



ROEMHELD

B 1.554

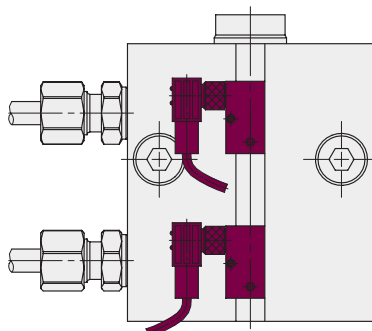
Block Cylinder with aluminium housing for adjustable magnetic sensors double acting, max. operating pressure 350 bar

- New - New - New -
 Now also available for 500 bar!
 Please ask for the part-no.

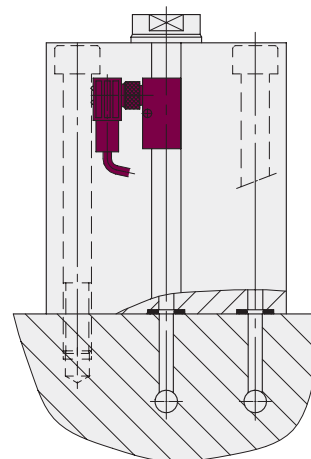


Oil supply

Versions with pipe thread see page 2



Manifold mounting with O-ring sealing see page 3



Application

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

Description

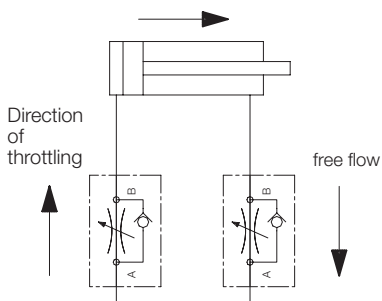
The position monitoring supplies the required information about the position of the piston. Monitoring is made by electronic sensors which detect the magnetic field of the magnetic piston. The switching points can be continuously adjusted by displacement of the switches in the slots.

Advantages

- Compact design
- Easy adjustment of switching point positions
- Same dimensions as the block cylinders as per data sheet B 1.509, except for total length.
- Diverse mounting possibilities
- 3 standard stroke lengths

Throttling of the flow rate

Throttling has to be made in the oil supply line to the block cylinder to rule out a possible pressure intensification and thereby pressures over 350 bar. The hydraulic circuit diagram shows flow control valves which allow oil return from the block cylinder without any impediments.



Important notes

Please only use fittings with soft seals, see page 4.

Block cylinders with aluminium housing are **not suitable for operation of blanking and punching dies.** Uncontrollable spikes and vibrations can appear which especially in the case of aluminium could cause a decrease in tool life. Steel can influence the magnetic field of the magnetic piston and thereby the position of the switching points. If there is the same influence for each stroke (e.g. because of adjoining steel components) it can be compensated by displacing the magnetic sensors. But if the influence differs from stroke to stroke, as e.g. in the case of swarf, a cover has to be provided 30 mm over the magnetic sensors.

Covers have to be provided to protect the cylinders against ferritic swarf. Piston material: Casehardening steel, hardened Cylinder body material: Anodized aluminium

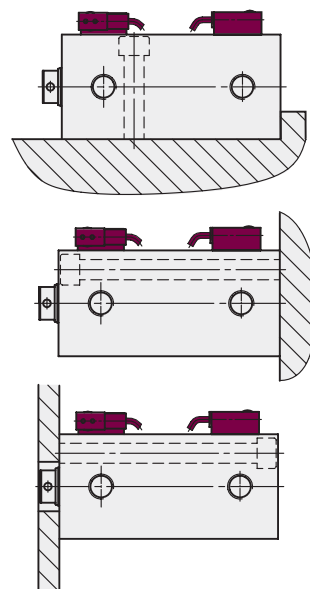
Special stainless steel version is available on request

For part-nos. see page 2 bottom

Max. cylinder temperature see page 4

Operating conditions, tolerances and other data see data sheet A 0.100.

