innovative solutions

Directional spool valves, direct operated, with solenoid actuation

Type WE

H7564

- Size 6
- Component series 6X
- Maximum operating pressure 350 bar *[5076 psi]*
- Maximum flow: 80 l/min *[21 US gpm]* DC
  60 l/min *[15.8 US gpm]* AC

CE

Features

- 4/3, 4/2 or 3/2 directional design
- High-power solenoid
- Porting pattern according to DIN 24340 form A
- Porting pattern according to ISO 4401-03-02-0-05 and NFPA T3.5.1 R2-2002 D03
- Wet-pin DC or AC solenoids with detachable coil
- Solenoid coil can be rotated by 90°
- The coil can be changed without having to open the pressure-tight chamber
- Electrical connection as individual or central connection
- Manual override, optional
- Spool position monitoring, optional

Contents

Ordering code

01	02	03	04	05		06	07	08	09	10	11		12	13	14	15	16
	WE	**6**		**6X**	**/**		**E**					**/**					*****

01	3 main ports	**3**
	4 main ports	**4**
02	Directional valve	**WE**
03	Size 6	**6**
04	Symbols e.g. C, E, EA, EB, etc; for the possible version, see page 5	
05	Component series 60 to 69 (60 to 69: Unchanged installation and connection dimensions)	**6X**
06	**With** spring return	**no code**
	Without spring return	**O**
	Without spring return with detent	**OF**
07	High-power wet-pin solenoid with detachable coil	**E**
08	Direct voltage 24 V	**G24**
	AC voltage 230 V 50/60 Hz	**W230**
	AC voltage 120 V or 110 V 50/60 Hz	**W110** **W + voltage**
	Direct voltage 205 V	**G205**
	DC solenoid with rectifier for AC voltage (not frequency-related; only available with plug-in connection with cover, see page 17)	**W110R**
	Connection to AC voltage mains via control with rectifier (see table below and page 4) [1] For further ordering codes for other voltages and frequencies, see page 8	
09	**Without** manual override	**no code**
	With concealed manual override (standard)	**N9** [2]
	With manual override	**N** [2]
	With lockable manual override "mushroom button" (small)	**N4** [2]
	With lockable manual override "mushroom button" (big)	**N5** [2; 3]
	With manual override "mushroom button" (big), not lockable	**N6** [2]
	With lockable manual override "nut"	**N7** [2]

Electrical connection

10	**Individual connection**	
	Without mating connector, with connector according to DIN EN 175301-803	**K4** [4]
	Without mating connector, with connector AMP Junior-Timer	**C4** [4]
	Without mating connector, with connector DT 04-2PA (Deutsch plug)	**K40** [4; 7]
	Without mating connector, 4-pole with connector M12x1 according to IEC 60947-5-2, integrated interference protection circuit and status LED	**K72L** [5]
	Without mating connector, 4-pole with connector M12x1 according to IEC 60947-5-2, integrated interference protection circuit and status LED (no connection pin 1 to pin 2)	**K73L** [5]
	Central connection	
	Cable entry at the cover, with indicator light	**DL**
	Central plug-in connection at the cover, with indicator light (without mating connector); connector according to DIN EN 175201-804	**DK6L** [6]
	For further electrical connections, see data sheet 08010	

AC voltage mains (admissible voltage tolerance ±10%)	Nominal voltage of the DC solenoid in case of operation with alternating voltage	**Ordering code**
110 V - 50/60 Hz	96 V	**G96**
230 V - 50/60 Hz	205 V	**G205**

Ordering code

01	02	03	04	05		06	07	08	09	10	11		12	13	14	15	16
	WE	**6**		**6X**	**/**		**E**					**/**					*****

Spool position monitoring

11	**Without** position switch	**no code**
	– Inductive position switch type QM	
	Monitored spool position "a"	**QMAG24**
	Monitored spool position "b"	**QMBG24**
	Monitored rest position	**QM0G24**
	– Inductive position switch type QR	
	Monitored rest position	**QR0G24S**
	Monitored spool position "a" and "b"	**QRABG24E**
	– Inductive position switch type QL	
	Monitored spool position "a"	**QLAG24**
	Monitored spool position "b"	**QLBG24**
	– Inductive proximity sensor type QS	
	Monitored spool position "a"	**QSAG24W**
	Monitored spool position "b"	**QSBG24W**
	Monitored spool position "0"	**QS0G24W**
	Monitored spool position "0" and "a"	**QS0AG24W**
	Monitored spool position "0" and "b"	**QS0BG24W**
	Monitored spool position "a" and "b"	**QSABG24W**
	For more information, see data sheet 24830	

12	**Without** throttle insert			**no code**
	With throttle insert see table:			
	Port	Throttle Ø in mm *[inch]*		
		0.8 *[0.031]*	1.0 *[0.039]*	1.2 *[0.047]*
	P	**= B08**	**= B10**	**= B12**
	A	**= H08**	**= H10**	**= H12**
	B	**= R08**	**= R10**	**= R12**
	A and B	**= N08**	**= N10**	**= N12**
	T	**= X08**	**= X10**	**= X12**
	Use with flows which exceed the performance limit of the valve (see page 6).			

