



# AMERICAN ELECTRIC EQUIPMENT, INC.

P.O. BOX 710 BECKLEY, WV 25801

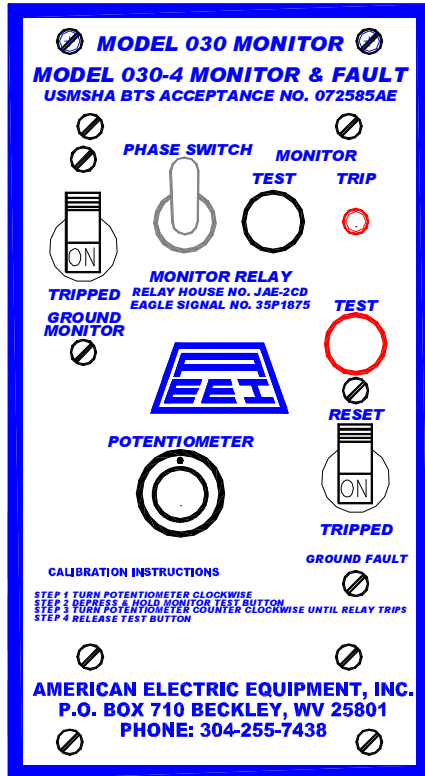
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030-4 LOW VOLTAGE GROUND MONITOR

Document A-8801

JULY 11, 2006



## Features

- ✓ MSHA accepted for trailing cable use
- ✓ Harsh environment operation; no sensitive electronic components to fail
- ✓ Easy adjustment from front of unit
- ✓ Failsafe operation
- ✓ No terminating device required
- ✓ Phase reversal switch to prevent nuisance tripping
- ✓ Integral ground fault relay
- ✓ Test pushbuttons for ground fault and ground monitor functions
- ✓ Monitor trip indicating light
- ✓ Latched ground monitor indication
- ✓ Latched ground fault indication

## Description

The AEEI 030-4 ground monitor is a pilot wire impedance type ground monitor. The MSHA BTS acceptance number allows its use in mining applications where trailing cables feed mobile equipment. It features an integral ground fault relay optimized for use on 15 A or 25 A resistance grounded systems.

## Operation

Connect monitor and ground fault CT as shown on drawing.

When power is applied to monitor initially, adjustment is required. Follow instructions on monitor faceplate to calibrate monitor. The ground fault and ground monitor indicators must be set to the RESET position.

If the pilot-ground loop is intact the TRIPPED light will be off.

## Faults

There are two types of faults, both provided with a test pushbutton:

### 1. MONITOR TRIPPED

If the pilot-ground loop's impedance is greater than the trip value, the MONITOR TRIPPED light is lit. It will go off when a good pilot-ground loop is established.

The MONITOR TRIPPED indicator will point down if a monitor fault has occurred. It must be flipped to RESET for the monitor to pick back up.

### 2. GROUND FAULT TRIPPED

The GROUND FAULT indicator will point down if a ground fault has occurred. It must be flipped to RESET for the monitor to pick back up.

Monitor Output Signal

The monitor is designed for use on circuit breakers with a 120 VAC UVR relay. The monitor output on terminals 7 and 8 is 120 VAC for normal operation and 0 VAC for a trip condition.

Undervoltage Protection

Contacts change state on loss of power, so the monitor can be used to provide undervoltage protection to a circuit.

Phase Reversal Switch

The PHASE SWITCH has the effect of reversing polarity on the monitor loop output. Polarity does not matter except in an environment of high induced pilot wire currents. If such currents exist, flipping the PHASE SWITCH and going to the opposite polarity may be of benefit in preventing accidental tripping of the monitor.

Testing

The MONITOR TEST and GROUND FAULT TEST pushbuttons can be used to test the monitor without disconnecting wires.

MONITOR TEST simulates a rise in pilot to ground loop resistance by inserting a test resistance in the pilot to ground loop.

