

# Smart Positioners YT-3400 / YT-3450

Torque motor technology with communications

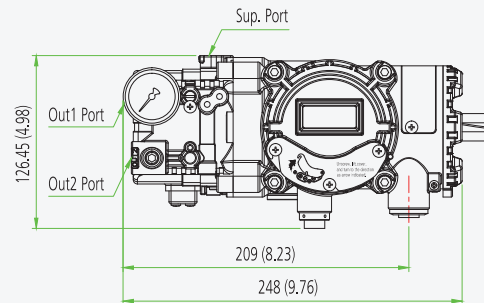
## Design features

- **Explosionproof / flameproof housing.** Global certification for Zone 1 and Division 1 installations.
- **Auto calibration.** Simple menu structure with options to auto calibrate all parameters or zero and end points only.
- **LCD display.** Alphanumeric digital display for process values and calibration.
- **Partial Stroke Test (PST).** Fully adjustable PST, with single or double set positions, all functionality can be performed and selected locally, through push buttons, or remotely with communication protocol.
- **Feedback signal.** Analogue feedback signals with 4 to 20 mA, mechanical and transistor switch options.

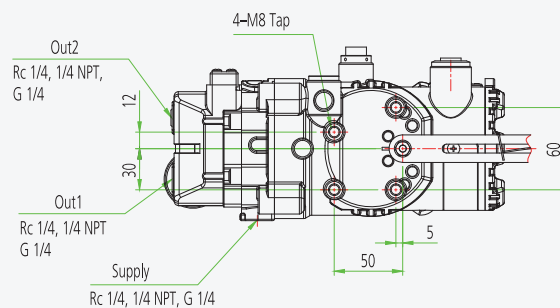
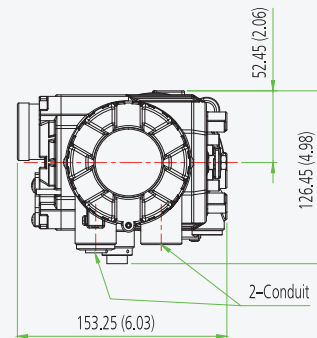
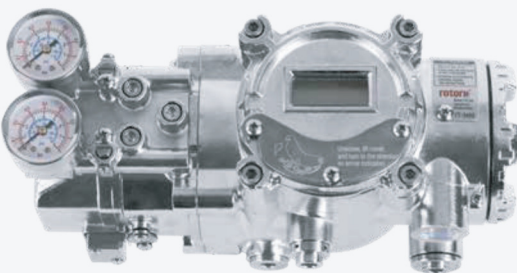
- **Auto / manual switch.** Enables closed-loop automatic valve position control or manual positioning via the Open / Close buttons. The manual mode is useful for troubleshooting, calibration, system testing or as a manual bypass.
- **PID control.** Pre-calibrated and user configurable variables via front panel pushbutton menu.
- **HART® communication.** Allows commands, position feedback and diagnostics to be sent digitally over the current loop.
- **Front panel pushbuttons for configuration.** Four robust and positive acting pushbuttons for field configuration.



## YT-3400 Aluminium Enclosure



## YT-3450 STS316 Enclosure



Dimensions: mm (Inches \*)

# Smart Positioners YT-3400 / YT-3450

Item Type	YT-3400	YT-3450
Input Signal	4 to 20 mA DC	
Supply Pressure	0.14 to 0.7 MPa = 1.4 to 7 bar = 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 1/4, 1/4 NPT, G 1/4	1/4 NPT
Gauge Connection	Rc 1/8, 1/8 NPT	1/8 NPT
Conduit	G 1/2, 1/2 NPT, M20	G 1/2
Operating Temp.	Standard Type	-30 to +85 °C (-22 to +185 °F)
	Low Temp. Type	-40 to +85 °C (-40 to +185 °F)
	Arctic Temp. Type	-55 to +85 °C (-67 to +185 °F)
	LCD Operating Temp.	withstands -55 to +85 °C (-67 to +185 °F) only visible above -40 °C (-40 °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 = 0.14 MPa) Below 0.08 CFM (sup = 20 psi)	
Flow Capacity	70 LPM (sup = 0.14 MPa) 2.47 CFM (sup = 20 psi)	
Output Characteristics	Linear, EQ%, Quick Open, user set (5 or 18 Points)	
Material	Aluminium Diecasting	Stainless Steel 316
Ingress Protection	NEMA 4-4X, IP66	
Explosion Protection Type	<b>ATEX, IECEx, EAC</b> Ex db IIC T5/T6, Ex tb IIIC T85°C/T100°C	
	<b>CCC, NEPSI</b> Ex d IIC T5/T6 Gb Ex tD A21 IP66 T85°C/T100°C	
	<b>KCs</b> Ex d IIC T5/T6 IP66	
	<b>CSA</b> Ex db IIC T5 or T6 Class I, Zone 1, AEx db IIC T5 or T6, Class II, Division 1, Groups E, F and G; Ex tb IIC T85°C/T100°C AEx tb IIIC T85°C/T100°C Type 4, 4X ; IP66	
	<b>FM</b> XP/II/1/ABCD/T6 Ta= -40°C to +70°C, T5 Ta= -40°C to +80°C I/1/AEx db/IIC/T6 Ta= -40°C to +70°C, T5 Ta= -40°C to +80°C DIP/II, III/1/EFG/T6 Ta= -40°C to +70°C, T5 Ta= -40°C to +80°C 21/AEx tb/IIIC/T85°C Ta= -40°C to +70°C, T100°C Ta= -40°C to +80°C; IP66	
	<b>ECAS</b> Ex db IIC T5/T6 Gb, Ex tb IIIC T100°C/T85°C Db	
	<b>INMETRO</b> Ex db IIC T5/T6 Gb IP66 Ex tb IIIC T85°C/T100°C Db IP66	
	Communication (Option)	
	HART (ver.7)	
	Weight	3.4 kg (7.5 lb)

