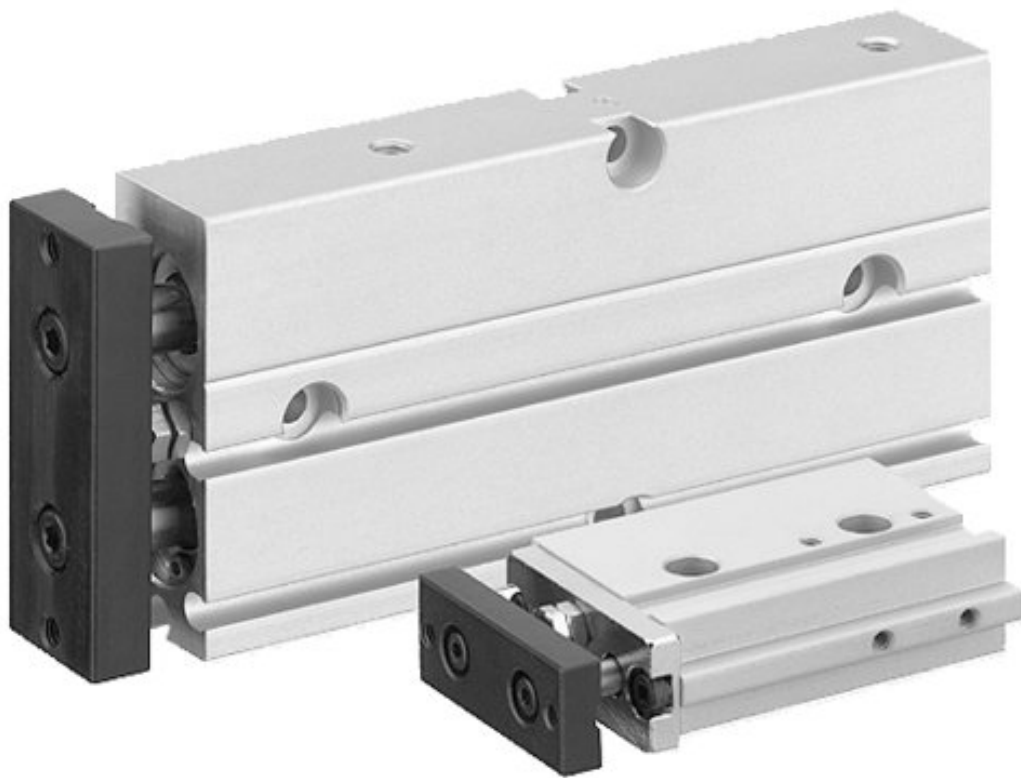


Series TWC



AVENTICS™ Series TWC

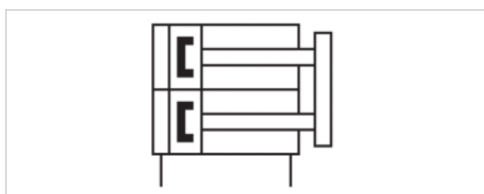


Double piston cylinder, Series TWC

- Ø 10-32 mm
- double-acting
- with magnetic piston
- Cushioning elastic



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



Technical data

Piston Ø	10 mm	16 mm	20 mm	25 mm	32 mm
Stroke 10	R402000799	R402000806	R402000816	R402000826	R402000836
20	R402000800	R402000807	R402000817	R402000827	R402000837
30	R402000801	R402000808	R402000818	R402000828	R402000838
40	R402000802	R402000809	R402000819	R402000829	R402000839
50	R402000803	R402000810	R402000820	R402000830	R402000840
60	R402000804	R402000811	R402000821	R402000831	R402000841
70	R402000805	R402000812	R402000822	R402000832	R402000842
80	-	R402000813	R402000823	R402000833	R402000843
90	-	R402000814	R402000824	R402000834	R402000844
100	-	R402000815	R402000825	R402000835	R402000845

Technical data

Piston Ø 2x	10 mm	16 mm	20 mm
Port	M5	M5	M5
Working pressure min./max.	2 ... 7 bar	1.5 ... 7 bar	1.5 ... 7 bar
Retracting piston force	63 N	189 N	296 N
Extracting piston force	98 N	253 N	395 N
Speed max.	0.5 m/s	0.5 m/s	0.5 m/s
Max. retracted stroke setting	-5 mm	-5 mm	-5 mm
Cushioning energy max.	0.03 J	0.11 J	0.17 J

Piston Ø 2x	10 mm	16 mm	20 mm
Weight 10 mm stroke	0.125 kg	0.26 kg	0.4 kg
+10 mm stroke	0.018 kg	0.027 kg	0.036 kg
Cushioning	elastic	elastic	elastic
Max. play (radial)	0.8 °	0.6 °	0.6 °
End cover	Polyoxymethylene	Polyoxymethylene	Polyoxymethylene

Piston Ø 2x	25 mm	32 mm
Port	M5	G 1/8
Working pressure min./max.	1.5 ... 7 bar	1.5 ... 7 bar
Retracting piston force	475 N	759 N
Extracting piston force	618 N	1012 N
Speed max.	0.5 m/s	0.5 m/s
Max. retracted stroke setting	-5 mm	-5 mm
Cushioning energy max.	0.23 J	0.28 J
Weight 10 mm stroke	0.58 kg	1.38 kg
+10 mm stroke	0.051 kg	0.093 kg
Cushioning	elastic	elastic
Max. play (radial)	0.6 °	0.6 °
End cover	Polyoxymethylene	Polyoxymethylene

