

## Weschler Quatro BarGraph Meters

- 101 segment bargraph in red, green or tricolor
- 4-digit 10000 count LED display
- 6" edgewise & 9/64 DIN cases
- Vertical or horizontal orientation

### Features

- Single & dual bar configurations
- Adjustable bargraph span
- Bargraph center zero mode
- Four programmable setpoints
- Front panel setpoint status indicators
- Up to 4 relay outputs for control and alarms
- Analog retransmit option with adjustable span
- Wide power supply range (AC & DC)
- Sensor excitation to power 4-20mA transmitters or bridge type sensors



▲ Style A

Direct Measurement of

- DC Current
- AC Current
- DC Voltage
- AC Voltage
- Frequency
- Process Loops

- Thermocouples
- RTDs
- Load Cells/Strain Gauges
- Speed Pickups/RPM
- Pressure
- Resistance/Potentiometers

### Bar & Digital

Style A combines a precision 4 digit LED display with a 101 segment bargraph. The bar can be set to display any part of the digital range, from a minimum of 100 counts to the full 12000 A/D counts. Higher bar resolution is useful for applications where the normal operating range is only a portion of the full scale input. Style A offers 4 levels of display brightness, which can be set from the front panel.

### ORDERING INFORMATION

Select desired code for each category to build the 15 digit part number.  
Example Part Number: MAVTRCXP1AKXXX

A B C D E F G H I J K XXX

<b>A Type</b>	F3	Frequency, 60-500VAC 99.99/999.9/9999Hz (Style A)
L 4 digit, 9/64 DIN Case	GF	Direct Pressure, 15 psi differential (clean, dry gas)
M 4 digit, 6" Edgewise Case	GH	Direct Pressure, 30 psi diff. (dry)
<b>B Style</b>	GK	Direct Pressure, 100 psi diff (dry)
A Digital & bar	M1	RPM, 99.99/999.9/9999Hz, 50mV-30V, w/24V Exc. (Style A)
C Single bar (no digital)	PD	Universal Process, 2V/5V/10V/ 20V/200V/2mA/20mA
D Dual bar (no digital)	PE	Dual Process, (style D only) 2V/10V/20V/200V/2mA/20mA
<b>C Orientation</b>	RD	Resistance, 2kΩ
V Vertical	SA	Strain Gage, 5/10VDC Excitation, 20/2mV/V, 4/6-wire
H Horizontal	SD	Pressure/Load Cell, 5/10V Excitation, 20/2mV/V, 4-wire
<b>D Bar Color</b>	TD	Thermocouple, J Type (0-1400°F) (Style C or D)
R Red	TE	Thermocouple, K Type (0-1999°F) (Style C or D)
G Green	W1	Thermocouple, J,K,R,T; Selectable °C/°F, 1°/0.1° (Style A)
T Tricolor (Style A or C only)	W2	RTD, 100Ω Pt Selectable 3/4-wire, °C/°F, 1°/0.1°, 385/392 (Style A)
<b>E Digital Display Color</b>	<b>I Power</b>	
R Red	1	85-265VAC/95-370VDC
G Green	2	15-48VAC/10-72VDC
X None (Style C or D)	<b>J Retransmit</b>	
<b>F Bar &amp; Scale Position</b>	A	Isolated 16 Bit Output, 4-20mA
C Center bar (Style A)	V	Isolated 16 Bit Output, 0-10VDC
A Center bar, scale left or above	X	None
E Center bar, scale right or below	<b>K Relays</b>	
X Dual bar (Style D)	for Type L:	
<b>G Second Bar Color (right or bottom bar)</b>	2	Two 10A Form C
R Red (Style D only)	4	Two 10A Form C & Two 5A
G Green (Style D only)		Form A **
X None	X	None
<b>H Input (Partial list)</b>	for Type M:	
AA AC Volts, scaled RMS, 200/600V	B	Two 10A Form C
AB AC Volts, scaled RMS, 200mV/2V/20V	E	Two 10A Form C & Two 5A Form A **
AC AC mA, scaled RMS, 2/20/200mA	K	Four 5A Form A
AD AC Amps, scaled RMS, 1A	T	Four 400V 140ma AC/DC SSR
AE AC Amps, scaled RMS, 5A	X	None
DE DC Volts, 2/20/200V/Custom w/Offset and 24V Excitation	<b>** shared common between A &amp; C</b>	
DF DC milliamp, 2/20/200mA w/Offset and 24V Excitation		
DG DC Amps, 1A		
DD DC Amps, 5A		
E1 Line Frequency, 60-500VAC, 199.9Hz, 400Hz optional (Style C or D)		
F2 Frequency, 50mV-30V w/24V Exc. 99.99/999.9/9999Hz (Style A)		

Inputs continued next column

### Single Bar

Style C offers a 101 segment red, green or tricolor bar, without digital display. The bar can be set to grow from the bottom or the center of the scale. The center mode is normally used for center zero but can also show deviation around a half-scale value.



