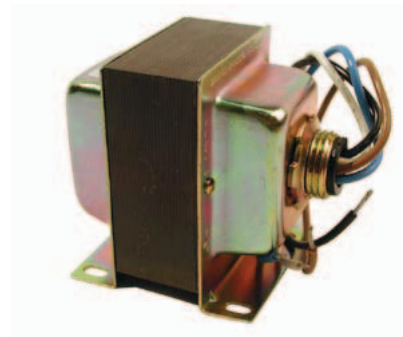


# Electronic Controls



## Electronic Controls Sections

- **Controllers, Thermostats, and Switches**
- **Enclosures**
- **Relays**
- **Sensors, Transmitters, and Transducers**
- **Power Supplies and Transformers**

See the Contents Section at the front of the Product Catalog for the complete data sheet listing. See also Electronic Actuators tab.



# CEE-2004, 2007, 2104, 2204 For Replacements Only: Proportional Fan Coil Unit Controllers 4-Pipe Htg.Clg; 2-Pipe Htg; 2-Pipe Clg

## Description

These CEE-2000 Series solid state electronic control modules are designed to provide modulating hydronic control for 4-Pipe Heating/Cooling Fan Coil Units, or for 2-Pipe Heating or 2-Pipe Cooling Fan Coil Units. Modules are available for 120, 208-240 or 277 VAC systems.

The CEE-2000 series are designed to work in combination with the YME-2000 Room Temperature Setpoint/Fan Speed Selector, the STE-1002 Return Air Sensor and the VEP-11/12/21/22 Series valves. The CEE will maintain the desired space temperature by sensing the return air temperature and utilizing time proportional control to modulate the VEP heating and or cooling valves based on the setpoint of the YME Room Temperature Setpoint/Fan Speed Selector.

## Features

- ◆ Solid state electronics
- ◆ Available in 120, 208-240 or 277 VAC
- ◆ Works with 4-Pipe heating/cooling, 2-Pipe heating, or 2-Pipe cooling fan coil units

## Application

The CEE-2004, 2104, 2007 and 2107 are available as after-market replacement parts.



## Models

### Normally Closed Heating and Cooling

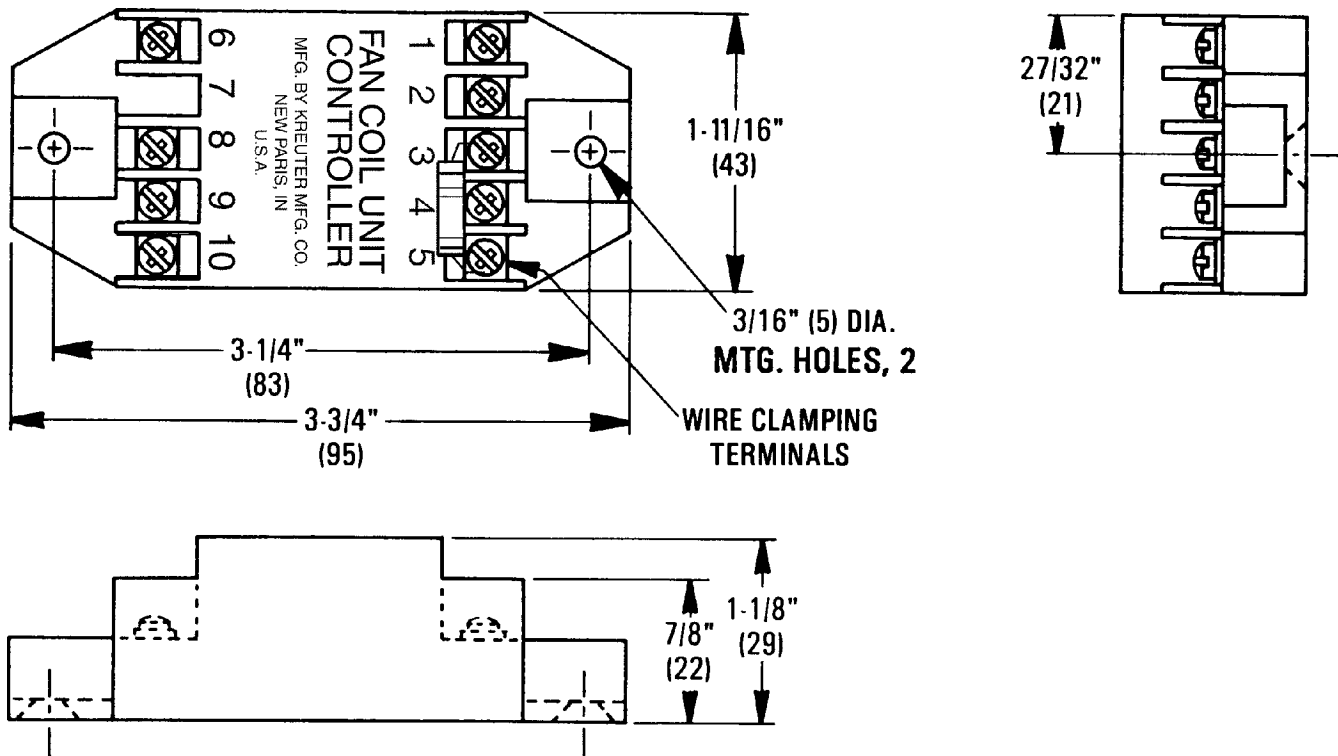
CEE-2004	120 VAC
CEE-2104	208-240 VAC
CEE-2204	277 VAC

### Normally Open Heating, Normally Closed Cooling

CEE-2007	120 VAC
CEE-2107	208-240 VAC
CEE-2207	277 VAC

## Details

All dimensions are in inches (mm).



## Specifications

<b>Supply Power</b>	CEE-2004, 2007; 120 VAC	<b>Wire Size</b>	14 to 18 AWG.	
	CEE-2104, 2107; 208-240 VAC		<b>Material</b>	Black Polycarbonate, UL Flame Class 94 HB
	CEE-2204, 2207 ; 277 VAC			
<b>Inputs</b>	Room Temperature Set-Point; YME-2002, 4.46K to 18.06K ohm	<b>Weight</b>	2 oz. (57 grams)	
	Return Air Temperature; STE-1002, 10K ohm at 77° F (25° C)		<b>Temperature Limits</b>	Operating 40° to 120° F (4° to 49° C)
				Shipping -40° to 140° F (-40° to 60° C)
<b>Outputs</b>	Time Proportioning; Cold Water Valve, VEP Series, 3 Watts (supply voltage)	<b>KMC Controls, Inc.</b> 19476 Industrial Drive New Paris, IN 46553 574.831.5250 www.kmcccontrols.com		
	Time Proportioning; Hot Water Valve, VEP Series, 3 Watts (supply voltage)			
<b>Connections</b>	Screw terminals, plated			



# CEE-2006, 2106, 2206 For Replacement Only: Proportional Fan Coil Unit Controller 2-Pipe Heating/Cooling w/ Reheat

## Description

These CEE-2000 Series are solid state electronic control modules available for replacement applications. They are designed to provide modulating hydronic control for 2-Pipe Heating and Cooling with optional electric reheat in the cooling mode. Modules are available for 120, 208-240 or 277 VAC systems.

When combined with the YME-2002 Room Temperature Setpoint/Fan Speed Selector, the STE-1002 Return Air Sensor, and VEP-11/12/21/22 Series valves; the CEE will maintain the desired space temperature by sensing hot or cold water available, and utilizing time proportional control to modulate the VEP series valve and will cycle the optional electric reheat relay based on the desired setpoint as identified by the room temperature selector..