Clamping length

13	42 mm *[1.65 inch]* (standard)	**no code**
	22 mm *[0.87 inch]*	**Z**

Seal material

14	NBR seals	**no code**
	FKM seals	**V**
	Attention: Observe compatibility of seals with hydraulic fluid used! (Other seals upon request)	

15	**Without** locating hole	**no code**
	With locating hole	**/60** [8)]
	With locating hole and locking pin ISO 8752-3x8-St	**/62**

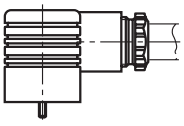
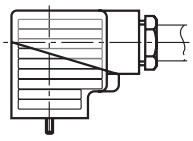
16	Further details in the plain text	

Explanation of the footnotes see page 4.

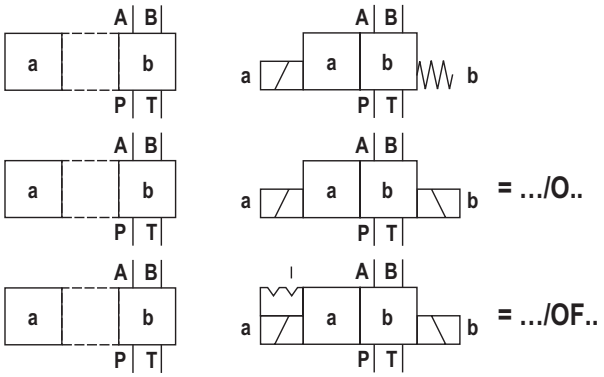
Ordering code

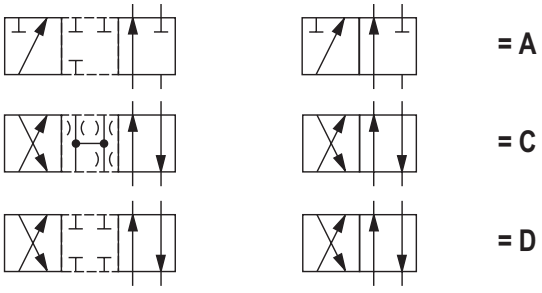
1) Only for version "individual connection"
2) The manual override cannot be allocated a safety function. The manual override units may only be used up to a tank pressure of 50 bar.
3) With tank pressures above 50 bar, it cannot be guaranteed that the valve remains in the position switched by the manual override “N5”.
4) Mating connectors, separate order, see below and data sheet 08006
5) Only version "G24", see data sheet 08010
6) Mating connector, separate order, material no. **R900005538**
7) Only possible in connection with the symbols G, J, D and E as well a reduced performance limit.
8) Locking pin ISO 8752-3x8-St, material no. **R900005694** (separate order)

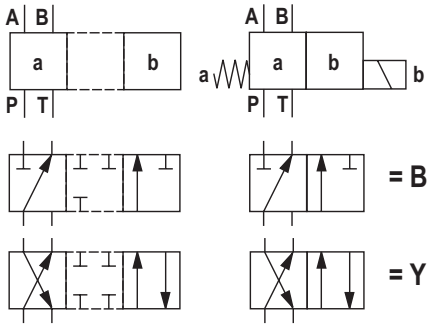
Mating connectors according to DIN EN 175301-803

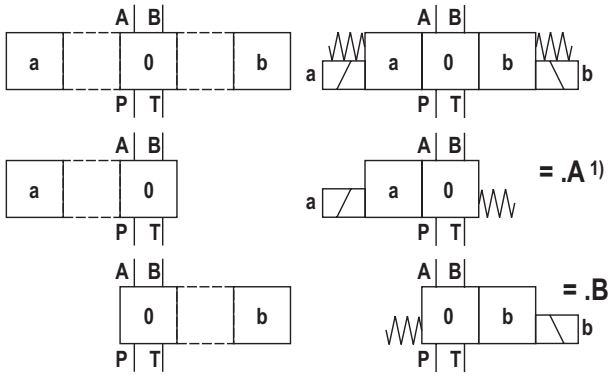
For details and more mating connectors, see data sheet 08006							
			Material number				
Port	**Valve side**	**Color**	Without circuitry	With indicator light 12 ... 240 V	With indicator light and rectifier 12 ... 240 V	With rectifier 12 ... 240 V	With indicator light and Zener diode suppression circuit 24 V
M16 x 1.5	a	Gray	**R901017010**	**–**	**–**	**–**	**–**
	b	Black	**R901017011**	**–**	**–**	**–**	**–**
	a/b	Black	**–**	**R901017022**	**R901017029**	**R901017025**	**R901017026**
1/2" NPT (Pg 16)	a	Red/ brown	**R900004823**	**–**	**–**	**–**	**–**
	b	Black	**R900011039**	**–**	**–**	**–**	**–**
	a/b	Black	**–**	**R900057453**	**R900057455**	**R900842566**	**–**