▶ Style C



▲ Style D

### Dual Bar

The dual bar configuration (Style D) can display two process variables, using the Dual Process input card (PE). Any combination of red and green bars can be specified. Two setpoints are available for each channel. The dual input card may also be used to display one process variable on the left bar and two tracking setpoints on the right bar. In this mode, setpoint 1 is determined by the channel 2 input signal. Setpoint 2 is offset from setpoint 1 by a fixed (user selectable) amount.

The dual bar style can be used with a single channel input module & 4 set points. The left bar displays the process signal; the right bar displays min/max.

### SPECIFICATIONS

<b>Input Accuracy:</b>	
DCV, DCA	±(0.06% of reading + 2 counts)
ACV, ACA	±(0.07% of reading + 5 counts)
Temperature	±(0.1% of reading + 3 counts)
Direct Pressure	±(1.0% of range + 3 counts)
Frequency/RPM	±(0.06% of reading + 2 counts)
Strain/Load	±(0.08% of reading + 3 counts)
Process	±(0.06% of reading + 2 counts)
Resistance/Pots	±(0.06% of reading + 2 counts)
<b>Bargraph Display:</b>	4", 101 segment
<b>Bar Viewing Angle:</b>	±40° red or green, ±35° orange
<b>Digital Display:</b>	4 digit LED, 0.31" (7.9mm) height Range -1999 to 9999 counts
<b>Decimal Position:</b>	Front panel selectable n.nnn, nn.nn, nnn.n, nnnn.
<b>Relay Output:</b>	
Form A (SPST)	5A@250VAC, 5A@30VDC (resistive)
Form C (SPDT)	10A@240VAC, 8A@24VDC (resistive)
<b>Analog Output:</b>	Isolated 16 bit, user scalable
mA out	4-20mA, 500Ω maximum loop resistance
Volts out	0-10VDC, 500Ω minimum load resistance
<b>Power Supply:</b>	85-265 VAC / 95-370 VDC @ 2.5W (4.2W) 18-48 VAC / 10-72 VDC @ 2.5W (4.2W)
<b>Sensor Excitation:</b>	24V @ 50mA (2-wire loop power) 10V @ 120mA (bridge excitation)
<b>Operating Temperature:</b>	0 to 60°C, 95% RH (non-condensing)

## Weschler Tri-Color Bargraph Meters

- Large, bright display with 16 step dimming
- 40, 50 or 100 segment Tri-Color Bar
- Bar changes color at user adjustable setpoints – Red, Green, Amber
- 5 or 6 digit resolution
- Versatile selection of inputs
- Up to 6 form A or 4 form C relay outputs
- Peak/Valley option
- RS232, RS485 & Ethernet Communications
- Analog retransmit option
- AC or DC power
- Rugged case

Sizes to replace popular edgewise and circular analog meters.

### CONFIGURATION OPTIONS

#### SIZE

BG252	6" Vertical BarGraph
BH252	6" Horizontal BarGraph
BV5A	7 1/2" Vertical BarGraph
BD101	10" Vertical BarGraph
BG241	4 1/2" Square BarGraph
BG261	8 1/2" Square BarGraph
BG281	8" 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
Process	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
12V DC
24V DC
28V DC
48V DC
125V DC
250V DC
120V AC / 125V DC

#### COMMUNICATION

RS232
RS485
Ethernet
ModBus

#### RETRANSMIT

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

#### DIGITAL DISPLAY COLOR

Green
Amber
Red

Over 10,000 combinations available.

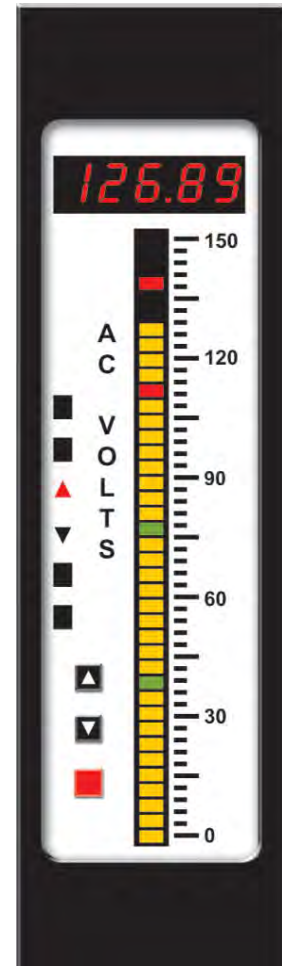
### FIELD PROGRAMMABLE FUNCTIONS

- Zero and full scale point location
- Setpoint type (Hi or Low)
- Hysteresis & latching
- Setpoint time delay
- 16 step dimming
- Digital display for engineering units
- Enable/disable front buttons
- I.D. selection for communication
- Bar form
- Peak / Valley enable
- Color zones
- Over / Under range, flashing
- Lamp test