## Features

- ◆ Solid state electronics
- ◆ Available in 120, 208-240 or 277 VAC
- ◆ Optional electric reheat in cooling mode

## Application

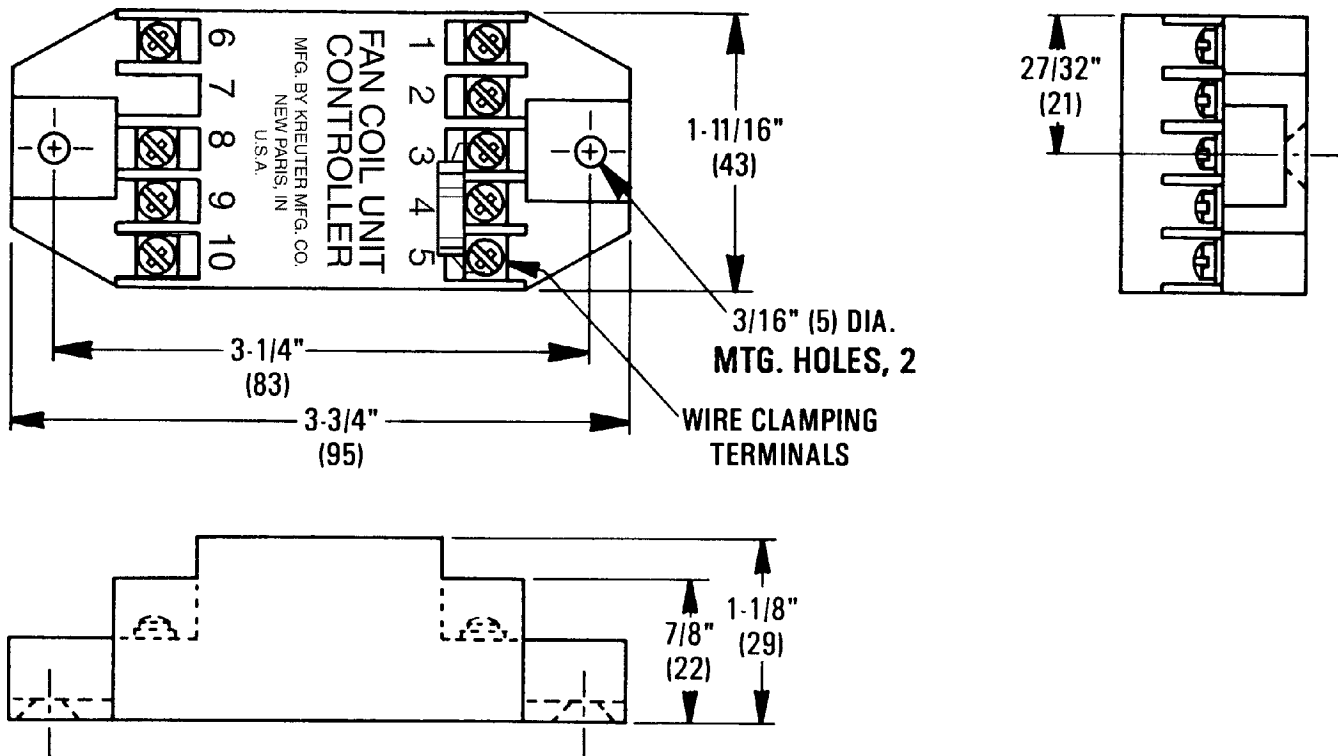
The CEE-2006, 2106 and 2206 are available as after market replacement parts.

## Models

CEE-2006	120 VAC
CEE-2106	208-240 VAC
CEE-2206	277 VAC

## Details

All dimensions are in inches (mm).



## Specifications

<b>Supply Power</b>	CEE-2006; 120 VAC	<b>Wire Size</b>	14 to 18 AWG.	
	CEE-2106; 208-240 VAC		<b>Material</b>	Black Polycarbonate, UL
	CEE-2206; 277 VAC			Flame Class 94 HB
<b>Inputs</b>	Room Temperature Setpoints; YME-2002, 4.46 K ohms to 18.06 K	<b>Weight</b>	2 oz. (57 grams)	
	Return Air Temperature; STE-1002, 10K ohm at 77° F (25° C)		<b>Temperature Limits</b>	Operating
<b>Outputs</b>	Time Proportioning; Cold/Hot Water Valve, VEP Series, 3 Watts (supply voltage)	Shipping		-40° to 140°F (-40° to 60°C)
	Electric heat relay; 11 watts continuous/ 20 watts max. in-rush (supply voltage)	<p><b>KMC Controls, Inc.</b> 19476 Industrial Drive New Paris, IN 46553 574.831.5250 www.kmccontrols.com</p>		
	<b>Connections</b>			Screw terminals, plated

### Description

The CEE-3009 and 3010 are solid state electronic Fan Speed Controllers. The CEE-3009/3010 provide variable fan speed control for fractional horsepower fan motors such as fan coil units, unit ventilators, etc., based on a 0 to 10 VDC control signal input, typically from a KMC Digital Controller.

The CEE-3010 will control single phase shaded pole or permanent split capacitor open air-over type fan motors up to 5 amperes and the CEE-3009 will control fan motors up to 10 amperes. Both controllers are rated at 120/240/277 VAC, and provide a minimum speed setting.

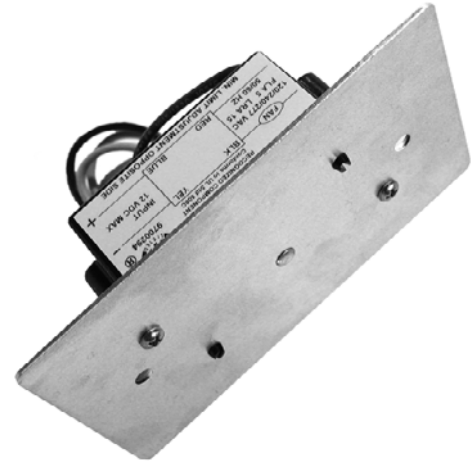
### Features

- ◆ Solid State design for simplicity and reliability
- ◆ Variable fan speed control
- ◆ Available in 5 and 10 Amp rated models
- ◆ Control single phase shaded pole or permanent split capacitor open air-over fan motors.

### Models

The following Fan Speed Controllers are available:

CEE-3010	5 ampere rated model
CEE-3009	10 ampere rated model

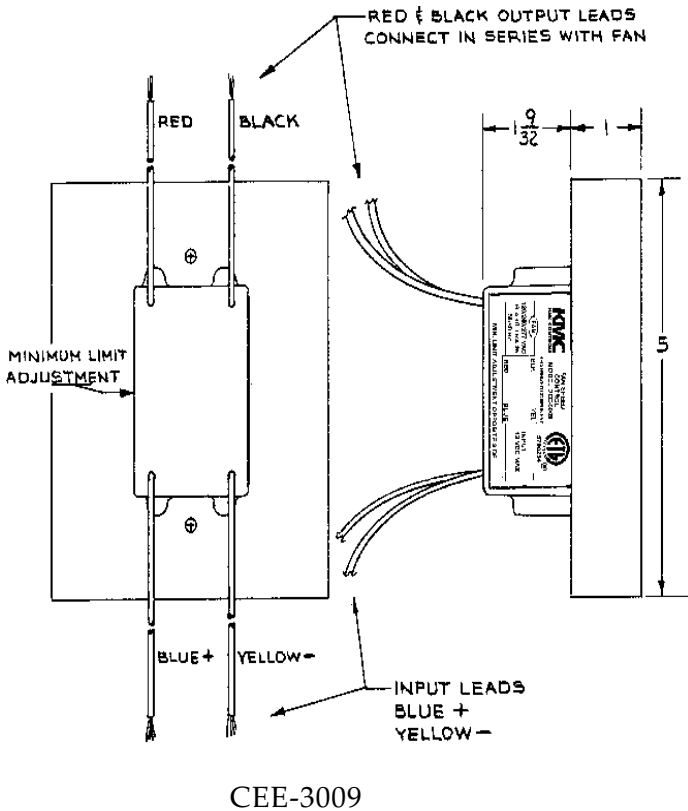


### Application

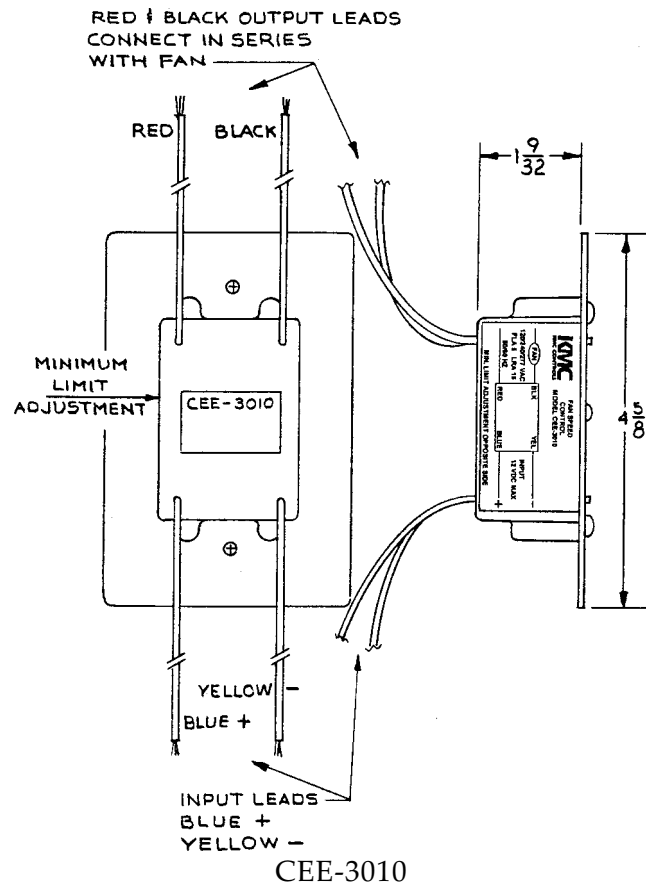
The CEE-3009 and CEE-3010 Fan Speed Controllers are designed to control fractional horsepower fan motors using 0-10 VDC control signal input.

