VOGEL®

Directional Valves

for oil or grease

161-110-031

161-140-050

DCV5-4

Function

The directional valves listed overleaf are used to control the flow of lubricants, e.g. to divide up a central lubrication system into a number of lube circuits (zoned actuation, Fig. 1) or to switch be-tween circulating and intermittently operated lube circuits (Fig. 2).

Valves for a maximum pressure of up to about 45 bars can be used for single-line lubrication systems with piston distributors. Valves for a pressure range of up to 300 or 500 bars are suitable for progressive systems.

Fig. 1

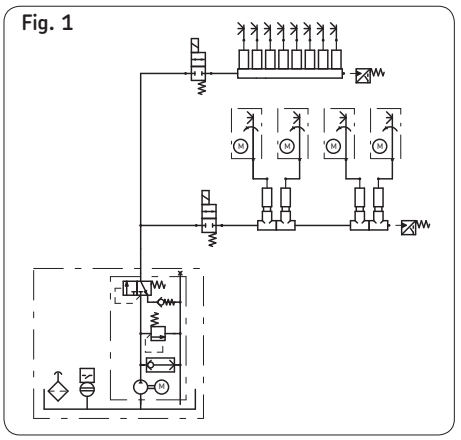
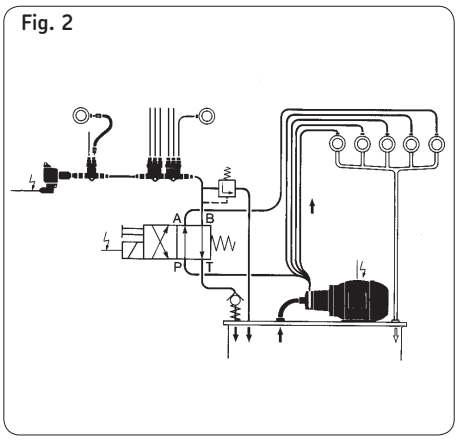


Fig. 2



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Im Folgenden finden Sie Informationen zu einem Teil unseres Leistungs- und Serviceportfolios.

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info@vogel-gruppe.de

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Directional valves are selected on the basis of the following criteria:

- 2, 3 or 4-way valve switching functions
- range of valve pressures
- flow rate of the valves
- lubricant for which the valve is to be used:
- oils with a low or high eff. viscosity,
- greases up to NLGI grade 2.

The valve data are listed in two tables, subdivided into:

- hydraulic and mechanical characteristics
- electrical characteristics.

