

Throttle Valve

Valve regulation with proportional magnet
 Subplate mounting NG 6 - 210 bar to 30 l/min
Explosion protection device 94/9/EC (ATEX 95)

Type

108 BXA-M534

Throttle valves are flow valves in which the volume flow depends on the throttle valve cross section and differential pressure. The control valve can be adjusted by means of orifice to ensure that, as far as possible, the equipment's efficiency by viscosity.

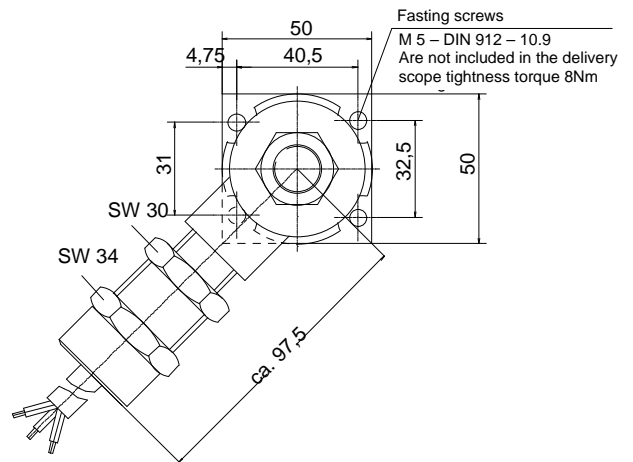
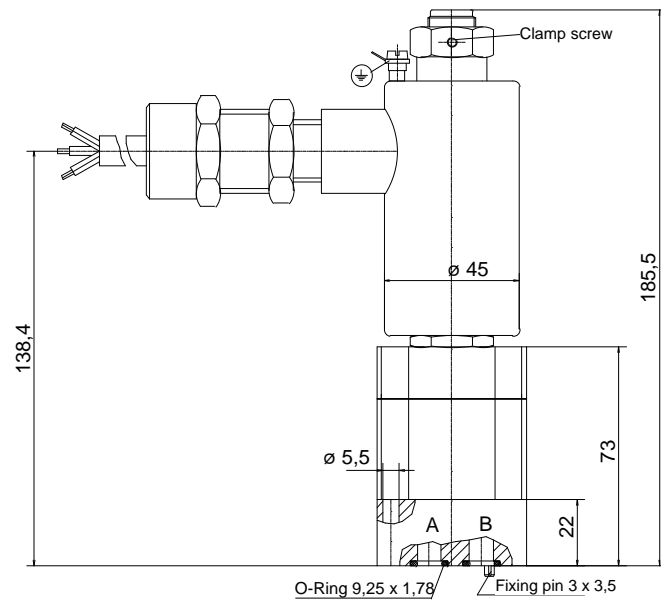
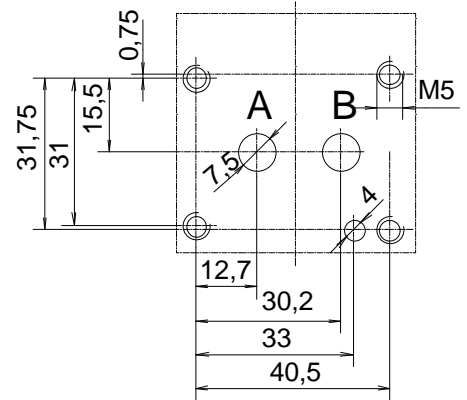
FEATURES

- Magnet system: power-controlled, pressure-sealed, coil exchangeable without opening the hydraulic system
- Remote control, programmable
- Valve static: closed
- Setting time: 70 ms
- Flow signal function: linear
- Mounting surface according to DIN 24 340 - G 6
- Assembly on connection plates with pipe joints or control panel
- Standard sealing material Viton (FKM)

MODIFICATIONS special model

- **Marking: CE 0722 Ex II 2GD Ex d IIC T5 C**
- For explosive areas, cluster II. class **2G 2D**
 Type of protection **Ex d IIC T5** according to
 EN 60679-0 : 2006 EN 60079-1 : 2004
 EN 61241-0 : 2006 EN 61241-1 : 2004
 Certificate of conformity: **INERIS 05ATEX0028X**
INERIS 05ATEX0028X/1

Mounting surface DIN 24 340-G6 (ISO 5781)



ORDER INFORMATION

The throttle valve supplied to standard specifications includes the O-rings for sealing the connecting drill holes and the certification of conformity.