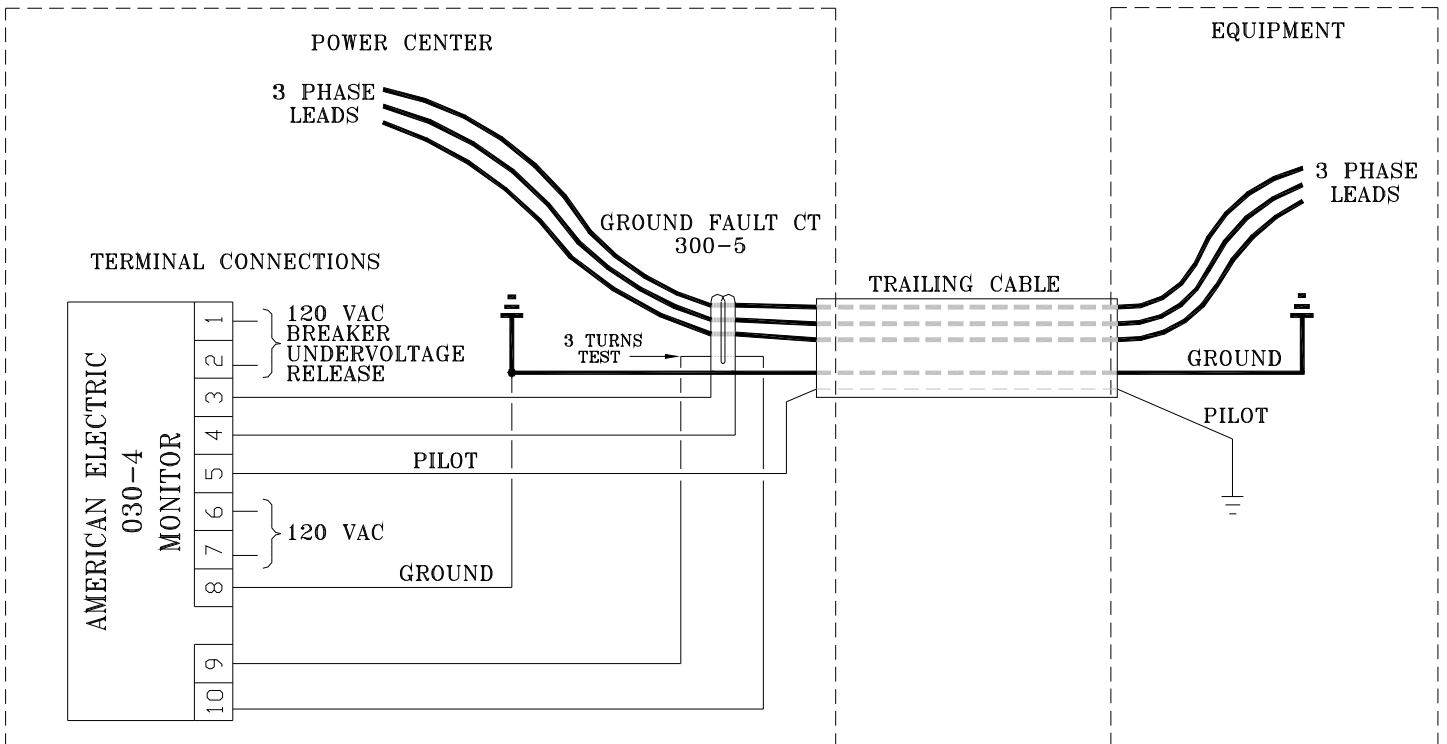
GROUND FAULT TEST passes a test current of approximately 2.5 amps 3 times through the CT core to simulate a ground fault condition. This test will completely test the 030-4 ground fault circuit including all CT connections. This test does not check grounding resistor.

