

# FlowCon EDP 15-25mm

## Externally Adjustable Differential Pressure Control Valve



### SPECIFICATIONS

**EDP insert:**

Static pressure:	2500 kPa / 360 psi
Temperature rating, media:	-20°C to +120°C / -4°F to +248°F
Material:	
- Insert:	Glass-reinforced PPS/POM
- Diaphragm:	EPDM
- O-rings:	EPDM
Maximum operational $\Delta P$ :	400 kPaD / 58 psid
Controlled $\Delta P^1$ :	5-50 kPaD
Flow rate range:	15-1500 l/hr / 0.07-50.6 GPM

**Valve:**

Material:	
- Body:	Forged brass ASTM CuZn40Pb2 / DZR CuZn36pb2As
- Ball valve:	ABV: Chemically nickel plated brass ball
End connections:	A: Fixed female ISO or NPT AB: Fixed female ISO or NPT ABV: Union end connection in brass alloy ISO or NPT
Capillary tube:	$\varnothing$ 3mm, length: 1.0m copper.

Note 1: Controlled  $\Delta P$  at 200 l/hr.

## DIMENSIONS AND WEIGHTS (NOMINAL) (measured in mm unless noted)

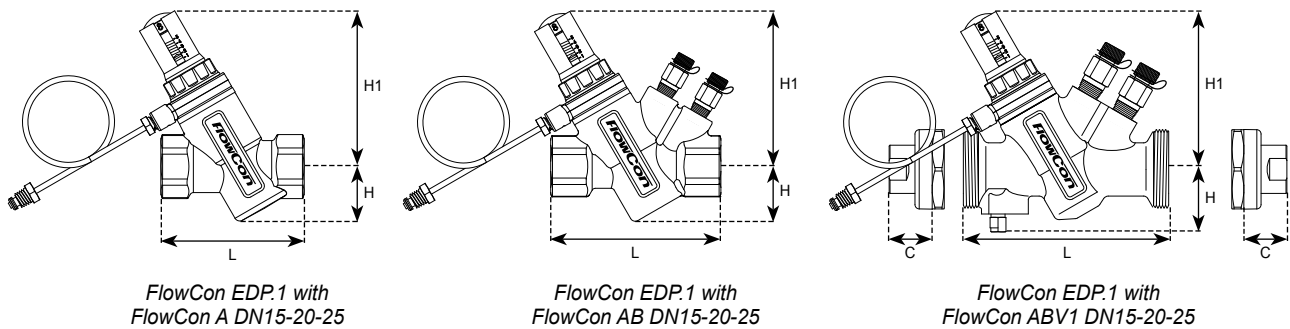
Model no.	Valve model	Valve size	Insert size	L	H	H1	End connections C <sup>2</sup>			Weight <sup>3</sup> (kgs.)	Kv <sup>4</sup> (m <sup>3</sup> /hr)	Kvs <sup>5</sup> (m <sup>3</sup> /hr)
							ISO female	ISO male	Sweat			
EDP.1.04	A	15	20	80	31	87	n/a	n/a	n/a	0.58	3.1	2.4
EDP.1.05		20								0.53		
EDP.1.06		25								0.56		
EDP.1.01	AB	15	20	82	31	87	n/a	n/a	n/a	0.51	3.1	2.4
EDP.1.02		94		0.56								
EDP.1.07		102		0.62								
EDP.1.03	ABV1	15	20	122	33	87	22	24	20	0.85	3.1	2.4
		20					22	25	20			
		25					n/a	39	22			

Note 2: Add end connection length to body length.

Note 3: Weight does not include end connections, insert or capillary tube (the weight of the insert and capillary tube is 0.28 kgs).

Note 4: For valve body only.

Note 5: FlowCon EDP insert and valve body combined.



