

3/2-way valve

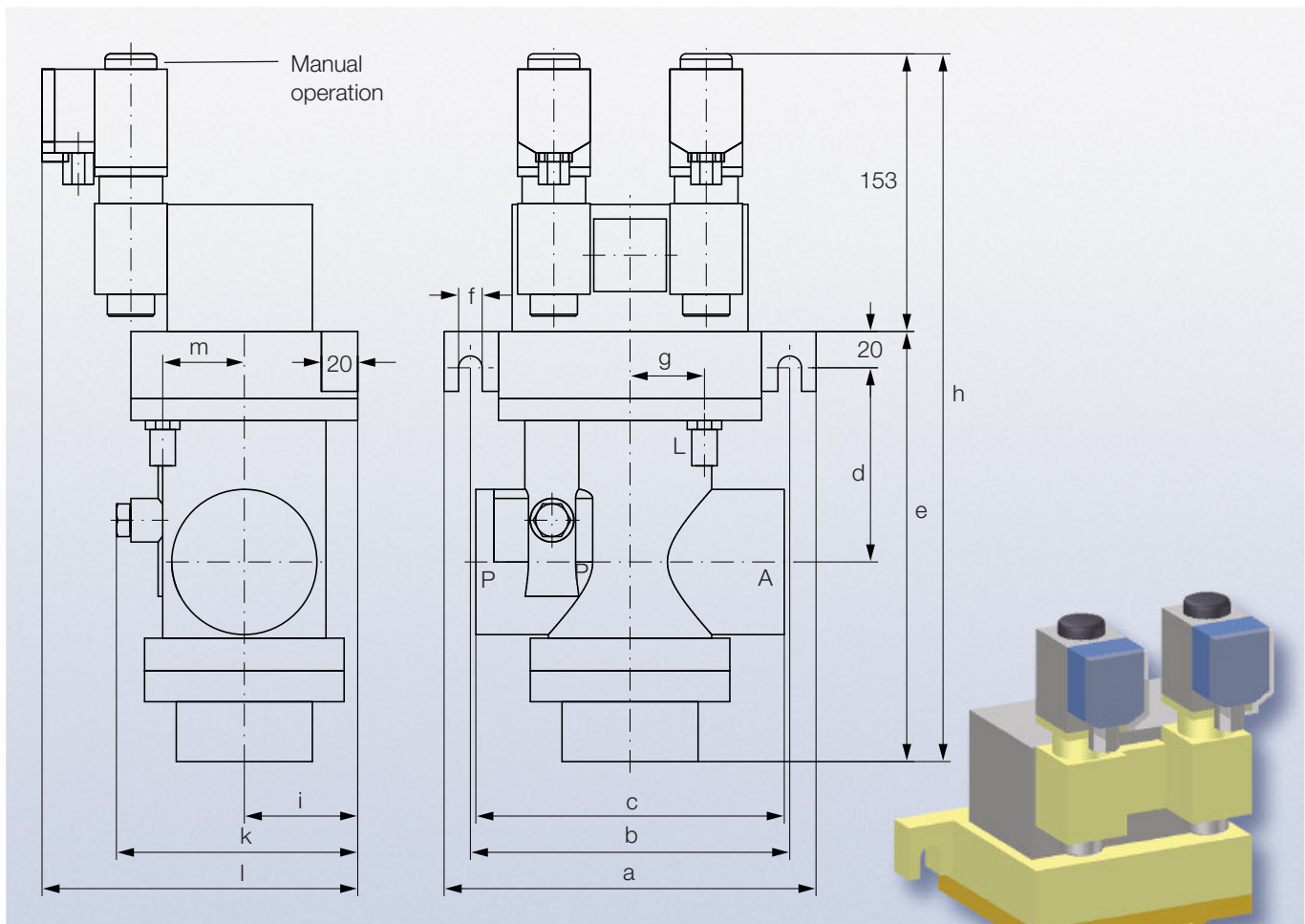
3W..H/iEA09

self-locking,
DN 10 to DN 50,
self-controlled,
for compressed air,
with electropneumatic pilot valve

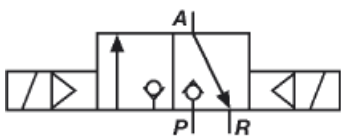
- Rugged construction
- Use of corrosion-resistant materials for all components
- Solenoid completely separated from the flow section
- Optical valve position indication
- Additional facility for manual operation as standard
- Type of protection: IP 54 according to EN 60529/IEC 529
- Ex-approval: I M2 EEx ia I intrinsically safe according to Directive 94/9/EC (ATEX)

Types	Nominal width/mm	Pipe connection
3W10H/iEA09	10	R ⅜
3W15H/iEA09	15	R ½
3W20H/iEA09	20	R ¾
3W25H/iEA09	25	R 1
3W32H/iEA09	32	R 1¼
3W40H/iEA09	40	R 1½
3W50H/iEA09	50	R 2