**BG261TC**

**BD101TC**



**BH252TC**

More information online at [weschler.com/bargraph](http://weschler.com/bargraph)

## Weschler Bargraph Meters

- Precise digital & vivid proportional (bar) display
- 101 segment single color bar, up to 10" high
- 3 1/2, 4 1/2 or 5 1/2 digit resolution
- Versatile selection of inputs
- Up to 6 form A or 4 form C relay outputs
- Peak/Valley option
- Analog retransmit option
- AC or DC power
- Rugged case

### CONFIGURATION OPTIONS

SIZE		POWER	
BG252	6" Vertical BarGraph	120V AC 50/60Hz	
BH252	6" Horizontal BarGraph	240V AC 50/60Hz	
PC101	DIN Size Vertical BarGraph	5V DC	
PH101	DIN Size Horizontal BarGraph	12V DC	
PC202	DIN Size Dual BarGraph	24V DC	
PG101	Single BarGraph	28V DC	
PG202	Dual BarGraph	48V DC	
BI1251	6" Vertical BarGraph	125V DC	
BW1316	6" Vertical BarGraph	250V DC	
BV5A	7 1/2" Vertical BarGraph	120V AC / 125V DC	
BD101	10" Vertical BarGraph		
BG241	4 1/2" Square BarGraph		
BG261	8 1/2" Square BarGraph		
BG281	8" Circle BarGraph		
BG251	6" Circle BarGraph		

SETPOINTS		COMMUNICATION	
	Hi/Lo		RS232
	Hi/Hi-Hi		RS485
	Lo/Lo-Lo		Ethernet
	Hi-Hi/Hi/Lo/Lo-Lo		ModBus

INPUT		RETRANSMIT	
DC Volts	50mV to 250V full scale		4-20mA
DC Amps	50µA to 5A full scale		0-1mA
AC Volts RMS	50mV to 250V full scale		1-5V DC
AC Amps RMS	1mA to 5A full scale		0-1V DC
Process	4-20mA DC		10-50mA DC
	1-5V DC		Excitation Power 24 VDC
	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			

LED COLOR	
	Green
	Amber
	Red

BAR COLOR	
	Green
	Amber
	Red

Over 10,000 combinations available.

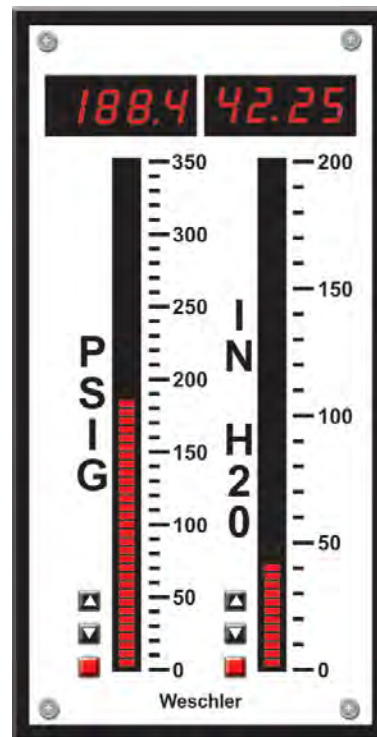
For more information see [weschler.com/bargraph](http://weschler.com/bargraph)



BG241



BG252



PC202

## Dixson Bargraph Meters/Controllers



**BW051P**

**BK051P**

- Fit Standard Switchboard Cutouts
- Red, Green or Amber LED Bar
- Precise 4 Digit Readout
- Underrange/Overrange Indication
- On/Off Control via Setpoint Relays
- Isolated Retransmit Option
- Transducer Excitation Supply
- Minimum 88,000 hour MTBF
- Two Year Warranty

### ORDERING INFORMATION

To Order—Insert Code for Each Letter to Select Catalog Number  
 Order Example: BBVRR1RAY1VDL1BX

