MULTILIN

MTM

METER TRANSDUCER MODULE

DESCRIPTION

The MTM Meter Transducer Module provides additional measurement and output capabilities to GE Multilin motor and feeder protection relays. It can only be used as an external option module with the GE Multilin 269 Motor Management Relay, 565 Feeder Management Relay or the 575 Feeder plus Auto-Reclose Relay. One MTM module is connected to each relay via a dedicated serial communications link.

Each MTM module provides the following additional functions to the host relay:

MEASUREMENT

- 3 phase voltage
- power factor
- real power (kW)
- reactive power (kVAR)
- power consumption (MWhr)
- frequency (Hz)

PROTECTION

- kVAR limit (269 only)
- voltage phase reversal
- undervoltage alarm/trip
- power factor alarm/trip (lead/lag)
- MTM communication alarm
- frequency alarm (under/over) (565/575 only)

OUTPUT

- separate isolated 4-20mA (standard) or 0-1mA (consult factory) outputs of:
  - average current (A)
  - 3 phase real power (kW)
  - 3 phase reactive power (kVAR)
  - power factor (-1.0 to 1.0)

WIRING

Power Connections

The MTM can be powered in two different ways:

- Separate 120VAC via terminals 34 and 35
- Via the PT input terminals

The first option is the factory setting. To alter the configuration refer to Figure 1 on the next page.

NOTE: The power supply voltage must always be maintained within safe operating limits of 90-140VAC to avoid any damage to the MTM.

PT Connections

The MTM PTs can be configured in two different ways:

- Open Delta
- 2 Input Wye

The first option is the factory setting. To alter the configuration refer to Figure 1 on the next page. Both configurations are shown in Figure 2 and Figure 3 on pages 3 and 4 respectively. For more details on wiring refer to the appropriate relay (269/565/575) manual.

Sampling Rate

If the MTM is powered using terminals 34 and 35 (separate power) and there is no PT voltage present the sampling rate is fixed at 50 or 60 Hz. Proper sampling rate must match the line frequency to ensure stable current readings. The factory setting is 60 Hz. To alter the setting to 50 Hz, refer to Figure 1.

SETUP AND USE

Setpoint programming and data monitoring is via the host relay over the serial communication channel. When the MTM metering module is installed, the host relay will display setpoint and measured information through its display. Consult the corresponding relay instruction manual for information on using the MTM module option.

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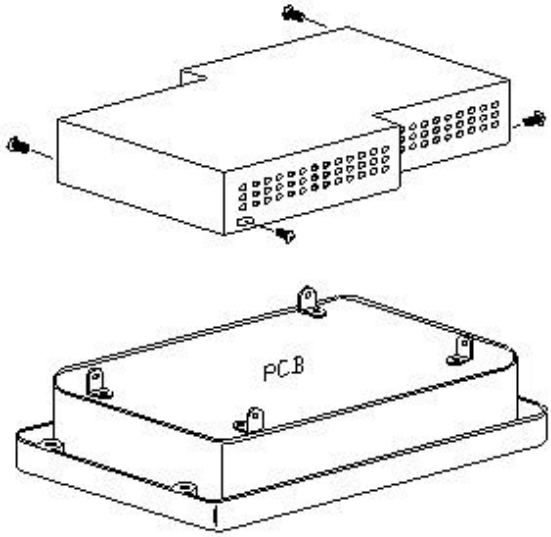
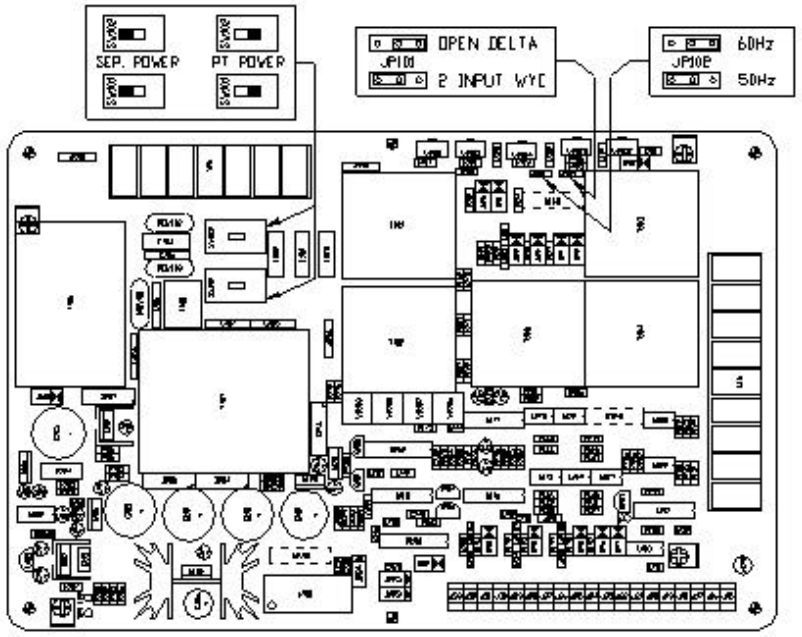
MTM POWER and PT Configuration Selection





