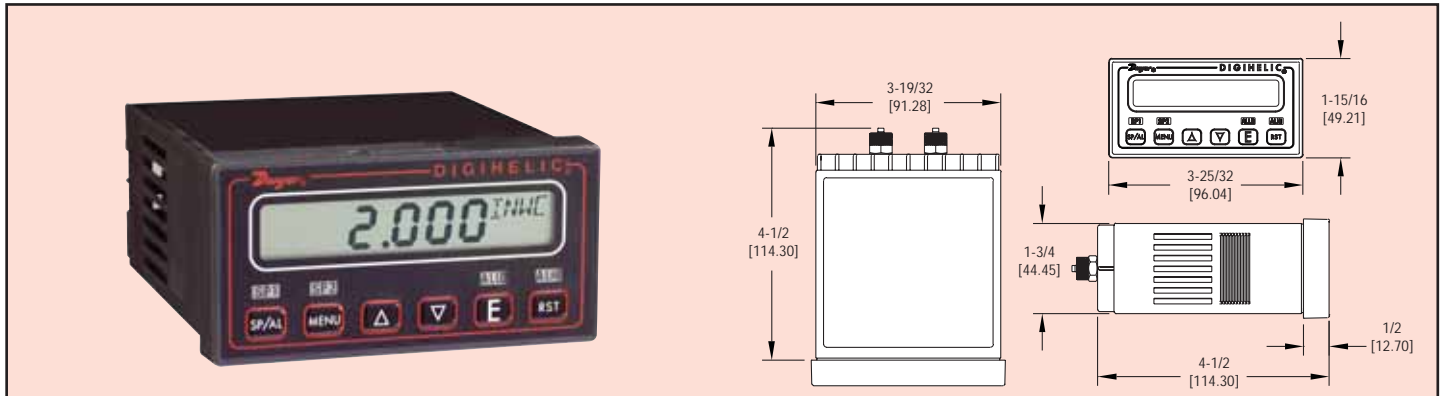


Series  
DH

# 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. Combining these three features allows the reduction of several instruments with one product, saving inventory, installation time and money. The Digihelic® Controller is the ideal instrument for pressure, velocity and flow applications, achieving a 0.5% full scale accuracy on ranges from 5 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 five 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 dampening for smoothing erratic process applications; scaling the 4-20mA process output to fit your application's range; Modbus® communications; and field calibration.

With all this packed into one product it is easy to see why the Digihelic® Controller is the only instrument you will need for all your pressure applications.

## APPLICATIONS

- Dust Collection Bag Filters
- SCFM Flow In Ducts
- Air Flow for Industrial Ovens
- Filter Status
- Clean Room Pressure
- Fume Hood Air Flow
- Pharmaceutical or Bio-Medical Glove Box Pressures
- Static Pressures in Ducts or Buildings
- Damper Control
- Fan Control

## SPECIFICATIONS

**Service:** Air and non-combustible, compatible gases.

**Wetted Materials:** Consult factory.

**Housing Material:** ABS plastic, UL approved 94-V-0.

**Accuracy:**  $\pm 0.5\%$  at 77°F (25°C) including hysteresis and repeatability.

**Stability:**  $< \pm 1\%$  per year.

**Pressure Limits:** Ranges  $\leq 2.5$  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  $\pm 20\%$ .

**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 ohms 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).

**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.

*Modbus® is a registered trademark of Schneider Automation.*

# One Control for all your Pressure Applications

Reduces Instruments, Inventory, Installation Time and Cost

**Compact** 1/8 DIN housing reduces panel space.

**Set Point** Status LED Indicators display set point activation. Allows user to view process status from a distance.

**"Hot Key"** saves time by allowing instant access to set point and alarms. Set points/alarms can be easily adjusted with arrow keys.

**Menu Key** Scrolls through menus to adjust settings. 5 simple menus allow for quick set-up and reduced installation time.

**Adjustable clip** for panel mounting.

**Set point 2** or alarm output (SPDT). Selectable direct acting control relay with adjustable deadband or high, low or high low alarm.

**4-20 mA** process output. View process remotely or send signal to PLC. Alleviates purchase of a separate transmitter.

**24 VDC** power supply. Universal power supply eliminates options, inventory and ordering mistakes.



**Selectable** Engineering Units in Pressure, Velocity or Flow, programmed on one unit. Alleviates time consuming conversions and flow charts.

**Alarm** LED Indicator shows alarm activation status. View alarm status from a distance.

**Reset button** for clearing an alarm when alarm is set for manual operation.

**Enter** a menu or store a value. From home display press to view full scale range.

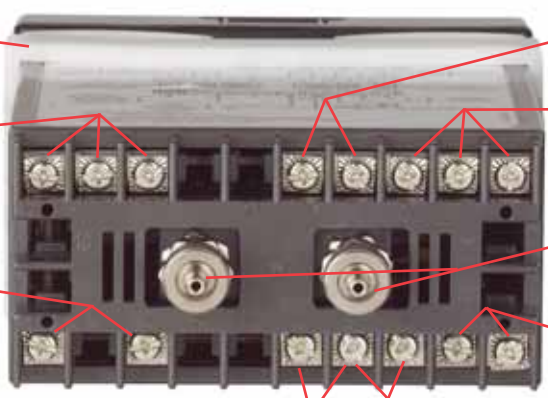
**120-240 VAC** power supply. Reduce inventory and eliminate lead times with universal power supply.

**Set point 1** output (SPDT). Direct or reverse acting control relay with adjustable deadband.

**Durable compression fittings** for 1/4" O.D. x 1/8" I.D. plastic tubing. Secures tubing in harsh applications where vibration & temperature fluctuations occur.

**RS-485** serial communications. View, record, and adjust control settings remotely from a computer with Modbus® protocol.

**Remote reset switch** for alarm. Acknowledge alarm from remote location. For users that need quick alarm reset from a distance.



Available Pressure Engineering Units												
Model No.	in. wc	ft. wc	mm wc	cm wc	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	25.4	.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

**Bi-Directional\* Ranges also available:** DH-012 Range: 0.25 - 0 - 0.25" w.c.  
 DH-014 Range: 1.0 - 0 - 1.0" w.c.  
 DH-015 Range: 2.5 - 0 - 2.5" w.c.  
 DH-016 Range: 5 - 0 - 5" w.c.  
 DH-017 Range: 10 - 0 - 10" w.c.

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

**ACCESSORIES**

The Mother Node™ converter is an easy solution for utilizing the Digihelic® Controller's RS-485 serial communication and connecting to virtually any PC.

- 351-9N, Mother Node™ silver RS-232 to RS-485 Converter with DB9F Connector.
- 351-9, Mother Node™ silver RS-232 to RS-485 Converter with DB9F Connector.
- Includes 120 VAC to 12 VDC adapter.
- A-266, Digihelic® surface mounting bracket.
- A-203, 1/8" I.D. x 1/4" O.D. PVC tubing.
- Digihelic® Links, Communication Software

