

Valves type AD5.E... with spool movement speed control.

These ON-OFF type valves are used when a lower spool movement speed than usual for conventional solenoid valves is required to prevent impacts which could adversely affect the smooth running of the system. The system consists of reducing the transfer section for the fluid from one solenoid to the other by means of calibrated orifice.

- This version can only be used with a direct current (DC) and also involves a **reduction in the limits of use so that we suggest to always test the valve in your application.**

- To order AD.5.J* version valves, specify the orifices code.
- The operation is linked to a minimum counter-pressure on the T line (1 bar min.)

• The switching time referred to the spool travel detected by a LVDT transducer can vary for the NG10 valve a minimum of 200 to a maximum of 400 ms depending on 5 fundamental variables:

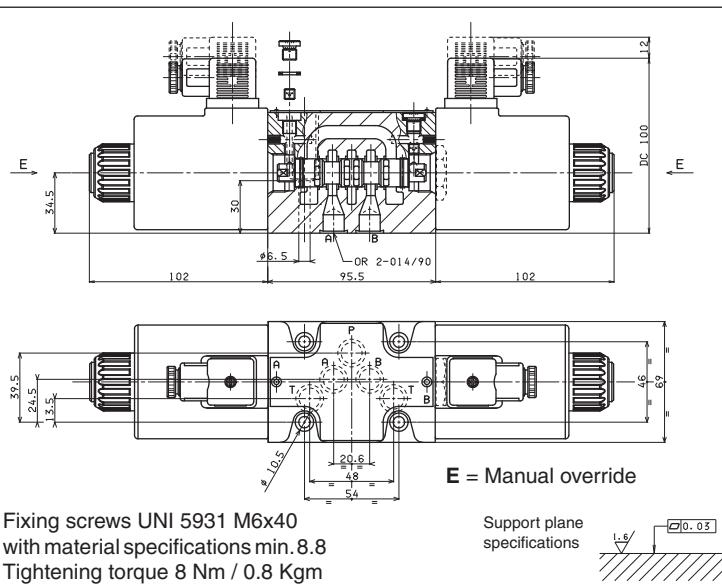
- 1) Diameter of the calibrated orifice (see table)
- 2) Hydraulic power for clearance referring to flow and pressure values through the valve
- 3) Spool type
- 4) Oil viscosity and temperature
- 5) Counter-pressure at T line

- **Possible mounting: C / E / F / G / H**

- **19 / 20 / 21 spools not planned for AD.5.E...J***

Max. pressure ports P/A/B	320 bar
Max. pressure port T - see note (*)	250 bar
Max. flow	100 l/min
Duty cycle	100% ED
Fluid viscosity	10 ÷ 500 mm ² /s
Fluid temperature	-25°C ÷ 75°C
Ambient temperature	-25°C ÷ 60°C
Weight with one DC solenoid	3,6 Kg
Weight with two DC solenoids	4,5 Kg

(*) Pressure dynamic allowed for 2 millions of cycles.



* Old code

EAD5E...J\$ - 00/2000/e

AD.5.E...Q5 VALVES WITH EXTERNAL DRAINING SOLENOID - VARIANT Q5

Valves type AD5.E...Q5 with external draining solenoid.

This involves valves with solenoid drainage chambers separated by line T in the CETOP 5 interface distinguished by the letter L. This solution makes it possible to operate with a maximum counter-pressure at T up to 320 bar using only 12.9 material fixing screws to ensure the maximum safety of the solenoid valve fixing and use of an additional drain. This version can be used for direct current (DC) and alternating current (AC), but involves a reduction in the limits of usage depending on the pressure at T.

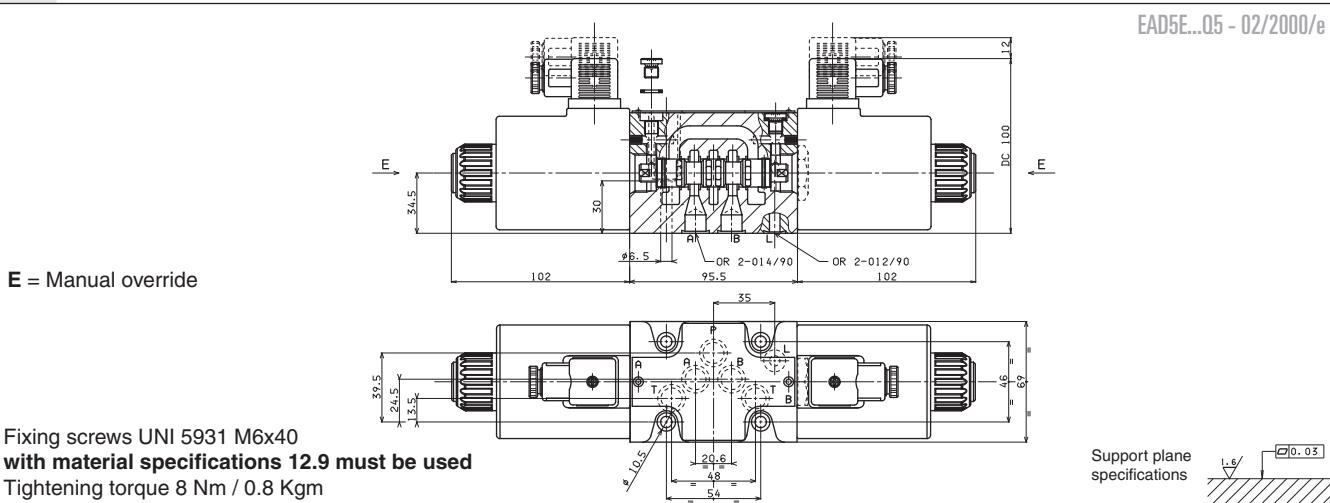
- **Mounting possible: C / D / E / F / G / H / I / L / M**
- **For subplate see BSH.5.31..**

