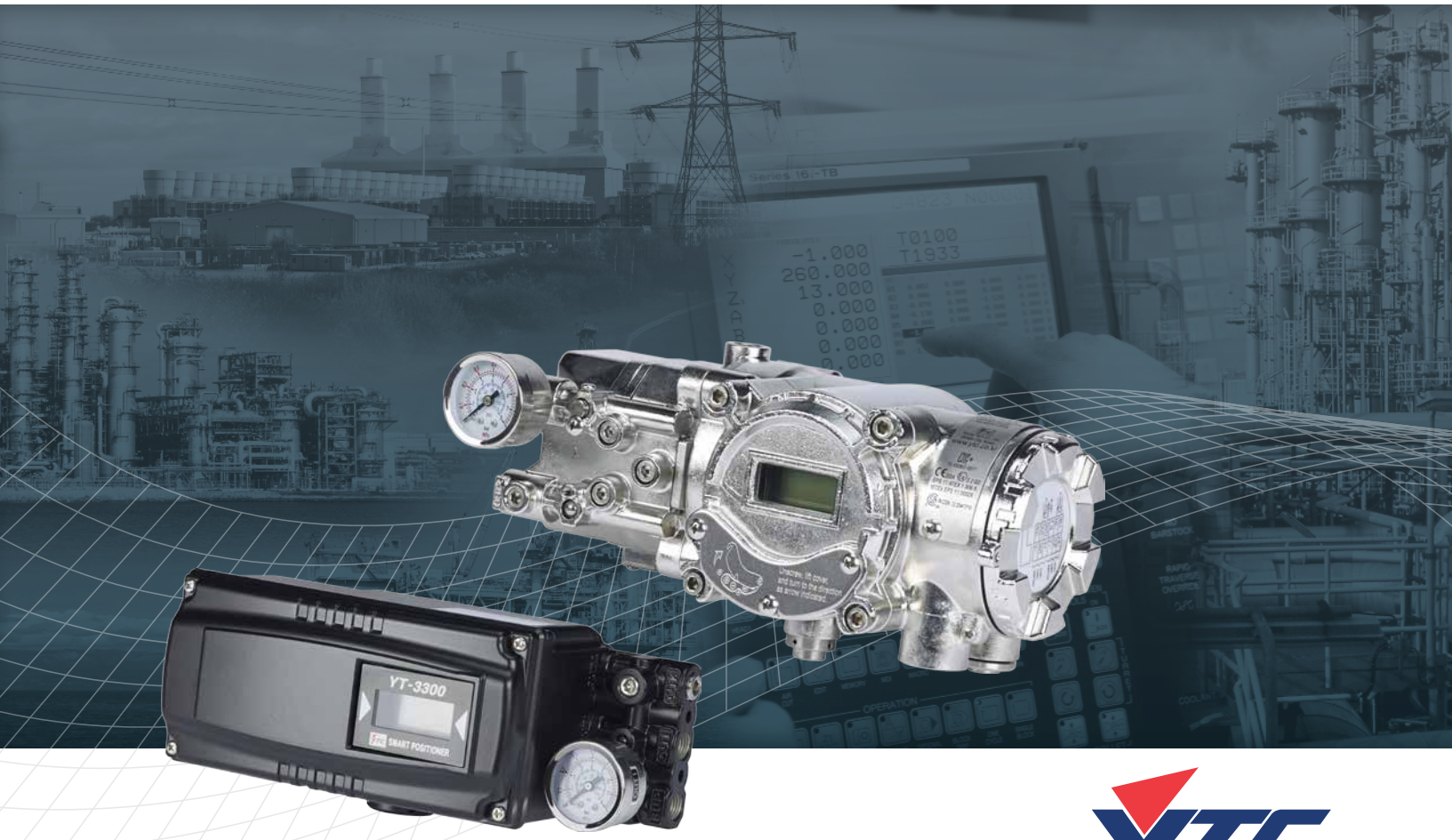
rotork®
Instruments

Valve Positioners and Accessories



YTC
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Keeping the World Flowing

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RELIABLE OPERATION WHEN IT MATTERS

Assured reliability for critical applications and environments.

Whether used 24/7 or infrequently, Rotork products will operate reliably and efficiently when called upon.

QUALITY DRIVEN GLOBAL MANUFACTURING

Products designed with 60 years of industry and application knowledge.

Research and development across all our facilities ensures cutting edge products are available for every application.

CUSTOMER-FOCUSED SERVICE WORLDWIDE SUPPORT

Solving customer challenges and developing new solutions.

From initial enquiry through to product installation, long-term after-sales care and Client Support Programmes (CSP).

LOW COST OF OWNERSHIP

Long-term reliability prolongs service life.

Rotork helps to reduce long-term cost of ownership and provides greater efficiency to process and plant.

Valve Positioners and Accessories

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COMPREHENSIVE PRODUCT RANGE SERVING MULTIPLE INDUSTRIES

Improved efficiency, assured safety and environmental protection.

Rotork products and services cover Oil & Gas, Water & Wastewater, Power, Marine, Pharmaceutical, HVAC, Mining, Biomedical, Rail, Pulp & Paper and Food & Beverage industries around the world.

MARKET LEADER TECHNICAL INNOVATOR

The recognised market leader for 60 years.

Our customers have relied upon Rotork for innovative solutions to safely manage the flow of liquids, gases and powders.

GLOBAL PRESENCE LOCAL SERVICE

Global company with local support.

Manufacturing sites, service centres, sales offices and *Centres of Excellence* throughout the world provide unrivalled customer services and fast delivery.

CORPORATE SOCIAL RESPONSIBILITY

A responsible business leads to being the best business.

We are socially, ethically and environmentally responsible and committed to embedding CSR across all our processes and ways of working.

rotork®

Keeping the World Flowing

Active in every industry and market sector around the world.

Serving customers and working with partners.

Improving efficiency, assuring safety and protecting the environment.

INDUSTRY KNOWLEDGE

Our engineering and application knowledgebase, built over 60 years, allows us to provide innovative and reliable solutions for all flow control applications.

We work across the globe, servicing a diverse range of markets and critical applications.

Our experience of flow control is second to none.

OIL & GAS

Rotork products are used on upstream, midstream and downstream activities, ranging from offshore production facilities, to refining and processing, to transportation, storage and distribution.

- Onshore and offshore production
- Refining and petrochemicals
- Distribution and storage
- Pipelines
- LNG liquefaction and regasification
- Unconventional oil and gas

WATER

Rotork products are used on modern state-of-the-art water treatment and distribution processes, which maximise existing resources such as, desalination plants and water re-use projects, together with conventional water and wastewater plants.

- Sludge and sewage treatment
- Water treatment, desalination and re-use
- Environmental control
- Dams, reservoirs and irrigation

POWER

Rotork products are found in traditional power stations, including nuclear power stations where its products are certified for use both inside and outside containment. They are also used for renewable energy generation systems such as thermal solar plants, and emission reduction processes such as flue gas desulphurisation.

- Conventional fuels
- Nuclear energy
- Concentrating solar power
- Geothermal and other renewables

OTHER INDUSTRIES

- Marine
- Pharmaceutical
- HVAC
- Mining
- Biomedical
- Rail
- Paper & Pulp
- Food & Beverage

rotork®
Instruments

Rotork Instruments are specialist manufacturers of products for flow control, pressure control, flow measurement and pressure measurement. Our solutions are trusted wherever there is a need for high precision and reliability, including pharmaceutical, biomedical, oil & gas and manufacturing industries.

We have production facilities throughout the world, complemented by a large network of distribution and support centres.

A full listing of our worldwide sales and service network is available on our website at **www.rotork.com**

Bifold® A rotork Brand

YTC A rotork Brand

MIDLAND-ACS A rotork Brand

A rotork Brand FAIRCHILD precision pneumatic & motion control

SOLDO CONTROLS A rotork Brand

M&M International A rotork Brand

wireless ri A rotork Brand

Worldwide Industry and Application Experience

With nearly 60 years of extensive knowledge and experience, Rotork has provided products and services worldwide for virtually every industrial actuator application.

Rotork Instruments offers a range of precision control and valve accessory products through our prestigious brands, including Fairchild, YTC, Soldo®, Midland-ACS™, Bifold®, Orange, M&M, Alcon and RI Wireless:

Instrument Valves

- Valve actuation accessories
- Solenoid valves
- Piston valves
- Instrument valves
- Medium pressure valves
- Subsea valves and connectors

Controllers

- Valve positioners
- Rail systems
- I/P and E/P converters
- Fire protection

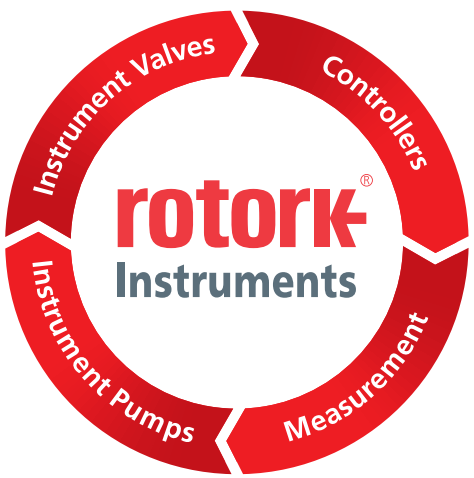
Measurement

- Valve position sensors
- Transmitters and switches

Instrument Pumps

- Pumps
- Intensifiers and accumulators

Rotork Instruments is proud to offer a diverse range of products which serve many different duties in a wide variety of applications. We also offer a factory customisation service to create one-off units to meet specific needs.



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Valve Positioners and Accessories

A valve positioner is a device that adjusts the valve actuator's position based on a control signal and are generally used in control applications because of their precision.

Valve positioners are usually mounted on the yolk or top casing of a pneumatic actuator for linear control valves, or near the end of the shaft for rotary control valves. To allow the valve's position to be compared with the position requested by the controller, the positioner can be connected mechanically to the valve stem or valve shaft or detect the movement by noncontact sensing technology. When a control signal differs from the valve actuator's position, the valve positioner changes the pilot pressure to move the actuator until the correct position is reached.

Benefits of using a valve positioner on rotary or linear control valves include:

- Accurately control and fast response to process a valve
- Control with minimized friction, dead-band, and hysteresis
- Auto-Tune and Auto-Calibrate through simple and fast setup and configuration
- Overcome seating frictions
- Negate flow-induced reactions to higher pressure drops and compensates for internal force imbalances
- Allow the use various valve characteristics

Pneumatic positioners receive pneumatic signals (usually 3-15 psig). The positioner then supplies the valve actuator with the correct air pressure to move the valve to the required position. Pneumatic positioners are intrinsically safe and can provide a large amount of force to close a valve.

Electro-pneumatic positioners convert current control signals to equivalent pneumatic signals. It uses a mix of both electricity and air, as implied by the name.

Digital or "SMART" positioners use a microprocessor to position the valve actuator while monitoring and recording data. They function very similarly to an electro-pneumatic analogue-type positioners, except the electronic signal conversion is digital rather than analogue. Smart positioners are very accurate, use less air and allow for online digital diagnostics.

YTC Positioner technology is based on over 20 years of experience. YTC Positioners and accessories have global recognition for their quality and reliability across all industries and all types of environments.

Valve Positioner **Features Summary**

	Type	Top Mounted	P/P	E/P	E/P	Smart	
	Model	TMP-3000	YT-1200	YT-1000	YT-1050	YT-2500	YT-2550
Certification	Explosion proof	-	-	✔	✔	-	-
	Intrinsically safe	-	-	✔	-	✔	✔
	ATEX/IECEx	-	-	✔	✔	✔	✔
	FM/CSA	-	-	✔	-	-	-
	KCs	-	-	✔	✔	✔	✔
	EAC	-	-	✔	✔	✔	✔
	NEPSI	-	-	✔	-	✔	-
	TIIS	-	-	✔	-	-	-
	TS	-	-	✔	-	-	-
	EMC	✔	-	✔	-	✔	-
	SIL Certified	-	-	-	-	-	-
Hardware	Technology	Solenoid	Bellows	Torque Motor	Torque Motor	Piezo	Piezo
	Local Buttons	✔	-	-	-	✔	✔
	LCD Display	✔	-	-	-	✔	✔
	Single / Double	✔	✔	✔	✔	✔	✔
	Linear / Rotary	Linear Only	✔	✔	✔	✔	✔
	Feedback	NCS	Potentiometer	Potentiometer	Potentiometer	Potentiometer	Potentiometer
	Fail Safe	✔	✔	✔	✔	✔	✔
	Fail Freeze	✔	-	-	-	✔	✔
	Natural Gas capability	-	-	-	-	-	-
	IP Rating	IP67	IP66	IP66	IP66	IP66	IP66
	Enclosure Material	PPS	Aluminium	Aluminium	STS316	Aluminium	STS316
Diagnostics	Mounting Error	-	-	-	-	✔	✔
	Supply Air Check	-	-	-	-	✔	✔
	Range Error	-	-	-	-	✔	✔
	Partial Stroke Test	-	-	-	-	-	-
Feedback Option	Analogue 4 - 20 mA	-	✔ [1]	✔	-	✔	✔
	Mechanical switches	-	✔ [1]	✔ [1]	-	✔	✔
	Proximity sensors	-	✔ [1]	✔ [1]	-	✔	✔
	Transistor switches (soft. type)	-	-	-	-	-	-
Comm.	HART	-	-	-	-	Ver. 5	Ver. 5
Page		10	11	12	12	18	18

Notes:
1. Available for rotary version only. In case of hazardous Ex installation area external mount through limit switch box is required.
2. YT-3300/3 and YT-3301, FM available, CSA in progress.
3. NEPSI and EMC only for YT-3300, not for YT-3303.

Valve Positioner **Features Summary**

Smart						
YT-2600	**YT-2700**	**YT-3300/3**	**YT-3301**	**YT-3350**	**YT-3400**	**YT-3450**
✔	-	-	-	-	✔	✔
-	✔	✔	✔	✔	-	-
✔	-	✔	✔	✔	✔	✔
-	-	✔ [2]	✔ [2]	✔	✔	✔
✔	✔	✔	✔	✔	✔	✔
✔	-	✔	✔	✔	✔	✔
-	-	✔ [3]	-	✔	✔	✔
-	-	-	-	-	-	-
-	-	-	-	-	-	-
✔	-	✔ [3]	✔	✔	✔	✔
-	-	✔	✔	✔	✔	✔
Piezo	Piezo	Torque Motor	Torque Motor	Torque Motor	Torque Motor	Torque Motor
✔	✔	✔	✔	✔	✔	✔
✔	✔	✔	✔	✔	✔	✔
✔	Single Only	✔	✔	✔	✔	✔
✔	✔	✔	✔	✔	✔	✔
Potentiometer	Potentiometer	Potentiometer	Potentiometer	Potentiometer	Potentiometer	Potentiometer
✔	✔	✔	✔	✔	✔	✔
✔	✔	-	-	-	-	-
-	-	-	-	-	✔	✔
IP66	IP66	IP66	IP66	IP66	IP66	IP66
Aluminium	Aluminium	Aluminium	Aluminium	STS316	Aluminium	STS316
✔	✔	✔	✔	✔	✔	✔
✔	✔	✔	✔	✔	✔	✔
✔	✔	✔	✔	✔	✔	✔
-	-	✔	✔	✔	✔	✔
✔	✔	✔	✔	✔	✔	✔
-	-	✔	✔	✔	-	-
-	-	✔	✔	✔	-	-
✔	-	-	-	-	✔	✔
Ver. 5	Ver. 5	Ver. 7	Ver. 7	Ver. 7	Ver. 7	Ver. 7
20	21	14	14	14	16	16

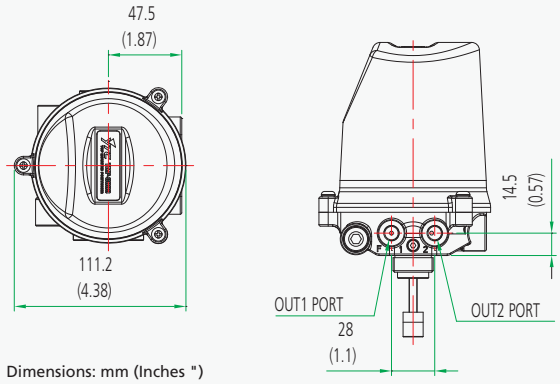
Smart Positioner TMP-3000

Solenoid Technology

Design features

- **Vertical mounting.** Easy to mount installation.
- **Fail Freeze and Fail Safe function.** Enables the valve maintain the last position (Fail Freeze) or move to a pre-determined position (Fail Safe) on the loss of electrical power supply or the pneumatic supply air.
- **LCD display.** Backlit alphanumeric digital display for process values and calibration.
- **Feedback signal.** 4 to 20 mA output option.
- **Auto calibration.** Simple menu structure with options to auto calibrate all parameters or zero and end points only.
- **Low air consumption level.** Almost zero air leakage.
- **Front panel pushbuttons for configuration.** Positive acting pushbuttons for field configuration.

