

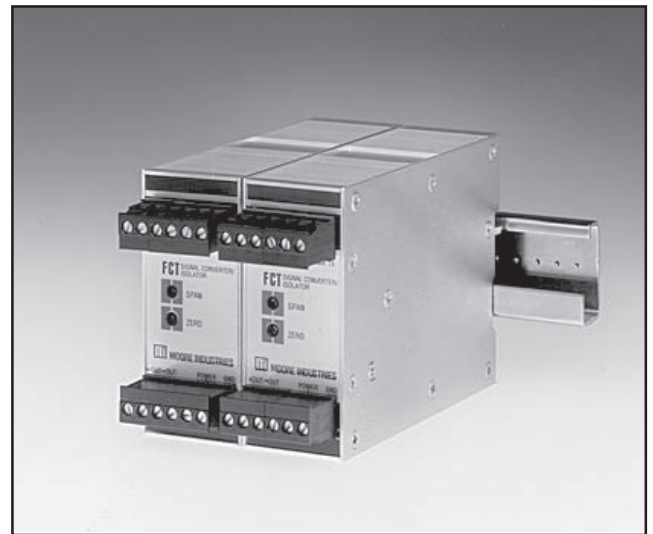
Description

Moore Industries' 4-wire FCT can be used as a signal isolator, converter, and/or repeater. Compact, yet highly versatile, the FCT features field-configurable input and output parameters, and universal power input. The FCT is the ideal plant standard.

Isolator—The FCT provides total isolation between the signal from a non-isolated signal transmitter and a receiving device. This eliminates faulty readings in process measurement and control equipment caused by ground loops, electrical interference, or motor noise.

Converter—The FCT's wide range of input and output choices allows it to act as a precise interface between transmitters, transducers, controllers and control systems with dissimilar signals.

Repeater—The FCT can be used to increase (boost) drive capability to a process loop to allow installation of additional instruments on the loop. The FCT also is excellent for splitting a secondary signal from a process loop to a recorder, indicator or other similar device.



The universal mounting clip of the DIN-style FCT allows quick installation on a G-type or Top Hat rail in a control room or in a field-mounted cabinet.

Ordering Specifications

To order, use the bold face data from the Ordering Specifications section of the Specifications table on page 2. For assistance, refer to the model number example located at the bottom of the table.

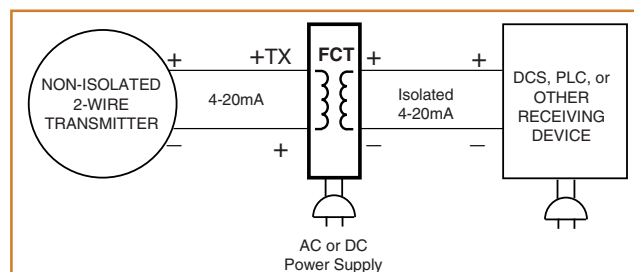


Figure 1. The FCT will supply power to a 2-wire transmitter while performing signal isolation.

Certifications (see Options listing where applicable)



Canadian Standards Association
General (Ordinary) Locations; NRTL/C



City of Los Angeles
General Locations

Features

- **Configurable inputs and outputs.** Universal FCTs can be easily field-configured to accommodate all common input and output signal types (4-20mA, 1-5V, 0-10V, etc.)
- **Universal power input.** The FCT automatically accepts all ac (90-260Vac) and dc (22-300Vdc) power supply inputs. No adjustments, such as jumper changes, are required.
- **Unusual inputs and outputs.** A wide range of non-standard input/outputs types are offered for applications with uncommon interface requirements.
- **Complete input/output/power isolation.** Exceptional signal isolation of 1000Vrms stops ground loops from affecting the integrity of a transmitted process signal.
- **Powers a 2-wire transmitter.** Transmitter excitation is standard on all universal (PRG) input/output FCTs.
- **RFI/EMI protection.** Inherent 10V/m RFI/EMI immunity protects the FCT in most applications. For especially noisy environments, choose the -RF option, which provides 30V/m protection.