METAL COVER REMOVAL

- ENSURE THAT POWER TO UNIT IS NOT APPLIED BEFORE ATTEMPTING TO REMOVE THE COVER
- REMOVE COVER BY UNSCREWING (4)-6-32 x1/4"Lg. PHILIPS PAN HEAD SCREWS.
- INSTALL COVER AFTER THE DESIRED CONFIGURATION HAS BEEN SELECTED.

POWER SELECTION (ASSUMING FACTORY DEFAULT SETTING OF SEP. POWER).

- TO POWER THE UNIT USING PT VOLTAGE, SET SW101 & SW102 TO PT POWER AS SHOWN IN THE ABOVE DIAGRAM.

PT CONFIGURATION SELECTION (ASSUMING FACTORY SETTING OF OPEN DELTA).

- TO CHANGE TO 2-INPUT WYE CONFIGURATION, PLACE J101 JUMPER LINK IN
- POSITION SHOWN IN THE DIAGRAM ABOVE.
- RETRIEVE THE "2 INPUT WYE " SECTION OF THE LABEL FROM THE PACK-UP KIT AND PLACE IT OVER THE EXISTING "OPEN DELTA" SECTION OF THE LABEL ON THE METAL COVER.

SAMPLING RATE SELECTION (ASSUMING FACTORY DEFAULT SETTING OF 60Hz).

- TO CHANGE TO 50Hz SAMPLING RATE, PLACE J102 JUMPER LINK IN POSITION AS SHOWN IN THE ABOVE DIAGRAM.

