

# LM LINEAR MODULE SERVICE & INSTALLATION MANUAL

Date: 07 / 11  
Reference # : F2-25

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**Having Difficulty installing this product? Price is here to help.**

**Application support by Phone:**

(Monday – Friday 8:30 A.M. – 4:30 P.M. (CST)  
 Please call 204-661-7807

**Application support by Email:**

[bradc@price-hvac.com](mailto:bradc@price-hvac.com)

**Literature:**

[www.price-hvac.com/literature](http://www.price-hvac.com/literature)



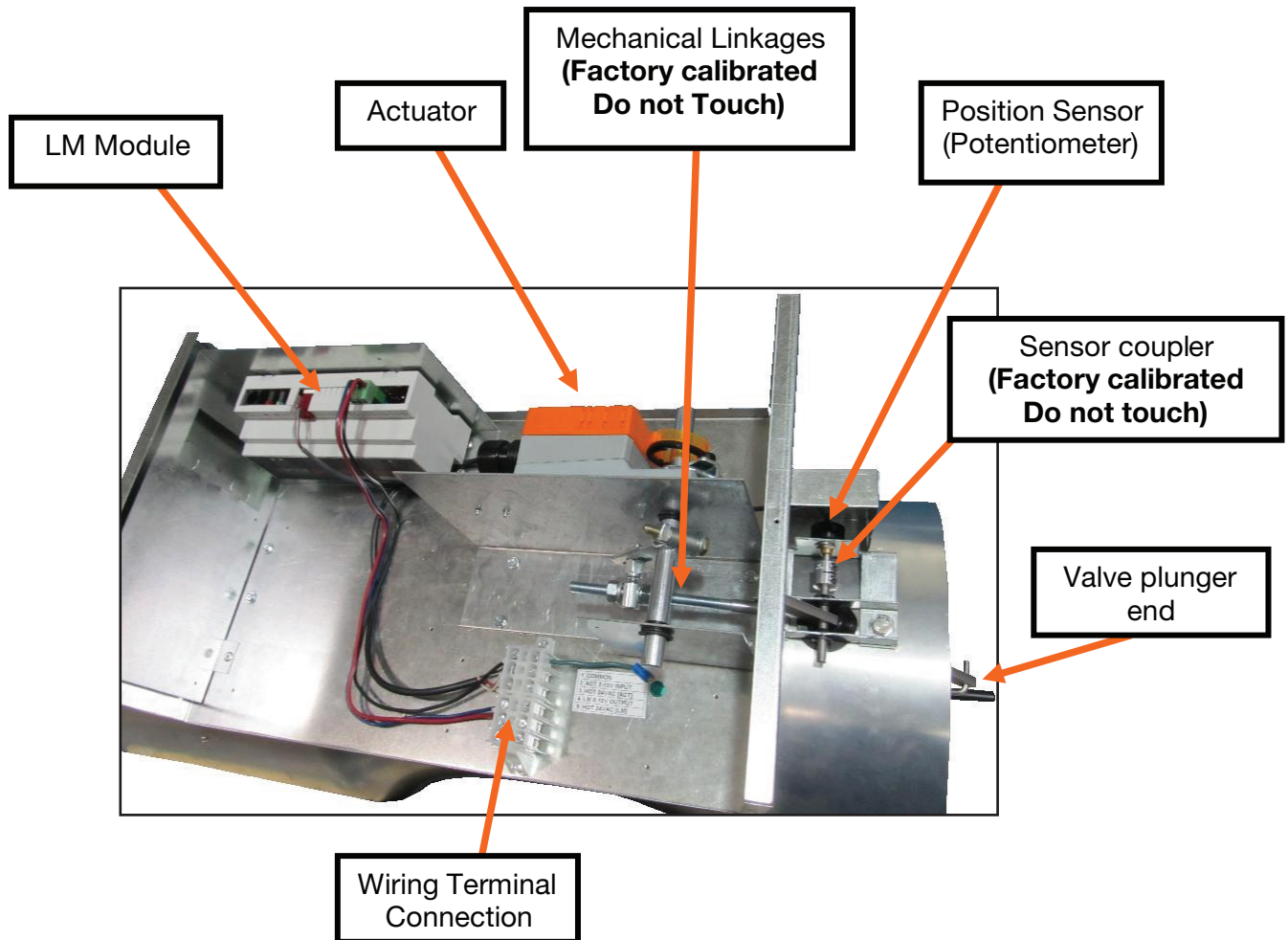
## General Description

LM – installation and service manual – V1.02  
0520L

