

4/2- and 4/3-way shut-off valve

RE 23193/02.06
Replaces: 08.02

1/12

Type Z4WE

Size 6
 Component series 3X
 Maximum operating pressure 315 bar
 Maximum flow 50 l/min



Table of contents

Contents	Page
Features	1
Ordering code	2
Cable sockets	2
Symbols	3
Standard types	4
Section	4
Technical data	5
Characteristic curves	6
Performance limits	7
Unit dimensions	8 to 11

Features

- Direct operated directional spool valve with solenoid operation
- Sandwich plate valve
- As shut-off through valve or as shut-off/through/short-circuit valve
- Position of ports to DIN 24340 form A (**without** locating bore), (standard)
- Position of ports to ISO 4401-03-02-0-94 (**with** locating bore), (ordering code .../60)
- For subplates, see data sheet RE 45052 (separate order)
- Wet-pin AC or DC solenoids
- Manual override, optional
- Inductive position switch, optional

Information on available spare parts:
www.boschrexroth.com/spc

Ordering code

Z4WE	6	-3X/	E			K4			*
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Shut-off valve, sandwich plate

Size 6 = 6

Symbols

D24, E51, E53, E63, E68, E137; with DC or AC solenoids

X250, X252, X253, X254, X255, X256; only with DC solenoids (AC voltage on enquiry). See Symbols on page 3

Component series 30 to 39 = 3X
(30 to 39: unchanged installation and connection dimensions)

Heavy-duty solenoid (wet-pin) = E

DC voltage 24 V = G24

AC voltage 230 V 50/60 Hz = W230

DC voltage 205 V = G205¹⁾

With concealed manual override (standard) = N9

With manual override = N

Without manual override = No code

Further details in clear text

No code = Without locating bore
/60³⁾ = With locating bore
/62 = With locating bore and locating pin ISO 8752-3x8-St

Seal material

No code = NBR seals
V = FKM seals

(other seals on enquiry)

⚠ Caution!

Observe compatibility of seals with hydraulic fluid used!

Optional extras

Inductive position switch, see RE 24830

No code = Without position switch

QMAG24 = Monitored position "a"

QMBG24 = Monitored position "b"

Electrical connection

K4²⁾ = Without cable socket

Individual connection with component plug to DIN EN 175301-803

¹⁾ For connection to the AC network, a DC solenoid that is controlled via a rectifier must be used (see table on the right).

Electrical controlling is accomplished via a cable socket with integrated rectifier (separate order, see below).

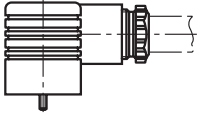
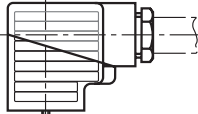
²⁾ Cable sockets, separate order, see below

³⁾ Locating pin ISO 8752-3x8-St, Material no. **R900005694** (separate order)

