Rotork Group

Rotork is a market-leading global provider of mission-critical flow control and instrumentation solutions for the industrial actuation and flow control markets. These include oil and gas, water and wastewater, power, chemical process and industrial applications.

Customers rely on us for innovative, high quality and dependable solutions for managing the flow of liquids, gases and powders. We help customers around the world to improve efficiency, reduce emissions, minimise their environmental impact and assure safety.

Our reliability record is second to none. Our products are designed with safety and performance at their core and are put through vigorous testing and certified to international standards. Our products are certified for use in the world's most dangerous, and hazardous areas.

Partnering with us provides the following:

- Assured safety and reliability
- Industry leading accuracy and efficiency
- Proven technology that works with all network control systems
- Product range with solutions to suit every application
- Assistance with plant planning, development and maintenance through our local support services
- We have innovative research and development centers throughout the world

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Valve Positioner Features Summary

rotork®



Type	P/P	E/P		Smart		
Model	YT-1200	YT-1000	YT-1050	YT-2500	YT-2550	YT-2600
Page	29	30		24		26
Certification						
Flame proof	-	✔		-		✔
Intrinsically safe	-	✔		✔		-
ATEX/IECEx	-	✔		✔		✔
FM/CSA	-	✔		-		-
KCs	-	✔		✔		✔
CCC/NEPSI	-	✔		✔		-
TIIS	-	✔	-	-		-
EMC	-	✔		✔	-	✔
SIL certified	-	-		-		-
Hardware						
Technology	Bellows	Torque motor		Piezo		Piezo
Local buttons	-	-		✔		✔
LCD display	-	-		✔		✔
Single / double	✔	✔		✔		✔
Linear / rotary	✔	✔		✔		✔
Feedback	Spring-return	Spring-return		Potentiometer		Potentiometer
Position feedback	-	-		-		-
Fail-safe	✔	✔		✔		✔
Fail-freeze	-	-		✔		✔
Natural gas capability	-	-		-		-
IP rating	IP66	IP66		IP66		IP66
NEMA rating	-	NEMA 4X		-		-
Enclosure material	Aluminium	Aluminium	STS316	Aluminium	STS316	Aluminium
Diagnostics						
Mounting error	-	-		✔		✔
Supply air check	-	-		✔		✔
Range error	-	-		✔		✔
Partial stroke test	-	-		-		-
Dashboard	-	-		-		-
Premium online diagnostics	-	-		-		-
Enhanced diagnostics	-	-		-		-
Feedback option						
4-20 mA analogue output	✔ [1]	✔		✔		✔
Mechanical switches	✔ [1]	✔ [1]		✔		-
Proximity sensors	✔ [1]	✔ [1]		✔		-
Digital output (or TR output)	-	-		-		✔
Comm.						
HART®	-	-		Ver. 5		Ver. 5
Profibus®	-	-		-		-
Foundation Fieldbus®	-	-		-		-

Notes:
1. Available for rotary version only. In case of hazardous Ex installation area external mount through limit switch box is required.
2. EMC only for YT-3301, not for YT-3303.
3. Available with potentiometer feedback.

Valve Positioner Features Summary



Smart								
RTP-4400	**YT-3100**	**YT-3300**	**YT-3350**	**YT-3301/2/3**	**YT-3700**	**YT-3750**	**YT-3400**	**YT-3450**
12	14	16		18	20		22	
✔	-	-		-	-		✔	
✔	✔	✔		✔	✔		-	
✔	✔	✔		✔	✔		✔	
-	-	✔		✔	✔		✔	
-	✔	✔		✔	✔		✔	
-	✔	✔		✔	✔		✔	
-	-	-		-	-		-	
-	-	✔		✔ [2]	✔		✔	
-	-	✔		✔	✔		✔	
Torque motor	Torque motor	Torque motor		Torque motor	Torque motor		Torque motor	
✔	✔	✔		✔	✔		✔	
✔	✔	✔		✔	✔		✔	
✔	✔	✔		✔	✔		✔	
✔	✔	✔		✔	✔		✔	
Linkage-less NCS	NCS	NCS		Potentiometer	NCS		NCS	
✔	-	-		-	-		-	
✔	✔	✔		✔	✔		✔	
-	-	-		-	-		-	
-	-	North America markets only		North America markets only	North America markets only		North America markets only	
IP66	IP66	IP66		IP66	IP66		IP66	
-	-	NEMA 4X		NEMA 4X	NEMA 4X		NEMA 4X	
Aluminium	Aluminium/plastic	Aluminium	STS316	Aluminium	Aluminium	STS316	Aluminium	STS316
✔	✔	✔		✔	✔		✔	
✔	✔	✔		✔	✔		✔	
✔	✔	✔		✔	✔		✔	
✔	-	✔		✔	✔		✔	
✔	-	-		-	-		-	
✔	-	-		-	-		-	
Advanced	-	-		-	✔		✔	
✔	✔	✔		-	✔		✔	
-	-	✔ [3]		-	✔		-	
-	-	✔ [3]		-	✔		-	
✔	-	-		-	✔		✔	
Ver. 7	-	Ver. 7		Ver. 7	Ver. 7		Ver. 7	
-	-	✔		-	-		-	
-	-	✔		-	-		-	

Smart Positioner Selection

Application guide

Compact and lightweight design for modulating applications
- Fail safe
- Modulating functions
- PID control
- Optional 4-20mA feedback

Fail freeze applications
- Zero air consumption
- Modulating functions
- PID control
- Optional 4-20mA feedback

Extended features for all applications
- Fail safe
- HART DD & DTM
- Non-contact sensor
- Basic PST capabilities

YT-3300 only:
- Profibus, FF comm.

YT-3400 only:
- Enhanced diagnostic
- Digital I/O comm.
- NE107 alarms log

Enhanced diagnostic and PST for control and on-off valves
- Fail safe
- Enhanced diagnostic
- HART DD & DTM
- Digital I/O comm.
- NE107 alarms log
- Non-contact sensor

High-end intelligent positioner with premium online diagnostics
- Premium online diagnostics with dashboard and valve signature
- Linkage-less NCS
- HART DD & DTM
- High pneumatic capacity
- Dual certification

YT-3100	YT-2500	YT-3300	YT-3700	RTP-4400 Premium online diagnostics
				
	HART	HART PROFIBUS	HART	HART
Safe area and Hazardous area: Intrinsically safe protection Ex ia	**YT-2600**  HART	**YT-3400**  HART	**YT-3400** Enhanced diagnostic option  HART	**Hazardous area: Flameproof protection** Ex d

Technical guide

Torque motor / flapper nozzle technology
- Extremely reliable
- Responsive and precise
- High resistance to humidity and contaminated air
- Low air consumption

Piezo valve technology
- Fail freeze (fail last)
- Zero air consumption

Torque motor / flapper nozzle technology
- Extremely reliable
- Responsive and precise
- High resistance to humidity and contaminated air
- Low air consumption

Torque motor / flapper nozzle technology
- Extremely reliable
- Responsive and precise
- High resistance to humidity and contaminated air
- Low air consumption

Linkageless non-contact position feedback
- Designed for harsh environments
- Potted electronics
- Magnet-based position sensing, no mechanical linkages
- High-capacity with optimised supply air consumption

YT-3100	YT-2500	YT-3300	YT-3700	RTP-4400 Premium online diagnostics
				
	HART	PROFIBUS	HART	HART
	YT-2600  HART	**YT-3400**  HART	**YT-3400** Enhanced diagnostic option  HART	

Low temperature application down to -30 °C

Arctic temperature application down to -55 °C

Multiple Bus Connectivity

HART communication

The HART Communication Protocol (Highway Addressable Remote Transducer) is a hybrid, analogue and digital, industrial automation protocol.

HART provides two simultaneous communication channels: the 4-20 mA analogue signal and a digital signal. The 4-20 mA signal communicates the primary measured value. Additional device information is communicated using a superimposed digital signal on the analogue one.

Rotork can offer a complete positioner portfolio from fail-freeze (fail-last) to fail-safe devices, all including easy handling and commissioning via HART communication protocol.

- Device Description (DD) and Device Type Manager (DTM) files allow the Rotork device to be incorporated into asset management systems
- Up to 63 devices on each network

Foundation Fieldbus

Foundation Fieldbus is a bi-directional communications protocol used for communications among field devices and the control system.

It utilises twisted pair or fibre media to communicate between multiple nodes (devices) and the controller. The controller requires only one communication point to communicate with up to 32 nodes, this is a significant improvement over the standard 4-20 mA communication method which requires a separate connection point for each communication device on the controller system.

- Device Description (DD) files describe the device capabilities to the host system
- Fully compliant with IEC61158-2 standard

Profibus Process Automation (PA)

Profibus manages equipment via a process control system in process automation applications.

The PA variant is designed for use in hazardous areas (Ex zones 0 and 1). The Physical Layer, with over the bus power, limits current flow so that explosive conditions are not created, even if a malfunction occurs. The number of devices attached to a Profibus PA segment is limited by this feature. However, PA uses the same protocol as Profibus DP, and can be linked to a Profibus DP network using a coupler device.

The much faster Profibus DP acts as a backbone network for transmitting process signals to the controller. This means that Profibus DP and Profibus PA can work tightly together, especially in hybrid applications where process and factory automation networks operate side by side.

- Electronic Device Description (EDD) and Device Type Manager (DTM) files allow the Rotork device to be incorporated into asset management systems
- General Station Description (GSD) guarantees device interoperability with all Profibus PLCs

Enhanced diagnostic capabilities are available for YT-3700, YT-3750, YT-3400 and YT-3450 products. Advanced and Premium diagnostics are available for the RTP-4400.



These products deliver diagnostic capabilities in safe and hazardous areas, using intrinsically safe or Ex d explosionproof protection methods. Aluminium or stainless steel construction materials provide flexibility to meet application demands.

Enhanced Diagnostics

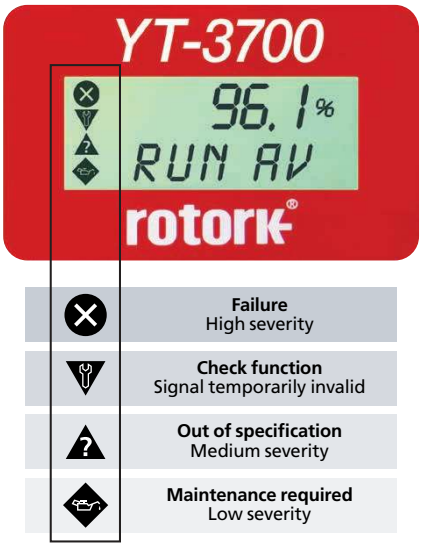
Alarms

Embedded memory can store up to 11 PST test results and up to 20 alarm logs. Through DTM, the history of files will be easy to detect and the valve system integrity easily verified.

Examples of user-configurable alarm/status based on NE107 status signal:

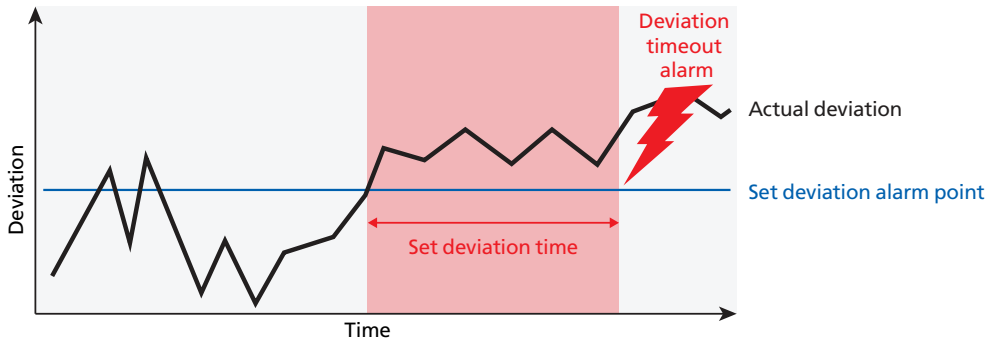
- Critical NVM failure
- Travel sensor failure
- RAM defect
- Drive signal
- Temperature signal
- Deviation
- Travel accumulator
- Cycle counter
- Full close/open count
- PST failure
- Auto calibration failure

Note: Alarm severity can be set by an operator



Explanation of on-screen icons

A deviation time out alarm occurs when the difference between the target position and the actual position exceeds the preset deviation alarm point (for more than the preset deviation time).



Enhanced Diagnostics

Online diagnostics

These digital smart positioners employ continuous monitoring and graphic display of valve position, setpoint target vs time and internal circuit board temperature vs time.

Steady state deviation online analysis can detect:

- Friction in the valve or actuator
- Leakage in pneumatics
- Insufficient supply pressure

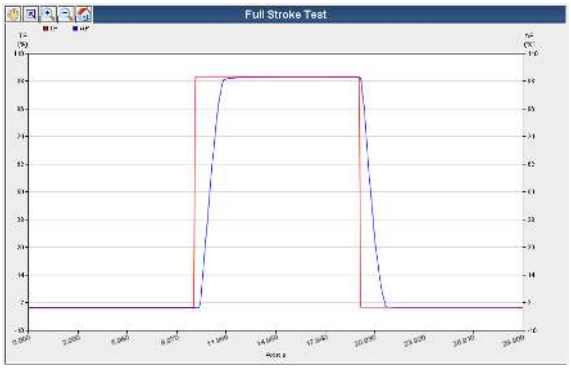


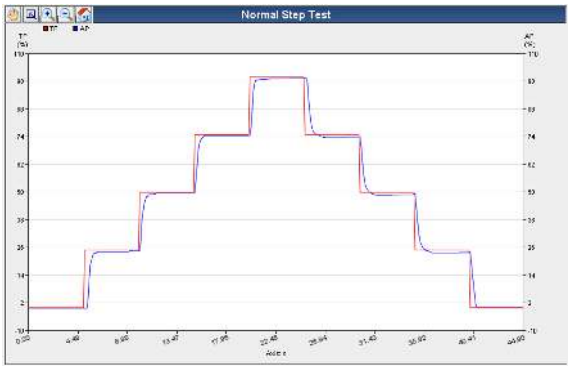
Offline diagnostics

Automated package tests, checking integrity and dynamic behaviour:

- Valve signature
- 25% step test
- Large step test
- Performance step test

These tests provide data to validate system performances. The system allows a reference to be set for further analysis highlighting performance shifts for predictive maintenance.





Partial Stroke Test (PST) capabilities

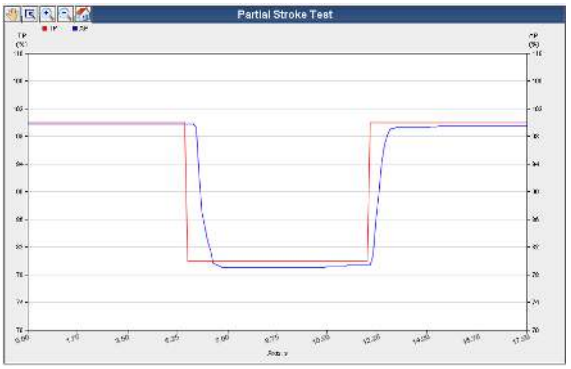
Automated PST functionality:

Configurable parameters

- PST interval [days]
- Position tolerance [%]
- PST start position [%]
- Target position [%]
- PST time out limit [sec]
- Target position hold time [sec]
- PST ramp up/down [%/sec] to reduce risks of overshooting system

Test activation via:

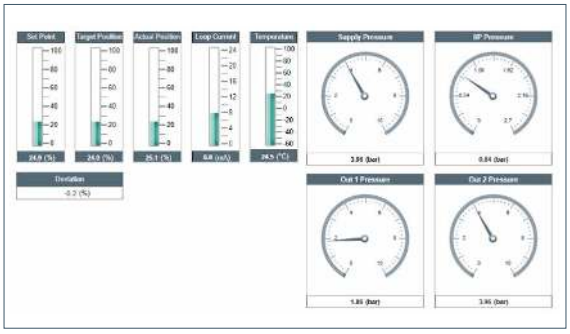
- Local positioner menu
- Remote DI control push button
- Remote HART® connection



Advanced Diagnostics

Features include:

- **Dashboard**
- **Alarm lists and information**
- **Advanced offline diagnostics:**
  - Valve signature test
  - Step response test
  - Test reports and test result comparison feature
- **Advanced online diagnostics:**
  - Partial stroke test and test result comparison feature



Dashboard

Alarms

Alarm panel indicates active alarms and provides a description of the alarms and proposed maintenance actions – device statuses according to Namur NE107 standard.

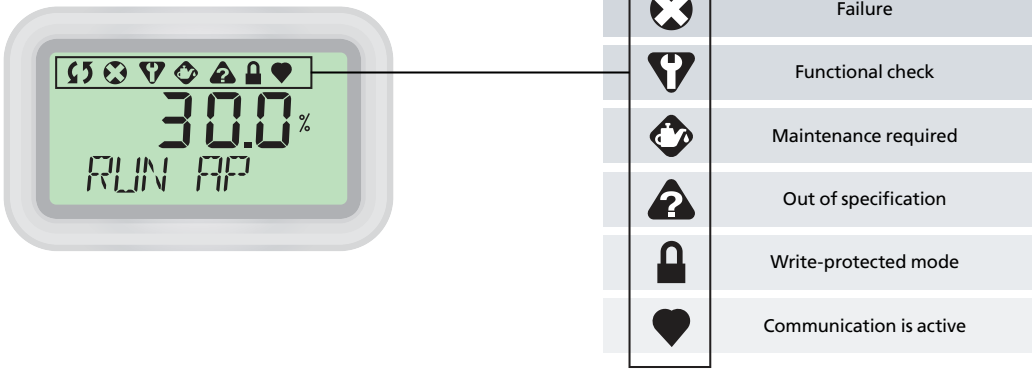
Alarm related views include:

- Alarm panel
- Alarm list
- Alarm information – description and proposed action



Alarm panel

Explanation of on-screen icons



Premium Diagnostics

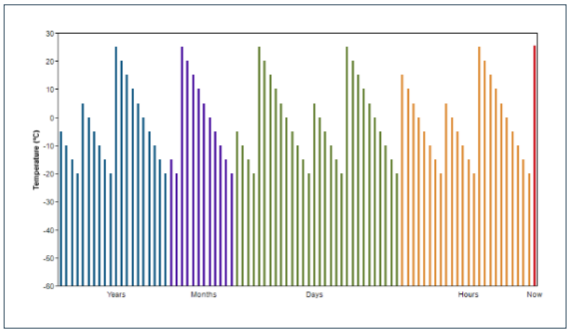
In addition to all Advanced Diagnostics, features include:

- **Trends**
- **Online monitoring of parameters**
- **Counter diagnostics**
- **Position and temperature histogram**

Trends

Trends serve as a predictive tool for identifying potential failures and planning maintenance by analysing changes over time.

