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Simple yet critical points to consider while installing Multi Function Energy Meters

PLACEMENT AND WIRING

Steps to take

- [ ] Place the meter inside an electrical panel
- [ ] Provide additional enclosure for added protection
- [ ] Connect the current transformer & potential transformer to the meter as per your application

Points to ponder

- Which type of connection you need to do ?
- Which rating of CT & PT depending on your application

Continued...

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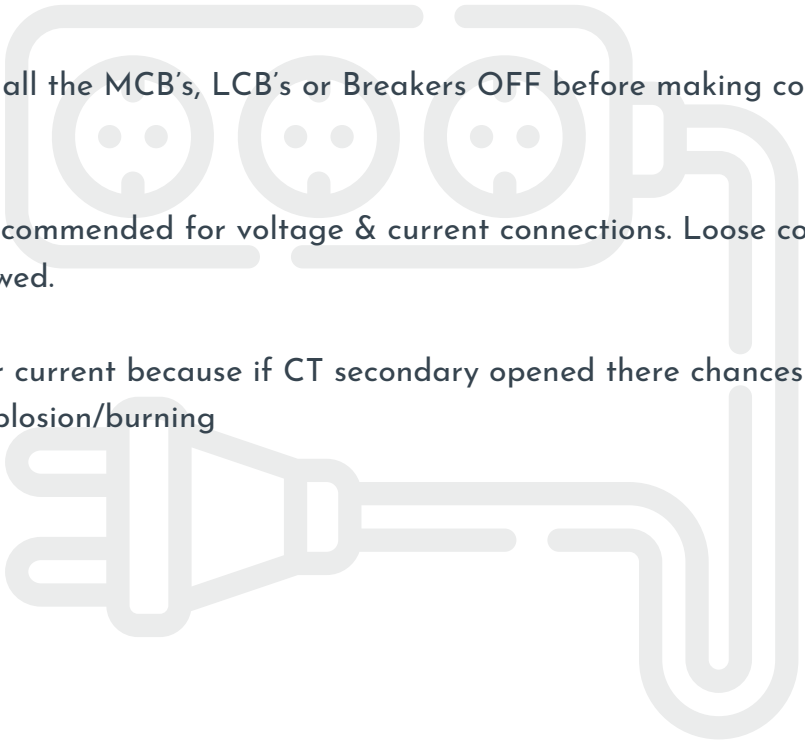
CONNECTING THE METER TO LOAD VOLTAGE

Steps to take

- [ ] Ensure that all the MCB's, LCB's or Breakers OFF before making connections to meter
- [ ] Wire lugs recommended for voltage & current connections. Loose connections are not allowed.
- [ ] Specially for current because if CT secondary opened there chances of CT damage/Explosion/burning



Points to ponder

- Wear adequate safey gear and follow safety protocol
- The meter's voltage input should be connected to a to a dedicated circuit breaker which is fed by the same voltage source as the load.
- If a dedicated circuit breaker is not available, pick an easily accessible circuit breaker connected to the same voltage source as the load

Continued...

CHECK CONNECTIONS OF MFM METER

Input Voltage Connections

- [ ] Depending on your application (3Ph 4wire or 3ph 3wire or 1ph 2wire), select appropriate voltage connections as follows:

Points to ponder

- Check phase sequence is correct
- Follow below criteria for **Voltage connection**
  - i) For 3P4W- R-Phase, Y-Phase, B-Phase & Neutral
  - ii) For 3P3W- R-Phase, Y-Phase, B-Phase (Don't connect Neutral)
  - iii) For 1P2W-R-Phase & Neutral

Input Current Connections

- [ ] Depending on your application (3Ph 4wire or 3ph 3wire or 1ph 2wire), select appropriate current connections & current transformer as per the load.

Points to ponder

- Check polarities of CT connections.
- Follow below criteria for **Current connections**
  - i) For 3P4W- All 3 CTs should be connected - CT1(R), CT2(Y) & CT3(B)
  - ii) For 3P3W- 2 Nos of CTs should be connected - CT1(R) & CT3(B)
  - iii) For 1P2W-CT1 should be connected I.e. CT1(R)

- [ ] Auxiliary supply should be in between 80-300 VLN VAC/DC (Not more than 300V)

Continued...

MODBUS RS485 CONNECTION

Steps to take

- [ ] Ensure proper connection of Individual A & B of Meter with A & B of Bus (Modbus communication bus)
- [ ] Use G terminal for shield and follow the standard RS 485 protocol guideline for connecting meter in daisy chained connection & connect 120 ohm resistor to termination bus
- [ ] Ensure that meter is properly connected to the RS485 to USB connector or Gateway/Modem
- [ ] Ensure that required driver for converter or gateway/modem install on your system

Points to ponder

- Are there any obstacles in signal quality?
- Is the wiring optimum in length or is it excessively long?

Continued...

CONFIGURATION OF MFM METER

Steps to take

- [ ] As per application, user need to do setting in system configuration of Meter Such as 3phase 4Wire,3 phase 3 wire and 1Phase 2 Wire.
- [ ] Depending on Voltage transformer and Current transformer ratio, User need to do PT/CT Primary & Secondary ratio setting in system
- [ ] Check & set up Slave ID, Baudrate & Parity bit for Modbus communications

Continued...

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SIMPLE THINGS THAT MAKE BIG IMPACT

- [ ] Upon buying a new meter, change factory settings and configure them as per your requirements
- [ ] Be mindful of ergonomics when installing the meter. The readings should be easily visible
- [ ] Input the correct specifications of the CT & PT into the meter setting menu. Wrong entries will disturb the reading
- [ ] Do not install current transformer and meter at a long distance from each other. Make them easy to visually inspect and accessible for repairs.