

Features

- Modern Appearance
- Stylish rotary dial and press button
- Large LCD with backlight
- Support Modbus RTU protocol
- Support standalone operation on RS485 communication failure
- 0...10 VDC / 2...10 VDC outputs for set-point and analogue input signal
- 24 VAC digital output activated by system on-off button
- Retaining last entered settings on power resumption
- Built-in temperature sensor
- 0...10 VDC analogue input capability
- Remote temperature sensor capability
- Parameter setup manual
- Customizing availability

Selectable Functions

- Analogue input can be configured to accept Built-in temp. sensor or TE10 series temp. sensor or 0...10 VDC output device
- Selectable 0...10 VDC or 2...10 VDC output
- Selections of °C, °F, % or no specified unit
- Selectable display icon for 24 VAC digital output status
- Selectable display readout range
- Selectable set-point range
- Measured readout off-set
- Selectable constant display of readout between analogue input or set-point



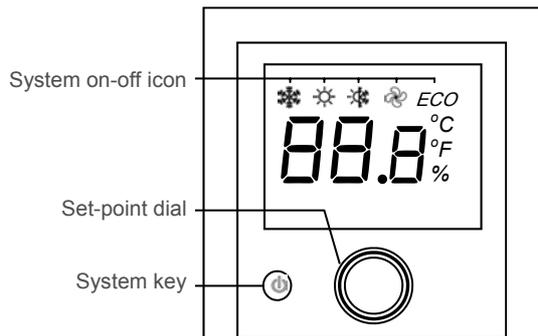
Product Overview

NSM is an active LCD Set-point Module energized by 24 VAC supply. It provides two 0...10 VDC signals to the external controllers which are directly proportional to display read-out of sensing device and set-point range. Sensing device is selectable from built-in temp. sensor, external TE10 temp sensor or 0-10 VDC device. 24 VAC digital output is activated by the system button that gives signal to external controller for purposes of energy-saving mode or other status on-off control applications. NSM allows authorized agent to change certain number of operating parameters.

Ordering

To order the NSM Set-point Module, contact the nearest Cyrus' representative. Specify the desired product code number from product overviews.

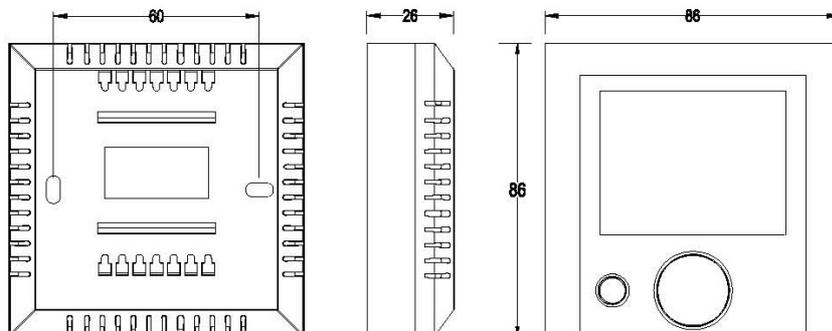
LCD Segments and Buttons



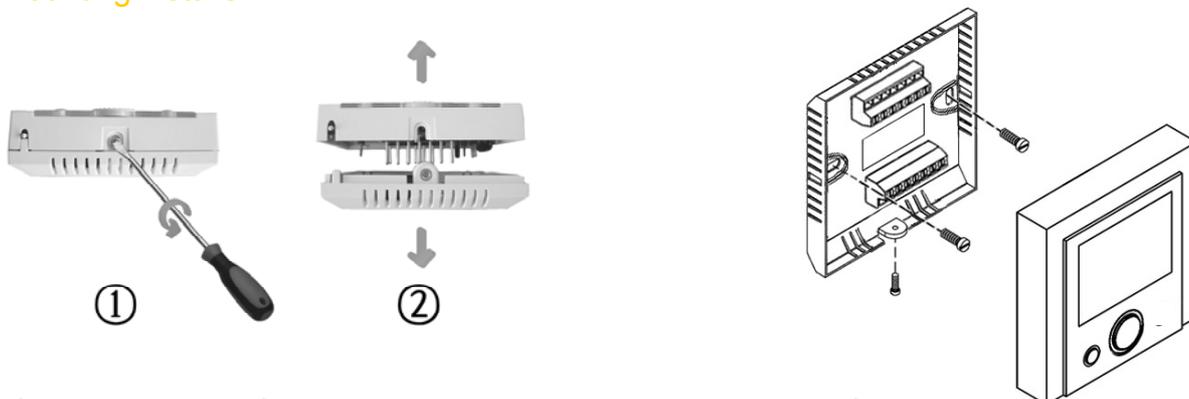
Operation Notes

Display	LCD shows analog input readout figure constantly except when set-point adjustment is being made
Backlight	The backlight will light up for 5 seconds when any button is pressed
Set-point	Increase or decrease set point by rotating the adjustment dial clockwise or counter-clockwise. When the dial is rotated, the LCD shows the set-point value
System Button	To provide 24 VAC output signal to external controller by pressing the button
Parameter setup menu	The thermostat allows authorized service agents to change certain number of operating parameters, please refer to parameter setup manual for details

Dimensions in mm



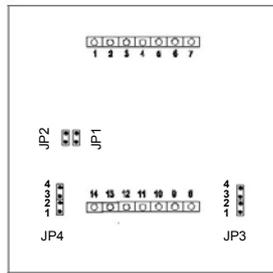
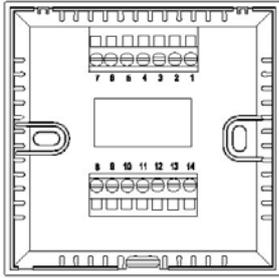
Mounting Details



NSM Module can be surface mounted or secured to a standard European 75 x 75 x 35 mm electrical box.