### Venturi Valve

The Venturi valve is capable of adjusting the airflow without affecting the pressure of the system. The valve is factory calibrated, as such, adjusting any of the mechanical pieces will invalidate the calibration. The mechanical linkages and sensor couplers are especially sensitive to adjustments when it comes to the calibration. The attached LM module provides a 0 to 10 VDC output signal that is linear to airflow. The unit is supplied with 24 VAC on the wiring terminals, as well as the 0-10 VDC signal output of the unit.

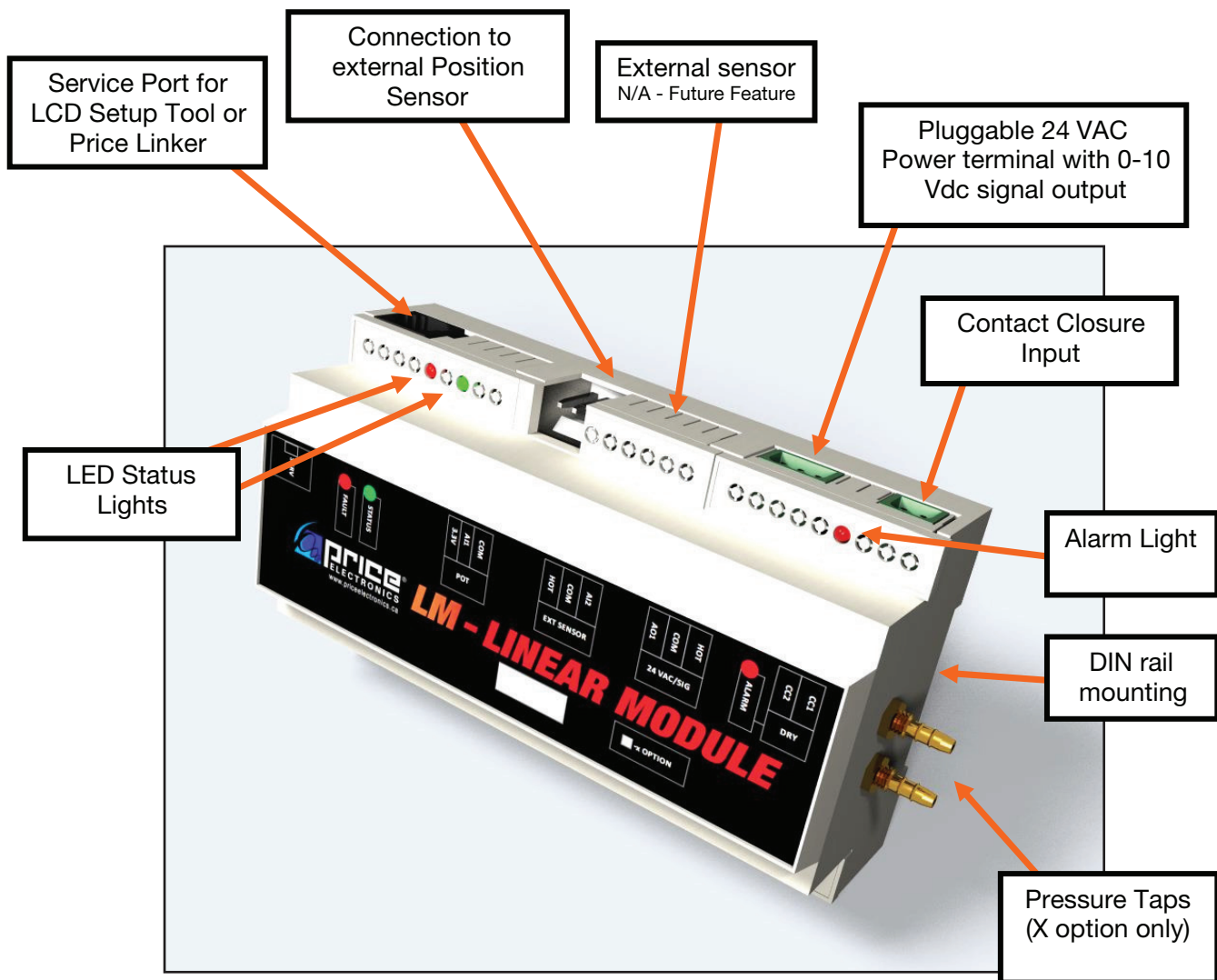
**If the mechanical linkages are accidentally adjusted or moved, please contact Price for assistance recalibrating the unit.**



