

spirax/sarco®

Flowmeter - M322 Signal Conditioning Unit

Description

The M322 conditioning unit accepts temperature and flow signals from the M111 Spiraflo Transducer as well as an analog (4-20 mA) pressure signal from an EL2600 pressure transmitter. Where the Spiraflo system is used for heat metering on saturated steam/condensate systems a separate temperature transmitter is used to monitor the condensate return temperature. These signals are converted into digital form for transmission over longer lengths - to a maximum of 1640 feet.

Materials

| | |
|------------------|--|
| Enclosure | Polycarbonate |
| Enclosure Rating | NEMA4 (IP65) with correct cable glands |

Technical

The Model M322 Signal Conditioning Unit is designed to operate in conjunction with the M111 Spiraflo Transducer and the M211G/M212G flow computer. The supply voltage (24 Vdc) is sourced from the flow computer and so no extra connections to a power supply are necessary.

| Channel | Input | Output |
|----------------------|--|--|
| Port 1 (Flow) | Analog input from M111 Transducer proportional to plate deflection angle (using RVDT), ie flow | Frequency signal (150-1500 Hz) which is proportional to flow through the M111 Transducer |
| Port 2 (Temp) | Analog input from Pt100 Temperature Sensor incorporated into M111 Transducer | Frequency signal (150-1500 Hz) which is proportional to measured temperature |
| Port 3 (Pressure) | 4-20 mA from Pressure Transmitter Max. loop impedance = 150 ohms Open circuit voltage = 15 volts | Frequency signal (150-1500 Hz) which is proportional to measured pressure |

Maintenance

The conditioning unit is a calibrated and non-repairable unit.

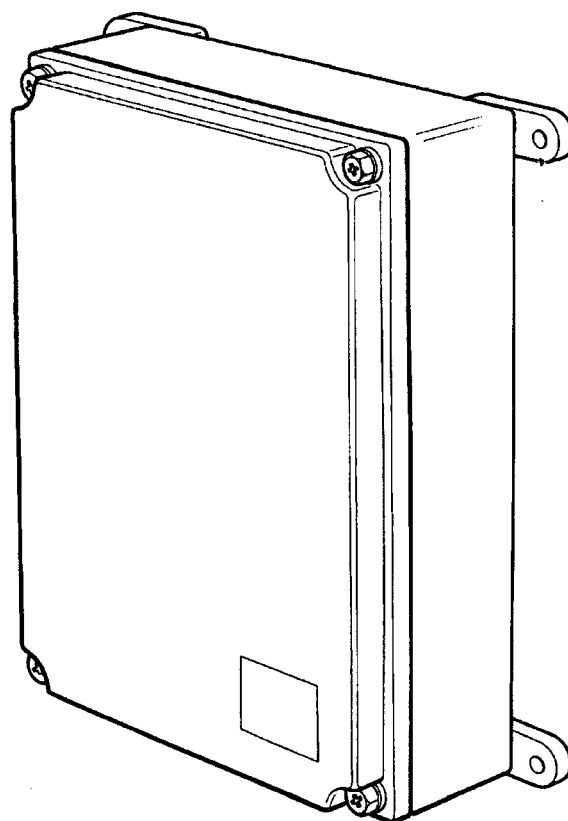
How to specify

Spirax Sarco, Inc. Model M322 Signal Conditioning Unit.

Associated equipment

| | | |
|------------|----------------------|-----------|
| M1111 | Transducer | TIS 8.100 |
| M211G/M21G | Flow computer | TIS 8.102 |
| EL2600 | Pressure transmitter | TIS 8.403 |

For a general description of the Spirax Sarco steam meter, see TIS 8.103



Installation

The conditioning unit is designed to be wall mounted using the four mounting lugs supplied with the unit. It should be located within 6.5 feet of the M111 Transducer and connected to it using the cable supplied with the transducer. The cable must be connected to the conditioning unit as shown on the wiring diagram overleaf. Recommended wiring from the EL2600 pressure transmitter to conditioning unit is 7 x 0.2mm (24 awg) twin core wire, either twisted or screened. When using the screened cable, the screen should be connected to the earth tag in the EL2600. This wiring to be supplied by the customer.

The conditioning unit should be fitted away from direct sources of heat.