Technical information

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

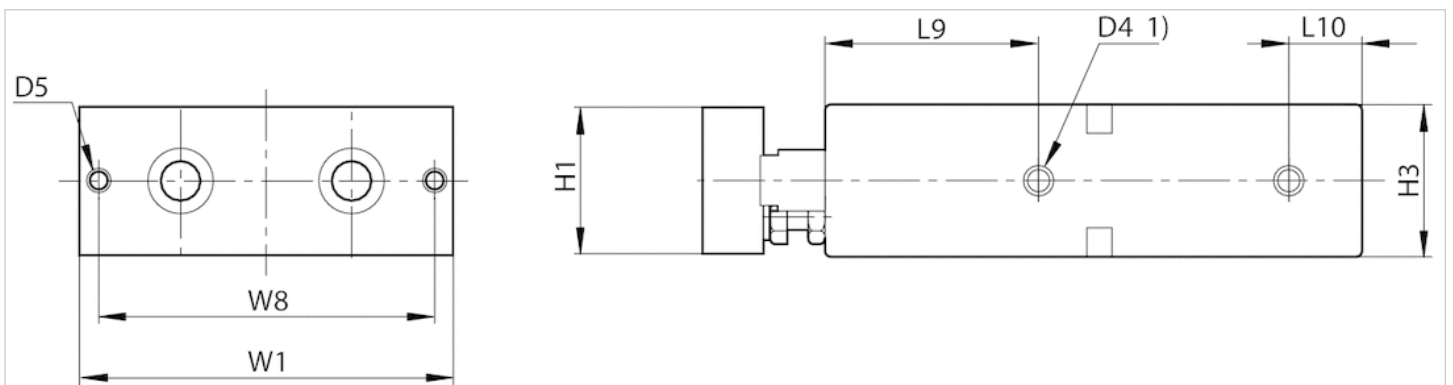
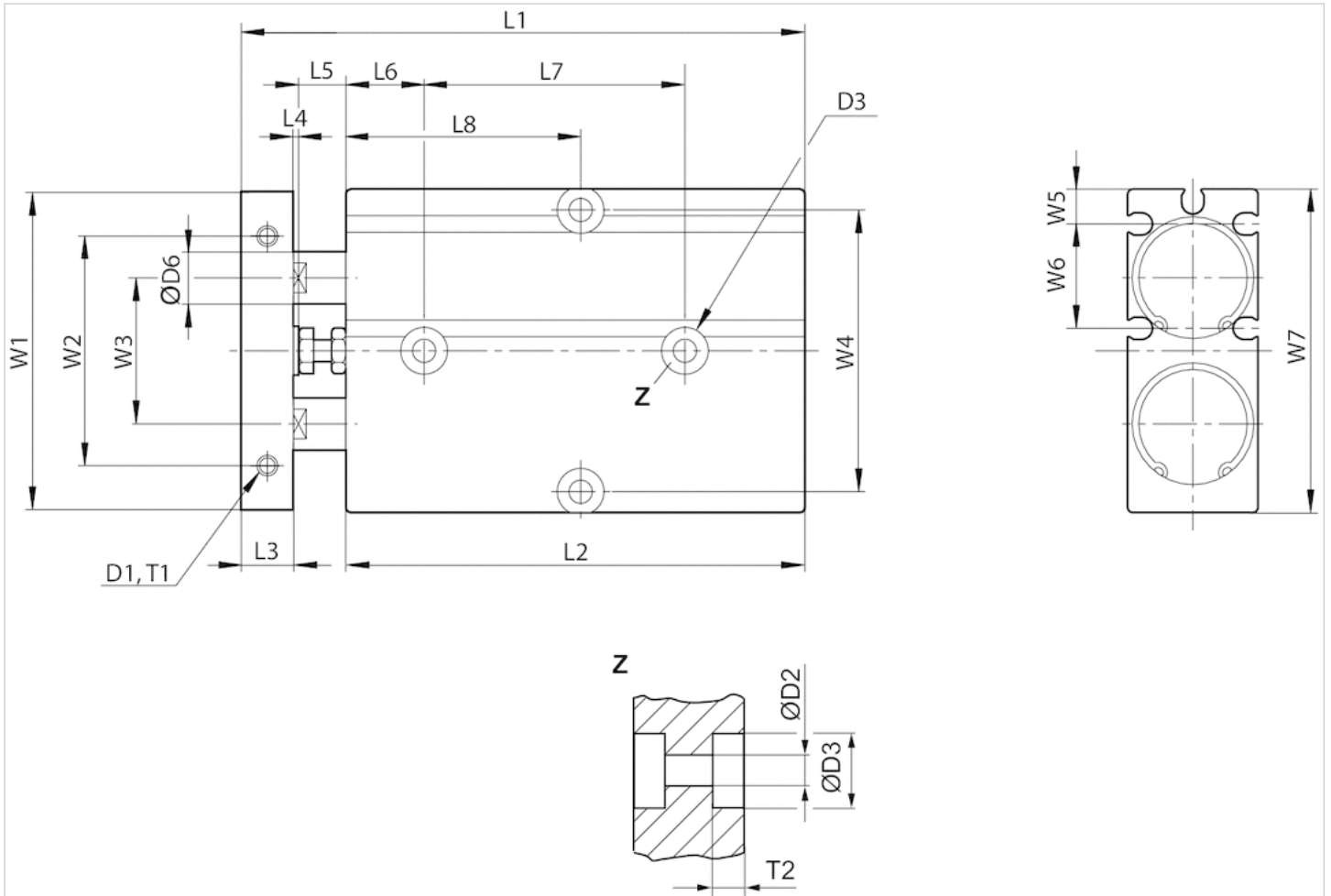
The oil content of compressed air must remain constant during the life cycle.

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

Technical information

Material	
Housing	Aluminum, anodized
Front plate	Steel, galvanized
Piston rod	Steel, hardened
Seal	Acrylonitrile butadiene rubber
Guide bushing	Aluminum, anodized
Front cover	Steel, nickel-plated
End cover	Polyoxymethylene
	See table for additional data on materials.

Dimensions



1) Compressed air connection
 T1 = depth of thread

Dimensions

Piston Ø	D1	T1	Ø D2	Ø D3	T2	D4	D5	Ø D6	H1	H3	L1 ±0,8 1)	L2±0,2 S=10 2)
10 mm	2xM3	4	3,4	6	5	M5	2xM3	6	16	17	68	66
16 mm	2xM4	5	4,5	8	5.5	M5	2xM4	8	20	21	78	73
20 mm	2xM4	5	4,5	8	5.5	M5	2xM4	10	24	25	88	78
25 mm	2xM5	6	4,5	9	6	M5	2xM4	12	29	30	91	82
32 mm	2xM8	10	5,5	9.5	10.5	G 1/8	2xM6	16	38	40	118	98

Piston Ø	L2±0,2 S=20 2)	L2±0,2 S=30 2)	L2±0,2 S=40 2)	L2±0,2 S=50 2)
10 mm	76	86	96	106
16 mm	83	93	103	113
20 mm	88	98	108	118
25 mm	92	102	112	122
32 mm	108	118	128	138

Piston Ø	L2±0,2 S=60 2)	L2±0,2 S=70 2)	L2±0,2 S=80 2)	L2±0,2 S=90 2)
10 mm	116	126	-	-
16 mm	123	133	143	153
20 mm	128	138	148	158
25 mm	132	142	152	162
32 mm	148	158	168	178

Piston Ø	L2±0,2 S=100 2)	L3	L4	L5	L6	L7 ±0,2 1)	L8 ±0,2 S=10 2)
10 mm	-	5	1	6	15	25	25
16 mm	163	8	1	6	15	30	40
20 mm	168	10	1	9	15	30	45
25 mm	172	10	1	8	15	40	50
32 mm	188	17	1	12	17	45	55

Piston Ø	L8 ±0,2 S=20 2)	L8 ±0,2 S=30 2)	L8 ±0,2 S=40 2)	L8 ±0,2 S=50 2)
10 mm	40	45	50	55
16 mm	45	50	55	60
20 mm	45	45	50	55
25 mm	50	50	55	60
32 mm	60	65	70	75

Piston Ø	L8 ±0,2 S=60 2)	L8 ±0,2 S=70 2)	L8 ±0,2 S=80 2)	L8 ±0,2 S=90 2)
10 mm	60	65	-	-
16 mm	65	70	75	80
20 mm	60	65	70	75
25 mm	65	70	75	80
32 mm	80	85	90	95

