

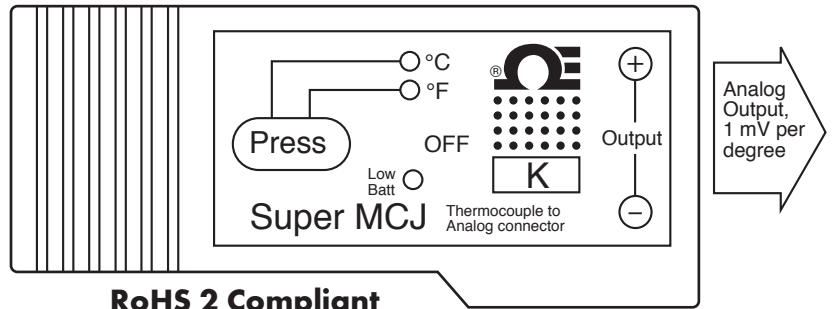
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# Super MCJ

SMCJ-J, SMCJ-K, SMCJ-T

Thermocouple Input (SMP or OST Connectors)



RoHS 2 Compliant

## Thermocouple-to-Analog Connector

INSTRUCTION SHEET

M2813-0103

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### GENERAL DESCRIPTION

This is a Thermocouple to Analog Connector. It converts a thermocouple input signal (Type J, K, or T) to a linear, compensated, amplified analog output. The unit provides 1mV/°F or 1mV/°C analog output. The analog output can go to a strip chart recorder or a digital voltmeter for temperature monitoring.

The unit is powered by a single AA size lithium battery. In order to install the battery, remove the back cover and place the battery on the PC board. The battery polarity is indicated on the PC board. If the battery is installed reverse, the unit will not power up. The back cover is mounted to the front cover via two mounting holes.

The input connection can be SMP or OST type connections. The output connection is standard banana plug or jack. The plastic case and the rubber gasket Bumper Band® provides a rugged and sealed connector design. Figure 1 provides a functional flow chart of how the unit operates. This unit is operated using a single tactile feedback button **Press**.

There are 3 LEDs built into the connector. The °C green LED flashes once every 2 seconds when the output provides 1mV/°C. The °F green LED flashes once every 2 seconds when the output provides 1mV/°F. If the input is open the °C and °F green LEDs

both flash alternately once a second.

When the battery voltage drops below a certain level, a red LED starts to flash once a second. This is a low battery indication. The battery must be replaced with a fresh battery immediately.

#### Field Adjustments

The unit is field adjustable by removing the back cover and accessing the three potentiometers. R17 provides offset adjustment when the unit is in mV/°F mode. R42 provides offset adjustment when the unit is in mV/°C mode. R32 provides span (gain) adjustment either in mV/°F or mV/°C mode.

### SPECIFICATIONS

#### Measuring Temperature Range:

Type J: -100 to +750°C (-148 to +1382°F)  
Type K: -100 to +1250°C (-148 to +2282°F)  
Type T: -100 to +350°C (-148 to +662°F)

#### Accuracy @ 75°F ambient temperature across the range:

Type J: ±1.4°C (±2.5°F)  
Type K: ±3°C (±5°F)  
Type T: ±2°C (±3°F)

**Input Connection:** SMP or OST connector

**Input Impedance:** 3M-ohms

**Output Connection:** Standard Banana Plug or Jack

#### Thermocouple Break Protection:

Output goes Upscale (std.)  
°F & °C Green LEDs flash once a second

**Output:** 1mV/°F or 1mV/°C, °F or °C Green LEDs flash once every 2 seconds

**Output Load:** 1K-Ohms min.

**Power:** One AA size Lithium Battery, 3.4 to 3.6 VDC 1900 mAh

#### Battery Life @ 75°F Ambient Temperature:

1440 hours (60 Days), continuous, no load

#### Low Battery Indication:

Red LED flashes once a second,

#### Response Time:

(0 to 63% of Final value): 150 msec

#### Operating Temperature:

0 to 50°C (32 to 122°F)

#### Thermal Zero Drift:

0.05 mV/°C (0.05 mV/°F) ambient temperature change

#### Operating Relative Humidity:

95% or less, without condensation

#### Dimensions:

4"L x 2"W x 1"H (10L x 5W x 2.5H cm)

**Weight:** 2.4 oz (67g)

### OTHER IMPORTANT CONSIDERATIONS BEFORE OPERATION

#### CAUTION

⚠ Follow all the safety precautions and operating instructions outlined in the manual.

⚠ The installation category is one (1).

⚠ There are no user replaceable fuse in this product.

⚠ Maximum input voltage to earth: 30 Vrms (42.4 peak) or 60 Vdc.

⚠ Avoid contact with hazardous live parts. The thermocouple probe should not be connected to hazardous live voltages (less than max. input voltage to earth).

⚠ The output terminals of this product are

for use with equipment (digital multimeter, chart recorder, etc.) which have no accessible live parts. Such equipment should comply with all the applicable safety requirements.

⚠ Do not open batteries, dispose of in fire, heat above 100°C (212°F), expose contents to water, recharge, put in backwards, mix with used or other battery types. It may cause explosion, leakage or personal injury.

⚠ Use cloth dampened with warm water and soap to clean the outside case and label. Do not use flammable liquid solutions for cleaning. Do not immerse the product in water.

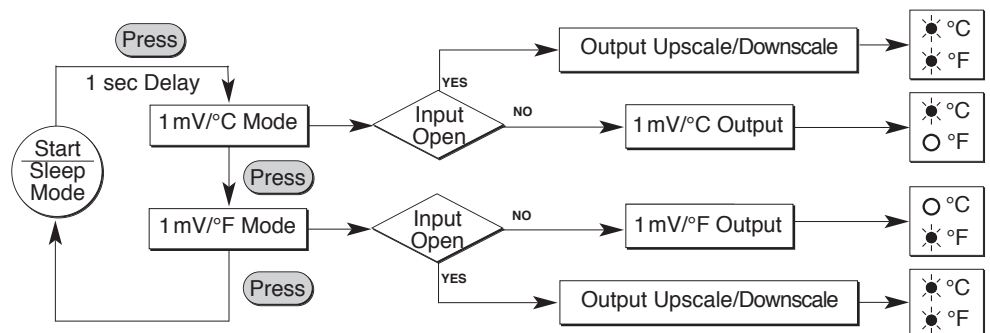


Figure 1, Functional Flow Chart

### Accessories

Model No.	Description
OM-NOMAD-BATT	Replacement Battery
SMCJ-CAB	Cable Wire (Red & Black) 36" Long



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If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

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1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

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