

WESCHLER INSTRUMENTS

Weschler Bargraph Meters

- Large, bright display
- 101 segment bar, up to 10" high
- 3 ½ or 4 ½ digit resolution
- Versatile selection of inputs
- Up to 4 form C relay outputs
- Peak/Valley option
- Analog retransmit option
- AC or DC power
- Rugged case

CONFIGURATION OPTIONS

SIZE

BG252	6" Vertical BarGraph
BH252	6" Horizontal BarGraph
PC101	DIN Size Vertical BarGraph
PH101	DIN Size Horizontal BarGraph
PC202	DIN Size Dual BarGraph
PG101	Single BarGraph
PG202	Dual BarGraph
BI1251	6" Vertical BarGraph
BW1316	6" Vertical BarGraph
BV5A	7 ½" Vertical BarGraph
BD101	10" Vertical BarGraph
BG241	4 ½" Square BarGraph
BG261	8 ½" Square BarGraph
BG281	8" Circle BarGraph
BG251	6" Circle BarGraph

INPUT

DC Volts	50mV to 250V full scale
DC Amps	50µA to 5A full scale
AC Volts RMS	50mV to 250V full scale
AC Amps RMS	1mA to 5A full scale
	4-20mA DC
	1-5V DC
	10-50mA DC
Line Frequency	55-65 Hz
MAG Pickup	50Hz-20kHz
Thermocouple	J, K or T
RTD	100 ohm Pt or 10 ohm Cu
Watts	single & polyphase
VARs	
Power Factor	

POWER

120V AC 50/60Hz
240V AC 50/60Hz
5V DC
12V DC
24V DC
28V DC
48V DC
125V DC
250V DC
120V AC / 125V DC

SETPOINTS

Hi/Lo
Hi/Hi-Hi
Lo/Lo-Lo
Hi-Hi/Hi/Lo/Lo-Lo

COMMUNICATION

RS232
RS485

RETRANSMIT

4-20mA
0-1mA
1-5V DC
0-1V DC
10-50mA DC
Excitation Power 24 VDC @ 90mA

LED COLOR

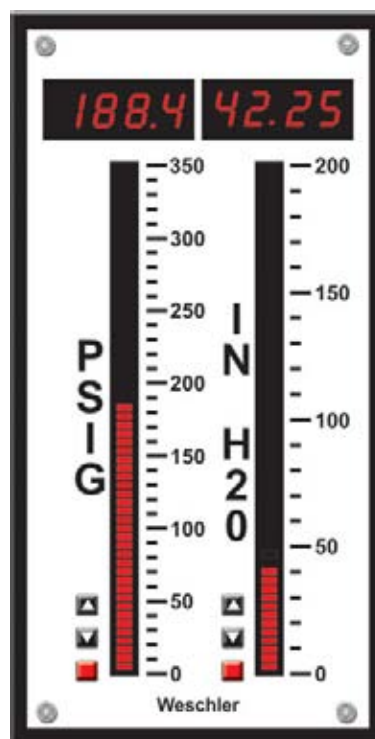
Green
Amber
Red



BG241

BG252

PC202



Over 4000 combinations available -
Contact Weschler to configure a
BarGraph for your application.

[Click here for complete data & configuration information](#)

WESCHLER INSTRUMENTS

Weschler Programmable Meter/Controller



Intuitive ▲

- Simplified Programming
- 8 Program Memories
- Display Filtering
- Last Digit Round-Up
- Optional NEMA (IP67) Front Cover (Call for Details)
- 10-Point Custom Linearization

This new and unique adjustment system offers unparalleled benefits. Now no more menus to scroll through—just go directly to the parameter you wish to adjust. Programming features include: Scaling, Analog Output, Alarm Output, and 10-point Linearization.

ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.
Order Example: Intuitive-AI-0-0-232-R-0

A	B	C	D	E	F	G
A Basic Unit						
Intuitive			Meter/Controller			
B Input						
AI	AC Current	I	Integrator (Totalizer)			
AV	AC Voltage	L	Loadcell			
DI	DC Current	P	Process			
DV	DC Voltage	R	Resistance			
C	Counter/Totalizer	S	Serial Data			
F	Frequency/Rate	T	Temperature			
U	Process/Temp.					
C Analog Output						
0	None	ANV	0-10V			
ANI	4-20 mA	ANB	-5 to +5V			
D Alarm Output						
0	None	SP	4 Alarms			
AL2	2 Alarms					
E Serial Data Output						
0	None	422	RS422			
232	RS232	485	RS485, addressable			
		DN	Device Net			
F Display Color						
R	Red					
G	Green					
G Supply Voltage						
0	95-265 VAC					
DCPSU	11-30 VDC					

National Meter KW Hour Meters

Three Phase Energy & Demand Meters

- Six Digit kWh LCD Display
- L1, L2 & L3 Power Readings
- Three Digit V, A & kW Readout
- kWh Pulse Relay
- RS-485 Modbus RTU Output
- Use with CTs Rated to 10,000A



▲ KW4000

Displays kWhrs and kW Demand along with Volts, Amps and real time kW per phase.

SPECIFICATIONS

Accuracy:	ANSI C12.16
Burden:	Isolated CT circuit, burden 0.06VA
Operating Temperature:	-10°F to 120°F, <95% RH non-condensing
Relay Output:	SPST Form A, 240VAC@10A resistive
RS-485:	4 wire
Dimensions:	7.5" W x 8" H x 3.5" D
Enclosure:	Surface mount, ABS plastic, NEMA 1
Connections:	Screw terminals
Dimensions:	5.6" W x 8.1" H x 3.5" D
Standards:	UL61010B-1, CUL

- 3Ø Revenue Class Meter
- 9 Digit LED Display
- Field Programmable
- Memory Backup Without Batteries
- Direct Energy Display – No Multipliers

NEW



K4000PM ▶

SPECIFICATIONS

Max Display:	999,999,999 kWh
Accuracy:	±0.5% ±2d
Burden:	Isolated CT circuit, burden 0.75VA
Operating Temperature:	-10°C to 50°C
Relay Output:	Energy/alarm pulse, 1/sec max rate
Contacts:	440VAC, 10A, 2500VA resistive
Indicator:	Front panel LED
Enclosure:	UL V0 rated plastic, NEMA 1
Dimensions:	3.78" W x 3.78" H x 3.3" D
Standards:	CAT III 300V, Class II double insulated

ORDERING INFORMATION

CAT NO.	DESCRIPTION
NM/KW4240	120/208/240V 3Ø, 3 or 4 Wire, kWh/Demand Meter
NM/KW4480	277/480V 3Ø, 3 or 4 Wire, kWh/Demand Meter
NM/K4240PM	120/208/240V 3Ø, 3 or 4 Wire, kWh Meter
NM/K4480PM	277/480V 3Ø, 3 or 4 Wire, kWh Meter

400A solid core CTs included. Split core and larger sizes available. Single phase models also available.

WESCHLER INSTRUMENTS

Weschler Digital Power Meters

NEW

- Measure 17 Electrical Parameters
- Use on Single & 3 Phase Systems
- Direct Input and Auxiliary Power to 480VAC
- RS-485 Modbus Communications
- Rugged Metal Case fits Standard ANSI Cutout

The MD3000 is a complete power metering system in a rugged steel switchboard case. Scroll the two front panel buttons to read voltage, current, power, demand and other system parameters. Use the MD3000 to monitor distribution feeders, branch circuits, generator sets, UPS systems and other power circuits. It easily retrofits into existing control panels with a standard ANSI 4" hole pattern. Windows PC software allows remote setup and readings through the Modbus communications port. Options include auxiliary AC or DC power and pulse output.

MD3000



Parameters Measured

- Phase to Phase Voltage (V)
- Phase to Neutral Voltage (V)
- Phase Current (A)
- Frequency (Hz)
- Instantaneous Demand: Amps, Active Power, Apparent Power
- Maximum Demand: Amps, Active Power, Apparent Power
- Total Harmonic Distortion: Phase Volts & Amps
- Energy (Wh, VAh, VARh)
- Active Power (W)
- Apparent Power (VA)
- Reactive Power (VAR)
- Power Factor (PF)

ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.
Example MD3000 - 33156A1

MD3000 – **A** **B** **C** **D** **E** **F**

A Phase / Wire

12	Single phase, 2 wire (1 element)
13	Single phase, 3 wire (2 element)
33	3 phase, 3 wire (2 element)
34	3 phase, 4 wire (3 element)

B Input Voltage

1	120V AC (line-neutral)
2	240V AC (line-line)
3	277V AC (line-neutral)
4	480V AC (line-line)

C Input Current

1	1A AC
5	5A AC

D Frequency

5	50Hz
6	60Hz

E Auxiliary (Meter) Power

A1	120V AC
A2	240V AC
A3	277V AC
A4	480V AC
D1	12V DC
D2	24V DC
D3	125V DC

F Options

P	Pulse output
R	RS-232 data streaming only (replaces RS-485)

Most popular configurations shown in bold.
Not all combinations available.

SPECIFICATIONS

Voltage Input	120, 240, 277 or 480 VAC nominal
Range	20-120%
Burden	0.5VA per phase
Overload	Continuous 1.5x nominal, 4x for 1 second
Current Input	1A or 5A
Range	4-120%
Overload	Continuous 4x nominal, 50x for 1 second
Frequency	50 or 60 Hz ± 5 Hz
Accuracy	
Volts & Amps	0.5% of reading ± 2 digits
Frequency	0.1Hz ± 1 digit
Active Power	1% of reading ± 2 digits
Reactive Power	1% of reading ± 2 digits
Apparent Power	1% of reading ± 2 digits
Power Factor	2% of range
Energy	IEC 1036 class 1
THD	1% of range
Auxiliary Power	
AC	120, 240, 277, 480 VAC $\pm 15\%$ 45-65Hz, burden <7VA
DC	12, 24, 125 VDC $\pm 15\%$
Display	3 lines of 4 digits, each 0.6" high
Connections	Screw terminals for #22 to #14 AWG wire
Case	Steel body, polycarbonate bezel
Memory	Setup parameters stored in non-volatile memory
Communications	RS-485 2 wire, Modbus RTU protocol Baud rate 2400, 4800, 9600, 19200
Temperature	-20°C to +70°C operation; RH <95%, non-condensing -40°C to +85°C storage
Protection	Class I
Dielectric Withstand	3kV RMS @60Hz between case, input, aux
Options	
Pulse Output	Ah, Wh, VAh, VARh; programmable pulse width; SPNO contact: 50V, 150mA max
RS-232	ASCII data streaming (continuous output)

[Click here for complete data & configuration information](#)

WESCHLER INSTRUMENTS

Electro Industries Power Meter

NEW

Shark

- Multifunction TRMS Measurements
- Meets ANSI C12.20 and IEC 687 0.2% Accuracy Class
- Bright 0.56" 3 Line LED Display
- % of Load Bar for Analog Perception
- Programmable CT & PT Ratios
- RS485 Modbus and DNP Protocol
- IrDA Port for PDA Remote Read