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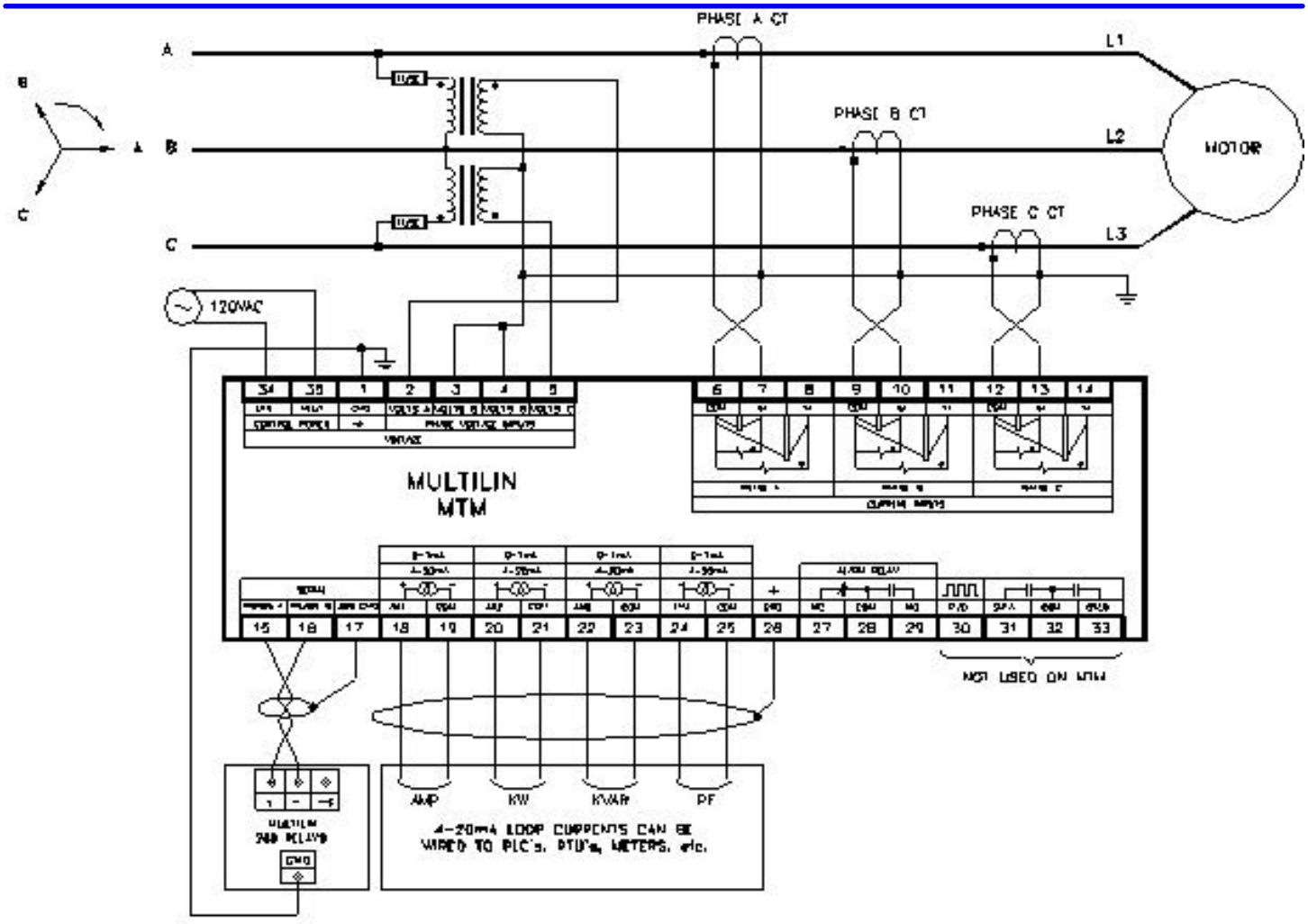
MTM Open Delta Configuration



NOTES:

1. TYPICAL WIRING FOR METERING TRANSFORMERS AND ANALOG OUTPUTS.
2. GROUND OF MTM SHOULD BE AT SAME GROUND POTENTIAL AS EXTERNAL COMPUTER
3. GROUNDING OF CT SECONDARIES SHOULD BE AT ONE LOCATION ONLY
4. TERMINALS 17 & 28 ARE INTERNALLY CONNECTED TO TERMINAL 1 AND ONLY TERMINAL 1 SHOULD BE EXTERNALLY GROUNDED
5. SHIELDED WIRE MUST BE USED FOR RS485 AND ISOLATED ANALOG OUTPUTS THE SHIELD MUST BE GROUNDED AT ONE END ONLY
6. ANALOG OUTPUTS ARE PROGRAMMABLE.

