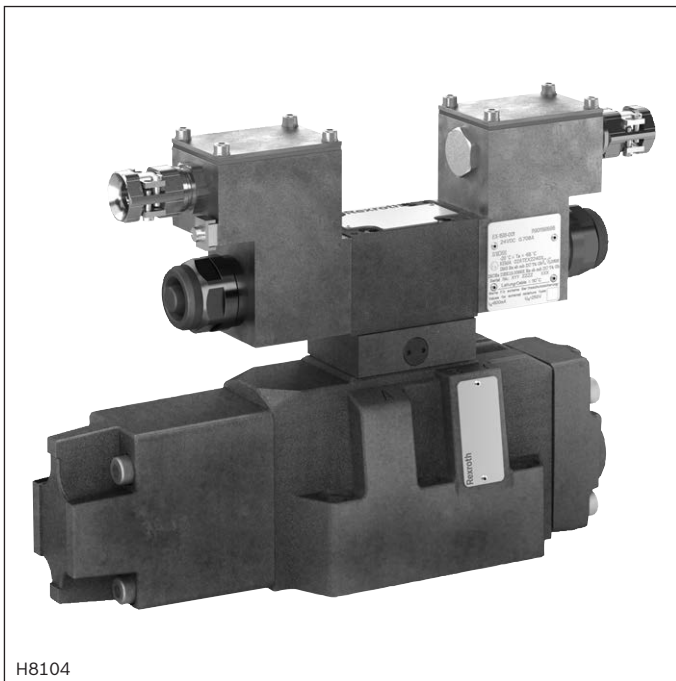


Proportional directional valves,
pilot-operated,
without electrical position feedback

Type 4WRZ ...XE

RE 29115-XE
Edition: 2016-04
Replaces: 11.14



H8104

- ▶ Sizes 10 ... 32
- ▶ Component series 7X
- ▶ Maximum operating pressure 350 bar
- ▶ Maximum flow 1600 l/min



ATEX units

For potentially explosive atmospheres



Information on explosion protection:

- ▶ Area of application in accordance with the Explosion Protection Directive 2014/34/EU: **II 2G**
- ▶ Type of protection of the valve solenoids: Ex eb mb IIC T4 Gb according to EN 60079-7 / EN 60079-18

Features

- ▶ 4/2- or 4/3-way version
- ▶ For intended use in potentially explosive atmosphere
- ▶ Controlling the direction and size of a flow
- ▶ For subplate mounting
- ▶ Porting pattern according to ISO 4401
- ▶ Spring-centered control spool
- ▶ Actuation by means of the pilot control valve (3-way pressure reducing valve)
- ▶ Solenoid coil is rotatable by 90°

Contents

| | |
|-----------------------|-----------|
| Features | 1 |
| Ordering code | 2 |
| Symbols | 3 |
| Function, section | 4, 5 |
| Pilot oil supply | 6 |
| Technical data | 7, 8 |
| Characteristic curves | 9 ... 13 |
| Dimensions | 14 ... 17 |
| Electrical connection | 18 |
| Further information | 19 |

Ordering code

| | | | | | | | | | | | | |
|------------|----------|----|----|----------|-----------|----------|-----------|------------|-----------|----------|----------|-----------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 |
| 4WR | Z | | | - | 7X | / | 6E | G24 | XE | J | / | D3 |

| | | |
|----|---|------------|
| 01 | Proportional directional valve | 4WR |
| 02 | Electro-hydraulic actuation | Z |
| 03 | Size 10 | 10 |
| | Size 16 | 16 |
| | Size 25 | 25 |
| | Size 32 | 32 |
| 04 | Symbols e. g. E, E3-, W6- etc.; possible version see page 3 | |

Rated flow

| | | |
|-----------|--|------------|
| 05 | - Size 10 | |
| | 25 l/min | 25 |
| | 50 l/min | 50 |
| | 85 l/min | 85 |
| | - Size 16 | |
| | 100 l/min | 100 |
| | 125 l/min | 125 |
| | 150 l/min | 150 |
| | 180 l/min | 180 |
| | - Size 25 | |
| | 220 l/min | 220 |
| | 325 l/min | 325 |
| | - Size 32 | |
| | 360 l/min | 360 |
| 520 l/min | 520 | |
| 06 | Component series 70 ... 79 (70 ... 79: unchanged installation and mounting dimensions) | 7X |
| 07 | Proportional solenoid | 6E |

Supply voltage of the control electronics

| | | |
|----|---------------------|------------|
| 08 | Direct voltage 24 V | G24 |
|----|---------------------|------------|

Explosion protection

| | | |
|----|--|-----------|
| 09 | "Increased safety" | XE |
| | For details, see information on explosion protection, page 8 | |

Corrosion resistance (outside)

| | | |
|----|--------------------------------|----------|
| 10 | Seawater-resistant, galvanized | J |
|----|--------------------------------|----------|

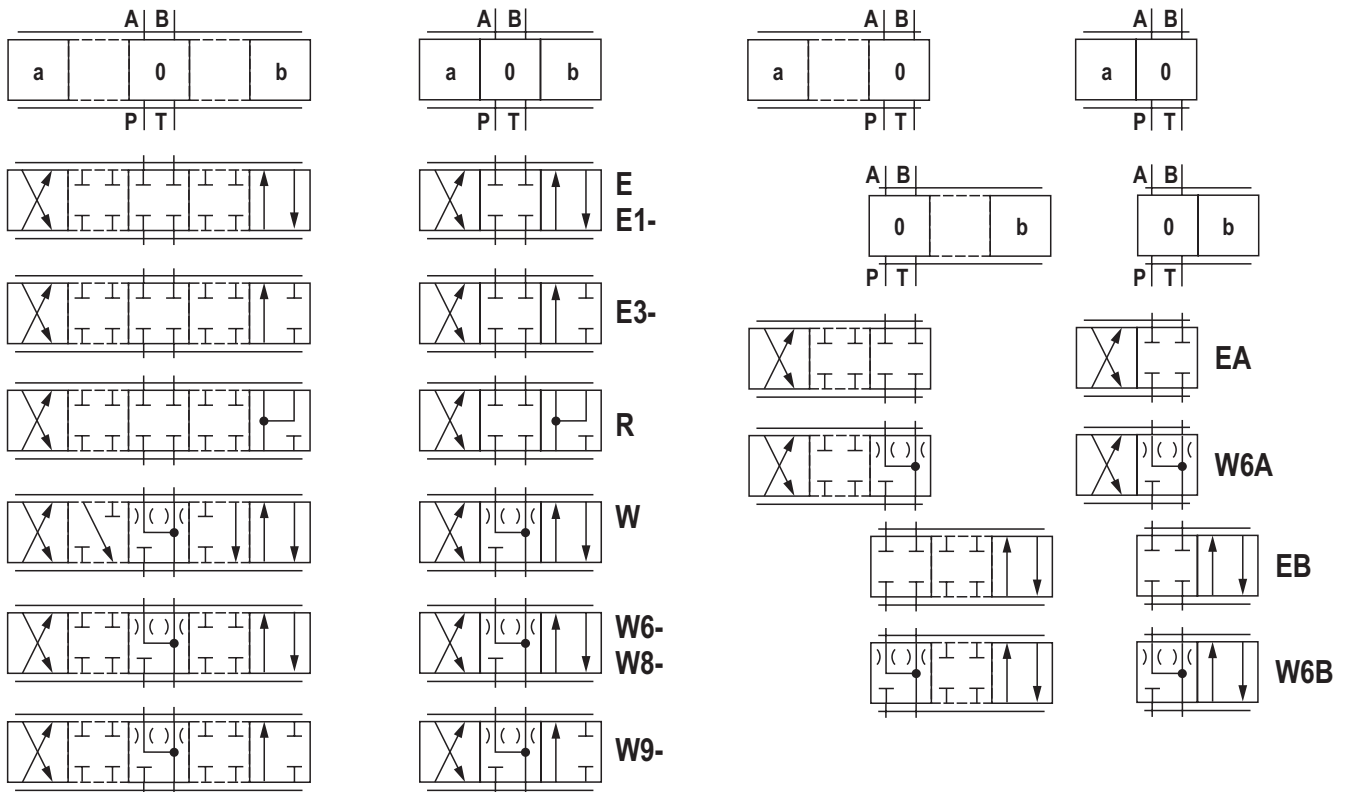
Pilot oil supply and pilot oil return (see also page 6)

| | | |
|----|--|----------------|
| 11 | External pilot oil supply, external pilot oil return | no code |
| | Internal pilot oil supply, external pilot oil return | E |
| | Internal pilot oil supply, internal pilot oil return | ET |
| | External pilot oil supply, internal pilot oil return | T |
| 12 | With pressure reducing valve (pre-set) | D3 |

Seal material

| | | |
|----|--|----------|
| 13 | NBR seals | M |
| | FKM seals | V |
| | Observe compatibility of seals with hydraulic fluid used! (Other seals upon request) | |

Symbols



With symbol E1- and W8-:

P → A: $q_{V \max}$ B → T: $q_{V/2}$
 P → B: $q_{V/2}$ A → T: $q_{V \max}$

With symbol E3- and W9-:

P → A: $q_{V \max}$ B → T: blocked
 P → B: $q_{V/2}$ A → T: $q_{V \max}$

(Differential circuit, piston top at port A)

Notice:

- ▶ In spool position "0", symbols W, W6-, W8-, W9-, W6A and W6B have a connection from A → T and B → T with less than 2% of the relevant nominal cross-section.
- ▶ Representation according to DIN ISO 1219-1.
- ▶ Hydraulic interim positions are shown by dashes.