CE



Dimensions: mm (Inches ")

Item Type	TMP-3000
Power Supply	24 VDC ± 10%
Input Signal	4 to 20 mA, 0 to 5 / 10 V
Power Consumption	< 4W
Output	4 to 20 mA
Output Characteristics	Linear, EQ%, Quick Open, User Set (16 points)
Operating Temp.	-10 to 60 °C (14 to 140°F)
Supply Pressure	0 to 0.7 MPa (0 to 7 bar)
Air Consumption	0 LPM
Flow Capacity	20 / 50 LPM
Filtering Size	5 micron
Acting Type	Single 2 solenoid valves Double 4 solenoid valves
Stroke	5 to 40 mm
Air Connection	G1/8 (Ø6 mm tube)
Conduit	M16 x 1.5 (with screw terminals)
Ingress Protection	IP67
Body Material	PPS
Cover Material	PC
Weight	820 g (1.8 lb)

Product Code

TMP-3000 - S - N - G - 1 - 0 - F

Model
TMP-3000 = Smart Positioner

Acting Type
S = Single
D = Double

Explosion Protection
N = Non-Explosion

Conduit & Air Connection
G = M16 x 1.5 - G1/8

Flow Capacity
1 = 20 LPM
2 = 50 LPM

Output Options
0 = NONE
1 = 4 to 20 mA feedback

Fail Option
F = Fail Freeze
S = Fail Safe

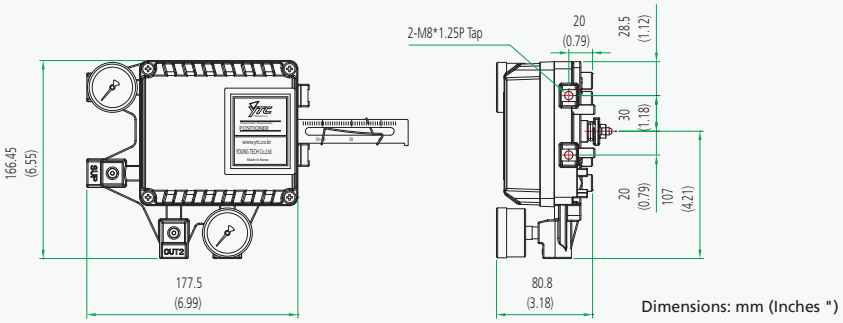
Pneumatic-Pneumatic Positioner YT-1200

Design features

- **Simple zero and span adjustment.** Internal hand dials and locking screws for 4 to 20 mA range adjustments.
- **Reverse and Direct Acting Settings.** Full and 1/2 split range setting by simple adjustment.
- **High vibration resistant.** No resonance between 5 to 200 Hz.
- **Auto / Manual switch.** Internal adjustment with lock screw safety.

CE

YT-1200 Aluminum Enclosure



Dimensions: mm (Inches ")

Item Type		YT-1200L & YT-1200R Single	Double
Input Signal		0.02 to 0.1 MPa (0.2 to 1 bar)	
Supply Pressure		0.14 to 0.7 MPa (1.4 to 7 bar)	
Stroke	Linear Type	10 to 150 mm	
	Rotary Type	0 to 90°	
Air Connection		PT(NPT)1/4	
Gauge Connection		PT(NPT)1/8	
Ingress Protection		IP66	
Operating Temp. (Standard Type)		-20 to 70 °C (-4 to 158 °F)	
Linearity	Linear Type	± 1% F.S.	± 2% F.S.
	Rotary Type	± 2% F.S.	
Hysteresis		±1% F.S.	
Sensitivity	Linear Type	± 0.2% F.S.	± 0.5% F.S.
	Rotary Type	± 0.5% F.S.	
Repeatability		± 0.5% F.S.	
Air Consumption		2.5 LPM (sup = 0.14 MPa)	
Flow Capacity		80 LPM (sup = 0.14 MPa)	
Material		Aluminium Diecasting	
Weight		1.7 kg (3.1 lb)	

Product Code

YT-1200R - S - 1 - 1 - 2 - S - (0)

Model
YT-1200L = Linear Positioner
YT-1200R = Rotary Positioner

Acting Type
S = Single
D = Double

Lever Type

Linear	Rotary
1 = 10 to 40 mm	1 = M6 x 34L
2 = 30 to 70 mm	2 = M6 x 63L
3 = 60 to 100 mm	3 = M8 x 34L
4 = 100 to 150 mm	4 = M8 x 63L
	5 = NAMUR

Orifice Type
1 = Φ1
2 = Φ2
3 = None

Air Connection
Linear
1 = PT 1/4
2 = NPT 1/4

Operating Temp.
S = -20 to 70 °C
H = -20 to 120 °C
L = -40 to 70 °C

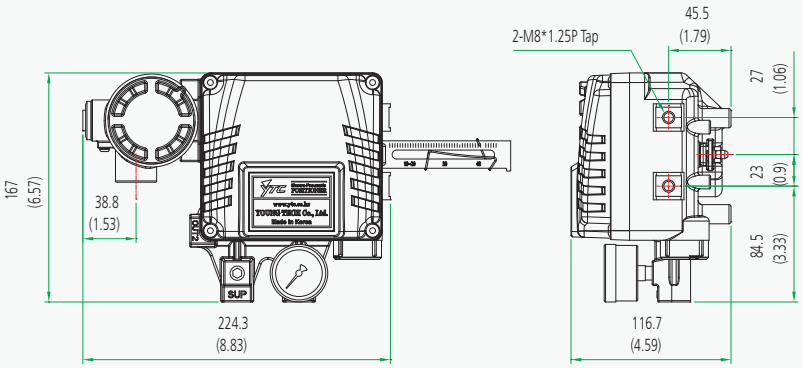
Option (Rotary only)
0 = None
1 = Dome Cover
2 = 4 to 20 mA feedback - 5VR
3 = 4 to 20 mA feedback - 6VR
4 = Limit Switch (YT-850)
5 = Limit Switch (YT-870)
6 = 4 to 20 mA feedback + Limit Switch (YT-870)

Electro-Pneumatic Positioners YT-1000 / YT-1050

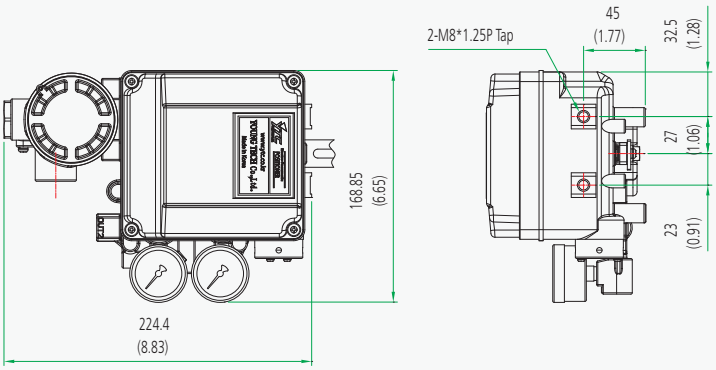
Design features

- **Simple zero and span adjustment.** Internal hand dials and locking screws for adjustments.
- **Reverse & Direct Acting Settings.** Full and 1/2 split range setting by simple adjustment.
- **High vibration resistant.** No resonance between 5 to 200 Hz.
- **Internal feedback option.** Available on weatherproof model only.
- **Auto / Manual switch.** Internal adjustment with lock screw safety.

YT-1000 Aluminum Enclosure



YT-1050 STS316 Enclosure



Dimensions: mm (Inches ")

Electro-Pneumatic Positioners YT-1000 / YT-1050

Item Type		YT-1000	YT-1050
Input Signal		4 to 20 mA DC	
Impedance		250 ± 15 Ω	
Supply Pressure		0.14 to 0.7 MPa (1.4 to 7 bar)	
Stroke	Linear Type	10 to 150 mm	
	Rotary Type	0 to 90°	
Air Connection		PT(NPT,G)1/4	NPT 1/4
Gauge Connection		PT(NPT)1/8	NPT 1/8
Conduit		G(PF,NPT)1/2, M20	G 1/2 (PF 1/2)
Explosion Protection Type		**ATEX** (II 2 G) Ex dmb IIB T5	
		IECEx (II2 G) EEx mb IIB T5	
		KCs Ex dmb IIB T5/T4 / Ex d IIC T5 IP66 / Ex ia IIB T6 Gb	**KCs** Ex dmb IIB T5
		TS Ex db mb IIB T5 Gb X **CSA** (Class I, Zone 1) Ex dm IIB T5 **FM** XP-S/I/1/CD/T5 Ta=60°C; DIP/II,III/1/EFG/T5 Ta=60°C; Type 4X **NEPSI** Ex dmb IIC T6 Gb **TIIS** Ex dmb IIB T5	-
Ingress Protection		IP66	
Operating Temp.	Operating	-20 to 70 °C (-4 to 158 °F)	
	Explosion	-20 to 60 °C (-4 to 140 °F)	
Linearity	Single	± 1% F.S.	
	Double	± 2% F.S.	
Hysteresis		±1% F.S.	
Sensitivity	Single	± 0.2% F.S.	
	Double	± 0.5% F.S.	
Repeatability		± 0.5% F.S.	
Air Consumption		2.5 LPM (sup = 0.14 MPa)	
Flow Capacity		80 LPM (sup = 0.14 MPa)	
Material		Aluminium Diecasting	Stainless steel 316
Weight		YT-1000L: 2.7 kg (6.1 lb) YT-1000R: 2.8 kg (6.2 lb) YT-1050: 5.71 kg (12.6 lb)	

Product Code

YT-1000 - R - S - N - 1 - 1 - 4 - S - 0 - (0)

Model
YT-1000 = Aluminum
YT-1050 = STS316

Motion Type
L = Linear
R = Rotary

Acting Type
S = Single
D = Double

Explosion Protection
N = Non-Explosion
M= ATEX, IECEx, TS, KCs
A = CSA, FM (YT-1000 only)
C = Ex d KCs, NEPSI (YT-1000 only)
I = Exia KCs (YT-1000 only)
X = TIIS (YT-1000 only)

Lever Type

Linear	Rotary
1 = 10 to 40 mm	1 = M6 X 34L
2 = 30 to 70 mm	2 = M6 X 63L
3 = 60 to 100 mm	3 = M8 X 34L
4 = 100 to 150 mm	4 = M8 X 63L
	5 = NAMUR

Orifice Type
1 = Φ1
2 = Φ2
3 = None

Conduit & Air Connection

YT-1000	YT-1050
1 = G1/2 - PT1/4	2= G1/2 - NPT1/4
2 = G1/2 - NPT1/4	
3 = G1/2 - G1/4	
4 = M20 - NPT1/4	
5 = NPT1/2 - NPT1/4	

Operating Temp.
S = -20 to 60 °C
H = -20 to 120 °C
L = -40 to 60 °C

Option 1

YT-1000L	YT-1000R
0 = None	0 = None (St'd)
2 = 4 to 20 mA feedback (Smart Type)	1 = Dome Cover
3 = 4 to 20 mA feedback with LCD (Smart Type)	

Option 2 (YT-1000R only)
0 = None
1 = 4 to 20 mA feedback (Internal - only for non-explosion area protection)
2 = 4 to 20 mA feedback (External)
3 = Limit Switch (Internal - only for non-explosion area protection)
4 = Limit Switch (External)
5 = 4 to 20 mA feedback + Limit Switch (Internal - only for non-explosion area protection)
6 = SPTM + Limit Switch (External)

Smart Positioners YT-3300 / YT-3350 / YT-3301 / YT-3303

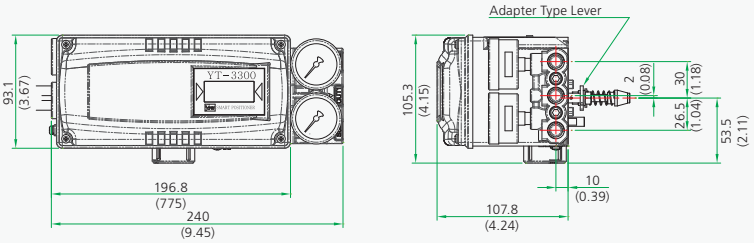
Torque motor technology with communications

Design features

- **Auto calibration.** Simple menu structure with options to auto calibrate all parameters or zero and end points only.
- **LCD display.** Alphanumeric digital display for process values and calibration.
- **Partial Stroke Test (PST).** Fully adjustable Partial Stroke Test. All functionality can be performed and selected locally, through push buttons, or remotely with communication protocol.
- **Feedback signal.** Analogue and Digital feedback signals with 4 to 20 mA, mechanical and proximity switch options (Limit switch options for YT-3300 and YT-3350 models).
- **PID control.** Pre-calibrated and user configurable variables via front panel pushbutton menu.
- **Auto / Manual switch.** Enables closed-loop automatic valve position control or manual positioning via the A/M switch. The manual mode is useful for troubleshooting, calibration, system testing or as a manual bypass.
- **HART® communication.** Allows commands, position feedback and diagnostics to be sent digitally over the current loop.
- **Front panel pushbuttons for configuration.** 4 robust and positive acting pushbuttons for field configuration.
- **Remote Mounting Option (YT-3301 model).** Remote sensor via cable to enable the positioner to be mounted away from extreme temperature.

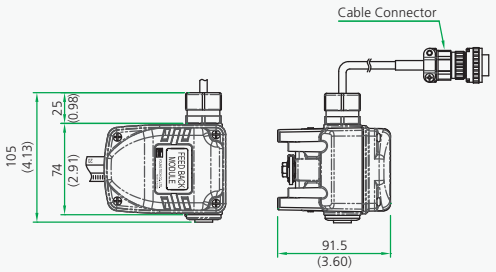
YT-3300 Aluminium Enclosure

YT-3350 STS316 Enclosure

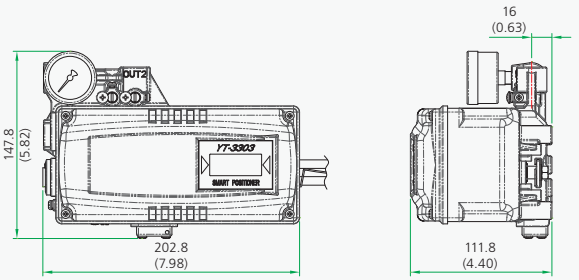


Dimensions: mm (Inches ")

YT-3301 Remote Mounting Option



YT-3303 Left Side Mounting Option



Smart Positioners YT-3300 / YT-3350 / YT-3301 / YT-3303

Item Type		YT-3300	YT-3303	YT-3350	YT-3301
Input Signal		4 to 20 mA DC			
Supply Pressure		0.14 to 0.7 MPa (1.4 to 7 bar)			
Stroke	Linear Type	10 to 150 mm			
	Rotary Type	0 to 90°			
Impedance		Max. 500 Ω @ 20 mA DC			
Air Connection		PT(NPT,G)1/4		NPT1/4	PT(NPT,G)1/4
Gauge Connection		PT(NPT)1/8		NPT1/8	PT(NPT)1/8
Conduit		G(PF,NPT)1/2, M20		G(PF)1/2	G(PF,NPT)1/2, M20
Operating Temp.	Standard Type	-30 to 85 °C (-22 to 185 °F)			
	Low Temp. Type	-40 to 85 °C (-40 to 185 °F)			
	LCD	-30 to 85 °C (-22 to 185 °F)			
	Explosion Temp.	-40 to 60 °C (T5) -40 to 40 °C (T6)			
	Remote Sensor	-			-40 to 120 °C (-40 to 248 °F)
Linearity		±0.5% F.S.			
Hysteresis		±0.5% F.S.			
Sensitivity		±0.2% F.S.			
Repeatability		±0.3% F.S.			
Air Consumption		Below 2 LPM (sup = O.14 MPa)			
Flow Capacity		70 LPM (sup = O.14 MPa)			
Output Characteristics		Linear, EQ%, Quick Open user set (18 Point)			
Material		Aluminium Diecasting		Stainless Steel 316	Aluminium Diecasting
Ingress Protection		IP66			
Explosion Protection Type		**ATEX, IECEx** Ex ia IIC T5/T6 Gb, EX iaD IIIC T100°C/T85°C Db IP66 **NEPSI** Ex ia IIC T5/T6 **KCs** Ex ia IIC T5/T6, EX iaD IIIC T100°C/T85°C **CSA** Certification in progress **FM** Class I, Div 1, Groups ABCD Class I, Zone 0 AEx ia IIC Class II/III, Div 1, Groups EFG Class I, II, III, Div 2, Groups ABCDEFG NEMA Type 4X IP66 AMBIENT TEMP: -40 - 60°C (T5) / -40 - 40°C (T6)			
Communication (Option)		HART (ver.7)			
L/S Rating	Mechanical Type (Omron)	AC 125 V, 3 A DC 30 V, 2 A	-	AC 125 V, 3 A DC 30 V, 2 A	-
	Proximity Type (P&F)	DC 8.2 V 8.2 mA	-	DC 8.2 V 8.2 mA	-
Weight	Body	2 kg (4.4 lb)		5.1 kg (11.2 lb)	2 kg (4.4 lb)
	Remote Sensor	-			0.9 kg (2.0 lb)

Product Code

YT-3301 - L - S - N - 2 - 4 - 2 - 4 - S - (1)

