CCI Digital Temperature Probe "DigiTemp"

Overview

The CCI Digital temperature probe is a unique design of a complete probe / sender combination. It is designed to be interfaced easily to a PLC based Temperature Monitoring / Control system. Using only one digital PLC input, it is possible to connect up to four separate probes and acquire data from them. This reduces the number of input channels required and simplifies the installation wiring, as up to 4 probes are simply daisy chained in parallel per PLC input channel.

Probe Details

The sender is packaged into a standard ANSI 50mm "hockey-puck" housing, which is installed into the head of the industrial probe assembly. The stainless steel probe stem is manufactured with a digital temperature sensor installed into the tip. The probe can read temperatures from –55 to +125°.

Function

The digital temperature sensor reads the temperature information, which is then transferred to the Micro-Controller in the sender. The Micro-Controller transmits the temperature as a series of low speed on / off pulses which can be easily read by a standard digital input on a PLC. Data is transferred to the PLC in a 16-bit format (14-bit temperature and 2-bits of address information). Using a few lines of PLC code, temperature measurements from up to 4 probes per input are acquired into four separate registers. These are then easily accessed for a control algorithm or display etc.

Features

The sender incorporates two diagnostic LED's, that give an immediate indication of applied power and data transmission status. Connectors are high quality Industrial types. If more than 1 probe per input is intended, the address of each probe is set with a simple jumper on the sender. The final assembly of the sender is potted in 2-pack resin for ruggedness, long-life and to protect against moisture ingression.

Specifications

Model No	: CCI-1045	
Data format	: Start pulse followed by 16 data-bit 2's complement binary code, MSB first °C x 10.	
Start Pulse	: 500mS on + 100mS off	
Data Pulse	: Binary 0 = 100ms on + 200mS off, Binary 1 = 200mS on + 100mS off.	
Rate	: One reading approximately every 6 seconds.	
Address Select	: 4 unique addresses – set by jumper link. **NOTE: Probes are shipped set to address 1**.	
Accuracy	: -10° to + 40°	+/- 0.25°
	-20° to + 80°	+/- 0.5°
	-55° to -20° and 80°-125°	+/- 1°
Resolution	: 0.1°	
Power Supply	: 24VDC @ 4mA (min 16V max 32V)	
Connection (3)	: 1) +24VDC, 2) Data-Output, 3) 0VDC	
Output	: 24VDC source 50mA max. (Suggested load, 2 – 5 K-Ohm)	
Output Protection	: Output is protected against short circuit, overload, reverse-polarity and data clash.	
Probe Stem	: Standard 200mm length. (Or to customer specified length) Spring loaded probe stems are available on request.	