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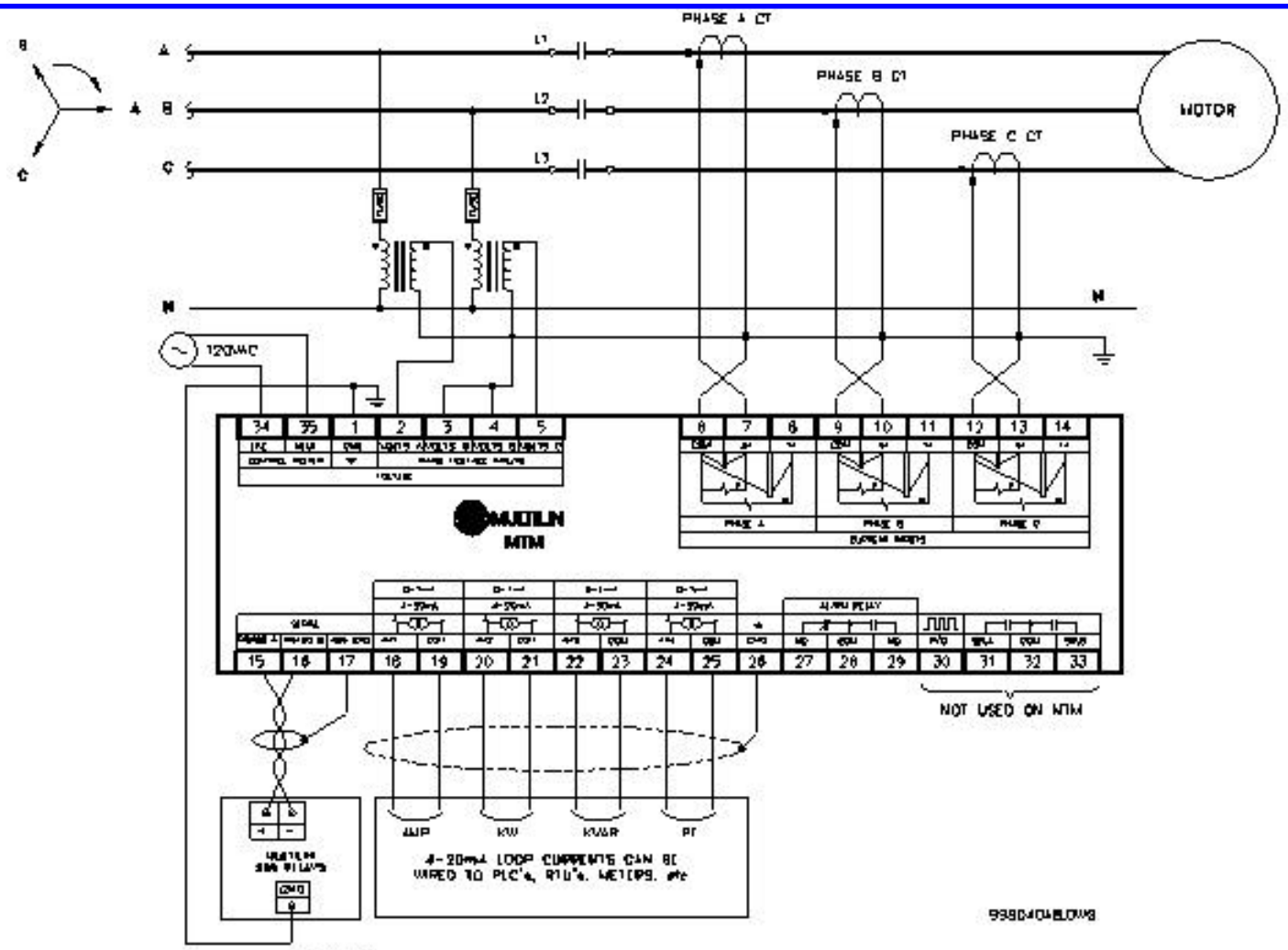
MTM 2 Input Wye Configuration



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5. SHIELDED WIRE MUST BE USED FOR RS485 AND ISOLATED ANALOG OUTPUTS. THE SHIELD MUST BE GROUNDED AT ONE END ONLY
6. WHEN USING A TWO INPUT WYE CONNECTION, A BALANCED SYSTEM MUST BE MAINTAINED TO ENSURE CORRECT READINGS.
7. MTM JUMPER MUST BE SET TO 2 INPUT WYE POSITION

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