Cocon QDP
Differential pressure regulator with flow limitation
PN 25, DN 20…25

General Information

Differential pressure regulator with flow limitation and zone control for installation in central heating and cooling systems. The valve combination can be equipped with an actuator or a manual regulating head. In addition, the maximum differential pressure is limited via the control zone. Installation only in the return pipe.

Two-way valve with secured, lead sealable, infinitely adjustable flow limitation. Direct setting using the handwheel. Readability of the set value independent of the handwheel position. Maintenance-free spindle sealing.

Functions

- Differential pressure control
- Flow limitation
- Zone control
- Shutoff

Features

+ Constant differential pressure control with presettable flow limitation
+ Compact design, handwheel always visible
+ Blockable and lead-sealable presetting visible from the outside

EN-03108-11446-DB-V2303   1

Product Details

Technical Data

Valve

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Nominal sizes	DN 20 and DN 25
Variants	With external thread according to ISO 228
Operating temperature	-10...120 °C
Operating pressure	Max. 25 bar / PN 25
Differential pressure	0.2...3 bar
Flow rate	DN 20: up to 1,580 l/h
	DN 25: up to 1,830 l/h
Medium	Heating and cooling water according to VDI 2035 or ÖNORM 5195
	Water-glycol mixtures with max. 50% glycol content
	Not suitable for steam, oily and aggressive media
pH value	6.5...10
Seat tightness for shutoff with handwheel[1]	DIN EN 12266-1 / ISO 5208-1

Actuator Connection

Connection	M 30 x 1.5
Stroke	4 mm
Closing dimension	11.8 mm
Lower stroke position	≤ 11.3 mm
Upper stroke position	≥ 15.8 mm
Closing force	90...150 N
Closing pressure	Max. 4 bar (400 kPa) in flow direction
Leakage rate with permissible actuator	DIN EN 1349 / IEC 60534, class IV

Functions

Setting

The required set value is adjusted with the handwheel based on the differential pressure and the required flow rate. The set value can be obtained from the charts with the valve characteristic lines, which can be found at the end of the Product Data. The set value can be found at the point of intersection between differential pressure and mass flow rate.

In the example opposite, the setting for a mass flow of 975 l/h (vertical line) and 10 kPa differential pressure (horizontal line) is sought. The point of intersection is on the characteristic line of presetting 5 = nominal value and set value on the handwheel.

Lead seal eyelet

Blocking ring
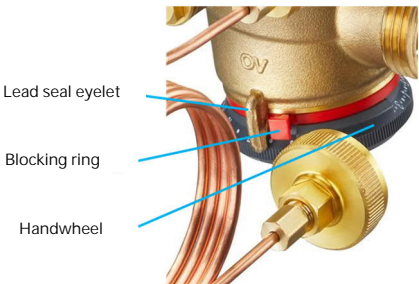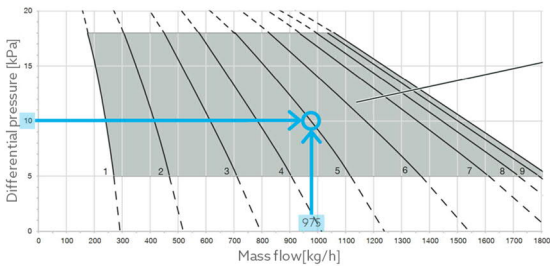
Handwheel

The nominal value setting is secured against unintentional setting by engaging the handwheel and the additional retractable blocking ring which can be fixed with sealing wire (item no. 1089091). The handwheel is always accessible and readable, even with the actuator mounted.

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[1] The sole, permanent, and unattended shutoff of the valve against the atmosphere is not permissible. In this case, provide an additional shutoff cap/plug.

Control

The Cocon QDP is a proportional regulator working without auxiliary energy. It keeps the differential pressure in the controlled section constant without auxiliary energy within a proportional band required for control purposes. The integrated diaphragm unit keeps the system pressure at a constant, fixed preset value. Pressure fluctuations, which can occur, for example, when system parts are switched on or off, are thus avoided.

