

RE 18 136-03/10.02

Replaces: 07.01

**3/2-way poppet valves
with solenoid operation
Type KSDER1**

Build size 1

T-11A cavity

Maximum operating pressure 350 bar

Maximum flow 12 L/min



Type KSDER1.A/HC...

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Features

- Direct operated directional poppet valve with solenoid operation
- The closed port is leak-free
- Switching is ensured even after long periods of inactivity
- Wet pin DC solenoids
- The solenoid coil can be rotated
- With protected hand override (optional)



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Ordering details

K S D E R 1 A / H C V

Direct operated directional poppet valve, electrically operated

Max. operating pressure 350 bar

Build size

= R

= 1

V = FKM seals

K4 = ISO 4400 ²⁾

K40 = Deutsch plug ²⁾

C4 = 2-pin type Junior-Timer ²⁾

N0 = Without hand override

N9 = With protected hand override

G24 = 24 V DC

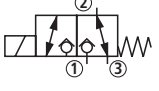
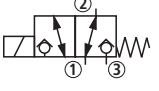
G12 = 12 V DC ³⁾

Wet pin DC

C = solenoid with removable coil

H = High performance and T-xxA cavity

A = Series

Cavity ¹⁾	Pressure 350 bar	Symbols	Actuator connections
	$q_v = L/min$		
T-11A	12		= C
			= U

¹⁾ See page 6

²⁾ Without plug-in connector!
Plug-in connector must be ordered separately (see below)

³⁾ Other voltages on request

Preferred types

Material No.	Type
R900771057	KSDER1CA/HCG24N0K4V
R900771058	KSDER1UA/HCG24N0K4V

Plug-in connectors

	Without circuitry Material No.	With circuitry Material No.	
K4 to DIN EN 17530-803 and ISO 4400; for further technical data see RE 08006	R900074684	R900057292 with indicator light 12...240 V	R900310995 with indicator light and Z-diode protective circuit 24 V
C4	R900221496		
K40	R900733451		

Function, section, symbols

General:

The cartridge solenoid valve is a direct operated pressure balanced 3/2-way poppet valve. It controls the stop, start and direction of a flow. It basically comprises of a cartridge housing (6), the solenoid (7), the valve seats (9 and 10) as well as the closing element (5) and compression spring (8).

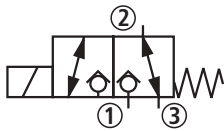
Basic principle:

The initial position of the valve is (normally open from 1 to 2, 3 closed "U" or normally open from 2 to 3, 1 closed "C") determined by the closing element version (5) and the location of the spring (8).

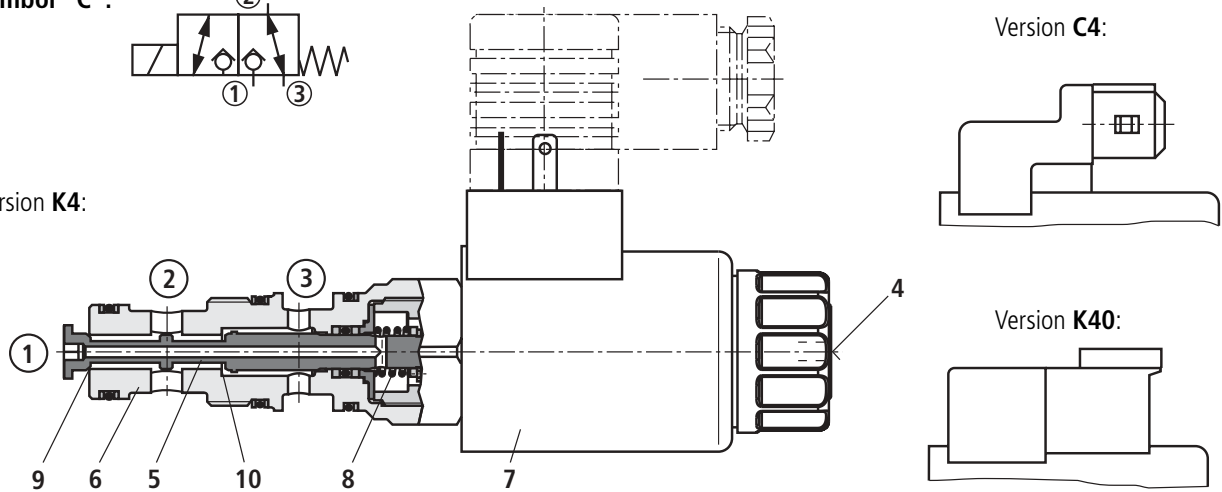
The 3/2-way poppet valves are, due to their design, with regards to the adjustment forces, always pressure balanced.

