



ELECTRO-PNEUMATIC CONTROL VALVE

MODEL **CT20D** DUCTILE CAST IRON
STAINLESS STEEL

COMPACT MULTI-PURPOSE CONTROL VALVE WITH ELECTRO-PNEUMATIC POSITIONER

Features

Electro-pneumatic globe valve up to DN 150 with drain plug and I/P positioner for steam and non-hazardous fluids.

1. Digital I/P positioner and pneumatic actuator of standardized sizes in a compact configuration.
2. Rolling actuator diaphragm ensures linearity over the operating stroke and maximizes life.
3. Self-adjusting positioner features zero calibration by auto-tuning, which ensures tight shut-off and improves control during low flow.
4. Positioner LCD allows simple operation with capacitive keys and displays valve travel and error codes.
5. Self-adjusting chevron packing minimizes seal leaks, stem wear and stiction/hysteresis problems.
6. Intrinsically safe version and a wide variety of other special options are available for exceptional performance in demanding duties.
7. Size DN 40 and above utilize V-port plugs to improve control stability and provide durability resulting in a long service life.

Pressure Equipment Directive (PED)

Classification according to PED 2014/68/EU, fluid group 2

Size	Category	CE Marking
DN 15 to DN 40	—*	Art. 4, Sec. 3 (sound engineering practice), CE marking not allowed
DN 50 to DN 150	I	with CE marking and Declaration of Conformity

* Manufactured in accordance with sound engineering practice



Specifications

VALVE

Model	CT20D																			
Body Material	Ductile Cast Iron (EN 5.3103)										Cast Stainless Steel (A351 Gr.CF8M)									
Connection	Flanged PN25 DIN EN 1092-2										Flanged PN40 DIN EN 1092-2									
Size (DN)	15	20	25	32	40	50	65	80	100	150	15	20	25	32	40	50	65	80	100	150
Max. Oper. Pressure (barg) PMO	22	21	21	20.5	22	22	22	20	20.5	12	32	21	21	20.5	32	26	23	20	20.5	12
Max. Oper. Temp. (°C) TMO	220																			
Leak Rate Class (IEC 60534-4)/ Seat Plug Sealing	Class IV/Metal sealing																			
Characteristic	Equal percentage or linear																			
Rangeability	50 : 1																			
Applicable Fluids*	Steam, Water, Air																			

* Do not use with toxic, flammable or otherwise hazardous fluids.

1 bar = 0.1 MPa

PRESSURE SHELL DESIGN CONDITIONS (**NOT** OPERATING CONDITIONS): Maximum Allowable Pressure (barg) PMA: 22 (EN 5.3103), 32 (CF8M)

Maximum Allowable Temperature (°C) TMA: 220

Minimum Allowable Temperature (°C): 0 (EN 5.3103), -40 (CF8M)

ACTUATOR / POSITIONER

Fail-safe Position	Valve CLOSED (Air to Open)
Motive Medium	Oil-free air, filtered to 5 µm
Electrical Input Signal (mA)	4 to 20
Load Impedance (V)	Max. 6.3
Air Supply Pressure Range for Positioner (barg)	4.4 to 6
Ambient Temperature Range (°C)	-20 to +80
Protection Class	IP 66
Intrinsically Safe Rating (optional)	ATEX II 2G Ex ia IIC T4

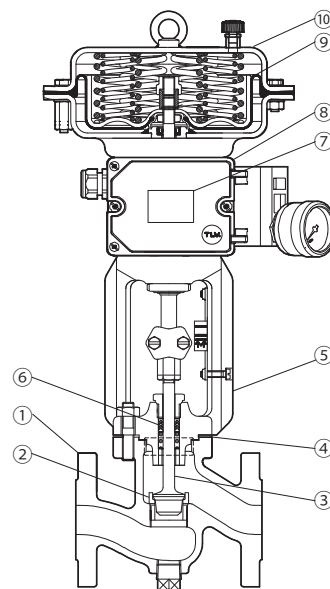


To avoid abnormal operation, accidents or serious injury, DO NOT use this product outside of the specification range. Local regulations may restrict the use of this product to below the conditions quoted.

