960
500	R481624928	R481624939	R481624950	R481624961

Technical data

Piston Ø	32 mm	40 mm	50 mm	63 mm
Retracting piston force	435 N	660 N	1035 N	1765 N
Extracting piston force	505 N	790 N	1235 N	1960 N
Cushioning length	16 mm	18 mm	16 mm	16 mm
Cushioning energy	4,8 J	9 J	15 J	27 J
Weight 0 mm stroke	0,699 kg	1,372 kg	2,044 kg	2,890 kg
Weight +10 mm stroke	0,015 kg	0,024 kg	0,040 kg	0,044 kg
Stroke max.	1200 mm	1200 mm	1200 mm	1200 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).

Clamping piece for magnetic field sensor necessary

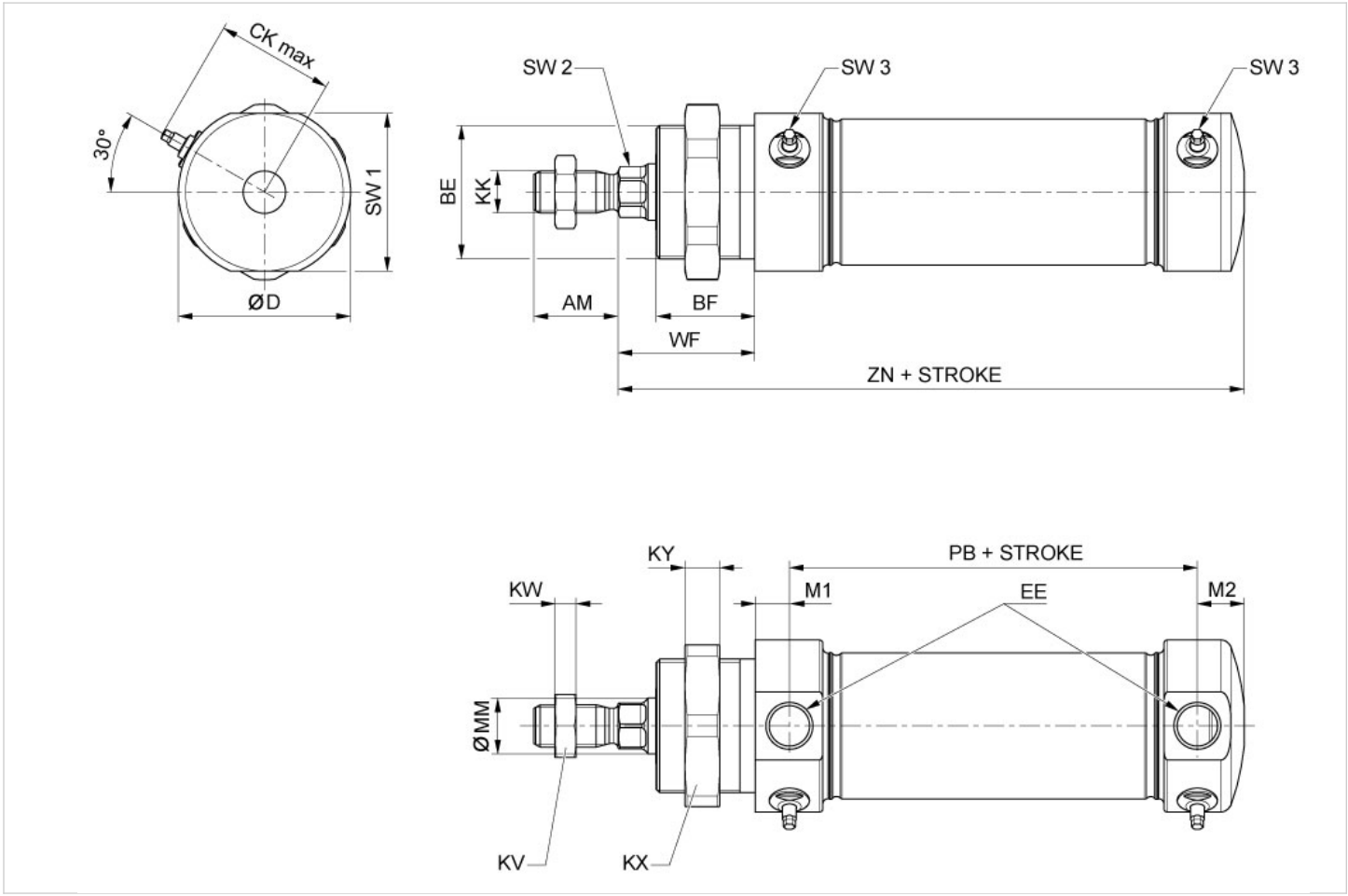
ATEX-certified cylinders with identification II 2G Ex h IIC T4 Gb / II 2D Ex h IIIC T135°C Db_X can be generated in the Internet configurator.
The operating temperature range for ATEX-certified cylinders is -20°C ... 60°C.

Technical information

Material	
Cylinder tube	Stainless steel
Piston rod	Stainless steel
Front cover	Stainless steel, Electropolished
End cover	Stainless steel, Electropolished
Piston Seal	Nitrile butadiene rubber
Nut for cylinder mounting	Stainless steel
Nut for piston rod	Stainless steel
Scraper	Ultra-high-molecular-weight polyethylene/ Thermoplastic polyurethane (UHMW-PE/TPU)
Guide bushing	Plastic

Dimensions

Dimensions



S = stroke

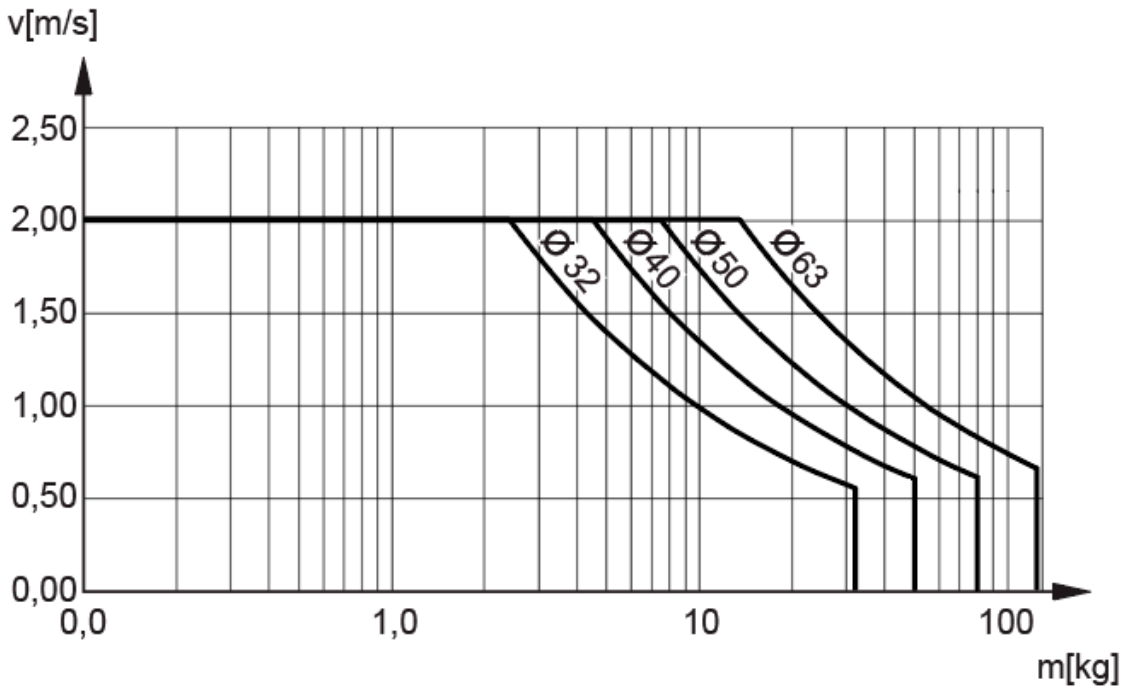
Dimensions

Piston Ø	AM–2	BE	BF	D	EE	KK	KV	KW	KX	KY	M1	M2
32 mm	22	M30x1,5	25	38	G 1/8	M10x1,25	36	8	17	5	9,5	14,2
40 mm	24	M38x1,5	28	49	G 1/4	M12x1,25	46	10	18	6	9,8	13,3
50 mm	32	M45x1,5	32	57	G 1/4	M16x1,5	55	10	24	8	9,8	12,6
63 mm	32	M45x1,5	32	70	G 3/8	M16x1,5	55	10	24	8	13	14,5

Piston Ø	MM f8	PB ±1	WF ±1,4	ZN ± 1	SW 1	SW 2
32 mm	12	46	34	104	35	10
40 mm	16	66	39	128,2	45	13
50 mm	20	68	44	134,5	53	17
63 mm	20	71,5	44	143,2	66	17

Diagrams

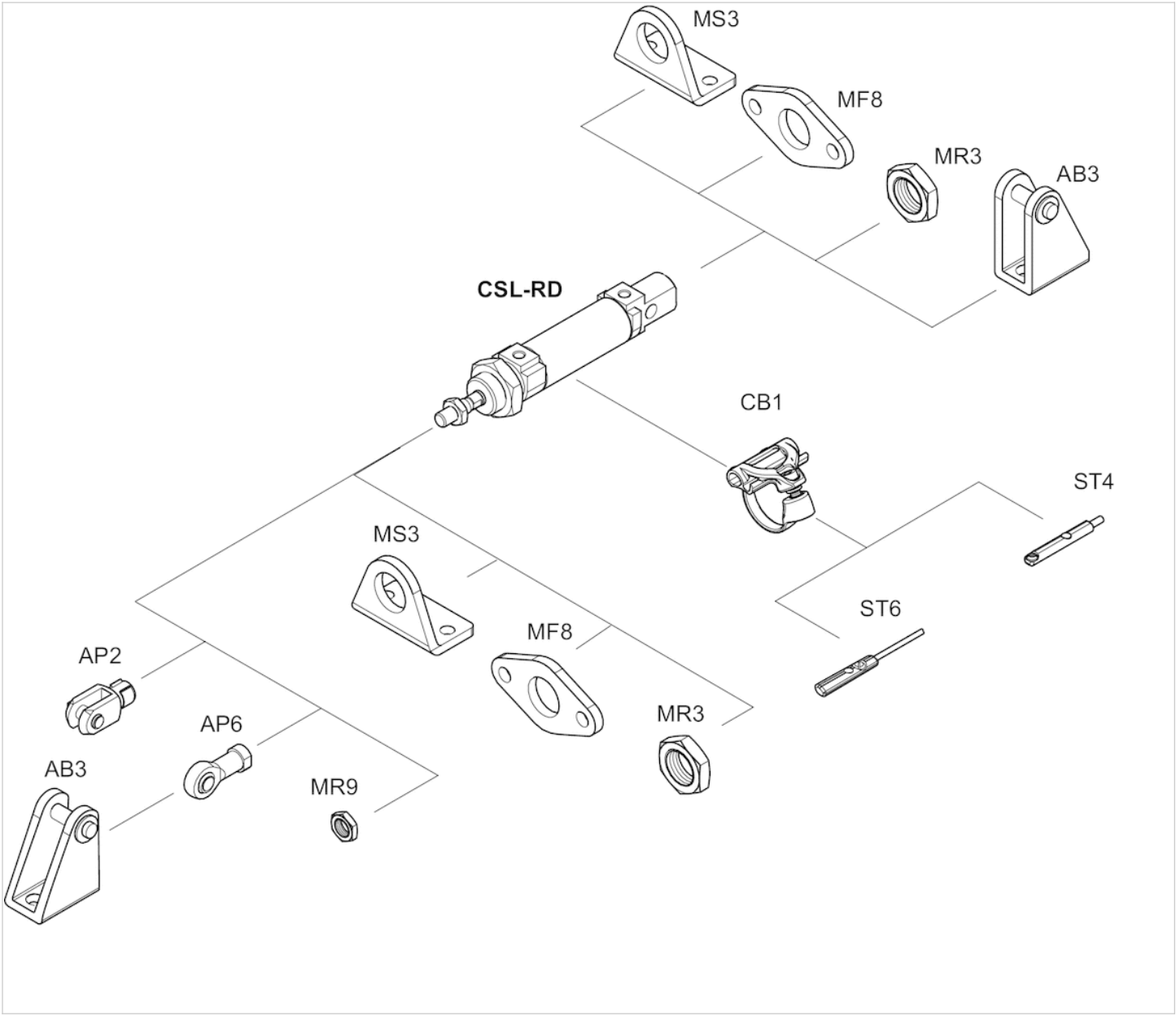
Cushioning diagram



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

Accessories overview

Overview drawing



NOTE:
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Stainless steel round cylinder, Series CSL-RD

- Version: standard type
- ISO 6432 (Ø16-25 mm)
- Ø 16-40 mm
- Ports M5, G 1/8, G 1/4
- double-acting
- with magnetic piston
- pneumatic pre-adjusted cushioning
- with integrated rear eye
- Piston rod External thread
- ATEX optional
- suitable for use in food processing (FDA/NSF/ EC No 1935/2004)

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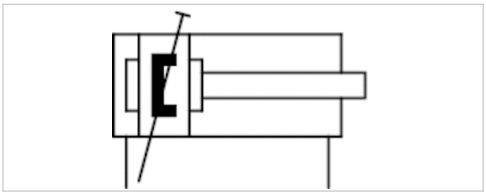


Standards	ISO 6432 (Ø16-25 mm)
Certificates	EC No 1935/2004, ATEX optional
Compressed air connection	Internal thread
Working pressure min./max.	1 ... 10 bar
Ambient temperature min./max.	-20 ... 80 °C
Medium temperature min./max.	-20 ... 80 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m³
Pressure for determining piston forces	6,3 bar

Technical data

Piston Ø Piston rod thread Ports Piston rod Ø	16 mm M6 M5 6 mm	20 mm M8 G 1/8 8 mm	25 mm M10x1,25 G 1/8 10 mm	32 mm M10x1,25 G 1/8 12 mm	40 mm M12x1,25 G 1/4 16 mm
Stroke 25	R480651366	R480651377	R480651388	R481624786	R481624797
50	R480651367	R480651378	R480651389	R481624787	R481624798
80	R480651368	R480651379	R480651390	R481624788	R481624799
100	R480651369	R480651380	R480651391	R481624789	R481624800
125	R480651370	R480651381	R480651392	R481624790	R481624801
160	R480651371	R480651382	R480651393	R481624791	R481624802
200	R480651372	R480651383	R480651394	R481624792	R481624803
250	R480651373	R480651384	R480651395	R481624793	R481624804
320	R480651374	R480651385	R480651396	R481624794	R481624805
400	R480651375	R480651386	R480651397	R481624795	R481624806
500	R480651376	R480651387	R480651398	R481624796	R481624807

Technical data

Piston Ø	16 mm	20 mm	25 mm	32 mm	40 mm
Retracting piston force	109 N	166 N	260 N	435 N	660 N
Extracting piston force	127 N	198 N	309 N	505 N	790 N
Cushioning length	11,5 mm	13 mm	14 mm	16 mm	18 mm
Cushioning energy	0,75 J	1,3 J	1,9 J	3,4 J	6,3 J
Weight 0 mm stroke	0,034 kg	0,063 kg	0,082 kg	0,699 kg	1,372 kg
Weight +10 mm stroke	0,002 kg	0,005 kg	0,006 kg	0,015 kg	0,024 kg
Stroke max.	800 mm	1100 mm	1200 mm	1200 mm	1200 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).

Clamping piece for magnetic field sensor necessary

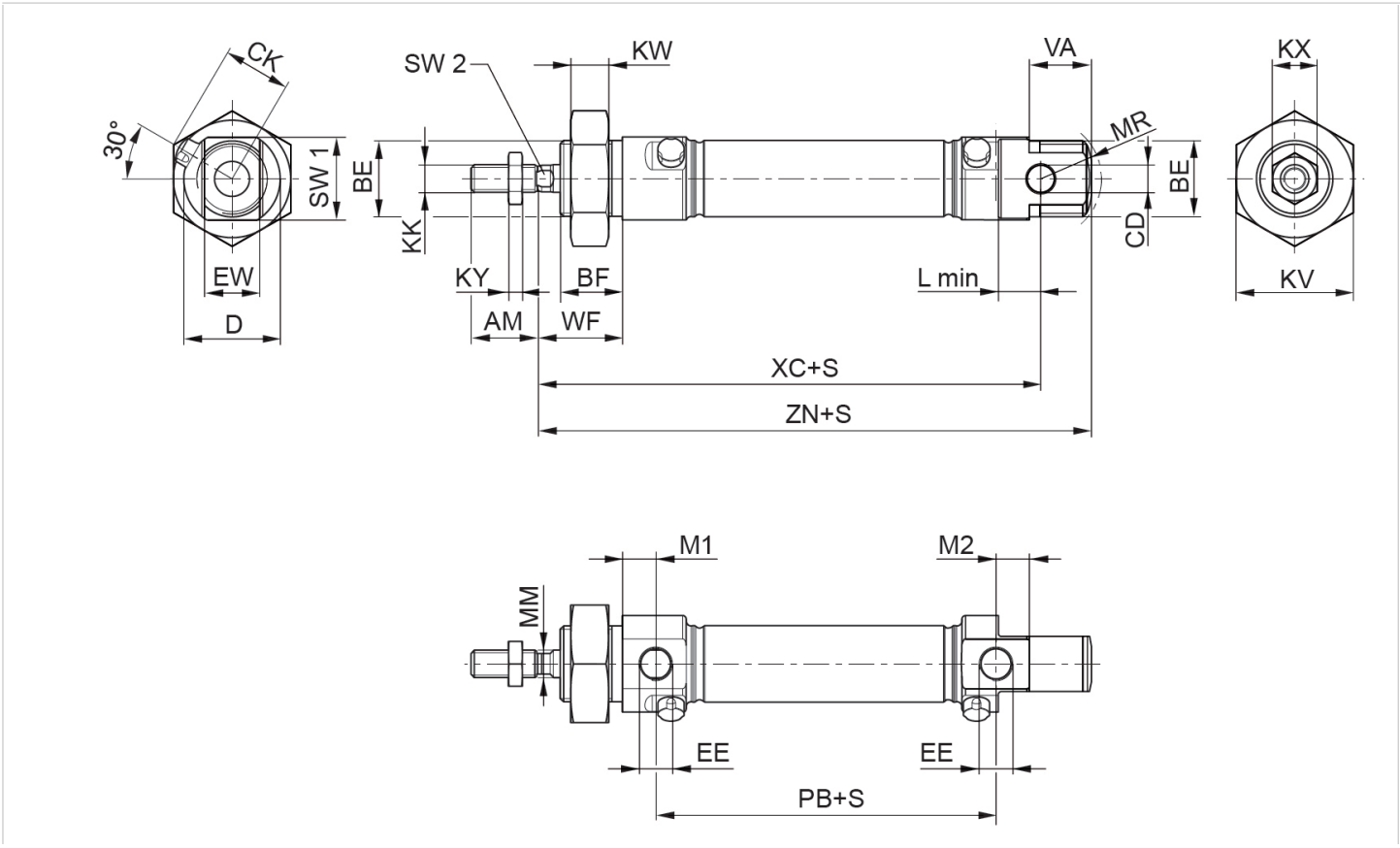
ATEX-certified cylinders with identification II 2G Ex h IIC T4 Gb / II 2D Ex h IIIC T135°C Db_X can be generated in the Internet configurator.
The operating temperature range for ATEX-certified cylinders is -20°C ... 60°C.

Technical information

Material	
Cylinder tube	Stainless steel
Piston rod	Stainless steel
Front cover	Stainless steel, Electropolished
End cover	Stainless steel, Electropolished
Piston Seal	Nitrile butadiene rubber
Nut for cylinder mounting	Stainless steel
Nut for piston rod	Stainless steel
Scraper	Thermoplastic polyurethane (TPU), Ultra-high-molecular-weight polyethylene/ Thermoplastic polyurethane (UHMW-PE/TPU)
Guide bushing	Plastic

Dimensions

Dimensions



S = stroke

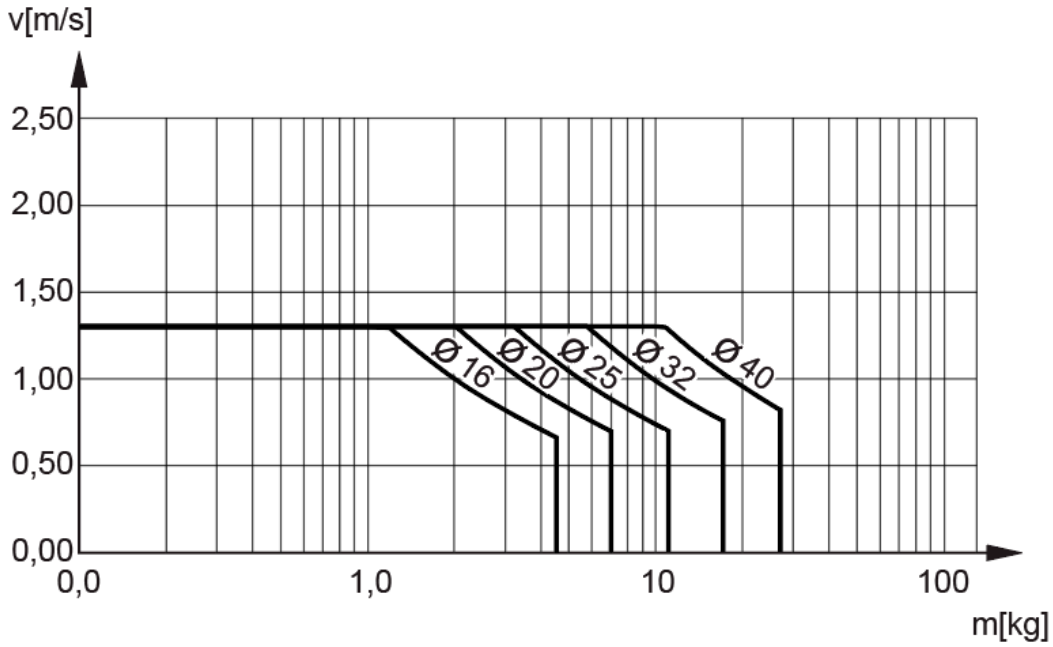
Dimensions

Piston Ø	AM	BE	BF	CD H9	CK	D	EE	EW d13	KK	KV	KW
16 mm	16	M16x1,5	16	6	14,7	22	M5	12	M6	24	8
20 mm	20	M22x1,5	18	8	17,9	28	G 1/8	16	M8	32	11
25 mm	22	M22x1,5	20	8	20,2	33	G 1/8	16	M10x1,25	32	11
32 mm	22	M30x1,5	25	10	21,5	38	G 1/8	16	M10x1,25	36	8
40 mm	24	M38x1,5	28	12	27	49	G 1/4	18	M12x1,25	46	10

Piston Ø	KX	KY	L min	M1	M2	MM f8	MR	PB ±1	VA	WF ±1,4	XC ±1	ZN ± 1	SW 1	SW 2
16 mm	10	3,2	9	6,7	6,7	6	16	43,6	16	22	82	94,7	20	5
20 mm	13	4	12	9,7	9,7	8	18	48,6	18	24	95	109,7	24	6
25 mm	17	5	12	9,7	9,7	10	19	52,6	20	28	104	119,7	28	8
32 mm	17	5	14	9,5	11,7	12	12	46	-	34	117,5	129,5	35	10
40 mm	18	6	16	9,8	8,7	16	13,9	66	-	39	139,6	153,5	45	13

Diagrams

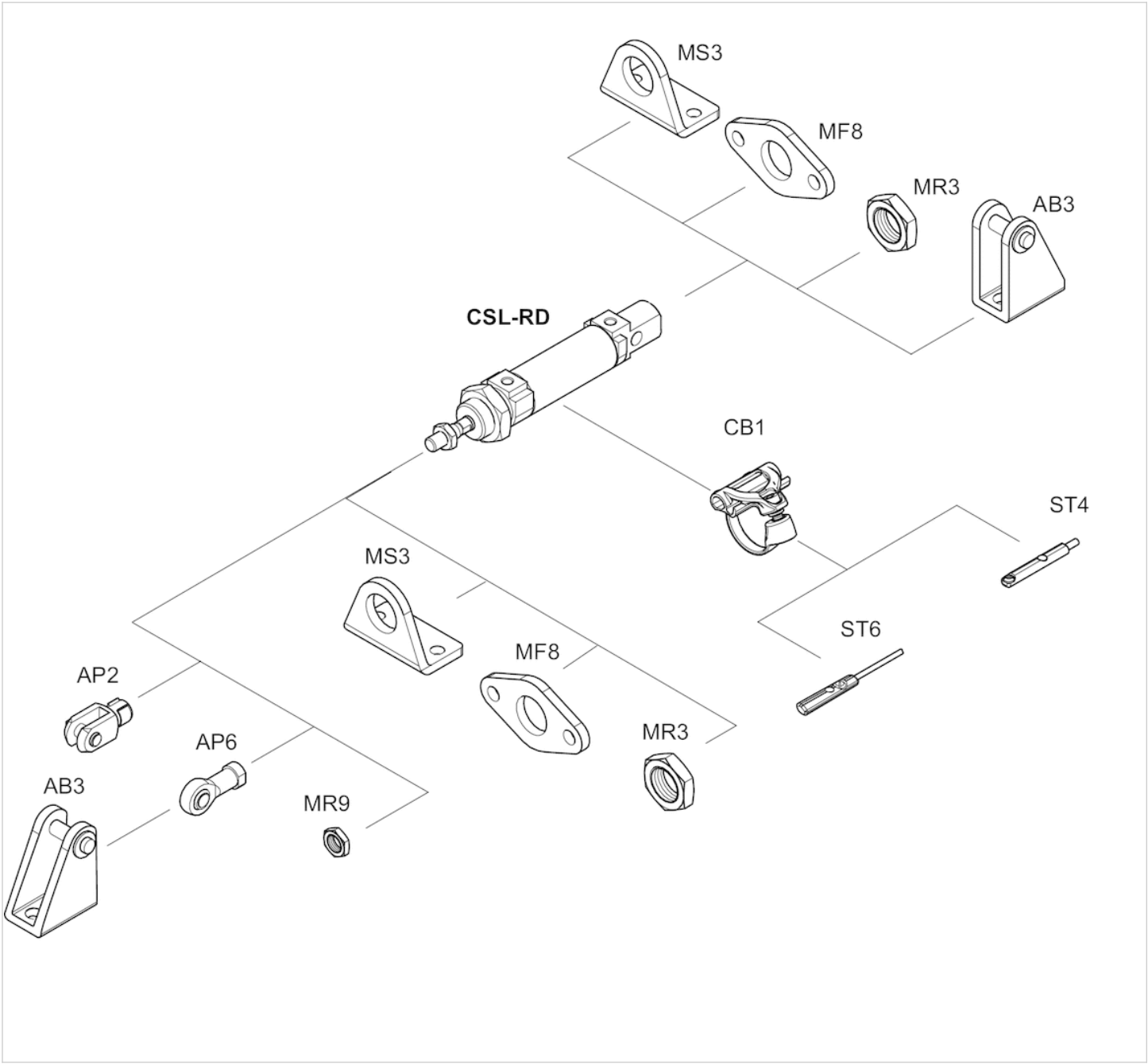
Cushioning diagram



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

Accessories overview

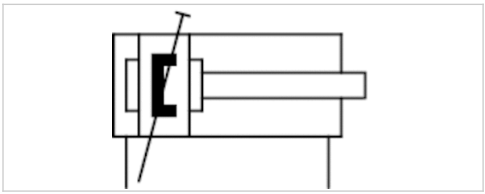
Overview drawing



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.