Ports 1, 2 and 3 can be applied with maximum operating pressure of 350 bar and the flow can pass through in both directions (see symbols). This is (no flow/flow) in the appropriate end position closed leak-free. During switching the ports are briefly connected with each other (negative overlap). The hand override (4) permits the valve to be switched without energising the solenoid.

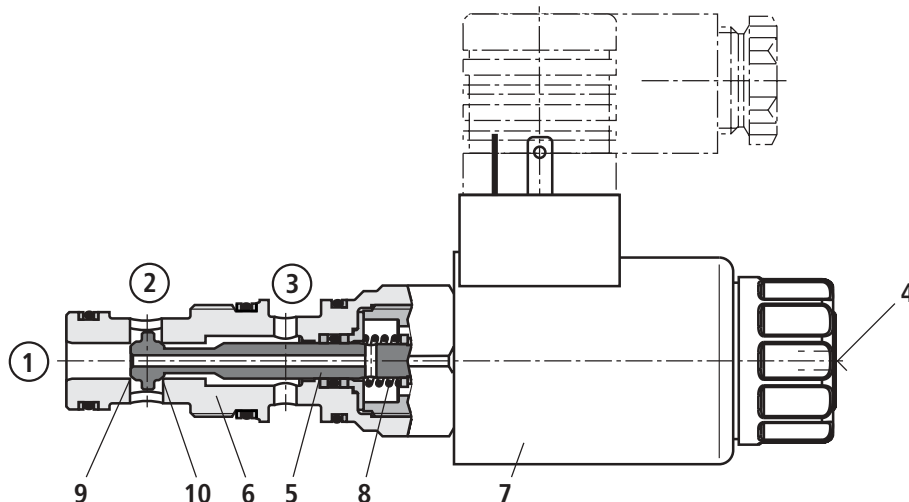
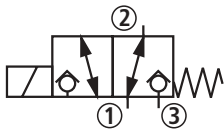
Symbol "C":



Version K4:



Symbol "U":



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

Installation		Optional
Ambient temperature range	°C	- 30 to + 50
Weight	kg	0.5

Hydraulic

Maximum operating pressure	bar	350 at all ports
Maximum flow	L/min	12
Pressure fluid		Mineral oil (HL, HLP) to DIN 51 524; Fast bio-degradable pressure fluids to VDMA 24 568 (see also RE 90 221); HETG (rape seed oil); HEPG (polyglycol); HEES (synthetic ester); Other pressure fluids on request
FKM seals		
Pressure fluid temperature range	°C	- 20 to + 80 (with FKM seals)
Viscosity range	mm ² /s	2.8 to 500
Cleanliness class to ISO code		Maximum permissible degree of contamination of the pressure fluid is to ISO 4406 (c) class 20/18/15 ¹⁾

Electrical

Voltage type		DC
Available voltages ²⁾	V	24 12
Voltage tolerance (nominal voltage)	%	±10
Power consumption	W	19
Duty		Continuous
Switching time to ISO 6403		See table below
Switching frequency	cycles/h	15000
Protection to DIN 40 050	K4 C4 K40	IP 65 (with mounted and fixed plug-in connector) IP 67 (with mounted and fixed plug-in connector) IP 69K (with mounted and fixed plug-in connector)
Maximum coil temperature ³⁾	°C	150

¹⁾ The cleanliness class stated for the components must be adhered to in hydraulic systems. Effective filtration prevents faults from occurring and at the same time increases the component service life

For the selection of filters see catalogue sheets RE 50 070; RE 50 076, RE 50 081

²⁾ Further voltages on request.

