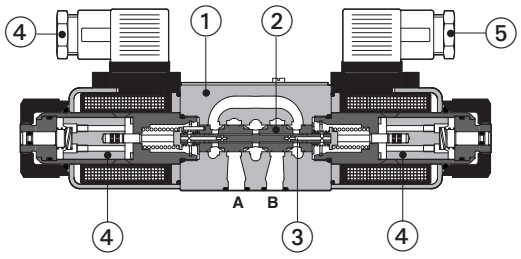
Proportional directional valves

pilot operated, open loop

Availability and price only on request



① Valve body
② Spool
③ Pilot spool
④ Proportional solenoid
⑤ Connector

DHZEM-A-071-L9

DHZEM-A

Open-loop, pilot operated proportional directional valves size 06, characterized by high flow capability up to 140 l/min and compact dimensions.

They are the ideal solution for applications with limited space, where the high flow performances are required for a short period, then the valve dimensions are privileged respect to the pressure drops.

They operate in association with electronic drivers, selectable with different format and performances, see section 2

The spools are available with linear **L**, flow characteristics.
The solenoid's coils are available for voltage supply 12 VDC or 24 VDC and with optional mobile connectors.

Size: **06**
Max flow: up to **140**
Max pressure: **350 bar**

1 MODEL CODE

DHZE	M	-	A	-	0	71	-	L	9	-	*	/	*	**	/	*

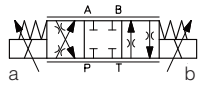
DHZE = size 06

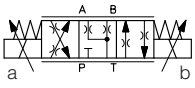
M = high flow execution

A = open loop

Valve size - ISO 4401
0 = size 06

Configuration:

71 = 

73 = 

Spool type - regulating characteristics:

L = linear

Spool size: **9** = 50 (l/min) at Δp 30 bar P-T
Max flow 140 l/min at Δp 240 bar P-T

Coils with special connectors, see section 8
- = omit for standard DIN connector
J = AMP Junior Timer connector
K = Deutsch connector
S = Lead Wire connection

Coil option
see section 2 and 3:
- = standard coil for 24V$_{DC}$ Atos drivers
6 = optional coil for 12V$_{DC}$ Atos drivers
18 = optional coil for 24V$_{DC}$ low current drivers

Series number

Seals material, see section 4:
- = NBR
PE = FKM
BT = HNBR

2 ELECTRONIC DRIVERS

Drivers model	E-MI-AC-01F		E-MI-AS-IR		E-BM-AS-PS		E-BM-AES
Type	Analog		Digital				
Voltage supply (VDC)	12	24	12	24	12	24	24
Valve coil option	/6	std	/6	std	/6	std	std
Format	plug-in to solenoid				DIN-rail panel		
Tech table	G010		G020		G030		GS050

3 MAIN CHARACTERISTICS - based on mineral oil ISO VG 46 at 50 °C

Assembly position	Any position		
Subplate surface finishing	Roughness index, Ra 0,4 flatness ratio 0,01/100 (ISO 1101)		
MTTFd valves according to EN ISO 13849	150 years, see technical table P007		
Ambient temperature range	**standard** = -20°C ÷ +70°C,	**/PE** option = -20°C ÷ +70°C,	**/BT** option = -40°C ÷ +60°C
Storage temperature range	**standard** = -20°C ÷ +80°C,	**/PE** option = -20°C ÷ +80°C,	**/BT** option = -40°C ÷ +70°C
Coil code	standard	option /6	option /18
Coil resistance R at 20°C	3,1 Ω	2,1 Ω	13,1 Ω
Max. solenoid current	2,5 A	3 A	1,2 A
Max. power	30W		
Insulation class	H (180°) Due to the occuring surface temperatures of the solenoid coils, the European standards ISO 13732-1 and EN982 must be taken into account		
Protection degree to DIN EN60529	IP67		
Duty factor	Continuous rating (ED=100%)		
Certification	**cURus** North American Standard		

Valve model		**DHZEM**
Pressure limits	[bar]	ports **P, A, B** = 350; **T** = 210
Spool type and size		**L9**
Nominal flow **(1)**	[l/min]	
at Δp = 10 bar (P-T)		28
at Δp = 30 bar (P-T)		50
at Δp = 70 bar (P-T)		80
at Δp max = 240 bar (P-T)		140
Response time **(2)**	[ms]	< 30
Hysteresis	[%]	5 [% of max regulation]
Repeatability	[%]	± 1 [% of max regulation]

Notes: above performance data refer to valves coupled with Atos electronic drivers, see section 2.
the flow regulated by the directional proportional valves is not pressure compensated, thus it is affected by the load variations.To keep costant the regulated flow under different load conditions, modular pressure compensators are available (see tab. D150).

