

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

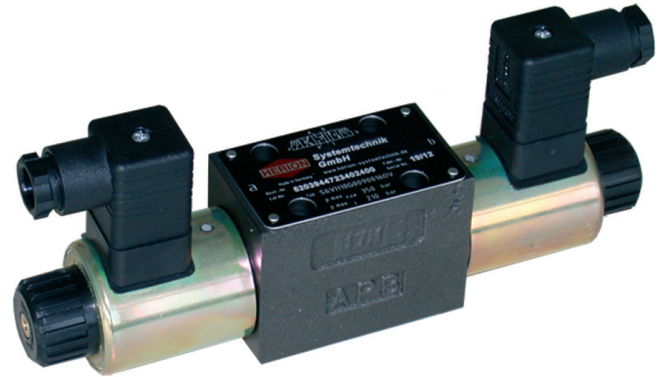
Easy replacement of solenoids. Solenoids with pressure-tight core tube (tube secured to valve body by means of central thread).

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
 $\theta_u \max.$ [°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 VH11
(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
 P_{20} [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	S6VH10 G 001 001 6 0 V	5203939.7234.02400
			24V	S6VH13 G 001 001 6 0 V	5205576.7234.02400
			VAC	S6VH11 G 001 001 6 0 V	5204084.7234.20500
			230	S6VH12 G 001 001 6 0 V	5205575.7234.20500
	003	-	VDC	S6VH10 G 003 001 6 0 V	5203940.7234.02400
			24V	S6VH13 G 003 001 6 0 V	5205428.7234.02400
			VAC	S6VH11 G 003 001 6 0 V	5204158.7234.20500
			230	S6VH12 G 003 001 6 0 V	5205570.7234.20500
	020	+	VDC	S6VH10 G 020 001 6 0 V	5203941.7234.02400
			24V	S6VH13 G 020 001 6 0 V	5201045.7234.02400
			VAC	S6VH11 G 020 001 6 0 V	5204082.7234.20500
			230	S6VH12 G 020 001 6 0 V	5205176.7234.20500
	019	+	VDC	S6VH10 G 019 001 6 M V	5203942.7234.02400
			24V	S6VH13 G 019 001 6 M V	5201367.7234.02400
			VAC	S6VH11 G 019 001 6 M V	5204089.7234.20500
			230	S6VH12 G 019 001 6 M V	5205571.7234.20500
	008	+	VDC	S6VH10 G 008 001 6 0 V	5203943.7234.02400
			24V	S6VH13 G 008 001 6 0 V	5205338.7234.02400
			VAC	S6VH11 G 008 001 6 0 V	5204092.7234.20500
			230	S6VH12 G 008 001 6 0 V	5205572.7234.20500
	009	+	VDC	S6VH10 G 009 001 6 0 V	5203944.7234.02400
			24V	S6VH13 G 009 001 6 0 V	5205344.7234.02400
			VAC	S6VH11 G 009 001 6 0 V	5204093.7234.20500
			230	S6VH12 G 009 001 6 0 V	5205174.7234.20500
	013	-	VDC	S6VH10 G 013 001 6 0 V	5203945.7234.02400
			24V	S6VH13 G 013 001 6 0 V	5203876.7234.02400
			VAC	S6VH11 G 013 001 6 0 V	5204094.7234.20500
			230	S6VH12 G 013 001 6 0 V	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** – With manual override
VH – Without 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.