Function, section: Pilot control valve, type 3DREP 6...

The pilot control valve is a 3-way pressure reducing valve that is actuated by a proportional solenoid. It converts an electrical input signal into a proportional pressure output signal and is used for all valves type 4WRZ ...

The proportional solenoids are controllable wet-pin DC solenoids. The solenoids are actuated by external control electronics.

Set-up:

The valve basically consists of:

- ▶ Housing (1) with connection surface
- ▶ Control spool (2) with pressure measuring pins (3 and 4)
- ▶ Solenoids (5 and 6) with central thread

Function:

The pressure in A or B is set by means of the proportional solenoids. The amount of the pressure depends on the current.

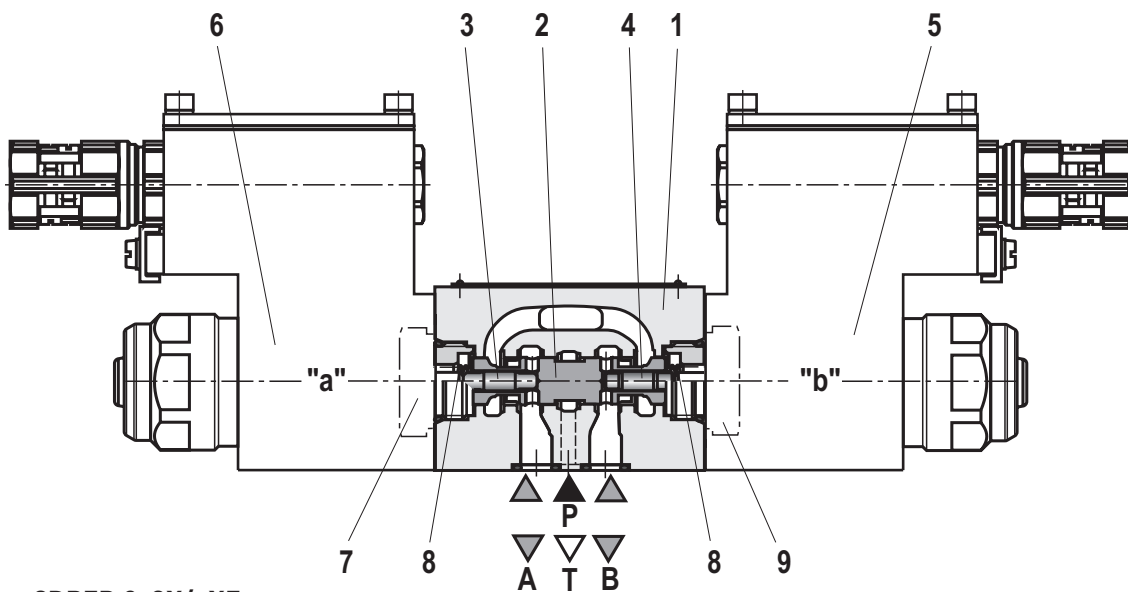
With de-energized solenoids (5, 6), the control spool (2) is held in the central position by means of the compression springs (8). Ports A and B are connected with T so that the hydraulic fluid can flow off to the tank without obstructions.

By actuating a proportional solenoid, e.g. solenoid "b" (5), the pressure measuring pin (4) and the control spool with it (2) are moved to the left. This opens the connection from P to A and B to T via orifice-type cross-sections with progressive flow characteristic. With the surface of the pressure measuring pin (3) the pressure that builds up in channel A acts on the control spool and against the solenoid force. The pressure measuring pin (3) is supported by the solenoid "a". If the pressure exceeds the value set at solenoid "b", the control spool (2) is pushed back against the solenoid force and connects A to T until the set pressure is achieved again. The pressure is proportional to the solenoid current.

When the solenoid is switched off, the control spool (2) is returned into the central position by the compression springs (8).

Notice:

Regarding valves of the version "3DREP 6 C", only one solenoid may be actuated at a time.



Type 3DREP 6..2X/..XE...

Valve with two spool positions

(Version "3DREP 6...A..." and "3DREP 6...B...")

The function of this valve version basically corresponds to the valve with three spool positions. The 2 spool position valve is, however, only equipped with solenoid "b" ((5); version "A") or solenoid "a" ((6); version "B").

Instead of the 2nd proportional solenoid, there is a plug screw (7 or 9).

Notice:

The tank line must not be allowed to run empty. With corresponding installation conditions, a preload valve (preload pressure approx. 2 bar) must be installed.

Function, section: Pilot-operated proportional directional valve, type 4WRZ ...XE...

Valves of the type 4WRZ... are pilot-operated 4-way directional valves that are actuated by means of proportional solenoids. Their function is to control the flow direction and size.

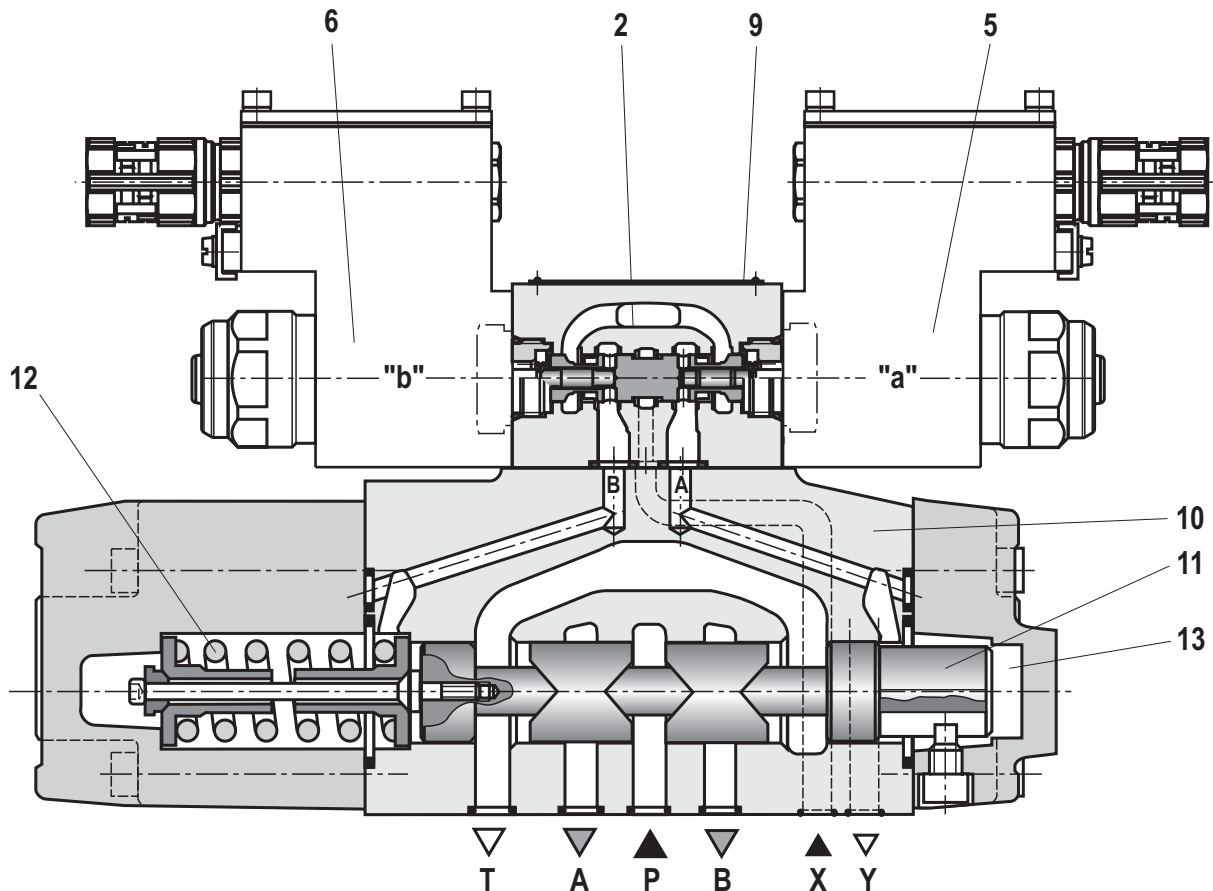
Set-up:

The valve basically consists of:

- ▶ Pilot control valve (9) with proportional solenoids (5 and 6)
- ▶ Main valve (10) with main control spool (11) and centering spring (12)

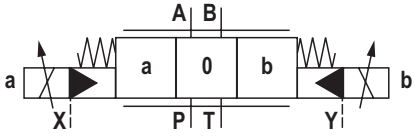
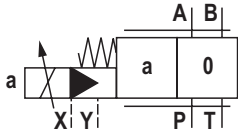
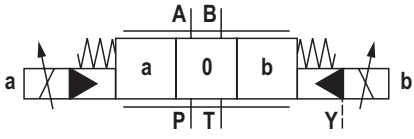
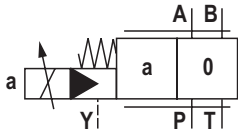
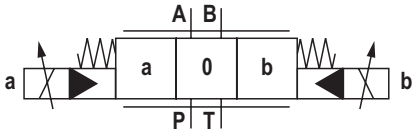
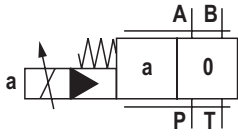
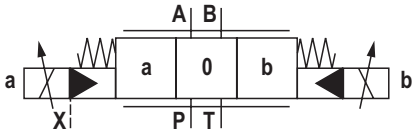
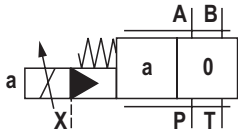
Function:

- ▶ With de-energized solenoids (5 and 6), the main control spool (11) is held in central position by means of a centering spring (12).
- ▶ Actuation of the main spool (11) using the pilot control valve (9) – the main control spool is moved proportionally – e. g. control of solenoid "b" (6)
 - Displacement of the control spool (2) to the right, pilot oil reaches the pressure chamber (13) via the pilot control valve (9) and displaces the main control spool (11) proportionally to the electrical input signal to the left
 - Connection from P → A and B → T via orifice-type cross-sections with progressive flow characteristic
- ▶ Internal pilot oil supply to the pilot control valve via port P or external pilot oil supply via port X
- ▶ Switching off the solenoid (6)
 - Control spool (2) and main control spool (11) are returned to central position
- ▶ Flow depending on the switching position of P → A and B → T or P → B and A → T.