Configuration

No.	Description	Material	DIN*	ASTM/AISI*
①	Valve Body	See Valve Specification Table for available materials		
②	Valve Seat	Stainless Steel X12Cr13	1.4006	AISI410
③	Plug and Stem	Stainless Steel X2CrNiMo17-12-2/ X12Cr13**	1.4404/ 1.4006**	AISI316L/ AISI410**
④	Valve Bonnet Gasket	Graphite	—	—
⑤	Valve Bonnet	Carbon Steel A105/A105M/ Stainless Steel SUSF316L***	1.0460/ 1.4404***	—/ A182 F316L***
⑥	Stuffing Box V-ring Packing	Fluorine Resin PTFE with Carbon	PTFE	PTFE
⑦	Positioner Housing	Polyphthalamide PPA	—	—
⑧	Positioner Cover	Polycarbonate PC	—	—
⑨	Rolling Diaphragm	Nitrile Rubber with Fabric Insert	NBR	NBR
⑩	Actuator Springs	Spring Carbon Steel	—	—

* Equivalent materials ** Kvs values 25 and higher *** For cast stainless steel model
Contact TLV for available replacement parts.

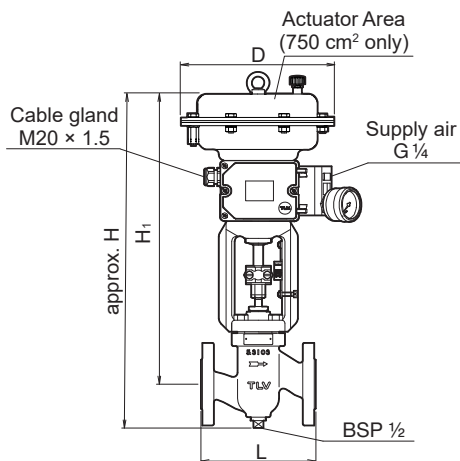


Cv & Kvs Values

Stroke (mm)	Kvs (DIN)	4	6.3	10	16	25	40	60	80	160	260
	Cv (UK)	3.9	6.1	9.7	15.5	24.3	38.8	58.2	77.6	155	252
	Cv (US)	5	7.5	12	20	30	47	70	95	190	300
	Seat Dia. (mm) DN	12	24		31	38	48	63	80	100	130
15	15	○									
	20		○								
	25			○							
	32				○						
	40					○					
	50						○				
	65							○			
	80								○		
30	100									○	
	150										○

Dimensions

● CT20D Flanged



CT20D Flanged

(mm)

DN	L		Actuator Area (cm²)	H	H ₁	φ D	Weight* (kg)
	DIN EN 1092-2	PN40					
15	130	130	175	460	401	215	18
20	150	150					19
25	160	160		465			20
32	180	180		485			24
40	200	200	355	525	445	280	35
50	230	230		530			40
65	290	290		585			52
80	310	310		615			76
100	350	350	750	715	594	394	94
150	480	480		810			149

Other standards available, but length and weight may vary

* Weight is for DIN PN 25 in ductile cast iron

Maximum Operating Differential Pressure* PMX (Air to open)

DN	Actuator Area (cm²)	Spring Bench Range (bar)	Min. Air Supply Pressure (barg)	Max. Differential Pressure* (bar)
15	175	0.8 - 2.4	2.6	50
20				21
25		1.2 - 3.6	3.8	20.5
32				42
40	355	1.6 - 2.4	2.6	26
50				23
65		2.4 - 3.6	3.8	20
80				20.5
100	750	2.5 - 4.2	4.4	12
150				

* Subject to limitation of maximum operating pressure rating of valve (PMO), see 'Specifications' for details.

Options*

- Body Material: Cast Steel (A216 Gr.WCB)
- Air Filter Regulator
- Manual Handwheel
- Limit Switches
- Electric Actuator
- Pneumatic Positioners
- Intrinsically Safe Positioner
- Pressure Gauge for Positioner

* Details available on request



Memo: