



60-2555 MOUNTING RACK for CES1000 CONTROLLER AND AM300 ACTUATOR MODULE FOR THE FIREYE® FOCUS™ COMBUSTION EFFICIENCY SYSTEM

Year 2000 Compliant in accordance with BSI document DISC PD2000-I:1998

DESCRIPTION

The 60-2555 is a surface mount rack for use with the CES1000 Controller and AM300 Actuator Module. The 60-2555 holds the AM300 Actuator Module in its top slot, and the CES1000 Controller in its bottom slot. Wiring connections between the CES1000 Controller and the CS200 Scanner and AC202 Actuator utilize pre-wired cables. Refer to Bulletin CES-4001. Additional field wiring (e.g., supply power, feedback potentiometer, stack temperature sensor, S1/S2 connections to the flame safeguard control, etc.) is connected to a terminal strip located in the wiring chamber of the 60-2555.

MOUNTING

Three (3) mounting holes are provided on the 60-2555 wiring rack. Refer to Figure 4 for mounting dimensions.



WARNING: Remove the power from the 60-2555 mounting rack prior to connecting or disconnecting any actuator cable AC59-XXX. FAILURE TO REMOVE POWER MAY RESULT IN COMPONENT DAMAGE.

Installation of Controller and Actuator Modules:

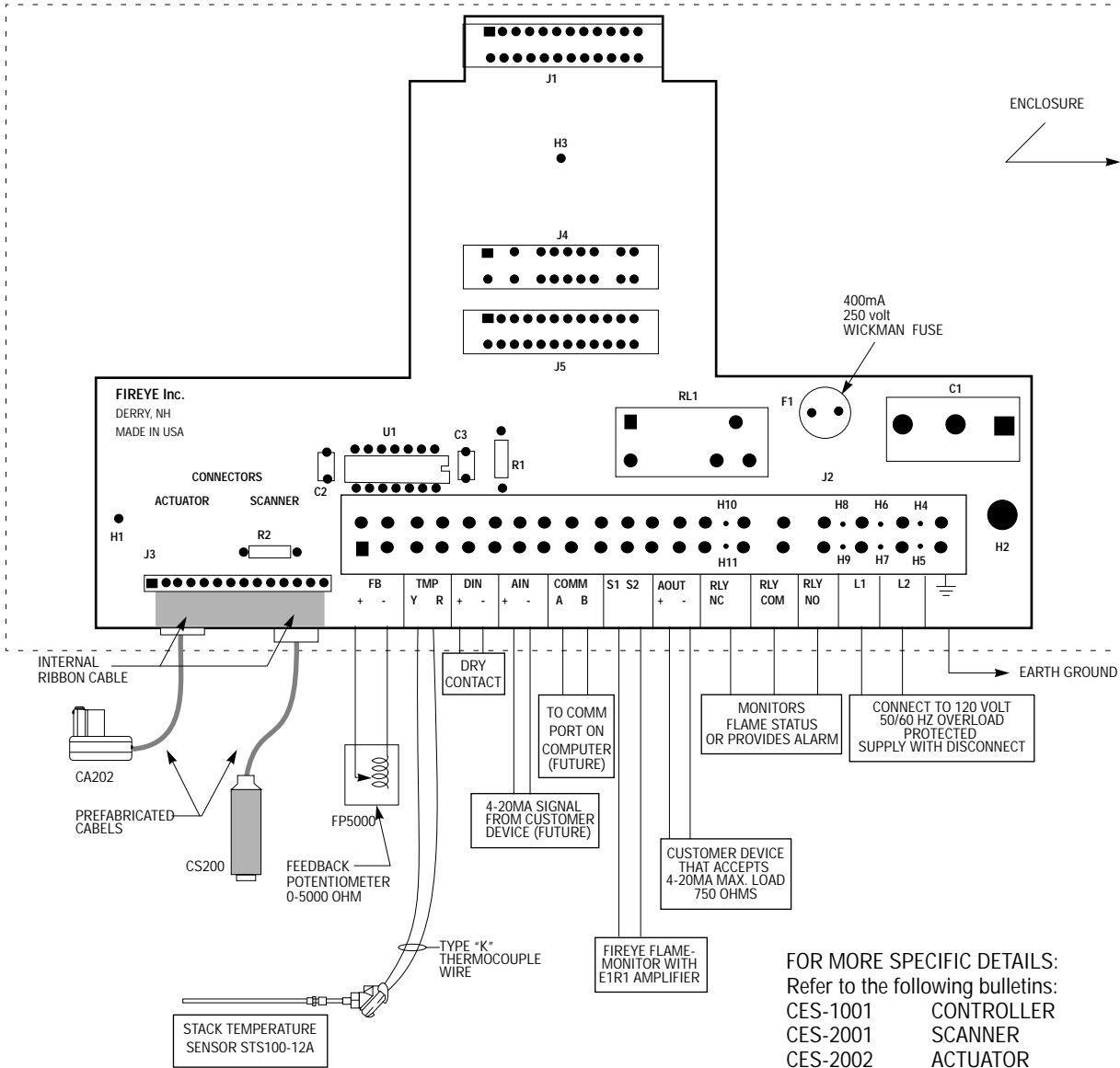
1. Open the clear cover on the outside of the 60-2555 mounting rack.
2. Slide the AM300 Actuator Module into the card guides on the third slot from the top in the wiring rack until the card mates with the connector mounted on the back of the wiring rack. Tighten the two screws on the right and left side of the rack to secure the Actuator Module.
3. Slide the CES1000 Controller into the card guides on the bottom slot in the wiring rack until the card mates with the connector mounted on the back of the wiring rack. **Note: There are no card guides for the bottom PC board of the CES1000 Controller.** Tighten the two screws on the right and left side of the rack to secure the CES1000 Controller.
4. Close the clear cover on the outside of the mounting rack.

