

Data Sheet

Automatic Bypass Control AVDO

Application



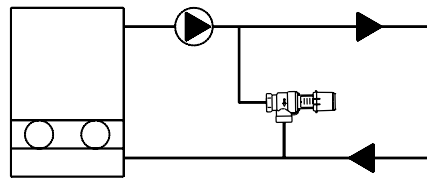
AVDO is a self-acting constant flow control primarily used either to maintain minimum flow rates through e.g. a low-capacity gas boiler or to control the differential pressure in a central heating system.

- Is dimensioned for pressure stage PN 10, max. 120 °C
- DN 15 and DN 20
- Operates without impulse tubes

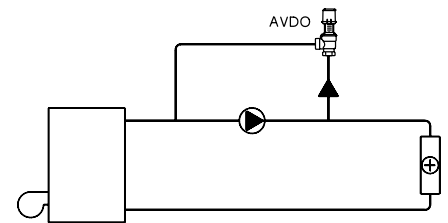
AVDO:

- Opens on rising differential pressure
- Has a setting range of 0.05 - 0.5 bar

On delivery valve housing is fit onto AVDO with one of the following fittings: internal socket thread, internal socket thread/nipple or external thread for compression fittings.



Low-capacity gas boiler where maintenance of a min. flow is required



Differential pressure control

Ordering

Type	Setting Range (bar)	Connection			Code no.
		Inlet		Outlet	
AVDO 15	0.05 - 0.5	R _p 1/2 ¹⁾		R _p 1/2 ¹⁾	003L6002
AVDO 20		R _p 3/4 ¹⁾		R _p 3/4 ¹⁾	003L6007
AVDO 25		R _p 1 ¹⁾		R _p 1 ¹⁾	003L6012
AVDO 15	0.05 - 0.5	R _p 1/2 ¹⁾		R 1/2 ¹⁾	003L6003
AVDO 20		R _p 3/4 ¹⁾		R 3/4 ¹⁾	003L6008
AVDO 25		R _p 1 ¹⁾		R 1 ¹⁾	003L6013
AVDO 15	0.05 - 0.5	G 3/4 A ²⁾		G 3/4 A ²⁾	003L6020
AVDO 20		G 1 A ²⁾		G 1 A ²⁾	003L6025
AVDO 25		G 1 1/4 A ²⁾		G 1 1/4 A ²⁾	003L6030
AVDO 15	0.05 - 0.5	R _p 1/2 ¹⁾		R 1/2 ¹⁾	003L6018
AVDO 20		R _p 3/4 ¹⁾		R 3/4 ¹⁾	003L6023
AVDO 25		R _p 1 ¹⁾		R 1 ¹⁾	003L6028

¹⁾ According to ISO 7/1

²⁾ According to ISO 228/1

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Accessories

Supplied in boxes of 10

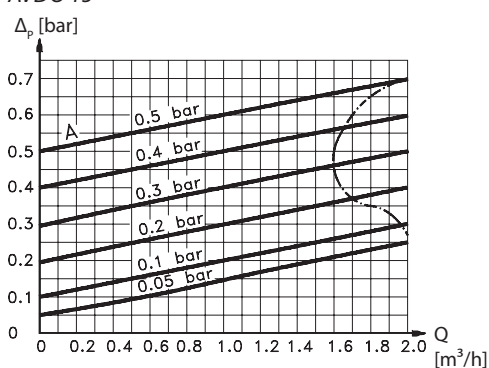
Copper tube fittings		Code no.
AVDO 20	Ø 18 x 1	013U0134
	Ø 22 x 1	013U0135
AVDO 25	Ø 28 x 1	013U0140

Technical data

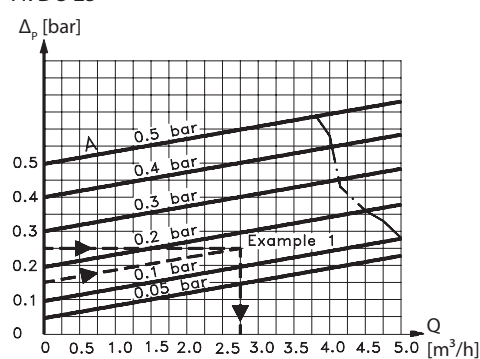
Setting range.....0.05 - 0.5 bar
 Max. differential pressure.....0.5 bar
 Operation pressure.....PN 10
 Max. flow temperature.....120 °C
 Max. leakage at closed valve.....50 l/h

