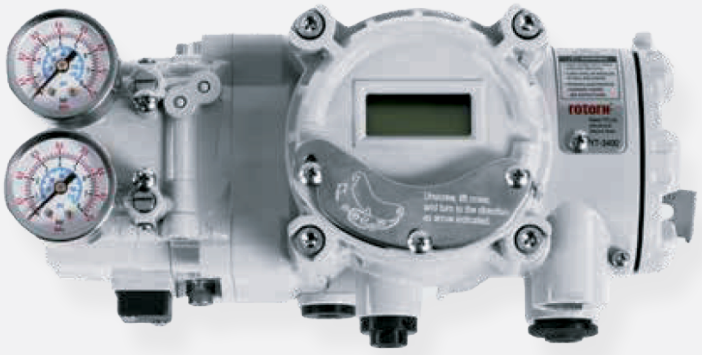
Building connections that last™

ASC Engineered Solutions

YT-3300 & YT-3400

Smart Positioner Datasheet



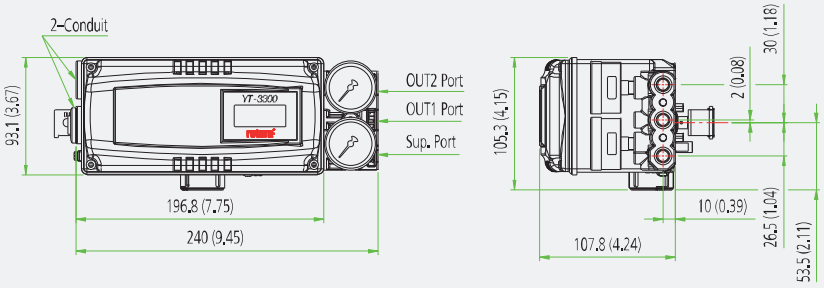
ABZ VALVE
An ASC Engineered Solution

Smart Positioner
YT-3300

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 PST, 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 4-20mA, 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.
- **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 utilizes twisted pair or fiber 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 en enhanced lifetime.

YT-3300 Aluminum Enclosure



Dimensions: mm (Inches ")

ABZ VALVE
An ASC Engineered Solution

Item Type		YT-3300
Input Signal		4 to 20 mA DC
Supply Pressure		20 to 102 psi
Stroke	Rotary Type	55 to 110°
Impedance		Max 500 Ω @ 20 mA DC
Air Connection		1/4 NPT
Gauge Connection		1/8 NPT
Conduit		1/2 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 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 Point)
Material		Aluminum Diecasting
Ingress Protection		NEMA 4X, IP66
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, Ex iaD IIIC T85°C / T100°C **CSA** CSA Certificate **FM** Class I, Div 1, Groups ABCD Class I, Zone 0 AEx ia IIC Class II / III, Div 1, Groups EFG Class I, II, III, Div 2, Groups ABCDEFG NEMA Type 4X, IP66, IP54 AMBIENT TEMP: -40 ~ 60°C (T5) / -40 ~ 40°C (T6) **SIL** SIL2 and SIL3 Non-interference device statement for SIS
Communication (Option)		HART (ver. 7), Profibus PA, and Foundation Fieldbus
L/S Rating	Mechanical Type (Omron)	AC 125 V, 3 A DC 30 V, 2A
	Proximity Type (P & F)	DC 8.2 V 8.2 mA
Weight	Body	2.0 kg (4.4 lb)

Product Code	YT-3300	R	D	N	5	5	2	0	S

Model
YT-3300 = Aluminum housing

Motion Type
R = Rotary

Acting Type
S = Single
D = Double

Explosion Protection[1]
N = Non-explosion
I = Intrinsically Safe ATEX, IECEx, KCs, INMETRO
A= Intrinsically Safe CSA, FM

Lever Type
Rotary
5 = NAMUR

Conduit & Air Connection
5 = 1/2 NPT - 1/4 NPT

Communications
0 = None
2 = HART
3 = Profibus PA. Note 1.
4 = Foundation Fieldbus. Note 1.

