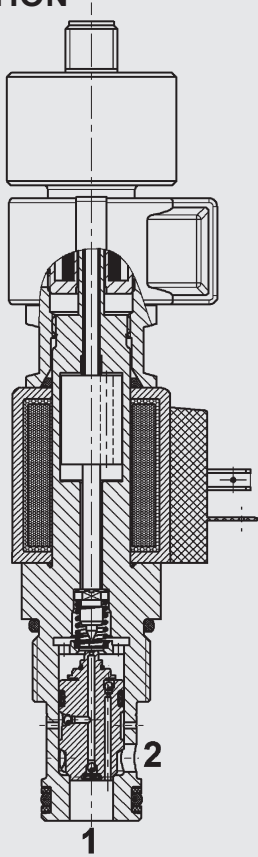


up to 110 l/min
up to 350 bar

FUNCTION



The directional valve is a pilot operated poppet valve with electronic switch position monitoring.

When de-energized, there is free flow through the valve in both directions. The valve opens at a differential pressure greater than 1 bar.

When energized, the valve is closed in both directions - this switch position is recorded inductively.

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. The switching point of the sensor is within the slider overlap of closing element. A minimum differential pressure is necessary for safe and seat-tight closing.

2/2 Solenoid Directional Valve Poppet Type, Pilot Operated Normally Open, With Electronic Switch Position Monitoring Metric Cartridge Valve – 350 bar WSM12120V-01E

FEATURES

- With 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
Flow rate:	max. 110 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. 7.4 mm ² /s to max. 420 mm ² /s
Filtration of operating liquid: (according to 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 years, according to DIN EN ISO 13849-1
Installation:	Optional
Materials:	Valve body: steel Poppet: hardened and ground steel Seals: NBR (standard) FKM (optional, media operating temperature range -20 °C to +120 °C) Back-up rings: PTFE Coil: steel / polyamide
Cavity:	12120 metric
Weight:	Valve complete: 0.63 kg Coil only: 0.19 kg

Electrical data

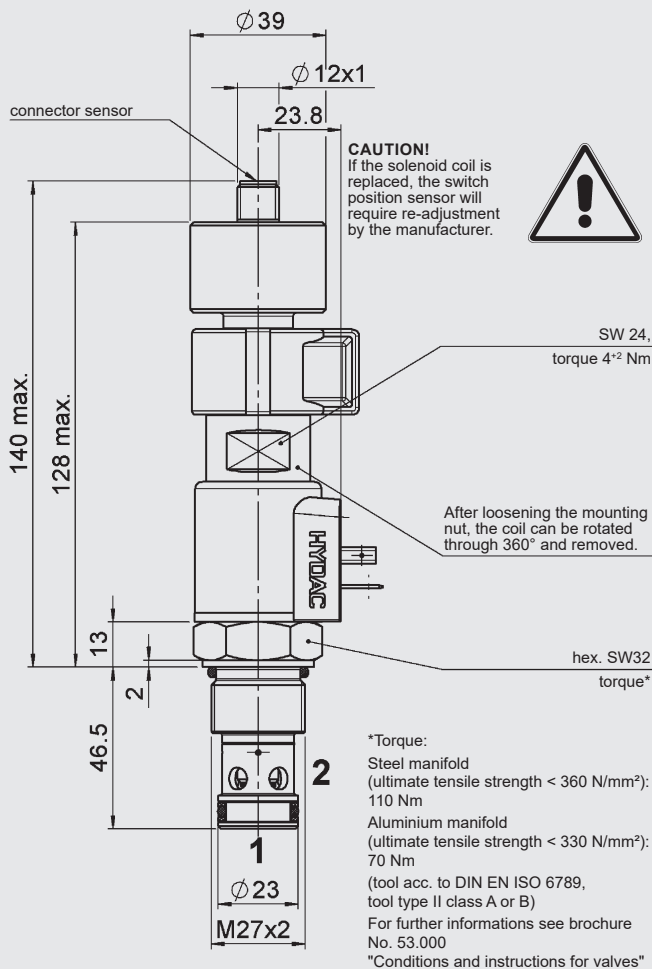
Type of voltage:	DC: direct current solenoid AC: alternating current solenoid with a bridge rectifier built into the coil
Current draw at 20 °C:	1.5 A at 12 V DC 0.8 A at 24 V DC
Voltage tolerance:	± 15% of the nominal voltage
Coil duty rating:	Continuous up to max. 115 % of the nominal voltage at 60 °C ambient temperature
Response time: (at p _{max} , Q _{max} , v = 33 mm ² /s)	energized: approx. 70 ms; de-energized: approx. 50 ms substantially extended response times possible at other operating conditions
Coil type:	Coil...-40-1836