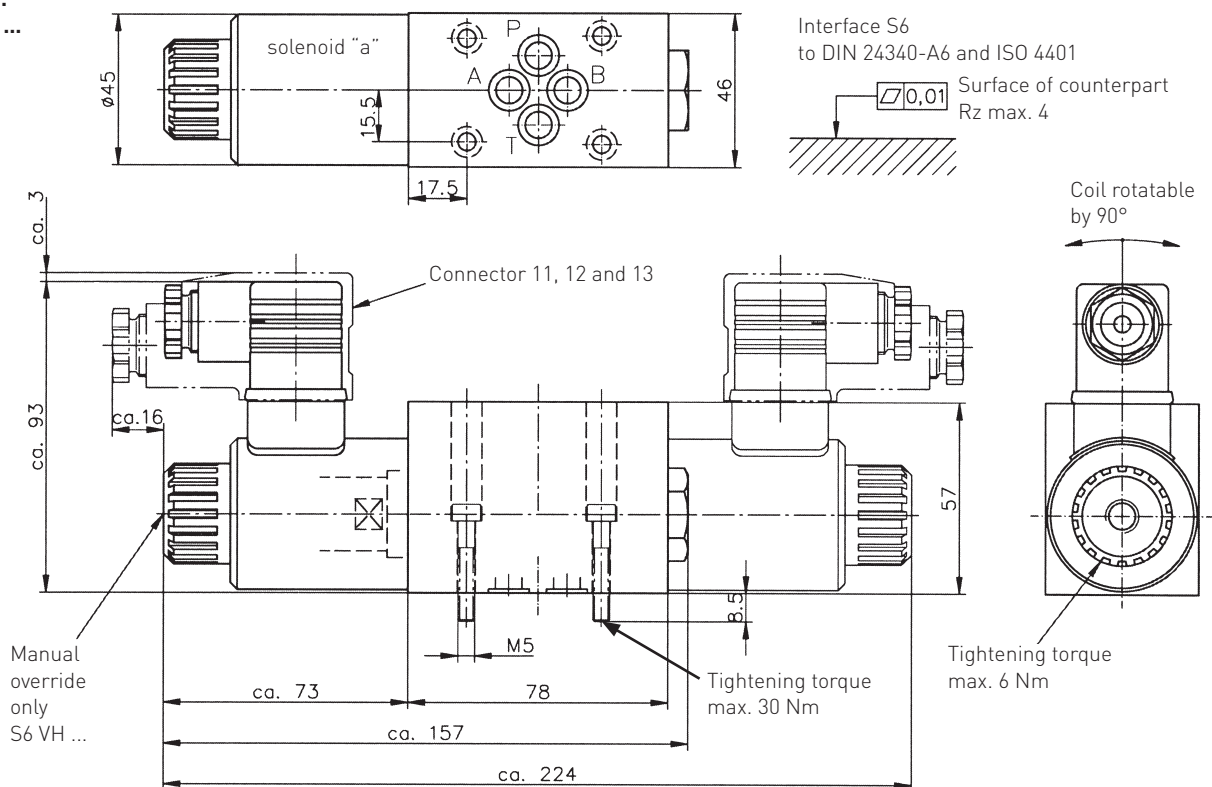
Line connection

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

Dimensional drawings

Directional control valve

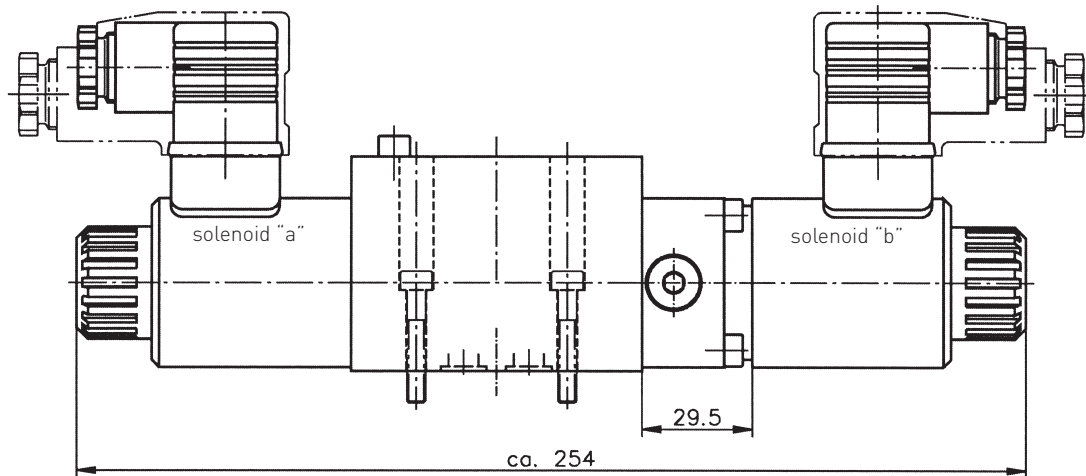
S 6 V ...
S 6 VH ...



Dimensional drawings

Directional control valve

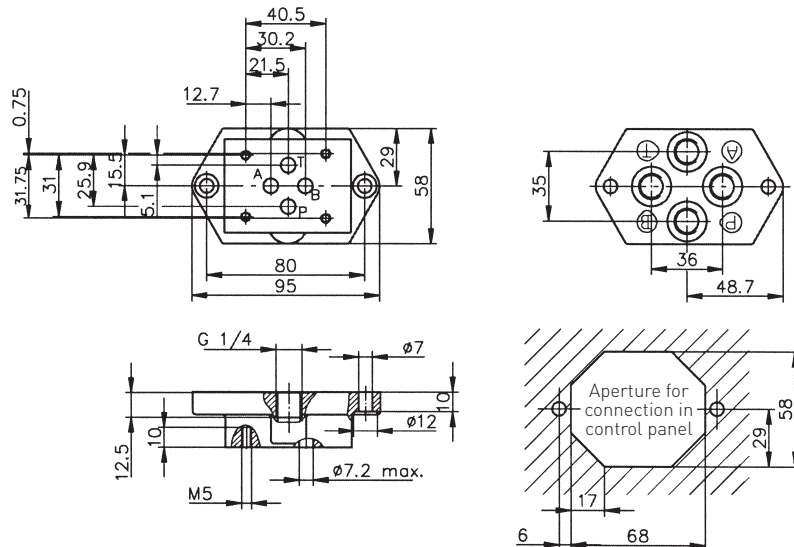
S 6 V ... M ...
S 6 VH ... M ...



