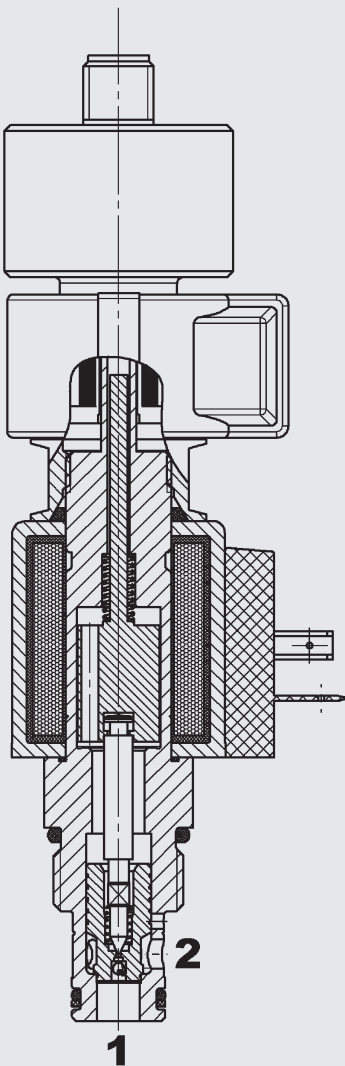


2/2 Solenoid Directional Valve Poppet Type, Pilot-Operated Normally Closed (Reverse Flow) With Electronic Switch Position Monitoring UNF Cartridge – 350 bar WS10ZR-01E

FUNCTION



The directional valve is a pilot-operated poppet valve with electronic switch position monitoring. When de-energized the valve is closed from port 2 to port 1. Flow is possible in the opposite direction. The valve piston opens at a differential pressure of approx. 1.6 bar (check valve function). When energized the valve allows flow in both directions. The valve piston opens at a differential pressure of approx. 0.9 bar from 2 to 1 or approx. 0.7 bar from 1 to 2.

FEATURES

- With integrated electronic switch position monitoring
- Excellent switching performance by high power HYDAC solenoid
- Coil seals protect the solenoid system
- Wide variety of coils and connectors available
- Exposed surfaces zinc-nickel plated for increased corrosion protection (1.000 h Salt spray test)

SPECIFICATIONS*

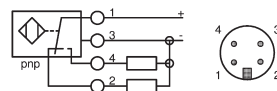
Operating pressure:	max. 350 bar
Nominal Flow:	max. 75 l/min
Leakage:	leakage-free, max. 5 drops/min (0.25 cm ³ /min) at p ₂ = 350 bar and p ₁ = 0 bar, v = 33 mm ² /s
Media operating temperature range:	min. -20 °C to max. +100 °C
Ambient temperature range:	min. -20 °C to max. + 60 °C
Operating Fluid:	Hydraulic oil to DIN 51524 Part 1, 2 and 3
Viscosity range:	min. 10 mm ² /s to max. 420 mm ² /s
Filtration of operating liquid: (nach ISO 4406)	p < 210 bar: min. 20/18/15 for extended lifetime recommended 17/15/12 p > 210 bar: min. 18/16/13 for extended lifetime recommended 16/14/11
MTTF _d :	150 - 1200 Jahre, according to DIN EN ISO 13849-1
Installation:	no orientation restrictions
Materials:	Valve body: steel Piston: hardened and ground steel Seals: NBR (standard) FKM (optional, media op. temperature range -20°C to +120°C) Back-up rings: PTFE Coil: steel / polyamide
Cavity:	FC10-2
Weights:	0.54 kg

Electrical data

Type of voltage:	DC: direct current solenoid AC: alternating current solenoid with a bridge rectifier built into the coil
Current draw at 20°C:	1.5 A for 12 V DC 0.8 A for 24 V DC
Voltage tolerance:	± 15% of nominal
Coil duty rating:	Continuous up to 115% of nominal voltage at 60°C ambient temperature
Response time: (at p _{max} , Q _{max} , v = 33 mm ² /s)	energized: approx. 50 ms; de-energized: approx. 50 ms substantially extended response times possible at other operating conditions
Type of coil	Coil...-40-1836

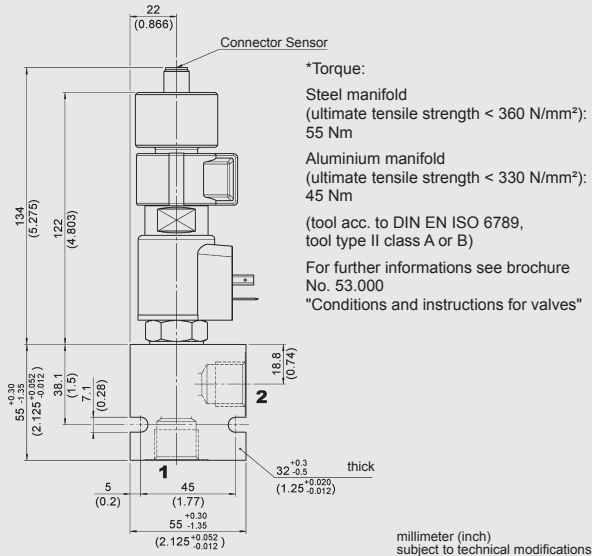
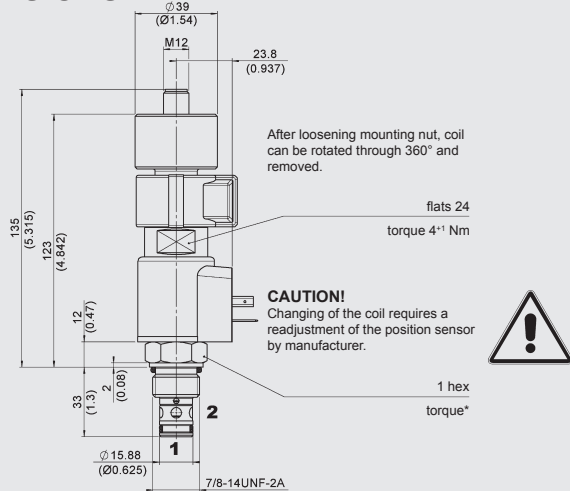
Sensor data

