

**Directional control valves DN 6 directly actuated
Interface to DIN 24 340 and ISO 4401 (CETOP03)
PN [p_{max.}] = 350 bar**

5-chamber system

No dynamic seals

Delay of switching time by exchangeable nozzle (optional)

Pulse mode through mechanical detent (optional)

Wet type solenoid with pressure-tight core tube

Optional: without manual override

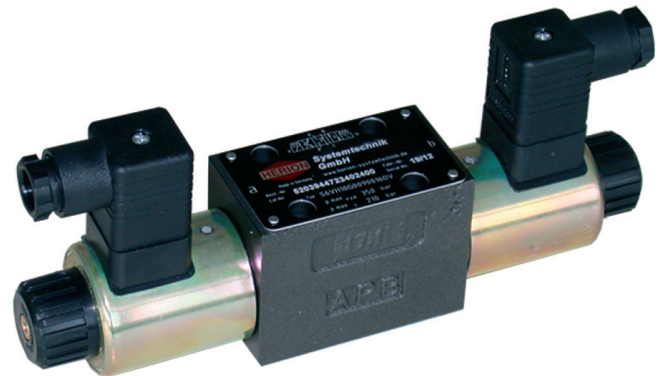
Easy replacement of solenoids. Solenoids with pressure-tight core tube (tube secured to valve body by means of central thread).

No need to open pressure-tight space when replacing solenoid.

Valves with Viton seals standard

Coils designed for DC voltage.

AC operation via connector equipped with rectifier



Technical data

General parameters

Designation:
Directional control valve
Symbol:
See type survey or type key
Design:
Spool-type valve
Type of mounting:
Flange
Line connection:
Subplate
Mounting position:
Preferably horizontal
Weight of valve with:
1 actuator [kg]: 1.9
2 actuators [kg]: 2.5
Weight of subplat.:
G 1/4 [kg]: 0.7
G 3/8 [kg]: 1
Ambient temperature range
 θ_u [°C]:
-20 to +50
Size:
DN 6
MTTF_d [years]:
150

Hydraulic parameters

Operating pressure
p_e max. [bar]
at port P, A, B:
up to 350
at port T:
up to 210
Pressure fluid temperature
 θ_u max. [°C]:
+70
Viscosity range: ν [mm²/s]:
12 to 500
Flow Q_{max} [l/min]:
See characteristic curves
Filtration:
Oil purity class to ISO 4406:
18/15

Further parameters

Manual override:
Standard
Switching times, approx. [ms]:
t_{on}: 50 to 80
t_{off}: 30 to 55
Rated voltage connector input
U_N [V]:
Standard voltages:
VH 10 VH 11
(VH 13) (VH 12)
24 DC 230 AC 40...60 Hz¹⁾
+5%/-10% +5%/-10%

Further voltages:
VH10 VH11*
12 DC
24 DC
48 DC
98 DC 110 AC
110 DC
125 DC
185 DC
205 DC 230 AC
220 DC
230 DC

* via connector rectifier
Power consumption
P₂₀ [W]:
31
Duty cycle [%]:
100
Degree of protection for
solenoid and electrical
connection to DIN 40050:
IP 65

¹⁾ when using a DC-type solenoid
205 V with rectifier

Directional control valves DN 6

Type survey (standard versions)