- Temperature
- Breakaway pressure
- Deviation
- Friction

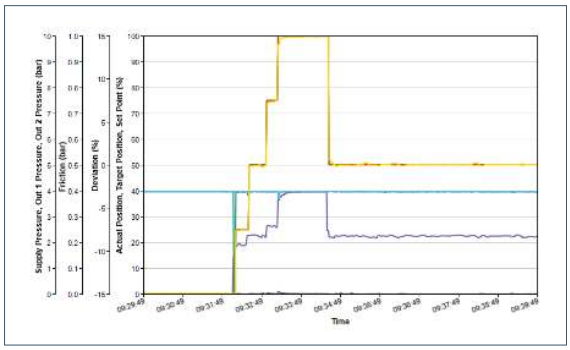


Online trends

Online monitoring

Monitoring provides an in-depth view of a control valve's performance and health through real-time device variables measured by the positioner, including:

- Actual position
- Deviation
- Target position
- Set point
- Supply pressure
- Output pressure (out 1 and out 2)
- Friction

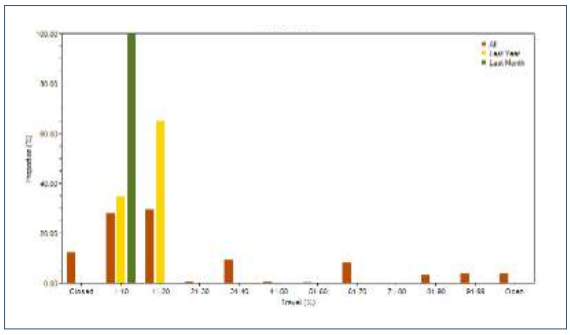


Online monitoring

Counter diagnostics

Counters provide a quantitative history of valve and positioner workload, essential for diagnosing health and transitioning from time-based to usage-based maintenance.

- Total valve strokes
- Total valve cycles
- Full open count
- Full close count
- I/P operation count



Histogram

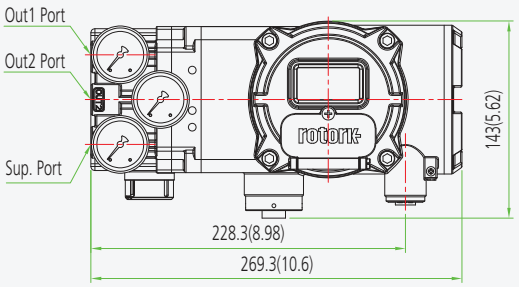
Next-generation intelligent valve positioners

Design features

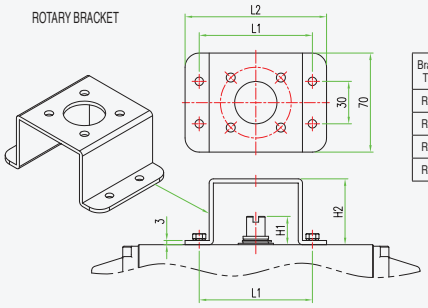
- **Simple installation and commissioning.** Easy setup and integration with all control systems.
- **Reliable operation.** Contactless position feedback with no mechanical wear and built-in intelligence using internal pressure sensors.
- **Rugged construction.** Engineered for operation in harsh environments.
- **Digitalisation.** Advanced online diagnostics enable predictive maintenance.
- **Data accessibility.** Seamless integration with all main DCS and AMS systems through configurable Digital Output and Input options.
- **Dual-certified.** The same unit can be used both in Exd explosionproof and Exi intrinsically safe areas.
- **Energy savings.** High capacity combined with optimised supply air consumption.
- **Simple system design**. High capacity reduces the need for volume boosters and accessories.

RTP-4400 aluminium enclosure



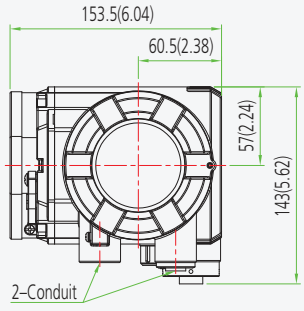


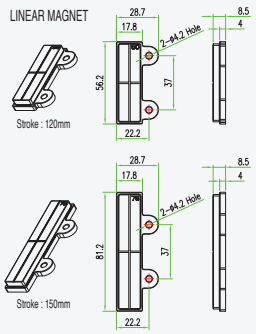
RTP-4400 bracket and magnet
(ordered separately)

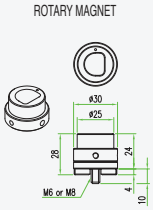


UNIT : mm

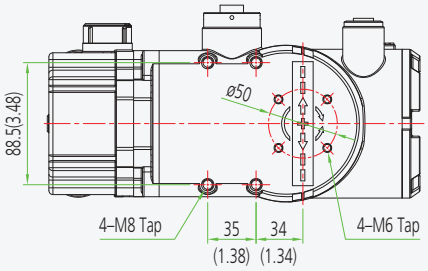
Bracket Type	Part No.	H1	H2	L1	L2
RB–1	H4400R-0015	20	46.6	80	100
RB–2	H4400R-0016	30	56.6		
RB–3	H4400R-0017	30	56.6	130	150
RB–4	H4400R-0018	50	76.6		







Magnet Type	Part No.
Linear (120mm stroke)	H4400L-0007
Linear (150mm stroke)	H4400L-0008
Rotary (M6)	H4400R-0013
Rotary (M8)	H4400R-0014



Dimensions: mm (Inches ")

Smart Positioner RTP-4400

Item type		RTP-4400
Power supply		Loop powered from 4-20 mA control signal
Min. operating current		3.8 mA
Load voltage		11.0 VDC at 20 mA DC 10.0 VDC at 4 mA DC
Input impedance		Max. 550 Ω at 20 mA DC
Control system compliance voltage		28 VDC max.
Protection		Over current protection Reverse polarity protection
Digital communication		HART 7
4-20 mA analogue output (optional)		One isolated output signal: 4-20mA Supply voltage: 9-28 VDC NAMUR NE43: Failure high (> 21 mA) or Failure low (< 3.6 mA).
Discrete switch input (optional)		One isolated input Max. supply voltage: 30 VDC, Max. 4 mA OFF at 0-5 VDC ON at 10-30 VDC
Discrete switch output (optional)		Two isolated outputs Maximum supply voltage: 30 VDC Max. ON state current ≤ 1 A ON state voltage drop ≤ 1 V OFF state current: ≤ 0.1 mA
Wire size		14-26 AWG
LUI usable range		-40 to +85 °C. LCD is not readable below -40 °C. The LCD PCBA supports 180° rotation. Four flame proof push buttons
Acting type		Single or Double
Supply pressure		1.4 to 9 bar (0.14 to 0.9 MPa). Do not exceed actuator rating.
Flow capacity		195 LPM / 413 SCFH (avg.) at 1.4 bar supply pressure 550 LPM / 1165 SCFH (avg.) at 5.5 bar supply pressure
Steady-state air consumption	Single-acting	2.4 LPM (avg.) at 4 bar supply
	Double-acting	2.7 LPM (avg.) at 4 bar supply
Supply medium		Air or nitrogen. It must be clean, dry and free of corrosive contaminants.
Air quality		According to ISA7.0.0.1 or ISO8573-1 Oil content: Class 3 (< 1 ppm) Solid particles: Class 6 (size ≤ 5 microns) Pressure dew point: At least 10°C below minimum anticipated ambient temperature to ensure no risk of condensation.
Input signal or air supply failure	Single	Actuator output 1 vents to atmosphere
	Double	Actuator output 1 vents to atmosphere and actuator output 2 goes to supply pressure
Operating ambient temperature	Standard	-40 to +85 °C (-40 to +185 °F)
	Arctic option	-55 to +85 °C (-67 to +185 °F)
Storage/transport temperature		Same as the ambient temperature
Relative humidity		0-90 % non-condensing
Humidity effect		IEC61514-2 < 0.3% for 48 hours at 40 °C and 93 % RH
Temperature effect		Typ. 0.01% / °C over -40 to +85°C
Vibration		ANSI/ISA-75.13.01
EMC emissions and immunity		Emissions: Class A (IEC 61000-6-4) Immunity: Performance Criteria A (IEC 61000-4 series)
Usable altitude		Up to 2,000 m
Linearity		± 0.5% F.S.
Hysteresis		± 0.5% F.S.
Sensitivity		± 0.3% F.S.
Repeatability		± 0.3% F.S.
Stroke range	Linear	6-120 mm, 6-150 mm[1]
	Rotary	55-110°

Item type	RTP-4400
Output characteristics	Linear, Quick Open, EQ %, User Set (9 or 21 points)
Housing and cover material	Low copper aluminium alloy (copper < 0.4%) Polyester powder coating
Electrical enclosure protection	IP66
Magnet holder, magnet bracket and rotary mounting bracket	Stainless Steel 316L
Air connection	Supply pressure: ¼ NPT Out pressure: ¼ NPT Exhausts: ⅜ NPT (pending) Tubing: ⅜ inch (10 mm) recommended
Cable entry	M20x1.5P or ½ NPT
Gauge connection	⅛ NPT
Explosion protection type	**ATEX / IECEx / UKEX** Ex db IIC T6/T5/T4 Gb Ex tb IIIC T85°C/100°C/T135°C Db or Ex ia IIC T6/T5/T4 Ga Ex ia IIIC T20085°C/100°C/T135°C Da Ambient temp.: -55 to +85 °C
Weight	4.95 kg without gauges, 5.15 kg with 3 gauges

Product code

RTP-4400 S - D - 4 - 2 - 1 - A - 1 - S

Acting type
S = Single
D = Double

Explosion protection[2]
D = ATEX, IECEx, UKCA
Z[3] = NEPSI, CCC
K[3] = KCs
A[3] = FM, CSA
P[3] = PESO
B[3] = INMETRO
E[3] = EAC
U[3] = ECAS

Conduit & air connection
4 = M20x1.5P - ¼ NPT
5 = ½ NPT - ¼ NPT

Communication
2 = HART protocol communication

Input/Output
0 = None
1 = 4-20 mA analogue output
2 = Discrete switch input and output
3 = 4-20 mA analogue output + discrete switch input and output

Diagnostics
A = Advanced
P = Premium

Pressure gauge
0 = None
1 = 2x gauges (single-acting) or 3x gauges (double-acting)

Ambient operating temperature
S = -40 to +85 °C (-40 to +185 °F)
L = -55 to +85 °C (-67 to +185 °F)

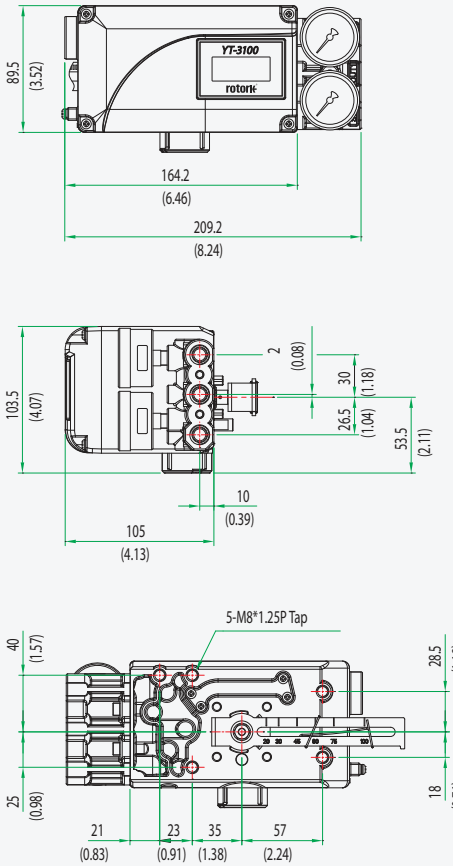
Notes:
1. For strokes less than 12 mm, performance degradation may occur
2. Dual-certified. The same unit can be used in either Exd explosionproof and/or Exi intrinsically safe areas.
3. Certification pending.

Design features

- **Compact.** Reliable and precise smart positioner, for linear and quarter-turn rotary actuators. Both single- and double-acting layouts are available.
- **Gauge manifold.** An option to keep the unit as compact as possible when gauges are not required.
- **Smart management system.** A clear and easy to navigate menu with four push buttons.
- **Visual self diagnostic.** Rated to NE107 standard for a user friendly and simplified troubleshooting process.
- **Analogue Output.** 4-20 mA analogue output completes the package, assuring full process control.
- **Non-contact sensor** for increased performance for high frequency operating valves and an enhanced lifetime.

YT-3100 aluminium enclosure with polycarbonate cover





Dimensions: mm (Inches ")

Compact Smart Positioner YT-3100

Item Type		YT-3100
Input signal		4 to 20 mA DC
Supply pressure		0.14 to 0.7 MPa = 1.4 to 7 bar = 20 to 102 psi
Stroke	Linear type	10 to 150 mm (0.4 to 6")
	Rotary type	55 to 110°
Impedance		Max. 500 Ω @ 20 mA DC
Air connection		Rc ¼, ¼ NPT
Gauge connection		⅛ NPT
Conduit		G ½
Operating temp.		-30 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 consumption		Below 2 LPM (sup = O.14 MPa) Below 0.07 CFM (sup = 20 psi)
Flow capacity		70 LPM (sup = O.14 MPa) 2.47 CFM (sup = 20 psi)
Output characteristics		Linear, EQ%, quick open, user set
Material		Housing: aluminium diecasting Cover: polycarbonate
Ingress protection		IP66 (excluding the pressure gauges)
Explosion protection type		**ATEX / IECEx / CCC / NEPSI / KCs** Ex ia IIC T5/T6 Gb Ambient temp.: -30 to +60 °C (T5) / -30 to +40 °C (T6)
Weight		1.7 kg (3.7 lb)

Product code

YT-3100 - L - S - N - 2 - 1 - 1 - 1 - S

Model
YT-3100 = Aluminium housing and polycarbonate cover

Motion type
L = Linear
R = Rotary

Acting type
S = Single
D = Double

Explosion protection
N = Non-explosion proof
i = Intrinsically safe KCs, ATEX, IECEx, NEPSI
Z = Intrinsically safe CCC, NEPSI

Lever type

Linear	Rotary
0 = 10 to 40 mm	5 = NAMUR
1 = 20 to 100 mm	
2 = 90 to 150 mm	

Conduit & air connection
1 = G ½ - Rc ¼
2 = G ½ - ¼ NPT

Gauges block
0 = NONE
1 = Gauges block

Options
0 = NONE
1 = 4-20 mA Analogue Output

Operating temp. (non-explosion proof)[1]
S = -30 to +85 °C (-22 to +185 °F)

Notes:
1. This option is just the normal operating temperature of the product and is not related to explosion protection temperature. See certificates for explosion protection temperature.

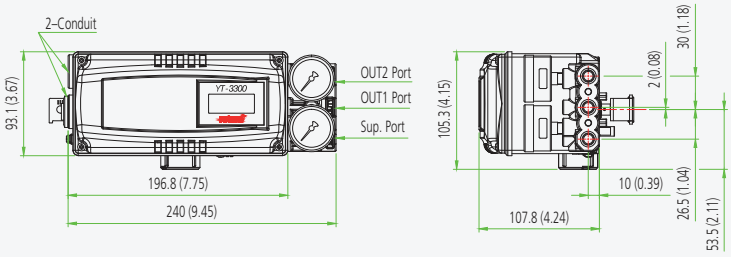
Torque motor technology with communications

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.
- **Analogue Output.** Analogue and digital feedback signals with 4-20 mA, mechanical and proximity switch options.
- **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.
- **Front panel pushbuttons for configuration.** Four robust and positive acting pushbuttons for field configuration.
- **Non-contact sensor** for increased performance for high frequency operating valves and an enhanced lifetime.
- **HART® communication.** Allows commands, position feedback and diagnostics to be sent digitally over the current loop.
- **Profibus Process Automation (PA).** Manages equipment via a process control system in process automation applications. The PA variant is designed for use in hazardous areas (Ex zones 0 and 1). The Physical Layer, with over the bus power, limits current flows so that explosive conditions are not created, even if a malfunction occurs. The number of devices attached to a PA segment is limited by this feature. However, PA uses the same protocol as DP, and can be linked to a DP network using a coupler device. The much faster DP acts as a backbone network for transmitting process signals to the controller. This means that DP and PA can work tightly together, especially in hybrid applications where process and factory automation networks operate side by side.
- **Foundation Fieldbus.** A bi-directional communications protocol used for communications among field devices and the control system. It utilises twisted pair or fibre media to communicate between multiple nodes (devices) and the controller. The controller requires only one communication point to communicate with up to 32 nodes, this is a significant improvement over the standard 4-20 mA communication method which requires a separate connection point for each communication device on the controller system.