Sensor data

Supply voltage:	24 V: 20 up to 32 V DC 12 V: 10.5 up 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 as per DIN 40050
CE conformity:	93/68/EEC 2014/30/EU
EMC:	DIN EN 61000-6-1-2-3-4
Humidity requirements:	0-95% rel. (as per DIN 40040)
Diagram:	

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

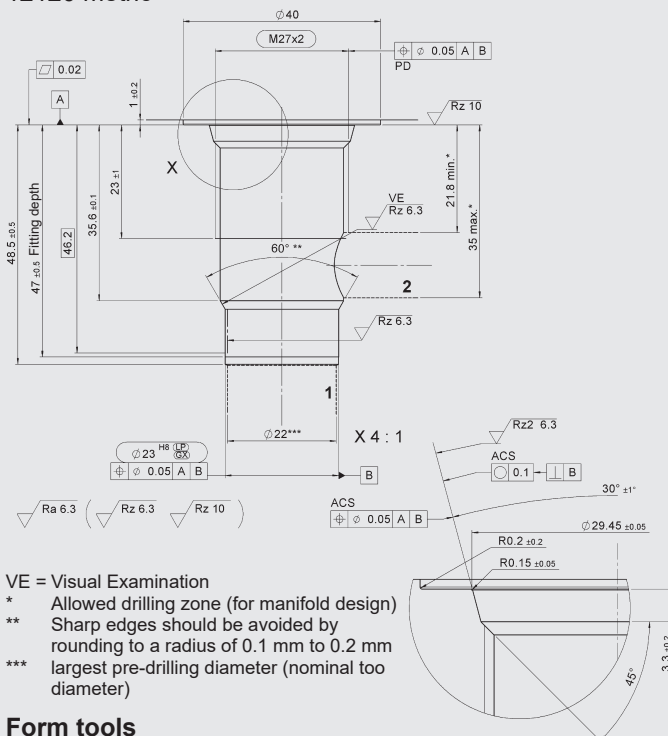
DIMENSIONS



millimetre
subject to technical modifications

CAVITY

12120 metric



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.
Countersink	172880
Reamer	1014207

millimetre
subject to technical modifications

MODEL CODE

WSM12120V - 01E - C - N - 24 DG - 12

Basic model

Directional poppet valve, metric

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

DT = AMP Junior Timer, 2-pole, radial

DK = Kostal threaded connection M27 x 1

DL = 2 flying leads 475 mm long; 0.75 mm²

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

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.
WSM12120V-01E-C-N-24DG	3643614
WSM12120V-01E-C-N-230AG	3705905

Other models on request

Standard in-line bodies

Code	Part No.	Material	Ports	Pressure
R12120-10X-01	396708	Steel, zinc-plated	G 3/4"	350 bar
R12120-10X-02	396707	Steel, zinc-plated	M 27 x 2	350 bar

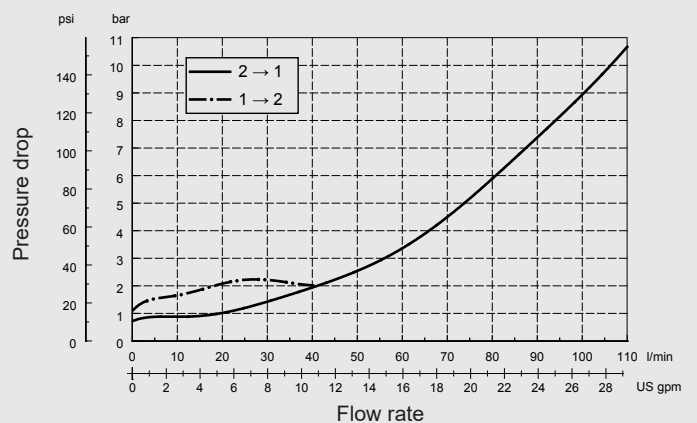
Other models on request

Seal kits

Code	Material	Part No.
SEAL KIT 12120-NBR	NBR	3454001
SEAL KIT 12120-FKM	FKM	3454002

TYPICAL 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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