

CT-1

CT-1 is a pneumatic control valve. Its valve-opening is accurately controlled by signals output from controller. The single-seat globe valve body offers large capacity and excellent controllability. The actuator is a multi-spring, single-action type.



■Features

1. CT-1 offers the standard type electro-pneumatic positioner and the air regulator as accessories and also offers several options of positioner (E/P, Smart Positioner) to be mounted depending on request from end user.
2. Drive part is a compact and lightweight.
3. Spherical main valve offers great sealability and great reduction of valve seat leakage (ANSI Class IV).

■Specifications

Model		CT-1	
Nominal size		15-100A	
Application	Controlled fluid	Cold and hot water, Air, Steam, Oil, Other non-dangerous fluids	
	Driving fluids	Compressed air	
Flange Connection		JIS 10KRF	
Max. working pressure		1.0 MPa	
Working temperature		-5 to 210°C (no freezing condition)	
Plug characteristics		Equal percentage	
Range ability		30:1	
Sealing (plug and seat)		Metal to metal	
Seat leakage		ANSI class IV	
Actuator		Single action	
Valve action		Reverse (fail to close)*1	
Supply air pressure		0.35-0.4MPa*2	
Ambient temperature		-20 to 70°C	
Material	Body	Cast carbon steel	
	Plug	Stainless steel	
	Seat ring	Stainless steel	
	Gasket	SUS + GRAFOIL®	
	Grand packing	V-PTFE	
	Diaphragm	EPDM	
Accessories		Electro-pneumatic positioner (4-20 mA DC)	
		Air regulator	

*1 Valve opens when the value of input signal increases.

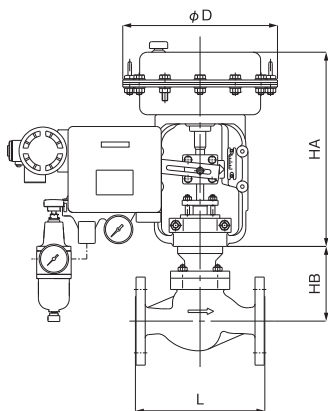
· Available with ASME or EN flanged.

*2 Please apply air pressure between 0.4-1.0MPa for air regulator.

■ Cv value

Nominal size	15A	20A	25A	32A	40A	50A	65A	80A	100A
Cv	6	9	14	25	33	50	85	106	175

■ Dimensions (mm) and Weights (kg)



Size	L	HA	HB	D	Stroke	Weight
15A	184	276	100	220	20	13
20A	184	276	100	220	20	13
25A	184	276	100	220	20	16
32A	222	320	111	270	25	22
40A	222	320	111	270	25	22
50A	254	320	124	270	25	28
65A	276	394	122	350	30	48
80A	298	394	162	350	30	61
100A	352	394	182	350	30	76

■ Positioner

Available with 2 types of positioners

It is next generation positioner and micro processor equipped providing with various functions such as auto-calibration and the optimum control PID etc.

Electro-pneumatic positioner (EP-1)



- Malfunction preventive structure with high tolerance for vibration.
- Quick and accurate response.
- Good efficiency with small air consumption.
- Easy zero/span adjustment.

Smart positioner (EP-1S)



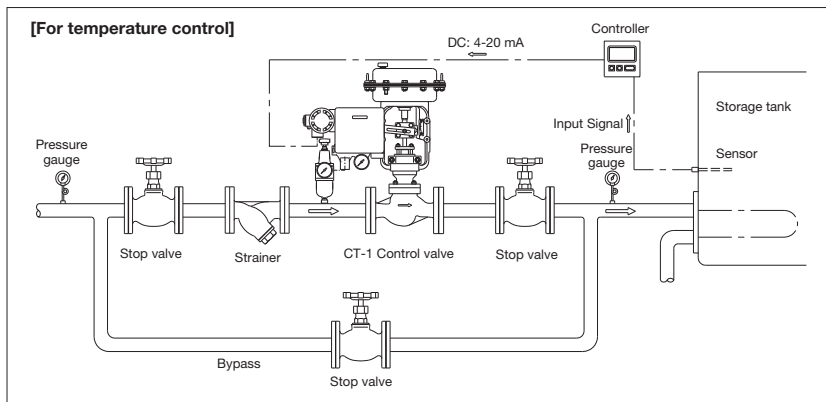
- LCD monitor shows positioner's condition.
- Excellent performance even under conditions of frequent vibrations.
- With feedback analog signal output terminal.
- Good efficiency with small air consumption.
- Auto-calibration with easy operation.

