# Z PROPERTIONAL



# DIRECT OPERATED FLOW CONTROL VALVE PFC-78-\*

100 l/min - 350 bar

#### 1 DESCRIPTION

The PFC-78 is a proportional solenoid operated, two-way, poppet-type, normally closed, piloted, screw-in hydraulic cartridge valve in cavity 7/8"-14 UNF for low leakage blocking and load-holding applications. When de-energized, the valve operates as a check valve and allows flow from 1 to 2, while blocking flow from 2 to 1. When energized, the 2 to 1 flow path is opened: flow is directly proportional to the current applied to the coil.



#### 2 ORDERING CODE

(1)		(2)		(3)		(4)		(5)
PFC	-	78	-		-		-	

- (1) PFC: proportional flow control valve
- (2) 78: cavity SAE10 (7/8"-14 UNF)
- (3) 03: without manual override 05: screw manual override
- (4) Electric voltage and solenoid coils (see table 5):

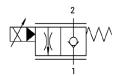
0000: no coil 012C coil for V12DC 024C coil for V24DC

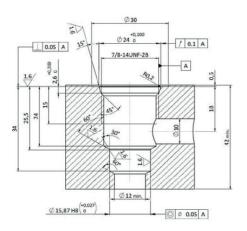
(5) Options for coil connection:

No designation: standard connection ISO4400/DIN 43650/A AMP: AMP Junior

C: flying leads

(6) Design number (progressive) of the valve.



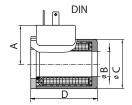


### 3 TECHNICAL DATA

Nominal flow $2\rightarrow 1$ with $\triangle p=35$ bar	70 l/min	Electric characters:			
Maximum rec. flow rate	100 l/min	Valve type PFC-78-* are operated by solenoid that are			
Maximum nominal pressure	100 MPa (350 bar)	energized from a D.C. voltage supply:			
Optimal dither control	70 Hz	V 12 DC = 012C			
Valve Hysteresis	<5 %	V 24 DC = 024C			
Protection	IP 67	With an appropriate electrical driver in order to control the input current at the valve			
Duty cycle	100%				
Installation and dimension	(see 5)				
Valve Body	Steel				
Mass	0,3 kg				
Note: pressure in T line influences v	alve performances				



### 4 COILS DIMENSIONS



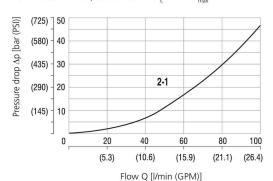
	DIN	FL	AMP
ØA	16,1	16,1	16,1
ØB	16,1	16,1	16,1
ØC	20	20	20
ØD	20	20	20

## 5 COILS TYPE BO2 ( Ø 19 mm)

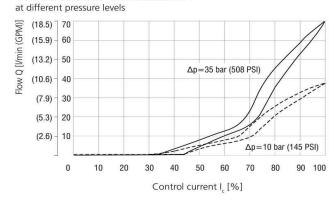
Coils ISO/DIN	voltage DC/RAC	nominal current (A)	resistance 20 C()	nominal power (W)	insulation class
BO2-12R2	12	1,7	4,68	20	
BO2-24R4	24	0,8	20,6	19	F

#### 6 TYPICAL DIAGRAMS

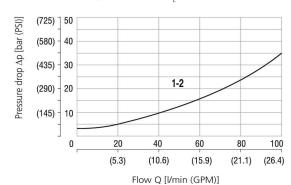
## Pressure drop related to flow rate Flow direction 2 $\rightarrow$ 1, Control current I<sub>c</sub>=1.25 · I<sub>max</sub>



#### Flow characteristic - flow direction 2-1



#### Pressure drop related to flow rate Flow direction $1\rightarrow 2$ , Control current $I_c=0$ mA



## Operating limits - flow direction 2-1 at different current levels

(725)

(1450)

(GPM) (26.4) 7100 Ic=1.0 Imax (23.8) 90 Ic=0,9 Imax (21.1) 80 Flow Q [I/min (18.5)70 (15.9)60 (13.2)50 Ic=0,8 Imax (10.6)40 (7.9)30 Ic=0,7 Imax (5.3)20 (2.6)10 50 100 150 200 250 300

#### Pressure drop $\Delta p=p_2-p_1$ [bar (PSI)]

(2901)

(3626)

(2176)

## HYDRAULIC FLUIDS

Seals and materials used on standard valves PFC-78-\* are fully compatible with hydraulics fluids of mineral base, upgraded with antifoaming and anti oxidizing agents. The hydraulic fluid must be kept clean and filtered to ISO 4406 class 19/17/14, or better, and used in a recommended viscosity range from 10 cSt to 60 cSt.

(4351) (5076)