HORNER ELECTRIC ADVANCED PRODUCTS GROUP

HE693RTD665-18 Isolated RTD Module Supplement Sheet

Description

The Horner Electric Isolated Resistance Temperature Detector (RTD) Input Modules allow RTD temperature sensors to be directly connected to the PLC without external signal processing (transducers, transmitters, etc.). All analog and digital processing of the RTD signal is performed on the module. These backplane-isolated (or bus-isolated) modules have programmable resolutions in increments of 0.05°C, 0.05°F, 0.1°C, 0.1°F, 0.5°C, 0.5°F. The module features six channels whose temperature values are reported to the 6 %AI input registers. There are 6 %I alarm bits and one setpoint alarm for each channel. Alarm setpoints are configured for each channel using 6 %AQ registers. All modules feature support for the following RTD types: PT-100 (platinum, 100Ω at 0°C), Ni-120 (nickel, 120Ω at 0°C), Cu-10 (Copper, 10Ω at 25°C), Pt-1000 (platinum, 1000Ω at 0°C), and TD5R Silicon (Microswitch).

The HE693RTD665-18 is a six-channel module with 1500V AC isolation to the PLC backplane and 5V AC isolation channel-to-channel. The HE693RTD665-18 also has a 50Hz notch filter. The purpose of this filter is to eliminate noise generated by power lines. This module is different from the basic HE693RTD665 due to the fact that the HE693RTD665-18 supports RTD types CU50, CU100 and TCP21, in addition to the standard types.

Illustration

- **For an illustration of the HE693RTD665-18, see the standard instructional manual, "Isolated RTD Modules Product Specifications and Installation Data".**

Specifications

The HE693RTD665-18 was specifically designed to support the RTD types CU50, CU100 and TCP21. The specifications for the RTD665-18 are shown on the following page. Also included on the next page is a table of the configuration parameters for this module. For all other information required, see the standard instructional manual, "Isolated RTD Modules Product Specifications and Installation Data".

Table of Specifications

Specification	RTD665-18	Specification	RTD665-18
Power Consumption	200mA@5VDC	I/O Points Required	6%AI, 6%AQ, 16%I
Number of Channels	6	Input Impedance	>1000 Megohms
Types Supported	Pt-100E @ -100 to 850ºC	Input Transient Protection	Suppression Diode
	Pt-100C @ -100 to 650ºC	A/D Conversion Type	18-bit, Integrating
	Ni-120 @ -100 to 270ºC	Update Time	50 Channels per second
	Cu-10 @ -200 to 260ºC	Average RTD Current	330 microamps
	Pt-1000 @ -100 to 850ºC	Channel-to-Channel Tracking	0.1ºC
	TD5R Si @ -40 to 150ºC	Operating Temperature	0 to 60ºC (32 to 140ºF)
	CU100 @ -200 to 200ºC		
	CU50 @ -200 to 200ºC		
	TCP21 @ -50 to 160ºC		
Resolution	0.05ºC, 0.05ºF, 0.1ºC, 0.1ºF, 0.5ºC, or 0.5ºF	Relative Humidity	5% to 95%, non-condensing
Accuracy	+/- 0.3ºC	Channel-to-Bus Isolation	1500V AC
RTD Short	Indefinite without damage	Channel-to-Channel Isolation	5V AC

Table of Configuration Parameters

%I Size	%AI Size	%I Size	Byte 1	Byte 2	Byte 3	Byte 4
16	6	6	Smart Module	Digital Filtering	RTD sensor type	Format Resolution
			1	000 - 111 Binary Numbers Only (See Digital Filtering Chart)	0: PT100E	00: 0.05°C
					1: Ni120	01: 0.05°F
					2: Pt100C	02: 0.1°C
					3: Cu10	03: 0.1°F
					4: N/A	04: 0.5°C
					5: PT1000	05: 0.5°F
					6: TD5R	
					7: CU100	
					8:CU50	
					9:TCP21	