Fixing possibilities

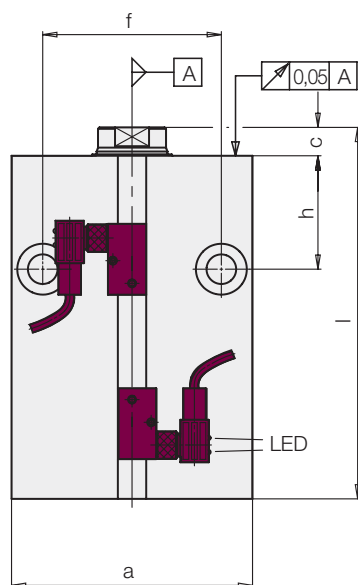
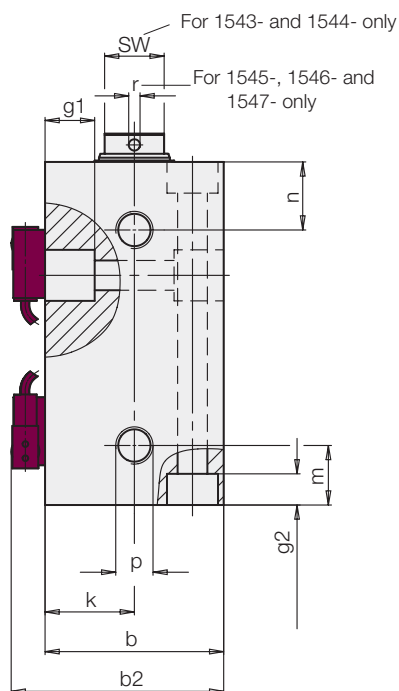


Application example of mould construction

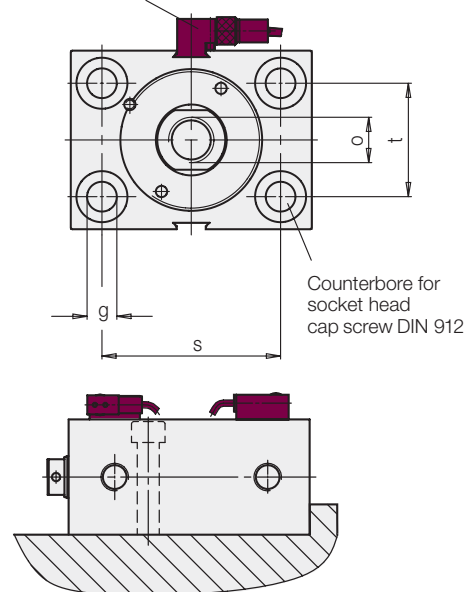


Variants available:
 ♦ Shorter stroke
 ♦ Keyway
 ♦ Internal thread instead of mounting holes in the body
 Special stainless steel version available





Accessory:
Magnetic sensors see reverse page



Cylinders must be backed up for operating pressures exceeding 160 bar.

Piston Ø D	[mm]	25	32	40	50	63
Rod Ø d	[mm]	16	20	25	32	40
Force to push at 100 bar	[kN]	4.9	8.0	12.5	19.6	31.2
Force to push at 350 bar	[kN]	17.1	28.1	44	68.7	109.2
Force to pull at 100 bar	[kN]	2.9	4.9	7.7	11.6	18.6
Force to pull at 350 bar	[kN]	10.1	17.1	26.8	40.5	65.1
Oil volume per 100 mm stroke						
Stroke to extend	[cm³]	4.91	8.05	12.56	19.63	31.17
Stroke to retract	[cm³]	2.9	4.9	7.7	11.6	18.6
a	[mm]	65	75	85	100	125
b	[mm]	45	55	63	75	95
b2	[mm]	57	67	75	87	107
c	[mm]	7	10	10	10	14
f	[mm]	50	55	63	76	95
g	[mm]	8.5	10.5	10.5	13	17
g1 at both sides	[mm]	12	16	17	22	-
g2 at both sides	[mm]	9	11	11	13	17
h	[mm]	33	38	40	44	50
k	[mm]	22.5	27.5	31.5	37.5	47.5
m	[mm]	18	20	21	21	26
n	[mm]	18	22	24	27	26
o x depth of thread	[mm]	M10 x 15	M12 x 15	M16 x 25	M20 x 30	M27 x 40
p		G 1/4	G 1/4	G 1/4	G 1/4	G 1/2
r	[mm]	-	-	4	4	4
s	[mm]	50	55	63	76	95
t	[mm]	30	35	40	45	65
SW	[mm]	13	17	-	-	-

Stroke ±1	[mm]	20	25	25	25	30
Total length l ±1	[mm]	85	100	106	117	135
Weight	[kg]	0.63	1.02	1.4	2.04	4.0
Part-no. (without magnetic sensors)		1543-513	1544-513	1545-513	1546-513	1547-513

Stroke ±1	[mm]	50	50	50	50	63
Total length l ±1	[mm]	115	125	131	142	168
Weight	[kg]	0.85	1.28	1.90	2.90	5.05
Part-no. (without magnetic sensors)		1543-516	1544-516	1545-516	1546-516	1547-516