Type 4WRZ...-7X/..XE...

Pilot oil supply

| 3 spool positions | 2 spool positions (version "A") | |
|--|---|--|
|  |  | <p>Type 4WRZ ... External pilot oil supply, external pilot oil return The pilot oil is supplied from a separate control circuit (externally). The pilot oil return is not directed into channel T of the main valve, but is separately directed to the tank via port Y (external).</p> |
|  |  | <p>Type 4WRZ ...E... Internal pilot oil supply, external pilot oil return The pilot oil supply is effected from channel P of the main valve (internally). The pilot oil return is not directed into channel T of the main valve, but is separately directed to the tank via port Y (external). In the subplate, port X is to be closed.</p> |
|  |  | <p>Type 4WRZ ...ET... Internal pilot oil supply, internal pilot oil return The pilot oil supply is effected from channel P of the main valve (internally). The pilot oil is directly returned to channel T of the main valve (internally). In the subplate, ports X and Y are closed.</p> |
|  |  | <p>Type 4WRZ ...T... External pilot oil supply, internal pilot oil return The pilot oil is supplied from a separate control circuit (externally). The pilot oil is directly returned to channel T of the main valve (internally). In the subplate, port Y is to be closed.</p> |

Technical data

(For applications outside these parameters, please consult us!)

| general | | | | | | |
|---|-----------------------------|--|-------------|-------------|-----------|-----|
| Installation position | | Any, preferably horizontal | | | | |
| Storage temperature range | °C | +5 ... +40 | | | | |
| Ambient temperature range | °C | -20 ... +60 | | | | |
| Maximum storage time | Years | 1 (see operating instructions 29115-XE) | | | | |
| Maximum weight | ▶ NG10 | kg | 10 | | | |
| | ▶ NG16 | kg | 16 | | | |
| | ▶ NG25 | kg | 21 | | | |
| | ▶ NG32 | kg | 45 | | | |
| Surface protection | | Galvanized | | | | |
| hydraulics | | | | | | |
| Size | NG | 10 | 16 | 25 | 32 | |
| Maximum operating pressure | ▶ Pilot control valve | 30 ... 100 | | | | |
| | – Pilot oil supply external | | | | | |
| | – Internal pilot oil supply | bar | 100 ... 315 | 100 ... 350 | | |
| | ▶ Main valve | bar | 315 | 350 | 350 | 350 |
| Maximum return flow pressure | ▶ Port T | | | | | |
| | – External pilot oil return | bar | 315 | 250 | 250 | 150 |
| | – Internal pilot oil return | bar | 30 | 30 | 30 | 30 |
| | ▶ Port Y | bar | 30 | 30 | 30 | 30 |
| Pilot volume for switching process 0 → 100% | cm ³ | 1.7 | 4.6 | 10 | 26.5 | |
| Pilot flow at port X and Y with stepped input signal 0 → 100% | l/min | 3.5 | 5.5 | 7 | 15.9 | |
| Maximum flow of the main valve | l/min | 170 | 460 | 870 | 1600 | |
| Hydraulic fluid | | See table page 8 | | | | |
| Hydraulic fluid temperature range | °C | -20 ... +80 (NBR seals) -15 ... +80 (FKM seals) | | | | |
| Viscosity range | mm ² /s | 20 ... 380 (preferably 30 ... 46) | | | | |
| Max. admissible degree of contamination of the hydraulic fluid Cleanliness class according to ISO 4406 (c) | ▶ Pilot control valve | Class 17/15/12 ¹⁾ | | | | |
| | ▶ Main valve | Class 18/16/13 ¹⁾ | | | | |
| Hysteresis | % | ≤ 6 | | | | |
| Maximum surface temperature | °C | 120 | | | | |

¹⁾ The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the life cycle of the components.
Available filters can be found at www.boschrexroth.com/filter.

Technical data

(For applications outside these parameters, please consult us!)

| Hydraulic fluid | Classification | Suitable sealing materials | Standards | Data sheet |
|-------------------------------|----------------------------|---|-----------|------------|
| Mineral oils | HL, HLP, HLPD, HVLP, HVLPD | NBR, FKM | DIN 51524 | 90220 |
| Bio-degradable ²⁾ | ▶ Insoluble in water | HETG | ISO 15380 | 90221 |
| | | HEES | | |
| | ▶ Soluble in water | HEPG | ISO 15380 | |
| Flame-resistant ²⁾ | ▶ Water-free | HFDU, HFDR | ISO 12922 | 90222 |
| | ▶ Containing water | HFC (Fuchs Hydrotherm 46M, Petrofer Ultra Safe 620) | NBR | ISO 12922 |



Important notices on hydraulic fluids:

- ▶ For further information and data on the use of other hydraulic fluids, please refer to the data sheets above or contact us.
- ▶ There may be limitations regarding the technical valve data (temperature, pressure range, life cycle, maintenance intervals, etc.).
- ▶ The ignition temperature of the hydraulic fluid used must be 50 K higher than the maximum solenoid surface temperature.

▶ Flame-resistant – containing water:

- Maximum operating pressure 210 bar
- Maximum pressure differential per control edge 175 bar
- Pressure pre-loading at the tank port >20% of the pressure differential, otherwise increased cavitation erosion
- Life cycle as compared to operation with mineral oil HL, HLP 50 ... 100%
- Maximum hydraulic fluid temperature 50 °C

- ▶ **Bio-degradable and flame-resistant:** If these hydraulic fluids are used which are also zinc-solving, an accumulation of zinc may occur.

²⁾ Not recommended for version "J" with corrosion protection

| electric | |
|------------------------------|---|
| Voltage type | Direct current or pulse-width modulated signal with a pulse voltage ≤ 28 V and a frequency ≥ 160 Hz up to max. 500 Hz |
| Type of signal | analog |
| Maximum current per solenoid | A 1.03 |
| Duty cycle | % 100 |
| Maximum coil temperature | °C 120 |

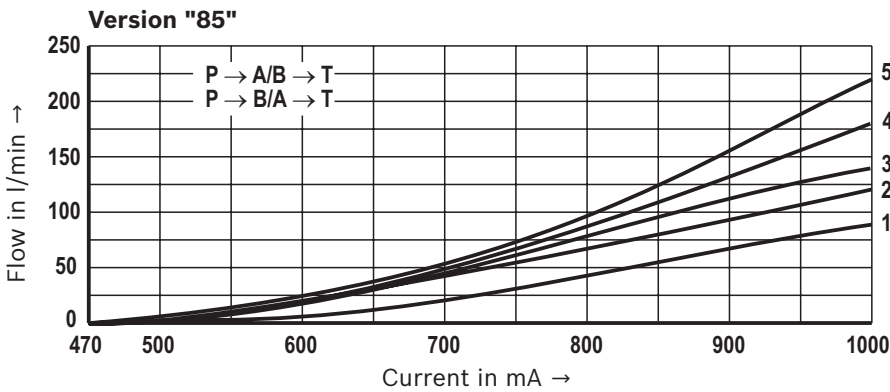
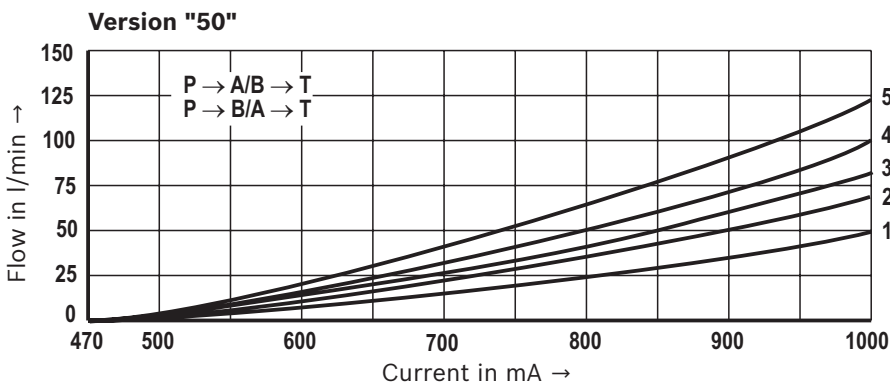
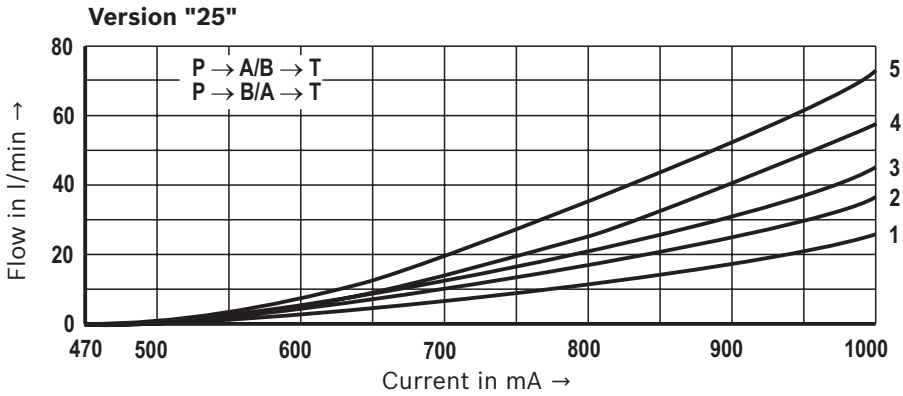
| Control electronics ³⁾ | |
|---|--|
| Amplifier module for the control of explosion-proof proportional directional valves 4WRA...XE, 3DREP 6...XE and 4WRZ...XE | VT-MSPA2-200-1X/V0/0 according to data sheet 30228-200 |
| Module for monitoring and limiting the solenoid currents with proportional valves | VT-MUXA2-2-1X/V0/1A according to data sheet 30290 |