Hydraulic / mechanical characteristics

Order No	Valve function	Basic position	Type	Rated width [mm]	Fc *) value	Connection threads	Flow rate max. [l/min]	Max. pressure DC [bar]	Max. pressure AC [bar]	Lubricants Oil [mm²/s]	Lubricants Grease NLGI 2 [mbar]	Lubricant temperature oil [°C]	Ambient temperature Oil [°C]	Ambient temperature Grease [°C]	Materials Housing	Materials Seals	Manual actuation	Fig.
161-110-018	2/2	closed	seat valve	1,2	0,8	G 1/8	–	50	75	max. 21	–	–10 to +80	–15 to +50	–	Al	NBR	yes	1
161-110-031	2/2	closed	ball seat v.	–	–	G 1/4	cf. KL. 1)	500	–	4-1500	max. 700	–	–40 to +80	–25 to +80	Al	–	yes	2
161-110-032	2/2	closed	ball seat v.	–	–	G 1/4	cf. KL. 1)	500	–	4-1500	–	–	–40 to +80	–	Al	–	yes	2
161-120-010	3/2	closed	seat valve	0,8	0,4	G 1/8	–	23	35	max. 21	–	–15 to +130	–15 to +50	–	Al	NBR	yes	1
161-120-018	3/2	closed	seat valve	0,8	0,4	G 1/8	–	23	35	max. 21	–	–15 to +130	–	–	Al	FKM (FPM)	yes	1
161-120-019	3/2	closed	seat valve	0,8	0,35	cf. GP 2)	–	23	35	max. 21	–	–15 to +130	–15 to +50	–	Al	NBR	yes	3
161-120-032 to 161-120-038	but 2-8 individual valves installed as valve manifold	like 161-120-019				M10x1											yes	4
161-120-064	3/2	open C->B	ball seat v.	–		G 1/4	cf. KL. 1)	500	–	4-1500	max. 700	–	–40 to +80	–25 to +80	Al	–	yes	5
161-120-065	3/2	open C->B	ball seat v.	–		G 3/8	cf. KL. 1)	500	–	4-1500	max. 700	–	–40 to +80	–25 to +80	Al	–	yes	6
161-120-028	3/2	geschlossen	ball seat v.	–		G 1/4	5	320		4-800	–	–	–40 bi to s +80	–	Al	–	yes	7
161-140-050	4/2	open P->A	sliding	–	cf. KL. 1)	cf. GP 2)	8 (NG 6)	320 3)	–	20-1000	–	–25 to +75	–	–	Al	–	yes	9
202-860	4/2	open P->A	sliding	–	cf. KL. 1)	cf. GP 2)	cf. KL. 1)	320 3)		10-500	–	–25 to +80	–24 to +50	–	Al	–	yes	9
DCV5-4	5/4	4)	sliding	1	–	M12x1.5	–	300	–	30-1500	max. 700	–25 to +80	–25 to +80	–25 to +80	Al	–	no	8

*) *Flow coefficient*
1) *CC = characteristic curve*
2) *BP =baseplate*
3) *Max. 160 bars with connection T*
4) *Remains in the last switching position selected*