Model
YT-3300 = Aluminium housing
YT-3301 = Aluminium housing with remote sensor
YT-3303 = Aluminium housing with right side lever
YT-3350 = Stainless steel housing

Motion Type
L = Linear
R = Rotary

Acting Type
S = Single
D = Double

Area Protection
N = Safe Area
I = Intrinsically Safe ATEX, IECEx. NEPSI, KCs
A = Intrinsically Safe CSA, FM

Lever Type

Linear		Rotary	
0 = 10 to 40 mm		1 = M6 x 34L	fork type
1 = 20 to 100 mm		2 = M6 x 63L	
2 = 90 to 150 mm		3 = M8 x 34L	
3 = 16 to 30 mm	roller type	4 = M8 x 63L	
4 = 16 to 60 mm		5 = NAMUR	
5 = 16 to 100 mm			
6 = 90 to 150 mm			

Conduit & Air Connection
1 = G1/2 - PT1/4
2 = G1/2 - NPT1/4
3 = G1/2 - G1/4
4 = M20 - NPT1/4
5 = NPT1/2 - NPT1/4

Communications
0 = NONE
2 = HART protocol communication

Output Options
0 = NONE
1 = 4 to 20 mA feedback
2 = Limit Switch - Mechanical Type (YT-3300 and YT-3350 only)
3 = Limit Switch - Proximity Type (YT-3300 and YT-3350 only)
4 = 4 to 20 mA + Limit Switch - Mechanical Type (YT-3300 and YT-3350 only)
5 = 4 to 20 mA + Limit Switch - Proximity Type (YT-3300 and YT-3350 only)

Operating Temp.
S = -30 to 85 °C
L = -40 to 85 °C

Cable Length (YT-3301 only)
Option for YT-3301 only. Standard cable length is 5 m.
1 = 5 m
2 = 10 m
3 = 15 m
4 = 20 m

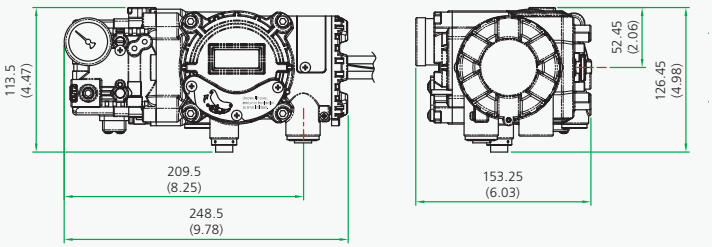
Smart Positioners YT-3400 / YT-3450

Torque motor technology with communications

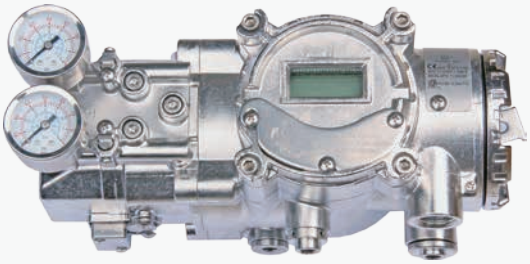
Design features

- **Explosionproof / Flameproof Housing.** Global certification for Zone 1 and Division 1 installations.
- **Auto calibration.** Simple menu structure with options to auto calibrate all parameters or zero and end points only.
- **LCD display.** Alphanumeric digital display for process values and calibration.
- **Partial Stroke Test (PST).** Fully adjustable Partial Stroke Test, with single or double set positions, all functionality can be performed and selected locally, through push buttons, or remotely with communication protocol.
- **Feedback signal.** Analogue feedback signals with 4 to 20 mA, mechanical and transistor switch options.
- **Auto / Manual switch.** Enables closed-loop automatic valve position control or manual positioning via the Open / Close buttons. The manual mode is useful for troubleshooting, calibration, system testing or as a manual bypass.
- **PID control.** Pre-calibrated and user configurable variables via front panel pushbutton menu.
- **HART® communication.** Allows commands, position feedback and diagnostics to be sent digitally over the current loop.
- **Front panel pushbuttons for configuration.** 4 robust and positive acting pushbuttons for field configuration.

YT-3400 Aluminium Enclosure



YT-3450 STS316 Enclosure



Dimensions: mm (Inches ")

Smart Positioners YT-3400 / YT-3450

Item Type		YT-3400	YT-3450
Input Signal		4 to 20 mA DC	
Supply Pressure		0.14 to 0.7 MPa (1.4 to 7 bar)	
Stroke	Linear Type	10 to 150 mm	
	Rotary Type	0 to 90°	
Impedance		Max. 450 Ω @ 20 mA DC	
Air Connection		PT(NPT,G)1/4	NPT1/4
Gauge Connection		PT(NPT)1/8	NPT1/8
Conduit		G(PF,NPT)1/2, M20	G(PF)1/2
Operating Temp.	Standard Type	-30 to 85 °C (-22 to 185 °F)	
	Low Temp. Type	-40 to 85 °C (-40 to 185 °F)	
	LCD Operating Temp.	-30 to 85 °C (-22 to 185 °F)	
	Explosion Temp.	-40 to 80 °C (T5) / -40 to 70 °C (T6)	
Linearity		±0.5% F.S.	
Hysteresis		±0.5% F.S.	
Sensitivity		±0.2% F.S.	
Repeatability		±0.3% F.S.	
Air Consumption		Below 2 LPM (sup = O.14 MPa)	
Flow Capacity		70 LPM (sup = O.14 MPa)	
Output Characteristics		Linear, EQ%, Quick Open user set (18 Point)	
Material		Aluminium Diecasting	Stainless Steel 316
Ingress Protection		IP66	
Explosion Protection Type		**ATEX, IECEx** Ex db IIC T5/T6, Ex tb IIIC T85°C/T100°C **NEPSI** Ex db IIC T5/T6, DIP A21 TA, T5/T6 **KCs** Ex d IIC T5/T6 IP66 **CSA** Ex db IIC T5 or T6 Class I, Zone 1, AEx db IIC T5 or T6, Class II, Division 1, Groups E, F and G; Ex tb IIC T85°C/T100°C AEx tb IIIC T85°C/T100°C **FM** XP/I/1/ABCD/T6 Ta= -40°C to +70°C, T5 Ta= -40°C to +80°C I/1/AEx db/IIC/T6 Ta= -40°C to +70°C, T5 Ta= -40°C to +80°C DIP/II, III/1/EFG/T6 Ta= -40°C to +70°C, T5 Ta= -40°C to +80°C 21/AEx tb/IIIC/T85°C Ta= -40°C to +70°C, T100°C Ta= -40°C to +80°C; IP66	
Communication (Option)		HART (ver.7)	
Weight		3.4 kg (7.5 lb)	7.0 kg (15.4 lb)

Product Code

YT-3400 - L - S - C - 2 - 4 - 2 - 3 - S

Model
YT-3400 = Aluminium housing
YT-3450 = Stainless steel housing

Motion Type
L = Linear
R = Rotary

Acting Type
S = Single
D = Double

Explosion Protection
C = ATEX, IECEx, NEPSI, KCs
E = EAC
A = CSA, FM

Lever Type

Linear	Rotary
1 = 10 to 40 mm	1 = M6 x 34L
2 = 20 to 70 mm	2 = M6 x 63L
3 = 50 to 100 mm	3 = M8 x 34L
4 = 100 to 150 mm	4 = M8 x 63L
	5 = NAMUR

Conduit & Air Connection
1 = G1/2 - PT1/4
2 = G1/2 - NPT1/4
3 = G1/2 - G1/4
4 = M20 - NPT1/4
5 = NPT1/2 - NPT1/4

Communication
0 = NONE
2 = HART protocol communication

Output Options
0 = NONE
1 = 4 to 20 mA feedback
2 = Limit switch
3 = 4 to 20 mA feedback + Limit switch

Operating Temp.
S = -30 to 85 °C
L = -40 to 85 °C

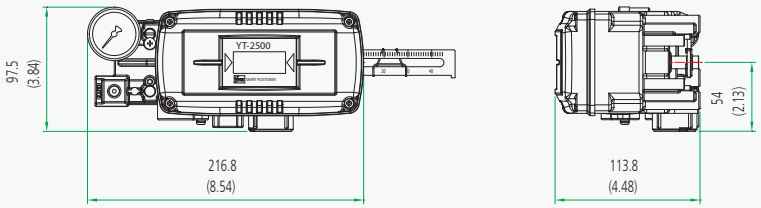
Smart Positioners YT-2500 / YT-2501 / YT2550

Piezo technology with communications

Design features

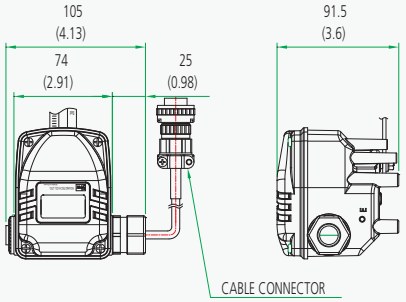
- **Fail Freeze and Fail Safe function.** Enables the valve maintain the last position (Fail Freeze) or move to a pre-determined position (Fail Safe) on the loss of electrical power supply or the pneumatic supply air.
- **Auto calibration.** Simple menu structure with options to auto calibrate all parameters or zero and end points only.
- **LCD display.** Alphanumeric digital display for process values and calibration.
- **Low air consumption level.** Almost zero air leakage.
- **Feedback signal.** Analogue feedback signals with 4 to 20 mA, mechanical and proximity switch options.
- **PD control.** Pre-calibrated and user configurable variables via front panel pushbutton menu.
- **HART® communication.** Allows commands, position feedback and diagnostics to be sent digitally over the current loop.
- **Front panel pushbuttons for configuration.** 4 robust and positive acting pushbuttons for field configuration.

YT-2500 Aluminium Enclosure



YT-2550 Stainless Steel Enclosure

YT-2501 Remote Mounting Option



Dimensions: mm (Inches ")

Smart Positioners YT-2500 / YT-2501 / YT2550

Item Type		YT-2500	YT-2550	YT-2501
Input Signal		4 to 20 mA DC		
Supply Pressure		0.14 to 0.7 MPa (1.4 to 7 bar)		
Stroke	Linear Type	10 to 150 mm		
	Rotary Type	0 to 90°		
Impedance		Max. 500 Ω @ 20 mA DC		
Air Connection		PT(NPT,G)1/4	NPT1/4	PT(NPT,G)1/4
Gauge Connection		PT(NPT)1/8	NPT1/8	PT(NPT)1/8
Conduit		G(PF,NPT)1/2, M20	G(PF)1/2	G(PF,NPT)1/2, M20
Operating Temp.	Standard Type	-30 to 80 °C (-22 to 176 °F)		
	LCD	-30 to 85 °C (-22 to 185 °F)		
	Explosion Temp.	-40 to 60 °C (T5) -40 to 40 °C (T6)		
	Remote Sensor	-		-40 to 120 ° C (-40 to 248 °F)
Linearity		±0.5% F.S.		
Hysteresis		±0.5% F.S.		
Sensitivity		±0.2% F.S.		
Repeatability		±0.3% F.S.		
Air Consumption	Fail Freeze	0.01 LPM (sup = 0.14 MPa)		
	Fail Safe	6 LPM (sup = 0.14 MPa)		
Flow Capacity	Fail Freeze	60 LPM (sup = 0.14 MPa)		
	Fail Safe	40 LPM (sup = 0.14 MPa)		
Output Characteristics		Linear, EQ%, Quick Open user set (18 Point)		
Material		Aluminium Diecasting	Stainless Steel 316	Aluminium Diecasting
Ingress Protection		IP66		
Explosion Protection Type		**ATEX, IECEx** Ex ia IIC T5/T6 Gb, Ex iaD IIC T85°C/T100°C IP6X		
		NEPSI Ex ia IIC T5/T6		-
		KCs Ex ia IIC T5/T6, EX iaD IIIC T100°C/T85°C		
Communication (Option)		HART (ver.5)		
L/S Rating	Mechanical Type (Omron)	AC 125 V, 3 A DC 30 V, 2 A		-
	Proximity Type (P&F)	DC 8.2 V 8.2 mA		-
Weight	Body	1.5 kg (3.3 lb)	2.9 kg (6.4 lb)	1.5 kg (3.3 lb)
	Linear Remote sensor	-	-	0.6 kg (1.3 lb)
	Rotary Remote sensor	-	-	0.9 kg (2.0 lb)

Product Code

YT-2501 - L - S - N - 2 - 4 - 2 - 3 - S - (1)

Model
YT-2500 = Aluminium housing
YT-2550 = Stainless steel house
YT-2501 = Aluminium housing with remote sensor

Motion Type
L = Linear
R = Rotary

Acting Type
S = Single
D = Double

Explosion Protection

YT-2500, YT-2550	YT2501
N = Non-Explosion	N = Non-Explosion
I = ATEX, IECEx, NEPSI, KCs	I = ATEX, IECEx, KCs

Lever Type

Linear	Rotary
1 = 10 to 40 mm	1 = M6 x 34L
2 = 20 to 70 mm	2 = M6 x 63L
3 = 50 to 100 mm	3 = M8 x 34L
4 = 100 to 150 mm	4 = M8 x 63L
	5 = NAMUR (YT-2501)

Conduit & Air Connection
1 = G1/2 - PT1/4
2 = G1/2 - NPT1/4
3 = G1/2 - G1/4
4 = M20 - NPT1/4
5 = NPT1/2 - NPT1/4

Communications
0 = NONE
2 = HART protocol communication

Output Options
0 = NONE
1 = 4 to 20 mA feedback
2 = Limit switch - Mechanical Type (YT-2500 and YT-2550 only)
3 = Limit switch - Proximity Type (YT-2500 and YT-2550 only)
4 = 4 to 20 mA feedback + Limit switch - Mechanical Type) (YT-2500 and YT-2550 only)
5 = 4 to 20 mA feedback + Limit switch - Proximity Type (YT-2500 and YT-2550 only)

Fail Option
F = Fail Freeze
S = Fail Safe

Cable Length (YT-2501 only)
Option for YT-2501 only. Standard cable length is 5 m.
1 = 5 m
2 = 10 m
3 = 15 m
4 = 20 m

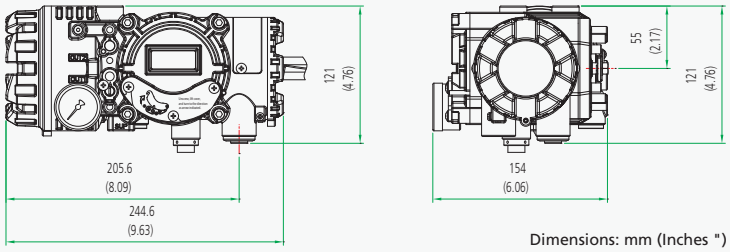
Smart Positioner YT-2600

Piezo technology with communications

Design features

- **Fail Freeze and Fail Safe function.** Enables the valve maintain the last position (Fail Freeze) or move to a pre-determined position (Fail Safe) on the loss of electrical power supply or the pneumatic supply air.
- **Explosionproof / Flameproof Housing.** Global certification for Zone 1 and Division 1 installations
- **Auto calibration.** Simple menu structure with options to auto calibrate all parameters or zero and end points only.
- **LCD display.** Alphanumeric digital display for process values and calibration.
- **Low air consumption level.** Almost zero air leakage.
- **Feedback signal.** Analogue feedback signals with 4 to 20 mA, transistor switch options.
- **PD control.** Pre-calibrated and user configurable variables via front panel pushbutton menu.
- **HART® communication.** Allows commands, position feedback and diagnostics to be sent digitally over the current loop.
- **Front panel pushbuttons for configuration.** 4 robust and positive acting pushbuttons for field configuration.