## Details

All dimensions in inches (mm).



CEE-3009



CEE-3010

## Specifications

**Operating Voltage** 120/240/277 VAC,  
50/60 Hz

### Full Load Current Rating

CEE-3010 5 Amperes  
CEE-3009 10 Amperes

### Locked Rotor Current Rating

CEE-3010 15 Amperes  
CEE-3009 25 Amperes

### Control Signal Input

1 to 10 VDC  
10K impedance, 12 VDC maximum  
Blue lead; positive  
Yellow lead; negative.

### Output

Red and Black output. Leads connect in series with fan motor.

### Leads

9" in length. 18 AWG. 105°C, 600V insulation.

### Material

Faceplate; aluminum, housing; polycarbonate.

### Approval

ETL Listed Recognized Component; Conforms to UL Standard 508C

### Weight

CEE-3010 3.5 oz.  
CEE-3009 10 oz.

### Temperature Limits

Operating 40° to 120°F (4° to 49°C)  
Shipping -40° to 140°F (-40° to 60°C)

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## Descriptions and Applications

The CEP-4000 series is a pressure-independent combination controller-actuator designed primarily for use on variable air volume terminal units. Cooling and heating air flow is sensed by a temperature-compensated hot-wire anemometer. Velocity sensing is unaffected by changes in the duct air temperature.

The CEP-4000 series offers full-range flow control of VAV terminal units when used with the CTE-1000/1100/5000 series room thermostats. Air-velocity flow control limits are set at the room thermostat or remotely with the REE-1012 remote-limits accessory module. The actuator section provides a magnetic clutch that allows the actuator to be stalled at either end of stroke, eliminating the requirement for mechanical stops or end switches. The controller-actuator is available with (100°, 60°, and 45°) built-in stops or (360°) no stops.

## Features

- ◆ Hot-wire temperature-compensated anemometer sensor (SSE-1001/1002/2001/2002 standard).
- ◆ Available with 100°, 60°, and 45° built in stops.

## Accessories

The following accessories are available:

### Mounting Adapter

HFO-0011 For 3/8" shaft

### Thermostats

CTE-1000 Series

CTE-1100 Series

CTE-5000 Series

### Thermostat/Controllers (w/ remote temp. sensors)

CEE-1000 Series

CEE-1100 Series

### Standard Air Flow Sensors

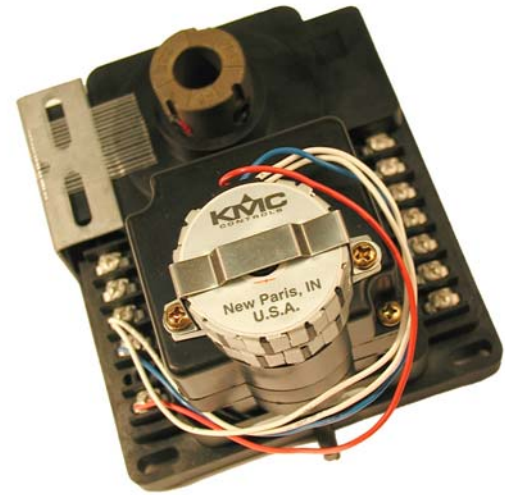
SSE-1001/1002 4"/8" insertion

SSE-2001/2002 4"/8" insertion, with thermistor

### Conformal Coated Air Flow Sensors

SSE-1011/1012 4"/8" insertion

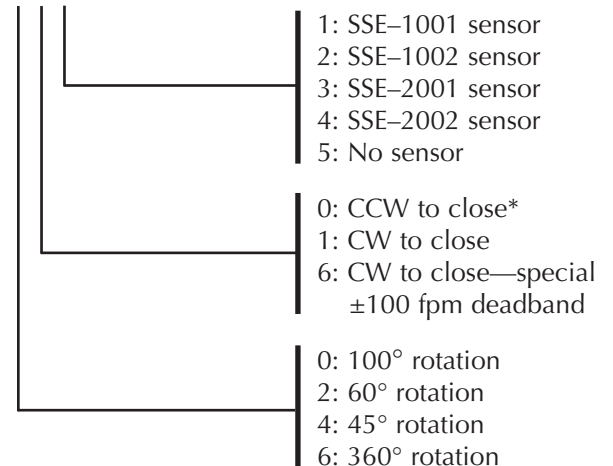
SSE-2011/2012 4"/8" insertion, with thermistor



## Models

Use the following chart to make your selection:

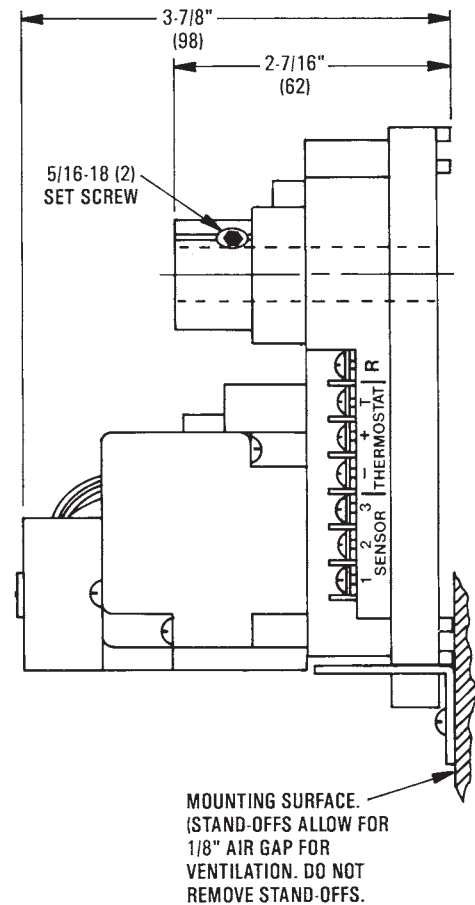
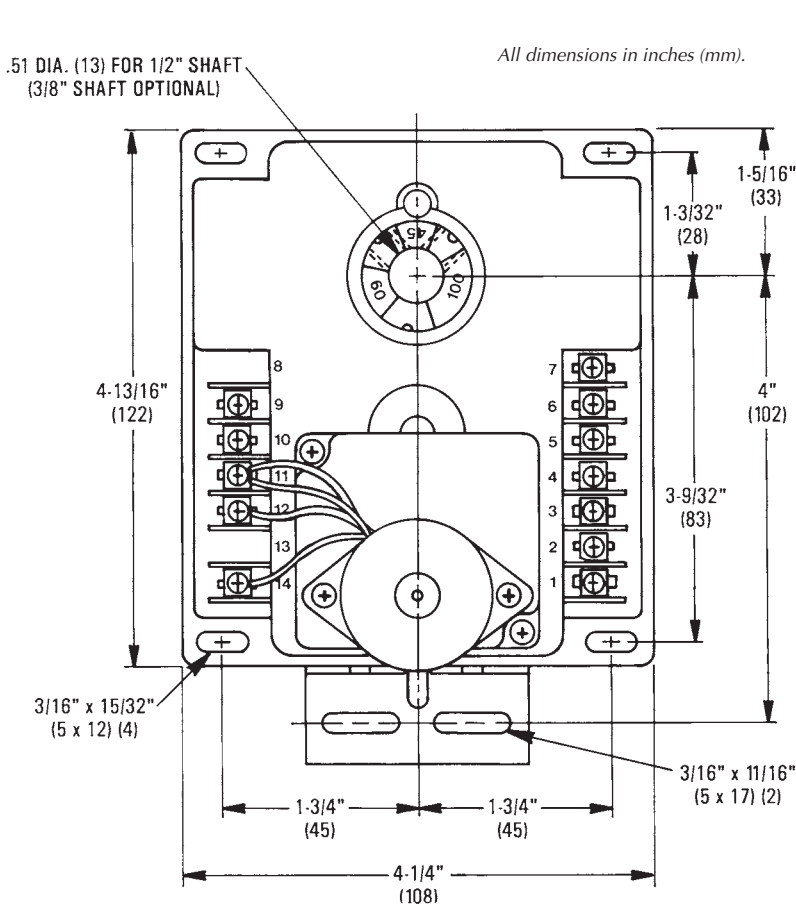
### CEP- 4X Y Z



**\*NOTE:** The default rotation direction can easily be reversed by swapping the red and blue motor wires.

When replacing an older model, the CEP-4995 (100° rotation, CW to close, no sensor) is a "universal replacement" for most applications and will replace **MOST** CEP-1000/3000/4000 series controllers. If replacing a CEP-1000 or CEP-3000 series controller, the REE-1000 series relay controller, the REE-1000 series relay may also need to be replaced with the equivalent REE-4000 series module. See the CEP-4000 Applications Guide for more information.