## LM – Linear Module

The Linear Module (**LM**) is a digital sensor that is used with a Venturi valve to monitor airflow. The LM will output a 0-10 Vdc signal that is proportional to the current airflow through the valve. If the module is equipped with the X option, then the module has the second function of measuring the current pressure in the valve and signaling an alarm through the Alarm Light and Contact Closure. The alarm is activated when the valve is working outside of its normal operating range (0.6 to 3.0 inches of water). The LM is DIN rail mounted for fast and easy installation and removal.

**Each LM is factory calibrated to the Venturi valve it ships with. It is a matched pair, do not switch modules in field. Contact Price for replacements!**



## Initial Startup – LCD Setup Tool only


The LM is factory calibrated, however some settings may require field adjustment. Please order a (LCD\_Setup) service tool (only one is required per job site). Settings modified through the setup tool are stored in EEPROM and are not lost if the power is cycled. When the LCD Setup Tool is powered from the LM module, it will display the following information:

Price Electronics	Start up screen
LCD Thermostat Version X.XX	Displays firmware version of LCD Setup Tool (Firmware must be 2.24 or higher to support LM)
Linear Module Version X.XX	Displays firmware version of LM
Venturi Size X X XX Inch	Displays valve and duct size
Current Flow XXX cfm	Displays current airflow, based on potentiometer Position



**LCD T-Stat  
Setup Tool –  
Includes RJ11 cable**

**Available Valve and duct sizes**

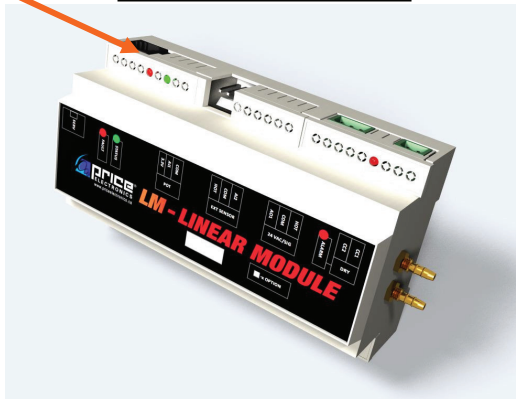


- Single 8"
- Single 10"
- Single 12"
- Double 10"
- Double 12"
- Triple 12"

**RJ-12 Cable**  
Plugs into LCD T-Stat  
and then into RJ11  
connector of LM



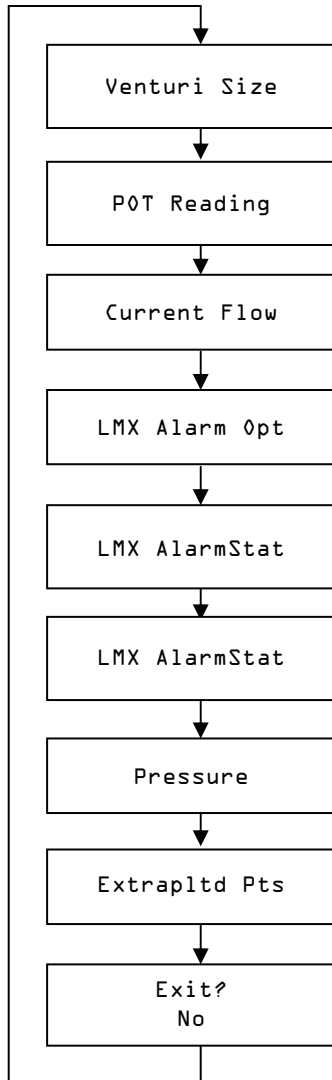
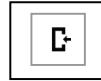
**Linear Module**



