

A Revenue-grade Energy Meter with Advanced Power Quality Analytics

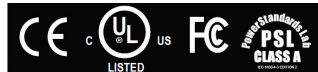
The ASCO Power Quality Meter helps reduce energy costs while increasing reliability and decreasing infrastructure cost. The device continuously records waveforms at high-speed and identifies transients, sags/swells and harmonics. Installation examples include generators, utility mains, transfer switches, UPS systems, paralleling gear, TVSS, PDUs, and critical power distribution switchboards.



Figure 1 : 5010 Remote Display Unit



Figure 2 : 5490 Mission Critical Power Quality Meter



	5410 Entry-Level	5450 Advanced	5490 Mission Control
7000 SERIES Transfer Switch Accessories	Acc. 140L	Acc. 140LS	Acc. 140LX
7000 SERIES Bypass-Isolation Transfer Switch Accessories	N/A	Acc. 140SB	Acc. 140XB
7000 SERIES Power Control Accessories	✓	✓	✓
Standalone Enclosure/ Loose Units	✓	✓	✓

Features:

- Continuous Waveform Recording (CWR) Technology provides complete data for accurate power quality analysis
- Millisecond time-stamp accuracy and synchronization for precise sequence of events analysis
- CWR Technology eliminates the need to setup any thresholds, triggers and events
- Automatic measurement compensation based on internal temperature monitoring ensures maximum accuracy
- Automated reports are generated for prescheduled periods and exported in COMTRADE and PQDIF (event reports), PDF, EXCEL, HTML and TXT (all other reports)
- Provides compliance testing to parameters in accordance with EN50160 and IEC 61000-4-15 / IEC 61000-4-30
- Real time monitoring with integrated web pages and alerts by email notifications

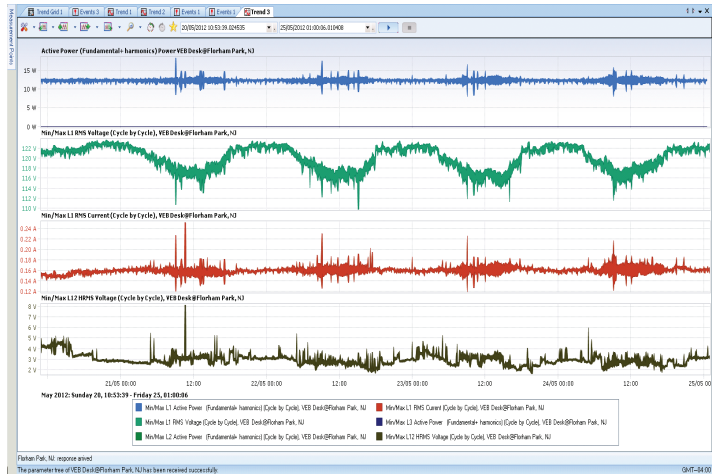


Figure 3: PowerQuest Analytics allows for analysis of continuously recorded waveforms, energy consumption, time-of-Use, flicker, harmonics, transients, sags/swells, crest and K-factor. It also aggregates sequence of events from multiple meters synchronized to the millisecond with ITC compliance curves. PowerQuest Analytics is available with the 5790 and 5900 Critical Power Management Systems.

ASCO 5400 SERIES Power Quality Meter Product Specifications

Features	5410 Entry-Level	5450 Advanced	5490 Mission Control
Maximum Voltage Sampling Rate per Cycle	256	512	1024
Voltage Harmonics Up-to	127th	255th	511th
Analog to Digital Converter	16/20 bit	16/20 bit	16/20 bit
Internal Memory	128MB	4GB	16GB
Transient Detection 50Hz / 60Hz	78.1/65.1 μ s	39/32.5 μ s	19.5/16.3 μ s
Measurement During Overloading	x2	x10	x10
Ethernet Ports	2*	2*	2*
NTP Time Synchronization	Yes	Yes	Yes
PoE out to 5010	Yes	Yes	Yes
IRIG-B Port(s)/ GPS RS232 Port(s)	-	1	2
Digital Inputs	-	8	16
Digital Outputs	-	4	8
Analog Inputs	-	4	8
Analog Outputs	-	4	8
Form "C" Relay Contacts	-	3	6
Dimensions	6.87" x 9.12" x 5.41"	6.87" x 9.12" x 6.76"	6.87" x 9.12" x 8.07"
Weight	5.41lbs	6.40lbs	7.10lbs

*One ethernet port reserved for optional 5010 display.

General

Real Time Measurements	
Voltage/current	Per Phase and Neutral, Average, Unbalance
Power	Real, Reactive, Apparent, Power Factor, Frequency
Energy	Bi-directional, Total, Import, Export, Net
Demand:	Block, Rolling Block, Thermal, Predicted
Temperature Sensor	
Internal PSU	Informative
Internal DSP	Measurement Compensation
External	-40C to 99C
Time	
Synchronization Device	Accuracy
GPS	100-200 μ s
IRIG-B	100-200 μ s
DCF-77	+/- 15 ms
SNTP Server	50-100 μ s
Environmental	
Operating Temp	-4F to 158F (-20C to 70C)
Storage	-40F to 185F (-40C to 185C)
Pollution Degree	2
Insulation Category	II
Humidity	Max 95% non-condensing

I/O	
Analog Inputs	4-20mA (continuous DC), 25 ohm, 270V
Analog Outputs	4-20mA (continuous DC), 0.1% Accuracy (10 bit D to A resolution)
Digital Inputs	Range: 0-220Vdc Triggers: Edge, Level, Debounce
Digital Outputs	100V Max Voltage Edge, Level, Trigger, KYZ Pulse Out
Relay	277VAC Max Voltage, 5A/250VAC, 10A/110VAC, 5A/30VDC, 10ms Max reaction time, 4 ms max drop-out time, 50mohm output resistance

Sensing Inputs

Voltage Inputs	
Nominal Full Scale	1KV
Maximum Peak	8KV
Input Impedance	3M Ω
Uncertainty	0.1% of Nominal
Current Input	
Nominal Full Scale	5A
Maximum Full Scale	50A
Load/Burden	0.07VA @ 100A, 0.0001VA @ 5A
Phase Shift	0.42 degrees @ 3A, 0.17 degrees @ 5A
Uncertainty	0.1% of Nominal
Frequency	
Range	42.5Hz to 69Hz
Resolution	10mHz
Accuracy	10mHz
Control Power	
Operating Range	100-260VAC: 50/60Hz 100-300VDC
Auxiliary DC Supply*	48VDC
PoE In	According to 802.3af

Standards	
Measurement Standards	EN50160, IEE1159, IEE519, IEC61000-4-15, IEC61000-4-7, IEC61000-4-30 Class A, IEC62053-22/23 Class 0.2
Electromagnetic Compatibility Standards	EN55011 Group 1 Class A, EN60439-1 (clause 7.9.1, 7.9.3, 7.9.4, 7.10.,3, 7.10.4), FCC Part 15 Subpart B Class A, IEC61000-3-3, EN61000-6-2, IEC60255
Environmental Standards	IEC60068-2-1,2,6,11,27,30,75
Safety Standards	UL508, EN61010-1: 2001 2nd Edition