## Details



## Specifications

<b>Operating Voltage</b>	24 VAC, -15%/+20%, 50/60 Hz
<b>Input Power</b>	9 VA
<b>Output Supply</b>	9.1 VDC (22 mA)
<b>Output Torque</b>	45 ±10 in-lbs. (5 ±1 N•m)
<b>Velocity Range</b>	0–3000 fpm (15.24 m/s)
<b>Velocity Deadband</b>	±50 fpm
<b>Velocity Output</b>	1–5 VDC (0–3000 fpm)
<b>Reset Voltage</b>	3–6 VDC (0–3000 fpm)
<b>Angular Rotation</b>	45°, 60°, 100°, 360°
<b>Stroke Time</b>	18° per minute
<b>Mounting</b>	Direct to 1/2" (13 mm) diameter shaft or with an HFO-0011 adaptor to 3/8" (10 mm) diameter shaft
<b>Material</b>	Glass-filled nylon
<b>Weight</b>	1.75 lb. (0.79 kg)
<b>Connections</b>	Plated screw terminals
<b>Temperature Limits</b>	
Operating	40° to 120° F (4° to 49° C)
Shipping	-40° to 140° F (-40° to 60° C)

## More Information

For installation instructions, see the CEP-4000 Installation Guide.

For principles of operation, troubleshooting, additional calibration procedures, and sample applications, see the CEP-4000 Applications Guide.

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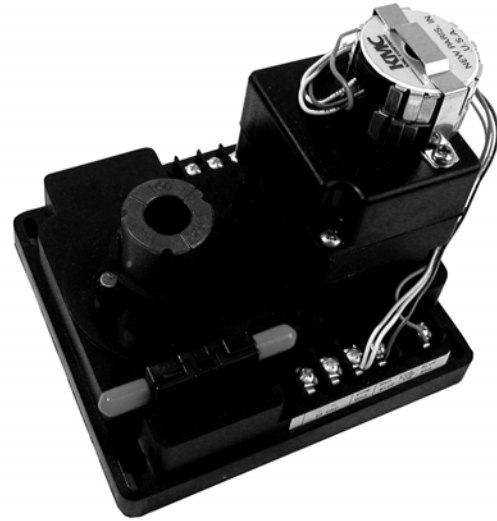
[info@kmcccontrols.com](mailto:info@kmcccontrols.com)

## Description

The KMC CSP-4000 VAV Flow Controller-Actuator are pressure-independent combination controller-actuators designed primarily for use on variable air volume terminal units. They use a multi-point or single-point differential (velocity) pressure measuring station or pitot tube for sensing airflow. Designed with a passive mass airflow sensor utilizing two Wheatstone bridges, each measures dynamic differential pressure which corresponds linearly to reset.

These units afford full range flow control of VAV terminal units when used with the CTE-1000, 1100 or 5000 series room thermostats. Minimum and maximum flow control limits are set at the wall thermostat. Available control options include proportional or on/off wet or electric reheat, dual minimum, fan induction, dual duct, and computer interface.

The internal magnetic clutch assures that excessive torque will not be applied to the gear train.



## Application

The CSP-4000 series controller-actuator is designed for pressure independent variable air volume control applications.

## Accessories

The following accessories are available:

- HFO-0034      Filter
- HFO-0011      Adaptor for 3/8" shaft

### Thermostats

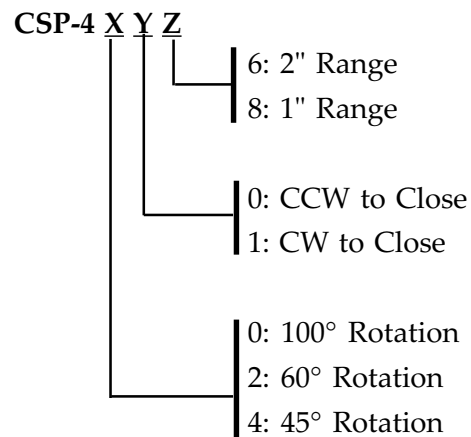
- CTE-1000 Series
- CTE-1100 Series
- CTE-5000 Series

### Thermostat/Controllers (w/remote sensors)

- CEE-1000 Series
- CEE-1100 Series

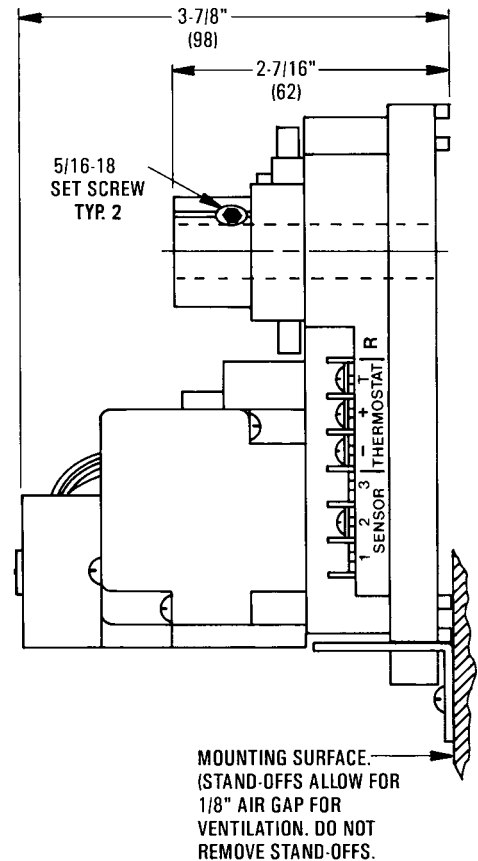
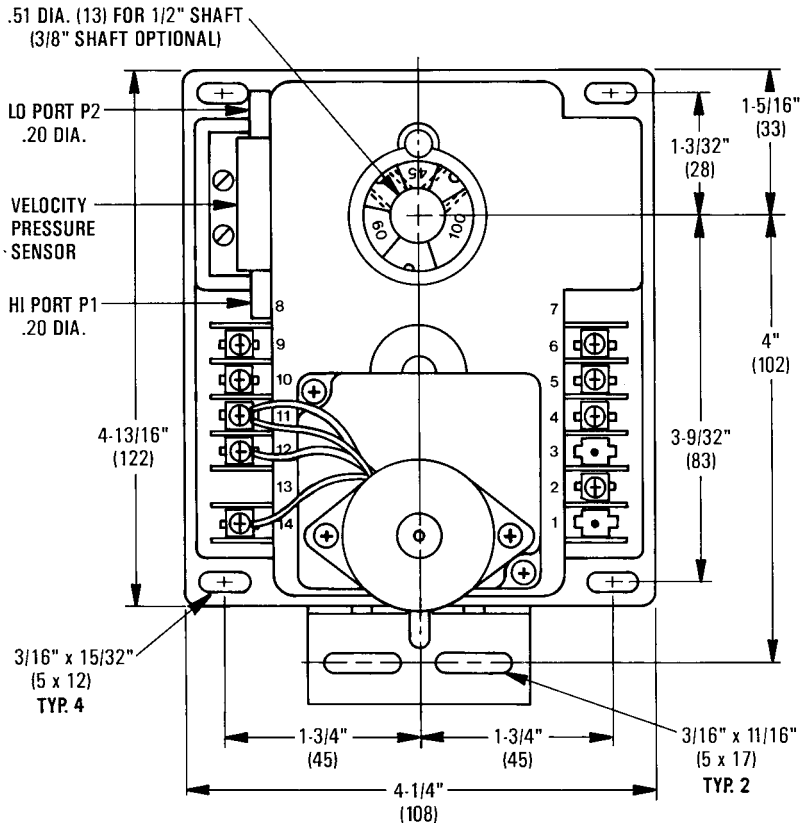
## Models

Use the following to determine the appropriate model:



## Details

All dimensions in inches (mm).



