



IM-0543 Rev. C
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By: Engineering Dept.

**INSTALLATION AND OPERATION INSTRUCTIONS
FOR
EC-10728 AND EC-10729 AC POWERED TRANSMITTERS**

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I. Description

A. General

The ac powered transmitter series is designed to apply a 4-20 mA dc signal proportional to a potentiometer input. The transmitter series is powered by ac line voltage and is completely isolated from the output. The compact design is ideal for small space requirements such as the PT-1000 series position indicators but can be installed anywhere near the potentiometer.

The EC-10728 is rated for 120 Vac input and the EC-10729 is rated for 240 Vac input. Both of the transmitters require a 5000 ohm potentiometer and can drive up to a 600 ohm load.

B. Specifications

1. Electrical

Input power:

EC-10728
120 Vac, 50-60 Hz,
+10%, 2W

EC-10729
240 Vac, 50-60 Hz,
+10%, 2W

Isolation: 1500 rms

Signal input range:
1000 ohms in a limited
range;
20 to 120 shaft rotation

Signal output: 4-20 mA dc,
adjustable (+20%)

Maximum output: 25 mA dc,
+2 mA

Output ripple: less than 20 mV

Load regulation: <.05%

Line regulation: <.01%

Linearity: <.1% of potentiometer
input

Sensitivity: dependant upon the
type of
potentiometer

Load: 0 to 600 ohms
Adjustments: Zero and Span, 20
turn

2. Mechanical

Weight: 8 oz. (277 g)
Dimensions: see installation
drawing
Electrical connections:
wire, insulated, 12 in,
22 AWG
Mounting position: any

3. Environmental

Operating temp: 0° to 75° C (32°
to 167° F)
Relative humidity: to 95%

II. Installation

A. Mounting and Wiring

The transmitter's mounting and overall dimensions are shown on page 4. The electrical interconnect is also shown on page 4.

B. Fusing

No fusing is required for either of the transmitters because of the very low power requirements.

C. Start-Up and Calibration

1. Install the blue, white and yellow leads to the potentiometer.

Note: For an increasing current signal output, potentiometer resistance must increase between the blue and white leads.

2. Connect the load to red (pos) and black (neg) leads.

3. Connect the proper input power to the blue leads for the EC-10728 (120 Vac) or the green leads for the EC-10729 (240 Vac).

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C. Start-Up and Calibration cont.

To calibrate do the following:

1. Move the potentiometer to the minimum signal position.

Note: Resistance should be approximately 0 ohms between the blue and white leads.

2. Adjust the Zero trim potentiometer until the output is 4 mA dc.

3. Move the potentiometer shaft to the maximum position.
4. Adjust the Span trim potentiometer for 20 mA dc output.

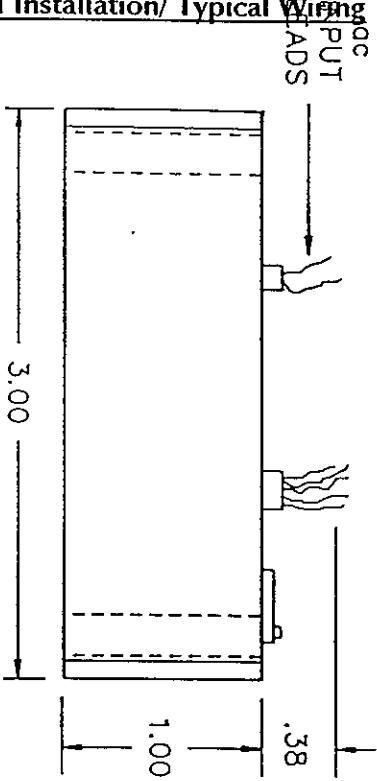
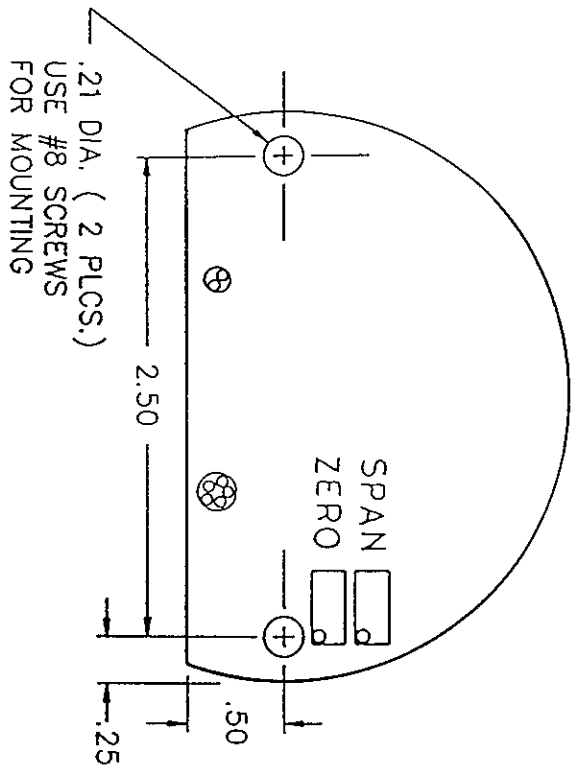
Note: It may be necessary to repeat these steps until the interaction no longer occurs.