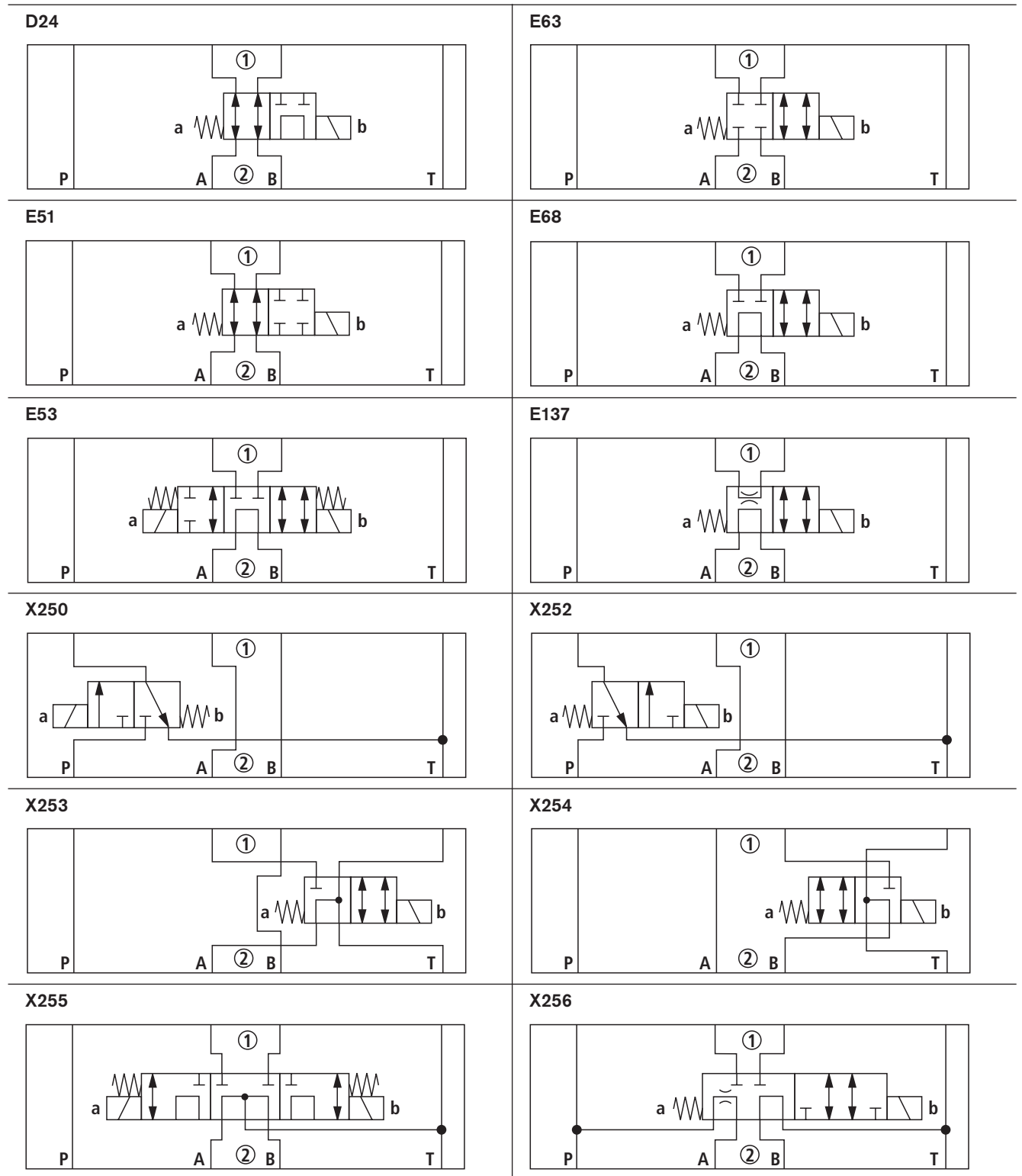
AC voltage network (permissible voltage tolerance ± 10%)	Nominal voltage of the DC solenoid when operated with AC voltage	Ordering code
110 V - 50/60 Hz	96 V	G96
230 V - 50/60 Hz	205 V	G205

For standard types, see page 4.

Cable sockets to DIN EN 175301-803

For further cable sockets, see RE 08006					
Valve side	Colour	Material no.			
		Without circuitry	With indicator lamp 12 ... 240 V	With rectifier 12 ... 240 V	With indicator lamp and Zener-diode suppressor circuit 24 V
a	Grey	R901017010	-	-	-
b	Black	R901017011	-	-	-
a/b	Blak	-	R901017022	R901017025	R901017026

Symbol (① = component side, ② = plate side)



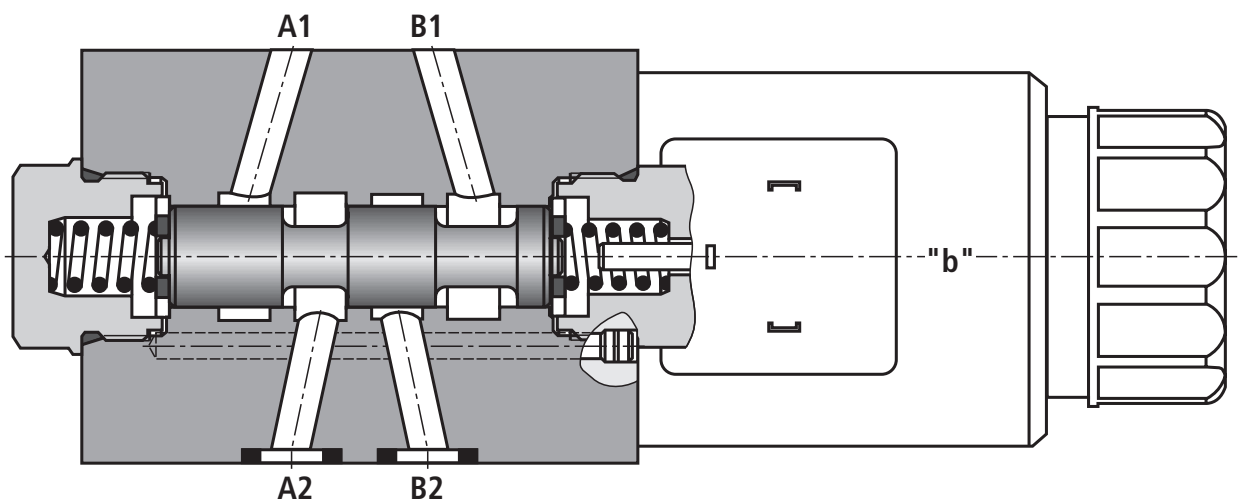
Standard types

Type	Material number
Z4WE 6 D24-3X/EG24N9K4	R900937923
Z4WE 6 E51-3X/EG24N9K4	R900958420
Z4WE 6 E53-3X/EG24N9K4	R900946121
Z4WE 6 E63-3X/EG24N9K4	R900937595
Z4WE 6 E68-3X/EG24N9K4	R900941212
Z4WE 6 E137-3X/EG24N9K4	R900975026

