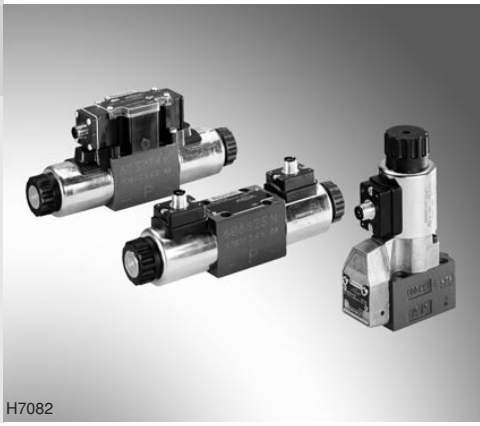
Rexroth
Bosch Group

Directional spool and seat valves with electrical actuation and M12x1 plug-in connection

RE 08010/10.09 1/18
Replaces: 07.07

Type WE, SED and SEW


H7082

Size 6 and 10

Table of contents

Features

- with individual connection directly on the solenoid coil
- with central connection at the housing
- Integrated operating display with light-emitting diodes (LED)
- Integrated interference protection circuit (suppressor diode)
- Electrical power consumption 8 and 30 Watt
- Function version according to ANSI

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

Ordering code, available versions

☞ **Note!**

The type designation information in the following tables that is printed in bold is the ordering code for the electrical connection. Points (...) in the listed type designations mark information that is to be amended. This information is to be taken from the ordering code of the respective basic data sheet.

Valves with M12x1 plug-in connection are only available with 24 V DC solenoids. Apart from that, there are no other limitations.

3/2, 4/2 and 4/3 directional spool valves

Type		Features	Basic data sheet
High-performance version	Reduced power consumption		
.WE 6 .6X/.EG24.**K72L**…		Individual connection 5-pole, integrated interference protection circuit, operating display with light-emitting diode	23178, 23183 [1)]
.WE 6 .6X/.EG24.**K73L**…		Individual connection 5-pole (no connection pin 1 to pin 2), integrated interference protection circuit, operating display with light-emitting diode	23178, 23183 [1)]
.WE 6 .6X/.EG24.**DK24L**…		Central connection 4-pole	23178, 23183 [1)]
.WE 6 .6X/.EG24.**DK35L**…		Central connection 4-pole, integrated interference protection circuit, operating display with light-emitting diode	23178, 23183 [1)]
	.WE 6 .6X/.EG24N9**K72L**/...SO407	Individual connection 5-pole, integrated interference protection circuit, operating display with light-emitting diode	23178-00
	.WE 6 .6X/.EG24N9**K73L**/...SO407	Individual connection 5-pole (no connection pin 1 to pin 2), integrated interference protection circuit, operating display with light-emitting diode	23178-00
	.WE 6 .6X/.EG24N9**DK35L**/...SO407	Central connection 4-pole, integrated interference protection circuit, operating display with light-emitting diode	23178-00
.WE 10 .3X/.CG24.**K72L**…		Individual connection 5-pole, integrated interference protection circuit, operating display with light-emitting diode	23327, 23183 [1)]
.WE 10 .4X/.CG24.**DK24L**…		Central connection 4-pole	23327, 3183 [1)]
.WE 10 .4X/.CG24.**DK35L**…		Central connection 4-pole, integrated interference protection circuit, operating display with light-emitting diode	23327, 23183 [1)]
5-.WE 10 .3X/.CG24.**K72L**…		Individual connection 5-pole, integrated interference protection circuit, operating display with light-emitting diode	23351

[1)] Smoothly switching

Ordering code, available versions

2/2, 3/2 and 4/2 directional seat valves

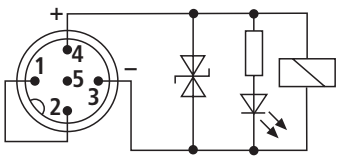
Type		Features	Basic data sheet
High-performance version	Reduced power consumption		
M-.SED 6 .1X/350CG24.**K72L**…		Individual connection 5-pole, integrated interference protection circuit, operating display with light-emitting diode	22049
M-.SED 10 .1X/350CG24.**K72L**…		Individual connection 5-pole, integrated interference protection circuit, operating display with light-emitting diode	22045
M-.SEW 6 .3X/420MG24.**K72L**…		Individual connection 5-pole, integrated interference protection circuit, operating display with light-emitting diode	22058
	M-.SEW 6 .3X/420MG24N9**K72L** SO407	Individual connection 5-pole, integrated interference protection circuit, operating display with light-emitting diode	22058 [2)]
M-.SEW 10 .1X/420MG24.**K72L**…		Individual connection 5-pole, integrated interference protection circuit, operating display with light-emitting diode	22075

[2)] No separate basic data sheet for version “SO407” available. Please use data sheet 22058.

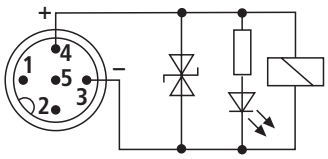
Electrical connections

Individual connection

“K72L”



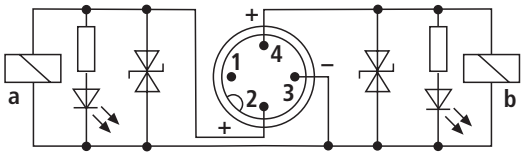
“K73L”



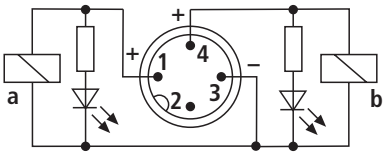
Pin 5 without function

Central connection

“DK35L”



“DK24L”



☞ **Note!**

With version “DK24L”, voltage peaks result when the solenoid coil (inductivity) is switched off, which may cause failures or damage in the connected control electronics. For limiting these voltage peaks, a protection circuit must be provided.

