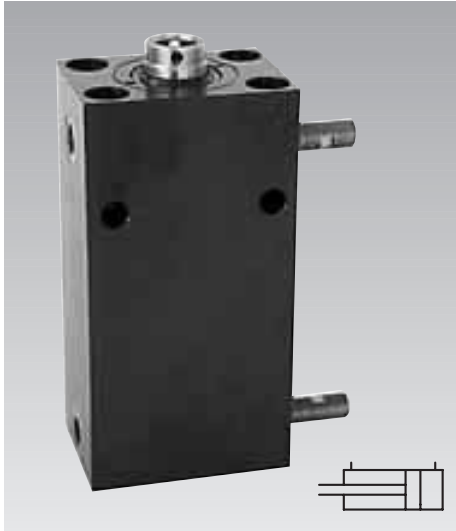
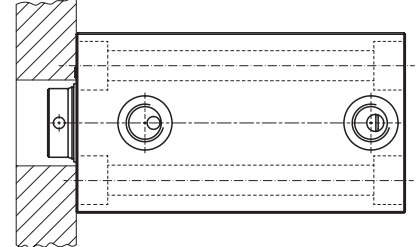
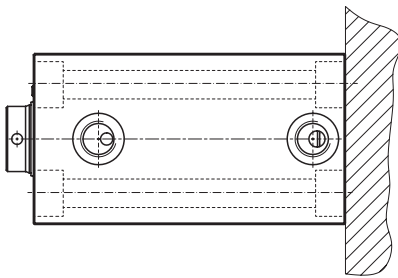
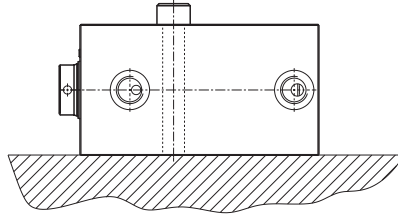




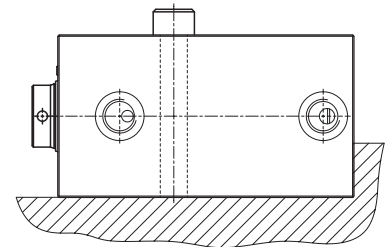
Block Cylinder for stroke end control max. operating pressure 500 bar



Fixing possibilities



Cylinders must be backed up for operating pressures exceeding 160 bar



Application

Double-acting block cylinders with stroke end control are particularly suitable for automated installations, time and cycle-dependent clamping and unclamping.

Description

The stroke end control supplies the required information about the position of the piston. Control is made by pressure-proof sensors, which are fixed at the corresponding stroke end of the cylinder piston in the body.

Advantages

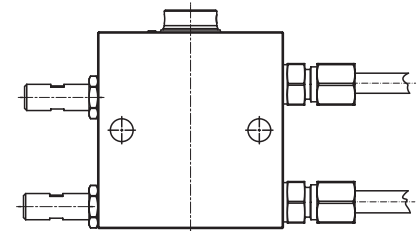
- Compact design
- Same dimensions as the block cylinders as per data sheet B 1.509, except for total length
- Diverse mounting possibilities
- 3 standard stroke lengths
- Sensors can be mounted at the right or left-hand side
- Switching point of the sensors adjustable up to 5 mm before the final position
- All standard versions are equipped with VITON® seals

Important notes

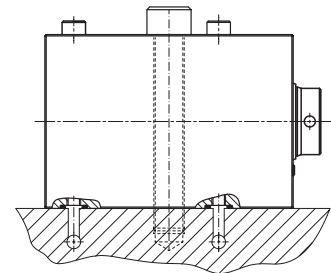
The high-pressure resistant sensors are delivered separately for mounting at place of installation in order to avoid transport damage. Please refer to the installation instructions on page 4.