(1) For different Δp, the max flow is in accordance to the diagrams in section 7

(2) 0-100% step signal

4 SEALS AND HYDRAULIC FLUID - for other fluids not included in below table, consult our technical office

Seals, recommended fluid temperature		NBR seals (standard) = -20°C ÷ +80°C, with HFC hydraulic fluids = -20°C ÷ +50°C FKM seals (/PE option) = -20°C ÷ +80°C HNBR seals (/BT option) = -40°C ÷ +60°C, with HFC hydraulic fluids = -40°C ÷ +50°C		
Recommended viscosity		20 ÷ 100 mm²/s - max allowed range 15 ÷ 380 mm²/s		
Max fluid contamination level	normal operation	ISO4406 class 18/16/13 NAS1638 class 7		see also filter section at www.atos.com or KTF catalog
	longer life	ISO4406 class 16/14/11 NAS1638 class 5		
Hydraulic fluid		**Suitable seals type**	**Classification**	**Ref. Standard**
Mineral oils		NBR, FKM, HNBR	HL, HLP, HLPD, HVLP, HVLPD	DIN 51524
Flame resistant without water		FKM	HFDU, HFDR	ISO 12922
Flame resistant with water		NBR, HNBR	HFC	

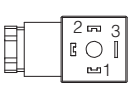
5 GENERAL NOTES

DHZEM proportional valves are CE marked according to the applicable Directives (e.g. Immunity/Emission EMC Directive and Low Voltage Directive).

Installation, wirings and start-up procedures must be performed according to the general prescriptions shown in table F003 and in the installation notes supplied with relevant components.

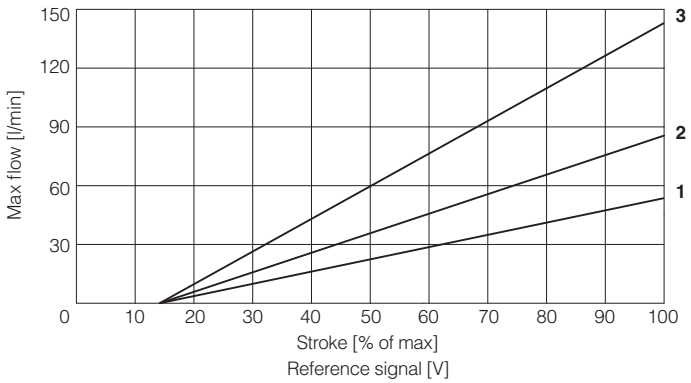
6 CONNECTIONS

SOLENOID POWER SUPPLY CONNECTOR	
PIN	Signal description
1	SUPPLY
2	SUPPLY
3	GND



7 DIAGRAM FOR DHZEM (based on mineral oil ISO VG 46 at 50 °C)

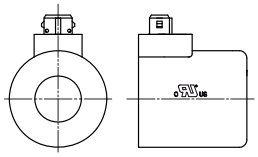
Regulation diagrams



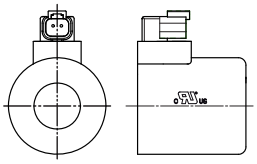
1 = linear spool L9 at Δp 30 bar
2 = linear spool L9 at Δp 70 bar
3 = linear spool L9 at Δp max

8 COILS WITH SPECIAL CONNECTORS

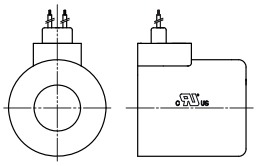
Options -J
Coil type COZEJ
AMP Junior Timer connector
Protection degree IP67



Options -K
Coil type COZEK
Deutsch connector, DT-04-2P male
Protection degree IP67



Options -S
Coil type COZES
Lead Wire connection
Cable lenght = 180 mm

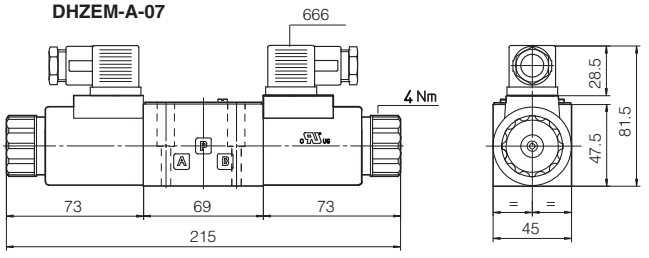


9 INSTALLATION DIMENSIONS FOR DHZEM [mm]

ISO 4401: 2005
Mounting surface: 4401-03-02-0-05 (see table P005)

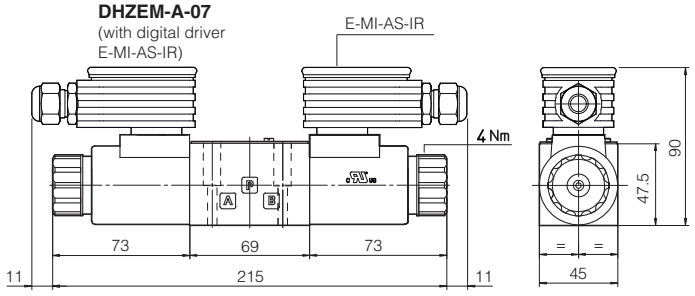
Fastening bolts: 4 socket head screws M5x30 class 12.9
Tightening torque = 8 Nm
Seals: 4 OR 108
Diameter of ports A, B, P, T: Ø 7,5 mm (max)

DHZEM-A-07



Mass: 2 kg

DHZEM-A-07
(with digital driver
E-MI-AS-IR)



Mass: 3 kg