³⁾ Due to the occurring surface temperature of the solenoid coils, the European Standards EN563 and EN982 must be taken into account!

When connecting the electrics, the protective conductor (PE ≡) must be connected according to the relevant regulations.

Switching time t in ms (installation: solenoid horizontal)**Solenoid 24 V**

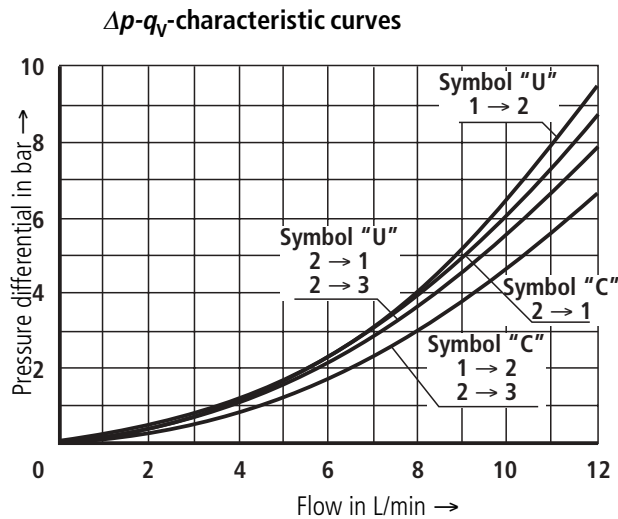
Flow Q = 12 L/min flow direction	Switching time			
	Version „U“		Version „C“	
	On	Off	On	Off
1 → 2	30	15	60	10
2 → 1	40	15	60	10
2 → 3	64	10	34	21
3 → 2	99	10	44	22

Performance limits (measured with HLP46 and $\vartheta = 40 \text{ }^\circ\text{C} \pm 5 \text{ }^\circ\text{C}$ and 24 V coil)

Max. operating pressure	$p_{\max} = 350 \text{ bar}$
Max. flow	$q_V = 12 \text{ L/min}$

