



4/2-way valve 4W../iEA07

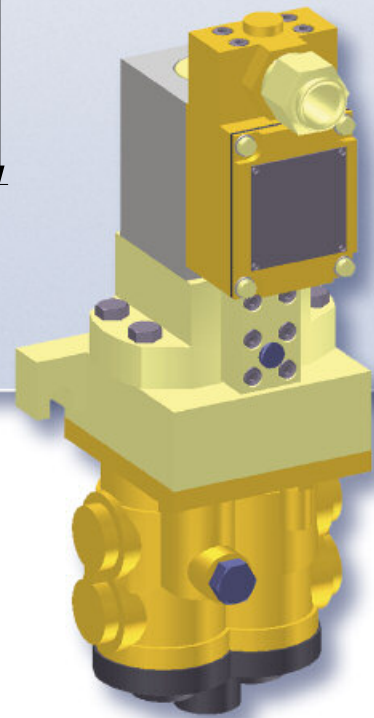
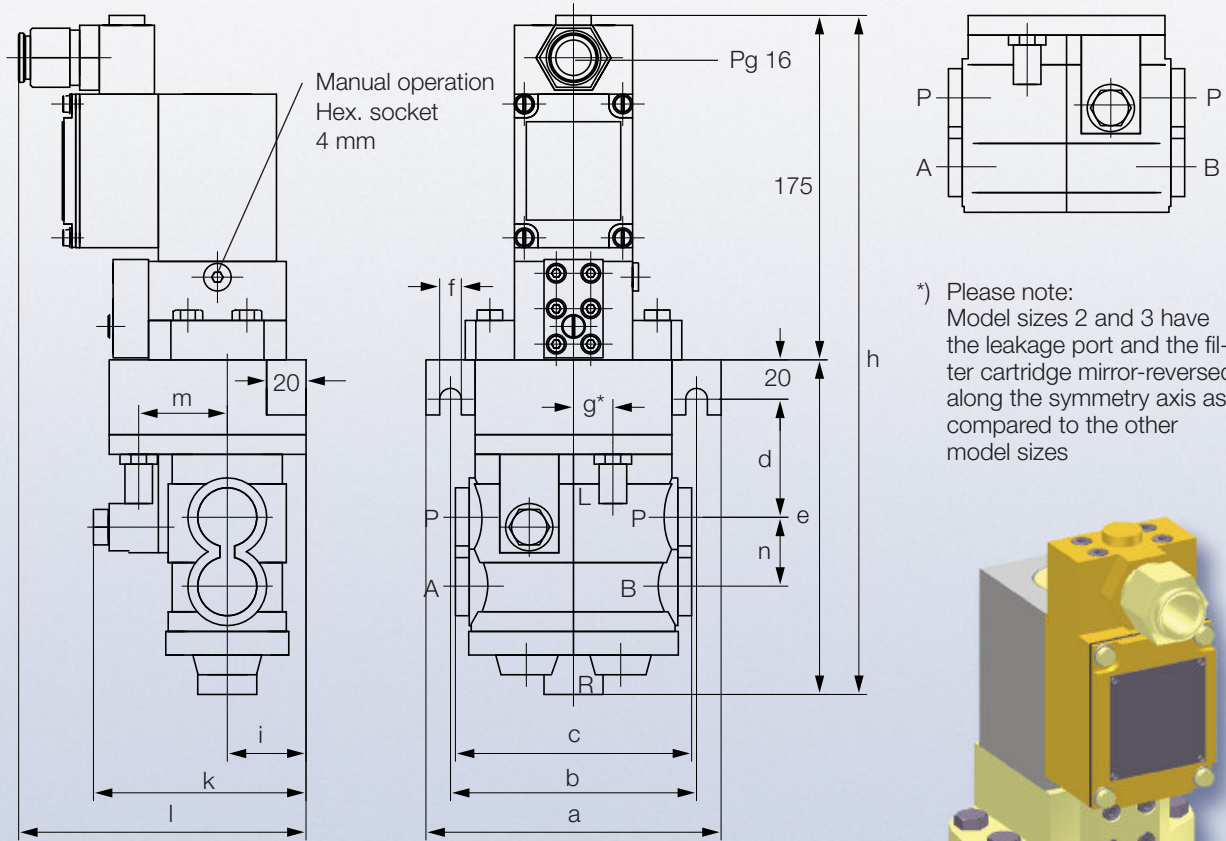
DN 10 to DN 50,
self-controlled,
for water, oil and hydraulic fluid HFA,
with electrohydraulic pilot valve

- Rugged construction
- Use of corrosion-resistant materials for all components
- Solenoid completely separated from the flow section
- Additional facility for manual operation as standard
- No leakage loss
- 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)

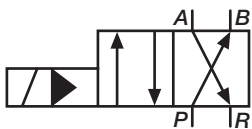
Types	Nominal width/mm	Pipe connection	Volume flow Q (l/min)*
4W10/iEA07	10	R ⅜	80
4W15/iEA07	15	R ½	150
4W20/iEA07	20	R ¾	230
4W25/iEA07	25	R 1	350
4W32/iEA07	32	R 1¼	600
4W40/iEA07	40	R 1½	950
4W50/iEA07	50	R 2	1600

* with $\Delta p = 5$ bar

4W../iEA07



Symbol



Size	NW	P,A,B,R	L	a	b	c	d	e	f	g*	h	i	k	l	m	n
1	10	R 3/8	R 3/8	150	125	120	60	163	11	20	338	40	109	148	45	35
1	15	R 1/2	R 3/8	150	125	120	60	163	11	20	338	40	109	148	45	35
2	20	R 3/4	R 3/8	205	176	175	66	229	13	41*	404	54	133	163	54	55
2	25	R 1	R 3/8	205	176	175	66	229	13	41*	404	54	133	163	54	55
2	32	R 1 1/4	R 3/8	205	176	175	66	229	13	41*	404	54	133	163	54	55
3	40	R 1 1/2	R 3/8	250	220	225	83	294	14	45*	469	61	151	171	65	75
3	50	R 2	R 3/8	250	220	225	83	294	14	45*	469	61	151	171	65	75



4W../iEA07

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 4/2-way valve is a pilot-operated seating-action valve with four 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 a ball seat valve activated via an intrinsically safe valve solenoid. Seating-action valves have the advantage over spool valves in that no leakage losses occur.