Piston Ø	L8 ±0,2 S=100 2)	L9	L10	W1	W2 ±0,2	W3	W4 ±0,2	W5	W6	W7	W8 ±0,2
10 mm	-	32	10	41	26	18	34	5	14	42	34
16 mm	85	32	10	53	34	24	47	5.7	18.5	54	47

Piston Ø	L8 ±0,2 S=100 2)	L9	L10	W1	W2 ±0,2	W3	W4 ±0,2	W5	W6	W7	W8 ±0,2
20 mm	80	35	12	61	44	28	55	6.8	20	62	55
25 mm	85	40	12	72	56	34	66	8.3	22.5	73	66
32 mm	100	46	15	94	72	42	83	10.1	34	96	83

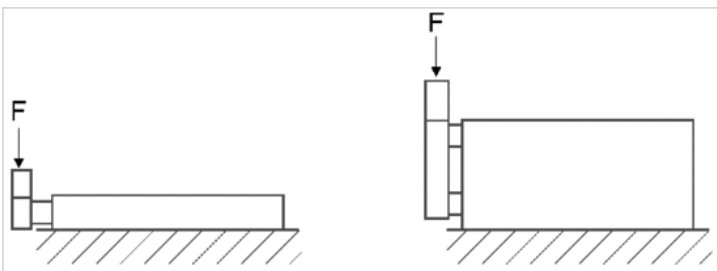
S = stroke

1) + Stroke

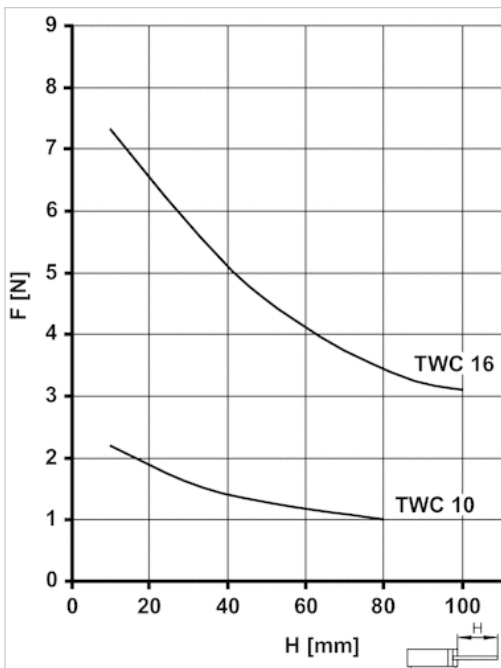
2) Dimensions for corresponding stroke

Diagrams

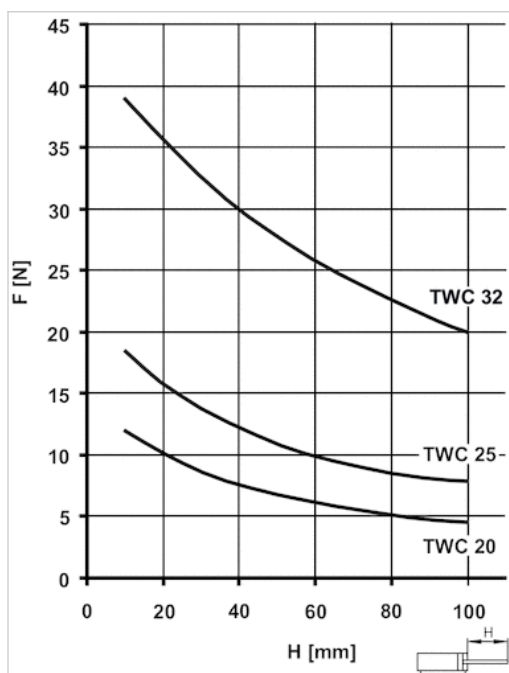
Max. transverse force F depending on the stroke length



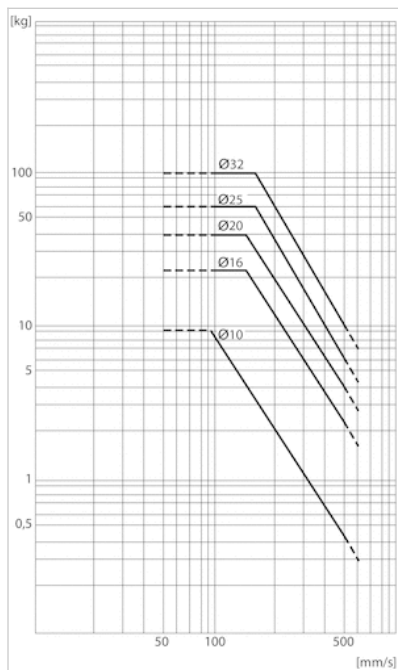
Ø 10 ... 16



Ø 20 ... 32



Maximum permissible moving mass depending on the impact speed

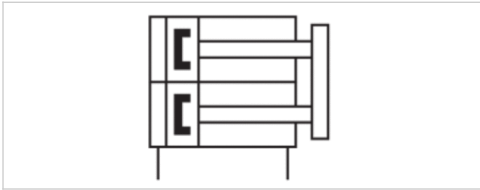


Double piston cylinder, Series TWC-HL

- Ø 16-25 mm
- double-acting
- with magnetic piston
- Cushioning elastic
- End position lock retracted cylinder



Working pressure min./max.	1.5 ... 7 bar
Ambient temperature min./max.	0 ... 60 °C
Medium	Compressed air
Max. particle size	5 µm
Oil content of compressed air	0-1 mg/m ³
Pressure for determining piston forces	6.3 bar



Technical data

Piston Ø	16 mm	20 mm	25 mm
Stroke 10	R402000846	R402000854	R402000862
20	R402000847	R402000855	R402000863
30	R402000848	R402000856	R402000864
40	R402000849	R402000857	R402000865
50	R402000850	R402000858	R402000866
60	R402000851	R402000859	R402000867
70	R402000852	R402000860	R402000868
80	R402000853	R402000861	R402000869

Technical data

Piston Ø 2x	16 mm	20 mm
Port	M5	M5
Retracting piston force	189 N	296 N
Extracting piston force	253 N	395 N
Speed max.	0.5 m/s	0.5 m/s
Max. holding force when locked	95 N	150 N
Max. play with locked end position	1 mm	1 mm
Cushioning energy max.	0.11 J	0.17 J
Weight 10 mm stroke	0.24 kg	0.37 kg

Piston Ø 2x	16 mm	20 mm
+10 mm stroke	0.035 kg	0.05 kg
Cushioning	elastic	elastic
Max. play (radial)	0.6 °	0.6 °
End cover	Polyoxymethylene	Polyoxymethylene

Piston Ø 2x	25 mm
Port	M5
Retracting piston force	475 N
Extracting piston force	618 N
Speed max.	0.5 m/s
Max. holding force when locked	235 N
Max. play with locked end position	1 mm
Cushioning energy max.	0.23 J
Weight 10 mm stroke	0.64 kg
+10 mm stroke	0.052 kg
Cushioning	elastic
Max. play (radial)	0.6 °
End cover	Polyoxymethylene

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).