Symbol	Symbol-No.	Overlap	Voltage	Type	Cat. No.
	001 ¹⁾	+	VDC 24V	S6VH10 G 001 001 6 0 V S6VH13 G 001 001 6 0 V	5203939.7234.02400 5205576.7234.02400
			VAC 230	S6VH11 G 001 001 6 0 V S6VH12 G 001 001 6 0 V	5204084.7234.20500 5205575.7234.20500
	003	-	VDC 24V	S6VH10 G 003 001 6 0 V S6VH13 G 003 001 6 0 V	5203940.7234.02400 5205428.7234.02400
			VAC 230	S6VH11 G 003 001 6 0 V S6VH12 G 003 001 6 0 V	5204158.7234.20500 5205570.7234.20500
	020	+	VDC 24V	S6VH10 G 020 001 6 0 V S6VH13 G 020 001 6 0 V	5203941.7234.02400 5201045.7234.02400
			VAC 230	S6VH11 G 020 001 6 0 V S6VH12 G 020 001 6 0 V	5204082.7234.20500 5205176.7234.20500
	019	+	VDC 24V	S6VH10 G 019 001 6 M V S6VH13 G 019 001 6 M V	5203942.7234.02400 5201367.7234.02400
			VAC 230	S6VH11 G 019 001 6 M V S6VH12 G 019 001 6 M V	5204089.7234.20500 5205571.7234.20500
	008	+	VDC 24V	S6VH10 G 008 001 6 0 V S6VH13 G 008 001 6 0 V	5203943.7234.02400 5205338.7234.02400
			VAC 230	S6VH11 G 008 001 6 0 V S6VH12 G 008 001 6 0 V	5204092.7234.20500 5205572.7234.20500
	009	+	VDC 24V	S6VH10 G 009 001 6 0 V S6VH13 G 009 001 6 0 V	5203944.7234.02400 5205344.7234.02400
			VAC 230	S6VH11 G 009 001 6 0 V S6VH12 G 009 001 6 0 V	5204093.7234.20500 5205174.7234.20500
	013	-	VDC 24V	S6VH10 G 013 001 6 0 V S6VH13 G 013 001 6 0 V	5203945.7234.02400 5203876.7234.02400
			VAC 230	S6VH11 G 013 001 6 0 V S6VH12 G 013 001 6 0 V	5204094.7234.20500 5205573.7234.20500

¹⁾ Port T of these 3/2 directional control valves is used as leak oil connection.

Connecting plate

	Type	Cat. No.
G 1/4	PS 6 G 2 024 2 0 0	1065173
G 3/8	PS 6 G 3 001 2 0 0	1065183

Ordering

The units are designated by their type number. The composition of this number can be drawn from the type code. The standard versions are listed in the type survey. When ordering any of the standard versions, please state type number as well as catalog number to preclude possible misinterpretations. Further valve versions can be composed via combination of types - order numbers on request.

Flanged valves are provided with O-rings and connector (type 10 or 11, Page 2). Subplate and mounting screws must be ordered separately.

Type key

Directional control valve

S	6	G	...	001	6	...	V
		1	2		3			4	

- 1 Actuation: **V** – Without manual override
VH – With manual override
- 2 Electrical connection: **10** – Connector Pg 11
11 – Connector Pg 11 with rectifier insert on solenoid
12 – Connector Pg 11 with rectifier insert and function indicator on solenoid
13 – Connector Pg 11 with function indicator on solenoid
- 3 Symbol: – Standard symbols see page 2
– Extra symbols see below
- 4 Additional data: **O** – Standard design
M¹⁾ – Mechanical detent
C²⁾ – Switching delay by means of nozzle

Subplate

P	S	6	G	2	0	0
				1	2			

- 1 Line connection: **2** – G 1/4 (internal thread)
3 – G 3/8 to DIN ISO 228/1)
- 2 Code: **024** – G 1/4
001 – G 3/8

¹⁾ Only 2-position valves are available with detent.
²⁾ Port T of valves with a delayed switching time has to be pressurized with approx. 5 bar.
³⁾ Port T of these 3/2-way valves is to be used as leak oil connection.

Extra symbols

Symbol	Symbol No.	Overlap	Symbol	Symbol No.	Overlap	Symbol	Symbol No.	Overlap
	002	-		038	+		117	+
	004	+		039	+		153	-
	005	+		082	+		159	+
	007	+		086	+		172	+
	010	+		087	-		174	+
	011	-		088	+		198	+
	016	+		090	-			
	025	+		094	+			
	031 ³⁾	+						
	033	-						

Directional control valves DN 6

Ordering example

Wanted:
4/3 directional control valve
DN 6, 24 VDC,
solenoid with plug, symbol 010,
along with corresponding
subplate G 1/4.