If the output signal does not change or no output is present, refer to the troubleshooting guide.

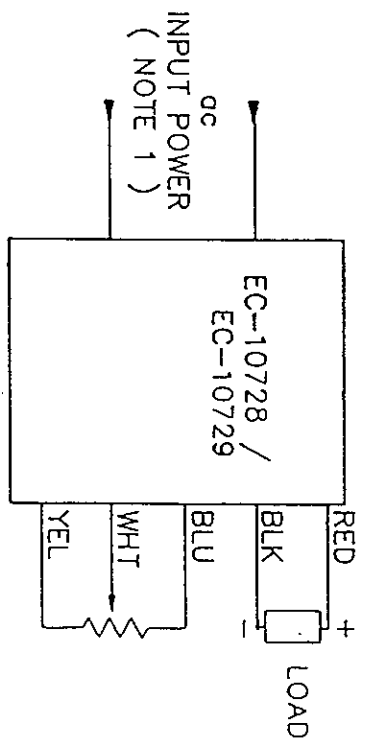
III. Troubleshooting

| PROBLEM | POSSIBLE CAUSE | REMEDY |
|--|--|--|
| There is no output current. | A. Input power is not connected. B. Load is not connected. C. There are broken leads. D. The transmitter is defective. | A. Connect the input power. B. Connect the load. C. Splice the wire or replace unit. D. Replace the transmitter. |
| There is a low current output. | A. Out of adjustment. B. There are broken potentiometer wires. C. The potentiometer is defective. D. The load is too large. | A. Adjust per the specifications. B. Splice wires or replace the unit. C. Replace the potentiometer. D. Reduce the load below 600 ohms. |
| The current loop does not go to 20 mA. | A. The load is too large. B. The potentiometer range is too small. | A. Reduce the load below 600 ohms. B. Increase the potentiometer signal range. |
| The unit stays at or above 20 mA. | A. The unit is defective. B. There is no potentiometer input. | A. Replace the unit. B. Connect the potentiometer. |
| Can not adjust the low end to 4 mA. | A. Minimum potentiometer resistance is too large. | A. Set the potentiometer to 50 ohms at low end. |

PHYSICAL INSTALLATION



WIRING



NOTES

- 1) THE EC-10728 IS RATED FOR 120V_{ac}, AND HAS BLUE INPUT LEADS. THE EC-10729 IS RATED FOR 240V_{ac}, AND HAS GREEN INPUT LEADS.
- 2) WITH THE TRANSMITTER WIRED AS SHOWN, THE 4 to 20mA OUTPUT WILL INCREASE WHEN THE POT RESISTANCE INCREASES BETWEEN THE BLUE AND WHITE WIRES.
- 3) MAXIMUM LOAD IS 600 OHMS.

Physical Installation/ Typical Wiring

IV.