YT-2600 Aluminium Exd Positioner



Dimensions: mm (Inches ")

Item Type		YT-2600
Input Signal		4 to 20 mA DC
Supply Pressure		0.14 to 0.7 MPa (1.4 to 7 bar)
Stroke	Linear Type	10 to 150 mm
	Rotary Type	0 to 90°
Impedance		Max. 450 Ω @ 20 mA DC
Air Connection		PT(NPT,G)1/4
Gauge Connection		PT(NPT)1/8
Conduit		G(PF,NPT)1/2, M20
Operating Temp.	Standard Type	-30 to 80 °C (-22 to 176 °F)
	LCD	-30 to 85 °C (-22 to 185 °F)
	Explosion Temp.	-40 to 80 °C (T5) -40 to 70 °C (T6)
Linearity		±0.5% F.S.
Hysteresis		±0.5% F.S.
Sensitivity		±0.2% F.S.
Repeatability		±0.3% F.S.
Air Consumption	Fail Freeze	0.01 LPM (sup = 0.14 MPa)
	Fail Safe	6 LPM (sup = 0.14 MPa)
Flow Capacity	Fail Freeze	50 LPM (sup = 0.14 MPa)
	Fail Safe	40 LPM (sup = 0.14 MPa)
Output Characteristics		Linear, EQ%, Quick Open user set (18 Point)
Material		Aluminium Diecasting
Ingress Protection		IP66
Explosion Protection Type		**ATEX, IECEx** Ex db IIC T5/T6, Ex tb IIIC T85°C/T100°C **KCs** Exd IIC T5/T6 IP66
Communication (Option)		HART (ver.5)
Weight		3.0 kg (6.61 lb)

Product Code

YT-2600 - L - S - C - 2 - 4 - 2 - 3 - S

Model
YT-2600 = Aluminum housing

Motion Type
L = Linear
R = Rotary

Acting Type
S = Single
D = Double

Explosion Protection
C = ATEX, IECEx, KCs

Lever Type

Linear	Rotary
1 = 10 to 40 mm	1 = M6 x 34L
2 = 20 to 70 mm	2 = M6 x 63L
3 = 50 to 100 mm	3 = M8 x 34L
4 = 100 to 150 mm	4 = M8 x 63L
	5 = NAMUR

Conduit & Air Connection
1 = G1/2 - PT1/4
2 = G1/2 - NPT1/4
3 = G1/2 - G1/4
4 = M20 - NPT1/4
5 = NPT1/2 - NPT1/4

Communications
0 = NONE
2 = HART protocol communication

Output Options
0 = NONE
1 = 4 to 20 mA feedback
2 = Limit switch
3 = 4 to 20 mA feedback + Limit switch

Fail Option
F = Fail Freeze
S = Fail Safe

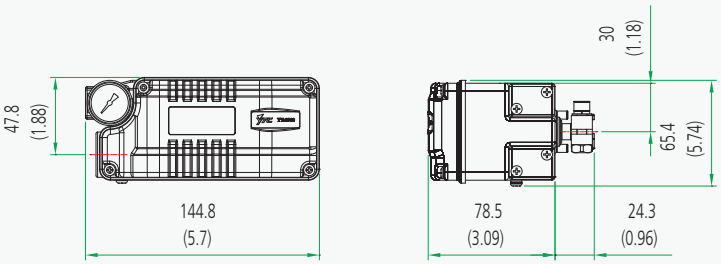
Smart Positioner YT-2700

Piezo technology single acting

Design features

- **Fail Freeze and Fail Safe function.** Enables the valve maintain the last position (Fail Freeze) or move to a pre-determined position (Fail Safe) on the loss of electrical power supply or the pneumatic supply air.
- **Auto calibration.** Simple menu structure with options to auto calibrate all parameters or zero and end points only.
- **LCD display.** Alphanumeric digital display for process values and calibration.
- **Low air consumption level.** Almost zero air leakage.
- **Feedback signal.** Analogue feedback signals with 4 to 20 mA.
- **PID control.** Pre-calibrated and user configurable variables via front panel pushbutton menu.
- **HART® communication.** Allows commands, position feedback and diagnostics to be sent digitally over the current loop.
- **Front panel pushbuttons for configuration.** 4 robust and positive acting pushbuttons for field configuration.

YT-2700 Compact Aluminium Positioner



Dimensions: mm (Inches ")

Item Type		YT-2700
Input Signal		4 to 20 mA DC
Supply Pressure		0.14 to 0.7 MPa (1.4 to 7 bar)
Stroke	Linear Type	5 to 35 mm
	Rotary Type	0 to 90°
Impedance		Max. 450 Ω @ 20 mA DC
Air Connection		PT(NPT)1/4
Gauge Connection		PT(NPT)1/8
Conduit		G1/2(PF1/2)
Operating Temp.	Standard Type	-30 to 80 °C (-22 to 176 °F)
	LCD	-30 to 85 °C (-22 to 185 °F)
	Explosion Temp.	-40 to 60 °C (T5) -40 to 40 °C (T6)
Linearity		±0.5% F.S.
Hysteresis		±0.5% F.S.
Sensitivity		±0.2% F.S.
Repeatability		±0.3% F.S.
Air Consumption	Fail Freeze	0.01 LPM (sup = 0.14 MPa)
	Fail Safe	6 LPM (sup = 0.14 MPa)
Flow Capacity	Fail Freeze	9 LPM (sup = 0.14 MPa)
	Fail Safe	40 LPM (sup = 0.14 MPa)
Output Characteristics		Linear, EQ%, Quick Open user set (18 Point)
Material		Aluminium Diecasting
Ingress Protection		IP66
Explosion Protection Type		**KCs** Ex ia IIC T5
Communication (Option)		HART (ver.5)
Weight		0.82 kg (1.8 lb)

Product Code

YT-2700 - L - S - N - 2 - 4 - 2 - 3 - S

Model
YT-2700 = Single acting positioner

Motion Type
L = Linear
R = Rotary

Acting Type
S = Single

Explosion Protection
N = Non-Explosion
I = KCs

Lever Type

Linear	Rotary
1 = 5 to 35 mm	1 = M6 x 34L
	2 = M6 x 63L
	3 = M8 x 34L
	4 = M8 x 63L
	5 = NAMUR

Conduit & Air Connection
1 = G1/2 - PT1/4
2 = G1/2 - NPT1/4
3 = G1/2 - G1/4
4 = M20 - NPT1/4
5 = NPT1/2 - NPT1/4

Communications
0 = NONE
2 = HART protocol communication

Output Options
0 = NONE
1 = 4 to 20 mA feedback

Fail Option
F = Fail Freeze
S = Fail Safe

IP Converters YT-930 / YT-940

Design features

- **Flameproof Housing (YT-940)** for Zone 1 installation.
- **High Accuracy and Sensitivity** with pressure sensor.
- **Analogue PID control.** High resolution proportional control
- **No effect from mounting orientation.**

YT-930

YT-940

Item Type		YT-930	YT-940
Input Signal		4 to 20 mA DC	
Output Signal	Standard	0.02 to 0.1 MPa (0.2 to 1.0 bar)	
	Multirange	0 to 0.12 MPa (0 to 1.2 bar)	
		0.04 to 0.2 MPa (0.4 to 2.0 bar)	
		0 to 0.23 MPa (0 to 2.3 bar)	
Supply Pressure	Standard	0.13 to 0.16 MPa (1.3 to 1.6 bar)	
	Minimum	0.2 bar greater than the maximum calibrated output pressure	
	Maximum	0.24 MPa (2.4 bar)	
Explosion Protection Type		**ATEX, IECEx** Ex ia IIC T5/T6 Gb, Ex ia IIIC T100°C/ T85°C Db	**FM** Class I Division 1 Groups A,B,C,D Class II, III Division 1 Groups E,F,G Class I Zone 1 AEx d IIC T6 Ta=-40°C to + 75°C, T5 Ta=-40°C to + 85°C, Type 4X, IP66 Zone 21 AEx tb IIIC T85°C Ta=-40°C to +75°C, T100°C Ta= -40°C to +85°C, Type 4X, IP66 **KCs** Ex d IIC T5/T6
Air consumption		Below 2 LPM (sup = 0.14 MPa)	
Flow Capacity		70 LPM (sup = 0.14 MPa)	
Explosion Temp.		-40 to 60 °C (T5) / -40 to 40 °C (T6)	
Operating Temp.		-40 to 85 °C (-22 to 185 °F)	
Linearity		±0.5% F.S.	
Hysteresis		±0.5% F.S.	
Sensitivity		±0.2% F.S.	
Repeatability		±0.3% F.S.	
Air Connection		(N)PT 1/4	
Conduit		G 1.2 (PF 1/2)	
Ingress Protection		IP66	Type 4X, IP66
Impedance		Max. 313 Ω @ 20 mA DC	
Material		Aluminium Diecasting	
Weight		1.6 kg (3.53 lb)	3 kg (6.61 lb)

Product Code

YT-930 - N - 1 - 1 - L - 0 - 0

Model
YT-930 = Intrinsically Safety Type
YT-940 = Flameproof Type

Explosion Protection

YT-930	YT-940
N = Non-Explosion	C = KCs
I = ATEX, IECEx	A = FM, CSA

Output Pressure
1 = 0.02 to 0.1 MPa
2 = 0.00 to 0.12 MPa
3 = 0.04 to 0.2 MPa
4 = 0.00 to 0.23 MPa

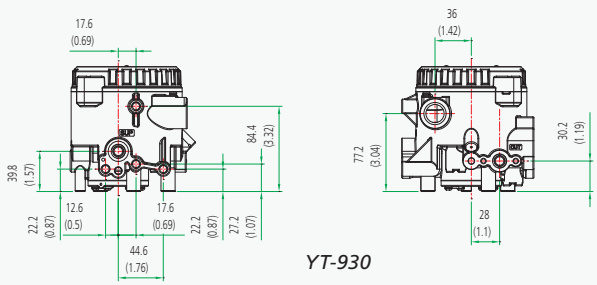
Conduit - Air Connection
1 = G1/2 - PT1/4
2 = G1/2 - NPT1/4

Operating Temp.
L = -40 to 85 °C

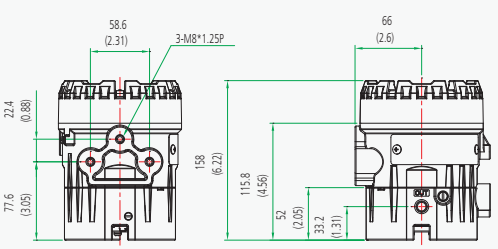
Option
0 = None
1 = Feedback Signal (4 to 20 mA DC)

Gauge
0 = None
1 = 0 to 0.2 MPa
2 = 0 to 0.4 MPa

Dimensions: mm (Inches ")



YT-930



YT-940

Air Filter Regulators YT-200 / YT-205 / YT-220 / YT-225

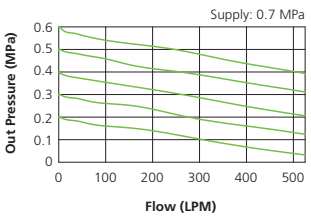
Design features

- **Stable Output and repeatability.** Provides constant control under variable flow rates and supply pressures.
- **Relief flow capability.** Discharges pressure if outer pressure is higher than set pressure.
- **Light weight and compact size.** Reduces installation costs.
- **5 micron filter.** Protects pneumatic instruments from dirty air.
- **Manual or Auto Draining Option**

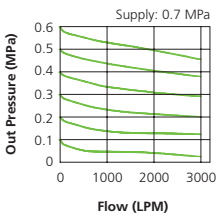
YT-200 YT-205 YT-220 YT-225

CE

YT-200 / YT-205 Flow (LPM)



YT-220 / YT-225 Flow (LPM)



Item Type	YT-200	YT-220	YT-205	YT-225
Max. Supply Pressure	1.7 MPa (17 bar)			
Max. Output Pressure	0.42 MPa (A Type), 0.84 MPa (B Type)			
Air Connection	PT (NPT) 1/4	PT (NPT) 1/2	NPT 1/4	NPT 1/2
Gauge Connection	PT (NPT) 1/4	PT (NPT) 1/4	NPT 1/4	NPT 1/4
Operating Temp.	-20 to 70 °C (-4 to 158 °F) (Standard type)			
Min. Filtering Size	5 micron			
Material	Aluminium Diecasting		Stainless Steel 316	
Weight	0.6 kg (1.7 lb)	0.86 kg (1.89 lb)	1.4 kg (3.0 lb)	2.1 kg (4.6 lb)

Product Code

YT-200 - A - N - 0 - 1 - 0

Model
YT-200 = Aluminum 1/4"
YT-205 = Stainless Steel 1/4"
YT-220 = Aluminum 1/2"
YT-225 = Stainless Steel 1/2"

Adjustable Range
A = 0 to 0.42 MPa
B = 0 to 0.84 MPa

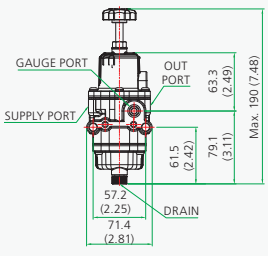
Connection Type
P = PT
N = NPT

Gauge
0 = None
1 = 0 to 0.4 MPa
2 = 0 to 1.0 MPa

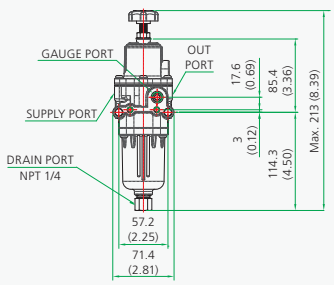
Operating Temp.
1 = -20 to 70 °C
2 = -20 to 120 °C
3 = -40 to 70 °C

Option
0 = Manual drain
1 = Auto drain

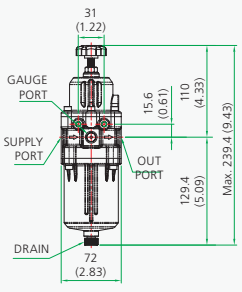
Dimensions: mm (Inches ")



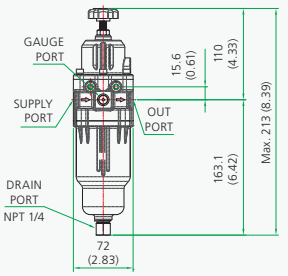
YT-200/205 Manual drain



YT-200/205 Auto drain



YT-220/225 Manual drain



YT-220/225 Auto drain

Volume Boosters YT-300 / YT-305 / YT-320 / YT-325 / YT-310 / YT-315

Design features

- **Large flow capacity.** Specifically designed to be used in conjunction with valve positioners.
- **Optimal sensitivity.** Reacts to sudden change in supply pressure.
- **Fixed deadband.** Provides accurate and stable final positioning of the valve.
- **Internal by-pass control.** Improves system stability.

YT-300 **YT-325** **YT-315**

SIL SIL LEVEL 3 CE

Item Type				YT-300 YT-305	YT-320 YT-325	YT-310 YT-315
Max. Supply Pressure				1 MPa (10 bar)		
Max. Signal / Output Pressure				0.7 MPa (7 bar)		
Signal/Output Pressure Ratio				1:1		
Flow Capacity (Cv)	Exhaust			1.32	2.08	5.24
	Output			1.19	2.72	4.91
Supply/Output Connection				PT (NPT) 1/4	PT (NPT) 1/2	NPT 3/4
Signal Connection				PT (NPT) 1/4		NPT1/4
Linearity				±1% F.S.		
Operating Temp.				-20 to 70 °C (-4 to 158 °F) (Standard type)		
Material	YT-300, YT-320, YT-310			Aluminium Diecasting		
	YT-305, YT-325, YT-315			Stainless Steel 316		
Weight	YT-300	YT-320	YT-310	0.5 kg (1.1 lb)	0.76 kg (1.7 lb)	2.3 kg (5.1 lb)
	YT-305	YT-325	YT-315	1.3 kg (2.9 lb)	1.9 kg (4.2 lb)	5 kg (11 lb)

Product Code

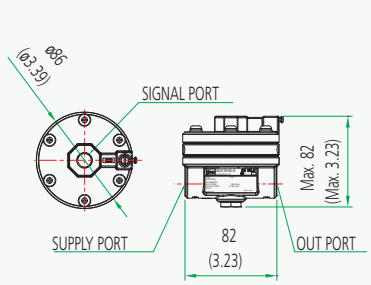
YT-300 - N - 1

Model
YT-300 = Aluminum 1/4"
YT-305 = Stainless Steel 1/4"
YT-320 = Aluminum 1/2"
YT-325 = Stainless Steel 1/2"
YT-310 = Aluminum 3/4"
YT-315 = Stainless Steel 3/4"

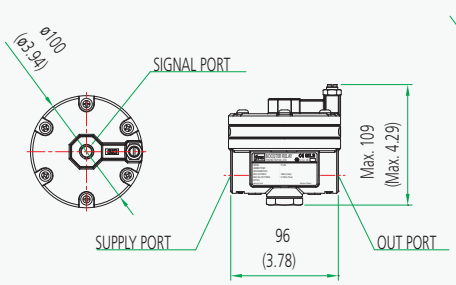
Connection Type (YT-305/325/315 are only available in NPT connection)
N = PT
P = NPT

Operating Temp.
1 = -20 to 70 °C
2 = -20 to 120 °C
3 = -40 to 70 °C

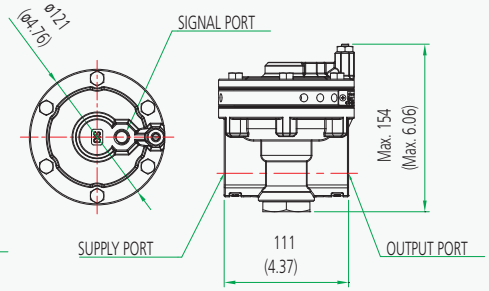
Dimensions: mm (Inches ")



YT-300/305



YT-320/325



YT-310/315

Lock-up Valves YT-400 / YT-405 / YT-430 / YT-435

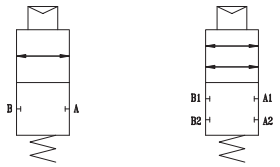
Design features

- **Compact size.** No bracket is required.
- **Optimal sensitivity.** Detects small variation of the pressure - below 0.01 MPa.