Capacity

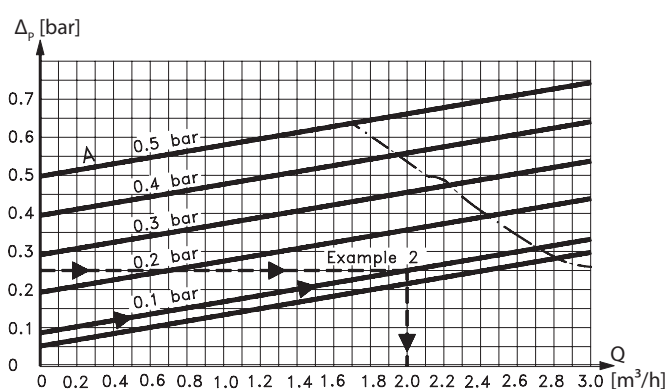
AVDO 15



AVDO 25



AVDO 20



A = set opening pressure

Δ_p = Δp for valve

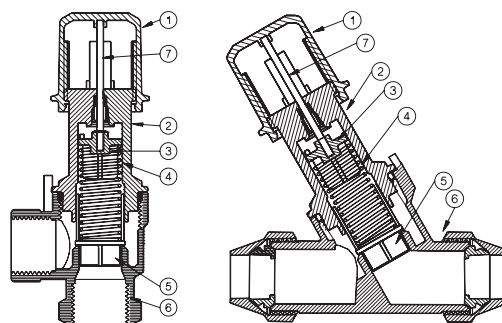
- - = Upper limit graph for recommended application area with almost noiseless installation.

Measurement conditions according to ISO 3743.

Design

Materials

1. Setting handle	Pom-plast
2. Base	Ms 58
3. Spring guide	PPS plastic
4. Spring	Stainless steel
5. Valve cone	PPS plastic
6. Valve body	Ms 58, hot-pressed
7. Setting pin	Stainless steel
O-rings	EPDM



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Installation

The valve body must be mounted with flow in direction of the cast-in arrow.

Setting

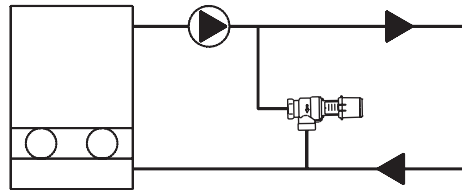
The control is set by turning the setting dial. AVDO has a setting scale on which the opening pressure in bar or mwg can be directly read.

The differential pressures stated for a given setting are indicative.

The scale gives the differential pressure across the AVDO when it just begins to open.

Sizing

Fig. 1



Example 1: Bypass control across heating system

Given:

- System, see fig. 1.
- Insignificant pressure loss in pipe from boiler to bypass.
- Pump characteristic, see fig. 2.
- 0.15 bar system differential pressure at max. system load.

Required:

- Bypass circulation beginning at 0.15 bar pump pressure.
- Min. 2.0 m³/h boiler circulation.

Seek:

- A constant flow control that opens concurrently with falling load across the system (closing radiator thermostats).
- A constant flow control that ensures min. 2.0 m³/h boiler circulation at min. system load.

Solution:

- A 2.0 m³/h flow corresponds to a 0.25 bar pump pressure. On closing radiator thermostats AVDO is to ensure min. 2.0 m³/h circulation at 0.25 bar differential pressure across AVDO. Choose AVDO 25 that provides 2.75 m³/h at 0.25 bar differential pressure across valve. Set AVDO on 0.15 bar required opening pressure.

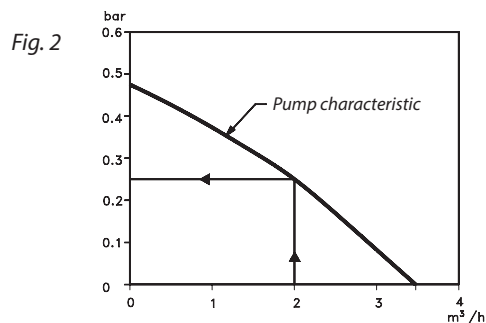
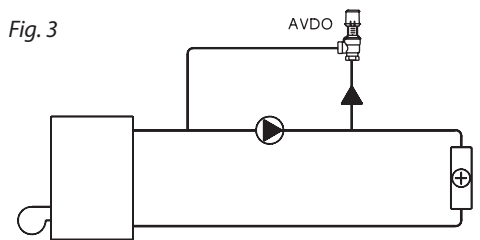


Fig. 3



Example 2: Bypass control across circulation pump

Given:

- System, see fig. 3.
- Pump characteristic, see fig. 4.

