



August, 1988
New Information
Mailed to: E, D, C/42-600A

EMETCON™
AUTOMATED DISTRIBUTION SYSTEM

MCT-250 Metering and Control Transponder

Description

The MCT-250 Distribution Line Carrier (DLC) transponder is a two-way device designed to monitor and report the status of up to four status inputs. The transponder may also be used to monitor system voltage at its remote location.

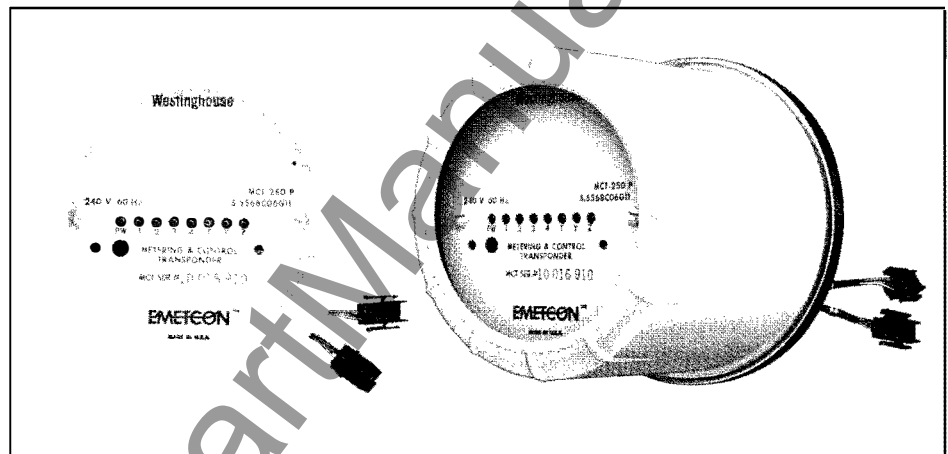
When used as an outage detector, the MCT-250 can detect the presence (or absence) of voltage on the load side of a protective device (reclosers or fuses) on the distribution line. When interrogated by the Central Station, the MCT-250 can report outage detection for a three-phase feeder plus a nearby single-phase tap.

The MCT-250 has the same load survey capability as the MCT-240. It also features a feedback load control (FLC) accumulator with variable interval. The accumulator holds the most recent completed interval data for retrieval by the Central Station. Data may be in the form of volt-squared hours, kilowatt hours or any metered quantity represented as pulses from a KYZ pulse initiator. The variable time interval may be set for 5, 15, 30 or 60 minute increments.

There are other MCT models to support remote meter reading in both single-phase and polyphase applications, time-of-use metering, kW demand metering, load survey, load control, remote service disconnect, and remote capacitor and voltage control. (Refer to the 42-660 series of product bulletins.)

Features

- Four status inputs that sense the position (open/closed) of dry contacts using an isolated 22 Vac source
- Optional sensing of transistor type switching or solid state device if external device provides a 50 volt or less source (AC or DC).
- Remote metering when connected to external meter with KYZ pulse initiator output (input through blades on MCT base)
- KYZ pulse accumulation in both a cumulative (total pulses) register and a remotely resettable register
- Feedback load control accumulator with variable interval (5, 15, 30, or 60 minutes) — allows system quantities to be retrieved by the Central Station



- Up to 48 intervals of load survey data collected in 1 of 4 downloadable interval times (5, 15, 30 or 60 minutes)
- Pluggable mounting using standard 6-blade meter socket
- Standard meter sealing ring and security seals can be used
- Standard white meter cover to minimize solar heat load
- Electronic modules replaceable in meter shop
- Unique and metering group addressing capability
- Self protecting transmitter
- Operating LED status indicators including test, power, 4 status, Y, and Z

Applications

Dry Contact Sense

The MCT-250 may be used to sense dry contacts. The MCT provides an isolated 22 Vac power source to provide a small current flow when the contacts close. The voltage coil of the interposing relays is chosen to match the source, for example, the source may be 120 Vac in which case the interposing relay coil would be rated for 120 Vac.

Refer to Figure 1 for a sample application for dry contact sense.

Voltage Monitoring

The MCT-250 may be applied to monitor system voltage as a stand-alone function. It will also perform this task when being used to monitor status inputs.

Voltage monitoring is performed in the MCT by accumulating KYZ pulses from a transducer or volt-squared hour meter and storing the data in a variable (5, 15, 30 or 60 min.) feedback load control interval, programmable by the system operator. When interrogated by the Central Station, the MCT sends back an accumulated pulse count for the most recent interval. Upon receipt, an appropriated multiplier is applied to convert the pulses to an average voltage value over the interval.

