

ABB TZID-C INTELLIGENT POSITIONER



ABB TZID-C POSITIONER

APPLICATION DATA

- Split range parallel stations
- Where precise positioning is required
- Building management or PLC input

OPTIONS

- EX-Protection EEx ib II C T6
- Plug In Modules
 - Analog Position Feedback Signal
 - Digital Position Feedback Signal for Min/Max Position
 - Safety Shutdown Module
- Kit for:
 - Mechanical Position Indicator
 - Digital Position Feedback for Min/Max position for 2-slot type indicators or micro-switch

- **Input Signal** 4-20mA, 2 wire fieldbus connection
- **Supply Air** 20-90 psi (1.4-6 bar)
- **Control Accuracy** $\leq 0.5\%$
- **Ambient Temp** - 22°F to 185°F
- 30°C to 85°C
- **Housing** Aluminum coated IP65
- **Vibration Immunity** 10g to 20...80Hz
- **Burden Voltage** 8, 7 V DC (Non Exhaust)

ABB TZID-C INTELLIGENT POSITIONER

SPECIFICATION

Overview

The positioner shall be an electronically-configurable positioner with Hart communication. Positioner shall be suitable for mounting to pneumatic linear or rotary actuators. Positioner shall feature a small and compact design, a modular construction, loop-powered CPU, and an excellent cost/performance ratio.

Operation

The positioner shall utilize a built-in operating panel providing a 2-line LCD and 4 pushbuttons for local configuration, commissioning and operational monitoring.

Operating Modes

The positioner shall provide three different operating modes: fixed control; adaptive control; and manual.

Adaptive Mode

The positioner shall incorporate a unique "Adaptive Control" mode that will "self-tune" positioner control parameters for any valve-actuator combination while controlling the process.

Pneumatics

Positioner shall utilize an I/P module with subsequent pneumatic amplifier that is used to control the pneumatic actuator. Positioner shall have steady-state air consumption < 0.015 scfm (< 0.03 kg/hr), independent of supply pressure.

Choice of Fail function

Positioner shall provide either "fail-safe" or "fail-freeze" function via i/p construction.

Inputs and outputs

The positioner shall have as standard a digital input and a digital output, both of which are in addition to its 4-20 mA input for the analog position set point.

Modular design

The positioner shall have available optional modules for analog position feedback, digital position feedback, an emergency shutdown module, proximity switches, or 24 V microswitches.

Single-button commissioning

The positioner shall utilize a commissioning function called Autoadjust which quickly establishes zero, span, and optimum positioning control parameters. Autoadjust function shall start with single pushbutton.

Display

The positioner shall utilize a 2-line LCD to show % position during operation and also displays via pushbutton operation the following positioner data:
 Up arrow button: Current setpoint (mA)
 Down arrow button: Internal device temperature
 Up + Down arrow buttons: % difference between position and signal

Mounting

The positioner case shall have one mounting footprint and the positioner design shall utilize one type feedback shaft. The positioner shall easily mount to any linear or rotary valve.

Positioner shall have the following performance specifications:

Accuracy:

≤ 0.5 % of span

Tolerance band:

0.3...10 %, adjustable

Resolution (A/D conversion):

> 4000 steps

Sample rate:

20 msec

Positioner shall have the following environmental specifications:

Influence of ambient temperature:

≤ 0.5 % for every 10°C change in temperature

Influence of vibration:

≤ ± 1 % up to 10 g and 20...80 Hz

Seismic requirements:

Meets requirements of DIN/IEC 68-3-3 Class III for strong and strongest earthquakes

Influence of mounting orientation:

Can be mounted in any position

Meets requirements of following directives:

EMC Directive 89/336/EEC as of May 1989

EC Directive for CE conformity marking

Ambient temperature:

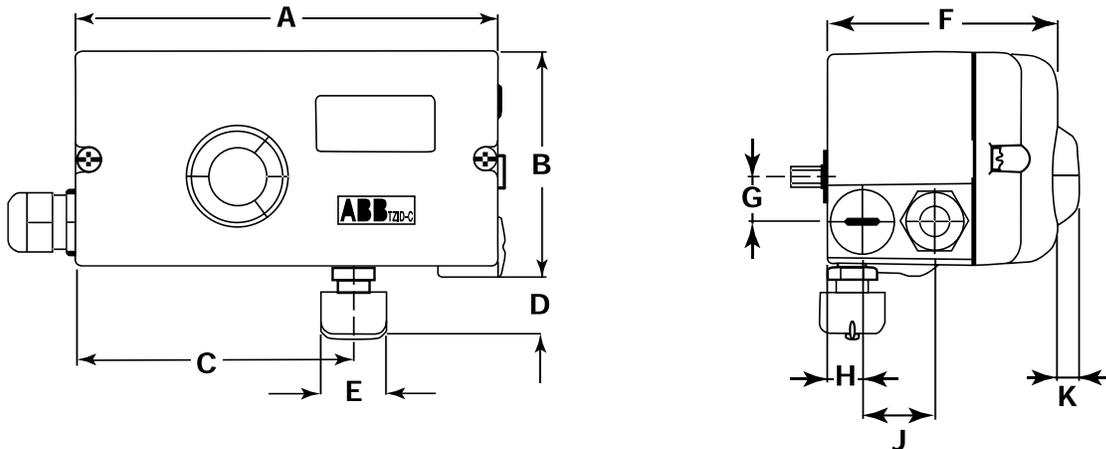
-40 °F to +185 °F (-40 °C to +85 °C) for operation, storage and transport;

Relative humidity:

Operational (with closed housing and air supply switched on): < 95 % (annual average), condensation permissible

Transport and storage:

75 % (annual average), non-condensing



DIMENSIONS¹ inches (mm) **AND WEIGHTS** pounds (kg)