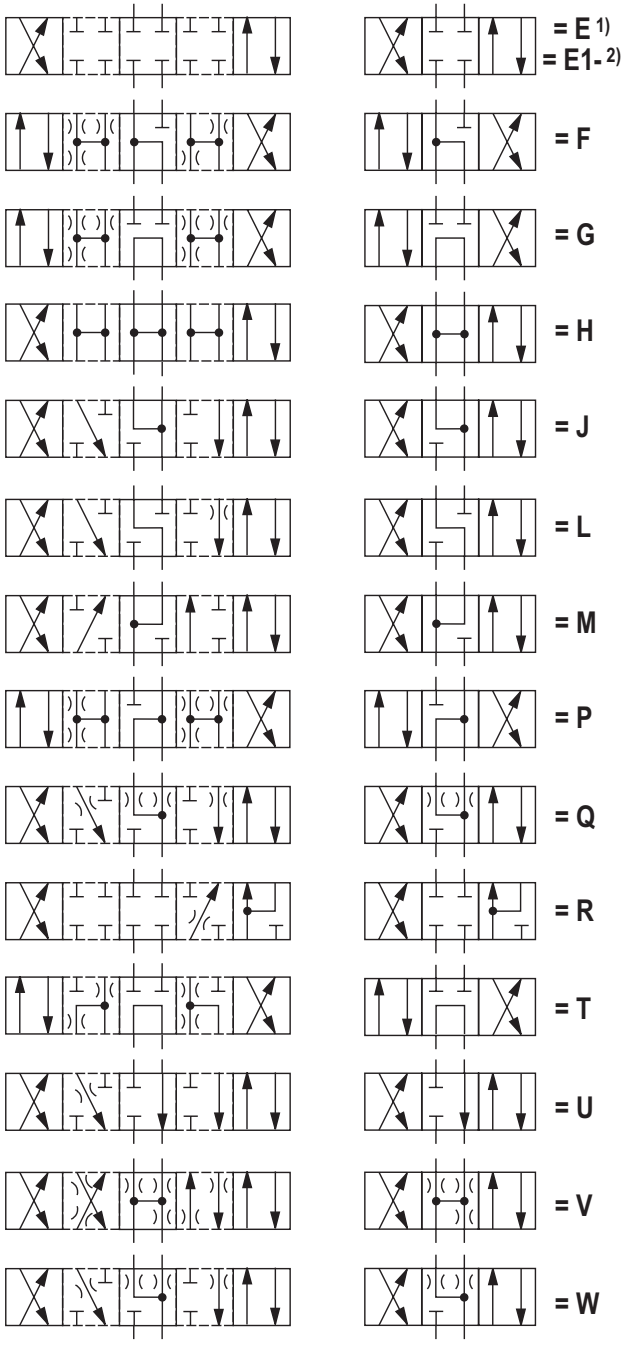
Symbols









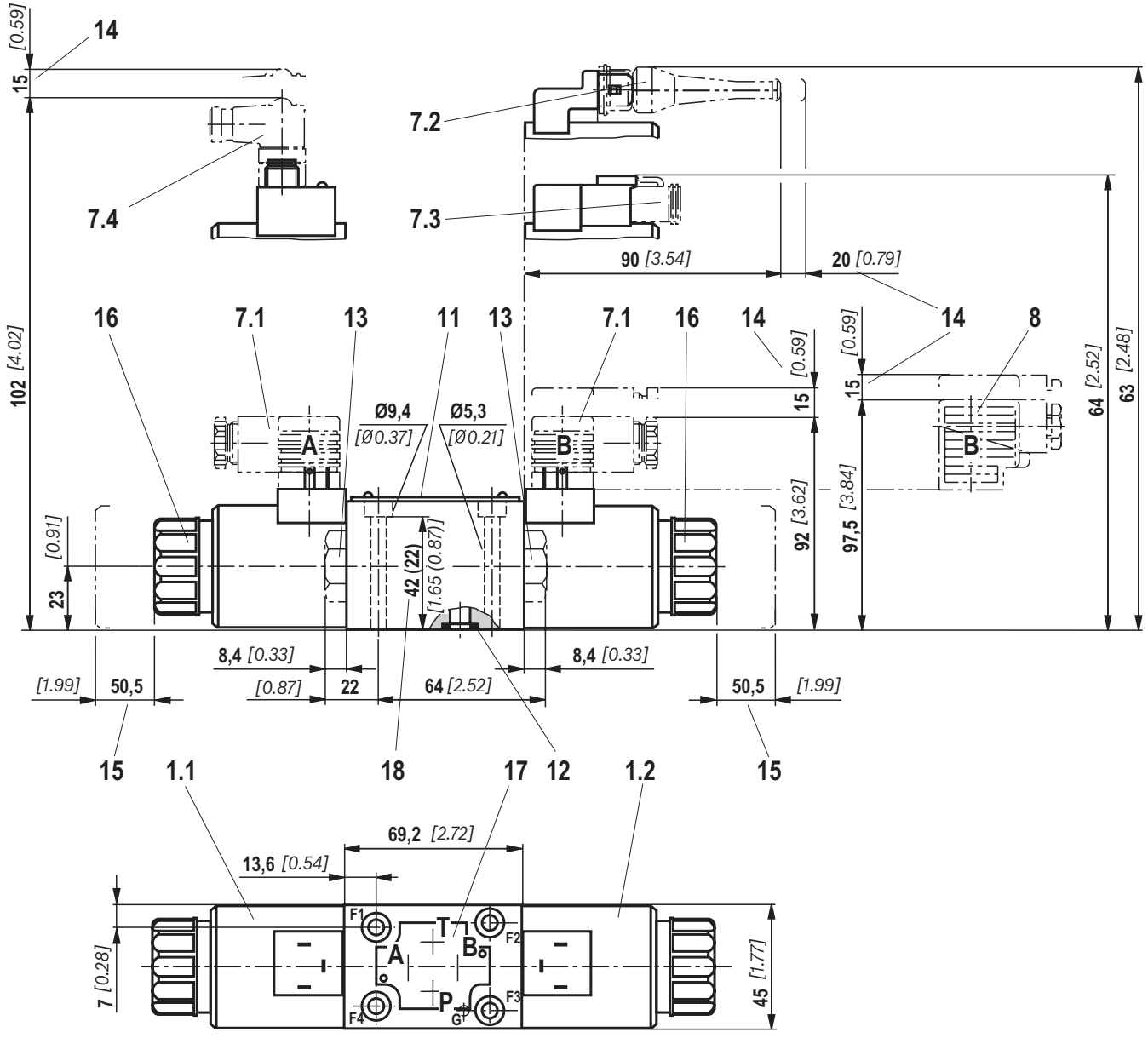


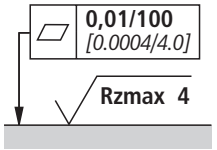
1) **Example:**
Symbol E with spool position "a", ordering code ..**EA**..

2) Symbol E1-: P – A/B pre-opening,
