

Case Input Module (Logic One®) Installation Instructions



Regulatory Compliance

Safety

This device has been tested and found to be in compliance with the requirements set forth in UL 916, Energy Management Equipment, and is listed by Underwriters Laboratories, Inc., for installations in the United States.

This device has been tested and found to be in compliance with the requirements set forth in C22.2, No. 205-M1983, Signal Equipment, and is Certified by Underwriters Laboratories, Inc., for installations in Canada.

Electromagnetic Compatibility (EMC)

Federal Communications Commission (FCC)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE! This device has been tested and found to comply with the limits established for Class A digital devices. It is intended to be used in a commercial environment. Operation of this equipment in residential environments may cause harmful interference, in which case the user may be required to correct the interference at his own expense.

CAUTION! Any changes or modifications not expressly approved by Novar Controls Corporation could void your authority to operate this equipment.

Industry Canada

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the interference-causing equipment standard entitled *Digital Apparatus*, ICES-003, of Industry Canada.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur le matériel brouiller: *Appareils Numériques*, NMB-003, édictée par l'Industrie Canada.

Disclaimer

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Novar Controls Corporation
6060 Rockside Woods Blvd., Cleveland, OH 44131
Tel: 800.348.1235 www.novarcontrols.com

Description

The Case Input Module is a unique input device that provides refrigerated case temperature information to Novar Controls' Logic One® Energy Infosystem.

The module comes in a metal enclosure (Figure 1) that protects the electronics from some environmental conditions, but it is not tightly sealed. It can be mounted on the wall or in a control panel if the location is dry and not refrigerated.

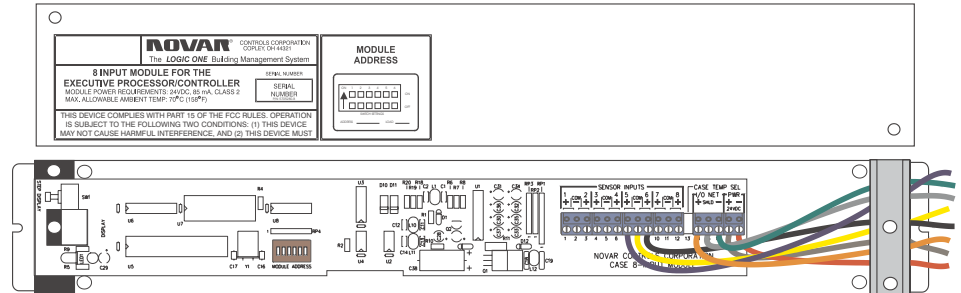


Figure 1. Logic One Case Input Module cover and circuit board enclosure

Each Case Input Module has eight inputs for case temperature sensors. A light-emitting diode (LED) display at the end of the Case Input Module shows the status of the inputs.

This document provides instructions for mounting the module, wiring it, setting its address, and checking its operation.

Specifications

Agency Approvals

Listed device:	CUL/UL E90949
Standards used:	UL 916, Energy Management Equipment CSA C22.2, No. 205-M1983, Signal Equipment

Power Requirements

Voltage:	24 VDC, Class 2
Current	85 mA

Measurement Range

Use with Novar Controls' sensor Part No.7330000	-39°F to 88°F
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Operating Environment

Temperature:	32° to 158°F (0° to 70°C)
Humidity:	0 to 95% Relative, noncondensing

Physical Dimensions

Length:	16.6 inches
Width:	2.75 inches
Depth:	1.3 inches
Weight:	1 lb 5 oz

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Precautions

Take the following precautions during installation:

- Observe all national and local electrical codes.
- Do *not* use this module as a final safety device.

Mounting the Module

The Case Input Module’s metal enclosure can be mounted on a wall, at the top of a refrigerated case, or in a control panel. Use the following procedure and refer to Figure 2, as necessary, to mount the enclosure.

Step	Procedure
1	Select a dry, nonrefrigerated location for the module.
2	Position the metal case against the mounting surface and mark the surface to show the location of the two mounting “holes.”
3	Drill holes in the locations marked in Step 2.
4	Place the module against the mounting surface and insert and tighten the appropriate type of screws to secure the module.