A B C D E F G H I J K L M N O

A Basic Unit		Basic Unit	
BB	BB101P	BW	BW051P
BC	BB202P (101 Segments each side)*	BK	BK051P
B Bargraph Orientation			
H	Horizontal (BP101P Only)		V Vertical
C Bargraph Color			
A	Amber		R Red (Standard)
G	Green		S Mixed (BW051/BK051 Only)
			T Tricolor
D 4-Digit Display			
X	None		G Green
A	Amber		R Red (Standard)
E Decimal Location			
1	000.0	3	0.000
2	00.00	X	0000
F Setpoint Options (Must be ordered with Alarm Setpoint) (G)			
X	None		A Amber
R	Red (Standard)		G Green
G Alarm Setpoint (Must be ordered with Setpoint Option (F))			
X	None		L Low/Low
H	High/High		A High/Low
H Program Switches			
X	None		Y Yes (Standard)
I Primary Power			
1	115 VAC	4	24 VDC
2	230 VAC	6	12 VDC
5	5 VDC	8	48 VDC
J Signal Inputs			
A	Amperes		M Milliamperes
B	Millivolts		O Other
C	Degrees C		U Microamperes
F	Degrees F		V Volts
K Signal Type			
A	AC	D DC	O RTD or TC
L Signal Linearity			
L	Linear		Q Square Root
X	Non-linear (TC, RTD, custom)		
M Special Options			
X	None		1 Isolated 2-wire retransmit
3	Auxiliary supply		A AC/DC converter (for AC in)
B	DC amp (for <1V FS in)		R RTD in
J	Type J TC in		K Type K TC in
E	Type E TC in		S Combination of the above
N Bar Start			
B	Bottom		C Center
T	Top		
O Terminals/Conformal Coating			
X	Standard/none		Y Standard/coated
B	Barrier strip terminals		E End cap
S	Combination of the above		

### SPECIFICATIONS

Input Ranges:

DC Volts	50mV to 250V
DC Current	50mA to 250mA
AC Volts	250mV to 250V
AC Current	1mA to 5A
Thermocouple	J, K, T, E
RTD	Pt 100
DC Accuracy:	±0.04% of span ±1d
AC Accuracy:	±0.5% of span, above 5% of range
Digital Display:	4 digit LED, 0.01% resolution
Enclosure:	Plastic, UL94 V0 or V1
Setpoint Relays:	Form C, 0.4A@125VAC, 2A@30VDC
Setability:	0.1%, with 1.0% hysteresis
Operating temperature:	0 to 60°C
Power:	115/230VAC, 50/60/400Hz, 4VA/channel DC power available
Line Regulation:	±10%
BB101P, BB202P	Bar Segments: 101 Dimensions: 2.16"W x 6"H x 5.8"D Panel Cutout: 1.77" x 5.7" Orientation: Vertical or horizontal
BW051P	Bar Segments: 51 Dimensions: 4.625" x 4.625" x 6.7"D Panel Cutout: 4" dia ANSI switchboard
BK051P	Bar Segments: 51 Dimensions: 3.82"W x 11.25"H x 7.10"D Panel Cutout: 1.77" x 5.7"

\*Specify both sides for BB202P

## Texmate Intelligent Panel Meters

### TIGER FAMILY

Intelligent Meter Controllers with Programmable Logic, Digital Signal Processing Capabilities & Serial Communication



▲ **DI-50E**  
1/8 DIN 96X48mm



▲ **DI-60AE**



▲ **GI-50E**  
9/32 DIN 144x72mm



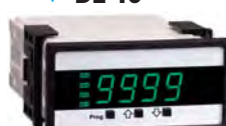
▲ **DI-60E**  
1/8 DIN 96X48mm

### LEOPARD FAMILY

Smart, Programmable Meter Relays with Isolated Retransmit or Control Loop Outputs



1/8 DIN 96X48mm  
▲ **DL-40 LR**



▼ **DL-40**



▲ **BL-40**  
1/16 DIN 96X24mm

### LYNX FAMILY

Configured for Direct Connection to Most Sensors and Process Signals, with Displays Scalable to Any Unit of Measure



1/8 DIN  
96X48mm

▲ **DX-35 LR**



▲ **DX-35**



▲ **DX-40 LR**



▲ **DX-45**

1/16 DIN  
96X24mm



▲ **BX-35**



▲ **BX-45**

### Tiger Family Features

- Intelligent and super-intelligent digital meters
- Front-panel digital calibration and function selection
- Built-in linearization function, 32 to 125 flexible points
- Built-in sensor excitation voltage 5 V / 10 V / 24 V DC
- Six 5A relays or combinations of 10A relays and 5A relays
- Built-in memory for maximum and minimum readings
- Over 75 signal conditioners, single as well as dual inputs
- Two high-resolution, independently programmable 16-bit analog outputs
- Built-in timer and totalizer (signal integration) inputs, plus user-definable macros and real time clock
- Choice of serial communications – RS232, RS485, Ethernet, ASCII, Modbus and direct drive printer output
- Auto-sensing AC / DC, wide range 85-265 V AC / 95-370 V DC or 15-48 V AC / 10-72 V DC power supply
- Digital "smart" filtering
- Computer programmable
- Data logging up to 7000 samples