Caution in conjunction with differential cylinders due to pressure intensification!

Notices!
Representation according to DIN ISO 1219-1.
Hydraulic interim positions are shown by dashes.

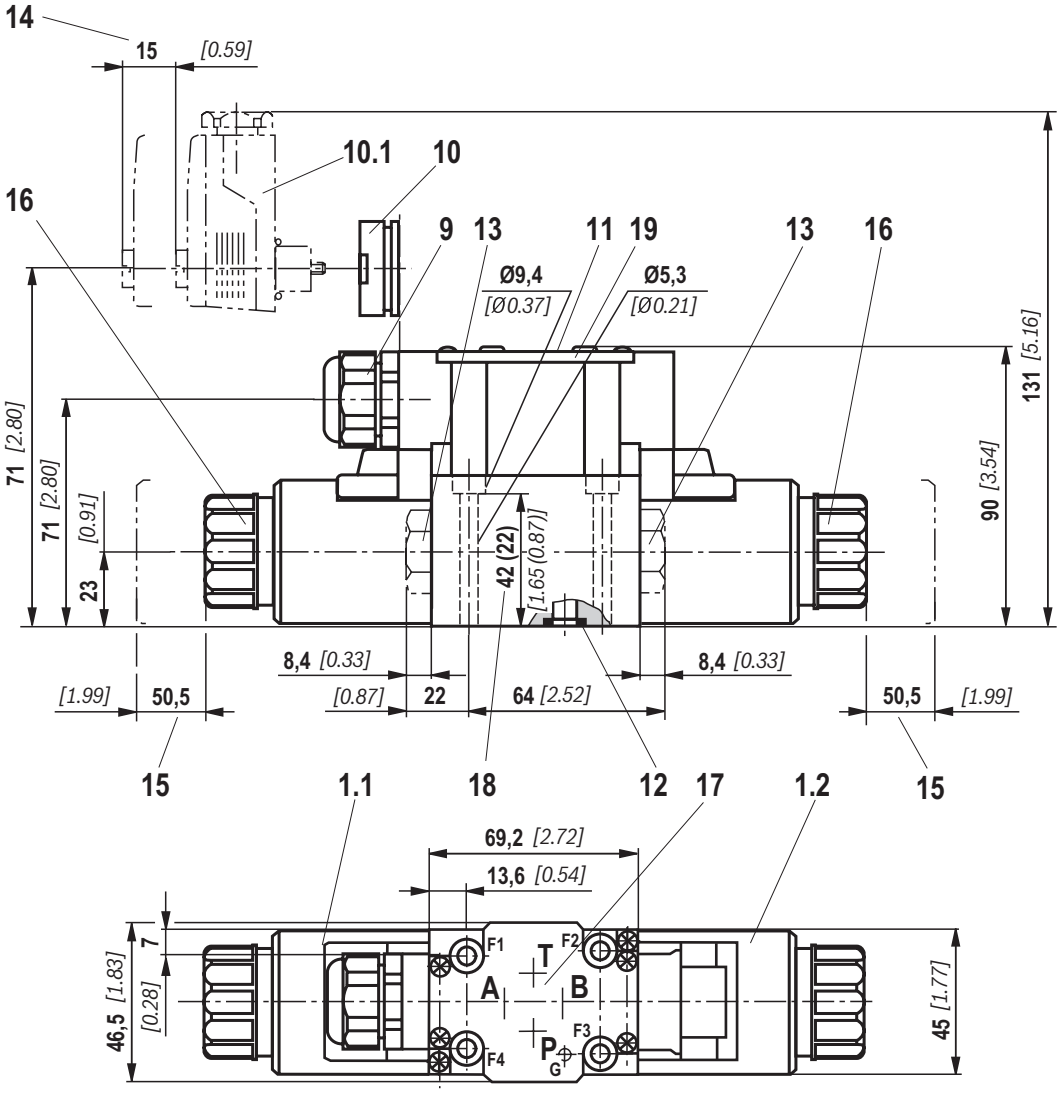
Dimensions: Valve with DC solenoid – **Individual connection**
(dimensions in mm *[inch]*)