YT-400S **YT-405D** **YT-430S** **YT-435D**

CE

Symbol



Single Acting Type Double Acting Type

Item Type		YT-400	YT-405	YT-430	YT-435
Signal Pressure		0.14 to 0.7 MPa (1.4 to 7 bar)			
Max. Supply Pressure		Max. 1 MPa (10 bar)			
Lock-Up Pressure		Max. 0.7 MPa (7 bar)			
Differential Pressure		Below 0.01 MPa (0.1 bar)			
Operating Temp.		-20 to 70 °C (-4 to 158 °F) (Standard type)			
Flow Capacity (Cv)		0.9		1.8	
Air Connection		PT (NPT) 1/4	NPT 1/4	NPT 3/8	
Signal Connection		PT (NPT) 1/4	NPT 1/4	NPT 1/4	
Material		Aluminium Diecasting	Stainless Steel 316	Aluminium Diecasting	Stainless Steel 316
Weight	Single	0.45 kg (1.0 lb)	1.3 kg (2.2 lb)	1.3 kg (2.2 lb)	3.3 kg (7.3 lb)
	Double	0.7 kg (1.5 lb)	1.5 kg (3.3 lb)	2.3 kg (5.1 lb)	5.8 kg (12.8 lb)

Product Code

YT-400 - S - P - 1

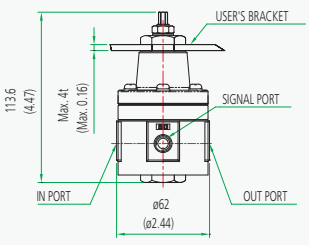
Model
YT-400 = Aluminum 1/4"
YT-405 = Stainless Steel 1/4"
YT-430 = Aluminum 3/8"
YT-435 = Stainless Steel 3/8"

Acting Type
S = Single
D = Double

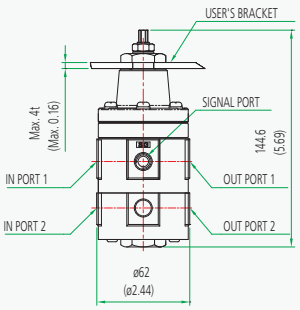
Connection Type (YT-405/435 are only available in NPT connection)
P = PT
N = NPT

Operating Temp.
1 = -20 to 70 °C
2 = -20 to 120 °C
3 = -40 to 70 °C

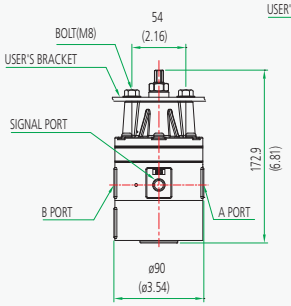
Dimensions: mm (Inches ")



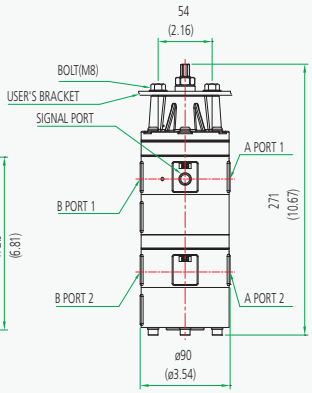
YT-400S, YT-405S
(Single Acting)



YT-400D, YT-405D
(Double Acting)



YT-430S, YT-435S
(Single Acting)



YT- 430D, YT-435D
(Double Acting)

YT-400S/405S *YT-400D/405D* *YT-430S/435S* *YT-430D/435D*

Snap Acting Relays YT-520 / YT-525 / YT-530 / YT-535

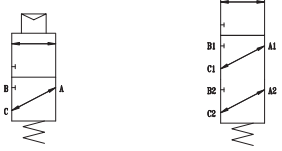
Design features

- **Rugged and reliable design.** Suitable for all environments.
- **Designed for valve actuation.** Changes the direction of the supply air to a 'fail-safe' circuit, or fail freeze in its last known position, on sudden loss of supply air pressure.

YT-520S **YT-525D** **YT-535S** **YT-530D**

CE

Symbol



Single Acting Type Double Acting Type

Item Type		YT-520	YT-525	YT-530	YT-535
Signal Pressure		0.14 to 0.7 MPa (1.4 to 7 bar)			
Max. Supply Pressure		1 MPa (10 bar)			
Operating Temp.		-20 to 70 °C (-4 to 158 °F) (Standard type)			
Signal Connection		NPT 1/4			
In / Output Connection		NPT 1/4		NPT 3/8	
Flow Capacity (Cv)		0.9		1.8	
Material		Aluminium Diecasting	Stainless Steel 316	Aluminium Diecasting	Stainless Steel 316
Weight	Single	0.73 kg (1.8 lb)	1.66 kg (3.7 lb)	1.3 kg (2.2 lb)	3.3 kg (7.3 lb)
	Double	1.2 kg (2.7 lb)	3.1 kg (6.3 lb)	2.3kg (5.1 lb)	5.8kg (12.8 lb)

Product Code

YT-520 - S - 2 - 1

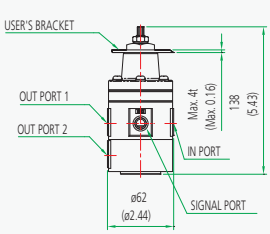
Model
YT-520 = Aluminum 1/4"
YT-525 = Stainless Steel 1/4"
YT-530 = Aluminum 3/8"
YT-535 = Stainless Steel 3/8"

Acting Type
S = Single
D = Double

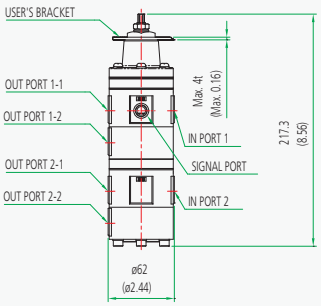
Connection Type
2 = NPT

Operating Temp.
1 = -20 to 70 °C
2 = -20 to 120 °C
3 = -40 to 70 °C

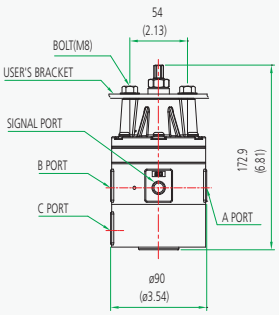
Dimensions: mm (Inches ")



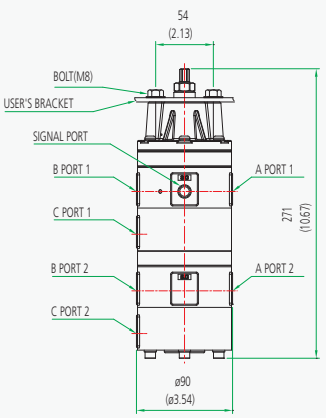
YT-520S/525S



YT-520D/525D



YT-530S/535S



YT-530D/535D

Solenoid Valve YT-720

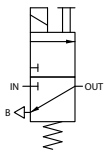
Design features

- **Balance spool type.** No require of backing spring.
- **AC and DC Power options.** Interchangeable AC and DC coils.
- **Manual override Options.** For maintenance or emergency operation.
- **Rotational Connection.** Coil assembly can be rotated.

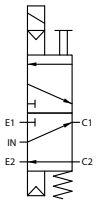
YT-720S (3-Way)

YT-720D (4-Way)

Symbol



YT-720S (3-Way)



YT-720D (4-Way)

Item Type		YT-720S	YT-720D
Max. Supply Pressure		0 to 0.4 MPa 0 to 0.7 MPa	0.1 to 1 MPa
Flow Capacity (Cv)	Output	0.2 (Φ3) at 0.4 MPa	0.75
		0.084 (Φ1.6) at 0.7 MPa	
	Exhaust	0.093	N/A
Rating Current	AC 220 V	60 mA (11 W)	
	AC 110 V	130 mA (12 W)	
	DC 24 V	580 mA (14 W)	
Frequency		50 to 60 Hz	
Explosion Protection Type		**KCs** Ex d IIC T6	
Connection Type		PT (NPT) 1/4	
Conduit		G 1/2 (PF 1/2)	
Coil Insulation Grade		Class F	
Operating Temp.	Operating	-20 to 70 °C (-4 to 158 °F)	
	Explosion	-20 to 50 °C (-4 to 122 °F)	
Weight		O.8 kg (1.8 lb)	1.2 kg (2.6 lb)

Product Code

YT-720 - S - P - 1 - 1

Model
YT-720

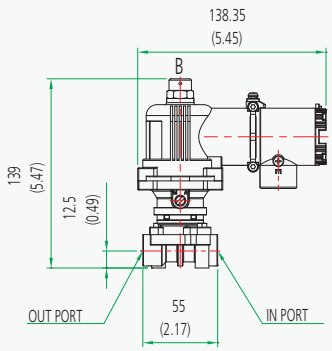
Valve Type
S = 3-Way
D = 4-Way

Connection Type
P = PT
N = NPT

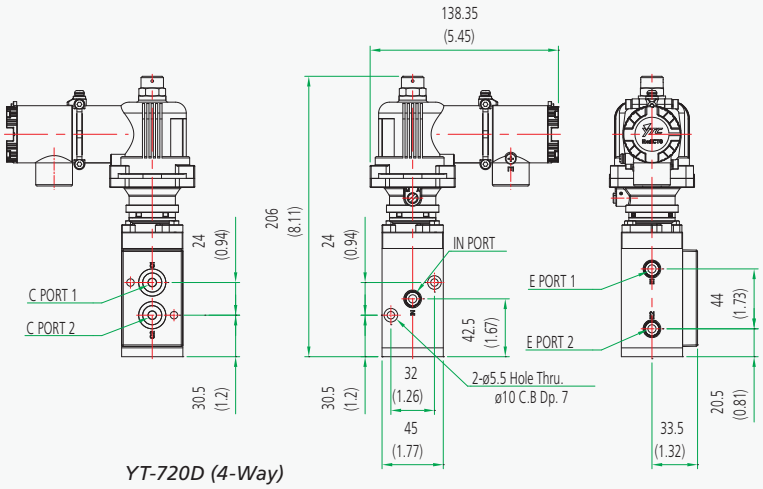
Power Source
1 = AC 110 V
2 = AC 220 V
3 = DC 24 V

Pressure
1 = 0 to 0.4 MPa (3-Way)
2 = 0 to 0.7 MPa (3-Way)
3 = 0 to 1.0 MPa (4-Way)

Dimensions: mm (Inches ")



YT-720S (3-Way)



YT-720D (4-Way)

Position Transmitter SPTM-5V

Design features

- Convenient wiring: 2 wire type.
- High accuracy and reliability. Stable Output and repeatability.
- Simple change for RA v.s. DA action setting.
- Smart setting. Easy setting of zero and span by pressing the buttons (2 or 5 points setup).

SPTM-5V

Item Type		SPTM-5VL	SPTM-5VR
Input Type		2 Wire	
Input Signal		0 – 30°	0 – 90°
Output Signal		4-20 mA DC	
Load Resistance		$R_L \leq \frac{Vs[v] - 9[v]}{I\ [mA]}$	
Supply Voltage		9 – 28 V DC	
Noise Range		50 mV p.p	
Conduit		G 1/2 (PF 1/2)	
Operating Temp.	Operating	-40 – 85 °C (-40 – 185 °F)	
	Explosion	20 – 60 °C (68 – 140 °F)	
	LCD	-30 – 85 °C (-22 – 185 °F)	
Linearity		±1% F.S.	
Hysteresis		±0.2% F.S.	
Sensitivity		±0.2% F.S.	
Explosion Protection Type		Ex ia IIC T5	
Ingress Protection		IP67	
Material		Aluminium Diecasting	
Weight		0.6 kg (1.3 lb)	

Product Code

SPTM-5V – L – Ⅱ – 0

Model
SPTM-5V = Intrinsically Safety Aluminum

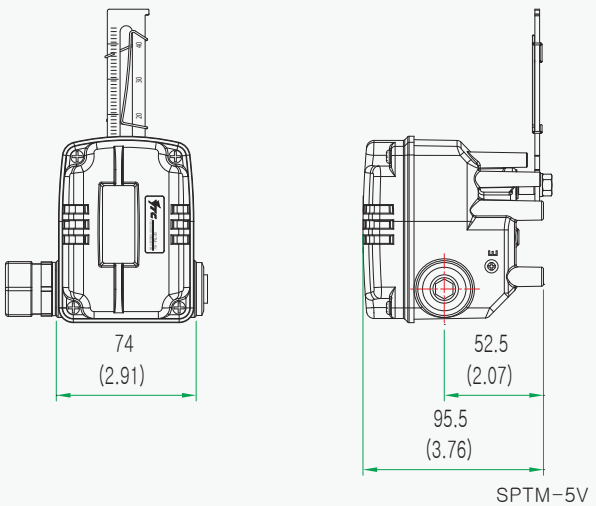
Motion Type
L = Linear
R = Rotary

Explosion Protection
I = Ex ia IIC T5
n = non-explosion

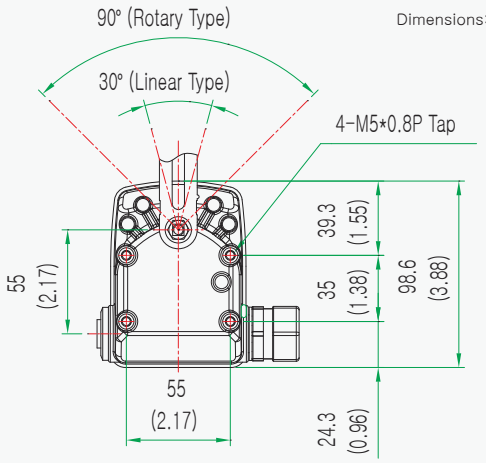
Lever Type

Linear	Rotary
1 = 10-40 mm	1 = Standard
2 = 20-70 mm	2 = NAMUR
3 = 50-100 mm	
4 = 100-150 mm	

Option
0 = None
1 = With LCD



SPTM-5V



Dimensions: mm (Inches ")

Position Transmitters SPTM-6V / SPTM-65V

Design features

- **Loop powered 2 wire type.**
- **High accuracy and reliability.** Stable Output and repeatability.
- **Reverse or Direct acting.** Easy to configure options.
- **Smart setting.** Easy setting of zero and span by pressing the buttons (2 or 5 points setup).

SPTM-6V

SPTM-65V

Item Type		SPTM-6V	SPTM-65V
Connection Type		2 Wire	
Input Signal	Linear	0 to 30°	
	Rotary	0 to 90°	
Output Signal		4 to 20 mA DC	
Load Resistance		$R_L \leq \frac{Vs[v] - 9[v]}{I\,[mA]}$	
Supply Voltage		9 to 28 VDC	
Noise Range		50 mV p.p	
Conduit		PF 1/2 (G 1/2)	
Operating Temp.	Operating	-40 to 85 °C(-40 to 185 °F)	
	Explosion	-40 to 60 °C(-40 to 140 °F)	
	LCD	-30 to 85 °C (-22 to 185 °F)	
Linearity		±1% F.S.	
Hysteresis		±0.2% F.S.	
Sensitivity		±0.2% F.S.	
Explosion Protection Type		**KCs** Ex d IIC T6	
Ingress Protection		IP67	
Material		Aluminium Diecasting	Stainless Steel 316
Weight		1.3 kg (2.9 lb)	2.8 kg (6.17 lb)

Product Code

SPTM-6V - L - C - 1

Model
SPTM-6V = Flameproof Aluminum
SPTM-65V = Flameproof Stainless Steel

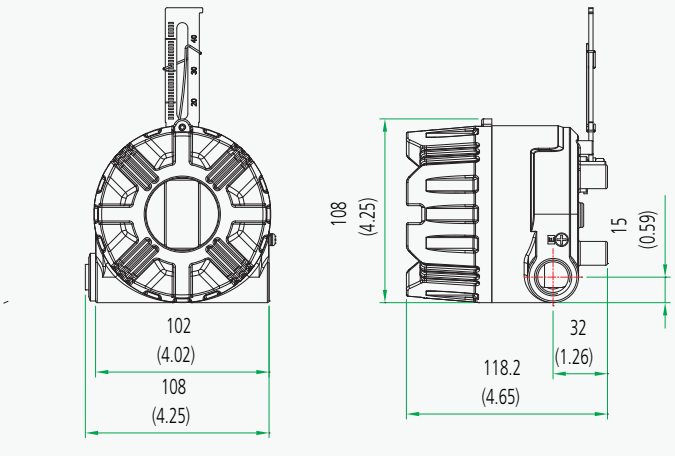
Motion Type
L = Linear
R = Rotary

Explosion Protection
C = Ex d IIC T6

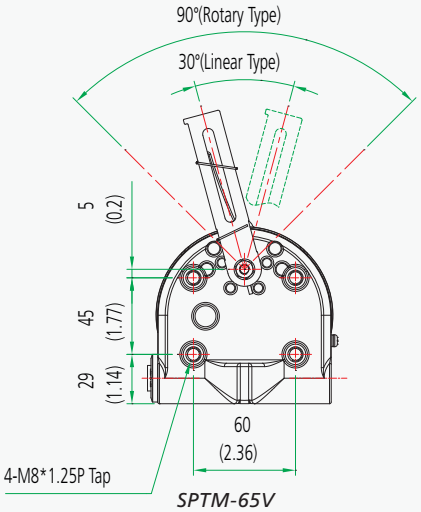
Lever Type

Linear	Rotary
1 = 10 to 40 mm	1 = Standard
2 = 20 to 70 mm	2 = NAMUR
3 = 50 to 100 mm	
4 = 100 to 150 mm	

Dimensions: mm (Inches ")



SPTM-6V



SPTM-65V

Limit Switch Box YT-850

Design features

- **Visual position indicator.** 360° viewing angle.
- **Multiple Output signals.** 8 contacts of terminal ports.
- **Universal Compatibility.** Suitable for any rotary motion actuator <IS05211>.
- **Easy configuration.** Simple adjustment of cam position.
- **Dual conduit entries.** Separate connections for power and signal cables.

