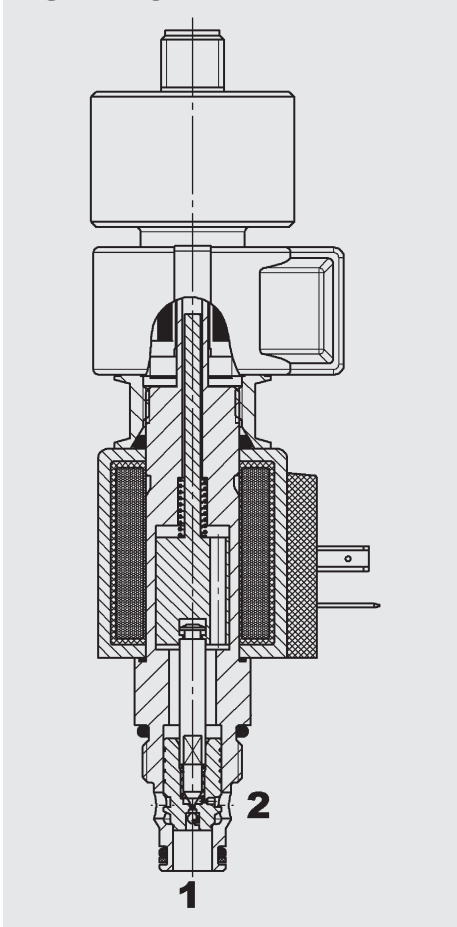


2/2 Solenoid Directional Valve Poppet Type, Pilot-Operated Normally Closed (Reverse Flow) With Electronic Switch Position Monitoring UNF Cartridge – 350 bar WS08ZR-01E

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 poppet opens at a differential pressure of approx. 1.8 bar (check valve function). When energized the valve allows flow in both directions. The valve piston opens at a differential pressure of approx. 1.3 bar from 2 to 1 or approx. 0.9 bar from 1 to 2.

Please mind: In pilot operated solenoid valves, shift performance and response times depend i.a. very much on pressure drop and volume flow during actuation. This applies particularly to valves with piston seals and/or position sensors.

FEATURES

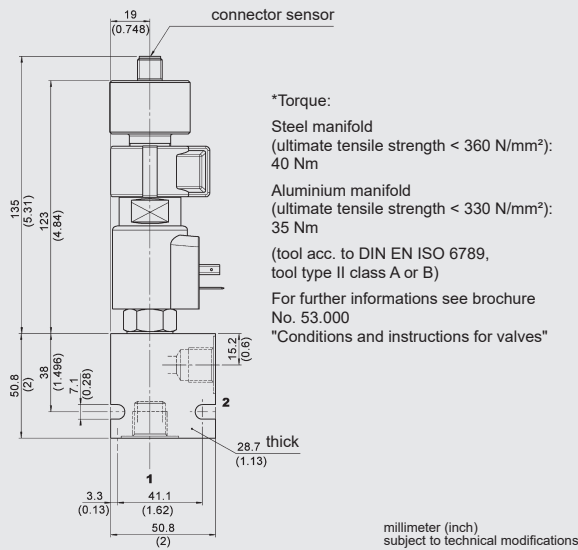
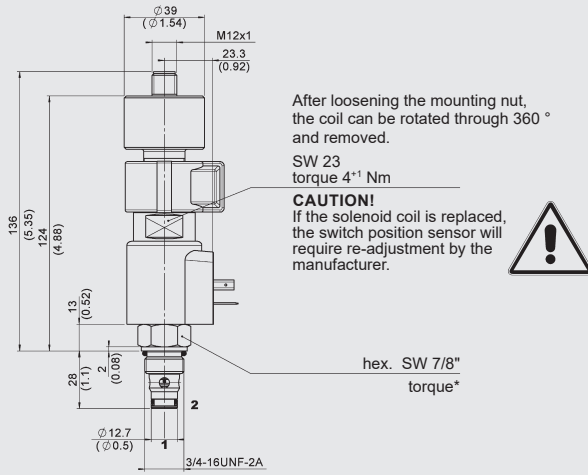
- With integrated electronic switch position monitoring
- Excellent switching performance by high power HYDAC solenoid
- Coil seals protect the solenoid system
- Wide variety of connectors available
- Exposed surfaces zinc-nickel plated for increased corrosion protection (1.000 h Salt spray test)

SPECIFICATIONS*

Operating pressure:	max. 350 bar
Nominal flow:	max. 40 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 Poppet: hardened and ground steel Seals: NBR (standard) FKM (optional, media temperature range -20 °C to +120 °C) Back-up rings: PTFE Coil: steel / polyamide
Cavity:	FC08-2
Weight:	0.5 kg
Electrical data	
Type of voltage:	<u>DC</u> : direct current solenoid <u>AC</u> : alternating current solenoid with a bridge rectifier built into the coil
Current draw at 20 °C:	1.5 A at 12 V DC 0.8 A at 24 V DC
Voltage tolerance:	± 15 % of nominal voltage
Coil duty rating:	Continuous up to max. 115 % of the nominal voltage at 60 °C ambient temperature
Response time: (at p _{max} , Q _{max} , v = 33 mm ² /s)	energized: approx. 30 ms de-energized: approx. 70 ms substantially extended response times possible at other operating conditions
Sensor data	
Supply voltage:	24 V: 20 bis 32 V DC 12 V: 10.5 bis 16 V DC
Reverse polarity protection of supply:	yes
Outputs:	2 with change-over function PNP positive switching
Output load:	≤ 400 mA, 100 % duty
Short circuit protection:	Provided
Connector:	Male connector M12 x 1 (4 pole)
Protection class:	IP65 to DIN 40050
CE-Conformity:	93/68/EEC 2014/30/EU
EMC:	DIN EN 6100-6-1-2-3-4
Humidity requirements:	0 - 95 % rel. (to DIN 40040)
Sensor connections:	