Stainless steel round cylinder, Series CSL-RD

- Version: hygienic design
- ISO 6432 (Ø16-25 mm)
- Ø 16-40 mm
- Ports M5, G 1/8, G 1/4
- double-acting
- with magnetic piston
- pneumatic pre-adjusted cushioning
- with integrated rear eye
- Piston rod External thread
- ATEX optional
- suitable for use in food processing (FDA/NSF/ EC No 1935/2004)



Standards	ISO 6432 (Ø16-25 mm)
Certificates	EC No 1935/2004, ATEX optional
Compressed air connection	Internal thread
Working pressure min./max.	1 ... 10 bar
Ambient temperature min./max.	-20 ... 80 °C
Medium temperature min./max.	-20 ... 80 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m³
Pressure for determining piston forces	6,3 bar

Technical data

Piston Ø Piston rod thread Ports Piston rod Ø	16 mm M6 M5 6 mm	20 mm M8 G 1/8 8 mm	25 mm M10x1,25 G 1/8 10 mm	32 mm M10x1,25 G 1/8 12 mm	40 mm M12x1,25 G 1/4 16 mm
Stroke 25	R480651399	R480651410	R480651421	R481624896	R481624907
50	R480651400	R480651411	R480651422	R481624897	R481624908
80	R480651401	R480651412	R480651423	R481624898	R481624909
100	R480651402	R480651413	R480651424	R481624899	R481624910
125	R480651403	R480651414	R480651425	R481624900	R481624911
160	R480651404	R480651415	R480651426	R481624901	R481624912
200	R480651405	R480651416	R480651427	R481624902	R481624913
250	R480651406	R480651417	R480651428	R481624903	R481624914
320	R480651407	R480651418	R480651429	R481624904	R481624915
400	R480651408	R480651419	R480651430	R481624905	R481624916
500	R480651409	R480651420	R480651431	R481624906	R481624917

Technical data

Piston Ø	16 mm	20 mm	25 mm	32 mm	40 mm
Retracting piston force	109 N	166 N	260 N	435 N	660 N
Extracting piston force	127 N	198 N	309 N	505 N	790 N
Cushioning length	11,5 mm	13 mm	14 mm	16 mm	18 mm
Cushioning energy	0,75 J	1,3 J	1,9 J	3,4 J	6,3 J
Weight 0 mm stroke	0,034 kg	0,063 kg	0,082 kg	0,699 kg	1,372 kg
Weight +10 mm stroke	0,002 kg	0,005 kg	0,006 kg	0,015 kg	0,024 kg
Stroke max.	800 mm	1100 mm	1300 mm	1200 mm	1200 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).

Clamping piece for magnetic field sensor necessary

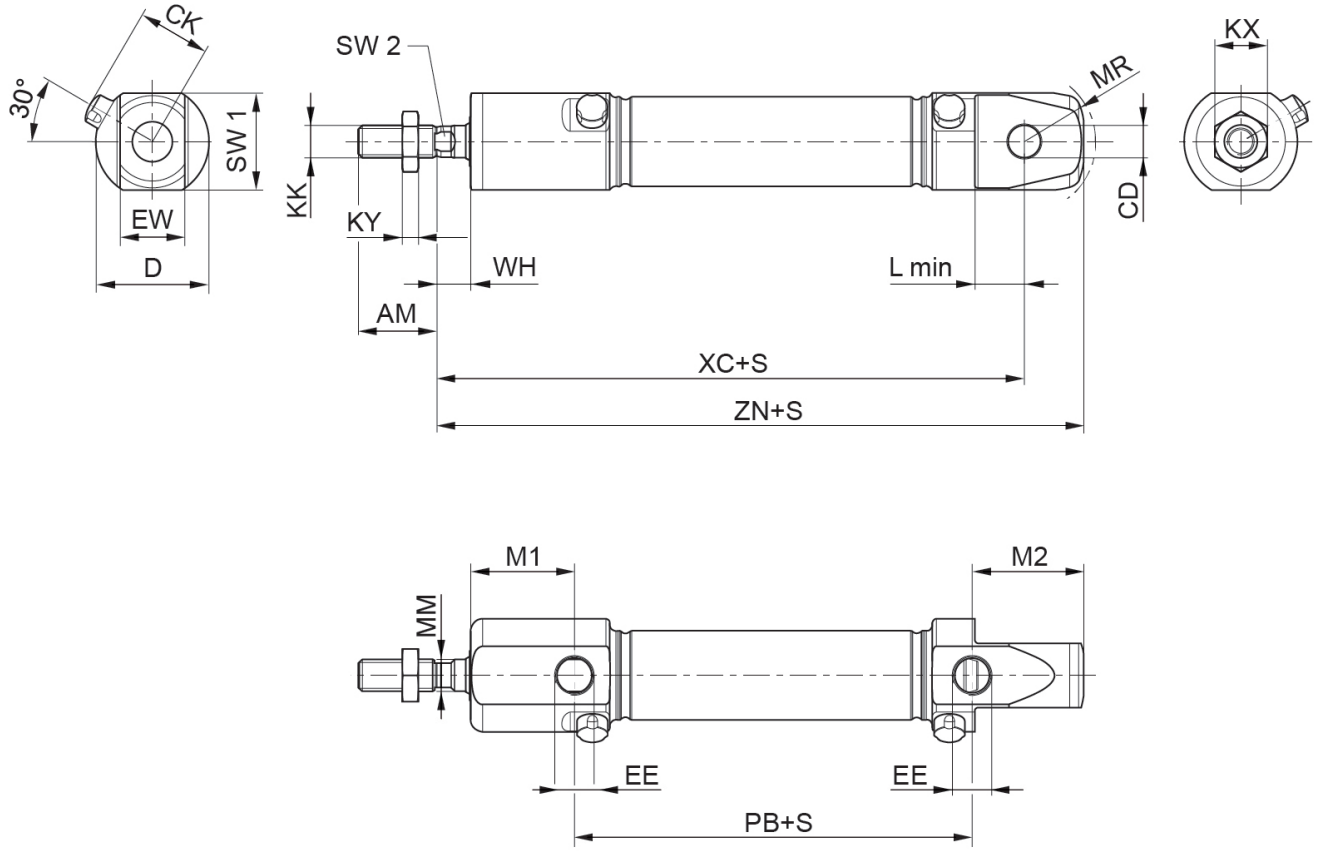
ATEX-certified cylinders with identification II 2G Ex h IIC T4 Gb / II 2D Ex h IIIC T135°C Db_X can be generated in the Internet configurator.
The operating temperature range for ATEX-certified cylinders is -20°C ... 60°C.

Technical information

Material	
Cylinder tube	Stainless steel
Piston rod	Stainless steel
Front cover	Stainless steel, Electropolished
End cover	Stainless steel, Electropolished
Piston Seal	Nitrile butadiene rubber
Nut for cylinder mounting	Stainless steel
Nut for piston rod	Stainless steel
Scraper	Thermoplastic polyurethane (TPU), Ultra-high-molecular-weight polyethylene/ Thermoplastic polyurethane (UHMW-PE/TPU)
Guide bushing	Plastic

Dimensions

Dimensions



S = stroke

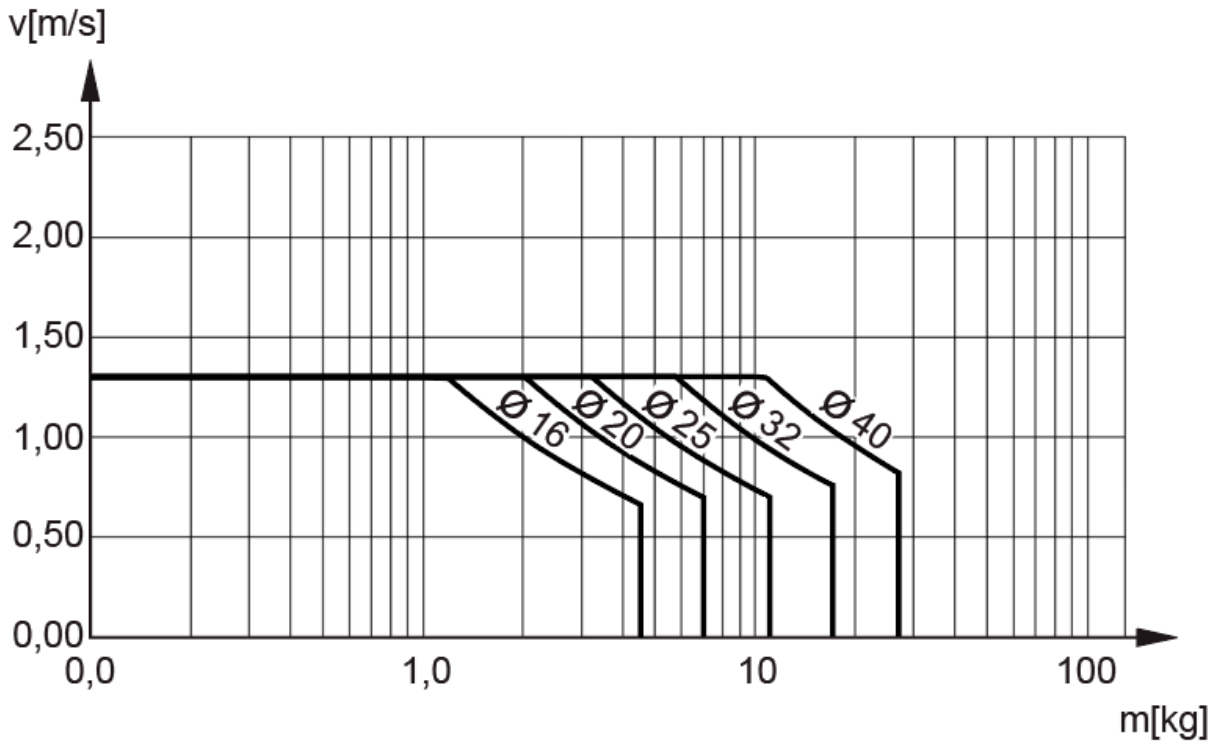
Dimensions

Piston Ø	AM	CD H9	CK	D	EE	EW d13	KK	KX	KY	L min	M1
16 mm	16	6	14,7	22	M5	12	M6	10	3,2	9	21,2
20 mm	20	8	17,9	28	G 1/8	16	M8	13	4	12	25,7
25 mm	22	8	20,2	33	G 1/8	16	M10x1,25	17	5	12	28,2
32 mm	22	10	21,5	38	G 1/8	16	M10x1,25	17	5	14	34,6
40 mm	24	12	27	49	G 1/4	18	M12x1,25	18	6	16	38

Piston Ø	M2	MM f8	MR	PB ±1	WH ±1,2	XC ±1	ZN ± 1	SW 1	SW 2
16 mm	22,7	6	16	43,6	7,5	82	94,7	20	5
20 mm	27,7	8	18	48,6	8	95	109,7	24	6
25 mm	29,7	10	19	51,8	9,5	104	119,7	28	8
32 mm	11,7	12	12	46	8,9	117,5	129,5	35	10
40 mm	8,7	16	13,9	66	10,8	139,6	153,5	45	13

Diagrams

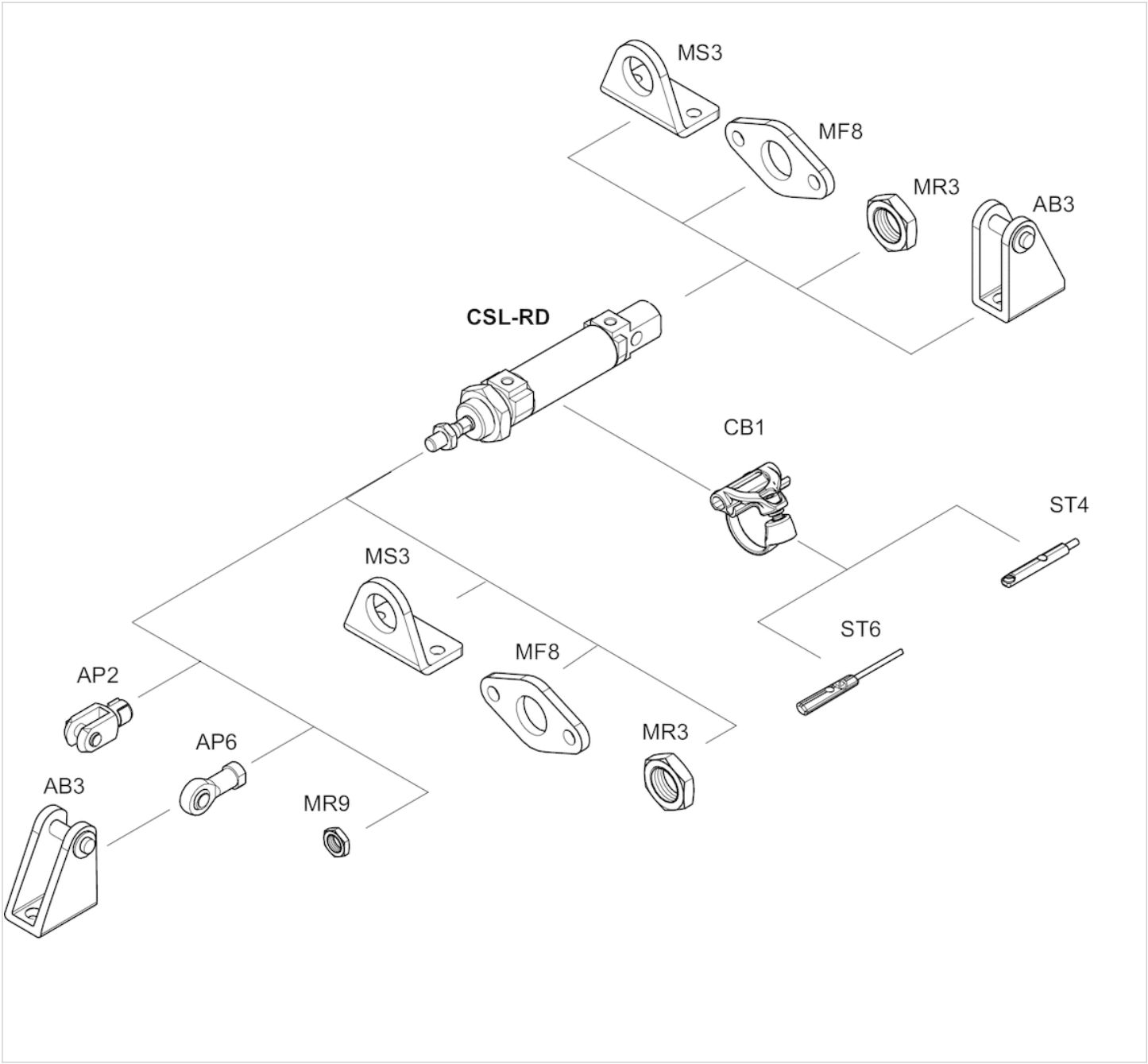
Cushioning diagram



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

Accessories overview

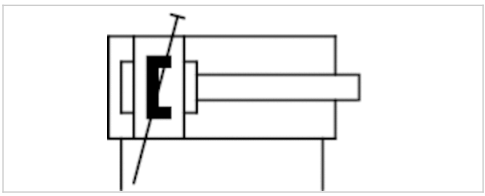
Overview drawing



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.

Stainless steel round cylinder, Series CSL-RD

- Version: short type
- Ø 32-40 mm
- Ports G 1/8, G 1/4
- double-acting
- with magnetic piston
- pneumatic pre-adjusted cushioning
- Piston rod External thread
- ATEX optional
- suitable for use in food processing (FDA/NSF/ EC No 1935/2004)



Certificates	EC No 1935/2004, ATEX optional
Compressed air connection	Internal thread
Working pressure min./max.	1 ... 10 bar
Ambient temperature min./max.	-20 ... 80 °C
Medium temperature min./max.	-20 ... 80 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m³
Pressure for determining piston forces	6,3 bar

Technical data

Piston Ø Piston rod thread Ports Piston rod Ø	32 mm M10x1,25 G 1/8 12 mm	40 mm M12x1,25 G 1/4 16 mm
Stroke 25	R481624962	R481624973
50	R481624963	R481624974
80	R481624964	R481624975
100	R481624965	R481624976
125	R481624966	R481624977
160	R481624967	R481624978
200	R481624968	R481624979
250	R481624969	R481624980
320	R481624970	R481624981
400	R481624971	R481624982
500	R481624972	R481624983

Technical data

Piston Ø	32 mm	40 mm
Retracting piston force	435 N	660 N
Extracting piston force	505 N	790 N
Cushioning length	16 mm	18 mm
Cushioning energy	3,4 J	6,3 J
Weight 0 mm stroke	0,699 kg	1,372 kg
Weight +10 mm stroke	0,015 kg	0,024 kg
Stroke max.	1200 mm	1200 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).

Clamping piece for magnetic field sensor necessary

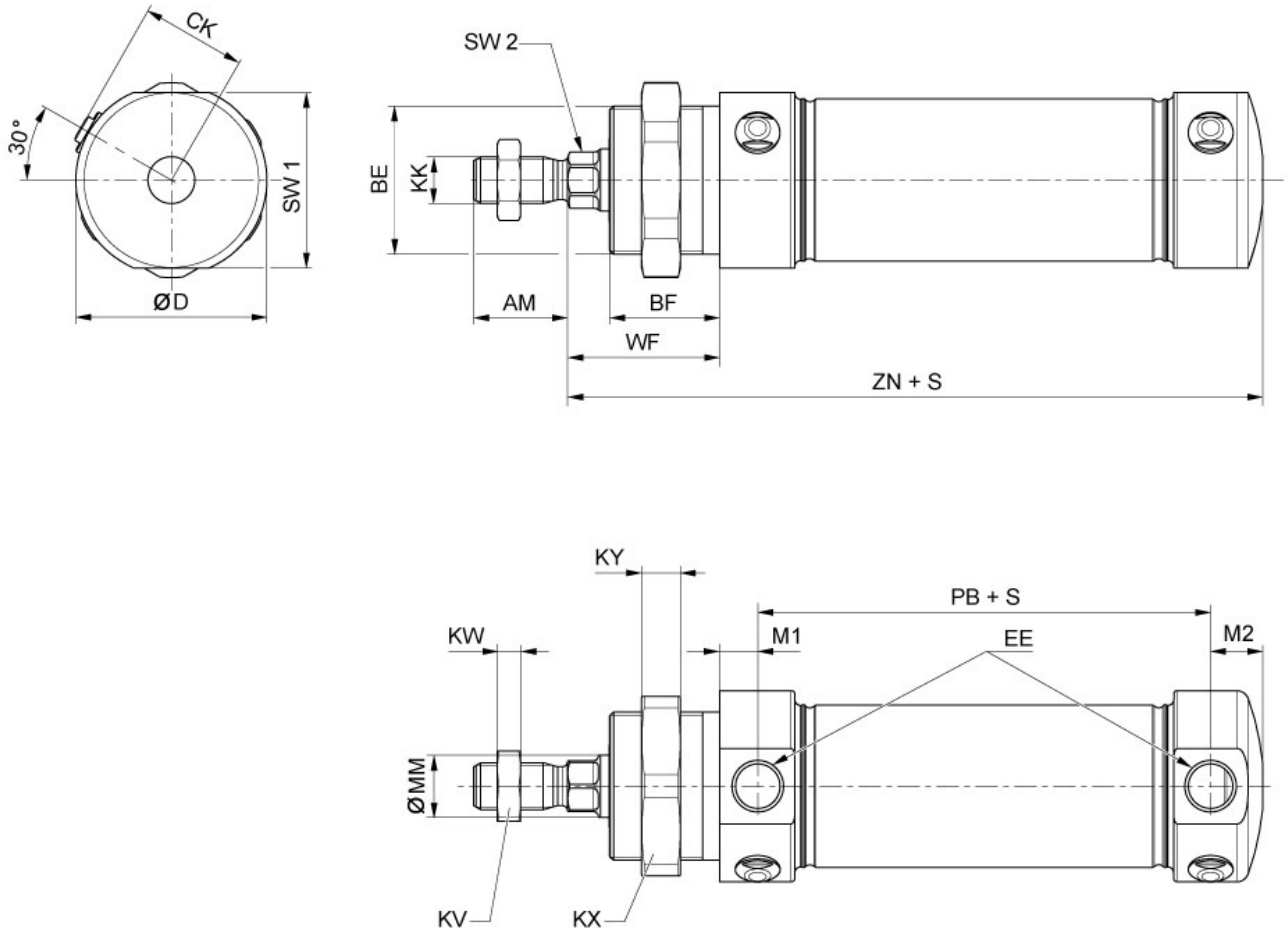
ATEX-certified cylinders with identification II 2G Ex h IIC T4 Gb / II 2D Ex h IIIC T135°C Db_X can be generated in the Internet configurator.
The operating temperature range for ATEX-certified cylinders is -20°C ... 60°C.

