

RE 18 136-06/09.02

Replaces: 02.02

**2/2-way spool valves
with solenoid operation
Type KKDER1**

Build size 1

Cavity: T-13A

Maximum operating pressure 350 bar

Maximum flow 40 L/min



H/A/D 6851/01

Type KKDER1NA/HC ...

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Features

- Direct operated directional spool valve with solenoid operation
- Flow can be passed in both directions
- Very low flow resistance
- Positive overlap prevents switching shocks from occurring
- Wet pin DC solenoids
- The solenoid coil can be rotated
- With protected hand override (optional)



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Ordering details

KKDER		R	1	A	H	C			V
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Direct operated directional spool valve, electrically operated

Max. operating pressure 350 bar = **R**

Build size = **1**

Cavity ¹⁾	Pressure 350 bar $q_v = L/min$	Symbols	Actuator connections
T-13A	40		= N
			= P

V = FKM seals

K4 = ISO 4400 ²⁾

K40 = Deutsch plug ²⁾

C4 = 2-pin type Junior-Timer ²⁾

N0 = Without hand override

N9 = Protected hand override

G24 = 24 V DC

G12 = 12 V DC ³⁾

C = Wet pin DC solenoid with removable coil

H = High performance and a T-xxA cavity

A = Series

¹⁾ See page 6

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

³⁾ Other voltages on request

Preferred types

Material No.	Type
00701686	KKDER1PA/HCG24N0K4V
00701687	KKDER1NA/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	00074684	00057292 With indicator light 12...240 V
		00310995 With indicator light and Z-diode protective circuit 24 V
C4	00221496	
K40	00733451	

Function, section, symbol

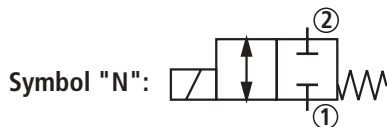
Basic principle:

The cartridge solenoid operated valves are direct operated pressure balanced 2/2-way spool valves. They control the start, stop and direction of a flow and are available as normally open or normally closed valves.

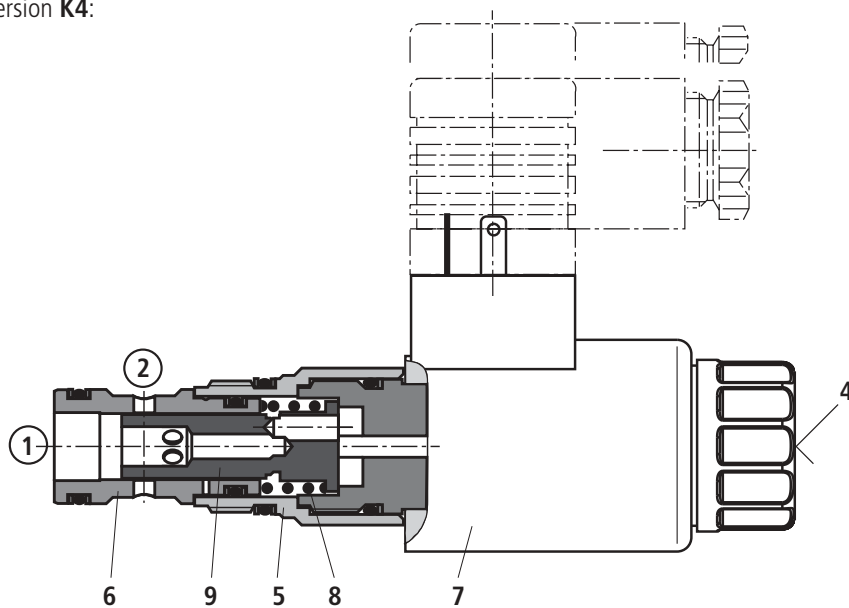
The cartridge valve basically comprises of a housing (5), bush (6) – that can move within the housing (5) – a control spool (9) as well as a return spring (8).

In the de-energised condition the control spool (9) is held in its initial position by the return spring (8). The control spool (9) is actuated via the wet pin solenoid (7). The various symbols are obtained by using the appropriate spool (N and P). Ports 1 and 2 can be continuously applied with an operating pressure of 350 bar and the flow can be passed in both directions (see symbols).

