

# CDC.3.\*.E...

## DIRECTIONAL CONTROL BANKABLE VALVE

Directional control bankable valve body is available in two different sizes: G3/8" or 9/16-18UNF (SAE 6).

The operation of the directional valve is electrical. The centring is achieved by means of calibrated length springs which immediately reposition the spool in the neutral position when the electrical signal is shut off. To improve the valve performance, different springs are used for each spool.

The solenoids, constructed with a protection class of IP65 in accordance with BS 5490 standards, are available in direct current form and different voltages. The electrical controls are equipped with an emergency manual control inserted in the tube.

The electrical supply connectors meet DIN 43650 ISO 4400 standards; AMP Junior, flying leads, flying leads and integrated diode (see variants); connectors are also available with built in rectifiers or pilot lights.

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Max. pressure ports P/A/B/T	250 bar
Max flow	30 l/min
Max excitation frequency	3 Hz
Duty cycle	100% ED
Fluid viscosity	10 ÷ 500 mm <sup>2</sup> /s
Fluid temperature	-25°C ÷ 75°C
Ambient temperature	-25°C ÷ 60°C
Max contamination level	class 10 in accordance with NAS 1638 with filter $\beta_{25} \geq 75$
Weight with one DC solenoid	1,25 Kg
Weight with two DC solenoids	1,5 Kg

### ORDERING CODE

- CDC** Directional control bankable valve
- 3** Size
- \*** Body type (tab. 1)
- E** Electrical operator
- \*\*** Spool (tab.2)  
For series connection use spool 04 only
- \*** Mounting (tab.3)
- \*** Voltage (tab.4)
- \*\*** Variants (tab.5)
- 1** Serial No.

For series connection configuration, a special individual bankable valve CDC.3.\*.E.04.\*\*.PT.1 (A B or G parallel body type only, with spool 04 type, PT variant) must always be used as first element. For other individual bankable valve must use body D E or H connector series type with spool 04 only.

#### TAB.1 - BODY TYPE

<b>A</b>	Ports G3/8" parallel
<b>B</b>	Ports 9/16 - 18UNF parallel
<b>D*</b>	Ports G3/8" series
<b>E*</b>	Ports 9/16 - 18UNF series
<b>G</b>	Attachment style, parallel pre-setting for modular valves
<b>H*</b>	Attachment style, series pre-setting for modular valves

(\* ) For series connection configuration see note below ordering code

#### TAB.4 - "E" TYPE OPERATOR

DC VOLTAGES	
<b>L</b>	12V
<b>M</b>	24V
<b>N</b>	48V*
<b>P</b>	110V*
<b>R</b>	98V*
<b>S</b>	196V*
<b>W</b>	Without DC coils

\* Special voltages

#### TAB.5 - VARIANTS TABLE

VARIANT	CODE
No variant	00
Viton	V1
Pilot light	X1
Rectifier	R1
Emergency button	E1
Rotary emergency button	P1
Solenoid valve without connectors	S1
First element for series connection	PT
Coil with flying leads (length 250 mm)FL	
Coil with flying leads (length 150 mm) and integrated diode	LD
Coil with AMP Junior connection	AJ
Viton + Pilot light	VX
Viton + Rectifier	VR
Pilot light + Rectifier	XR

Other variants relate to a special design

#### TAB.3 MOUNTING

STANDARD	
<b>C</b>	
<b>E</b>	
<b>F</b>	
SPECIALS (WITH PRICE INCREASING)	
<b>G</b>	
<b>H</b>	

#### TAB.2 - STANDARD SPOOLS

TWO SOLENOIDS, SPRING CENTERED "C" MOUNTING			
Spool type		Covering	Transient position
<b>01</b>		+	
<b>02</b>		-	
<b>03</b>		+	
<b>04*</b>		-	

#### ONE SOLENOID, SIDE A "E" MOUNTING

Spool type		Covering	Transient position
<b>01</b>		+	
<b>02</b>		-	
<b>03</b>		+	
<b>04*</b>		-	
<b>15</b>		-	
<b>16</b>		+	

