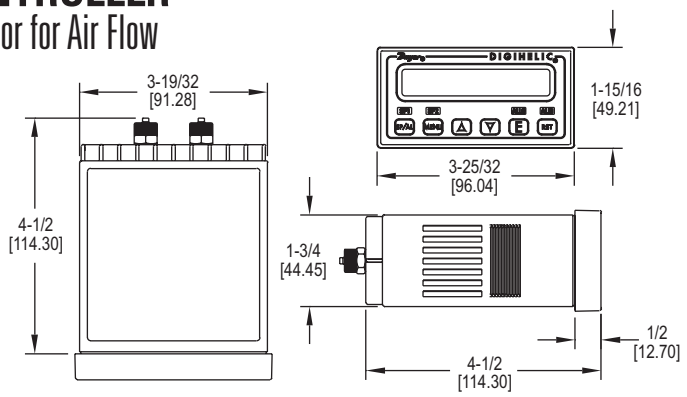
Dwyer
SERIES DH

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

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 = 100-240 VAC, 50-400 Hz or 132-240 VDC. Low voltage power = 24 VDC ±20%.
Power Consumption: Low voltage power = 24 VDC - 130 mA max; High voltage power = 100-240 VAC, 132-240 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.

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	

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 - 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/in²
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.

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.