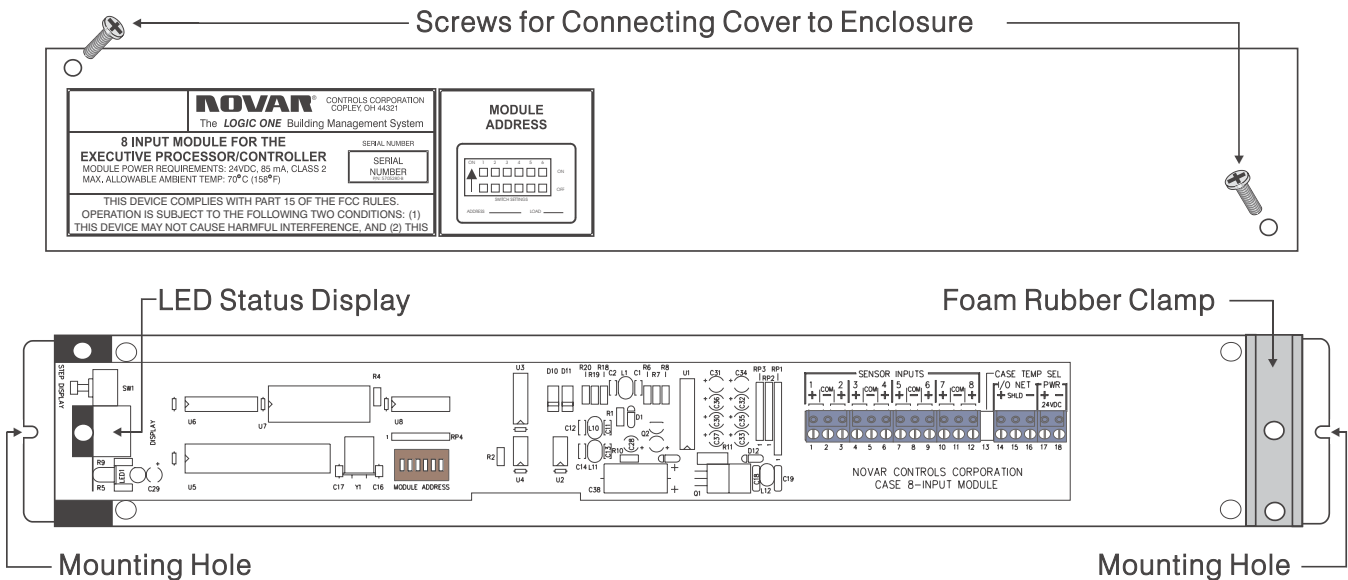


Figure 2. Mounting the Case Input Module

Wiring Connections

To prepare the module for wiring, complete the following procedure.

Step	Procedure
1	Remove the two screws located in opposite corners of the cover and remove the cover.
2	Remove the screw holding the clamp and foam rubber pads in place at the right end of the circuit board. <ul style="list-style-type: none"> ■ The cable used to make the wiring connections is fed between the pads.

NOTE! The foam rubber pads, clamp, and screw must be returned to their original positions when the wiring connections have been completed.

Because the inputs are software-definable, the wiring scheme must match the software configuration. The Case Input Module connections are shown in Figure 3.

Sensor Inputs

This module is designed to be used with Novar Controls Corporation's analog temperature sensors (Low-Range Temperature Sensor, Novar Controls Part No. 7330000).

To connect the sensors:

- Connect the red wire of the temperature sensors to the software-designated plus (+) input.
- Connect the black wire of the temperature sensors to any of the common terminals.

NOTE! The maximum recommended wire length for each temperature sensor is 100 feet.

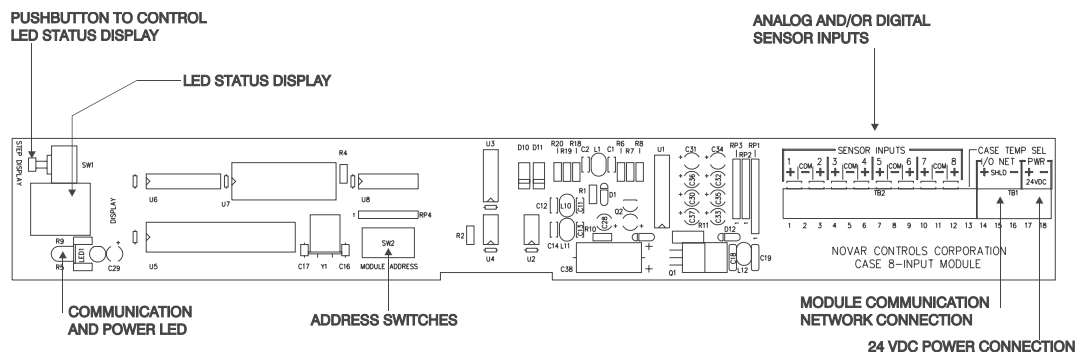


Figure 3. Case Input Module wiring diagram

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Module Communication Network

A four-conductor shielded cable (Belden 9155, Novar Controls WIR-1020, or equivalent) should be used make the communication connections between the Case Input Module and the executive module.

