Technical Data **TD02601016E** September 2011

IQ 250/260 Electronic Power Meters

General Description

The IQ 250 and IQ 260 meters provide capabilities you would not normally expect in affordable, compact meters, such as fast sampling rate and accurate metering for a full range of power attributes. Providing the first line of defense against costly power problems, Eaton's IQ 250 and IQ 260 electronic power meters can perform the work of an entire wall of legacy metering equipment utilizing today's technology.

When space is at a premium, yet you need ANSI C12.20 accuracy, the IQ 250/260 series fit the bill. These meters are ideal for electrical equipment assemblies, machine control panels, such as panelboard and switchboard mains and feeders, low voltage metal-enclosed switchgear feeders and motor control centers. Requiring far less space than other meters with similar functionality, IQ 250/260 series fit into a standard ANSI or IEC cutout on a panelboard or other electrical equipment, and therefore fit easily into retrofit applications.

Typical Applications

- Utility and commercial metering.
- Substations, industrial facilities, power generation sites and campuses.
- Sub-metering.
- Load studies and voltage recording.
- Analog meter replacement.

Features and Benefits

- Measure and display real-time information about critical power parameters with a sampling rate of 400 samples per cycle.
- Monitor power utilization and quality with ANSI C12.20 accuracy (0.2 percent).
- Optional 128KB for data logging which guards against loss of historical data.
- Verify meter accuracy with KYZ test pulse self-certification capabilities.
- Standard Modbus® RTU communications.
- Available as transducer only or with display.
- Designed to accommodate upgrades.
- Integrate into Eaton's Power Xpert® Architecture for a holistic system-level view.

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Additional Features

Table 1. Features of IQ 250 and IQ 260 Electronic Power Meters

Features	IQ 250	IQ 260
Instrumentation		
Current, per Phase	•	•
Current Demand	•	•
Calculated Neutral Current	•	•
Voltage, per Phase (L-L, L-N)	•	•
Frequency	•	•
Power, Energy and Demand		
Real, Reactive and Apparent Power, Total and per Phase (kW, kvar, kVA)	•	•
Real, Reactive and Apparent Energy, Total and per Phase (kWh, kvarh, kVAh)	•	•
Real, Reactive and Apparent Power Demand	•	•
Power Factor, Total and per Phase	•	•
Min./Max. Readings, I, V, PF, F, THD (IQ 260), kW, kvar, kVA	•	•
Demand Methods		
Block Interval (Sliding, Fixed)	•	•
Communications		
RS-485	•	•
KYZ Output	•	•
Modbus RTU	•	•
Modbus ASCII	•	•
DNP 3.0	•	•
Data Logging		
128KB for data logging	Opt.	Opt.
I/O		
2 Digital In / 2 Digital Out ①	Opt.	Opt.
4 Digital In / 4 KYZ Out	Opt.	Opt.
4 Analog Output (4 – 20 mA) ②	Opt.	Opt.
4 Analog Output (0 – 1 mA)	Opt.	Opt.
Power Quality Analysis		
Total Harmonic Distortion (THD) Voltage and Current per Phase		•
Alarming		
Set Point Driven Alarm		•

① Digital Out with IQ250 requires external command.

② Requires external power supply.