Directional control valve:
Type No.:
S 6 VH 10 G 010 001 6 0 V
Cat. No.:
5204099723402400

Subplate:
Type No.:
P S 6 G 2 024 2 0 0
Cat. No.:
1065173

Mounting screws:
[4 pcs. required]
Socket-head screw:
(M 5 x 30 DIN 912-10.9)
Cat. No.:
0700387

Design

The design is based upon the **5-chamber system**. A spool of hardened steel slides in a housing made of high-strength cast-iron. Therefore the units are suitable for rough operating conditions and guarantee reliable switching, even with long rest periods.

Actuation

The directional control valves are electromagnetically operated, with spring return for the standard valves. The piston of valves with mechanical detent remains in energized position even if de-energized.

Mounting

The units are bolted on sub-plates and sealed by O-rings.

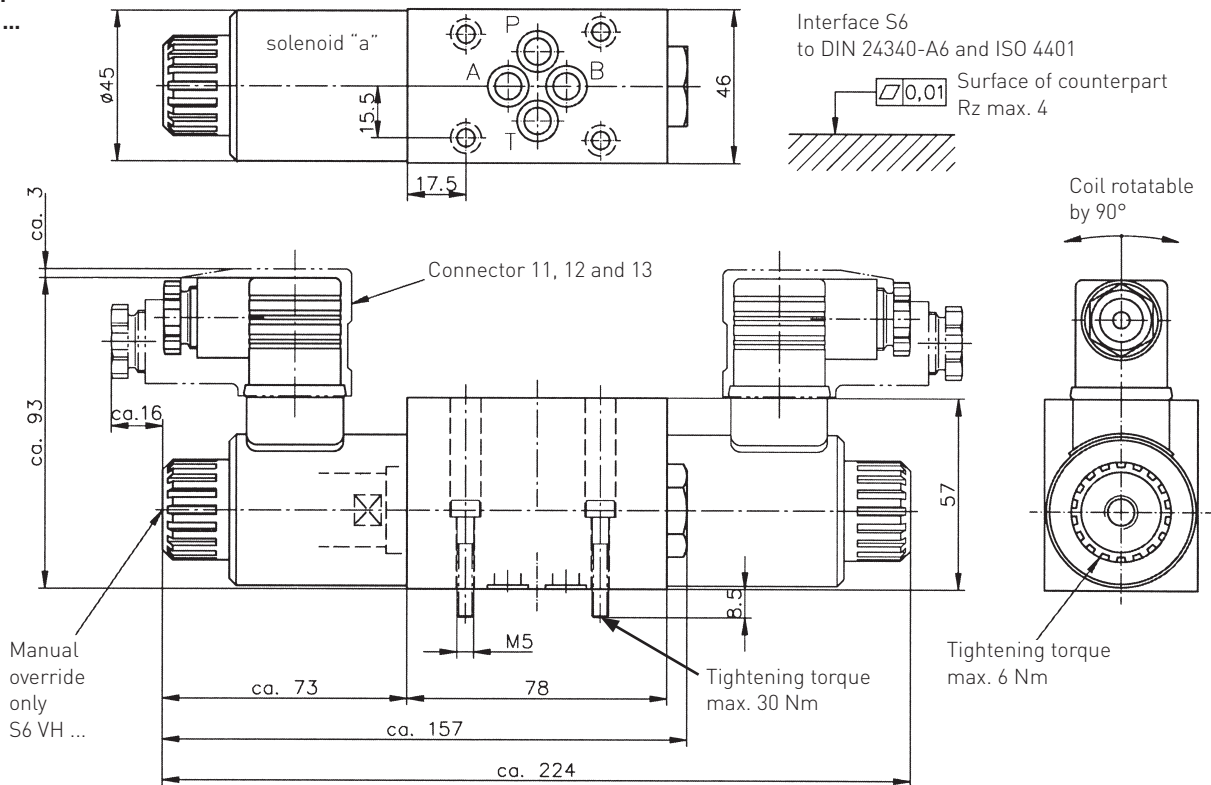
Line connection

Subplate, interface to
DIN 24340-A6 and
ISO 4401-AB-03-4-A.