Parameter	Accuracy	Display
Voltage L-L & L-N:	0.1%	0-9999 V or kV, scalable
Current:	0.1%	0-9999 Amps or kAmps
± Watts	0.2%	0-9999 Watts, kWatts, MWatts
±Wh	0.2%	5 to 8 Digits Programmable
±VARs	0.2%	0-9999 VARs, kVARs, MVARs
±VARh	0.2%	5 to 8 Digits Programmable
VA	0.2%	0-9999 VA, kVA, MVA
VAh	0.2%	5 to 8 Digits Programmable
PF	0.2%	±0.5 to 1.0
Frequency	0.01 Hz	45 to 65 Hz
%THD	1.0%	0 to 100%
% Load Bar	1-120%	10 Digit Resolution Scalable

Real time measurements for all parameters; plus Min/Max for V, A, W, VAR, VA, PF, f, %THD: Average for A, W, VAR, VA, PF

SPECIFICATIONS

System:	3 Element Y, 2.5 Element Y, 2 Element Δ, 4 Wire Δ
Voltage Input:	0-416VAC L-N, 0-721VAC L-L
Max. Burden:	0.36VA per phase at 600V, 0.014VA at 120V
Current Withstand:	100A for 10sec, 300A for 3sec, 500A for 1sec
Max. Burden:	0.005VA per phase at 11A
Pass-thru Wire:	0.177" (4.5mm) max dia.
Isolation:	All Inputs and Outputs are galvanically isolated to 2500VAC
Operating Temp:	-30 to +70°C, <95% RH non-condensing
Sampling:	400+ Samples/Cycle, all channels measured simultaneously
Update Rate:	1sec, except 100msec on Watts, VAR, VA
Power Supply:	90-265VAC / 100-37-VDC, 10VA
Communications:	RS485 Port (rear), IrDA (faceplate)
Protocol:	Modbus RTU, ASCII or DNP 3.0
Dimensions, Ratings:	4.85"H x 4.82"W x 4.25"D, NEMA12 FACE

ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.
Order Example: EI/Shark100-60-10-V2-485-X

EI/SHARK	A	B	C	D	E	F
A	Model					
	100	Power Meter/Transducer with LED Display				
	100T	Power Transducer only (DIN rail mount)				
B	Frequency					
	50	50Hz				
	60	60Hz				
C	Current Input Class					
	10	0-11A (5A nominal)				
	2	0-2A (1A nominal)				
D	Functions					
	V1	Volts/Amps				
	V2	V1 + Power & Frequency				
	V3	V2 + Energy Counters, DNP3.0				
	V4	V3 + Harmonics & Limits				
E	Communications					
	X	None (Shark100 only)				
	485	RS-485 (req'd in Shark100T)				
F	Mounting (Shark100 only)					
	X	ANSI				
	DIN	DIN mounting brackets				

Simpson Digital Power Meters

- Measure up to 23 Parameters
- Standard 1/4 DIN Case
- Wide Backlit LCD Display
- Four Keys Select All Parameters
- Software Detection/Correction of Wiring Errors

UL CE GIMA



Parameter	G100	G200	G300	G400
Phase Amps	•	•	•	•
Phase Volts	•	•	•	•
Line Volts	•	•	•	•
Per phase PF	•	•	•	•
Per phase kW	•	•	•	•
Per phase kvar	•	•	•	•
Per phase kVA	•	•	•	•
3 Phase PF	•	•	•	•
3 Phase kW	•	•	•	•
3 Phase kvar	•	•	•	•
3 Phase kva	•	•	•	•
Frequency	•	•	•	•
kWh	•	•	•	•
Capacitive kvarh	•	•	•	•
Inductive kvarh	•	•	•	•
Total kvarh	•	•	•	•
Import kWh	•	•	•	•
Current Demand	•	•	•	•
Voltage Demand	•	•	•	•
kW Demand	•	•	•	•
Peak Amps	•	•	•	•
Peak Phase Volts	•	•	•	•
Peak Current Demand	•	•	•	•
Peak Voltage Demand	•	•	•	•
Neutral Current	•	•	•	•

SPECIFICATIONS

System:	3 phase, 3 or 4 wire, unbalanced load
Input	0.5% to 120% of range
Frequency:	45-65Hz
Harmonics:	up to 20th harmonic
Operating Temperature:	-10°C to 65°C, <75% RH
Accuracy:	Current: ±0.2% of full scale
	Voltage: ±0.3% of full scale
	Watts: ±0.4% of full scale

ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.
Order Example: SI/G100-1-3-1-0

A	B	C	D	E
A	Basic Unit			
	SI/G100	GIMA 100 Meter		
	SI/G200	GIMA 200 Meter		
	SI/G300	GIMA 300 Meter		
	SI/G400	GIMA 400 Meter		
B	Power			
	1	115VAC		
	2	230VAC		
C	Voltage Input			
	1	120/280V		
	2	120/240V		
	3	277/480V		
	4	63/110V		
D	Current Input			
	1	5 Amp		
E	Other			
	0	None		

WESCHLER INSTRUMENTS

Yokogawa AC Switchboard Meters

Single, dual, and triple displays

- Field Configurable
- Measures True RMS Current and Voltage
- Accuracy: $\pm 0.2\%$ of Rdg. $\pm 0.1\%$ FS
- Displays MIN/MAX Values
- Scaling to 1250:1 for Potential Transformers, 5000:1 for Current Transformers
- Available for Single- and Three-Phase Systems
- High-Resolution, High-Intensity LED Display
- Fits Standard Panel Cutouts
- Non-Volatile Memory Stores All Setup Parameters
- Options Include RS-485 Communications, Analog Outputs, DC Auxiliary Power Supply

[Click Here to Order Online](#)



2493 ▲



▲ 2491



2492 ►

AC WATT/VAR SINGLE FUNCTION

To Order—Insert Number Code for Each Letter to Select Catalog Number.

Order Example: 2491-53-11-5-AHF-0

A	B	C	D	E	F
A	2491	Single Function			
B	Function Connection				
	51	Watt 1P2W			
	52	Watt 1P3W			
	53	Watt 3P3W			
	54	Watt 3P4W (2½ Element)			
	55	Watt 3P4W (3 Element)			
	61	Vars 1P2W			
	62	Vars 1P3W			
	63	Vars 3P3W			
	64	Vars 3P4W (2½ Element)			
	65	Vars 3P4W (3 Element)			
	71	Power Factor 1P2W			
	72	Power Factor 1P3W			
	73	Power Factor 3P3W			
	74	Power Factor 3P4W (2½ Element)			
	75	Power Factor 3P4W (3 Element)			
	91	Phase Angle 1P2W			
	92	Phase Angle 1P3W			
	93	Phase Angle 3P3W			
	94	Phase Angle 3P4W (2½ Element)			
	95	Phase Angle 3P4W (3 Element)			
C	AC Input Rating				
	11	120 Volt/1 Amp			
	15	120 Volt/5 Amp			
	21	240 Volt/1 Amp			
	25	240 Volt/5 Amp			
	33	Special (Describe)			
D	Frequency				
	5	50/60 Hz			
	6	400 Hz			
	8	Special Calibration			
E	Analog Output				
	AAA	None			
	AFA	0 to 1 mA			
	AFB	0 to ±1 mA			
	AHD	4 to 20 mA			
	AHF	12 ±8 mA			
F	Communication				
	0	None			
	1	RS-485			

AC AMP/VOLT/FREQUENCY SINGLE FUNCTION

To Order—Insert Number Code for Each Letter to Select Catalog Number.

Order Example: 2491-21-1-AHD-0

A	B	C	D	E
A	2491	Single Function		
B	Input Range			
	11	1 Amp AC		
	15	5 Amp AC		
	21	150 Volts AC		
	25	300 Volts AC		
	81	Frequency (150V)		
	83	Frequency (300V)		
C	Frequency			
	1	50/60 Hz		
	2	400 Hz		
	3	Special Calibration		
D	Analog Output			
	AAA	None		
	AFA	0 to 1 mA		
	AFB	0 to ±1 mA		
	AHD	4 to 20 mA		
	AHF	12 ±8 mA		
E	Communication			
	0	None		
	1	RS-485		

WESCHLER INSTRUMENTS

Yokogawa

AC Switchboard Meters

AC VOLT OR AMP

To Order—Insert Number Code for Each Letter to Select Catalog Number.

Order Example: 2493-03-1-AFA-0-1

A	B	C	D	E	F
A	2493	Triple Display			
B		Connections/Input Rating			
	01	3P3W 150 VAC			
	02	3P4W 150 VAC			
	03	3P3W 300 VAC			
	04	3P4W 300 VAC			
	05	3-Phase A, B, C 1 AAC			
	06	3-Phase A, B, C 5 AAC			
C		Frequency			
	1	50/60 Hz			
	2	400 Hz			
D		Analog Output			
	AAA	None			
	AFA	0 to 1 mA DC			
	AHD	4 to 20 mA DC			
E		Communication			
	0	None			
	1	RS-485			
F		Auxiliary Power			
	1	120 VAC			
	2	240 VAC			
	3	24 VDC			
	4	48 VDC			
	5	125 VDC			

AC VOLT/AMP/HERTZ & WATT/VAR/POWER FACTOR

To Order—Insert Number Code for Each Letter to Select Catalog Number.

Order Example: 2493-08-1-1-AHD-0-1

A	B	C	D	E	F	G
A	2493	Triple Display				
B		Function/Connections				
	07	Volt/Amp/Hz 1P2W				
	08	Volt/Amp/Hz 3P3W				
	09	Volt/Amp/Hz 3P4W				
C		Volt/Amp Rating				
	1	150V/1 AAC				
	2	150V/5 AAC				
	3	300V/1 AAC				
	4	300V/5 AAC				
D		Frequency				
	1	50/60 Hz				
	2	400 Hz				
E		Analog Output				
	AAA	None				
	AFA	0 to 1 mA DC				
	AHD	4 to 20 mA DC				
F		Communication				
	0	None				
	1	RS-485				
G		Auxiliary Power				
	1	120 VAC				
	2	240 VAC				
	3	24 VDC				
	4	48 VDC				
	5	125 VDC				

AC VOLT AND VOLT/FREQUENCY

To Order—Insert Number Code for Each Letter to Select Catalog Number.

Order Example: 2492-16-1-AHD-0-1

A	B	C	D	E	F
A	2492	Dual Function			
B		Function Connection			
	12	150 Volt/1 Amp AC			
	13	300 Volt/1 Amp AC			
	16	150 Volt/5 Amp AC			
	17	300 Volt/5 Amp AC			
	22	150 Volt and 50/60 Hz			
	23	300 Volt and 50/60 Hz			
	26	150 Volt and 400 Hz			
	27	300 Volt and 400 Hz			
C		Frequency (NA For Frequency Units)			
	1	50/60 Hz			
	2	400 Hz			
D		Analog Output			
	AAA	None			
	AFA	0 to 1 mA			
	AHD	4 to 20 mA			
E		Communication			
	0	None			
	1	RS-485			
F		Auxiliary Power Supply			
	1	120 Volt 50/60 Hz			
	2	240 Volt 50/60 Hz			

AC WATT/POWER FACTOR & WATT/VAR

To Order—Insert Number Code for Each Letter to Select Catalog Number.