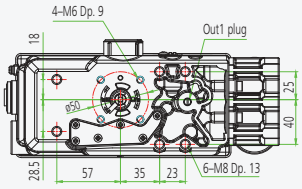
YT-3300 aluminium enclosure





YT-3350 STS316 enclosure





Dimensions: mm (Inches ")

Item type		YT-3300	YT-3350
Input signal		4-20 mA DC	
Supply pressure		0.14 to 0.7 MPa / 1.4 to 7 bar / 20 to 102 psi	
Stroke	Linear type	10 to 150 mm (0.4 to 6")	
	Rotary type	55 to 110°	
Impedance		Max. 500 Ω @ 20 mA DC	
Air connection		Rc ¼, ¼ NPT, G ¼	¼ NPT
Gauge connection		⅛ NPT	
Conduit		G ½, M20, ½ NPT	G ½
Operating temp.	Standard type	-30 to +85 °C (-22 to +185 °F)	
	Low temp. Type	-40 to +85 °C (-40 to +185 °F)	
	Arctic temp. Type	-55 to +85 °C (-67 to +185 °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) Below 0.07 CFM (sup = 20 psi)	
Flow capacity		70 LPM (sup = O.14 MPa) 2.47 CFM (sup = 20 psi)	
Output characteristics		Linear, EQ%, Quick Open, User Set (5, 21 Points)	
Material		Aluminium Diecasting	Stainless Steel 316
Ingress protection		NEMA 4X, IP66 (excluding the pressure gauges)	
Explosion protection type		**ATEX / IECEx / UKEX / CCC / NEPSI / INMETRO** Ex ia IIC T5/T6 Gb Ex ia IIIC T100°C/T85°C Db **KCs** Ex ia IIC T5/T6 Gb Ex ia IIIC T100°C/T85°C Db **CSA** CSA certificate **FM** Class I, Div 1, Groups A, B, C & D Class I, Zone 0 AEx ia IIC Class II/III, Div 1, Groups E, F & G Class I/II/III, Div 2, Groups A, B, C, D, F & G NEMA Type 4X, IP66, IP54 **PESO (YT-3300 only)** Ex ia IIC T6/T5 Gb Ambient temp.: -40 to +60 °C (T5) / -40 to +40 °C (T6)	
SIL		SIL2 and SIL3 Non-interference device statement for SIS	
Communication (option)		HART (ver.7) Profibus PA[1] Foundation Fieldbus[1]	
L/S rating	Mechanical type (Omron)	125 VAC, 3 A / 30 VDC, 2 A	
	Proximity type (P&F)	8.2 VDC, 8.2 mA	
Weight		2 kg (4.4 lb)	5.1 kg (11.2 lb)

Product code

YT-3300 - L - S - N - 2 - 4 - 2 - 4 - S

Model
YT-3300 = Aluminium housing
YT-3350 = Stainless steel housing

Motion type
L = Linear
R = Rotary

Acting type
S = Single
D = Double

Explosion protection
N = Non-explosion proof
i = Intrinsically safe ATEX, IECEx, KCs, NEPSI, INMETRO, PESO (YT-3300 only)
A = Intrinsically safe CSA, FM
AG = Intrinsically safe CSA, FM - tapped exhaust
Z = Intrinsically safe CCC, NEPSI

Lever type

Linear		Rotary	
0 = 10 to 40 mm	standard type	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	adapter 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 = G ½ - Rc ¼ (N/A for YT-3350)
2 = G ½ - ¼ NPT
3 = G ½ - G ¼ (N/A for YT-3350)
4 = M20 - ¼ NPT (N/A for YT-3350)
5 = ½ NPT - ¼ NPT (N/A for YT-3350)

Communications
0 = None
2 = HART protocol communication
3 = Profibus PA[1]
4 = Foundation Fieldbus[1]

Output options
0 = None
1 = 4-20 mA Analogue Output
2[2] = Limit switch (2ea) - mechanical type
3[3] = Limit switch (2ea) - proximity type
4[2] = 4-20 mA Analogue Output + limit switch (2ea) - mechanical type
5[3] = 4-20 mA Analogue Output + limit switch (2ea) - proximity type

Operating temp. (non-explosion proof)[4]
S = -30 to +85 °C (-22 to +185 °F)
L = -40 to +85 °C (-40 to +185 °F)
A = -55 to +85 °C (-67 to +185 °F) (Non-explosion proof only[5])

Notes:
1. Only available for N, i (ATEX/IECEx only) of explosion protection and 0 of output options. Potentiometer feedback sensor is only applicable. Arctic temperature option is not available.
2. Only S, L of operating temperature are available for 2, 4 of output options. This option is only available with potentiometer feedback sensor.
3. Only S of operating temperature is available for 3, 5 of output options. This option is only available with potentiometer feedback sensor.
4. This option is just the normal operating temperature of the product and is not related to explosion protection temperature. See certificates for explosion protection temperature.
5. This option is also available for CCC with Ex ia IIC T5/T6 Gb.

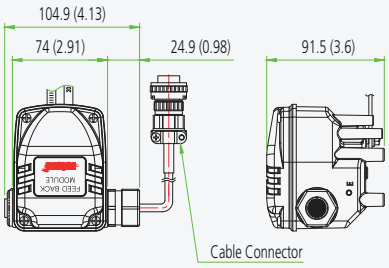
Torque motor technology with communications

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.
- **Analogue Output.** Analogue 4-20 mA position feedback option.
- **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.** Four robust and positive acting pushbuttons for field configuration.
- **Remote Mounting Option (YT-3301/YT-3302).** Remote sensor via cable to enable the positioner to be mounted away from extreme temperature.

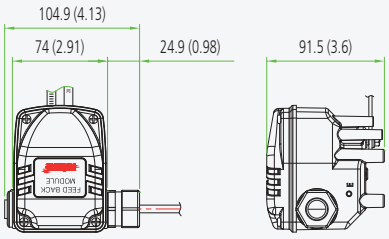
YT-3301 remote mounting option





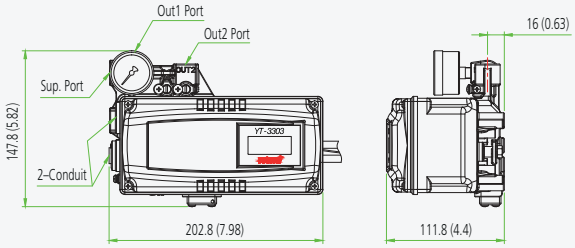
YT-3302 remote mounting option





YT-3303 left side mounting option





Dimensions: mm (Inches ")

Item type		YT-3301 / 3302	YT-3303
Input signal		4-20 mA DC	
Supply pressure		0.14 to 0.7 MPa / 1.4 to 7 bar / 20 to 102 psi	
Stroke	Linear type	10 to 150 mm (0.4 to 6")	
	Rotary type	55 to 110°	
Impedance		Max. 500 Ω @ 20 mA DC	
Air connection		Rc ¼, ¼ NPT, G ¼	
Gauge connection		⅛ NPT	
Conduit		G ½, M20, ½ NPT	
Operating temp.	Standard type	-30 to +85 °C (-22 to +185 °F)	
	Low temp. Type	-40 to +85 °C (-40 to +185 °F)	
	Arctic temp. Type	-55 to +85 °C (-67 to +185 °F)	
	Remote sensor	-55 to +120 °C (-67 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) Below 0.07 CFM (sup = 20 psi)	
Flow capacity		70 LPM (sup = O.14 MPa) 2.47 CFM (sup = 20 psi)	
Output characteristics		Linear, EQ%, quick open, user set (5, 18 points)	
Material		Aluminium diecasting	
Ingress protection		IP66, IP54 (YT-3301) IP66 (YT-3302) (excluding the pressure gauges)	IP66
Explosion protection type		**ATEX / IECEx / NEPSI / INMETRO / UKEX / CCC / KCs** Ex ia IIC T5/T6 Gb Ex ia IIIC T100°C/T85°C Db **KCs (YT-3303 only)** Ex ia IIC T5/T6 Ex iaD IIIC T100°C/T85°C **CSA** CSA certificate **FM** Class I, Div 1, Groups A, B, C & D Class I, Zone 0 Aex ia IIC Class II/III, Div 1, Groups E, F & G Class I/II/III, Div 2, Groups A, B, C, D, F & G NEMA Type 4X, IP66, IP54 Ambient temp.: -40 to +60°C (T5) / -40 to +40°C (T6)	
SIL		SIL2 and SIL3 Non-interference device statement for SIS	
Communication (option)		HART (ver.7)	
Weight	Body	2.2 kg (4.9 lb) / 2.5 kg (5.5 lb)	2 kg (4.4 lb)
	Remote sensor	1 kg (2.1 lb)	-

Product code

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

Model
YT-3301 = Aluminium housing with remote sensor
YT-3302 = Aluminium housing with remote sensor
YT-3303 = Aluminium housing with right side lever

Motion type
L = Linear
R = Rotary

Acting type
S = Single
D = Double

Explosion protection
N = Non-explosion proof
i = Intrinsically safe ATEX, IECEx, KCs, NEPSI, INMETRO, UKEX, PESO
A = Intrinsically safe CSA, FM
AG = Intrinsically safe CSA, FM - tapped exhaust
Z = Intrinsically safe CCC, NEPSI

Lever type

Linear	Rotary	
1 = 10 to 40 mm	1 = M6 X 34L (YT-3303 only)	fork type
2 = 20 to 70 mm	2 = M6 X 63L (YT-3303 only)	
3 = 50 to 100 mm	3 = M8 X 34L (YT-3303 only)	
4 = 100 to 150 mm	4 = M8 X 63L (YT-3303 only)	
	5 = NAMUR (YT-3301/3302/3303)	

Conduit & air connection
1 = G ½ - Rc ¼
2 = G ½ - ¼ NPT
3 = G ½ - G ¼
4 = M20 - ¼ NPT
5 = ½ NPT - ¼ NPT

Communications
0 = None
2 = HART protocol communication

Output options
0 = None
1 = 4-20 mA Analog Output

Operating temp. (non-explosion proof)[1]
S = -30 to +85 °C (-22 to +185 °F)
L = -40 to +85 °C (-40 to +185 °F)
A = -55 to +85 °C (-67 to +185 °F) (Non-explosion proof only[2])

Cable length (YT-3301/3302 only)
Standard cable length is 5 m.
1 = 5 m
2 = 10 m
3 = 15 m
4 = 20 m

Notes:
1. This option is just the normal operating temperature of the product and is not related to explosion protection temperature. See certificates for explosion protection temperature.
2. This option is also available for CCC with Ex ia IIC T5/T6 Gb.

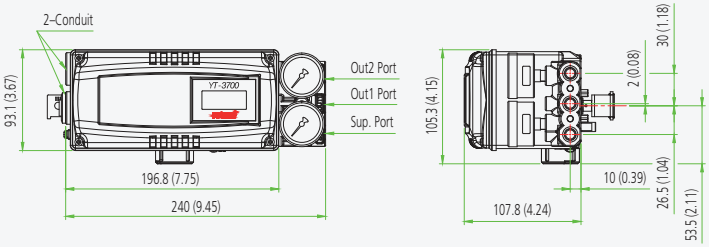
Digital smart positioner with enhanced diagnostics

Design features

- **Enhanced diagnostic** (including offline and online) to fully check the integrity of the system. Valve signature, advanced step tests and Partial Stroke Testing (PST) can be operated from local or remote positions. Device Description (DD) and Device Type Manager (DTM) files allow for full software compatibility.
- **Visual diagnostic info** to NE107 standard for a user-friendly analysis with a severity alarm scale and a clear visual identification locally on the display or remotely through HART®.
- **Digital input/output configurable** depending on the application and customer preferences. Multiple options are available e.g. start a pre-set PST event or receive error alarms, tailoring interaction with the device as necessary.
- **Auto tuning** functionality.
- **Non-contact sensor** for increased performance for high frequency operating valves and an enhanced lifetime.

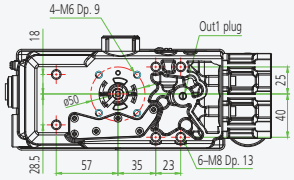
YT-3700 aluminium enclosure





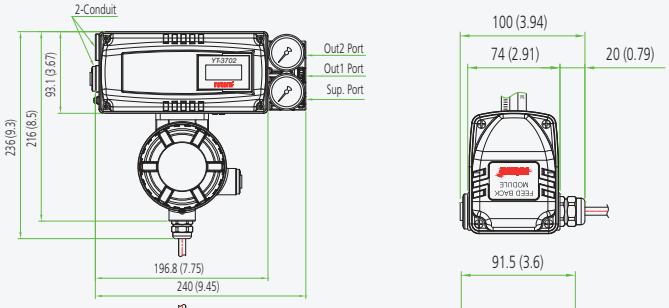
YT-3700 aluminium enclosure with limit switches and dome indicator





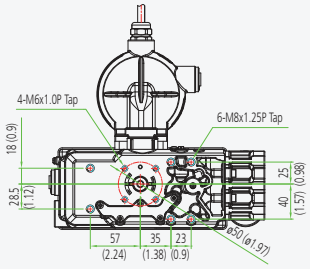
YT-3702 remote mounting option





YT-3750 STS316 enclosure





Dimensions: mm (Inches ")

Item type		YT-3700 / 3702	YT-3750
Input signal		4-20 mA DC	
Supply pressure		0.14 to 0.7 MPa = 1 .4 to 7 bar = 20 to 102 psi	
Stroke	Linear type	10 to 150 mm (0.4 to 6")	
	Rotary type	55 to 110°	
Impedance		Max. 500 Ω @ 20 mA DC	
Air connection		Rc ¼, ¼ NPT, G ¼	¼ NPT
Gauge connection		1/8 NPT	
Conduit		G ½, M20, ½ NPT	G ½
Operating temp.	Standard type	-30 to +85 °C (-22 to +185 °F)	
	Low temp. Type	-40 to +85 °C (-40 to +185 °F)	
	Arctic temp. Type	-55 to +85 °C (-67 to +185 °F)	
	LCD	withstands -55 to +85 °C (-67 to +185 °F) only visible above -40 °C (-40 °F)	
	Remote sensor	-55 to +120 °C (-67 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) Below 0.07 CFM (sup = 20 psi)	
Flow capacity		70 LPM (sup = O.14 MPa) 2.47 CFM (sup = 20 psi)	
Output characteristics		Linear, EQ%, quick open, user set (5, 21 points)	
Material		Aluminium diecasting	Stainless steel 316
Ingress protection		IP66, NEMA 4X (excluding the pressure gauges)	
Explosion protection type		**ATEX / IECEx / CCC / UKEX / NEPSI** Ex ia IIC T5/T6 Gb Ex ia IIIC T100°C/T85°C Db **FM / CSA** Intrinsically Safe. Refer to the product manual for details. **KCs** Ex ia IIC T5/T6 Ex ia IIIC T100°C/T85°C **PESO** Ex ia IIC T5T6 Gb Ambient temp.: -40 to +60 °C (T5) / -40 to +40 °C (T6)	
SIL		SIL2 and SIL3 Non-interference device statement for SIS	
Communication (option)		HART (ver.7)	
L/S rating	Mechanical type (Omron)	AC 125 V, 3 A / DC 30 V, 2 A (YT-3702 is not available)	
	Proximity type (P&F)	DC 8.2 V 8.2 mA (YT-3702 is not available)	
Weight		2 kg (4.4 lb) / 3.1 kg (6.8 lb)	5.1 kg (11.2 lb)
Digital input		Low level control voltage 0 to 5 VDC High level control voltage 10 to 28 VDC Max current < 4 mA	
Digital output		Supply voltage 5 to 28 VDC Low level current < 1 mA High level current > 2.2 mA @5 VDC, < 14mA @28 VDC	

Product code

YT-3700 - L - S - N - 2 - 4 - 2 - 4 - S - (1)

Model
YT-3700 = Aluminium housing
YT-3702 = Aluminum housing with remote NCS
YT-3750 = Stainless steel housing

Motion type
L = Linear
R = Rotary (in case of a switches request the device will have visual position indicator as standard)

Acting type
S = Single
D = Double

Explosion protection
N = Non-explosion proof (YT-3702 is N only)
i = Intrinsically safe ATEX, IECEx, KCs, NEPSI, UKEX, PESO
A = Intrinsically safe CSA, FM
AG = Intrinsically safe CSA, FM - tapped exhaust
Z = Intrinsically safe CCC, NEPSI

Lever type

Linear	Rotary
0 = 10 to 40 mm (YT-3700/3750)	5 = NAMUR
1 = 20 to 100 mm (YT-3700/3750)	
2 = 90 to 150 mm (YT-3700/3750)	
1 = 10 to 40 mm (YT-3702 only)	
2 = 20 to 70 mm (YT-3702 only)	
3 = 50 to 100 mm (YT-3702 only)	
4 = 100 to 150 mm (YT-3702 only)	

Conduit & air connection
1 = G ½ - Rc ¼ (N/A for YT-3750)
2 = G ½ - ¼ NPT
3 = G ½ - G ¼ (N/A for YT-3750)
4 = M20 - ¼ NPT (N/A for YT-3750)
5 = ½ NPT - ¼ NPT (N/A for YT-3750)

Communication protocols
2 = HART communication

Output options
0 = None (digital I/O are built-in)
1 = 4-20 mA feedback (digital I/O are built-in)
4[1] = 4-20 mA feedback + limit switch (2ea) - mechanical type (potentiometer drive without digital I/O communication)
5[2] = 4-20 mA feedback + limit switch (2ea) - proximity type (potentiometer drive without digital I/O communication)

Operating temp. (non-explosion proof)[3]
S = -30 to +85 °C (-22 to +185 °F)
L = -40 to +85 °C (-40 to +185 °F)
A = -55 to +85 °C (-67 to +185 °F) (Non-explosion proof only)

Cable length (YT-3702 only)
Standard cable length is 5 m.
1 = 5 m
2 = 10 m
3 = 15 m
4 = 20 m

Notes:
1. Only S, L of operating temperature are available for 4 of output options. This option is only available with potentiometer feedback sensor.
2. Only S of operating temperature is available for 5 of output options. This option is only available with potentiometer feedback sensor.
3. This option is just the normal operating temperature of the product and is not related to explosion protection temperature. See certificates for explosion protection temperature.

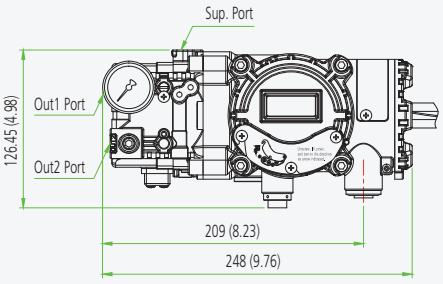
Torque motor technology with communications

Design features

- **Enhanced diagnostic** (including offline and online) to fully check the integrity of the system. Valve signature, advanced step tests and Partial Stroke Testing (PST) can be operated from local or remote positions. Device Description (DD) and Device Type Manager (DTM) files allow for full software compatibility.
- **Visual diagnostic info** to NE107 standard for a user-friendly analysis with a severity alarm scale and a clear visual identification locally on the display or remotely through HART®.
- **Digital input/output configurable** depending on the application and customer preferences. Multiple options are available e.g. start a pre-set PST event or receive error alarms, tailoring interaction with the device as necessary.
- **Auto tuning** functionality.
- **Non-contact sensor** for increased performance for high frequency operating valves and an enhanced lifetime.

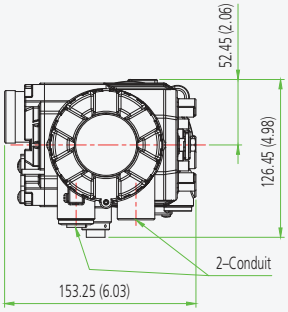
YT-3400 aluminium enclosure

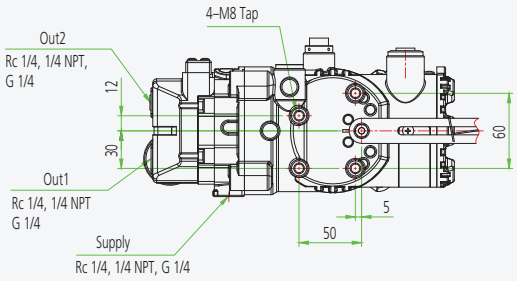




YT-3450 STS316 enclosure







Dimensions: mm (Inches ")

Item type		YT-3400	YT-3450
Input signal		4-20 mA DC	
Supply pressure		0.14 to 0.7 MPa / 1.4 to 7 bar / 20 to 102 psi	
Stroke	Linear type	10 to 150 mm (0.4 to 6")	
	Rotary type	55 to 110°	
Impedance		Max. 450 Ω @ 20 mA DC	
Air connection		Rc ¼, ¼ NPT, G ¼	¼ NPT
Gauge connection		⅛ NPT	
Conduit		G ½, ½ NPT, M20	G ½
Operating temp.	Standard type	-30 to +85 °C (-22 to +185 °F)	
	Low temp. Type	-40 to +85 °C (-40 to +185 °F)	
	Arctic temp. Type	-55 to +85 °C (-67 to +185 °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) Below 0.08 CFM (sup = 20 psi)	
Flow capacity		70 LPM (sup = O.14 MPa) 2.47 CFM (sup = 20 psi)	
Output characteristics		Linear, EQ%, quick open, user set (5 or 21 points)	
Material		Aluminium diecasting	Stainless steel 316
Ingress protection		NEMA 4-4X, IP66 (excluding the pressure gauges)	
Explosion protection type		**ATEX / IECEx / UKEX / CCC / NEPSI** Ex db IIC T5/T6 Gb Ex tb IIIC T85°C/T100°C Db **KCs** Ex d IIC T5/T6 IP66 Ex tb IIIC T85°C/T100°C (YT-3450 only) **CSA** Ex db IIC Gb T5 or T6 Class I, Division 1, Groups C, D Class II, Division 1, Groups E, F and G Ex tb IIIC Db T100°C/T85°C Type 4, 4X ; IP66 **FM** Class I, Div 1, Groups ABCD; T6/T5 Class II/III, Div 1, Groups EFG; T6/T5 Class I, Zone 1, AEx db IIC T6/T5 Zone 21 AEx tb IIIC Type 4X/IP66 **INMETRO** Ex db IIC T5/T6 Gb IP66 Ex tb IIIC T100°C/T85°C Db IP66 **PESO** Ex db IIC T5/T6 Gb Ambient temp.: -40 to +70 °C (T6) / -40 to +80 °C (T5)	
SIL		SIL2 and SIL3 Non-interference device statement for SIS	
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
N = Non-explosion proof
C[1] = ATEX, IECEx, KCs, NEPSI, INMETRO, ECAS, UKEX, PESO
A = CSA, FM
AG = CSA, FM - tapped exhaust
Z = CCC, NEPSI

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 = G ½ - Rc ¼ (N/A for FM, CSA, CCC or YT-3450)
2 = G ½ - ¼ NPT (N/A for FM, CSA, CCC or YT-3450)
3 = G ½ - G ¼ (N/A for FM, CSA, CCC or YT-3450)
4 = M20 - ¼ NPT (N/A for YT-3450)
5 = ½ NPT - ¼ NPT

Communication
0 = None
2 = HART protocol communication
5 = HART with enhanced diagnostic capabilities & DI/DO

Output options[4]
0 = None
1 = 4-20 mA Analogue Output
2 = Limit switch (2ea)[2]
3 = 4-20 mA Analogue Output + limit switch (2ea)[2]

Operating temp. (non-explosion proof)[3]
S = -30 to +85 °C (-22 to +185 °F)
L = -40 to +85 °C (-40 to +185 °F)
A = -55 to +85 °C (-67 to +185 °F) (Non-explosion proof only)

Notes:
1. Please put the name of the certificate in a purchase order.
2. Limit switch (or digital output): DC 24V (50mA) and transistor type.
3. This option is just the normal operating temperature of the product and is not related to explosion protection temperature.
   See certificates for explosion protection temperature.
4. Output options 2 and 3 are not selectable when communication option 5 is selected. Communication option 5 includes digital I/O and digital output is configurable to software limit switch.

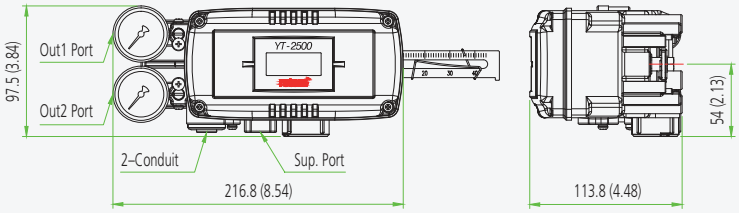
Piezo technology with communications

Design features

- **Fail-freeze and fail-safe functions.** Enables the valve to 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.
- **Analogue Output.** Analogue feedback signals with 4-20 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.** Four robust and positive acting pushbuttons for field configuration.

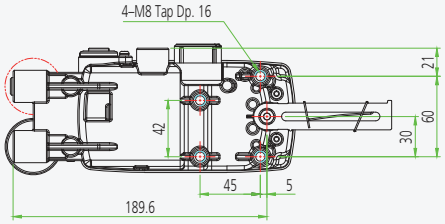
YT-2500 aluminium enclosure





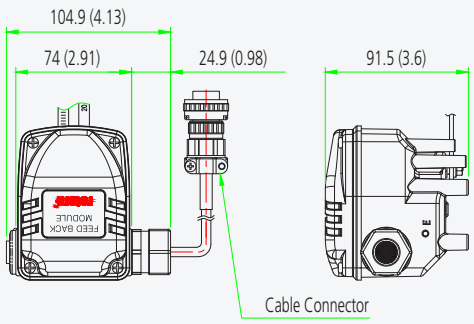
YT-2550 stainless steel enclosure





YT-2501 remote mounting option





Dimensions: mm (Inches *)

Item type		YT-2500	YT-2550	YT-2501
Input signal		4-20 mA DC		
Supply pressure		0.14 to 0.7 MPa = 1.4 to 7 bar = 20 to 102 psi		
Stroke	Linear type	10 to 150 mm (0.4 to 6")		
	Rotary type	55 to 110°		
Impedance		Max. 500 Ω @ 20 mA DC		
Air connection		Rc ¼, ¼ NPT, G ¼	¼ NPT	Rc ¼, ¼ NPT, G ¼
Gauge connection		⅛ NPT		
Conduit		G ½, ½ NPT, M20x1.5P	G ½	G ½, ½ NPT, M20x1.5P
Operating temp.	Positioner	-30 to +80 °C (-22 to +176 °F)[1]		
	Remote sensor	-		-55 to +120 °C (-67 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) 0 CFM (sup = 20 psi)		
	Fail-safe	0.06 LPM (sup = 0.14 MPa) 0.002 CFM (sup = 20 psi)		
Flow capacity	Fail-freeze	60 LPM (sup = 0.14 MPa) 2.12 CFM (sup = 20 psi)		
	Fail-safe	40 LPM (sup = 0.14 MPa) 1.41 CFM (sup = 20 psi)		
Output characteristics		Linear, EQ%, Quick Open, User Set (5 or 18 Points)		
Material		Aluminium diecasting	Stainless steel 316	Aluminium diecasting
Ingress protection		IP66 (excluding the pressure gauges)		
Explosion protection type		**ATEX / IECEx / CCC / NEPSI** Ex ia IIC T5/T6 Gb Ex ia IIIC T100°C/T85°C Db **KCs** Ex ia IIC T5/T6 Ex iaD IIIC T100°C/T85°C Ambient temp.: -30 to +40 °C (T6) / -30 to +60 °C (T5)		
Communication (option)		HART (ver.7)		
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)	1.6 kg (3.4 lb)
	Linear remote sensor	-	-	0.6 kg (1.3 lb)
	Rotary remote sensor	-	-	1.0 kg (2.1 lb)

Product code

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

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

Motion type
L = Linear
R = Rotary

Acting type
S = Single
D = Double

Explosion protection
Check certification restrictions.
N = Non-explosion proof
i = ATEX, IECEx, KCs, NEPSI
Z = CCC, NEPSI

Lever type

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

Conduit & air connection
1 = G ½ - Rc ¼ (N/A for YT-2550)
2 = G ½ - ¼ NPT
3 = G ½ - G ¼ (N/A for YT-2550)
4 = M20 - ¼ NPT (N/A for YT-2550)
5 = ½ NPT - ¼ NPT (N/A for YT-2550)

Communications
0 = None
2 = HART protocol communication

Output options
0 = None
1 = 4-20 mA Analogue Output
2 = Limit switch - mechanical type (YT-2500L, R and YT-2550R only)
3 = Limit switch - proximity type (YT-2500L, R and YT-2550R only)[1]
4 = 4-20 mA Analogue Output + limit switch (2ea) - mechanical type) (YT-2500L, R and YT-2550R only)
5 = 4-20 mA Analogue Output + limit switch (2ea) - proximity type[1] (YT-2500L, R and YT-2550R only)[1]

Fail option
F = Fail-freeze
S = Fail-safe

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

Notes:
1. Inductive proximity limit switch internal type: -25 to +80 °C (-13 to 176 °F).

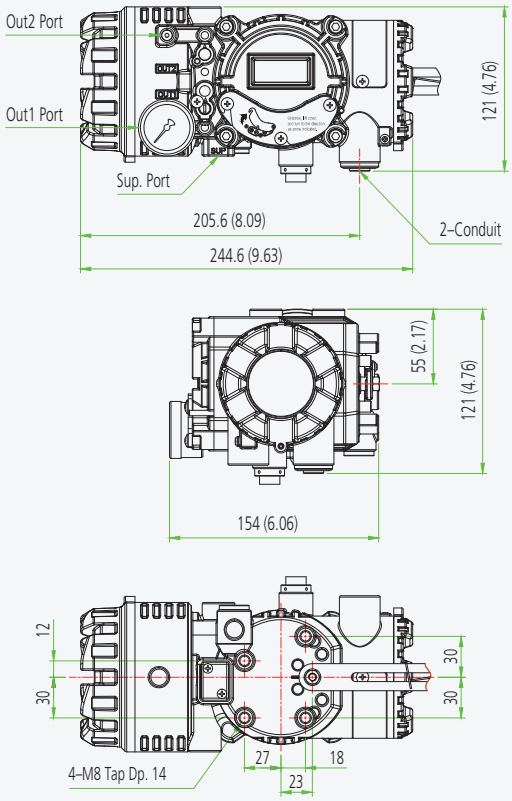
Piezo technology with communications

Design features

- **Fail-freeze and fail-safe functions.** Enables the valve to 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.
- **Analogue Output.** Analogue feedback signals with 4-20 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.** Four robust and positive acting pushbuttons for field configuration.

YT-2600 aluminium Ex d positioner





Dimensions: mm (Inches ")

Smart Positioner YT-2600

Item type		YT-2600
Input signal		4-20 mA DC
Supply pressure		0.14 to 0.7 MPa = 1 .4 to 7 bar = 20 to 102 psi
Stroke	Linear type	10 to 150 mm (0.4 to 6")
	Rotary type	55 to 110°
Impedance		Max. 450 Ω @ 20 mA DC
Air connection		Rc ¼, ¼ NPT, G ¼
Gauge connection		⅛ NPT
Conduit		G ½, ½ NPT, M20x1.5P
Operating temp.		-30 to +80 °C (-22 to +176 °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) 0.002 CFM (sup = 20 psi)
	Fail-safe	0.06 LPM (sup = 0.14 MPa) 0.002 CFM (sup = 20 psi)
Flow capacity	Fail-freeze	60 LPM (sup = 0.14 MPa) 1.77 CFM (sup = 20 psi)
	Fail-safe	40 LPM (sup = 0.14 MPa) 1.41 CFM (sup = 20 psi)
Output characteristics		Linear, EQ%, quick open, user set (5 or 18 points)
Material		Aluminium diecasting
Ingress protection		IP66 (excluding the pressure gauges)
Explosion protection type		**ATEX / IECEx / KCs / CCC** Ex db IIC T5/T6 Gb Ex tb IIIC T85°C/T100°C Db Ambient temp.: -30 to +70 °C (T6) / -30 to +80 °C (T5)
Communication (option)		HART (ver.7)
Weight		3.0 kg (6.61 lb)

Product code

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

Model
YT-2600 = Aluminium housing

Motion type
L = Linear
R = Rotary

Acting type
S = Single
D = Double

Explosion protection
C = ATEX, IECEx, KCs
Z = CCC

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 = G ½ - Rc ¼ (N/A for CCC)
2 = G ½ - ¼ NPT (N/A for CCC)
3 = G ½ - G ¼ (N/A for CCC)
4 = M20x1.5P - ¼ NPT
5 = ½ NPT - ¼ NPT

Communications
0 = None
2 = HART protocol communication

Output options
0 = None
1 = 4-20 mA Analogue Output
2 = Limit switch (2ea)[1]
3 = 4-20 mA Analogue Output + limit switch (2ea)[1]

Fail option
F = Fail-freeze
S = Fail-safe

Notes:
1. Limit switch: DC 24 V (50 mA) and transistor type.

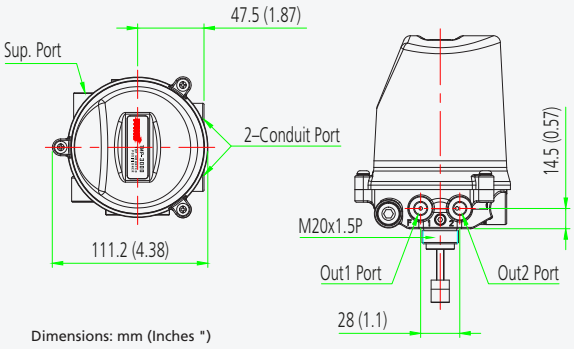
Solenoid technology

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.
- **Analogue Output.** 4-20 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% More than 4W (167mA @24V) with single-acting More than 5.8W (242mA @24V) with double-acting
Input signal	0-20 mA, 4-20 mA, 0-5 V, 0-10 V
Analogue Output	4-20 mA
Output characteristics	Linear, EQ%, quick open, user set (5 or 21 points)
Operating temp.	-10 to +60 °C (+14 to +140 °F)
Supply pressure	0 to 0.7 MPa / 0 to 7 bar / 0 to 102 psi
Air consumption	0 LPM (0 psi)
Flow capacity	20 / 50 LPM (0.7 / 1.77 CFM)
Filtering size	5 micron
Acting type	Single 2 solenoid valves Double 4 solenoid valves
Stroke	5 to 40 mm (0.2 to 1.6")
Air connection	G ⅛ (Ø 6 mm tube)
Conduit	2-M16 x 1.5P (with screw terminals)
Ingress protection	IP67
Body material	PPS
Cover material	PC
Weight	750 g (1.7 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 proof

Conduit & air connection
G = M16 x 1.5 - G⅛

Flow capacity
1 = 20 LPM
2 = 50 LPM

Output options
0 = None
1 = 4-20 mA Analogue Output

Fail option
F = Fail-freeze
S = Fail-safe

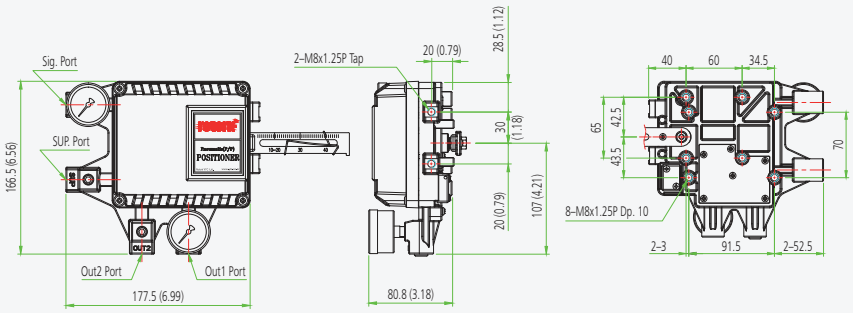
Pneumatic-Pneumatic Positioner YT-1200

Design features

- **Simple zero and span adjustment.** Internal hand dials and locking screws for 0.1 to 1 MPa range adjustments.
- **Reverse and direct-acting settings.** Full and ½ 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.

