



# ELECTRO-PNEUMATIC CONTROL VALVE

MODEL **CV-COSR** DUCTILE CAST IRON  
CAST IRON, STAINLESS STEEL

## POSITIONER/ACTUATOR CONTROL VALVE

### Features

Control valve featuring a digital I/P positioner combined with a compact pneumatic actuator.

1. Pneumatic actuator with digital I/P positioner 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 aperture and error codes.
5. Self-adjusting chevron packing minimizes seal leaks, stem wear and stiction/ hysteresis problems.
6. Multi-spring actuator is highly efficient, and its low overall height facilitates compact installation.
7. A condensate drainage port is prepared at the bottom of the body to facilitate piping for installing a blow valve or steam/air trap to eliminate condensate.

### 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	I	With CE marking and Declaration of Conformity

\* Manufactured in accordance with sound engineering practice



Pressure gauge is optional

### Specifications

#### VALVE

Model	CV-COSR					
Body Material	Cast Iron (JIS FC250) (equivalent to GG-25/EN-JL1040)		Ductile Cast Iron (GGG40.3/EN 5.3103)		Cast Stainless Steel (A351/A351M Gr.CF8 or CF8M) (equivalent to 1.4312 or 1.4410)	
Connection	Flanged ASME		Flanged DIN		Flanged DIN	
Size	DN 15, 20, 25, 32, 40	DN 50	DN 15, 20, 25, 32, 40	DN 50	DN 15, 20, 25, 32, 40	DN 50
Maximum Operating Pressure (barg) PMO	13	10	16	10	16	10
Maximum Operating Temperature (°C) TMO	200		220			
Seat Plug Sealing / Leak Rate Class (IEC 60534-4)	Metal to Metal / Class IV					
Characteristic	Equal percentage					
Rangeability	50 : 1					
Applicable Fluids*	Steam, Water, Air					

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

PRESSURE SHELL DESIGN CONDITIONS (NOT OPERATING CONDITIONS): Maximum Allowable Pressure (barg) PMA: 13 (Cast Iron), 16 (Ductile Cast Iron, Cast Stainless Steel)

Maximum Allowable Temperature (°C) TMA: 200 (Cast Iron), 220 (Ductile Cast Iron, Cast Stainless Steel)

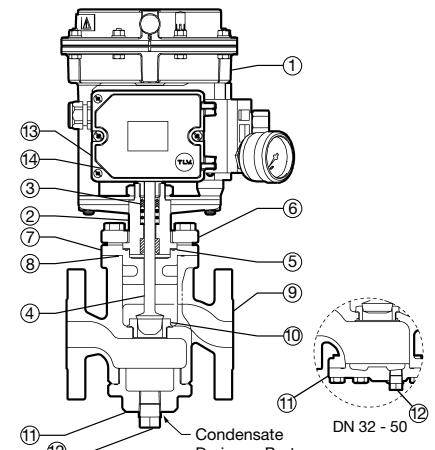
Minimum Allowable Temperature (°C): 0

1 bar = 0.1 MPa

#### 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)	3.7 to 6
Ambient Temperature Range (°C)	- 20 to 80
Protection Class	IP 66
Intrinsically Safe Rating (optional)	ATEX II 2G Ex ia IIC T4

**CAUTION** 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.



NOTE: Pressure gauge is optional

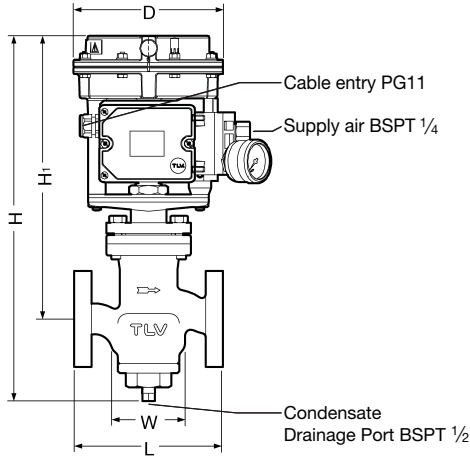
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No.	Description	Material	DIN*	ASTM/AISI*
①	Actuator Body	Aluminum GD-Al Si 12	—	—
②	Valve Bonnet	Carbon Steel A105/A105M	1.0460	—
③	Stuffing Box V-rings	Fluorine Resin PTFE w/ Carbon	PTFE	PTFE
④	Valve Plug and Stem	Stainless Steel SUS304	1.4301	AISI304
⑤	Valve Bonnet Gasket	Fluorine Resin PTFE	PTFE	PTFE
⑥	Flange	Cast Stainl. Stl. A351/A351M Gr.CF8	1.4312	—
⑦	Valve Bonnet Guide	Cast Stainl. Stl. A351/A351M Gr.CF8	1.4312	—
⑧	Valve Bonnet Guide Gasket	Fluorine Resin PTFE	PTFE	PTFE
⑨	Body	See Valve Specification Table for available materials		
⑩	Valve Seat	Stainless Steel SUS304	1.4301	AISI304
⑪	Cover Plug	Same material as Valve Body	—	—
	Cover			
⑫	Drain Plug	Cast Iron Body	1.0037	A6
		Ductile Body		
		Stain. Steel Body		
⑬	Positioner Housing	Polyphthalamide PPA	—	—
⑭	Positioner Cover	Polycarbonate PC	—	—

\* Equivalent materials

**Dimensions**

● **CV-COSR Flanged**



Size DN 15 - 25 shown.  
Configuration of larger sizes differs slightly

NOTE: Pressure gauge is optional

**CV-COSR Flanged**

(mm)

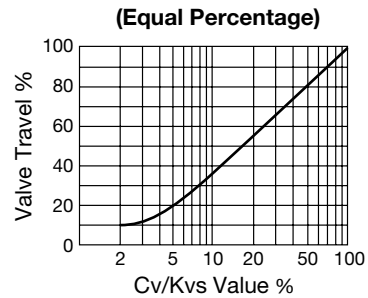
DN	L					Actuator Area (cm <sup>2</sup> )	H	H <sub>1</sub>	W	φ D	Weight* (kg)
	DIN 2501	ASME Class									
	PN25/40	125FF	(150FF)	250RF	(300RF)						
(15)	130	—	170	—	170	120	397	310	88	168	13.5
(20)	150	—	182	—	182						14.5
25	160	176	188	188	192		421	308	93		16.5
32	180	—	—	—	—						22.5
40	200	209	220	222	224		449	337	157		23.5
50	230	247	255	260	261						30.5

( ) No ASME standard exists for Cast Iron; machined to fit steel flanges available  
Class 125 FF can connect to 150 RF, 250 RF can connect to 300 RF  
Other standards available, but length and weight may vary  
\* Weight is for PN 25/40 (Ductile Cast Iron)

**Cv & Kvs Values**

DN	15	20	25	32	40	50
Kvs (DIN)	3.0	5.1	7.7	14	23	34
Cv (UK)	2.9	5.0	7.5	14	23	33
Cv (US)	3.5	6.0	9.0	17	27	40
Seat Diameter (mm)	12	24		38		48

**Characteristic Graph**



**Options**

Intrinsically Safe Positioner	ATEX II 2G Ex ia IIC T4
Pressure Gauge for Positioner	Details on request
Electric Actuator*	Details on request

\* Manufacturer: Samson AG

Manufacturer  
**TLV** CO., LTD.  
Kakogawa, Japan  
is approved by LRQA Ltd. to ISO 9001/14001