Technical data: Type .WE 6 .6X/.EG24.(D)K…
(For applications of the component outside the specified values, please contact us!)

hydraulic

			High performance version (also smoothly switching)	Reduced power consumption “SO407”
Maximum operating pressure	– Port A, B, P	bar *[psi]*	350 *[5076]*	315 *[4569]*
	– Port T	bar *[psi]*	210 *[3046]*	210 *[3046]*
Maximum flow		l/min *[US gpm]*	80 *[21.1]*	60 *[15.9]*
Hydraulic fluid			Mineral oil (HL, HLP) according to DIN 51524 [1]; fast bio-degradable hydraulic fluids according to VDMA 24568 (see also RE 90221); HETG (rape seed oil) [1]; HEPG (polyglycols) [2]; HEES (synthetic esters) [2]; other hydraulic fluids upon request	

electrical

M12x1 plug-in connections [3]			K72L, K73L, DK24L, DK35L	K72L, K73L, DK35L
Available voltages [4]		V	24	
Switch-off voltage peak limited	– K72L, K73L, DK35L	V	–44 to –55	–44 to –55
	– DK24L	V	without limitation	–
Voltage tolerance (nominal voltage)		%	±10	
Power consumption		W	30	8
Duty cycle			S1 (continuous operation)	
Switching time according to ISO 6403	– Standard ON	ms	25 to 45	up to 60
	– Smoothly switching ON	ms	3 to 4 times longer than standard	–
	– Standard OFF	ms	10 to 25	up to 30
	– Smoothly switching OFF	ms	3 to 4 times longer than standard	–
Maximum switching frequency	– Standard	1/h	15000	7200
	– Smoothly switching	1/h	7200	–
Protection class according to DIN EN 60529			IP 65 [5]	
Protection class according to DIN EN 61140			III	
Maximum coil temperature [6]		°C *[°F]*	150 *[302]*	110 *[230]*

[1] Suitable for NBR and FKM seals

[2] Only suitable for FKM seals

[3] Mating connectors according to IEC 60947-5-2, separate order, see data sheet 08006

[4] Connection only to functional low voltage with safe insulation = PELV/SELV

[5] Only when using the mating connectors specified by us and with correct assembly

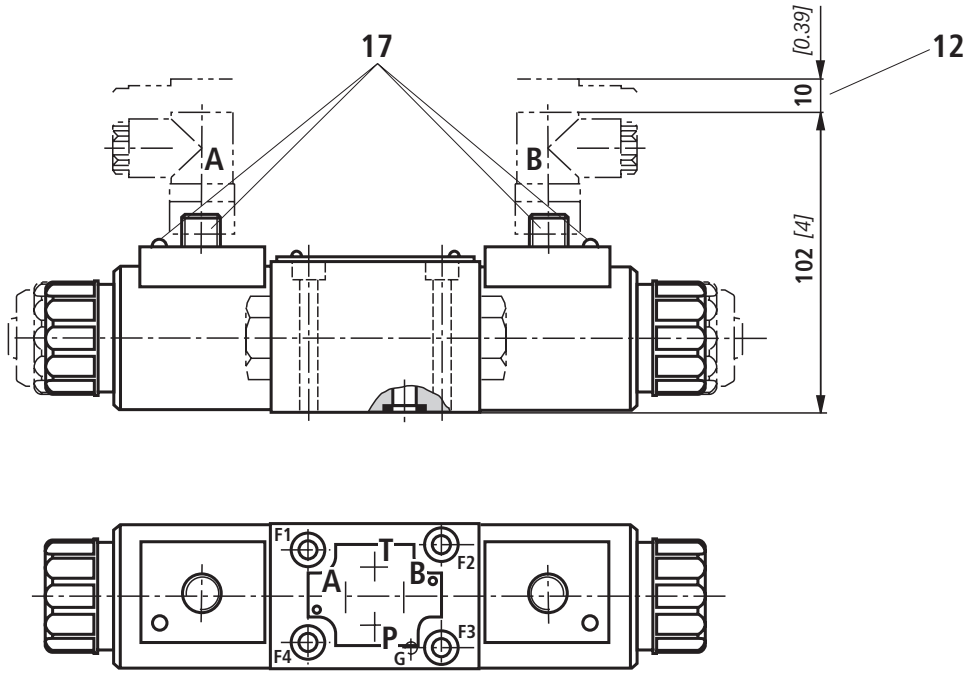
[6] Due to the surface temperatures of the solenoid coils, the standards ISO 13732-1 and 982 need to be adhered to!

☞ **Note!**

For more information, please refer to the corresponding basic data sheet.

Valve versions with electrical individual connection “**K…**” or central connection “**DK…**” and related basic data sheets see page 2.

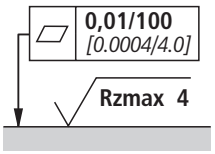
Unit dimensions: Type .WE 6 .6X/.EG24.**K...** – Individual connection (dimensions in mm *[inch]*)



12 Space required for removing the mating connector

17 M12x1 plug-in connection with operating display LED (Mating connectors according to IEC 60947-5-2, separate order, see data sheet 08006);