Type	Material number
Z4WE 6 X250-3X/EG24N9K4/V/60	R901087021
Z4WE 6 X252-3X/EG24N9K4/V/60	R901087024
Z4WE 6 X253-3X/EG24N9K4/V/60	R901087027
Z4WE 6 X254-3X/EG24N9K4/V/60	R901087028
Z4WE 6 X255-3X/EG24N9K4/V/60	R901087029
Z4WE 6 X256-3X/EG24N9K4/V/60	R901087075

Further standard types and components can be found in the EPS (standard price list).

Section



Technical data (for applications outside these parameters, please consult us!)

General			
Weight	– Valve with one solenoid	kg	1.2
	– Valve with two solenoids	kg	1.6
Installation orientation			Optional
Ambient temperature range		°C	–30 to +50 (NBR seals) –20 to +50 (FKM seals)
Hydraulic			
Maximum operating pressure	– Ports P, A, B	bar	315
	– Port T		210 for DC voltage; 160 for AC voltage
Maximum flow		l/min	50
Hydraulic fluid			Mineral oil (HL, HLP) to DIN 51524 ¹⁾ ; fast bio-degradable hydraulic fluids to VDMA 24568 (see also RE 90221); HETG (rape seed oil) ¹⁾ ; HEPG (polyglycols) ²⁾ ; HEES (synthetic esters) ²⁾ ; other hydraulic fluids on enquiry
Hydraulic fluid temperature range		°C	–30 to +80 (NBR seals) –20 to +80 (FKM seals)
Viscosity range		mm ² /s	2.8 to 500
Max. permissible degree of contamination of the hydraulic fluid; cleanliness class to ISO 4406 (c)			Class 20/18/15 ³⁾
Electrical			
Type of voltage			DC voltage AC voltage 50/60 Hz
Available voltages ⁴⁾	V		12, 24, 96, 205 110, 230
Voltage tolerance (nominal voltage)	%		± 10 ± 10
Power consumption	W		30 –
Holding power	VA		– 50
Making capacity	VA		– 220
Duty cycle			100 % 100 %
Switching time to ISO 6403	ON	ms	20 to 45 10 to 20
	OFF	ms	10 to 25 15 to 40
Maximum switching frequency		1/h	15000 7200
Maximum coil temperature ⁵⁾		°C	150 180
Type of protection to DIN EN 60529 ⁶⁾			IP 65 IP 65

¹⁾ Suitable for NBR and FKM seals

²⁾ Suitable only for FKM seals

³⁾ The cleanliness classes specified for components must be adhered to in hydraulic systems. Effective filtration prevents malfunction and, at the same time, prolongs the service life of components.

For the selection of filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086 and RE 50088.

⁴⁾ Other voltages on enquiry

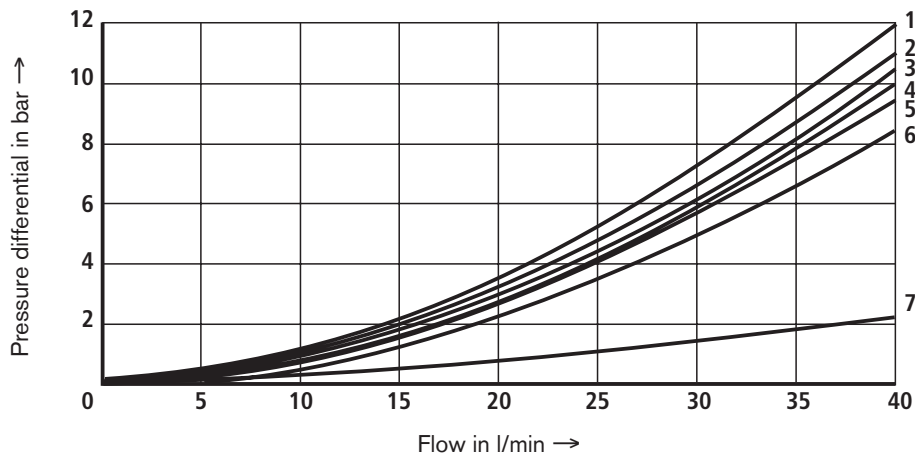
⁵⁾ Due to the surface temperatures of the solenoid coils, observe the European standards EN563 and EN982!

