

# I/A Series System Premium Performance Differential Pressure Transmitters

Model IDP15D, IDP31D and IDP32D



## DESCRIPTION

For demanding pressure measurement applications that require a rugged, robust and reliable transmitter, the Foxboro® I/A Series® System Premium Performance Transmitters provide the best solution.

The Foxboro brand I/A Series System Enterprise Control System Component Differential Pressure Transmitter family are microprocessor-based smart transmitters that provide precise, reliable, measurement of differential pressure and features high performance and excellent stability. Capable of measuring gas, liquid, vapor, and liquid levels, it transmits 4 to 20mA DC analog and digital signals according to the measured differential pressure. It can also execute two-way communications using HART protocol, thus facilitating self-diagnosis, range resetting, and automatic zero adjustment.

## Summary

The Foxboro I/A Series System Premium Performance Differential Pressure Transmitters are capable of measuring gas, liquid, vapor, liquid levels and transmit a 4 to 20mA DC analog and digital signal.

## Business Value

The rich diagnostics of the I/A Series Differential Pressure Transmitters enables cost savings via alarms to trigger predictive maintenance scenarios, two-way communication using HART protocol to facilitate self-diagnosis, range resetting, automatic zero adjustment and are highly effective in taking measurement over a wide range which will reduce the need for costly inventory.

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## Features / Benefits

- Unique characterization and composite semiconductor sensors realize high accuracy up to 0.04% F.S.
- Proven Sensor technology enables Long-term stability up to 0.1% of URL per 10-year period.
- A wide measuring range is available from a single model. This feature is highly effective in taking measurement over a wide range and reducing the need for inventory.
- Two-way communication using HART protocol facilitates self-diagnosis, range resetting, automatic zero adjustment, and other operations.
- HART communication protocol
- SIL2 rated
- IDP15D: Draft Range (-4" H<sub>2</sub>O to +4" H<sub>2</sub>O)
- IDP31D: 100 msec response time
- IDP32D: For high static pressure applications



## SPECIFICATIONS

### Measuring Span / Setting Range / Working Pressure Range

#### Measuring Span Limits

Model code	kPa	Psi	bar	mmHg	mmH <sub>2</sub> O	inH <sub>2</sub> O
IDP15D	0.1 and 2	0.015 and 0.29	0.001 and 0.2	0.75 and 15	10.20 and 203.94	0.4 and 8
IDP31D	0.5 and 100	0.07 and 14.5	0.005 and 1	3.75 and 750	50 and 10,160	2 and 400
IDP32D	0.5 and 100	0.07 and 14.5	0.005 and 1	3.75 and 750	50 and 10,160	2 and 400

#### Setting Range Limits

Model code	kPa	Psi	bar	mmHg	mmH <sub>2</sub> O	inH <sub>2</sub> O
IDP15D	-1 and +1	0.145 and +0.145	-0.01 and +0.01	-7.5 and +7.5	-102 and +102	-4 and +4
IDP31D	-100 and +100	-14.5 and +14.5	-1 and +1	-750 and +750	-10,160 and +10,160	-400 and +400
IDP32D	-100 and +100	-14.5 and +14.5	-1 and +1	-750 and +750	-10,160 and +10,160	-400 and +400

#### Measuring Span Limits

Model code	kPa	Psi	bar	mmHg	mmH <sub>2</sub> O	inH <sub>2</sub> O
IDP15D	-70 and +210	-10 and +30	0.7 and +2.1	-525 and +1575	-7130 and +21,400	-280 and +840
IDP31D	2 (abs) and 21,000	0.29 (abs) and 3045	0.02 (abs) and 210	15 (abs) and 157,500	204 (abs) and 2MM	8 (abs) and 84,300
IDP32D	2 (abs) and 42,000	0.29 (abs) and 6090	0.02 (abs) and 420	15 (abs) and 315,000	204 (abs) and 4MM	8 (abs) and 168,600

#### Notes

1. In case these models are installed in countries requiring CE Marking, maximum working pressure is limited to 20MPa {200kgf/cm<sup>2</sup>}.
2. With 304 SST bolts and nuts, the maximum working pressure is 10MPa {100 kgf/cm<sup>2</sup>}.
3. With 304 SST bolts and nuts, the maximum working pressure is 23.3 MPa {233 kgf/cm<sup>2</sup>}.