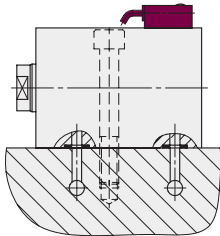
Stroke ±1	[mm]	100	100	100	100	100
Total length l ±1	[mm]	165	175	181	192	205
Weight	[kg]	1.20	1.81	3.00	4.60	6.22
Part-no. (without magnetic sensors)		1543-519	1544-519	1545-519	1546-519	1547-519

Part-no.	Version
154X-4XX	stainless steel
154X-X2X	VITON® seals see chart page 4

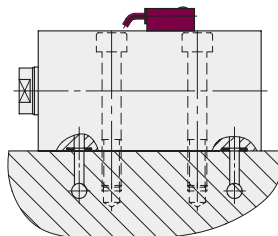


Oil supply and O-ring sealing at:

Broad side
Stroke 20 – 30 mm
K

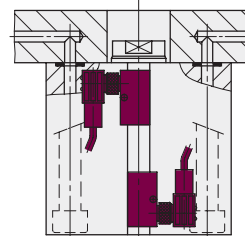


Broad side
Stroke 50 – 100 mm
L



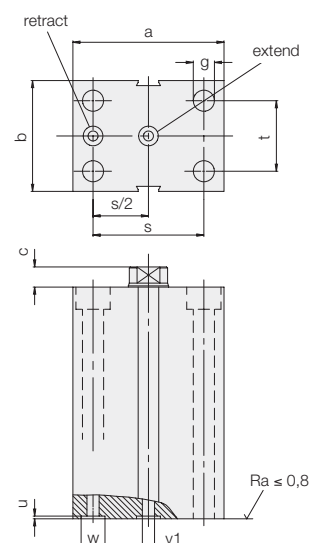
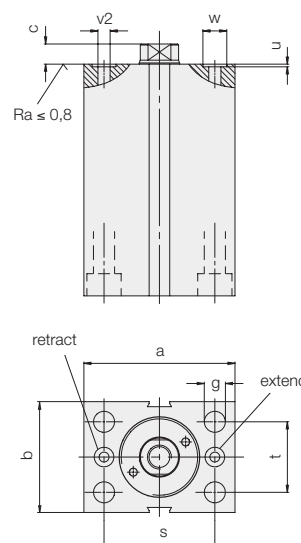
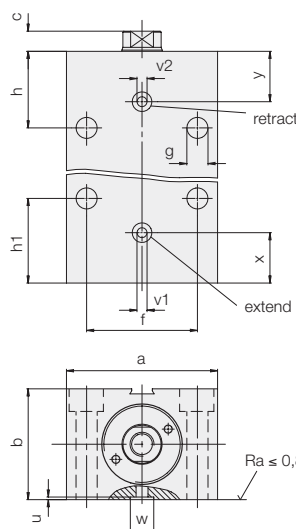
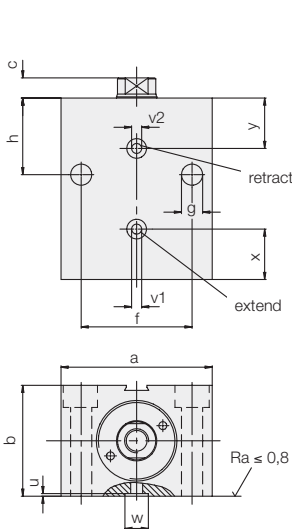
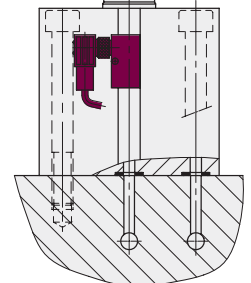
Rod side

S



Bottom side

B



Block Cylinder	1543-XXX	1544-XXX	1545-XXX	1546-XXX	1547-XXX
Piston Ø [mm]	25	32	40	50	63
Rod Ø [mm]	16	20	25	32	40
a [mm]	65	75	85	100	125
b [mm]	45	55	63	75	95
c [mm]	7	10	10	10	14
f [mm]	50	55	63	76	95
g [mm]	8.5	10.5	10.5	13	17
h [mm]	33	38	40	44	50
h1 [mm]	40	42	44	47	60
s [mm]	50	55	63	76	95
t [mm]	30	35	40	45	65
u ± 0.05 [mm]	1.1	1.1	1.1	1.1	1.3
v1 [mm]	4	5	6	6	8
v2 [mm]	4	4.5	4.5	6	6
w + 0.2 [mm]	9.8	10.8	10.8	10.8	15.8
x [mm]	21.5	25	27	30	35
y [mm]	21	25	27	29.5	32
Dimensions O-ring [mm]	7 x 1.5	8 x 1.5	8 x 1.5	8 x 1.5	12.42 x 1.78
Part-no. spare O-ring	3000-342	3000-343	3000-343	3000-343	3000-335
Part-no. O-ring (VITON®)	3001-077	3000-275	3000-275	3000-275	3001-078

O-rings are included in delivery.