When the designed flow rate is reached (975 kg/h in the example above), the Cocon QDP regulates the corresponding differential pressure (10 kPa in the example above). Due to the steep characteristic line, fluctuations in the differential pressure only have a minor effect on the flow rate.

When planning, it must be considered that the Cocon QDP requires a differential pressure of at least 20 kPa across the valve in order to enter the control range.

Zone control

The pipework or the downstream consumer is shut off during operation by the actuator. An actuator with on/off control is sufficient for this function. Room temperature-based flow control with intermediate positions is not possible with differential pressure regulators.

Oventrop offers a wide range of suitable actuators, see chapter "Accessories" below.

Shutoff

Before mounting the actuator or if no actuator is planned, the pipework can be shut off briefly using the protection cap supplied. The sole, permanent, and unattended shutoff of the valve against atmosphere is not permissible. In this case, provide an additional shutoff cap/plug.

Materials

Component	Material
Handwheel, blocking ring	Plastic
Body	Dezincification resistant brass
O-rings, diaphragm	EPDM
Spindle	Stainless steel
Regulating sleeve	Plastic
Connection impulse tube / blind plug	Brass
Impulse tube	Copper
Protection cap	Plastic

Dimensions and Item Numbers

DN	D	Length [mm]	Height [mm]	Weight [kg]	Flow rate [l/h]	Item no.
20	G 1	91	113	1,2	bis 1.580	1144606
25	G 1¼	103	113	1,4	bis 1.830	1144608

Accessories

Fittings

	Size	Suitable for	Item no.
Connection set with externally threaded tailpipes	G 1 x R ¾	DN 20	1140284
Consisting of two tailpipes with O-rings and union nuts	G 1 ¼ x R 1	DN 25	1140285

Wire seal kit

	Suitable for	Item no.
To seal the handwheel. Consisting of seal and sealing wire. Set of **10** pces.	All nominal sizes	1089091

Thermal actuators

		Suitable for	Item no.
On/off, **230** V	NC, cable **1** m	All nominal sizes	1012415
IP54, 230 V AC	NC, cable **2** m	All nominal sizes	1012452
NC = normally closed	NC, cable **5** m	All nominal sizes	1012455
NO = normally open	NC, cable **10** m	All nominal sizes	1012459
	NO, cable **1** m	All nominal sizes	1012425
On/off, with auxiliary switch IP54, 230 V AC	NC, cable **1** m	All nominal sizes	1012435
On/off, **24** V	NC, cable **1** m	All nominal sizes	1012416
IP54, 24 V AC / DC	NC, cable **2** m	All nominal sizes	1012442
	NO, cable **1** m	All nominal sizes	1012426

Motorised actuators

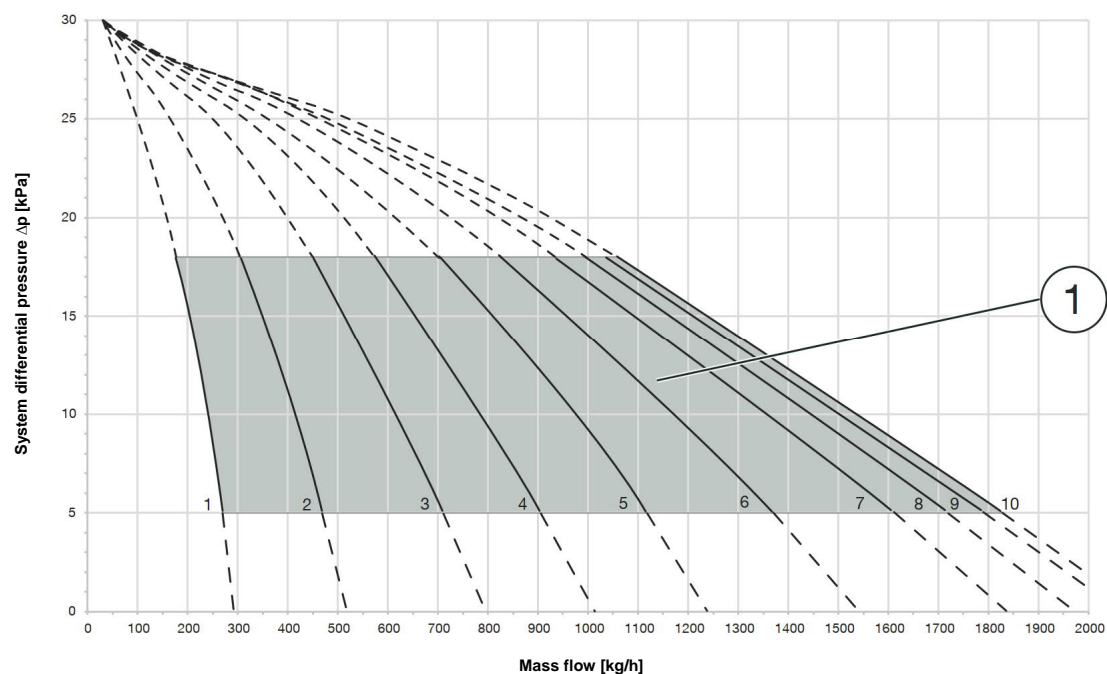|		Suitable for	Item no.
Floating / On/off Cable **1.5** m, IP54	230 V AC	All nominal sizes	1012729
Modbus Cable **1.5** m, IP54	24 V AC / DC	All nominal sizes	1012745
On/off, with short running time Cable **1.5** m, running time **3** seconds	230 V AC	All nominal sizes	1012710
	24 V AC / DC	All nominal sizes	1012711