## Specifications

<b>Supply Voltage</b>	24 VAC -15%/ + 20%
<b>Input Power</b>	3 VA
<b>Output Supply</b>	9.1 VDC (22 mA)
<b>Output Torque</b>	45 ± 10 in. lbs. (5 ± 1 Nm)
<b>Velocity Range</b>	1" wg (249 Pa) or 2" wg (498 Pa)
<b>Angular Rotation</b>	45°, 60°, 100° or 360°
<b>Stroke Time</b>	18° per minute
<b>Control Action</b>	PI
<b>Proportional Band</b>	.012" (1" range) .024" (2" range)
<b>Integral Time</b>	23.5 seconds
<b>Mounting</b>	Direct to 1/2" (13 mm) diameter shaft or 3/8" (10 mm) diameter with adaptor

### Connections

Wire	Plated screw terminals
Air	0.2" (5 mm) nipples for 1/4" (6 mm) OD tubing

### Material

Glass-filled nylon

### Weight

1.75 lbs. (.79 kg)

### Temperature Limits

Operating	40° to 120° F (4° to 49° C)
Shipping	-40° to 140° F (-40° to 60° C)

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### Description

The electronic analog KMC CSP-5001/5002 VAV Flow Controller-Actuators are pressure-independent combination controller-actuators, designed primarily for use on variable-air-volume terminal units.

Airflow is sensed by using a single or multi-point differential (velocity) pressure measuring station or pitot tube (such as an SSS-1000 series airflow sensor). Designed with an onboard flow-through sensor using twin platinum resistance temperature detectors, these models are capable of controlling a velocity setpoint from 0 to 3,300 fpm with an accuracy of 3%.

The CSP-5001/5002 offers full-range flow control of VAV terminal units when used with the CTE-5100 series room thermostats. Air velocity flow control limits may be set at the thermostat or internal to the CSP-5001/5002. The actuator section provides adjustable stops, magnetic clutch, and a gear disengagement button. Internal status LEDs indicate green for opening and red for closing.

Available control options include proportional or two position wet or electric reheat, changeover, dual minimums, fan induction, dual duct, and automation interface.

### Features

- ◆ Onboard flow-through sensors with twin platinum resistance temperature detectors
- ◆ Setpoint accuracy of 3% from 0 to 3,300 fpm
- ◆ Adjustable stops
- ◆ Magnetic clutch
- ◆ Gear disengagement button
- ◆ Internal LED rotation status indicators
- ◆ Mount for auxiliary switch or potentiometer

### Models

Two models are available: CSP-5001 (CCW to close) and CSP-5002 (CW to close).

(Factory-set rotation direction can be reversed by changing the position of a jumper.)



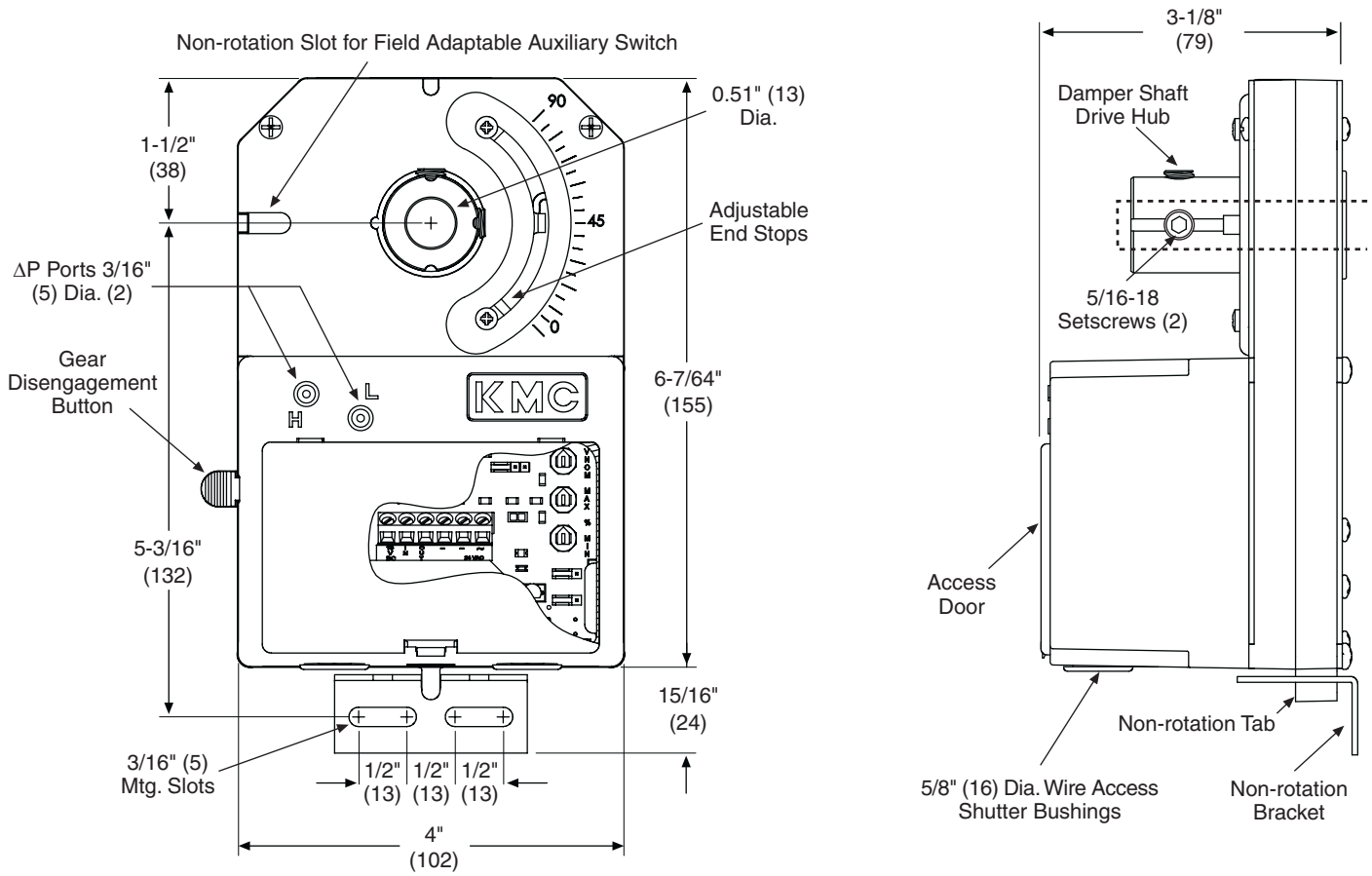
### Accessories

The following accessories are available:

CME-1002	Single auxiliary cam switch
CME-1004	Dual auxiliary cam switch
CME-2001	Rotary feedback pot., 10 k $\Omega$ (7.5 k $\Omega$ at 90°)
CME-2002	Rotary feedback pot., 1 k $\Omega$ (750 $\Omega$ at 90°)
HFO-0011	Adaptor for 3/8" shaft
HMO-4518	Snap-in connector for 1/2" flexible metal conduit
HMO-4520	Compression connector for plenum cable
HMO-4526	Female connector for 1/2" conduit
HSO-5001	Test leads
SSS-1002	Airflow sensor, 1 sensing point, 3-5/32" length (80 mm)
SSS-1003	Airflow sensor, 2 sensing points, 5-13/32" length (137 mm)
SSS-1004	Airflow sensor, 3 sensing points, 7-21/32" length (195 mm)
SSS-1005	Airflow sensor, 4 sensing points, 9-29/32" length (252 mm)

## Details

All dimensions are in inches (mm).