## MODEL NUMBER SELECTION

Insert type of body:

**01**=AB15 **02**=AB20 **03**=ABV1 **04**=A15 **05**=A20 **06**=A25 **07**=AB25

**51**=AB15.DZR **52**=AB20.DZR

Insert p/t plug requirements:

**B**=pressure/temperature plugs **P**=taps plugged - leave blank if A-body or no p/t plugs required

Insert inlet x outlet union end connections: - leave blank if A- or AB-body or no end connections required

Body model and size	Female threaded	Male treaded	Sweat
EDP.1.03.XX 15-25mm, 1/2"-1"	<b>E</b> = 15mm=1/2" <b>F</b> = 20mm=3/4"	<b>H</b> = 15mm=1/2" <b>I</b> = 20mm=3/4" <b>J</b> = 25mm=1"	<b>K</b> = 15mm <b>L</b> = 18mm <b>M</b> = 22mm

Capillary tube connection - defined by partner valve connection sizes:

**1**=Capillary tube for connection to QuickDisc partner valve

**2**=Capillary tube with union M8 to 1/4" adaptor according to ISO 7.1 (compatible with FlowCon p/t port drillings)

Connections standard:

**I**=ISO **N**=NPT (NPT: not available on body type: A25 and AB25)

Example: EDP.1.01.B.1.I=FlowCon EDP in FlowCon AB body (15mm), with capillary tube for connection to QuickDisc, p/t plugs, 15mm fixed ISO female/female connections.

## DESCRIPTION

The FlowCon EDP series are a range of externally adjustable differential pressure control valves. The purpose of the valve is to keep a constant differential pressure, thereby avoiding noise from the sub system that the valve is controlling. The FlowCon EDP insert can be mounted in multiple valve housing meeting multiple installation demands and allowing valve servicing without removing the valve from the pipework's.

The FlowCon EDP insert holds a patented dual spring construction ensuring a large differential pressure adjustment range. Adjustment to the specific  $\Delta P$  required over the controlled subsystem is externally adjustable and can easily be adjusted even when the valve is installed and in operation.

The main purpose of the FlowCon EDP is to provide a valve with a large  $\Delta P$  range in a flexible insert construction ensures easy selection, installation and maintenance of the product.

		Flow range (l/hr)				
Setting:		1	2	3	4	5
EDP.1	Qmin	15	15	15	15	15
	Qmax	400	750	1400	1500	1500

## ACCESSORIES

- ACC00120: Capillary tube with fittings for connection to QuickDisc partner valve.
- ACC00121: Union M8 to 1/4" adaptor according to ISO 7.1 - compatible with FlowCon p/t port drillings.
- ACC0001: Adjustment key.

## SIZING - HOW TO SELECT

The FlowCon EDP valve is to be selected based on the required flow rate and the differential pressure required across the controlled circuit ( $\Delta p_C$ ) at design flow (see flow rate curves below for reference).

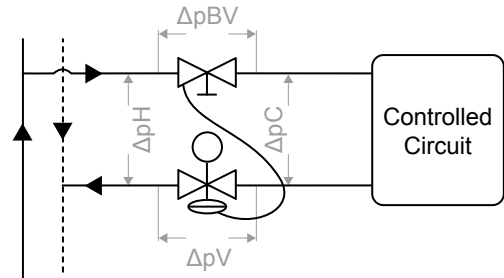
The FlowCon EDP will hereafter ensure that the differential pressure across the controlled circuit ( $\Delta p_C$ ) never exceeds the maximum defined kPaD in the chosen setting, even at partial load conditions, down to the minimum flow values listed.

### Example;

Design flow rate = 800 l/hr,

Pipe size = DN20

$\Delta p_C = 16$  kPaD (design condition)



#### 1 Select the valve model required:

The  $\Delta p_C$  and  $\Delta p_{V_{MIN}}$  required by the respective valves at 800 l/hr are shown in the flow rate curves below.

In order to optimize the system energy efficiency, the setting with closest value is selected; in this case, setting 3.1 is selected. Note that the maximum flow values are to be limited either on the partner valve  $\Delta p_{BV}$  or on the radiator thermostats.

#### 2 Valve size is selected in accordance with the pipe size: If the valve is connected to a DN20 pipe, a 20mm housing is selected to eliminate pipe modifications.