### Leopard Family Features

- Smart 4-digit meters
- Front-panel digital scaling, offset, and setpoints
- Over 38 different signal conditioners
- Dual 10 and 5-amp relays, 4 relays total plus analog output
- 1/16 DIN meters have 2 or 3 relays or 1 relay plus analog output
- Auto-sensing AC / DC, wide range 85-265 V AC / 95-370 V DC, or 15-48 V AC / 10-72 V DC power supply

### Lynx Family Features

- Basic indicator 3.5, 4 or 5 digit, 0.56" and 0.8" LED meters
- Analog scaling and offset from rear
- Over 24 single-input signal conditioners available
- Auto-sensing AC / DC, wide range 85-265 V AC / 95-370 V DC, or 15-48 V AC / 10-72 V DC power supply

## SPECIFICATIONS

### Tiger Meter Specifications

**Accuracy:** Built-in compensation and linearization functions enable system accuracies of the order of  $\pm 0.0001\%$  of reading for analog inputs. Stop - Start time resolution from  $\pm 1\text{sec}$  to  $\pm 0.7\text{nsec}$ . Digital input and pulse counts  $\pm 1$  count.

**A/D Convertors:** A Dual Slope, bipolar 17 bit A/D is provided as standard on the main board. SMART modules have 24 bit or 16 bit Delta-Sigma A/D convertors that utilize the internal I<sup>2</sup>C BUS.

**Temperature Coefficient:** Typically 30ppm/°C. Compensation can be utilized to achieve system temperature coefficients of 1ppm.

**Warm Up Time:** Up to 10 minutes, depending on input module.

**Conversion Rate:** Typically 10 samples per second. However, SMART input modules are available that can convert at 60, 240, 480 or 960 samples per second.

**Control Output Rate:** Can be selected for 100msec or 10msec. Some SMART modules have SSR outputs that react within 1.2msec.

**Excitation Voltage:** Depends on input module selected. Typically, 5V, 10V or 24VDC is provided.

**Operating Temperature:** 0 to 50 °C (32 °F to 122 °F).

**Storage Temperature:** -20 °C to 70 °C (-4 °F to 158 °F).

**Relative Humidity:** <95% (non-condensing) at 40 °C (104 °F).

**Case Options:** NEMA 4X Lens cover  
Metal case surround  
Panel Adapters

## Texmate Intelligent Panel Meters

### Leopard Meter Specifications

A/D Converter:	14 bit single slope
Accuracy:	±(0.05% of reading + 2 counts)
Temperature Coefficient:	100 ppm/°C (Typical)
Warm Up Time:	2 minutes
Conversion Rate:	5 conversions per second (Typical)
Operating Temperature:	0 to 60°C, <95% (non condensing)
Storage Temperature:	-20°C to 70°C

### Lynx Meter Specifications

A/D Converter:	12 bit dual slope
Accuracy:	±(0.05% of reading + 2 counts)
Temperature Coefficient:	100 ppm/°C (Typical)
Warm Up Time:	2 minutes
Conversion Rate:	3 conversions per second (Typical)
Operating Temperature:	0 to 60°C, <95% (non condensing)
Storage Temperature:	-20°C to 70°C

### ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.  
Order Example: DI-50E-DR-PS1-IA01-IAC-S2-R1

Basic Unit **A** - **B** - **C** - **D** - **E** - **F** - **G**

### TIGER FAMILY METER SELECTION

A	DI-50E	Intelligent Modular, 32 pt Linear, Analog out & relays
	DI-60AE	Intelligent Modular, Alpha Numeric 6 digit 0.56" LED
	DI-60E	Intelligent Modular, Numeric 6 digit 0.56" LED
	GI-50E	Intelligent Modular, w/ 5 digit 1" LED
B	Display	
	DR	Red LED
	DG	Green LED
	DB	Super-bright Red LED
C	Power Supply	
	PS1	85-265VAC/95-370VDC
	PS2	15-48VAC/10-72VDC
D	Input Modules – See Input Module List "T" Items	
E	Output Options	
	AIC	Isolated 4 to 20 mA Analog Output
AIV	Isolated 0 to 10 VDC Analog Output	
F	Serial Communications (Isolated)	
	S1	USB, ASCII
	S2	RS-232, ASCII
	S4	RS-485, ASCII
	S8	Ethernet, ASCII
	S3	USB, Modbus RTU
	S5	RS-232, Modbus RTU & ASCII
	S6	RS-485, Modbus RTU & ASCII
	S9	Ethernet, Modbus TCP/IP
G	Relays	
	OR11	One 10A Form C
	OR12	Two 10A Form C
	OR33	Three 5A Form A
	OR34	Four 5A Form A
	OR46	Six 5A Form A*
	OR14	Two 10A Form C, Two 5A Form A*
OR23	Two 10A Form C, One 5A Form A	
OR62	Two 400V AC/DC SSR, 140mA	
OR64	Four 400V AC/DC SSR, 140mA	

