



Advantages/Benefits

- ▶ Namur interface - G 1/4
- ▶ When de-energized, pressure port connected to outlet 2 outlet 4 exhausted.
- ▶ High flow rate
- ▶ Long service life
- ▶ Applications with lubricated or unlubricated air
- ▶ Lockable manual override standard
- ▶ No "stick-slip-effect"
- ▶ EEx ib IIC T6 (Type 550)
EEx ed IIC T5 (Type 650)

Design/Function

The Type 450 is a high-quality spool valve, combining the advantages of elastomeric and metal-to-metal sealed valves.

The valve has a long and reliable service life on lubricated and unlubricated air. The self-cleaning action on the seal makes it insensitive to dirt particles in compressed air.



There is no stiction with intermittent use.

Due to the low power consumption, the epoxy-encapsulated solenoid can be controlled via a PLC. All of the solenoid actuators are available in wide-band voltage ranges, with combined 50 and 60Hz operation for AC versions.

Applications

- Pneumatic control
- Cylinder control in machine engineering
- Actuated valve control
- Safety interlocks

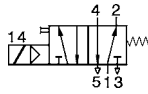
5/2-Way Spool Valve with Namur Interface

Type 450
Type 550 
Type 650 

Technical Data

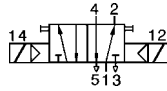
Circuit Function

H 5/2-way valve,
when de-energized, pressure port 1
connected to outlet 2, outlet 4
exhausted.



Spring return

5/2-way valve,
when de-energized, pressure port 1
connected to outlet 2, outlet 4
exhausted.



Impulse valve

Body Materials

Aluminium,
Internal parts aluminium and stainless steel

Specifications

Orifice 6 mm
Flow 750 l/min.

Operating Data (Valve)

Seal Materials / Fluids Handled / Temp.-Range

POM/ lubricated or unlubricated air -10 to
NBR +70 °C¹⁾

¹⁾ for Types 550 and 650: to +60 °C

For more detailed information please refer to resistance
chart (Leaflet-No. 1896009).

Max. ambient temperature Type 450: +55 °C
Type 550,650: +40 °C

Port connection Namur sub-base - G 1/4

Operating Data (Actuator)

Operating voltages

Type 450 24-28, 230-250 V/ 50, 60 Hz
Type 550 24 V/=
Type 650 24, 110, 220, 240 V/UC (universal
current)

Note for Type 650 A bridge rectifier has been incorpo-
rated in the solenoid system, which
makes it suitable for both AC and DC
operation. (Universal current to DIN
40700).

Voltage tolerance ±10 %

Power consumption Type 450: 2,5 to 4 Watt
Type 650: 5 Watt

Duty cycle 100% continuously rated

Rating with cable plug, cable or
junction box IP 65

Installation / Accessories



Installation as required

Electrical connection

- Type 450, 550 • cable plug for 6-7 mm ø cable
(supplied as standard)
- Type 650 • moulded-in cable H05RN-F3
G, 3 x 0,75 mm², length 3 m, with
tension relieving cable gland
- junction box without safety fuse

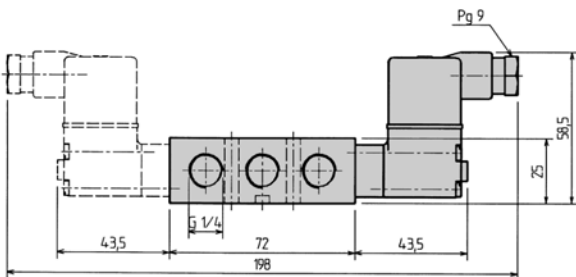
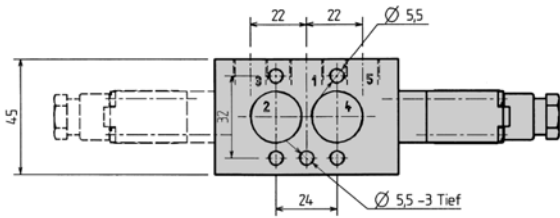
Safety fuse A safety fuse with a medium
response time and rated according to
the nominal current should be incorpo-
rated in the circuit.