Dimensional drawings

Directional control valve

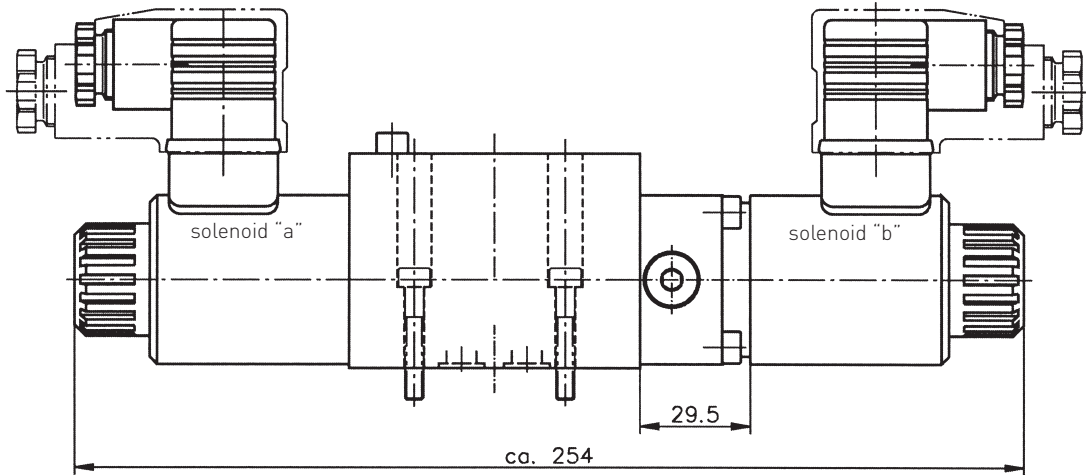
S 6 V ...
S 6 VH ...



Dimensional drawings

Directional control valve

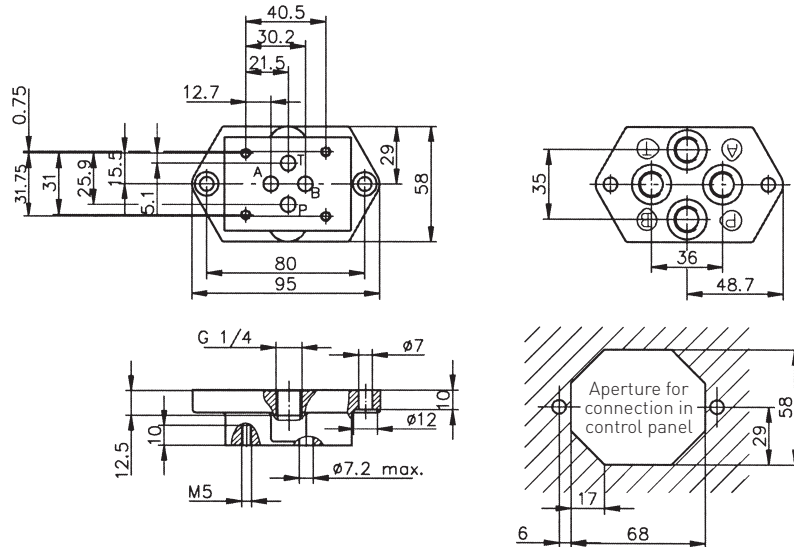
S 6 V ... M ...
S 6 VH ... M ...