Maximum environmental temperature of the sensors -25...+80°C

Version with connecting thread



Version for manifold mounting with O-ring sealing



Application example

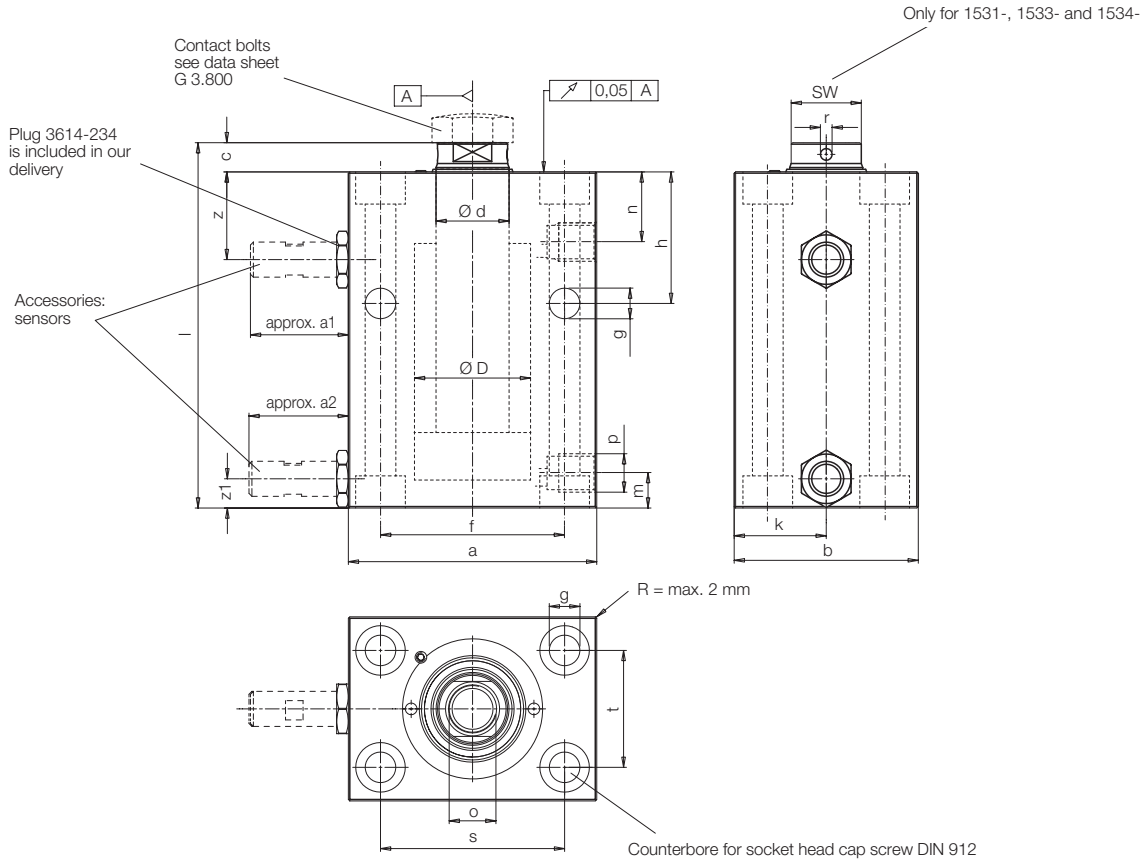
Application for pressing in of piston rods into the pistons.

To monitor the press-in depth of the piston rods, the stroke ends of the block cylinder is controlled.