YT-1200 aluminium 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 / 3 to 14.5 psi	
Supply pressure		0.14 to 0.7 MPa / 1.4 to 7 bar / 20 to 102 psi	
Stroke	Linear type	10 to 150 mm (0.4 to 6")	
	Rotary type	55 to 100°	
Air connection		Rc ¼, ¼ NPT	
Gauge connection		⅛ NPT	
Ingress protection		IP66 (excluding the pressure gauges)	
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) 0.08 CFM (sup = 20 psi)	
Flow capacity		80 LPM (sup = 0.14 MPa) 2.83 CFM (sup = 20 psi)	
Material		Aluminium diecasting	
Weight		1.7 kg (3.1 lb)	

Notes:
1. Only S, L of operating temperature is available
2. Only S of operating temperature is available

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
1 = Rc ¼
2 = ¼ NPT

Ambient temp.
S = -20 to +70 °C (-4 to +158 °F)
H = -20 to +120 °C (-4 to +248 °F)
L = -40 to +70 °C (-40 to +158 °F)

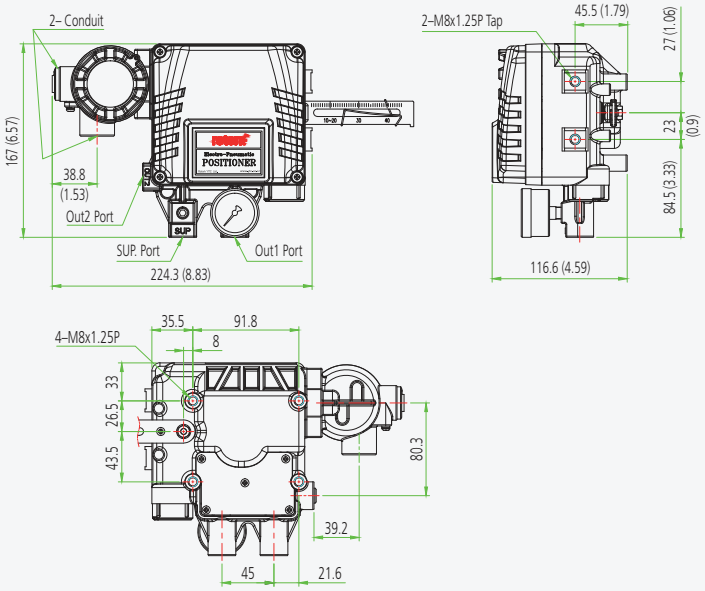
Option (rotary only)
0 = None
1 = Dome cover
2 = 4-20 mA Analogue Output - SPTM-5V (non-explosion proof)[1]
3 = 4-20 mA Analogue Output - SPTM-6V (flameproof enclosure)[1]
4 = Limit switch – YT-850 (non-explosion proof)[2]
5 = Limit switch – YT-870 (flameproof enclosure)[2]
6 = 4-20 mA Analogue Output + limit switch(2ea) – YT-870 (flameproof enclosure)[2]

Design features

- **Simple zero and span adjustment.** Internal hand dials and locking screws for 4-20 mA range adjustments.
- **Reverse and direct-acting settings.** Full and ½ split range setting by simple adjustment.
- **High vibration resistant.** No resonance between 5 to 200 Hz.
- **Internal Analogue Output.** Available on weatherproof model only.
- **Auto / manual switch.** Internal adjustment with lock screw safety.

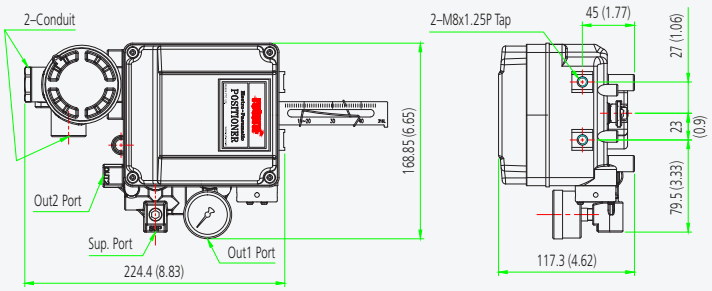
YT-1000 aluminium enclosure





YT-1050 STS316 enclosure





Dimensions: mm (Inches ")

Item type		YT-1000	YT-1050
Input signal		4-20 mA DC	
Impedance		250 ± 15 Ω	
Supply pressure		0.14 to 0.7 MPa = 1.4 to 7 bar = 20 to 102 psi	
Stroke	Linear type	10 to 150 mm (0.4 to 6")	
	Rotary type	55 to 100˚	
Air connection		Rc ¼, ¼ NPT, G ¼	¼ NPT
Gauge connection		⅛ NPT	
Conduit		G(NPT) ½, M20	G ½, ½ NPT
Explosion protection type		**ATEX / IECEx:** (II 2 G) Ex dmb IIB T5, Ex ia IIC T6 (YT-1000 only) **INMETRO:** (II 2 G) Ex dmb IIB T5 **UKEX**: II 2G Ex db mb IIB T5 Gb, NEMA 4X	
		KCs Ex dmb IIB T5/T4 / Ex dmb IIC T5 / Ex ia IIB T6 Gb **CSA** (Class I, Zone 1) Ex dm IIB T5 **FM** CL I, Div 1, Groups C, D T5; CL II, III, Div 1, Groups E, F, G T5; Type 4X	**KCs** Ex dmb IIB T5
		CCC / NEPSI Ex db mb IIB T5 Gb Ex db mb IIC T6 Gb Ex ia IIC T6 Gb **TIIS** Ex dmb IIB T5	**CCC** Ex d mb IIB T5 Gb
		NEPSI Ex d mb IIB T5 Gb Ex d mb IIC T6 Gb Ex ia IIC T6 Ga	**NEPSI** Ex d mb IIB T5 Gb
		PESO Ex db mb IIB T5 Gb Ex ia IIC T6 Gb	**PESO** Ex db mb IIB T5 Gb
Ingress protection		YT-1000: IP66, TYPE 4X (FM) YT-1050: IP66 (excluding the pressure gauges)	
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) 0.8 CFM (sup = 20 psi)	
Flow capacity		80 LPM (sup = 0.14 MPa) 2.83 CFM (sup = 20 psi)	
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)	

YT-1000L Product code

YT-1000 - L - S - N - 1 - 1 - 4 - S - 0

Model
YT-1000 = Aluminium

Motion type
L = Linear

Acting type
S = Single D = Double

Explosion protection[1]
N = Non-explosion proof
M[2] = Ex db mb IIB T5 Gb: ATEX, IECEx, KCs, NEPSI, UKEX, PESO
T = Ex db mb IIB T5 Gb: INMETRO
A = Ex d m IIB T5: CSA
F = Flameproof enclosure & encapsulation: FM
C = Ex dmb IIC T5: KCs
X = Ex dmb IIB T5: TIIS
Z[3] = Ex db mb IIB T5 Gb: CCC, NEPSI
B[4] = Ex db mb IIC T6 Gb: CCC, NEPSI
G = Ex ia IIC T6 Gb: CCC, NEPSI
i = Ex ia IIC T6 Gb: ATEX, IECEx, KCs, UKEX, PESO

Lever type
Linear
1 = 10 to 40 mm
2 = 30 to 70 mm
3 = 60 to 100 mm
4 = 100 to 150 mm

Orifice type
1 = Φ1 2 = Φ2 3 = None

Conduit & air connection
1 = G ½ - Rc ¼ (N/A for FM, CSA)
2 = G ½ - ¼ NPT (N/A for FM, CSA)
3 = G ½ - G¼ (N/A for FM, CSA)
4 = M20 - ¼ NPT
5 = ½ NPT - ¼ NPT

Operating temp. (non-explosion proof)[5]
S = -20 to +70 °C (-4 to +158 °F)
H = -20 to +120 °C (-4 to +248 °F)
L = -40 to +70 °C (-40 to +158 °F)

Option
0 = None
2[6] = 4-20 mA Analogue Output (internal, without LCD, non-explosion proof)
3[7] = 4-20 mA Analogue Output with LCD (internal with LCD, non-explosion proof)

YT-1000L Notes:
1. M (except KCs), T, F, X, Z, B, G, i are only available for operating temperature S. M (only KCs) is only available for operating temperature S and H. A, C are only available operating temperature S and L.
2. Please put the name of the certificate in a purchase order.
3,4. Z and B are only available for conduit & air connection 4 and 5.
5. This option is just the normal operating temperature of the product and is not related to explosion protection temperature. See certificates for explosion protection temperature.
6,7. Only available for operating temperature S and L.

See page 32 for YT-1000R and YT-1050 product code charts.

YT-1000R Product code

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

Model
YT-1000 = Aluminium

Motion type
R = Rotary

Acting type
S = Single D = Double

Explosion protection[1]
N = Non-explosion proof
M[2] = Ex db mb IIB T5 Gb: ATEX, IECEx, KCs, NEPSI, UKEX, PESO
T = Ex db mb IIB T5 Gb: INMETRO
A = Ex d m IIB T5: CSA
F = Flameproof enclosure & encapsulation: FM
C = Ex dmb IIC T5: KCs
X = Ex dmb IIB T5: TIIS
Z[3] = Ex db mb IIB T5 Gb: CCC, NEPSI
B[4] = Ex db mb IIC T6 Gb: CCC, NEPSI
G = Ex ia IIC T6 Gb: CCC, NEPSI
i = Ex ia IIC T6 Gb: ATEX, IECEx, KCs, UKEX, PESO

Lever type
1 = M6 X 34L
2 = M6 X 63L
3 = M8 X 34L
4 = M8 X 63L
5 = NAMUR

Orifice type
1 = Φ1 2 = Φ2 3 = None

Conduit & air connection
1 = G ½ - Rc ¼ (N/A for FM, CSA)
2 = G ½ - ¼ NPT (N/A for FM, CSA)
3 = G ½ - G¼ (N/A for FM, CSA)
4 = M20 - ¼ NPT
5 = ½ NPT - ¼ NPT

Operating temp. (non-explosion proof)[5]
S = -20 to +70 °C (-4 to +158 °F)
H = -20 to +120 °C (-4 to +248 °F)
L = -40 to +70 °C (-40 to +158 °F)

Option 1
0 = None (std)
1[6] = Dome cover

Option 2
0 = None
1[7] = 4-20 mA Analogue Output (internal, without LCD, non-explosion proof)
2[8] = 4-20 mA Analogue Output (external, SPTM-6V, explosion proof)
3[9] = Limit switch (2ea, internal, non-explosion proof)
4[10] = Limit switch (2ea, external, YT-850 (non-explosion proof) or YT-870 (explosion proof))
5[11] = 4-20 mA Analogue Output + limit switch (2ea) (internal, non-explosion proof)
6[12] = SPTM + limit switch (2ea) (external, YT-870, explosion proof)

YT-1050 Product code

YT-1050 - L - S - N - 1 - 1 - 2 - S

Model
YT-1050 = STS316

Motion type
L = Linear R = Rotary

Acting type
S = Single D = Double

Explosion protection[13]
N = Non-explosion proof
M[14] = Ex db mb IIB T5 Gb: ATEX, IECEx, KCs, UKEX, PESO
T = Ex db mb IIB T5 Gb: INMETRO
Z = Ex db mb IIB T5 Gb: CCC, NEPSI

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
1 = G ½-¼ NPT (N/A for CCC)
5 = ½ NPT - ¼ NPT (CCC only)

Operating temp. (non-explosion proof)[15]
S = -20 to +70 °C (-4 to +158 °F)
H = -20 to +120 °C (-4 to +248 °F)
L = -40 to +70 °C (-40 to +158 °F)

YT-1000R Notes:
1. M (except KCs), T, F, X, Z, B, G, i are only available for operating temperature S. M (only KCs) is only available for operating temperature S and H. A, C are only available operating temperature S and L.
2. Please put the name of the certificate in a purchase order.
3,4. Z and B are only available for conduit & air connection 4 and 5.
5. This option is just the normal operating temperature of the product and is not related to explosion protection temperature. See certificates for explosion protection temperature.
6. 1 in **Option 1** + 0 in **Option 2** is available for Explosion protection M (ATEX, IECEx, KCs and NEPSI only), A, C, Z, B, G, i (ATEX, IECEx and KCs only) and N.
7. There is also with LCD type. So if you would like to order this, please fill in "4-20 mA Analog Output (Internal, With LCD)" on the order form.
7,8. Only available for operating temperature S and L.
8. The nameplate of the external product, SPTM-6V, is KCs+NEPSI. The conduit entries of SPTM-6V is G **½**. For NEPSI it is **½** NPT. SPTM-6V (Explosion protection for Ex d IIC) is certified with KCs and NEPSI so this option is available for Explosion protection M (KCs and NEPSI only), C, i (KCs only) and N. This option is only available for 0 in **Option 1**.
9,10,11,12. Only available for operating temperature S, and 1 in **Option 1**.
10. Mechanical switch (SPDT) is only available for YT-850. The conduit entry of YT-850 is G **½**.
10,12. Mechanical switch (SPDT) and Inductive proximity (Autonics) are available for YT-870.
YT-870 has two types of nameplates, KCs+ATEX+IECEx+CSA and CCC. The conduit entry of YT-870 is G **¾**. For CSA and CCC it is **½** NPT.
YT-870 (Explosion protection for Ex d IIC) is certified with KCs, ATEX, IECEx, CSA and CCC so this option is available for Explosion protection M (ATEX, IECEx and KCs only), A, C, Z, B, G, i (ATEX, IECEx and KCs only) and N.

YT-1050 Notes:
13. M (except KCs), T and Z are only available for operating temperature S. M (only KCs) is only available for operating temperature S and H.
14. Please put the name of the certificate in a purchase order.
15. This option is just the normal operating temperature of the product and is not related to explosion protection temperature. See certificates for explosion protection temperature.

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**

Item type		YT-930	YT-940
Input signal		4-20 mA DC	
Output pressure	Standard	1 0.02 to 0.1 MPa (0.2 to 1.0 bar)	
	Multi-range	2 0.00 to 0.12 MPa (0 to 1.2 bar)	
		3 0.04 to 0.2 MPa (0.4 to 2.0 bar)	
		4 0.00 to 0.23 MPa (0 to 2.3 bar)	
Supply pressure	Standard	1 0.13 to 0.16 MPa (1.3 to 1.6 bar)	
	Multi-range	2 0.14 to 0.16 MPa (1.4 to 1.6 bar)	
		3 0.22 to 0.24 MPa (2.2 to 2.4 bar)	
		4 0.25 to 0.27 MPa (2.5 to 2.7 bar)	
Explosion protection type		**ATEX / IECEx** Ex ia IIC T5/T6 Gb, Ex ia IIIC T100°C/ T85°C Db	**FM / CSA** 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) Below 0.08 CFM (sup = 20 psi)	
Flow capacity		70 LPM (sup = 0.14 MPa) 2.47 CFM (sup = 20 psi)	
Explosion temp.		-40 to +60 °C (T5) / -40 to +40 °C (T6)	-40 to +85 °C (T5) / -40 to +75 °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		Rc ¼, ¼ NPT	
Conduit		G ½	
Ingress protection		IP66	Type 4X, IP66 (excluding the pressure gauges)
Impedance		Max. 390Ω @20mA DC	Max. 390Ω @20mA DC
Material		Aluminium diecasting	
Weight		1.6 kg (3.53 lb)	2.5 kg (5.6 lb)



YT-930



YT-940

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 proof	C = KCs, FM, CSA
i = ATEX, IECEx	

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 = G ½ - Rc ¼
2 = G ½ - ¼ NPT

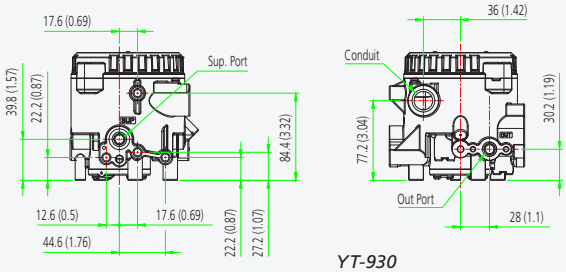
Operating temp. (non-explosion proof)[1]
L = -40 to +85 °C (-40 to +185 °F)

Option
0 = None
1 = 4-20 mA Analogue Output

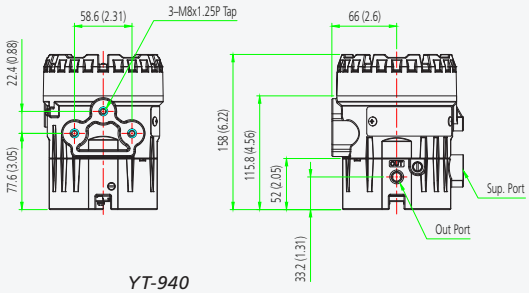
Gauge
0 = None
1[2] = 0 to 0.2 MPa
2[3] = 0 to 0.4 MPa

Notes:
1. This option is the normal operating temperature of the product and is not related to explosion protection temperature. See certificates for explosion protection temperature.
2. For 1 or 2 in output pressure option.
3. For 3 or 4 in output pressure option.