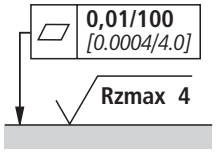




Required surface quality of
the valve contact surface

Dimensions: Valve with DC solenoid – **Central connection**
(dimensions in mm *[inch]*)





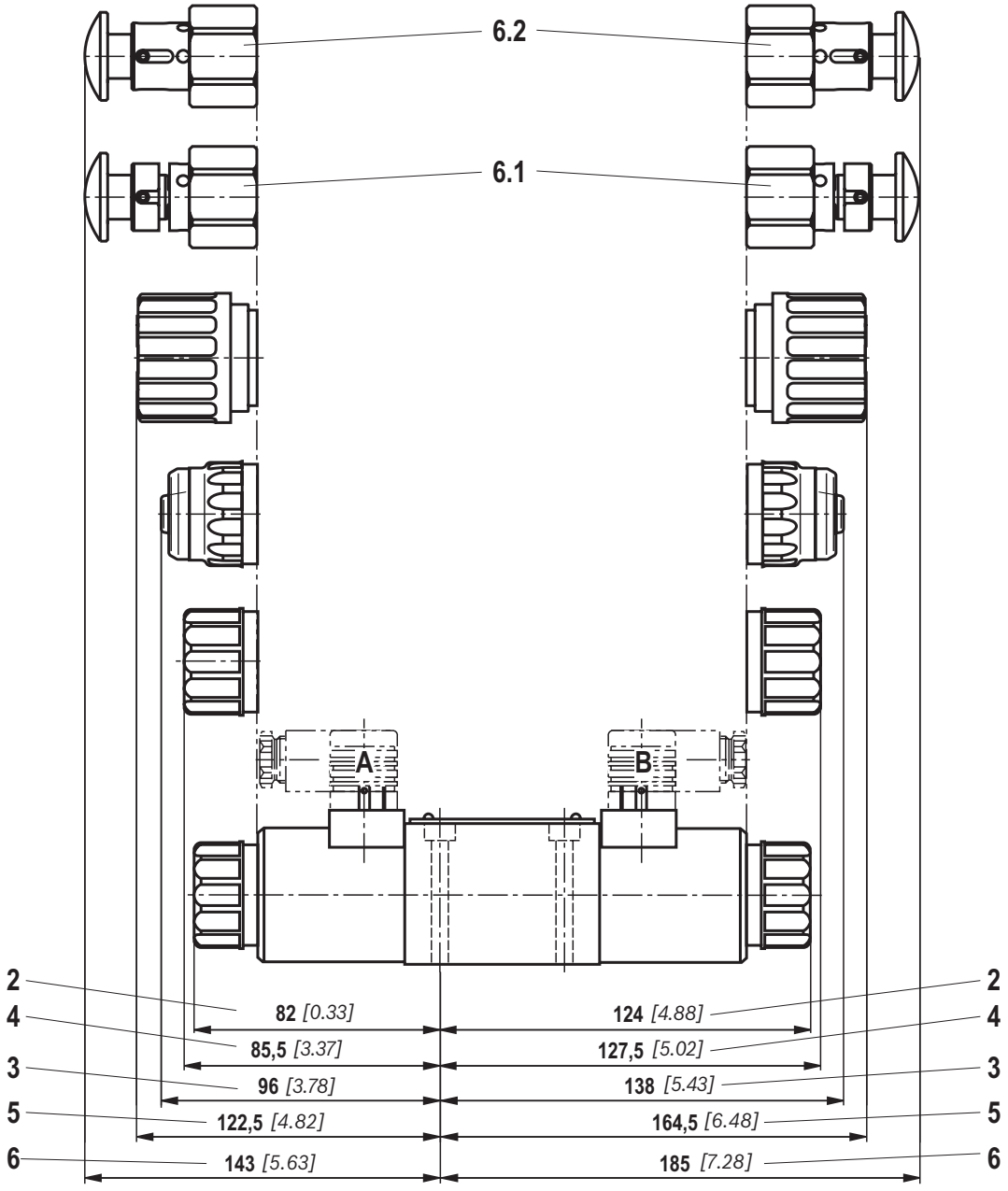
Required surface quality of the valve contact surface