Order Example: 249247-13-5-AFA-0-1

A	B	C	D	E	F	G
A	2492	Dual Function				
B		Function/Connection				
	40	Watt/VAR 1P2W				
	41	Watt/VAR 1P3W				
	42	Watt/VAR 3P3W				
	43	Watt/VAR 3P4W (2 ¹ / ₂ Element)				
	44	Watt/VAR 3P4W (3 Element)				
	45	Watt/Power Factor 1P2W				
	46	Watt/Power Factor 1P3W				
	47	Watt/Power Factor 3P3W				
	48	Watt/Power Factor 3P4W (2 ¹ / ₂ Element)				
	49	Watt/Power Factor 3P4W (3 Element)				
C		AC Input Rating				
	12	120 Volt/1 Amp				
	13	120 Volt/5 Amp				
	16	240 Volt/1 Amp				
	17	240 Volt/5 Amp				
D		Frequency				
	5	50/60 Hz				
	6	400 Hz				
E		Analog Output				
	AAA	None				
	AFA	0 to 1 mA				
	AFB	0 to ±1 mA				
	AHD	4 to 20 mA				
	AHF	12 ±8 mA				
F		Communication				
	0	None				
	1	RS-485				
G		Aux. Power Supply				
	1	120 Volt 50/60 Hz				
	2	240 Volt 50/60 Hz				

Yokogawa Power and Energy Meters

NEW

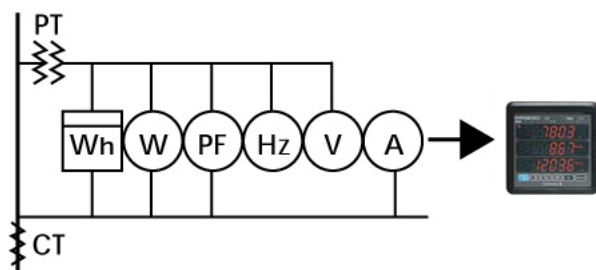
- Multiple Measured Parameters – Power and Energy (Active, Regenerative, Reactive, Apparent) plus Voltage, Current, Frequency, Power Factor and Demand
- Selectable System Configurations – Single and Three Phase; Two, Three and Four Wire
- Selectable Input Voltage Range – 120V, 240V, 480V
- CT & PT Ratios Entered from the Front Panel
- Standard RS-485 and Optional Ethernet Communications with Modbus Protocol
- Analog and Pulse Outputs
- Digital Input for Integration Start/Stop or Demand Alarm Release
- ANSI 4" Round or DIN 96 Square Mounting



**PR300
POWERCERT**



A single unit replaces up to 11 analog meters, contributing to savings on cost, space and wiring.



Eight display screens are available on the PR300. The three parameters displayed in each screen are user selectable.

ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.
Order Example: PR300-42203-6A-0

PR300 - **A** **B** **C** **D** **E** - **F** **G** - 0

A Phase and Wire	
3	Universal three-wire system (single-phase two-wire, single-phase three-wire, three-phase three-wire)
4	Universal four-wire system (single-phase two-wire, single-phase three-wire, three-phase three-wire, three-phase four-wire)
5	Three-phase four-wire (2.5 element)
B Input	
1	Universal voltage (150/300/600V), 1A AC
2	Universal voltage (150/300/600V), 5A AC
C Additional Inputs & Outputs	
0	1 digital input
1	1 digital input, 1 analog output
2	1 digital input, 1 pulse output
3	1 digital input, 1 analog input, 1 pulse output
D Communications	
0	RS-485 (PC Link, Modbus ASCII & Modbus RTU protocols)
3	Ethernet (Modbus TCP protocol)*
E Optional Measuring Functions	
0	None
1	Demand measurement (1 demand alarm output)
F Power Supply	
6	100-240V AC (50/60Hz) or 130-300V DC
G Phase Indication	
A	A, B, C
R	R, S, T

*Ethernet includes RS-485 for communication to other PR300 meters

SPECIFICATIONS

Accuracy:	Active energy	±0.5%
	Active power	±0.5% of FS
	Voltage, Current	±0.25% of FS
	Frequency	±0.5Hz
	Demand	±0.5%
Max. Input Voltage: 150V, 300V, 600V		
Max. Input Current: 1.2X FS continuous, 2X for 10s, 10X for 3s		
Frequency: 45 to 65 Hz		
Digital Input: On level: 4.5-25V DC, Off level: within ±1VDC		
Demand Function: Average power or average current		
Demand Period: 1 to 60 minutes		
Analog Output: 4-20mA DC		
Load: <600Ω		
Measured Item: Active power, reactive power, apparent power, phase voltage, phase current, power factor or frequency		
Pulse Output: Pulse proportional to energy		
Measured Item: Active energy, regenerative energy, reactive energy (Lead/Lag) or apparent energy		
Units: 0.1 to 5000.0 kWh/pulse; set in 100Wh increments		
Signal: Open collector, 30V DC @ 200mA max.		
Alarm Output: Alarms when measured demand exceeds setpoint		
Signal: Open collector, 30V DC @ 200mA max.		
RS-485: 2-wire (half-duplex)		
Address: 01 to 99 (31 units max.)		
Baud Rate: 19200, 9600 & 2400 bps		
Protocol: PC Link (with or without checksum), Modbus (RTU, ASCII)		
Ethernet: IEEE802.3 compliant 10Base-T/100Base-TX		
IP Address: Set from front panel. Only one address required for each PR300 cluster.		
Gateway: RS-485 port on Ethernet meter communicates with RS-485 port on other PR300 meters		
Data Backup: Last integrated value of active energy, regenerative energy, reactive energy & apparent energy are stored in non-volatile memory		
Withstand Voltage: 2500V AC between V & A inputs, power and ground; 2500V AC from V & A inputs, power and ground to digital input, pulse output, analog output, communications port and alarm output		
Operating Temp.: 0 to 50°C, 20-90% RH non-condensing		
Temperature Effect: 0.01%/°C		
Display: Three 5-digit LEDs with unit & function annunciators		
Power: 100-240VAC ±10% (50/60Hz), 130-300V DC ±15%		
Power Consumption: 10VA, 5W max.		
Case: Polycarbonate UL94-V0		
Connections: Screw terminals (except Ethernet)		
Size: ANSI: 4.33" x 4.33" x 5.05" (110 x 110 x 128 mm)		
DIN: 96 x 96 x 126 mm		

Order Online

WESCHLER INSTRUMENTS

Conzerv Power and Energy Meters

NEW



ELF3200

- Multiple Parameters Measured
- Auto-Scrolling Display
- 3-Phase Wiring Check
- 1/8 DIN Dustproof Case
- User Selectable Star/Delta, 1A/5A CT, CT & PT Ratios
- Wide Range Auxiliary Supply
- 10 Year Backup of Integrated Energy Data

		3259	3234				3234-3		
	Parameter		W	VA	VAR	PF	W	VA	VAR
RMS AVG L1 L2 L3	V	✓							
	A	✓							
	%Load	✓							
	%Unbal	✓							
	F	✓							
RMS Total L1 L2 L3	RPM	✓							
	W		✓				✓		
	VA			✓				✓	
	VAR				✓				✓
	PF					✓	✓	✓	✓
INTEG 3PH Energy	Wh		✓				✓		
	VAh			✓				✓	
	VARh				✓				✓
	-VARh				✓				✓
	Wh		✓				✓		
OLD 3PH Energy	VAh			✓				✓	
	VARh				✓				✓
	-VARh				✓				✓
	Wh		✓				✓		
	VAh			✓				✓	

Notes: OLD are previous energy values.
VA measurements selectable for 3D or Arithmetic.

SPECIFICATIONS

TRMS Sensing:	4 quadrant power, 2 quad. energy
Voltage Inputs:	4, 80-500V L-L
Current Inputs:	3, field selectable 1A or 5A
Range:	50mA to 6A
Burden:	0.2VA max per phase
Frequency:	45-65Hz
Display:	4 digit 0.55" LED
Sequence:	Parameter, Value
Resolution:	Energy 8 digits, all others 4 digits
Accuracy CL 1.0:	W, Wh & PF Class 1.0, VAR & VARh Class 2.0, all other parameters 1.0% of rdg.
Accuracy CL 0.5:	W, Wh & PF Class 0.5, VAR & VARh Class 1.0, all other parameters 0.5% of rdg.
Aux. Supply:	80-270V, 45-65Hz, 3VA
Temperature:	-10 to 60°C operating, <95% RH
Dimensions:	96 x 48mm, 40mm behind panel

Optional Accessories:

- 96 x 96 Adapter Plate
- Clamp-on Current Probes
- Fused Voltage Probes (1, 3, 4)

ORDERING INFO

CZ/ELF3259-xx Digital Voltage, Current & Frequency Meter

CZ/ELF3234-xx Digital Power & Energy Meter*: W & Wh; VA & VAh; VAR & VARh; PF

CZ/ELF3234-3-xx Digital Power & Energy Meter*: W & Wh & PF; VA & VAh & PF; VAR & VARh & PF

xx specify either 1.0 or 0.5 Accuracy Class

*ELF Power Meters are user programmable to display any one set of parameters separated by ;



DM32 Series

- 1 Phase, 3 Phase & DC Versions
- Accuracy Class 1.0 & 0.5
- Compact 96 x 96 mm DIN Case
- Built-in Phase Selector Switch
- Screw Terminal Connections
- Super Bright 0.5" LED Display

Optional Accessories:

- 144 x 144 Adapter
- Terminal Block Cover
- Connection Leads (one/three pair)
- Fused Voltage Probes (1, 3, 4)

SPECIFICATIONS

Input:	1Ø 2-wire or 3Ø 3-wire/4-wire	Accuracy:	Class 1.0: ±1% of FS ± 1 count
Range:	Nominal Span	Class 0.5: ±0.5% of FS ± 1 count	Class 0.2: ±0.2% of FS ± 1 count
	63.5V 51-76V	Display:	3 digits (800 counts FS) for V & A
	110V 80-130V		3½ dgits (1600 counts FS) for Class 0.5
	240V 170-270V		4 digits for Frequency (reads Aux Supply)
	415V 330-470V	Resolution:	1 count in 100 or better
	1A 0.05-1.2A	Temperature:	0 to 50°C operating, <95% RH non-condensing
	5A 0.25-6.0A	Aux. Supply:	110V Nom. 80-150V AC
Frequency:	45-65Hz		240V Nom. 170-300V AC
Burden:	0.2VA max per phase	Dimensions:	96 x 96 mm bezel, 80 mm behind panel
Overload:	Volts: 800V for 5 sec.	Warranty:	1 year
	5A: 6X for 10 sec., 20X for 1 sec.		
	1A: 1X for 10 sec., 30X for 1 sec.		

ORDERING INFO

Example: CZ/DM3252-5A-110VAC-1.0-1200:5

Model	Input	Aux. Supply	Accuracy	PT/CT Ratio
CZ/DM3250 Single Phase Volts	63.5V**	110VAC	1.0	specify PT ratio
CZ/DM3251 Single Phase kV	110V	240VAC	0.5	
CZ/DM3256 Three Phase Volts	240V**			
CZ/DM3257 Three Phase kV	415V			
CZ/DM3252 Single Phase Amps				
CZ/DM3259 Single Phase kA	1A	110VAC	1.0	specify CT ratio
CZ/DM3258 Three Phase Amps	5A	240VAC	0.5	
CZ/DM3261 Three Phase kA				
CZ/DM3270 Single Phase Frequency	Ext or Aux*	110VAC	0.2	-
CZ/DM3290 DC Volts	10-500V*	240VAC	1.0	
CZ/DM3291 DC Amps***	75 or 60mV*		0.5	

*** input from shunt

*specify

**single phase models only

Conzerv Power and Energy Meters

NEW



CE

UL US

EM6400

- Simultaneous Sampling of Volts & Amps
- Programmable CT & PT ratios
- Built-in Phase Analyzer
- RS-485 Modbus Serial Port
- 'One Touch' Operation and Setup
- Measure 4 Quadrant Power & 2 Quadrant Energy
- Demand Monitoring (Optional)
- Auto-Scrolling 3 Line, 4 Digit LED Display
- Color-Coded Analog Load Bar (%A FS)
- Wide Range Auxiliary Supply

EM6459

- Displays Volts, Amps, Frequency / PF simultaneously
- Monitors generator speed
- Monitors generator loading efficiency

EM6434

- Analyzes motor performance
- Monitors loading characteristics of motors
- Monitors motors efficiency

EM6433

- Monitors load currents, active power & energy consumption
- Displays Amps & Power simultaneously

EM6436

- Monitors active power & energy consumption, system voltage, load current and PF
- Displays Amps, Power, PF simultaneously

EM6400 All of the above plus:

- Optimizes demand utilization
- Analyzes power quality
- Helps energy balancing

SPECIFICATIONS

Sensing:	True RMS, 1 sec update time
Measurement:	4 quadrant Power & 2 quadrant Energy (4 quadrant optional)
Input voltage:	4 Voltage inputs 110 or 415 V L-L nominal
Range:	80 to 600V L-L
Input current:	3 current inputs, field configurable 1A or 5A
Range:	20mA - 6A
Overload:	10A cont., 50A for 3 sec
Burden:	0.2VA max per Volts/Amps input
Frequency:	45-65Hz
Aux supply:	44-300 V AC/DC, 3VA max
Resolution:	RMS 4 digit, INTEG 8 digit
Communication:	2-wire RS-485, Modbus RTU
Demand:	Integration period 5-30 minutes in 5 minute increments
Environment:	-10°C to +60°C operating, 5-95% RH non condensing
Dimensions:	96x96mm bezel, 80mm behind panel

Measurement Accuracy (% Reading)

	CL1.0	CL0.5
Volts L-N, L-L per phase & Avg	1.0	0.5
Amps per phase & Avg	1.0	0.5
Amps phase angle per phase	2°	1°
Frequency	0.1	0.1
Real Power per phase & total	1.0	0.5
Reactive Power per phase & total	2.0	1.0
Apparent Power per phase & total	1.0	0.5
Active Energy Import/Export	1.0	0.5
Reactive Energy	2.0	1.0
Apparent Energy	1.0	0.5
RPM	1.0	0.5

These meters can be setup using the front panel or a free GUI software utility.

Parameters	6459	6433	6434	6436	6400
V1, V2, V3, V12, V23, V31	✓			✓	✓
A1, A2, A3	✓	✓		✓	✓
Freq	✓				✓
% Load - Amps	✓				✓
% Unbal - Amps	✓				✓
Power Factor 1, 2, 3	✓		✓	✓	✓
RPM	✓				✓
Phase Angle 1, 2, 3	✓				✓
W1, W2, W3		✓	✓	✓	✓
VA1, VA2, VA3			✓		✓
VAR1, VAR2, VAR3			✓		✓
THD% on V1, V2, V3					0
THD% on A1, A2, A3					0
Demand W or VA					0
Rising demand, Max demand					0
Demand Time remaining					0
Hour of Max demand					0
INT: Wh		✓	✓	✓	✓
INT: VAh, VARh, -VARh			✓		✓
INT: Run hours		✓		✓	✓
INT: Interruptions, On hours					✓
INT W I/E: Wh					0
INT W I/E: VAh, VARh, -VARh					0
INT W I/E: Run hours					0
OLD: Wh		✓	✓	✓	✓
OLD: VAh, VARh, -VARh			✓		✓
OLD: Run hours		✓		✓	✓

0 = optional

Demand Parameters Option (EM6400)

- Monitors Demand - Present, Rising & Maximum, Time remaining
- VA & W demand is selectable through setup table
- Demand may be Sliding window (auto) or Fixed window (User), selectable through setup mode
- The time of occurrence for the Maximum Demand is based on "On hrs" of the system
- Maximum Demand can be cleared independently or along with the integrators through the CLR function in the setup mode

ORDERING INFO

CZ/EM6459-xx	Programmable Multi-function Meter: V, A, F, PF
CZ/EM6434-xx	Programmable Multi-function Power & Energy Meter
CZ/EM6436-xx	Programmable Multi-function Meter: V, A, F, PF, Power & Energy
CZ/EM6400-xx	Programmable Multi-function Meter
CZ/EM6400-xxPlus	Programmable Multi-function Meter with Demand, THD & Bi-directional

xx specify either 1.0 or 0.5 Accuracy Class

WESCHLER INSTRUMENTS

Conzerv Power and Energy Monitors

NEW



EM3360

EM3360

- Offers comprehensive power and energy monitoring at feeders and individual loads
- Retrieves previous energy reading to cross check utility meter readings or electricity bills
- Analyzes loading patterns
- Visualizes unbalances in system
- Checks for wrong connection, reversed phase sequence, deteriorating power factor compensation on one of the phases, etc.

EM3480 All benefits of EM3360 plus:

- Offers Demand Monitoring
- Ensures automatic synchronization of demand with utility meter
- Displays Max demand along with date and time of occurrence
- Helps to set realistic demand target

EM3460 All benefits of EM3480 plus:

- Predictive feature enables prior indication of crossing demand
- Facilitates tripping of non essential loads
- Analyzes electrical faults & planning of load schedules
- Optimizes demand utilization
- Improves system efficiency

These meters can be setup using the front panel or a free GUI based software utility.

- Record and Analyze Power & Energy Data of Energy Intensive Loads
- Auto Scrolling Display of up to 16 User Selectable Parameters
- Separately Monitor Import/Export of Energy (optional)
- Store Previous Period Integrated Data
- Built-in Phase Analyzer
- Data Maintained During Power Failure
- 6 Digit Readout for Energy Parameters, 4 Digit Readout for Instantaneous Parameters

Feature

	3360	3480	3460
Voltage L-L per phase & average	✓	✓	✓
Voltage L-N per phase & average	✓	✓	✓
Voltage Neutral to earth	✓	✓	✓
Current per phase & average	✓	✓	✓
Neutral current	✓	✓	✓
Phase Angle	✓	✓	✓
%THD V1,V2,V3, I1,I2,I3	✓	✓	✓
Line Frequency, Generator RPM	✓	✓	✓
kW, kVA, kVAR per phase & total	✓	✓	✓
PF per phase and 3 phase	✓	✓	✓
kWh, kVAh, KVARh, Ah; avg: PF, Hz, V	✓	✓	✓
Run hours & number of interruptions	✓	✓	✓
Demand: instantaneous & maximum		✓	✓
Settable upper/lower limits & interval			✓
3 Demand limit alarm outputs			✓
High/Low data store	✓	✓	✓
High/Low max. demand profile store		✓	✓
19 level Demand Target profile		✓	✓
Real-time clock w. On/Off & run times	✓	✓	✓
Relay outputs for load control			✓
User settable demand targets			✓

User Programmable

From Front Panel:

- EHT, HT or LT, Delta 2E or Star 3E measurement; PT & CT Ratios; kVA or kW Demand
- VA measurement – 3D or Arithmetic
- Demand Period (1 to 30 minutes)
- Manual Synchronization (fixed window, to suit most popular EB meters) or sliding window.
- Auto Synchronization: User programmable password for all Setup, Demand Synchronization and Clear Functions.

From Software:

- TOU calendar
- Monthly auto reset date

SPECIFICATIONS

Sensing:	3 Phase, 3 Wire/4 Wire (field configurable)	Accuracy:	For V, A, PF, all Power & Energy parameters
Measurement:	True RMS	Class 1.0:	± (0.2% of Full Scale + 0.8% of reading + 1 digit)
Voltage Input:	110 to 415 VAC nominal	Class 0.5:	± (0.1% of Full Scale + 0.4% of reading + 1 digit)
Range:	80 – 500V	Accuracy of Hz:	± 0.2% of reading
Current Input:	5 or 1 Amp nominal (factory set)	Accuracy of Ø:	± 1° (20% to 120% of Full Scale)
Maximum:	120% of nominal	Display:	7 digit, 0.56" LED, auto scaling (kilo/Mega)
Burden:	0.2 VA Max.	Temperature:	0° - 60°C operating
Frequency:	50 Hz ± 5%, 60 Hz ± 5%	Dimensions:	Bezel 192 x 144mm, 110mm behind panel
Auxiliary Supply:	Factory Set, Single Phase, 240V (190-270V) or 110V (85-130V), 5VA max.	Panel Cutout:	186 x 138mm (+ 1.0 mm)
Power Factor:	0.5 PF Lag - Unity - 0.8 PF Lead		

ORDERING INFO

Example: CZ/DM3360-1.0-5A-110-R-TOU-485-IE

Model	Accuracy	Input	Aux. Supply VAC	Enable Auto Reset	Enable TOU (x=off)	Comm Port (RS-485)	Import/Export
CZ/EM3360 Power & Energy Monitor	1.0	1A	110	R=on x=off	Energy	485=install x=none	IE=on x=off
CZ/EM3480 Trivector Monitor	0.5	5A	240		Energy+MaxDM		
CZ/EM3460 Smart Demand Controller	0.2			specify date & time	Energy+MaxDM+DM Ctrl		

WESCHLER INSTRUMENTS

Amprobe Power Quality Recorder



DM-4



Includes carrying case, CTs, test leads, PC software & RS-232 cable, remote user interface with protective hard case & interface cable, instruction manual.

