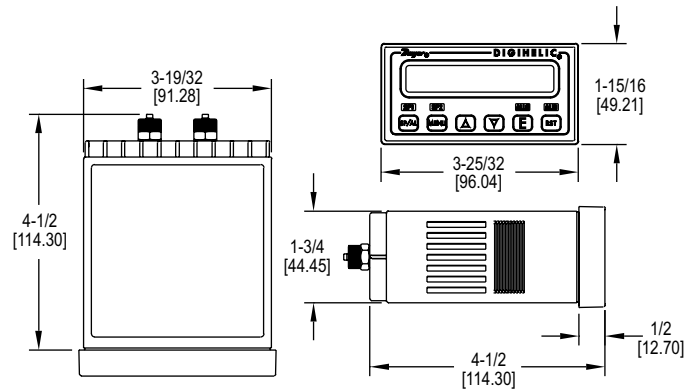


DIGIHELIC® DIFFERENTIAL PRESSURE CONTROLLER

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

CALIBRATION SERVICES AVAILABLE


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.

BENEFITS/FEATURES

- 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 and 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.
Compliance: 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.

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 ²
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 and 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 and DH-010.

OPTIONS

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

Example: DH-004-FC

ACCESSORIES

Model	Description
A-203	1/8" ID x 1/4" OD PVC tubing
A-266	Digihelic® surface mounting bracket
Digihelic Links™	Communications software
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

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Process Tubing Options: See page 453 (Gage Tubing Accessories)

DATA ACQUISITION AND LOGGING SOFTWARE

Designed for Communication with Series DH and DHII Digihelic® Differential Pressure Controllers



The **Model Digihelic Links™ Data Acquisition and Logging Software** is an easy to use Windows® based program. Data logging and graphing can be set up by the individual control with varying logging periods. Event logging, live instrument status, remote calibration as well as uploading pre-saved configuration files are some of the higher end capabilities the Digihelic Links™ Communications Software provides. The Digihelic Links™ Communications Software is compatible with all Series DH and DHII Digihelic® Differential Pressure Controllers.

BENEFITS/FEATURES

- Log and graph data up to 10 units simultaneously; view up to 40 units
- Easy to use Windows® based operator interface
- Data logging at individually adjustable rates
- On-screen graphing of process values
- Upload and download saved control configuration profiles
- Remote calibration of controls

MODEL CHART	
Model	Description
Digihelic Links™	Communications software CD

ACCESSORIES	
Model	Description
MN-1	Mini-Node™ USB/RS-485 converter

REQUIRED EQUIPMENT COMPUTER REQUIREMENTS

The Digihelic Links™ Communications Software application will run on Windows® 95/98 and Windows® NT Workstation 4.0 (Service Pack 3 recommended), Windows® 2000 and Windows® XP software. The hardware requirements for each of these operating systems can be found in the documentation provided with that operating system. One available RS-485 port is needed to communicate with the control(s). A minimum of 4 MB of hard disk space is needed for the Digihelic Links™ Communications Software application files, and additional hard disk space is needed to store data log files. Log file size will vary depending on the duration and rate selected for the controls and the number of controls on line.

COMMUNICATION REQUIREMENTS

To communicate with the Digihelic® Differential Pressure Controller from a PC with an RS-232 Serial Communications Port, an RS-485 to RS-232 converter is required to convert the signal from the Digihelic® controller RS-485 format to the RS-232 input of the PC. Recommended converters are the Models 351-9 RS-485 to RS-232 converter or Model MN-21 RS-485 to USB converter. For RS-485 systems a 120 Ω resistor is also needed to terminate the last control on the control network. Shielded twisted pair cable is recommended for wiring the controls together.

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