### LEOPARD FAMILY METER SELECTION

A	BL-40	4.0 digit, Modular, Low Profile, Half Height Case
	BL-40H	4.0 digit, Thermocouple & RTD, Half Height Case
	DL-40	4.0 digit, Modular, 1/8 DIN case
	DL-40H	4.0 digit, Thermocouple & RTD, 1/8 DIN Case
B	Display	
	DR	Red LED, 0.56 inch high
	DG	Green LED, 0.56 inch high
	DB	Super bright LED, 0.56 inch high
	LG	Large Green LED, 0.8 or 1 inch high
	LR	Large Red LED, 0.8 or 1 inch high
C	Power Supply	
	PS1	85-265VAC/95-370VDC
	PS2	15-48VAC/10-72VDC
D	Input Modules – See Input Module List "L" Items	
E	Output Options	
	AIC	Isolated 4 to 20 mA Analog Output
AIV	Isolated 0 to 10VDC Analog Output	
F	Relays	
	OR11	Single 10A Form C Relay
	OR12	Two 10A Form C Relays
	OR34	Four 5A Form A Relays
	OR14	Two 10A Form C, Two 5A Form A (some contacts connected)

### LYNX FAMILY METER SELECTION

A	BX-35	3.5 Digit Universal Power Supply, 1/16 DIN Case
	BX-45	4.5 Digit Universal Power Supply, 1/16 DIN Case
	DX-35	3.5 Digit Universal Power Supply, 1/8 DIN Case
	DX-40	4 Digit Universal Power Supply, 1/8 DIN Case
	DX-45	4.5 Digit Universal Power Supply, 1/8 DIN Case
B	Display	
	DR	Red LED
	DG	Green LED
	DB	Super-bright Red LED
	LG	Large Green LED, 0.8 inch high
LR	Large Red LED, 0.8 inch high	
C	Power Supply	
	PS1	85-265VAC/95-370VDC
	PS2	15-48VAC/10-72VDC
D	Input Modules – See Input Module List "LY" Items	

### INPUT MODULE SELECTION

Function	Module	For
<b>AC</b>		
AC 1A, Scaled RMS	IA04	T,L,Ly
AC 5A, Scaled RMS	IA05	T,L,Ly
AC 1A, True RMS	IA09	T,L,Ly
AC 5A, True RMS	IA11	T,L,Ly
AC 2/20/200mA, Scaled RMS	IA03	T,L,Ly
AC 2/20/200mA, True RMS	IA08	T,L,Ly
AC 100mV, Scaled RMS	IA10	T,L,Ly
AC 100mV, True RMS	IA12	T,L,Ly
AC 200/600V, Scaled RMS	IA01	T,L,Ly
AC 200mV/2V/20V, Scaled RMS	IA02	T,L,Ly
AC 200/600V, True RMS	IA06	T,L,Ly
AC 200mV/2V/20V, True RMS	IA07	T,L,Ly
<b>DC</b>		
DC 5A	ID04	T,L,Ly
DC 1A	ID09	T,L,Ly
DC 2/20/200mA w/ 24V Exc.	ID03	T,L,Ly
DC 2/20/200mA w/ Offset & 24V Exc.	ID07	T,L,Ly
DC 20/50/100/200mV w/ Offset & 24V Exc.	ID02	T,L,Ly
DC 2/20/200V/Custom w/ 24V Exc.	ID01	T,L,Ly
DC 2/20/200V/Custom w/ Ext. Decimal Select	ID06	T
DC 2/20/200V/Custom w/ External LIN Table Select	ID08	T
DC 2/20/200V/Custom w/ Offset & 24V Exc.	ID05	T,L,Ly
DC Watts, 200V & 50mV from shunt	IW03	T
DC 2V and 3-wire RTD	IDT3	T
Dual DC 2mA	IDD3	T
Dual DC 50mV	IDD2	T
Dual DC 2V	IDD1	T
DC 50mV and 4-20mA	IDD6	T
DC 2V and 4-20mA	IDD5	T
DC 2V and 50mV	IDD4	T
DC 50mV and JKRSTBN Thermocouple	IDT5	T
DC 2V and JKRSTBN Thermocouple	IDT4	T
DC 1-5V Process w/ Offset & 24V Exc.	IP03	T,L,Ly
DC 2/5/10/20V/2/20mA + 3 Digital Inputs	IP10	T
Triple DC 50mV	ITD2	T
Triple DC 2V	ITD1	T
DC 50mV and 50mV and JKRSTBN T/C	ITT6	T
DC 50mV and 2V and JKRSTBN T/C	ITT9	T
DC 2V and 2V and JKRSTBN T/C	ITT7	T
DC 50mV and two JKRSTBN T/C	ITT5	T
DC 2V and two JKRSTBN T/C	ITT3	T
DC Volts and T/C and Frequency	ITTG	T
Quad DC 50mV	IQD2	T
Quad DC 2V	IQD1	T
RTD + DC V + DC V + Frequency	IQT5	T
Smart DC V, 16 bit, 1 to 800 Hz update rates	ISD1*	T
Smart DC V, 16 bit, 1 to 960 Hz update rates	ISD2**	T
Smart DC V, 16 bit, 1 to 800 Hz w/dual SSRs	ISD3*	T
Smart DC V, 16 bit, 1 to 960 Hz w/dual SSRs	ISD4**	T
Smart DC V, High Res & Acc, 24 bit 1-400Hz	ISD5*	T
Smart DC V, High Res & Acc, 24 bit 1-480Hz	ISD6**	T
Smart DC V, High Res & Acc, 1-400Hz w/dual SSRs	ISD7*	T
Smart DC V, High Res & Acc, 1-400Hz w/dual SSRs	ISD8**	T
Smart Dual 3-wire Potentiometer (50 Hz)	ISR3*	T
Smart Dual 3-wire Potentiometer (60 Hz)	ISR4**	T
Smart Dual DC Volts, 16 bit, 1-20Hz update	ISDA*	T
Smart Dual DC Volts, 16 bit, 1-20Hz update	ISDB**	T
Smart Load Cell and RTD	ISSB	T
DC Process 2/5/10/20/200V/2/20mA w/ 24V Exc.	IP07	T,L
DC Process 2/5/10/20/200V/2/20mA w/ 24V Exc & AutoCal	IP08	T

