

# Smart Positioners YT-3300 / YT-3350

Torque motor technology with communications

## Design features

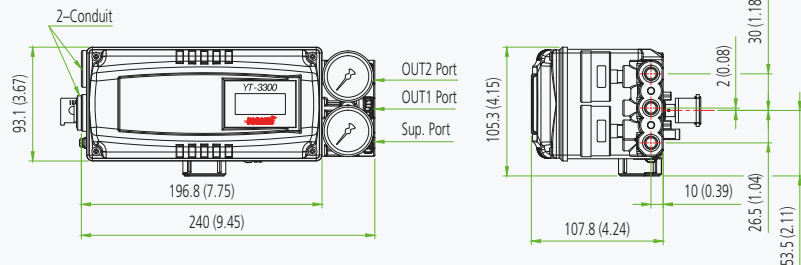
- **Auto calibration.** Simple menu structure with options to auto calibrate all parameters or zero and end points only.
- **LCD display.** Alphanumeric digital display for process values and calibration.
- **Partial Stroke Test (PST).** Fully adjustable Partial Stroke Test. All functionality can be performed and selected locally, through push buttons, or remotely with communication protocol.
- **Feedback signal.** Analogue and digital feedback signals with 4-20 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.
- **HART® communication.** Allows commands, position feedback and diagnostics to be sent digitally over the current loop.
- **NEW 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.

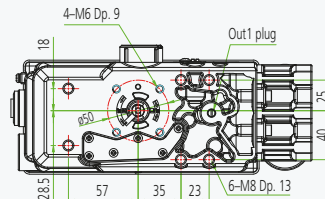
- **NEW Foundation Fieldbus.** A bi-directional communications protocol used for communications among field devices and the control system. It utilizes twisted pair or fibre media to communicate between multiple nodes (devices) and the controller. The controller requires only one communication point 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.
- **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.



## YT-3300 Aluminium Enclosure



## YT-3350 STS316 Enclosure



Dimensions: mm (Inches ")

# Smart Positioners YT-3300 / YT-3350

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		Rc ⅛, ⅛ NPT	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 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)	
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 0.07 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, 21 Points)	
Material		Aluminium Diecasting	Stainless Steel 316
Ingress Protection		NEMA 4X, IP66	
Explosion Protection Type	<b>ATEX / IECEx / EAC</b> Ex ia IIC T5/T6 Gb Ex ia IIIC T100°C/T85°C Db IP66		
	<b>CCC</b> Ex ia IIC T5/T6 Gb Ex iaD 21 T1 00/T85		
	<b>KCs</b> Ex ia IIC T6/T5 Ex ia IIIC T85°C/T100°C		
	<b>CSA</b> CSA certificate		
	<b>FM</b> 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, E, F & G NEMA Type 4X, IP66, IP54 Ambient temp: -40 to +60°C (T5) / -40 to +40°C (T6)		
	<b>NEPSI</b> Ex ia IIC T5/T6		
	<b>INMETRO</b> Ex ia IIC T5/T6 Gb Ex ia IIIC T100°C/T85°C Db		
	HART (ver.7) Profibus PA <sup>1</sup> Foundation Fieldbus <sup>1</sup>		
	Communication (Option)		
	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  
i = Intrinsically Safe ATEX, IECEx, NEPSI, KCs, INMETRO, PESO  
E = Intrinsically Safe EAC  
A = Intrinsically Safe CSA, FM  
AG = Intrinsically Safe CSA, FM - Tapped Exhaust  
Z = Intrinsically Safe CCC

### Lever Type

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

### 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<sup>1</sup>  
4 = Foundation Fieldbus<sup>1</sup>

### Output Options

0 = None  
1 = 4 to 20 mA feedback  
2<sup>2</sup> = Limit Switch - Mechanical Type  
3<sup>3</sup> = Limit Switch - Proximity Type  
4<sup>2</sup> = 4 to 20 mA + Limit Switch - Mechanical Type  
5<sup>3</sup> = 4 to 20 mA + Limit Switch - Proximity Type

### Operating Temp. (Non-explosionproof)<sup>4</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) (EAC only)

### Notes:

1. Only available to ATEX/IECEx and Output Option code 0. 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.