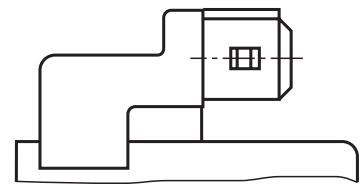
The hand override (4) makes it possible to switch the valve without energising the solenoid.



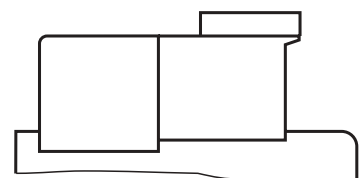
Version **K4**:



Version **C4**:



Version **K40**:



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

Installation		Optional
Ambient temperature range	°C	– 30 to + 50
Weight	kg	0.6

Hydraulic

Maximum operating pressure	bar	350 at all connections
Maximum flow	L/min	40
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 (polyglycols); 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
Degree of contamination		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
	V	12
Voltage tolerance (nominal voltage)	%	±10
Power consumption	W	19
Duty		Continuous
Switching time to ISO 6403 (solenoid horizontal)	ON ms	≤ 80
	OFF ms	≤ 50
Switching frequency	cycles/h	Up to 15000
Protection to DIN 40 050	K4	IP 65 (with mounted and fixed plug-in connector)
	C4	IP 67 (with mounted and fixed plug-in connector)
	K40	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 and RE 50 081.

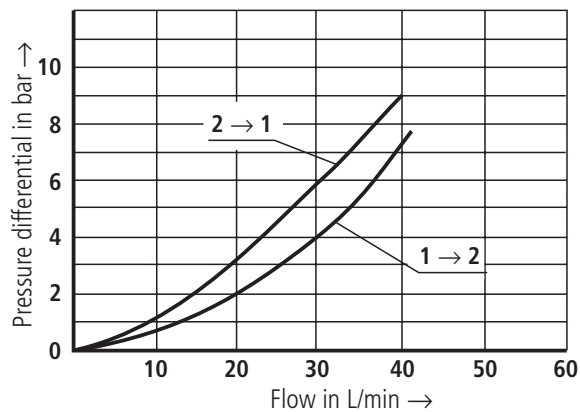
²⁾ Further voltages on request.

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

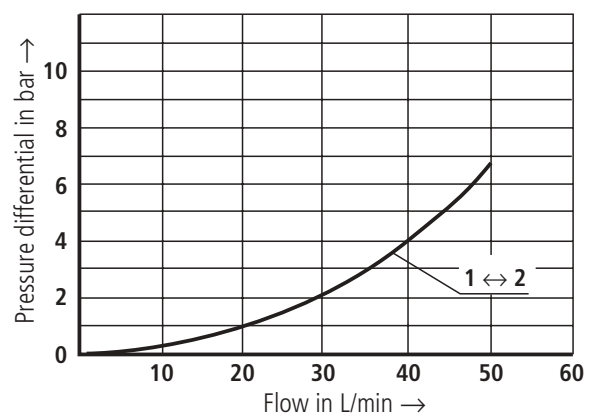
When connecting the electrics, the protective conductor (PE ≡) must be connected according to the relevant regulations.

Characteristic curves (measured with HLP46, $\vartheta_{oil} = 40\text{ °C} \pm 5\text{ °C}$ and 24 V coil)