5/2-Way Spool Valve with Namur Interface

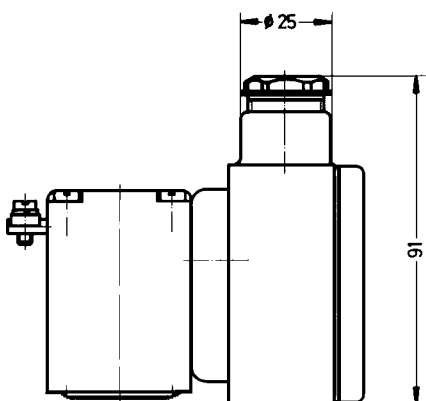
Type 450
Type 550 
Type 650 

Dimensions in mm

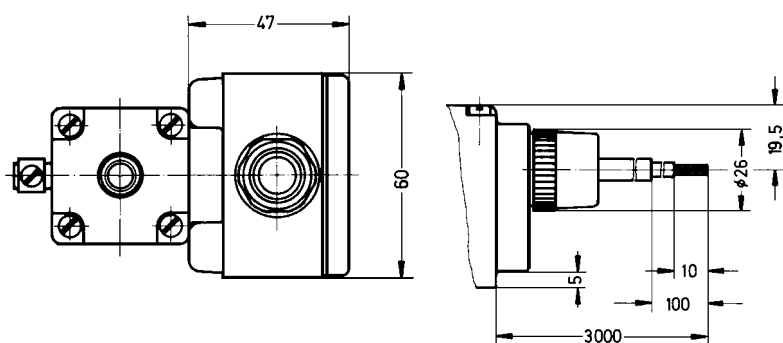
Version with M5 Mounting screws



Ex-version with junction box





With moulded-in cable



Note

The solenoid systems of the Types 550 and 650 are mounted vertically to the spool valve body.

5/2-Way Spool Valve with Namur Interface

Type 450
Type 550 
Type 650 

Ordering Chart (Other Versions on Request)

Circuit Function	Orifice DN [mm]	Flow Rate Air Q _{Nn} [l/min]	Port Connec- tion	Pressure Range [bar]	Approval PTB.-No. Type 550: Ex-87.B.2023 Type 650: Ex-89.C.1034	Weight [kg]	Voltage/ Frequency [V/Hz]	Order-No.	
H ¹⁾	6,0	750	Namur	2-8	-	Type 450	0,32	024-30/=	031 455 L
					-	Type 450	0,32	24-28/50,60	031 456 M
					-	Type 450	0,32	230-250/50,60	031 458 X
H ¹⁾	6,0	750	Namur	2-8	Ex ed	Type 650	0,62	024/UC	031 649 E
					Ex ed	Type 650	0,62	024/UC	031 688 N ³⁾
					Ex ed	Type 650	0,62	110/UC	031 650 B
					Ex ed	Type 650	0,62	110/UC	031 489 P ³⁾
					Ex ed	Type 650	0,62	220/UC	031 651 Y
					Ex ed	Type 650	0,62	220/UC	031 490 L ³⁾
					Ex ed	Type 650	0,62	240/UC	031 652 Z
H ¹⁾	6,0	750	Namur	2-7	Ex ib	Type 550	0,32	24/=	031 614 K
H ²⁾	6,0	750	Namur	2-7	Ex ed	Type 650	0,62	24/UC	031 484 A
								110/UC	031 485 B
								220/UC	031 593 F
								220/UC	031 486 C ³⁾

¹⁾ With spring return, ²⁾ Impulse operated, ³⁾ With junction box without safety fuse

Accessories

Code	Order-No.
Rubber blanking gasket for 3/2-way Version (for conversion from 5/2- to 3/2-way)	015 411 G

Accessories for Type 650

Safety Fuses	[mA]	Order-No.
24 V	400	007 073 Z
110 V	100	007 068 C
220/240 V	63	007 067 T

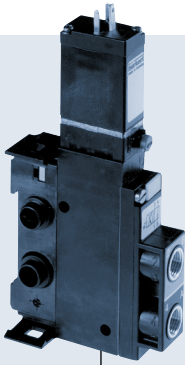
Electrical Accessories for Type 550

Code / Specification Version	Explosion Group	Max. Safety Values		Nominal Voltage [V]	Nom. Curr. [mA]	Polarity	Approval No.	Order-No.
		Voltage [V]	Current [mA]					
Safety barrier Coil version	IIC	28	110	24	40	negative polarity	Ex-78/2007X	006 562 X
						positive polarity	Ex-78/2007X	006 700 N
Installation accessory for barrier								007 152 V

In case of special requirements
please consult for advice.

We reserve the right to make technical
changes without notice.

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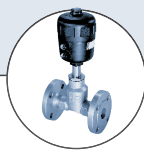


Type 5470-R can be combined with ...



Type 2506

Cable plug



Type 2012

Single-seat globe valve



Type 0044

Pneumatic cylinder

- Compact design in 3/2 and 4/2-way versions
- Extendable valve block
- Reduced power consumption
- Different pneumatic connections available
- Robust

Valves of type 5470 consist of a type 6104 pilot rocker solenoid valve and a pneumatic valve.

An armature with a tilting bearing, similar to a rocker, tilts within the body of the pilot valve, and switches the valve. The minimal tilting movement of the rocker is non-wearing, and basic lubrication is unnecessary.