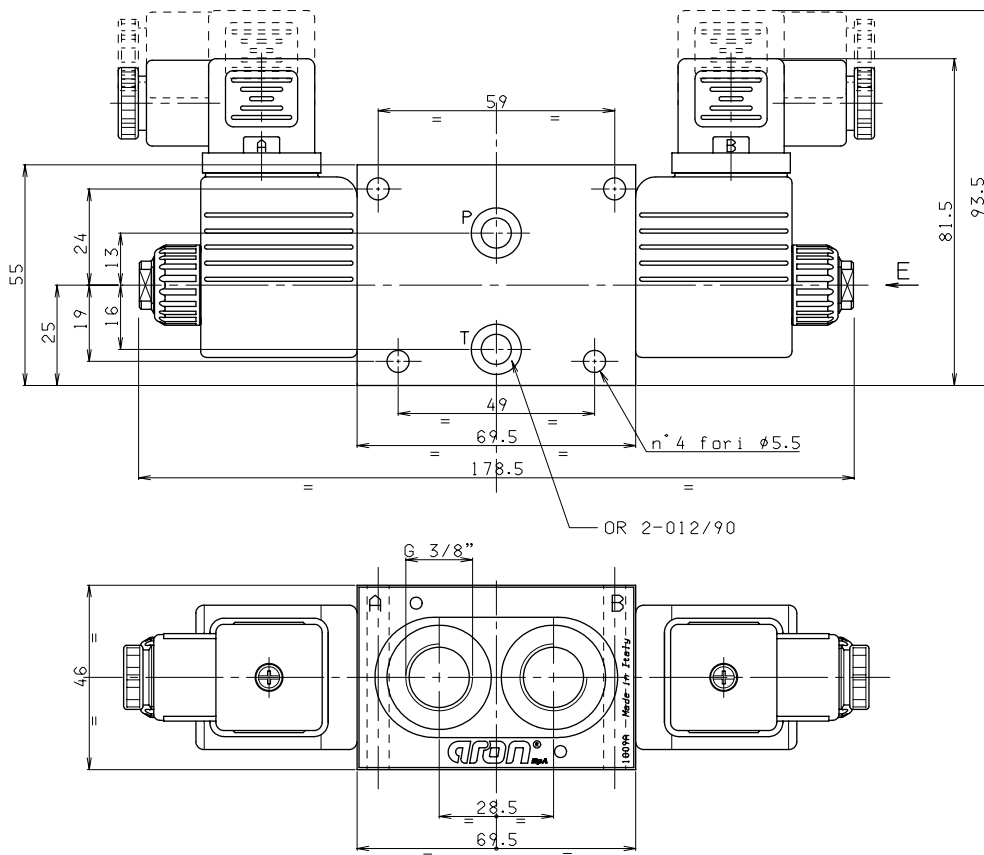
#### ONE SOLENOID, SIDE B "F" MOUNTING

Spool type		Covering	Transient position
<b>01</b>		+	
<b>02</b>		-	
<b>03</b>		+	
<b>04*</b>		-	
<b>15</b>		-	
<b>16</b>		+	

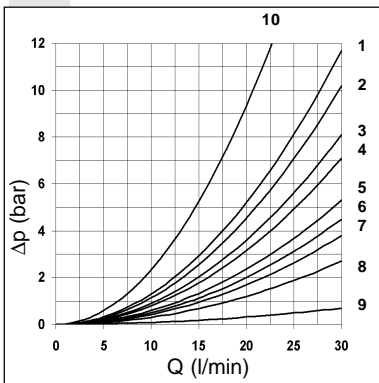
\* SPOOL WITH PRICE INCREASING

OVERALL DIMENSIONS

E = Manual override



PRESSURE DROPS  
DIRECTIONAL CONTROL BANKABLE VALVE



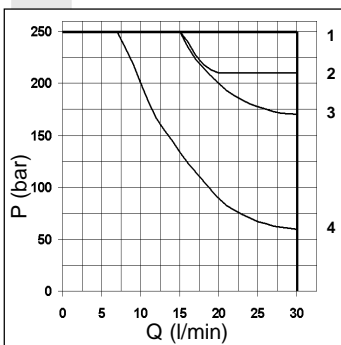
Spool type	Connections					
	P→A	P→B	A→T	B→T	P→T	P/ T passing
01	4	4	4	4	/	9
02 (p*)	7	7	6	6	7	9
02 (s*)	7	7	6	6	8	/
03	4	4	6	6	/	9
04 (p*)	2	2	1	1	5	9
04 (s*)	2	2	1	1	3	/
15-16 F	6	6	5	10	/	9
15-16 E	6	6	10	5	/	9

Curve No.