⁶⁾ With cable socket mounted and locked

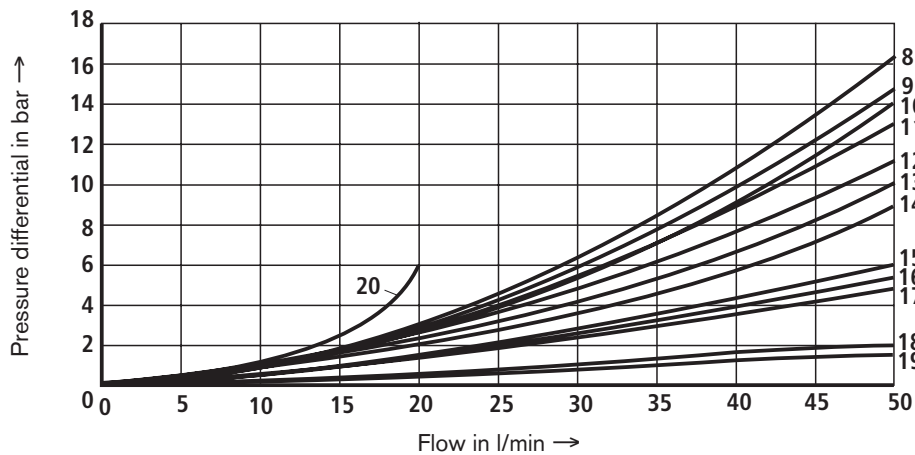
When establishing the electrical connection, properly connect the protective earth conductor (PE \perp).

Characteristic curves (measured with HLP46, $\vartheta_{oil} = 40\text{ °C} \pm 5\text{ °C}$)

Δp - q_v characteristic curves

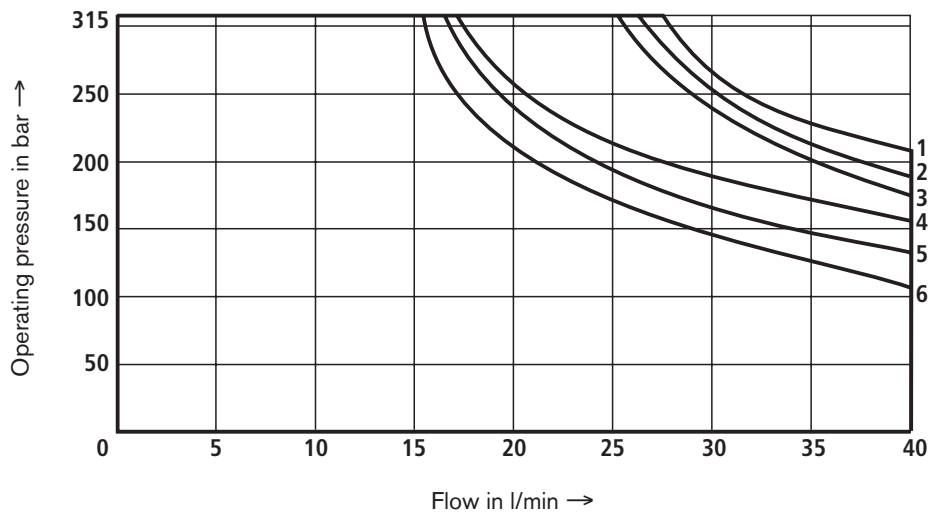


Symbol	A2-A1	A1-A2	B2-B1	B1-B2	A2-B2	B2-A2	T2-T1	P2-P1
D24	4	1	2	4	3	2	7	7
E51	3	1	1	3	-	-	7	7
E53	2	2	2	2	5	2	7	7
E63	2	5	5	3	-	-	7	7
E68	4	4	6	5	4	5	7	7
E137	1	4	3	2	5	6	7	7

