PRODUCT OVERVIEW

The X-13s™ Thermocouple expansion module is used in conjunction with the X-600M™ controller. The X-13s is a 2-channel signal conditioner for Type-K thermocouples. One or more X-13s thermocouple expansion modules can be connected to a X-600M control module with a ribbon cable. The ribbon cable provides both power and communications to the module.

The X-600M is a multifunction web-enabled industrial I/O controller. It performs control, logic, and monitoring functions similar to that of a Programmable Logic Controller (PLC). However, unlike a PLC, the X-600M is designed for web-based applications from the ground up. No add-on software or hardware is required.

The X-600M can be fully configured, programmed and tested using its built-in web server. The web setup pages are intuitive and easy to use and do not require special programming skills.

The X-600M together with the X-13s provide an easy, flexible and reliable way to monitor temperature over a network. The X-13s is suitable for use with freezers, ovens, fermenters, generators – anywhere precision, rugged, temperature sensors are required.

Features:

- 2-Channel thermocouple inputs
- Type K Thermocouples
- Range -200°C to +1250°C
- Two "Open Thermocouple" Channel LEDs
- Powered through expansion bus
- Great for moderate-load applications including:
  - Freezers
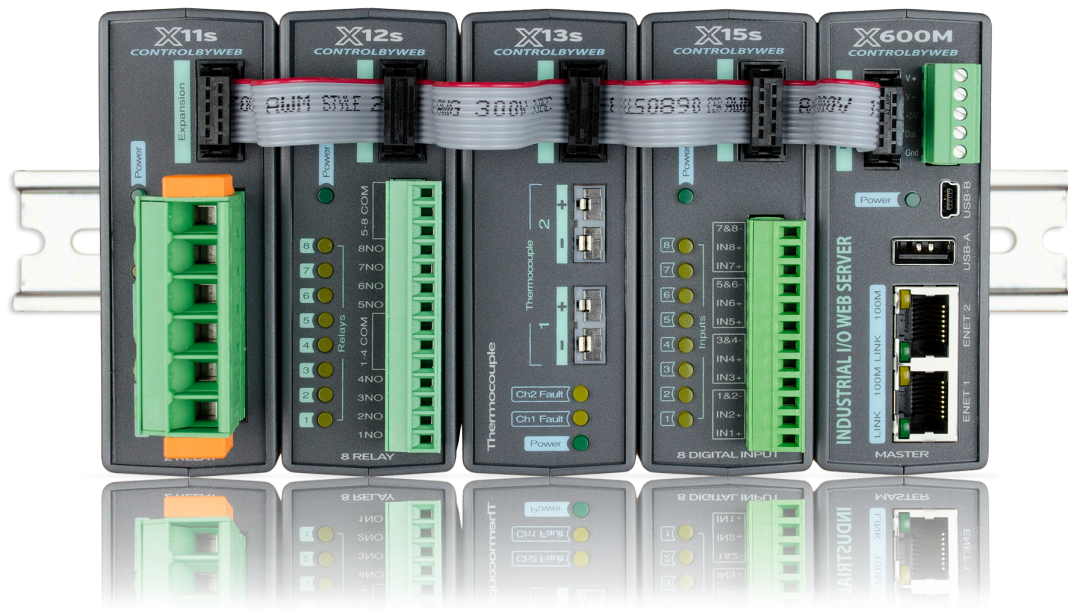 - Ovens
  - Fermenters
  - Generators
  - and much more...
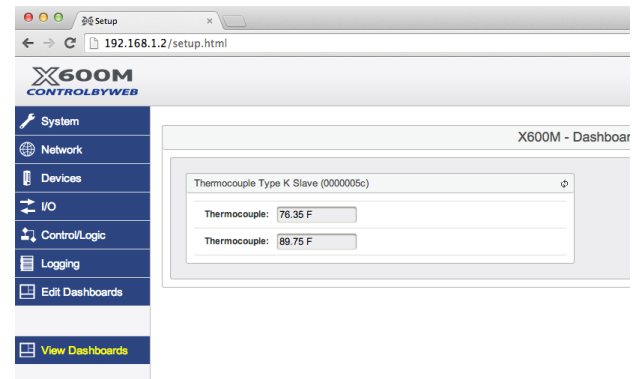
View X-13s components on the X-600M's Dashboard
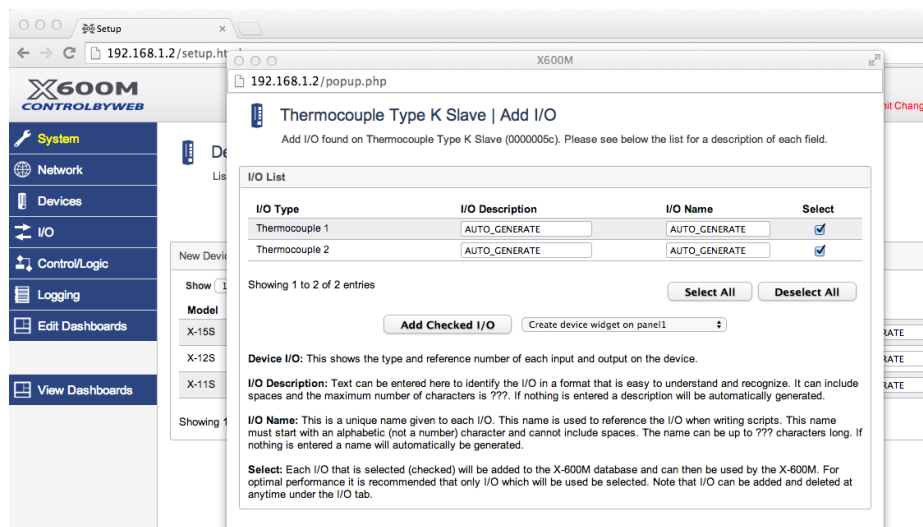
Adding the X-13s on the X-600M