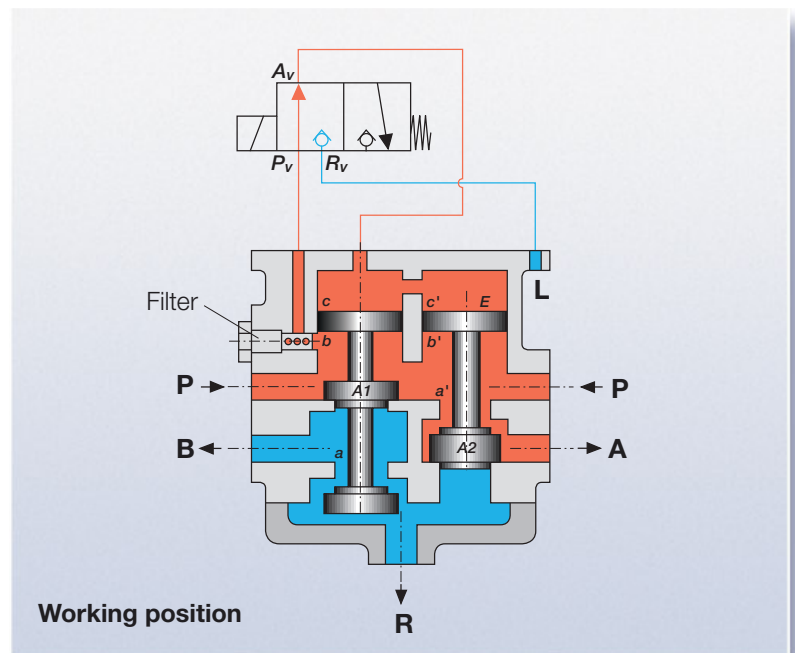
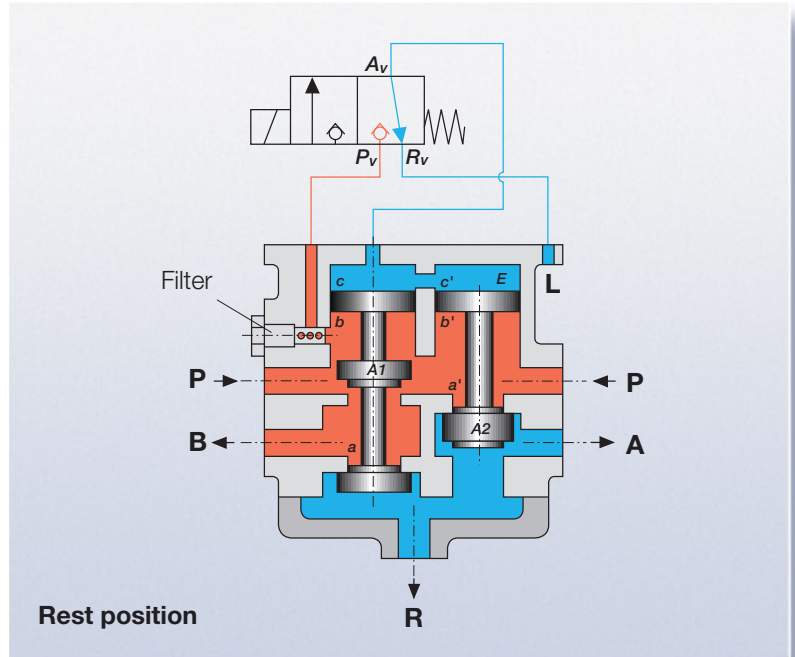
The 4/2-way valve is self-controlled. That means, for operating the pilot control unit the working medium from the main control unit is utilized. Bore ducts are provided allowing the compressed air to pass between the two units. In order to protect the pilot control unit from impurities the duct for 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 pressure side P to the working side B. When the pilot control unit is actuated via the valve solenoid the main control unit is operated hydraulically allowing flow from the pressure side P to the working side A.

Leakage port L is designed to ventilate space E when changing switching positions. The fluid quantity discharged is small and can be returned to the tank.

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 4/2-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 functions for the "positive" design





4W../iEA07

TECHNICAL DATA

Type	pilot-operated 4-way valve
Housing/flow part	red brass
Valve seat sealing	flexible seal on metal
Ports	pipe threads R $\frac{3}{8}$ – R2
Medium	water, oil, HFA fluid
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} = 220 mA
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

4W*/iEA07	Valve solenoid, intrinsically safe
	Nominal width in mm
	4/2-way valve for water and oil and HFA fluid

TYPICAL EXAMPLE

4W15/iEA07	■ 4/2-way valve	■ With intrinsically safe solenoid for water or oil and HFA fluid
	■ Nominal width 15 mm	

Subject to technical alterations · Version 10/12