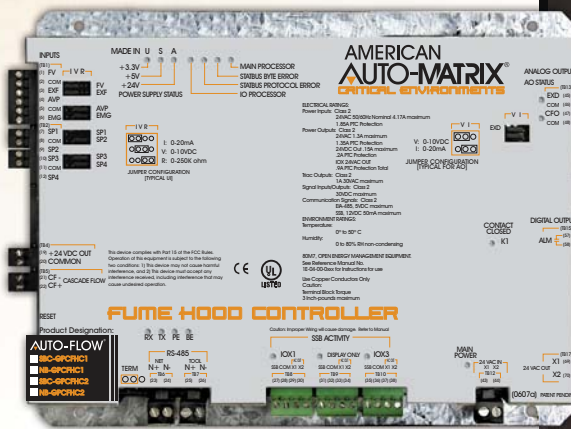


DESCRIPTION

The NB-GPC^{FHC} in combination with the FHC-SD color touch-screen Local User Interface (LUI) offers unprecedented technology combined with flexibility of control found nowhere else in the industry today. Through utilizing the NB-GPC^{FHC™}, fume hoods can now be configured to support either Face Velocity or Sash Position methods through a single BACnet[®] controller. In addition, flexibility is expanded through the use of the FHC-SD, a color touch-screen display that offers multiple levels of configurability and accessibility; designed to give users security and safety on a highly visible, live local user interface.

NB-GPC^{FHC} FEATURES

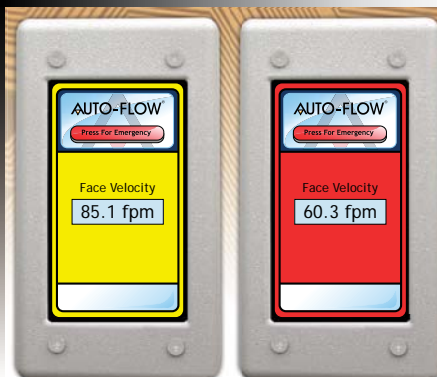
- Native BACnet control utilizing American Auto-Matrix state-of-the-art GPC technology
- Microprocessor-based DDC control system utilizing tunable high speed PID (Proportional, Integral, Derivative) Control Algorithms
- PID updates every 50ms for exhaust damper output
- Stand-alone or Networked operation
- Configurable set-points
- Pluggable wiring connections
- Pre-programmed function blocks improve application reliability
- BACnet MSTP communication over twisted pair (EIA 485) wire; up to 115.2k Baud (Current BACnet limit 78.6K)
- Analog and digital outputs updated every 200ms
- Stand-alone flow totalization for flow offset control
- Digital output provided for external alarming
- Non-linear input and output curves supported
- Two stage programmable high / low alarms
- Expandable STATbus I/O
- Battery backup real-time clock and configuration data
- Patented closed loop control based on measured face velocity technology or control based on popular venturi-type valves and sash area calculations configurable in the controller
- In emergency mode controller drives to preconfigured output state
- Supplied with approved, lockable enclosure



FHC Dedicated Inputs and Outputs	
8 Dedicated Inputs: 16 bit resolution, 0-5VDC, 0 TO 10VDC, 0-20mA, 0-250K Ohms	1 Face Velocity Input 1 Exhaust Flow Input 1 Fume Hood Air Valve Pressure Input 1 Emergency Input (Dry Contact) 4 Sash Position Inputs
1 Dedicated Serial Input: 0-10VDC, Non-polar	Cascade Flow Input
1 Dedicated Analog Output: 0-10VDC, 0-20mA	Exhaust Flow Damper Output
1 Dedicated Digital Output: 10-29VAC, 1A, Opto-isolated triac	Alarm Device Output
1 Dedicated Serial Output 0-10VDC	Cascade Flow Output
1 Expansion Digital Input (Optional)	Hood Presence Input (Dry Contact)

The FHC-SD and Alarming

The FHC-SD allows for two-staged alarming, notifying users of a potential problem through visual and audible alarms. Should a preset "low/high-limit" be reached, the display will begin to flash yellow and emit a 3 second pulsing alarm from the display as a caution to the hood operator. Should an extreme "low/high-limit" alarm occur, the display then will go into emergency override, displaying a red flashing background and emitting a constant pitch alarm from the display, while also forcing the controller to activate the preset emergency procedure; which may also include audible and visual alarms through the BACnet network.