## Info Menu

The info menu shows information about the modules status. No values can be changed from this menu.

- The Info Menu is accessed by pressing the **Menu** button
- Scroll through with the **UP** ▲ and **DOWN** ▼ buttons



### Venturi Size

- Shows the valve and duct size

### Potentiometer Reading (Position Sensor)

- Direct reading from the potentiometer
- Range is 0 to 4096

### Current Flow

- Current airflow based on the position sensor reading

### LMX Alarm Option

- **Present** - X option is available
- **Not Present** - X option is unavailable

### LMX Alarm Status (X option only)

- **Normal** - The valve is operating within the modules pressure limits
- **In Alarm** - The valve is operating outside of the pressure limits and is generating an alarm

### Pressure (X option only)

- Current pressure in inches of water

### Extrapolated Points

- Diagnostic information

### Exit

- This will exit the info menu if you select Yes
- Note: Info menu will automatically time out after 60 seconds

## Service Menu

The service menu allows the balancer/installer to access to the controller setup to change settings.

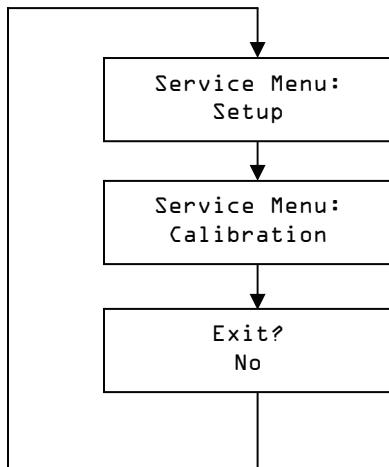
- Hold down the **Menu** button for 5 seconds



- Display shows

- Use the up and down buttons to enter the password **in this sequence**

▼   ▲   ▲   ▼  
DOWN   UP   UP   DOWN



### Setup

- Allows you to change various options
- **See Page 7**

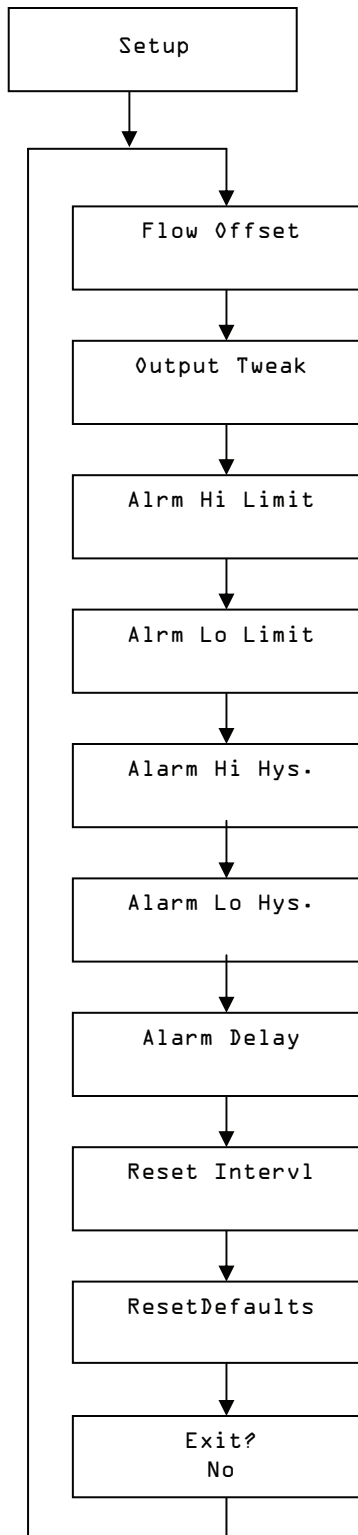
### Calibration


- Shows information based on the units calibration
- **See Page 8**

### Exit

- This will exit the SERVICE menu if you select Yes
- Note: Service menu will automatically time out after 20 seconds

