

Introduction

The Johnson Controls® DP150 Series multi-range low differential pressure transducer uses a dead-ended capacitive sensing element that requires minimal amplification and delivers excellent accuracy and longterm stability. It is an ideal solution for any contractor, and combines flexibility of a multi-range transducer with the performance of a single range transducer. The MRG has eight field-selectable ranges and three field-selectable outputs that makes it easily adjustable with a flip of a switch or jumper. The MRG has two different housing configuration options: standard design (wall mount) or a universal design that includes both a duct probe as well as a DIN rail mount option to address any installation changes on the job site.

The core technology of the DP150 is the all stainless steel capacitive sensing element. The welded dead-ended capacitive sensor requires minimal amplification and delivers excellent accuracy and longterm stability.

Figure 1: DP150 transducer



Applications

The Differential Pressure Transducer DP150 Multi-Range Series has the following suggested uses:

- Quick installation for sub-contractors
- Flexible for building specification changes
- Service and retrofit friendly

- Quick and accurate for service technicians
- Easy reconfiguration

Features and benefits

The Differential Pressure Transducer DP150 has a universal design, is field-selectable, and is suitable for harsh environments. Features include:

- Field-configurable duct probe
- 3.5 digit LCD
- Field-selectable range
- Field-selectable output
- Simple 5-step setup
- Field-accessible pushbutton zero and span
- External mounting tabs and optional DIN rail
- Unregulated AC or DC operation

Standard design

The standard design of the DP150 is for a wall mount configuration.

Universal design

The DP150 uses a universal design that gives the user total flexibility to make changes on the job site. The user has the option to choose field-selectable ranges, output, mounting setup and engineering unit. This flexibility enables a contractor to stock one product for all of their needs.

Field-selectable ranges

The DP150 provides eight field-selectable ranges, 0.5 in., 1.0 in., 2.5 in., and 5.0 in. W.C. You can select the required application ranges on-site.

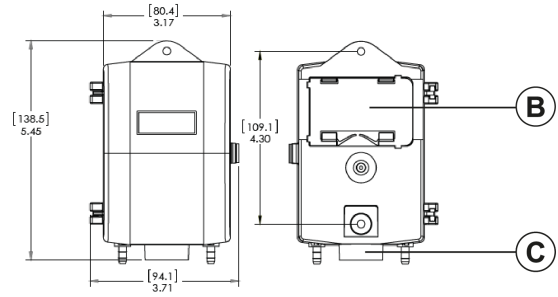
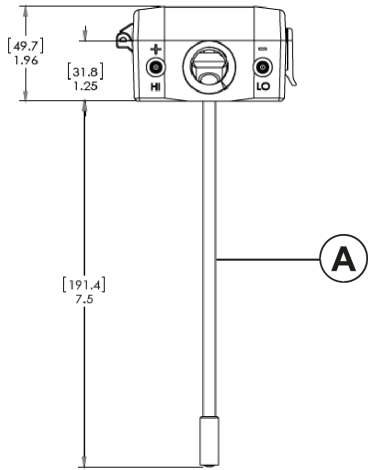
Harsh environments

The DP150 housing has a robust IP67-rated design, sealed with a gasket to make it washdown capable for difficult applications. The DP150 also has a conduit fitting for easier installation and wiring.

Dimensions

See the following figures for the dimensions of the DP150 Transducer.

Figure 2: Dimensions of the DP150 Transducer, in. (mm)



Callout	Description
A	Static pressure probe
B	DIN rail backplate
C	1/2 in. conduit

Ordering information

See the following table for ordering options for the DP150 Differential Pressure Transducers. For example, DP150MRC-SC is model DP150 with 0.1 in. W.C. and 0.25 in. W.C., and standard configuration. All units have 1/2 in. conduit electrical fitting.

Table 1: Product codes

Product code	Range, in in. W.C.	Configuration	Electrical fitting	Duct Probe
DP150MR1-SA	0.1, 0.25, 0.5, and 1.0	Standard	No	No
DP150MR1-UA	0.1, 0.25, 0.5, and 1.0	Universal	No	Yes
DP150MR2-SA	1.0, 2.5, 5.0, and 10	Standard	No	No
DP150MR2-UA	1.0, 2.5, 5.0, and 10	Universal	No	Yes
DP150MRC-SC	0.1, 0.25	Standard	Yes	No
DP150MRC-UC	0.1, 0.25	Universal	Yes	Yes
DP150MRG-SA	0.5, 1.0, 2.5, and 5.0	Standard	No	No
DP150MRG-UA	0.5, 1.0, 2.5, and 5.0	Universal	No	Yes

Technical specifications

Table 2: Differential Pressure Transducer DP150 technical specifications

Description	Specification	
Performance data	Accuracy RSS, at constant temperature <i>i</i> Note: RSS of non-linearity, hysteresis, and non-repeatability	±1.0% FS
	Compensated range	32°F to 122°F (0°C to 50°C)
	Thermal effects <i>i</i> Note: Units calibrated at nominal 70° F. Maximum thermal error calculated from this data.	FS 0.03°F (0.054°C)
	Maximum line pressure	10 psi, 277 in. W.C.
	Overpressure	Up to 10 psi (277 in. W.C.), range dependent
	Long term stability	2.0% FS per year
Position effect	Zero offset <i>i</i> Note: The unit is factory-calibrated at 0g effect in the vertical position	0.5% FS per g
Physical specifications	Case	Fire-retardant polycarbonate, UL 94 V-0 approved, hinged lid
	Mounting	Two screw holes vertical position
	Electrical connection block	Removable screw terminal
	Pressure fitting	3/16 in. O.D. barbed brass
	Zero	Button
	Span	Button
Environmental data	Operating temperature <i>i</i> Note: Operating temperature limits of the electronics only. Pressure media temperatures may be considerably higher.	32°F to 122°F (0°C to 50°C)
	Electrical data	
	Excitation range	13 VDC to 30 VDC, 18 VAC to 24 VAC, voltage output 13 VDC to 30 VDC, 4 mA to 20 mA output at terminals
	Current consumption	30 mA, maximum
	Mis-wiring	Reverse excitation protection
	Field-selectable output <i>i</i> Note: Calibrated into a 50K ohm load, operable into a 10K ohm load or greater.	3-wire: 0 V to 5 V, 0 V to 10V 2-wire: 4 mA to 20 mA
	Output resistance, voltage output	10 ohm, maximum
	Load resistance, voltage output	10 K ohm, minimum
	Loop resistance, 4 mA to 20 mA	0 ohm to 800 ohm
Pressure media	Air or similar non-conducting gases	
Compliance	CE Mark - Johnson Controls declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC and RoHS Directives.	
CE		

***i* Note:**

- Span full-scale output factory set to within 1%
- Calibrated at factory with a 24 VDC loop supply voltage and a 250 ohm load
- Span full-scale output factory set to within ±0.16 mA

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls shall not be liable for damages resulting from misapplication or misuse of its products.

Product warranty

This product is covered by a limited warranty, details of which can be found at www.johnsoncontrols.com/buildingswarranty.

Software terms

Use of the software that is in (or constitutes) this product, or access to the cloud, or hosted services applicable to this product, if any, is subject to applicable end-user license, open-source software information, and other terms set forth at www.johnsoncontrols.com/techterms. Your use of this product constitutes an agreement to such terms.

Patents

Patents: <https://jciapat.com>

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