Specifications

<p>Performance Accuracy: $\pm 0.1\%$ of span (includes adjustment resolution and linearity)</p> <p>Isolation: 1000Vrms between input, output, and power (500Vac with -RF option)</p> <p>Dielectric Withstand Capability: 1500Vrms between case, power, inputs, and outputs (500Vac with -RF option)</p> <p>Frequency Response: 5Hz at -3dB point</p> <p>Ripple: 10mV peak-to-peak at maximum span and max. load resistance</p> <p>Common Mode Rejection: Exceeds 120dB @ 60Hz with a limit of 1000Vrms</p>	<p>Performance (continued) Max. Input Overrange:</p> <p>For all voltage inputs: $\pm 60V$</p> <p>For 0-20mA inputs: $\pm 50mA$</p> <p>For 0-50mA inputs: $\pm 100mA$</p> <p>RFI/EMI Effect: 10V/m - ABC - $\pm 0.5\%$ of full scale when tested according to SAMA Standard PMC 33.1 (see -RF option for enhanced protection)</p> <p>Load Effect: $\pm 0.01\%$ of span from zero to maximum load resistance</p> <p>Power Supply Effect: $< 0.05\%$ of span over the full power supply range</p>	<p>Performance (continued) 2-Wire Transmitter Excitation: 24Vdc (nominal), supply at 25mA (standard on all PRG units)</p> <p>Ambient Conditions Ratings Temperature Range: $-30^{\circ}C$ to $+82^{\circ}C$ ($-22^{\circ}F$ to $+180^{\circ}F$)</p> <p>Effect on Accuracy: $\pm 0.015\%$ of span/$^{\circ}C$ maximum change over $-30^{\circ}C$ to $+70^{\circ}C$ range ($\pm 0.008\%$ of span/$^{\circ}F$ over -22 to $+158^{\circ}F$ range)</p> <p>Adjustments Type: External multiturn potentiometers</p> <p>Span: $\pm 10\%$; Zero: $\pm 5\%$</p> <p>Weight 300 grams (approximately 0.6 lbs)</p>
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Ordering Information

Unit	Input	Output	Power	Options	Housing
FCT	<p>PRG Universal (programmable) Unit can be field-configured via connection terminals on front panel and internal, solderless jumpers for any input listed under "FACTORY CONFIGURATION", below (PRG input default is 4-20mA. PRG input available only with PRG output.)</p> <p>FACTORY CONFIGURATION Specify one of these inputs for unit with jumpers* set at the factory for: 0-20mA into 50 ohms 4-20mA into 50 ohms 0-50mA into 20 ohms 10-50mA into 20 ohms 0-5V into 1 megohm 1-5V into 1 megohm 0-10V into 2 megohms (*Internal jumpers are included to allow for field-reconfiguration unless unit is also equipped with the -NJ option. FCTs equipped with -NJ are not reconfigurable.)</p> <p>SPECIAL INPUTS Special, PRG or fixed input ranges to accommodate almost any application. Spans from 1 to 24V, or 1 to 100mA</p>	<p>PRG Universal (programmable) Unit can be field-configured via internal solderless jumpers for any output listed under "FACTORY CONFIGURATION", below (PRG output default is 4-20mA. PRG output is available only with PRG input.)</p> <p>FACTORY CONFIGURATION Specify one of these outputs for unit with jumpers* set at the factory for: 0-20mA into 0-1200 ohms 4-20mA into 0-1200 ohms 0-5V into 20K ohms, minimum 1-5V into 20K ohms, minimum 0-10V into 40K ohms, minimum (*Internal jumpers are included to allow for field-reconfiguration unless unit is also equipped with the -NJ option. FCTs equipped with -NJ are not reconfigurable.)</p> <p>SPECIAL OUTPUTS Special, PRG or fixed output ranges to accommodate almost any application. Spans from 10mV to 20V, or 1 to 50mA</p>	<p>U Universal power accepts 22-300Vdc or 90-260Vac, sensing and switching automatically (3.5W nominal, 5W max., depending on output)</p>	<p>-RF RFI/EMI protection of 30 V/m - ABC = $\pm 0.5\%$ of full scale when tested according to SAMA Standard PMC 33.1</p> <p>-RO Reverse output decreases proportionally as input increases. Available with 4-20MA, or 1-5V outputs only. Not available with PRG.</p> <p>-NJ Fixed range unit (no internal jumpers). Selection of appropriate "FACTORY CONFIGURATION" is required.</p> <p>-TX Transmitter excitation; 24Vdc, nominal, current limited</p> <p>-LA Approved by the City of Los Angeles for applications in General Locations.</p>	<p>DIN Aluminum DIN-style housing mounts on G-type or Top Hat rail</p>

When ordering, specify: Unit / Input / Output / Power / Option(s) [Housing]
Model Number Examples: FCT / PRG / PRG / U / -RF [DIN]
 FCT / 4-20MA / 0-10V / U / -LA -TX [DIN]

Field-Selectable Inputs and Outputs with Universal Power

It's easy to specify the right FCT. One field-configurable, universal model handles the majority of isolating, converting, repeating, and splitting applications.