Technical information

Material	
Cylinder tube	Stainless steel
Piston rod	Stainless steel
Front cover	Stainless steel, Electropolished
End cover	Stainless steel, Electropolished
Piston Seal	Nitrile butadiene rubber
Nut for cylinder mounting	Stainless steel
Nut for piston rod	Stainless steel
Scraper	Thermoplastic polyurethane (TPU), Ultra-high-molecular-weight polyethylene/ Thermoplastic polyurethane (UHMW-PE/TPU)
Guide bushing	Plastic

Dimensions

Dimensions



S = stroke

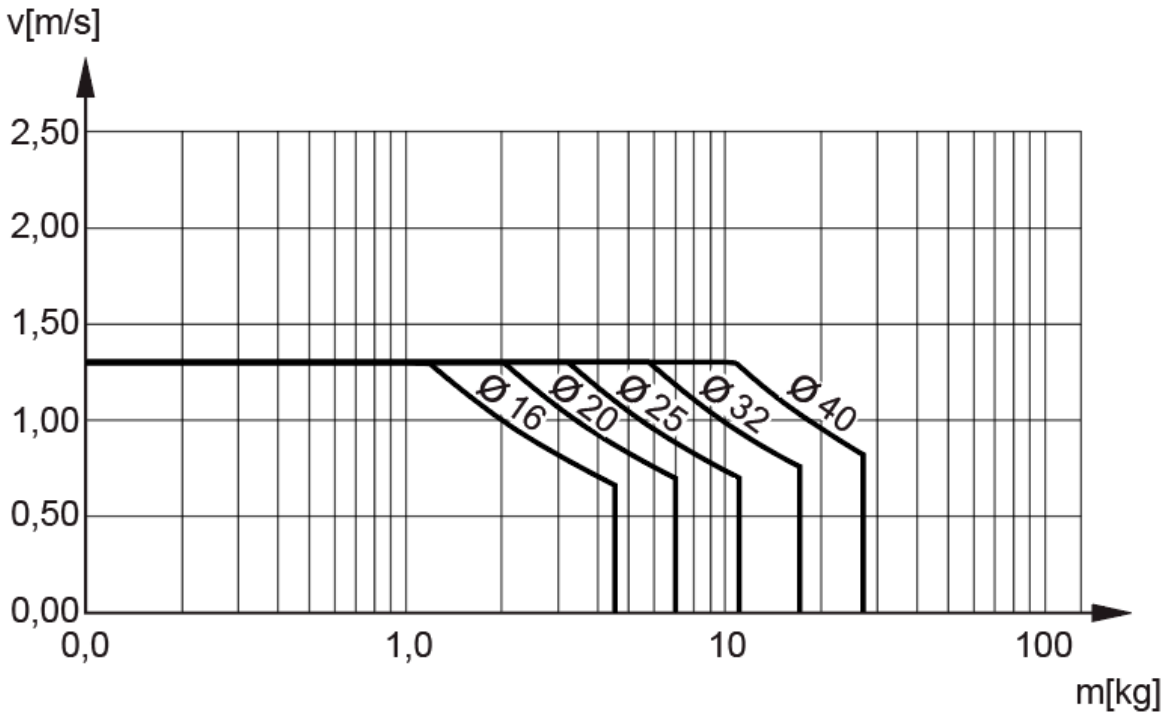
Dimensions

Piston Ø	AM	BE	BF	CK	D	EE	KK	KV	KW
32 mm	22	M30x1,5	25	21,5	38	G1/8	M10x1,25	36	8
40 mm	24	M38x1,5	28	27	49	G1/4	M12x1,25	46	10

Piston Ø	KX	KY	M1	M2	MM f8	PB	WF	ZN	SW 1	SW 2
32 mm	17	5	9,5	14,2	12	46	34	104	35	10
40 mm	18	6	9,8	13,3	16	66	39	128,2	45	13

Diagrams

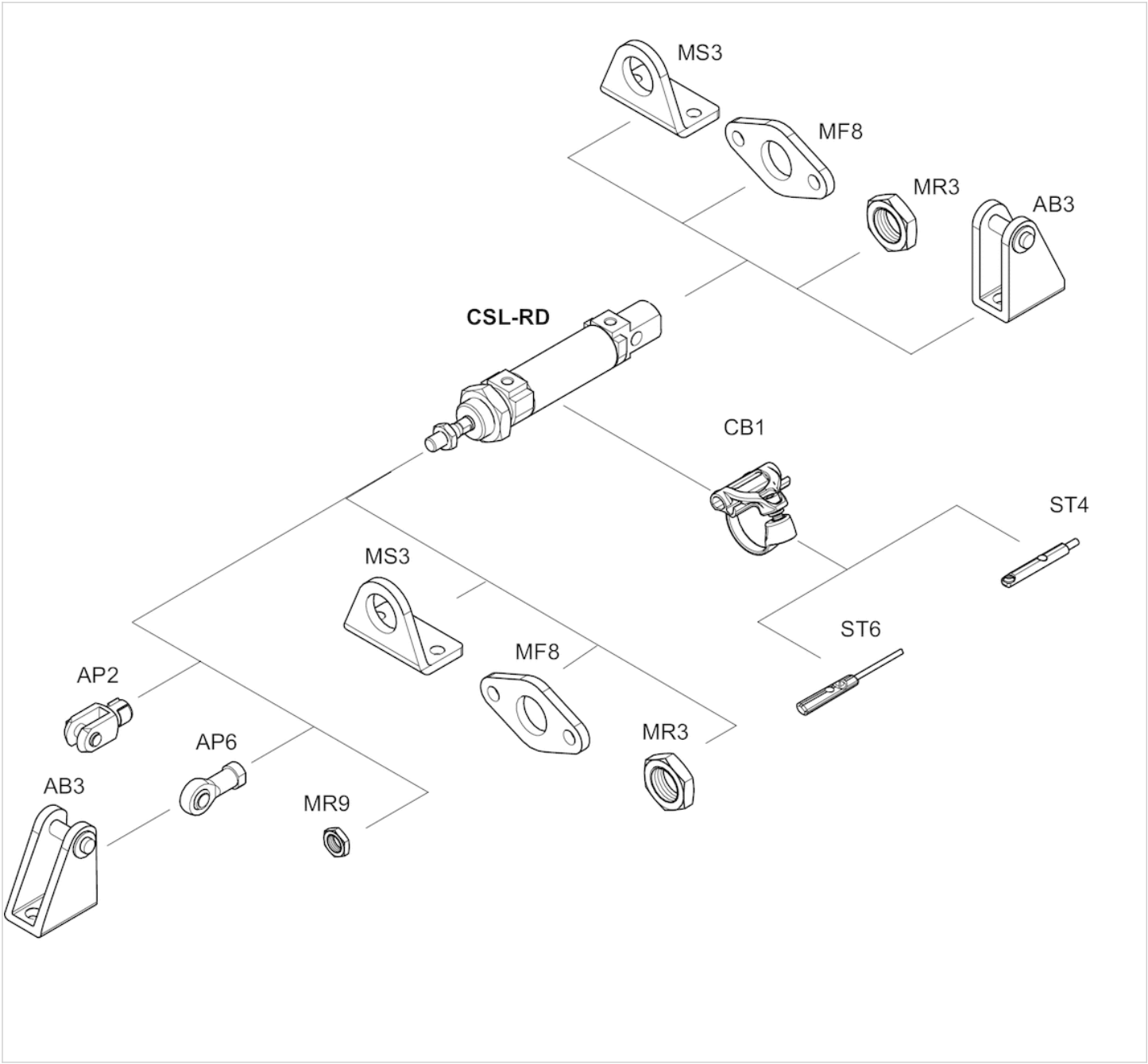
Cushioning diagram



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

Accessories overview

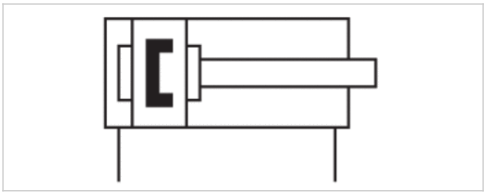
Overview drawing



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.

Stainless steel round cylinder, Series CSL-RD

- Version: standard type
- ISO 6432 (Ø 16-25 mm)
- Ø 16-63 mm
- Ports M5, G 1/8, G 1/4, G 3/8
- double-acting
- with magnetic piston
- elastic cushioning
- with integrated rear eye
- Piston rod External thread
- ATEX optional
- suitable for use in food processing (FDA/NSF/ EC No 1935/2004)



Standards	ISO 6432 (Ø 16-25 mm)
Certificates	EC No 1935/2004 ATEX optional
Compressed air connection	Internal thread
Working pressure min./max.	1 ... 10 bar
Ambient temperature min./max.	-20 ... 80 °C
Medium temperature min./max.	-20 ... 80 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m³
Pressure for determining piston forces	6,3 bar

Technical data

Piston Ø Piston rod thread Ports Piston rod Ø	16 mm M6 M5 6 mm	20 mm M8 G 1/8 8 mm	25 mm M10x1,25 G 1/8 10 mm	32 mm M10x1,25 G 1/8 12 mm	40 mm M12x1,25 G 1/4 16 mm	50 mm M16x1,5 G 1/4 20 mm	63 mm M16x1,5 G 3/8 20 mm
Stroke 25	R412020398	R412020442	R412020486	R481624698	R481624709	R481624720	R481624731
50	R412020399	R412020443	R412020487	R481624699	R481624710	R481624721	R481624732
80	R412020400	R412020444	R412020488	R481624700	R481624711	R481624722	R481624733
100	R412020401	R412020445	R412020489	R481624701	R481624712	R481624723	R481624734
125	R412020402	R412020446	R412020490	R481624702	R481624713	R481624724	R481624735
160	R412020403	R412020447	R412020491	R481624703	R481624714	R481624725	R481624736
200	R412020404	R412020448	R412020492	R481624704	R481624715	R481624726	R481624737
250	R412020405	R412020449	R412020493	R481624705	R481624716	R481624727	R481624738
320	R412020406	R412020450	R412020494	R481624706	R481624717	R481624728	R481624739
400	R412020407	R412020451	R412020495	R481624707	R481624718	R481624729	R481624740
500	R412020408	R412020452	R412020496	R481624708	R481624719	R481624730	R481624741

Technical data

Piston Ø	16 mm	20 mm	25 mm	32 mm	40 mm	50 mm	63 mm
Retracting piston force	109 N	166 N	260 N	435 N	660 N	1035 N	1765 N
Extracting piston force	127 N	198 N	309 N	505 N	790 N	1235 N	1960 N
Impact energy	0,14 J	0,23 J	0,35 J	0,5 J	0,7 J	1,0 J	1,3 J
Weight 0 mm stroke	0,034 kg	0,063 kg	0,082 kg	0,699 kg	1,372 kg	2,044 kg	2,890 kg
Weight +10 mm stroke	0,002 kg	0,005 kg	0,006 kg	0,015 kg	0,024 kg	0,040 kg	0,044 kg
Stroke max.	800 mm	1100 mm	1200 mm	1200 mm	1200 mm	1200 mm	1200 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).

Clamping piece for magnetic field sensor necessary

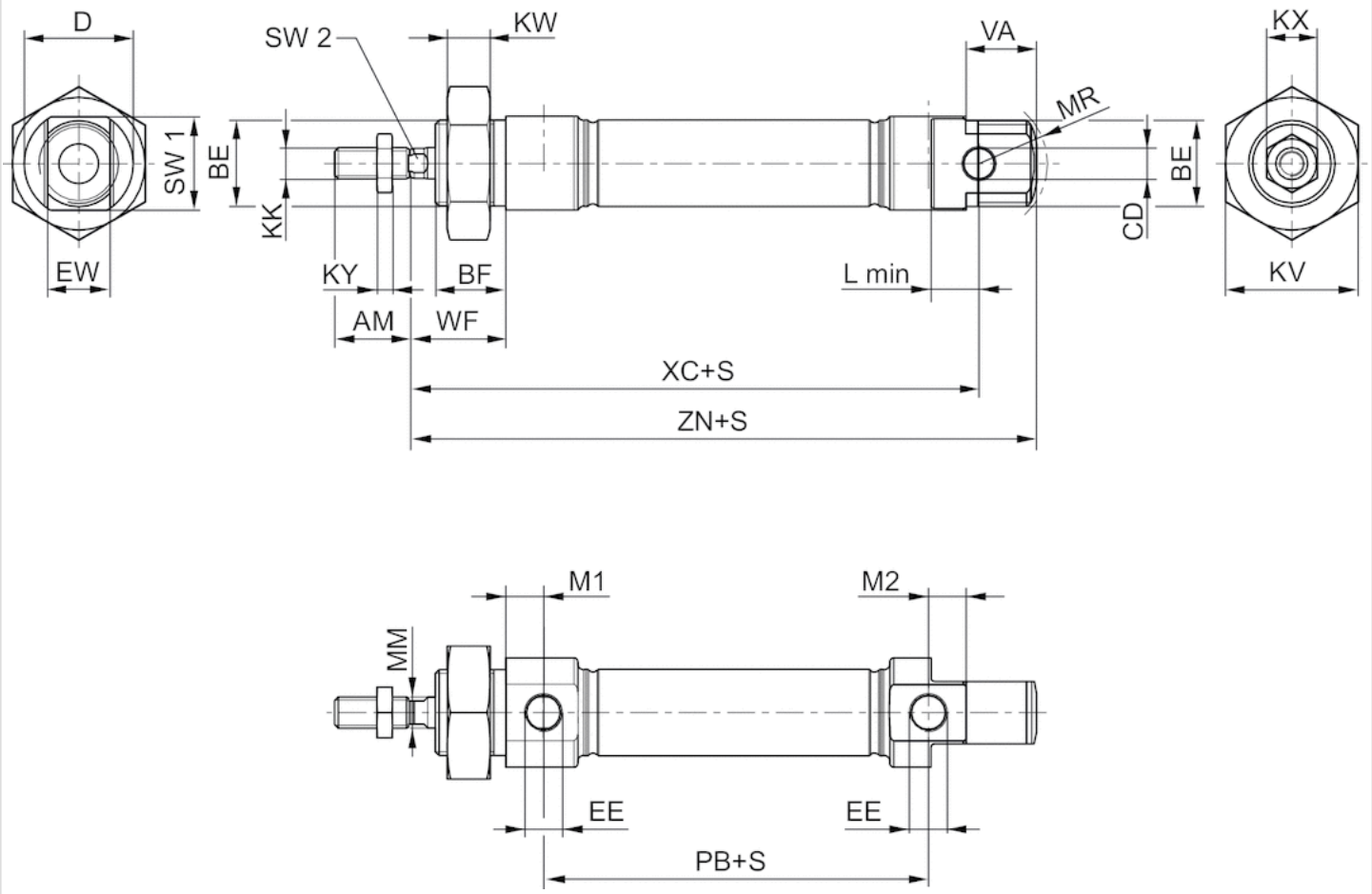
ATEX-certified cylinders with identification II 2G Ex h IIC T4 Gb / II 2D Ex h IIIC T135°C Db_X can be generated in the Internet configurator. The operating temperature range for ATEX-certified cylinders is -20°C ... 60°C.

Technical information

Material	
Cylinder tube	Stainless steel
Piston rod	Stainless steel
Front cover	Stainless steel, Electropolished
End cover	Stainless steel, Electropolished
Piston Seal	Nitrile butadiene rubber
Nut for cylinder mounting	Stainless steel
Nut for piston rod	Stainless steel
Scraper	Thermoplastic polyurethane (TPU), Ultra-high-molecular-weight polyethylene/ Thermoplastic polyurethane (UHMW-PE/TPU)
Guide bushing	Plastic

Dimensions

Dimensions



S = stroke

Dimensions

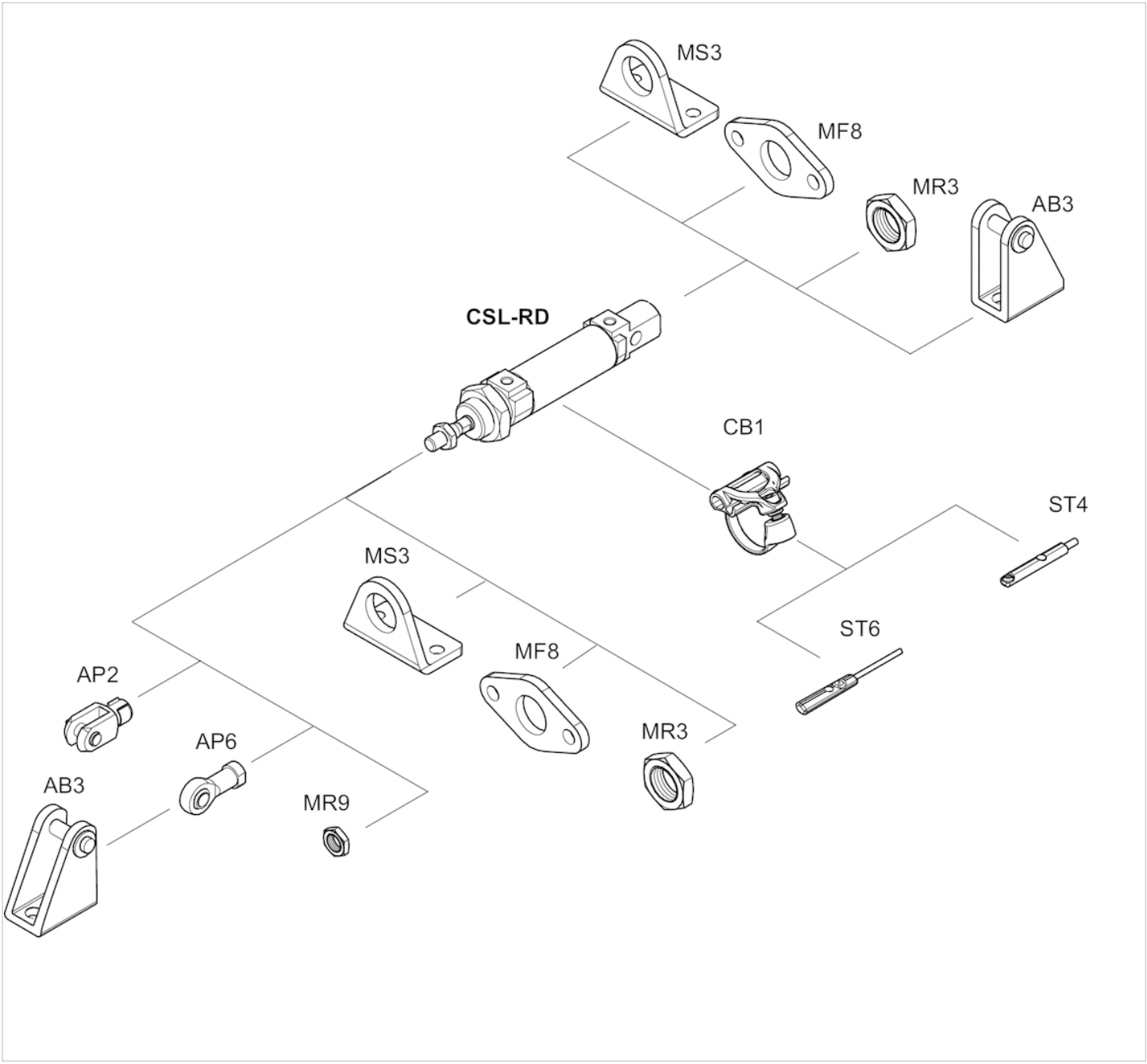
Piston Ø	AM	BE	BF	CD H9	D	EE	EW d13	KK	KV	KW	KX
16 mm	16	M16x1,5	16	6	22	M5	12	M6	24	8	10
20 mm	20	M22x1,5	18	8	28	G 1/8	16	M8	32	11	13
25 mm	22	M22x1,5	20	8	33	G 1/8	16	M10x1,25	32	11	17
32 mm	22	M30x1,5	25	10	38	G 1/8	16	M10x1,25	36	8	17
40 mm	24	M38x1,5	28	12	49	G 1/4	18	M12x1,25	46	10	18
50 mm	32	M45x1,5	32	16	57	G 1/4	21	M16x1,5	55	10	24
63 mm	32	M45x1,5	32	16	70	G 3/8	21	M16x1,5	55	10	24

Piston Ø	KY	L min	M1/M2	MM f8	MR	PB ±1	VA	WF ±1,4	XC ±1	ZN ± 1	SW 1	SW 2
16 mm	3,2	9	6,7	6	16	43,6	16	22	82	94,7	20	5
20 mm	4	12	9,7	8	18	48,6	18	24	95	109,7	24	6
25 mm	5	12	9,7	10	19	52,6	20	28	104	119,7	28	8
32 mm	5	14	9,5/11,7	12	12	46	-	34	117,5	129,5	35	10
40 mm	6	16	9,8/8,7	16	13,9	66	-	39	139,6	153,5	45	13

Piston Ø	KY	L min	M1/M2	MM f8	MR	PB ±1	VA	WF ±1,4	XC ±1	ZN ± 1	SW 1	SW 2
50 mm	8	17	9,8/8,3	20	15,8	68	-	44	147,2	163	53	17
63 mm	8	17	13/9,3	20	16	71,5	-	44	155	171	66	17

Accessories overview

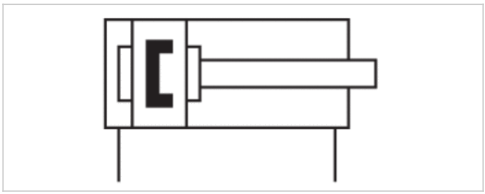
Overview drawing



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.

Stainless steel round cylinder, Series CSL-RD

- Version: hygienic design
- ISO 6432 (Ø 16-25 mm)
- Ø 16-63 mm
- Ports M5, G 1/8, G 1/4, G 3/8
- double-acting
- with magnetic piston
- elastic cushioning
- with integrated rear eye
- Piston rod External thread
- ATEX optional
- suitable for use in food processing (FDA/NSF/ EC No 1935/2004)



Standards	ISO 6432 (Ø 16-25 mm)
Certificates	EC No 1935/2004, ATEX optional
Compressed air connection	Internal thread
Working pressure min./max.	1 ... 10 bar
Ambient temperature min./max.	-20 ... 80 °C
Medium temperature min./max.	-20 ... 80 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m³
Pressure for determining piston forces	6,3 bar

Technical data

Piston Ø Piston rod thread Ports Piston rod Ø	16 mm M6 M5 6 mm	20 mm M8 G 1/8 8 mm	25 mm M10x1,25 G 1/8 10 mm	32 mm M10x1,25 G 1/8 12 mm	40 mm M12x1,25 G 1/4 16 mm	50 mm M16x1,5 G 1/4 20 mm	63 mm M16x1,5 G 3/8 20 mm
Stroke 25	R412020420	R412020464	R412020508	R481624808	R481624819	R481624830	R481624841
50	R412020421	R412020465	R412020509	R481624809	R481624820	R481624831	R481624842
80	R412020422	R412020466	R412020510	R481624810	R481624821	R481624832	R481624843
100	R412020423	R412020467	R412020511	R481624811	R481624822	R481624833	R481624844
125	R412020424	R412020468	R412020512	R481624812	R481624823	R481624834	R481624845
160	R412020425	R412020469	R412020513	R481624813	R481624824	R481624835	R481624846
200	R412020426	R412020470	R412020514	R481624814	R481624825	R481624836	R481624847
250	R412020427	R412020471	R412020515	R481624815	R481624826	R481624837	R481624848
320	R412020428	R412020472	R412020516	R481624816	R481624827	R481624838	R481624849
400	R412020429	R412020473	R412020517	R481624817	R481624828	R481624839	R481624850
500	R412020430	R412020474	R412020518	R481624818	R481624829	R481624840	R481624851

Technical data

Piston Ø	16 mm	20 mm	25 mm	32 mm	40 mm	50 mm	63 mm
Retracting piston force	109 N	166 N	260 N	435 N	660 N	1035 N	1765 N
Extracting piston force	127 N	198 N	309 N	505 N	790 N	1235 N	1960 N
Impact energy	0,14 J	0,23 J	0,35 J	0,5 J	0,7 J	1,0 J	1,3 J
Weight 0 mm stroke	0,034 kg	0,063 kg	0,082 kg	0,699 kg	1,372 kg	2,044 kg	2,890 kg
Weight +10 mm stroke	0,002 kg	0,005 kg	0,006 kg	0,015 kg	0,024 kg	0,040 kg	0,044 kg
Stroke max.	800 mm	1100 mm	1200 mm	1200 mm	1200 mm	1200 mm	1200 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).

Clamping piece for magnetic field sensor necessary

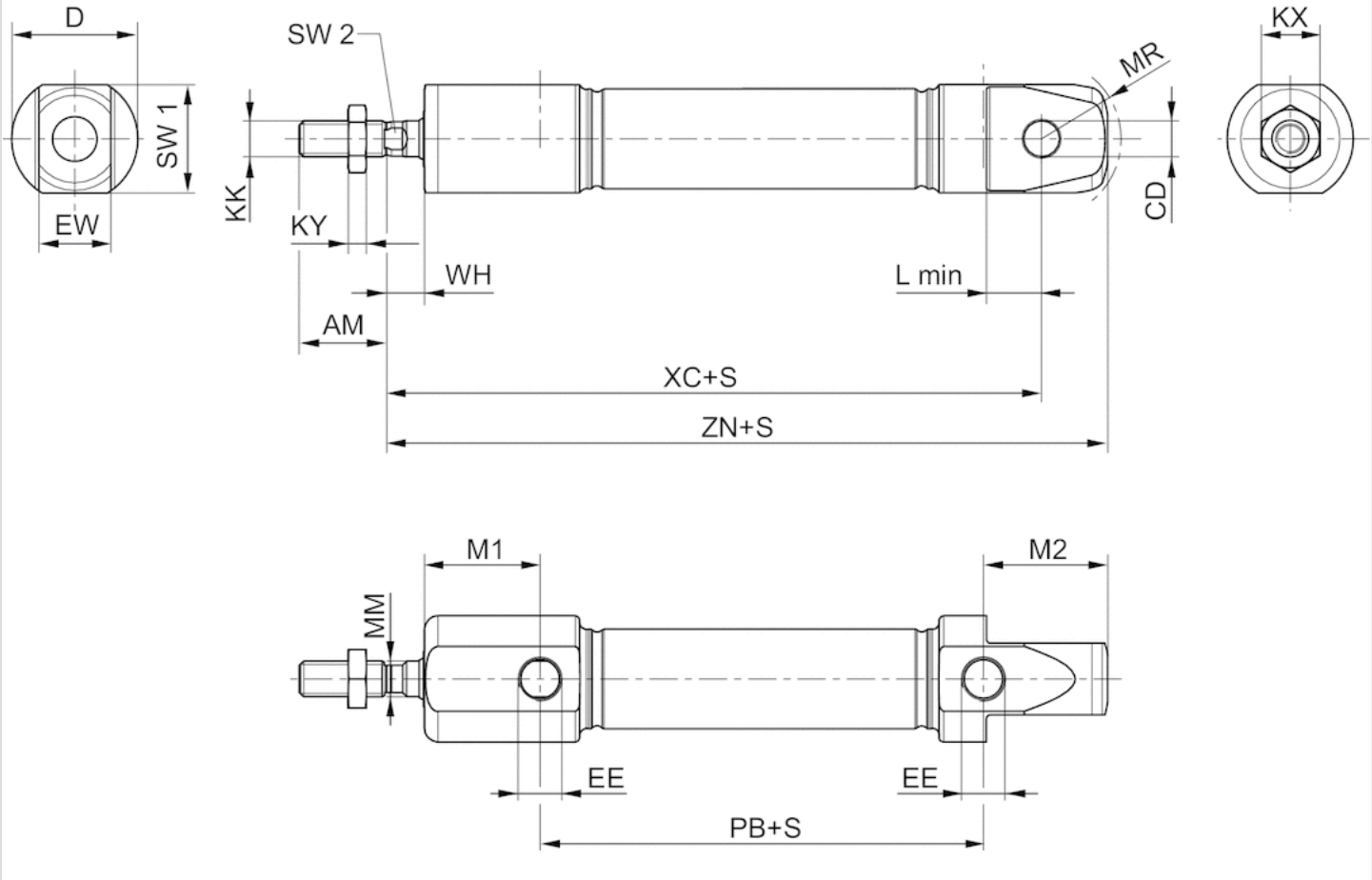
ATEX-certified cylinders with identification II 2G Ex h IIC T4 Gb / II 2D Ex h IIIC T135°C Db_X can be generated in the Internet configurator.
The operating temperature range for ATEX-certified cylinders is -20°C ... 60°C.