- TRMS measurements on single phase (2 or 3 wire) and three phase (Y or delta) systems
- Easy to setup and operate
- Measures Volts, Amps, Watts, VARs, VA, PF, energy and peak demand
- Records all parameters simultaneously
- Captures voltage sags and surges
- Records voltage spikes down to 100nsec
- Battery or line powered (50/60Hz)
- Protected against unauthorized setup changes
- User selectable data sampling rate
- Manual or programmable recording start
- Remote user interface for field data analysis
- Extract data to PC (Windows) or PDA (Palm OS)

SPECIFICATIONS

Function	Description	Accuracy
Supplied Current Transducer	1000A clamp CT, 2" internal diameter	
AC Current	Standard CT (DM-CT-HTA): 5 - 1000A Optional small CT (DM-CT-100): 1 - 100A	Input accuracy: ±(2% Rdg + 2 LSD)
AC Voltage, including Sags and Surges	20 - 1000V	±(3% Rdg + 2 LSD)
Voltage Transients	200 - 6000Vpp, duration >100nS	±10% Rdg
Harmonics (Voltage and Current)	THD, DC and individual up to 51th	±(5% Rdg + 2 LSD), DC to 25th harmonic
Power	Working (W), Reactive (VAR) & Apparent (VA)	±(3.0% Rdg + 2 LSD)
Energy	Working (kWh), Reactive (VARh) & Apparent (VAh)	±(3.0% Rdg + 2 LSD)
Peak Demand	kW	±(3.0% Rdg + 2 LSD)
Power Factor (True and Displacement)	0.00 - 1.00	±3%
Phase Sequence	1 - 2 - 3	
Selectable Fundamental	50/60 Hz	
Available Recording Time	Several hours to several years depending on setup	

ORDERING INFORMATION

AB/DM-4 DM-4 Power Quality Recorder with 1000A clamp-on CTs

Accessories

AB/DM-CT-100 100A Compact Clamp
AB/USB USB to RS-232 adapter
AB/MTL-501 Advanced Electrical Test Lead Kit

Yokogawa Portable Data Logger



XL100



Includes mating screw terminal block, AC adapter, protective rubber boot, communication software & manual.

- 8 or 16 isolated analog input channels
- Supports direct TC, RTD and DCV inputs
- 16MB internal memory + flash card capability
- Wide viewing angle 3.5" color LCD
- Trigger and alarm functions
- 1 pulse and 2 digital logic inputs
- 100msec to 1 hour sample interval
- Ethernet, USB, RS232 & RS485
- Web server, FTP client and email functions

SPECIFICATIONS

Input	Type	Accuracy	Resolution
	DCV: 100/500mV, 1/5/10/30V, 1-5V F.S.	±0.1% F.S.	10µV
	TC: K,E,J,T,L,U,N	±0.05% F.S. ±1°C	0.1°C
	TC: W,R,S,B	±0.05% F.S. ±2°C	1°C
	3-wire RTD: Pt100, JPt100	±0.05% F.S. ±0.5°C	0.1°C
	Pulse: Instantaneous value, integration, revolution		
	Logic: Voltage, contact		
Maximum Input	30V		
Measurement Interval	XL101: 100/200/500ms, 1/2/5/10/20/30s, 1/2/5/10/20/30/60min XL102: 200/500ms, 1/2/5/10/20/30s, 1/2/5/10/20/30/60min		
Data Storage	16MB internal memory, External storage: Compact flash memory card (TypeII), SD card, USB memory (copy function only)		
Functions	Alarm output (4ch), Trigger function (pre-trigger/triggerdelay), Calculation (inter-channel calculation, linear scaling, statistical operation), Average, Automatic Measurement		
Display Screens	Waveform, digital, bargraph, waveform + digital, alarm summary, log		
Communication	10Base-T/100-BaseTX Ethernet (SMTP, FTP, TCP/IP, SNMP protocols) USB, RS-232, RS-485		
Operating Temperature	0 to 50°C, 5 to 85%RH (non-condensing)		
Storage Temperature	-20 to 60°C, <90%RH (non-condensing)		
Size	6.1" x 6.1" x 2.2" (155x155x55mm), without projecting parts or rubber boot		
Weight	1.8 lbs (800g), without battery or rubber boot		
Safety	EN61010-1: Measurement Category I (Max. Input voltage: 30VDC), Pollution degree 2		

ORDERING INFORMATION

YE/XL101-D	8 channel Portable Data Station w/ US power cord	YE/93037	Carrying case
YE/XL102-D	16 channel Portable Data Station w/ US power cord	YE/94009	Lithium ion battery, 2.4Ah
Accessories		YE/91029	Digital input cable
YE/90060	Type K thermocouple	YE/91011	RS232 cable to PC (9 pin)

AEMC Power Quality Loggers

- Simple operation: Plug in, Record, Download and Read
- Measures and stores V, A, Hz, W, VA, VAR, Demand, Peak Demand, Harmonics, THD, K-Factor and more
- Automatically captures worst-case Surge, Sag and THD waveforms
- Takes 128 samples/cycle with 16 bit resolution
- Records up to 12 data channels
- Three LED status indicators
- Powered from voltage input channel with battery backup for data memory
- Optically isolated RS-232 output for direct connection to a PC
- Includes DB9 serial cable & DataView® software for data storage, analysis and report generation



PQL100

ORDERING INFORMATION

AE/2125.03	PQL 100 Power Quality Logger with integral 3-prong power plug
AE/2125.04	PQL 120 Power Quality Logger with 6 ft power cord
AE/2119.02	Soft Carrying Case

SPECIFICATIONS

Measurements	Simultaneously voltage and current measurements.
Voltage TRMS	0 to 140V, 0.1V resolution Accuracy $\pm(0.3\%$ of Reading + 0.3V)
Current TRMS	0 to 15A (70A peak maximum), 0.01A resolution Accuracy $\pm(0.5\%$ of Reading + 0.03A) @ 0.75A to 15A
Frequency	45 to 65Hz, 0.01Hz resolution & accuracy
Harmonics	to 50th for both Voltage & Current
Watt/VA/VAR	0 to 2100 with 0.1 resolution Accuracy $\pm(2.0\%$ of Reading + 40 counts)
Power & Power Factor	0.01 resolution, Accuracy $\pm 0.03\%$ @ PF/DPF = 1
Programmable Parameters	V, A, Hz, Odd & Even Harmonics (V & A), W, VA, Var, THD (V & A), PF, DF, K-Factor
Demand	VA, W (10/15/30 minutes or user-definable)
Peak Demand	Over demand period
Voltage Surge & Sag	User-definable magnitude
Storage Rate	125ms to 7 days
Recording Session	Length 15 minutes to 8 weeks (user programmable)
Total Memory	1MB
Waveform Storage	20 worst-case
Operating Temperature	-10° to 50°C, <85% RH to 35°C
Dimensions	5.91 x 3.15 x 2.36" (150 x 80 x 60mm)
Safety Rating	IEC 1010-1, 150V Cat. III, Pollution Degree 2

AEMC Voltage & Current Data Loggers



SDL Sentinel®

- 3 or 4 Channels
- True RMS measurements
- Low-cost, self-contained, portable
- Differential three-phase voltage inputs
- Integral flexible current probe
- 3 Programmable storage modes
- Programmable data storage rate
- Records up to 480,000 points
- 64 samples per cycle
- Optically isolated USB 2.0 communication
- Includes DataView® software for real time display, data storage, analysis & report generation

SPECIFICATIONS

Sample Rate	64 samples/cycle
Storage Rate	250ms to 12 hours, programmable
Record Modes	Stop when full, FIFO, XRM*
Memory Capacity	1MB, 480,000 readings
Communications	Optically isolated USB 2.0
Controls	One button for on/off & start/stop
Indicators	Red, yellow & green status LEDs
Protection	IP50, except BNC models
Rating	600V CAT III
Dimensions	6.73 x 4.76 x 2.17" (171 x 121 x 55mm)

* In XRM, each time the memory fills, every other of the oldest data samples is discarded to make room for new samples.

MODEL	SDL V301	SDL V401	SDL A301	SDL A302	SDL A303	SDL A304	SDL A401	SDL A402
No. of Channels	Three	Four	Three	Three	Three	Three	Four	Four
Input Termination	Recessed banana jacks	Recessed banana jacks	Hard-wired flexible CTs	Hard-wired flexible CTs	Hard-wired flexible CTs	Hard-wired flexible CTs	BNC	BNC
Input Type	AC/DC Volts	AC/DC Volts	AC Amps	AC Amps	AC Amps	AC Amps	AC Amps	AC/DC Amps
Voltage Range	0 to 600VAC 0 to 850VDC	0 to 600VAC 0 to 850VDC						
Current Range			5 to 1000A	15 to 3000A	5 to 1000A	15 to 3000A	5 to 1000A or 15 to 3000A, sensor dependent	Probe with voltage output req'd (order separately)
Resolution	0.1V	0.1V	0.1A	0.25A	0.1A	0.25A	0.25A	Probe dependent
Accuracy	$\pm 0.25\%$ of rdg $\pm 0.6V$ from 85-600V $\pm 1.0\%$ of rdg $\pm 0.6V$ from 5-85V		$\pm 1\%$ of rdg $\pm 1.5A$	$\pm 1\%$ of rdg $\pm 1.5A$	$\pm 1\%$ of rdg $\pm 1.5A$	$\pm 1\%$ of rdg $\pm 1.5A$	$\pm 1\%$ of rdg $\pm 1.5A$	Probe dependent
Power Source	Alkaline batteries	AC power/ NiMH batteries	Alkaline batteries	Alkaline batteries	AC power/ NiMH batteries	AC power/ NiMH batteries	AC power/ NiMH batteries	AC power/ NiMH batteries
Battery Life	100 hours to 90 days	Power ride through 10 hours	100 hours to 45 days	100 hours to 45 days	Power ride through 10 hours	Power ride through 10 hours	Power ride through 10 hours	Power ride through 10 hours
Hardware Included	Six color-coded leads, batteries,	Eight color-coded leads, batteries, 120V wall charger	Three hard-wired flexible CTs, batteries	Three hard-wired flexible CTs, batteries	Three hard-wired flexible CTs, batteries, 120V wall charger	Three hard-wired flexible CTs, batteries, 120V wall charger	Batteries, 120V wall	Batteries, 120V wall charger
Catalog Number	AE/2134.10	AE/2134.11	AE/2134.15	AE/2134.16	AE/2134.17	AE/2134.18	AE/2134.19	AE/2134.20

WESCHLER INSTRUMENTS

Extech Sound Meters

NEW

Datalogging Sound Level Meter

- ANSI Type 2 meter with 16000 record memory
- Large LCD with fast 50 segment bargraph
- Time stamped data, Max Hold function
- RS-232 & recorder outputs
- Tripod mounting

407764



SPECIFICATIONS

Range:	30-130dB
Basic Accuracy:	±1.5dB
Weighting:	A & C
Response Time:	Fast, slow
Dimensions:	10.4 x 2.8 x 0.8" (265x72x21mm)

ORDERING INFORMATION

Complete with microphone, wind cover, Windows software, serial cable, AA batteries & carrying case.