Name	Throttle valve	108	B	XA	P	6	M534
Type series							
Series code letter							
Special design							
Valve operating mode : P = proportional solenoid							
Orifice size: 2; 3; 4; 5; 6; 7							
Modification no. for customisation							

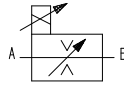
ACCESSORY

- set of valve fastenings:** Order-No.: 44-108-00078
4 pces. Socket head screw M 5 x 30 DIN 912 - 10.9
- Connecting plates:** see dimension sheet 9-74-030-2002
- Control amplifier type StA 03 -ES - 1 (not ex-authorisation)**
see dimension sheet 9-74-003-0025

CHARACTERISTICS

1. General

Symbol



Design

slit orifice

Weight

1,9 kg

Mounting position

any

Direction of volume flow

A to B

Ambient temperature

-20°C to +50°C

2. Hydraulic characteristics

Rated pressure / max. pressure

210 bar for all connections

max. permitted pressure difference

10 bar

max. permitted flow from A to B

30 l/min

Flow signal function

see fig. 2 to 7

Leakage flow

approx. 30 cm³/min (viscosity > 36 mm²/sec., Δp 10 bar and Signal input = 0 Volt)

Hydraulic fluid temperature range

-20°C to +60°C

Viscosity range

5 - 350 mm²/s

Contamination level / filtering

General permit table class 16/13 according to ISO 4406 or 7 according to NAS 1638 (recommended filter: minimum retaining rate $\beta_{5-10} \geq 75$)

3. Type of actuation

3.1 Solenoid

electrical – proportional solenoid, simple solenoid

Design

pressing, pressure sealed, explosion protection device

Current supply / nominal voltage

D.C. voltage / 24 V

Rated current / cur off

0,4 A (effective)

Nominal resistance P_{20} / cut off P_{warm}

9,5 W

Relative switch-on time

100%

Type of protection

IP 67 according to EN DIN 60 529

4. Transfer

(Definition according to DIN 24 311)

