Description

**TC/RTD Temperature Module**

The primary purpose of temperature modules is to interface to the temperature transducers and convert the signal into a digital representation. These modules condition and digitize the inputs at a rate that completely encompasses the signal content and allows for removal of typical noise sources.

The Orbit 60 Series TC/RTD Temperature Input Modules provide six channels of either Thermocouple (TC) or Resistive Temperature Detector (RTD) temperature input sensors.

Each channel of the Orbit 60 Series TC/RTD input module is individually configurable for sensor type and range using Orbit Studio configuration software.

- **TC sensors** – The thermocouple configured channels provide cold junction compensation for any J, K, E, or T Type Thermocouple.

- **RTD sensors** – The RTD configured channels can be connected to a 3-Wire 100 Ohm Platinum 0.00392 RTD, 3-Wire 100 Ohm Platinum 0.00385 RTD, 3-Wire 10 Ohm Copper RTD, or 3-Wire 120 Ohm Nickel RTD.

The RTD/TC inputs reference the internal system ground, and for this reason, should only connect to transducers isolated at the sensing end.

These modules occupy a single slot. The module OK LEDs indicate proper functioning and the LINK LEDs indicate good system communication. Six Channel Status LEDs on the utility side of the module indicate a connected sensor in OK condition.
## TC/RTD Temperature

<table>
<thead>
<tr>
<th></th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thermocouple (TC) Temperature</strong></td>
<td></td>
</tr>
<tr>
<td>Thermocouple</td>
<td>Type J, K, E, T</td>
</tr>
<tr>
<td>Channel Supported</td>
<td>6</td>
</tr>
<tr>
<td>Nominal Error</td>
<td>±1°C</td>
</tr>
<tr>
<td>Max Error</td>
<td>±3°C</td>
</tr>
<tr>
<td><strong>RTD Temperature</strong></td>
<td></td>
</tr>
<tr>
<td>RTD Type</td>
<td>Pt100 (385), Pt100 (392), Ni120, Cu10</td>
</tr>
<tr>
<td>Max Error</td>
<td>±1°C, except Cu10 ±3°C</td>
</tr>
<tr>
<td>Fault Input Tolerance</td>
<td>±24V</td>
</tr>
</tbody>
</table>
Compliance and Certifications

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

EMC
European Community Directive:
EMC Directive 2014/30/EU
Standards:
EN 61000–6–2; Immunity for Industrial Environments
EN 61000–6–4; Emissions for Industrial Environments

Electrical Safety
European Community Directive:
LV Directive 2014/35/EU
Standards:
EN 61010–1;
EN 61010–2–201;

RoHS
European Community Directive:
RoHS Directive 2011/65/EU

Cyber Security
Designed to meet IEC 62443

Maritime*
ABS Rules for Condition of Classification,
Part 1
- Steel Vessels Rules
- Offshore Units and Structures

Functional Safety*
SIL 2
* Approvals pending

Hazardous Area Approvals


CSA/NRTL/C
Class I, Zone 2: AEx/Ex ec nC IIC T4 Gc;
Class I, Zone 2: AEx/Ex nA nC IIC T4 Gc;
Class I, Division 2, Groups A, B, C, D T4;
Class I, Division 2, Groups A, B, C, D T4 (N.I.);
T4 @ Ta= -30°C to +65°C (-22°F to +149°F)

ATEX/IECEx

Ex II 3 G
Ex ec nC IIC T4 Gc
Ex nA nC IIC T4 Gc
T4 @ Ta= -30°C to +65°C (-22°F to +149°F)
## Ordering Information


### RTD / TC Temperature Module

<table>
<thead>
<tr>
<th>Ordering Option</th>
<th>Description</th>
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<tr>
<td>60R/INP07</td>
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**AAA – Hazardous Area Certifications**

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>00</td>
<td>No Hazardous Area</td>
</tr>
<tr>
<td>01</td>
<td>CSA/NRTL/C (Class I, Div 2)</td>
</tr>
<tr>
<td>02</td>
<td>Multi (CSA, ATEX, IECEx)</td>
</tr>
<tr>
<td>XXX</td>
<td>Country Specific Approvals</td>
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**BB – SIL Level**

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<tbody>
<tr>
<td>00</td>
<td>No SIL</td>
</tr>
<tr>
<td>02</td>
<td>SIL 2</td>
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