Refer to Figure 2 for a sample application for voltage monitoring.



www.westinghouse.com

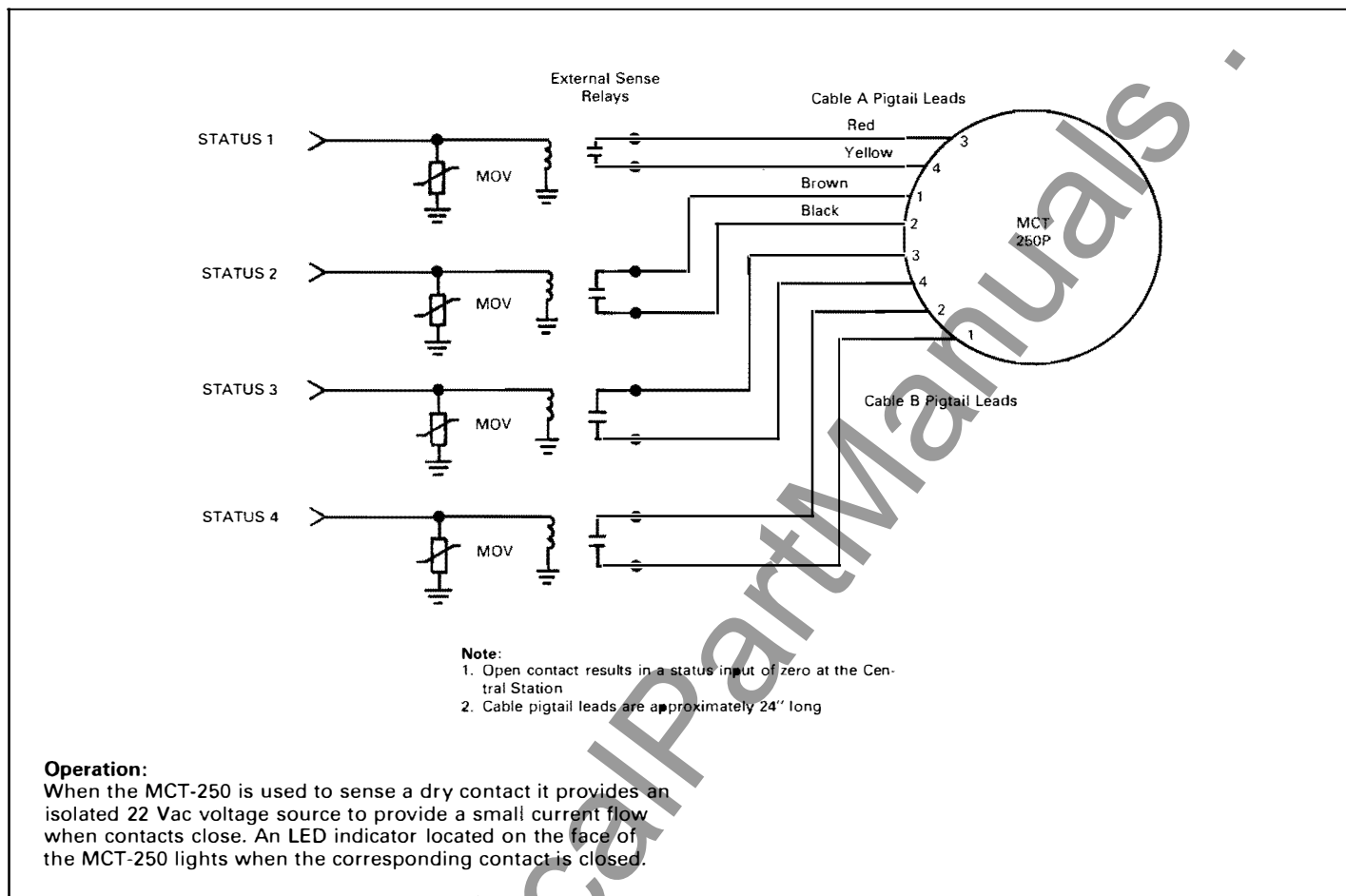


Figure 1 – Sample Circuit for MCT-250 used for Dry Contact Sense

Specifications

Communication:

Distribution Line Carrier (DLC)
Receive and Transmit (two-way)
Westinghouse EMETCON Protocol
Carrier Frequency 9.6 or 12.5 kHz
Modulation: Coherent Phase Shift Keying (CPSK)
Data Rate: 70 to 80 bps
Error Detection: Six Bit BCH Code on each transmission

Code Approval:

FCC Verified (Part 15, Subpart J, Class B)

Surge Protection:

Surge Protection: ANSI C37.90A

Operating Range:

Temperature: -40 to +55 degrees C
Humidity: 0 to 100% (noncondensing)

Power Requirements:

240 Vac, +10 percent -20 percent, 60 Hz, single phase without neutral
(Operating voltages of 120 and 208 Vac are also available)

Dimensions:

Depth	Diameter	Weight
7.5 in. (19.1 cm)	6.57 in. (17.2 cm)	3.75 lb. (1.8 kg)