1. Loosen the fixed screw.
2. Slightly twist the screw driver to crack open the cover from the base.
3. Hold the base firmly with one hand and remove the cover with another hand by pulling away from the base forcibly.

Wiring Diagram & Jumper Settings



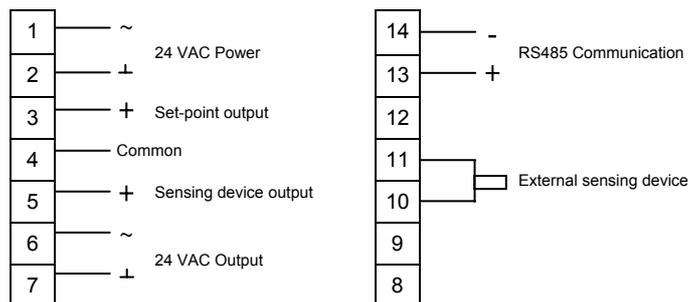
Jumper Settings	
Jumper	Socket Position
JP1	OPEN for external sensor CLOSED for built-in sensor
JP2	OPEN for 2...10 V, CLOSED for 0...10V (Factory Setting)
JP3	Insert at pins 1& 2 for TE10 sensor input (Factory setting), Insert at pins 3 & 4 for 0...10 V active input
JP4	Always at pins 3 & 4

Wiring Diagrams and Additional Application Notes

- NSM is always turned on when power supply is connected.
- Set-point range is equally proportional to 0...10 VDC and outputs at wiring terminals 3 & 4.
- Readout range of sensing device is equally proportional to 0...10 VDC and outputs at wiring terminals 4 & 5.
- Pressing the system key to activate 24 VAC output at wiring terminals 6 & 7 and desired icon appears on LCD.
- When TE10 sensor is wired to wiring terminals 10 and 11, remove the JP1 jumper and insert the jumper JP3 to pins 1&2.
- When 0...10 VDC input device is wired to terminal 10 and 11, remove the JP1 jumper and insert the jumper JP3 to pins 3&4.
- Remove jumper JP2 if 2-10 VDC proportional output is required.
- 22 or 24 AWG twisted shielded pair double-insulated cable is recommended as remote sensor wiring and its length must not exceed 25 m.
- Do not bundle and run power wiring and remote sensor wiring in the same conduit. Failure to do so may result in poor thermostat performance due to electrical noise.

WARNING

Incorrect wiring connection may cause permanent equipment damages to the Module



NSM Networking Set-point Module

Setup Manual

Symbol	Function	Description
0	MCU firmware revision level	LCD shows 0-- after entering the setup menu
2	Configuration of input	201 = active 0-10 VDC device when JP3 at pins 3&4 202 = TE10 temp. sensor when JP3 at pins 1&2 (factory setting)
3	Engineer unit	3-C = °C (factory setting) 3-F = °F 3-P = % 3-0 = no specified unit
4	Low-end value of sensing device readout	From -50 (when 202 and 3-C are set, factory setting = 0) or -99 (when 201 and 3-C or 201 and 3-F or 201 and 3-0 are set), or -58 (when 202 and 3-F are set) or 0 (when 201 and 3-P are set) To High-end value of X1 minus 4
5	High-end value of sensing device readout	From Low-end value plus 4 units To +110 (when 202 and 3-C are set, factory setting = 50) or +999 (when 201 and 3-C or 201 and 3-F or 201 and 3-0 are set), or +230 (when 202 and 3-F are set) or +100 (when 201 and 3-P are set)
10	Controller address setting	To set the slave device address from 1 to 32 (Default 255)
A	Low-end value of set-point range	From low-end value of sensing device readout To high-end value of set-point range minus 4 units
b	High-end value of set-point range	From low-end value of set-point range plus 4 units To high-end value of sensing device readout
H	Display offset for readout value	-50 to +99 (factory setting = 0)
n	Display icon for system on-off status	n-1 = LCD is shut down while status is OFF (factory setting) n-2 = Cooling n-3 = Heating n-4 = Auto n-5 = Fan n-6 = ECO
u	Constant display of input or local set-point value	u-1 = constant display of X1 input readout (factory setting) u-2 = constant display of set-point value
f5	Restoration of default factory settings	f51 = Retain current settings (factory setting) f52 = Restore default factory settings

Technical Specifications

Product Model	NSM
Power Requirements	24 V ±15% 50/60 Hz
LCD	3 digits
Display range	-99...999
Set Point Range	-99...999
Analogue Input	TE10 NTC temperature sensor (-50...110 °C), or 0...10 VDC active input corresponding to adjustable (°C, °F, % or no unit)
Analogue Outputs	0...10 VDC Minimum 10,000 Ω output impedance
Digital Output	20 VA @ 24 VAC
RS485 communication speed	Baud rate fixed at 19,200 bps
Device MAC addressing	01-32 via parameter setup menu, factory setting is 255
Body Material	Self-extinguishing, molded ABS
Ambient/Storage Temperature Limits	0 to 50 °C / -30 to 50 °C, 10% to 90% RH non-condensing
Agency Approval	CE Mark compliant to EMC and low voltage directives
Shipping Weight	120 g
Dimensions	See Dimensions drawing in mm

The specification above are normal and conform to generally acceptable industry standard. Cyrus is not responsible for damages resulting from misapplication or misuse of its products.