Subplate with interface according to DIN 24 340-A 6 and ISO 4401-AB-03-4-A

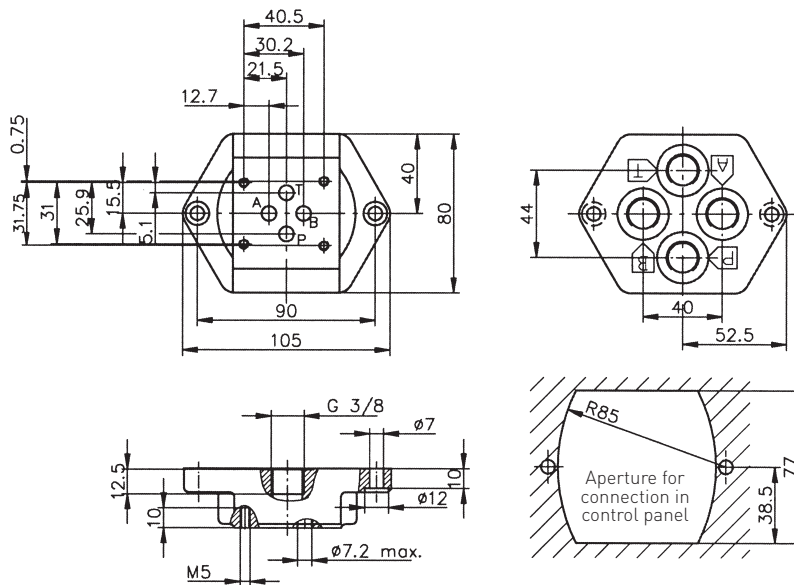
G 1/4

Type: P S 6 G 024 2 0 0
Reference: 1065173



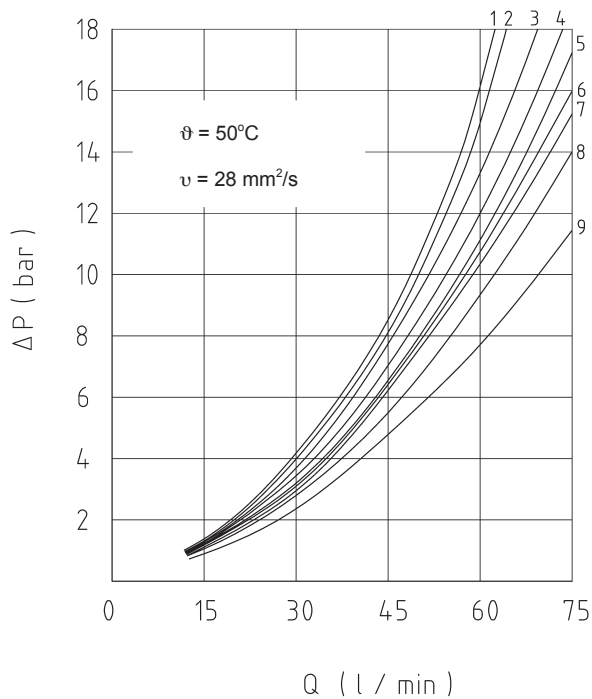
G 3/8

Type: P S 6 G 3 001 2 0 0
Reference: 1065183

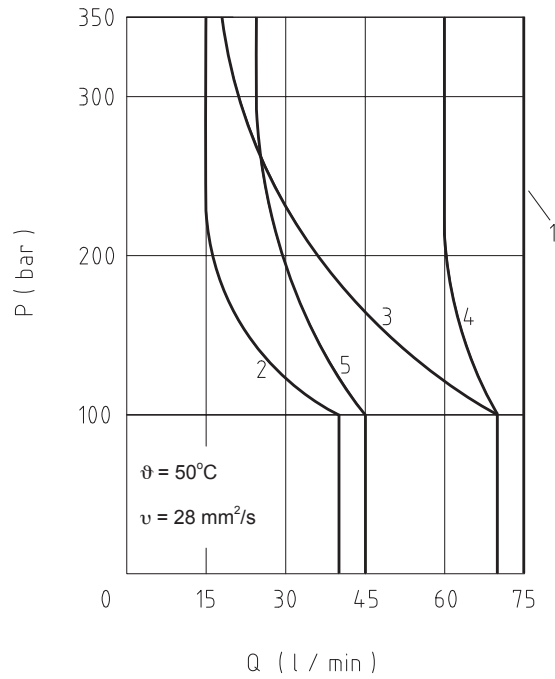


Characteristic curves

Flow curves $Q = f(\Delta p)$



Power limits



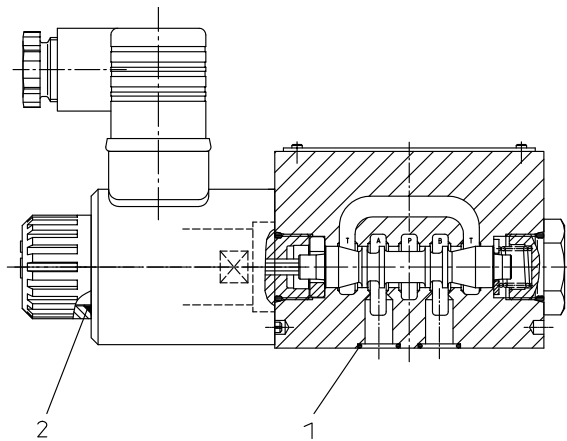
Symbol	Flow direction				
	P-A	P-B	A-T	B-T	P-T
001	7	7	-	-	-
003	8	8	3	3	-
008	8	8	6	6	-
009	5	5	9	9	-
013	5	5	4	4	2
019	5	5	1	1	-
020	5	5	1	1	-

Symbol	Characteristic curve
001	2