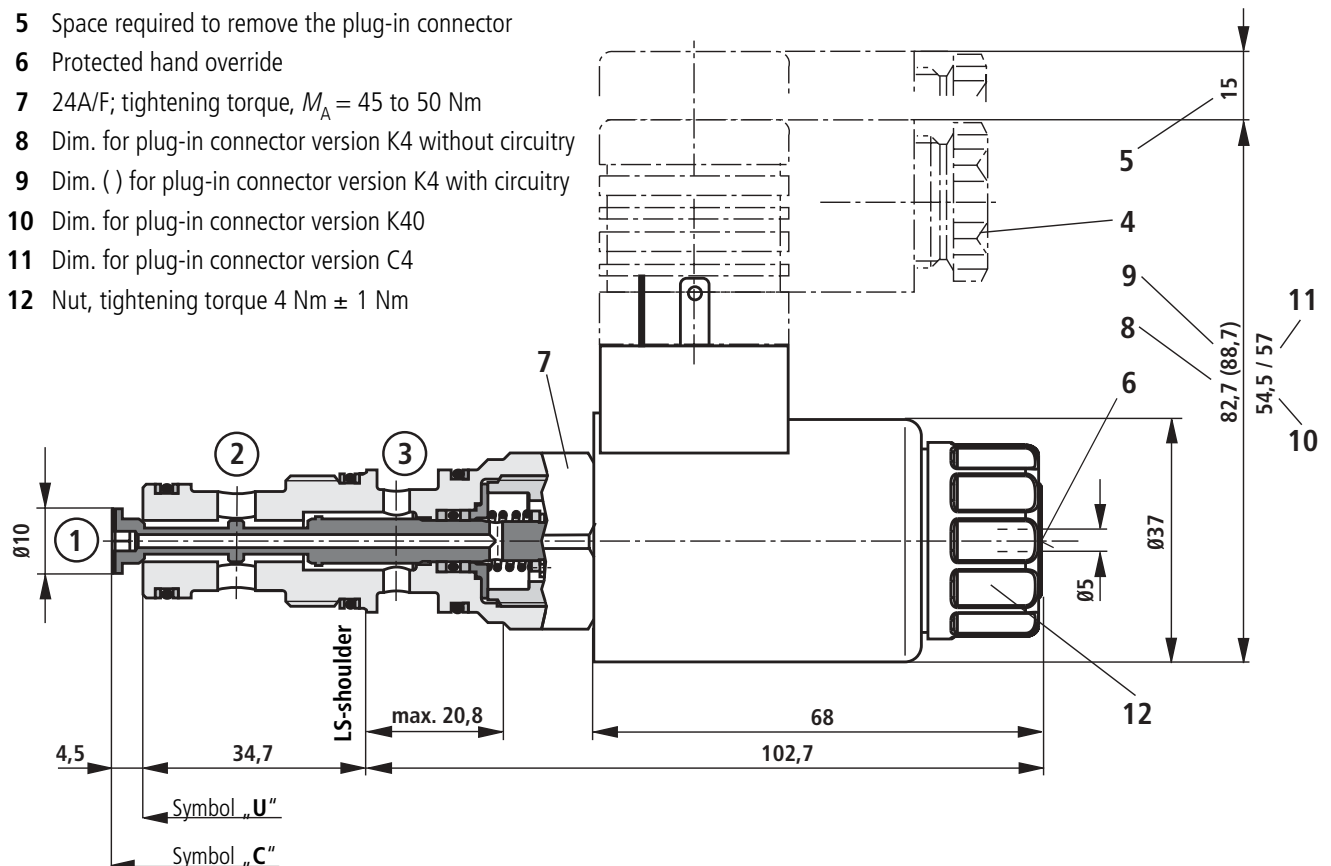
⚠ Attention! The performance limit was determined with the solenoids at operating temperature and a 10% under voltage.

Characteristic curves (measured with HLP46 and $\vartheta = 40 \text{ }^\circ\text{C} \pm 5 \text{ }^\circ\text{C}$ and 24 V coil)