The type 5470 R is available as a 3/2 and 4/2-way valve. The valves can be mounted together individually using the module flange. In various applications, they can be used advantageously as valve blocks. Different variants are available for service ports 2 and 4.

Power consumption

corresponds to the effective coil power in the ordering chart.

Technical data	
Orifice	DN 4.0 mm
Body material	polyamide (PA)
Valve internal	ultramide
Seal material	NBR
Media	Compressed air, neutral gases (5 µm filtering)
Media temperature	-10 ... +50 °C
Ambient temperature	-10 ... +55 °C
Supply connections 1 and 3	Module flange
Service port 2 and 4 (options)	Threaded port G 1/8 Threaded port NPT 1/8 Tube connection SL 6/4 mm Push-in connection Ø 6 mm
Operating voltage	24 V DC, 110 - 120 V DC, 220 - 240 V DC, (In the case of a.c. voltage, use the valves with a UC coil.)
Voltage tolerance	±10 %
Duty cycle	100 % continuous operation
Electrical connection	Tag connector above acc. to DIN 43 650 Form C, for cable plug type 2506 and type 1057 rectangular plug (5.08 mm)
Type of protection	EEx ia IIC T6 on request
Protection class	IP 65 (with cable plug) IP 20 (at type 1057) and IP 40 (at rectangular plug 5.08 mm)
Installation	as required, preferably with actuator upright

**Complete Actuator Connection for Rotary Actuators*
with Pilot Valve, Position Transmitter and AS-Interface**



Design/Function

The system, consisting of pilot valve and position sensor with integral AS-Interface connection, reduces the effort for connection of a rotary actuator to a minimum.

The individual components are matched to each other so that the complete connection is installed and ready to use within a short time. Coding of the plug connections eliminates the possibility of incorrect wiring.

The AS-Interface offers the option of connecting up to 31 slaves per line to the controller or the higher level bus system with a minimum of wiring at low cost (in future 62 units will be able to be connected).

Current and data supply to the system is provided simultaneously via the yellow AS-Interface bus cable.

In this way, economy in cabling can be fully realized. Nevertheless, the energy that can be transmitted over the AS-Interface line is limited and the power consumption of the system must be considered.

Through the use of a low-power pilot valve (1 Watt), the current consumption of the overall connection from the AS-Interface was able to be limited to 75 mA.

Thus, for example, it is possible to supply 31 connections with an AS-Interface power supply for 2.8 A, line losses included.

Integral pre-failure checking of the valve assures a high degree of reliability for the user. For example, the short circuiting of a first few windings by the penetration of moisture can be recognized prior to complete failure of the valve through the further effects of moisture.

Advantages/Benefits



- ▶ Easy and safe installation, hence rapid change of actuator also possible
- ▶ Easy cabling by means of coded plug connections



- ▶ Up to 31 actuators can be connected by means of a simple two-wire circuit
- ▶ Low loading of the AS-i power supply thanks to low-power 1 Watt valve
- ▶ Pre-failure checking of valve, diagnosis message via AS-Interface