Technical information

Material	
Cylinder tube	Stainless steel
Piston rod	Stainless steel
Front cover	Stainless steel, Electropolished
End cover	Stainless steel, Electropolished
Piston Seal	Nitrile butadiene rubber
Nut for cylinder mounting	Stainless steel
Nut for piston rod	Stainless steel
Scraper	Thermoplastic polyurethane (TPU), Ultra-high-molecular-weight polyethylene/ Thermoplastic polyurethane (UHMW-PE/TPU)
Guide bushing	Plastic

Dimensions

Dimensions



S = stroke

Dimensions

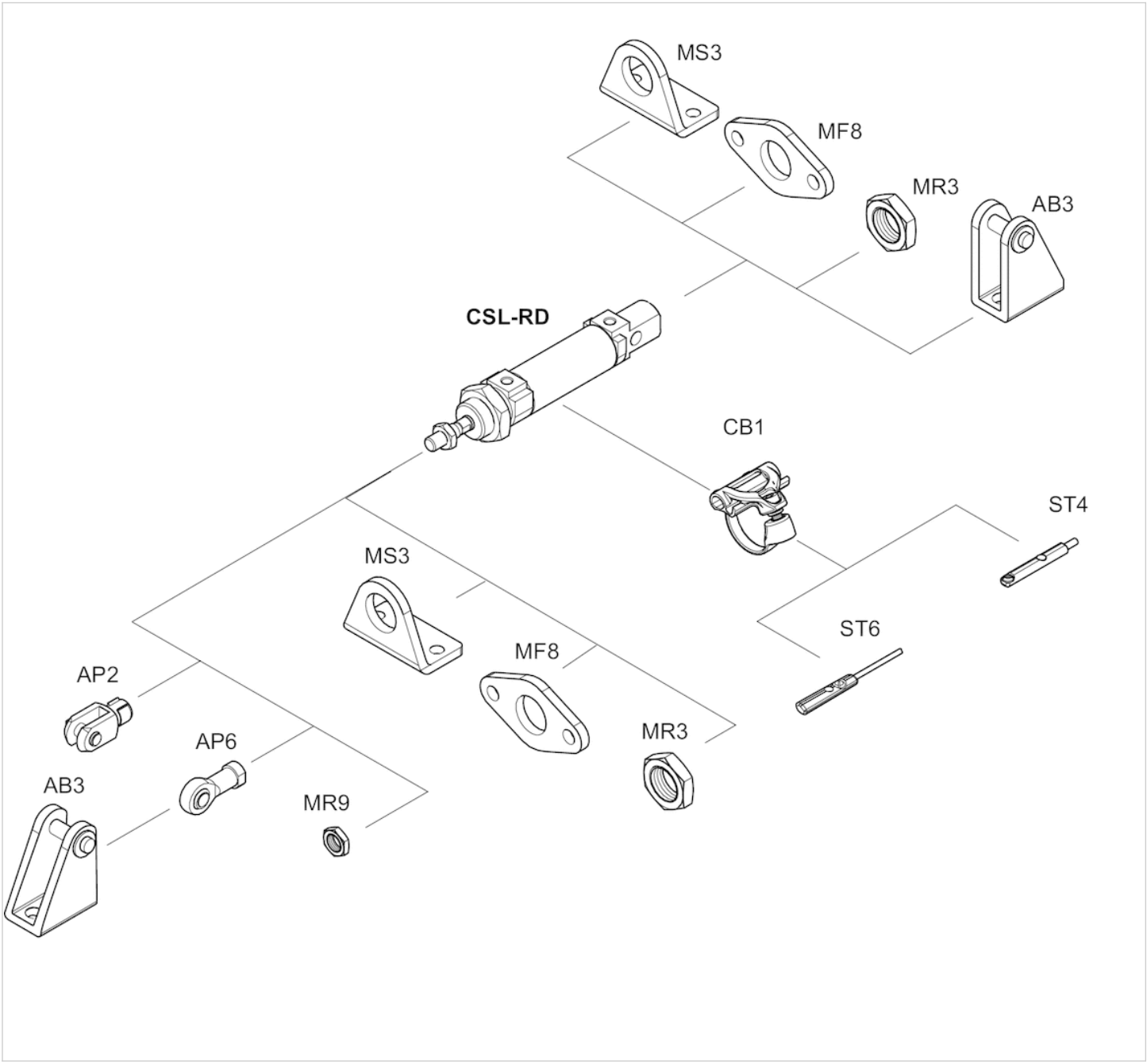
Piston Ø	AM	CD H9	D	EE	EW d13	KK	KX	KY	L min	M1	M2
16 mm	16	6	22	M5	12	M6	10	3,2	9	21,2	22,7
20 mm	20	8	28	G 1/8	16	M8	13	4	12	25,7	27,7
25 mm	22	8	33	G 1/8	16	M10x1,25	17	5	12	28,2	29,7
32 mm	22	10	38	G 1/8	16	M10x1,25	17	5	14	34,6	11,7
40 mm	24	12	49	G 1/4	18	M12x1,25	18	6	16	38	8,7
50 mm	32	16	57	G 1/4	21	M16x1,5	24	8	17	42,1	8,3
63 mm	32	16	70	G 3/8	21	M16x1,5	24	8	17	45,3	9,4

Piston Ø	MM f8	MR	PB ±1	WH ±1,4	XC ±1	ZN ± 1	SW 1	SW 2
16 mm	6	16	43,6	7,5	82	94,7	20	5
20 mm	8	18	48,6	8	95	109,7	24	6
25 mm	10	19	52,6	9,5	104	119,7	28	8
32 mm	12	12	46	8,9	117,5	129,5	35	10
40 mm	16	13,9	66	10,8	139,6	153,5	45	13

Piston Ø	MM f8	MR	PB ±1	WH ±1,4	XC ±1	ZN ± 1	SW 1	SW 2
50 mm	20	15,8	68	11,7	147,2	163	53	17
63 mm	20	16	71,5	11,7	155	171	66	17

Accessories overview

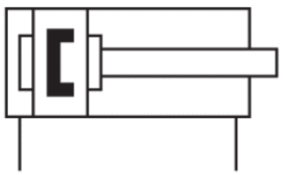
Overview drawing



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.

Stainless steel round cylinder, Series CSL-RD

- Version: short type
- Ø 16-25 mm
- Ports M5, G 1/8
- double-acting
- with magnetic piston
- elastic cushioning
- Piston rod External thread
- ATEX optional
- suitable for use in food processing (FDA/NSF/ EC No 1935/2004



Certificates	EC No 1935/2004, ATEX optional
Compressed air connection	Internal thread
Working pressure min./max.	1 ... 10 bar
Ambient temperature min./max.	-20 ... 80 °C
Medium temperature min./max.	-20 ... 80 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m³
Pressure for determining piston forces	6,3 bar

Technical data

Piston Ø Piston rod thread Ports Piston rod Ø	16 mm M6 M5 6 mm	20 mm M8 G 1/8 8 mm	25 mm M10x1,25 G 1/8 10 mm
Stroke 25	R412021846	R412021857	R412021868
50	R412021847	R412021858	R412021869
80	R412021848	R412021859	R412021870
100	R412021849	R412021860	R412021871
125	R412021850	R412021861	R412021872
160	R412021851	R412021862	R412021873
200	R412021852	R412021863	R412021874
250	R412021853	R412021864	R412021875
320	R412021854	R412021865	R412021876
400	R412021855	R412021866	R412021877
500	R412021856	R412021867	R412021878

Technical data

Piston Ø	16 mm	20 mm	25 mm
Retracting piston force	109 N	166 N	260 N
Extracting piston force	127 N	198 N	309 N
Impact energy	0,14 J	0,23 J	0,35 J
Weight 0 mm stroke	0,034 kg	0,063 kg	0,082 kg
Weight +10 mm stroke	0,002 kg	0,005 kg	0,006 kg
Stroke max.	800 mm	1100 mm	1200 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).

Clamping piece for magnetic field sensor necessary

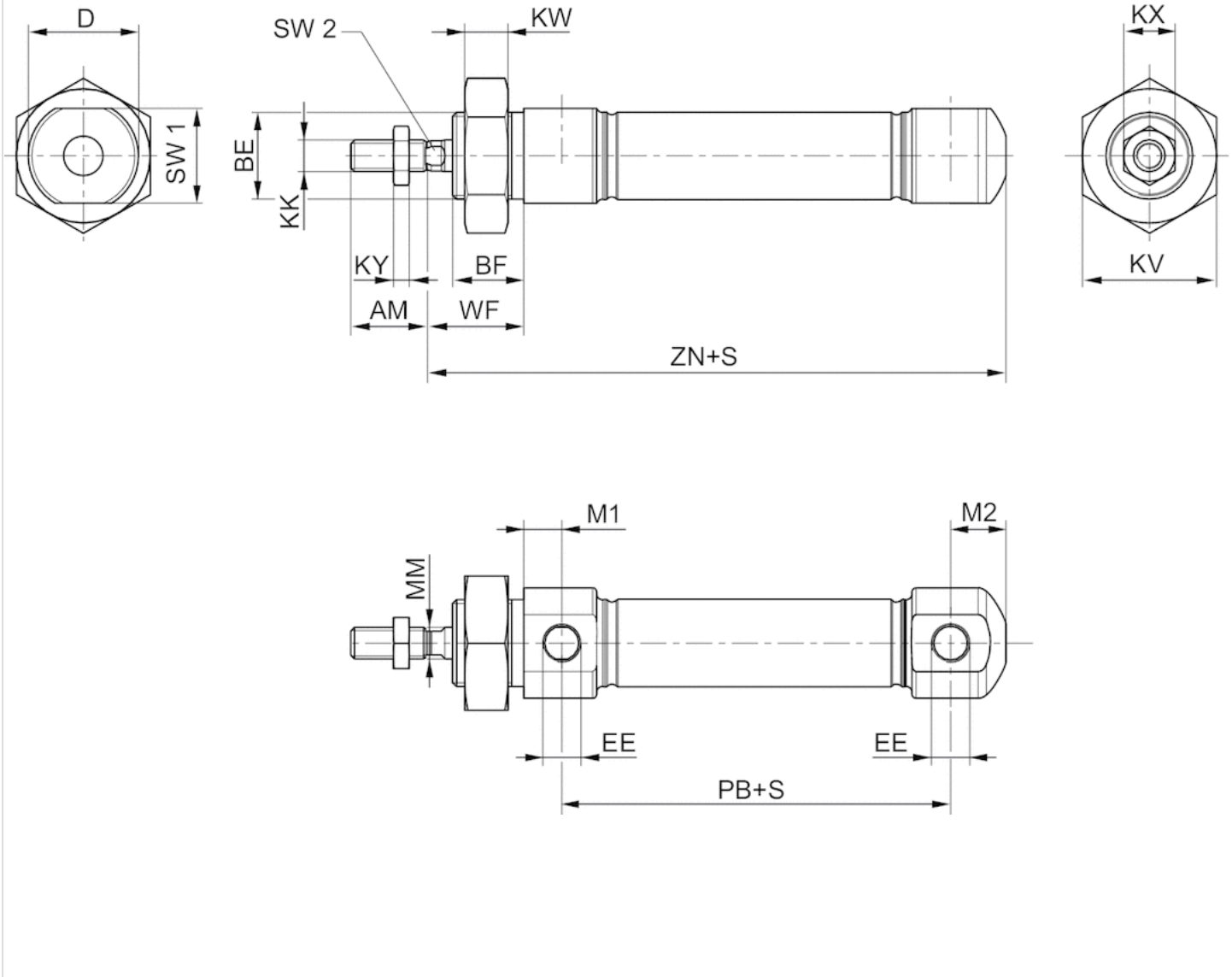
ATEX-certified cylinders with identification II 2G Ex h IIC T4 Gb / II 2D Ex h IIIC T135°C Db_X can be generated in the Internet configurator.
The operating temperature range for ATEX-certified cylinders is -20°C ... 60°C.
Based on ISO 6432

Technical information

Material	
Cylinder tube	Stainless steel
Piston rod	Stainless steel
Front cover	Stainless steel, Electropolished
End cover	Stainless steel, Electropolished
Piston Seal	Nitrile butadiene rubber
Nut for cylinder mounting	Stainless steel
Nut for piston rod	Stainless steel
Scraper	Thermoplastic polyurethane (TPU), Ultra-high-molecular-weight polyethylene/ Thermoplastic polyurethane (UHMW-PE/TPU)
Guide bushing	Plastic

Dimensions

Dimensions



S = stroke

Dimensions

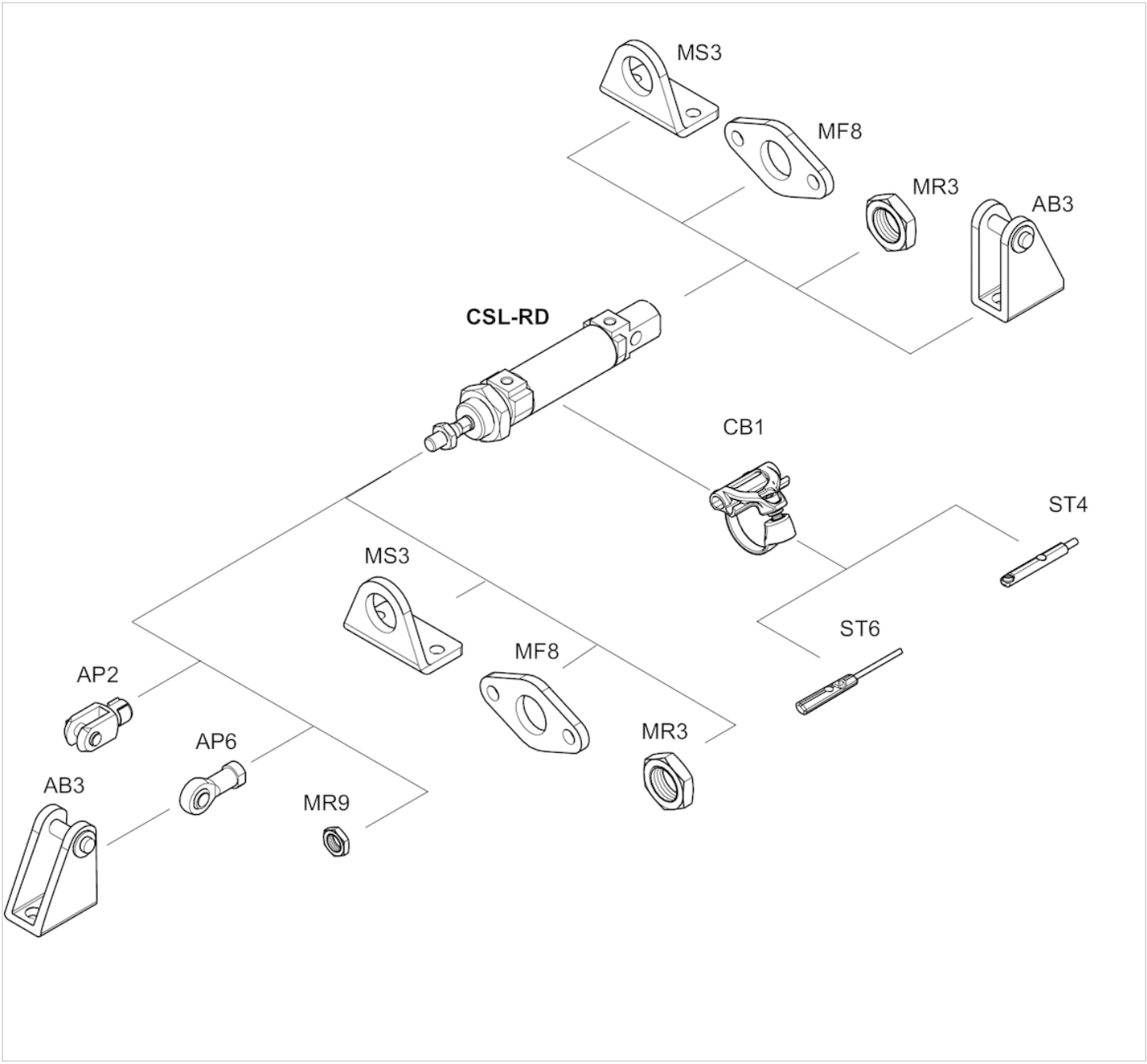
Piston Ø	AM–2	BE	BF	D	EE	KK	KV	KW	KX	KY	M1	M2
16 mm	16	M16x1,5	16	22	M5	M6	24	8	10	3,2	6,7	10
20 mm	20	M22x1,5	18	28	G 1/8	M8	32	11	13	4	9,7	14
25 mm	22	M22x1,5	20	33	G 1/8	M10x1,25	32	11	17	5	9,7	14

Piston Ø	MM f8	PB ±1	WF ±1,4	ZN ± 1	SW 1	SW 2
16 mm	6	43,6	22	82	20	5

Piston Ø	MM f8	PB ±1	WF ±1,4	ZN ± 1	SW 1	SW 2
20 mm	8	48,6	24	96	24	6
25 mm	10	52,6	28	104	28	8

Accessories overview

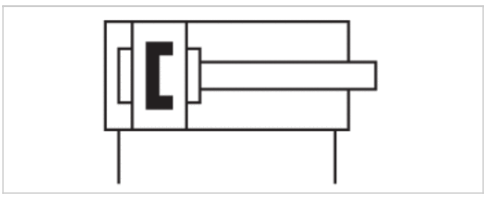
Overview drawing



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.

Stainless steel round cylinder, Series CSL-RD

- Version: Standard Type
- ISO 6432 (Ø16-25 mm)
- Ø 16-63 mm
- Ports M5, G 1/8, G 1/4, G 3/8
- double-acting
- with magnetic piston
- elastic cushioning
- with integrated rear eye
- Piston rod External thread
- suitable for use in food processing (FDA/NSF/ EC No 1935/2004)
- Heat resistant



Standards	ISO 6432 (Ø16-25 mm)
Compressed air connection	Internal thread
Working pressure min./max.	1 ... 10 bar
Ambient temperature min./max.	-10 ... 120 °C
Medium temperature min./max.	-10 ... 120 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 5 mg/m³
Pressure for determining piston forces	6,3 bar

Technical data

Piston Ø Piston rod thread Ports Piston rod Ø	16 mm M6 M5 6 mm	20 mm M8 G 1/8 8 mm	25 mm M10x1,25 G 1/8 10 mm	32 mm M10x1,25 G 1/8 12 mm	40 mm M12x1,25 G 1/4 16 mm	50 mm M16x1,5 G 1/4 20 mm	63 mm M16x1,5 G 3/8 20 mm
Stroke 25	R480646359	R480646370	R480646381	R481624984	R481624995	R481625006	R481625017
50	R480646360	R480646371	R480646382	R481624985	R481624996	R481625007	R481625018
80	R480646361	R480646372	R480646383	R481624986	R481624997	R481625008	R481625019
100	R480646362	R480646373	R480646384	R481624987	R481624998	R481625009	R481625020
125	R480646363	R480646374	R480646385	R481624988	R481624999	R481625010	R481625021
160	R480646364	R480646375	R480646386	R481624989	R481625000	R481625011	R481625022
200	R480646365	R480646376	R480646387	R481624990	R481625001	R481625012	R481625023
250	R480646366	R480646377	R480646388	R481624991	R481625002	R481625013	R481625024
320	R480646367	R480646378	R480646389	R481624992	R481625003	R481625014	R481625025
400	R480646368	R480646379	R480646390	R481624993	R481625004	R481625015	R481625026
500	R480646369	R480646380	R480646391	R481624994	R481625005	R481625016	R481625027

Technical data

Piston Ø	16 mm	20 mm	25 mm	32 mm	40 mm	50 mm	63 mm
Retracting piston force	109 N	166 N	260 N	435 N	660 N	1035 N	1765 N
Extracting piston force	127 N	198 N	309 N	505 N	790 N	1235 N	1960 N
Impact energy	0,14 J	0,23 J	0,35 J	0,5 J	0,7 J	1,0 J	1,3 J
Weight 0 mm stroke	0,034 kg	0,063 kg	0,082 kg	0,699 kg	1,372 kg	2,044 kg	2,890kg
Weight +10 mm stroke	0,002 kg	0,005 kg	0,006 kg	0,015 kg	0,024 kg	0,040 kg	0,044 kg
Stroke max.	800 mm	1100 mm	1200 mm	1200 mm	1200 mm	1200 mm	1200 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).

Clamping piece for magnetic field sensor necessary

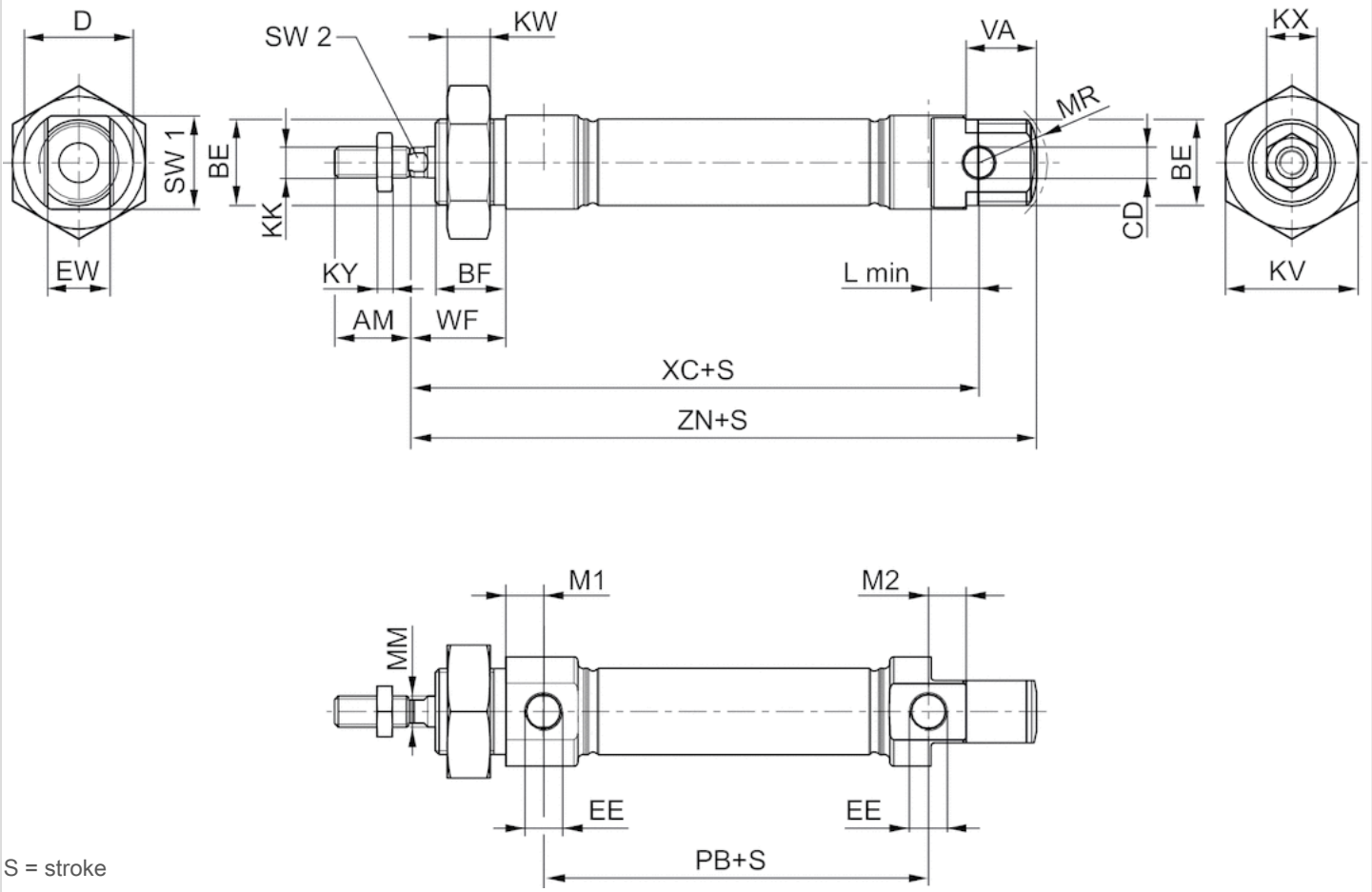
Ambient temperature with contact query max. 120 °C

Technical information

Material	
Cylinder tube	Stainless steel
Piston rod	Stainless steel
Front cover	Stainless steel, Electropolished
End cover	Stainless steel, Electropolished
Piston Seal	Nitrile butadiene rubber
Nut for cylinder mounting	Stainless steel
Nut for piston rod	Stainless steel
Scraper	Fluorocaoutchouc
Guide bushing	Plastic

Dimensions

Dimensions



S = stroke

Dimensions

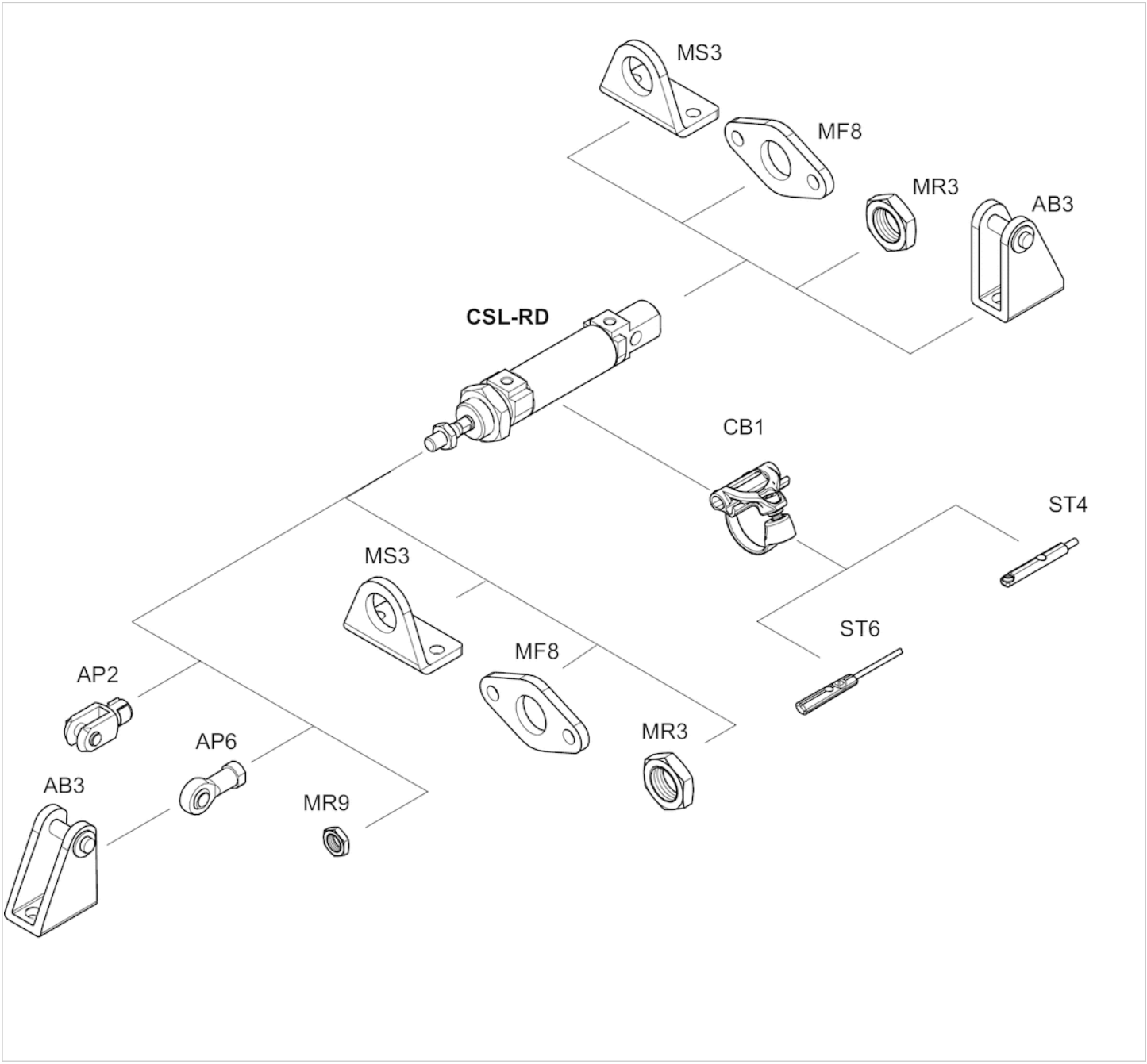
Piston Ø	AM	BE	BF	CD H9	D	EE	EW d13	KK	KV	KW	KX
16 mm	16	M16x1,5	16	6	22	M5	12	M6	24	8	10
20 mm	20	M22x1,5	18	8	28	G 1/8	16	M8	32	11	13
25 mm	22	M22x1,5	20	8	33	G 1/8	16	M10x1,25	32	11	17
32 mm	22	M30x1,5	25	10	38	G 1/8	16	M10x1,25	36	8	17
40 mm	24	M38x1,5	28	12	49	G 1/4	18	M12x1,25	46	10	18
50 mm	32	M45x1,5	32	16	57	G 1/4	21	M16x1,5	55	10	24
63 mm	32	M45x1,5	32	16	70	G 3/8	21	M16x1,5	55	10	24