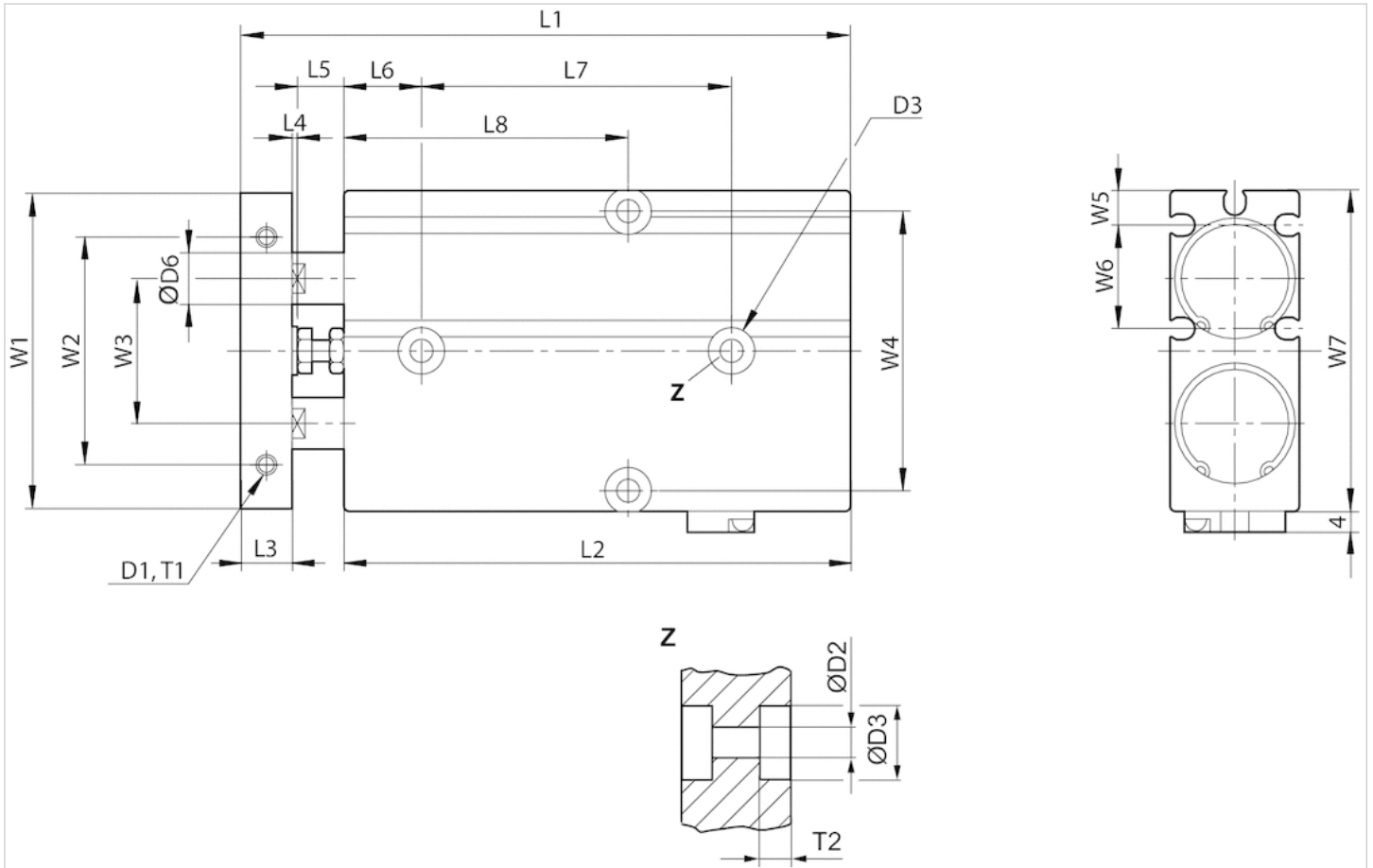
Additional function: end position lock with pressure drop

Technical information

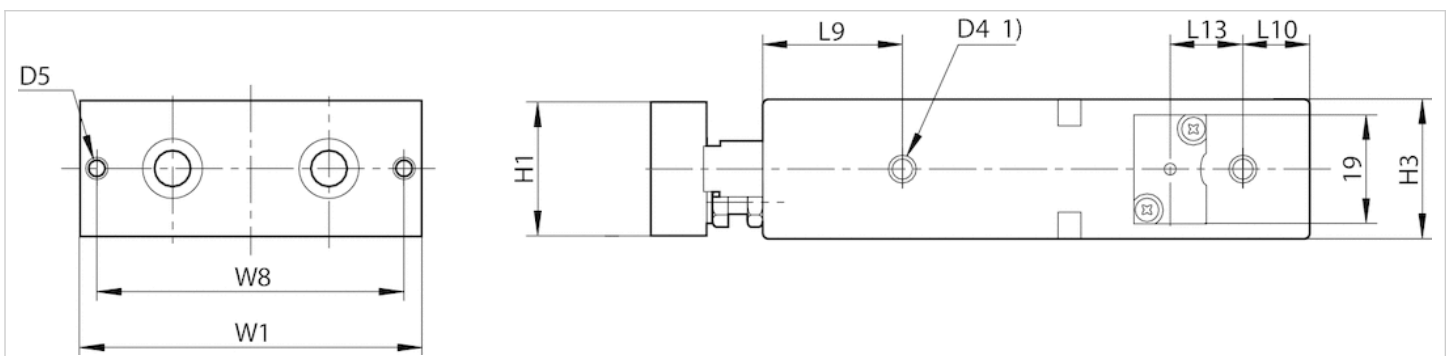
Material	
Housing	Aluminum, anodized
Front plate	Steel, galvanized
Piston rod	Steel, hardened
Seal	Acrylonitrile butadiene rubber
Guide bushing	Aluminum, anodized
Front cover	Steel, nickel-plated
End cover	Polyoxymethylene

Dimensions

TWC 16-HL - 25-HL



TWC 16-HL - 25-HL



1) Compressed air connection
 T1 = depth of thread

Dimensions

Piston Ø	D1	T1	Ø D2	Ø D3	T2	D4	D5	Ø D6	H1	H3	L1 ±0,8 1)	L2 ±0,2 S=10 2)
16 mm	2xM4	5	4,5	8	5,5	M5	2xM4	8	20	21	88	83
20 mm	2xM4	5	4,5	8	5,5	M5	2xM4	10	24	25	98	88
25 mm	2xM5	6	4,5	9	6	M5	2xM4	12	29	30	101	92

Piston Ø	L2 ±0,2 S=20 2)	L2 ±0,2 S=30 2)	L2 ±0,2 S=40 2)	L2 ±0,2 S=50 2)
16 mm	93	103	113	123
20 mm	98	108	118	128
25 mm	102	112	122	132

Piston Ø	L2 ±0,2 S=60 2)	L2 ±0,2 S=70 2)	L2 ±0,2 S=80 2)	L3	L4	L5	L6
16 mm	133	143	153	8	1	6	15
20 mm	138	148	158	10	1	9	15
25 mm	142	152	162	10	1	8	15