EX/407764	Datalogging Sound Level Meter
EX/144117	120V AC Adapter
EX/407764-EXT	Microphone Extension Cable, 15ft (4.7m)
EX/407744	94dB Sound Calibrator
EX/407766	94/114dB Sound Calibrator

Sound Level Monitor

- Adjustable high limit
- OVER display & external alarm output
- Time stamped Max reading memory
- Meets ANSI Type 2
- Wall, bench or tripod mounting

SL120



SPECIFICATIONS

Frequency:	31.5Hz - 8kHz
Ranges:	30-80dB, 60-110dB, 80-130dB
Resolution:	0.1dB
Weighting:	A & C
Response Time:	Fast (125ms), Slow (1s)
Dimensions:	8.75 x 7.1 x 1.25" (22x18x3.2mm)

ORDERING INFORMATION

Complete with swivel microphone, AA batteries

EX/SL120	Sound Level Monitor
EX/SL125	Microphone Extension Cable, 15ft (4.7m)
EX/SL123	AC Alarm Relay Module, 9ft cable
EX/SL124	DC Alarm Relay Module, 9ft cable
EX/153117	120V AC Adapter
EX/SIGN-01	Illuminated 110VAC Warning Sign

Extech Clamp-On Power Datalogger

- 1000A Clamp measures 1Ø & 3Ø power to 600kW
- Display True Power, Apparent Power, Power Factor, True RMS Voltage & Current, Resistance and Frequency
- Dual display of kW+PF, kVA+PF, V+A, A+Hz or V+Hz
- Clamp jaws open to 1.8" (46mm)
- Data Hold and Auto Power Off
- Built-in recorder datalogs up to 4000 readings
- 25 point data memory viewable on the LCD display
- Full function display on large 4-digit LCD with fast 40 segment bargraph, Peak Hold and Min/MAX
- CAT III-600V; CE
- Optional RS-232 module with PC software

Model 382065

- Includes 9V battery, alligator clips, test leads and case

Model 382068

- Includes 382065 & 382062-1 RS-232 module, Windows compatible software and cable

382065



SPECIFICATIONS

	Range	Resolution	Basic Accuracy
True Power:	600kW	10W	±(2%rdg+5d)
Apparent Power:	1000kVA	10VA	±(2%rdg+5d)
Peak Current:	1000A	0.1A	±(6%rdg+10d)
Peak Voltage:	600V	0.1A	±(6%rdg+10d)
AC Current (40-500Hz):	1000A	0.1A	±(1.5%rdg+5d)
DC Current:	1000A	0.1A	±(1.5%rdg+5d)
AC Voltage (40-500Hz):	600V	100mV	±(0.5%rdg+5d)
DC Voltage:	600V	100mV	±(0.5%rdg+5d)
Frequency:	5kHz	0.1Hz	±(0.5%rdg+5d)
Resistance:	10kΩ	1Ω	±(1%rdg+5d)
Continuity:	Beeper when <50Ω		
Dimensions/	10.2x3.7x1.8" (260x93x45mm)/		
Weight:	15.9oz (450g)		

ORDERING INFORMATION

EX/382065	Clamp-on Power Datalogger
EX/382065-NIST	Clamp-on Power Datalogger with NIST certificate
EX/382068	Clamp-on Power Datalogger kit with software
EX/382068-NIST	Clamp-on Power Datalogger kit with software w/NIST certificate
EX/382062-1	Plug-in RS-232 Interface, Cable, Software
EX/480172	AC Line Splitter, 3-prong plug

WESCHLER INSTRUMENTS

Yokogawa Clamp-on Power Monitors/Analyzers

NEW



[Click Here to Order Online](#)



CW121 Clamp-on Power Monitor

For maintenance and long term monitoring of electrical equipment and systems.

- Supports 1Ø 2W to 3Ø 4W systems
- Internal flash card memory
- RS-232 or RS-485 communications
- Sends data to internal memory, PC, optional floppy disk or printer
- Compact and light weight unit

SPECIFICATIONS

Voltage:	150, 300, 450 ACV
Current:	20 - 3000 ACA
Measurement Parameters:	V, A, VAR, PF, Hz, Wh
Accuracy:	±0.8% rdg ± 0.4% rng, depending on clamp probe
Record Time:	Settable from 1-30 sec., 1-30 min., 1 hr.
Flash Memory:	Compatible up to 128 MB flash card
External I/O:	One of three options for start / stop Wh
Data Accumulation:	24 hours of data in one second intervals
Wiring Error Check:	Function ensures correct measurement operations
Communications:	RS-232 standard, RS-485 available
Display:	Large backlit LCD
Safety:	UL approved
Dimensions:	4.6"W x 6.4"H x 2.0"D (117x161x51mm)
Power:	100 - 240V AC, 50/60Hz (CAT II)

ORDERING INFORMATION

YE/CW121-D-1/SP1 Clamp-on Power Monitor with complete accessory package

Includes all required hardware and software, except clamp-on current probes: Portable Clamp-on Power Meter, UL/CSA standard power cord, four voltage probes, RS-232 communications, 9 pin RS232 communication cable, 16 MB flash memory card and card holder, flash card reader and cable, power cable. (Supplies power from measured circuit), magnetic case for power meter, carrying case for power meter and accessories, data analysis software package.

Add suffix to part number for correct size Current Clamp-on Probes:

/C2	Clamp-on Probes for 20/200A (3pcs / set)
/C4	Clamp-on Probes for 500A (3pcs / set)
/C6	Clamp-on Probes for 700A (3pcs / set)
/C8	Clamp-on Probes for 50A (3pcs / set)
/96034	Clamp-on Probe for 3000A Jaw type
/96035	Clamp-on Probe for 3000A Flexible type

CW240 Clamp-on Power Analyzer

Records electric energy measurements, instantaneous measurements, demand measurements, waveform measurements, voltage fluctuation measurements, harmonics measurements and leakage current.

- Supports 1Ø 2W to 3Ø 4W 4i (neutral line current) systems
- Supports two system measurements (1Ø 2W X2) (1Ø 3W X2) (3Ø 3W X2)
- Data logging interval up to 1 hour
- Internal flash card memory system
- RS-232 or RS-485 communications
- Sends data to internal memory, PC, optional floppy disk or printer

SPECIFICATIONS

Voltage:	150, 300, 600, 1000 ACV
Current:	200.0 ACmA - 3000 ACA
Measurement Parameters:	V, A, VAR, PF, HZ, WATTS, VA, PA
Record Time:	1 cycle- 0.5 sec., 1-30 sec., 1-60 min .
Flash Memory:	Compatible up to 512 MB flash card
Harmonic Measurement:	up to 50th
Wiring Error Check:	Function ensures correct measurement operations
Communications:	RS-232 standard, RS-485 available
Display:	Large backlit LCD
Safety:	UL approved
Operating temperature:	5-40°C, 5-80% RH (no condensation)
Dimensions:	8.11" W x 7.25" H x 2.56" D (206 x 184 x 65mm)
Power:	100 - 240V AC, 50/60Hz (CAT II)
Location:	Indoor use

ORDERING INFORMATION

YE/CW240-D/DA/PMI/SPI Clamp-on Power Analyzer with complete accessory package. Includes all required hardware and software, except clamp-on current probes (see below): UL/CSA standard power cord, four voltage probes, NiMH battery pack & six AA alkaline batteries, carrying case, 16 MB flash card and card reader, 9 pin RS-232 cable and Toolbox software package, users manual, quick manual, communications manual.

Add suffix to part number for correct size Current Clamp-on Probes:

/C2	Clamp-on Probes for 20/200A (4 pcs / set)
/C4	Clamp-on Probes for 500A (4 pcs / set)
/C6	Clamp-on Probes for 700A (4 pcs / set)
/C8	Clamp-on Probes for 50A (4 pcs / set)
/C10	Clamp-on Probes for 2A (4 pcs / set)
/C12	Clamp-on Probes for 3000A Jaw type (4 pcs / set)
/C14	Clamp-on Probes for 3000A Flexible type (4 pcs / set)
/96036	Clamp-on Probe for 2A measurement

Optional AP240E Data analysis software package

WESCHLER INSTRUMENTS

Hioki AC Power Monitors

Clamp-On Power HiTester

- Measure up to two 3Ø, 3-wire systems
- Measure up to four 1Ø, 2-wire systems
- 5A to 5000A range
- Simultaneous recording of demand values and harmonics
- Ideal for troubleshooting & energy management



3169 ▲

3169 SPECIFICATIONS

Systems:	1Ø 2-wire, 1Ø 3-wire, 3Ø 3-wire, 3Ø 4-wire (50/60 Hz)	Accuracy:	±0.2% rdg ±0.1% f.s. + Clamp accuracy (for active power)
Functions:	ACV, ACA, W, VA, VAR, PF, integrated power, Frequency, Harmonics	With 9660:	±0.3% rdg ±0.02% FS
Ranges:	150/300/600V	With 9661:	±0.3% rdg ±0.01% FS
	With 9660: 5-100A, 4 ranges	With 9669:	±1.0% rdg ±0.01% FS
	With 9661: 5-500A, 5 ranges	With 9667:	±2.0% rdg ±1.5 mV
	With 9669: 100A-1kA, 3 ranges	With 9694:	±0.3% rdg ±0.02% FS
	With 9667: 500A-5kA, 2 ranges	Harmonics:	Up to the 50th order, ±3% FS + measurement accuracy
	With 9694: 0.5A-5A, 3 ranges	Power:	100 to 240VAC, 50/60 Hz
Power:	75W to 9MW, 108 combination patterns	Dimensions:	8.3"W x 6.3"H x 2.4"D

Power Quality Analyzer

- Measure Dips, Swells, Interruptions, Flicker, Transients
- Harmonic to the 50th order
- High frequency transient over voltage
- Detection and waveform display
- 4 current and 4 voltage channels



3196 ▲

3196 SPECIFICATIONS

Systems:	1Ø 2-wire, 1Ø 3-wire, 3Ø 3-wire, 3Ø 4-wire (50/60 Hz)
Ranges:	Ch1, Ch2, Ch3: 150/300/600V AC Ch4: 60/150/300/600V AC, 60/600V DC 9660: 50/100A, 9661: 50/500A, 9667: 500/5000A, 9669: 1000A
Measurements:	1. Transient overvoltage 2. Voltage swell, Voltage dip, Voltage interruption 3. Frequency, Voltage, Current, Voltage/Current peak, Active/Reactive / Apparent power, Power factor, DPF 4. Voltage unbalance ratio, Current unbalance ratio 5. Harmonic voltage/current/power, Inter harmonic voltage/current, Harmonic voltage current phase angle, Total harmonic/inter harmonic distortion 6. IEC flicker[Pst, Plt], K factor / ΔV10(Japan)
Internal Memory:	13MB
Interface:	Flash ATA card (up to 528MB), RS-232C, LAN (10BASE-T), HTTP server function
Power:	Rechargeable battery & AC adapter
Dimensions:	11.8"W x 8.5"H x 2.7"D

ORDERING INFORMATION

Order Clamp-on Sensor Separately

HK/3169-20	Clamp-On Power HiTester, with voltage leads
HK/3196	Power Quality Analyzer, with voltage leads
HK/9660	100A Clamp-On Sensor
HK/9661	500A Clamp-On Sensor
HK/9669	1000A Clamp-On Sensor
HK/9667	5000A Flexible Clamp-On Sensor
HK/9694	5A Clamp-On Sensor

Other Options: Printer, memory cards, PC software, carrying case

Fluke Power Quality Analyzer



- Voltage, current and power harmonics up to 51st
- Total harmonic distortion (THD)
- Phase angle of individual harmonics
- Watts, power factor, displacement power factor, VA and VAR
- Voltage and current waveforms
- Calculates 3Ø Power on Balanced Load from 1Ø Measurement
- Use cursors to read time and date of sags and swells.
- Catch voltage transients and waveform distortion
- See current at the instant of voltage events
- Catch and save up to 40 transients
- Correlate the cause of distortion with time and date stamps
- 3 Year Warranty

The Fluke 43 includes a hard case, voltage and current probes, FlukeView® PC software and cable, line voltage adapter/battery charger, applications manual, power quality video and user's manuals.