## Setup Menu



- Scroll through menu with UP ▲ and DOWN ▼ keys
- Press Enter  to apply your changes
- \*---wait---\* will display as your changes are applied

### Flow Offset

- Applies an offset of +/- 1000 CFM
- **Default is 0 CFM**

### Output Tweak

- Changes the output voltage by +/- 100%
- **Default is 0%**

### Alarm Hi Limit (X option only)

- The maximum static pressure before contact closure is closed
- *Alarm Hi Hysteresis* allows this limit to increase by its value with out generating an alarm, this is to reduce chatter
- The alarm LED on the unit will turn on
- Ranges from 0.7 to 3.0 inches of water, or 0.1 above *Alarm Low Limit*
- **Default is 3.0 inches of water**

### Alarm Low Limit (X option only)

- The minimum static pressure before contact closure is closed
- *Alarm Low Hysteresis* allows this limit to decrease by its value with out generating an alarm, this is to reduce chatter
- The alarm LED on the unit will turn on
- Ranges from 0.6 to 2.9 inches of water, or 0.1 below *Alarm Hi Limit*
- **Default is 0.6 inches of water**

### Alarm Hi Hysteresis (X option only)

- Sets a threshold that prevents contact closure from “chattering” when the pressure is on the edge of an alarm
- Affects only *Alarm Hi Limit*
- Ranges between 0.1 to 0.7 inches of water
- **Default is 0.5 inches of water**

### Alarm Low Hysteresis (X option only)

- Sets a threshold that prevents contact closure from “chattering” when the pressure is on the edge of an alarm
- Affects only *Alarm Low Limit*
- Ranges between 0.1 to 0.3 inches of water
- **Default is 0.1 inches of water**

### Alarm Delay (X option only)

- The length of time in seconds between changes to the contact closure  
Between 1 and 600 seconds
- **Default is 10 seconds**