Piston Ø	L7 ±0,2 1)	L8 ±0,2 S=10 2)	L8 ±0,2 S=20 2)	L8 ±0,2 S=30 2)
16 mm	40	40	45	50
20 mm	40	40	45	50
25 mm	50	45	50	55

Piston Ø	L8 ±0,2 S=40 2)	L8 ±0,2 S=50 2)	L8 ±0,2 S=60 2)	L8 ±0,2 S=70 2)
16 mm	55	60	65	70
20 mm	55	60	65	70
25 mm	60	65	70	75

Piston Ø	L8 ±0,2 S=80 2)	L9	L10	L13	W1	W2 ±0,2	W3	W4 ±0,2	W5	W6	W7	W8 ±0,2
16 mm	75	22	10	13	53	34	24	47	5.7	18.5	54	47
20 mm	75	25	12	13	61	44	28	55	6.8	20	62	55
25 mm	80	30	12	10	72	56	34	66	8.3	22.5	73	66

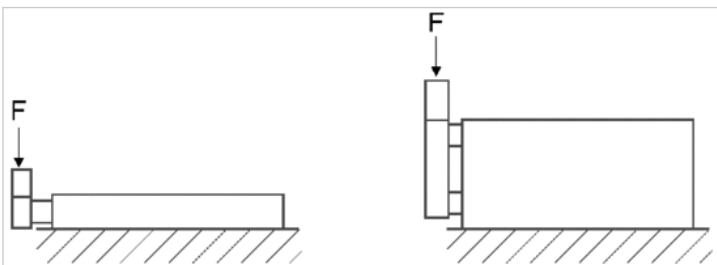
S = stroke

1) + Stroke

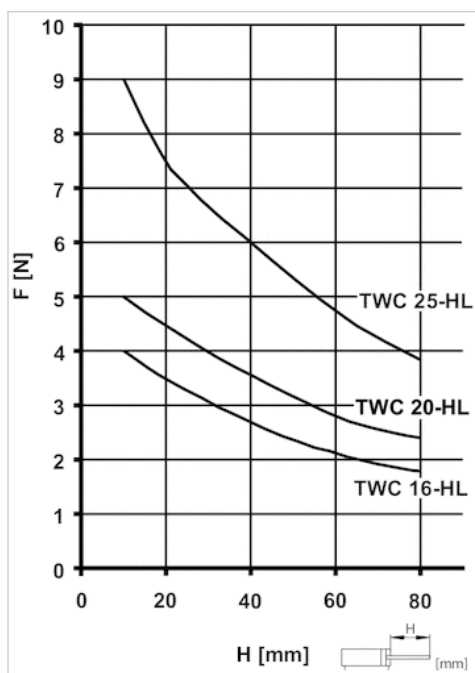
2) Dimensions for corresponding stroke

Diagrams

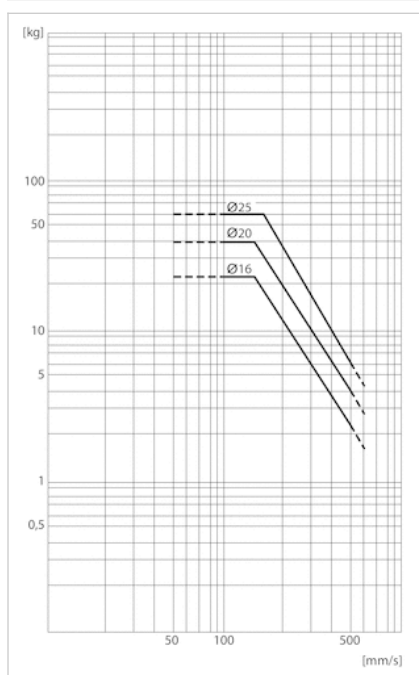
Max. transverse force F depending on the stroke length



Ø 16 mm ... 25 mm



Maximum permissible moving mass depending on the impact speed

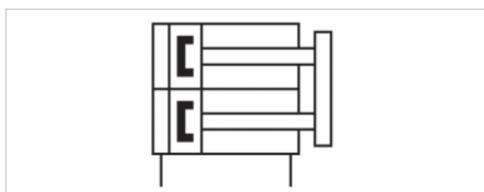


Double piston cylinder, Series TWC-RL

- Ø 16-25 mm
- double-acting
- with magnetic piston
- Cushioning elastic
- End position lock extended cylinder



Working pressure min./max.	1.5 ... 7 bar
Ambient temperature min./max.	0 ... 60 °C
Medium	Compressed air
Max. particle size	5 µm
Oil content of compressed air	0-1 mg/m ³
Pressure for determining piston forces	6.3 bar



Technical data

Piston Ø	16 mm	20 mm	25 mm
Stroke 10	R402000870	R402000878	R402000886
20	R402000871	R402000879	R402000887
30	R402000872	R402000880	R402000888
40	R402000873	R402000881	R402000889
50	R402000874	R402000882	R402000890
60	R402000875	R402000883	R402000891
70	R402000876	R402000884	R402000892
80	R402000877	R402000885	R402000893

Technical data

Piston Ø 2x	16 mm	20 mm
Port	M5	M5
Retracting piston force	189 N	296 N
Extracting piston force	253 N	395 N
Speed max.	0.5 m/s	0.5 m/s
Max. holding force when locked	96 N	150 N
Max. play with locked end position	1 mm	1 mm
Max. retracted stroke setting	-5 mm	-5 mm
Cushioning energy max.	0.11 J	0.17 J

Piston Ø 2x	16 mm	20 mm
Weight 10 mm stroke	0.26 kg	0.39 kg
+10 mm stroke	0.033 kg	0.049 kg
Cushioning	elastic	elastic
Max. play (radial)	0.6 °	0.6 °
End cover	Polyoxymethylene	Polyoxymethylene

Piston Ø 2x	25 mm
Port	M5
Retracting piston force	475 N
Extracting piston force	618 N
Speed max.	0.5 m/s
Max. holding force when locked	235 N
Max. play with locked end position	1 mm
Max. retracted stroke setting	-5 mm
Cushioning energy max.	0.23 J
Weight 10 mm stroke	0.67 kg
+10 mm stroke	0.051 kg
Cushioning	elastic
Max. play (radial)	0.6 °
End cover	Polyoxymethylene

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).

