GENERIC SPECIFICATION FOR
MULTIFUNCTION POWER AND ENERGY METER
GE VERNOVA EPM 2200 BACNET METER

2. PRODUCT

2.1 POWER METER

A. The meter shall be UL listed and CE marked.

B. The meter shall be designed for multifunction electrical measurement on 3 phase power systems. The meter shall perform to spec in harsh electrical applications in high and low voltage power systems.

1. The meter shall support 3 element Wye, 2.5 element Wye, 2 element Delta, 4 wire Delta systems.
2. The meter shall accept universal voltage input.
3. The meter's surge withstand shall conform to IEEE C37.90.1.
4. The meter shall be user programmable for voltage range to any PT ratio.
5. The meter shall accept a burden of up to .36VA per phase, Max at 600 Volts, and 0.014VA at 120 Volts.
6. The meter shall accept a voltage input range of up to 416 Volts Line to Neutral, and up to 721 Volts Line to Line.
7. The meter shall accept a current reading of up to 11 Amps continuous.
8. The meter shall have color-coordinated voltage and current inputs.
9. The meter shall have a phasor diagram that clearly shows wiring status.

C. The meter shall use a dual input method for current inputs. Method one shall allow the CT to pass directly through the meter without any physical termination on the meter, ensuring the meter cannot be a point of failure on the CT circuit. The second method shall provide additional termination pass-through bars, allowing the CT leads to be terminated on the meter. The meter must support both termination methods.

1. Fault Current Withstand shall be 100 Amps for 10 seconds, 300 Amps for 3 seconds, and 500 Amps for 1 second.
2. The meter shall be programmable for current to any CT ratio. DIP switches or other fixed ratios shall not be acceptable.
3. The meter shall accept a burden of 0.005VA per phase, Max at 11 Amps.
4. The meter shall begin reading at 5mA pickup current.
5. Pass through wire gauge dimension of 0.177” / 4.5 mm shall be available.
6. All inputs and outputs shall be galvanically isolated to 2500 Volts AC.
7. The meter shall accept current inputs of class 10: (0 to 10) A, 5 Amp Nominal, and class 2 (0 to 2) A, 1A Nominal Secondary.

D. The meter shall have an accuracy of +/- 0.4% or better for Volts and Amps, and 0.5% for power and energy functions. The meter shall meet the accuracy requirements of IEC62053-22 (Class 0.5%) and ANSI C12.20 (Class 0.5%).

1. The meter shall provide true RMS measurements of voltage, phase to neutral and phase to phase; current, per phase and neutral.
2. The meter shall provide sampling at 400+ samples per cycle on all channels measured readings simultaneously.
3. The meter shall have 6 simultaneous 24-bit Analog to Digital converters.

4. The meter shall have an anti-dither algorithm to improve reading stability.

E. The meter shall have a three-line, bright red, .56” LED display, which presents a scrolling display of measured readings.

1. The meter shall fit in both DIN 92mm and ANSI C39.1 round cut-outs, and shall be capable of replacing existing analog meters in switchgear panels without alteration to the existing panel. The meter shall mount in not more than 4.25" panel depth.
2. The meter shall display a % of Load bar on the front panel to provide an analog feel. The % of Load bar shall have not less than 10 segments.

F. The meter shall be a traceable revenue meter, which shall contain a utility grade test pulse allowing power providers to verify and confirm that the meter is performing to its rated accuracy.

G. The meter shall have an RS485 Com port through its back plate.

1. The RS485 port shall support BACnet MS/TP.

H. The meter shall have native BACnet support:

1. The meter’s RS485 serial port shall be configured to speak BACnet MS/TP protocol.
2. The meter shall have 34 pre-configured embedded BACnet Objects consisting of standard voltage, current, and power parameters. The Objects shall be named such that they can be readily identified.

I. The meter shall also have an RJ45 Ethernet communication port in addition to the serial port.

1. The Ethernet port shall provide 100BaseT Ethernet communication speaking Modbus TCP/IP, and a Web server.
2. The meter shall have an embedded Web interface for configuration and viewing.
3. The Web interface shall have a Home page with power and energy snapshot information.
4. The Web interface shall have a feature that lets the user save BACnet Object data as a .csv file that can be viewed in word processing or spreadsheet applications.
5. The Web interface shall have a webpage that displays the BACnet objects, their readings, and information about the objects.
6. The Web interface shall have a webpage displaying statistics for the unit, e.g., the number of meter reboots, and the number of BACnet MS/TP packets sent and received.
7. The Web interface shall be viewable with any standard Internet browser.
8. The meter shall be configurable on the Host PC through LAN configuration.
9. The meter’s BACnet MS/TP shall integrate with any BACnet applications or servers.

J. The meter shall provide user configured fixed window or rolling window demand so the user can set up the particular utility demand profile.

1. Readings for kW, kVAR, kVA and PF shall be calculated using utility demand features. All other parameters shall offer max and min capability over the user selectable averaging period.
2. Voltage shall provide an instantaneous max and min reading displaying the highest surge and lowest sag seen by the meter.

K. The meter shall have a 10 year warranty.

L. The following options shall be available for ordering:

EPM 2200 BACnet Meter – Order Code: PL2200BNB

EPM 2200 Meter with Enclosure

Order Code:

- PL2200ENC120BNB
- PL2200ENC277BNB

EPM 2200	Enclosure Option	EPM 2200 Option	EPM 2200 Communications	Description
PL2200				
	ENC120			NEMA1 Rated - Indoor, Single Meter Enclosure, 120V
	ENC277			NEMA1 Rated - Indoor, Single Meter Enclosure, 277V
		A1		Volts and Amps meter
		B1		Volts, Amps, Power and Frequency meter
		C1		Volts, Amps, Power, Frequency and Energy Counters meter
		BN		BACnet Volts, Amps, Power, Frequency and Energy Counters meter
			S	RS485 Serial/KYZ Pulse
			X	None
			B	BACnet MS/TP Serial and Modbus TCP/IP Ethernet

M. Acceptable product is GE Vernova Company, Model EPM 2200 BACNET Meter with no substitutes allowed. Order Code: PL2200BNB

N. For additional specification information please contact:

GE Vernova Grid Solutions

650 Markland Street

Markham, ON

L6C 0M1

Canada

Phone: 905-927-7070

Fax: 905-927-5098

Worldwide e-mail: multilin.tech@gevernova.com

Europe e-mail: multilin.tech.euro@gevernova.com