

Fusion.TC EtherCAT Temperature Controller with Built-in Functional Safety

Description

DDI's Fusion.TC expands Fusion.IO family of OEM tailored control solutions, adding modular temperature control for measuring, monitoring & controlling temperature on mission critical OEM process machinery. Fusion.TC supports virtually all thermocouple types, with built-in *cold junction sensing*. RTD types PT100 & PT1000 with 2, 3, or 4-wires are also supported. Fusion.TC is certified for use as a safety rated temperature interlock device when equipped with DDI safety rated slot card model 21-200682, conforming to ISO 13849-1 (Cat3 /PL e) & IEC 620161 & ICE 61508 (SIL CL3 /SIL3). Over & undertemperature setpoint monitors enable use of Fusion.TC as part of a machine safety interlock system when programmed using Interlock Builder software. PID control with fast autotuning enables precise control of process temperature in the most demanding environments. Fusion.TC, like Fusion.IO supports I/O expansion using Remote I/O modules (RIMs). Fusion.TC's compact size & RIM expansion enables placement of I/O where needed on the machine, eliminating costly wiring & I/O cabinets and recovering valuable space on the machine.

Application of Fusion.IO as a part of machine safety system requires user installation and selection of attached devices be in accordance with the standards of the machine safety certifying body. Consult a DDI Solution Engineer for information on best practices for machine safety.

Fusion.TC Description & Ratings	
Functionality	Multi-channel Temperature Control
Slot Card Support	Analog, Analog Temperature & Digital
Remote I/O Module Support	up to four (4) RIMs
Control Algorithm, # Loops	PID, up to 48 loops
Control outputs	Digital PWM for SSR & SCR control
Input voltage (note 1)	24VDC
Operating temperature, °C	0 to 55 °C
Safety Rating (note 2)	IEC 61508, SIL3; ISO 13489 Cat3/PL e
Thermocouple Support	
# Channels	up to 64 safe up to 128 non-safe
Types supported	B, E, J, K, N, R, S, T
Accuracy @ 25°C (note 3)	+/- 1 °C
Sampling rate	250Hz
RTD Support	
# Channels	up to 32 safe
Types supported	PT100, PT1000
Accuracy @ 25°C (note 3)	+/- 0.5 °C
Sampling rate	333 Hz
<small>(note 1) SELV rated power supply is required for machine level functional safety (note 2) SIL3 rating requires redundant sensors, SIL2 a single sensor; machine level safety requires strict adherence to best practices for sensor selection & placement. (note 3) Accuracy measured at Fusion.IO connector, with connector placement conforming to Fusion.IO reference design criteria.</small>	

