



# ELECTRO-PNEUMATIC CONTROL VALVE

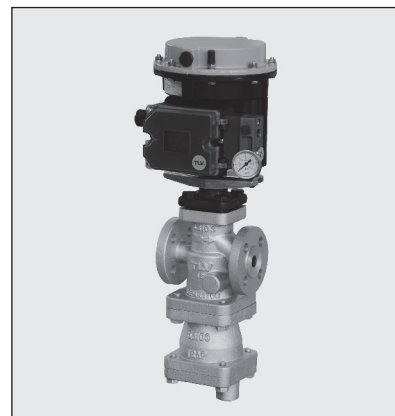
## MODEL CV-COS-16

### POSITIONER/ACTUATOR CONTROL VALVE WITH SEPARATOR AND STEAM TRAP

#### Features

Steam control valve featuring a digital I/P positioner combined with a compact pneumatic actuator. Built-in cyclone separator and steam trap to provide high-quality steam for process applications.

1. Built-in cyclone separator and self-modulating free float steam trap provide dry, high-quality steam supply improving productivity and product quality for process applications.
2. Removal of condensate while valve is closed reduces scale adhesion and water hammer.
3. Pneumatic actuator with digital I/P positioner in a compact configuration.
4. Rolling actuator diaphragm ensures linearity over the operating stroke and maximizes life.
5. Self-adjusting positioner features zero calibration by auto-tuning, which ensures tight shut-off and improves control during low flow.
6. Positioner LCD allows simple operation with capacitive keys and displays valve travel and error codes.
7. Self-adjusting chevron packing minimizes seal leaks, stem wear and stiction/hysteresis problems.



#### Specifications

##### VALVE

Model			CV-COS-16		
Body Material			Cast Steel (A216 Gr.WCB) Cast Stainless Steel (A351 Gr.CF8)		
Connection			Flanged ASME		
Size (mm)			15, 20, 25	40	50
Max. Operating Pressure (MPaG)	PMO	150RF	1.0		
		300RF	2.0	1.7	1.1
Maximum Operating Temperature (°C) TMO			220		
Leak Rate Class (IEC 60534-4)/Seat Plug Sealing			Class IV / Metal sealing (Option: Class VI / Soft sealing)		
Characteristic			Equal percentage		
Rangeability			50 : 1		
Applicable Fluid*			Steam		

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

PRESSURE SHELL DESIGN CONDITIONS (**NOT** OPERATING CONDITIONS): Maximum Allowable Pressure (MPaG) PMA: 3.1  
Maximum Allowable Temperature (°C) TMA: 220

1 MPa = 10.197 kg/cm<sup>2</sup>

##### ACTUATOR / POSITIONER

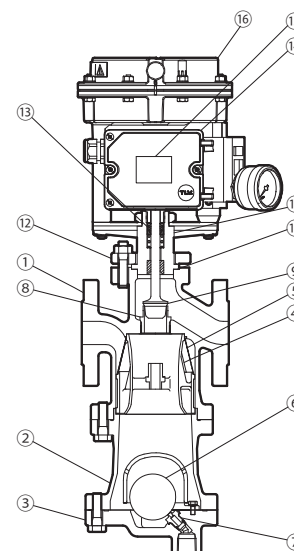
Fail-safe Position	Valve CLOSED (Air to Open)
Motive Medium	Oil-free air, filtered to 5 µm
Electrical Input Signal (mA)	4 to 20
Load Impedance (V)	Max. 6.3
Air Supply Pressure Range for Positioner (MPaG)	0.37 to 0.6
Ambient Temperature Range (°C)	-20 to +80
Protection Class	IP 66
Intrinsically Safe Rating (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.