Use the following procedure to connect the communications cable.

Step	Procedure
1	Connect the Case Input Module communication cable to the Mod Com port of the executive module.
2	Connect the communication cable to the Case Input Module I/O Net terminals (Terminals 14, 15, and 16), located next to the power connection. <ul style="list-style-type: none"> ■ Maintain polarity when making the wiring connections.

Power Connection

The Case Input Module requires 24-VDC power.

- Connect the +24 to Terminal 17.
- Connect the minus (-) 24-VDC to Terminal 18.

Address Settings

Each module must have a unique address within the range of 0 to 63. The address switches are located on the left side of the circuit board (see Figure 2 or 3). Set the address switches as shown in Figure 4.

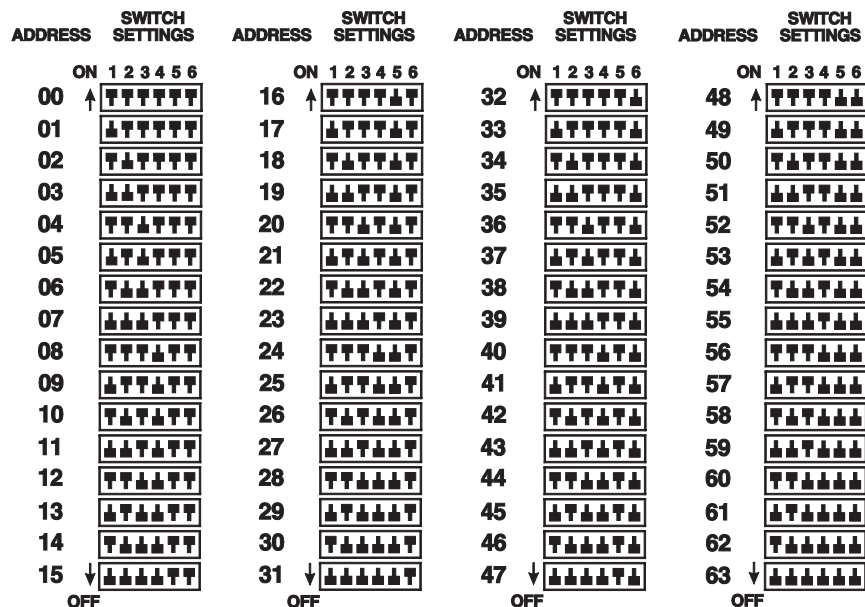


Figure 4. Case Input Module address settings

Checking Operation

When the installation has been completed, check the following items to ensure proper operation.

- Double-check all wiring before turning on the power.
- Check the communication LED located next to the LED status display on the Case Input Module. It should blink intermittently when power is turned on and proper communication is occurring. If the LED does not blink, there is a loss of communication and/or power.
- Check the LED status display. The Case Input Module contains an alphanumeric LED display that indicates the status of the sensors wired to the module. This display can be seen through the clear plastic on the left side of the metal enclosure.

To operate the display, press the push button located inside the clear plastic on the left side of the metal enclosure. (The button is recessed; a pen, screwdriver, or similar object will be needed to press it.) The LEDs will display the input number and the sensor value in consecutive order. If the sensor value is below zero, a minus (-) sign will also be displayed. All temperature readings are in Fahrenheit.

NOTE! Although the displayable range of an analog sensor is -39° to 88°F , the sensor should be programmed for a range of -32°F to 80°F to allow the system to operate properly.

Any temperature less than -39°F will display as -39°F .
Any temperature greater than 88°F will display as 88°F .

NOTE! The ninth input on the circuit board is not used.
Therefore, Input 9 will always read "OPN."

- Check for a Comm Loss alarm. If a communications failure exists, an alarm will be generated and called out *if the system has been programmed to do so*.
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