Required:

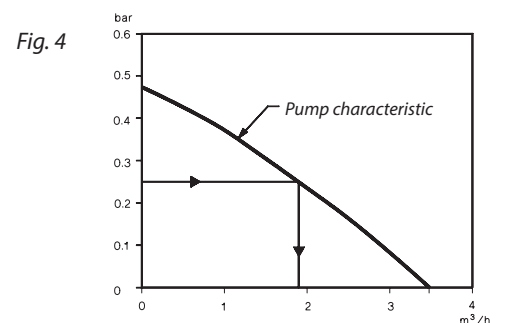
- Bypass circulation beginning at 0.1 bar pump pressure.
- Max. system differential pressure at closed radiator thermostats must be limited to 0.25 bar.

Seek:

- A constant flow control that opens concurrently with falling load across the system (closing radiator thermostats).
- A constant flow control that ensures max. system differential pressure not exceeding 0.25 bar at min. system load.

Solution:

- The max. permissible differential pressure 0.25 bar across system corresponds to a 1.8 m³/h water volume (fig. 4). At min. load AVDO must ensure 1.8 m³/h pump bypass circulation. In this example AVDO 20 must be used - see "Capacity" - as circulation is not to begin before differential pressure across system has exceeded 0.1 bar, AVDO is set on 0.1 bar - see "Setting".



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Dimensions

Fig. 1

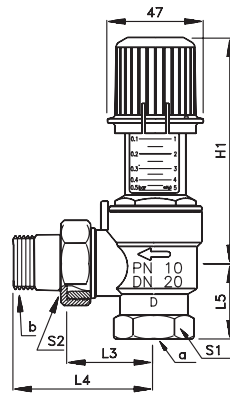


Fig. 2

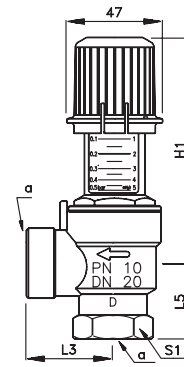


Fig. 3

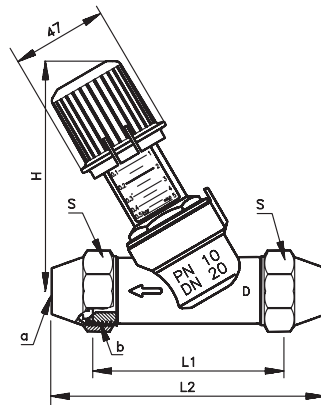


Fig. 4

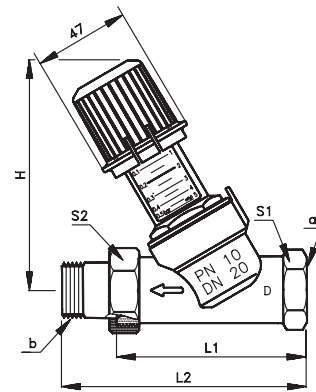


Fig. 1

DN	Type	a ¹⁾	b ¹⁾	L3	L4	L5	H1		S1	S2
							Min.	Max.		
15	AVDO 15	RP ½	RP ½	40	69	33	83	112	28	30
20	AVDO 20	RP ¾	RP ¾	42	74	37	83	112	34	37
25	AVDO 22	RP 1	RP 1	46	81	46	85	114	43	40

Fig. 2

DN	Type	a ¹⁾	L3	L5	H1		S1
					Min.	Max.	
15	AVDO 15	RP ½	40	33	83	112	28
20	AVDO 20	RP ¾	42	37	83	112	34
25	AVDO 22	RP 1	46	46	85	114	43

Fig. 3

DN	Type	a (mm)	b ¹⁾	L1	L2	H1		S
						Min.	Max.	
15	AVDO 15	15/16/18	G ¾ A	87	111	89	113	30
20	AVDO 20	18/22	G 1 A	93	120	90	114	37
25	AVDO 22	28	G 1¼ A	106	136	95	119	45

Fig. 4

DN	Type	a ¹⁾	b ¹⁾	L1	L2	H1		S1	S2
						Min.	Max.		
15	AVDO 15	RP ½	RP ½	87	116	89	113	28	30
20	AVDO 20	RP ¾	RP ¾	93	125	90	114	34	37
25	AVDO 22	RP 1	RP 1	106	141	95	119	43	40

¹⁾ According to ISO 7/1 ²⁾ According to ISO 228/1

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