Output Options[4]
0 = None
1 = 4-20 mA Analogue Output
2[2] = Limit switch (2 ea) - mechanical type
3[3] = Limit switch (2 ea) - 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

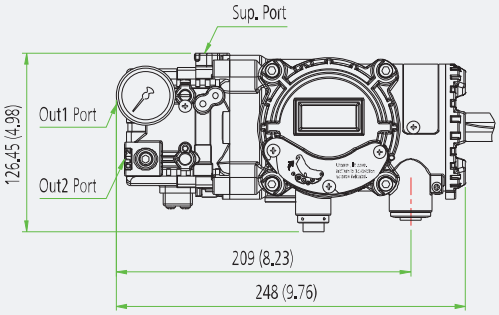
Operating Temp. (Non-explosion proof)[3]
S = -30 to +85°C (-22 to +185°F)
L = -40 to +85°C (-40 to +185°F)
A = -55 to +85°C (-67 to +185°F) (Non-explosion only)

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. Sea certificates for explosion protection temperature.

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 Aluminum Enclosure



Dimensions: mm (Inches ")

Item Type		YT-3400
Input Signal		4 to 20 mA DC
Supply Pressure		20 to 102 psi
Impedance		Max. 450 Ω @ 20 mA DC
Stroke	Rotary Type	55 to 100°
Air Connection		1/4 NPT
Gauge Connection		1/8 NPT
Conduit		1/2 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 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		2.5 LPM (sup = 0.14 MPa) 0.8 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 21 Point)
Material		Aluminum Diecasting
Ingress Protection		NEMA 4-4X, IP66
Explosion Protection Type		**ATEX / IECEx / UKEX / CCC / NEPSI** Ex db IIC T5 / 6 Gb Ex tb IIIC T85°C / T100°C Db **KCs** Ex d IIC T5 / T6 IP66 Ex tb IIIC T85°C / T100°C **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 / 15 Class I / III, Div 1, Groups EFG; T6 / T5 Class 1, 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 **INMETRO** Ex db IIC T5 / T6 Gb IP66 Ex tb IIIC T100°C / T85°C Db IP66 **PESO** Ex db IIC T5 / T6 Gb
Communication (Option)		HART (ver. 7)
Weight		3.4 kg (7.5 lb)

Product Code	YT-3400	R	D	N	5	5	2	0	S

Model
YT-3400 = Aluminum housing

Motion Type
R = Rotary

Acting Type
S = Single
D = Double

Explosion Protection[1]
N = non-explosion
C1 = ATEX, IECEx, NEPSI, KCs, INMETRO, ECAS, UKEX, PESO
A = CSA, FM
AG = CSA, FM - tapped exhaust
L = CCC, NEPSI

Lever Type
Rotary
5 = NAMUR

Conduit & Air Connection
5 = 1/2 NPT - 1/4 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 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.

About ASC Engineered Solutions

ASC Engineered Solutions is defined by quality—in its products, services and support. With more than 1,400 employees, the company's portfolio of precision-engineered piping support, valves and connections provides products to more than 4,000 customers across industries, such as mechanical, industrial, fire protection, oil and gas, and commercial and residential construction. Its portfolio of leading brands includes ABZ Valve®, AFCON®, Anvil®, Anvil EPS, Anvil Services, Basic-PSA, Beck®, Catawissa, Cooplet®, FlexHead®, FPPI®, Gruvlok®, J.B. Smith, Merit®, North Alabama Pipe, Quadrant®, SCI®, Sharpe®, SlideLOK®, SPF® and SprinkFLEX®. With headquarters in Commerce, CA, and Exeter, NH, ASC also has ISO 9001:2015 certified production facilities in PA, TN, IL, TX, AL, LA, KS, and RI.

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FC-DS-ABZ-YT-3300-YT-3400-v03 20241007