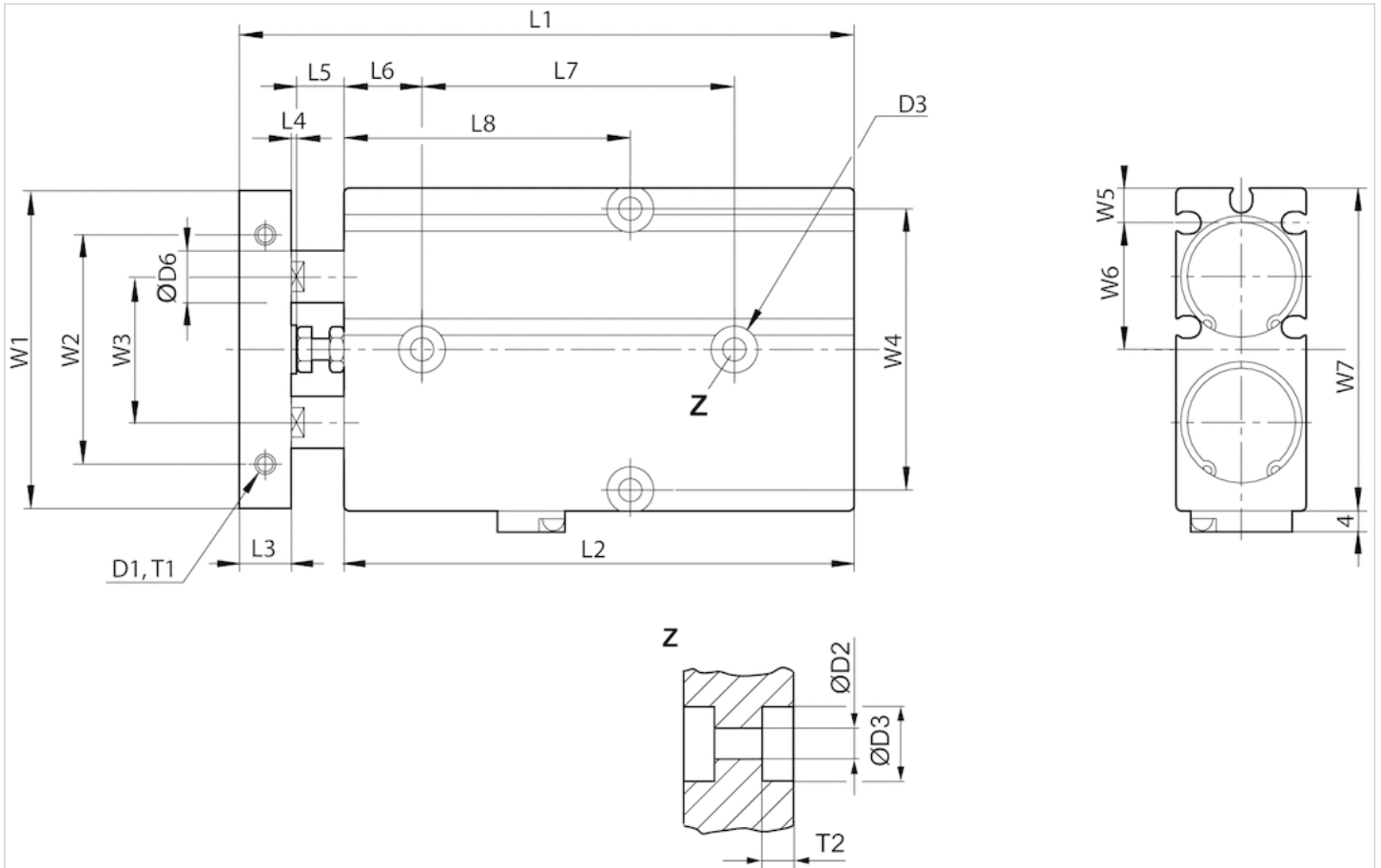
Additional function: end position lock with pressure drop

Technical information

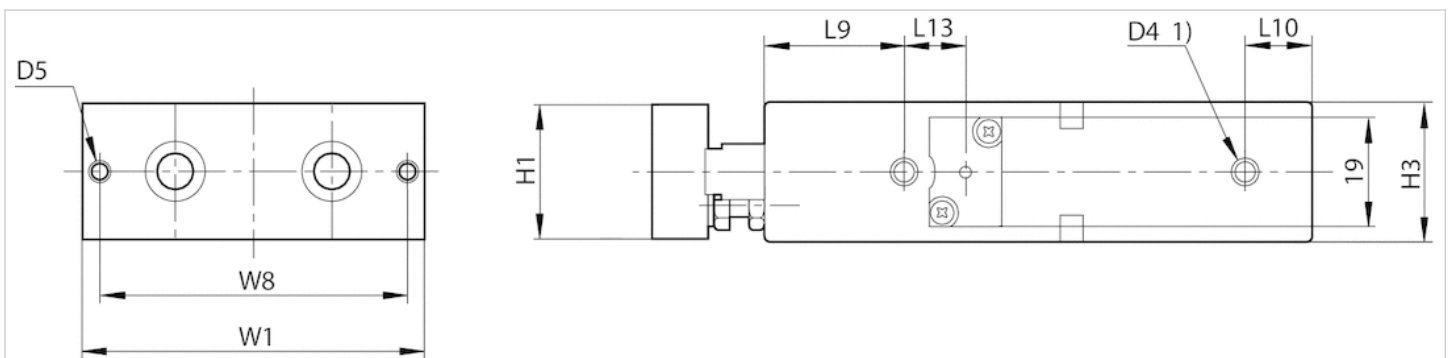
Material	
Housing	Aluminum, anodized
Front plate	Steel, galvanized
Piston rod	Steel, hardened
Seal	Acrylonitrile butadiene rubber
Guide bushing	Aluminum, anodized
Front cover	Steel, nickel-plated
End cover	Polyoxymethylene

Dimensions

TWC 16-RL - 25-RL



TWC 16-RL - 25-RL



1) Compressed air connection
 T1 = depth of thread

Dimensions

Piston Ø	D1	T1	Ø D2	Ø D3	T2	D4	D5	Ø D6	H1	H3	L1 ±0,8 1)	L2 ±0,2 S=10 2)
16 mm	2xM4	5	4,5	8	5,5	M5	2xM4	8	20	21	88	83
20 mm	2xM4	5	4,5	8	5,5	M5	2xM4	10	24	25	98	88
25 mm	2xM5	6	4,5	9	6	M5	2xM4	12	29	30	101	92

Piston Ø	L2 ±0,2 S=20 2)	L2 ±0,2 S=30 2)	L2 ±0,2 S=40 2)	L2 ±0,2 S=50 2)
16 mm	93	103	113	123
20 mm	98	108	118	128
25 mm	102	112	122	132

Piston Ø	L2 ±0,2 S=60 2)	L2 ±0,2 S=70 2)	L2 ±0,2 S=80 2)	L3	L4	L5	L6
16 mm	133	143	153	8	1	6	15
20 mm	138	148	158	10	1	9	15
25 mm	142	152	162	10	1	8	15

Piston Ø	L7 ±0,2 1)	L8 ±0,2 S=10 2)	L8 ±0,2 S=20 2)	L8 ±0,2 S=30 2)
16 mm	40	45	45	50
20 mm	40	45	45	50
25 mm	50	50	50	55

Piston Ø	L8 ±0,2 S=40 2)	L8 ±0,2 S=50 2)	L8 ±0,2 S=60 2)	L8 ±0,2 S=70 2)
16 mm	55	60	65	70
20 mm	55	60	65	70
25 mm	60	65	70	75