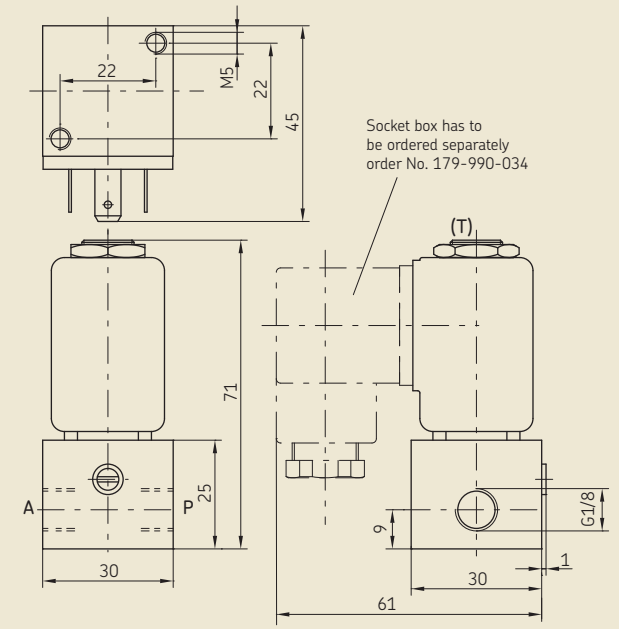
Electrical characteristics

Order No.	Available voltages [1]	Rated current [A]	Rated power	Type of enclosure	ON time	Insulation class	Switching time ON [ms]	Switching time OFF [ms]	Electrical onnections
161-110-018	Standard 24 V DC DC and AC	–	AC: 16 VA, 8 W DC: 10 W	IP 65 with plug	100 % ED	H 180	10-15	–	DIN EN 175301-803
161-110-031	24 V DC	0.67	16 W	IP 65 with plug	100 % ED at max. +35 °C	F	40	40	DIN EN 175301-803
161-110-032	230 V AC 115 V AC 50 or 60 Hz	0.10	20 W	IP 65 with plug	100 % ED at +20 °C	F	100	125	DIN EN 175301-803
161-120-010	DC and AC	–	10 W at 24 V DC 8 W at 220 V, 50 Hz	IP 65 with plug	100 % ED at +20 °C	H 180	10-15	–	DIN EN 175301-803
161-120-018	DC and AC	–	10 W at 24 V DC 8 W at 220 V, 50 Hz	IP 65 with plug	100 % ED	H 180	10-15	–	DIN EN 175301-803
161-120-019	DC and AC	–	AC: 10 W DC: 8 W	IP 65 with plug	100 % ED	H180	10-15	–	DIN EN 175301-803
161-120-032 to 161-120-038	DC and AC	–	AC: 10 W DC: 8 W	IP 65 with plug	100 % ED	H 180	10-15	–	DIN EN 175301-803
161-120-028	DC and AC	2.0 at 12 V DC 1.0 at 24 V DC 0.14 at 220 V, 50/60 Hz	–	IP 65 with plug	– DIN 43650-AF3	F	70	200	DIN EN 175301-803
161-120-064	12 V DC 24 V DC	1.70 at 12 V DC 0.83 at 24 V DC	20 W	IP 65 with plug	100 % ED at max. +35 °C	F	100	50	DIN EN 175301-803
161-120-065	12 V DC 24 V DC	1.70 at 12 V DC 0.83 at 24 V DC	20 W	IP 65 with plug	100 % ED at max. +35 °C	F	100	50	DIN EN 175301-803
161-140-050	DC and AC	1.33 at 24 V DC 0.17 at 220 V, 50 Hz	–	IP 65 with plug	100 % ED	–	–	–	DIN EN 175301-803
1202-860	DC and AC	–	30 W at 24 V DC 120 VA at 220 V, 50 Hz	IP 65 with plug	100 % ED	–	–	–	DIN EN 175301-803
DCV5-4	24 V DC ±25 %	0,2 (start-up current 1.4)	5 W	IP 65	100 % ED	–	1000	–	M12×1

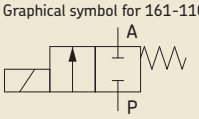
1) *Please indicate voltage, type of current and frequency when ordering*

Fig. 1

161-110-018; 161-120-010; 161-120-018



Graphical symbol for 161-110-018



Graphical symbol for 161-120-010; 161-120-018

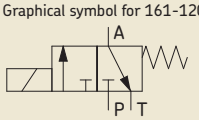
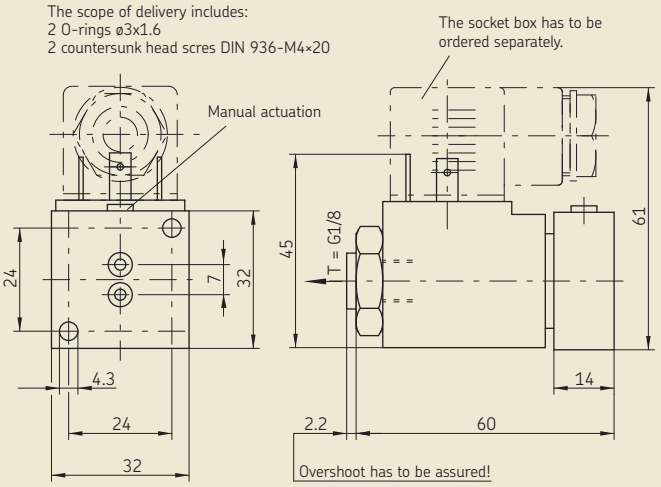


Fig. 3

161-120-019 (individual valve for manifolds 161-120-032 to -038)



