

# TMO2D

## Display and Control Module

### Applications

A display/controller for use with:

- XMO2 thermoparamagnetic oxygen transmitter
- O2X1 galvanic fuel cell oxygen transmitter
- XMTC thermal-conductivity hydrogen/gas transmitter
- Any other 4 to 20 mA output transmitter

### Features

- Two-line x 24-character backlit LCD
- Single or dual isolated, 4 to 20 mA outputs
- Up to four field-configurable process alarms
- Automatic calibration relays.



# Display and Control Module

The TMO2D is an optional display and control module that enhances the performance and operation of transmitters such as the XMO2, XMTC or O2X1. It provides a two-line x 24-character backlit LCD display, display and option programming via keyboard, recorder outputs, alarm relays, and relays for driving sample system solenoids for automatic zero and span calibration, as well as a 24 VDC power supply for the transmitter. The TMO2D also provides microprocessor-based oxygen signal compensation for improved accuracy for the TMO2 transmitter.

## Autoverification/ Autocalibration

The TMO2D provides long-term, hands-off operation with this optional feature. When initiated, the TMO2D controls solenoid valves in the sample system to bring zero and span gases to the transmitter. Then TMO2D software compares the calibration gas readings with factory data to verify proper calibration. If an adjustment is necessary, the TMO2D makes corrections automatically and notifies the user via the front panel display and alarm contacts.



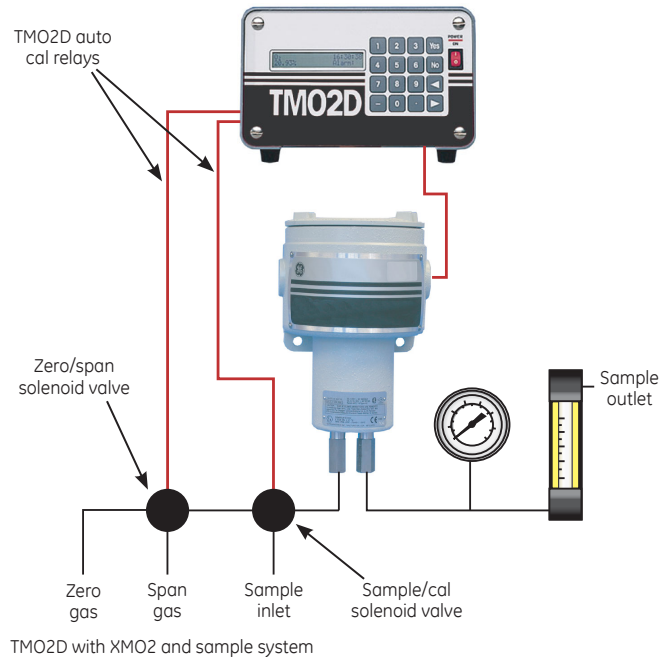
XMO2 thermoparamagnetic oxygen transmitter



XMTC thermal conductivity gas transmitter



O2X1 galvanic fuel cell oxygen transmitter



# TMO2D Specifications

## Performance

### System Accuracy

Refer to transmitter specifications

### Electronics Display and Output Accuracy

±0.1% of span

### Ambient Temperature Effect

±0.05% of full scale per °F (°C)

## Functional

### Analog Output

- Standard: Single, isolated 0/4 to 20 mA, 500  $\Omega$  maximum, 12-bit resolution, field programmable
- Optional: Dual, isolated 0/4 to 20 mA, 500  $\Omega$  maximum, 12-bit resolution, field programmable

### Alarms

- Standard: Two Form C, SPDT, 2 A maximum @ 115 VAC, field programmable, 0.01% set-point resolution, 0.05% of span dead band
- Optional: Two hermetically sealed relays for Class I, Division 2 hazardous (classified) locations
- Two standard or hermetically sealed relays for automatic calibration (Auto Cal)

### Digital Output

RS232C serial port

### Display

Two-line x 24-character backlit LCD

### Analog Input

- One 4 to 20 mA input from any transmitter
- Optional second 4 to 20 mA input from TMO2 transmitter

### Power

100/115/220/240 VAC ±10%, 50/60 Hz, 35 W maximum provides 24 VDC, 1 A maximum to transmitter

### Temperature

- Operating: 32°F to 122°F (0°C to 50°C)
- Storage: -4°F to 158°F (-20°C to 70°C)

## Physical

### Dimensions

- Rack mount: 5.25 in x 19 in x 9.25 in (133 mm x 483 mm x 235 mm)
- Bench mount: 5.25 in x 9 in x 9.25 in (133 mm x 229 mm x 235 mm)
- Panel mount: 5.25 in x 9 in x 9.25 in (133 mm x 229 mm x 235 mm)
- Weatherproof: 11.25 in x 9.38 in x 4.38 in (286 mm x 238 mm x 111 mm)
- Explosion-proof: Consult factory

### Weight

- Rack mount: 5.4 lb (2.4 kg)
- Bench mount: 7.4 lb (3.4 kg)
- Panel mount: 4.7 lb (2.1 kg)
- Weatherproof: 6.5 lb (3.0 kg)

### Environmental

- General-purpose: rack, bench, panel
- Weatherproof: Type 4X/IP65
- Non-incendive: Rack, panel and stainless steel weatherproof; FM/CSA Class I, Division 2, Groups A,B,C&D

### European Compliance

Complies with EMC Directive 89/336/EEC, 73/23/EEC LVD (Installation Category II, Pollution Degree 2)

# TMO2D Specifications

## Order Information

Record selected option in blank indicated at bottom of form.

### TMO2D Display and Control Module

#### Design Package

- 1 Rack mount\*
- 2 Bench mount\*
- 3 Panel mount
- 4 Explosion-proof (consult factory for design and delivery)
- 5 Weatherproof (Type 4X, stainless steel)\*

#### Power

- 1 100 VAC, 50 to 60 Hz
- 2 115 VAC, 50 to 60 Hz
- 3 230 VAC, 50 to 60 Hz
- 4 240 VAC, 50 to 60 Hz

#### Output

- 1 Single isolated 0/4 to 20 mA
- 2 Dual isolated 0/4 to 20 mA

#### Alarm Relays

- 1 Dual alarm relays (standard)
- 2 Dual alarm relays, hermetically sealed for Class I, Division 2
- 3 Dual alarm relays and auto cal\*\*
- 4 Dual alarm relays and auto cal\*\*, hermetically sealed for Class I, Division 2

#### Analyzer

- 1 For use with oxygen analyzer
- 2 For use with gas analyzer

TMO2D - \_ \_ \_ \_ Use this number to order product

\*Approved for Division 2 with Division 2 alarms

\*\*Dual automatic calibration relays (auto cal)



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920-036C