## Specifications

<b>Supply Voltage</b>	24 VAC -15/+20%, 50/60 Hz
<b>Input Power</b>	4 VA max.
<b>Output Supply</b>	16 VDC (22 mA)
<b>Output Torque</b>	50 in. lb. min., 70 in. lb. max. (5.6 N•m min., 7.9 N•m max.)
<b>Velocity Range</b>	0 to 3300 fpm (16.76 m/s), dependent on DP pickup, tubing size/length, and connections
<b>Velocity Output</b>	0 to 10 VDC (0 to 100% flow)
<b>Angular Rotation</b>	0° to 95° (both end stops adjustable)
<b>Stroke Time</b>	18° per minute @ 60 Hz, 15° per minute @ 50 Hz
<b>Reset Voltage</b>	0 to 10 VDC
<b>Reset Limits</b>	Adjustable, 0 to 100%
<b>Mounting</b>	Direct to 1/2" (13 mm) diameter shaft or 3/8" (10 mm) diameter with adaptor

<b>Connections</b>	Wire clamp type, 14 to 22 AWG, Cu
<b>Material</b>	Flame-retardant polymer, UL94-5V plenum-rated, black housing with white cover
<b>Weight</b>	2.4 lbs. (1 kg.)
<b>Temperature Limits</b>	
Operating	32° to 120° F (0° to 49° C)
Shipping	-40° to 140° F (-40° to 60° C)

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### Description

The YEC-1101 is used as an interface between energy management systems and pneumatic final control devices. The unit is designed to remotely position control valves and damper actuators, and reset receiver-controllers. The switch may be driven in either direction, by the application of a 24 VAC signal, to adjust a pneumatic output signal between 2 to 18 psi (14 to 124 kPa).

Applications include the remote positioning of control valves and damper actuators, and the reset of receiver-controllers. Visual indication is provided by the scale plate referencing the percentage of output being produced.

### Features

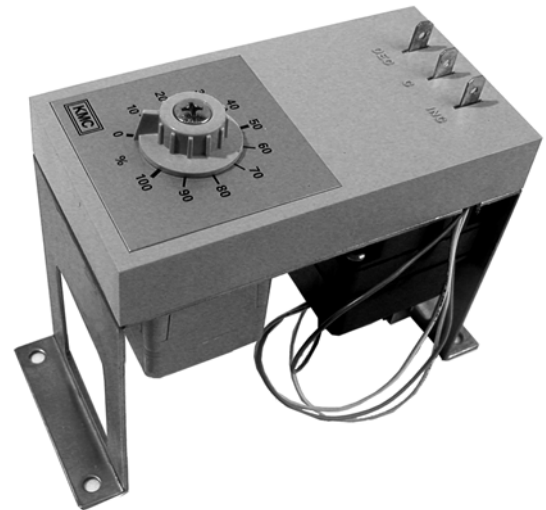
- ◆ Bidirectional action
- ◆ Adjustable signal 2 to 18 psi (14-124 kPa)
- ◆ Compact size

### Accessories

HFO-0120 Elbow fitting

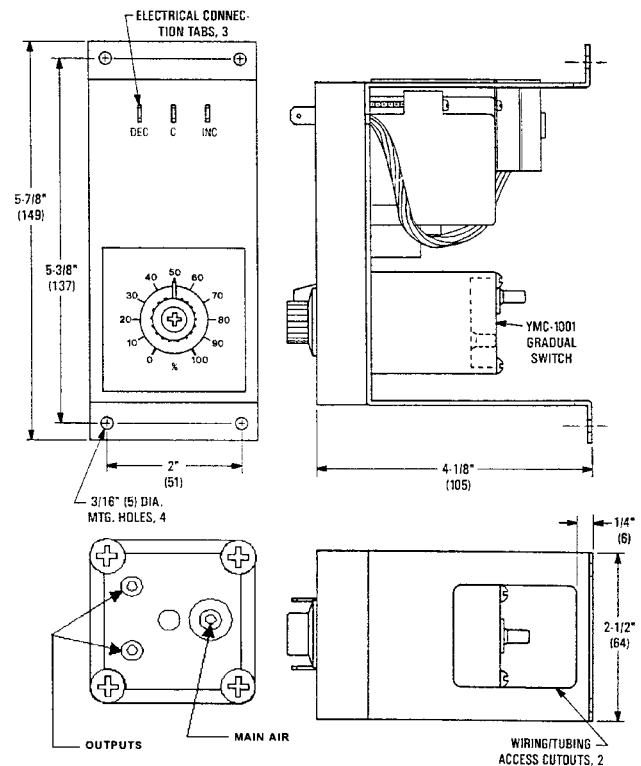
### Specifications

<b>Main Air Pressure</b>	20 psig (138 kPa) normal, 30 psig maximum (207 kPa)
<b>Output Range</b>	2 to 18 psi (14 to 124 kPa)
<b>Air Consumption</b>	28.8 scim (7.87 mL/s)
<b>Connections</b>	Air: 3/16" (5 mm) fittings for 1/4" (6 mm) O.D. Polyethylene tubing Electrical: Push-on terminals, 1/4" (6 mm)
<b>Output Timing</b>	0.32 psi/sec (2.2 kPa/sec)
<b>Supply Voltage</b>	24 VAC +20%, -15%
<b>Supply Power</b>	2 VA @ 24 VAC
<b>Materials</b>	ABS, UL flame Class 94HB
<b>Weight</b>	18 oz. (.45 kg)
<b>Temperature Limits</b>	
Operating	40° to 120° F (4° to 49° C)
Shipping	-40° to 140° F (-40° to 60° C)



### Details

All dimensions in inches (mm).



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### Description

The YME-2000 Series Selector Switches are room temperature, fan speed selectors and/or set-point selectors, designed for use with the CEE-2000 Series Fan Coil Unit Controllers.

All YME-2000 Series models contain mechanical interlocks to maintain proper fan speed sequencing. The adjustment knob turns clockwise to increase, and counterclockwise to decrease, the temperature set-point. The indexing switches, shown from left to right, increase fan speed.

### Features

- ◆ Multiple functions available in one unit
- ◆ Mechanical interlocks ensure correct fan speed sequencing
- ◆ Three indexing switches for fan speed control

### Applications

The YME-2000 is an after-market replacement for use with the CEE-2000 Series Fan Coil Unit controllers.

### Models

YME-2002-16	FCU Selector; Fan Speed and Temperature (ivory)
YME-2004-16	Fan Speed and Temperature (lt. oak)
YME-2005-16	YME-2004 w/ Thermistor mounted under knob (lt. oak)
YME-2007-16	YME-2005 w/ Thermometer (lt. oak)
YME-2009-16	YME-2008 w/Thermistor mounted under knob (ivory)



### Accessories

#### For YME-2004-16, 2005-16

HPO-1215	Gold faceplate with visible screw holes.
HPO-1216	Gold faceplate with concealed screw holes.

#### For YME-2007-16

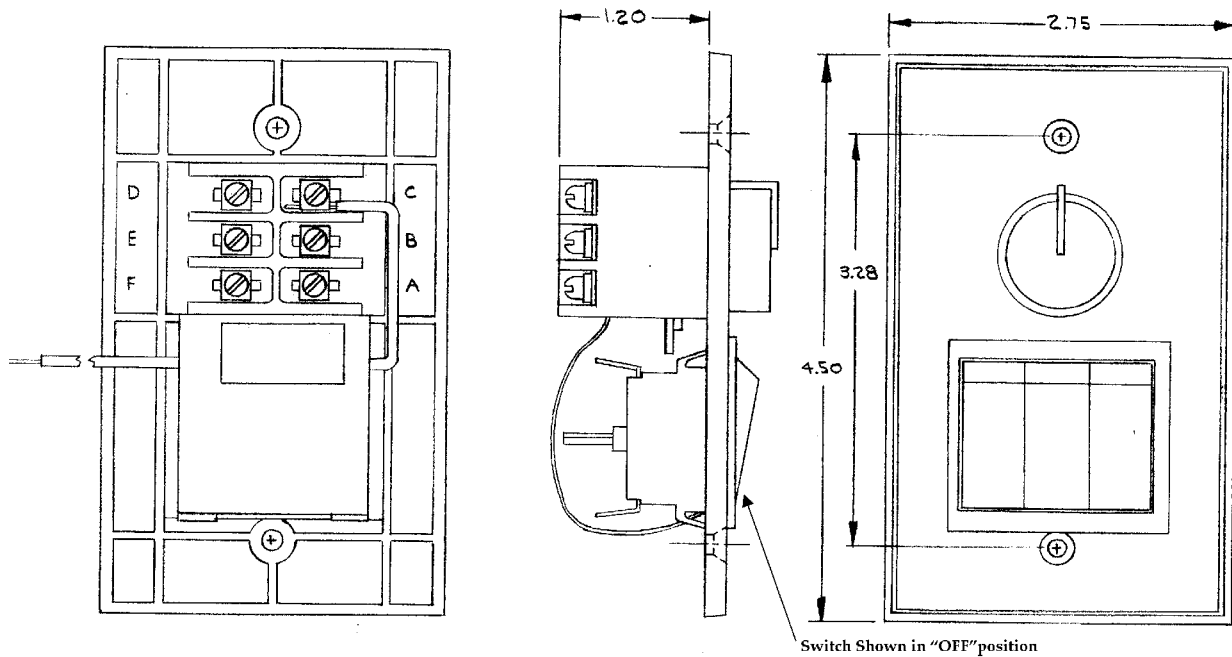
HPO-1219	Gold faceplate with concealed screw holes.
HPO-1220	Gold faceplate with visible screw holes.

