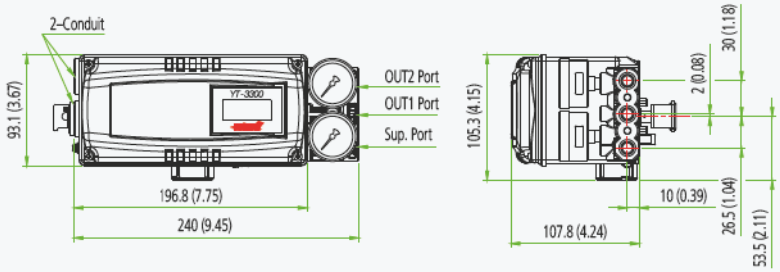
Smart Positioners YT-3300 / YT-3350

Torque motor technology with communications

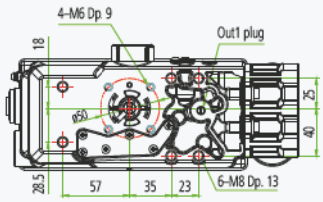
Design features

- **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.

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 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)	
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	
Explosion Protection Type		**ATEX / IECEx / EAC** Ex ia IIC T5/T6 Gb Ex ia IIIC T100°C/T85°C Db IP66 **CCC** Ex ia IIC T5/T6 Gb Ex iaD 21 T1 00/T85 **KCs** Ex ia IIC T6/T5 Ex ia IIIC T85°C/T100°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, E, F & G NEMA Type 4X, IP66, IP54 Ambient temp: -40 to +60°C (T5) / -40 to +40°C (T6) **NEPSI** Ex ia IIC T5/T6 **INMETRO** Ex ia IIC T5/T6 Gb Ex ia IIIC T100°C/T85°C Db	
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
i = Intrinsically Safe ATEX, IECEx. NEPSI, KCs, INMETRO
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	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 to 20 mA feedback
2[2] = Limit Switch - Mechanical Type
3[3] = Limit Switch - Proximity Type
4[2] = 4 to 20 mA + Limit Switch - Mechanical Type
5[3] = 4 to 20 mA + Limit Switch - Proximity Type

Operating Temp. (Non-explosionproof)[4]
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. Limited to non-explosion/ATEX/IECEx protection and 0 Output Option code only. Excludes Arctic temperature type.
2. Only S, L of Operating Temperature are available for 2, 4 of Output Options.
3. Only S of Operating Temperature is available for 3, 5 of Output Options.
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.

fork type

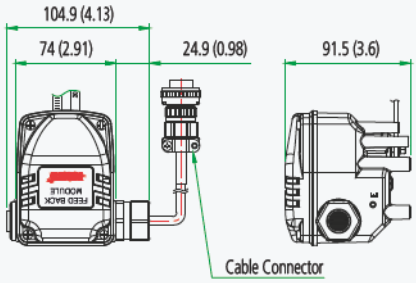
Smart Positioners YT-3301 / YT-3303

Torque motor technology with communications

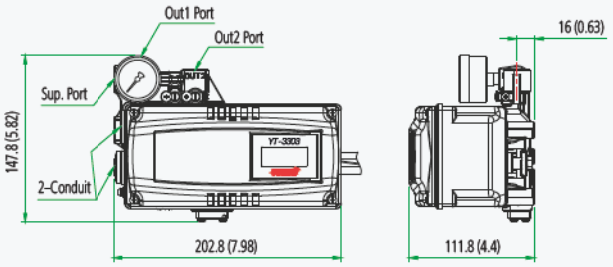
Design features

- **Auto calibration.** Simple menu structure with options to auto calibrate all parameters or zero and end points only.
- **LCD display.** Alphanumeric digital display for process values and calibration.
- **Partial Stroke Test (PST).** Fully adjustable Partial Stroke Test. All functionality can be performed and selected locally, through push buttons, or remotely with communication protocol.
- **Feedback signal.** Analogue 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 model).** Remote sensor via cable to enable the positioner to be mounted away from extreme temperature.

YT-3301 Remote Mounting Option



YT-3303 Left Side Mounting Option



Dimensions: mm (Inches ")

Smart Positioners YT-3301 / YT-3303

Item Type		YT-3301	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		Rc ⅛, 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)	
	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 = 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	IP66
Explosion Protection Type		**ATEX / IECEx** Ex ia IIC T5/T6 Gb Ex ia IIIC T100°C/T85°C Db IP66 **CCC** Ex ia IIC T5/T6 Gb Ex iaD 21 T100°C/T85°C **KCs** Ex ia IIC T6/T5 Ex ia IIIC T85°C/T100°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, E, F & G NEMA Type 4X, IP66, IP54 Ambient temp: -40 to +60°C (T5) / -40 to +40°C (T6) **EAC** 1Ex ia IIC T6/T5 Ex ia IIIC T85/T100 **INMETRO** Ex ia IIC T6/T5 Gb Ex ia IIC T85°C/T100°C Db	
Communication (Option)		HART (ver.7)	
Weight	Body	2.2 kg (4.9 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-3303 = Aluminium housing with right side lever

Motion Type
L = Linear
R = Rotary

Acting Type
S = Single
D = Double

Explosion Protection
N = Non-explosion
i = Intrinsically Safe ATEX, IECEx, KCs, INMETRO
E = Intrinsically Safe EAC
A = Intrinsically Safe CSA, FM
AG = Intrinsically Safe CSA, FM - Tapped Exhaust
Z = Intrinsically Safe CCC

Lever Type

Linear	Rotary (fork type)
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-3301)

Conduit & Air Connection
1 = G ½ - Rc ¼
2 = G ½ - ¼ NPT
3 = G ½ - G ¼
4 = M20 - ¼ NPT (will come with electrical conduit adaptors)
5 = ½ NPT - ¼ NPT (will come with electrical conduit adaptors)

Communications
0 = None
2 = HART protocol communication

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

Operating Temp. (Non-explosionproof)[1]
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)

Cable Length (YT-3301 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.