**ORDERING INFORMATION**

MONITOR PART NUMBER: 030-4

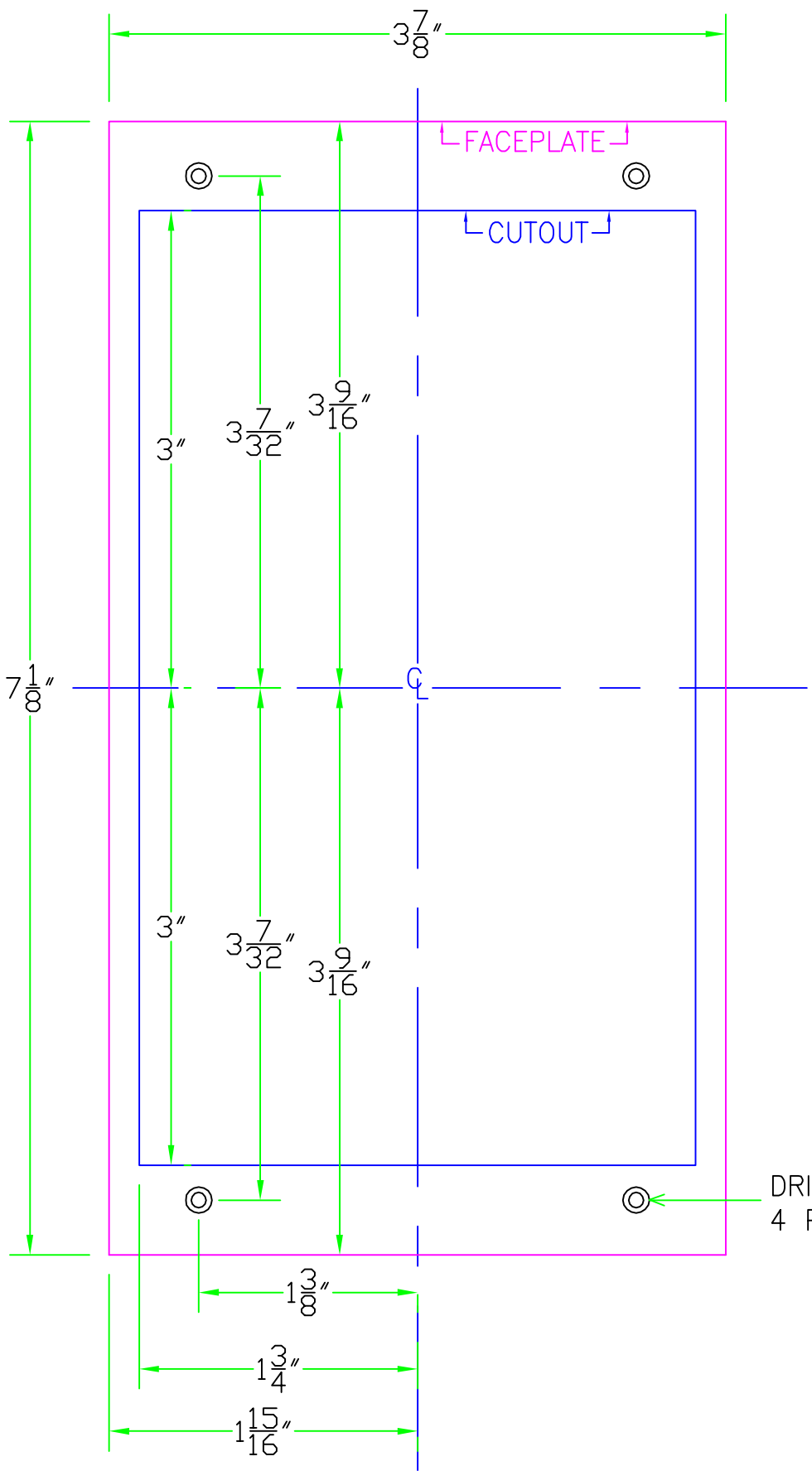
300-5 CT PART NUMBER: A-1247

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SCALE: FULL	APPROVED BY:
DATE: 1-25-12	DANNY FARLEY
MOUNTING DETAILS FOR	
030-4 GROUND MONITOR	
DRAWING NUMBER	A-12814



DRILL / TAP 8/32  
4 PLACES