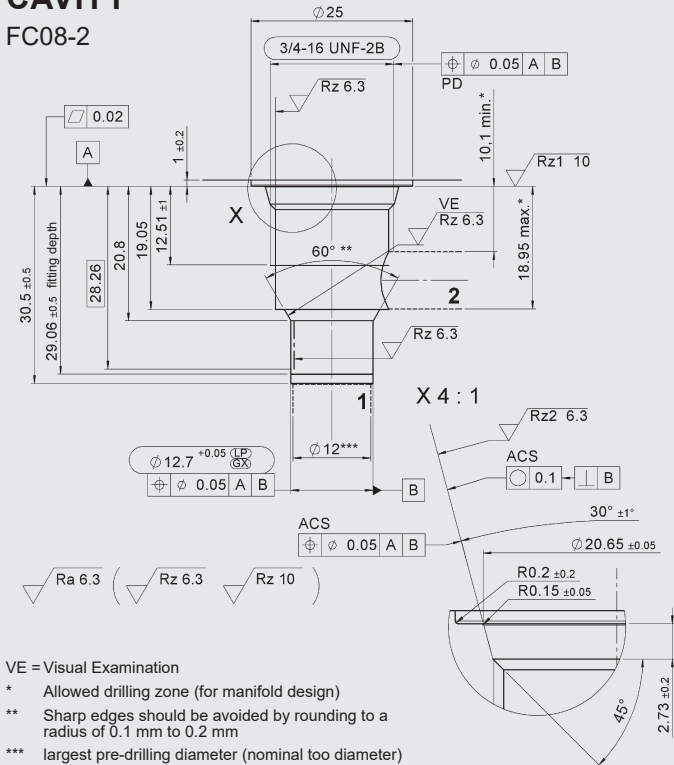
*see "Conditions and instructions for valves" in brochure 53.000

DIMENSIONS



CAVITY

FC08-2



Form tools

Tool	Part No.
Rougher	175473
Finisher	175474

millimeter (inch)
subject to technical modifications

MODEL CODE

WS08ZR - 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 voltages
12 = 12 V DC
24 = 24 V DC

AC voltages (bridge rectifier built into the coil)

115 = 115 V AC
230 = 230 V AC

Other voltages on request

Coil connectors (type 40-1836)

DC: DG = DIN connector type A to EN175301-803
DK = Kostal threaded connection M27 x 1
DL = 2 Leadwires, 457 mm long, 0.75 mm²
DN = Deutsch connector DT04-2P, 2-pole, axial
DT = AMP Junior Timer, 2-pole, radial

AC: AG = DIN connector type A to EN175301-803

Other connectors on request

Supply voltage for sensor

Omission = 24 V DC
12 = 12 V DC

Standard models

Model code	Part No.
WS08ZR-01E-C-N-12DG	3368892
WS08ZR-01E-C-N-24DG	3352882
WS08ZR-01E-C-N-230AG	3368893

Standard in-line bodies

Code	Part No.	Material	Ports	Pressure
FH082-SB3	560919	Steel, zinc-plated	G3/8"	350 bar
FH082-AB3	3011423	Aluminium, anodized	G3/8"	210 bar

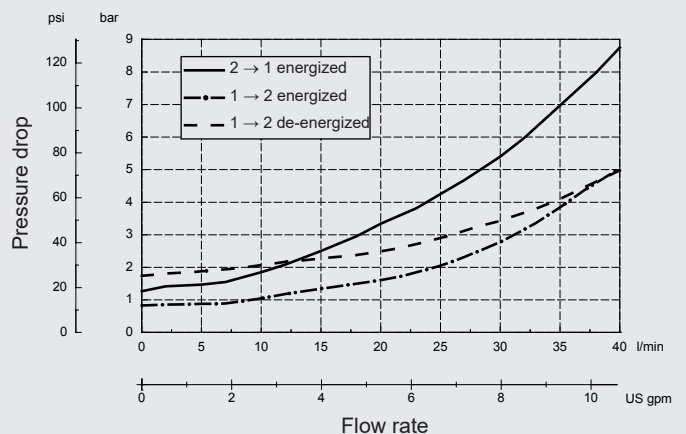
Other models on request

Seal kits

Code	Material	Part No.
FS UNF 08/N SEAL KIT	NBR	3651385
FS UNF 08/V SEAL KIT	FKM	3651356

TYPICAL PERFORMANCE

Measured at $v = 34 \text{ mm}^2/\text{s}$, $T_{oil} = 46^\circ \text{C}$



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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