The diagram at the side shows the pressure drop curves for spools during normal usage. The fluid used is a mineral oil with a viscosity of 46 mm<sup>2</sup>/s at 40 C°; the tests have been carried out at a fluid temperature of 40 C°..

(p\*) Parallel connections  
(s\*) Series connections

LIMITS



Spool type	n° curve
01	1
02	1
03	3
04	2
15-16	1(4*)

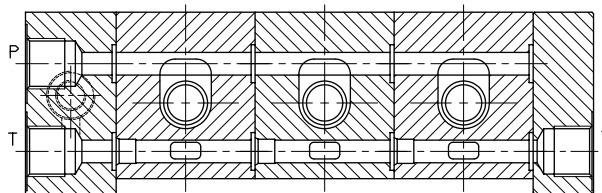
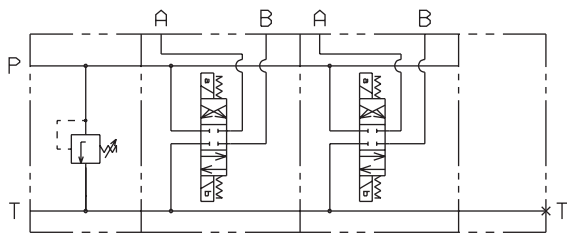
The tests have been carried out with solenoids at a temperature of 50 C° and a voltage 10% less than rated voltage with a fluid temperature of 50 C°. The fluid used was a mineral oil with a viscosity of 46 mm<sup>2</sup>/s at 40 degrees C. The values in the diagram refer to tests carried out with the oil flow in two directions simultaneously (e.g. from P to A and at the same time B to T).

**In the cases where valves 4/2 and 4/3 are used with the flow in one direction only, the limits of use could have variations which may even be negative (See curve No 4 and Spool No 16 used as 2 or 3 ways). The tests were carried out with a counter-pressure of 2 bar at T port.**

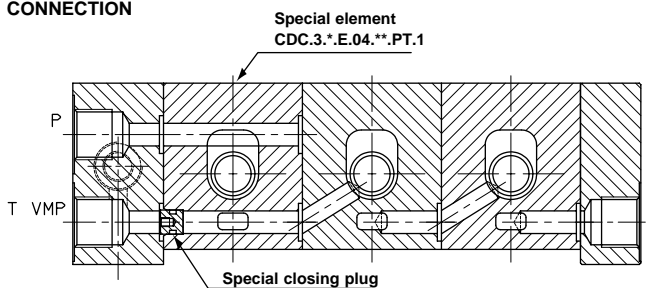
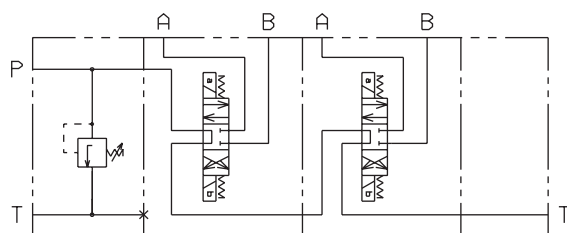
(4\*) = 15 and 16 spools used as 2 or 3 way, follow the curve n°4