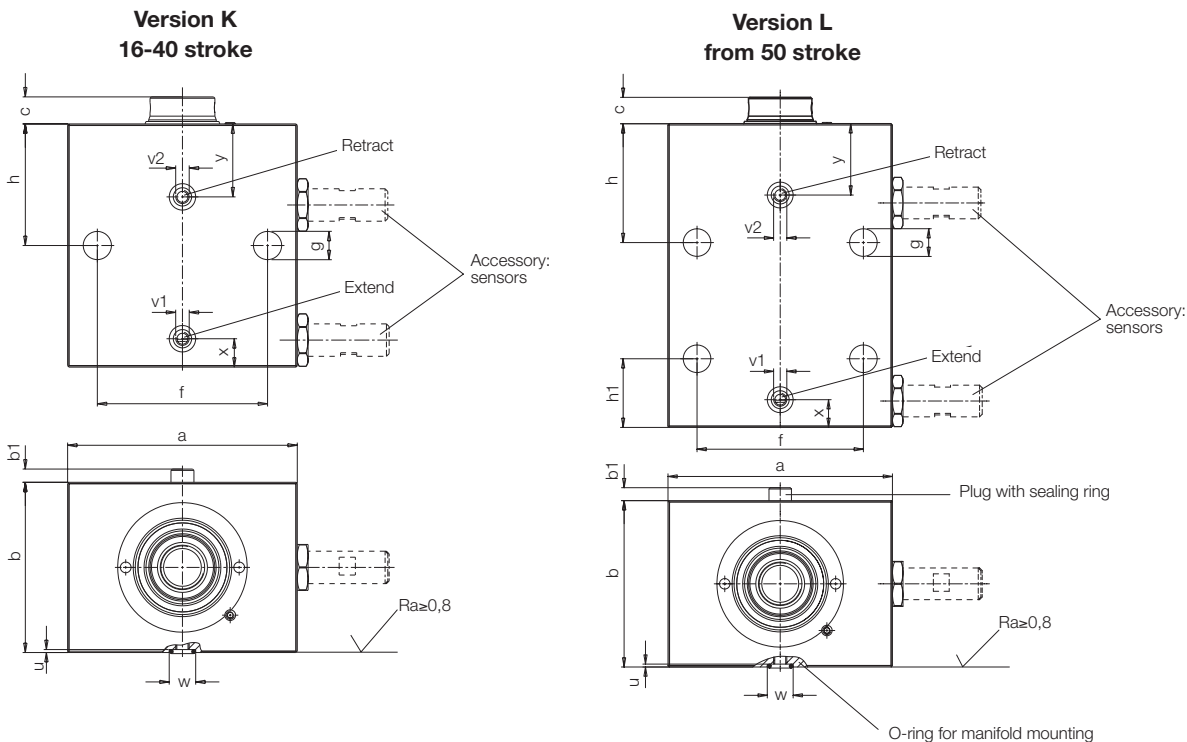




Dimensions – Version with connecting thread



Dimensions – Version for manifold mounting with O-ring sealing



For use of the sensors at the left side, the cylinder will be rotated by 180° and the plug with sealing ring and the O-ring for manifold mounting are exchanged.



ROEMHELD

Piston Ø D	[mm]	16	25	32	40	50	63	80	100
Rod Ø d	[mm]	10	16	20	25	32	40	50	63
Force to push	100 bar [kN]	2	4.9	8	12.6	19.5	31.2	50.4	78.4
at	500 bar [kN]	10	24.5	40.2	62.8	98.5	156	252	392
Force to pull	100 bar [kN]	1.2	2.9	4.9	7.7	11.6	18.6	30.6	47.4
at	500 bar [kN]	6.1	14.5	24.5	38.3	57.9	93	153.2	236.8
Oil volume/	stroke to extend [cm³]	2.01	4.91	8.05	12.56	19.63	31.17	50.26	78.54
10 mm stroke	stroke to retract [cm³]	1.2	2.9	4.9	7.7	11.6	18.6	30.6	47.4
a	[mm]	60	65	75	85	100	125	160	200
a1	[mm]	35	34.5	33.5	33.5	30	47	37	42
a2	[mm]	35	34.5	33.5	34	32	47	39	44
b	[mm]	35	45	55	63	75	95	120	150
b1	[mm]	4	5	5	5	6	5.5	7.5	7.5
c	[mm]	6	7	10	10	10	14	14	15
f	[mm]	30	50	55	63	76	95	120	158
g	[mm]	6.5	8.5	10.5	10.5	13	17	21	25
h	[mm]	40	38	45	45	49	52	62	64
h1	[mm]	24	38	29	26	33	37	47	52
k	[mm]	17.5	22.5	27.5	31.5	37.5	47.5	60	75
m	[mm]	11	16	13	12	13	20.5	20	24
n	[mm]	16.5	18	24	24	27	26	34	35
o x depth of thread	[mm]	M6x12	M10x15	M12x15	M16x25	M20x30	M27x40	M30x40	M42x60
p		G1/4	G1/4	G1/4	G1/4	G1/4	G1/2	G1/2	G1/2
r	[mm]	-	-	-	4	4	4	5	6
s	[mm]	40	50	55	63	76	95	120	158
t	[mm]	22	30	35	40	45	65	80	108
u ± 0.05	[mm]	1.1	1.1	1.1	1.1	1.1	1.5	1.5	1.5
v1 extend	[mm]	M4	M5	M5	M5	M6	M6	M8	M8
v2 retract	[mm]	M4	M5	M5	M5	M6	M6	M8	M8
w +0.2	[mm]	9.8	9.8	9.8	9.8	10.8	13.8	13.8	13.8
x	[mm]	9	16	13	10.5	13	18	22.5	24
y	[mm]	20.5	21	27	27	29.5	31.5	39	40
z	[mm]	28	24.5	30.5	30	33	34.5	41.5	42.5
z1	[mm]	11	12.7	14.5	13	17.5	21	26	30
R	[mm]	-	-	-	2	2	2	2	-
SW	[mm]	8	13	17	-	-	-	-	-
Dimensions O-ring		7x1.5	7x1.5	7x1.5	7x1.5	8x1.5	10x2	10x2	10x2
Part-no. O-ring		3000-342	3000-342	3000-342	3000-342	3000-343	3000-347	3000-347	3000-347