#### 3 Calculate pressure loss across DPCV ( $\Delta p_V$ ):

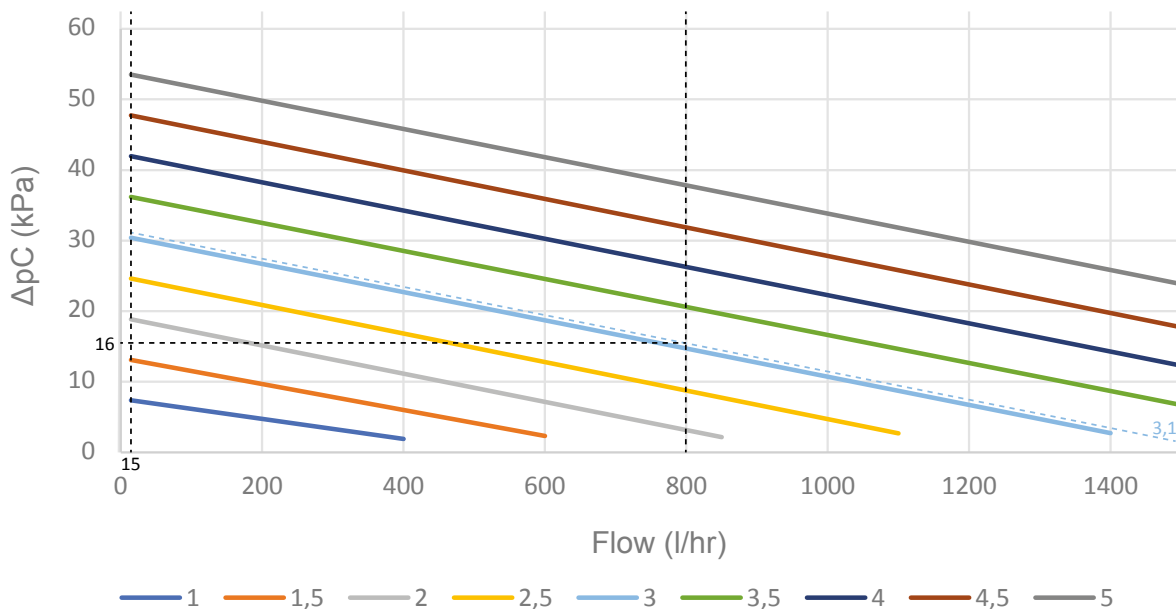
$$\Delta p_V = (Q_{design} / Kvs)^2 * 100 = (0.8 \text{ m}^3/\text{hr} / 2.4 \text{ m}^3/\text{hr})^2 * 100 = 11.1 \text{ kPaD.}$$

#### 4 Calculate the pressure loss across the partner valve ( $\Delta p_{BV}$ ): In this example a FlowCon QuickDisc is used as partner valve holding a 3 kPaD differential pressure drop @ 800 l/hr in DN20 - see separate QuickDisc tech-note for calculation.

#### 5 The minimum pump head are now defined: $\Delta p_H = \Delta p_{BV} + \Delta p_C + \Delta p_V \Rightarrow 3 + 16 + 11 = 30$ kPaD.

The pump can now be selected considering a pressure drop of 30 kPaD. The EDP in setting 3.1 will hereafter ensure that the  $\Delta p_C$  never supersedes 31 kPaD within the specified flow range.

## FLOW RATE CURVES



## GENERAL SPECIFICATIONS

### 1. DIFFERENTIAL PRESSURE CONTROL VALVES - FLOWCON EDP

- 1.1. Contractor shall install the differential pressure control valves where indicated in drawings.
- 1.2. Valve shall be an insert based, mechanically operated, differential pressure control device, which shall accurately control differential pressure over a sub system independent of system pressure fluctuation.
- 1.3. Valve housing shall be permanently marked to show direction of flow.