The FCT quickly sets up to accommodate all

common current and voltage signal types (specify "PRG" input/output). Standardize on the FCT and avoid having to stock an array of expensive and restrictive fixed-parameter units.

Adding to its flexibility, the FCT automatically adjusts to accept any standard ac or dc power supply.

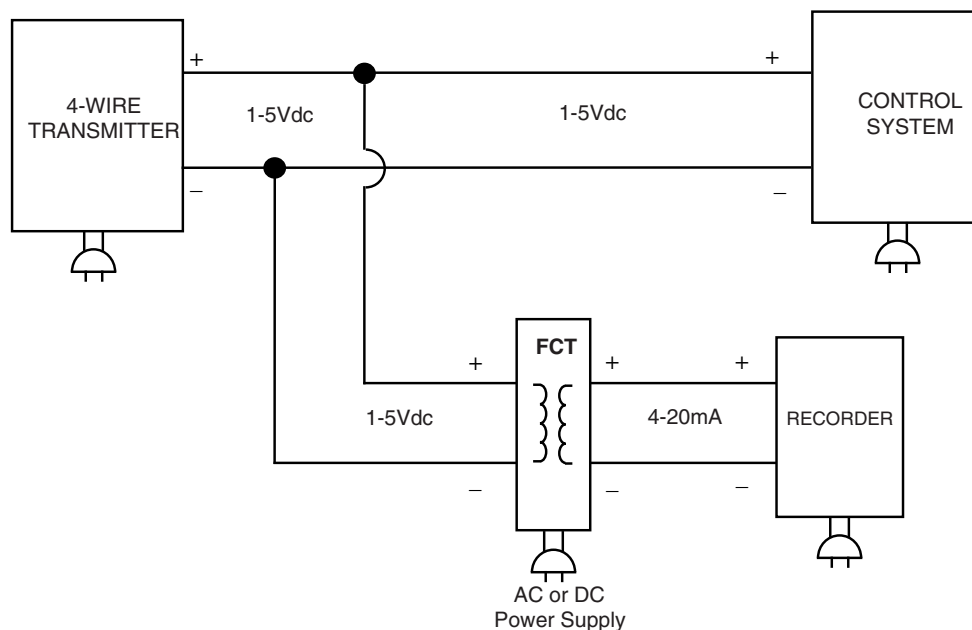
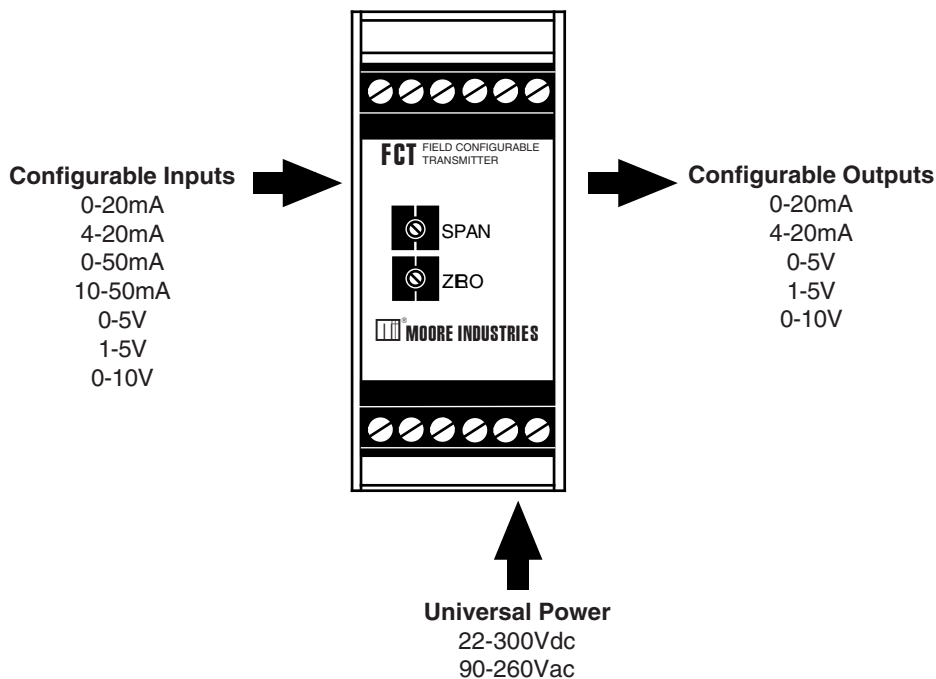


Figure 2. The FCT used as a repeater (splitter) delivers an isolated signal to a secondary instrument.