| Information on explosion protection | |
|--|--|
| Area of application in accordance with the explosion protection directive 2014/34/EU | II 2G |
| Type of protection of valve according to EN 13463-1 / EN 13463-5 | c T4 X |
| Type of protection valve solenoid according to EN 60079-7 / EN 60079-18 | Ex eb mb IIC T4 Gb ⁴⁾ |
| Type examination certificate solenoid | KEMA 02ATEX2240 X |
| "IECEx Certificate of Conformity" solenoid | IECEx DEK 12.0068X |
| Special application conditions for safe application | <ul style="list-style-type: none"> ▶ In case of bank assembly, only one solenoid of all valves may be energized at a time. ▶ In case of valves with two solenoids, maximally one of the solenoids may be energized at a time. ▶ Only direct current or a pulse-width modulated signal with a pulse voltage ≤ 28 V and a frequency ≥ 160 Hz up to max. 500 Hz may be used for operation. |

³⁾ A monitoring circuit is to be provided for the monitoring of the solenoid current. We recommend operating the valves with the assemblies described herein.

⁴⁾ Surface temperature > 50 °C, provide contact protection

Characteristic curves: Size 10
(measured with symbol E, W6-, EA, W6a, HLP46, $\vartheta_{oil} = 40 \pm 5 \text{ }^\circ\text{C}$)

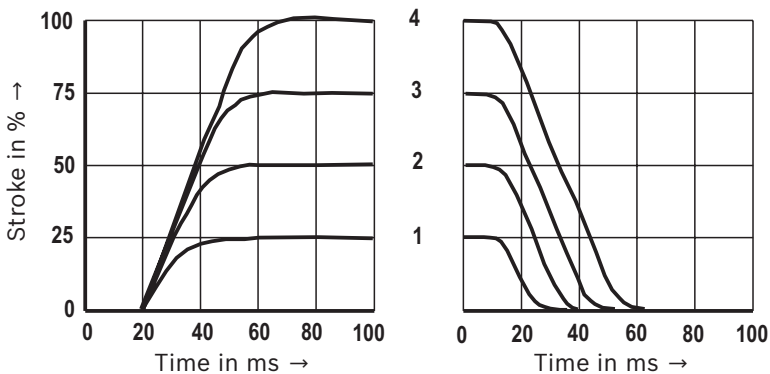


- 1 $\Delta p = 10$ bar constant
- 2 $\Delta p = 20$ bar constant
- 3 $\Delta p = 30$ bar constant
- 4 $\Delta p = 50$ bar constant
- 5 $\Delta p = 100$ bar constant

$\Delta p = p_P - p_L - p_T$ (according to DIN 24311)

- Δp Valve pressure differential
- p_P Inlet pressure
- p_L Load pressure
- p_T Return flow pressure

Transition function with stepped electric input signals

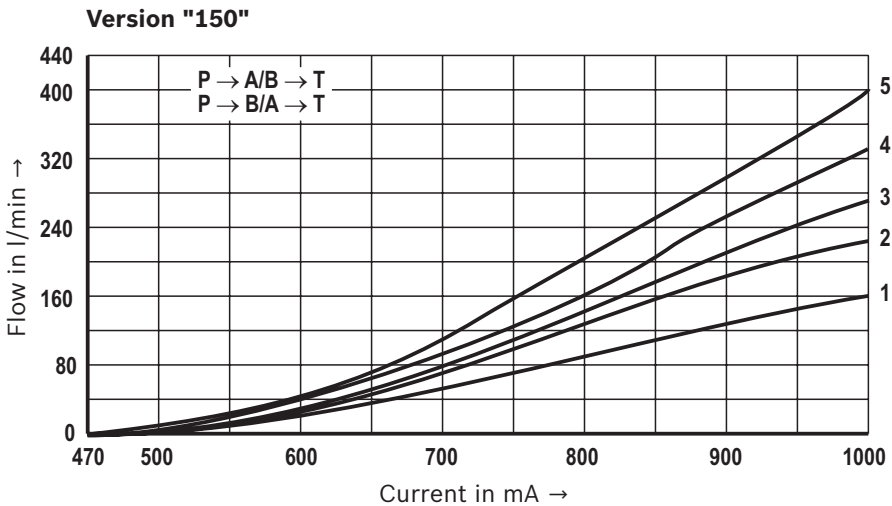
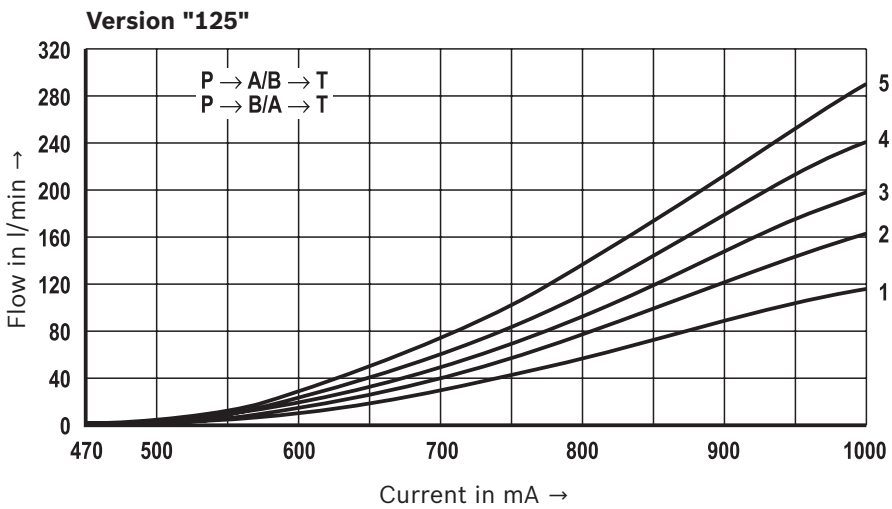
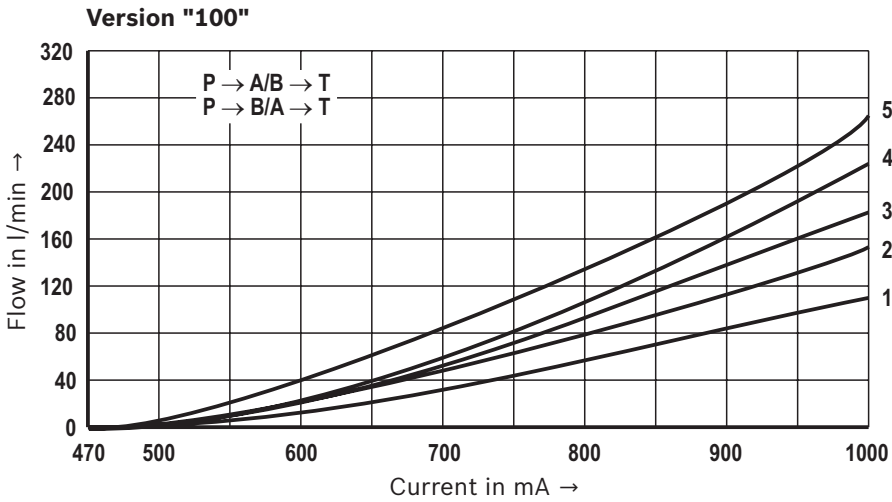


| | Change of input signal in % |
|---|-----------------------------|
| 1 | 0 → 25 → 0 |
| 2 | 0 → 50 → 0 |
| 3 | 0 → 75 → 0 |
| 4 | 0 → 100 → 0 |

Measured at pilot pressure $p_{ST} = 50$ bar

Characteristic curves: Size 16

(measured with symbol E, W6-, EA, W6A, HLP46, $\vartheta_{oil} = 40 \pm 5 \text{ }^\circ\text{C}$)