NB-GPC^{FHC}

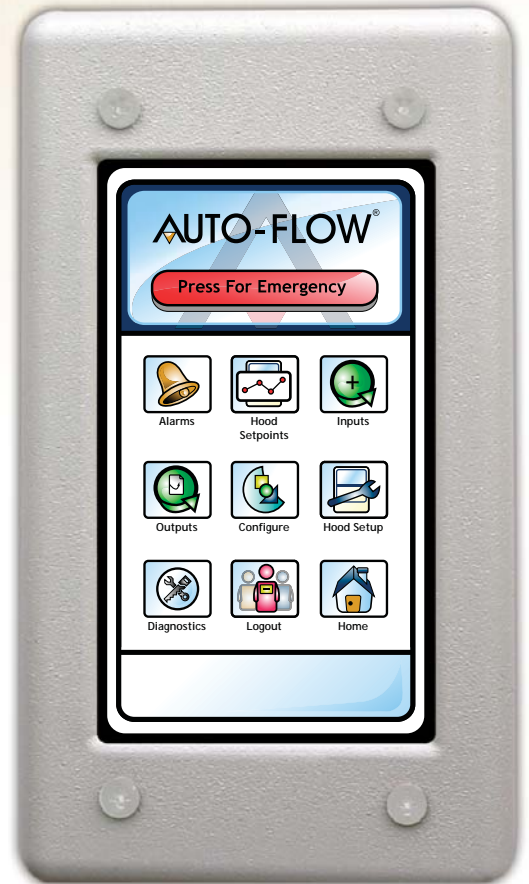
BACnet Fume Hood Controller and Small Display

AMERICAN AUTO-MATRIX[®] CRITICAL ENVIRONMENTS

FHC-SD FEATURES



- Displays measured or calculated face velocity (through face velocity or sash position)
- 12 Bit Color, 272 x 480 pixel LCD-based Touch Screen Local User Interface for displaying and modification of system information specific to the NB-GPC^{FHC}
- Intuitive screen calibration
- Local setpoint and alarm set-up
- Multi-tiered icon driven screens
- Easy step-by-step FHC set-up through use of calibration wizards
- Multi-level numerical password based access protection
- Non-volatile memory stored on FHC for backup and cloning over the EIA-485 network
- Local alarm initiation and BAS visibility
- Configurable default screens
- Visible and audible multistage alarming capabilities for high, low, extreme high and extreme low values of several parameters
- Cancel alarm commands require authorized user
- Set-up can be accomplished in either English or Metric units
- Chemical resistant 'Kydex' plastic case, mountable on both US and Euro switch boxes * IP-44 Available
- Touch Screen protected by chemically resistant polyester membrane
- SD/MMC card port accessible by removing casing
- Flash program upgradability through use of standard SD/MMC card port
- Store debugging information on one SD/MMC card for multiple hood applications



SPECIFICATIONS - NB-GPC^{FHC}

Mounting	Terminations	Input Supply
• Flat surface with screws	• Pluggable terminal blocks for inputs, outputs, power and network connections for 18-22 gauge wire	• Line Input: 22 to 29 VAC 50/60Hz @ 4.16A max, PTC protection • Transformer: Internal isolated switching power supply • Indicators: LEDs for line power, regulated DC voltages
Operating Environment	Dimensions	
• Operating temperature: 32 to 122°F (0 to 50°C) • Relative humidity: 0 to 80% RH non-condensing	• Overall Size: 8.2 x 6.5 x 1.0 in. (20.83 x 16.51 x 2.54 cm.) • Shipping Weight: 1 lb. (1.36 kg)	

SPECIFICATIONS - FHC-SD

Processor	Display	Touchscreen	Local Memory Storage	
• High speed 32-bit processor running at 86 Mhz	• Sharp LQ043 • Backlit, 9:16 widescreen TFT color LCD • 272 x 480 pixels	• Custom fitted to match the LQ043 display	• 8MB Intel on board flash chip	
SRAM	Alarm Buzzer	Features	SD/MMC Card Socket	Dimensions
• 1MB RAM chip	• Self contained piezo buzzer	• Revert jumper button • Reset button	• Supports 2GB storage capacity	• Overall Size: 6.0 x 3.4 x 1.0 in. (15.24 x 8.64 x 2.54 cm.) • IP-44 Available

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