FCT

Field-Configurable Signal Converter/Isolator

Figure 3. Outline Dimensions.

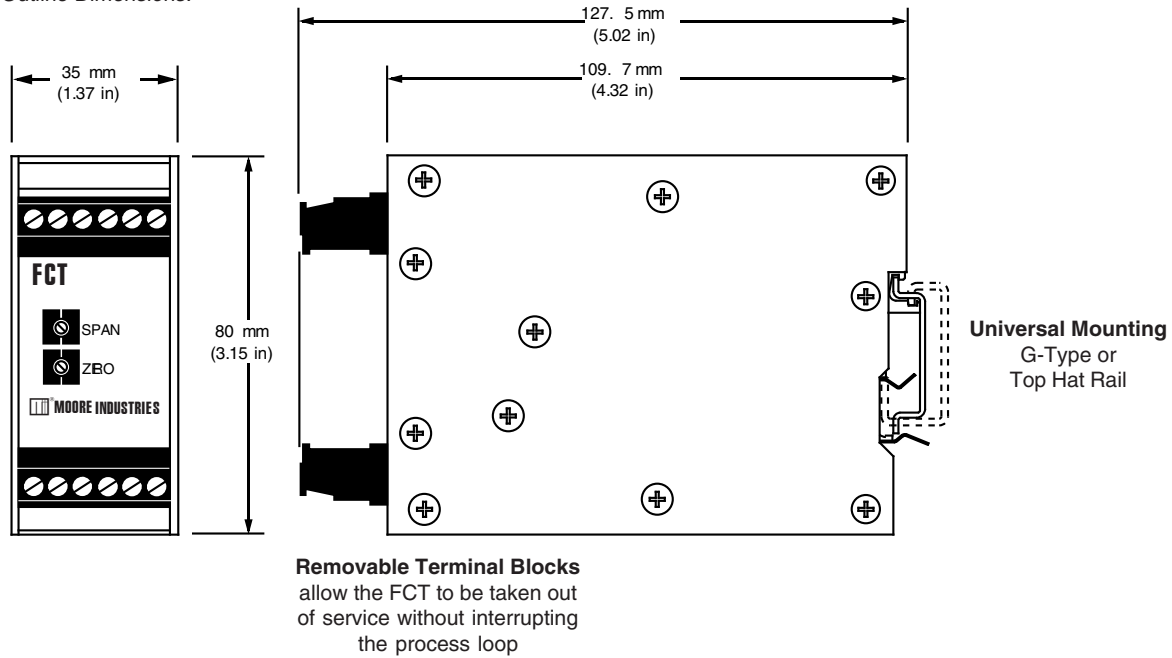


Table 1. Terminal Designations.

MODELS WITH UNIVERSAL INPUT/OUTPUT

Top Terminals						Bottom Terminals					
1	2	3	4	5	6	7	8	9	10	11	12
COM	10V	5V	20MA	50MA	TX	+OUT	-OUT		POWER	POWER	GND

MODELS WITH FIXED INPUT/OUTPUT

Top Terminals						Bottom Terminals					
1	2	3	4	5	6	7	8	9	10	11	12
-IN	+IN				TX*	+OUT	-OUT		POWER	POWER	GND

* Fixed input/output models can be ordered with 2-wire transmitter excitation by specifying -TX in the option field of the ordering code.

EXAMPLE: FCT / 4-20MA / 4-20MA / U / -TX [DIN]

Table 1a. Key to Abbreviations.

Key	Description
COM	Signal Common
GND	Case Ground
IN	Signal input
OUT	Signal output
POWER	Universal or Fixed (24V) power input
TX	2-wire transmitter excitation output
5V	0-5V or 1-5V input
10V	0-10V input
20MA	0-20mA or 4-20mA input
50MA	0-50mA or 10-50mA input