## Product Code

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

### Model

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

### Motion Type

L = Linear  
R = Rotary

### Acting Type

S = Single  
D = Double

### Explosion Protection

C<sup>1</sup> = ATEX, IECEx, KCs, CCC, NEPSI, INMETRO  
E = EAC  
A = CSA, FM  
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 = G1/2 - Rc1/4 (N/A for CCC, YT-3450)  
2 = G1/2 - 1/4 NPT (N/A for CCC)  
3 = G1/2 - G1/4 (N/A for CCC, YT-3450)  
4 = M20 - 1/4 NPT (N/A for YT-3450)  
5 = 1/2 NPT - 1/4 NPT

### Communication

0 = None  
2 = HART protocol communication

### Output Options

0 = None  
1 = 4 to 20 mA feedback  
2 = Limit switch<sup>2</sup>  
3 = 4 to 20 mA feedback + Limit switch<sup>2</sup>

### Operating Temp. (Non-explosion proof)<sup>3</sup>

S = -30 to +85 °C (-22 to +185 °F) (N/A for EAC)  
L = -40 to +85 °C (-40 to +185 °F)  
A = -55 to +85 °C (-67 to +185 °F) (only available with EAC certification)

### Notes:

1. Please put the name of the certificate in a purchase order.
2. Limit switch: 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.

# Smart Positioners YT-2500 / YT-2550 / YT-2501

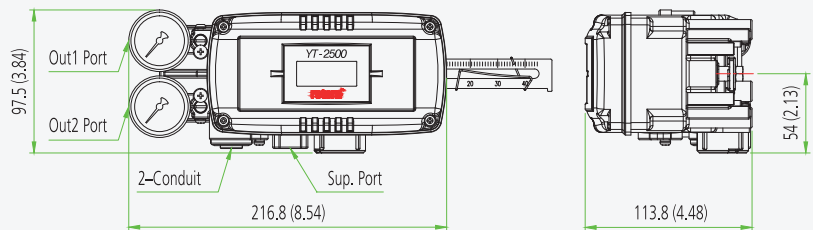
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## Design features

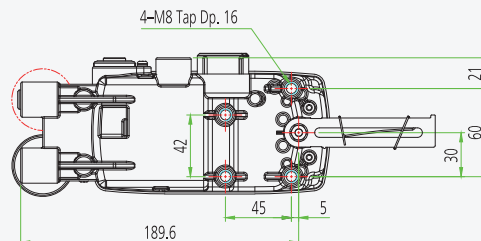
- **Fail-freeze and fail-safe functions.** Enables the valve maintain the last position (fail-freeze) or move to a pre-determined position (fail-safe) on the loss of electrical power supply or the pneumatic supply air.
- **Auto calibration.** Simple menu structure with options to auto calibrate all parameters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



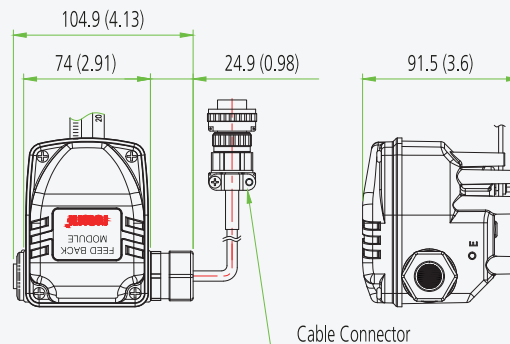
## YT-2500 Aluminium Enclosure



## YT-2550 Stainless Steel Enclosure



## YT-2501 Remote Mounting Option



Dimensions: mm (Inches \*)