Piston Ø	KY	L min	M1/M2	MM f8	MR	PB ±1	VA	WF ±1,4	XC ±1	ZN ± 1	SW 1	SW 2
16 mm	3,2	9	6,7	6	16	43,6	16	22	82	94,7	20	5
20 mm	4	12	9,7	8	18	48,6	18	24	95	109,7	24	6
25 mm	5	12	9,7	10	19	52,6	20	28	104	119,7	28	8
32 mm	5	14	9,5/11,7	12	12	46	-	34	117,5	129,5	35	10
40 mm	6	16	9,8/8,7	16	13,9	66	-	39	139,6	153,5	45	13

Piston Ø	KY	L min	M1/M2	MM f8	MR	PB ±1	VA	WF ±1,4	XC ±1	ZN ± 1	SW 1	SW 2
50 mm	8	17	9,8/8,3	20	15,8	68	-	44	147,2	163	53	17
63 mm	8	17	13/9,4	20	16	71,5	-	44	155	171	66	17

Accessories overview

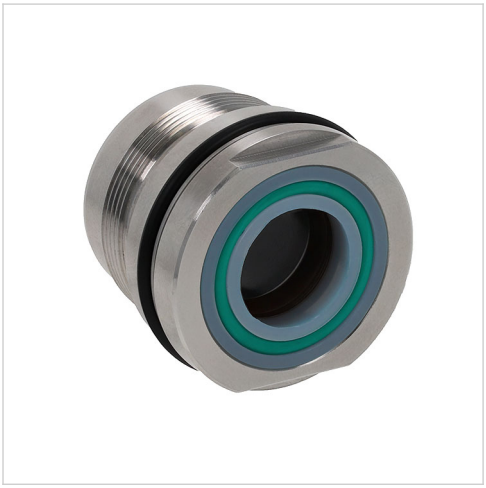
Overview drawing



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.

Modular scraper system

- For stainless steel round cylinders series CSL-RD
- Piston Ø 32, 40, 50, 63 mm



Working pressure min./max.	1.5 ... 10 bar
Ambient temperature min./max.	See table below
Medium	Compressed air
Oil content of compressed air	0 ... 5 mg/m³

Technical data

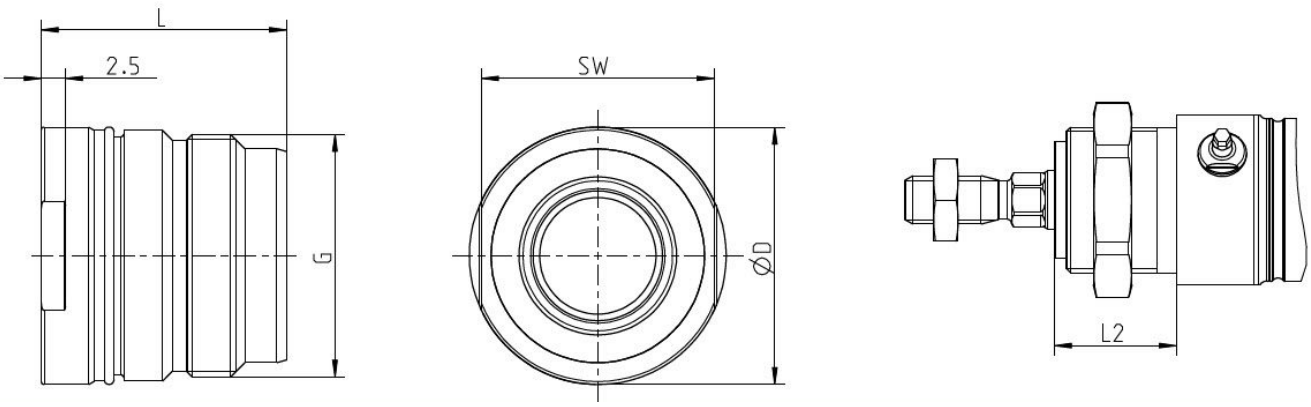
Part No.	Piston Ø	Piston rod seal	Scraper
R412028343	32 mm	NBR	TPE-E
R412028344	32 mm	NBR	UHMW-PE/TPU
R412028345	32 mm	UHMW-PE	UHMW-PE
R412028346	32 mm	FPM	PTFE
R412028347	40 mm	NBR	TPE-E
R412028348	40 mm	NBR	UHMW-PE/TPU
R412028349	40 mm	UHMW-PE	UHMW-PE
R412028350	40 mm	FPM	PTFE
R412028351	50, 63 mm	NBR	TP-E
R412028352	50, 63 mm	NBR	UHMW-PE/TPU
R412028353	50, 63 mm	UHMW-PE	UHMW-PE
R412028354	50, 63 mm	FPM	PTFE

Part No.	Ambient temperature min./max.
R412028343	-20 ... 80°C
R412028344	-20 ... 80°C
R412028345	-20 ... 80°C
R412028346	-10 ... 150°C
R412028347	-20 ... 80°C
R412028348	-20 ... 80°C
R412028349	-20 ... 80°C
R412028350	-10 ... 150°C
R412028351	-20 ... 80°C
R412028352	-20 ... 80°C
R412028353	-20 ... 80°C
R412028354	-10 ... 150°C

Technical information

Material	
Housing	Stainless steel

Dimensions



Dimensions

Piston Ø		ØD	G	L	L2	SW
32		26,5	M25x1	25,3	25,1	24
40		34	M30x1	28,4	28,2	30
50, 63		38	M33x1,5	32	32,3	34

Piston rod nut MR9

Weight See table below

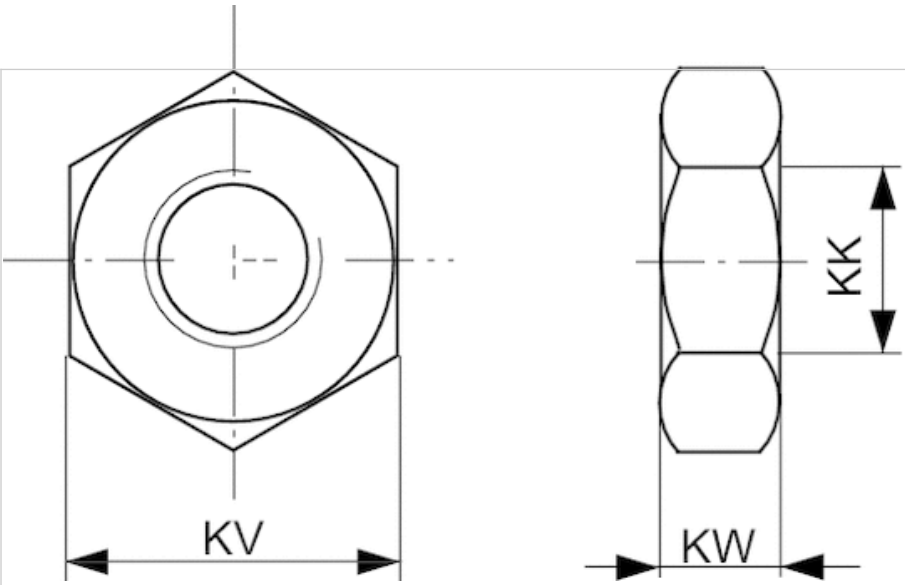
Technical data

Part No.	Suitable piston rod thread	Weight
8103190644	M6	0,003 kg
8103190164	M8	0,006 kg
8103190464	M10x1,25	0,008 kg
3590304000	M12x1,25	0,02 kg
3590305000	M16x1,5	0,03 kg

Technical information

Material	
Material	Stainless Steel

Dimensions



Dimensions

Part No.	KK	KV	KW
8103190644	M6	10	3,2
8103190164	M8	13	4
8103190464	M10x1,25	17	5
3590304000	M12x1,25	19	6
3590305000	M16x1,5	24	8

Rod clevis AP2, Series CM2

- with circlip, to mount on cylinder CSL-RD

Weight See table below

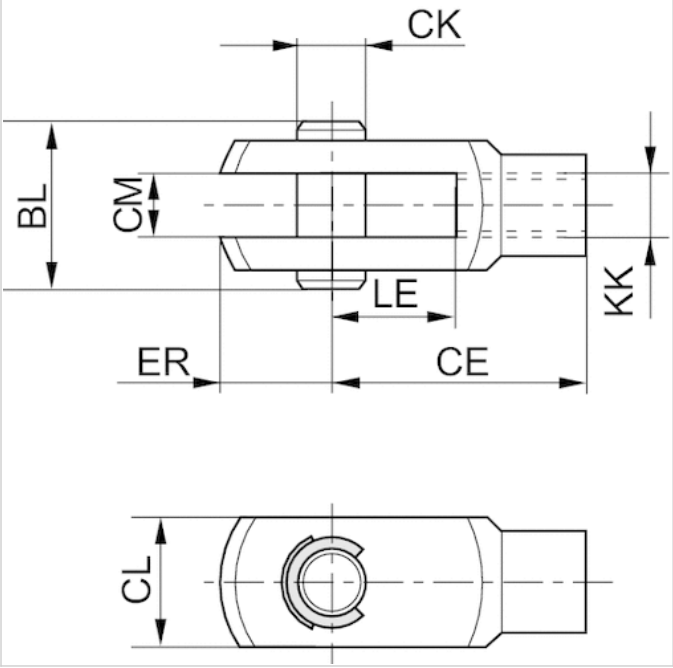
Technical data

Part No.	Suitable piston rod thread	for	Weight
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
3590504000	M12x1,25	CCL-IS CCL-IC CCI SSI 167 ICS-D2	0,16 kg
3590505000	M16x1,5	CCL-IS ICS-D2 167	0,4 kg

Technical information

Material	
Material	Stainless steel

Dimensions



Dimensions

Part No.	KK	CE	CK e8	CL	CM B12	ER	BL	LE
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
3590504000	M12x1,25	48	12	24	12	14	31	24
3590505000	M16x1,5	64	16	32	16	19	39	32

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

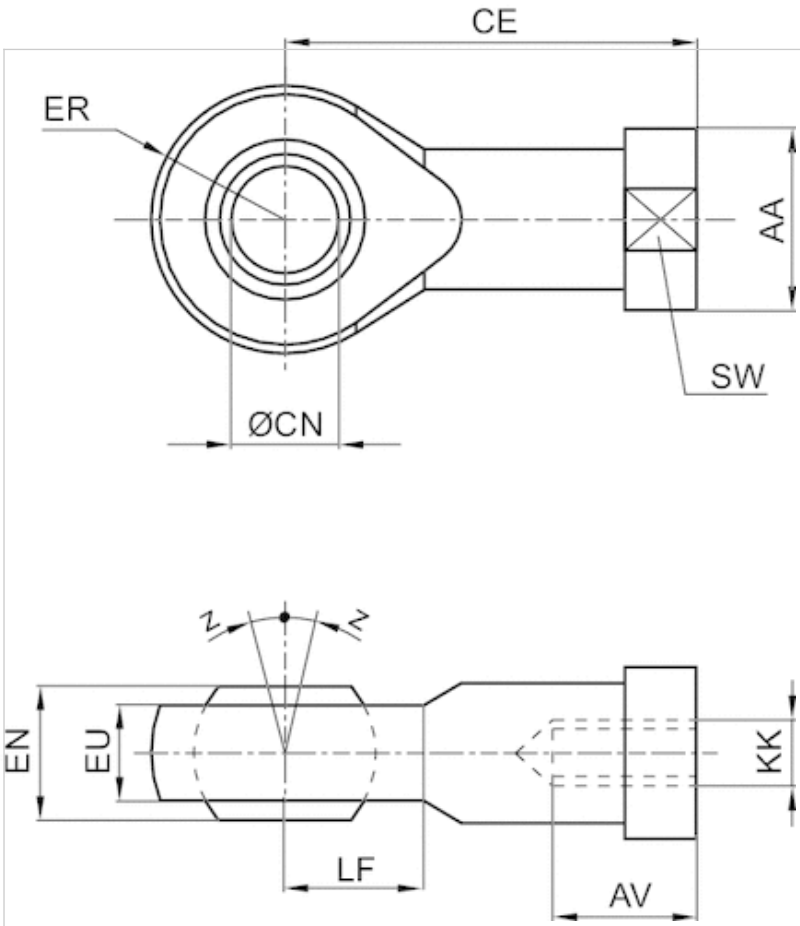
Technical data

Part No.	Suitable piston rod thread	for	Swivel bearing Ø	Weight
8958209012	M6	CCL-IC CSL-RD ICM	6	0,04 kg
8958209022	M8	CCL-IC CSL-RD ICM	8	0,06 kg
8958209032	M10x1,25	CCL-IS CCL-IC SSI CSL-RD ICM ICS-D2	10	0,09 kg
8958209042	M12x1,25	CCL-IS CCL-IC SSI CSL-RD ICM ICS-D2	12	0,12 kg
8958209052	M16x1,5	CCL-IS CCL-IC SSI CSL-RD ICM ICS-D2	16	0,23 kg

Technical information

Material	
Material	Stainless steel

Dimensions

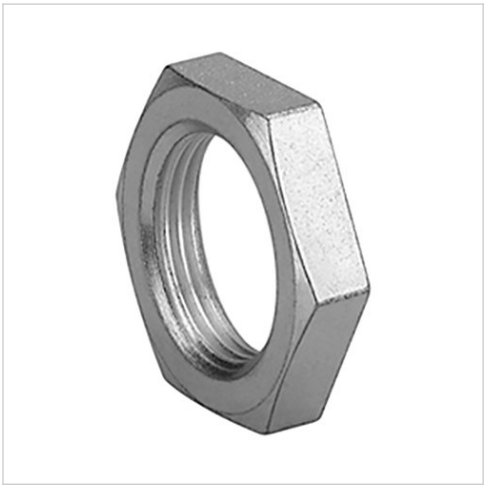


Dimensions

Part No.	KK	AA	AV min.	CE	Ø CN H7	EN –0,1	ER	EU max.	LF	SW	Z [°] max.
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
8958209042	M12x1,25	22	18	50	12	16	16	12	16	19	6,5
8958209052	M16x1,5	27	24	64	16	21	21	15	21	22	7,5

Nut MR3, series CM1

- for cylinder mounting
- Suitable piston Ø 16, 20, 25, 32, 40, 50, 63mm
- for series CSL-RD



Weight See table below

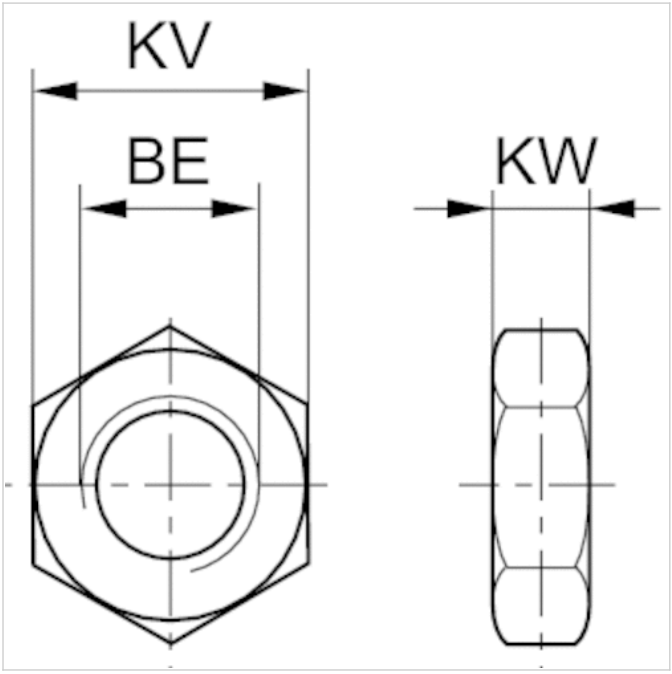
Technical data

Part No.	Piston Ø	Thread size
2918540030	16 mm	M16x1,5
R913030290	20, 25 mm	M22x1,5
R412027981	32 mm	M30x1,5
R412027982	40 mm	M38x1,5
R412027983	50, 63 mm	M45x1,5

Technical information

Material	
Material	Stainless steel

Dimensions



Dimensions

Part No.	Piston Ø	BE	KV	KW
2918540030	16 mm	M16x1,5	27	8
R913030290	20, 25 mm	M22x1,5	32	11
R412027981	32 mm	M30x1,5	36	8
R412027982	40 mm	M38x1,5	46	10
R412027983	50, 63 mm	M45x1,5	55	10

Flange mounting MF8, Series CM1

- Cylinder mounting in accordance with ISO 6432
- Suitable piston Ø 16, 20, 25 mm

Standards	ISO 6432

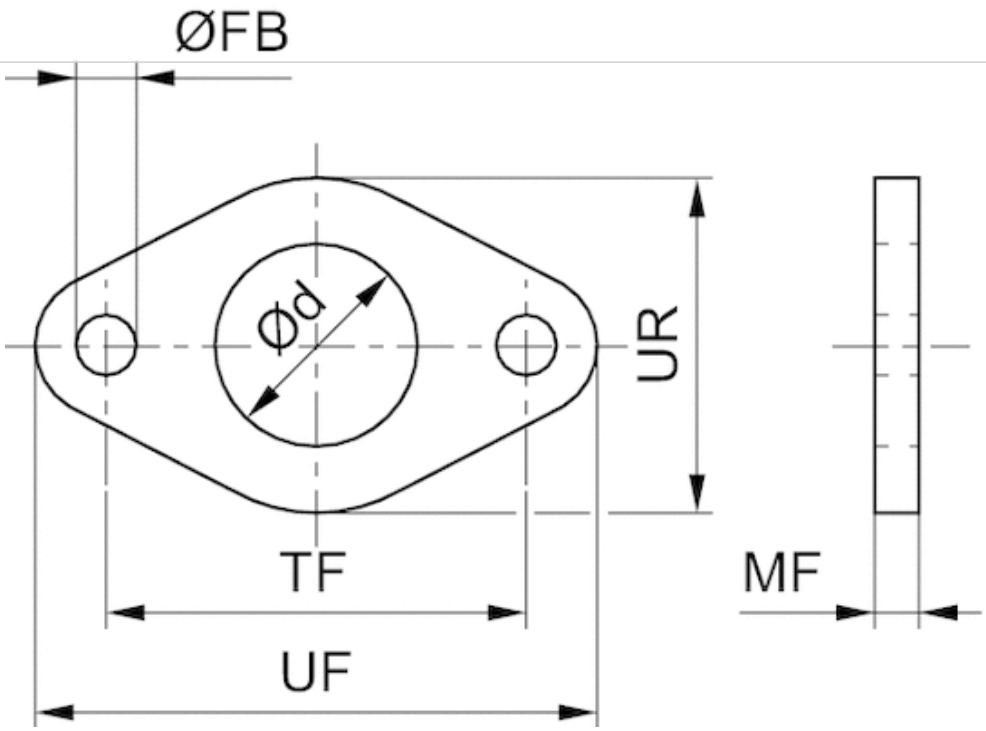
Technical data

Part No.	Piston Ø
3322016000	16 mm
3322020000	20, 25 mm

Technical information

Material	
Material	Stainless steel

Dimensions



Dimensions

Part No.	Piston Ø	Ø d	Ø FB	MF	TF js14	UF	UR
3322016000	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 16, 20, 25 mm

Standards	ISO 6432

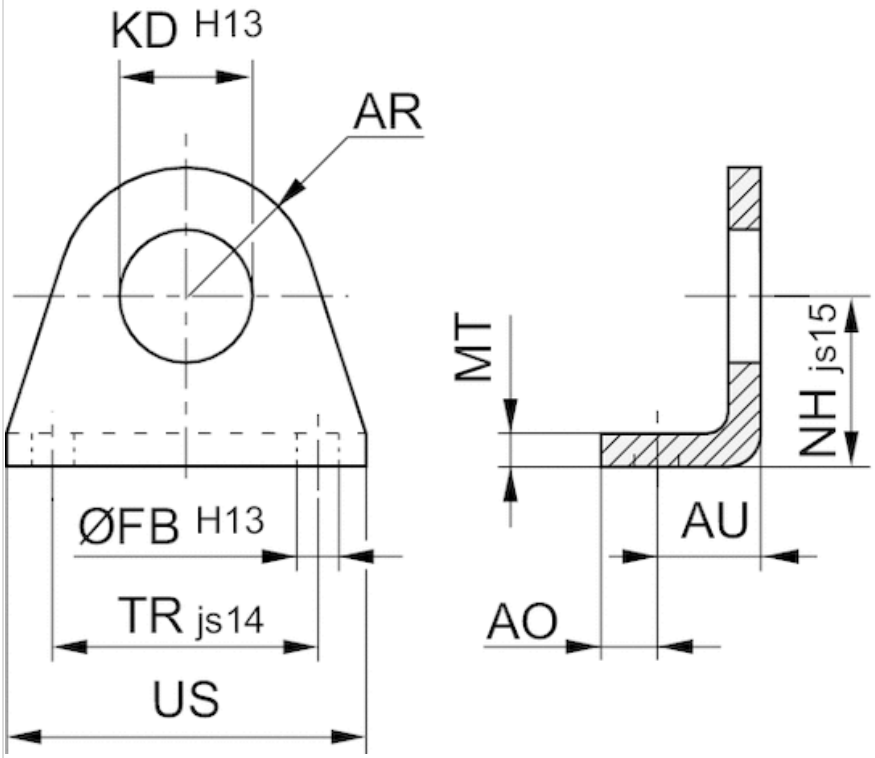
Technical data

Part No.	Piston Ø
3322216000	16 mm
3322220000	20, 25 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
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

Clevis mounting AB3, Series CM1

- Suitable piston Ø 16, 20, 25, 32, 40, 50, 63 mm

The delivered product may vary from that in the illustration.