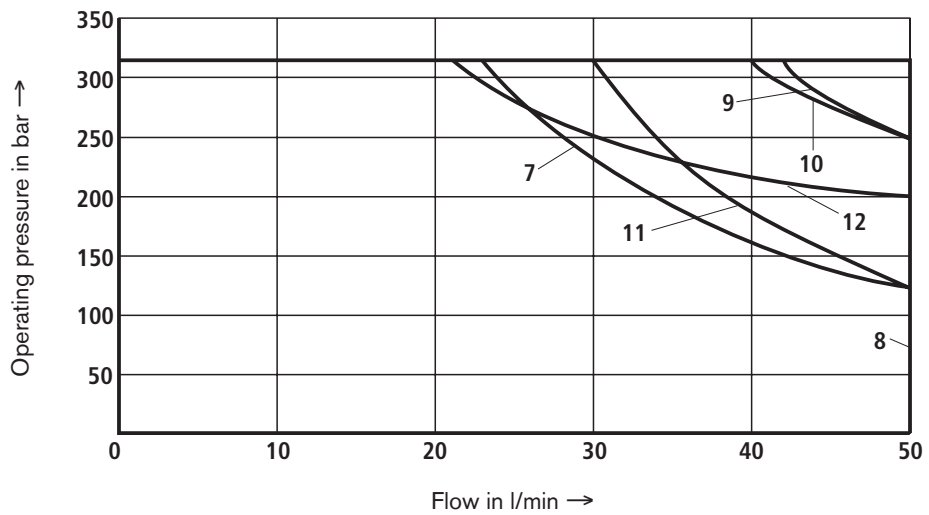


Symbol	Position	A1-A2	A2-A1	B1-B2	B2-B1	T2-T1	P2-P1	P1-T2	B2-T2	P2-P1	A2-T2	P2-A2 B2-T2
X250		16	16	17	17	18	13	11	-	-	-	-
X252		16	16	17	17	18	9	10	-	-	-	-
X253		13	13	14	14	19	18	-	-	-	8	-
X254		16	16	12	13	18	18	-	12	-	-	-
X255	0	-	-	-	-	15	-	-	8	-	8	-
	a	12	12	-	-	-	-	-	13	-	-	-
	b	-	-	12	12	-	-	-	-	-	13	-
X256		12	12	9	9	18	-	-	-	18	-	20

Performance limits (measured with HLP46, $\vartheta_{oil} = 40\text{ °C} \pm 5\text{ °C}$ and 24 V DC voltage)