A	B	C	D	E	F	G	H	J	K	WEIGHT
6½ (168.5)	3½ (89.5)	4¾ (110.75)	1 (25)	1 (ø26)	3.62 (92)	¾ (18)	½ (14)	1½ (29)	¾ (9)	5 (796)



ABB AV SERIES POSITIONER

APPLICATION DATA

- Split range parallel stations
- Where precise positioning is required
- Building management or PLC input

ABB AV SERIES POSITIONER

- **Input Signal** 4-20mA, 2 wire fieldbus connection
- **Control Accuracy** $\leq 0.5\%$ of span
- **Supply & Exhaust Air Capacity** up to 23 scfm at 70psi supply pressure
- **Ambient Temp** - 40°F (- 40°C) to 185°F (85°C)
- **Housing** is epoxy coated cast aluminum for long life and environmental protection
- **Vibration Immunity** 15 to 120 Hz at accelerations to 2 G
- **Burden Voltage** 8, 7 V DC (Non Exhaust)
- **Mounting** in any position to any linear or rotary valve
- **Autoadjusts** to control parameters with single pushbutton
- **Adaptive Mode** will self-tune positioner control parameters for any valve-actuator combination while controlling process
- **Cam provides application flexibility** between input signal and actuator position and includes direct and reverse acting
- **Threaded Exhaust Vent** allows use of natural gas

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The positioner shall provide three different operating modes: fixed control; adaptive control; and manual.

Adaptive Mode

The positioner shall incorporate a unique "Adaptive Control" mode that will "self-tune" positioner control parameters for any valve-actuator combination while controlling the process.

Pneumatics

Positioner shall utilize an I/P module with subsequent pneumatic amplifier that is used to control the pneumatic actuator. Positioner shall have steady-state air consumption < 0.015 scfm (< 0.03 kg/hr), independent of supply pressure.

Choice of Fail function

Positioner shall provide either "fail-safe" or "fail-freeze" function via i/p construction.

Inputs and outputs

The positioner shall have as standard a digital input and a digital output, both of which are in addition to its 4-20 mA input for the analog position set point.

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Positioner shall have the following performance specifications:

Accuracy: $\leq 0.5\%$ of span

Tolerance band: 0.3...10 %, adjustable

Resolution (A/D conversion): > 4000 steps

Sample rate: 20 msec

Positioner shall have the following environmental specifications:

Influence of ambient temperature: $\leq 0.5\%$ for every 10 °C change in temperature

Influence of vibration: $\leq \pm 1\%$ up to 10 g and 20...80 Hz

Seismic requirements: Meets requirements of DIN/IEC 68-3-3 Class III for strong and strongest earthquakes

Influence of mounting orientation: Can be mounted in any position

Meets the requirements of the following directives: EMC Directive 89/336/EEC as of May 1989

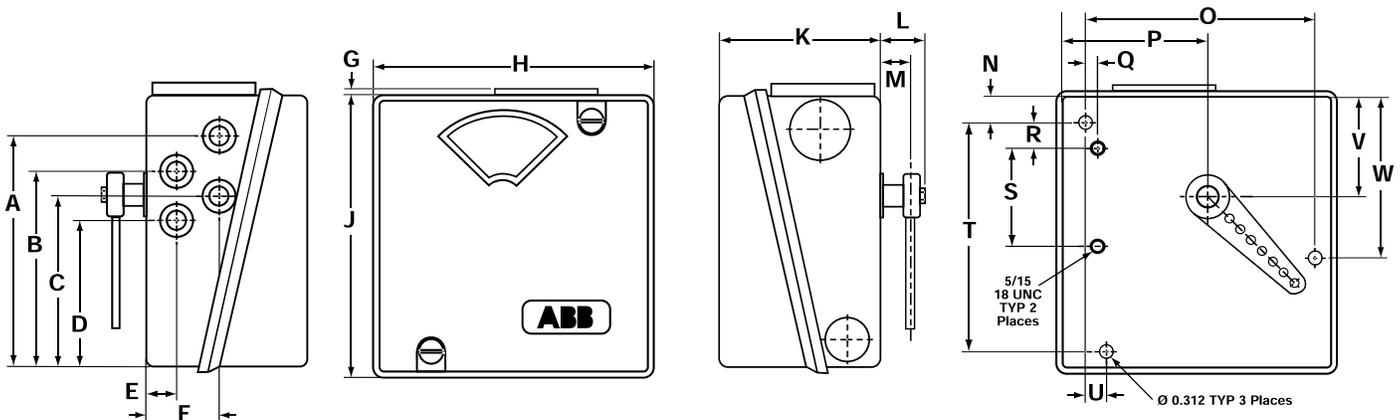
EC Directive for CE conformity marking

Ambient temperature: -40 °F to +185 °F (-40 °C to +85 °C) for operation, storage and transport;

Relative humidity:

Operational (with closed housing and air supply switched on): < 95 % (annual average), condensation permissible

Transport and storage: 75 % (annual average), non-condensing



DIMENSIONS inches (mm) and **WEIGHT** pounds (kg)

A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	Wgt.
1 1/4	4 1/2	3 7/8	3 3/16	1 1/16	1 11/16	5/8	6 7/16	6 1/2	3 11/16	1 1/2	1 1/16	1 9/32	5 1/4	3 3/16	1/4	1 9/32	2 1/4	5 1/4	1/2	2 9/32	3 23/32	10
(134.0)	(113.4)	(98.9)	(84.7)	(17.5)	(42.4)	(3.6)	(163.3)	(164.8)	(93.7)	(26.2)	(17.5)	(15.2)	(133.6)	(84.8)	(7.1)	(15.0)	(57.2)	(133.4)	(12.2)	(58.2)	(94.0)	(4.54)

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