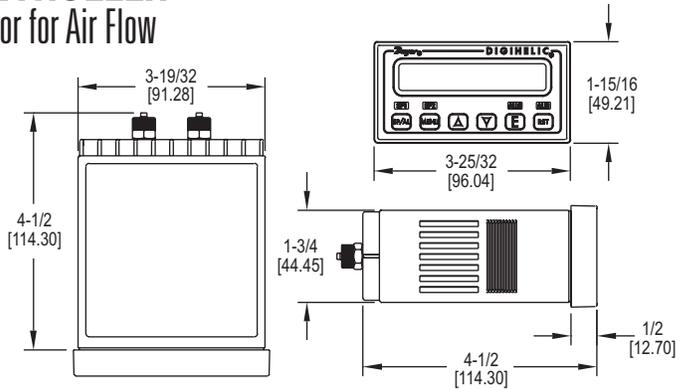


# DIGIHELIC® DIFFERENTIAL PRESSURE CONTROLLER

3-in-1 Instrument: Gage, Switch and Transmitter, Square Root Extractor for Air Flow



The **SERIES DH** Digihelic® Differential Pressure Controller is a 3-in-1 instrument possessing a digital display gage, control relay switches, and a transmitter with current output. The Digihelic® controller is the ideal instrument for pressure, velocity and flow applications, achieving a 0.5% full scale accuracy on ranges from 0.25 to 100 in w.c. The Digihelic® controller allows the selection of pressure, velocity or volumetric flow operation in several commonly used engineering units. Two SPDT control relays with adjustable dead bands are provided along with a scalable 4-20 mA process output. The Series DH provides extreme flexibility in power usage by allowing 120/220 VAC and also 24 VDC power which is often used in control panels. Programming is easy using the menu key to access 5 simplified menus which provide access to: security level; selection of pressure, velocity or flow operation; selection of engineering units; K-factor for use with flow sensors; rectangular or circular duct for inputting area in flow applications; set point control or set point and alarm operation; alarm operation as a high, low or high/low alarm; automatic or manual alarm reset; alarm delay; view peak and valley process readings; digital damping for smoothing erratic process applications; scaling the 4-20 mA process output to fit your application's range; Modbus® communications; and field calibration.

**FEATURES/BENEFITS**

- 3-in-1 instrument allows the reduction of several instruments with one product, saving inventory, installation time and money
- Velocity of flow modes, a square root output coincides with the actual flow curve for greater precision
- Power usage of 120/220 VAC or 24 VDC provides flexibility to incorporate device in control panel
- Secure menu program provides access to device operation only for the right skill level
- Modbus® communications supports Process and HVAC system integration and control

**APPLICATIONS**

- SCFM duct flow
- Industrial ovens air flow
- Filter status
- Clean room pressurization
- Fume hood air flow
- Surgical and medical room pressurization
- Damper and fan control

OPTIONS	
To order add suffix:	Description
-B	Barbed fitting for 3/16" ID tubing
-NIST	NIST traceable calibration certificate
Example: DH-004-NIST	
-FC	Factory calibration certificate
Example: DH-004-FC	

MODEL CHART - AVAILABLE PRESSURE ENGINEERING UNITS												
Model	in w.c.	ft w.c.	mm w.c.	cm w.c.	psi	in Hg	mm Hg	mbar	Pa	kPa	hPa	oz/in <sup>2</sup>
DH-002	.2500	-	6.350	0.635	-	-	0.467	0.623	62.28	-	0.623	0.144
DH-004	1.000	-	25.40	2.540	-	-	1.868	2.491	249.1	0.249	2.491	0.578
DH-006	5.000	.4167	127.0	12.70	.1806	.3678	9.342	12.45	1245	1.245	12.45	2.890
DH-007	10.00	.8333	254.0	25.40	.3613	.7356	18.68	24.91	2491	2.491	24.91	5.780
DH-008	25.00	2.083	635.0	63.50	.9032	1.839	46.71	62.27	6227	6.227	62.27	14.45
DH-009*	50.00	4.167	1270	127.0	1.806	3.678	93.42	124.5	-	12.45	124.5	28.90
DH-010*	100.0	8.333	2540	254.0	3.613	7.356	186.8	249.1	-	24.91	249.1	57.80

\*Velocity and volumetric flow not available on bi-directional range units and models DH-009 & DH-010.

**SPECIFICATIONS**

**Service:** Air and non-combustible, compatible gases.  
**Wetted Materials:** Consult factory.  
**Housing Material:** ABS plastic, UL approved 94 V-0.  
**Accuracy:** ±0.5% at 77°F (25°C) including hysteresis and repeatability.  
**Stability:** < ±1% per year.  
**Pressure Limits:** Ranges ≤ 2.5 in w.c. = 2 psi; 5": 5 psi; 10": 5 psi; 25": 5 psi; 50": 5 psi; 100": 9 psi.  
**Temperature Limits:** 32 to 140°F (0 to 60°C).  
**Compensated Temperature Limits:** 32 to 140°F (0 to 60°C).  
**Thermal Effects:** 0.020%/°F (0.036%/°C) from 77°F (25°C).  
**Power Requirements:** High voltage power = 100 to 240 VAC, 50 to 400 Hz or 132 to 240 VDC. Low voltage power = 24 VDC ±20%.  
**Power Consumption:** Low voltage power = 24 VDC - 130 mA max; High voltage power = 100 to 240 VAC, 132 to 240 VDC - 7VA max.  
**Output Signal:** 4-20 mA DC into 900 Ω max.  
**Zero & Span Adjustments:** Accessible via menus.  
**Response Time:** 250 ms.  
**Display:** 4 digit LCD 0.4" height. LED indicators for set point and alarm status.  
**Electrical Connections:** Screw terminals.  
**Process Connections:** Compression fitting for use with 1/8" ID X 1/4" OD tubing (3.175 mm ID x 6.35 mm OD). Optional barbed fitting for 3/16" ID tubing.  
**Enclosure Rating:** Face designed to meet NEMA 4X (IP66).  
**Mounting Orientation:** Mount unit in horizontal plane.  
**Size:** 1/8 DIN.  
**Panel Cutout:** 1.772 x 3.620 in (45 x 92 mm).  
**Weight:** 14.4 oz (408 g).  
**Serial Communications:** Modbus® RTU, RS485, 9600 baud.  
**Agency Approvals:** CE, UL.

**SWITCH SPECIFICATIONS**

**Switch Type:** 2 SPDT relays.  
**Electrical Rating:** 8 amps at 240 VAC resistive.  
**Set Point Adjustment:** Adjustable via keypad on face.

**ACCESSORIES**

Model	Description
MN-1	Mini-Node™ USB/RS-485 converter; the Mini-Node™ converters are an easy solution for utilizing the Digihelic® controller's RS-485 serial communication and connecting to virtually any PC.
A-266	Digihelic® surface mounting bracket
A-203	1/8" ID x 1/4" OD PVC tubing
Digihelic Links™	Communications Software

MODEL CHART - BI-DIRECTIONAL* RANGES	
Model	Range
DH-012	0.25 to 0 to 0.25 in w.c.
DH-014	1.0 to 0 to 1.0 in w.c.
DH-015	2.5 to 0 to 2.5 in w.c.
DH-016	5 to 0 to 5 in w.c.
DH-017	10 to 0 to 10 in w.c.

\*Velocity and volumetric flow not available on bi-directional range units and models DH-009 & DH-010.

Modbus® is a registered trademark of Schneider Automation, Inc.  
 Process Tubing Options: See page 499 (Gage Tubing Accessories)

PRESSURE  
Gages/Switches, Transmitters