Accessories

- LOAD CONTROL EXTENSION CABLE – Style Number 7302C76G04, 4 leads per cable, 48" long, includes 2 x 4-PIN connectors to mate with MCT-250P OUTPUT leads, cable to be cut in field (one cable is included with each MCT-250P)
- MCT-250P SOCKET (includes sealing ring), Style Number 2D25504G08

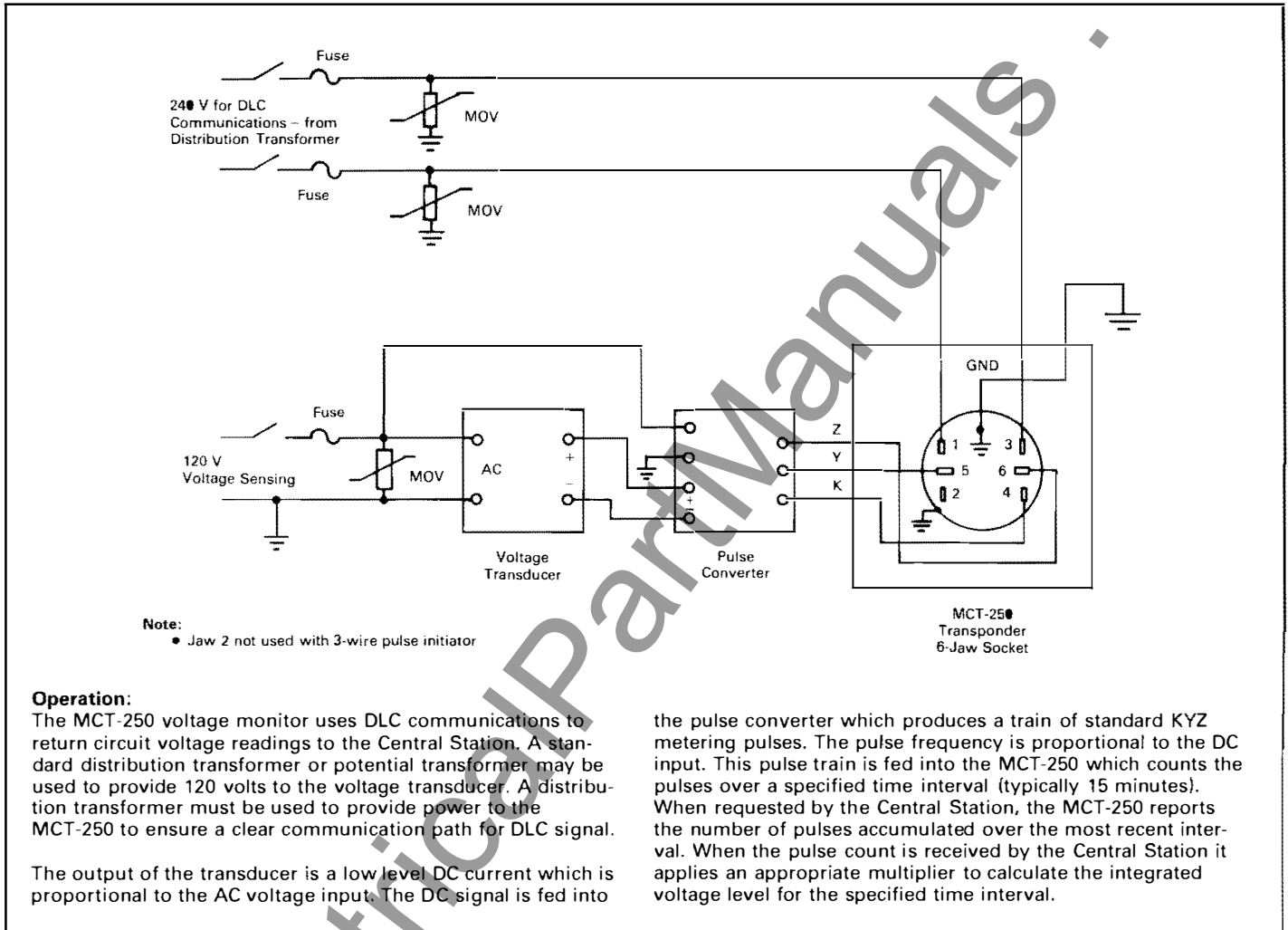


Figure 2 – Sample Circuit for MCT-250 Used as Feeder Voltage Monitor with Transducer Input

Model and Style Numbers

Model Number	Package Style	Carrier Frequency	Voltage	Status Inputs	LED Indication	Control Relays	Style Number
MCT-250	Pluggable	12.5 kHz	240 Vac	4	Power, Test, Y, Z, & 4 Status	None	5568C06G11
MCT-250	Pluggable	9.6 kHz	240 Vac	4	Power, Test, Y, Z, & 4 Status	None	5568C06G17



www.ElectricalPartManuals.com

Printed in U.S.A.

Westinghouse Electric Corporation
Measurements and Control Division
Raleigh, North Carolina, U.S.A. 27611