WIRING

Remove the two (2) screws securing the wiring chamber cover and remove the cover. Four (4) knock-outs are provided on the bottom of the wiring chamber that will accept two (2) 1/2" (PG16) and two (2) 3/4" (PG 21) strain relief/conduit connectors. Refer to Figure 1. Insert a small standard blade screwdriver (Fireeye screwdriver provided) into the small opening of each terminal used for field wiring termination. Push back on the screwdriver and insert the wire into the opening. The terminal will accept AWG 28 to AWG 12 gage wire (0.08 to 2.5 mm).

WIRING CONNECTIONS TO 60-2555

FIGURE 1.



FOR MORE SPECIFIC DETAILS:
Refer to the following bulletins:
CES-1001 CONTROLLER
CES-2001 SCANNER
CES-2002 ACTUATOR
CES-3001 ACTUATOR MODULE
CES-2555 MOUNTING RACK
CES-4001 ACCESSORIES
CES-7001 SOFTWARE

Terminal Strip	Description
MOD FB+	Feedback potentiometer mounted on firing rate motor or burner linkage.
MOD FB-	Feedback potentiometer mounted on firing rate motor or burner linkage.
TMP Y (+)	Stack temperature sensor.
TMP R (-)	Stack temperature sensor.
Din+	Digital input. Dry contact only. Function to be determined.
Din-	Digital input. Dry contact only. Function to be determined.
Ain+	4-20 mA analog input. Function to be determined.
Ain-	4-20 mA analog input. Function to be determined.
COMM A	Remote communications (RS485). COMM A.
COMM B	Remote communications (RS485). COMM B.
S1	Flame signal to flame safeguard control. Fireye only.
S2	Flame signal to flame safeguard control. Fireye only.
Aout+	4-20 mA analog output. User selectable function.
Aout-	4-20 mA analog output. User selectable function.
RLY N.O.	Flame relay. Normally open contact.
RLY COM	Flame relay common.
RLY N.C.	Flame relay. Normally closed contact.
⊕	Earth ground connection.
L2	Incoming power. Neutral.
L1	Incoming power. 120 VAC only (fused @.4A).

4A resistive at 120 VAC
3A resistive at 24 VDC

SPECIFICATIONS

Operating Temperature

Storage:	Minimum:	-20°C (-4°F)
	Maximum:	+80°C (176°F)
Operating:	Minimum:	-20°C (-4°F)
	Maximum:	+60°C (140°F)

Humidity

Maximum 85% RH (Relative Humidity)

Non-condensing

MOD FB+, MOD FB- Connect to the feedback potentiometer which provides a resistive signal to indicate the position of the firing rate actuator. The CES controller can monitor the following input ranges: 0-135 ohms or 0-1000 ohms. The input signal from the feedback potentiometer is selected via the jumper mounted on the CES1000 controller (refer to bulletin CES1001).

TMPY, TMPR Connect to the stack temperature sensor (STS100-12A). The polarity of the wires is important. The temperature sensor is a Type K thermocouple with a range of 0-1000 degrees F.

Din+, Din- Connect to digital input. Function to be determined. Dry contact only. Polarity of the wire is not important.