3W..H/iEA09



Symbols



Size	NW	P,A	L	a	b	c	d	e	f	g	h	i	k	l	m
1	10	R $\frac{3}{8}$	R $\frac{3}{8}$	150	125	120	60	163	11	20	316	40	109	152	35
1	15	R $\frac{1}{2}$	R $\frac{3}{8}$	150	125	120	60	163	11	20	316	40	109	152	35
2	20	R $\frac{3}{4}$	R $\frac{3}{8}$	205	176	175	66	229	13	41	382	54	133	167	55
2	25	R 1	R $\frac{3}{8}$	205	176	175	66	229	13	41	382	54	133	167	55
2	32	R 1 $\frac{1}{4}$	R $\frac{3}{8}$	205	176	175	66	229	13	41	382	54	133	167	55
3	40	R 1 $\frac{1}{2}$	R $\frac{3}{8}$	250	220	225	83	294	14	45	447	61	151	175	75
3	50	R 2	R $\frac{3}{8}$	250	220	225	83	294	14	45	447	61	151	175	75

3W..H/iEA09

FUNCTION AND DESIGN

In fluid technology, directional control valves are designed to allow passage of the operating medium (compressed air or hydraulic fluid), to block passage or to change the direction of flow. The designation of the directional control valve is derived from the number of switching positions as well as the number of ports per switching position.

The 3/2-way valve with self-locking feature is a pilot-operated seating-action valve with three ports and two switching positions. It consists of the main control unit with a disk-shaped seating piston and the pilot control unit. The pilot control unit consists of two ball seat pilot valves. The latter are actuated via an intrinsically safe solenoid each. Seating-action valves generally offer the advantage over spool valves that no leakage losses occur.

The 3/2-way valve is self-controlled. That means, for operating the pilot control unit the working medium from the main control unit is utilized. Bore ducts are provided allowing the compressed air to pass between the two units. In order to protect the pilot control unit from impurities the duct for the pressure supply has a filter installed which can be replaced easily and quickly. In rest position, the main control unit is open from the return side R to the working side B. When the pilot control unit is actuated via the valve solenoid the main control unit is operated pneumatically allowing flow from the pressure side P to the working side A.

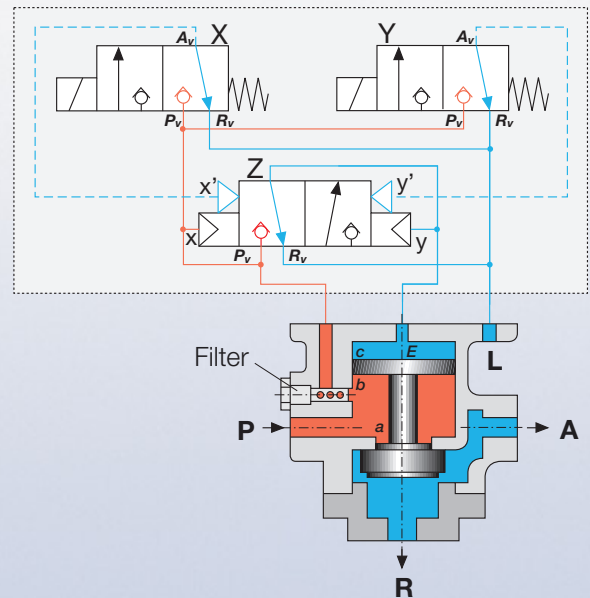
The 3/2-way valve is provided with a self-locking feature. That means, upon activation of the pilot control valve Y the main control unit will remain in working position even if the pilot control valve Y is deactivated again. The main control unit will only return into rest or locking position after being activated by the pilot control unit.

Leakage port L is designed to ventilate space E when changing switching positions.

The valve housing is made of red brass and all further mounting parts of the valve are also made of corrosion-resistant materials. The components of the solenoid are largely embedded in cast resin. The overall design of the valve ensures safety with respect to explosion protection and mechanical damage.

The 3/2-way valve is noted for a long service life. It has proved its worth for decades even in the adverse conditions of underground mining.

Sequence of function





3W..H/iEA09

TECHNICAL DATA

Type	pilot-operated self-locking 3-way valve
Housing/flow part	red brass
Valve seat sealing	flexible seal on metal
Ports	pipe threads R $\frac{1}{2}$ – R2
Medium	compressed air
Temperature of medium	max. 85 °C
Operating pressure	3 bar – 40 bar
Fitting position	any
Electr. connection	intrinsically safe d.c. voltage, polarity reversible
Electr. connection values	V _{nom} = 12 V DC; V _{max} = 13.5 V DC; I _{nom} = 50 mA each solenoid valve
Temperature range	-20 °C to 60 °C
Type of protection	IP 54 according to EN 60529/IEC 529
Ex-approval	I M2 EEx ia I acc. to Directive 94/9/EC (ATEX)
Certificate number	DMT 99 ATEX E 102

TYPE CODE AND ORDERING INFORMATION

3W*	2 valve solenoids, intrinsically safe
H	Self-locking valve
iEA09	Nominal width in mm
	3/2-way valve for compressed air

TYPICAL EXAMPLE

3W32H/iEA09	■ 3/2-way self-locking valve	■ With 2 intrinsically safe solenoids
	■ Nominal width 32 mm	for compressed air

Subject to technical alterations · Version 09/12