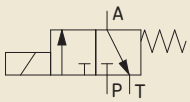
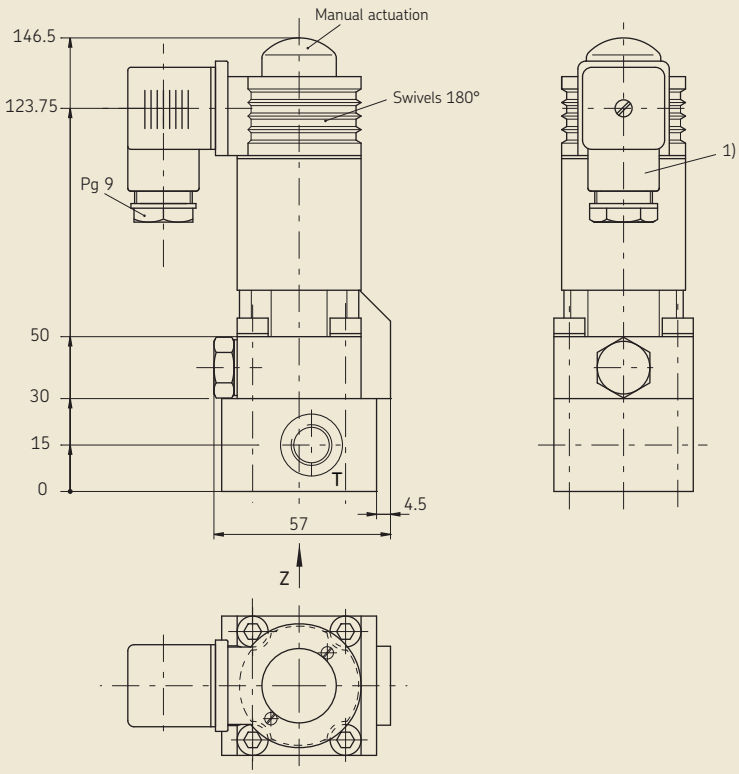
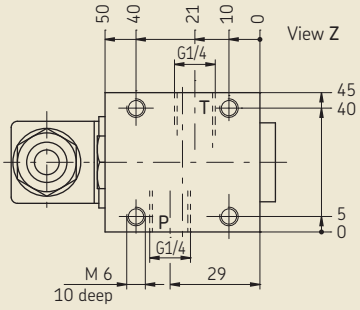


Fig. 2

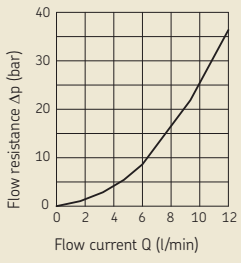
161-110-031; 161-110-032



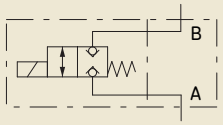


[1] With 161-110-031 socket box
DIN EN 175301-803 has to be order separately;
e.g. 179-990-416 (with LED, protective circuit
and integrally extruded 3 m long PUR cable).

Characteristic Δp – Q (recommended value)
with an oil viscosity ~ 60 mm²/s and 40 °C