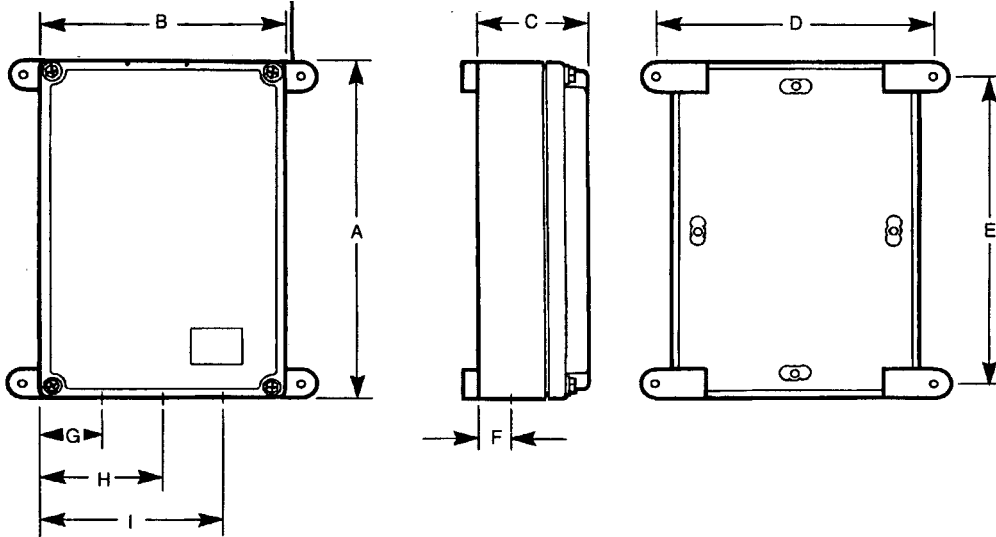
Maximum ambient temperature is 149°F (65°C) minimum is 32°F (0°C).

Full installation instructions are given in a separate booklet supplied with each unit.

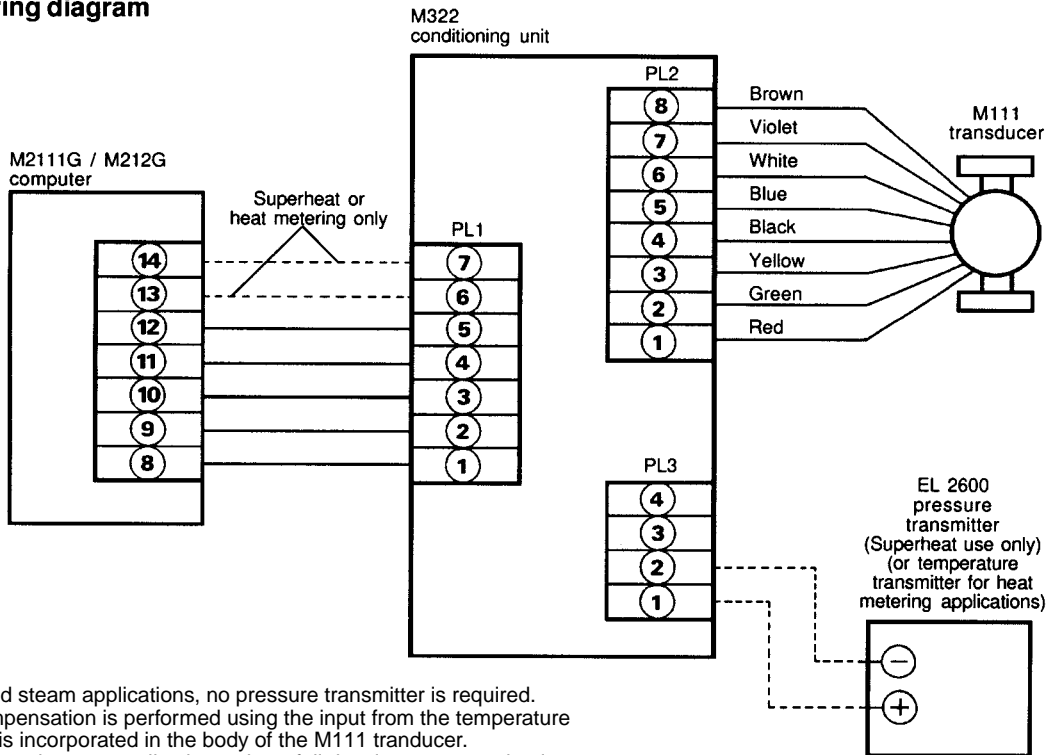
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Dimensions (approximate) in inches

| A | B | C | D | E | F | G | H | I | Weight |
|-----|-----|-----|-----|-----|---|-----|-----|-----|---------|
| 9.8 | 6.9 | 2.9 | 7.8 | 9.1 | 1 | 1.6 | 3.3 | 5.1 | 1.7 lb. |



Wiring diagram



Note

For saturated steam applications, no pressure transmitter is required. Density compensation is performed using the input from the temperature sensor that is incorporated in the body of the M111 transducer. For superheated steam applications where full density compensation is required, a pressure transmitter (Spirax Sarco EL2600 series) is required and should be fitted in the line upstream of the M111 transducer as described in the instructions that accompany the equipment. For superheated steam applications where the line pressure is constant and only the temperature varies, no pressure transmitter is required. Density correction is carried out assuming a constant nominal pressure. The connections 7-14 and 6-13 between M322 conditioning unit and M211G/M212G flow computer are only necessary if a pressure transmitter is used. For heat metering applications on saturated steam / condensate applications a condensate temperature transmitter can be substituted in place of the EL2600 pressure transmitter.