

3/2 way poppet valves electromagnetic actuated, directly controlled G 1/4, 1/4 NPT or flanged with NAMUR Interface

TÜV-approval based on IEC 61 508, DIN V 19 251

Valves for safety systems up to SIL 4

Solenoid valve also suitable for low power consumption in non hazardous areas without barrier

Working from 0 bar up

High operational reliability even after long periods of inoperation

Suitable for control and instrument quality air

Also suitable for open air installation

Namur flange with integrated exhaust air recirculation

Solenoid: ATEX category II 2 GD, type of protection Ex ia IIC T5/T6, EX tD A21 IP66 T95°C, suitable for zones 1, 2 (gases) and 21, 22 (dusts)



Approval depends on magnetic system, see page 2!

Technical features

Medium:

Compressed air, filtered, non-lubricated and dry
Other fluids on request

Operation:

Direct solenoid operated poppet valves

Flow direction:

Optional

Mounting position:

Any, but preferably with solenoid vertical

Port size:

G 1/4, 1/4 NPT or flanged with NAMUR Interface

Operating pressure:

0 ... 10 bar

Fluid/Ambient temperature:

-25 ... +60°C

Depending on solenoid system
Air supply must be dry enough to avoid ice formation at temperatures below +2°C.

For outdoor installation please protect all connections against the penetration of moisture!

Materials:

Housing: brass 2.0402 (Ms 58), stainless steel 1.4404 (316 L)
hard-anodised aluminium 3.0615
Internal parts: stainless steel, brass
Solenoid housing: aluminium, anodized hartanodisiert 3.0615
Seals: NBR

Technical data

Symbol	Port size	Operating *1) pressure (bar)	kv-Wert (Cv (US) ≈ kv x 1,2)	Material Seat	Housing	Weight without solenoid (kg)	Dimension No.	Model *4)
	G 1/4	0 ... 10	0.340	NBR	Brass	0,65	1	2401088.2003
	1/4 NPT	0 ... 10	0.340	NBR	Brass	0,65	1	2401087.2003
	G 1/4	0 ... 10	0.340	NBR	Stainless steel	0,65	2	2401086.2003
	1/4 NPT	0 ... 10	0.340	NBR	Stainless steel	0,65	2	2401012.2003
	G 1/4 NAMUR	0 ... 10	0.340	NBR	Aluminium *2)	0,55	3	2401091.2003
	1/4 NPT NAMUR	0 ... 10	0.340	NBR	Aluminium *2)	0,55	3	2401090.2003
	G 1/4 NAMUR *3)	0 ... 10	0.340	NBR	Aluminium *2)	0,55	4	2401009.2003

*1) With gaseous and liquid fluids up to 40 mm²/s


*2) Hard-anodised

*3) P port in flange interface

*4) Manual override on request

Note: At an ambient temperature of -20°C, higher air consumption may be experienced for short periods.

Solenoid parameters for use in non hazardous locations


	Switch-on voltage	Allowed current	Holding current	Power consumption	Ex-Protection	IP-Protection class (to EN 60529)	Temperature Ambient/Fluid	Electrical connection	Weight	Operating sequence	Model
	[V]	[mA]	[mA]	[W]			[°C]		[kg]		
	22 ... 26,4	< 75	> 40	1,8 at 24 V	—	IP 66	-40 ... +80	M20 x 1,5 *6)	0,85	see below	2003

Standard voltages (±10%), Design according to VDE 0580, EN 50014/50028. 100% duty cycle.

Pick-up delay typical: 0,3 ... 2 s, depending on intrinsic current supply

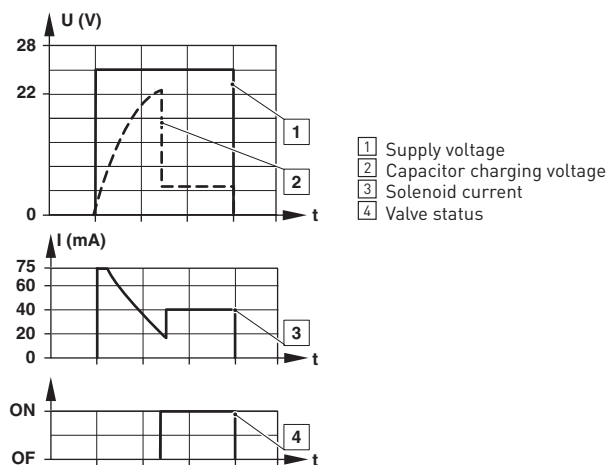
*6) Connector cable gland is in scope of delivery

