



RTD Input Module
HE800RTD000 / HE800RTD100
HE-RTD000 / HE-RTD100*
 * HE- denotes plastic case.

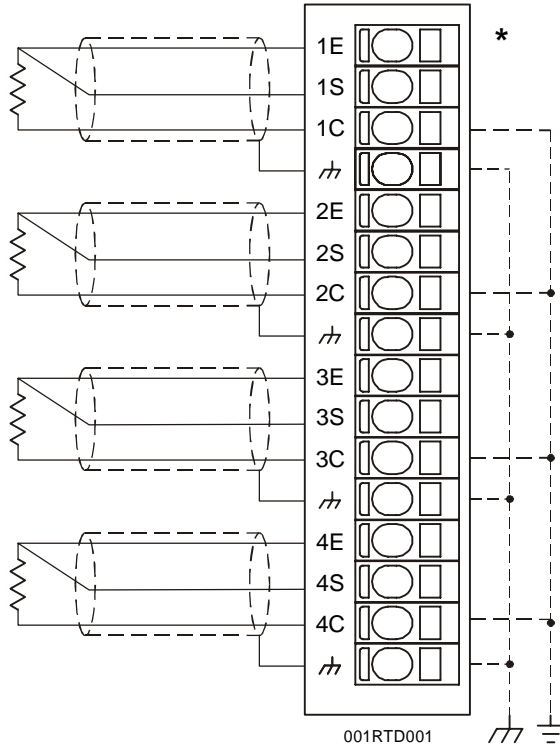
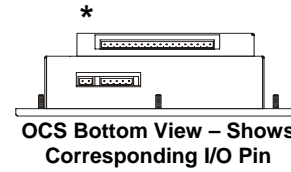


This datasheet also covers products starting with IC300.

1 SPECIFICATIONS

	RTD000	RTD100		RTD000	RTD100
Number of Channels	2	4	Required Power (Steady State)	0.10W (4.2mA @ 24VDC)	
RTD Types	100, 200, 500, 1000 Ohms at 0°C, Platinum, Alpha 0.00385, DIN43760		Required Power (Inrush)	Negligible	
Input Range	-200°C to +850°C		Average RTD Current	0.44mA (100 Ohm Range)	
Input Impedance	>100Meg Ohm 0-4VDC Clamped @ 0 and 4VDC		I/O Points Required	2	4
RTD Excitation Current	2.2, 1.1, 0.44, 0.22mA, 25% duty cycle		Converter Type	Integrating	
RTD Short	Indefinite		Types Supported	DIN43760	
Channel-to-Channel Tracking	0.1°C		Accuracy	± 0.5°C	
Update Time	16 channels/second		Resolution	0.05°C	
Input Transient Protection	Zener/Capacitor		Operating Temperature	0° to 60° Celsius	
Notch Filter	50-60 Hz. Software Selectable		Relative Humidity	5 to 95% Non-condensing	
CE	See Compliance Table at http://www.heapg.com/Support/compliance.htm		Terminal Type	Spring Clamp, Removable	
UL			Weight	9.5 oz. (270 g)	

2 WIRING



Pin	Signal	
	RTD100	RTD000
1E	RTD1 Excitation	RTD1 Excitation
1S	RTD1 Sense	RTD1 Sense
1C	RTD1 Common	RTD1 Common
⌘	Shield	Shield
2E	RTD2 Excitation	RTD2 Excitation
2S	RTD2 Sense	RTD2 Sense
2C	RTD2 Common	RTD2 Common
⌘	Shield	Shield
3E	RTD3 Excitation	
3S	RTD3 Sense	
3C	RTD3 Common	
⌘	Shield	
4E	RTD4 Excitation	
4S	RTD4 Sense	
4C	RTD4 Common	
⌘	Shield	

3 CONFIGURATION

Note: The status of the I/O can be monitored in Cscape Software.

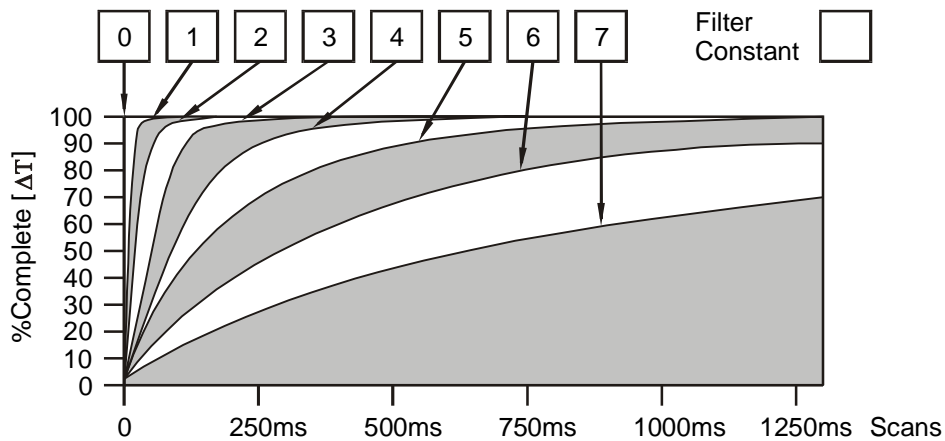
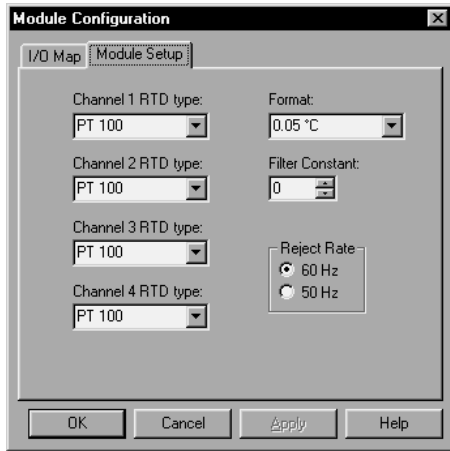
Preliminary configuration procedures that apply to SmartStack™ Modules are contained in the hardware manual of the controller you are using. Refer to the **Additional References** section in this data sheet for a listing of hardware manuals.