Graphical symbol for 161-110-031



Graphical symbol for 161-110-032

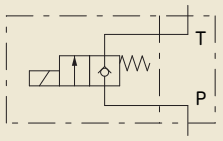
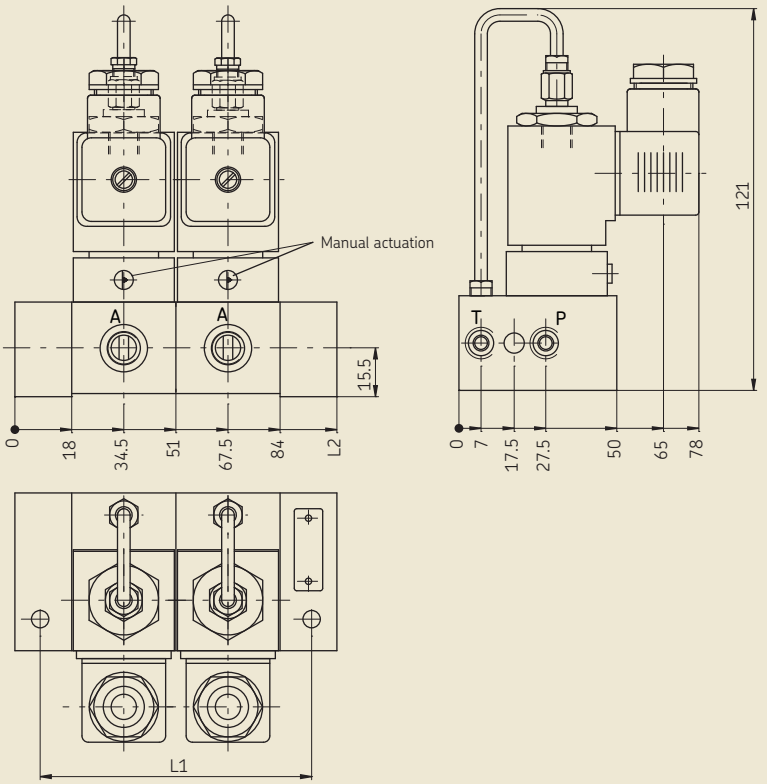
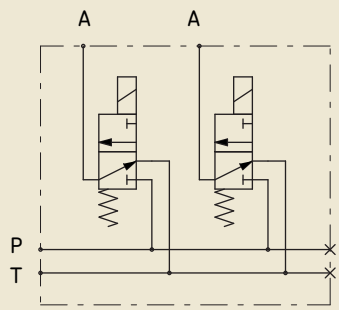


Fig. 6

161-120-032 to -038

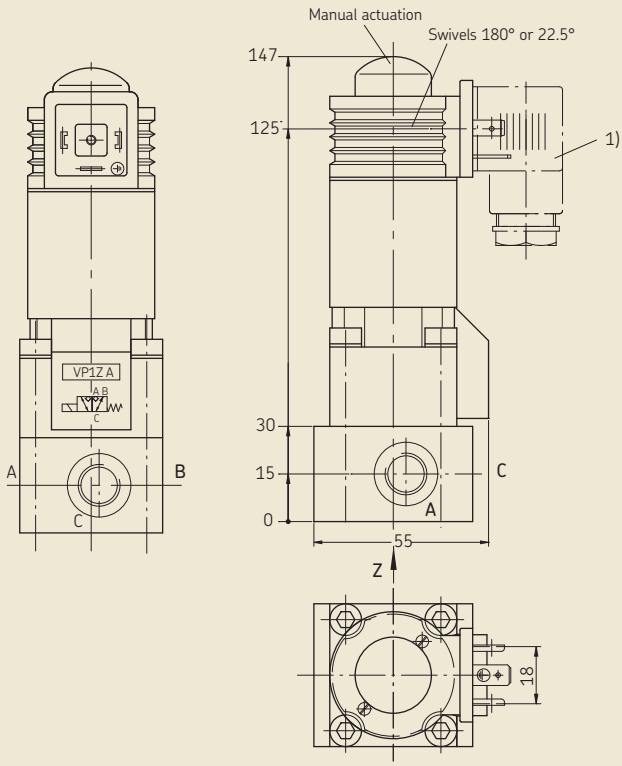


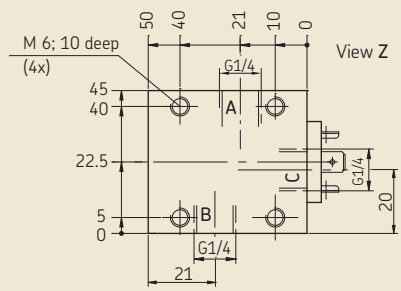


Order No.	Number of valves	L1 [mm]	L2 [mm]
161-120-032	2	86	102
161-120-033	3	119	135
161-120-034	4	152	168
161-120-035	5	185	201
161-120-036	6	218	234
161-120-037	7	251	267
161-120-038	8	284	300

Fig. 5

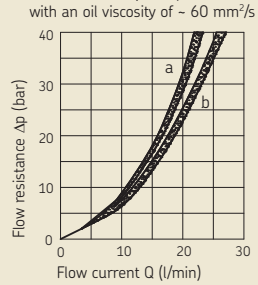
161-120-064





[1] **Socket box DIN EN 175301-803 has to be order separately;**
e.g. 179-990-416 (with LED, protective circuit and integrally extruded 3 m long PUR cable).