## Texmate Intelligent Panel Meters

### INPUT MODULE SELECTION - CONTINUED

Function	Module	For
<b>COUNTER</b>		
Quadrature Counter	IC02	T
Quadrature Counter w/dual SSRs	IC03	T
Universal Freq./ RPM / Up Down Counter	IF10	T
Dual UP/DOWN Counter	IDC1	T
Counter and T/C and 4-20mA	ITTF	T
Smart Dual Counter and Pressure Direct	ISP1	T
<b>DUAL INPUTS</b>		
3-wire RTD and DC V	IDT3	T
3-wire RTD and 4-20mA	IDP2	T
Dual DC 2mA	IDD3	T
Dual DC 50mV	IDD2	T
DC 50mV and 4-20mA	IDD6	T
DC 2V and 4-20mA	IDD5	T
DC 2V and DC 50mV	IDD4	T
Strain Gage and Frequency	IDS3	T
Dual DC 2V	IDD1	T
Dual Direct Pressure (Abs. or Differential/Gage)	IGY	T
Dual Frequency	IDF2	T
Dual Pressure Input	IDS2	T
Dual Process Loop	IDP1	T
Dual Resistance Input	IDR1	T
Dual RTD Input	IDT2	T
Dual Smart Pressure/Load Cell, 16 bit	ISS5*	T
Dual Smart Pressure/Load Cell, 16 bit	ISS6**	T
Dual Strain Gage Input	IDS1	T
Dual Thermocouple	IDT1	T
Thermocouple and 4-20mA	IDP3	T
Thermocouple and DC mV	IDT5	T
Thermocouple and DC V	IDT4	T
Thermocouple and Load Cell	IDT6	T
Dual UP/DOWN Counter	IDC1	T
Smart Dual 3-wire Potentiometer	ISR3	T
Smart Load Cell and Process (4-20mA)	ISS9	T
Smart Dual DC Volts, 16 bit, 1-20Hz update	ISDA*	T
Smart Dual DC Volts, 16 bit, 1-20Hz update	ISDB**	T
Smart Dual Photo Diode Input	ISSE	T
Smart Dual RTD (50Hz)	IST5*	T
Smart Dual RTD (60Hz)	IST6**	T
<b>4-20mA</b>		
3-wire RTD and 4-20mA	IDP2	T
DC 50mV and 4-20mA	IDD6	T
DC 2V and 4-20mA	IDD5	T
Dual Process Loop	IDP1	T
Thermocouple and 4-20mA	IDP3	T
Process Loop 4-20mA	IP01	T,L,Ly
Process Loop 4-20mA w/ Ext. Lin Table	IP09	T,L,Ly
Process Loop 4-20mA w/ 24V Exc. & AutoCal	IP06	T
Process Loop 4-20mA w/ 24V Exc.	IP02	T,L,Ly
Quad 4-20mA	IQP1	T
Smart Load Cell and Process 4-20mA	ISS9	T
Triple 4-20mA	ITP1	T
4-20mA and 4-20mA and T/C	ITT8	T
T/C and 4-20mA and Counter	ITTF	T
T/C and 4-20mA and DC mV	ITTA	T
T/C and 4-20mA and DC Volts	ITTB	T
T/C and 4-20mA and Frequency	ITTF	T
T/C and T/C and 4-20mA	ITT4	T
<b>FREQUENCY / RPM</b>		
Universal Freq./ RPM / Up Down Counter	IF10	T
Universal Frequency / RPM	IF05	L
Line Frequency	IF08	L
Line Frequency	IF06	T
Dual Frequency	IDF2	T
Strain Gage and Frequency	IDS3	T
RTD and RTD and Frequency	ITTE	T
T/C and 4-20mA and Frequency	ITTF	T
T/C and DC Volts and Frequency	ITTG	T
RTD + DC V + DC V + Frequency	IQT5	T
<b>LVDT</b>		
Smart Dual LVDT (50 Hz)	ISL1*	T
Smart Dual LVDT (60 Hz)	ISL2**	T
<b>OXIDATION REDUCTION POTENTIAL</b>		
Oxidation Reduction Potential (ORP)	IOR1	T
<b>pH</b>		
pH	IH01	T
pH w/ Automatic Temperature Compensation	IH02	T