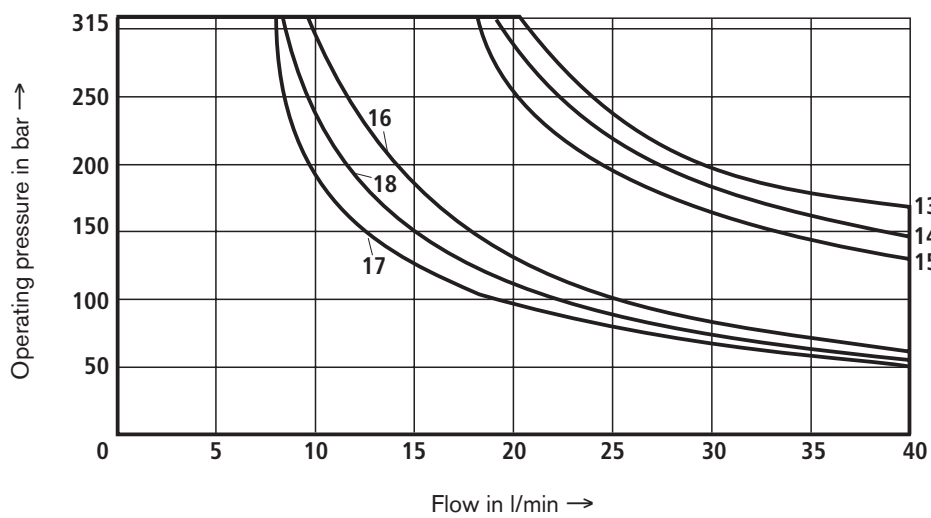


- 1 E63
- 2 E68
- 3 E53
- 4 E51
- 5 E137
- 6 D24



- 7 X250
- 8 X252
- 9 X253
- 10 X254
- 11 X255
- 12 X256

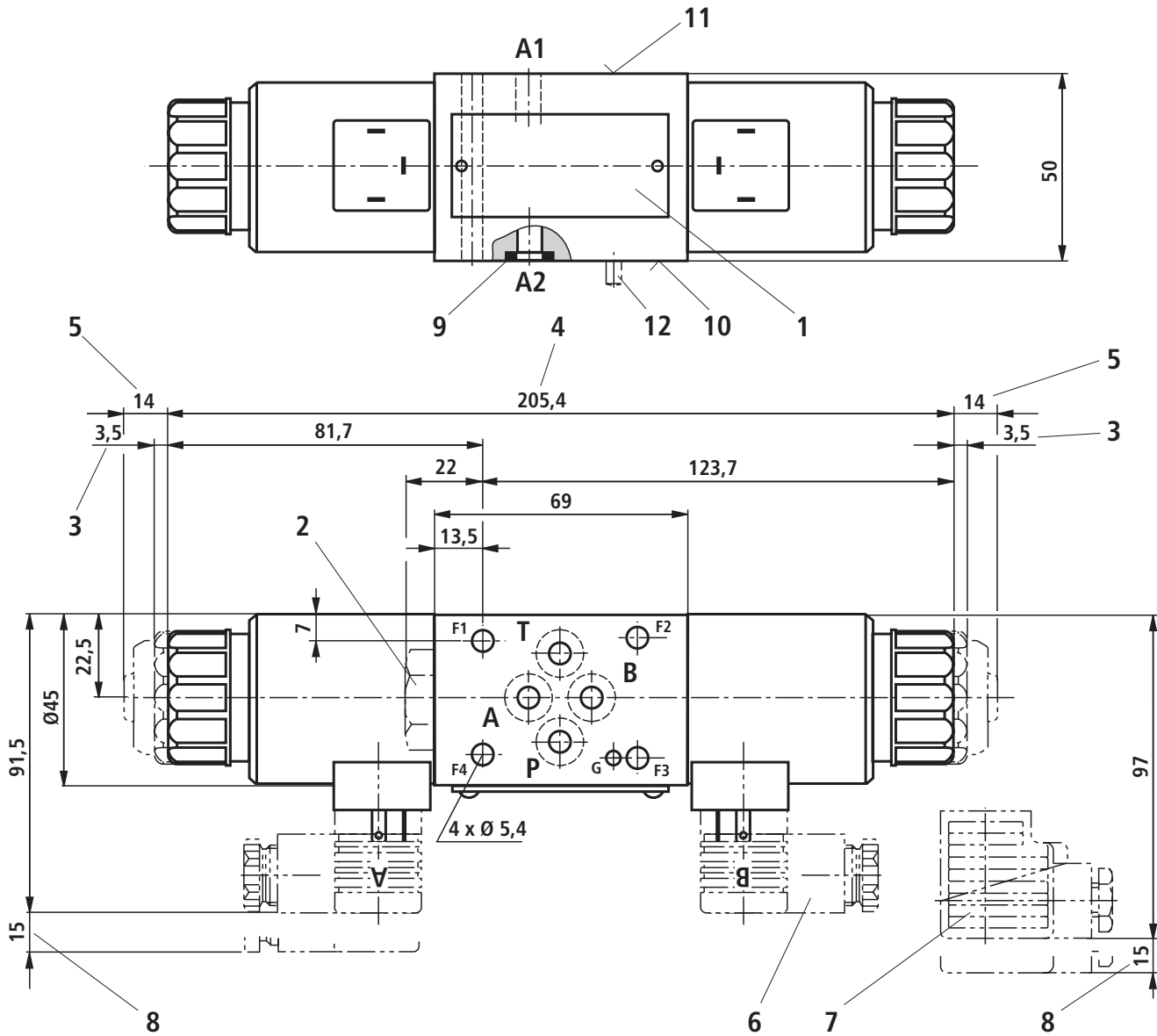
Performance limits (measured with HLP46, $\vartheta_{oil} = 40\text{ °C} \pm 5\text{ °C}$ and 230 V AC voltage)



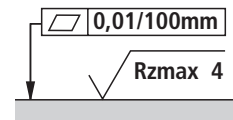
	W230-50Hz	W230-60Hz
E63	13	16
E68	14	18
E53	15	18
E137	17	17
E51	17	17
D24	17	17

Unit dimensions: Valve with DC solenoid (nominal dimensions in mm)

