

# DIVISION 26 09 00

## Instrumentation and Control for Electrical Systems



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#### 1. Secondary Metering

1.1. All substations shall be provided with secondary metering, which provides:

Amps for each phase (A)	Kilovolt-amps (kVA)
Volts phase to phase (all phases) (V)	Kilovolt-ampere hours (kVAH)
Volts phase to neutral (all phases) (V)	Power factor
Kilowatts (kW)	Digital Output
Kilowatt demand (kWd)	Frequency (Hz)
Kilowatt-hours (total) (kWh)	% harmonic distortion
KiloVARs (kVAR)	

- 1.2. In order to facilitate reading of the meter the display shall be installed at eye level (1.7m AFF)
- 1.3. Current Transformers (CT's) shall be sized to maximum rated current of transformer (not larger) with 5 amp secondary. Potential Transformers (PT's) are required on services over 250 volts.
- 1.4. A colour coded test switch is required to facilitate testing and removal of each meter. ABB Flexitest switches are normally used.
- 1.5. Queen's central metering system uses Schneider PME metering software. To be compatible, new meters shall be Schneider PM5560 or Eaton PXM 2260 with Ethernet communications. Where power quality monitoring is also required, the new meters shall be Schneider PM8000 or Eaton PXM4000 with Ethernet communications. The requirement for a power quality meter instead of a standard meter shall be determined by PPS Engineering.
- 1.6. The Electrical Contractor shall provide the Ethernet jacks for any electrical metering. Conduit to be supplied and installed by the contractor. Supply and installation of the Ethernet cable to be sub-contracted to an approved IT Sub-Contractor. The conduit and wire/cable will normally terminate at the main incoming communications node. Termination location at the field end shall be coordinated with PPS.
- 1.7. Documentation shall include catalogue cuts for meter, CT's and test switch; operating and maintenance manual for meter.
- 1.8. Unless approved by PPS, do not use batteries as a power source. Power source shall come from the electrical distribution available through wired connections.