Technical data

Part No.	Piston Ø	Swivel bearing Ø	Fig.
3323416000	16 mm	6 mm	Fig. 2
3323420000	20, 25 mm	8 mm	Fig. 2
R412027966	32 mm	10 mm	Fig. 1
R412027967	40 mm	12 mm	Fig. 1
R412027968	50, 63 mm	16 mm	Fig. 1

Scope of delivery: clevis mounting incl. pivot pins

Technical information

Material	
Material	Stainless steel

Dimensions

Fig. 1

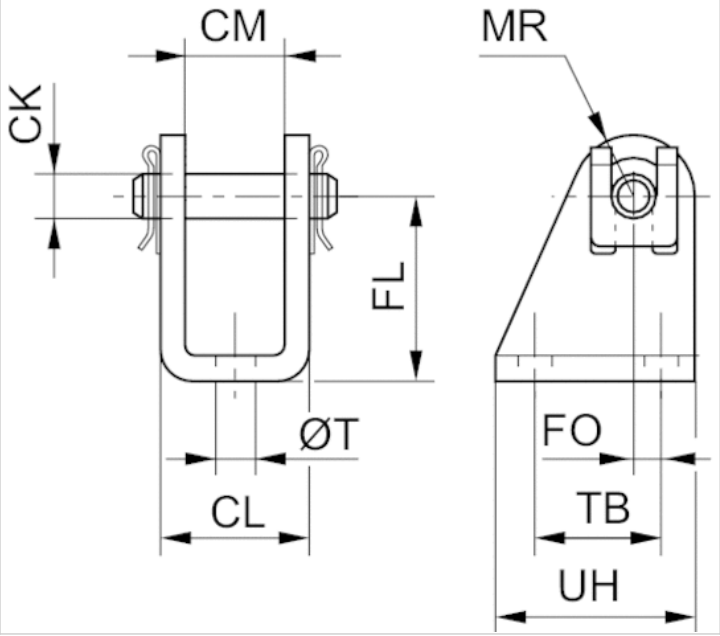
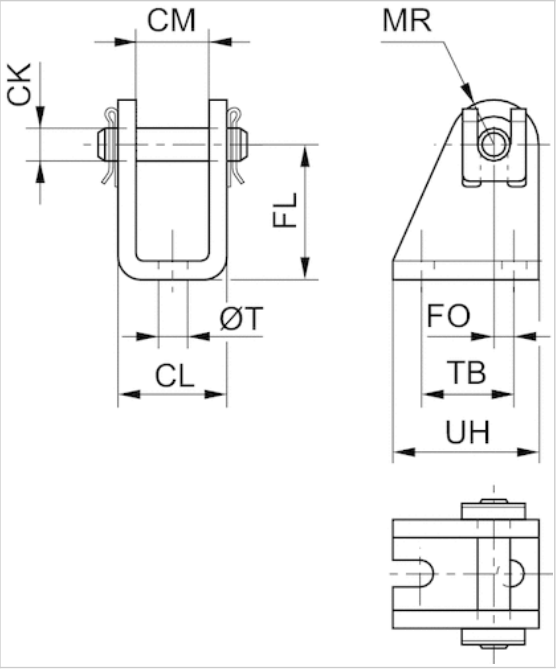


Fig. 2



Dimensions

Part No.	Piston Ø	Fig.	CM	Ø CK	CL	FL	FO	MR	Ø T	TB	UH
3323416000	16 mm	Fig. 2	12	6	18	27	2	7	5,5	15	25
3323420000	20,25 mm	Fig. 2	16	8	24	30	4	10	6,6	22	34
R412027966	32 mm	Fig. 1	16	10	24	35	5	11	6,6	24	35
R412027967	40 mm	Fig. 1	18	12	28	40	5	13	9	30	45
R412027968	50, 63 mm	Fig. 1	21	16	33	45	6	14	9	34	50

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

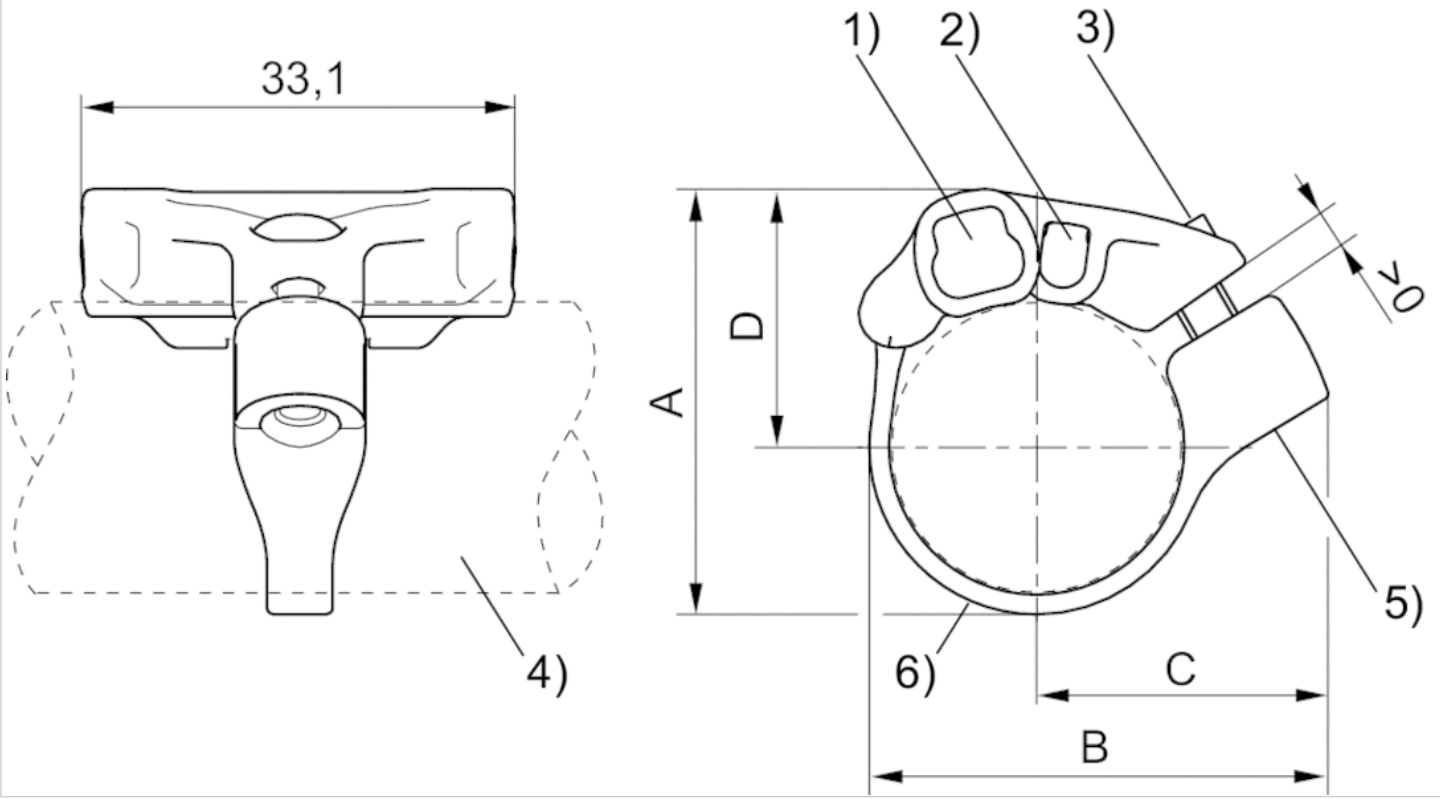
Technical data

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	
Material	Polyamide Stainless steel

Dimensions



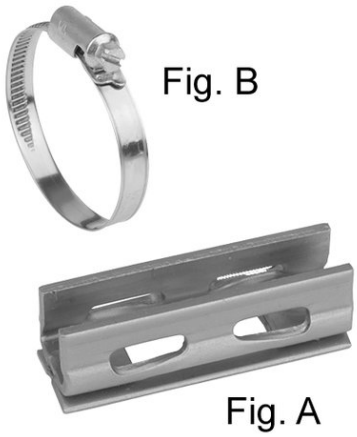
1) Sensor slot for ST6 2) Sensor slot for ST4 3) Mounting screw (made of stainless steel) 4) Cylinder profile 5) Thread insert (made of stainless steel) 6) Tightening strap

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
- to mount on cylinder CSL-RD



Weight See table below

Technical data

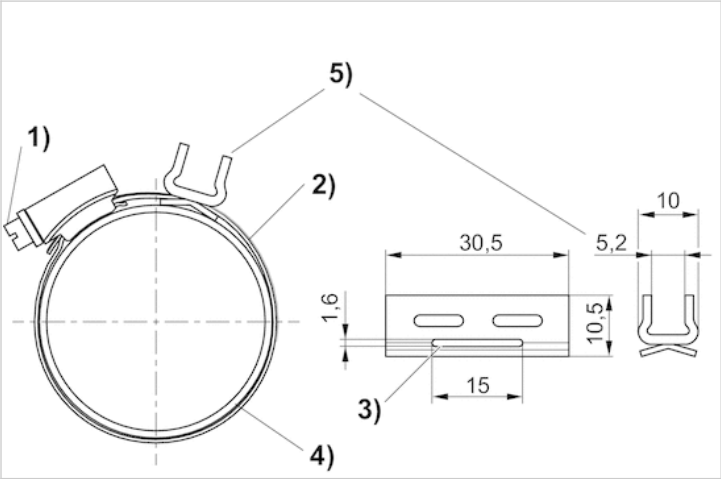
Part No.	Cylinders Ø min.	Cylinders Ø max.	for series	Weight	Fig.
R412024050	25 mm	32 mm	ST6	-	Fig. B
R412024051	40 mm	40 mm	ST6	-	Fig. B
R412024052	50 mm	50 mm	ST6	-	Fig. B
R412024053	63 mm	63 mm	ST6	-	Fig. B
R412024054	25 mm	63 mm	ST6	0.011 kg	Fig. A

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

Technical information

Material	
Material	Stainless steel

Dimensions



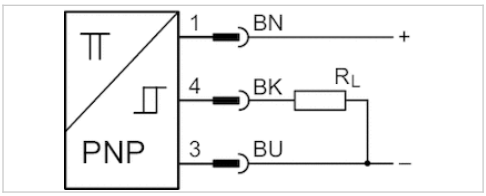
1) Mounting screw 2) Tightening strap 3) Opening for tightening strap 4) Cylinder tube 5) Sensor holder

Dimensions

Part No.	Cylinder tube Ø	For series	Fig.
R412024050	25 40 mm	ST6	Fig. B
R412024051	32 50 mm	ST6	Fig. B
R412024052	40 60 mm	ST6	Fig. B
R412024053	50 70 mm	ST6	Fig. B
R412024054	-	ST6	Fig. A

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, 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
Vibration resistance	10 - 55 Hz, 1 mm
Shock resistance	30 g / 11 ms
Cable length L	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 Imax	DC switching current, max.
R412022854	≤ 2,5 V	0,1 A
R412022856	≤ 2,5 V	0,1 A

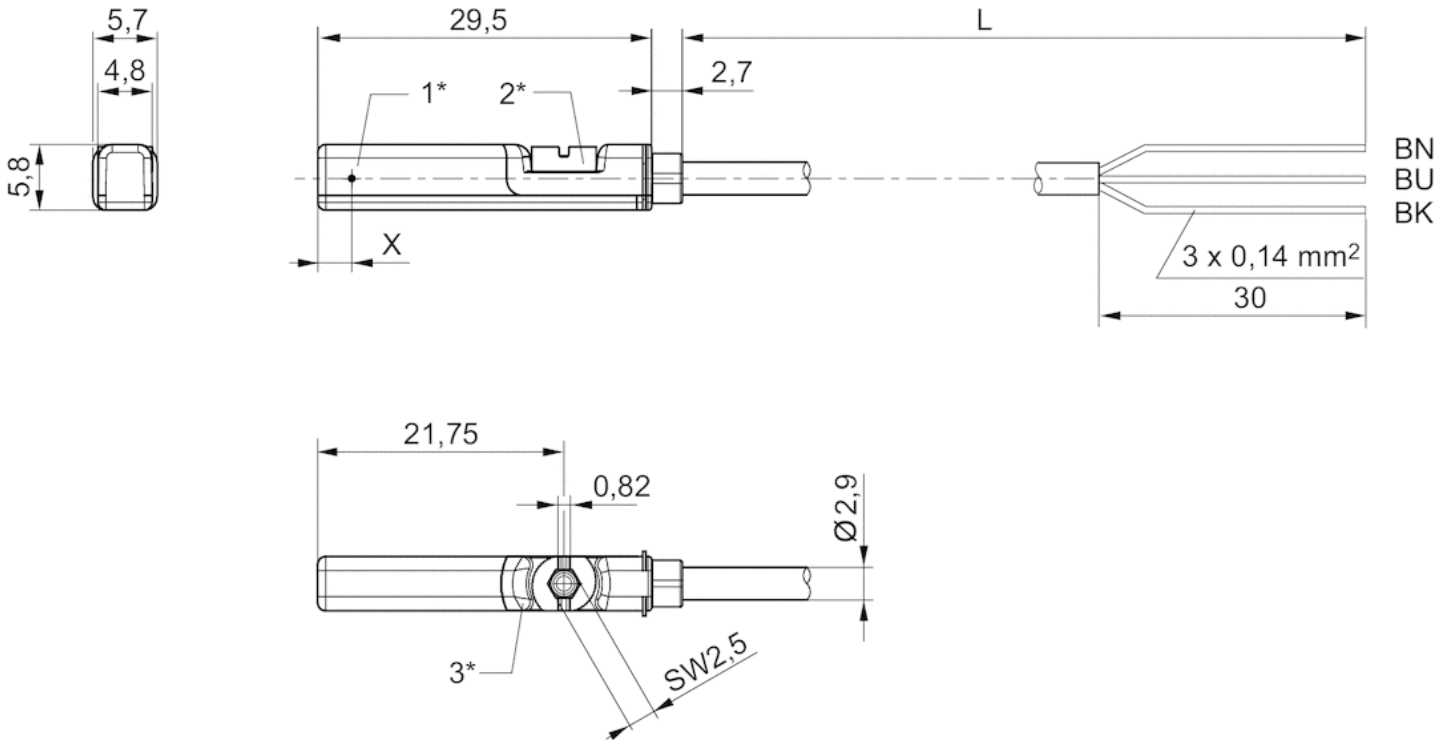
Part No.	Max. switching frequency
R412022854	1000 Hz
R412022856	1000 Hz

Part No.	Version
R412022854	short circuit resistant Protected against polarity reversal
R412022856	short circuit resistant Protected against polarity reversal

Technical information

Material	
Housing	Polyamide
Cable sheath	Polyurethane
Locking screw	Stainless steel

Dimensions



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, 3-pin
- UL certification
- Reed electronic PNP
- Direct mounting for series PRA, PRE, CCI, KPZ, SSI, GPC, CVI
- Indirect mounting for series TRB, ITS, CCL-IS, MNI, CSL-RD, RPC, ICS-D2, ICM, KHZ, TRR

Certificates	CE declaration of conformity cULus RoHS
Ambient temperature min./max.	-30 ... 80 °C
Protection class	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	10 ... 30 V DC
Min./max. AC operating voltage	See table below
Hysteresis	≥ 0,2 mT
Switching logic	NO (make contact)
LED status display	Yellow
Vibration resistance	10 - 55 Hz, 1 mm
Shock resistance	30 g / 11 ms
Cable length L	3 5 10 m

Technical data

Part No.		for	Type of contact
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

Part No.	Cable length L	Min./max. AC operating voltage	Voltage drop U at Imax
R412022869	3 m	10 ... 30 V AC	I*Rs
R412022870	5 m	10 ... 30 V AC	≤ 0,1 V
R412022871	10 m	10 ... 30 V AC	I*Rs
R412022853	3 m	-	≤ 2,5 V
R412022855	5 m	-	≤ 2,5 V

Part No.	DC switching current, max.	AC switching current, max.
R412022869	0,3 A	0,5 A
R412022870	0,3 A	0,5 A
R412022871	0,3 A	0,5 A
R412022853	0,13 A	-

Part No.	DC switching current, max.	AC switching current, max.
R412022855	0,13 A	-

Part No.	Switching capacity	Max. switching frequency
R412022869	Reed, 3-pin: max. 6 W	400 Hz
R412022870	Reed, 3-pin: max. 6 W	400 Hz
R412022871	Reed, 3-pin: max. 6 W	400 Hz
R412022853	-	1000 Hz
R412022855	-	1000 Hz

Part No.	Operating current, not switched	Operating current, switched
R412022869	-	-
R412022870	-	-
R412022871	-	-
R412022853	8 mA	30 mA
R412022855	8 mA	30 mA

Part No.	Version	
R412022869	Protected against polarity reversal	1)
R412022870	Protected against polarity reversal	1)
R412022871	Protected against polarity reversal	1)
R412022853	short circuit resistant Protected against polarity reversal	2)
R412022855	short circuit resistant Protected against polarity reversal	2)

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

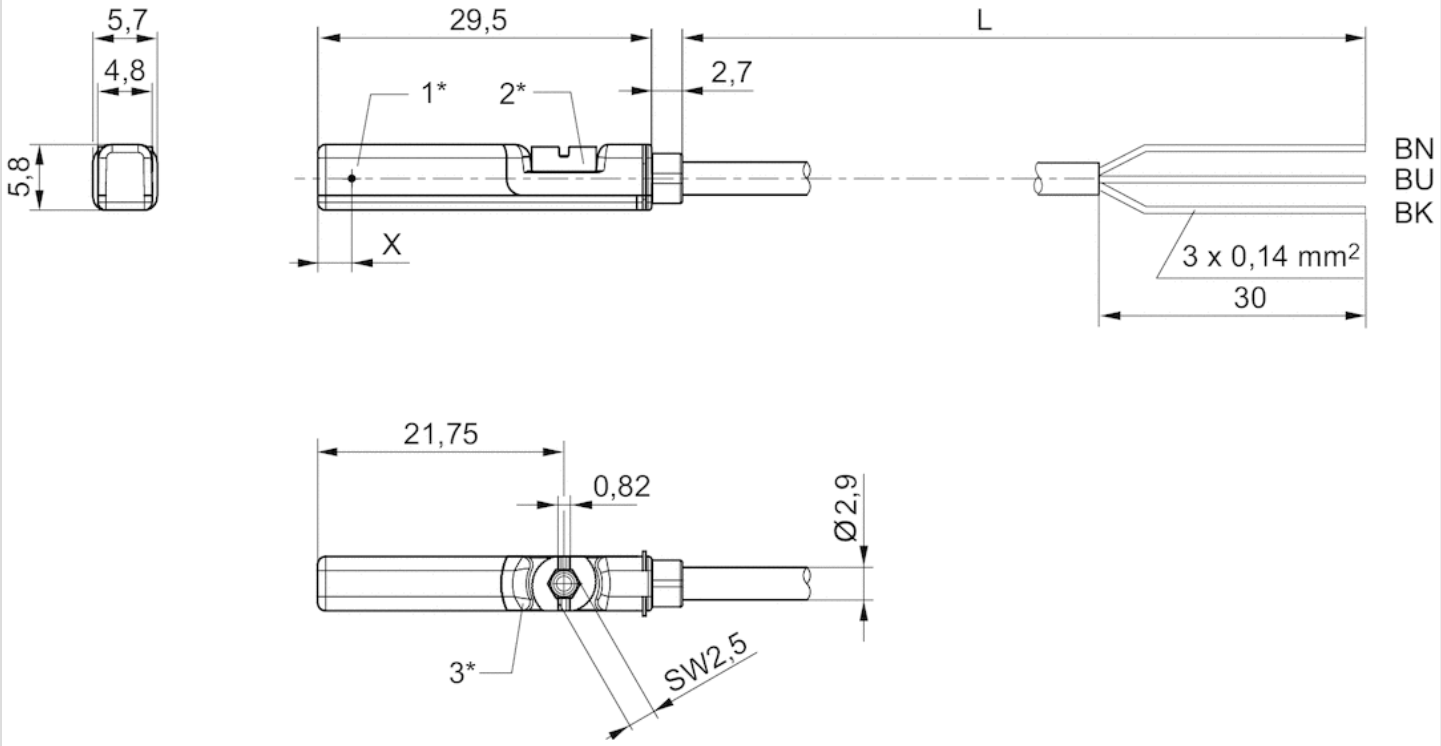
Technical information

No cULus certification for 230 V variant.

Technical information

Material	
Housing	Polyamide
Cable sheath	Polyurethane
Locking screw	Stainless steel

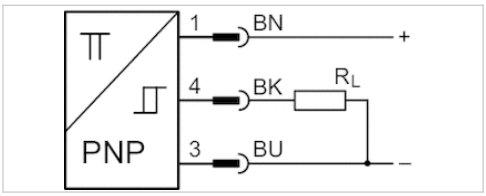
Dimensions



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, M8x1, 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 Imax	DC switching current, max.
R412022860	≤ 2,5 V	0,1 A

Part No.	Max. switching frequency
R412022860	1000 Hz

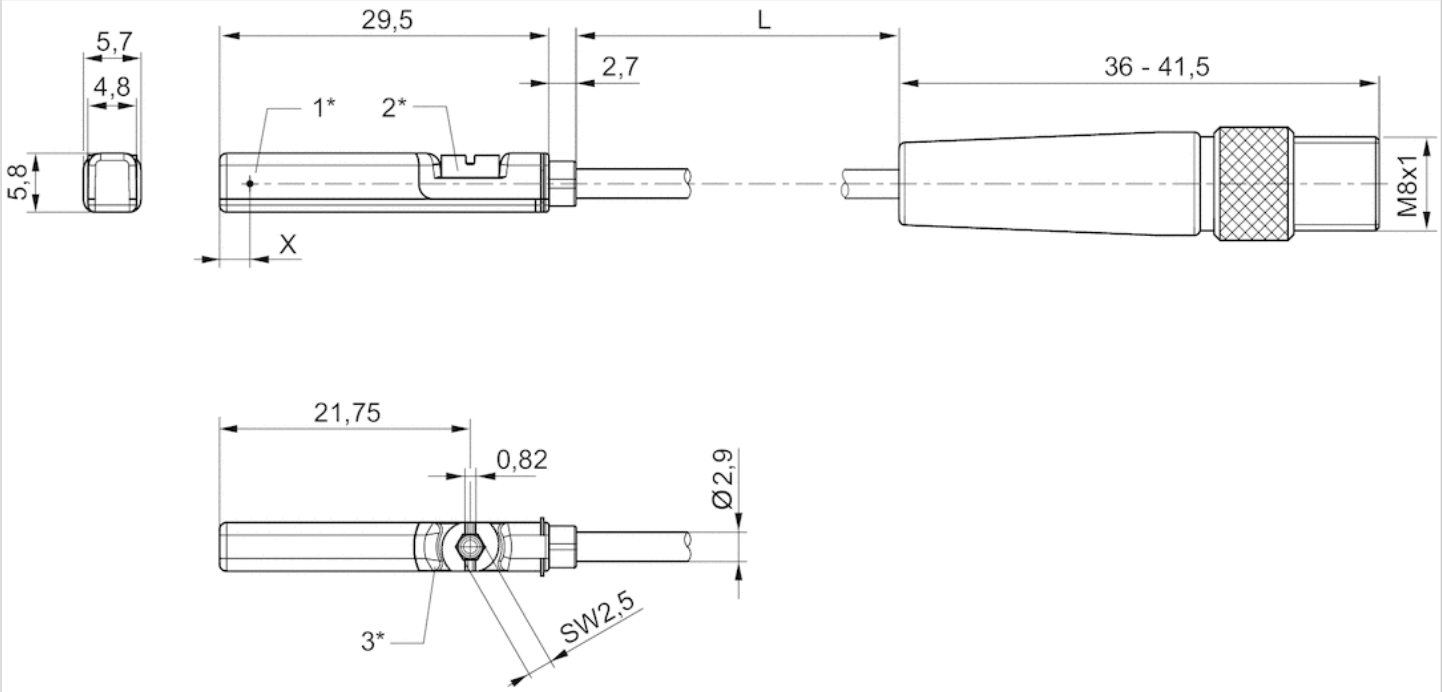
Part No.	Version
R412022860	short circuit resistant Protected against polarity reversal

Technical information

Material	
Housing	Polyamide
Cable sheath	Polyurethane
Locking screw	Stainless steel

Dimensions

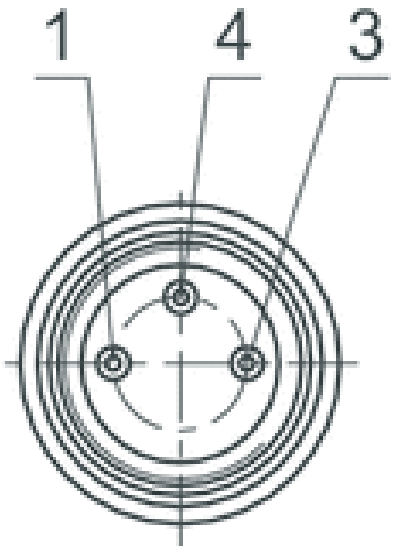
Dimensions



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

Pin assignments

Pin assignments



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

Sensor, Series ST6

- 6 mm T-slot
- with cable
- Plug, M8x1, 3-pin, with knurled screw
- UL certification
- Reed electronic PNP
- Direct mounting for series PRA, PRE, CCI, KPZ, SSI, GPC, CVI
- Indirect mounting for series TRB, ITS, CCL-IS, MNI, CSL-RD, RPC, ICS-D2, ICM, KHZ, TRR

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

Technical data

Part No.		for	Type of contact
R412022875		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	Reed
R412022859		PRA, PRE, CCI, KPZ, SSI, GPC, CVI	electronic PNP

Part No.	Cable sheath	Cable length L	Min./max. AC operating voltage
R412022875	Polyvinyl chloride	0,3 m	10 ... 30 V AC
R412022859	Polyurethane	0,3 m	-

Part No.	Voltage drop U at Imax	DC switching current, max.
R412022875	I*Rs	0,3 A
R412022859	≤ 2,5 V	0,13 A

Part No.	AC switching current, max.	Max. switching frequency
R412022875	0,5 A	400 Hz
R412022859	-	1000 Hz

Part No.	Operating current, not switched	Operating current, switched
R412022875	-	-
R412022859	8 mA	30 mA

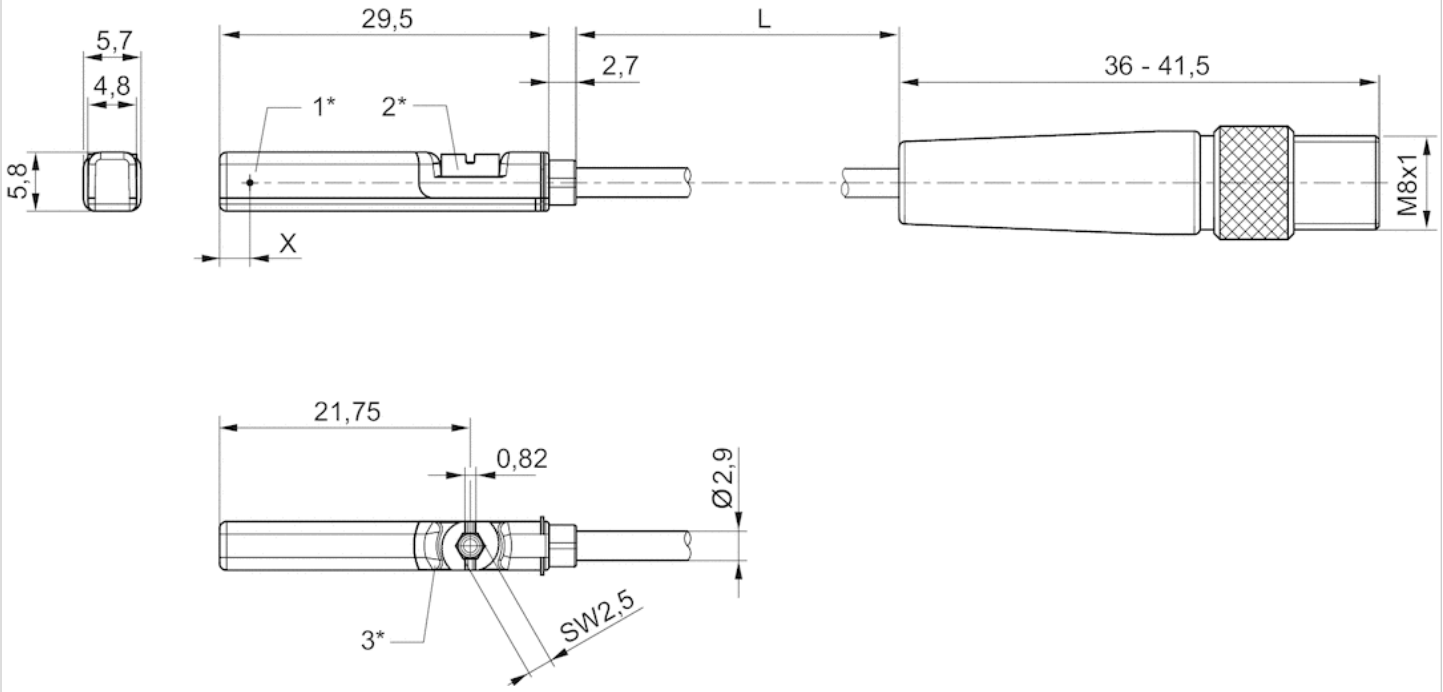
Part No.	Version
R412022875	Protected against polarity reversal
R412022859	short circuit resistant Protected against polarity reversal