Symbols D24, E51, E53, E63, E68, E137



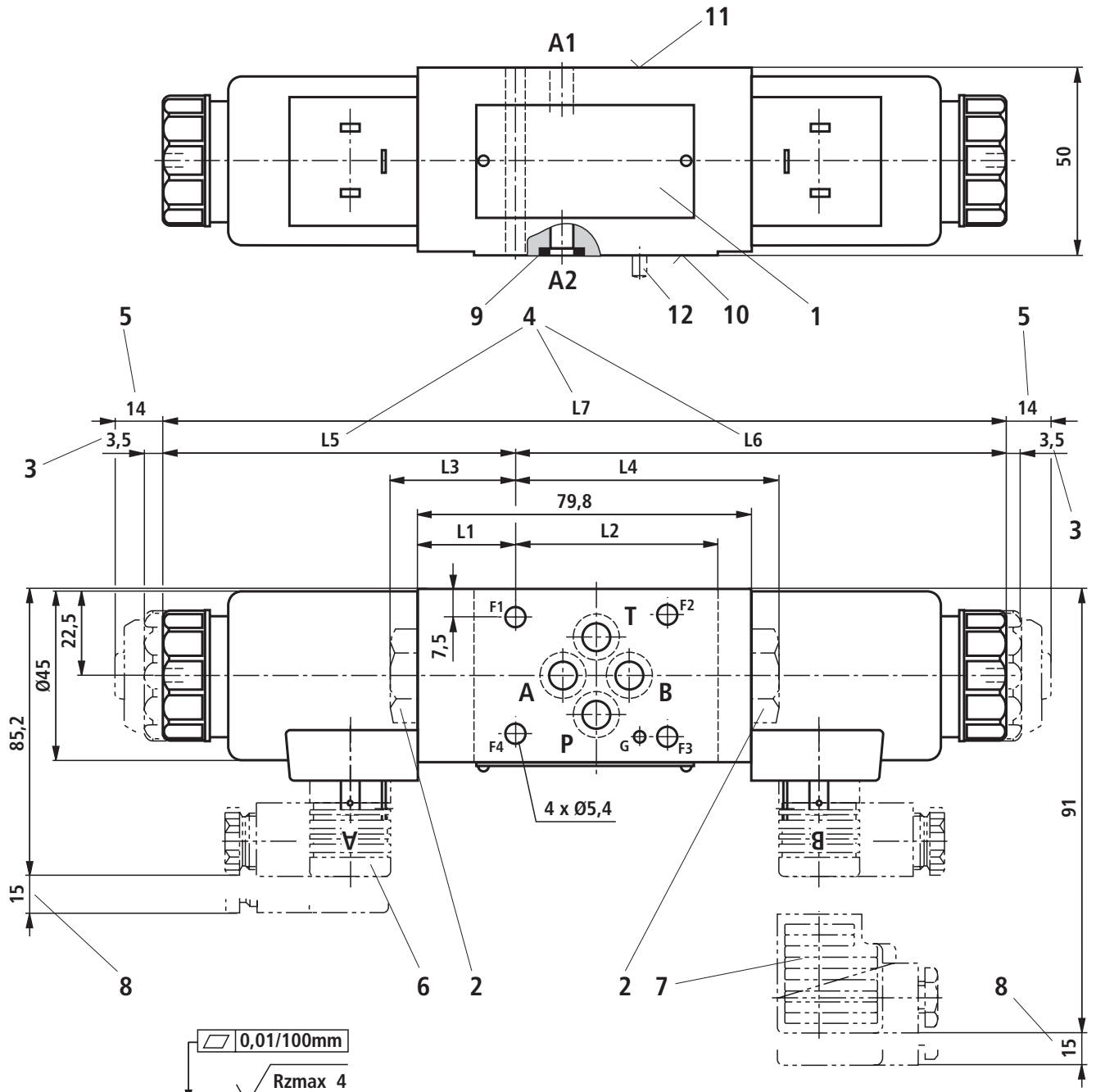
For the explanation of items, subplates and valve fixing screws, see page 11.



Required surface quality of the valve mounting face

Unit dimensions: Valve with DC solenoid (nominal dimensions in mm)