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

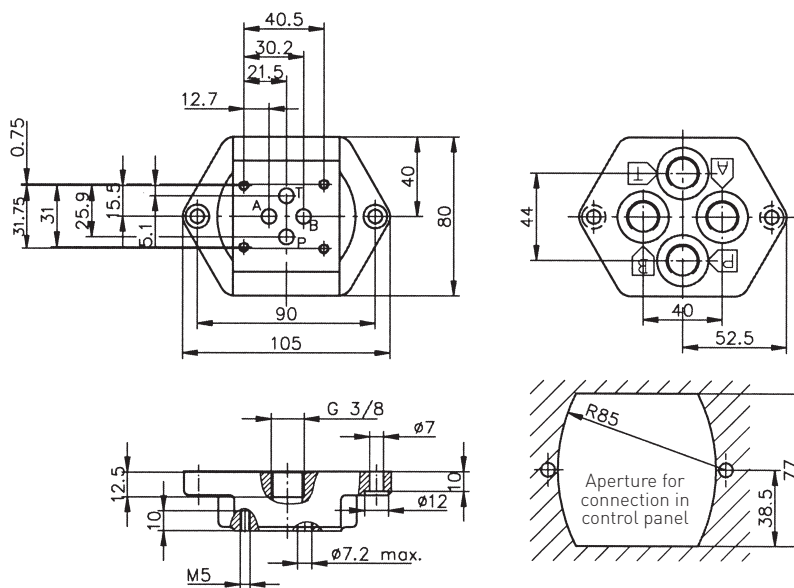
G 1/4

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



G 3/8

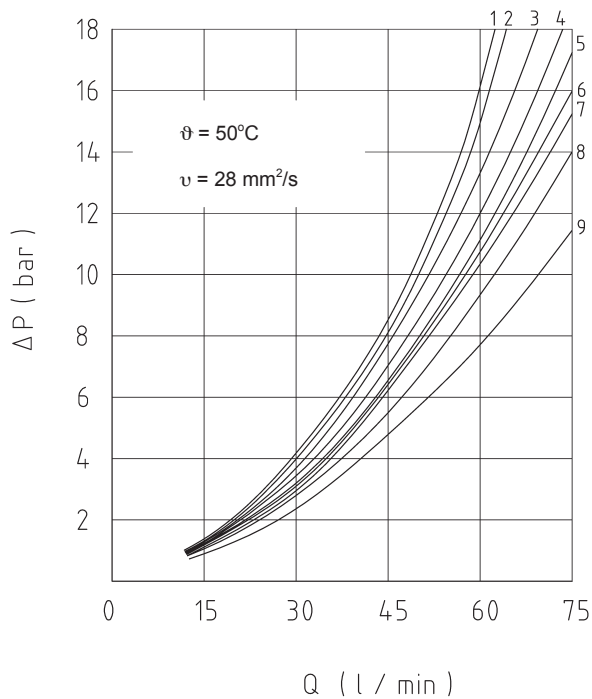
Type: P S 6 G 3 001 2 0 0
Reference: 1065183



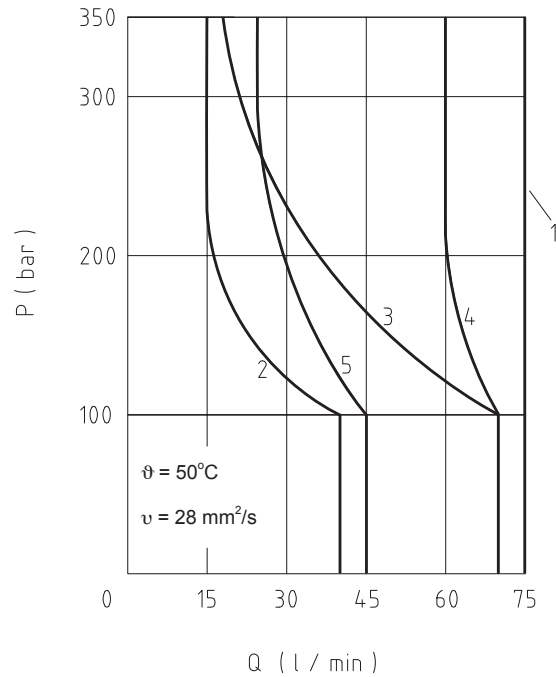
Directional control valves DN 6

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%.

