

# ControlWave<sup>®</sup> PAC Resistance Temperature Detector Module and Thermocouple Module

The Resistance Temperature Detector (RTD) module and the Thermocouple (TC) module allow the ControlWave<sup>®</sup> PAC to accurately monitor a wide range of temperatures.

## RTD Module

The Resistance Temperature Detector (RTD) provides four isolated inputs. The RTD module monitors the temperature signal from an RTD sensor within a fixed range. The RTD module provides four channels for measuring the resistance of 2-wire, 3-wire, or 4-wire 100-ohm platinum RTD sensors. The RTD module determines the RTD type (2, 3, or 4-wire) by the position of a jumper on the terminal block.

Each channel contains signal conditioning circuitry, a 24-bit Analog to Digital Converter (ADC), and current limiter for over-voltage protection. Each channel provides electrical isolation of 500 Vdc (channel to channel/system bus) and surge protection.

## TC Module

The TC module (also referred to as the Low-Level Analog Input or LLAI module) provides six individually isolated differential inputs for thermocouples or  $\pm 10$  mV inputs, plus one prewired cold junction compensation (CJC) input for temperature compensation at the terminal block.

Each channel contains a 24-bit Analog to Digital Converter (ADC), and an over-voltage protection. Each channel provides

electrical isolation of 500 Vdc (channel to channel/system bus) and surge protection.

The module provides CJC at the terminal block with a factory installed CJC board and built-in RTD sensor.

The CJC board is factory installed on local or remote terminal blocks and is electrically isolated

## Local or Remote Terminations

I/O modules available are factory configured for either local terminations that consist of one 40-point terminal block assemblies or remote terminations that consist of 4 DIN-rail mountable terminal block mass termination headers. Terminations are pluggable and accept a maximum wire size of 14 AWG (American Wire Gauge).

I/O modules are designed to maximize usability while minimizing installation, maintenance, and system downtime costs. A pull down door provides front panel wiring terminal access for technicians. The bezel and the terminations can be easily removed from the I/O module to make wiring even easier.

Remote terminations provide a convenient alternative to the standard direct connect termination. Remote terminations allow a concentration of electrical connections from one or more controllers to be located in a single area. For more information on remote terminations or terminal blocks, refer to Product Data Sheet CWPAC.





Common Mode Rejection	120 db
Normal Mode Rejection	80 db
Electrical Isolation	500 Vdc channel to channel and channel to bus
Surge Suppression	180 Vdc transorb between signal and ground
Status Indicator	Normal, Over/Under Range, and module OK/FAIL LEDs
Cold Junction Compensation	RTD sensor on terminal block
<b>Power</b>	
Input Voltage Range	Powered from Backplane
<b>Physical</b>	
Dimensions	177.8 mm H x 46.2 mm W x 165.1 mm D (7 in. H x 1.82 in. W x 6.5 in. D)
Weight	0.66 kg (1.45 lb)
Wiring	Up to 14 American Wire Gauge (AWG) local termination or optional remote termination
<b>Environmental</b>	
Same as the ControlWave PAC in which it is installed	
<b>Approvals</b>	
Same as the ControlWave PAC in which it is installed	

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