Characteristic Δp – Q (recommended value)
with an oil viscosity of ~ 60 mm²/s and 40 °C



Curve a: A ➞ C and C ➞ B
Curve b: A ➞ B

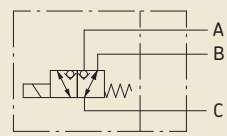
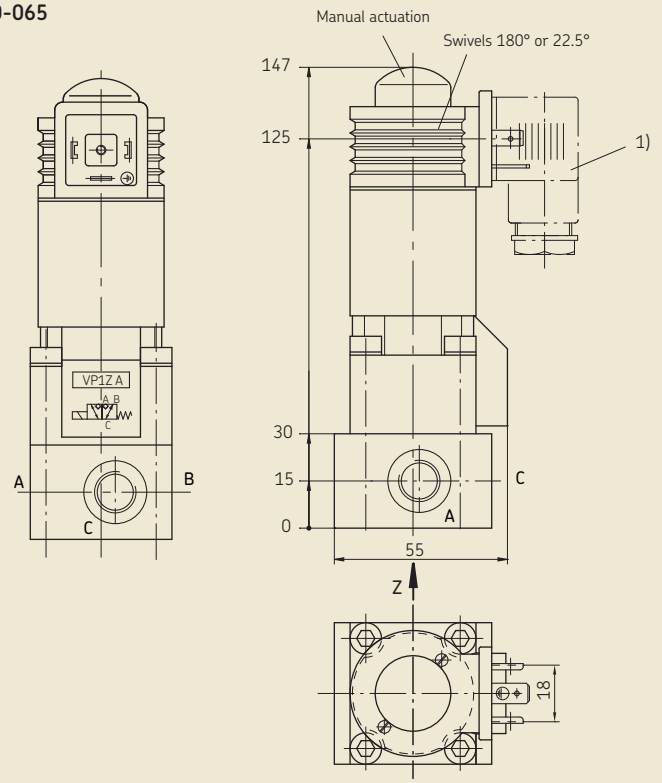


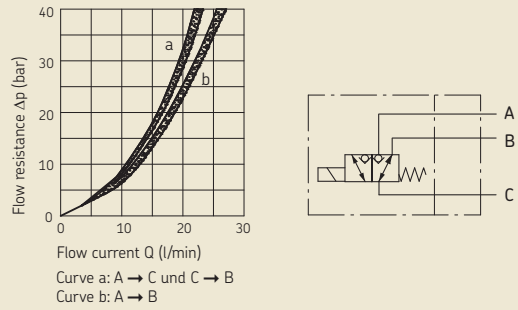
Fig. 6

161-120-065



[1] Socket box DIN EN 175301-803 has to be order separately; e.g. 179-990-416 (with LED, protective circuit and integrally extruded 3 m long PUR cable).

Characteristic Δp – Q (recommended value) with an oil viscosity ~ 60 mm²/s and 40 °C