Guidelines for Installing Control Valve

⚠ Warning and caution for installation

- Before connecting the product to piping, remove foreign substances and scales inside the piping. Note that the seal material must not flow into the inside of the product.
* Contamination of foreign substances can cause valve seat leakage and malfunction.
- When installation, check the direction of the product so that the fluid flowing and the arrow marked on the product are in the same direction.
- As shown in the above figure, it is recommended that stop valves, strainers, pressure gauges and bypass line are installed to the piping. For screwed valve, a union joint is recommended to install for easy maintenance and inspection.
- Make sure to install a strainer with the mesh size 80-100 at the inlet side of the product.
- Avoid over-tightening of screw and excessive stress imposed from the piping in order to prevent malfunction due to the distortion of the body.
- Recommend the upright installing position for the control valve (top drive unit).
- Secure a space required for disassembly or removal of the product at the time of maintenance and inspection.
- Control Valve is not explosion-proof. Do not use in the area or ambience where explosive gasses accumulate.
- When using at the outdoor, set eaves to avoid direct rain.

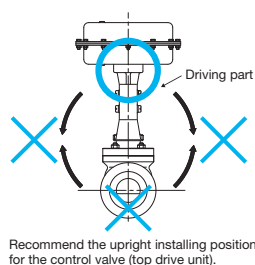
■ Piping example



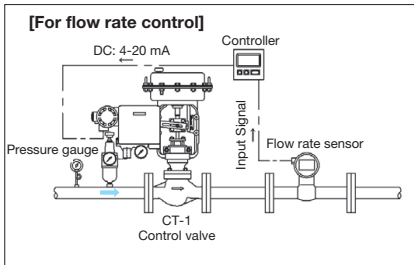
Standard opening signal and valve opening, flow rate, temperature relationship.

Signals (DC)	Valve operation (valve opening)	Condition of fluid	Condition of fluid inside of tank
20 mA	Fully open (100%)	Steam amount: Maximum	Temperature: Maximum
Increase signal	Open	Steam amount: Increase	Temperature: Slow increase
4 mA	Fully close (0%)	Steam amount: Flow rate 0	Temperature: Stable

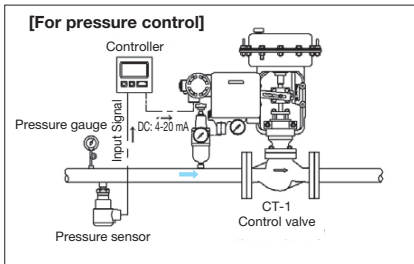
Installation posture



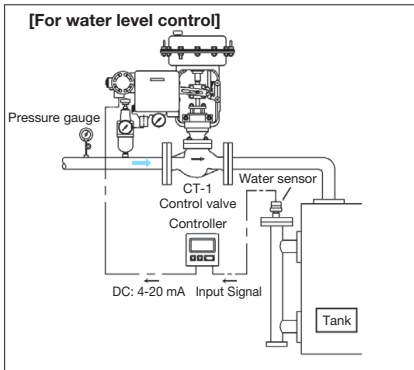
■ Other usage examples



Signals (DC)	Valve operation (valve opening)	Condition of fluid
20 mA ↑ Increase signal ↑ 4 mA	Fully open (100%) ↑ Open ↑ Fully close (0%)	Flow rate: Maximum ↑ Flow rate: Increase ↑ Flow rate: Minimum



Signals (DC)	Valve operation (valve opening)	Condition of fluid
20 mA ↑ Increase signal ↑ 4 mA	Fully open (100%) ↑ Open ↑ Fully close (0%)	Pressure: Minimum ↑ Pressure: Decrease ↑ Pressure: Maximum



Signals (DC)	Valve operation (valve opening)	Condition of fluid
20 mA ↑ Increase signal ↑ 4 mA	Fully open (100%) ↑ Open ↑ Fully close (0%)	Water level: Quick increase ↑ Water level: Slow increase ↑ Water level: Stable