Ain+, Ain- Connect to 4-20 mA analog input. Observe proper polarity of the wires. **Note:** The inputs can monitor either a current sync or current source 4-20 mA analog output. When monitoring a current sync output, connect the common wire of the current sync output to the Earth Ground terminal (⊕).

COMM A, COMM B RS485 Remote communications.

- S1** Connect to terminal S1 on the wiring base (60-1386 or 60-1466) of the Fireye flame safeguard control.
- S2** Connect to terminal S2 on the wiring base (60-1386 or 60-1466) of the Fireye flame safeguard control.

Aout+, Aout- 4-20 mA current source analog output. Maximum connected load not to exceed 750 ohms. User can select which function (flame efficiency ratio, flame signal, stack temperature, actuator command signal, mod motor feedback potentiometer, or user selected analog input) the analog output will track. The function is selected via the keypad/display mounted on the CES1000 controller (refer to bulletin CES1001) or RS485 remote communications (refer to bulletin CES-7001).

RLY N.O., RLY COM, RLY N.C. Normally open, common and normally closed outputs of the flame relay. Flame relay will be energized when the CES scanner detects the presence of flame.

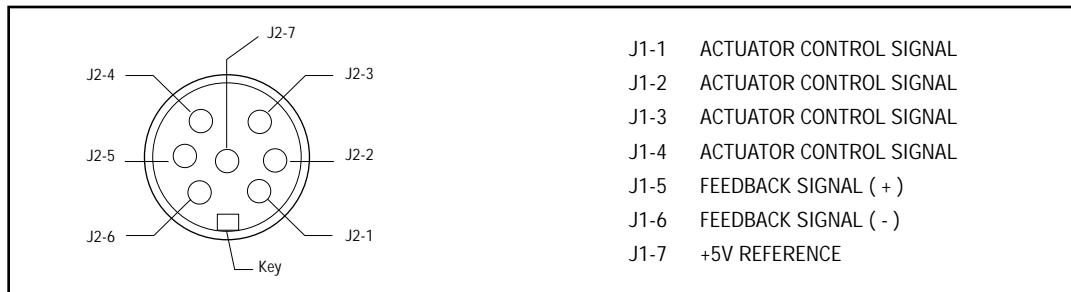
Connect to a proper earth ground. Electrical system should meet NEC requirements for ground. There will be zero (0) volts measured between terminals \ominus and L2 (Neutral) with a proper earth ground.

L2 Incoming power (Neutral).

L1 Incoming power (120 VAC).

FIGURE 2.

ACTUATOR CABLE AS VIEWED FROM THE FRONT (OUTSIDE) OF THE 60-2555 MOUNTING RACK



WARNING: Remove the power from the 60-2555 mounting rack prior to connecting or disconnecting any actuator cable AC59-XXX. FAILURE TO REMOVE POWER MAY RESULT IN COMPONENT DAMAGE.

Connect the 7 pin Fireye actuator cable (P/N AC59-xxx) between the CA202 actuator and the "actuator" connector on the bottom of the 60-2555 wiring rack. The connector on both the CA202 actuator and wiring rack are keyed. Refer to Figure 2. Both ends of the actuator cable are identical. The actuator cable is available in lengths up to 100 feet. Refer to bulletin CES-4001.

CES Scanner Cable

Connect the 6 pin Fireye CES scanner cable (P/N SC59-xxx-xx) between the CS200 scanner and the "scanner" connector on the bottom of the 60-2555 wiring rack. The connector on both the CS200 scanner and wiring rack are keyed. Refer to Figure 3. Both ends of the scanner cable are identical. The scanner cable is available in lengths up to 100 feet. Refer to bulletin CES-4001.

FIGURE 3.