Curve a: A ➞ C und C ➞ B
Curve b: A ➞ B

Fig. 7

161-120-028

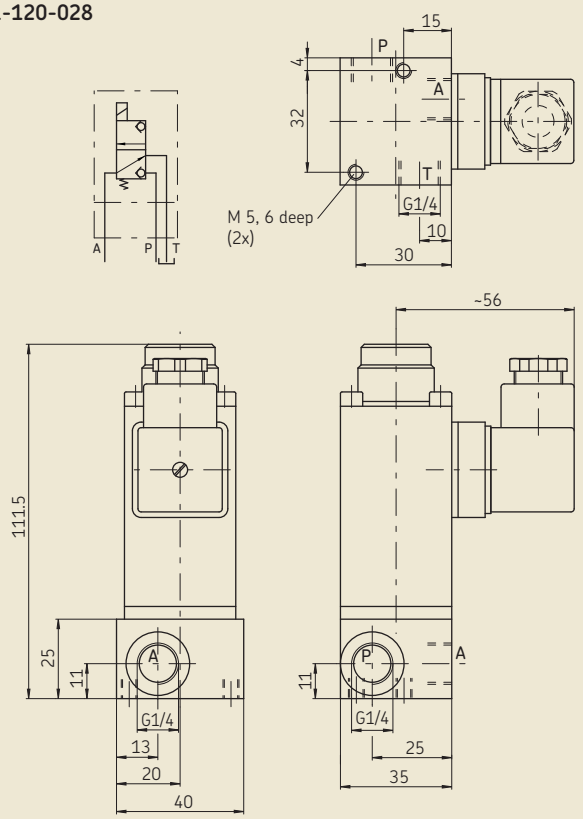
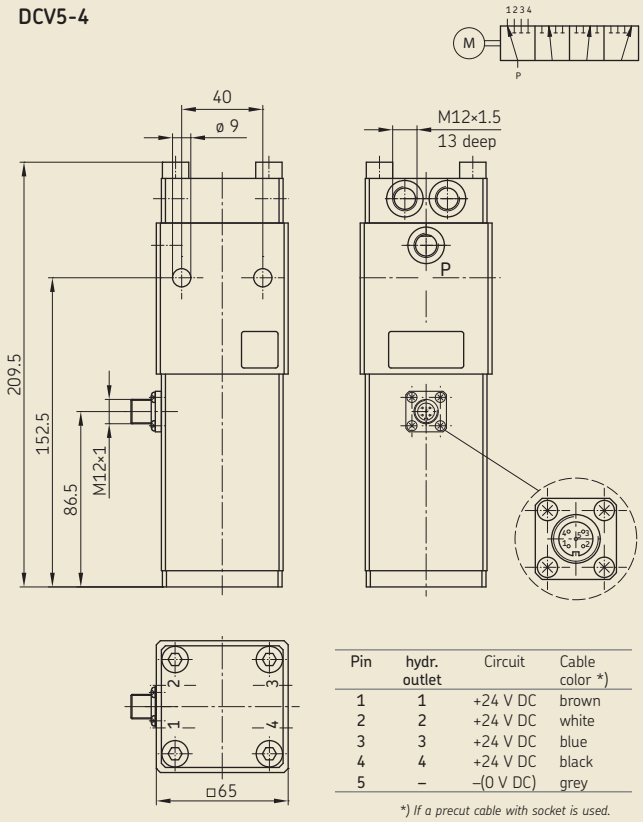