ORDERING INFORMATION

Fluke 43B Power Quality Analyzer

The Fluke 43B Power Quality Analyzer performs the measurements you need to maintain power systems, troubleshoot power problems and diagnose equipment failures. All in a rugged handheld package.

Function	Measurement	Accuracy/Selection
Volts	5.000V-600V RMS (AC & DC)	±(1%+10d)
Amps	50.00A-50.00kA RMS (AC & DC)	±(0.5%+2d)
Mains frequency	40.0-70.0Hz	±(4%+4d)
Watts, VAR, VA	250W-2.5MW	±0.04
PF, DPF	0.25-1.00	4 min-16 days selectable
Sags & Swells	Voltage and Current	Select 20/50/100/200% above or below line voltage
Transient Capture	40 ns pulse width Up to 40 transients	1s to 5 min selectable
Thrush Current	1A to 1000A	±(0.6%+5d)
Ohms	500.0Ω to 30.00MΩ	±(2%+10d)
Capacitance	50.00nF to 500.0μF	Sampling rate: 25MS/sec
Scope	Dc, ac, ac+dc, peak, peak-peak, Hz, duty cycle, phase, pulse width, crest factor	Bandwidth: Voltage BW (Channel 1): 20MHz Current BW (Channel 2): 15 kHz
Screen saves	All functions	10 screens
Recording	V/A/Hz, Power, Harmonics, Q/Cap, Temperature, Scope	4 min-16 days selectable parameters in each display mode

Battery life: Rechargeable Ni-Cd pack (charger included), 4 hrs typical (continuous)

OPTIONAL ACCESSORIES

i200s	240A AC current probe
80i-1000s	1000A AC current probe
i2000flex	2000A flexible AC current probe
80TK	Thermocouple module
80T-IR	Non-contact infrared temperature probe
PAC91	Parallel printer adapter

WESCHLER INSTRUMENTS

Fluke Three Phase Power Quality Analyzer

NEW



The Fluke 433 and 434 three-phase power quality analyzers help locate, predict, prevent and troubleshoot problems in power distribution systems. The new IEC standards for flicker and power quality are built in.

- Rugged, handheld recorder
- Seven hours operating time per charge on NiMH battery pack
- Transfer data files to your PC for reporting and analysis using FlukeView® software

Included Accessories

The 433 and 434 come with four dual-range (40A and 400A) current clamps, five voltage test leads and clips, line adapter/battery charger, color localization input decals, color wire clips for test leads, carrying case, manual and quick start guide.

ORDERING INFORMATION

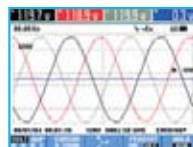
433	Power Quality Analyzer (three-phase)
434	Power Quality Analyzer (three-phase)

RECOMMENDED ACCESSORIES

i2000 PQ4 4 pack i2000A Flexclamp



- Automatic transient displays: never miss an event
- Auto trends: don't waste time setting up recordings



- Four voltage and four current channels
- Captures waveform data on all phases simultaneously

Function	433	434
Application	Three-phase	
Inputs	4 voltage and 4 current (for 3 phases and ground)	
Measurements		
Vrms, Arms, Hz, W, VAR, VA, PF, Cos Ø (DPF), Crest Factors	•	•
Harmonics and THD (V, A, W), k-factor	•	•
Inter-harmonics	Optional*	•
kWh and kVARh (forward and reverse), kVAh, demand interval	Optional*	•
Flicker (Plt, Pst, PF5)	•	•
Unbalance	•	•
Recorder/AutoTrend	•	•
System-Monitor	•	•
Real time scope/Phasor diagrams	•	•
Dips and swells/Half cycle based	•	•
Transient display	Optional*	•
Inrush current	Optional*	•
EN50160 compliance	•	•
IEC61000-4-30 compliance	•	•
Memory (screens/data)	25/5 standard 50/10 Optional*	50/10
FlukeView software and interface cable	Optional*	•
Safety rating (Meets EN61010 European standards)	CAT IV 600 V/CAT III 1000 V	
Battery life	Up to 7 hours/charge	

*Optional functionality can be added with upgrade kit.

Ideal Power Analyzer



61-806

- Backlight
- Neutral Current Capabilities
- Auto-detect Clamps
- Optional FIFO Memory

61-807

- 100A Neutral Current Clamp included
- Backlight
- Auto-detect Clamps
- Optional FIFO Memory

- Single- or Three-Phase Measurements
- True RMS
- Data Logging (1MB Memory)
- Auto Ranging
- Min/Max/Avg
- Password Protected On-Screen Setup
- 160 x 160 Pixel LCD
- RS-232 Interface
- Customized Data Collection
- Real-Time Clock
- Programmable Trigger-Points and Start/Stop Time

Power Measurements

- Kilowatts (kW)
- Voltamperes (VA)
- Inductive reactive power (kVarL)
- Capacitive reactive power (kVarC)
- Power factor (PF)
- Frequency (Hz)
- Kilowatt hours (kWh)
- Reactive power per hour (kVarhL, kVarhC)

Harmonics Measurements

- Total harmonic distortion (%THD)
- Harmonic factorization to 51st harmonic

The 800 Series Power Analyzer includes alligator clip voltage leads, three 1000A AC Clamp-on current probes, power supply/RS-232 interface and a padded carrying case.

SPECIFICATIONS

Function	Range	Accuracy
AC Voltage	20 to 500 V (phase-neutral) 20 to 866 V (phase-neutral)	0.5% 0.5%
AC Current	10 to 1000 A (with supplied Clamp adapters)	1.0%
Active Power	866 kW (with supplied Clamp adapters)	1.0%
Reactive Power	866 kW (with supplied Clamp adapters)	1.0%
Power Factor	0.5 to 1.0	1.0%

SP/61-474 Disturbance Program

Tracks sags, swells and transients; programmable trigger points; captures individual waveforms for analysis.

SP/61-475 Fast-Check Program

Monitors performance of in-line energy meters; stores data and provides comparison against mechanical or electrical meters; monitors key power and energy measurements.

SP/61-476 Check Meter Program

Captures transient waveforms caused by motor start-ups; monitors key power and energy measurements.

ORDERING INFORMATION

SP/61-805	800 Series Power Analyzer
SP/61-806	Power Analyzer with Neutral Measure
SP/61-807	Power Analyzer with Neutral Clamp
SP/61-474	Disturbances Software Program
SP/61-475	Check-Meter Software Program
SP/61-476	Fast-Check Software Program
SP/61-453	2000/200AAC Clamp
SP/61-455	500AAC Clamp

WESCHLER INSTRUMENTS

LEM Power Quality Analyzers

Three Phase Analyzer

- Power quality meter, disturbance analyzer & data logger
- Vector diagram for phase imbalance analysis
- Graphical overview mode for fast troubleshooting
- Numeric display of ACA, ACV, frequency, power, energy, flicker
- Trend recording with real time clock
- Capture 100 events with adjustable threshold
- Harmonics to the 40th with magnitude and phase
- Backlit high resolution color display



▲ **Analyst 3Q**

Supplied with carrying case, four 3000A LEM~Flex CTs, batteries, AC adaptor, test leads & RS-232 color cable.

Single Phase Analyzer

- Backlit color display
- Oscilloscope, spectrum and multi-parameter display modes
- Measure ACV, ACA, W, VA, VAR, kWhr and Power Factor
- TRMS, Peak, Crest Factor, THD, DF and Frequency
- Harmonics to the 50th with magnitude and phase
- Measure dips, sags, swells, flicker, inrush current
- Power quality surveying with time and date stamp
- mV/A input for installed CTs



▲ **Analyst Q70**

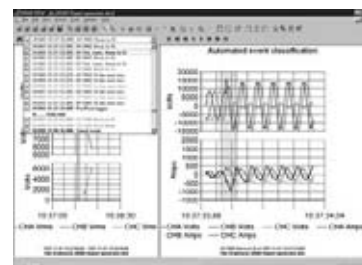
Supplied with carrying case, 3000A LEM~Flex CTs, batteries, mains adaptor, test leads & RS-232 cable.

COLOR 3Q & Q70 SPECIFICATIONS

Nominal voltage	Star: 115/230/480V Delta: 200/400/830V
Intrinsic Error	0.2% (115V - 830V)
Resolution	0.1V
Current Ranges	30/300/3000A
Intrinsic error	0.5% (excl probe)
Resolution	0.01A
Clip-on current transducer – input voltage ranges:	0.1V, 1V AC
Power	
Intrinsic error	1%
Resolution	1W
Frequency Measurement (fundamental)	45 - 65Hz
Intrinsic error	0.2%
Resolution	0.01Hz
Events – intrinsic error	1%
Flicker – FI, Pst, Plt, IEC 1000-4-15 – intrinsic error	3%

Dran-View™ Software

This premier Power Quality software allows the viewer to scroll through event, timeline and waveform data simultaneously, zero in on captured disturbance waveforms, scan historical trends, evaluate statistics and perform harmonic and interharmonic analysis - all with the click of a mouse. An intuitive two-pane browser, simple-to-use visualization, extensive analysis and complete report writing capabilities turns every user into a power quality expert.



Clamp-on Analyzer

- Measure AC and DC current to 2000A
- W, VA, VAR, kWh and Power Factor, even for distorted waveforms
- TRMS, Peak, Crest Factor, THD, DF and Frequency
- Live Harmonics analysis and bargraph display
- 8 data set memory and time stamped min, max, average
- IEC61010 Cat IV for enhanced safety
- Datalogging of up to 10,000 readings
- Optional PC based datalogging software

Supplied with test leads, carrying case and alkaline batteries.
PC Serial Cable included when ordered with software.

