Butterfly valve, PN16

Modulating or On-Off motorized control

TVI-BV Series...

Application

Suitable for use as a control valves in heating, ventilating and air conditioning plants for low-pressure hot water and chilled water systems used in isolation, change-over, bypass or control application, with permissible fluids as:

- Water: max. -20°C …100°C
- Domestic water

Design features

- The large Kvs values provide for an economical control valve solution for large flow application.
- Manual operation by a 8mm wrench or turning the wheel.
- Double D-fit of valve stem connected with the valve disc produces close tolerance, easy disassembly..
- Rust proof stainless steel 316 disc, more proper and good at high temperature.
- The boot seat makes the connection of the valve body to the piping easy, and it is quite easy to replace the seat, should it ever be necessary.
- The disc is self centralizing due to the patented pinless design.
- Valve shaft and the body were completely isolated by four non-corrosive RPTFE (ReinforcedPolyTetraFluoroEthylene) bushings, resulting in increased control of the valve disc, lower valve seating torque and longer valve life.
- The patented gear drive mechanism provides for efficient, smooth operation while allowing easy manual override at any time.
- With IP67 rating, easily visible position indicators, international standard ISO5211 mounting system, internal thermal motor overload protection, heater, dual auxiliary Form C witches, and easily accessible wiring termination points.

Types and operating data

On-Off control with 220Vac power supply

Type	DN	k_{vs} m^3/h	Power Consumption (W)	Closing Pressure △ps (kPa)
TVI-BV-050-323	50	80	10	1200
TVI-BV-065-323	65	170	10	1200
TVI-BV-080-323	80	290	10	1200
TVI-BV-100-323	100	560	10	1200
TVI-BV-125-323	125	870	10	1200
TVI-BV-150-323	150	1340	40	1200
TVI-BV-200-323	200	2690	40	1200
TVI-BV-250-323	250	5540	120	1200
TVI-BV-300-323	300	7540	120	1200
TVI-BV-350-323	350	10300	120	1200
TVI-BV-400-323	400	14300	220	1200
TVI-BV-450-323	450	18900	220	1200
TVI-BV-500-323	500	24200	180	1200

Modulating control with 24Vac power supply

Type	DN	k_{vs} m^3/h	Power Consumption (W)	Closing Pressure △ps (kPa)
TVI-BV-050-024	50	80	10	1200
TVI-BV-065-024	65	170	10	1200
TVI-BV-080-024	80	290	10	1200
TVI-BV-100-024	100	560	10	1200
TVI-BV-125-024	125	870	10	1200
TVI-BV-150-024	150	1340	70	1200
TVI-BV-200-024	200	2690	70	1200
TVI-BV-250-024	250	5540	180	1200
TVI-BV-300-024	300	7540	180	1200
TVI-BV-350-024	350	10300	180	1200
TVI-BV-400-024	400	14300	180	1200
TVI-BV-450-024	450	18900	180	1200
TVI-BV-500-024	500	24200	180	1200

△ps Max. permitted differential pressure at which the motorized valve still closes against the pressure

Ordering information

When ordering, please give quantity, designation and type code.

Example: 1pc, DN80 On-Off motorized butterfly valve, PN16, TVI-BV-080-323

Technical data

Butterfly valve

Nominal pressure		PN16
Valve characteristic		Modified equal percentage
Rangeability		10:1 (for 30° to 70° range)
Leakage rate		Water bubble tight (to DIN3230)
Material	- Valve body	Cast iron GG25 (DN50…300)
		Ductile iron GGG40 (DN350…500)
	- Disc	Stainless steel 316 disc
	- Seat	EPDM boot seat
	- Shaft	Stainless steel 416
Operating pressure		Max.1600kPa(16bar)
Flange connection		To ISO7005-2 to lug
Action		90°

Actuator

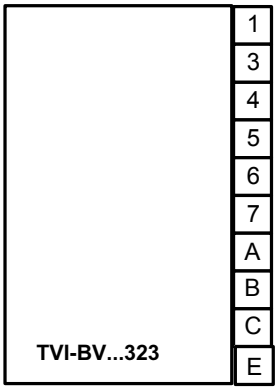
Operating voltage		24/220Vac, 50/60Hz
Overload protection		Thermal protected 135° cut-out
Control signal	TVI-BV…323	On-Off / 3-position control
	TVI-BV…024	Selectable 2…10Vdc / 4..20mA
Sensitivity	TVI-BV…024	0.2mA / 100mA
Feedback	TVI-BV...024	Selectable 4…20mA / 2…10Vdc
Auxiliary switches		2 x SPDT, 250Vac-10A
		Factory set for 3° and 87° state change
Wiring connection		1/2” cable connector, screw terminals
Protection degree		IP 67
Material	- Housing	Die cast aluminum alloy
	- Gear train	High alloy steel gear sets, self locking
Permissible ambient condition		
	- Temperature	-20…70°C
	- Humidity	Up to 95% RH
Angle of rotation		Mechanically limited to 95°

Approvals

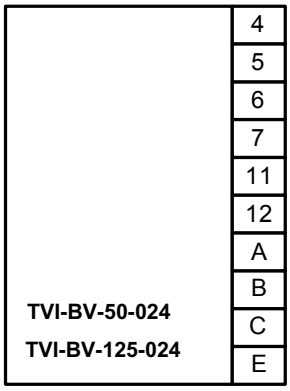
CE Conformity to

- EMC directive 89/336/EEC
- Low voltage directive 93/68/EEC

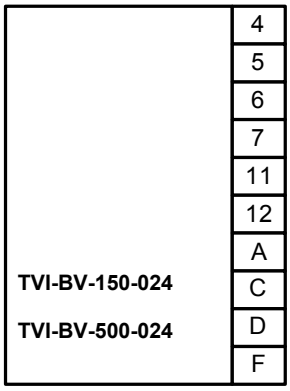
Connection diagram



1 System neutral
3 System phase for valve "Open" (220V ac)
4 System phase for valve "Close" (220V ac)
7 Supply phase for heater(220V ac)
A Connection "Common" for Auxiliary switch
B Auxiliary switch output "Valve open"
E Auxiliary switch output "Valve close"



4 System neutral
5 System phase (24V ac)
6 Control signal 4...20mA / 2...10Vdc neutral
7 Control signal 4...20mA / 2...10Vdc phase
11 Feedback signal 4...20mA / 2...10Vdc neutral
12 Feedback signal 4...20mA / 2...10Vdc phase
A Connection "Common" for Auxiliary switch
B Auxiliary switch output "Valve open"
E Auxiliary switch output "Valve close"



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A Auxiliary switch output "Valve open"
C Auxiliary switch output "Valve open"
D Auxiliary switch output "Valve close"
F Auxiliary switch output "Valve close"