Technical information

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

Dimensions

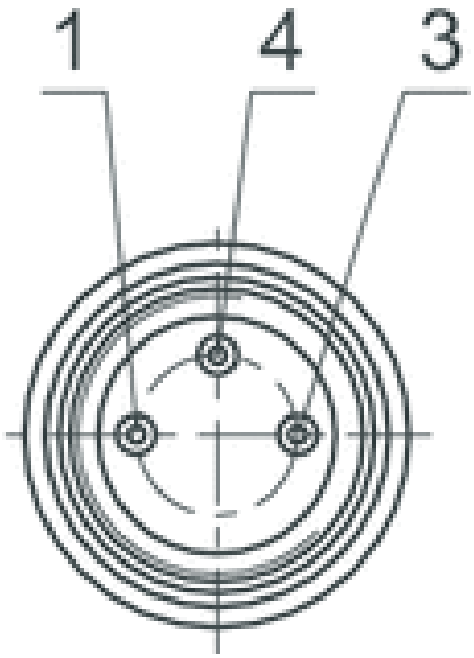
Dimensions



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

Pin assignments

Pin assignments



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

Sensor, Series ST4

- 4 mm C-slot
- with cable
- Plug, M8, 3-pin
- UL certification
- Reed electronic PNP
- 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

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

Part No.	Voltage drop U at Imax	DC switching current, max.
R412019682	≤ 0,5 V	0,13 A
R412019683	≤ 2,5 V	0,1 A

Part No.	AC switching current, max.	Switching capacity
R412019682	0,13 A	3 W / 3 VA
R412019683	-	-

Part No.	Version
R412019682	Protected against polarity reversal

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

Technical information

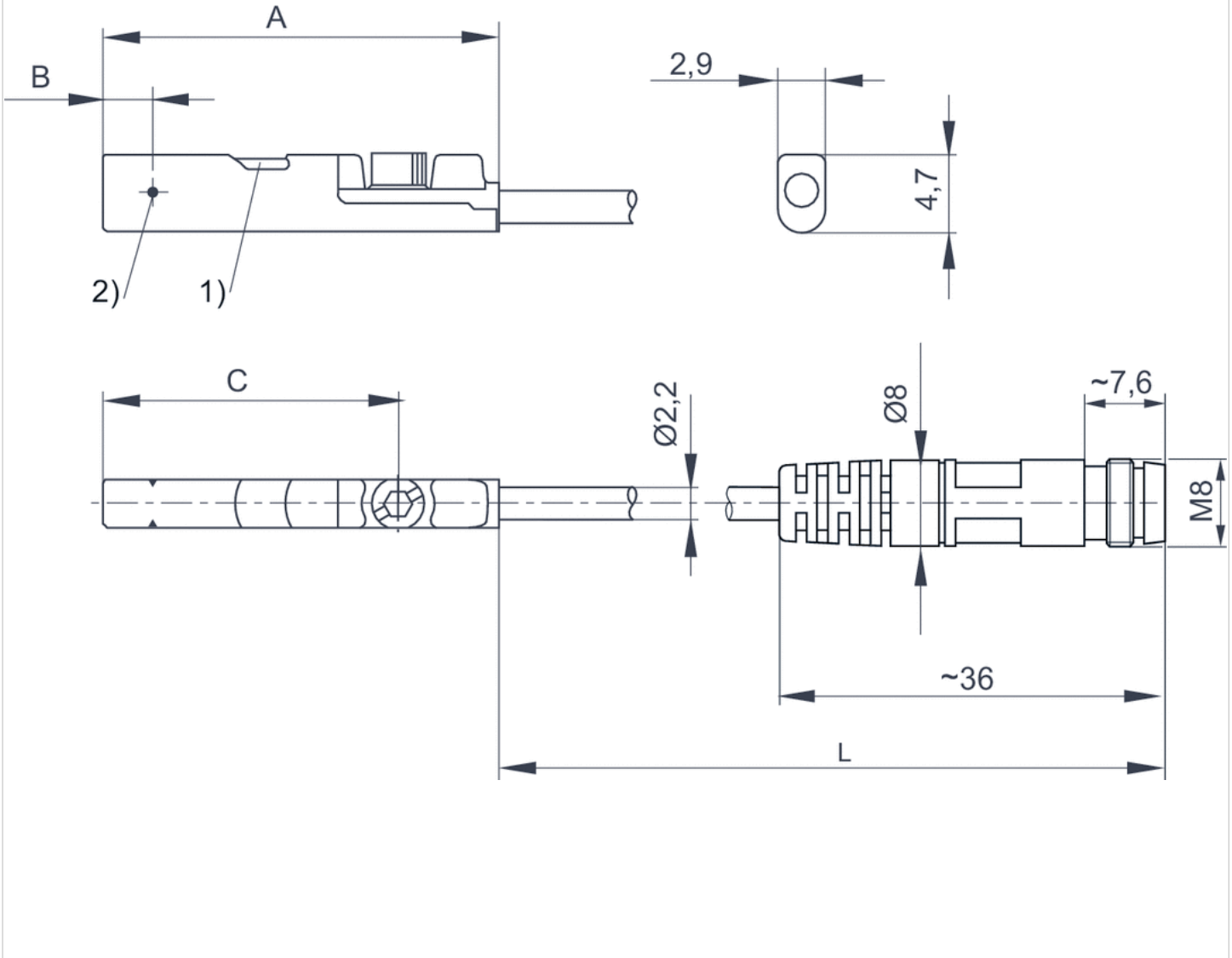
The max. switching capacity must not be exceeded.

Technical information

Material	
Housing	Polyamide fiber-glass reinforced
Cable sheath	Polyurethane

Dimensions

Dimensions



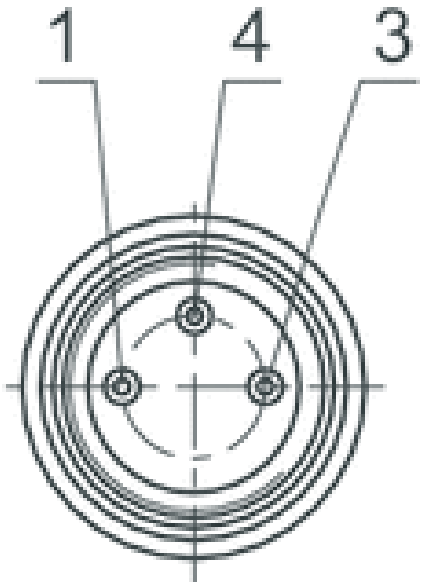
1) LED 2) Switching point
L = cable length

Dimensions

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

Pin assignments

Pin assignments



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

Sensor, Series ST4

- 4 mm C-slot
- with cable
- open cable ends, 3-pin
- 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	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

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

Part No.	Voltage drop U at Imax	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.	AC switching current, max.	Switching capacity
R412019488	0,13 A	3 W / 3 VA

Part No.	AC switching current, max.	Switching capacity
R412019489	0,13 A	3 W / 3 VA
R412019680	-	-
R412019681	-	-

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

Technical information

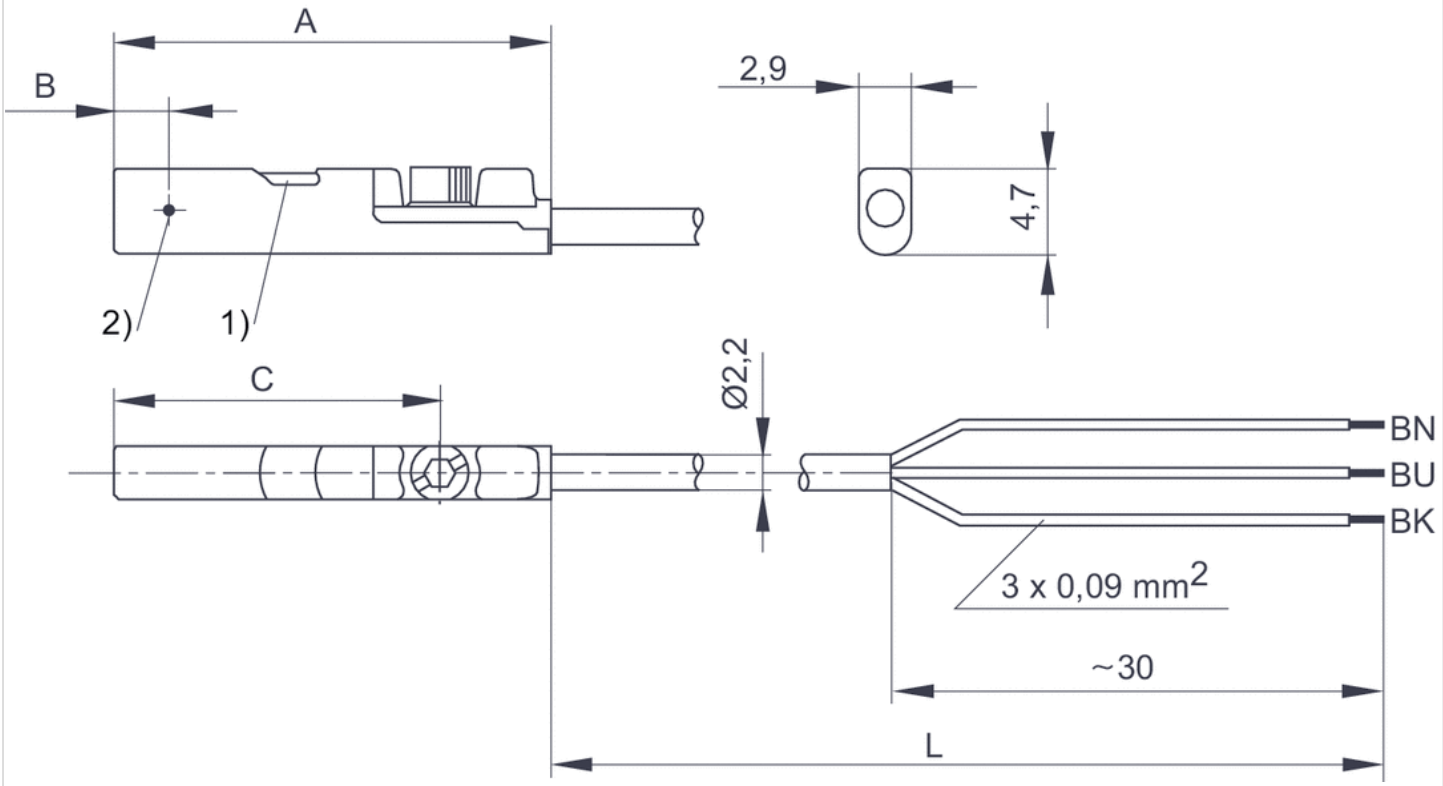
The max. switching capacity must not be exceeded.

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

Series QR2-C-RPN, stainless steel

- Straight fitting
- External thread
- M5 M7 G 1/8 G 1/4 G 3/8 G 1/2
- push-in fitting
- Ø 4 Ø 6 Ø 8 Ø 10 Ø 12
- QR2-C-RPN
- suitable for use in food processing

Working pressure min./max.	-0.95 ... 16 bar
Ambient temperature min./max.	-20 ... 150 °C
Weight per piece	See table below

Technical data

Part No.	Port G	Port D	Delivery unit	Weight per piece
2544004050	M5	Ø 4	2 piece	0.005 kg
R412026847	M5	Ø 6	2 piece	0.008 kg
R412004890	G 1/8	Ø 4	2 piece	0.008 kg
R412004891	G 1/8	Ø 6	2 piece	0.01 kg
R412004892	G 1/8	Ø 8	2 piece	0.013 kg
R412004893	G 1/4	Ø 6	2 piece	0.015 kg
R412004894	G 1/4	Ø 8	2 piece	0.019 kg
R412004895	G 1/4	Ø 10	2 piece	0.022 kg
R412004896	G 3/8	Ø 10	2 piece	0.039 kg
R412004897	G 3/8	Ø 12	2 piece	0.041 kg

Technical information

The series QR1 (plastic) and QR2 (metal) can not be combined
Thread seal with captive O-ring

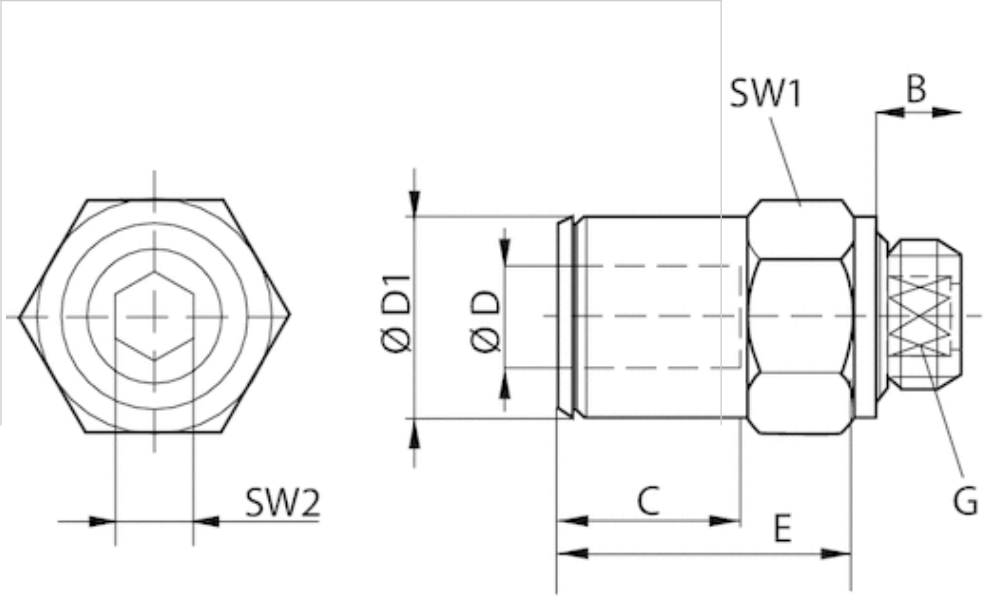
For further information about assembling and tolerances of adaptable tubing can be found in the “Technical information” document (available in the MediaCentre).

Technical information

Material	
Housing	Stainless steel
Seal	Fluorocaoutchouc
Tooth lock washer	Stainless steel
Release ring	Stainless steel
Thread	Stainless steel

Dimensions

Dimensions



Dimensions

Part No.	Port D	Port G	A	B	C	E*	SW1	SW2	ØD1
2544004050	Ø 4	M5	20.5	4	7	15	9	–	9
R412026847	Ø 6	M5	22.5	4	–	16	9	–	11
R412004890	Ø 4	G 1/8	17	5.5	7	15	13	3	9
R412004891	Ø 6	G 1/8	23.5	5.5	12.5	16	13	4	11
R412004892	Ø 8	G 1/8	23.5	5.5	12.5	18	13	5	13
R412004893	Ø 6	G 1/4	21.5	6.5	5.5	16	16	4	11
R412004894	Ø 8	G 1/4	25.5	6.5	9.5	16	16	6	13
R412004895	Ø 10	G 1/4	27.5	6.5	7.5	16	16	7	15
R412004896	Ø 10	G 3/8	25.5	9	7	19	21	8	15
R412004897	Ø 12	G 3/8	31	9	7	20	21	10	17

* Insertion depth

Series QR2-C-RVT , stainless steel

- Elbow fitting
- External thread
- M5 G 1/8 G 1/4 G 3/8 G 1/2
- push-in fitting
- Ø 4 Ø 6 Ø 8 Ø 10 Ø 12
- QR2-C-RVT
- suitable for use in food processing

Working pressure min./max.	-0.95 ... 16 bar
Ambient temperature min./max.	-20 ... 150 °C
Weight per piece	See table below

Technical data

Part No.	Port G	Port D	Delivery unit	Weight per piece
R412005617	M5	Ø 4	2 piece	0.008 kg
R412026810	M5	Ø 6	2 piece	0.009 kg
R412004898	G 1/8	Ø 4	2 piece	0.012 kg
R412004899	G 1/8	Ø 6	2 piece	0.02 kg
R412004900	G 1/8	Ø 8	2 piece	0.022 kg
R412004901	G 1/4	Ø 6	2 piece	0.024 kg
R412005616	G 1/4	Ø 8	2 piece	0.025 kg
R412004902	G 3/8	Ø 10	1 piece	0.043 kg
R412004903	G 3/8	Ø 12	1 piece	0.06 kg

Technical information

The series QR1 (plastic) and QR2 (metal) can not be combined
Thread seal with captive O-ring

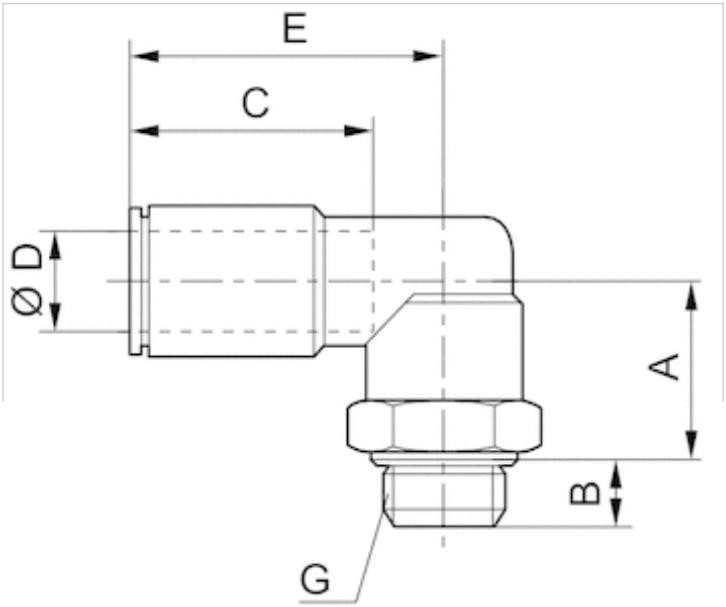
For further information about assembling and tolerances of adaptable tubing can be found in the “Technical information” document (available in the MediaCentre).

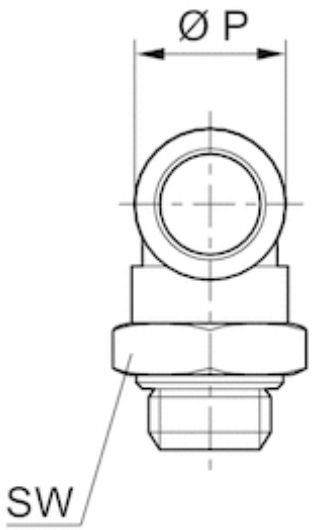
Technical information

Material	
Housing	Stainless steel
Seal	Fluorocaoutchouc
Tooth lock washer	Stainless steel
Release ring	Stainless steel
Thread	Stainless steel

Dimensions

Dimensions



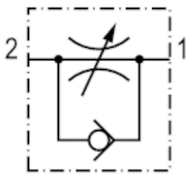


Dimensions

Part No.	Port D	Port G	A	B	C	E	SW	Ø P
R412005617	Ø 4	M5	15	4	15	14.5	9	9
R412026810	Ø 6	M5	16	4	15	14.5	9	9
R412004898	Ø 4	G 1/8	14.5	5.5	15	19.5	13	9
R412004899	Ø 6	G 1/8	16.5	5.5	16	19.5	13	11
R412004900	Ø 8	G 1/8	18.5	5.5	18	19.5	13	13
R412004901	Ø 6	G 1/4	15.5	6.5	16	20.5	16	11
R412005616	Ø 8	G 1/4	17.5	6.5	18	20.5	16	13
R412004902	Ø 10	G 3/8	18.5	7	19	24	21	16
R412004903	Ø 12	G 3/8	21	7	19	26.5	21	19

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

- suitable for use in food processing
- Qn 2▸1 = 50-1000 l/min
- direction of throttle 2 ▸ 1
- exhaust air throttling
- push-in fitting / External thread
- Heat resistant



Certificates	NSF/ANSI 169, FDA conform, EU Regulation 1935/2004
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.
			Qn 2▸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
R412024740	Ø 6	G 1/4	370 l/min	1 piece	Fig. 5
R412024741	Ø 8	G 1/4	420 l/min	1 piece	Fig. 6
R412024742	Ø 10	G 3/8	1000 l/min	1 piece	Fig. 7

Nominal flow Qn at 6 bar and Δp = 1 bar

Technical information

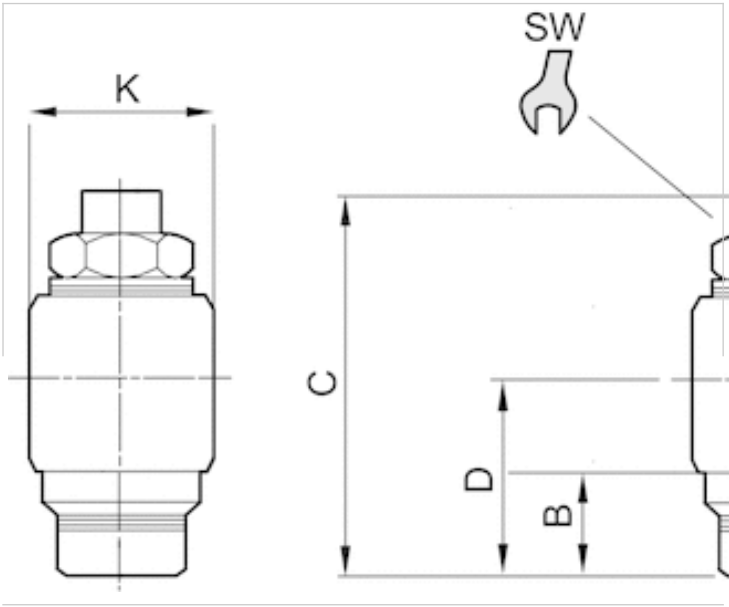
Materials according to AISI/FDA:
Housing ▸ Stainless steel AISI 316L (1.4404)
Flow control screw ▸ Stainless steel AISI 316L (1.4404)
Seal ▸ FKM (FDA-compliant)
Stainless steel connection ▸ AISI 316L (1.4404)

Technical information

Material	
Housing	Stainless steel
Flow control screw	Stainless steel
Seals	Fluorocaoutchouc

Dimensions

Dimensions

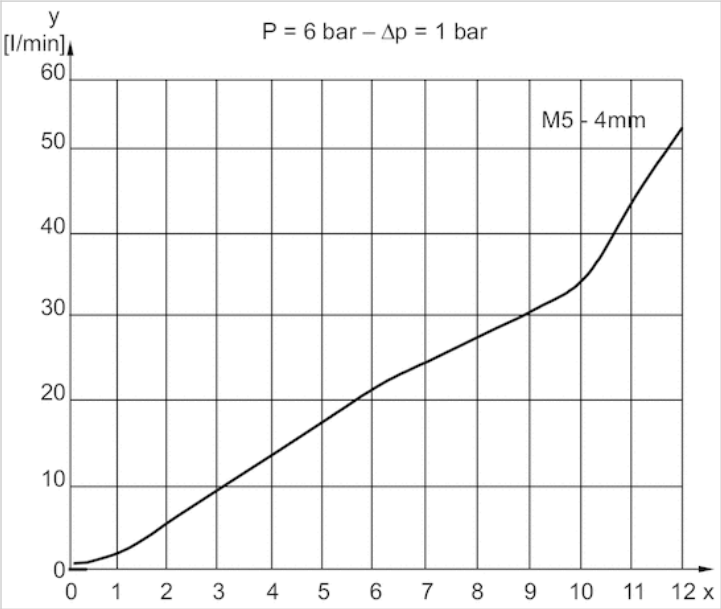


Dimensions

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
R412024740	Ø 6	G 1/4	6.5	40	17.5	12	23.5	17	10
R412024741	Ø 8	G 1/4	6.5	40	17.5	14	24	17	10
R412024742	Ø 10	G 3/8	9	52	22	16	28	22	14