Electrical connections “K72L” and “K73L” see page 3



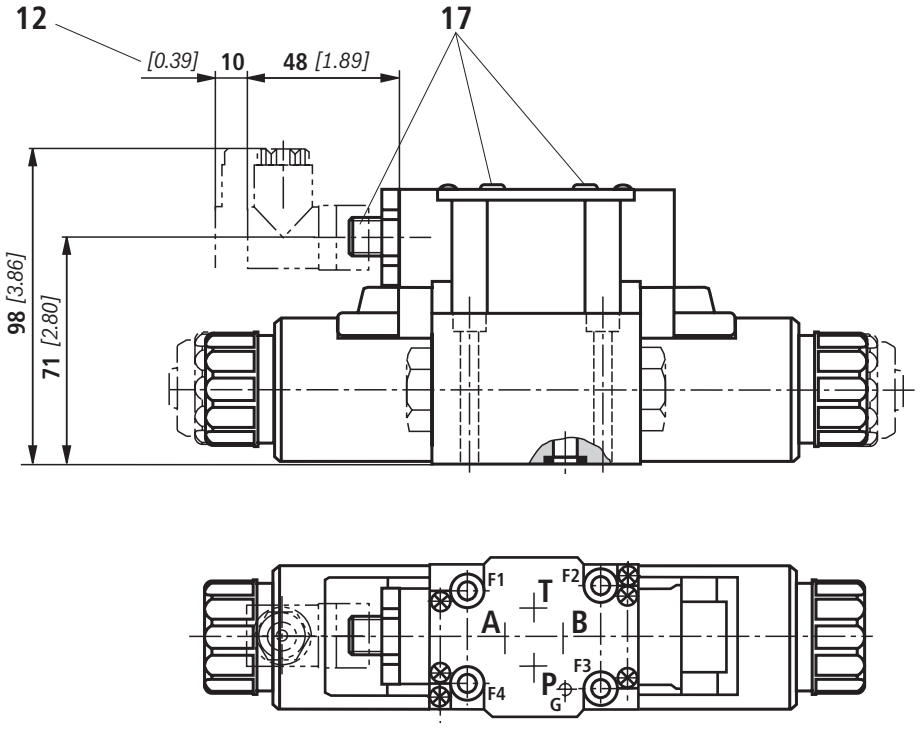
Required surface quality of the valve mounting face

☞ **Note!**

For missing **dimensions**, **position explanations, valve mounting screws** and **subplates**, please refer to the respective basic data sheet:

- 23178 (standard valve)
- 23183 (smoothly switching)
- 23178-00 (reduced power consumption)

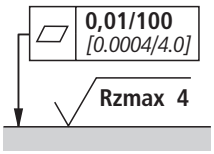
Unit dimensions: Type .WE 6 .6X/.EG24.**DK…** – Central connection (dimensions in mm *[inch]*)



12 Space required for removing the mating connector

17 M12x1 plug-in connection with operating display LED (Mating connectors according to IEC 60947-5-2, separate order, see data sheet 08006);

Electrical connections “DK35L” and “DK24L” see page 3



Required surface quality of the valve mounting face

☞ **Note!**

For missing **dimensions**, **position explanations, valve mounting screws** and **subplates**, please refer to the respective basic data sheet:

- 23178 (standard valve)
- 23183 (smoothly switching)
- 23178-00 (reduced power consumption)

Technical data: Type (5-).WE 10 .3X/.CG24.(D)K…
(For applications of the component outside the specified values, please contact us!)

hydraulic

Maximum operating pressure	– Port A, B, P	bar *[psi]*	315 *[4569]*
	– Port T	bar *[psi]*	210 *[3046]*
Maximum flow		l/min *[US gpm]*	120 *[31.7]*
Hydraulic fluid			Mineral oil (HL, HLP) according to DIN 51524 [1]; fast bio-degradable hydraulic fluids according to VDMA 24568 (see also RE 90221); HETG (rape seed oil) [1]; HEPG (polyglycols) [2]; HEES (synthetic esters) [2]; other hydraulic fluids upon request

electrical

			Type .WE 10 …(D)K… (also smoothly switching)	**Type 5-.WE 10 …K…** (5-chamber version)
M12x1 plug-in connections [3]			K72L, DK24L, DK35L	K72L
Available voltages [4]		V	24	
Switch-off voltage peak limited	– K72L, DK35L	V	–44 to –55	–44 to –55
	– DK24L	V	without limitation	–
Voltage tolerance (nominal voltage)		%	±10	
Power consumption		W	35	
Duty cycle			S1 (continuous operation)	
Switching time according to ISO 6403	– Standard ON	ms	45 to 60	45 to 75
	– Smoothly switching ON	ms	3 to 4 times longer than standard	–
	– Standard OFF	ms	20 to 30	35 to 45
	– Smoothly switching OFF	ms	3 to 4 times longer than standard	–
Maximum switching frequency	– Standard	1/h	15000	15000
	– Smoothly switching	1/h	7200	–
Protection class according to DIN EN 60529			IP 65 [5]	
Protection class according to DIN EN 61140			Ⅲ	
Maximum coil temperature [6]		°C *[°F]*	150 *[302]*	110 *[230]*

[1] Suitable for NBR and FKM seals

[2] Only suitable for FKM seals

[3] Mating connectors according to IEC 60947-5-2, separate order, see data sheet 08006

[4] Connection only to functional low voltage with safe insulation = PELV/SELV

[5] Only when using the mating connectors specified by us and with correct assembly