Solenoid parameters for use in intrinsically safe circuits

Symbol	Switch-on voltage [V]	Holding current min. [mA]	Holding voltage [V]	Pick-up delay typical *3) [s]	Protection class	Temperature Ambient/Fluid [°C]	Weight [kg]	Model
	22 ... 28	40	approx. 5	0,3 ... 5	II2G Ex ia IIC T6 II2G Ex ia IIC T5 II2D IP66 T95°C	-40 ... +55 -40 ... +70 -40 ... +70	0,85	2003

*3) depending on intrinsic current supply

Operating sequence



Model	Approvals ATEX	IECEX	FM	Datasheet
2003	PTB 04 ATEX 2010	IECEX PTB 05.0020	—	N/en 7.1.535







Function of solenoid drive

To switch the direct operated valve, a certain energy is required. This energy is stored in a capacitor. The charging voltage is 22 V. The higher the supply voltage, the shorter the charging time. As soon as the charging voltage has been reached, the valve switches. The small current now flowing through the coil is sufficient to hold the valve in the open position. At least 40 mA are required for this.

Current supply units:

Intrinsically safe power supply units can be chosen in a list of compatibility in www.norgren.com. When selecting an intrinsically safe power supply, it is important to observe the maximum permissible values acc. to the EC-Type-Examination Certificate PTB 04 ATEX 2010 respectively IECEx PTB 05.0020 Ui 28 V, Ii 110 mA, Pi 1,5 W. The effective internal capacities Ci; and inductivities Li of the solenoid are negligibly low.

Accessories

Silencer *1)	Exhaust guard *2)	Filter	Throttle control plate	Flange plate	Yoke
					
Page 6	Page 6	Page 6	Page 6	Page 5	Page 6
M/S2 (G1/4) C/S2 (1/4 NPT)	0613422 (G1/4, 1/4 NPT)	0681173 (G1/4, 1/4 NPT)	4040239 (for G1/4 only)	0612790 (NAMUR single connection plate, for G1/4 only) 0612791 (NAMUR-rip use in combination with 0612790, Alu)	0540593

