TECHNICAL DATA

XM-361 & 362 TEMPERATURE MODULES

The Allen-Bradley XM® series is the world's first machine monitoring and protection system designed as a distributed network of modules deployed on an open standard industrial bus.

The XM-361 Universal Temperature Module and the XM-362 Isolated TC Temperature Module are intelligent 6-channel temperature monitors. Each module is a complete monitoring system in a compact, easily installed, easily maintained package. Each channel of the XM-361 module can be configured to measure either an RTD or an isolated thermocouple while the XM-362 is designed specifically for thermocouple measurements - isolated or grounded.

For each input the modules measure the temperature, in engineering units, the rate of change of the temperature, and the difference in temperature between adjacent channels.

For applications that require 4-20mA output, each module provides one output per channel, configurable as either the measured temperature or the difference value. And when relays are required the modules support up to 8 relays via connected XM-441 Expansion Relay modules.

The Modules can operate stand alone, with no interface to higher-level control systems or interactive user interfaces. They can also be deployed on a standard or dedicated DeviceNet network where they can provide real-time data and status information to other XM modules, PLC's, DCS and Condition Monitoring Systems

Configuration can be performed remotely via the DeviceNet network, or locally by a PC connected to the integral serial interface.

INTELLIGENT DISTRIBUTED TEMPERATURE MEASUREMENTS

SPECIFICATIONS

Communications

DeviceNet:

- Standard DeviceNet protocol for all functions
- Available Electronic Data Sheet (EDS) file provides support by most DeviceNet compliant systems
- Baud rate automatically set by bus master to 125kb, 250kb or 500kb

Note: The XM-361 and XM-362 modules use only the DeviceNet protocol, not power. Module power is provided independently.

Side Connector: All XM measurement and relay modules include side connectors that allow interconnecting adjacent modules thereby simplifying the external wiring requirements. The Interconnect provides primary power, DeviceNet communication and the circuits necessary to support expansion modules such as the XM-441 Expansion Relay module.

Serial: Local configuration via Serial Configuration Utility Program Requires Serial Communications Cable.

- RS-232 via mini-connector
- Baud rate auto baud to 19200 or 57600

Inputs

Supported Sensors

THERMOCOUPLE		
	Min °C	Max °C
B	0	1810
C	0	1316
E	5	284
J	0	364
K	-40	484
N	-40	620
R	-40	1760
S	-40	1760
T	-40	379
RTD (XM-361 ONLY)		
	Min °C	Max °C
100 Pt 385	-40	660
100 Pt 392	-40	660
200 Pt 385	-40	453
200 Pt 392	-40	443
250 Pt 392	-40	389
120 Ni 672	-40	439
100 Ni 618	-40	180
10 Cu 427	-40	260

XM-361

RTD Current Source: 501µA ±1%

Common Mode Input Range: ±3 Volts

Input Impedance: 1 MΩ voltage input

XM-362

Isolation: Up to 250 volts of isolation per input

Outputs

4-20mA Outputs:

- 2 isolated banks of 3 outputs each
- 1 output per channel configured for:
  - Measured value
  - Difference value
- 600 ohm max load

Isolation: 250 volts

Indicators

8 LEDs:

- Module Status -red/green
- Network Status - red/green
- Channel 1 Status - off/yellow/red
- Channel 2 Status - off/yellow/red
- Channel 3 Status - off/yellow/red
- Channel 4 Status - off/yellow/red
- Channel 5 Status - off/yellow/red
- Channel 6 Status - off/yellow/red

Measured Parameters

Level: Measured value in engineering units

Difference: Measured value minus the previous channel value (1-6, 2-1, 3-2, 4-3, 5-4, 6-5)

Rate of Change:

- Per minute
- Updated once per second

Data Buffer

Trend Buffer

Stores a set of records containing measured parameters in response to a trigger event.

- Trend Interval: 1 to 3600 seconds
- Trigger: The trend is saved when a specified relay actuates, or on command from an XM-440, host or controller.
- Capacity: 170 to 2048 records depending on the number of parameters stored.

Signal Conditioning

Accuracy:

- Platinum RTD's & TC's: ±1°C (±2°F)
- Copper & Nickel RTD's:

Low Pass Filter: User configurable for the measurement and rate value from each channel

Resolution: 0.025% of range

Measured Units:

- °F
- °C

Alarms

Number: 12 alarm and danger pairs

Operators:

- Greater than
- Less than
- Inside Range
- Outside Range

Hysteresis: User defined

Non-Volatile Configuration

A copy of the module configuration is retained in nonvolatile memory from where it is read upon power up.

Relays

Number:
- Up to eight relays when linked to one or two XM-441 Expansion Relay module, or:
- Eight virtual relays whose status can be used by remote Control Systems

Failsafe:
- Normally energized (failsafe), or
- Normally de-energized (non-fail-safe)

Latching:
- Latching, or
- Non-latching

Time Delay: 0 to 25.5 seconds in 100msec increments

Voting Logic: Single or paired "And" or "Or" logic applied to any alarms

Reset:
- Local reset switch on top of module
- Digital reset command via serial or DeviceNet interface

Activation On:
- Alarm Status
  - Normal
  - Alert
  - Danger
  - Disarm
- Sensor Out Of Range
- Module Fault

Approvals

CE, C-Tick, ODVA, UL, EEX
CSA Class I, Div 2, Groups A, B, C, D

Power

Module: 21.6 - 26.4Vdc

Consumption: Max: 200mA

Heat Production: Max: 6 Watts (20.5 BTU/hr)

Redundant Power: *All XM Measurement and Relay modules support redundant power. Each module includes redundant power inputs on its terminal base.*

Environmental

Operating Temperature: -20 to +65°C (-4 to 149°F)

Storage Temperature: -40 to +85°C (-40 to 185°F)

Relative Humidity: 95% non-condensing

Conformal Coating:
All printed circuit boards are conformal coated:
- Per material specifications MIL-I-46058C / IPC-CC-830
- In accordance with IPC-A-610C

Physical

Dimensions
- Height: 3.8in (97mm)
- Width: 3.7in (94mm)
- Depth: 3.7in (94mm)

Weight
- Module: 5.9 ounces (167 grams)
- Base: 8.3 ounces (235 grams)

HOW TO ORDER

To order the XM-361 or 362 Temperature modules and for information about the XM-441 Expansion Relay module contact your local authorized Allen-Bradley distributor or Rockwell Automation sales office.

Catalog Number	Description
1440-TUN06-00RE	XM-361 Universal Temperature Module*
1440-TTC06-00RE	XM-362 Isolated TC Temperature Module*
1440-TB-E	Terminal Base E for XM-36x
1440-SCDB9FXM2	XM Serial Communications Cable

** Requires Terminal Base E*

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