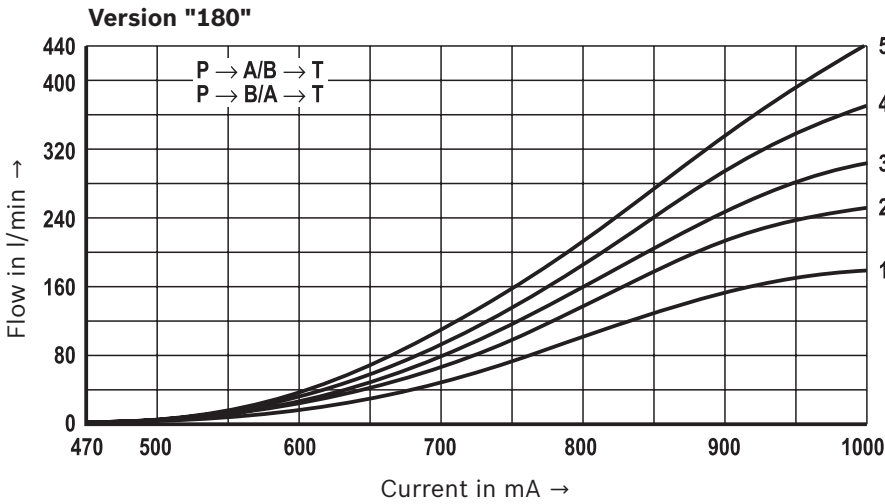
- 1 $\Delta p = 10$ bar constant
- 2 $\Delta p = 20$ bar constant
- 3 $\Delta p = 30$ bar constant
- 4 $\Delta p = 50$ bar constant
- 5 $\Delta p = 100$ bar constant

$\Delta p = p_P - p_L - p_T$ (according to DIN 24311)

- Δp Valve pressure differential
- p_P Inlet pressure
- p_L Load pressure
- p_T Return flow pressure

Characteristic curves: Size 16

(measured with symbol E, W6-, EA, W6A, HLP46, $\vartheta_{oil} = 40 \pm 5 \text{ }^\circ\text{C}$)

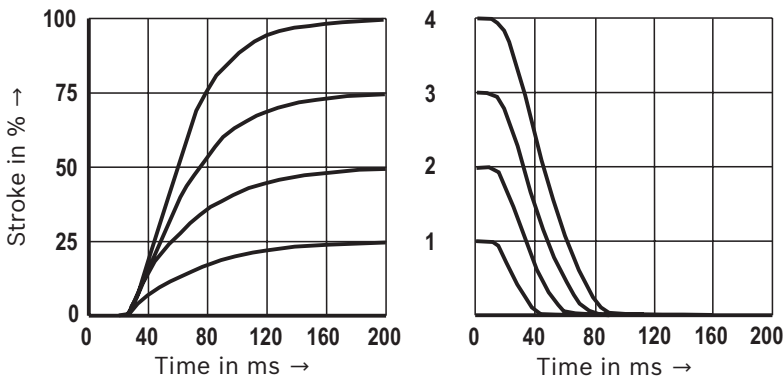


- 1 $\Delta p = 10$ bar constant
- 2 $\Delta p = 20$ bar constant
- 3 $\Delta p = 30$ bar constant
- 4 $\Delta p = 50$ bar constant
- 5 $\Delta p = 100$ bar constant

$\Delta p = p_P - p_L - p_T$ (according to DIN 24311)

- Δp Valve pressure differential
- p_P Inlet pressure
- p_L Load pressure
- p_T Return flow pressure

Transition function with stepped electric input signals



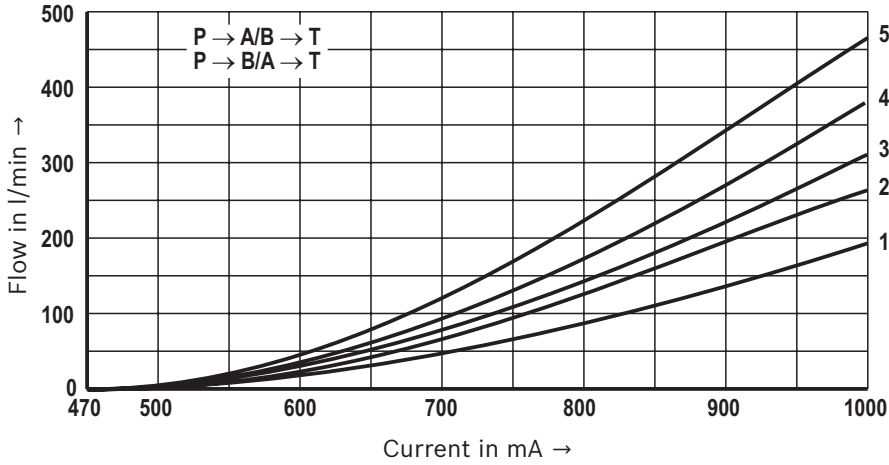
| | Change of input signal in % |
|---|-----------------------------|
| 1 | 0 → 25 → 0 |
| 2 | 0 → 50 → 0 |
| 3 | 0 → 75 → 0 |
| 4 | 0 → 100 → 0 |

Measured at pilot pressure $p_{ST} = 50$ bar

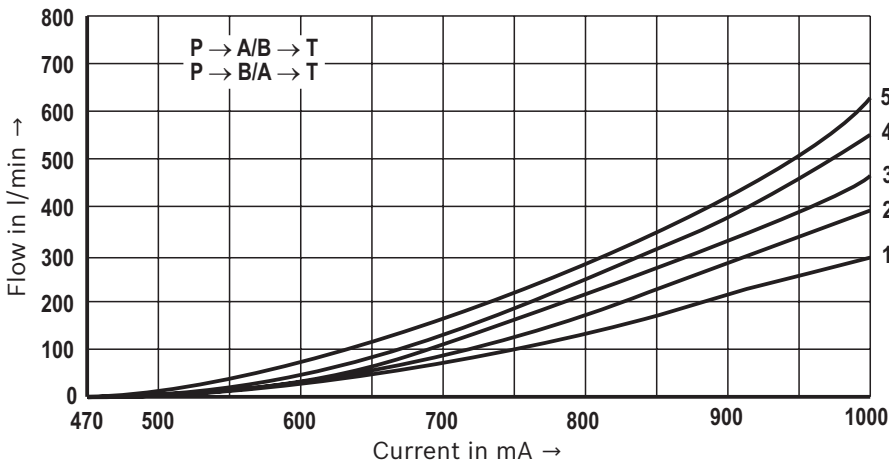
Characteristic curves: Size 25

(measured with symbol E, W6-, EA, W6A, HLP46, $\vartheta_{oil} = 40 \pm 5 \text{ } ^\circ\text{C}$)

Version "220"



Version "325"

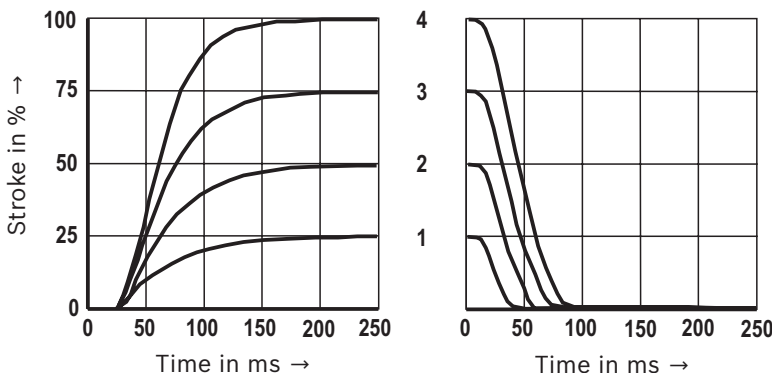


- 1 $\Delta p = 10 \text{ bar constant}$
- 2 $\Delta p = 20 \text{ bar constant}$
- 3 $\Delta p = 30 \text{ bar constant}$
- 4 $\Delta p = 50 \text{ bar constant}$
- 5 $\Delta p = 100 \text{ bar constant}$

$\Delta p = p_P - p_L - p_T$ (according to DIN 24311)

- Δp Valve pressure differential
- p_P Inlet pressure
- p_L Load pressure
- p_T Return flow pressure

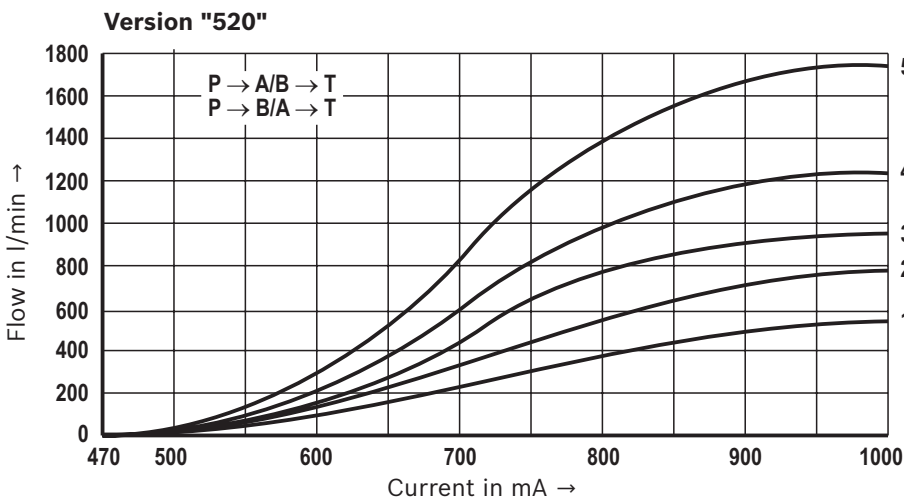
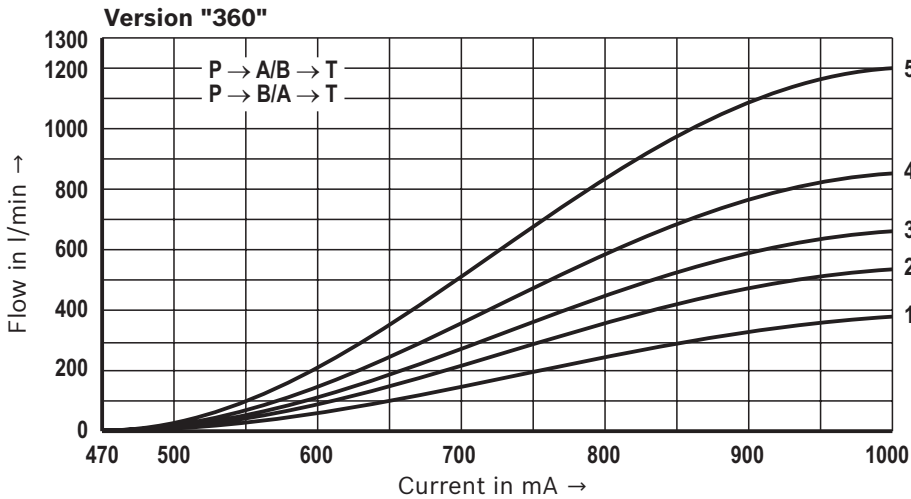
Transition function with stepped electric input signals



| | Change of input signal in % |
|---|-----------------------------|
| 1 | 0 → 25 → 0 |
| 2 | 0 → 50 → 0 |
| 3 | 0 → 75 → 0 |
| 4 | 0 → 100 → 0 |

