Solenoid directional valves with low power consumption
Direct operated, ISO 4401 size 06
Available only on request

On-off directional valves derived from standard versions and equipped with low power consumption solenoids. They permit a considerable energy saving and they can be directly operated from the output stage of the machine control system (PLC I/O modules).

Two models are available:
- DHE, 15W power, spool type, max operating limits 40 l/min, 210 bar
- DHO, 8W power, spool type, max operating limits 50 l/min, 250 bar

For DHE the coils can be easily replaced without tools. The coils are fully encapsulated according to temperature class H.

Applications
Machine tools, marine system
Surface mounting ISO 4401 size 06

### Model Code of Spool Type Directional Valves

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<th>Model</th>
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Seals material
- = NBR
PE = FKM

Voltage code
24DC = 24V DC
X = without connector
See note 1 at section 6 for available connectors, to be ordered separately

Options
A = Solenoid mounted at side of port B (only for single solenoid valves).
In standard versions, solenoid is mounted at side of port A.

### Configurations and Spools

#### Configurations

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#### Spools

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#### Spools

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Series number

6021

Table TE015-2/E
3 MAIN CHARACTERISTICS OF DHE /15W AND DHO /8W DIRECTIONAL VALVES

Assembly position / location
Any position

Subplate surface finishing
Roughness index Ra 0.4 - flatness ratio 0.01/100 (ISO 1101)

Ambient temperature
from -20°C to +70°C

Fluid
Hydraulic oil as per DIN 51524 ..., 535; for other fluids see section 1

Recommended viscosity
15 + 100 mm²/s at 40°C (ISO VG 15 + 100)

Fluid contamination class
ISO 4401 class 21/19/16 NAS 1638 class 10, in line filters of 25 μm (β25 ≥ 75 recommended)

Fluid temperature
-20°C +60°C (standard seals) -20°C +80°C (IP65 seals)

Flow direction
As shown in the symbols of tables 6

Operating pressure
DHE, DHO

Rated flow
See diagrams Q/Δp at section 5

Maximum flow
40 l/min for DHE; 50 l/min for DHO; see operating limits at section 6

3.1 Coils characteristics

Insulation class
H (180°C) Due to the occurring surface temperatures of the solenoid coils, the European standards EN ISO 13732-1 and EN ISO 4413 must be taken into account

Connector protection degree DIN 43650
IP65

Relative duty factor
100%

Supply voltage tolerance
± 10%

4 NOTES

1 Type of electric/electronic connector DIN 43650, to be ordered separately
666 = standard connector IP-65, suitable for direct connection to electric supply source.
667 = as 666, but with built-in signal led.

2 Spools
- spools type 0/2, 1/2 and 2/2 are only used for two position valves: single solenoid valves, type DH*-063*/2

5 Q/ΔP DIAGRAMS based on mineral oil ISO VG 46 at 50°C

6 OPERATING LIMITS

The diagrams have been obtained with warm solenoids and power supply at lowest value (Vnom - 10%). The curves refer to application with symmetrical flow through the valve (i.e. P0A and B0T). In case of asymmetric flow the operating limits must be reduced.

DHE, DHO
A = Spools 0, 1, 1/2, 8
B = Spools 0/2, 3, 6, 7
C = Spools 4, 5, 58, 16, 17
D = Spools 2/2
ISO 4401: 2005
Mounting surface: 4401-03-02-0-05
Fastening bolts:
DHE: 4 socket head screws M5x30 class 12.9
DHO: 4 socket head screws M5x50 class 12.9
Tightening torque = 8 Nm
Seals: 4 CR1 108
Ports P,A,B,T: Ø = 7.5 mm (max).
Overall dimensions refer to valves with connectors type 666

PORTS LOCATION

Model | Ports location | GAS Ports A-B-P-T | Ø Counterbore [mm] A-B-P-T | Mass [kg]
--- | --- | --- | --- | ---
BA-202 | Ports A, B, P, T underneath; | 3/8" | – | 1.2
BA-204 | Ports P, T underneath; ports A, B on lateral side | 3/8" | – | 1.2
BA-302 | Ports A, B, P, T underneath | 1/2" | 25.5 | 1.8

The subplates are supplied with 4 fastening bolts M5x50. Also available are multi-station subplates and modular subplates. For further details see table K280.