Other dimensions see page 2.

The following block cylinder versions are suitable for manifold mounting with O-rings:
B 1.509, B 1.542, B 1.552 and B 1.570

Order:

Please add the identification letters **K, L, S, or B** to the part-no. of the required block cylinder.

Example of ordering:

Double-acting block cylinder 1545-513 with oil supply at the broad side
Part-no. 1545-513 K



Compared with traditional reed switches the electronic magnetic sensors offer the following advantages:

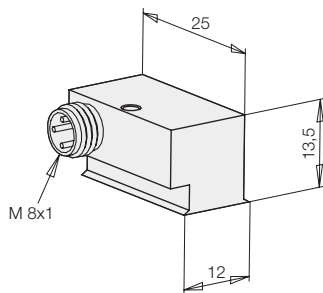
- Indifference to shock and vibration
- Bounce-free output signal
- Only one switching point
- Wear resistant
- Protection against reverse battery
- Protected against short circuits

Electric connection is made as per traditional inductive proximity switches; up to four magnetic sensors can be connected in series.

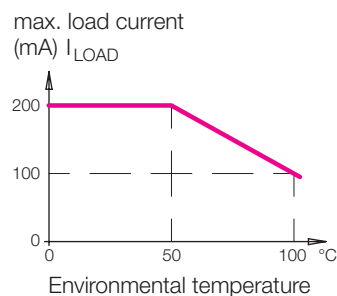
Minimum distance of the switching points: 6 mm.

For further information about voltage supply for position controls see data sheet A 0.120.

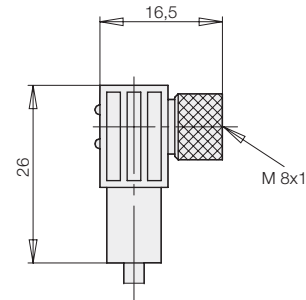
Electronic magnetic sensor



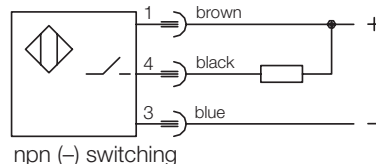
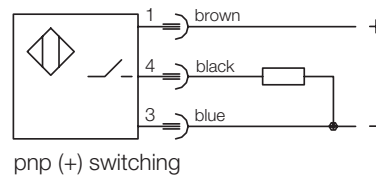
Temperature curve



Connecting cable with right angle plug



Connecting scheme



Technical characteristics

	Electronic magnetic sensor		Connecting cable with right angle plug	
Cylinder body material	aluminium black lacquered			
Voltage	10 – 30 V DC		10 – 30 V DC	
Residual ripple	max. 10%			
Current load I _{LOAD}	200 mA – up to 50°C 150 mA – at 75°C 100 mA – at 100°C			
Current consumption	< 15 mA			
Voltage drop (max. load)	< 2 V			
Protected against short circuits	yes			
Protection against reverse battery	installed			
Switching frequency	1 kHz			
Reproducibility	± 0.1 mm			
Switching hysteresis	3 mm			
Protection as per DIN 40050	IP 67		IP 67	
Environmental temperature	–25°C up to +100°C		–25°C up to +90°C	
Plug connection	M8 plug		M8 plug	
LED	no		Voltage (green) Function display (yellow)	
Cable, length of cable			PIR, 5 m	
Output, interlock	pnp	npn	pnp	npn
Part-no. (1 off)	3829-201	3829-149	3829-099	3829-124

Max. cylinder temperature

Hydraulic fluid	Cylinder temperature	with magnetic sensor	without magnetic sensor	
			Perbunan	VITON®
HLP	–25 ... +100 °C	–25 ... +100 °C	–25 ... +100 °C	–20 ... +120 °C
HFD				–20 ... +120 °C

VITON® = registered trade mark for fluoric caoutchouc of the company DuPont Dow Elastomers

Further accessory

see data sheet B 1.555

- Pin-and-socket connector
- Y-distributor
- Reversing plug
- Voltage regulator
- Straight tube male stud coupling with elastic sealing

Type L
D 8 L ED for tube Ø 8 G 1/4 250 bar
D 15 L ED for tube Ø 15 G 1/2 250 bar

Part-no. Type S
9208-131 D 8 S ED for tube Ø 8 G 1/4 350 bar
9215-033 D 16 S ED for tube Ø 16 G 1/2 350 bar

Part-no.
9208-132
9216-021



Other fittings see data sheet F 9.300