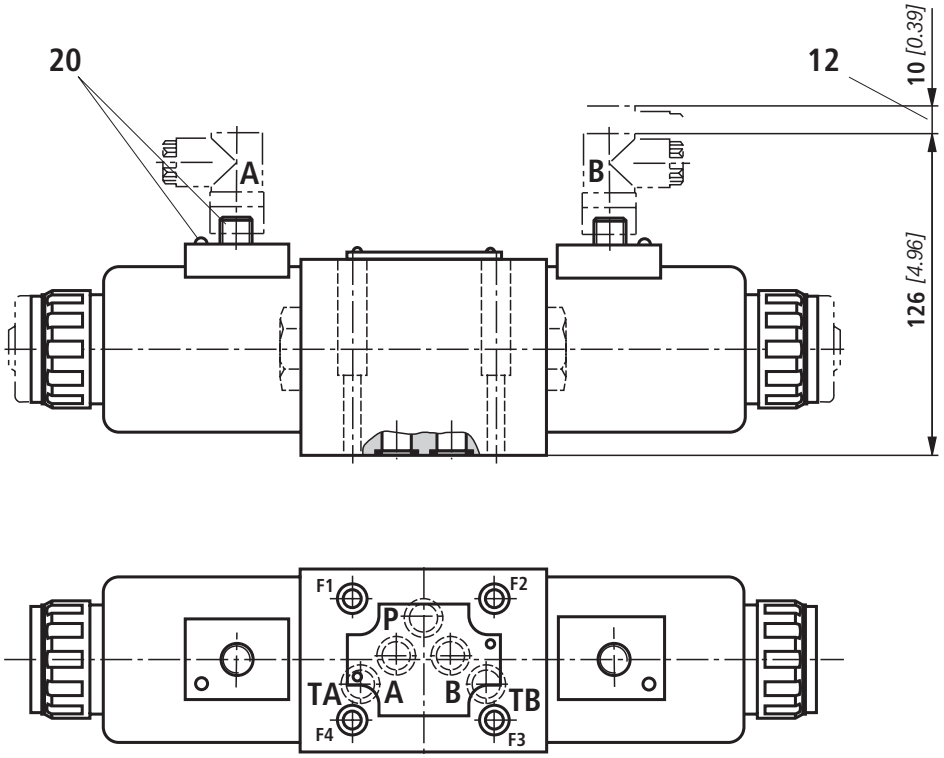
[6] Due to the surface temperatures of the solenoid coils, the standards ISO 13732-1 and 982 need to be adhered to!

☞ **Note!**

For more information, please refer to the corresponding basic data sheet.

Valve versions with electrical individual connection "**K…**" or central connection "**DK…**" and related basic data sheets see page 2.

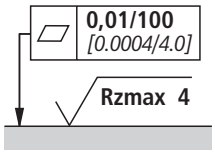
Unit dimensions: Type .WE 10 .3X/.CG24.**K72L…** – Individual connection (dimensions in mm *[inch]*)



12 Space required for removing the mating connector

20 M12x1 plug-in connection with operating display LED (Mating connectors according to IEC 60947-5-2, separate order, see data sheet 08006);

Electrical connection “K72L” see page 3



Required surface quality of the valve mounting face

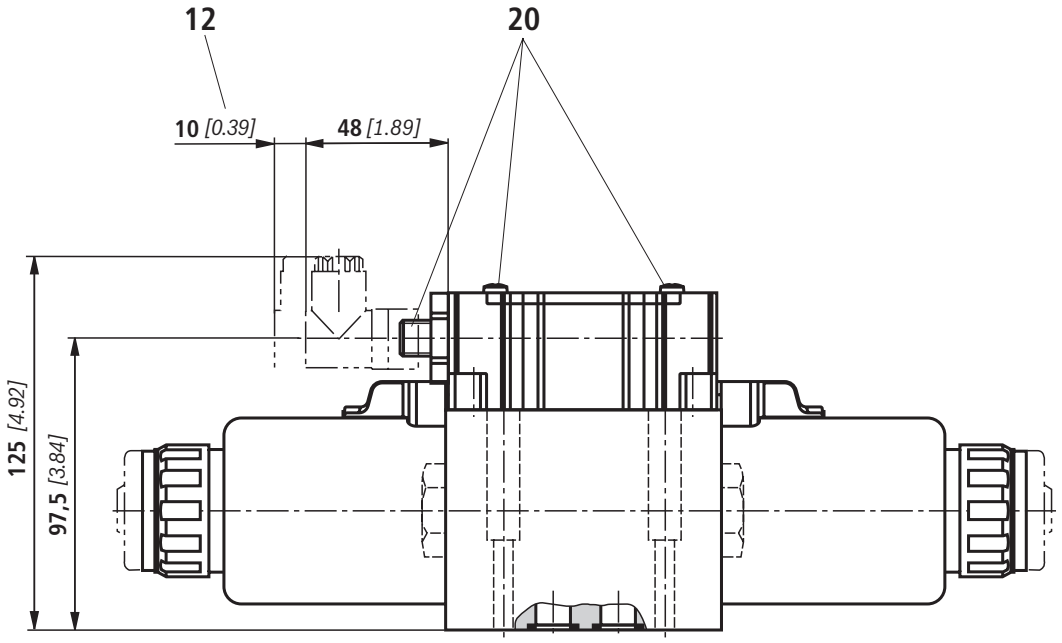
☞ **Note!**

For missing **dimensions**, **position explanations, valve mounting screws** and **subplates**, please refer to the respective basic data sheet:

– 23327 (standard valve)

– 23183 (smoothly switching)

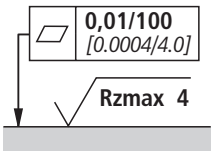
Unit dimensions: Type .WE 10 .4X/.CG24.**DK…** – Central connection (dimensions in mm *[inch]*)



12 Space required for removing the mating connector

20 M12x1 plug-in connection with operating display LED (Mating connectors according to IEC 60947-5-2, separate order, see data sheet 08006);