# Smart Positioners YT-2500 / YT-2550 / YT-2501

Item Type	YT-2500	YT-2550	YT-2501	
Input Signal	4 to 20 mA DC			
Supply Pressure	0.14 to 0.7 MPa = 1.4 to 7 bar = 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 1/4, 1/4 NPT, G 1/4	1/4 NPT	Rc 1/4, 1/4 NPT, G 1/4	
Gauge Connection	Rc 1/8, 1/8 NPT	1/8 NPT	Rc 1/8, 1/8 NPT	
Conduit	G 1/2, 1/2 NPT, M20x1.5P	G 1/2	G 1/2, 1/2 NPT, M20x1.5P	
Operating Temp.	Standard Type	-30 to +80 °C (-22 to +176 °F) <sup>1</sup>		
	Explosion Temp.	-30 to +60 °C (-22 to +140 °F) (T5) -30 to +40 °C (-22 to +104 °F) (T6)		
	Remote Sensor	-	-40 to +120 °C (-40 to +248 °F)	
Linearity	±0.5% F.S.			
Hysteresis	±0.5% F.S.			
Sensitivity	±0.2% F.S.			
Repeatability	±0.3% F.S.			
Air Consumption	Fail-freeze	0.01 LPM (sup = 0.14 MPa) 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			
Explosion Protection Type	<b>ATEX, IECEx</b> Ex ia IIC T5/T6 Gb, Ex ia IIIc T85°C/T100°C IP6X			
	<b>CCC</b> Ex ia IIC T5/T6 Gb Ex iaD 21 T100/T85			
	<b>KCs</b> Ex ia IIC T5/T6, EX iaD IIIc T100°C/T85°C			
	<b>NEPSI (only YT-2500)</b> Ex ia IIC T5/T6 Gb Ex iaD 21 T100/T85			
	<b>EAC (only YT-2500)</b> 1Ex ia IIC T6...T5 Gb X Ex ia IIIc T85°C...T100°C Db X IP66			
Communication (Option)	HART (ver.5)			
L/S Rating	Mechanical Type (Omron)	AC 125 V, 3 A DC 30 V, 2 A	-	
	Proximity Type (P&F)	DC 8.2 V 8.2 mA	-	
Weight	Body	1.5 kg (3.3 lb)	2.9 kg (6.4 lb)	1.6 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 house  
YT-2501 = Aluminium housing with remote sensor

### Motion Type

L = Linear  
R = Rotary

### Acting Type

S = Single  
D = Double

### Explosion Protection

N = Non-Explosion  
i = ATEX, IECEx, KCs, NEPSI (only YT-2500)  
E = EAC (only YT-2500)  
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 (YT-2501)

### Conduit & Air Connection

1 = G1/2 - Rc1/4  
2 = G1/2 - 1/4 NPT (YT-2550 only available with conduit connection code 2)  
3 = G1/2-G1/4  
4 = M20-1/4 NPT (YT-2501 will come with electrical conduit adaptors)  
5 = 1/2 NPT-1/4 NPT (YT-2501 will come with electrical conduit adaptors)

### Communications

0 = None  
2 = HART protocol communication

### Output Options

0 = None  
1 = 4 to 20 mA feedback  
2 = Limit switch - Mechanical Type (YT-2500 and YT-2550 only)  
3 = Limit switch - Proximity Type (YT-2500 and YT-2550 only)<sup>1</sup>  
4 = 4 to 20 mA feedback + Limit switch - Mechanical Type (YT-2500 and YT-2550 only)  
5 = 4 to 20 mA feedback + Limit switch - Proximity Type (YT-2500 and YT-2550 only)<sup>1</sup>

### Fail Option

F = Fail-freeze  
S = Fail-safe

### Cable Length (YT-2501 only)

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

### Notes:

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

# Smart Positioner YT-2600

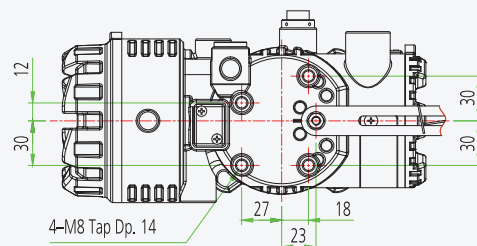
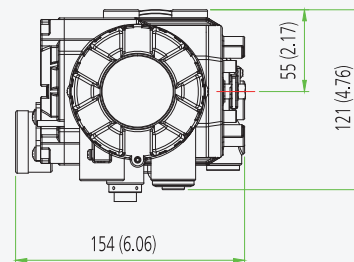
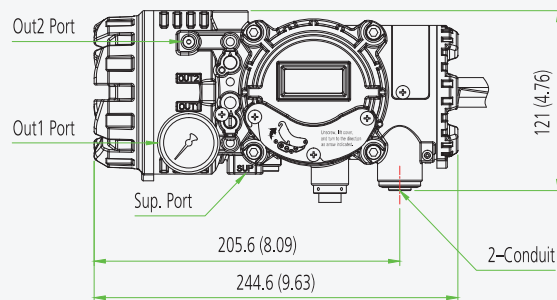
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## Design features

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



## YT-2600 Aluminium Ex d Positioner



Dimensions: mm (Inches \*)