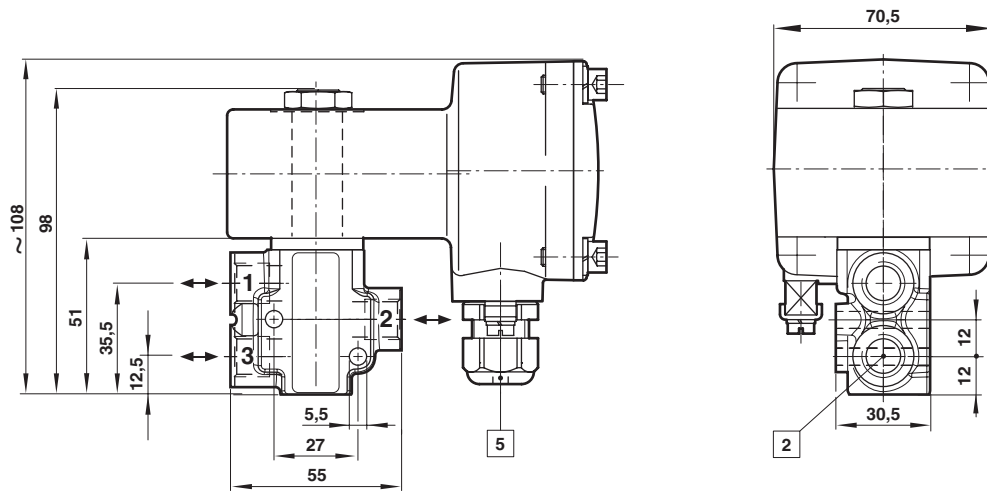
*1) For indoors use only

*2) For outdoors use, opening pressure ~ 0,2 bar

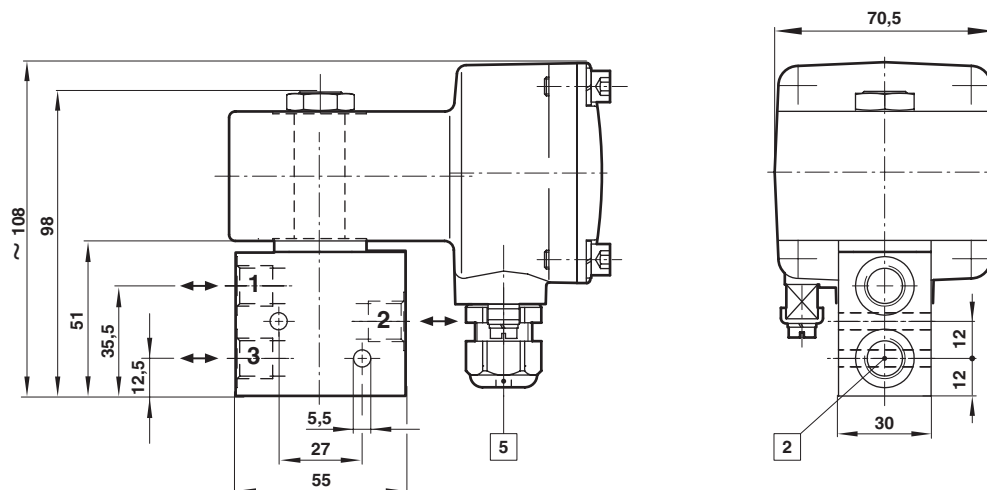
Dimensions

Valves

1

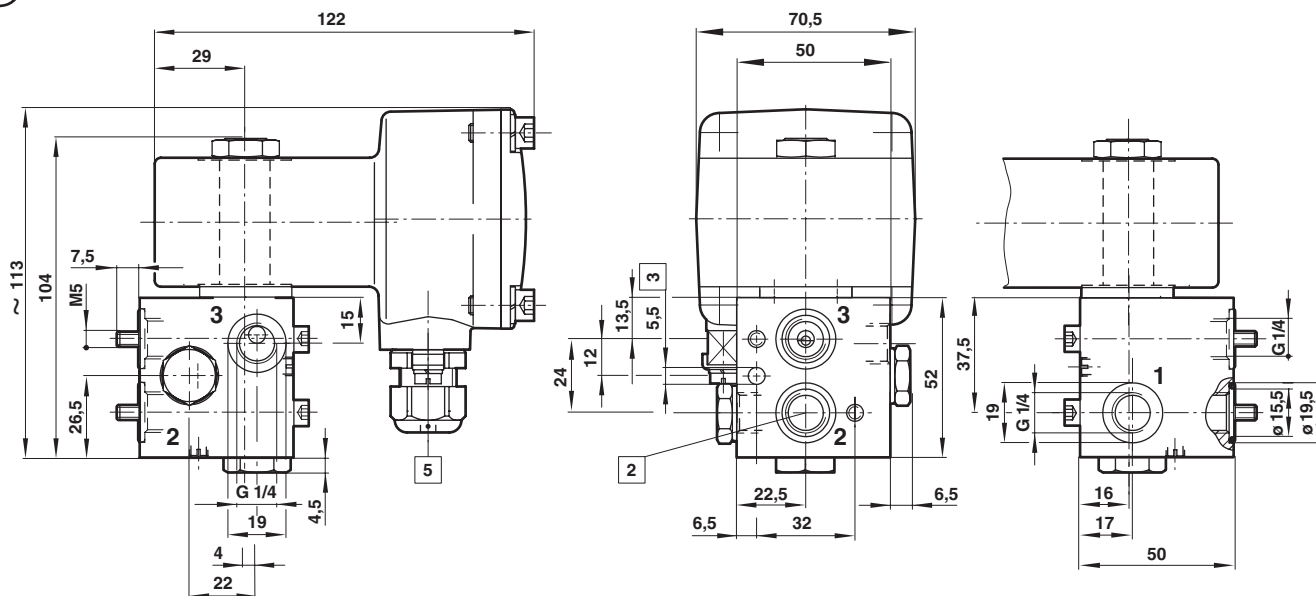


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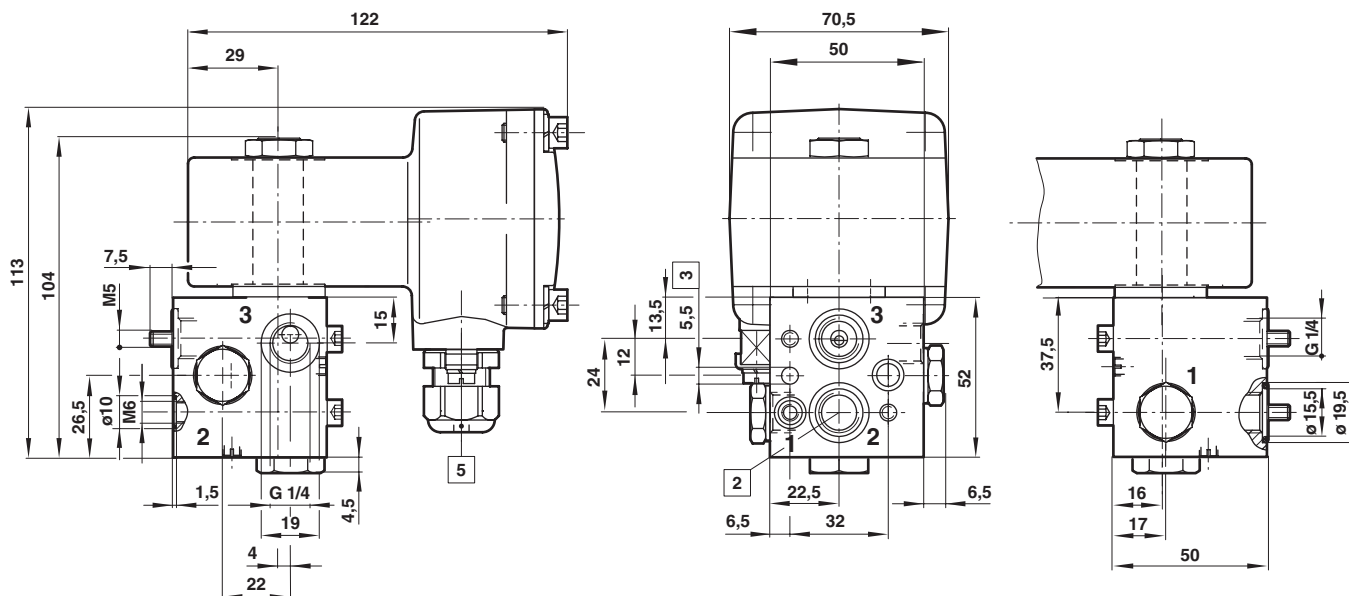