Supply voltage:	24 V: 20 to 32 V DC 12 V: 10.5 to 16 V DC
Reverse polarity protection of supply:	yes
Outputs:	2 with change-over function PNP positive switching
Output load:	≤ 400 mA, 100% continuous
Short-circuit protection:	Provided
Connector:	Male connector M12 x 1 (4 pole)
Protection class:	IP65 to DIN40050
CE-conformity:	93/68/EEC 2004/108/EC
EMC:	DIN EN 61000-6-1-2-3-4
Humidity requirements:	0 - 95% rel. (according to DIN 40040)
Sensor connections:	



*see "Conditions and instructions for valves" in brochure 53.000

DIMENSIONS



MODEL CODE

WS10ZR - 01E - C - N - 24 DG - 12

Basic model

Directional poppet valve, UNF

Type

01E = with electronic switch position monitoring

Body and ports*

C = cartridge only

Seals

N = NBR (standard)

V = FKM

Coil voltage

DC

12 = 12 V DC

24 = 24 V DC

AC (bridge rectifier built into the coil)

115 = 115 V AC

230 = 230 V AC

Other voltages on request

Coil connector (...-40-1836)

DC: DG = DIN connector Type A to EN 175301-803

DK = KOSTAL threaded connector M27 x 1

DL = 2 Leadwires, 457 mm (18") long, 0.75 mm²

DN = Deutsch connector DT04-2P, 2pole, axial

DT = AMP Junior Timer, 2 pole, radial

AC: AG = DIN connector type A to EN 175301-803

Other connectors on request

Supply voltage for sensor

Omission = 24 V DC

12 = 12 V DC

Standard models

Model code	Part No.
WS10ZR-01E-C-N-12DG	3980690
WS10ZR-01E-C-N-24DG	3386337

Other models on request

*Standard line bodies

Code	Part No.	Material	Ports	Pressure
FH102-SB4	3037594	Steel, zinc-plated	G1/2"	350 bar
FH102-AB4	3037777	Alu, clear anodized	G1/2"	210 bar

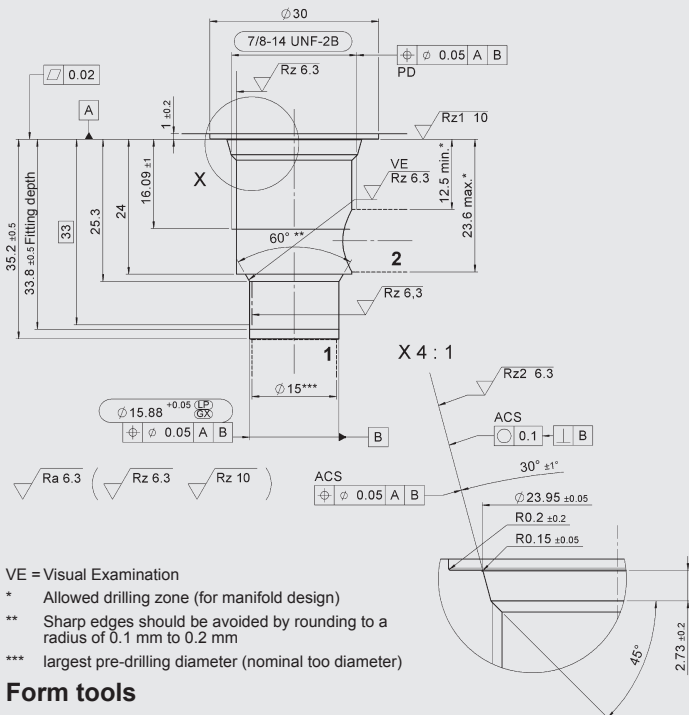
Other models on request

Seal kits

Code	Material	Part No.
FS UNF 10/N SEAL KIT	NBR	3651557
FS UNF 10/V SEAL KIT	FKM	3651559

CAVITY

FC10-2



VE = Visual Examination

* Allowed drilling zone (for manifold design)

** Sharp edges should be avoided by rounding to a radius of 0.1 mm to 0.2 mm

*** largest pre-drilling diameter (nominal too diameter)

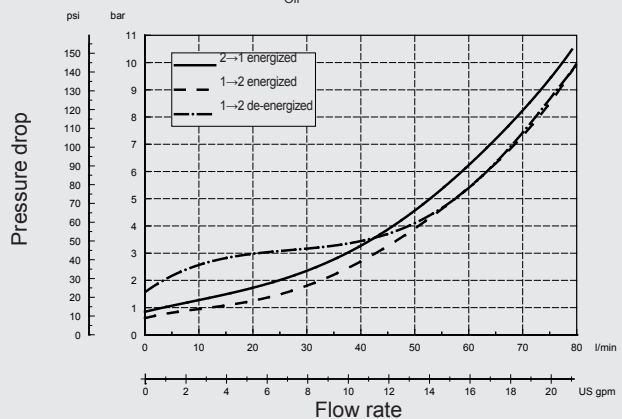
Form tools

Tool	Part No.
Rougher FC10-2	176379
Finisher FC10-2	165706

millimeter (inch) subject to technical modifications

PERFORMANCE

measured at $v = 33 \text{ mm}^2/\text{s}$, $T_{\text{Oil}} = 46 \text{ }^\circ\text{C}$



NOTE

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

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