Measured at pilot pressure $p_{ST} = 50 \text{ bar}$

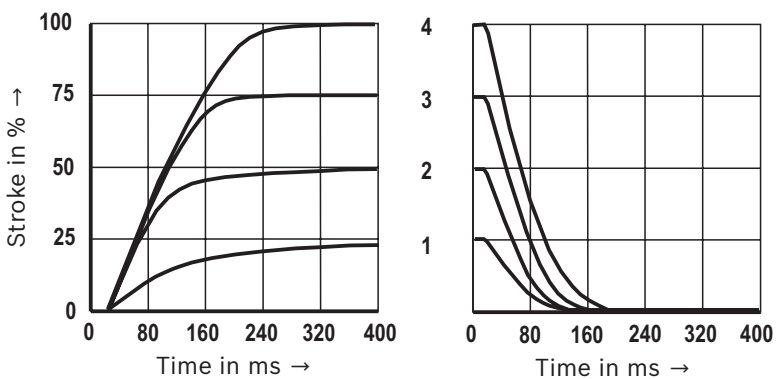
Characteristic curves: Size 32

 (measured with symbol E, W6-, EA, W6A, HLP46, $\vartheta_{oil} = 40 \pm 5 \text{ }^\circ\text{C}$)


- 1 $\Delta p = 10$ bar constant
- 2 $\Delta p = 20$ bar constant
- 3 $\Delta p = 30$ bar constant
- 4 $\Delta p = 50$ bar constant
- 5 $\Delta p = 100$ bar constant

$$\Delta p = p_P - p_L - p_T \text{ (according to DIN 24311)}$$

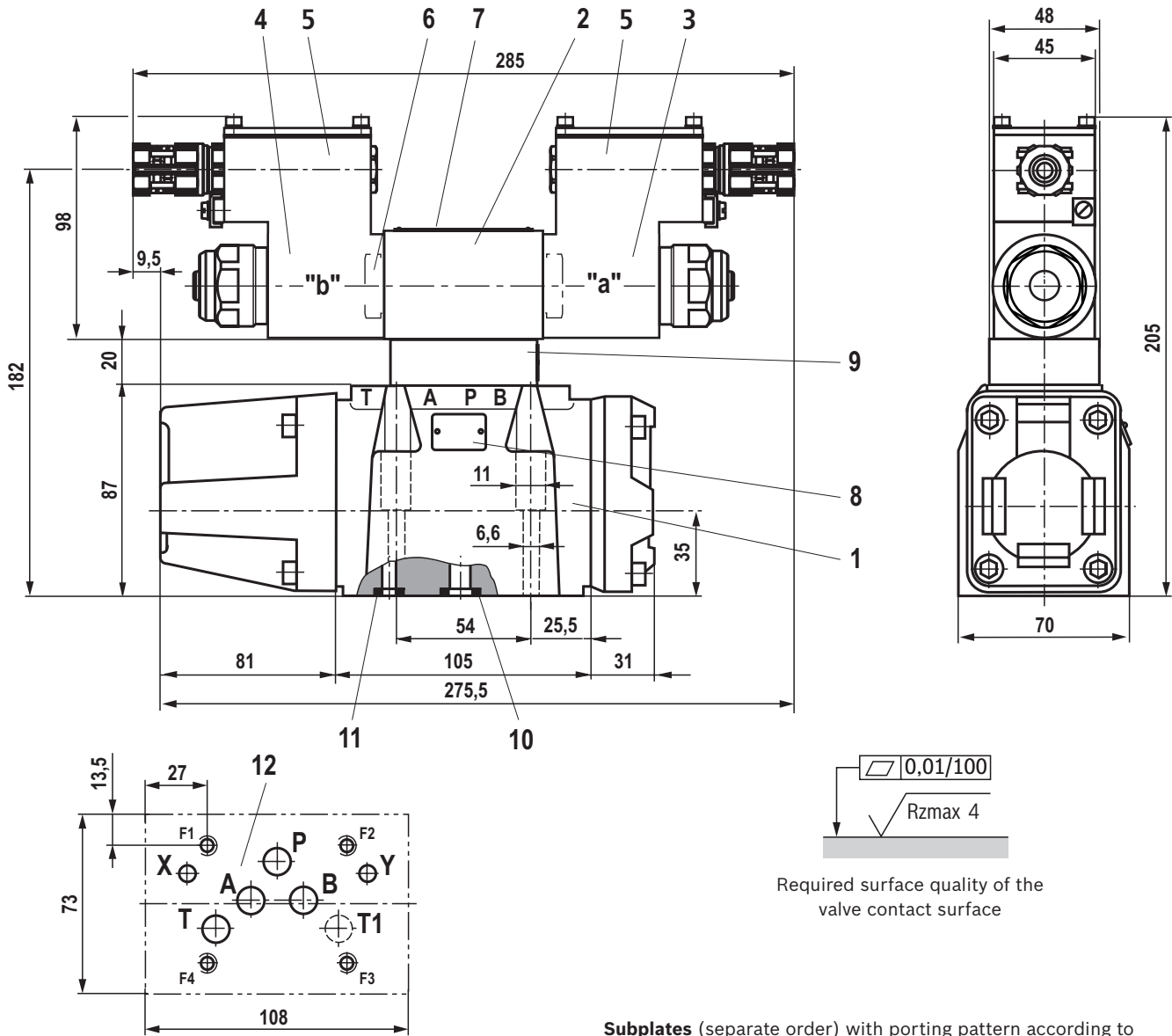
- Δp Valve pressure differential
- p_P Inlet pressure
- p_L Load pressure
- p_T Return flow pressure

Transition function with stepped electric input signals


| | Change of input signal in % |
|---|-------------------------------------|
| 1 | 0 \rightarrow 25 \rightarrow 0 |
| 2 | 0 \rightarrow 50 \rightarrow 0 |
| 3 | 0 \rightarrow 75 \rightarrow 0 |
| 4 | 0 \rightarrow 100 \rightarrow 0 |

 Measured at pilot pressure $p_{ST} = 50$ bar

Dimensions: Size 10
(dimensions in mm)



Required surface quality of the valve contact surface

- 1 Main valve
- 2 Pilot control valve
- 3 Proportional solenoid "a"
- 4 Proportional solenoid "b"
- 5 Terminal box
- 6 Plug screw for valves with one solenoid
- 7 Name plate for pilot control valve
- 8 Name plate for main valve
- 9 Pressure reducing valve (always available)
- 10 Identical seal rings for ports P, A, B, T and T1
- 11 Identical seal rings for X and Y
- 12 Machined valve contact surface; porting pattern according to ISO 4401-05-05-0-05 (X, Y as required, T1 is available at the valve and can optionally be provided)

Subplates (separate order) with porting pattern according to ISO 4401-05-05-0-05, see data sheet 45100.