003	4
008	1
009	3
013	5
019	1
020	1

Maximum values determined with solenoid in warmed-up condition and at an undervoltage of 10%.
 Fluid passing in two directions (from P to A and B to T).
 If one port is closed, a reduced breaking capacity must be taken into consideration.
 A reduced breaking capacity must also be taken into consideration for valve types with switching delay (nozzle).

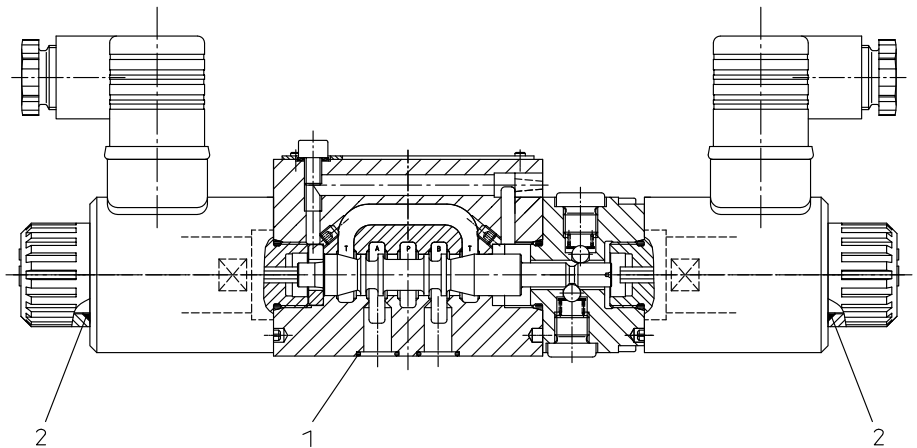
Spare parts drawings

S 6 V ...
S 6 VH ...



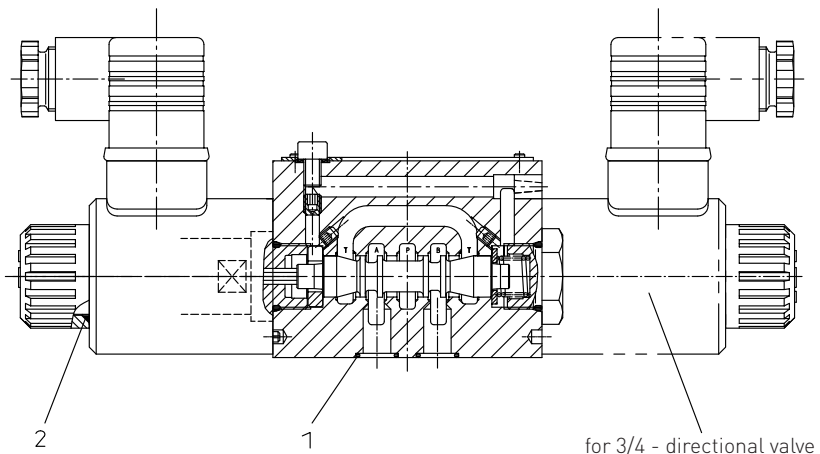
S 6 V ... M
S 6 VH ... M

with mechanical detent



S 6 V ... C ...
S 6 VH ... C ...