Fig. 8

DCV5-4

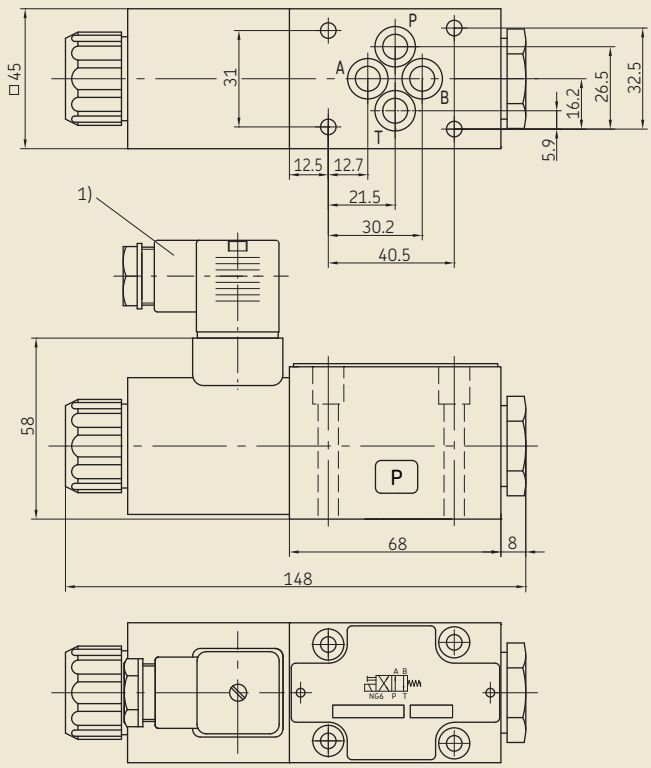


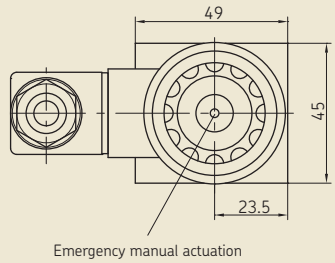
Pin	hydr. outlet	Circuit	Cable color *)
1	1	+24 V DC	brown
2	2	+24 V DC	white
3	3	+24 V DC	blue
4	4	+24 V DC	black
5	–	–(0 V DC)	grey

*) If a precut cable with socket is used.

Fig. 9

161-140-050, 202-860



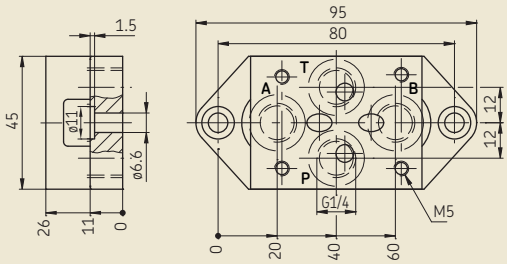


[1] With 161-140-050 socket box
DIN EN 175301-803 has to be order separately;
e.g. 179-990-034 (with LED, protective circuit and integrally extruded 3 m long PUR cable).

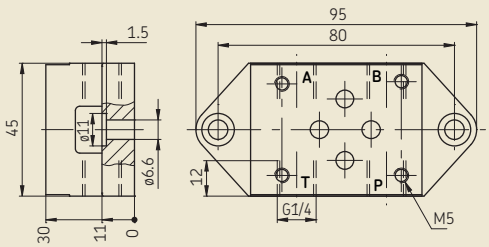
Mounting plates for line connector

for directional valves 161-140-050, 202-860 (to be ordered separately)

892-530-020 bottom line connector



892-530-030 lateral line connector



Attachement of directional valve to the respective mounting plate
4 cap screws, DIN912-M5×45-8.8
4 washers 650-050

The parts have to be ordered separately.

Connection fittings

Solderless tube union (at p max. to 50 bars)

Connecting piece for ø 6 tubing : order No. 406-054
for ø 8 tubing : order No. 301-020
for ø 10 tubing : order No. 410-163

Washer: order No. 508-108

Tube union with cutting ring to DIN 2353
(at p max. greater than 50 bars)

Connecting piece for ø 8 tubing : order No. 408-403W
for ø 10 tubing : order No. 410-403W

Washer: order No. 508-108

VOGEL®

Order No. 1-1703-US
Subject to change without notice! (09/2008)

All products from VOGEL may be used only for their intended purpose. If operating instructions are supplied together with the products, the provisions and information therein of specific relevance to the equipment must be observed as well.

In particular, we call your attention to the fact that hazardous materials of any kind, especially the materials classified as hazardous by EC Directive 67/548/EEC, Article 2, Par. 2, may only be filled into VOGEL centralized lubrication systems and components and delivered and/or distributed with the same after consultation with and written approval from VOGEL.

All products manufactured by VOGEL are not approved for use in conjunction with gases, liquefied gases, pressurized gases in solution and fluids with a vapor pressure exceeding normal atmospheric pressure (1013 mbars) by more than 0.5 bar at their maximum permissible temperature.

Leaflet information
1-1730-US Electric Plug-and-Socket Connectors

Competence center for industrial applications

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