- 2 Port size G 1/4 or 1/4 NPT
- 5 For cable Ø 5 ... 9 mm

3

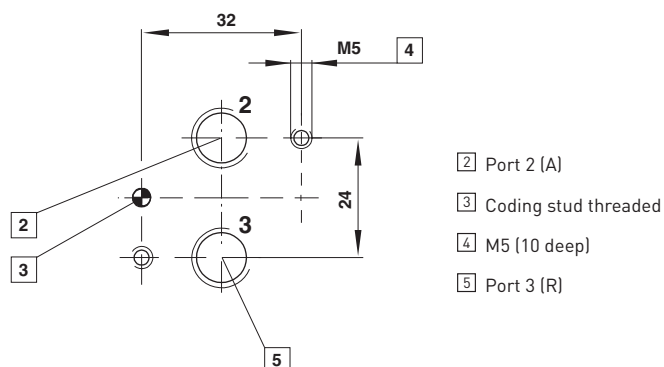
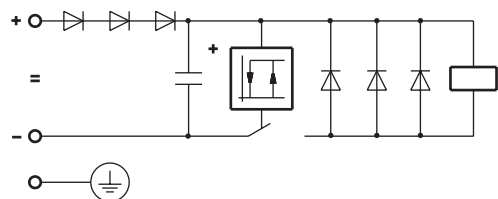


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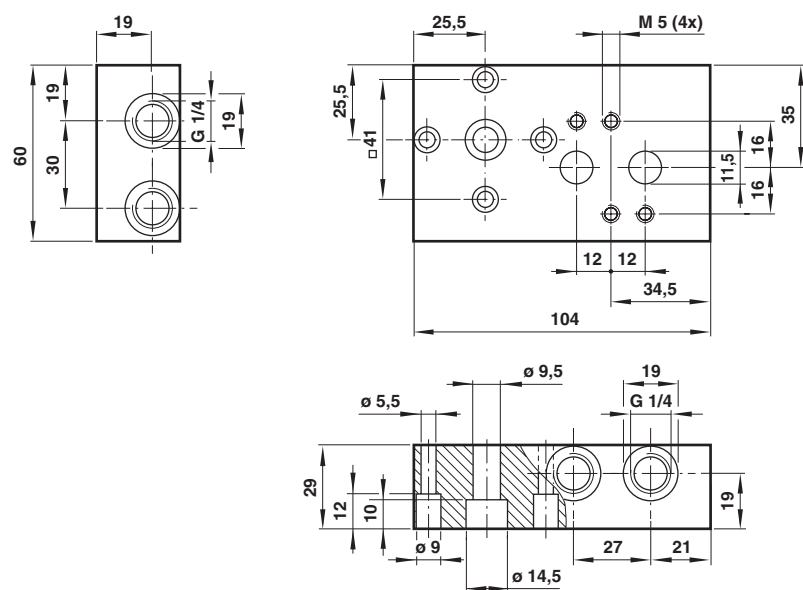
- 2 Port size G 1/4 or 1/4 NPT
- 3 3 mm deep
- 5 For cable Ø 5 ... 9 mm