Electrical connections “DK35L” and “DK24L” see page 3



Required surface quality of the valve mounting face

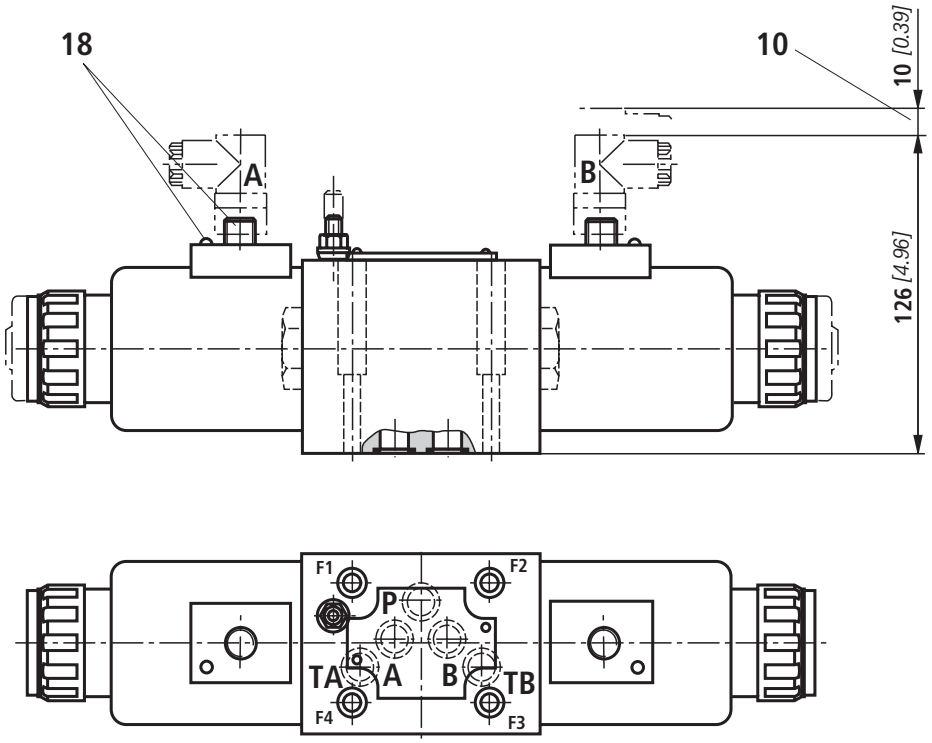
☞ **Note!**

For missing **dimensions**, **position explanations, valve mounting screws** and **subplates**, please refer to the respective basic data sheet:

– 23327 (standard valve)

– 23183 (smoothly switching)

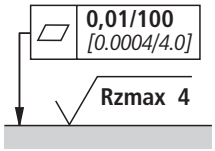
Unit dimensions: Type 5-.WE 10 .3X/.CG24.**K72L…** – Individual connection (dimensions in mm *[inch]*)



10 Space required for removing the mating connector

18 M12x1 plug-in connection with operating display LED (Mating connectors according to IEC 60947-5-2, separate order, see data sheet 08006);

Electrical connection “K72L” see page 3



Required surface quality of the valve mounting face

☞ **Note!**

For missing **dimensions**, **position explanations, valve mounting screws** and **subplates**, please refer to the basic data sheet 23351.

Technical data: Type M-.SED 6 .-1X/350CG24.K72L…
(For applications of the component outside the specified values, please contact us!)

hydraulic

Maximum operating pressure	bar *[psi]*	See basic data sheet 22049 (performance limits)
Maximum flow	l/min *[US gpm]*	25 *[6.6]*
Hydraulic fluid		Mineral oil (HL, HLP) according to DIN 51524 [1]; fast bio-degradable hydraulic fluids according to VDMA 24568 (see also RE 90221); HETG (rape seed oil) [1]; HEPG (polyglycols) [2]; HEES (synthetic esters) [2]; other hydraulic fluids upon request

electrical

M12x1 plug-in connection [3]			K72L
Available voltages [4]		V	24
Switch-off voltage peak limited		V	–44 to –55
Voltage tolerance (nominal voltage)		%	±10
Power consumption		W	30
Duty cycle			S1 (continuous operation)
Switching time according to ISO 6403	– ON	ms	40 to 70
	– OFF	ms	10 to 20 (without rectifier) 30 to 45 (with rectifier)
Maximum switching frequency		1/h	15000
Protection class according to DIN EN 60529			IP 65 [5]
Protection class according to DIN EN 61140			III
Maximum coil temperature [6]		°C *[°F]*	150 *[302]*

[1] Suitable for NBR and FKM seals

[2] Only suitable for FKM seals

[3] Mating connectors according to IEC 60947-5-2, separate order, see data sheet 08006

[4] Connection only to functional low voltage with safe insulation = PELV/SELV

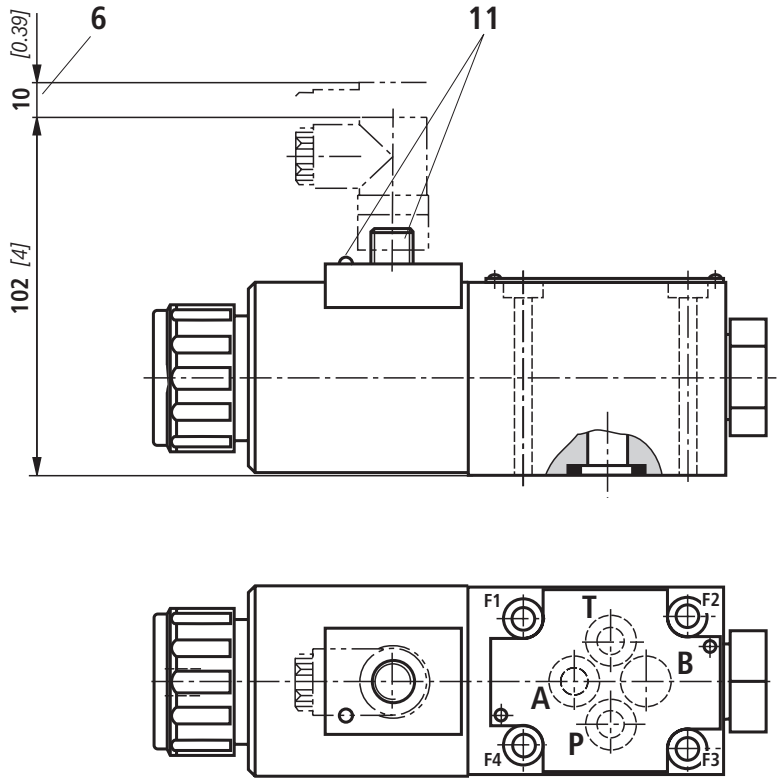
[5] Only when using the mating connectors specified by us and with correct assembly

[6] Due to the surface temperatures of the solenoid coils, the standards ISO 13732-1 and 982 need to be adhered to!