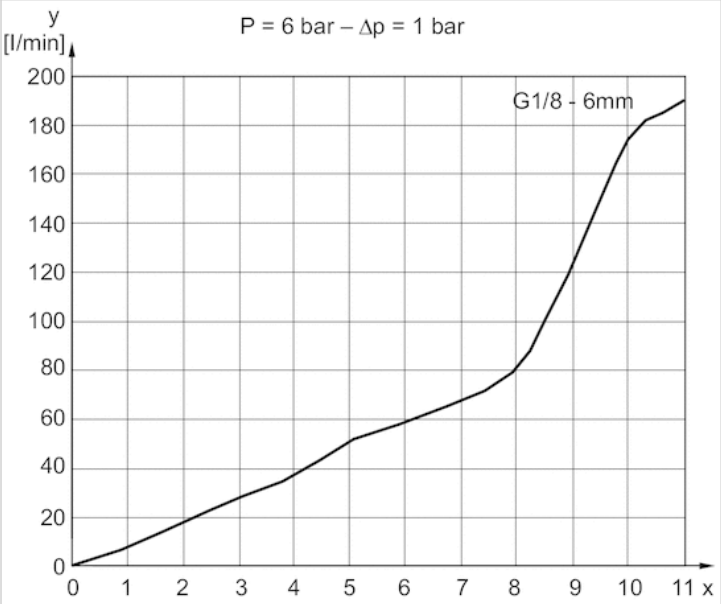
Diagrams

Flow diagram, Fig. 1

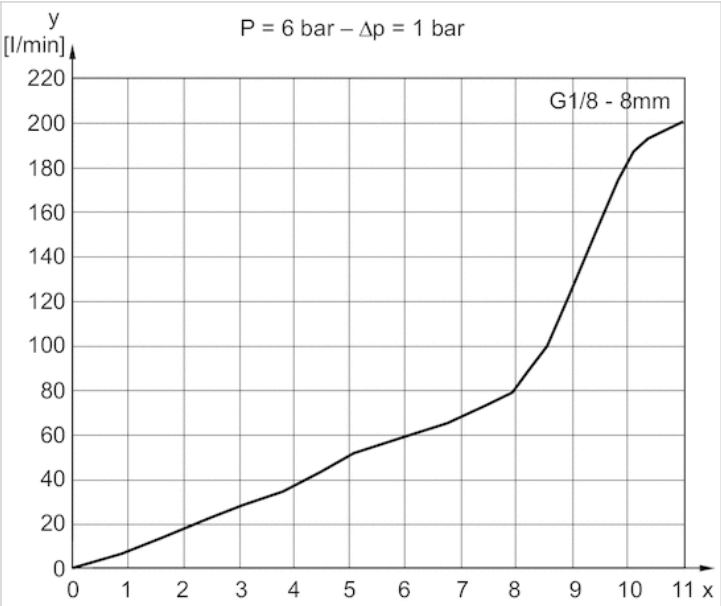


Flow diagram, Fig. 2

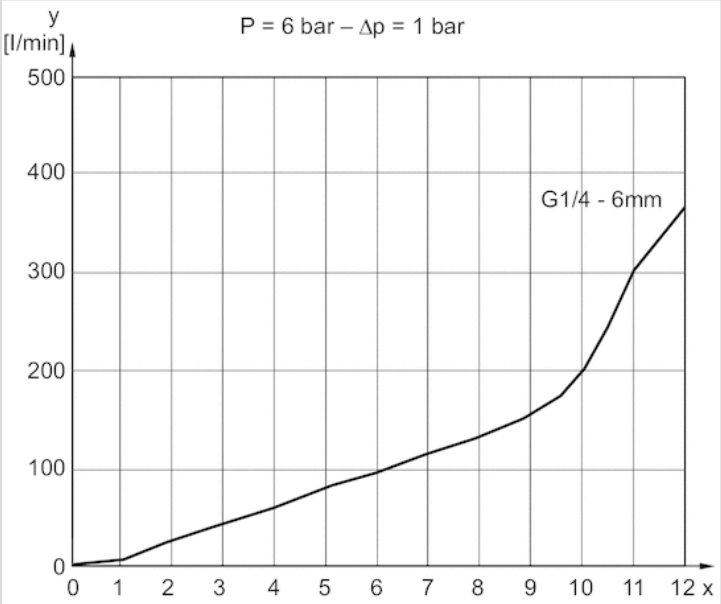
Flow diagram, Fig. 3



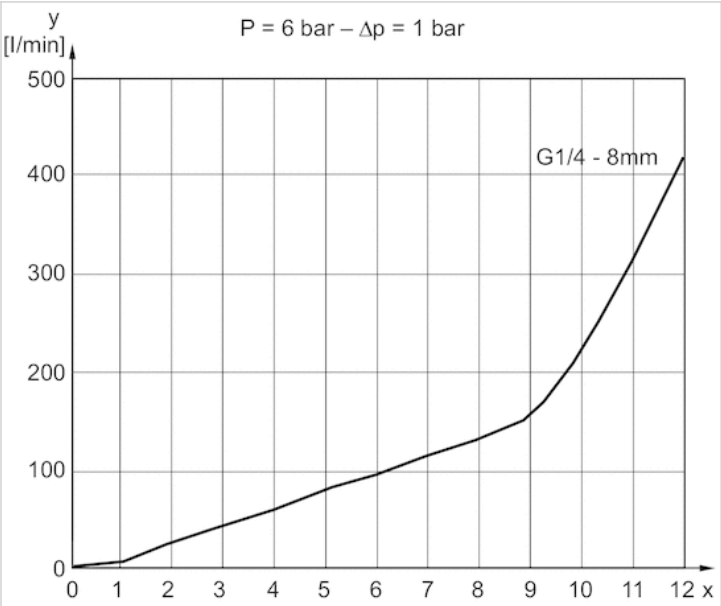
Flow diagram, Fig. 4



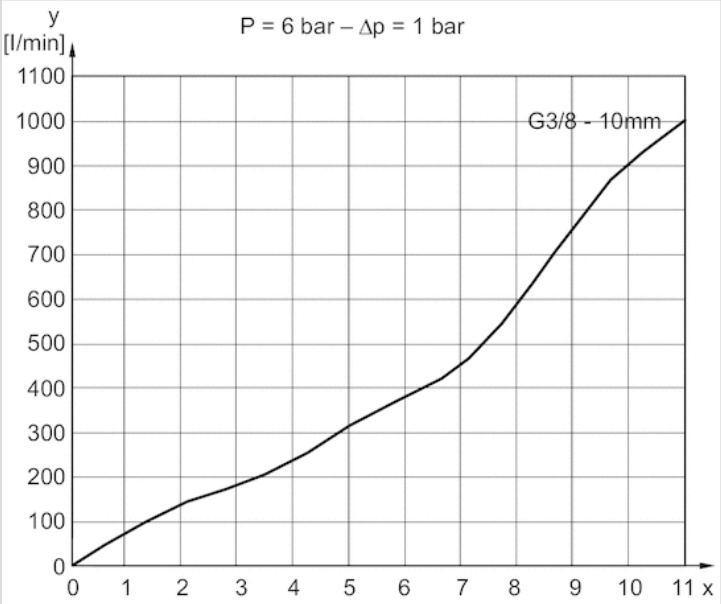
Flow diagram, Fig. 5



Flow diagram, Fig. 6

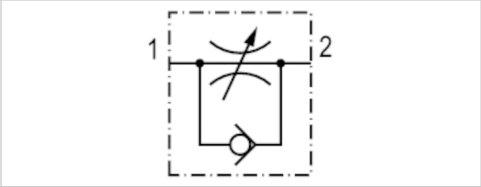


Flow diagram, Fig. 7



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

- Qn 1▸2 = 150-1000 l/min
- direction of throttle 1 ▸ 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.
			Qn 1▸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
R412024751	Ø 6	G 1/4	370 l/min	1 piece	Fig. 3
R412024752	Ø 8	G 1/4	420 l/min	1 piece	Fig. 4
R412024753	Ø 10	G 3/8	1000 l/min	1 piece	Fig. 5

Nominal flow Qn at 6 bar and Δp = 1 bar

Technical information

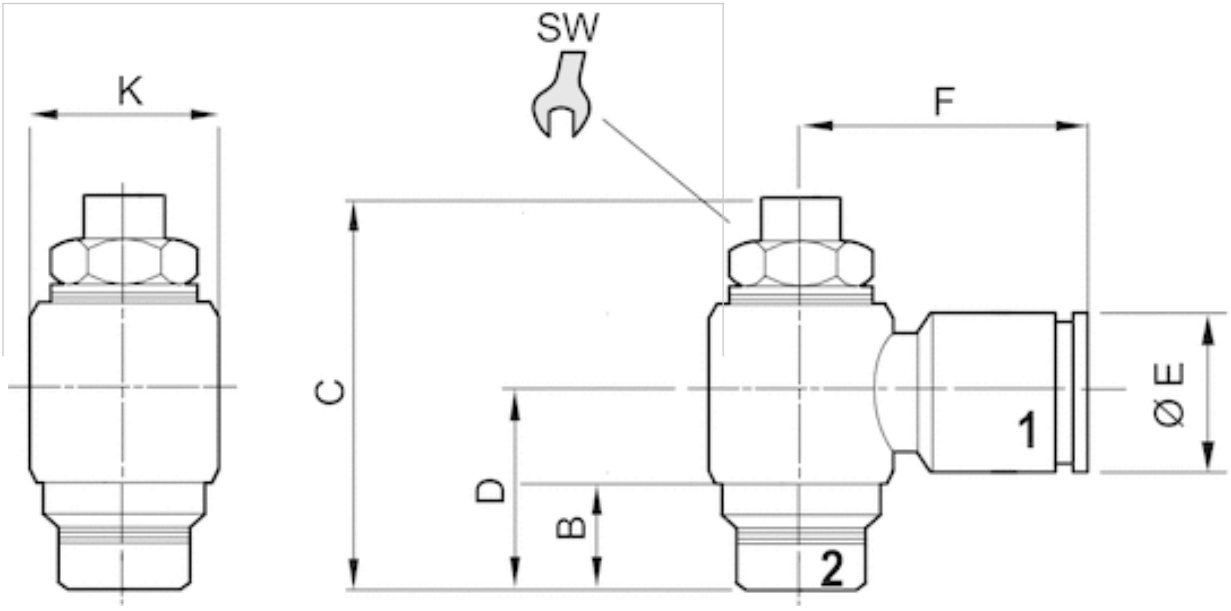
Materials according to AISI/FDA:
Housing ▸ Stainless steel AISI 316L (1.4404)
Flow control screw ▸ Stainless steel AISI 316L (1.4404)
Seal ▸ FKM (FDA-compliant)
Stainless steel connection ▸ AISI 316L (1.4404)

Technical information

Material	
Housing	Stainless steel
Flow control screw	Stainless steel
Seals	Fluorocaoutchouc

Dimensions

Dimensions

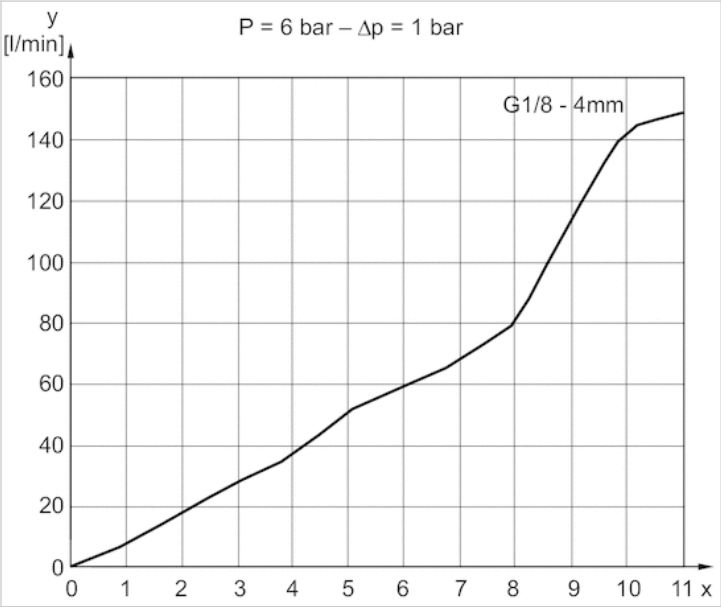


Dimensions

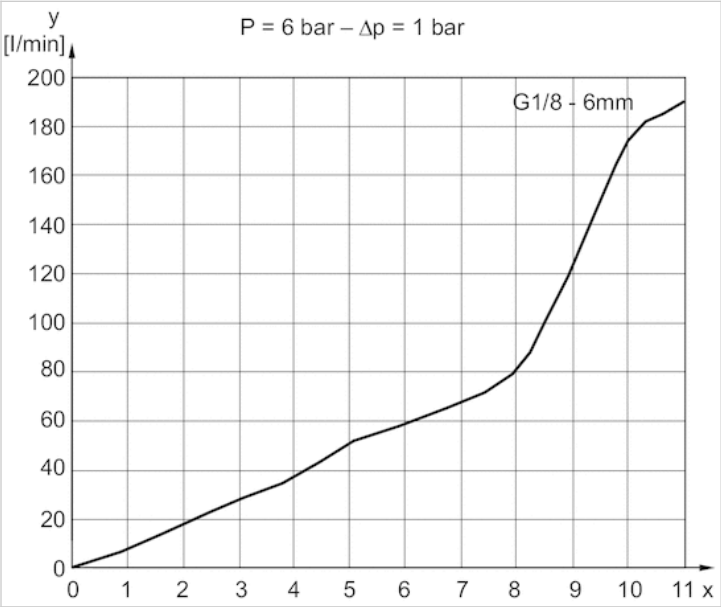
Part No.	Port 1	Port 2	B	C	D	ØE	F	ØK	SW
R412024749	Ø 4	G 1/8	5	32	15.5	9	19.5	14	9
R412024750	Ø 6	G 1/8	5	32	15.5	12	22	14	9
R412024751	Ø 6	G 1/4	6.5	40	17.5	12	23.5	17	10
R412024752	Ø 8	G 1/4	6.5	40	17.5	14	24	17	10
R412024753	Ø 10	G 3/8	9	52	22	16	28	22	14

Diagrams

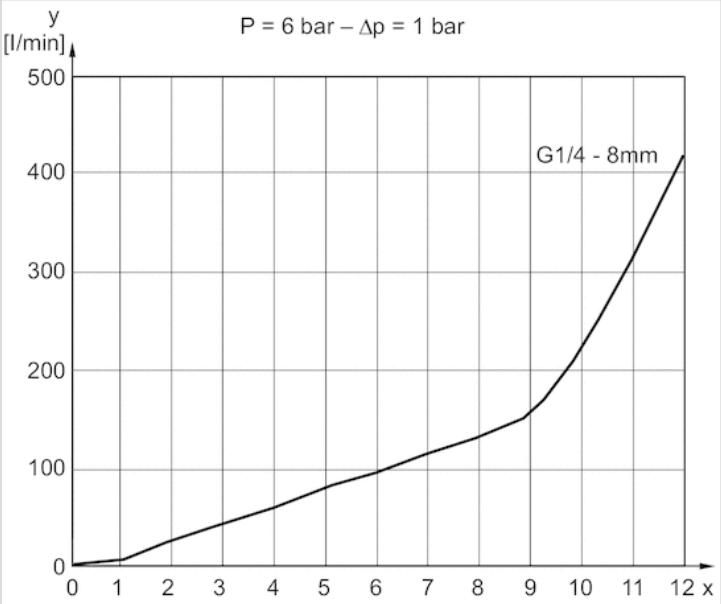
Flow diagram, Fig. 1



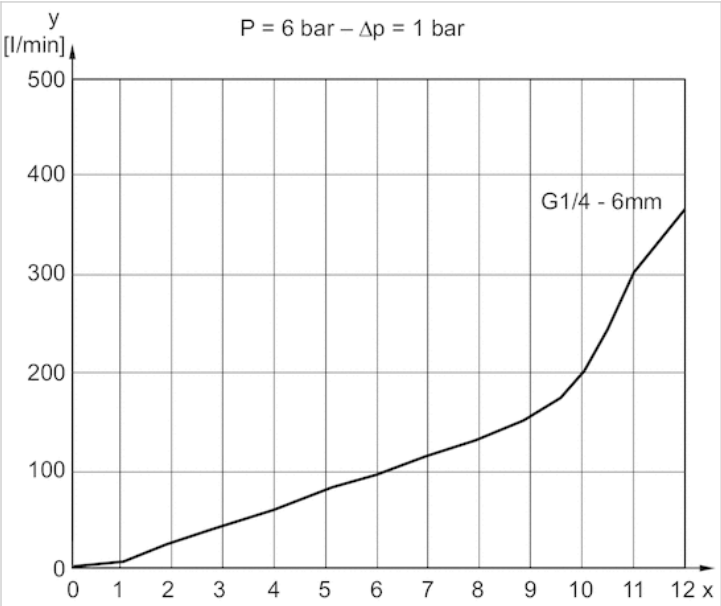
Flow diagram, Fig. 3



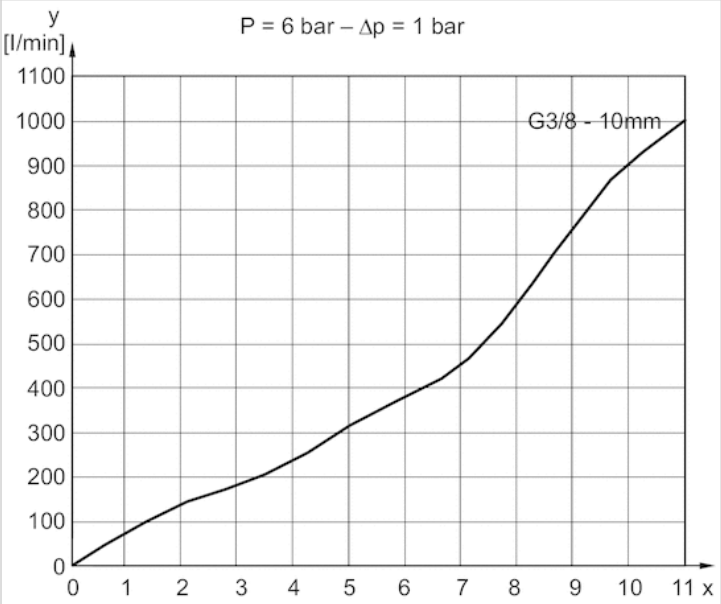
Flow diagram, Fig. 4



Flow diagram, Fig. 5

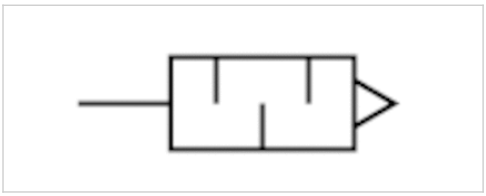


Flow diagram, Fig. 5



Silencers, series SI1

- M5 G 1/8 G 1/4 G 3/8 G 1/2 G 3/4 G 1
- 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
R412010082	G 1/4	93 dB	1852 l/min	1 piece	0.021 kg
R412010083	G 3/8	101 dB	2678 l/min	1 piece	0.028 kg

Weight per piece

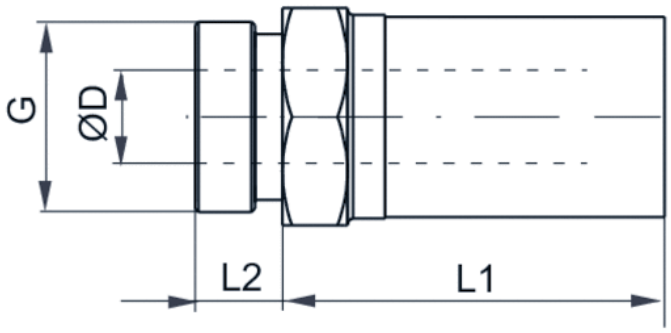
Nominal flow Qn at p1 = 6 bar (absolute) freely discharged. Sound pressure level measured at 6 bar against atmosphere at 1 m distance.

Technical information

Material	
Silencer	Stainless steel
Thread	Stainless steel

Dimensions

Dimensions

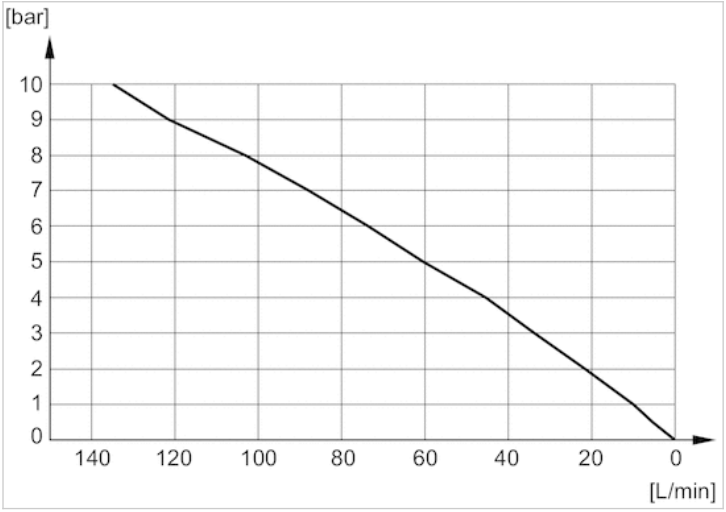


Dimensions

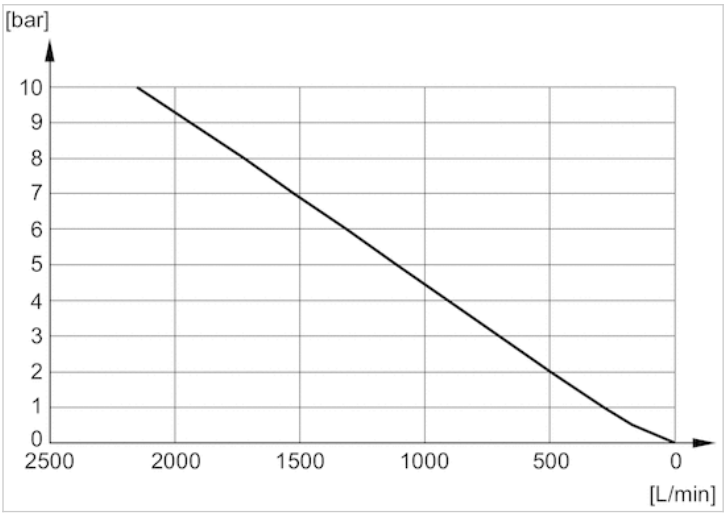
Part No.	Port G	SW	Ø D	L1	L2
R412010090	M5	8	3.1	10.5	3.5
R412010081	G 1/8	13	6.6	20	6
R412010082	G 1/4	16	8.6	29.5	7.5
R412010083	G 3/8	19	12.1	33.5	7.5
R412010084	G 1/2	24	15.3	39.5	9.5
R412010085	G 3/4	30	19.3	45	10
R412010086	G 1	36	25.5	49.5	11.5

Diagrams

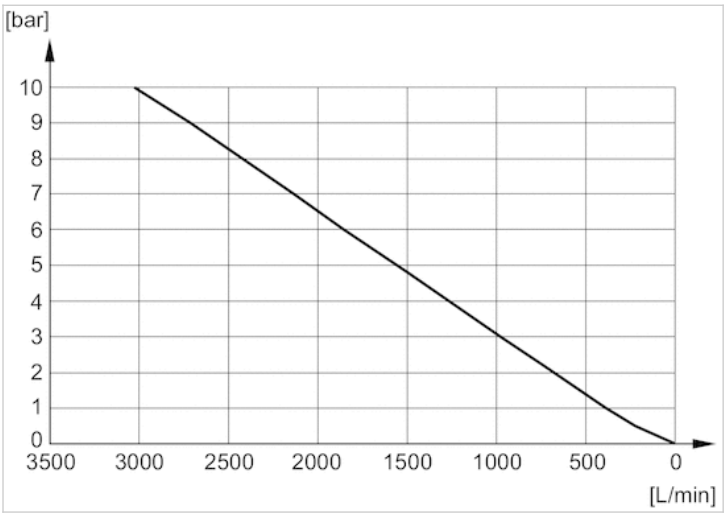
Flow diagram, R412010090



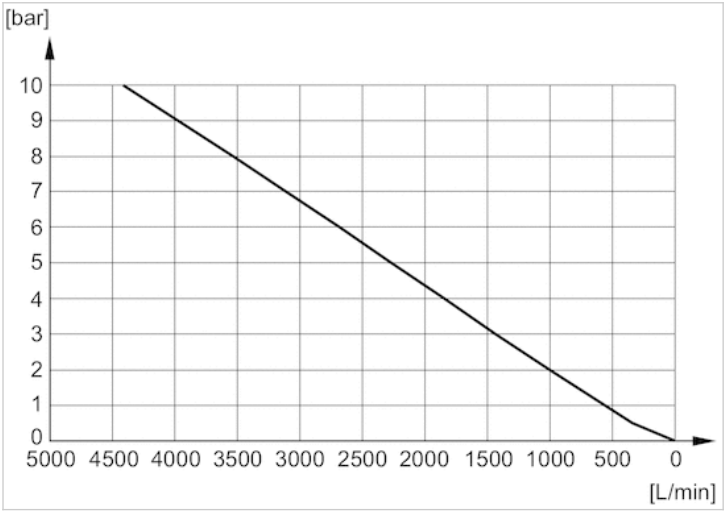
Flow diagram, R412010081



Flow diagram, R412010082



Flow diagram, R412010083



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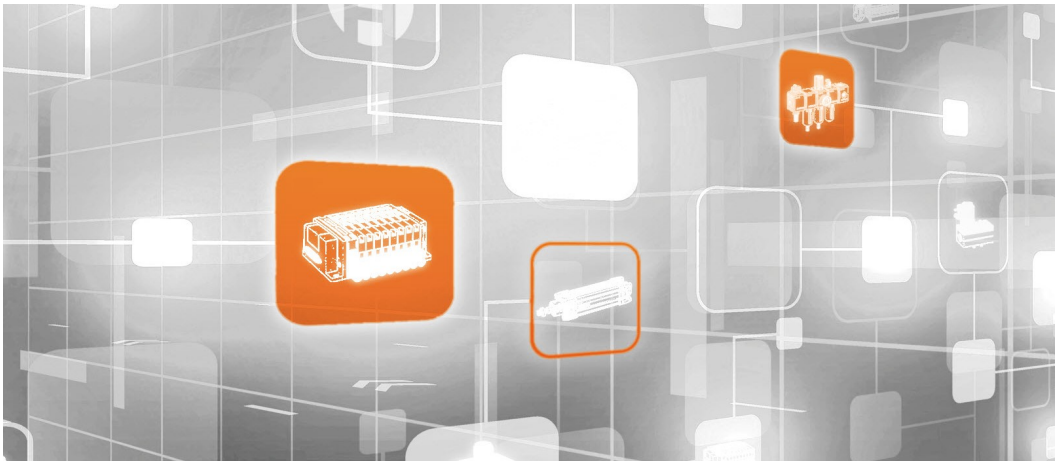

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