Max. pressure ports P/A/B/T	320 bar
Max. pressure port L (DC coils) see note (*)	250 bar
Max. pressure port L (AC coils)	160 bar
Max. flow	100 l/min
Max. excitation frequency	2 Hz
Duty cycle	100% ED
Fluid viscosity	10 ÷ 500 mm ² /s
Fluid temperature	-25°C ÷ 75°C
Ambient temperature	-25°C ÷ 60°C
Weight with one DC solenoid	3,6 Kg
Weight with two DC solenoids	4,5 Kg
Weight with one AC solenoid	3,5 Kg
Weight with two AC solenoids	4,3 Kg

(*) Pressure dynamic allowed for 2 millions of cycles.

OVERALL DIMENSIONS

EAD5E...Q5 - 02/2000/e



ORDERING CODE

AD Directional valve

5

CETOP 5/NG10

*

Type of operator (tab.1)

**

Spools (see tables on page I-30)

*

Mounting type (tab.2)

*

Voltage (tab.3)

**

Variants (tab.4)

2

Serial No.

TAB.1

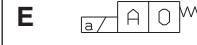
TYPE OF OPERATOR

E	Electrical
D	Direct mechanical
O	Oleo-pneumatic
L	Lever

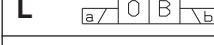
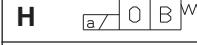
TAB.2

MOUNTING

STANDARD



SPECIALS (WITH PRICE INCREASING)



• Mounting type **D** is only for valves with detent

• In case of **mounting D** with detent a maximum supply time of 2 sec is needed (only for AC coils).

• The springs for the version with detent (mounting **D**) are different from those for standard versions.

TAB.3 - "E" TYPE OPERATION

AC VOLTAGE

A	24V/50Hz
B	48V/50Hz*
J	115V/50Hz - 120V/60Hz
Y	230V/50Hz - 240V/60Hz
E	240V/50Hz*
F	24V/60Hz*

DC VOLTAGE

L	12V	115Vac/50Hz
M	24V	120Vac/60Hz
N	48V*	with rectifier
P	110V*	230Vac/50Hz
Z	102V*	240Vac/60Hz
X	205V*	with rectifier
K	Without AC coils	
W	Without DC coils	
Z	other controls	

Voltage codes are not stamped on the plate, their are readable on the coils.

* Special voltage

TAB.4 - VARIANTS

VARIANT

No variant (without connectors)

Viton

Emergency button

Preset for microswitch - (E/F/G/H only) see below note ♦

Rotary emergency button

Marine version (AD.5.O..)

Emergency + Viton

Preset for microswitch + Viton

Spool movement speed control (VDC only) with ø 0.5 mm diameter orifice

Spool movement speed control (VDC only) with ø 0.6 mm diameter orifice

Spool movement speed control (VDC only) with ø 0.7 mm diameter orifice

Spool movement speed control (VDC only) with ø 0.8 mm diameter orifice

External draining solenoid (electrically operated only)

Microswitch+ Detent (for lever operation)

Detent for lever control

CODE	◆	PAGE
S1	◆	
VS	◆	
ES	◆	I-35
MS	◆	I-31- I-34
P2	◆	I-35
H1	◆	
VU	◆	
MV	◆	
5S	◆	I-32
6S	◆	I-32
7S	◆	I-32
8S	◆	I-32
S5	◆	I-32
MD	◆	
D1	◆	

♦ = Maximum counter-pressure on T port: 4 bar

◆ = Variant codes stamped on the plate

(*) All variants are considered without connectors. The connectors must be order separately. See Ch. I Page 19

TWO SOLENOIDS, SPRING CENTRED "C" MOUNTING			
Spool type	Diagram	Covering	Transient position
01		+	
02		-	
03		+	
04*		-	
05		+	
66		+	
06		+	
07*		+	
08*		+	
10*		+	
22*		+	
11*		+	
12*		+	
13*		+	
14*		-	
28*		-	

ONE SOLENOID, SIDE A "E" MOUNTING			
Spool type	Diagram	Covering	Transient position
01		+	
02		-	
03		+	
04*		-	
05		+	
66		+	
06		+	
08*		+	
10*		+	
12*		+	
15		-	
16		+	
17		+	
14*		-	
28*		-	

STANDARD SPOOLS

(*) Spool with price increasing

• With spools 15 / 16 / 17 only the mounting E / F are possible

• 19 / 20 / 21 spool not planned for AD.5.E...J*

• For lever operated the spools used are different.

Available spools for this kind of valve are: 01 / 02 / 03 / 04 / 05 / 06 / 66 / 07
22 / 13 / 15 / 16 / 17

ONE SOLENOID, SIDE B "F" MOUNTING

Spool type	Diagram	Covering	Transient position
01		+	
02		-	
03		+	
04*		-	
05		+	
66		+	
06		+	
08*		+	
10*		+	
22*		+	
12*		+	
13*		+	
07*		+	
15		-	
16		+	
17		+	
14*		-	
28*		-	

TWO SOLENOIDS "D" MOUNTING

Spool type	Diagram	Covering	Transient position
19*		-	
20*		+	
21*		+	