☞ **Note!**

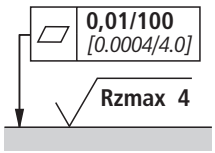
For more information, please refer to the basic data sheet 22049.

Unit dimensions: Type M-.SED 6 .-1X/350CG24.K72L…
(dimensions in mm *[inch]*)



6 Space required for removing the mating connector

11 M12x1 plug-in connection with operating display LED (Mating connectors according to IEC 60947-5-2, separate order, see data sheet 08006);
Electrical connection “K72L” see page 3



Required surface quality
of the valve mounting face

☞ **Note!**

For missing **dimensions**, **position explanations, valve mounting screws** and **subplates**, please refer to the basic data sheet 22049.

Technical data: Type M-.SED 10 .-1X/350CG24.K72L…
(For applications of the component outside the specified values, please contact us!)

hydraulic

Maximum operating pressure	bar *[psi]*	See basic data sheet 22045 (performance limits)
Maximum flow	l/min *[US gpm]*	40 *[10.6]*
Hydraulic fluid		Mineral oil (HL, HLP) according to DIN 51524 [1]; fast bio-degradable hydraulic fluids according to VDMA 24568 (see also RE 90221); HETG (rape seed oil) [1]; HEPG (polyglycols) [2]; HEES (synthetic esters) [2]; other hydraulic fluids upon request

electrical

M12x1 plug-in connection [3]			K72L
Available voltages [4]		V	24
Switch-off voltage peak limited		V	–44 to –55
Voltage tolerance (nominal voltage)		%	±10
Power consumption		W	30
Duty cycle			S1 (continuous operation)
Switching time according to ISO 6403	– ON	ms	30 to 50
	– OFF	ms	10 to 20 (without rectifier) 35 to 45 (with rectifier)
Maximum switching frequency		1/h	15000
Protection class according to DIN EN 60529			IP 65 [5]
Protection class according to DIN EN 61140			Ⅲ
Maximum coil temperature [6]		°C *[°F]*	150 *[302]*

[1] Suitable for NBR and FKM seals

[2] Only suitable for FKM seals

[3] Mating connectors according to IEC 60947-5-2, separate order, see data sheet 08006

[4] Connection only to functional low voltage with safe insulation = PELV/SELV

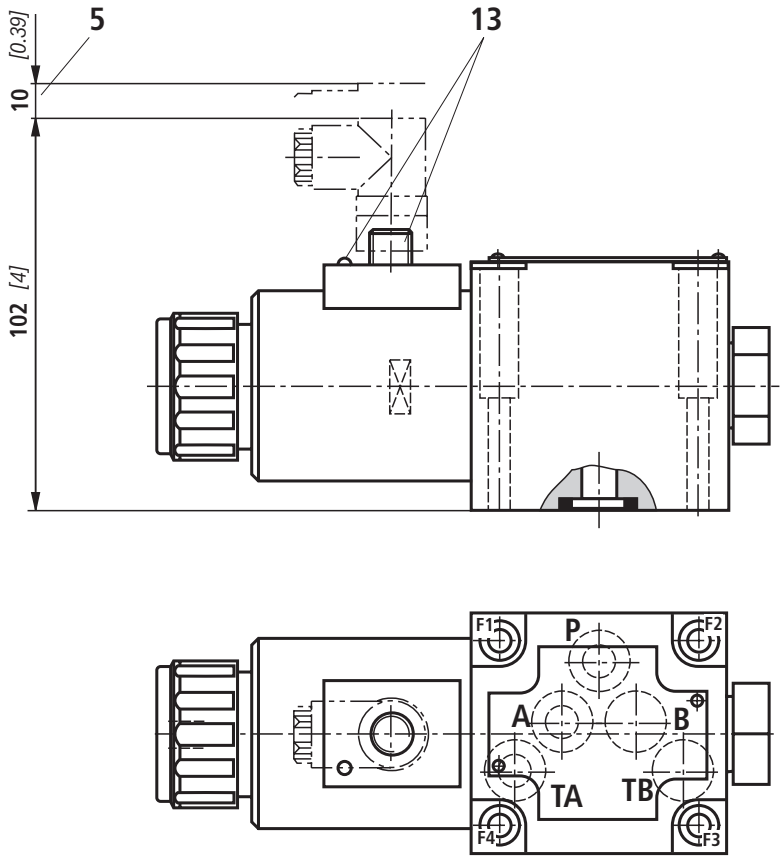
[5] Only when using the mating connectors specified by us and with correct assembly

[6] Due to the surface temperatures of the solenoid coils, the standards ISO 13732-1 and 982 need to be adhered to!

☞ **Note!**

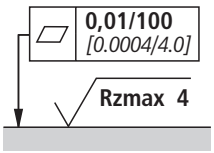
For more information, please refer to the basic data sheet 22045.

Unit dimensions: Type M-.SED 10 .-1X/350CG24.K72L…
(dimensions in mm *[inch]*)



5 Space required for removing the mating connector

13 M12x1 plug-in connection with operating display LED (Mating connectors according to IEC 60947-5-2, separate order, see data sheet 08006);
Electrical connection “K72L” see page 3



Required surface quality
of the valve mounting face

☞ **Note!**

For missing **dimensions**, **position explanations, valve mounting screws** and **subplates**, please refer to the basic data sheet 22045.