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## Temperature Limits: Model - IDP15D

Influence	Reference Operating Conditions	Normal Operating Range	Operative Limits	Storage and Transportation Limits
Process Connection Temp				
With Silicon Fill	24 ± 2°C (75 ± 3°F)	-15 ± 65°C (5 ± 150°F)	-40 ± 70°C (-40 ± 158°F)	N/A
With Flourine Fill	24 ± 2°C (75 ± 3°F)	-15 ± 65°C (5 ± 150°F)	-40 ± 70°C (-40 ± 158°F)	N/A
Electronics Temp				
Without LCD Indicator	24 ± 2°C (75 ± 3°F)	-15 ± 65°C (5 ± 150°F)	-40 ± 70°C (-40 ± 158°F)	-15 ± 65°C (5 ± 150°F)
With LCD Indicator	24 ± 2°C (75 ± 3°F)	-15 ± 65°C (5 ± 150°F)	-40 ± 70°C (-40 ± 158°F)	-15 ± 65°C (5 ± 150°F)
Relative Humidity	50 ± 10%	5 to 100%	5 and 100%	5 and 100% Noncondensing
Supply Voltage mA Output	3 ± 0.5 V dc	17.9 to 42 V dc	17.9 to 42 V dc	N/A
Output Load-mA Output	650Ω	0 to 1482Ω	0 and 1482Ω	N/A

## Temperature Limits: Model - IDP31D

Influence	Reference Operating Conditions	Normal Operating Range	Operative Limits	Storage and Transportation Limits
Process Connection Temp				
With Silicon Fill	24 ± 2°C (75 ± 3°F)	-40 ± 110°C (5 ± 230°F)	-50 ± 115°C (58 ± 239°F)	N/A
With Flourine Fill	24 ± 2°C (75 ± 3°F)	-20 ± 75°C (-4 ± 167°F)	-40 ± 80°C (-40 ± 176°F)	N/A
Electronics Temp				
Without LCD Indicator	24 ± 2°C (75 ± 3°F)	-40 ± 85°C (5 ± 150°F)	-50 ± 93°C (-58 ± 200°F)	-50 ± 85°C (58 ± 185°F)
With LCD Indicator	24 ± 2°C (75 ± 3°F)	-25 ± 80°C (13 ± 176°F)	-30 ± 85°C (-22 ± 180°F)	-50 ± 85°C (58 ± 185°F)
Relative Humidity	50 ± 10%	5 to 100%	5 and 100%	5 and 100% Noncondensing
Supply Voltage mA Output	3 ± 0.5 V dc	17.9 to 42 V dc	17.9 to 42 V dc	N/A
Output Load-mA Output	650Ω	0 to 1482Ω	0 and 1482Ω	N/A

## Temperature Limits: Model - IDP32D

Influence	Reference Operating Conditions	Normal Operating Range	Operative Limits	Storage and Transportation Limits
Process Connection Temp				
With Silicon Fill	24 ± 2°C (75 ± 3°F)	-15 ± 110°C (5 ± 230°F)	-20 ± 115°C (-4 ± 239°F)	N/A
With Flourine Fill	24 ± 2°C (75 ± 3°F)	-15 ± 75°C (5 ± 167°F)	-20 ± 80°C (-4 ± 176°F)	N/A
Electronics Temp				
Without LCD Indicator	24 ± 2°C (75 ± 3°F)	-15 ± 85°C (5 ± 180°F)	-25 ± 93°C (-13 ± 200°F)	-15 ± 85°C (5 ± 180°F)
With LCD Indicator	24 ± 2°C (75 ± 3°F)	-15 ± 85°C (5 ± 180°F)	-25 ± 83°C (-13 ± 180°F)	-15 ± 85°C (5 ± 180°F)
Relative Humidity	50 ± 10%	5 to 100%	5 and 100%	5 and 100% Noncondensing
Supply Voltage mA Output	3 ± 0.5 V dc	17.9 to 42 V dc	17.9 to 42 V dc	N/A
Output Load-mA Output	650Ω	0 to 1482Ω	0 and 1482Ω	N/A

# I/A Series Differential Pressure Transmitters

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The maximum pressures applicable under the Sound Engineering Practice (SEP) section of the Pressure Equipment Directive depend on the type of fluids measured, as shown in the table below. Devices in the I/A Series System Differential Pressure Transmitters are used at or below the applicable pressure in the table or the device's maximum working pressure, whichever is lower.

## Maximum Pressures Applicable

Measurement Fluid	Group	Pressure	Applicable Models
Gas	1	200 bar (20 MPa)	All models except IDP32D
Gas	2	1000 bar (100 MPa)	All models
Fluid	1	500 bar (50 MPa)	All models
Fluid	2	1000 bar (100 MPa)	All models

### Notes

1. Group 1 comprises fluids defined as: explosive, extremely flammable, highly flammable, flammable, very toxic, toxic and oxidizing.
2. Group 2 comprises all other fluids not included in group 1.

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