

Description

Moore Industries' 2-wire TCX Thermocouple Transmitter accepts any standard ISA Thermocouple input and provides a proportional current output.

Low output ripple makes the loop-powered TCX ideal for input to a process computer. It is also perfect for interface with a recorder, indicator or a controlling instrument.

The TCX's advanced circuitry minimizes the problems commonly associated with temperature measurement via a thermocouple. It automatically compensates for changes in the reference junction temperature. Complete isolation with high common mode noise rejection prevent electrical interference from affecting the accuracy of the transmitted signal. The TCX also incorporates a low leakage differential input amplifier that eliminates offset error over the operating temperature range, even when thermocouple extension wires are used.

The TCX is available with a wide range of options including complete RFI/EMI protection. For details, see the back page.

Moore Industries offers a complete line of sensors, thermowells and fittings for use with the TCX. For information, see our Temperature Systems data sheet (#3.99).

Ordering Specifications

To order, use the bold face data from the Ordering Specifications section of the Specifications table (see back page). For assistance, refer to the model number example located at the bottom of the table.

Certifications (see options where applicable):



CSA General Location; Explosion-proof, Class I, Division I, Groups B, C and D

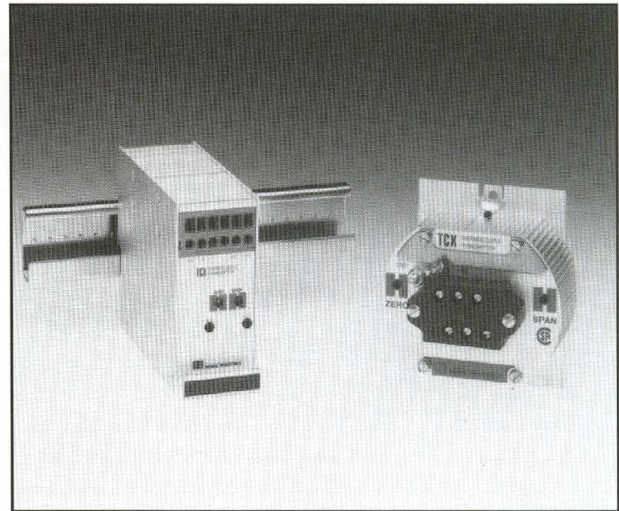


FM, Explosion-proof, Class I, Division I, Groups B, C, D (refer to FM prefix on enclosures)



CENELEC, Flameproof, EExd IIC T6 (refer to F prefix on enclosures)

SAA, Explosion-proof Ex d IIC T6 IP66
Intrinsic Safety, Ex ia IIC T4 (see-SAA option)
Type N Ex n IIC T6 IP65



Versatile mounting options allow the TCX to be mounted in tight spaces or in rugged field environments.

Features

- **Standard inputs and outputs.** The TCX accepts input from all standard ISA thermocouple types. It provides a highly accurate 4-20mA or 10-50mA output.
- **Input/output isolation.** Eliminates signal inaccuracies caused by ground loops, motor noise, and other electrical interference.
- **RFI/EMI option.** When the -RF option is added, the TCX is resistant to the harmful effects of radio frequency and electromagnetic interference.
- **Versatile mounting options.** The TCX is offered in a rugged hockey-puck housing that mounts in an explosion-proof enclosure. The compact DIN-style rail-mount housing is ideal for high-density installations.

TCX

Thermocouple Transmitter

Specifications

<p>Performance</p> <p>Calibration Capability: ±0.1% of span (linearity and repeatability) Frequency Response: 10Hz (3dB point) Bias Current: Limited to 20 nanoamperes Burnout Protection: Upscale drive standard; Downscale drive is optional (see -DD option) Isolation: Input and output are transformer isolated with no dc connections between them Common Mode Rejection: Exceeds 100dB at 60Hz with a limit of 500V rms Ripple: Less than 20mV P/P maximum Line Voltage Effect: ±0.01% of span/Vdc</p> <p>Ambient Temperature Range: -29°C to +82°C (-20°F to +180°F) Effect: ±0.018%/°C (±0.01%/°F) over above range (±0.036%/°C with -LSA option)</p> <p>Adjustments Type: External multiturn potentiometers Span: Adjusts output to full scale over entire input range Zero: Adjusts output to 0% for offsets of up to ±10% of full scale input</p> <p>Weight 187 grams (6.6 ounces)</p>	<p>Ordering Information</p> <p>Unit TCX Thermocouple Transmitter</p> <p>Input Thermocouple Type: J, K, T, R, S, E Input Range: 2-5MVFS 2-5mV full scale 5-10MVFS 5-10mV full scale (-LSA option required) 10-20MVFS 10-20mV full scale 20-50MVFS 20-50mV full scale</p> <p>Output Current: 4-20MA into 600 ohms with 24Vdc power supply 10-50MA into 600 ohms with 42Vdc power supply</p> <p>Power 12-42DC (loop-powered on output side)</p> <p>Options -DD Downscale drive -EZ Elevated zero (specify input for 0% output) -FA Front accessible terminal block (either -FA or -RA required on DIN housing) -LSA Low input span (5-10mV full scale input) -NA Increased safety Ex n IIC T6 IP65 (Australia) (Req. WTD enclosure)(DIN only) -RA Rear accessible terminal block (either -RA or -FA required on DIN housing) -RF RFI/EMI protection rates 50V/m - ABC = 0.1% F.S. when tested according to SAMA Standard PMC 33.1 -RTB Removable terminal block -SAA Intrinsic safety Ex ia IIC T4</p>	<p>Housing DIN Aluminum DIN -style rail-mount housing (see the DIN housing sheet) FL Hockey-puck housing with flanges for surface or relay track mounting (see the FL/HP housing sheet) HP Hockey-puck housing with spring clips for mounting in an explosion-proof enclosure (see the FL/HP housing sheet) HPD Hockey-puck housing with bottom clip for mounting on top of another hockey-puck transmitter in a high dome explosion-proof enclosure (see the HPD housing sheet) 2LS* Hockey-puck housing mounted in a 2-hub, low dome, solid cover explosion-proof enclosure (3-hub versions also available; see the EXPL housing sheet) 2HG* Hockey-puck housing mounted in a 2-hub, high dome, glass cover, explosion-proof enclosure; a hockey-puck indicator may be mounted "piggy-back" on top of the TCX (3-hub and solid cover versions also available; see the EXPL housing sheet)</p> <p>• F (prefix) on explosion-proof enclosures indicates CENELEC flameproof approved EExd IIC T6 (e.g., F2LS) FM (prefix) on explosion-proof enclosures indicates FM approved Class I, Division I, Groups B, C, D (e.g., FM2LS) P (suffix) indicates explosion-proof enclosure comes equipped with base plate and U-bolts for mounting on a 2-inch pipe (e.g., 2LSP) S (suffix) indicates explosion proof enclosure Ex d IIC T6 IP66 (Australia)</p>
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To order, specify: Unit / T/C Type, Range / Output / Power / Options [Housing]
Model number example: TCX / J20-50MVFS / 4-20MA / 12-42DC / -FA [DIN]



United States
Tel: (818) 894-7111
FAX: (818) 891-2816

Australia
Tel: (02) 9525-9177
FAX: (02) 9525-7296

Belgium
Tel: 03/235.35.44
FAX: 03/271.00.17

Netherlands
Tel: (0)344-617971
FAX: (0)344-615920

United Kingdom
Tel: 01293 514488
FAX: 01293 536852

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