Measured with the amplifier StA 03 – ES

repeat accuracy

ca. 1%

Hysteresis

ca. 4%

In rated variable volume flow at Δp 50 bar

Volume flow signal function

see Fig. 2 - 7

Time response

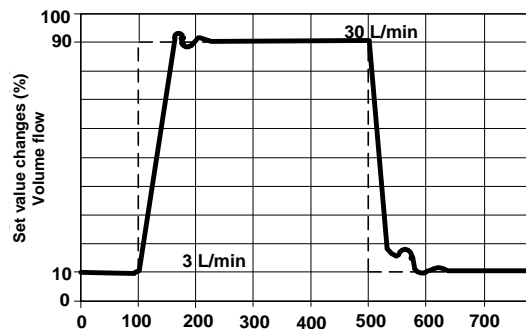
see Fig. 1

CHARACTERISTIC

Time response

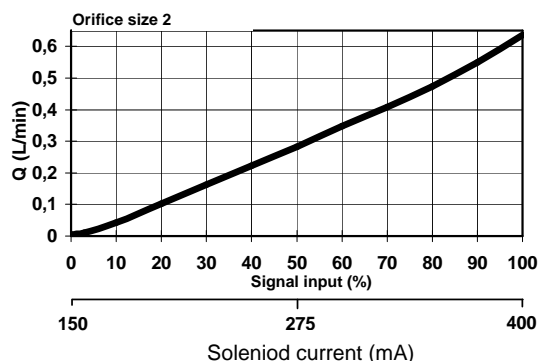
Fig. 1 measure with orifice size 7

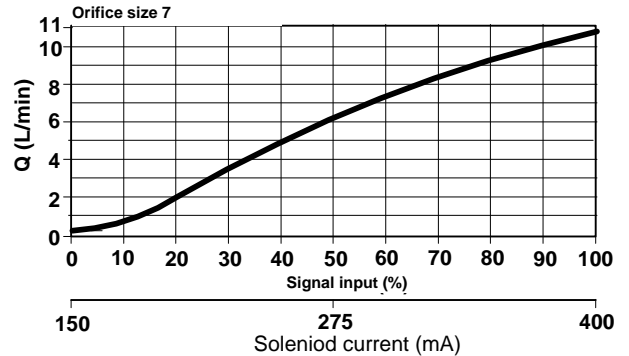
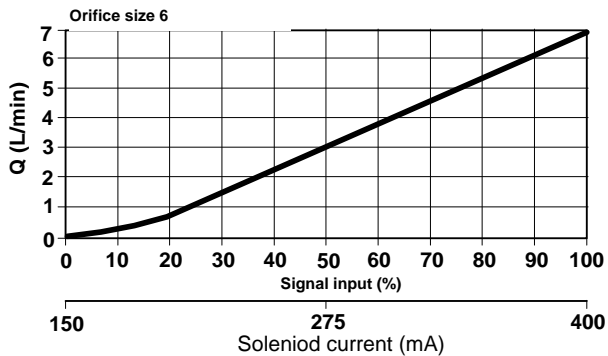
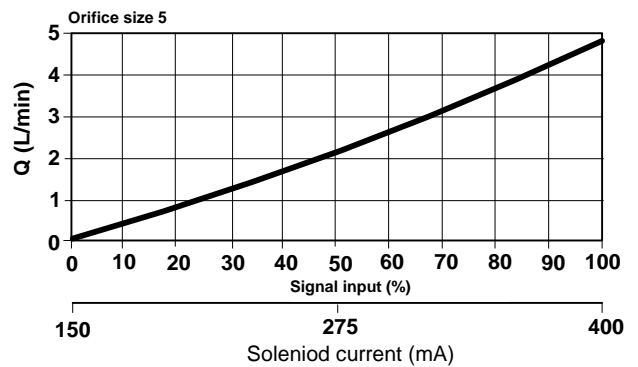
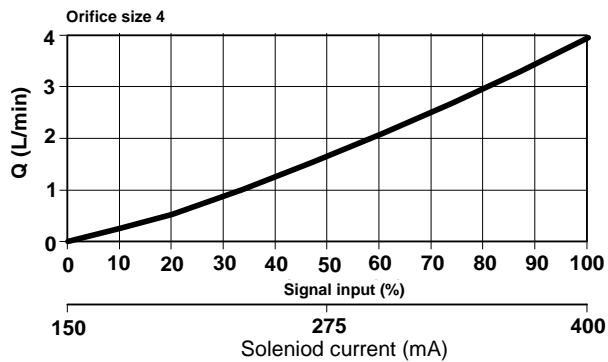
Δp 10 bar (constant) The response function will change under different operating conditions.



Volume flow signal function characteristics; $Q = f(I; \Delta p = \text{const.})$

Flow as a function of the magnetic flow for different orifices with constant differential pressure of 1,25 bar.





The construction of operating solenoids is conforming to the rules of EN 60079-0 and 60079-1 and was released for manufacturing by “Institut National de l’EnviRonnement industriel et des rISques” (INERIS)

The number of certification, manufacturer’s serial number and the date of outgoing goods control of the solenoid are labelled on the surface of the solenoid.

Before mounting and start-up please mind the following points:

1. The valves have to be treated and stored with care.
2. The information of the performance data on the solenoid must be observed, also never remove the labelling of the solenoids.
3. The safety regulations of the manufacturer must be observed by the user.
4. The flange face of the valve has to be free of oil before mounting.

Valve description

1. Valve

The flow control valve can be used to adjust the throttle section progressively.

It can be installed either at the input or exit of the system. The flow adjustment is by, means of a proportional magnet that is powered by an electric amplifier proportionally to a specified electric nominal value signal. The proportional magnet is an electro-mechanical transducer. Its initial force is proportional to the magnet current.

The magnetic force operates via a sliding piston with the throttle opening against an opposing force pressure spring in such a way that the system operates with a controlled force. The sliding piston valve also operates proportionally to the force, depending, in addition, on the throttle opening and the flow. The flow will depend on the size of the throttle section and the pressure difference at this point. If the pressure difference remains constant, the flow will also be constant.

The throttling is by means of a orifice and is thus not affected, in general, by the viscosity of the pressure medium. The direction of flow for the throttle is from connection A to B.

2. Materials

The valve components are made of structural steel. All the components likely to wear are hardened. The magnet components in contact with the pressure medium are of steel, iron, and brass. The exterior of the coil is zinc plated and the coil holder is black-burnished.

For applications in excess of the given specification, please contact Schiedrum.

All specified parameters are partially based on long years of experience. The data are typical and may slightly deviate depending on the valve series. All measurements were carried out on a test stand with an oil viscosity of $36 \text{ mm}^2/\text{s}$, a filter mesh of $< 10 \mu\text{m}$ and an optimally adjusted electronic control system. All data given here should be used as description for the product only and they are not to understand as warranty in the sense of law.