Switching time delay
with nozzle



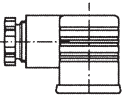
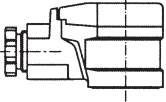
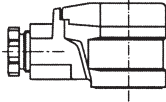
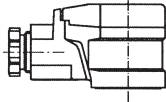
Spare parts kit

0615057, containing:
4 x O-ring ref. 0701728 Pos. 1
2 x O-ring ref. 0681632 Pos. 2

Sealings are exclusively available as spare parts kit.

Repairs and maintenance must only be carried out by the valve manufacturer or authorized personnel.

Electrical spare parts

Electrical connection, Symbol 10	Cat. No.
 <p>Connector Pg 11 (Operating voltage: 0...300 V DC)</p>	0570275
Electrical connection, Symbol 11	Cat. No.
 <p>Connector Pg 11 with rectifier (Operating voltages: 15...250 V AC or 10...250 V DC)</p>	0570819
Electrical connection, Symbol 12	Cat. No.
 <p>Connector Pg 11 with rectifier and indicator (Operating voltages: 80...130 V AC or 100...130 V DC)</p>	0588568
<p>Connector Pg 11 with rectifier and indicator (Operating voltages: 150...250 V AC or 135...250 V DC)</p>	0571502
Electrical connection, Symbol 13	Cat. No.
 <p>Connector Pg 11 with indicator (Operating voltages: 24 V DC)</p>	0570818
<p>Connector Pg 11 with indicator (Operating voltages: 90...130 V DC)</p>	0570816
<p>Connector Pg 11 with indicator (Operating voltages: 150...250 V DC)</p>	0570817

HERION Systemtechnik GmbH

Untere Talstraße 65
71263 Weil der Stadt
Tel.: +49 (0) 7033/3018-0
Fax: +49 (0) 7033/3018-10
info@herion-systemtechnik.de
www.herion-systemtechnik.de

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Development Zone, Nanjing, 211100 P.R.C.
Tel.: +86-25-52785915
E-Mail: info@estun.com
www.estun.com

Japan

Riken Optech Corporation
2-6-9, Higashi Ohi, Shinagawa-ku,
Tokyo 140-8533
Tel.: +81 3 34748602
E-Mail: contact@rikenoptech.com
www.rikenoptech.com

Korea

CHUNGWOO CO., LTD.
416-4 Dokjeongri
Janganmyun Hwaseongsi
Kyungkido, Korea
Tel.: +82 (0)31 351-5340
E-Mail: blueox2@unitel.co.kr
www.chungwooco.co.kr

Spain

EUROTECH SYSTEMS, S.L.
Av. Can LLuch, 25
08690 SANTA COLOMA DE CERVELLO
Tel.: +34 93 634 0101
E-Mail: eurotech@eurotechsys.com
www.eurotechsys.com

South Africa

Ernest Lowe ELCO
Pneumatic & Hydraulic Automation Solutions
6, Skew Road, Boksburg North 1459,
Gauteng, South Africa
Tel.: +27 (11) 898-6600
E-Mail: corporate@elco.co.za
www.elco.co.za

Taiwan

Full Life Trading Co., Ltd.
16F-4, No.2, Jian Ba Rd. Chung Ho City
Taipei County, Taiwan 23562
Tel.: +886-2-82261860
E-Mail: sales-dept@fulllifetrading.com
www.fulllifetrading.com

Turkey

Power Pnomatik Proses A. Ş
Necatibey Cad. No:44/2
Karaköy
Ýstanbul 34420
Tel.: +90 212 2938870
E-Mail: info@powerpnomatik.com
www.powerpnomatik.com