YT-850

CE

Item Type		YT-850M		YT-850P	
Switch Type		Mechanical Switch (2xSPDT)		Inductive Proximity Sensor	
		SS5GL (Omron)	SS10GL (Omron)	PSN17-5DNU (Autonics)	NJ2-V3-N (P&F)
Switch Rating	AC	250 V 3 A 125 V 5 A	250 V 10.1 A 125 V 10.1 A	-	-
	DC	250 V 0.2 A, 125 V 0.4 A, 30 V 4 A, 14 V 5 A, 8 V 5 A		12 - 24 VDC	8 VDC
Ingress Protection		IP67			
Operating Temp.		-20 to 80 °C (Standard)			
Conduit Entry		NPT1/2, G1/2, M20			
Terminal		8 Points			
Mounting Bracket		NAMUR VDI / VDE 3845, ISO 5211			
Material		Aluminium Diecasting			
Weight		880 g (1.94 lb)			

Product Code

YT-850 - M - 1 - 0

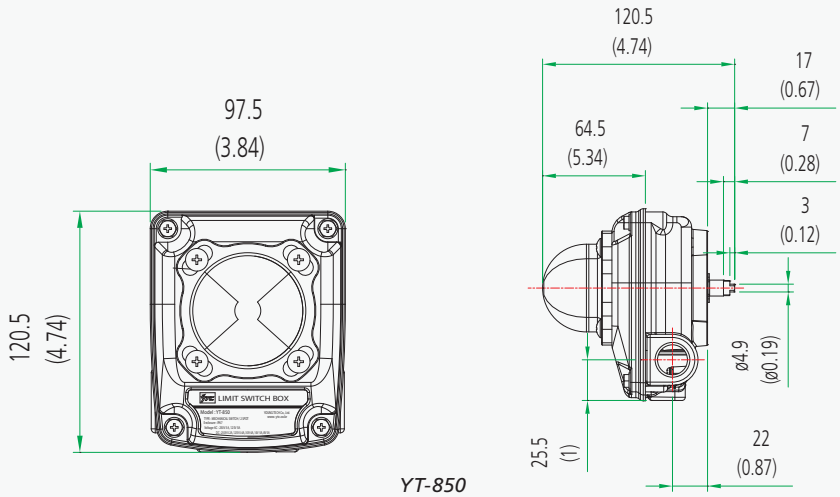
Model
YT-850 = Weatherproof Aluminum

Switching Type
M = Mechanical Switch (2xSPDT)
P = Proximity Type

Conduit
1 = NPT 1/2
3 = G 1/4
4 = M20

Bracket Type
0 = None
1 = ST-1 (30*80,H20)
2 = ST-2 (30*80,H30)
3 = ST-3 (30*130,H30)
4 = ST-4 (30*130,H50)

Dimensions: mm (Inches ")



YT-850

Limit Switch Boxes YT-870 / YT-875

Design features

- **Visual position indicator.** 360° viewing angle.
- **Multiple Output signals.** 8 contacts of terminal ports.
- **Universal Compatibility.** Suitable for any rotary motion actuator <IS05211>.
- **Easy configuration.** Simple adjustment of cam position.
- **Dual conduit entries.** Separate connections for power and signal cables.

Item Type		YT-870M YT-875M		YT-870P YT-875P		YT-870D YT-875D
Switch Type		Mechanical Switch (2 x SPDT)		Inductive Proximity Sensor		Mechanical Switch (2 x DPDT)
		SS5GL (Omron)	SS10GL (Omron)	PS17-5DNU (Autonics)	NJ2-V3-N (P&F)	DZ-10G-1B (Omron)
Switch Rating	AC	250 V 5 A 125 V 5 A	250 V 10.1 A 125 V 10.1 A	-	-	125 or 250 VAC 10 A 480 VAC 2 A
	DC	250 V 0.2 A, 125 V 0.4 A, 30 V 4 A, 14 V 5 A, 8 V 5 A		12 - 24 VDC	8.2 VDC	125 VDC 0.5 A 250 VDC 0.25 A
Ingress Protection		IP67				
Explosion Protection Type		**ATEX, IECEx** Ex db IIC T6, Ex tb IIIC T85°C **CSA** Ex db IIC T6 Class I, Zone 1, AEx db IIC T6 Class II, Division 1, Groups E, F and G, Ex tb IIIC T85°C Zone21, AEx tb IIIC T85°C **KCs** Ex d IIC T6				
Operating Temp.		-20 to 60 °C				
Conduit Entry		NPT3/4 (G3/4, M20, NPT1/2)				
Terminal		8 Points				
Mounting Bracket		NAMUR VDI / VDE 3845, ISO 5211				
Material and Weight	YT-870	Aluminium Diecasting: 1.5 kg (3.3 lb)				
	YT-875	Stainless Steel 316: 3.5 kg (7.7 lb)				

YT-870

YT-875

Product Code

YT-870 - M - 1 - 0 - 0

Model
YT-870 = Flameproof Aluminum
YT-875 = Flameproof Stainless Steel

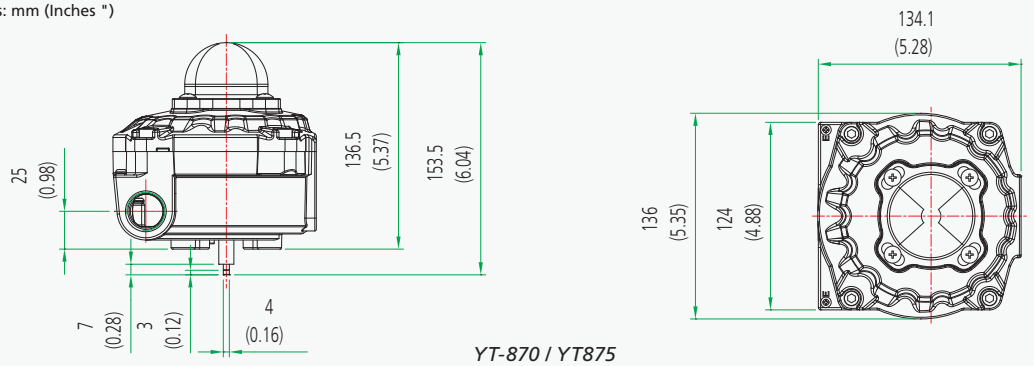
Switching Type
M = Mechanical Type (2 x SPDT)
P = Proximity Type
D = Mechanical Type (2 x DPDT)

Conduit
1 = NPT 3/4
2 = PF 3/4 (YT-870 only)
3 = M20 (YT-870 only)
4 = NPT 1/2 (YT-870 only)

Bracket Type
0 = None
1 = ST-1 (30*80,H20)
2 = ST-2 (30*80,H30)
3 = ST-3 (30*130,H30)
4 = ST-4 (30*130,H50)

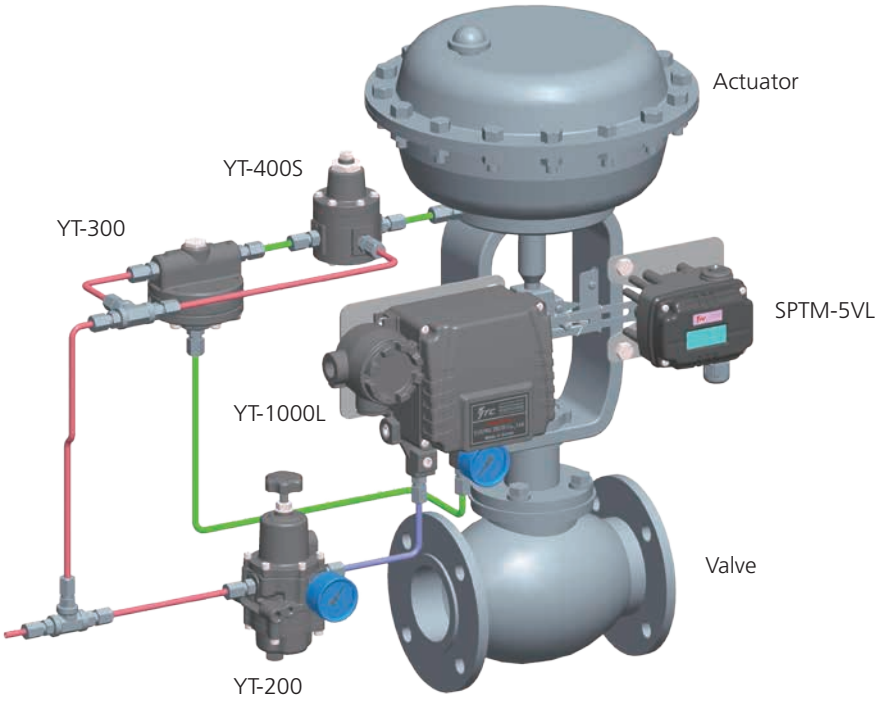
Option
0 = None
1 = SPTM

Dimensions: mm (Inches ")

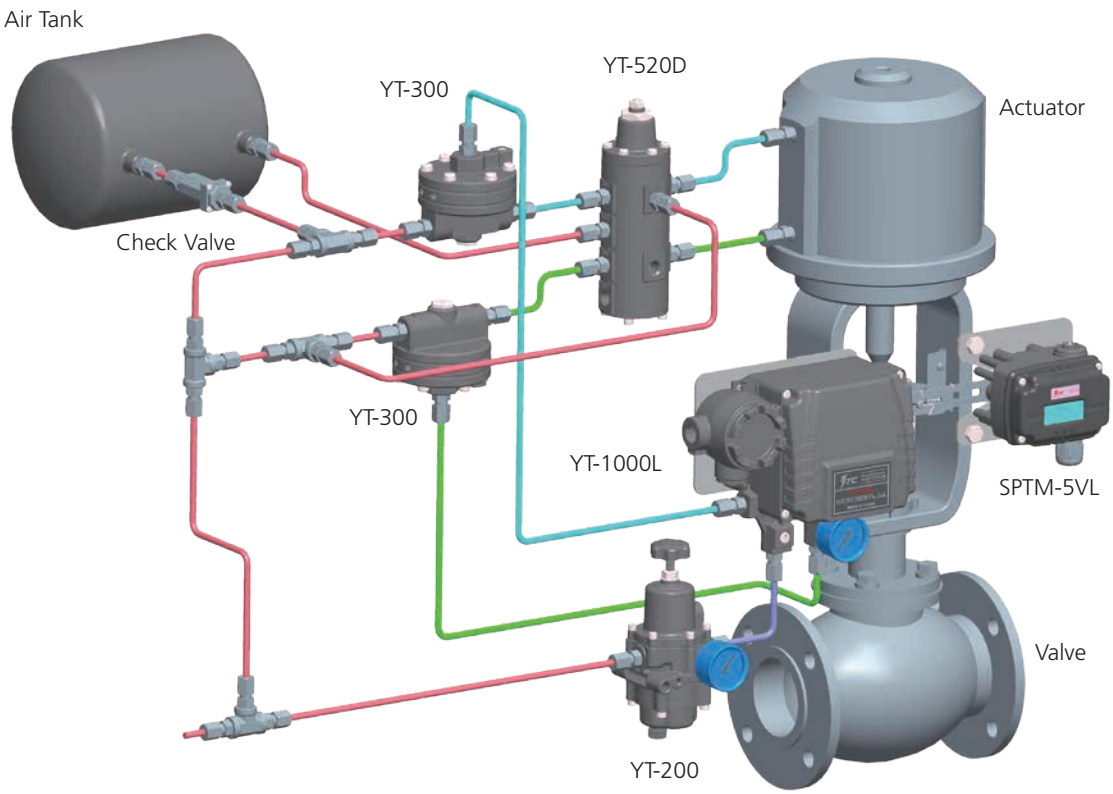


YT-870 / YT875

Examples for Installation (Linear Type)

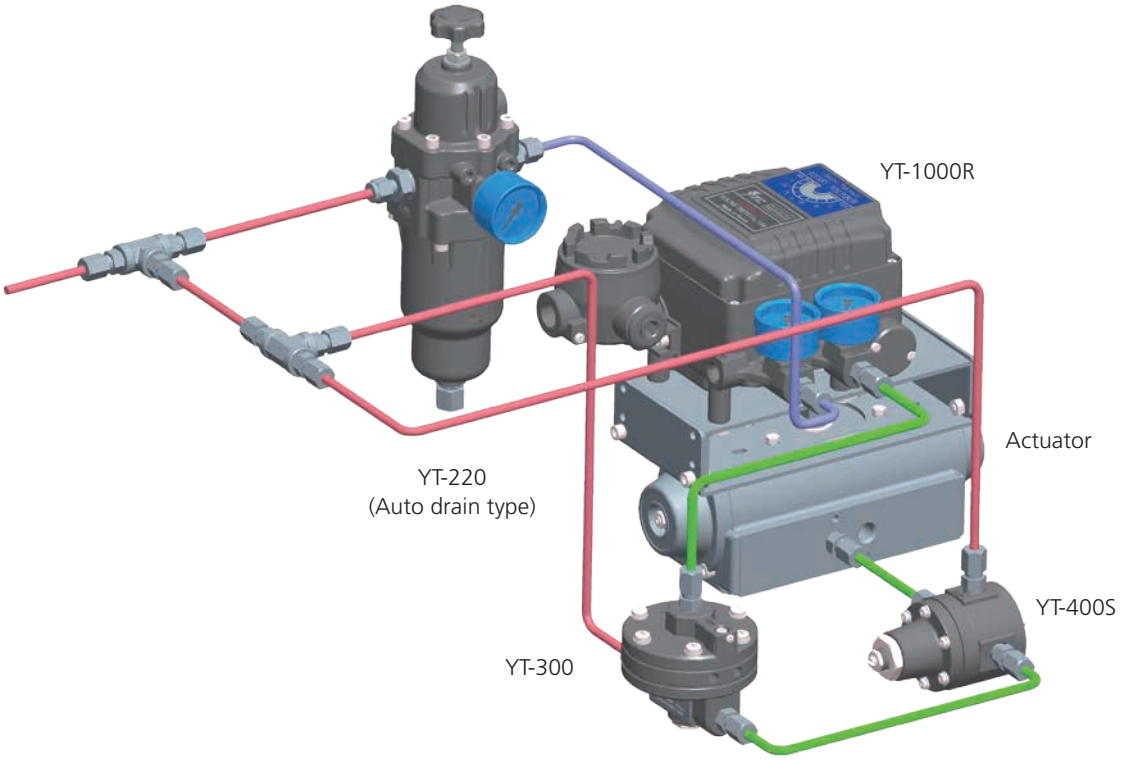


YT-1000L (Single type) Application Example

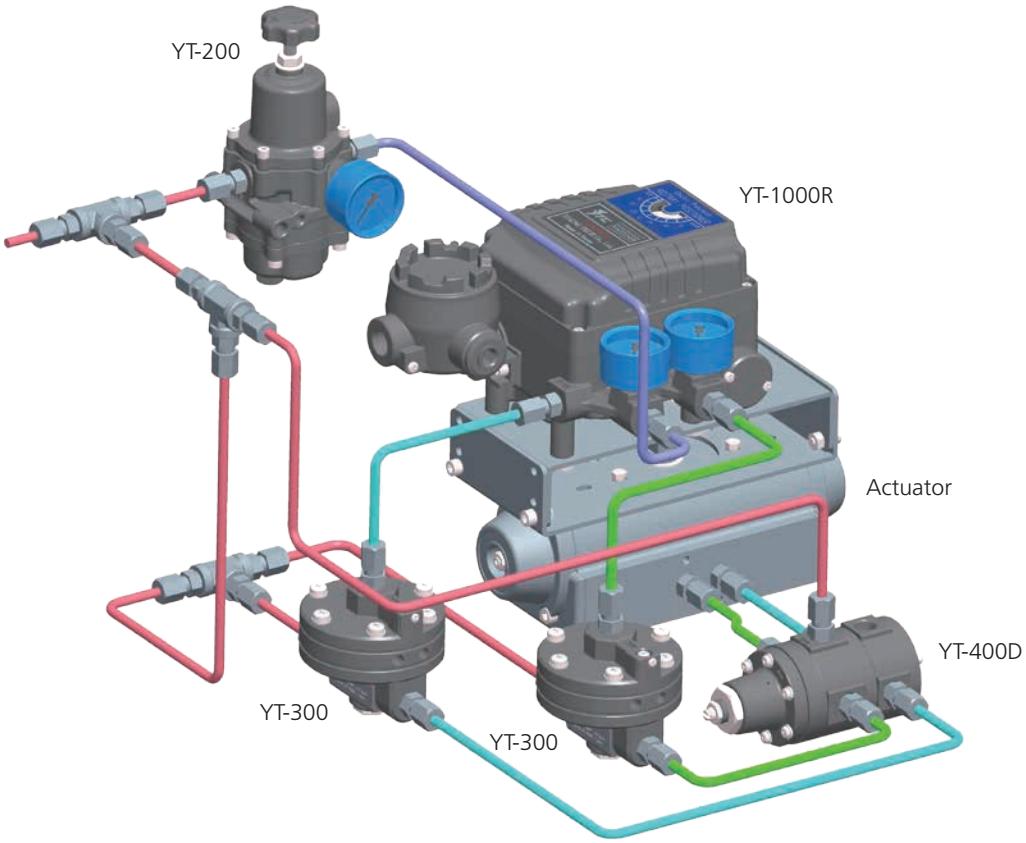


YT-1000L (Double type) Application Example

Examples for Installation (Rotary Type)