Piston Ø	L8 ±0,2 S=80 2)	L9	L10	L13	W1	W2 ±0,2	W3	W4 ±0,2	W5	W6	W7	W8 ±0,2
16 mm	75	22	10	11	53	34	24	47	5.7	18.5	54	47
20 mm	75	25	12	11	61	44	28	55	6.8	20	62	55
25 mm	80	30	12	9	72	56	34	66	8.3	22.5	73	66

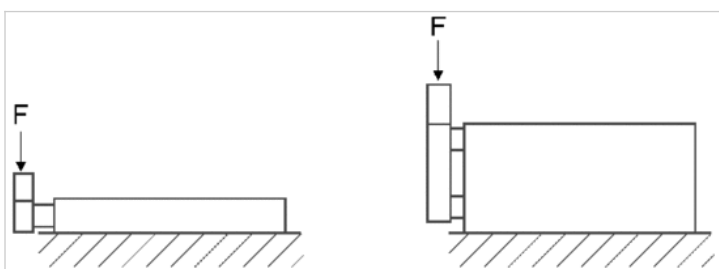
S = stroke

1) + Stroke

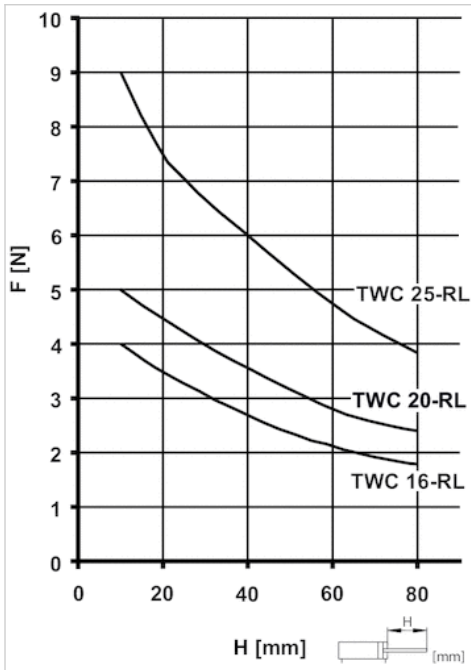
2) Dimensions for corresponding stroke

Diagrams

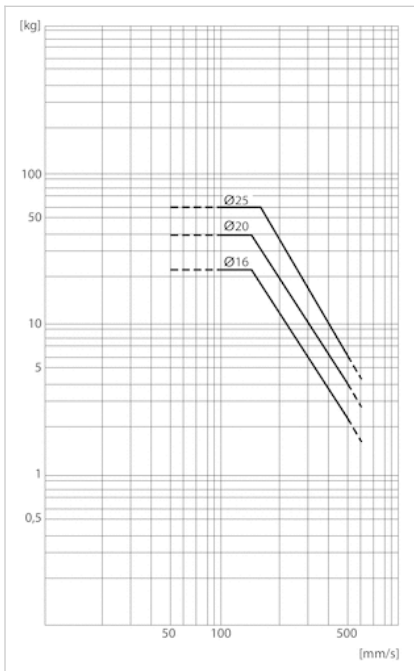
Max. transverse force F depending on the stroke length



16 ... 25 mm



Maximum permissible moving mass depending on the impact speed



Sensor, Series SC4

- 4 mm C-slot
- with cable
- open cable ends, 3-pin
- UL certification
- electronic PNP electronic NPN
- Direct mounting for series UPG, RTC, MSN, GPC, MSC, PRA, SSI, TWC



Certificates	CE declaration of conformity cULus
Ambient temperature min./max.	-30 ... 80 °C
Protection class	IP65, IP67
Switching point precision	±0,1 mT
Nominal current, actuated state	10 mA
Quiescent current (without load)	4 mA
Min./max. DC operating voltage	10 ... 30 V DC
Hysteresis	0,4 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 m

Technical data

Part No.		for	Type of contact
R412026162		UPG, RTC, MSN, GPC, MSC, PRA, SSI, TWC	electronic PNP
R412026163		UPG, RTC, MSN, GPC, MSC, PRA, SSI, TWC	electronic PNP
R412026166		UPG, RTC, MSN, GPC, MSC, PRA, SSI, TWC	electronic NPN

Part No.	Cable length L	Voltage drop U at I _{max}	DC switching current, max.
R412026162	3 m	≤ 2,5 V	0.1 A
R412026163	5 m	≤ 2,5 V	0.1 A
R412026166	3 m	≤ 2,5 V	0.1 A

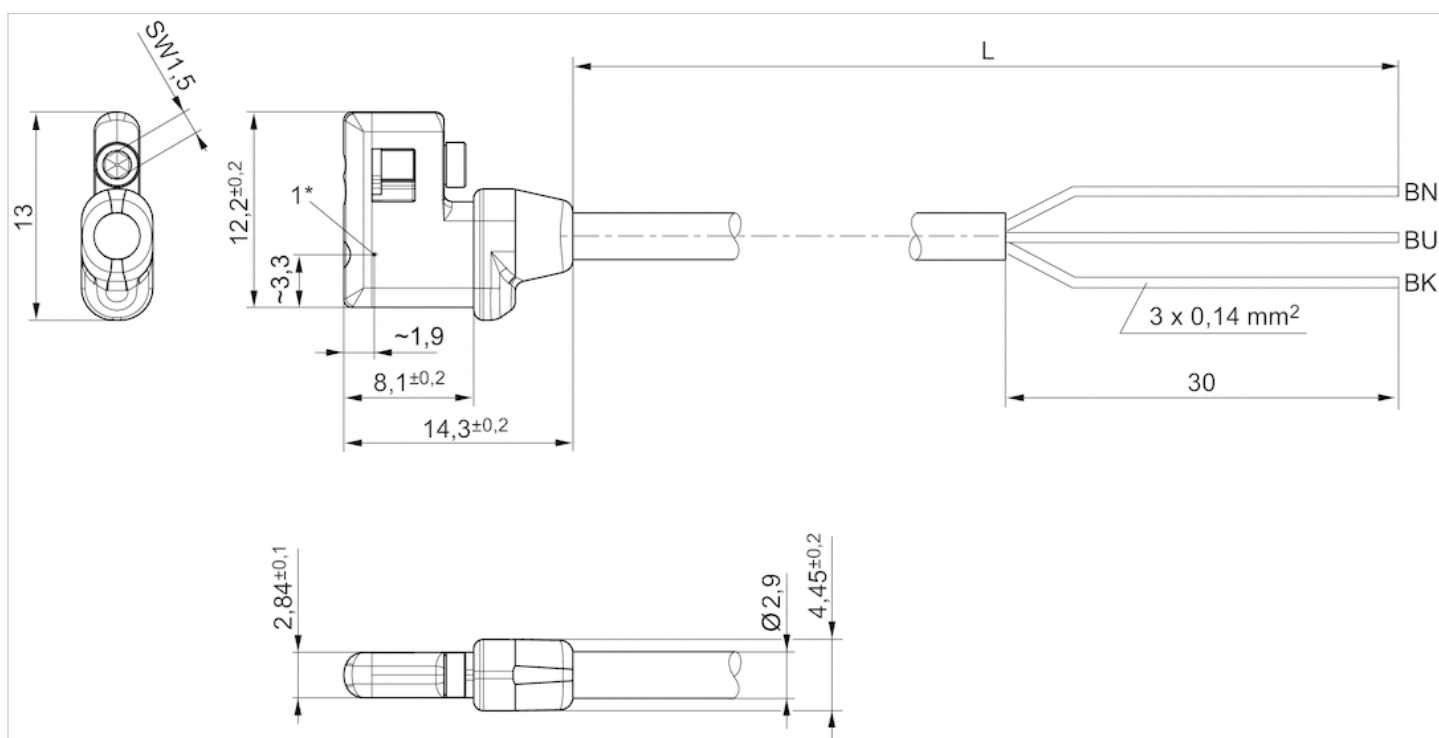
Part No.	Max. switching frequency	Version
R412026162	1000 Hz	Protected against polarity reversal
R412026163	1000 Hz	Protected against polarity reversal
R412026166	1000 Hz	Protected against polarity reversal