SCANNER CONNECTOR AS VIEWED FROM THE FRONT (OUTSIDE) OF THE 60-2555 WIRING RACK

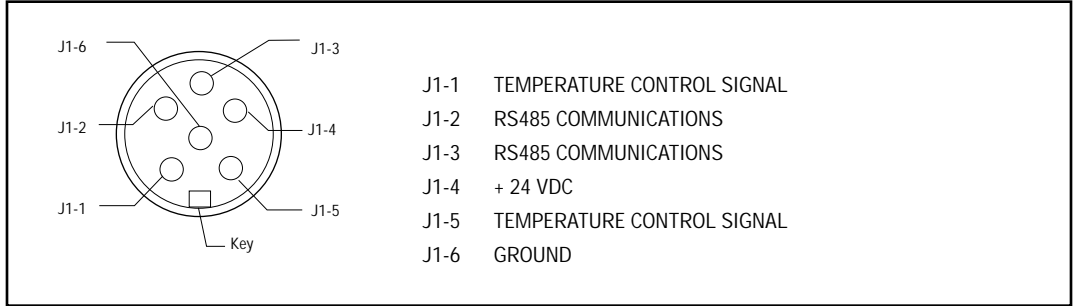
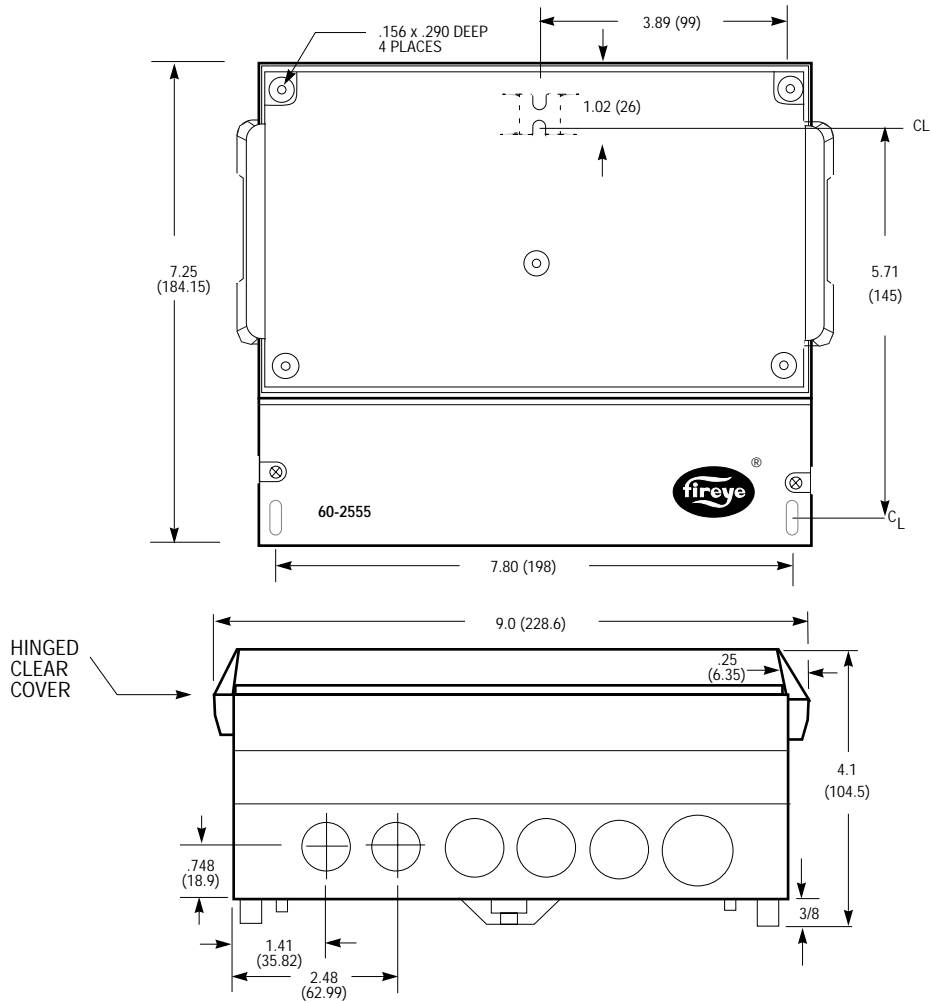


FIGURE 4.

DIMENSIONS





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NOTICE

When Fireeye products are combined with equipment manufactured by others and/or integrated into systems designed or manufactured by others, the Fireeye warranty, as stated in its General Terms and Conditions of Sale, pertains only to the Fireeye products and not to any other equipment or to the combined system or its overall performance.

WARRANTIES

FIREYE guarantees for one year from the date of manufacture of its products to replace, or, at its option, to repair any product or part thereof (except lamps, electronic tubes and photocells) which is found defective in material or workmanship or which otherwise fails to conform to the description of the product on the face of its sales order. **THE FOREGOING IS IN LIEU OF ALL OTHER WARRANTIES AND FIREYE MAKES NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED.** Except as specifically stated in these general terms and conditions of sale, remedies with respect to any product or part number manufactured or sold by Fireeye shall be limited exclusively to the right to replacement or repair as above provided. In no event shall Fireeye be liable for consequential or special damages of any nature which may arise in connection with such product or part.



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CES-2555
APRIL 1999
Supersedes April 1997