#### For YME-2008-16, 2009-16

HPO-1221	Ivory faceplate
HPO-1215	Gold faceplate with visible screw holes.
HPO-1216	Gold faceplate with concealed screw holes.

## Details

All dimension in inches (mm).



## Specifications

**Fan Switch Ratings** 1/2 HP at 120/208/240/277  
VAC 50/60 Hz

**Connections** Screw terminals, plated

**Wire Size** 14 to 18 AWG, copper  
conductors only

**Material** Plastic Valox

**Weight** 3.5 oz. (99 grams)

### Temperature Setpoint Range

YME-2002 55° to 85° F (13° to 29° C)

YME-2004 to 2009 56° to 91° F (13° to 33° C)

### Temperature Limits

Operating 40° to 120° F (4° to 49° C)

Shipping -40° to 140° F (-40° to 60° C)

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The IEI-1110 Refrigeration Alarm Monitor (RAM-1) is a stand-alone operator interface for the SLE-1001 FirstWatch Refrigerant Monitor. Use RAM-1 to:

- ◆ Monitor and display flash gas and moisture signals from FirstWatch.
- ◆ Set flash gas and moisture alarm levels.
- ◆ Display visual and sound audible alarms when predefined alarm limits are exceeded.

RAM-1 uses nine-function buttons, a bright, four-character display, and an audible alarm to provide critical information and convenient operation. An auxiliary input for closed-switch contacts suspends RAM-1 operation during system service or when the system is not operating.



### Operation Buttons

Flash Alarm Level	Displays and sets the flash gas alarm level.
Flash	Displays the current corrected flash gas level.
H2O Alarm Level	Displays and sets the moisture alarm level.
H2O	Displays the current corrected moisture level.
Base Set	Displays and sets the current uncorrected flash gas or moisture level.
Delay	Displays and sets the flash gas alarm delay setting.
Mute	Silences audible alarms.
∧ and ∨	Increments or decrements the displayed value.

### Display Views

Power On	ON
Flash Gas Alarm	FLSH
Moisture Alarm	H2O
Override	HOLD

### Display

Red LED, 4-character, 7-segment, 0.37 inch high

### Mounting

HMO-5040 backplate (supplied) to 2 x 4 in. vertical standard electrical handybox

### Connections

6-inch, four-conductor, 22 AWG cable for flash gas, moisture, power and ground  
2, 6-inch, 22 AWG wires for auxiliary input

### Material

Light almond ABS, UL Flame Class 94HB

### Power Supply

24 volt AC (+20,-15%) 1.5 VA, 50-60 Hz

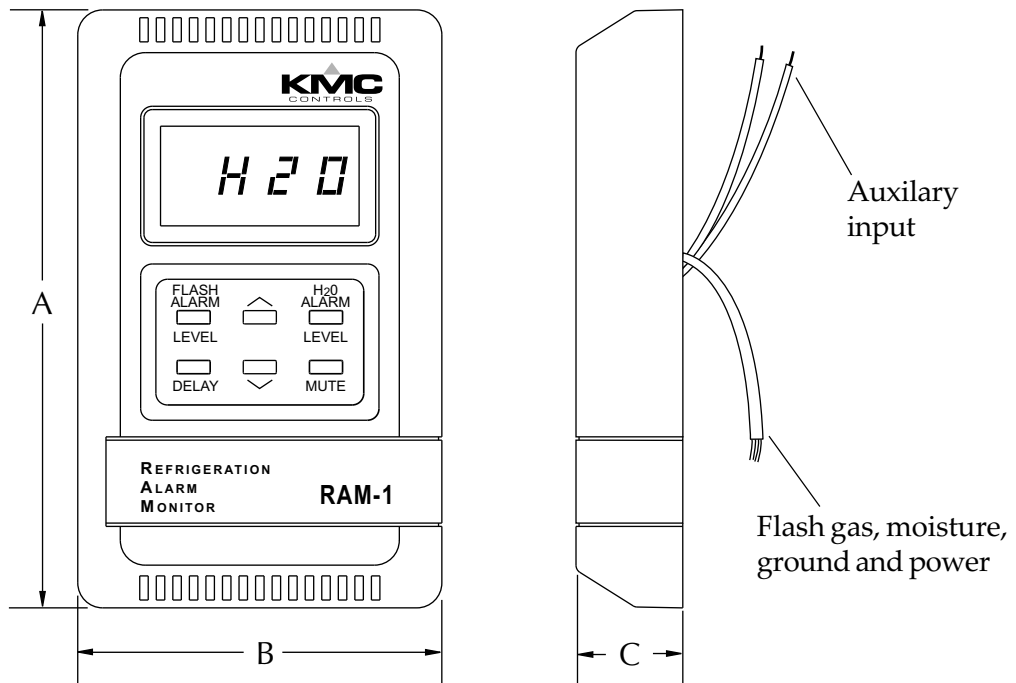
### Accessories

HMO-5022	4 x 4 inch adaptor plate, Almond
XEE-6111-40	Single-hub 120 volt transformer
XEE-6112-40	Dual-hub 120 volt transformer
SLE-1101	Refrigeration Alarm Monitoring Kit. Includes SLE-1001, IEI-1110, and 40 VA transformer.

### Environmental Limits

Operating	32 to 140° F (0-60° C)
Shipping	-40 to 140° F (-40 to 60° C)
Humidity	0-95% relative humidity (non-condensing)

## Dimensions



A	B	C
4.50 in.	2.75 in.	0.88 in.
114.3 mm	69.9 mm	22.2 cm

## Order

**Specify:** Model Number, accessory number if required

**Order From:** Local KMC Controls representative or, KMC Controls, Inc. Specifications and design are subject to change without notice.

**KMC Controls, Inc.**

19476 Industrial Drive

New Paris, IN 46553

574.831.5250

[www.kmccontrols.com](http://www.kmccontrols.com)

The KMC SLE-1001 First Watch Monitor detects problems with critical refrigerant conditions long before visual observation can spot trouble. When mounted on an approved sight-glass window, this easy-to-install optical sensor detects the following refrigerant conditions:

- ◆ Moisture content
- ◆ Flash gas content (bubbles of non-condensed refrigerant)

By combining an SLE-1001 with a KMC digital facilities management system you can also

- ◆ Remotely monitor systems in difficult to reach locations.
- ◆ Record the actual condition of the refrigerant.
- ◆ Initiate alarms to alert personnel to possible trouble areas.

The SLE-1001 First Watch Refrigeration monitor is designed for use with Sporlan Valve Company's See•All Combination Moisture and Liquid Indicators or equivalent. First Watch is an ideal way to monitor critical areas that do not meet ANSI/ASHRAE Standard 15-1994.

### Output Signal

<i>Flash gas</i>	0-5 volts DC, 100 kΩ load impedance
<i>Moisture</i>	0-5 volts DC, 100 kΩ load impedance

### Indicators

<i>Flash gas</i>	Flashing red LED. Flashing rate is proportional to concentration of bubbles
<i>Moisture</i>	Yellow LED. LED brightness is proportional to presence of moisture.

### Connections

10 foot, four-conductor, 22 AWG cable

### Power Supply

24 volt AC (+20,-15%) 1.5 VA, 50-60 Hz



### Environmental Protection Agency

Electronic Technology Verified. Information on the performance characteristics of First Watch Monitor technology can be found at [www.epa.gov/etv](http://www.epa.gov/etv), or call KMC Controls at (574) 831-5250 for a copy of the ETV verification report. Use of the ETV® Name or Logo does not imply approval or certification of this product nor does it make any explicit or implied warranties or guarantees as to product performance.