Valve mounting screws (separate order)

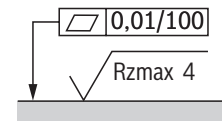
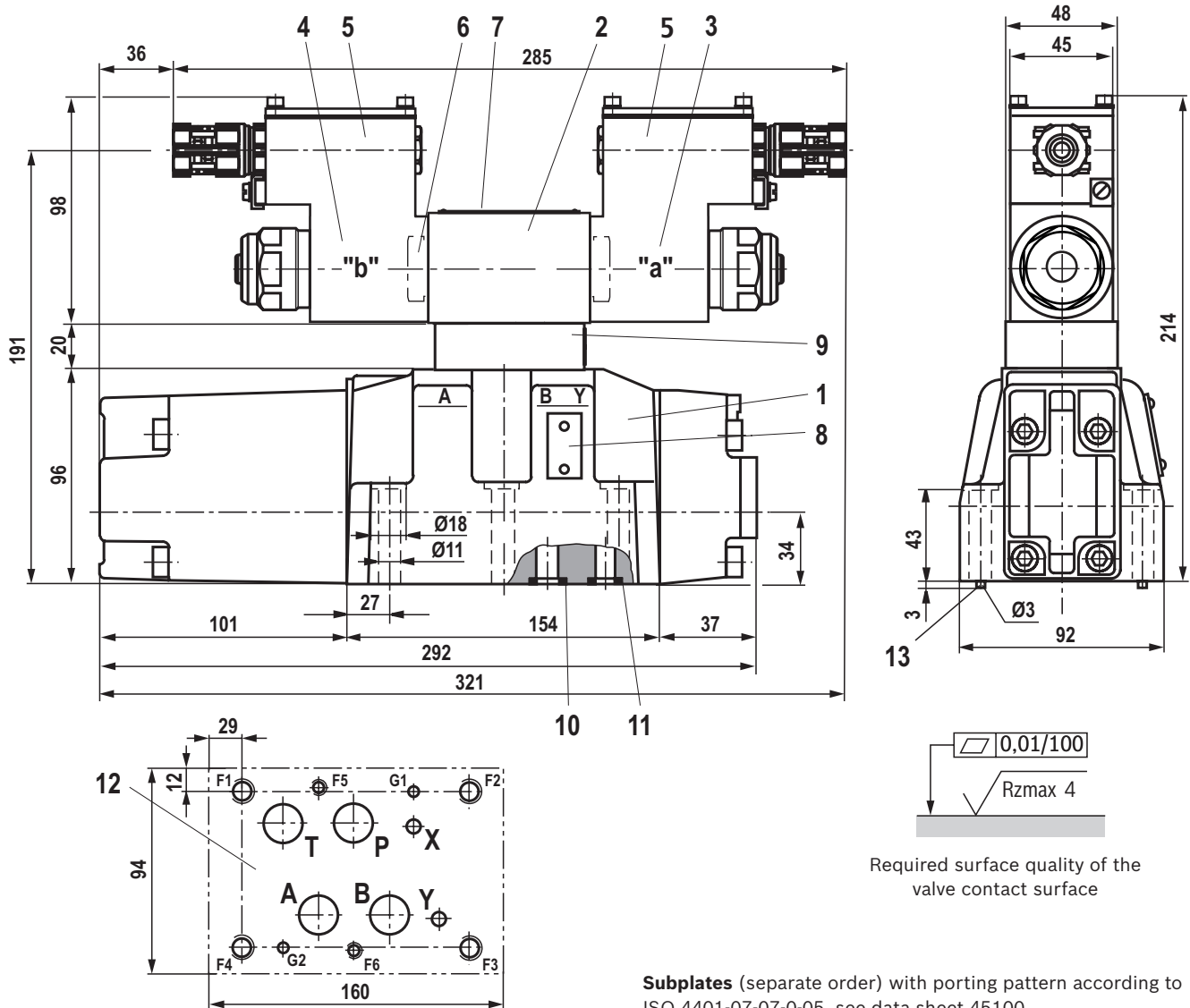
For reasons of stability, exclusively use the following valve mounting screws:

4 hexagon socket head cap screws
ISO 4762 - M6 x 45 - 10.9-CM-Fe-ZnNi-5-Cn-T0-H-B
 (friction coefficient $\mu_{total} = 0.09 \dots 0.14$)
 Tightening torque $M_A = 13 \text{ Nm} \pm 10\%$,
 Material no. **R913043777**

Notice:

Subplates are no components in the sense of directive 2014/34/EU and can be used after the manufacturer of the overall system has conducted an assessment of the risk of ignition. The "G...J3" versions are free from aluminum and/or magnesium and galvanized.

Dimensions: Size 16 (dimensions in mm)



Required surface quality of the valve contact surface

- 1 Main valve
- 2 Pilot control valve
- 3 Proportional solenoid "a"
- 4 Proportional solenoid "b"
- 5 Terminal box
- 6 Plug screw for valves with one solenoid
- 7 Name plate for pilot control valve
- 8 Name plate for main valve
- 9 Pressure reducing valve (always available)
- 10 Identical seal rings for ports P, A, B and T (not with version "100" and "150")
- 11 Identical seal rings for X and Y
- 12 Machined valve contact surface; porting pattern according to ISO 4401-07-07-0-05 (X and Y as required)
Deviating from the standard: Ports P, A, B and T with Ø 20 mm; with version "100" and "150" T with Ø13 mm
- 13 Locating pin

Subplates (separate order) with porting pattern according to ISO 4401-07-07-0-05, see data sheet 45100.

Valve mounting screws (separate order)

For reasons of stability, exclusively use the following valve mounting screws:

2 hexagon socket head cap screws

ISO 4762 - M6 x 60 - 10.9-CM-Fe-ZnNi-5-Cn-T0-H-B

(friction coefficient $\mu_{\text{total}} = 0.09 \dots 0.14$)

Tightening torque $M_A = 12.2 \text{ Nm} \pm 10\%$,

Material no. **R913043410**

4 hexagon socket head cap screws

ISO 4762 - M10 x 60 - 10.9-flZn/nc/480h/C

(friction coefficient $\mu_{\text{total}} = 0.09 \dots 0.14$)

Tightening torque $M_A = 58 \text{ Nm} \pm 20\%$,

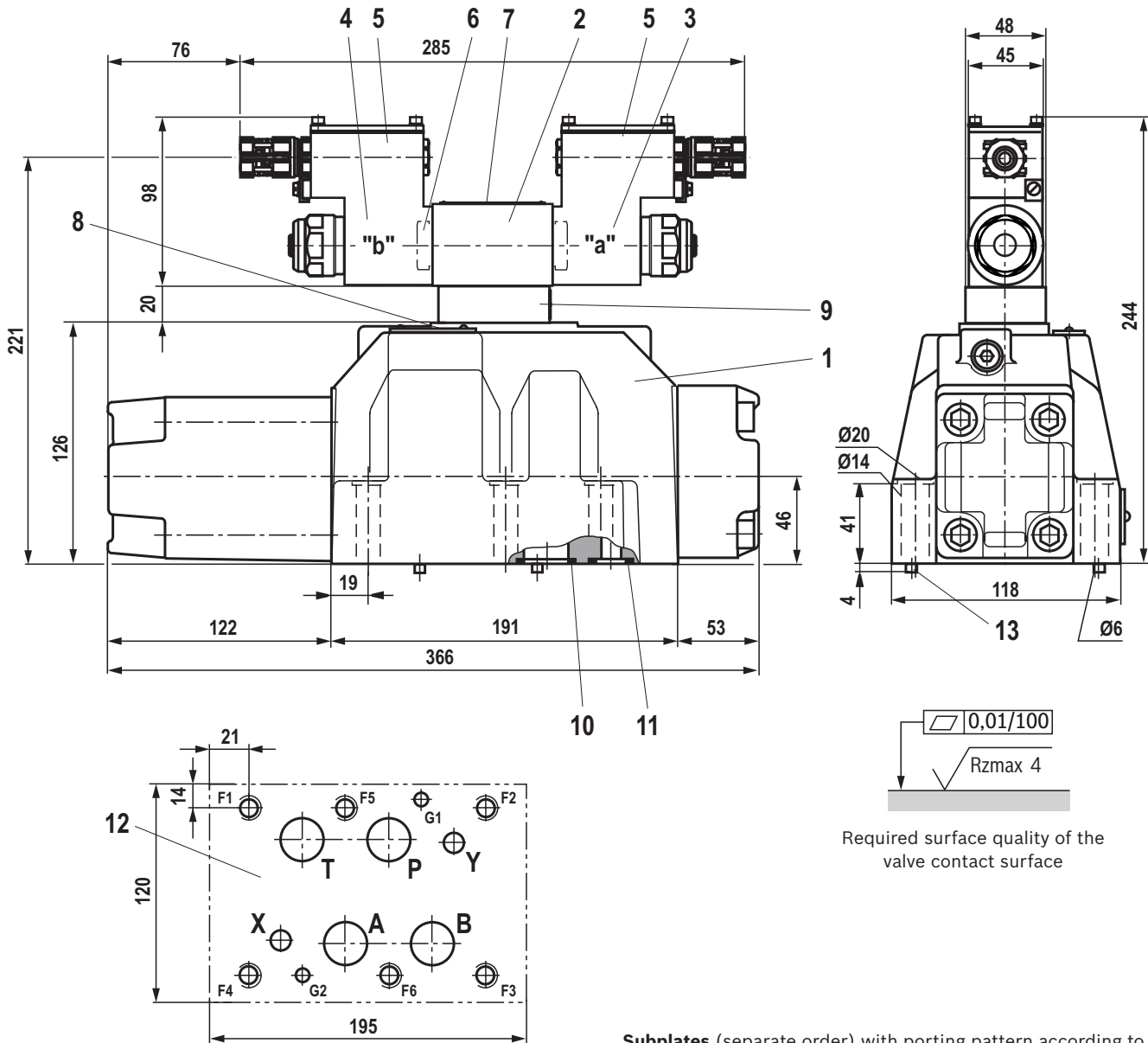
Material no. **R913014770**



Notice:

Subplates are no components in the sense of directive 2014/34/EU and can be used after the manufacturer of the overall system has conducted an assessment of the risk of ignition. The "G...J3" versions are free from aluminum and/or magnesium and galvanized.

Dimensions: Size 25
(dimensions in mm)



- 1 Main valve
- 2 Pilot control valve
- 3 Proportional solenoid "a"
- 4 Proportional solenoid "b"
- 5 Terminal box
- 6 Plug screw for valves with one solenoid
- 7 Name plate for pilot control valve
- 8 Name plate for main valve
- 9 Pressure reducing valve (always available)
- 10 Identical seal rings for ports P, A, B and T
- 11 Identical seal rings for X and Y
- 12 Machined valve contact surface; porting pattern according to ISO 4401-08-08-0-05 (X and Y as required)
- 13 Locating pin

Subplates (separate order) with porting pattern according to ISO 4401-08-08-0-05 see data sheet 45100.