Module Setup Tab

- Sensor Type for each channel may be selected independently.
- Temperature format may be set for various C° or F° ranges.
- Filter Constant sets the level of digital filtering according to the chart below.
- Reject Rates sets the frequency level for noise rejection at 50 or 60HZ.

I/O Map Tab

The I/O Map describes which I/O registers are assigned to a specific SmartStack™ Module and where the module is located in the point map. The I/O Map is determined by the model number and location within the SmartStack™. The I/O Map is not edited by the user.



Digital Filtering. The illustration above demonstrates the effect of digital filtering (set with Filter Constant) on module response to a temperature change.

4 TEMPERATURE CONVERSION

For a given module configuration, use the appropriate formula in the table to obtain the actual temperature (°C or °F) that is represented by the value in the %AI register.

Module Configuration	Temperature Conversion	
	Celsius	Fahrenheit
0.05°	°C = %AI / 20	°F = %AI / 20
0.1°	°C = %AI / 10	°F = %AI / 10
0.5°	°C = %AI / 2	°F = %AI / 2

5 INSTALLATION / SAFETY

Warning: Remove power from the OCS controller, CAN port, and any peripheral equipment connected to this local system before adding or replacing this or any module.

- a) All applicable codes and standards should be followed in the installation of this product.
- b) Shielded wiring should be used for best performance such as Omega EXTT-3CU-26S or equivalent.
- c) Shields may be terminated at the module terminal strip.
- d) In severe applications, shields should be tied directly to the ground block within the panel.
- e) Interposing electrical devices (such as relays) in the signal path can cause errors due to resistive imbalance.

For detailed installation and a handy checklist that covers panel box layout requirements and minimum clearances, refer to the hardware manual of the controller you are using. (See the **Additional References** section in this document.)

When found on the product, the following symbols specify:



Warning: Consult user documentation.



Warning: Electrical Shock Hazard.

WARNING: To avoid the risk of electric shock or burns, always connect the safety (or earth) ground before making any other connections.

WARNING: To reduce the risk of fire, electrical shock, or physical injury it is strongly recommended to fuse the voltage measurement inputs. Be sure to locate fuses as close to the source as possible.

WARNING: Replace fuse with the same type and rating to provide protection against risk of fire and shock hazards.

WARNING: In the event of repeated failure, do not replace the fuse again as a repeated failure indicates a defective condition that will not clear by replacing the fuse.

WARNING: Only qualified electrical personnel familiar with the construction and operation of this equipment and the hazards involved should install, adjust, operate, or service this equipment. Read and understand this manual and other applicable manuals in their entirety before proceeding. Failure to observe this precaution could result in severe bodily injury or loss of life.

For detailed installation and a handy checklist that covers panel box layout requirements and minimum clearances, refer to the hardware manual of the controller you are using. (See the **Additional References** section in this document.)

- All applicable codes and standards need to be followed in the installation of this product.
- For I/O wiring (discrete), use the following wire type or equivalent: Belden 9918, 18 AWG or larger.

Adhere to the following safety precautions whenever any type of connection is made to the module.

- Connect the green safety (earth) ground first before making any other connections.
- When connecting to electric circuits or pulse-initiating equipment, open their related breakers. Do not make connections to live power lines.
- Make connections to the module first; then connect to the circuit to be monitored.
- Route power wires in a safe manner in accordance with good practice and local codes.
- Wear proper personal protective equipment including safety glasses and insulated gloves when making connections to power circuits.
- Ensure hands, shoes, and floor are dry before making any connection to a power line.
- Make sure the unit is turned OFF before making connection to terminals. Make sure all circuits are de-energized before making connections.
- Before each use, inspect all cables for breaks or cracks in the insulation. Replace immediately if defective.

6 ADDITIONAL REFERENCES

The following information serves as a *general* listing of Horner controller products and other references of interest and their corresponding manuals numbers. Visit our website listed in the **Technical Support** section to obtain user documentation and updates.

Note: This list is <u>not</u> intended for users to determine which products are appropriate for their application; controller products differ in the features that they support. If assistance is required, see the Technical Support section in this document.	
Controller	Manual Number
XLE Series (e.g., HE-XExxx)	MAN0805
QX Series (e.g., HE-QXxxx)	MAN0798
NX Series (e.g., HE-NXxxx)	MAN0781
LX Series (e.g., LX-xxx; also covers RCS116)	MAN0755
Color Touch OCS (e.g., OCSxxx)	MAN0465
OCS (Operator Control Station) (e.g., OCS1xx / 2xx; Graphic OCS250)	MAN0227
Remote Control Station (e.g., RCS2x0)	
MiniOCS (e.g., HE500OCSxxx, HE500RCSxxx)	MAN0305
Other Useful References	
CAN Networks	MAN0799
Cscape Programming and Reference	MAN0313
Wiring Accessories and Spare Parts Manual	MAN0347
DeviceNet™ Implementation	SUP0326
Wiring Accessories and Spare Parts Manual	MAN0347

7 TECHNICAL SUPPORT

For assistance and manual up-dates, contact Technical Support at the following locations:

North America:
(317) 916-4274
www.heapg.com

Europe:
(+) 353-21-4321-266
www.horner-apg.com