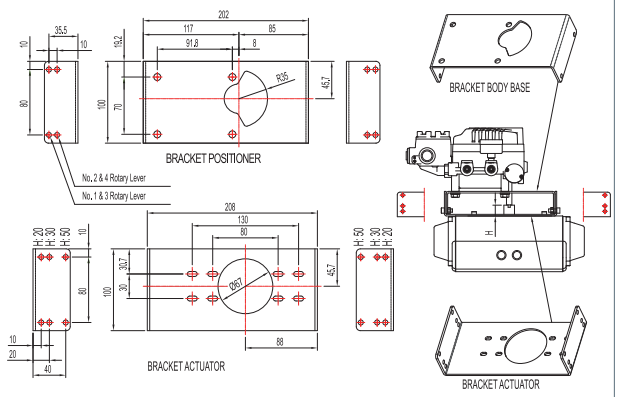
YT-1000R (Single type) Application Example



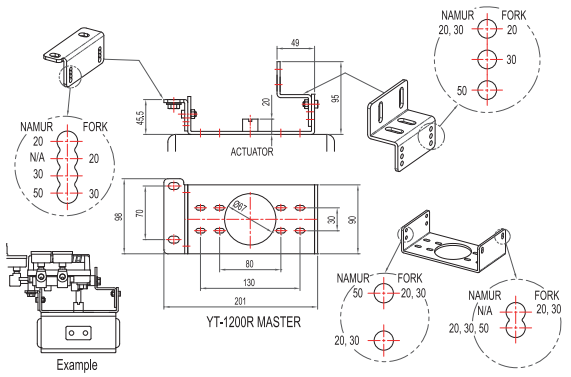
YT-1000R (Double type) Application Example

Brackets and Levers

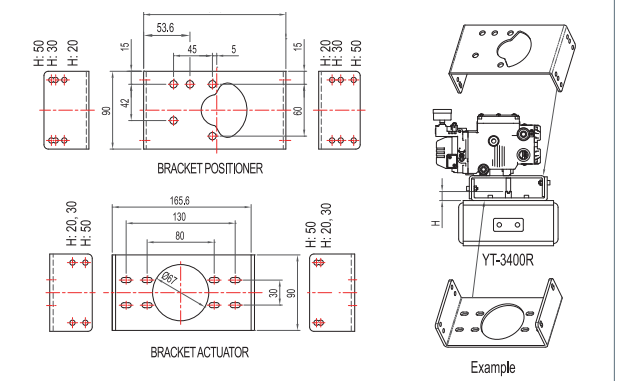
YT-1000R Bracket Series



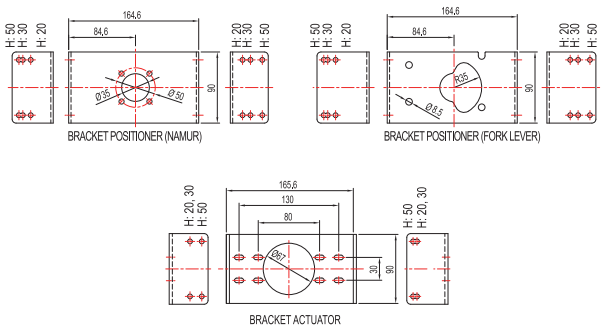
YT-1200R Bracket Series



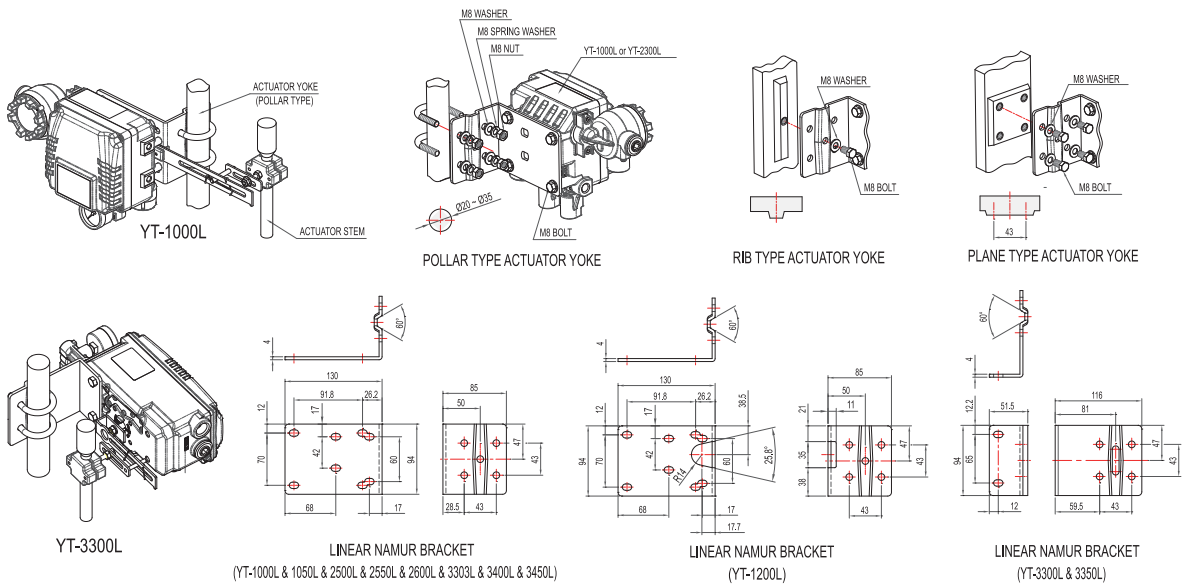
YT-2500R & 2550R & 2600R & 3303R & 3400R & 3450R Bracket Series



YT-3300R & 3350R Bracket Series

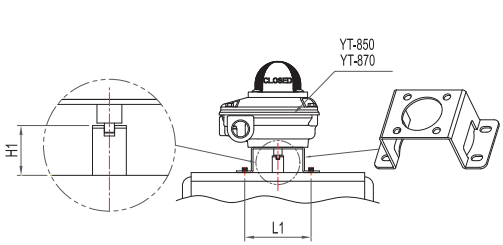


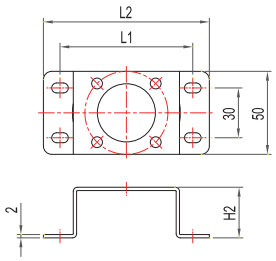
Linear Type Namur Bracket Series



Brackets and Levers

YT-850 & 870 & 875 Bracket Series

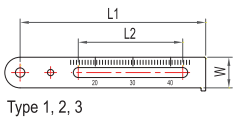




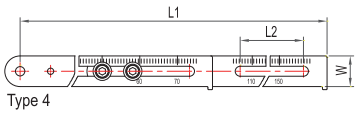
UNIT : mm

Bracket Type	H1	H2	L1	L2
ST-1	20	30.5	80	100
ST-2	30	40.5		
ST-3	30	40.5	130	150
ST-4	50	60.5		

Lever Series



Type 1, 2, 3

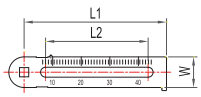


Type 4

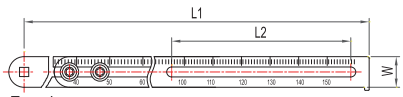
UNIT : mm

Lever Type	Stroke	L1	L2	W
1	10~40	121.2	68.2	20
2	30~70	195	120	
3	60~100	277	122	
4	100~150	400		

YT-1000 & 1200 Linear Type



Type 1, 2, 3

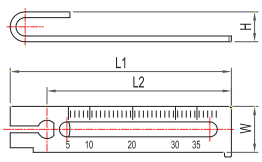


Type 4

UNIT : mm

Lever Type	Stroke	L1	L2	W
1	10~40	93	67	20
2	20~70	153.5	106.5	
3	50~100	214	117	
4	100~150	307.3		

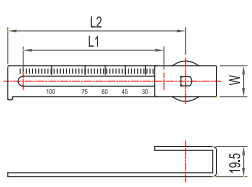
YT-2500 & 2550 & 2600 & 3303 & 3400 & 3450 & SPTM-5V & SPTM-6V& SPTM-65V Linear Type



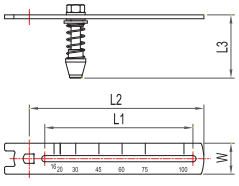
UNIT : mm

Stroke	L1	L2	W	H
5 ~ 35	96.3	80.3	20	13

YT-2700 Linear Type



Type 0, 1, 2

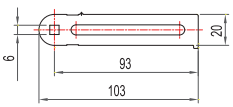


Type 3, 4, 5, 6

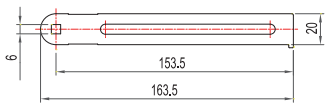
UNIT : mm

Lever Type	Stroke	L1	L2	L3	W
0 (Standard)	10 ~ 40	45	55	-	20
1 (Standard)	20 ~ 100	91	115		
2 (Standard)	90 ~ 150	85	165		
3 (Adapter)	16 ~ 30	27	43	40.9	
4 (Adapter)	16 ~ 60	64	80		
5 (Adapter)	16 ~ 100	96	113		
6 (Adapter)	90 ~ 150	80	167		

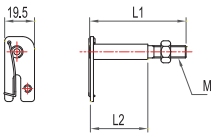
YT-3300 & YT-3350 Linear Type



SPTM-5V Rotary Type



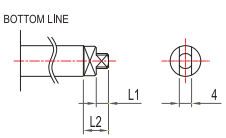
SPTM-6V & SPTM-65V Rotary Type



UNIT : mm

Lever Type	L1	L2	M
1	34	9	M6
2	63	37	
3	34	9	M8
4	63	37	

Rotary Fork Lever Type



UNIT : mm

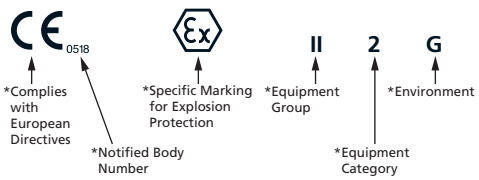
Model	L1	L2
E/P &P/P Positioner	7	11
Smart Positioner & SPTM-6V & SPTM-65V	4	8
SPTM-5V	4	9
YT-850 & 870 & 875	3	7

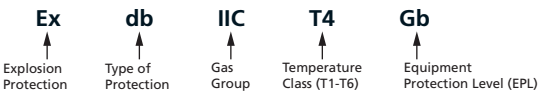
Rotary Namur Lever Type

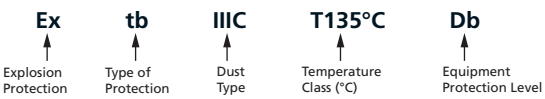
Appendix A: Equipment Certification Requirements for Hazardous Locations

ATEX & IECEx

Typical ATEX & IECEx Marking [*ATEX only]





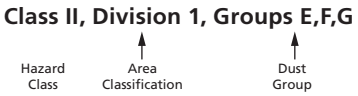


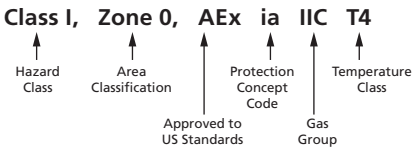
Protection Concepts

Type of Protection	Symbol	Typical IEC EPL	Typical Zone(s)	IEC Standard	Basic Concept of Protection
Electrical Equipment for Gases, Vapours and Mists (G)					
General Requirements	-	-	-	IEC 60079-0	-
Optical Radiation	Op pr Op sh Op is	Gb Ga Ga	1, 2 0, 1, 2 0, 1, 2	IEC 60079-28	Protection against ignitions from optical radiation
Increased Safety	eb ec	Gb Gc	1, 2 2	IEC 60079-7	No arcs, sparks or hot surfaces. Enclosure IP54 or better
Type 'n' (non-sparking)	nA	Gc	2	IEC 60079-15	
Flameproof	da db dc	Ga Gb Gc	0, 1, 2 1, 2 2	IEC 60079-1	Contain the explosion, quench the flame
Type 'n' (enclosed break)	nC	Gc	2	IEC 60079-15	
Quartz / Sand Filled	q	Gb	1, 2	IEC 60079-5	Quench the flame
Intrinsic Safety	ia ib ic	Ga Gb Gc	0, 1, 2 1, 2 2	IEC 60079-11	Limit the energy of sparks and surface temperatures
Type 'n' (sealing & hermetic sealing)	nC	Gc	2	IEC 60079-15	Keep the flammable gas out
Type 'n' (restricted breathing)	nR	Gc	2	IEC 60079-15	
Encapsulation	ma mb mc	Ga Gb Gc	0, 1, 2 1, 2 2	IEC 60079-18	
Electrical Equipment for Combustible Dusts (D)					
General Requirements	-	-	-	IEC 60079-0	-
Optical Radiation	Op pr Op sh Op is	Db Da Da	21, 22 20, 21, 22 20, 21, 22	IEC 60079-28	Protection against ignitions from optical radiation
Enclosure	ta tb tc	Da Db Dc	20, 21, 22 21, 22 22	IEC 60079-31	Standard protection for dusts, rugged tight enclosure
Intrinsic Safety	ia ib ic	Da Db Dc	20, 21, 22 21, 22 22	IEC 60079-11	Limit the energy of sparks and surface temperatures
Encapsulation	ma mb mc	Da Db Dc	20, 21, 22 21, 22 22	IEC 60079-18	Protection by encapsulation of incendive parts
Electrical Equipment for Combustible Dusts (D)					
General Requirements	-	-	-	EN 13463-1	Low potential energy
	h	Ga, Gb, Gc Da, Db, Dc	0, 1, 2 20, 21, 22	IEC 80079-36	
Flow Restricted Enclosure	fr	-	-	EN 13463-2	Relies on tight seals,closely matched joints and tough enclosures to restrict the breathing of the enclosure
Flameproof Enclosure	d	-	-	EN 13463-3	
Constructional Safety	c	-	0, 1, 2 20, 21, 22	EN 13463-5	Ignition hazards eliminated by good engineering methods
	h	Ga, Gb, Gc Da, Db, Dc	0, 1, 2 20, 21, 22	IEC 80079-37	
Control of Ignition Source	b	-	-	EN 13463-6	Control equipment fitted to detect malfunctions
	h	Ga, Gb, Gc Da, Db, Dc	0, 1, 2 20, 21, 22	IEC 80079-37	

cCS Aus

Typical North American Marking (CSA)





Protection Concepts

Type of Protection	Code	Country	Class	Division / Zone	Standard	Basic Concept of Protection
Electrical Equipment for Flammable Gas, Vapors and Mists - Class I						
General Requirements	AEx Ex	US CA US CA	Class I Class I Class I Class I	Division 1 & 2 Division 1 & 2 Zone 1 & 2 Zone 1 & 2	FM 3600 - ISA 60079-0 CSA 60079-0	
Increased Safety	AEx e Ex e	US CA	Class I Class I	Zone 1 Zone 1	ISA 60079-7 CSA C22.2 No. 60079-7	No arcs, sparks or hot surfaces
Non-Incendive	(NI) (NI)	US CA	Class I Class I	Division 2 Division 2	ISA 12.12.01 / FM 3611 C22.2 No. 213	
Non-Sparking	AEx nA Ex nA	US CA	Class I Class I	Zone 2 Zone 2	ISA 60079-15 CSA C22.2 No. 60079-15	
Explosion Proof	(XP) (XP)	US CA	Class I Class I	Division 1 Division 1	UL 1203 / FM 3615 C22.2 No. 30	Contain the explosion and extinguish the flame
Flameproof	AEx d AEx d Ex d	US US CA	Class I Class I Class I	Zone 1 Zone 1 Zone 1	ISA 60079-1 UL 1203 / FM 3615 CSA 60079-1	
Enclosed Break	AEx nC Ex nC	US CA	Class I Class I	Zone 2 Zone 2	ISA 60079-15 CSA C22.2 No. 60079-15	
Intrinsic Safety	(IS) (IS) AEx ia AEx ib EX ia Ex ib	US CA US US CA CA	Class I Class I Class I Class I Class I Class I	Division 1 Division 1 Zone 0 Zone 1 Zone 0 Zone 1	UL 913 / FM 3610 C22.2 No. 157 ISA 60079-11 / FM 3610 ISA 60079-11 / FM 3610 CSA C22.2 No. 60079-11 CSA C22.2 No. 60079-11	Limit energy of sparks and surface temperature
Limited Energy	AEx nC Ex nL	US CA	Class I Class I	Zone 2 Zone 2	ISA 60079-15 CSA C22.2 No. 60079-15	
Restricted Breathing	AEx nR Ex nR	US CA	Class I Class I	Zone 2 Zone 2	ISA 60079-15 CSA C22.2 No. 60079-15	Keep flammable gas out
Encapsulated	AEx ma AEx m Ex m AEx mb	US US CA US	Class I Class I Class I Class I	Zone 0 Zone 1 Zone 1 Zone 1	ISA 60079-18 ISA 60079-18 CSA C22.2 No. 60079-18 ISA 60079-18	
Electrical Equipment for Flammable Gas, Vapors and Mists - Class I						
General Requirements	Ex	US CA US CA US	Class II Class II Class III Class III -	Division 1 & 2 Division 1 & 2 Division 1 & 2 Division 1 & 2 Zone 20, 21, 22	FM 3600 CSA C22.2 No.0 FM 3600 CSA C22.2 No.0 ISA 60079-0	
Dust Ignition Proof	-	US CA	Class II Class II	Division 1 Division 1	UL 1203 / FM 3616 CSA C22.2 No. 25	Keep combustible dust out
Dust Protected	-	US CA	Class II Class II	Division 2 Division 2	ISA 12.12.01 / FM 3611 CSA C22.2 No. 25	
Protection by Enclosure	AEx ta AEx tb AEx tc Ex ta Ex tb Ex tc	US US US CA CA CA	Class II Class II Class II Class II Class II Class II	Zone 20 Zone 21 Zone 22 Zone 20 Zone 21 Zone 22	ISA 60079-31 ISA 60079-31 ISA 60079-31 CSA C22.2 No. 60079-31 CSA C22.2 No. 60079-31 CSA C22.2 No. 60079-31	
Encapsulation	AEx maD AEx mbD	US US	- -	Zone 20 Zone 21	ISA 60079-18 ISA 60079-18	
Intrinsic Safety	(IS) (IS) AEx iaD AEx ibD (IS) (IS)	US CA US US US CA	Class II Class II - - Class III Class III	Division 1 Division 1 Zone 20 Zone 21 Division 1 Division 1	UL 913 / FM 3610 CSA C22.2 No. 157 ISA 60079-11 ISA 60079-11 UL 913 / FM 3610 CSA C22.2 No. 157	Limit energy of sparks and surface temperature