Dimensions: mm (Inches ")



YT-930



YT-940

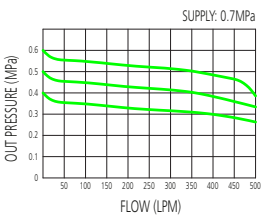
Design features

- **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.
- **Five micron filter.** Protects pneumatic instruments from dirty air.
- **Manual or auto draining option**

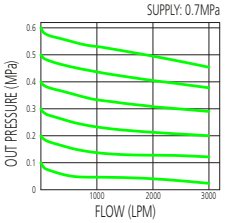


YT-200 YT-205 YT-220 YT-225

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 = 246.5 psi			
Max. output pressure	0.42 MPa (A Type), 0.84 MPa (B Type) 60.9 psi (A Type), 121.8 psi (B Type)			
Air connection	Rc ¼, ¼ NPT	Rc ½, ½ NPT	¼ NPT	½ NPT
Gauge connection	Rc ¼, ¼ NPT	Rc ¼, ¼ NPT	¼ NPT	¼ NPT
Operating temp.	-20 to +70 °C (-4 to +158 °F) (standard type)			
Min. filtering size	5 micron			
Material	Aluminium diecasting		Stainless steel 316	
Weight (manual drain)	0.62 kg (1.4 lb)	0.88 kg (2 lb)	1.5 kg (3.3 lb)	2.2 kg (4.8 lb)

Product code

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

Model
YT-200 = Aluminium ¼"
YT-205 = Stainless steel ¼"
YT-220 = Aluminium ½"
YT-225 = Stainless steel ½"

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

Connection type
P = Rc (N/A for YT-205 and YT-225)
N = NPT

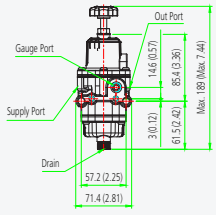
Gauge
0 = None
1 = 0 to 0.4 MPa
2 = 0 to 1.0 MPa

Ambient temperature
1 = -20 to +70 °C (-4 to +158 °F)
2 = -20 to +120 °C (-4 to +248 °F)
3 = -40 to +70 °C (-40 to +158 °F)
4 = -50 to +70 °C (-58 to +158 °F)

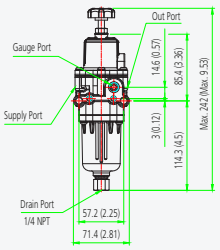
Option
0 = Manual drain
1 = Auto drain[1]

Notes:
1. Only "1" of operating temp. is available

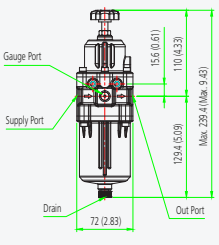
Dimensions: mm (Inches ")



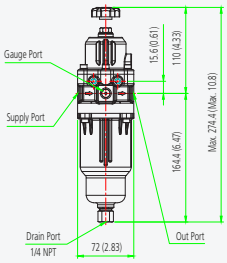
YT-200/205 manual drain



YT-200/205 auto drain



YT-220/225 manual drain



YT-220/225 auto drain

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 bypass control.** Improves system stability.



YT-300 YT-325 YT-315

SIL SIL LEVEL 2 CE UKCA Ex

Item type				YT-300 YT-305	YT-320 YT-325	YT-310 YT-315
Max. supply pressure				1 MPa = 10 bar = 145 psi		
Max. signal / output pressure				0.7 MPa = 7 bar = 102 psi		
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				Rc ¼, ¼ NPT	Rc ½, ½ NPT	¾ NPT
Signal connection				Rc ¼, ¼ NPT		¼ NPT
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	0.51 kg (1.1 lb)	0.77 kg (1.7 lb)	1.9 kg (4.2 lb)
	YT-305	YT-325	YT-315	1.4 kg (3 lb)	1.9 kg (4.2 lb)	4.6 kg (10.1 lb)

Product code

YT-300 - N - 1

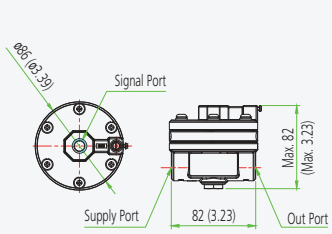
Model
YT-300 = Aluminium ¼"
YT-305 = Stainless steel ¼"
YT-320 = Aluminium ½"
YT-325 = Stainless steel ½"
YT-310 = Aluminium ¾"
YT-315 = Stainless steel ¾"

Connection type (YT-305/325/310/315 are only available in NPT connection)
P = Rc
N = NPT

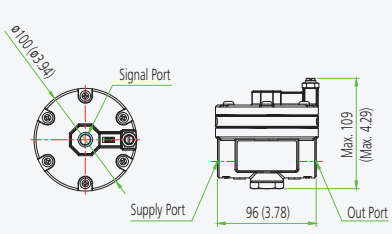
Ambient temperature
1[1] = -20 to +70 °C (-4 to +158 °F)
2 = -20 to +120 °C (-4 to +248 °F)
3 = -40 to +70 °C (-40 to +158 °F)
4 = -60 to +70 °C (-76 to +158 °F)

Notes:
1. Standard products with NBR rubber (ambient temperature range option 1) deteriorate quickly and are easily damaged when exposed to natural environments (sunlight, ozone, snow, rain, etc.). Therefore, it is highly recommended to use high-temperature (ambient temperature range option 2) or low-temperature (ambient temperature range option 3) options with silicone rubber when using the product outdoors.

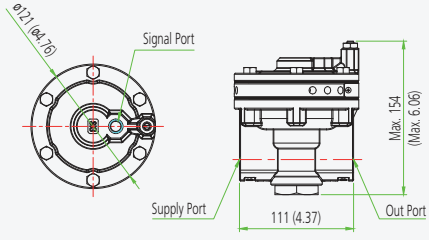
Dimensions: mm (Inches ")



YT-300/305



YT-320/325



YT-310/315

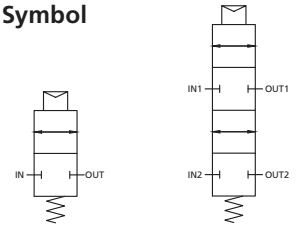
Design features

- **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

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 = 20 to 102 psi			
Max. supply pressure		Max. 1 MPa = 10 bar = 145 psi			
Signal pressure setting range		0.14 to 0.7 MPa = 7 bar = 102 psi			
Hysteresis		Below 0.01 MPa = 0.1 bar = 1.45 psi			
Operating temp.		-20 to +70 °C (-4 to +158 °F) (standard type)			
Flow capacity (Cv)		0.9		1.8	
Air connection		Rc ¼, ¼ NPT	¼ NPT	⅜ NPT	
Signal connection		Rc ¼, ¼ NPT	¼ NPT	¼ NPT	
Material		Aluminium diecasting	Stainless steel 316	Aluminium diecasting	Stainless steel 316
Weight	Single	0.47 kg (1.1 lb)	1.3 kg (2.2 lb)	1.5 kg (3.3 lb)	3.3 kg (7.3 lb)
	Double	0.66 kg (1.5 lb)	1.5 kg (3.3 lb)	2.7 kg (6 lb)	5.8 kg (12.8 lb)

Product code

YT-400 - S - P - 1

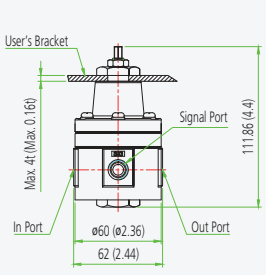
Model
YT-400 = Aluminium ¼"
YT-405 = Stainless steel ¼"
YT-430 = Aluminium ⅜"
YT-435 = Stainless steel ⅜"

Acting type
S = Single
D = Double

Connection type (YT-405/430/435 are only available in NPT connection)
P = Rc
N = NPT

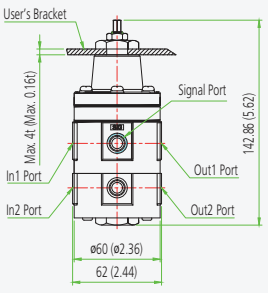
Ambient temperature
1 = -20 to +70 °C (-4 to +158 °F)
2 = -20 to +120 °C (-4 to +248 °F)
3 = -40 to +70 °C (-40 to +158 °F)
4 = -50 to +70 °C (-58 to +158 °F)

Dimensions: mm (Inches ")



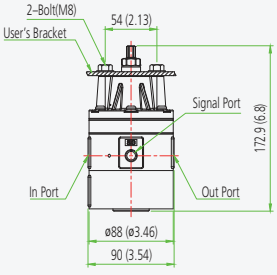
YT-400S, YT-405S (Single-acting)

YT-400S/405S



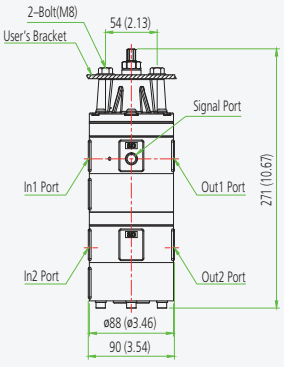
YT-400D, YT-405D (Double-acting)

YT-400D/405D



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

YT-430S/435S



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

YT-430D/435D

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.

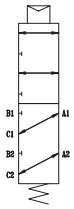


YT-520S YT-525D YT-530S YT-535D

Symbol



Single-acting type



Double-acting type

Item type		YT-520	YT-525	YT-530	YT-535
Hysteresis		Below 0.01 MPa = 0.1 bar = 1.45 psi			
Signal pressure		0.14 to 0.7 MPa = 1.4 to 7 bar = 20 to 102 psi			
Max. supply pressure		1 MPa = 10 bar = 145 psi			
Operating temp.		-20 to +70 °C (-4 to +158 °F) (standard type)			
Signal connection		¼ NPT			
A, B, C connection		¼ NPT		⅜ NPT	
Flow capacity (Cv)		0.9		1.8	
Material		Aluminium diecasting	Stainless steel 316	Aluminium diecasting	Stainless steel 316
Weight	Single	0.71 kg (1.6 lb)	1.7 kg (3.8 lb)	1.5 kg (3.3 lb)	3.3 kg (7.3 lb)
	Double	1.3 kg (2.9 lb)	3.1 kg (6.9 lb)	2.7kg (6 lb)	5.8kg (12.8 lb)

Product code

YT-520 - S - 2 - 1

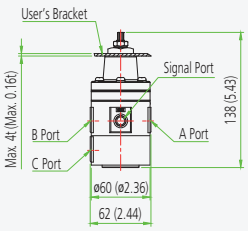
Model
YT-520 = Aluminium ¼"
YT-525 = Stainless steel ¼"
YT-530 = Aluminium ⅜"
YT-535 = Stainless steel ⅜"

Acting type
S = Single
D = Double

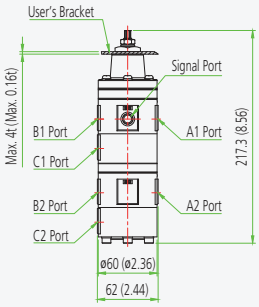
Connection type
2 = NPT

Ambient temp.
1 = -20 to +70 °C (-4 to +158 °F)
2 = -20 to +120 °C (-4 to +248 °F)
3 = -40 to +70 °C (-40 to +158 °F)
4 = -50 to +70 °C (-58 to +158 °F)

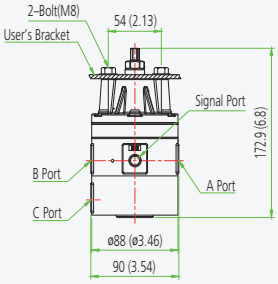
Dimensions: mm (Inches ")



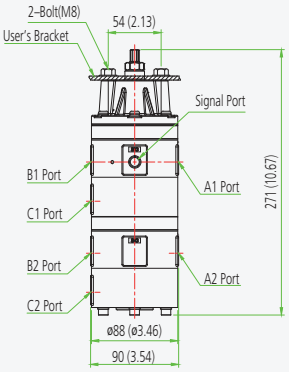
YT-520S/525S



YT-520D/525D



YT-530S/535S



YT-530D/535D

Position Transmitter SPTM-5V

Design features

- **Convenient wiring: two 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 (two or five points setup).



SPTM-5V

Item type	SPTM-5VL	SPTM-5VR
Input type	2 Wire	
Input stroke	10 to 150 mm	55 to 100 °
Output signal	4-20 mA DC	
Load resistance	$R_L \leq \frac{Vs[v] - 9[v]}{I\,[mA]}$	
Supply voltage	9 to 28 VDC	
Conduit	G ½	
Operating temp.	-40 to +85 °C (-40 to +185 °F)	
Linearity	±1% F.S.	
Hysteresis	±0.2% F.S.	
Sensitivity	±0.2% F.S.	
Explosion protection type	**NEPSI** Ex ia IIC T5 Gb Ambient temp.: -40 to +60 °C (-40 to +140 °F)	
Ingress protection	IP67	
Material	Aluminium diecasting	
Weight	0.6 kg (1.3 lb)	

Product code

SPTM-5V - L - N - 1 - 0

Model
SPTM-5V

Motion type
L = Linear
R = Rotary

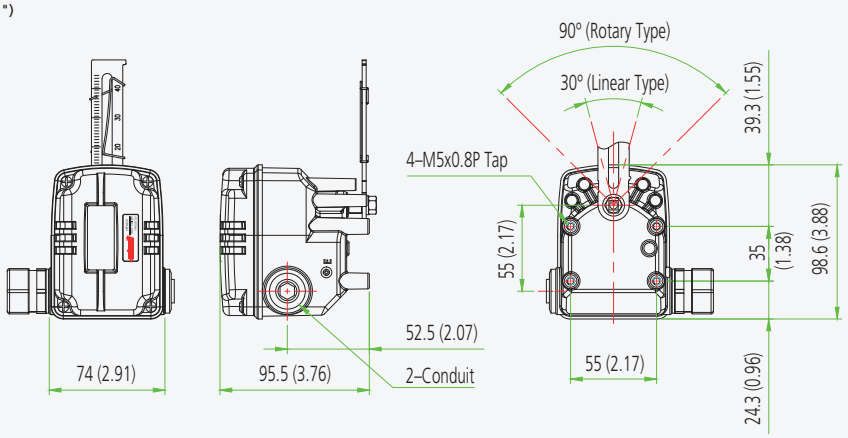
Explosion protection
N = Non-explosion proof
Z = NEPSI

Lever type

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

Option
0 = None 1 = With LCD

Dimensions: mm (Inches ")



Design features

- **Loop powered two 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 (two or five points setup).



SPTM-6V



SPTM-65V

Item type		SPTM-6V	SPTM-65V
Connection type		2 Wire	
Input stroke	Linear	10 to 150 mm	
	Rotary	55 to 100 °	
Output signal		4-20 mA DC	
Load resistance		$R_L \leq \frac{Vs[v] - 9[v]}{I\ [mA]}$	
Supply voltage		9 to 28 VDC	
Conduit		G ½ or ½ NPT only for NEPSI	
Operating temp.		-40 to +85 °C (-40 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 **NEPSI** Ex d IIC T6 Gb Ambient temp.: -40 to +60 °C (-40 to +140 °F)	
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 aluminium
SPTM-65V = Flameproof stainless steel

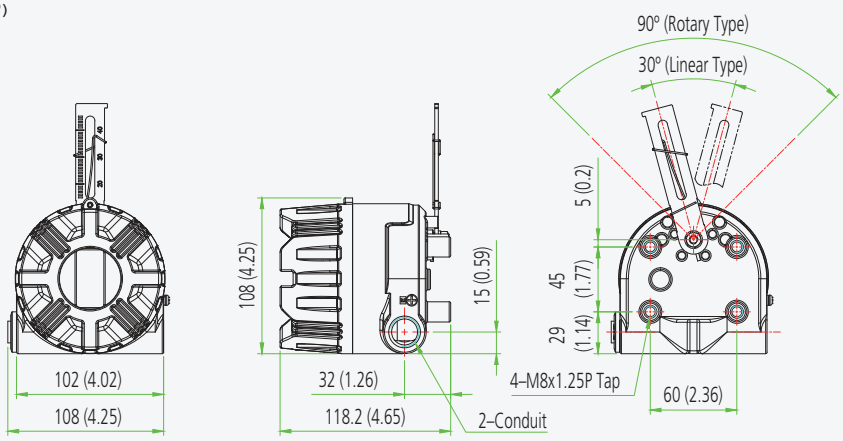
Motion type
L = Linear
R = Rotary

Explosion protection
C = KCs
Z = NEPSI

Lever type

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

Dimensions: mm (Inches ")



Limit Switch Box YT-850

Design features

- **Visual position indicator.** 360° viewing angle.
- **Multiple output signals.** Eight contacts of terminal ports.
- **Universal compatibility.** Suitable for any rotary motion actuator <ISO5211>.
- **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)	PSN17-5DNU (Autonics, NPN type)
Switch rating	AC	250 V 3 A 125 V 5 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
Ingress protection		IP67	
Ambient temp.		-25 to +70 °C (-13 to +158 °F)	
Conduit entry		½ NPT, G ½, M20x1.5P	
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

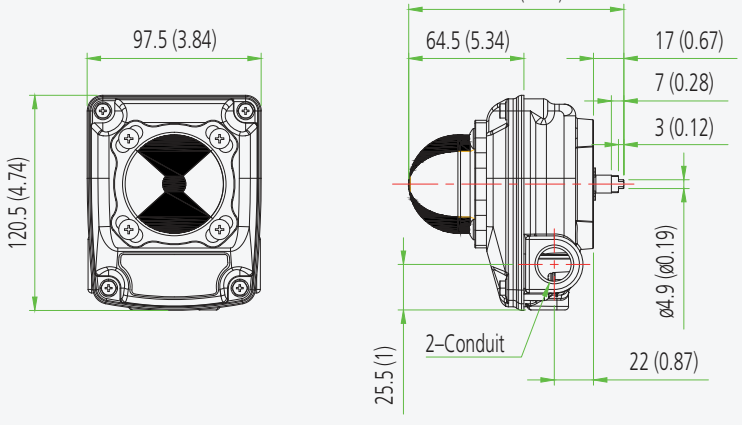
Model
YT-850 = Weatherproof aluminium

Switching type
M = Mechanical switch
P = Inductive proximity type

Conduit
1 = ½ NPT
3 = G ½
4 = M20x1.5P

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 ")



Design features

- **Visual position indicator.** 360° viewing angle.
- **Multiple output signals.** Eight contacts of terminal ports.
- **Universal compatibility.** Suitable for rotary actuators (ISO 5211).
- **Easy configuration.** Simple adjustment of cam position.
- **Dual conduit entries.** Separate power & signal cable connections.