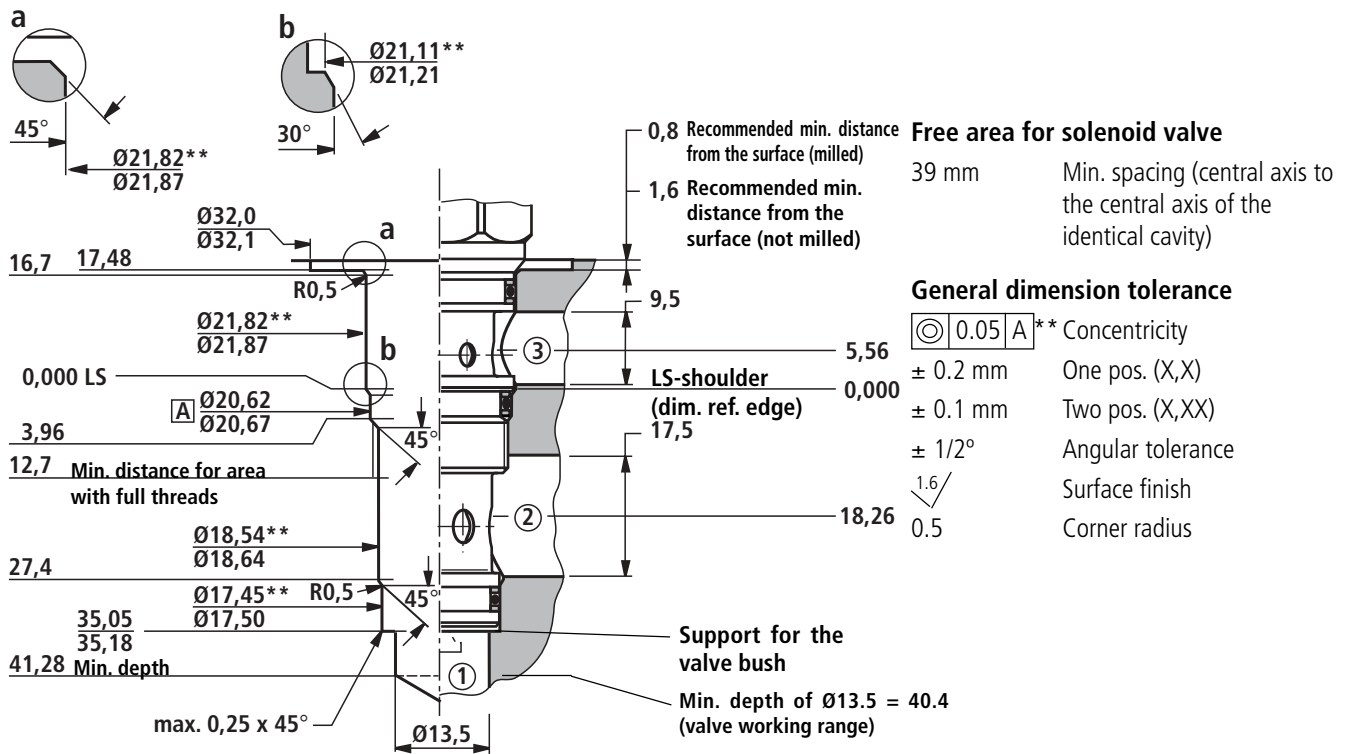


Unit dimensions (dimensions in mm)

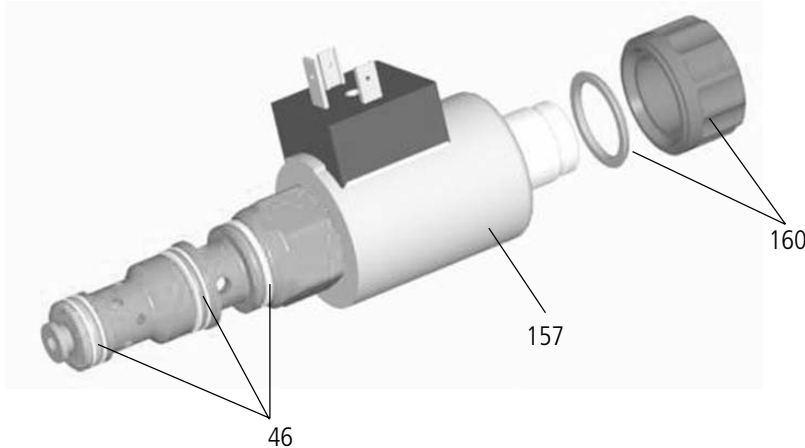
- ① Actuator connection 1
- ② Actuator connection 2
- ③ Actuator connection 3
- 4 Plug-in connector to DIN EN 175 301-803 must be ordered separately, see page 2
- 5 Space required to remove the plug-in connector
- 6 Protected hand override
- 7 24A/F; tightening torque, $M_A = 45$ to 50 Nm
- 8 Dim. for plug-in connector version K4 without circuitry
- 9 Dim. () for plug-in connector version K4 with circuitry
- 10 Dim. for plug-in connector version K40
- 11 Dim. for plug-in connector version C4
- 12 Nut, tightening torque $4 \text{ Nm} \pm 1 \text{ Nm}$



T-11A cavity; 3 actuator connections; thread M20 x 1.5 ** (dimensions in mm)



Available individual components



Pos.	Designation		DC voltage	Material No.
157	Coil for individual connections	K4	12 V	R900991678
			24 V	R900991121
		K40	12 V	R900729189
			24 V	R900729190
		C4	12 V	R900315818
			24 V	R900315819
160	Nut O-ring for pole tube			R900991453
				R900004280
46	Valve seal kit			R900733765

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