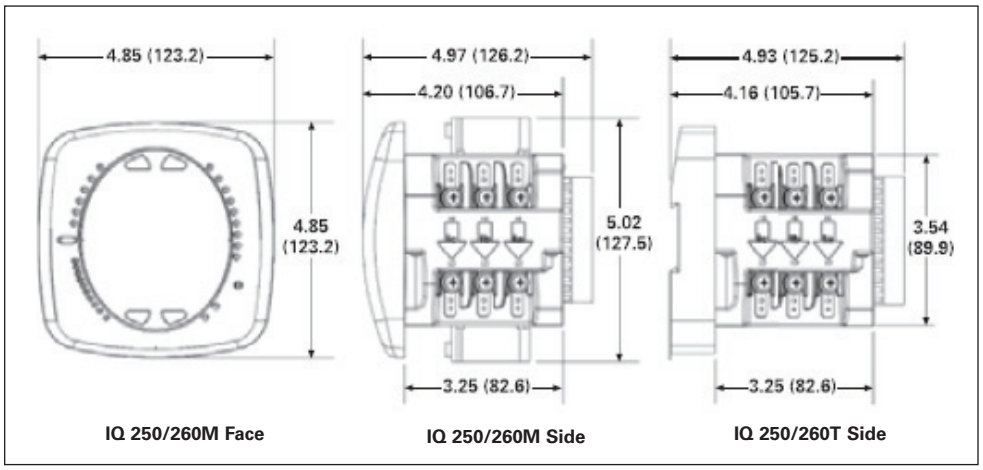
Technical Data and Specifications

Table 2. IQ 250/260 Electronic Power Meter Technical Information

Description	Specifications
Current Inputs	
Class 10	Amp Nominal, 10 Amp Max.
Class 2	Amp Nominal, 2 Amp Max.
Fault Current Withstand 100 Amps for: 300 Amps for: 500 Amps for:	 10 Seconds 3 Seconds 1 Second
Continuous Current Withstand	20 Amps for Screw Terminated or Pass-through Connections
Programmable Current	Full Scale to Any CT Ratio
Burden	0.005 VA per Phase Max. at 11 Amps
Pickup Current Class 10 Class 2	0.1% of Nominal 5 mA 1 mA
Connections Pass-through Wire Gauge Dimension Quick Connect	 0.177 Inches (4.5 mm) 0.25-Inch Male Tab
Voltage Inputs	
Range Line-to-Neutral Line-to-Line	 20 – 576 Vac 0 – 721 Vac
Programmable Voltage Range	Full Scale to Any PT Ratio
Supported Systems	3 Element Wye, 2.5 Element Wye, 2 Element Delta, 4-Wire Delta Systems
Input Impedance	1 Meg Ohm/Phase
Burden	0.36 VA/Phase Max. at 600 V; 0.014 VA at 120 Volts
Connection	7-Pin 0.400-Inch Pluggable Terminal Block, AWG #12 – 26 (0.129 – 3.31 mm^2)
Isolation	
All inputs and outputs are galvanically isolated to 2500 volts.	
Environmental Ratings	
Operating Temperature	-20°C to +70°C
Storage Temperature	-20°C to +70°C
Operating Humidity	To 95% RH Non-condensing
Faceplate Rating	NEMA 12 Mounting Gasket Included

Description	Specifications
Sensing Method	
Voltage, Current	True RMS
Power	Sampling at Over 400 Samples per Cycle On All Channels
Harmonics Resolution	40th Order
Update Rate	
Watts, Var and VA	100 msec at 60 Hz
All Other Parameters	1 Second at 60 Hz
Power Supply	
ac/dc Voltage Option	90 – 265 Vac at 50/60 Hz or 100 – 370 Vdc, Universal ac/dc Supply
dc Voltage Option	18 – 60 Vdc
Burden	10 VA Max.
Standard Communications Format	
Connection Type	RS-485 (Through Back Plate)
Com Port Baud Rate	9600 – 57,600 Bauds
Com Port Address	01 – 247
Data Format	8-Bit, No Parity
Protocols	Modbus ASCII, RTU or DNP 3.0
KYZ Pulse	
Contacts	1 Form A
On Resistance, Max.	35 Ohms
Peak Switching Voltage	350 Vdc
Continuous Load Current	120 mA
Peak Load Current	350 mA (10 ms)
Off-state Leakage Current at 350 Vdc	1 uA
Opto-isolation	3750 Vac
Dimensions and Shipping	
Weight	2 lbs.
Basic Unit	H 5.00 x W 4.90 x L 5.00 Inches
IQ 250/260	Mounts in 92 mm DIN and ANSI C39.1 Round Cut-outs
Shipping Container Dimensions	6-Inch Cube
Tolerance	+/-0.1 Inches (2.54 mm)
Compliance	
IEC 687	0.2% Accuracy
ANSI C12.20	0.2% Accuracy
ANSI C62.41	Burst
UL/cUL/CE	Electrical & Electronic Measuring & Test Equipment 22CZ

IQ 250/260 Meter Dimensions



Expandable I/O Componentry

Figure 1. IQ 250/260 Meter Dimensions — Face and Side Views

Ordering Information

Table 3. IQ 250/260 Meter Catalog Numbering System

IQ 250 M A 6 5 1 1 0

Model Series	**250** = Energy **260** = Power Quality
Meter Type	**M** = Meter (with integral display) **T** = Transducer Only (no display)
Data Logging	**A** = None **L** = Data logging
Frequency	**5** = 50 Hz System **6** = 60 Hz System
Current Input	**1** = 1 Amp Secondary **5** = 5 Amp Secondary
Power Supply	**1** = 90–265 Vac/dc **4** = 24–48 Vdc
I/O Slot 1	**0** = None **1** = 2 Relay Outputs/2 Status Inputs **2** = 4 KYZ Pulses/4 Status Inputs **3** = 4 Analog Outputs: 0–1 mA **4** = 4 Analog Outputs: 4–20 mA
I/O Slot 2	**0** = None **1** = 2 Relay Outputs/2 Status Inputs **2** = 4 KYZ Pulses/4 Status Inputs **3** = 4 Analog Outputs: 0–1 mA **4** = 4 Analog Outputs: 4–20 mA

Table 4. IQ 250/260 Meter Accessories

Description	Catalog Number
Panel Mounting Adapter for retrofitting an IQ 250/260 to an IQ Analyzer/IQ DP4000/IQ Data Cutout	IQ250-PMAK
PXM 2000 Gateway Card Kit to upgrade an IQ 250/260 to a PXM 2000	PXM2000-GCK

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