

Field-mounted Two-wire Signal Conditioners 6-UNIT

THERMOCOUPLE TRANSMITTER

MODEL **6TS**

MODEL & SUFFIX CODE SELECTION

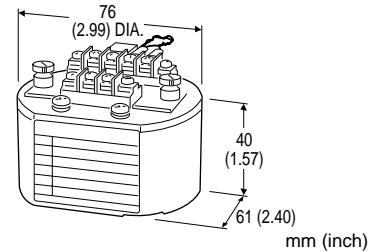
MODEL _____ 6TS-□□
 INPUT THERMOCOUPLE _____
 1 : (PR)
 2 : K (CA)
 3 : E (CRC)
 4 : J (IC)
 5 : T (CC)
 6 : B (RH)
 7 : R
 8 : S
 0 : Specify
OUTPUT
 4 – 20mA DC
SUPPLY VOLTAGE
 13 – 28V DC
OPTIONS _____
 /BL : Downscale burnout

ORDERING INFORMATION

Specify code number and variables.
 • **Code number** (e.g. 6TS-2/BL)
 • **Temperature range** (e.g. 0 – 800°C)

GENERAL SPECIFICATIONS

Connection: M3 screw terminals
 (nickel-plated steel; torque ≤0.6 N·m)
Housing material: die cast aluminium
Isolation: input to output
Adjustments: approx. -0.5 – +5% for zero, approx.
 ±5% for span (behind the access cover)
Output limit: approx. 120%
Burnout protection: upscale standard; downscale
 optional
Linearization: standard
Cold junction compensation: CJC sensor attached
 to the input terminals



Functions & Features

- Accepting direct input from a thermocouple and providing a standard 4 – 20mA DC signal
- Linearization
- Burnout protection
- High-accuracy cold junction compensation
- Rugged enclosure

Typical Applications

- High-accuracy cold junction compensation benefits narrow span measurements
- 0.1µA burnout sensing enables long distance transmission with minimum offset drifts
- Electric furnace (isolation)

INPUT & OUTPUT

■ **INPUT:** thermocouples
Minimum span: 3mV
Zero suppression/elevation: max. 1.5 times span
Input resistance: 20kΩ minimum
Burnout sensing: 0.1µA
Temperature range

T/C	USABLE RANGE		MIN. SPAN	
	°C	°F	°C	°F
(PR)	0 to 1760	32 to 3200	370	670
K (CA)	-270 to +1370	-450 to +2500	75	140
E (CRC)	-270 to +1000	-450 to +1830	50	100
J (IC)	-210 to +1200	-350 to +2190	60	110
T (CC)	-270 to +400	-450 to +750	75	140
B (RH)	0 to 1820	32 to 3300	780	1440
R	-50 to +1760	-50 to +3200	360	680
S	-50 to +1760	-50 to +3200	380	700

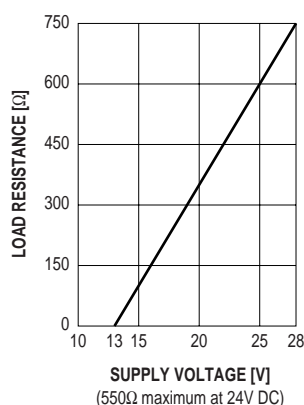
Remark: For the temperatures that range below 0°C, the transmitter may partially not satisfy the described accuracy. Consult factory.

■OUTPUT: 4 – 20mA DC

Load resistance vs. supply voltage:

$$\text{Load Resistance } (\Omega) = \frac{\text{Supply Voltage (V)} - 13 \text{ (V)}}{0.02 \text{ (A)}}$$

(including leadwire resistance)



INSTALLATION

Supply voltage: 13 – 28V DC

Operating temperature: -5 to +70°C (23 to 158°F)

Operating humidity: 30 to 90% RH (non-condensing)

Mounting: DIN rail with mounting plate A-31;
surface mounting with adapter plate A-01;
spring clip A-02 for 3-inch hub

Dimensions: W76×H54.5×D61 mm (2.99"×2.15"×2.40")
See General Spec. Sheet Figure A-2.

Weight: 220 g (0.49 lbs)

Terminal assignment: See General Spec. Sheet Figure B-2.

PERFORMANCE in percentage of span

Accuracy: ±0.4% (at over 400°C or 750°F for R, S and PR; over 770°C or 1420°F for B)

Cold junction compensation error
(at 25°C ±10°C or 77°F ±18°F)

K, E, J & T: ±0.5°C or ±0.9°F maximum

S, R & PR: ±1°C or ±1.8°F maximum

Temp. coefficient: ±0.015%/°C (±0.008%/°F)

(at over 400°C or 750°F for R, S and PR;
over 770°C or 1420°F for B)

Response time: ≤0.5 seconds (0 – 90%)

Burnout response: ≤10 seconds

Insulation resistance: ≥100MΩ with 500V DC

Dielectric strength: 500V AC @1 minute

(input to output)

1500V AC @1 minute

(input or output to ground)

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