HYDRAULIC SYMBOLS AND INSTRUCTION OF CONNECTION

PARALLEL CONNECTION



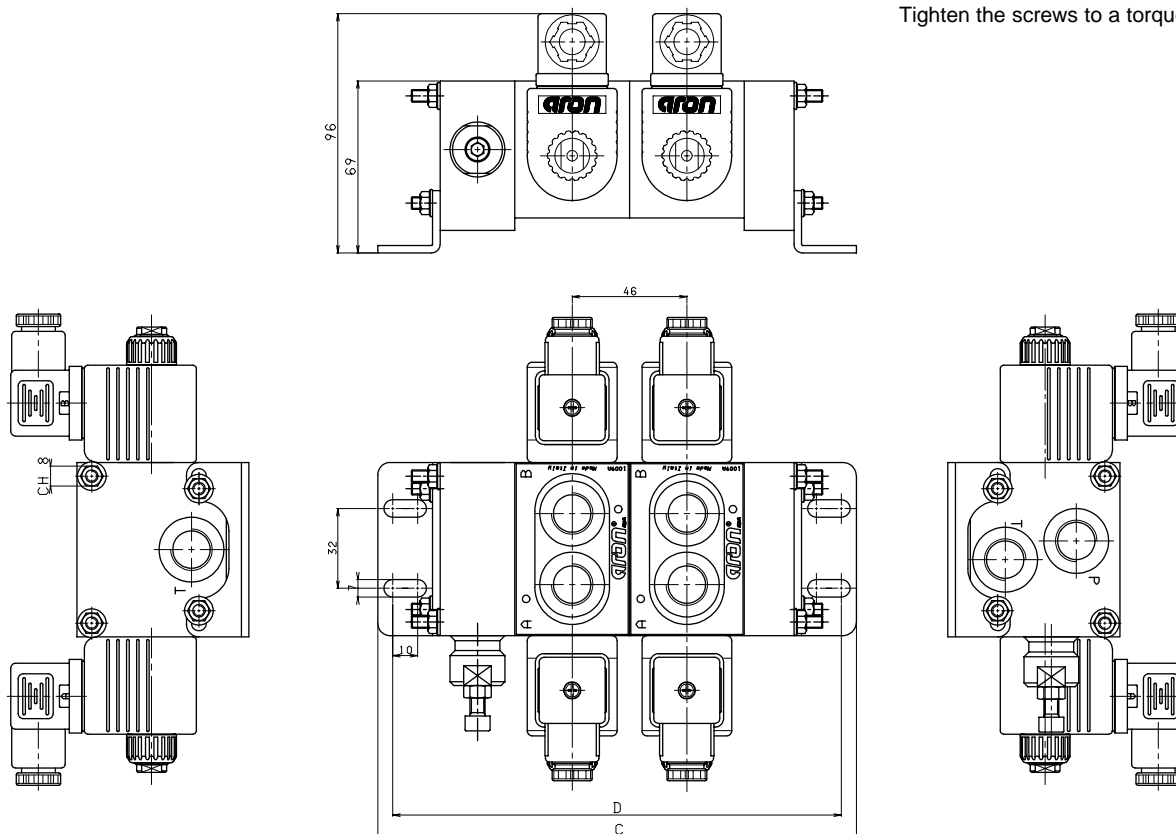
SERIES CONNECTION



For series connection configuration, a special individual valve bank section (CDC.3\*.E.04.\*\*.PT.1) must always be used as first element (see ordering code)

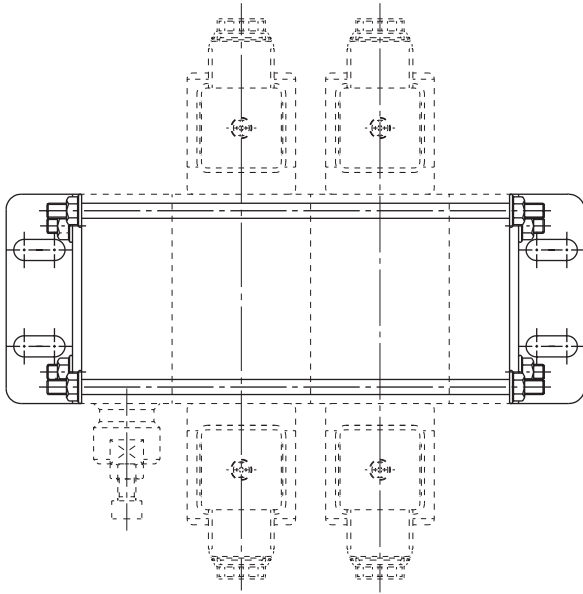
OVERALL DIMENSIONS

Tighten the screws to a torque of 5 Nm



No. ELEMENTS	FE02-FE INLET MODULE		FE 10 INLET MODULE	
	C	LENGTH (mm)	C	LENGTH (mm)
2	192	180	202	190
3	238	226	248	236
4	284	272	294	282
5	330	318	340	328
6	376	364	386	374