YT-870



YT-875

Item type		YT-870M YT-875M	YT-870P YT-875P		YT-870D YT-875D
Switch type		Mech. switch (2 x SPDT)	Inductive proximity sensor		Mech. switch (2 x DPDT)
		SS5GL (Omron)	PSN17-5DNU (Autonics, NPN type)	NJ2-V3-N (P&F, NC type)	DZ-10G-1B (Omron)
Switch rating	AC	250 V 5 A 125 V 5 A	-	-	125 V or 250 V 10A
	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 V	8.2 V	125 V 0.5 A, 250 V 0.25 A, 30 V 10 A, 14 V 10 A, 8 V 10 A
Ingress protection		Type 4, 4X, IP 67			
Explosion protection type		**ATEX / IECEx** Ex db IIC T6. Ex tb IIIC T85°C **CSA (also available in USA)** 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. Ex tb IIIC T85°C **CCC** Ex d IIC T6 Gb. Ex tD A21 IP67 T85°C			
Ambient temp.		-20 to +60 °C (-4 to +140 °F)			
Conduit entry		YT-870: ¾ NPT, G ¾, M20x1.5P, ½ NPT YT-875: ¾ NPT			
Terminal		YT-870D, 875D = 12 points YT-870M, 870P, 875M, 875P = 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)			

Product code

YT-870 - M - 1 - 0 - 0 -

Model
YT-870 = Flameproof aluminium
YT-875 = Flameproof stainless steel

Switching type
M = Mechanical type (2 x SPDT)
P = Inductive proximity type[1]
D = Mechanical type (2 x DPDT)

Conduit
1 = ¾ NPT
2 = G ¾ (YT-870 only, NA for CCC)
3 = M20x1.5P (YT-870 only)
4 = ½ NPT (YT-870 only)

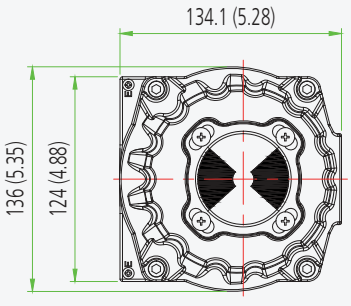
Bracket type
0 = None
1 = ST-1 (30*80,H20)
2 = ST-2 (30*80,H30)
3 = ST-3 (30*130,H30)
4 = ST-4 (30*130,H50)

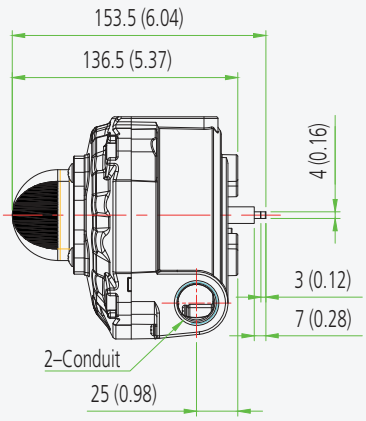
Option
0 = None
1 = 4-20 mA Analogue Output[2]

Explosion protection
Blank = ATEX, IECEx, CSA, KCs
Z = CCC

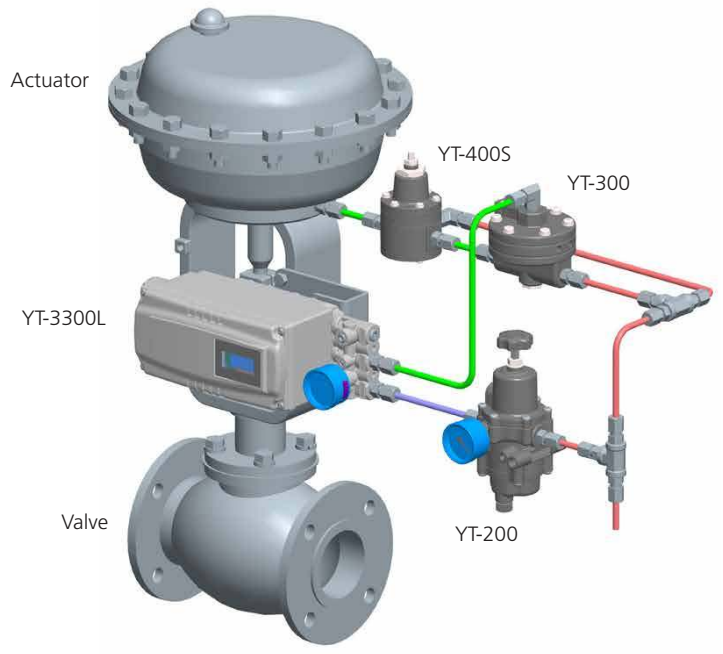
Notes:
1. Standard type is PSN17-5DNU (Autonics, NPN type), but PSN17-5DPU (Autonics, PNP) and NJ2-V3-N (P&F, NC type) are also available. 2. Only M of switching type is available.

Dimensions: mm (Inches ")

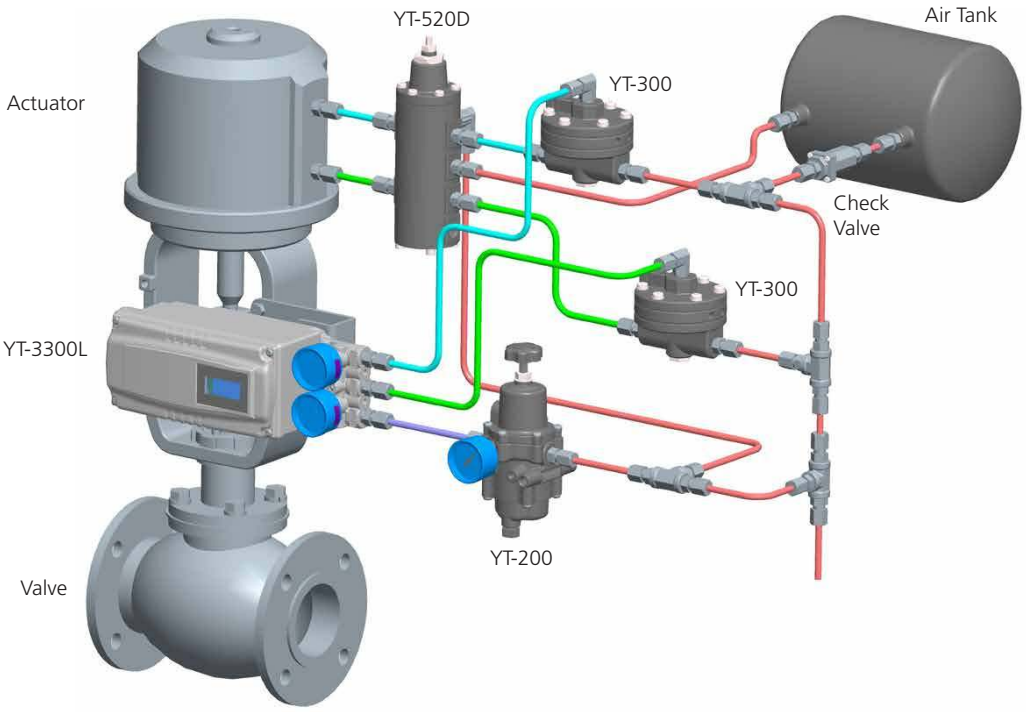




Examples for Installation (Linear Type)

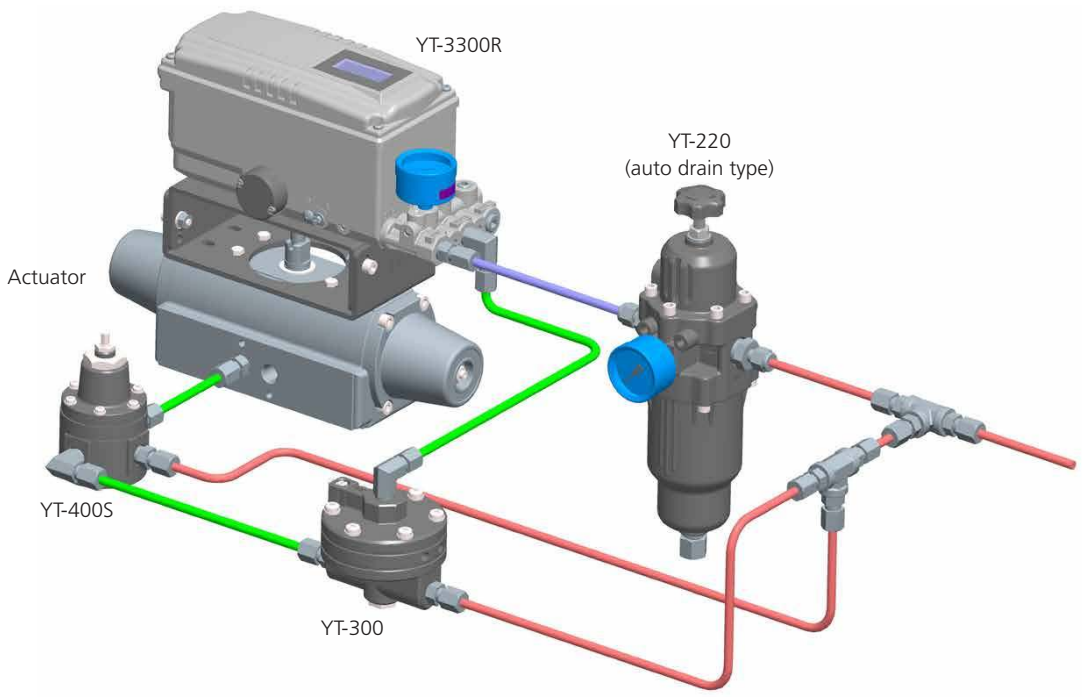


YT-3300L (single-acting) application example

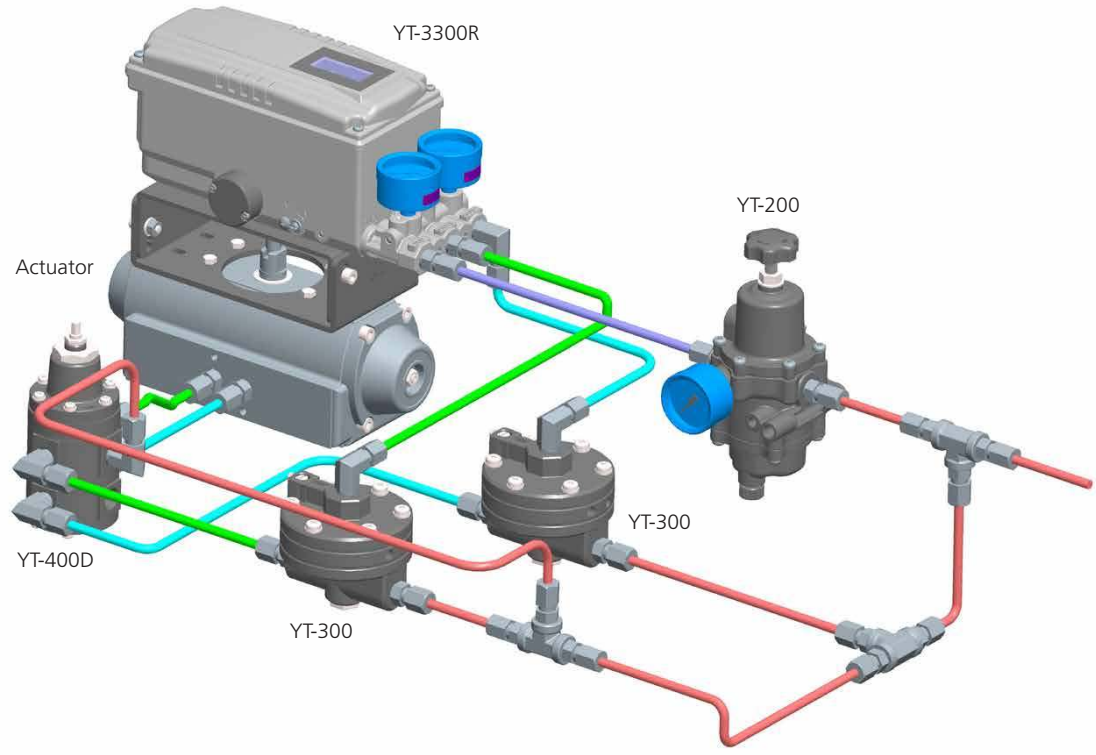


YT-3300L (double-acting) application example

Examples for Installation (Rotary Type)

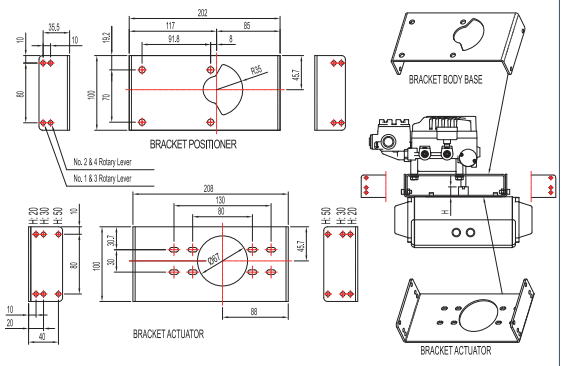


YT-3300R (single-acting) application example

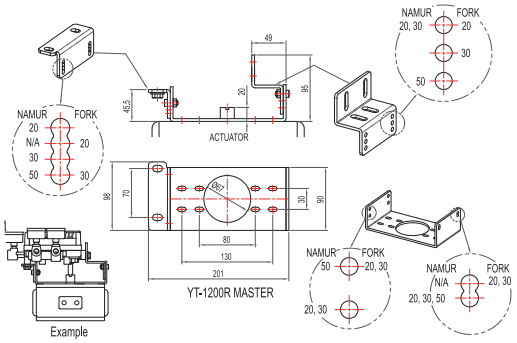


YT-3300R (double-acting) application example

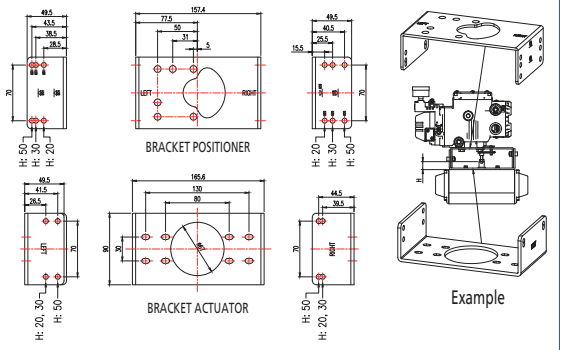
YT-1000R bracket series



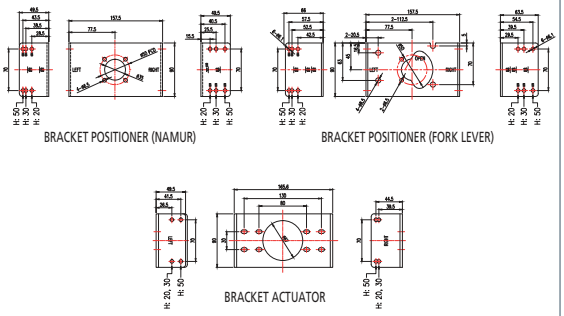
YT-1200R bracket series



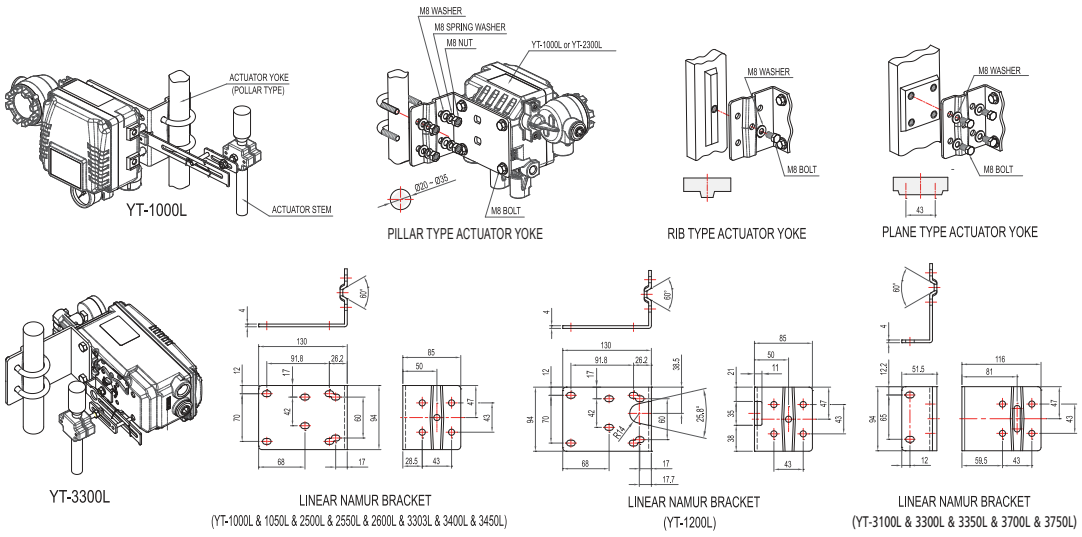
YT-2500R & 2550R & 2600R & 3303R & 3400R & 3450R bracket series