Technical data: Type M-.SEW 6 .-3X/420MG24.K72L…
(For applications of the component outside the specified values, please contact us!)

hydraulic

Maximum operating pressure	bar *[psi]*	See basic data sheet 22058 (performance limits)
Maximum flow	l/min *[US gpm]*	25 *[6.6]*
Hydraulic fluid		Mineral oil (HL, HLP) according to DIN 51524 [1]; fast bio-degradable hydraulic fluids according to VDMA 24568 (see also RE 90221); HETG (rape seed oil) [1]; HEPG (polyglycols) [2]; HEES (synthetic esters) [2]; other hydraulic fluids upon request

electrical

			High-performance version	Reduced power consumption “SO407”
M12x1 plug-in connection [3]			K72L	
Available voltages [4]		V	24	
Switch-off voltage peak limited		V	–44 to –55	
Voltage tolerance (nominal voltage)		%	±10	
Power consumption		W	30	8
Duty cycle			S1 (continuous operation)	
Switching time according to ISO 6403	– ON	ms	25 to 40 (without rectifier) 30 to 55 (with rectifier)	50 (spool symbol “C”) 55 (spool symbol “U”)
	– OFF	ms	10 to 15 (without rectifier) 35 to 55 (with rectifier)	30 (spool symbol “C”) 15 (spool symbol “U”)
Maximum switching frequency		1/h	15000	7200
Protection class according to DIN EN 60529			IP 40 [5]	
Protection class according to DIN EN 61140			Ⅲ	
Maximum coil temperature [6]		°C *[°F]*	150 *[302]*	110 *[230]*

[1] Suitable for NBR and FKM seals

[2] Only suitable for FKM seals

[3] Mating connectors according to IEC 60947-5-2, separate order, see data sheet 08006

[4] Connection only to functional low voltage with safe insulation = PELV/SELV

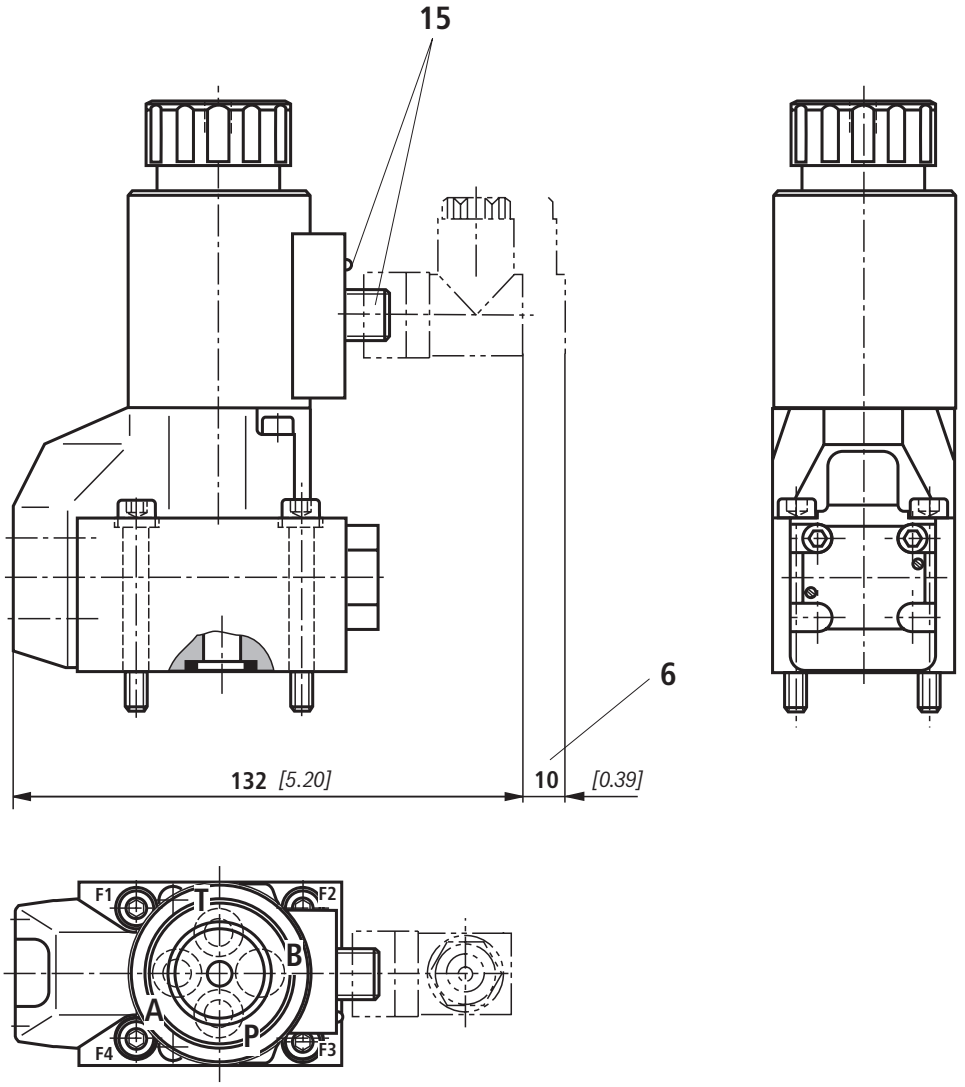
[5] Only when using the mating connectors specified by us and with correct assembly

[6] Due to the surface temperatures of the solenoid coils, the standards ISO 13732-1 and 982 need to be adhered to!

☞ **Note!**

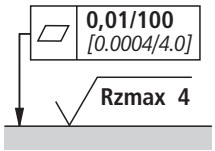
For more information, please refer to the basic data sheet 22058 (without version “SO407”).