Stroke ±1	[mm]	16	20	25	25	25	30	32	40
Total length l ± 1	[mm]	81	88	102	104	109	126	141	156
Weight	[kg]	1	1.6	2.7	3.4	5.1	8.9	16.3	28.2

With connecting thread

Part-no.	1531-136	1533-136	1534-136	1535-136	1536-136	1537-146	1538-146	1539-156
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For manifold mounting with O-ring sealing

Part-no.	1531-130K	1533-130K	1534-130K	1535-130K	1536-130K	1537-140K	1538-140K	1539-150K
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Stroke ±1	[mm]	50	50	50	50	50	63	80
Total length l ± 1	[mm]	115	118	127	129	134	159	189
Weight	[kg]	1.7	2.3	3	4.2	6.2	11.1	21.7

With connecting thread

Part-no.	1531-166	1533-166	1534-166	1535-166	1536-166	1537-176	1538-186
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For manifold mounting with O-ring sealing

Part-no.	1531-160L	1533-160L	1534-160L	1535-160L	1536-160L	1537-170L	1538-180L
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Stroke ±1	[mm]	100	100	100	100	100	100	100
Total length l ± 1	[mm]	165	168	177	179	184	196	209
Weight	[kg]	2.5	3.3	4.8	6	8.6	14	24.2

With connecting thread

Part-no.	1531-196	1533-196	1534-196	1535-196	1536-196	1537-196	1538-196	1539-196
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For manifold mounting with O-ring sealing

Part-no.	1531-190L	1533-190L	1534-190L	1535-190L	1536-190L	1537-190L	1538-190L	1539-190L
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Accessory sensor

Part-no.	3829-180	3829-180	3829-180	3829-180	3829-180	3829-030	3829-030	3829-204
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Accessory pull-type connector pnp

M12x1 knee-type	Part-no.	3829-049	3829-049	3829-049	3829-049	3829-049	3829-049	3829-049
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M12x1 straight	Part-no.	3829-078	3829-078	3829-078	3829-078	3829-078	3829-078	3829-078
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Part-no.	3829-078	3829-078	3829-078	3829-078	3829-078	3829-078	3829-078	3829-078
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Technical characteristics see page 4