Sizing

Handwheel settings – Characteristic lines

DN 20
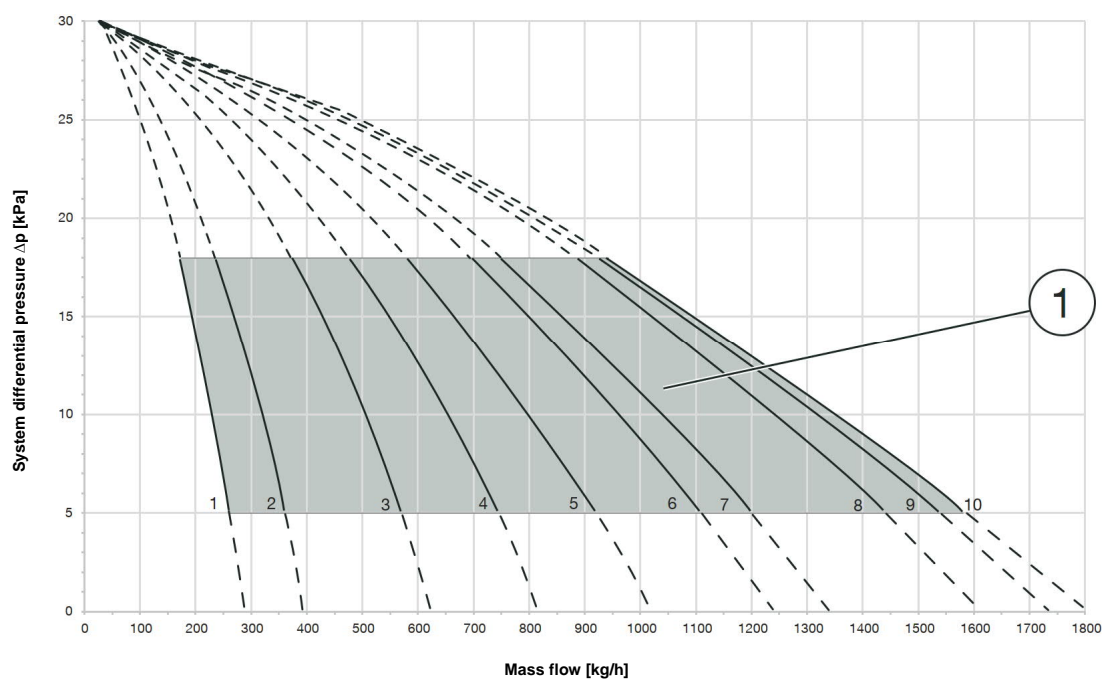
DN 25

(1) Recommended application range 5 to 18 kPa (grey highlighted).