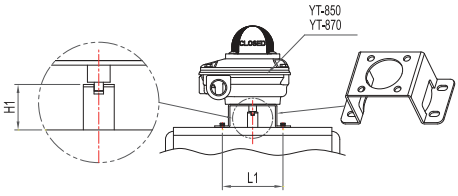
YT-3100R & 3300R & 3350R & 3700 & 3750 bracket series

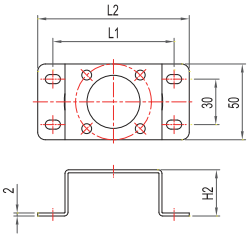


Linear type NAMUR bracket series



YT-850 & 870 & 875 bracket series

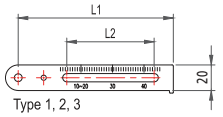




UNIT : mm

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		

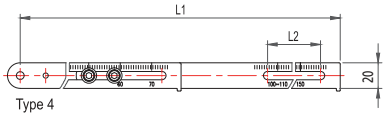
Lever series



Type 1, 2, 3

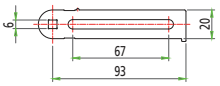
UNIT : mm

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

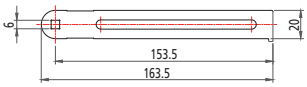


Type 4

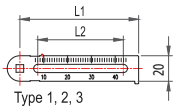
YT-1000 & 1200 linear type



SPTM-5V rotary standard lever type



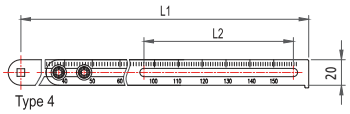
SPTM-6V & SPTM-65V
rotary standard lever type



Type 1, 2, 3

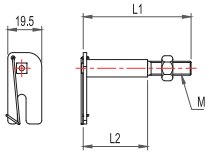
UNIT : mm

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



Type 4

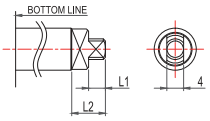
YT-2500, 2550, 2600, 3302, 3303, 3400, 3450, 3702,
SPTM-5V, SPTM-6V, SPTM-65V linear type



UNIT : mm

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

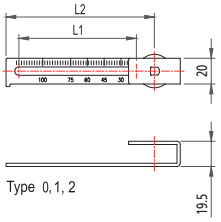
Rotary fork lever type



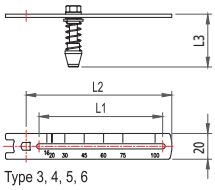
UNIT : mm

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



Type 0, 1, 2



Type 3, 4, 5, 6

UNIT : mm

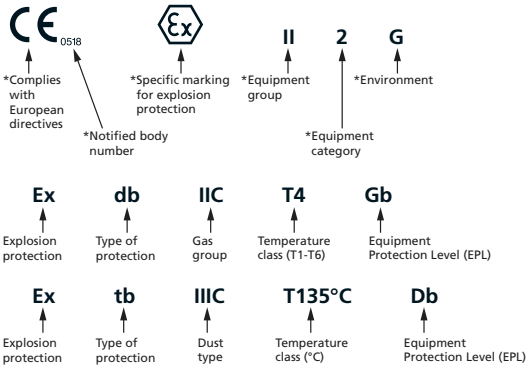
Lever type	Stroke	L1	L2	L3	
0 (Standard)	10 ~ 40	45	55	–	
1 (Standard)	20 ~ 100	91	115		
2 (Standard)	90 ~ 150	85	165		
3 (Adapter)	16 ~ 30	27	43	40.9	YT-3300 YT-3350 only
4 (Adapter)	16 ~ 60	64	80		
5 (Adapter)	16 ~ 100	96	113		
6 (Adapter)	90 ~ 150	80	167		

YT-3100, 3300 & 3350 & 3700 & 3750 linear type

Appendix A: Equipment Certification Requirements for Hazardous Locations

ATEX & IECEx

Typical ATEX & IECEx marking [*ATEX only]

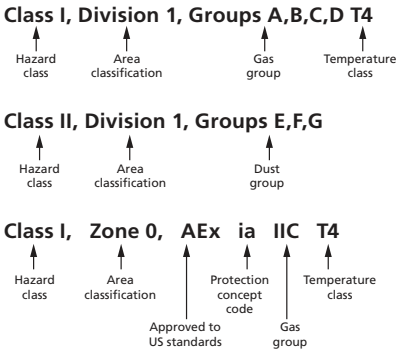


Protection concepts

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	- h	- Ga, Gb, Gc Da, Db, Dc	- 0, 1, 2 20, 21, 22	EN 13463-1 IEC 80079-36	Low potential energy
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 h	- Ga, Gb, Gc Da, Db, Dc	0, 1, 2 20, 21, 22 0, 1, 2 20, 21, 22	EN 13463-5 IEC 80079-37	Ignition hazards eliminated by good engineering methods
Control of ignition source	b h	- Ga, Gb, Gc Da, Db, Dc	- 0, 1, 2 20, 21, 22	EN 13463-6 IEC 80079-37	Control equipment fitted to detect malfunctions

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	
Explosionproof	(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 — Serial number; Year of certification

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 fibres and flyings	Class III Fibres and flyings	-	-

Classification of divisions and zones

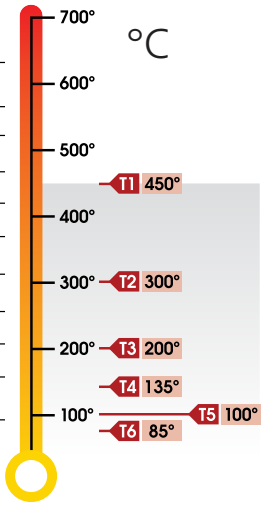
Type of area	NEC and CEC*	ATEX and IEC	Definitions
Continuous hazard	Division 1	Zone 0 / Zone 20 Cat 1	A place in which an explosive atmosphere is continuously present
Intermittent hazard	Division 1	Zone 1 / Zone 21 Cat 2	A place in which an explosive atmosphere is likely to occur in normal operation
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, fibres, flyings
6	Indoor / outdoor	Protection against temporary submersion
6P	Indoor / outdoor	Protection against prolonged submersion
12, 12K	Indoor	Protection against circulating dust, fibres, flyings
13	Indoor	Protection against circulating dust, fibres, flyings, seepage

Appendix B: Certifications

Product	Model number	Cert. type	Rating
Eiectro-pneumatic positioner	YT-1000 / 1050	ATEX/IECEx/ UKEX/PESO	Ex db mb IIB T5 Gb
		INMETRO	Ex db mb IIB T5 Gb
	YT-1000	FM	CL I, Div 1, Groups C,D T5; CL II, III, Div 1, E,F,G T5; Type 4X
		CSA	Ex d m IIB T5 Gb
		CCC, NEPSI	Ex db mb IIB T5 Gb; Ex db mb IIC T6, Ex ia IIC T6 Gb
		TIIS	Ex dmb IIB T5
		KCs	Ex dmb IIB T5/T4
			Ex dmb IIC T5
			Ex ia IIC T6 Gb
		ATEX/IECEx/ KCs/CCC/ PESO	Ex ia IIC T6 Gb
	YT-1050	KCs	Ex db mb IIB T5/T4 Gb
		NEPSI, CCC	Ex db mb IIB T5 Gb
Smart positioner	YT-3300 / 3350 / 3301 / 3302 / 3303 / 3400 / 3450 / 3700 / 3702 / 3750	SIL	SIL2 / SIL3
	YT-3300	PESO/NEPSI	Ex ia IIC T5/T6 Gb
	YT-3300 / 3350 / 3301 / 3302 / 3303	ATEX/IECEx/ UKEX	Ex ia IIC T5/T6 Gb, Ex ia IIIC T100°C/T85°C Db
		INMETRO	Ex ia IIC T6/T5 Gb
			Ex ia IIIC T85°C/T100°C Db IP66
		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 ABCDFG; Type 4X/IP66 or IP54, T5 -40°C to 60°C, T6 -40°C to 40°C
		CSA	Class I, Division 1/2, Groups ABC and/or D T5/T6
			Class II, Division 1/2, Groups EF and/or G T100°C/T85°C; Class III
			Ex ia IIC T5/T6 Ga; Ex tb IIIC T100°C/T85°C Db IP66
		CCC	Ex ia IIC T5/T6 Gb, Ex ia IIIC T85°C/T100°C Db
		KCs	Ex ia IIC T5/T6 Gb, Ex iaD IIIC T100°C/T85°C
	YT-3400 / 3450	ATEX/IECEx/ UKEX	Ex db IIC T5/T6, Ex tb IIIC T100°C/T85°C
		FM	Class I Div 1, Groups ABCD; T6/T5
			Class II, III Div 1, Groups EFG; T6/T5
			Class I, Zone 1, AEx db IIC T6/T5
			Zone 21 AEx tb IIIC; T85°C Ta= -40°C to +70°C, T100°C Ta= -40°C to +80°C; Type 4X/IP66
		CSA	Ex db IIC Gb T5 or T6; Class I, Div 1, Groups CD; Class II, Div 1, Groups EFG; Type 4X /IP66
			Ex tb IIIC Db T85°C/T100°C
		CCC	Ex db IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db
		NEPSI	Ex db IIC T5/T6 Gb,
			Ex tb IIIC T85°C/T100°C Db
		INMETRO	Ex db IIC T5/T6 Gb IP66
			Ex tb IIIC T100°C/T85°C Db IP66
		PESO	Ex db IIC T5/T6 Gb
	YT-3400	KCs	Ex d IIC T5/T6 IP66
	YT-3450	KCs	Ex d IIC T5/T6, Ex tb IIIC T100°C/T85°C
	RTP-4400	ATEX/IECEx/ UKEX	Ex db IIC T6/T5/T4 Gb, Ex tb IIIC T85°C/100°C/T135°C Db
			Ex ia IIC T6/T5/T4 Ga, Ex ia IIIC T_{200}85°C/100°C/T135°C Da
			Ta: -55 °C to +85 °C

Appendix B: Certifications

Product	Model number	Cert. type	Rating
Smart positioner	YT-2500 / 2550 / 2501	ATEX/IECEx	Ex ia IIC T5/T6 Gb, Ex ia IIIC T100°C/T85°C IP6X
		CCC	Ex ia IIC T5/T6 Gb, Ex ia IIIC T85°C/T100°C D
		NEPSI	Ex ia IIC T5/T6 Gb, Ex iaD 21 T100/T85
		KCs	Ex ia IIC T5/T6, Ex iaD IIIC T100°C/T85°C
	YT-2600	ATEX/IECEx	Ex db IIC T5/T6, Ex tb IIIC T100°C/T85°C
		KCs	Ex d IIC T6/T5, Ex tb IIIC T85°C/T100°C
		CCC	Ex db IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db
	YT-3700 / 3750	ATEX/IECEx/ UKEX	Ex ia IIC T5/T6 Gb, Ex ia IIIC T100°C/T85°C Db IP 6x
		CCC	Ex ia IIC T5/T6 Gb, Ex ia IIIC T85°C/T100°C Db
		KCs	Ex ia IIC T6/T5, Ex ia IIIC T85°C/T100°C
		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, Zone 21 AEx tb IIIC T100°C…T85°C, Type 4X, IP66
		CSA	Ex ia IIC T6/T5 Gb; Ex ia IIIC T85°C/T100°C Db, Class I, Div 1 and Div 2, Groups A, B, C, D T6/T5,
			Class II, Div 1 and Div 2, Groups E, F, G, T85°C/T100°C, Class III
		PESO	Ex ia IIC T5/T6 Gb
IP converter	YT-930	ATEX/IECEx	Ex ia IIC T5/T6 Gb, Ex ia IIIC T100°C/T85°C Db
	YT-940	FM	Class I, Div 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, Div 1, Groups E, F, G; T6, T5
			Class I, Zone 1, AEx d IIC T6, T5
			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 IIIC T85°C/T100°C
		KCs	Ex d IIC T5/T6
Position transmitter	SPTM-5V	NEPSI	Ex ia IIC T5 Gb
	SPTM-6V / 65V	KCs	Ex d IIC T6 IP67
		NEPSI	Ex d IIC T6 Gb
Limit switch	YT-870 / 875	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, Div 1, Groups: E, F and G, Ex tb IIC T85°C
			Zone 21, AEx tb IIC T85°C; Type 4, 4X; IP67
		CCC	Ex db IIC T6 Gb, Ex tb IIIC T85°C Db
		KCs	Ex d IIC T6, Ex tb IIIC T85°C
Volume booster	YT-300 / 305 / 320 / 325 / 310 / 315	SIL	SIL2 / SIL3

Rotork Service

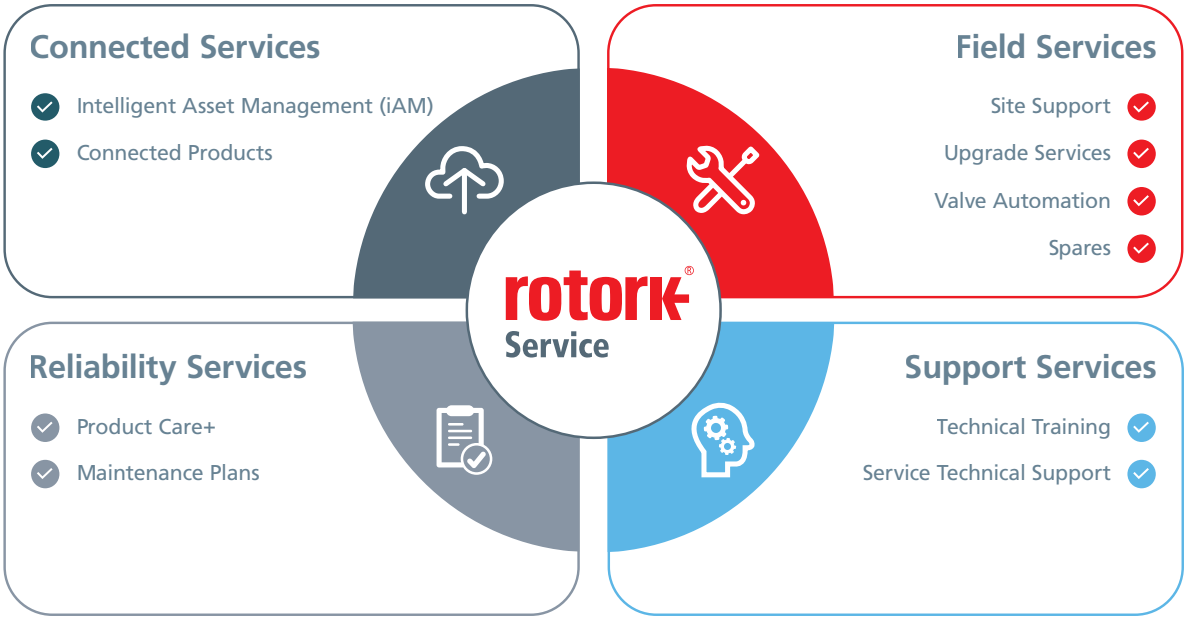
We offer specialist expertise to support mission-critical flow control and instrumentation solutions across oil and gas, water and power, and chemical, process and industrial markets.

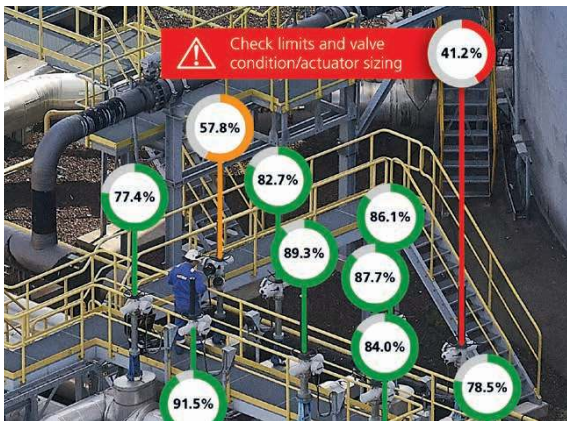
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Our engineers are highly trained, ensuring consistent, high-quality service worldwide. We operate dedicated workshops for the repair, calibration and testing of our products and only use genuine parts to guarantee top-level performance and reliability.

Our service offering covers four key areas:

- **Connected Services** including Rotork's Intelligent Asset Management (iAM) system
- **Field Services** including site support, upgrade solutions, valve automation and spares
- **Reliability Services** including health checks and product maintenance
- **Support Services** including technical training and support





Connected Services

Intelligent Asset Management (iAM) is a cloud-based system for intelligent Rotork actuators and the flow control equipment they operate. Effective asset management and maintenance are essential for maintaining site uptime.



Reliability Services

Reliability Services is a customisable approach to maintenance, with options that provide progressively increased levels of coverage and support. Our tailor-made programmes increase reliability and availability and allow customers to have flexibility about what services are most appropriate for them.



Field Services

Site Support

Benefit from our on-site support, from installation to emergency repairs.

Upgrade Solutions

Make sure your assets are prepared for the future with suitable upgrade options.

Valve Automation

Achieve precise and consistent flow control with automation of existing valves and replacement actuator/valve packages.

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