

VD123, VD133

Two-port and three-port control valves DN50 – DN150



Summary

Control valves VD123 and VD133 are flanged, two and three-way valves with mixing or diverting function with high tightness in both ports. Assembled with electromechanic actuators, the valve can be controlled with 3-point or continuous signal. Part of delivery is also a hand wheel which can be used for the valve control until assembling with an actuator.

Applications

Owing to unique flow characteristic optimized for control of thermodynamic processes, the valves are ideal for applications in heating and air-conditioning.

Process media

The valves are suitable for common media such as water, air and other media compatible with material of body and internal parts in a temperature range of +2 to +150°C.

Sealing surfaces of the trim are resistant to common dirt and impurities in the medium. However, for abrasive dirt particles it is recommended to pipe a strainer in the flow to ensure reliable function. The valve cannot work in cavitation conditions.

Installation

The valve must be piped with the medium flow according to arrows indicated on the valve body (inlet ports A, B and outlet port AB). For diverting function the valve is to be piped conversely (inlet port AB and outlet ports A, B).

The valve can be piped in any position except when the actuator is below the valve body.

Technical data

Nominal size range	DN50 to DN150
Nominal pressure	PN16
Body material	Grey cast iron EN-JL 1040
Seat material	Stainless steel 1.4027
Plug material	Stainless steel 1.4305
Plug type	V-ported with soft seat sealing
Seat sealing, packing	EDPM
Operating temperature range	+2 to +150°C
Connection	Flanges type B1 (raised-faced) acc. to EN 1092-2 (4/2002)
Dimensions	see below
Flow characteristics	straight way: LDMspline®

	angle way: linear
Kvs value	40 to 360 m ³ /h
Rangeability	50:1
Leakage rate	Class IV. - S1 acc. to EN 1349 (5/2001) (<0.0005% Kvs)

Three-port range

Type	DN [mm]	Kvs [m ³ /h]	Δ _{pmax} [kPa]*	H [mm]
VD133 50	50	40	210	20
VD133 65	65	63	130	20
VD133 80	80	100	80	20
VD133 100	100	160	300	40
VD133 125	125	250	190	40
VD133 150	150	360	130	40

*Values for standard actuator types. Other actuator types on demand.

Two-port range

Same data as in the table above. Order as **VD123...**

Detailed Kvs calculation and valve authority determination sheets available on request.

Actuators

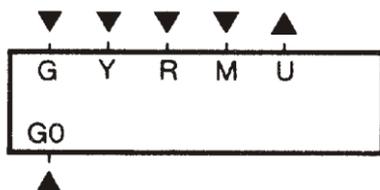
The valves are delivered with standard motoric actuators. Their connection to the valve ensures zero clearance between the stem of the actuator and the valve so precise regulating ability is ensured even for minimal position changes. The actuators are self-adaptive. The limit positions are limited by the valve stroke. To communicate with a control system, the actuators are equipped with either standard 3-position control or direct control (options: 0..10 V, 2..10 V, 0..20 mA or 4..20 mA). All the types of actuators are equipped with hand wheel for manual operation.

VD133 50 - 80

Technical data

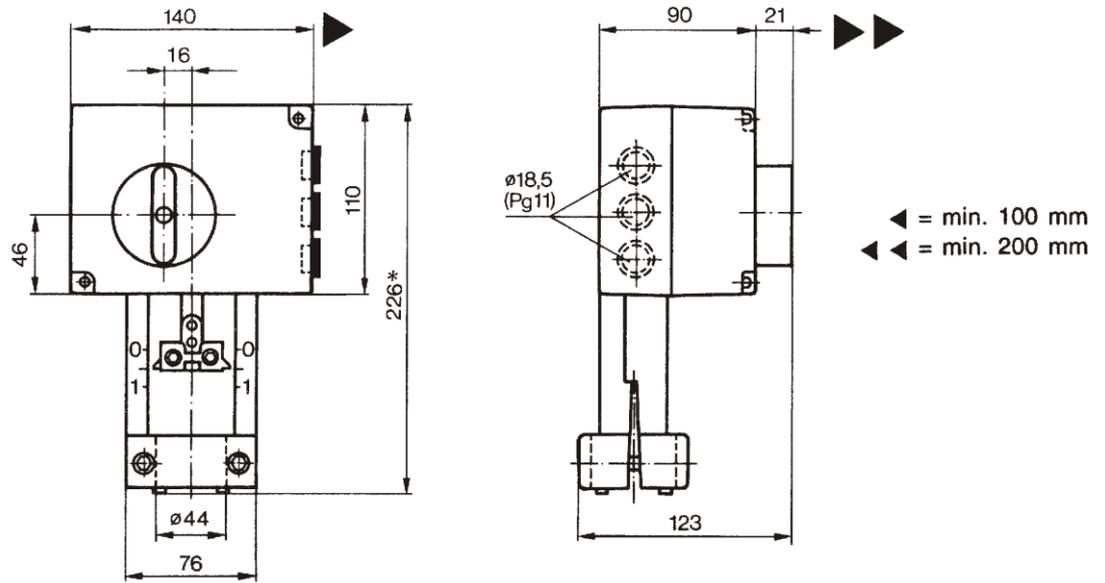
Power supply	24 V AC ± 10%, 50 Hz
Consumption	6,5 VA
Control signal	0...10 V DC or 4...20 mA
Nominal force	700 N
Nominal stroke	20 mm
Dimensions	see below
Run time 0...100%	35 s
Control input impedance	> 10 kOhm (0...10 V) 250 Ohm (0/4...20 mA)
Operating / storage conditions	-5..50°C, 5..95 %rH non-condensing

Terminals



- AC 24 V feeding voltage
- G - system potential AC 24 V
- GO - system neutral AC 24 V
- Y control input signal DC 0...10 V
- R control input signal DC 4...20 mA or 0...1000 Ohm (type of signal is selected by switch DIL No.2)
- M measuring neutral
- U feedback DC 0...10 V for DC 0...10 V or R = 0...1000 Ohm on Y terminal (maximum availability from both signals), or feedback DC 4...20 mA at DC 4...20 mA on the R terminal

Actuator dimensions



VD133 100 - 150 Technical data

Power supply	24 V AC \pm 10%, 50 Hz
Consumption	19 VA
Control signal	0...10 V DC or 4...20 mA
Nominal force	3200 N
Nominal stroke	40 mm
Dimensions	see below
Weight	4 kg
Control input impedance	> 10 kOhm (0...10 V) 250 Ohm (0/4...20 mA)
Protection	IP65
Operating / storage conditions	-20...60°C, 5...100 %rH, condensing

Terminals