Tighten the screws to a torque of 5 Nm



**COMPLETE KIT OF MOUNTING  
CONSISTING OF N° 4 RODS AND N° 8 STUD NUTS**

CODE	LENGTH (mm)	COMPOSITION
V89540003	165	2 ELEMENTS WITH FE.02 or FE
V89540005	210	3 ELEMENTS WITH FE.02 or FE
V89540007	255	4 ELEMENTS WITH FE.02 or FE
V89540009	300	5 ELEMENTS WITH FE.02 or FE
V89540011	350	6 ELEMENTS WITH FE.02 or FE
V89540004	175	2 ELEMENTS WITH FE.10
V89540006	220	3 ELEMENTS WITH FE.10
V89540008	265	4 ELEMENTS WITH FE.10
V89540010	310	5 ELEMENTS WITH FE.10
V89540012	360	6 ELEMENTS WITH FE.10

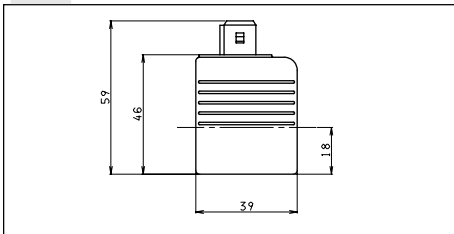
**FIXING FEET**

CODE	COMPOSITION	No. PZ.
M76.15.0014	EVERY-ONE	2

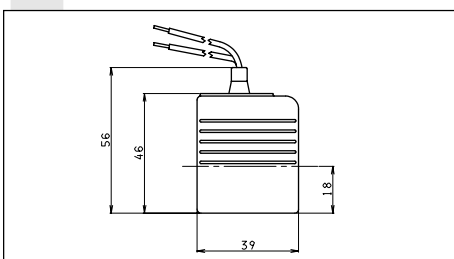


**A09 DC COIL**

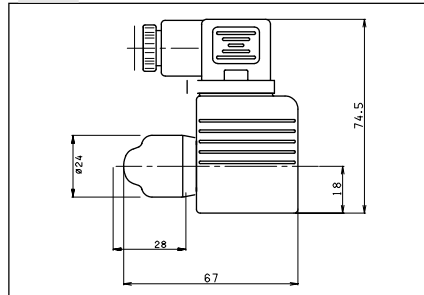
**COIL WITH AMP JUNIOR**



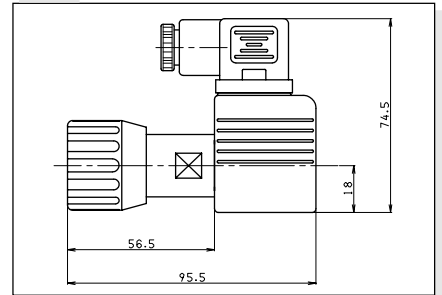
**COIL WITH FLYING LEADS,  
AND WITH INTEGRATED DIODE VERSION**



**E1 VARIANT WITH MANEMERGENCY**



**P1 VARIANT WITH ROT. EMERGENCY**



Type of protection (in relation to connector used)	IP 65
Number of cycle	18.000/h
Supply tolerance	±10%
Ambient temperature	-30°C ÷ 60°C
Duty cycle	100% ED
Insulation class	H
Weight	0,215 Kg

VOLTAGE (V)	MAX WINDING TEMPERATURE (AMBIENT TEMPERATURE 25°C)	RATED POWER (W)	RESISTANCE AT 20°C (OHM) ±7%
12V	123°C	27	5.3
24V	123°C	27	21.3
48V*	123°C	27	85.3
98V*	123°C	27	355
110V*	123°C	27	448
196V*	123°C	27	1422

\* Special voltages