### Accessories

#### IEI-1110

RAM-1, Refrigerant Alarm Monitor

#### Power transformer

- XEE-6111-40, single-hub  
120 volt transformer
- XEE-6112-40, dual-hub  
120 volt transformer

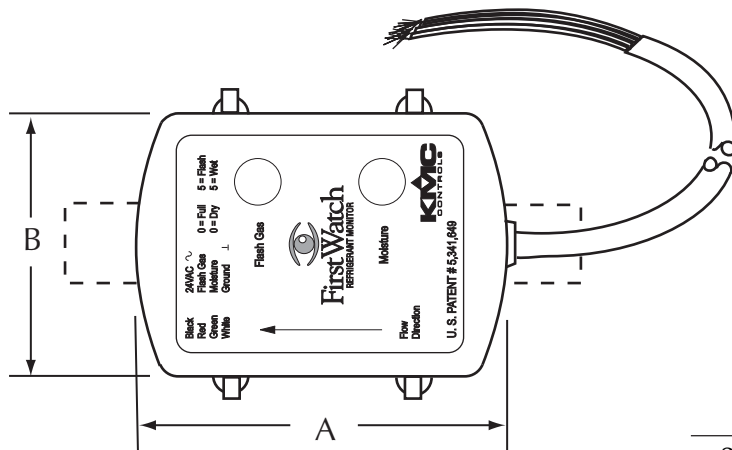
#### SLE-1101

Refrigeration Alarm Monitoring Kit. Includes SLE-1001, IEI-1110, and 40 VA transformer.

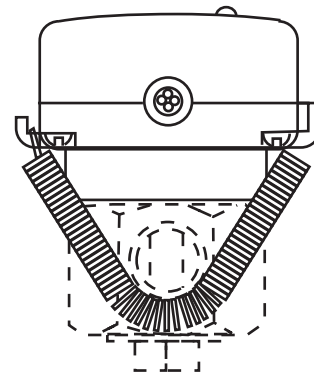
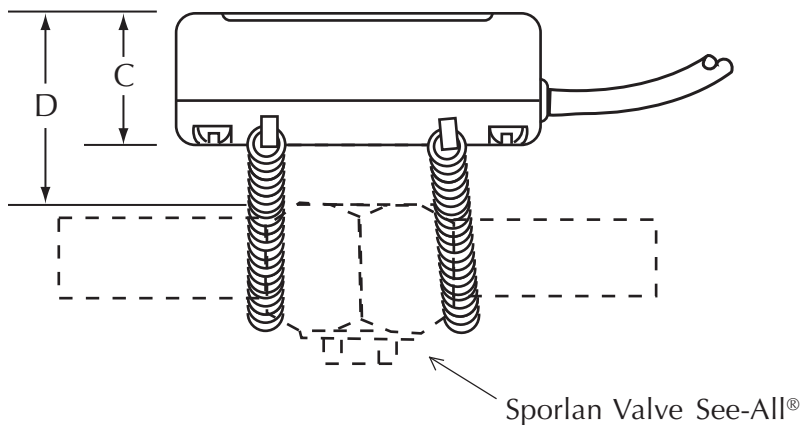
### Environmental Limits

<i>Operating</i>	-20 to 140° F (-29 to 60°C)
<i>Shipping</i>	-40 to 140°F (-40 to 60°C)
<i>Humidity</i>	0-95% relative humidity (non-condensing)

## Dimensions



A	B	C	D
3.0 in.	2.5 in.	1.06 in.	1.5 in.
7.62 cm	6.53 cm	2.67 cm	3.81 cm



## Approved Sight Glass Windows

The KMC SLE-1001 First Watch Monitor is approved for use with the following models of the Sporlan Valve Company's See•All® sight glass.

SA-14S, SA-14SU, SA-14UU  
 SA-15S, SA-15SU, SA-15UU  
 SA-17S  
 SA-19S

*Requires adaptor ring (supplied with SLE-1001)*  
 SA-12S  
 SA-13S, SA-13SU, SA-13UU

## Order

**Specify:** Model Number, accessory number if required

**Order From:** Local KMC Controls representative or, KMC Controls, Inc.

Specifications and design are subject to change without notice. All orders are subject to KMC's Terms and Conditions (including warranty restrictions), a copy of which is available from KMC.

**KMC Controls, Inc.**  
 19476 Industrial Drive  
 New Paris, IN 46553  
 574.831.5250  
[www.kmcccontrols.com](http://www.kmcccontrols.com)

### Description

The KMC SSE-1000 Duct Sensors are designed for use with VAV terminal units in HVAC systems. They are used in conjunction with the CEP series of controller-actuators to maintain the desired airflow to an occupied space. The CEP model must be ordered separately. (Refer to the CEP-4000 data sheet for related model numbers).

Two sensor lengths are available to accommodate various box inlet sizes. Sensors are inserted into the inlet collar of the box; the foam backing on the sensor head protects against conditioned air leakage.

SSE-1011, 1012, 2011, and 2012 are “conformal” coated for air streams that may be contaminated with corrosive materials. The SSE-2000 series incorporates two additional terminals (“X” and “Y”) which allow duct temperature sensing for items such as the REE-1005 heating-cooling change over relay. In addition, the airflow portion of the signal is fully compensated for changes in temperature for accurate control of delivered air.

### Features

- ◆ Available with or without conformal coating
- ◆ Available in two different lengths to accommodate inlet box sizes
- ◆ 2000 Series models include additional terminals for temperature sensing
- ◆ Foam backing prevents air leakage

### Application

The KMC SSE-1000/2000 Series Duct Sensors are intended for use in conjunction with KMC CEP series controller-actuators in HVAC systems. The sensors provide airflow sensing to the controller-actuators for controlling VAV terminal units to maintain airflow in an occupied space.



### Models

The following models are available

#### Standard

SSE-1001/2001 3-7/8" long (98 mm)

SSE-1002/2002 7-7/8" long (200 mm)

#### Conformal Coated

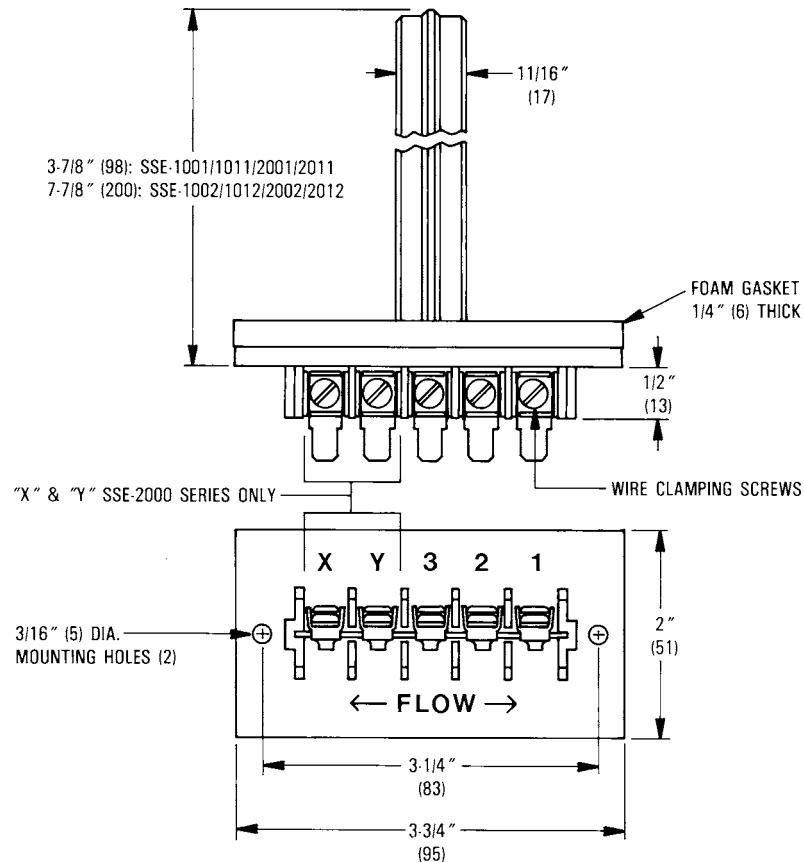
SSE-1011/2011 3-7/8" long (98 mm)

SSE-1012/2012 7-7/8" long (200 mm)

**NOTE:** CEP controller-actuator must be ordered separately, but can be shipped together. Specify full CEP model number.

## Details

All dimension are in inches (mm)



## Specifications

<b>Connections</b>	Plated screw terminals
<b>Material</b>	ABS (UL 94-5V)
<b>Weight</b>	2.5 oz. (71 grams)
<b>Temperature Limits</b>	
Operating	40° to 120°F (4° to 49°C)
Shipping	-40° to 140°F (-40° to 60°C)

**KMC Controls, Inc.**  
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