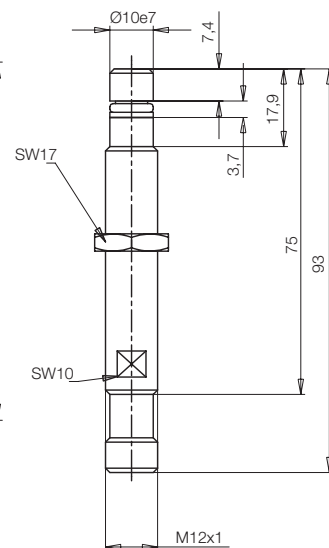
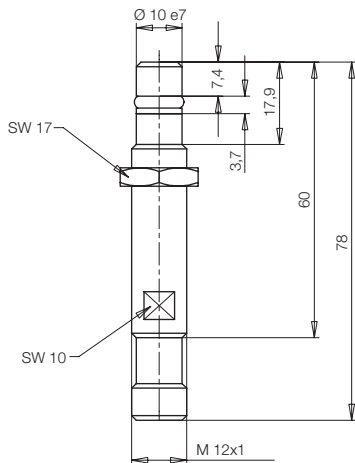
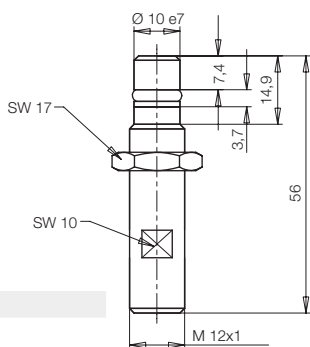
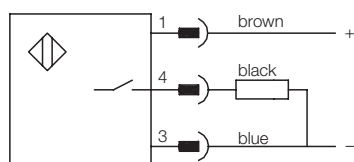
General and technical characteristics

Rated operating distance S_n	[mm]	1.5	1.5	1.5
Assured operating distance S_a	[mm]	0...1.2	0...1.2	0...1.2
Repeatability	[%]	≤5	≤5	≤5
Hysteresis	[%]	≤15	≤15	≤15
Environmental temperature	[°C]	-25...+80	-25...+80	-25...+80
Special characteristics		pressure rated to 500 bar	pressure rated to 500 bar	pressure rated to 500 bar
Dimensions BxHxT or DxT	[mm]	M12x1 x 56	M12x1 x 78	M12x1 x 93
Material of the body		1.4104	1.4104	1.4104
Material of sensing face		EP [Duroplast]	EP [Duroplast]	EP [Duroplast]
Code class	[IP]	68 as per BWN Pr 20	68 as per BWN Pr 20	68 as per BWN Pr 20
Type of connection		Connector	Connector	Connector

Electrical characteristics

Voltage		DC	DC	DC
Wiring		3 wires	3 wires	3 wires
Switching function		interlock	interlock	interlock
Output signal		PNP	PNP	PNP
Rated operating voltage	[V]	24 DC	24 DC	24 DC
Rated operating current	[mA]	200	200	200
Voltage	[V]	10...30 DC	10...30 DC	10...30 DC
Residual ripple	[%]	≤15	≤15	≤15
Switching frequency	[Hz]	1000	1000	1000
No-load current	[mA]	≤10/≤2	≤10/≤1	≤10/≤1
Cut off current	[μA]	≤80	≤10	≤10
Voltage drop	[V]	≤1.5/-	≤1.5/-	≤1.5/-
Protection against short circuit		yes	yes	yes
Protection against reverse battery		yes	yes	yes

Part-no. high-pressure resistant sensor	3829-180	3829-030	3829-204
Part-no. O-ring VITON® (spare part)	3001-550	3001-551	3001-550
Part-no. Back-up ring (spare part)	3001-552	3001-552	3001-552



Accessory for sensors

Pull-type connector pnp

a) M12 knee-type, 2 LED, 3 m

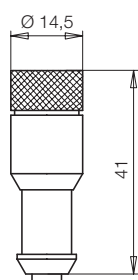
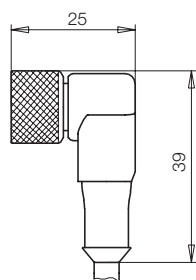
Part-no. 3829-049

b) M12 straight, without LED, 3 m

Part-no. 3829-078

Technical characteristics

Voltage	10 – 30 V DC
Protection DIN 40050	IP 67
Environmental temperature	-25°C up to 90°C
LED: Voltage	(green)
Function display	(yellow)



Mounting and adjustment of sensors

Front sensor:

1. Extend piston rod completely
2. Carefully, screw the sensors in to the stop at the piston
Turn back the sensor:

Rotation	Switching point before the final position
1/4	approx. 5 mm
1 1/4	approx. 1 mm
3. Lock the sensor in this position by means of a nut
4. Wire the switch electrically and check the function

Rear sensor:

1. Retract completely the piston rod
(Further steps see front sensor)