Appendix A: Equipment Certification Requirements for Hazardous Locations

ATEX & IECEx Certificate Number

SIRA — Name of Notified Body performing EC-type examination

13 — Year of Certification

ATEX — Reference to ATEX 95 Directive

1234 — Serial Number

IECEx — Name of Notified Body performing EC-type examination

CSA — Name of Body Performing IECEx Certification

13.1234 — Year of Certification; Serial Number

Suffixes: U – component certification
X – special conditions for safe use apply

Apparatus Groups [ATEX and IECEx]

Group	Environment	Location	Typical Substance
I	Gases, Vapours	Coal Mining	Methane (Fire damp)
IIA		Surface and other locations	Acetic acid, Acetone, Ammonia, Butane, Cyclohexane, Gasoline (petrol), Kerosene, Methane (natural gas) (non-mining), Methanol (methyl alcohol), Propane, Propan-2-ol (iso-propyl alcohol), Toluene, Xylene
IIB			Di-ethyl ether, Ethylene, Methyl ethyl ketone (MEK), Propan-1-ol (n-propyl alcohol), Ethanol (ethyl alcohol)
IIC			Acetylene, Hydrogen, Carbon disulphide
IIIA	Combustible Dusts	Surface and other locations	Combustible flyings
IIIB			Non-conductive
IIIC			Conductive

Apparatus Groups (US / CAN)

Substance	Hazard Class	NEC 500	NEC 505
Acetylene	Class I Flammable Gases	Group A	IIC
Hydrogen		Group B	IIC
Ethylene		Group C	IIB
Propane		Group D	IIA
Methane (mining)		Group D	-
Combustible Metal Dusts	Class II Combustible Dusts	Group E	-
Combustible Carbonaceous Dusts		Group F	-
Combustible Dusts not in Group E or F (Flour, Grain, Wood, Plastics, Chemicals)		Group G	-
Combustible Fibers and Flyings	Class III Fibers and Flyings	-	-

Classification of Divisions and Zones

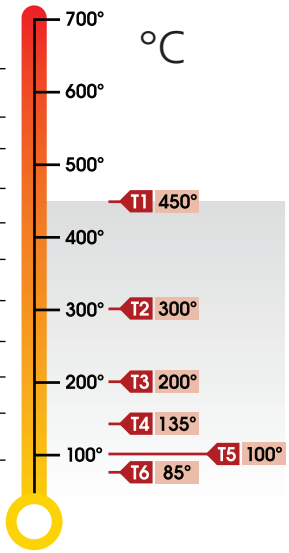
Type of Area	NEC and CEC*	ATEX and IEC	Definitions
Continuous hazard	Division 1	Zone 0 / Zone 20 Cat 1	A place in which an explosive atmosphere is continuously present
Intermittent hazard	Division 1	Zone 1 / Zone 21 Cat 2	A place in which an explosive atmosphere is likely to occur in normal operation
Hazard under abnormal conditions	Division 2	Zone 2 / Zone 22 Cat 3	A place in which an explosive atmosphere is not likely to occur in normal operation, but may occur for short periods

* On occasion the ATEX and IEC Zones may be used in the corresponding NEC and CEC system

Temperature Classification

Classification of maximum surface temperatures for Group II Electronic Equipment (T Class).

IIA	T1	Ammonia	630°
IIC	T1	Hydrogen	560°
IIA	T1	Methane	537°
IIA	T1	Propane	470°
IIB	T2	Ethylene	425°
IIA	T2	Butane	372°
IIC	T2	Acetylene	305°
IIA	T3	Cyclohexane	259°
IIA	T3	Kerosene	210°
IIB	T4	Di-ethyl Ether	160°
IIC	T6	Carbon Disulphide	95°



Dusts Typical Ignition Temperatures (°C)

Dusts	Cloud	Layer
Aluminium	590 °C	>450 °C
Coal dust (lignite)	380 °C	225 °C
Flour	490 °C	340 °C
Grain dust	510 °C	300 °C
Methyl cellulose	420 °C	320 °C
Phenolic resin	530 °C	>450 °C
Polythene	420 °C	(melts) °C
PVC	700 °C	>450 °C
Soot	810 °C	570 °C
Starch	460 °C	435 °C
Sugar	490 °C	460 °C

Ingress Protection Codes

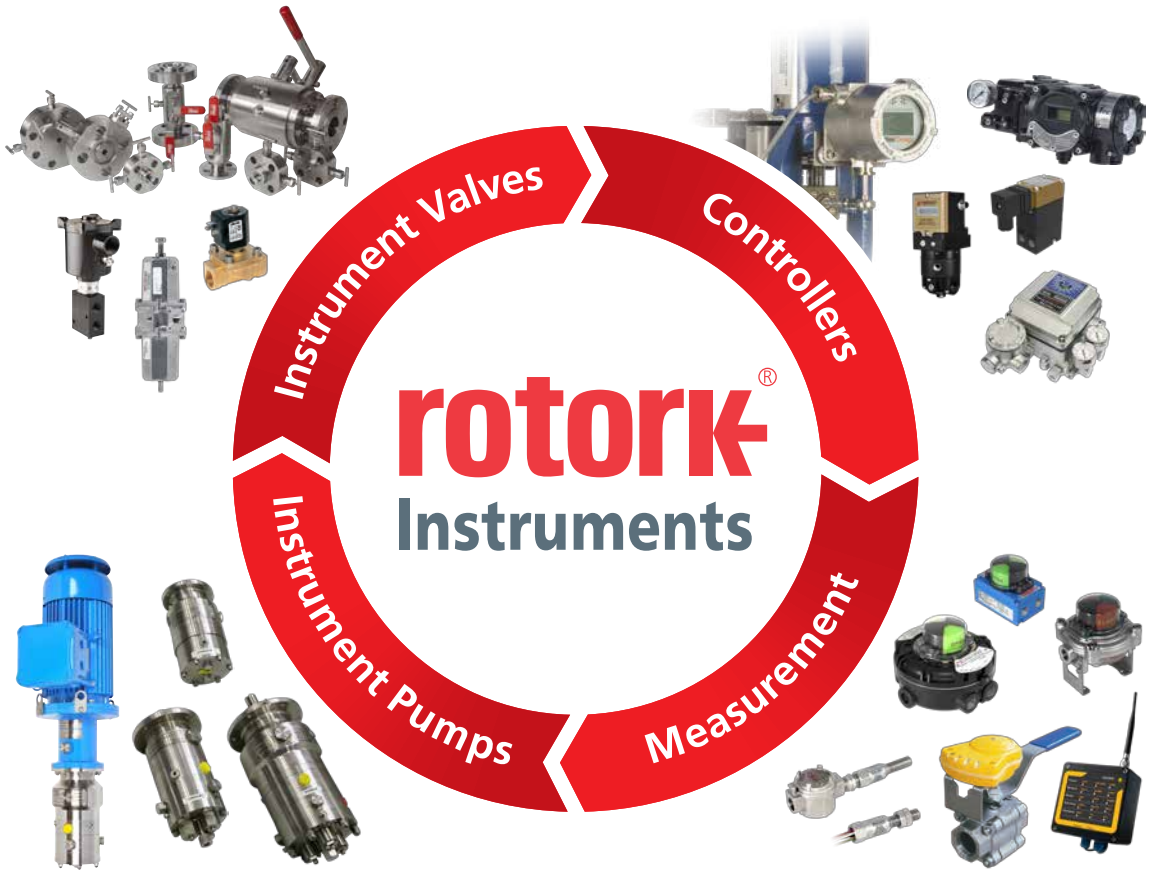
First Number (protect from solid bodies)		Second Number (protect from water)	
0	No protection	0	No protection
1	Objects > 50mm	1	Vertical drip
2	Objects > 12.5mm	2	Angled drip
3	Objects > 2.5mm	3	Spraying
4	Objects > 1.0mm	4	Splashing
5	Dust-protected	5	Jetting
6	Dust-tight	6	Powerful jetting
		7	Temporary immersion
		8	Continuous immersion

Enclosure Type Ratings (NEMA / CSA / UL)

Type	Area	Brief Definition
1	Indoor	General purpose
2	Indoor	Protection against angled dripping water
3, 3R, 3S	Indoor / Outdoor	Protection against rain, snow
4, 4X	Indoor / Outdoor	Protection against rain, snow, hose directed water
5	Indoor	Protection against angled dripping water, dust, fibers, flyings
6	Indoor / Outdoor	Protection against temporary submersion
6P	Indoor / Outdoor	Protection against prolonged submersion
12, 12K	Indoor	Protection against circulating dust, fibers, flyings
13	Indoor	Protection against circulating dust, fibers, flyings, seepage

Appendix B: Certifications

Product Type	Model Number	Cert. Type	Rating
Electro-Pneumatic Positioner	YT-1000 / 1050	ATEX	II 2G Ex db mb IIB T5 Gb
		IECEx	Ex db mb IIB T5 Gb
	YT-1000	FM	XP-S/I/1/CD/T5 Ta=60°C; DIP/II,III/1/EFG/T5 Ta=60°C; Type 4X
		CSA	(Class I, Zone 1) Ex dm IIB T5
		NEPSI	Ex dmb IIC T6 Gb
		TIIS	Ex dmb IIB T5
		TS	Ex db mb IIB T5 Gb X
		KCs	Ex dmb IIB T5/T4
			Ex d IIC T5 IP66
			Ex ia IIB T6 Gb
	YT-1050	KCs	Ex dmb IIB T5
Smart Positioner	YT-3300 / 3350 /3303 / 3301 / 3400 / 3450	SIL	SIL2/SIL3
	YT-3300 / 3350 / 3303 / 3301	ATEX	Ex ia IIC T5/T6 Gb, EX iaD IIIC T100°C/T85°C Db IP66
		IECEx	Ex ia IIC T5/T6 Gb, EX iaD IIIC T100°C/T85°C Db IP66
	YT-3300 / 3350 / 3303 / 3301	FM	Class I, Div 1, Groups ABCD Class I, Zone 0 AEx ia IIC Class II/III, Div 1, Groups EFG Class I, II, III, Div 2, Groups ABCDEFG NEMA Type 4 IP66
	YT-3300 / 3350 / 3303 / 3301	CSA	Pending
	YT-3300	NEPSI	Ex ia IIC T5/T6
		KCs	Ex ia IIC T5/T6, EX iaD IIIC T100°C/T85°C
	YT-3350	KCs	Ex ia IIC T5/T6, EX iaD IIIC T100°C/T85°C
	YT-3303	KCs	Ex ia IIC T5/T6, EX iaD IIIC T100°C/T85°C
	YT-3301	KCs	Ex ia IIC T5/T6, EX iaD IIIC T100°C/T85°C
	YT-3400 / 3450	ATEX	Ex db IIC T5/T6, Ex tb IIIC T85°C/T100°C
		IECEx	Ex db IIC T5/T6, Ex tb IIIC T85°C/T100°C
		FM	XP/I/1/ABCD/T6 Ta= -40°C to +70°C, T5 Ta= -40°C to +80°C I/1/AEx db/IIC/T6 Ta= -40°C to +70°C, T5 Ta= -40°C to +80°C DIP/II, III/1/EFG/T6 Ta= -40°C to +70°C, T5 Ta= -40°C to +80°C 21/AEx tb/IIIC/T85°C Ta= -40°C to +70°C, T100°C Ta= -40°C to +80°C; IP66
		CSA	Ex db IIC T5 or T6 Class I, Zone 1, AEx db IIC T5 or T6, Class II, Division 1, Groups E, F and G; Ex tb IIC T85°C/T100°C AEx tb IIIC T85°C/T100°C
		NEPSI	Ex db IIC T5/ T6, DIP A21 TA, T5/T6
	YT-3400	KCs	Ex d IIC T5/T6 IP66
	YT-3450	KCs	Ex d IIC T5/T6, Ex tb IIIC T85°C/T100°C
	YT-2500 / 2550 / 2501	ATEX	Ex ia IIC T5/T6 Gb, Ex iaD IIC T85°C/T100°C IP6X
		IECEx	Ex ia IIC T5/T6 Gb, Ex iaD IIC T85°C/T100°C IP6X
	YT-2500	NEPSI	Ex ia IIC T5/T6
		KCs	Ex ia IIC T5/T6, EX iaD IIIC T100°C/T85°C
	YT-2550	KCs	Ex ia IIC T5/T6, EX iaD IIIC T100°C/T85°C
	YT-2501	KCs	Ex ia IIC T5/T6, EX iaD IIIC T100°C/T85°C
	YT-2600	ATEX	Ex db IIC T5/T6, Ex tb IIIC T85°C/T100°C
		IECEx	Ex db IIC T5/T6, Ex tb IIIC T85°C/T100°C
		KCs	Ex d IIC T5/T6 IP66
	YT-2700	KCs	Ex ia IICT5
IP Converter	YT-930	ATEX	Ex ia IIC T5/T6 Gb, Ex ia IIIC T100°C/T85°C Db
		IECEx	Ex ia IIC T5/T6 Gb, Ex ia IIIC T100°C/T85°C Db
	YT-940	FM	Class I Division 1, Groups A, B, C, D; T6 Ta= -40°C to +75°C, T5 Ta= -40°C to +85°C; Type4X, IP66 Class II, III Division1, Groups E, F, G;T6 Ta=-40°C to+75°C, T5 Ta=-40°C to+85°C; Type4X, IP66 Class I, Zone 1, AEx d IIC T6 Ta= -40°C to + 75°C, T5 Ta= -40°C to +85°C, Type 4X, IP66 Zone 21 AEx tb IIIC T85°C Ta= -40°C to +75°C, T100°C Ta= -40°C to +85°C, Type 4X, IP66
		CSA	Ex db IIC T5 or T6 Ex tb IIC T85'C/T100'C, IP66
		KCs	Ex d IIC T5/T6
Solenoid Valve	YT-720	KCs	Ex d IIC T6
Position Transmitter	SPTM-5V	KCs	Ex ia IIC T5
	SPTM-6V	KCs	Ex d IIC T6 IP67
	SPTM-65V	KCs	Ex d IIC T6 IP67
Limit Switch	YT-870 / 875	ATEX	Ex db IIC T6, Ex tb IIIC T85°C
		IECEx	Ex db IIC T6, Ex tb IIIC T85°C
		CSA	Ex db IIC T6 Class I, Zone 1, AEx db IIC T6 Class II, Division 1, Groups: E, F and G, Ex tb IIIC T85°C Zone 21, AEx tb IIIC T85°C
	YT-870	KCs	Ex d IIC T6
	YT-875	KCs	Ex d IIC T6
Volume Booster	YT-300 / 305 / 320 / 325 / 310 / 315	SIL	SIL3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Rotork plc
Brassmill Lane, Bath, UK
tel +44 (0)1225 733200
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email mail@rotork.com

Young Tech Co., LTD
81, Hwanggeum-ro 89 beon-gil, Yangchon-eup,
Gimpo-si, Gyeonggi-do, South Korea, 10048
web www.ytc.co.kr
tel +82 31 986 8545
fax +82 70 4170 4927
email ytc.sales@rotork.com

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