Applications

Networking of process valves with rotary actuators in the areas of

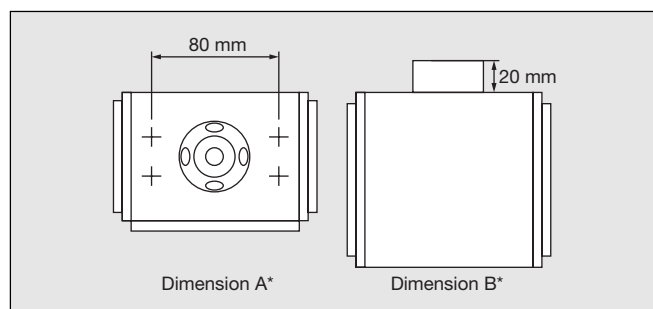
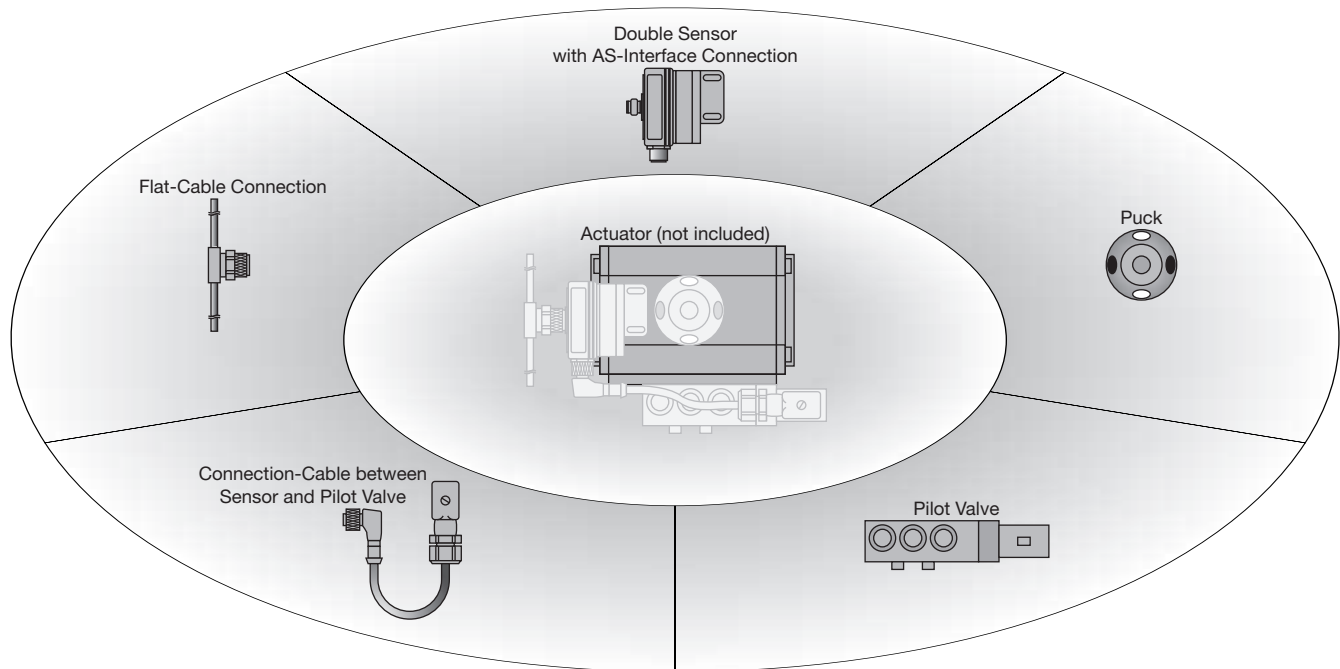
- Dairies
- Bottle filling machines
- Shrink wrap machines
- Food and beverage industry
- Food milles
- Chemical and raw components for foaming industry
- Plastic and rubber manufacturing

For system integrators and end users



* For rotary process valve actuator with standard attachment to VDI/VDE 3845 (dimensions see next page)

The Components and their Assembly



* For rotary process valve actuator with standard attachment to VDI/VDE 3845 with A = 80 mm, B = 20 mm

Valve Type 6517 Namur

Exhaust ports may be fully throttled

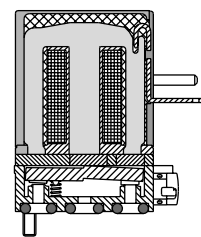


Simple check of functioning by red indicator pin

3/2 and 5/2-way function in one device, handy reversible plate to change function

- IP 65
- Safety position by means of mechanical spring
- Reliable switch back even after being switched on for a long time
 - The diaphragm controlled seat valve works to a large extent without dynamically loaded seals, which prevents sticking owing to temperature effects, gumming or swelling of seals
- Suitable for aggressive atmospheres (e.g. solvent vapour)
 - The housing is made of glass fibre reinforced plastic
 - The metal parts are optionally available in stainless steel
- Version for operation with auxiliary control air
- On single-action actuators, exhaust air return to the spring chamber of the actuator

Rocker-Action Pilot Type 6106



- Almost frictionless system guarantees long service life and reliable switching
- Low electric power consumption (1 W)
- Suitable for oily or oil-free air

Double Sensor and Pilot Valve with Integral AS-Interface



Features

- Passes control signals on to solenoid valve
- Monitors position of solenoid valve
- Transmits it via a switching signal

Chief Advantages

- Complete potting of position sensor prevents condensation from changing temperature
- One sensor for all sizes of actuators without adapter plates (to VDI / VDE 3845)
- Optical signalling of valve position by the puck
- For a redundant signal with reflecting puck, a second sensor can be used.

Allocation of Data Bits

Data bit	Type	Designation	Status / LED	Description
D0	Input	Switching signal Sensor 1	0 / –	Sensor position 1 not damped
			1 / yellow	Sensor position 1 damped
D1	Input	Switching signal Sensor 2	0 / –	Sensor position 2 not damped
			1 / yellow	Sensor position 2 damped
D2	Input	Error Actuator	0 / –	No error
			1 / red	Cable breakage / Short circuit at actuator
D0	Output	Actuator	0 / –	Solenoid valve not switched
			1 / yellow	Solenoid valve switched

Ordering Chart

Model / Description	Item No.
Complete actuator connection for rotary actuators including <ul style="list-style-type: none"> • Double sensor with AS-Interface connection • Puck • Pilot valve • Connection-cable between sensor and pilot valve • Flat-cable connection 	434 180 N