Terminal assignment with central connection:

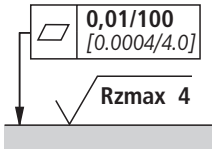
- **1 solenoid:**
  Always connect the solenoid to terminals 1 and 2,
  the protective earthing connector to terminal ⏚ PE
- **2 solenoids:**
  Always connect solenoid "a" to terminals 1 and 2,
  solenoid "b" to terminals 3 and 4,
  the protective earthing conductor to terminal ⏚ PE

Dimensions for manual overrides see page 15.
Item explanations, valve mounting screws and **subplates** see page 18.

Dimensions: Valve with DC solenoid – Manual overrides
(dimensions in mm *[inch]*)

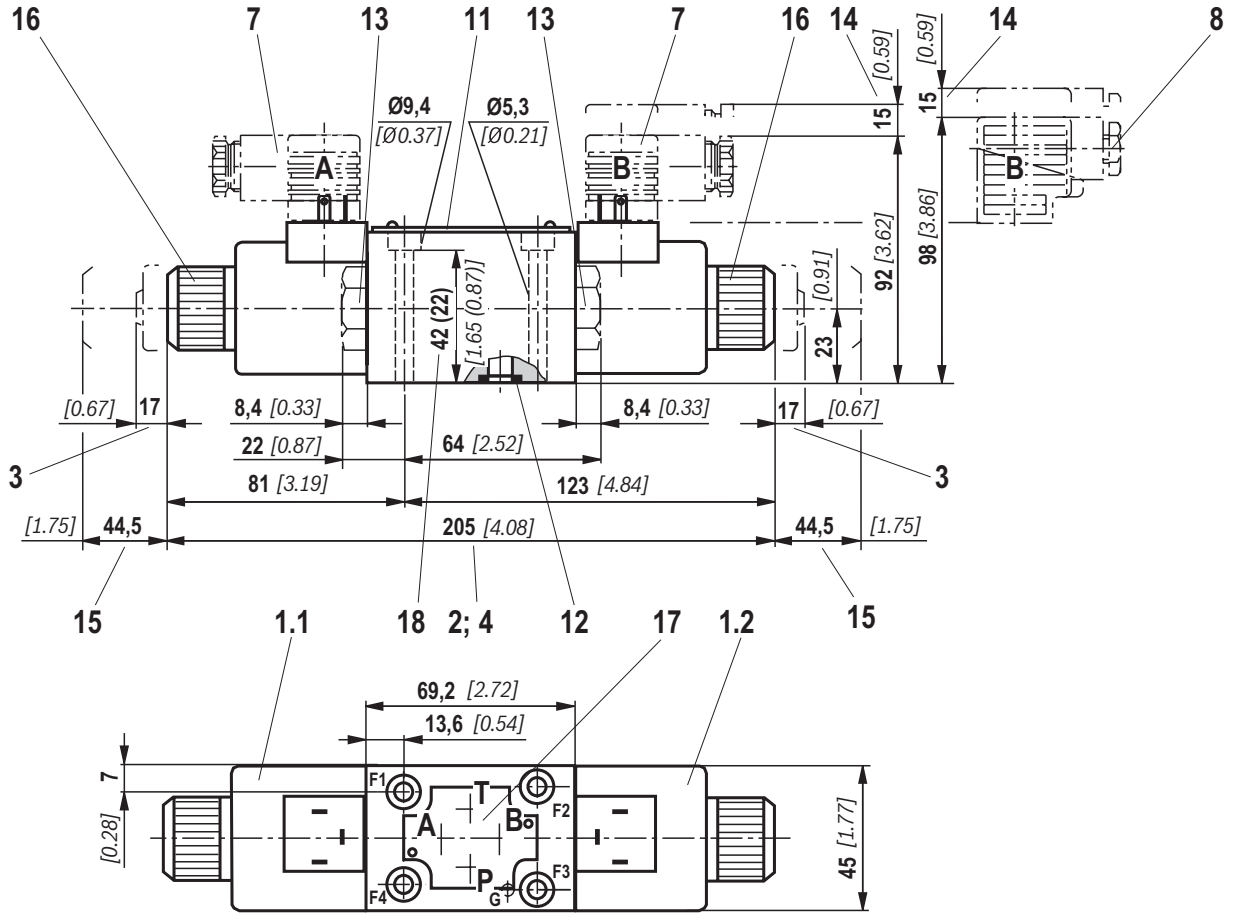


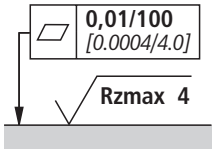
Item explanations, valve mounting screws and **subplates**
see page 18.