### Reset Interval

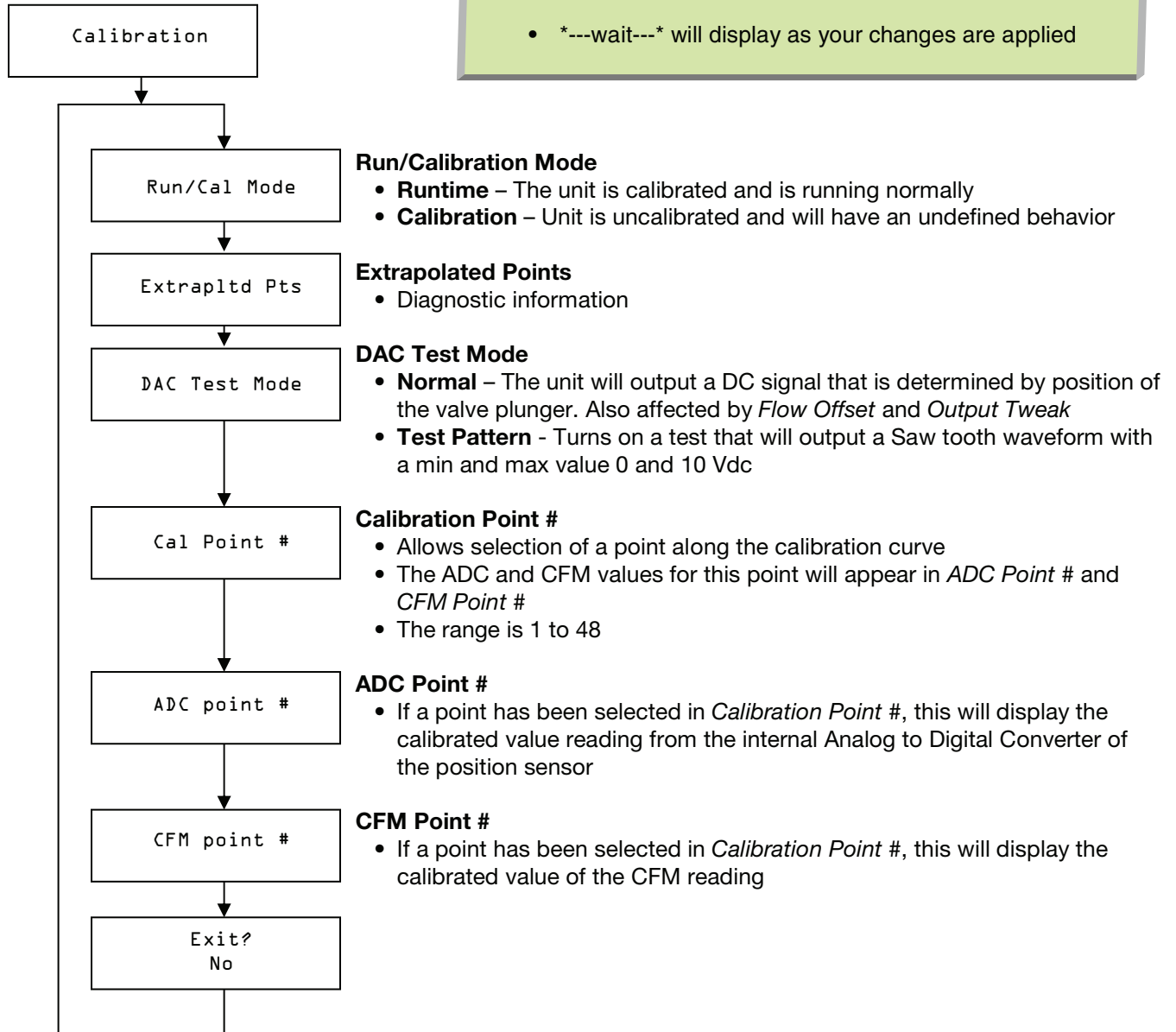
- Determines how often the unit will reset itself
- Adjusted between 1 and 14400 minutes (10 days)
- A 0 will ensure the unit never resets
- **Default is 1440 minutes (1 Day)**

### Reset Defaults

- Resets the unit back to factory defaults
- **Does not reset calibration data**

## Calibration Menu

- Scroll through menu with UP ▲ and DOWN ▼ keys
- Press Enter  to apply your changes
- \*---wait---\* will display as your changes are applied



## Troubleshooting

The following information is provided in the event that the Linear Module (**LM**) does not appear to function properly after installation.

Red Fault LED	Green Status LED	Condition
Off	Long slow blinks at power on	Firmware revision information on startup
Off	Slow Blinks	Normal Operation
Fast Blinks	Slow Blinks	Service tool connected
Fast Blinks	Fast Blinks	Unit is out of calibration and service tool is connected
Fast Blinks	Off	Unit is out of calibration

X Option Only	
Alarm LED is on	Unit is running outside of its operating pressure range, contact closure is closed
Alarm LED is Off	Unit is running inside of its operating pressure range, contact closure is open





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**e.h. price**  
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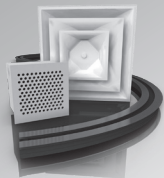
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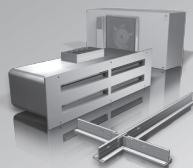
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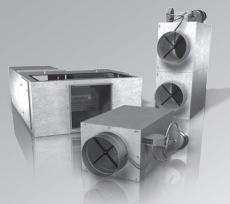
### Grilles & Diffusers



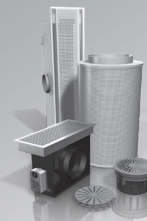
### Critical Environments



### Terminals



### Sustainable Building



### Noise Control