▲ **Analyst 2060**

SPECIFICATIONS

	Ranges	Accuracy
Current	40/400/2000	1.5%
Voltage	4/40/400/750	1%
Watts /VA /VAR	4k/40k/400k/1200k	2.5%
PF	0.3 capacitive to 0.3 inductive	3°
KWhr	4/40/400/4000/40000	3%
Frequency	10Hz to 1kHz	1%
	45-65Hz fundamental	0.5%
Line Harmonics	% F ₀ or RMS plus actual values up to the 25th	
DC Ripple	2% to 600%	

ORDERING INFORMATION

LE/AN3Q	Color ANALYST 3Q with LEM analysis software
LE/Q70	ANALYST Q70 with LEM analysis software
LE/LH2060	ANALYST 2060
LE/DRANVIEW	Dran-View software for 3Q & Q70
LE/2060 SOFT	Datalogging Software for 2060

All 5-kV & 10-kV Models Include Leads and Battery

WESCHLER INSTRUMENTS

AEMC Three-Phase Power Quality Analyzer



PowerPad™
3945



- True RMS single-, two- and three-phase measurements at 256 samples/cycle, plus DC
- Real-time color waveforms
- Easy-to-use on-screen setup
- Automatic current probe recognition and scaling
- True RMS voltage and current measurement
- Measures DC volts, amps and power
- Display and capture voltage, current and power harmonics to 50th order, including direction, in real time
- Capture transients down to 1/256th of a cycle
- Phasor diagram display
- VA, VAR and W per phase and total
- kVAh, VARh and kWh per phase and total
- Neutral current display for three-phase
- Transformer K-factor display
- Power Factor, displacement PF display
- Captures up to 50 transients
- Short-term flicker display
- Phase unbalance (current and voltage)
- Harmonic Distortion (total and individual) from 1st to 50th
- Alarms, surges and sags
- Screen snapshot function captures waveforms or other information on the display
- Includes DataView® software for data storage, real-time display, analysis and report generation

SPECIFICATIONS

Electrical

Sampling Frequency	256 samples/cycle
Data Storage	4MB partitioned for waveforms, transients, alarms and trend recording
Voltage (TRMS)	Phase-to-Phase: 960V Phase-to-Neutral: 480V
Current (TRMS)	MN Clamp: 5mA to 100mA/120A or 2 to 240A MR Clamp: 10 to 1000Aac, 10 to 1400Adc SR Clamp: 3 to 1200A AmpFlex™: 10 to 6500A*
Frequency (Hz)	40 to 69Hz
Other Measurements	kW, kVAR, PF, DPF, kWh, kVARh, kVAh, K-Factor, Flicker
Harmonics	1st to 50th, Direction, Sequence
Power Source	9.6V NiMH rechargeable battery pack AC Supply: 110/230VAC ±20% (50/60Hz)
Battery Life	≥Eight hours with display on; ≤35 hours with display off (record mode)

Mechanical

Communication Port	Optically coupled RS-232
Display	1/4 VGA (320 x 240) color LCD
Dimensions	9.5 x 7 x 2" (240 x 180 x 55mm)
Weight	4.6 lbs (2.1kg)
Safety Rating	EN 61010, 600V Cat. III, Pollution Degree 2

*Crest factor at 6500 = 1



All models include three color-coded current probes with 10 ft leads (MN93 example shown), four color-coded 10 ft voltage leads, four color-coded alligator clips, RS-232 DB9F optically coupled serial cable, NiMH battery, US 120V power cord, DataView® software, carrying bag, soft carrying pouch and user manual.

ORDERING INFORMATION

AE/2130.75	PowerPad™ Model 3945 w/MN93 (240A)	AE/2140.14	Set of three color-coded MN193 probes (6A/120A) with 10 ft leads
AE/2130.76	PowerPad™ Model 3945 w/SR193 (1200A)	AE/2140.17	5A Adapter box
AE/2130.77	PowerPad™ Model 3945 w/24" AmpFlex™ 193-24 (6500A)	AE/2140.23	Set of four color-coded 30 ft voltage leads
AE/2130.78	PowerPad™ Model 3945 w/36" AmpFlex™ 193-36 (6500A)	AE/2140.24	Set of three color-coded MN93-30 probes (240A) with 30 ft leads
AE/2130.79	PowerPad™ Model 3945 w/MR193 (1000Aac/1400Adc)	AE/2140.25	Set of three color-coded SR193-30 probes (1200A) with 30 ft leads
AE/2130.80	PowerPad™ Model 3945 w/MN193 (6A/120Aac)	AE/2140.26	Set of three color-coded 24" AmpFlex™ 193-24-30 probes (6500A) with 30 ft leads
Accessories (Optional)		AE/2140.27	Set of three color-coded 36" AmpFlex™ 193-36-30 probes (6500A) with 30 ft leads
AE/2140.09	Set of three color-coded MN93 probes (240A) with 10 ft leads	AE/2140.28	One AC/DC Current Probe Model MR193-BK (black connector) (1000Aac/1400Adc)
AE/2140.10	Set of three color-coded SR193 probes (1200A) with 10 ft leads	AE/2140.29	Set of three color-coded MN193-30 probes (6A/120A) with 30 ft leads
AE/2140.11	Set of three color-coded 24" AmpFlex™ 193-24 probes (6500A) with 10 ft leads	AE/2140.30	Set of three color-coded MR193-30 probes (1000Aac/1400Adc) with 30 ft leads
AE/2140.12	Set of three color-coded 36" AmpFlex™ 193-36 probes (6500A) with 10 ft leads		
AE/2140.13	Set of three color-coded MR193 probes (1000Aac/1400Adc) with 10 ft leads		

AEMC Single-Phase Power Quality Analyzer

NEW



8230 PowerPad® Jr.

- Displays Min, Max and Average Volts and Amps, Crest Factor, Peak value and K-Factor
- Calculates and displays Watts, VARs and VA, Power Factor and Displacement Power Factor for single-phase and balanced three-phase
- Displays total harmonic distortion (THD-F and THD-R) for voltage and current
- Displays individual harmonic values and % for Volts and Amps through the 50th harmonic
- Captures, displays and stores inrush current waveforms and statistics
- Stores up to eight screen captures
- Stores up to 1MB of trend recorded data
- Configurable from DataView® software or front panel
- Captures up to 4096 alarm events using up to 10 different thresholds
- Displays and records up to 17 different power quality parameters
- Includes DataView® software for data storage, real-time waveform display, analysis and report generation

All models include current probe with 10 ft lead and black connector, black & red 10 ft voltage leads and alligator clips, optical USB cable, NiMH battery, US 120V power cord, DataView® software, carrying bag, soft carrying pouch and user manual.

DataView® Software included with Model 8230

- Display and analyze real-time or recorded data on the PC
- Configure all PowerPad® Jr. functions & parameters
- Customize views, templates and reports
- Create and store a complete library of configurations
- Zoom in and out and pan through sections of the graph
- Display waveforms, trend graphs, harmonic spectrums, text summaries, transients, event logs & stored alarms

ORDERING INFORMATION

AE/2130.82	PowerPad® Jr. Model 8230 w/MN93-BK (240A)
AE/2130.83	PowerPad® Jr. Model 8230 w/SR193-BK (1200A)
AE/2130.84	PowerPad® Jr. Model 8230 w/24" AmpFlex® 193-24-BK (6500A)
AE/2130.85	PowerPad® Jr. Model 8230 w/36" AmpFlex® 193-36-BK (6500A)
AE/2130.86	PowerPad® Jr. Model 8230 w/MR193-BK (1000AAC/1400ADC)
AE/2130.87	PowerPad® Jr. Model 8230 w/MN193-BK (6A/120AAC)

SPECIFICATIONS

Electrical	
Voltage (TRMS)	660V Phase-to-Phase, 600V Phase-to-Neutral
Current (TRMS)	MN Clamp: 5mA to 120A or 2 to 240A MR Clamp: 10 to 1000AAC, 10 to 1400ADC SR Clamp: 3 to 1200A AmpFlex®: 10 to 6500A (Crest factor at 6500 = 1)
Frequency	40 to 70Hz
Other Measurements	kW, kVAR, PF, DPF, kWh, kVARh, kVAh, K-Factor, Flicker, Harmonic Phase Shift, Phase Rotation
Harmonics	THD-R, THD-F, V, A, VA 1st to 50th, Direction, Sequence
Sampling Frequency	256 samples/cycle
Data Storage	1.5MB partitioned for waveforms, alarms & trend
Power Source	NiMH AA rechargeable battery pack AC Supply: 120/230VAC (50/60Hz)
Battery Life	>Eight hrs with display on, >40 hrs with display off (recording mode)
Mechanical	
Communication Port	Optically isolated USB
Display	1/4 VGA (320 x 240) color LCD
Dimensions	8.3 x 4.3 x 2.4" (211 x 108 x 60mm)
Safety Rating	EN 61010, 600V Cat. III, Pollution Degree 2

AEMC Power Quality Meter

NEW



8220

- Displays Min, Max and Average Volts and Amps, Crest Factor, Peak value and K-Factor
- Calculates and displays Watts, VARs and VA, Power Factor and Displacement Power Factor for single-phase and balanced three-phase
- Displays total harmonic distortion (THD-F and THD-R) for voltage and current
- Displays individual harmonic values and % for Volts and Amps through the 50th harmonic
- Captures and displays inrush current
- Calculates & displays phase rotation & RPM
- Displays °F or °C & resistance to 2000Ω
- Conducts continuity and diode tests
- Stores up to nine complete sets of readings for all volt, amp, power, harmonics and other measurements
- Configurable from DataView® software or front panel
- Operates off batteries or optional AC adapter
- Includes DataView® software for data storage, real-time waveform display, analysis and report generation

All models include current probe with 10 ft lead & black connector, black & red 10 ft voltage leads and alligator clips, optical USB cable, six 1.5V batteries, two safety test probes, DataView® software, carrying bag, soft carrying pouch and user manual.

Three-line backlit digital display with custom icons

ORDERING INFORMATION

AE/2130.91	Power Quality Meter Model 8220 w/MN93-BK (240A)
AE/2130.92	Power Quality Meter Model 8220 w/SR193-BK (1200A)
AE/2130.93	Power Quality Meter Model 8220 w/24" AmpFlex® 193-24-BK (6500A)
AE/2130.94	Power Quality Meter Model 8220 w/36" AmpFlex® 193-36-BK (6500A)
AE/2130.95	Power Quality Meter Model 8220 w/MR193-BK (1000AAC/1400ADC)
AE/2130.96	Power Quality Meter Model 8220 w/MN193-BK (6A/120AAC)

SPECIFICATIONS

Voltage (TRMS)	660V Phase-to-Phase, 600V Phase-to-Neutral
Current (TRMS)	MN Clamp: 5mA to 120A or 2 to 240A MR Clamp: 10 to 1000AAC, 10 to 1400ADC SR Clamp: 3 to 1200A AmpFlex®: 10 to 6500A (Crest factor at 6500 = 1)
Frequency	40 to 70Hz
Other Measurements	kW, kVAR, PF, DPF, VA, Harmonics, Phase Rotation, Temperature, RPM, Resistance, Continuity, Diode Test
Sampling Frequency	256 samples/cycle
Data Storage	Stores nine sets of readings
Power Source	Six 1.5V AA Alkaline batteries (>8hr life with display on) AC Supply: 120/230VAC (50/60Hz) - optional
Communication Port	Optically isolated USB
Dimensions	8.3 x 4.3 x 2.4" (211 x 108 x 60mm)