Required surface quality of
the valve contact surface

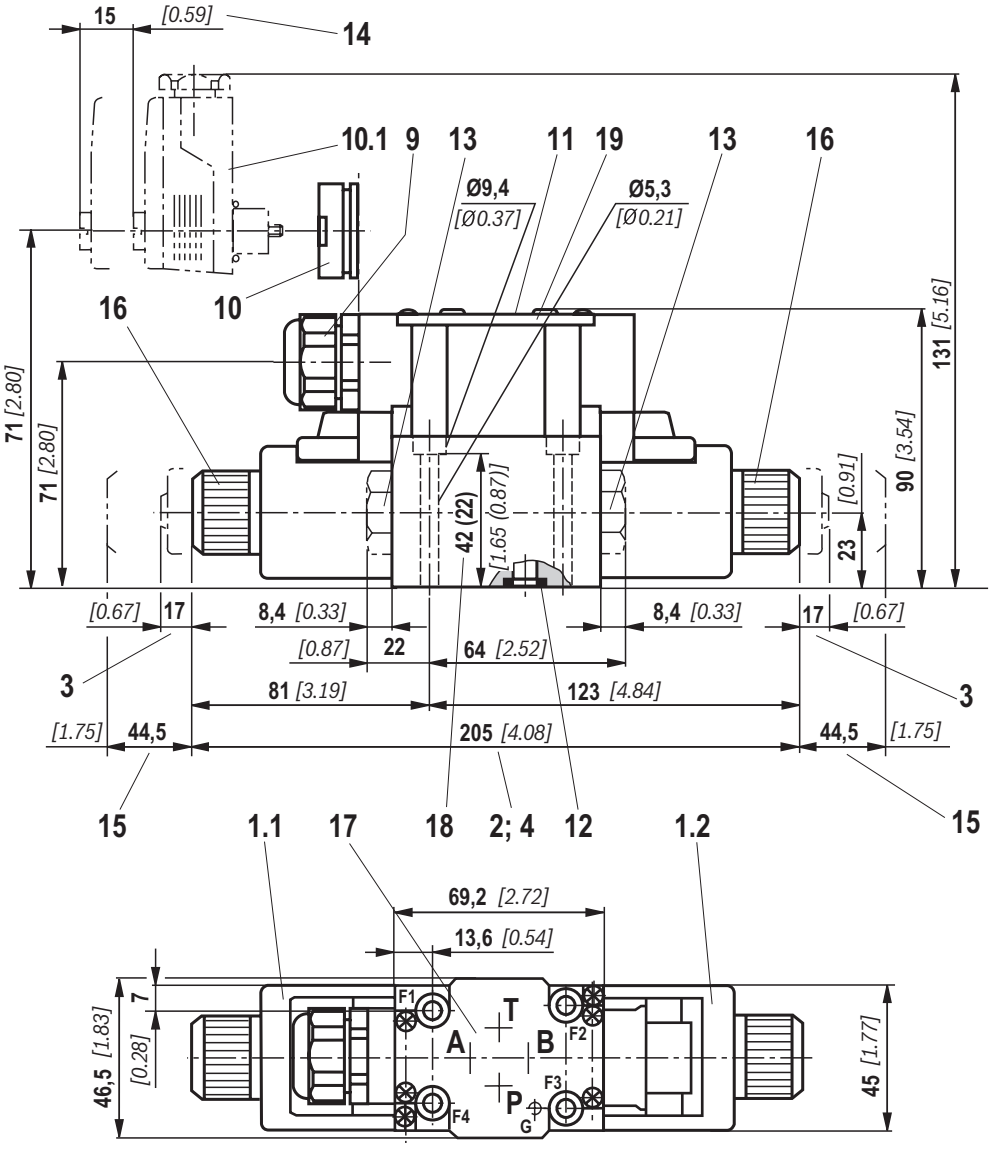
Dimensions: Valve with AC solenoid – **Individual connection**
(dimensions in mm *[inch]*)

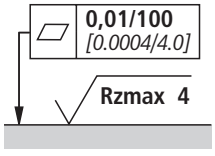




Required surface quality of
the valve contact surface

Dimensions: Valve with AC solenoid – **Central connection**
(dimensions in mm *[inch]*)





Required surface quality of the valve contact surface

Terminal assignment with central connection:

- **1 solenoid:**
  Always connect the solenoid to terminals 1 and 2, the protective earthing connector to terminal ⏚ PE
- **2 solenoids:**
  Always connect solenoid "a" to terminals 1 and 2, solenoid "b" to terminals 3 and 4, the protective earthing to terminal ⏚ PE