Unit dimensions: Type M-.SEW 6 .-3X/420MG24.K72L…
(dimensions in mm *[inch]*)



6 Space required for removing the mating connector

15 M12x1 plug-in connection with operating display LED (Mating connectors according to IEC 60947-5-2, separate order, see data sheet 08006);
Electrical connection “K72L” see page 3



Required surface quality
of the valve mounting face

☞ **Note!**

For missing **dimensions**, **position explanations, valve mounting screws** and **subplates**, please refer to the basic data sheet 22058.

Technical data: Type M-.SEW 10 .-1X/420MG24.K72L…
(For applications of the component outside the specified values, please contact us!)

hydraulic

Maximum operating pressure	bar *[psi]*	See basic data sheet 22075 (performance limits)
Maximum flow	l/min *[US gpm]*	40 *[10.6]*
Hydraulic fluid		Mineral oil (HL, HLP) according to DIN 51524 [1]; fast bio-degradable hydraulic fluids according to VDMA 24568 (see also RE 90221); HETG (rape seed oil) [1]; HEPG (polyglycols) [2]; HEES (synthetic esters) [2]; other hydraulic fluids upon request

electrical

M12x1 plug-in connection [3]			K72L
Available voltages [4]		V	24
Switch-off voltage peak limited		V	–44 to –55
Voltage tolerance (nominal voltage)		%	±10
Power consumption		W	30
Duty cycle			S1 (continuous operation)
Switching time according to ISO 6403	– ON	ms	25 to 60 (without rectifier) 30 to 70 (with rectifier)
	– OFF	ms	10 to 20 (without rectifier) 30 to 70 (with rectifier)
Maximum switching frequency		1/h	15000
Protection class according to DIN EN 60529			IP 40 [5]
Protection class according to DIN EN 61140			III
Maximum coil temperature [6]		°C *[°F]*	150 *[302]*

[1] Suitable for NBR and FKM seals

[2] Only suitable for FKM seals

[3] Mating connectors according to IEC 60947-5-2, separate order, see data sheet 08006

[4] Connection only to functional low voltage with safe insulation = PELV/SELV

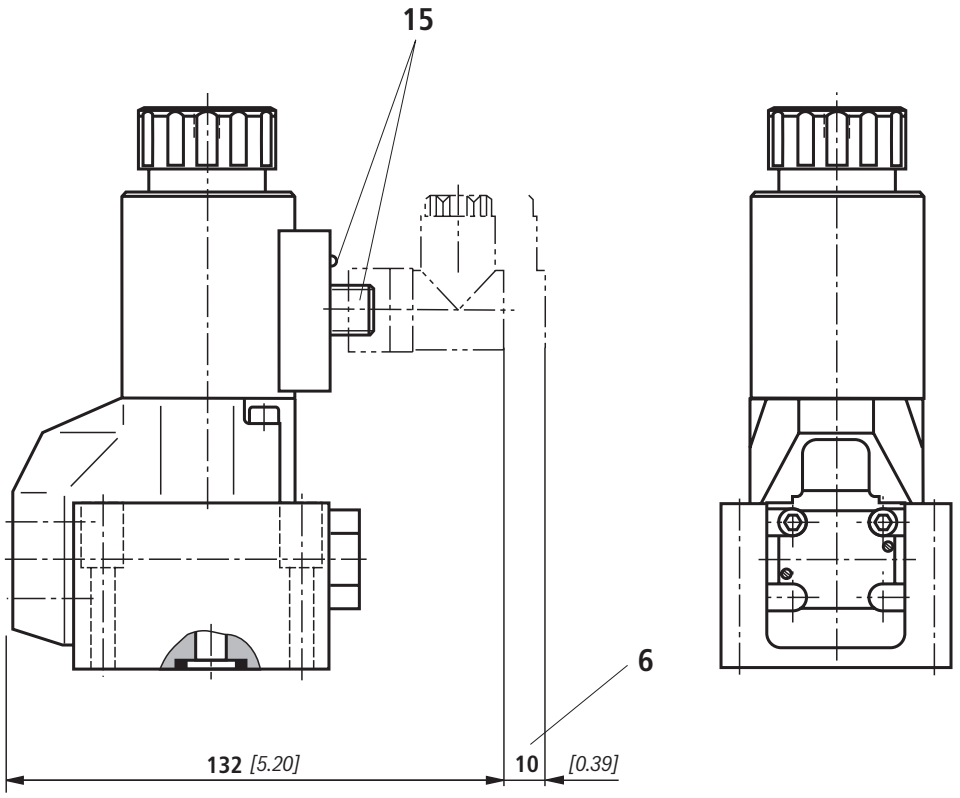
[5] Only when using the mating connectors specified by us and with correct assembly

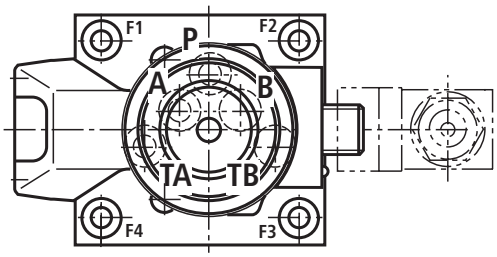
[6] Due to the surface temperatures of the solenoid coils, the standards ISO 13732-1 and 982 need to be adhered to!

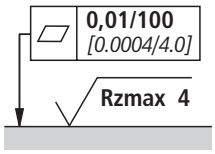
☞ **Note!**

For more information, please refer to the basic data sheet 22075.

Unit dimensions: Type M-.SEW 10 .-1X/420MG24.K72L…
(dimensions in mm *[inch]*)







Required surface quality
of the valve mounting face

6 Space required for removing the mating connector

15 M12x1 plug-in connection with operating display LED (Mating connectors according to IEC 60947-5-2, separate order, see data sheet 08006);

Electrical connection “K72L” see page 3

☞ **Note!**

For missing **dimensions**, **position explanations, valve mounting screws** and **subplates**, please refer to the basic data sheet 22075.

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Notes

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