Valve mounting screws (separate order)

For reasons of stability, exclusively use the following valve mounting screws:

6 hexagon socket head cap screws
ISO 4762 - M12 x 60 - 10.9-fZn/nc/480h/C

(friction coefficient $\mu_{total} = 0.09 \dots 0.14$)

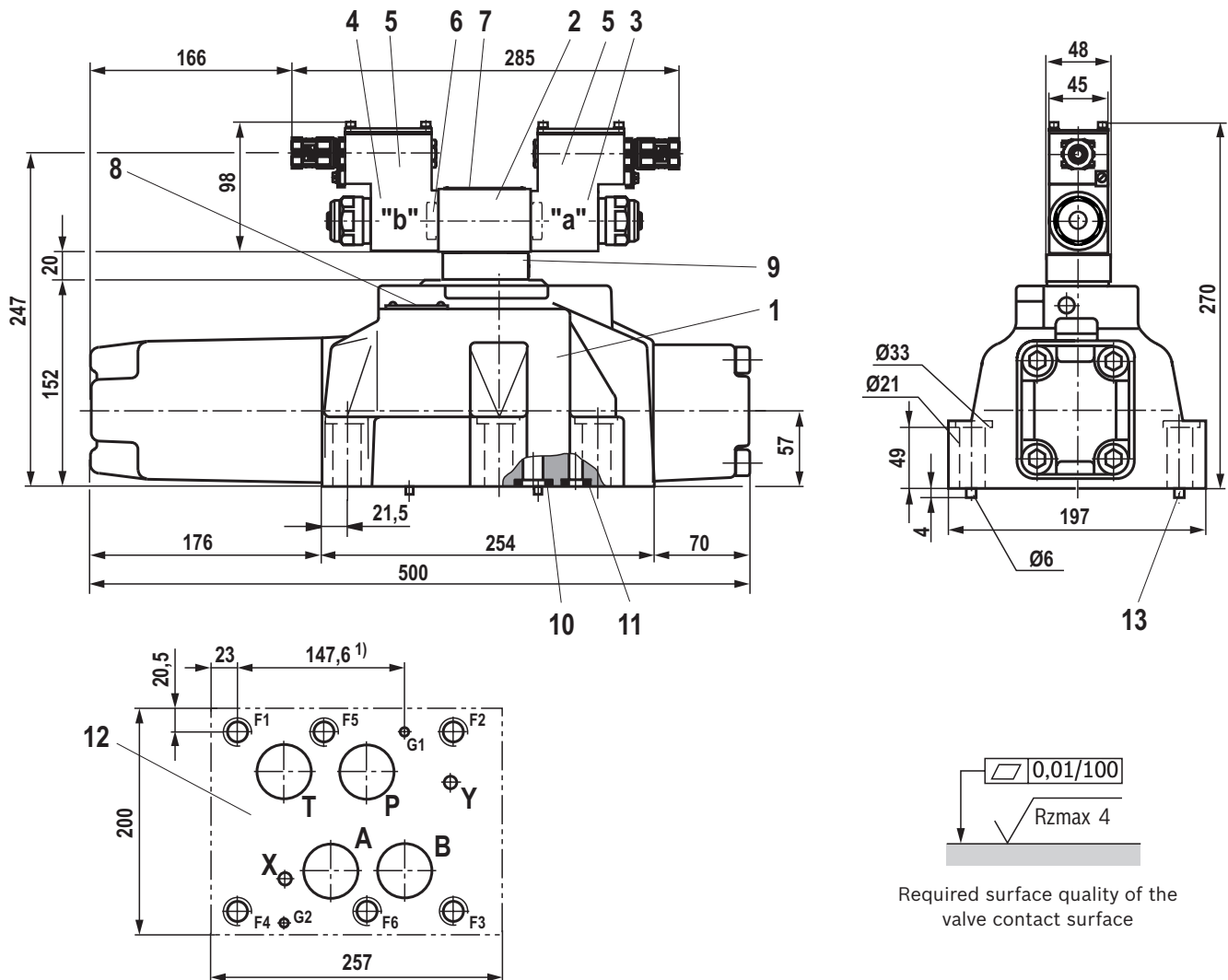
Tightening torque $M_A = 100 \text{ Nm} \pm 20\%$,

Material no. **R913015613**

Notice:

Subplates are no components in the sense of directive 2014/34/EU and can be used after the manufacturer of the overall system has conducted an assessment of the risk of ignition. The "G...J3" versions are free from aluminum and/or magnesium and galvanized.

Dimensions: Size 32 (dimensions in mm)



- 1 Main valve
- 2 Pilot control valve
- 3 Proportional solenoid "a"
- 4 Proportional solenoid "b"
- 5 Terminal box
- 6 Plug screw for valves with one solenoid
- 7 Name plate for pilot control valve
- 8 Name plate for main valve
- 9 Pressure reducing valve (always available)
- 10 Identical seal rings for ports P, A, B and T
- 11 Identical seal rings for X and Y
- 12 Machined valve contact surface; porting pattern according to ISO 4401-10-09-0-05 (X and Y as required)
Deviating from the standard: Ports P, A, B and T with Ø 38 mm; position G1¹⁾ according to DIN 24340 Form A
- 13 Locating pin

Subplates (separate order) with porting pattern according to ISO 4401-10-09-0-05, see data sheet 45100.

Valve mounting screws (separate order)

For reasons of stability, exclusively use the following valve mounting screws:

6 hexagon socket head cap screws

ISO 4762 - M20 x 80 - 10.9-flZn/nc/480h/C

(friction coefficient $\mu_{\text{total}} = 0.09 \dots 0.14$)

tightening torque $M_A = 340 \text{ Nm} \pm 20\%$,

Material no. **R913008472**

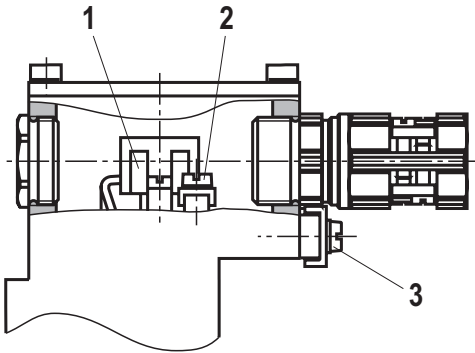
Notice:

Subplates are no components in the sense of directive 2014/34/EU and can be used after the manufacturer of the overall system has conducted an assessment of the risk of ignition. The "G...J3" versions are free from aluminum and/or magnesium and galvanized.

Electrical connection

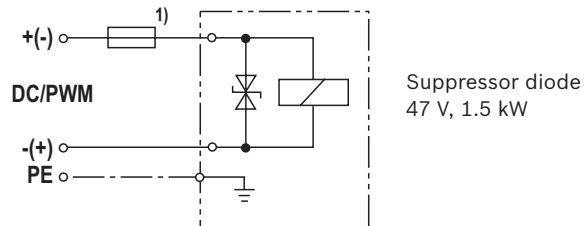
The type-examination tested valve solenoid of the valve is equipped with one terminal box and a type-tested cable entry.

The connection is polarity-independent.



Notice:

When establishing the electrical connection, the protective earthing conductor (PE \perp) has to be connected properly.



1) Recommended pre-fuse characteristics: medium time-lag according to DIN 41571, 1.25 A

Properties of the connection terminals and mounting elements

| Position | Function | Connectable line cross-section |
|----------|---|--|
| 1 | Operating voltage connection | Single-wire 0.75 ... 2.5 mm ² Finely stranded 0.75 ... 1.5 mm ² |
| 2 | Connection for protective earthing conductor | Single-wire max. 2.5 mm ² Finely stranded max. 1.5 mm ² |
| 3 | Connection for potential equalization conductor | Single-wire 4 ... 6 mm ² Finely stranded 4 mm ² |

Cable gland

| | |
|--|---|
| Type approval | II 2G Ex e IIC Gb |
| Threaded connection | M20 x 1.5 |
| Protection class according to EN 60529 | IP66 (With correctly installed electrical connection) |
| Line diameter | mm 7 ... 10.5 |
| Sealing | Outer sheath sealing |

Connection line

| | |
|-------------------|--|
| Line type | Non-armored cables and lines (outer sheath sealing) |
| Temperature range | °C -30 ... > +110 |

Notice:

A fuse which corresponds to the rated current according to DIN 41571 and EN / IEC 60127 has to be connected upstream of every valve solenoid (max. $3 \times I_{rated}$).

The shut-off threshold of the fuse has to match the prospective short-circuit current of the supply source.

The prospective short-circuit current of the supply source may amount to a maximum of 1500 A.

This fuse may only be installed outside the potentially explosive atmosphere or must be of an explosion-proof design.

Further information

- ▶ Subplates
 - ▶ Hydraulic fluids on mineral oil basis
 - ▶ Environmentally compatible hydraulic fluids
 - ▶ Flame-resistant, water-free hydraulic fluids
 - ▶ Flame-resistant hydraulic fluids - containing water (HFAE, HFAS, HFB, HFC)
 - ▶ Proportional pressure reducing valve, direct operated
 - ▶ Selection of filters
 - ▶ Information on available spare parts
- Data sheet 45100
Data sheet 90220
Data sheet 90221
Data sheet 90222
Data sheet 90222
Data sheet 90223
Operating instructions 29115-XE-B
www.boschrexroth.com/filter
www.boschrexroth.com/spc

Notes

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