### 2. VALVE HOUSING

#### 2.a. FlowCon A

- 2.a.1. Valve housing shall consist of forged brass ASTM CuZn40Pb2, rated at no less than 2500 kPa static pressure at +120°C.

OR...

#### 2.b. FlowCon AB

- 2.b.1. Valve housing shall consist of forged brass ASTM CuZn40Pb2, rated at no less than 2500 kPa static pressure at +120°C.
- 2.b.2. Pressure/temperature test plugs for verifying accuracy of flow performance shall be available for all valve sizes.

OR...

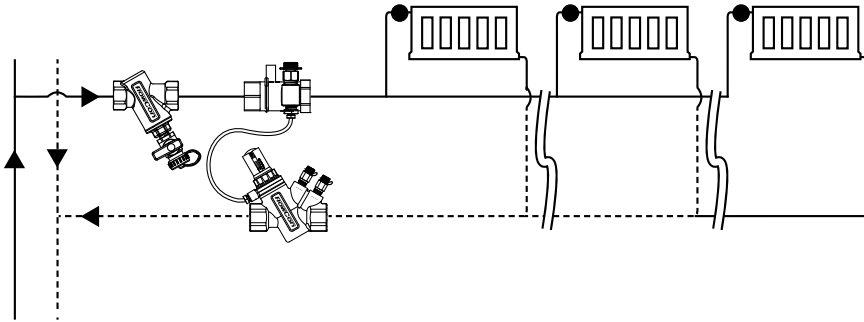
#### 2.c. FlowCon ABV

- 2.c.1. Valve housing shall consist of forged brass ASTM CuZn40Pb2, rated at no less than 2500 kPa static pressure at +120°C.
- 2.c.2. Valve ball shall consist of chemically nickel plated brass (ASTM CuZn40Pb2).
- 2.c.3. Pressure/temperature test plugs for verifying accuracy of flow performance shall be available for all valve sizes.

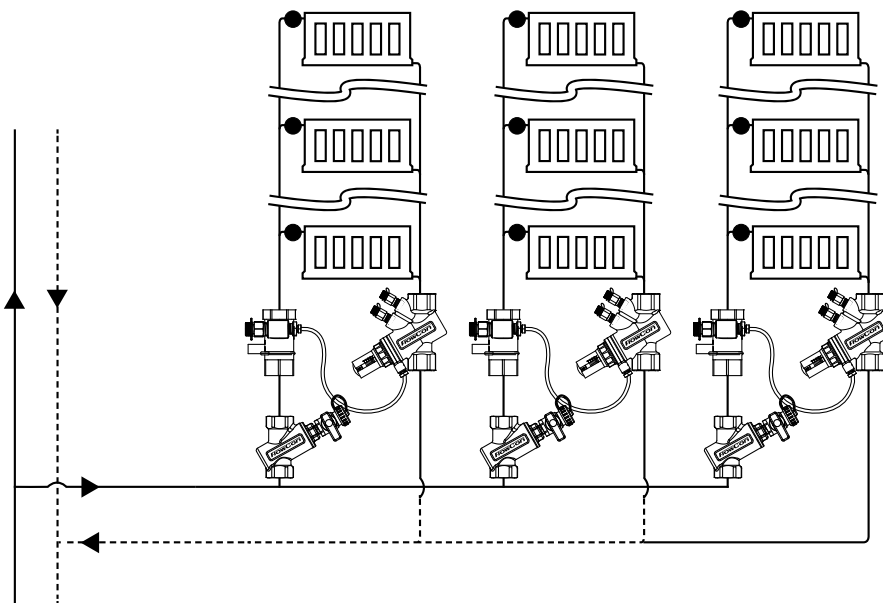
### 3. FLOW AND PRESSURE REGULATION UNIT

- 3.1. Differential pressure regulation unit shall consist of glass reinforced PPS/POM and stainless steel 18-8 spring.
- 3.2. Regulation diaphragm must be with a hydrogenated acrylonitrile-butadiene rubber or EPDM in-line rolling diaphragm. Flat diaphragms or external disc regulation are not accepted.
- 3.3. Differential pressure regulation unit shall be insert based and readily accessible for change-out or maintenance.
- 3.4. Differential pressure regulation unit shall be externally adjustable with the valve in-line and the system in operation.
- 3.5. Differential pressure regulation unit shall be mounted with double spring system allowing differential pressure adjustment within minimum 5-50 kPaD in the same insert without adjustments to the valve.
- 3.6. Differential pressure regulation unit must protect the system against noise and must have a clearly defined differential pressure range within a flow range of 15-1500 l/hr.

