TC292

DUAL CHANNEL AC/DC BUFFER AMPLIFIER

Features

- ☐ **Switch Selectable Compensation for Tyes E, J, K, and T Thermocouples**
- ☐ **Switch Selectable Gain Steps and Gain Vernier for ±10Vdc Output with Inputs =9mVdc**
- ☐ **Non-Compensated Mode for differential and Single Ended DC Amplifier Operation**
- ☐ **±100% Zero Suppression in Both Operating Modes**
- ☐ **Selectable Low Pass Filters**
- ☐ **=1 MegOhm Differential Input Impedance**
- ☐ **Linearity 0.05%FS**

DESCRIPTION

The TC292 is a versatile single-channel thermocouple amplifier with cold-junction compensation for types E, J, K, and T Thermocouples. In addition, it offers a non-compensated mode for use as a single-ended or differential input DC amplifier.

Front Panel Selector switches for Operating Mode, Cold Junction Compensation, Gain Range, Low Pass Filter Range, and Suppression permit convenient monitoring of the DC output and suppression levels. Suppression authority equal to 100% of the selected gain step is provided with a board-mounted switch to engage the suppression circuit and select the polarity.

Because the output in the thermocouple mode is linear with respect to input voltage, and not linearized to the specific thermocouple curves, look-up tables or other standardization techniques may be used for conversion to measured temperature in more exacting measurements.

INPUT OUTPUT CONNECTIONS

The TC292 can be installed in any module position in the MC170 case, which is internally bussed to supply the required operating voltages to all module positions. Signal input-output connections are made at the terminals on the rear of the MC170 case. If these are wire-wrap terminals, connection should be made in accordance with the connector information in the TC292 Instruction Manual. If the MC170 case is to be supplied with screw-terminal strips, the TC292 should be installed only in module positions wired per MC170T Option A.

Specifications

Input Signal Range:	±9mV FS to ±100mVdc FS for ±10Vdc FS output.
Gain Switch Positions:	High: (9mV to 25mV) Medium: (18mV to 50mV) Low: (36mV to 100mV)
Gain Ajust (“SPAN”) Potentiometer:	Continuous adjustment from 40% to 110%
Gain Switch Accuracy:	±1% of full scale without readjustment.
Thermocouple Cold Junction Compensation:	Switch selectable for types E, J, K, and T; Reference temperature variation ±5°C ±25°C.
Suppression Range:	0 to 100% of the selected range; polarity determined by board-mounted switch.
Linearity:	0.05% FS output, referred to input.
Low Pass Filter:	DC to 1Hz and DC to 100Hz, switch selectable.
Operating Temp. Range:	-20° to +70°C (0° to + 160°F)
Input Power:	±15Vdc supplied by MC170 Case
INPUT CHARACTERISTICS	
Safe Differential Voltage:	±20V
Differential Input Voltage:	=1 Meg W in parallel with 0.1mF.
Common Mode Voltage:	±10V
Common Mode Rejection:	=100dB at 60Hz
OUTPUT CHARACTERISTIC	
Output:	0 to ±10Vdc, 0-2mA, short-circuit proof.
Output Impedance:	W, nominal
Output Noise:	=5mV/rms at maximum gain and fast filtering

8626 Wilbur Avenue - Northridge, CA 91324-4498
(818) 886-2057 - FAX (818) 886-6512
http://www.validyne.com - e-mail to sales@validyne.com