NAMUR hole pattern (driving side)

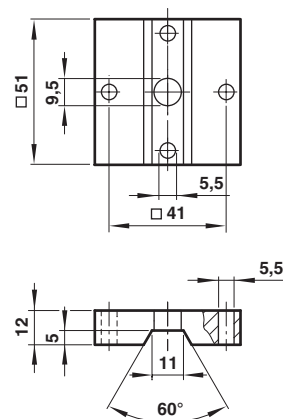


NAMUR interlinking plates in redundancy design
for »safety exhausting« and »safety ventilating«
see data sheet 5.4.830

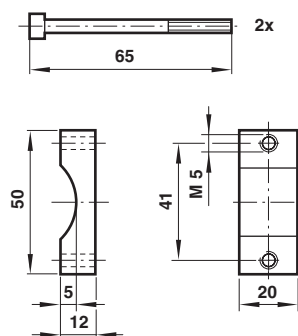
Model: 0612790



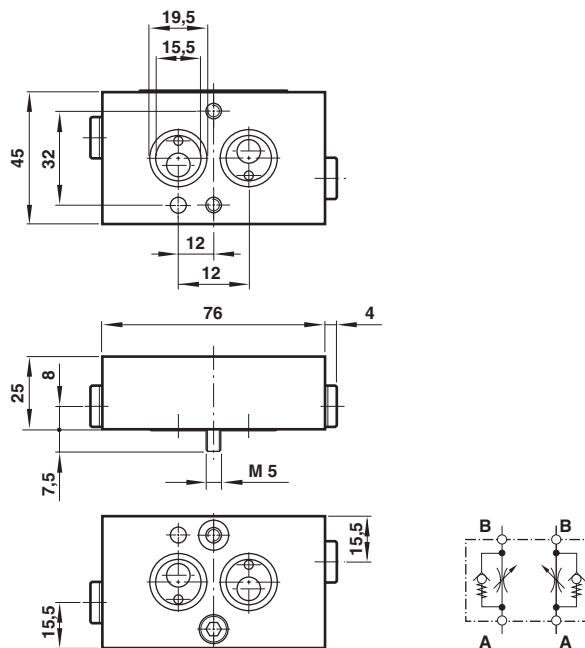
Model: 0612791



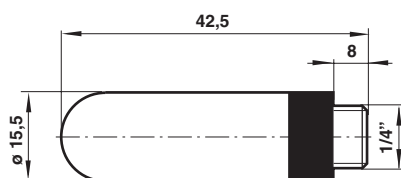
Yoke
Model: 0540593



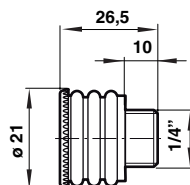
Throttle control plate
Model: 4040239



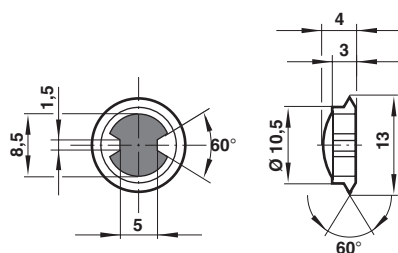
Silencer
Model: M/S2, C/S2



Exhaust guard
Model: 0613422



Filter
Model: 0681173



Thread pitch diameter max. 11,85 mm

Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under »**Technical features**«.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult NORGREN.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in pneumatic systems and to provide adequate safeguards to prevent personal injury or damage to

equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.

Functional safety (SIL):

Suitable for certain applications can only be evaluated through examination of each safety-related overall system with regard to the requirements of IEC 61508/61511.