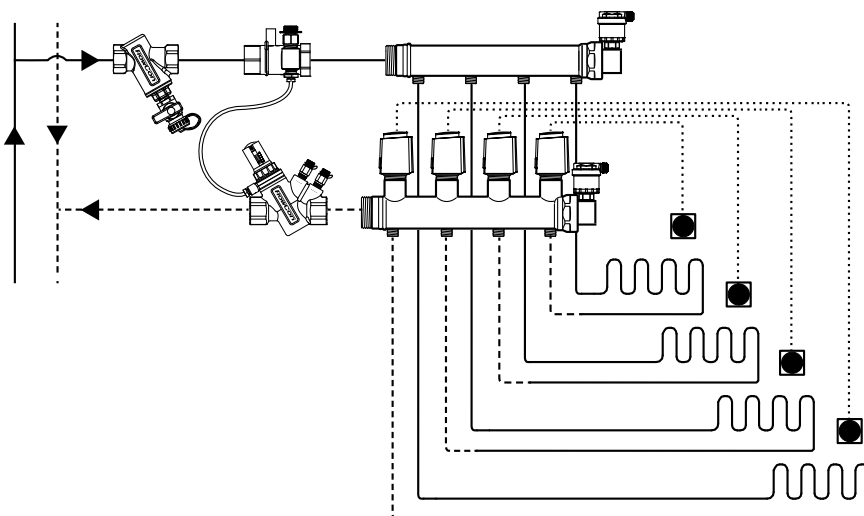
## APPLICATIONS



FlowCon EDP mounted on the branch in 2-pipe heating system.

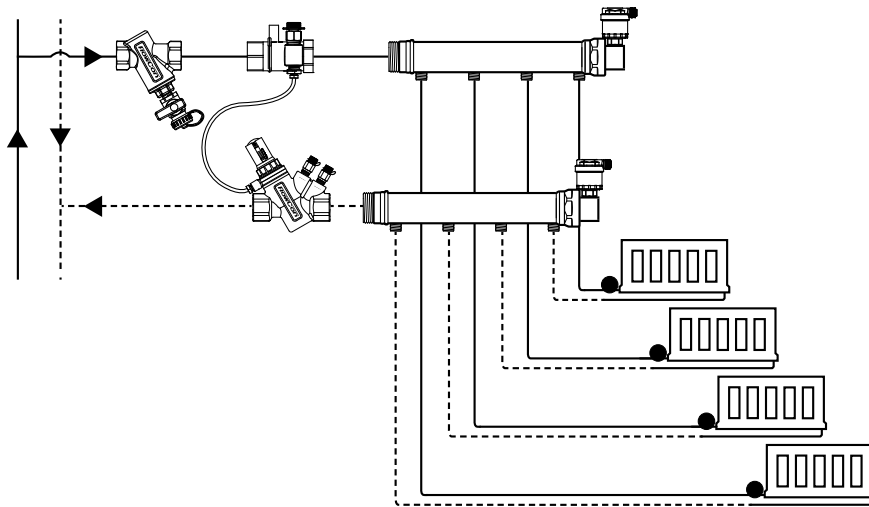


FlowCon EDP mounted on the riser in 2-pipe heating system.



FlowCon EDP mounted on a manifold for underfloor heating system.

## APPLICATIONS (...continued)



FlowCon EDP used as zone valve  
for a manifold distribution system.

## UPDATES

**For latest updates please see [www.flowcon.com](http://www.flowcon.com)**

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