Symbols X250, X252, X253, X254, X255, X256

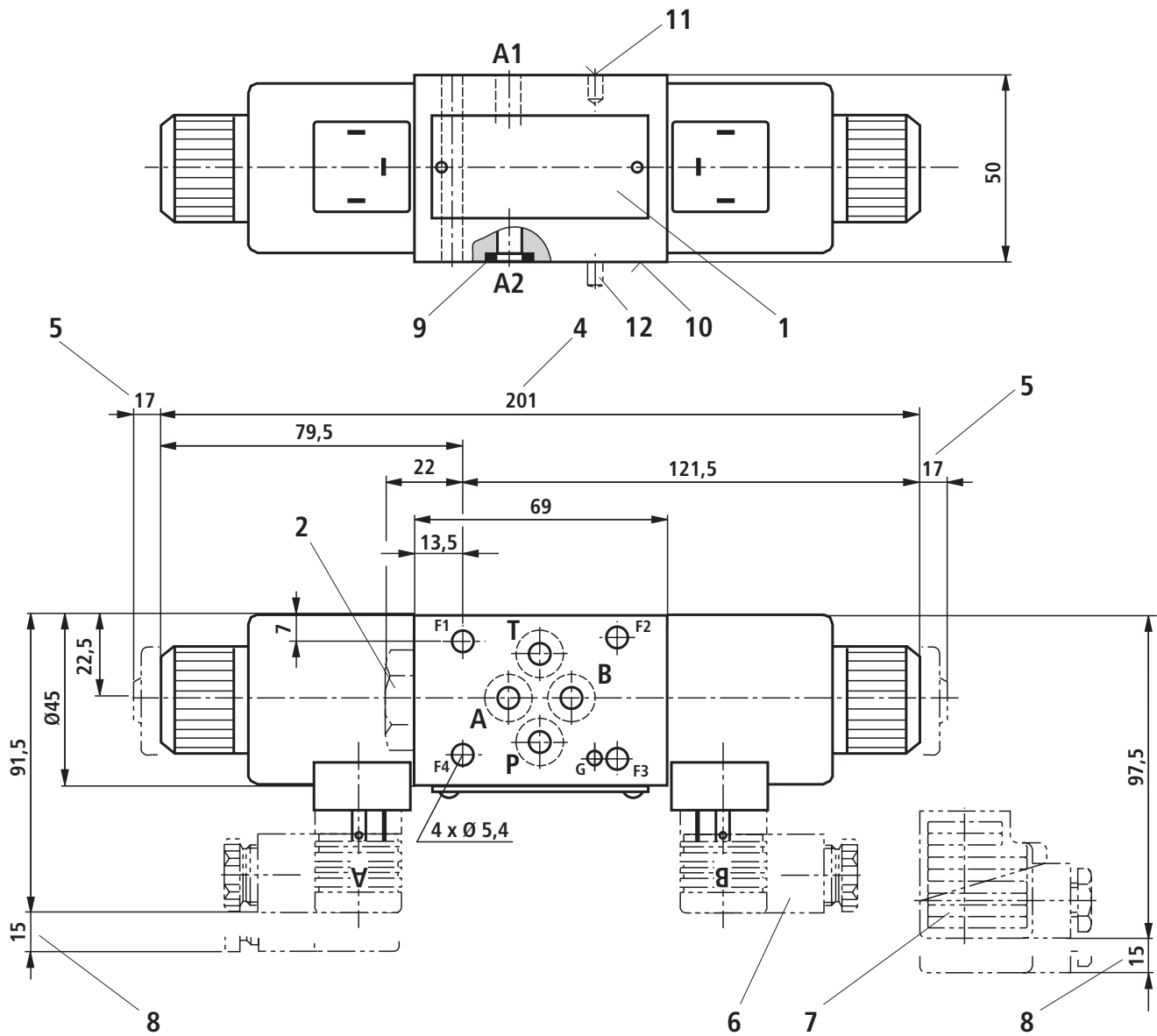


Required surface quality of the valve mounting face

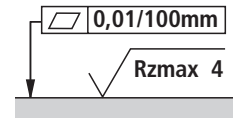
For the explanation of items, subplates and valve fixing screws, see page 11.

Symbol	Solenoid side A	Solenoid side B	L1	L2	L3	L4	L5	L6	L7
X250	X		24.9	54.9	-	63.3	93.3	-	-
X252		X	24.9	54.9	33.5	-	-	123.1	-
X253		X	18.3	54.3	26.9	-	-	129.7	-
X254	X		18.3	54.3	-	69.9	86.7	-	-
X255	X	X	25.9	53.9	-	-	94.3	131.1	225.4
X256		X	12	54.8	20.6	-	-	136	-

Unit dimensions: Valve with AC solenoid (nominal dimensions in mm)



For the explanation of items, subplates and valve fixing screws, see page 11.



Required surface quality of the valve mounting face

Unit dimensions

- 1 Nameplate
 - 2 Plug screw for valve with one solenoid
 - 3 Dimension for valve without manual override
 - 4 Dimension for solenoid **with concealed** manual override "N9" (standard) – the manual override can only be actuated up to a tank pressure of approx. 50 bar. Avoid damage to the bore for the manual override! (Special tool for operation, separate order, material no. **R900024943**)
 - 5 Dimension for valve with manual override "N"
 - 6 Cable socket **without** circuitry (separate order, see page 2 and RE 08006)
 - 7 Cable socket **with** circuitry (separate order, see page 2 and RE 08006)
 - 8 Space required to remove cable socket
 - 9 Identical seal rings for ports A2, B2, P2, T2
 - 10 Plate side – position of ports to ISO 4401-03-02-0-94 (with locating bore for locating pin ISO 8752-3x8-St; versions "/60" and "/62")
 - 11 Component side – position of ports to DIN 24340 form A (without locating bore), or ISO 4401-03-02-0-94 (with locating bore $\varnothing 3 \times 5$ mm deep)
 - 12 Locating pin ISO 8752-3x8-St; only version "/62"
- Subplates** to data sheet RE 45052 (separate order)
- | | |
|-------------------------|-----------------|
| (Without locating bore) | G 341/01 (G1/4) |
| | G 342/01 (G3/8) |
| | G 502/01 (G1/2) |
| (With locating bore) | G 341/60 (G1/4) |
| | G 342/60 (G3/8) |
| | G 502/60 (G1/2) |
- Subplates** to data sheet RE 45052
- Valve fixing screws** (separate order)
- **4 socket head cap screws ISO 4762 - M5 - 10.9-fZn-240h-L**
Friction coefficient $\mu_{\text{total}} = 0.09$ to 0.14 ,
tightening torque $M_T = 7 \text{ Nm} \pm 10\%$
or
 - **4 socket head cap screws ISO 4762 - M5 - 10.9**
with friction coefficient $\mu_{\text{total}} = 0.12$ to 0.7 ,
tightening torque $M_T = 8.1 \text{ Nm} \pm 10\%$

Notes

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