Δp - q_v -characteristic curves – Symbol N

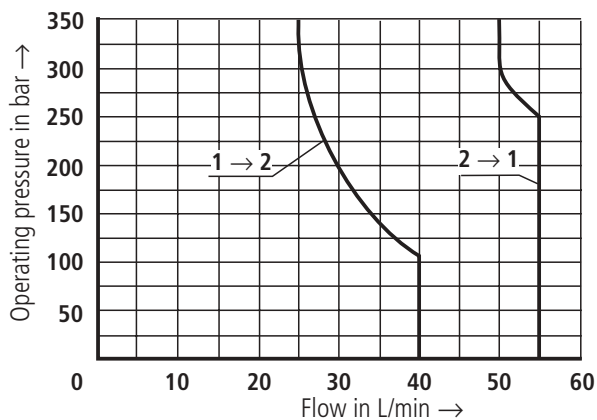


Δp - q_v -characteristic curves – Symbol P

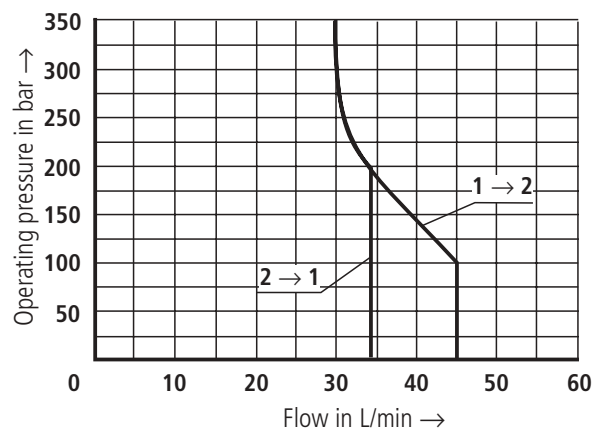


Performance limits (measured with HLP46, $\vartheta_{oil} = 40\text{ °C} \pm 5\text{ °C}$ and 24 V coil)

Symbol N



Symbol P

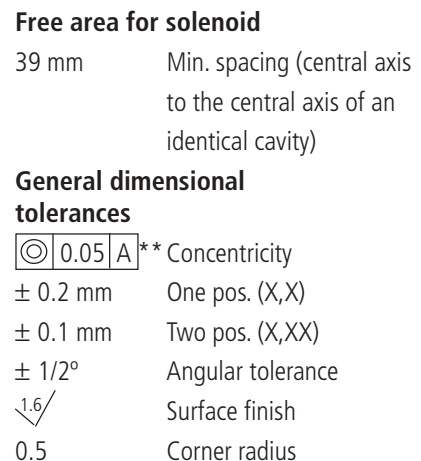


⚠ Attention:

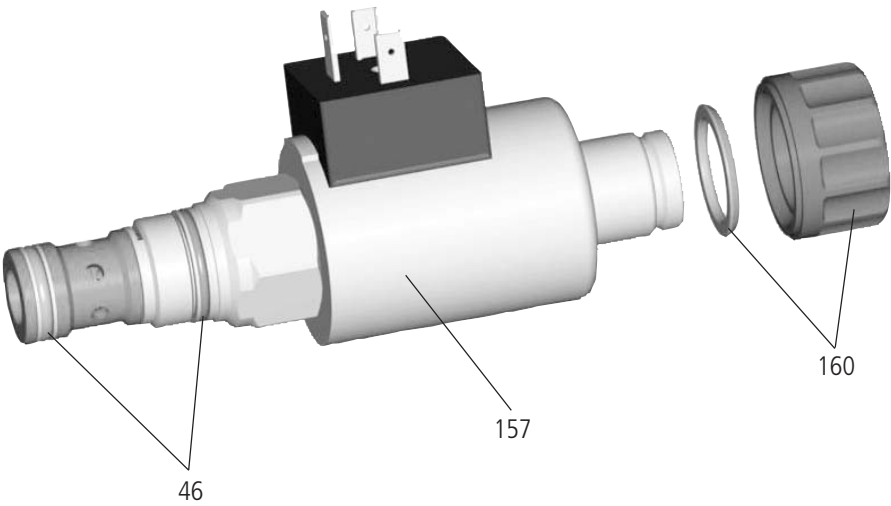
The performance limit was determined with the solenoids at their operating temperature and 10% under voltage.

- ① Actuator connection 1
- ② Actuator connection 2

- | | |
|---|---|
| 3 | Plug-in connector to DIN 43 650 and ISO 4400 must be ordered separately, see page 2 |
| 4 | Space required to remove the plug-in connector |
| 5 | Protected hand override |
| 6 | 24A/F; tightening torque, $M_A = 45$ to 50 Nm |
| 7 | Dim. for plug-in connector without circuitry |
| 8 | Dim. () for plug-in connector with circuitry |



Available individual components



Pos.	Designation		DC voltage	Material No.
157	Coil for individual connection	K4	12 V	00991678
			24 V	00991121
		K40	12 V	00729189
			24 V	00729190
		C4	12 V	00315818
			24 V	00315819
160	Nut O-ring for pole tube			00991453 00004280
46	Valve seal kit			00733593

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