,

Technical information

Material	
Housing	Polyamide
Cable sheath	Polyurethane
Locking screw	Stainless steel

Dimensions



* Switching point

L = cable length

Sensor, Series SC4

- 4 mm C-slot
- with cable
- Plug, M8, 3-pin, with knurled screw
- UL certification
- electronic PNP electronic NPN
- Direct mounting for series UPG, RTC, MSN, GPC, MSC, PRA, SSI, TWC



Certificates	CE declaration of conformity cULus
Ambient temperature min./max.	-30 ... 80 °C
Protection class	IP65, IP67
Switching point precision	±0,1 mT
Nominal current, actuated state	10 mA
Quiescent current (without load)	4 mA
Min./max. DC operating voltage	10 ... 30 V DC
Hysteresis	0,4 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	0.3 0.5 m

Technical data

Part No.		for	Type of contact
R412026164		UPG, RTC, MSN, GPC, MSC, PRA, SSI, TWC	electronic PNP
R412026165		UPG, RTC, MSN, GPC, MSC, PRA, SSI, TWC	electronic PNP
R412026167		UPG, RTC, MSN, GPC, MSC, PRA, SSI, TWC	electronic NPN

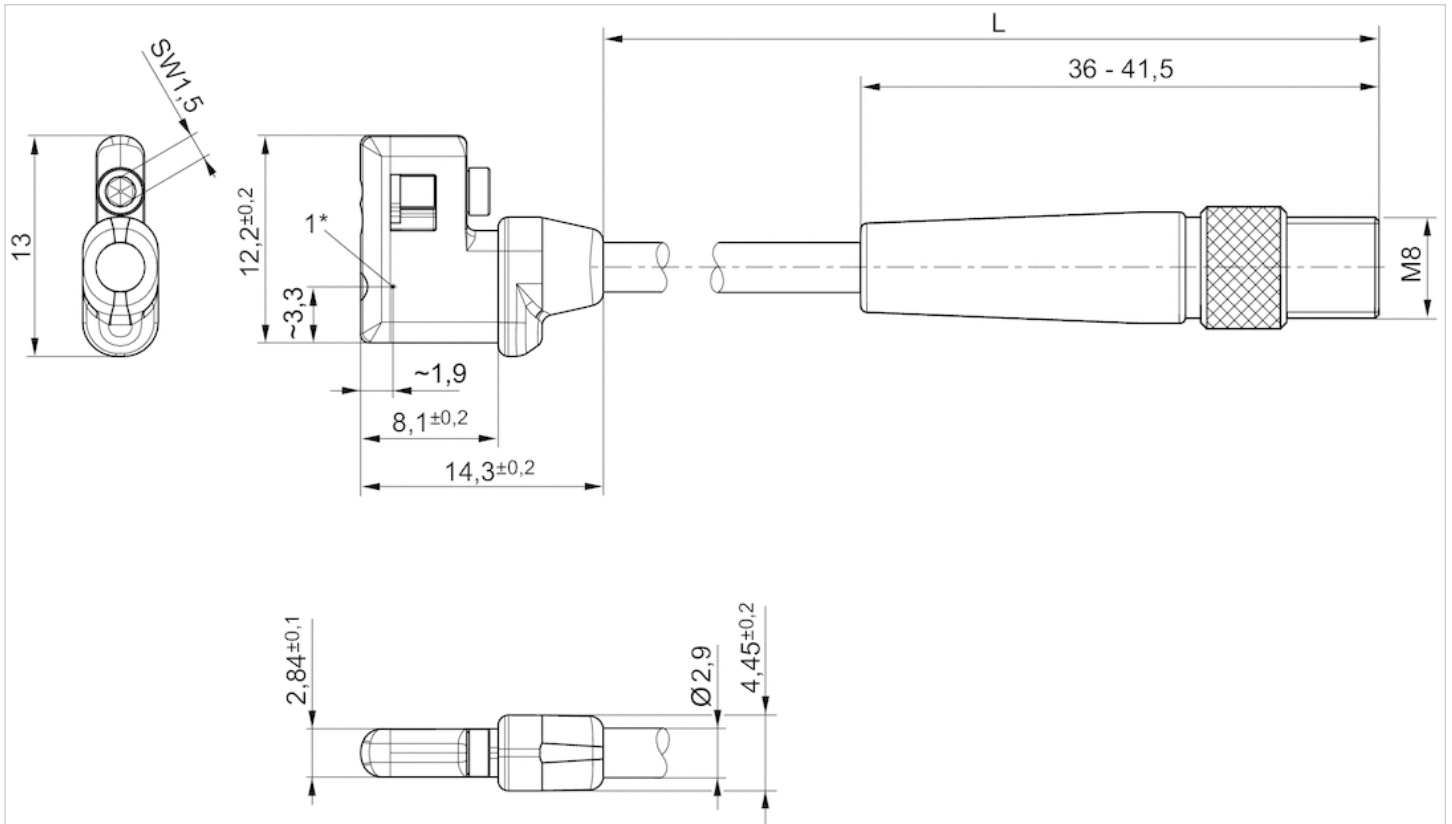
Part No.	Cable length L	Voltage drop U at I _{max}	DC switching current, max.
R412026164	0.3 m	≤ 2,5 V	0.1 A
R412026165	0.5 m	≤ 2,5 V	0.1 A
R412026167	0.3 m	≤ 2,5 V	0.1 A

Part No.	Max. switching frequency	Version
R412026164	1000 Hz	Protected against polarity reversal
R412026165	1000 Hz	Protected against polarity reversal
R412026167	1000 Hz	Protected against polarity reversal

Technical information

Material	
Housing	Polyamide
Cable sheath	Polyurethane
Locking screw	Stainless steel

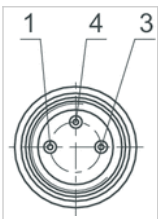
Dimensions



* Switching point
L = cable length

Pin assignments

Pin assignments



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

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