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Expansion Modules With The X-600M Controller

Applications

- ✓ **Freezers**
- ✓ **Ovens**
- ✓ **Fermenters**
- ✓ **Generators**
- ✓ **More...**

Models:

- X-13s

Power Requirements

- Voltage: 9-28 VDC (supplied via the X-600M controller, 24V recommended)
- Max Current: See table below for typical values at 25°C.

Power	Thermocouple Open	Thermocouple Good
9 VDC	49 mA	17 mA
12 VDC	37 mA	13 mA
24 VDC	20 mA	8 mA

Thermocouples

- Number of channels: 2 Channels
- Thermocouple: Type-K
- Linear Range: -200°C to 1250°C
- Operating Ambient: -40°C to 85°C (internal cold junction compensation)
- Resolution: 0.027°C
- Drift: 4ppm/°C typical, 15ppm/°C max
- Type: Inputs are not isolated, only use ungrounded thermocouples
- Input Current: Differential, ±165nA max
- Error Detection Detects sensor breakage or disconnection of lead wire

Connectors

- Type: Miniature size, Omega PCC-SMP Series, Type-K
- Mating Connector: Miniature size, SMP
- Expansion Connector: Ribbon cable, 10-conductor, polarized, 2x5-position, 0.100" pitch Provides power and communications for expansion modules (Communications: RS-485)

LED Indicators

- Number of LEDs: 3
  - Power on
  - "Open Thermocouple (Channels 1-2)

Physical

- Size:
  - 1.41in (35.7mm) wide
  - 3.88in (98.5mm) tall
  - 3.1in (78mm) deep (not including connector)
- Weight: 4.8 oz (136 g)
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

Environmental

- Operating Temperature: -40°F to 150°F (-40°C to 65.5°C)
- Storage Temperature: -40°F to 185°F (-40°C to 85°C)
- Humidity: 5-95%, non-condensing
- Altitude: Up to 2,000m
- Indoor use or NEMA-4 protected location

Electromagnetic Compliance

- IEC CISPR 22, CISPR 24
- FCC 47CFR15 (Class B)
- EN55024 ITE Immunity (2010)
- EN55022 Emissions (2010)

Product Safety Compliance

- UL: E4683-A116 61010-1 3rd Edition
- CSA: C22.2 No. 61010-1-12 3rd Edition
- CCN: QUYX, QUYX7 (Process Control Equipment, Electrical)

CE

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