Dimensions

1.1 Solenoid "a"

1.2 Solenoid "b"

2 Dimension for solenoid **with concealed** manual override "**N9**" (standard)

3 Dimension for solenoid **with** manual override "**N**"

4 Dimension for solenoid **without** manual override

5 Dimension for solenoid **with** manual override "**N7**"

6 Dimension for solenoid **with** manual override "**N5**" and **"N6"**

6.1 Manual override "**N5**"

6.2 Manual override "**N6**"

7.1 Mating connector **without** circuitry for connector "K4" (separate order, see page 4 and data sheet 08006)

7.2 Mating connector (AMP Junior Timer) with connector "C4" (separate order, see data sheet 08006)

7.3 Mating connector DT 04-2PA (Deutsch plug) with connector "K40" (separate order, see data sheet 08006)

7.4 Mating connector angled with M12x1 plug-in connection with status LED "K72L" (separate order, see data sheet 08006)

8 Mating connector **with** circuitry for connector "K4" (separate order, see page 4 and data sheet 08006)

9 Cable gland Pg 16 *[1/2" NPT]* "DL"

10 Central plug-in connection "DKL"

10.1 Angled socket (red, separate order) Material no. **R900005538**)

11 Name plate

12 Identical seal rings for ports A, B, P, T
☞ **Notice!** The ports are clearly determined according to their tasks and must not be arbitrarily interchanged or closed.

13 Plug screw for valves with one solenoid

14 Space required to remove the mating connector/ angled socket

15 Space required to remove the coil

16 Mounting nut, tightening torque $\boldsymbol{M}_A = 4^{+1}$ Nm *[2.95$^{+0.74}$ ft-lbs]*

17 Porting pattern according to DIN 24340 form A (**without** locating hole), or ISO 4401-03-02-0-05 and NFPA T3.5.1 R2-2002 D03 (**with** locating hole for locking pin ISO 8752-3x8-St, material no. **R900005694**, separate order)

18 Alternative clamping length (): 22 mm *[0.87 inch]*

19 Cover
Attention!
The valve may only be operated with properly mounted cover.

Subplates according to data sheet 45052 (separate order)

(**without** locating hole)	G 341/01 (G1/4)
	G 342/01 (G3/8)
	G 502/01 (G1/2)
(**with** locating hole)	G 341/60 (G1/4)
	G 342/60 (G3/8)
	G 502/60 (G1/2)
	G 341/12 (SAE-6) [1]
	G 342/12 (SAE-8) [1]
	G 502/12 (SAE-10) [1]

[1] Upon request

Valve mounting screws (separate order)

▶ Clamping length 42 mm:
4 metric hexagon socket head cap screws
ISO 4762 - M5 x 50 - 10.9-flZn-240h-L
(friction coefficient μ_{total} = 0.09 to 0.14);
tightening torque $\boldsymbol{M}_A$ = 7 Nm *[5.2 ft-lbs]* ± 10%,
material no. **R913000064**
or
4 hexagon socket head cap screws
ISO 4762 - M5 x 50 - 10.9 [2]
(friction coefficient μ_{total} = 0.12 to 0.17);
tightening torque $\boldsymbol{M}_A$ = 8.1 Nm *[6 ft-lbs]* ± 10%

4 hexagon socket head cap screws UNC 10-24 UNC x 2" ASTM-A574
(friction coefficient μ_{total} = 0.19 bis 0.24);
tightening torque $\boldsymbol{M}_A$ = 11 Nm *[8.2 ft-lbs]* ± 15%,
(friction coefficient μ_{total} = 0.12 to 0.17);
tightening torque $\boldsymbol{M}_A$ = 8 Nm *[5.9 ft-lbs]* ± 10%,
material no. **R978800693**

▶ Clamping length 22 mm:
4 metric hexagon socket head cap screws
ISO 4762 - M5 x 30 - 10.9-flZn-240h-L
(friction coefficient μ_{total} = 0.09 to 0.14);
tightening torque $\boldsymbol{M}_A$ = 7 Nm *[5.2 ft-lbs]* ± 10%,
material no. **R913000316**
or
4 hexagon socket head cap screws
ISO 4762 - M5 x 30 - 10.9 [2]
(friction coefficient μ_{total} = 0.12 to 0.17);
tightening torque $\boldsymbol{M}_A$ = 8.1 Nm *[6 ft-lbs]* ± 10%

4 hexagon socket head cap screws UNC 10-24 UNC x 1 1/4"
(friction coefficient μ_{total} = 0.19 to 0.24);
tightening torque $\boldsymbol{M}_A$ = 11 Nm *[8.2 ft-lbs]* ± 15%,
(friction coefficient μ_{total} = 0.12 to 0.17);
tightening torque $\boldsymbol{M}_A$ = 8 Nm *[5.9 ft-lbs]* ± 10%,
material no. **R978802879**

[2] Not included in the INOSOL delivery range