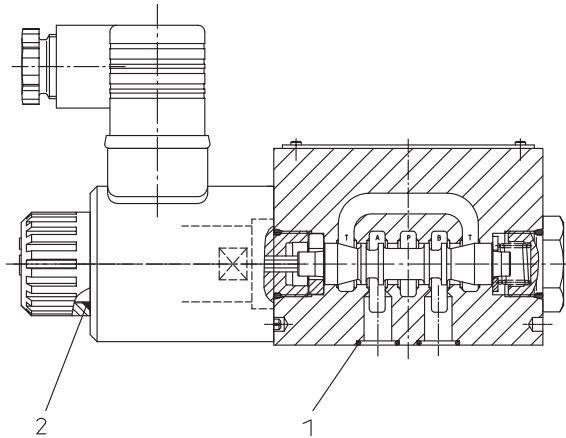
Fluid passing in two directions (from P to A and B to T).

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).

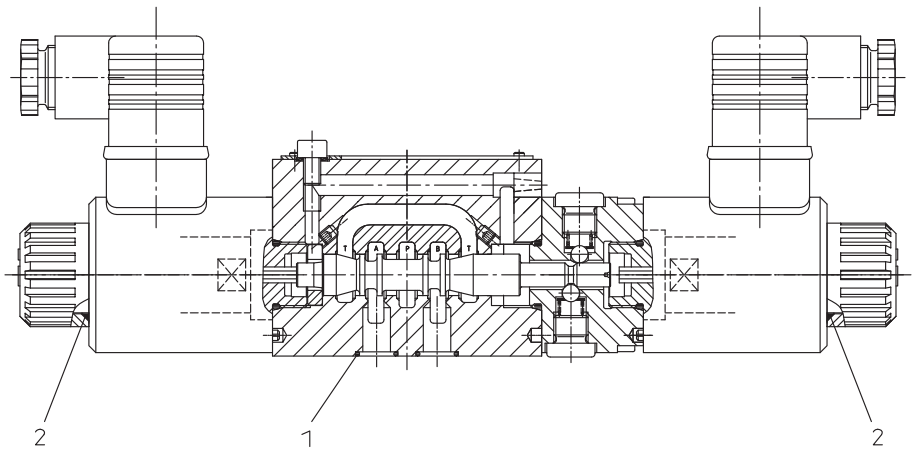
Spare parts drawings

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



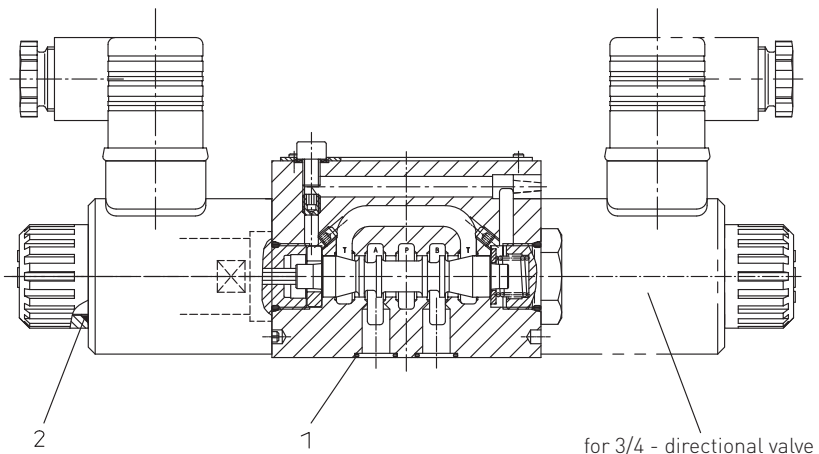
S 6 V ... M
S 6 VH ... M

with mechanical detent



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

Switching time delay
with nozzle



Spare parts kit

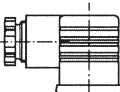
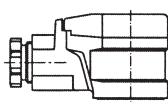
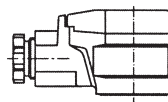
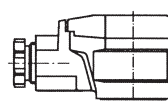
0615057, containing:
4 x O-ring ref. 0701728 Pos. 1
2 x O-ring ref. 0681632 Pos. 2

Sealings are exclusively available as spare parts kit.

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

Directional control valves DN 6

Electrical spare parts

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

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