No.	Description	Material	JIS	ASTM/AISI*
①	Main Body	See Valve Specification Table for available materials		
②	Separator Body	See Valve Specification Table for available materials		
③	Trap Cover	See Valve Specification Table for available materials		
④	Separator	Cast Stainless Steel	—	A351 Gr.CF8
⑤	Separator Screen	Stainless Steel	SUS304	AISI304
⑥	Float	Stainless Steel	SUS316L	AISI316L
⑦	Trap Valve Seat	—	—	—
⑧	Valve Seat	Stainless Steel	SUS303	AISI303
⑨	Plug and Stem	Stainless Steel	SUS303	AISI303
⑩	Valve Bonnet Gasket	Graphite	—	—
⑪	Valve Bonnet	Carbon Steel/ Stainless Steel**	—/ SUS316Ti**	A105/ A479 Type 316Ti**
⑫	Flange	Carbon Steel	—	A105
⑬	Stuffing Box V-ring Packing	Fluorine Resin with Carbon	PTFE	PTFE
⑭	Positioner Housing	Polyphthalamide	PPA	PPA
⑮	Positioner Cover	Polycarbonate	PC	PC
⑯	Actuator Body	Aluminium	GD-Al Si 12	—

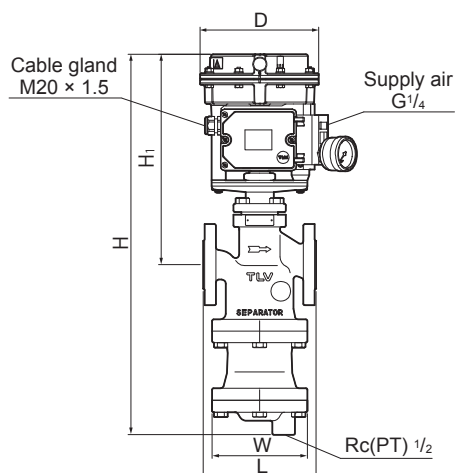
\* Equivalent \*\* For cast stainless steel model  
Contact TLV for available replacement parts.



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## Dimensions

### ● CV-COS-16 Flanged



### CV-COS-16 Flanged (mm)

Size	L		Actuator Area (cm <sup>2</sup> )	H	H <sub>1</sub>	W	φ D	Weight* (kg)
	ASME Class							
	150RF	300RF						
15		190	120	495	292	105	168	11
20	184	194						
25		197		535		150		15
40	222	235		580	297	165		23
50	254	267		630		195		36

Other standards available, but length and weight may vary

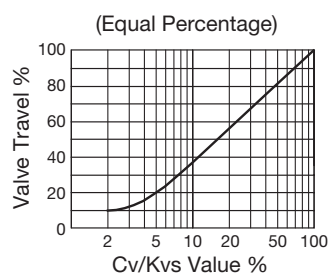
\* Weight is for Class 300 RF

## Cv & Kvs Values

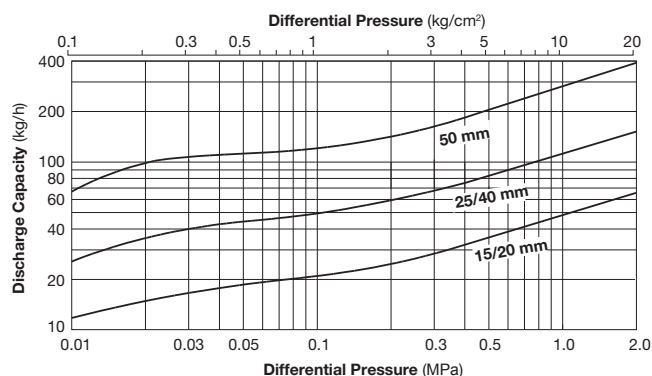
Size	15	20	25	40	50
Cv (US)	5.0 [2.0]	7.5 [3.0]	12 [5.0]	30 [12]	40 [20]
Cv (UK)	3.9 [1.6]	6.1 [2.4]	9.7 [3.9]	24 [9.7]	34 [15.5]
Kvs (DIN)	4.0 [1.6]	6.3 [2.5]	10 [4.0]	25 [10]	35 [16]
Seat Diameter (mm)	12	24 [12]		38 [24]	48 [32]

[ ] Optional

## Characteristic Graph



## Trap Discharge Capacity



1. The discharge capacity is the maximum continuous condensate discharge 6 °C below saturated steam temperature.
2. The differential pressure is the difference between the CV-COS inlet and its trap outlet pressure.



**CAUTION** DO NOT use this product under conditions that exceed maximum differential pressure, as condensate backup will occur!

## Options

Intrinsically Safe Positioner	ATEX II 2G Ex ia IIC T4
Pressure Gauge for Positioner	Fitted as standard, available without
Electric Actuator*	Details on request

\* Manufacturer: Samson AG

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

ISO 9001  
 ISO 14001

