Facilities Standards & Guidelines

C.76 Electrical Metering

Revision 0

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Section 1 – Summary

1.1 The purpose of the BAE electrical metering standard is to formalize our preferred electrical metering across our facilities. This standard should be followed across BAE facilities on all new projects and retrofits.

Electrical metering is critical to understanding electrical outages, demand, and performance. Metering can be performed at various levels of the electrical distribution, and serve different purposes:

- Utility Level – The electrical utility provider dictates the revenue metering requirements. This information is not monitored by BAE in real time and is installed outside our buildings.
- Switchgear Level – Internal to BAE facilities, the switchgear meter can capture data of the entire buildings or large sections of buildings.
- Panelboard Level – Panelboard metering can capture a specific area of interest within the building
- Load Level – Metering individual loads is uncommon, but sometimes necessary when granular data is needed

Section 2 – Switchgear Metering

2.1 Switchgear metering is usually designed and setup during new switchgear construction, but it's also possible to add metering into switchgear after construction. These meters capture real-time electrical data at millisecond granularity and provide power quality, fault, and usage data. This level of metering provides the most amount of data and is networked over ethernet to a stand-alone software.

2.2 Switchgear metering shall be Schneider Electric PowerLogic PM 8000 series (or higher).

- The measurement accuracy required is: ANSI C12.20; Class 0.2, current classes 2 and 10. IEC 62053-22; Class 0.2S.
- Communication of multi-port Ethernet and serial communications with minimum of two Ethernet ports and one RS485 serial port. IPv4 and IPv6 must be supported.
- The measured and calculated parameters shall be the full range of 3-phase voltage, current, power, and energy measurements, total harmonic distortion (THD), and individual current/voltage harmonics readings.
- Any current transformers and voltage transformers that meet the measurement specs can be paired with these meters.

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Section 3 – Panelboard and Load Metering

3.1 Panelboard and load level metering is usually added to targeted areas once there is a need for electrical data. This level of metering is focused on gathering electrical demand, since the overall power quality information is gathered at the switchgear level. Electrical demand is trended at slower intervals, and less overall data is being gathered these meters shall be integrated into BAE's building automation system, Siemens' Desigo.

3.2 Both panelboard and load metering will require a stand-alone enclosure to house the meter, instrument transformers, and overcurrent protection

3.3 Panelboard and load meters shall be Siemens SEM3 or PAC3200 series.

- The measurement accuracy required is ANSI C12.1 / C12.16 (Standard Accuracy: 1%)
- Communication will be Ethernet with serial available
- The measured and calculated parameters shall be 3-phase voltage, current, power, and energy measurements.
- Any current transformers and voltage transformers that meet the measurement specs can be paired with these meters.

3.4 Busbars distribute power to multiple loads and have metering units available as a part of their product offering. For Vertiv's iMPB busbars the trend point functionality is required.

Revision	Release Date	Description of Changes
0	11/17/2026	Initial Release

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