Function	Module	For
<b>POTENTIOMETER</b>		
3-wire Potentiometer 1kΩ min.	IRO2	T,L,Ly
Linear Potentiometer 1kΩ min.	IRO3	T,L
Smart Dual 3-wire Potentiometer (50 Hz)	ISR3*	T
Smart Dual 3-wire Potentiometer (60 Hz)	ISR4**	T
Smart Quad Potentiometer/Resistance	ISSA	T
Smart Single 3-wire Potentiometer (50 Hz)	ISR1*	T
Smart Single 3-wire Potentiometer (60 Hz)	ISR2**	T
<b>PRESSURE / LOAD CELL</b>		
Universal Direct Pressure	IGYZ	T,L,Ly
Direct Pressure with 2 Digital Inputs	IGYX	T
Dual Direct Pressure (Abs. or Differential/Gage)	IGY	T
Dual Pressure Input	IDS2	T
Dual Smart Pressure/Load Cell, 16 bit	ISS5*	T
Dual Smart Pressure/Load Cell, 16 bit	ISS6**	T
Pressure/Load Cell 20/2mV/V, 5/10V Exc, 4-wire	IS05	T,L,Ly
Pressure/Load Cell Ext Exc., 20/2mV/V, 4-wire	IS06	T,L,Ly
Pressure/Load Cell Ext Exc., High Impedance	IS07	T,L
Pressure/Load Cell Ext Exc., 4/6-wire	IS04	T,L
Pressure/Load Cell w/ AutoCal, 4-wire	IS03	T
Pressure/Load Cell, 4/6-wire	IS02	T,L
Smart Pressure/Load Cell, Standard Res 16 bit	ISS1*	T
Smart Pressure/Load Cell, Standard Res 16 bit	ISS2**	T
Smart Pressure/Load Cell, High Res & Acc 24 bit	ISS3*	T
Smart Pressure/Load Cell, High Res & Acc 24 bit	ISS4**	T
Smart Quad Pressure/Load Cell (50 Hz)	ISS7*	T
Smart Quad Pressure/Load Cell (60 Hz)	ISS8**	T
Smart Pressure Direct & Dual Counter	ISP1	T
Smart Load Cell and Process 4-20mA	ISS9	T
Smart Load Cell and RTD	ISSB	T
Smart Load Cell and Two Digital Inputs	ISSC*	T
Smart Load Cell and Two Digital Inputs	ISSD**	T
Thermocouple and Load Cell	IDT6	T

Function	Module	For
<b>PROCESS LOOP</b>		
Dual Process Loop	IDP1	T
Process Loop 4-20mA	IP01	T,L,Ly
Process Loop 4-20mA w/ Ext. Lin Table	IP09	T
Process Loop 4-20mA w/ 24V Exc. & AutoCal	IP06	T
Process Loop 4-20mA w/ 24V DC Exc.	IP02	T,L,Ly
<b>QUAD INPUTS</b>		
Quad 4-20mA	IQP1	T
Quad DC 50mV	IQD2	T
Quad DC 2V	IQD1	T
Quad RTD Platinum 2 wire connection	IQT2	T
Quad RTD Platinum 4 wire connection	IQT4	T
RTD + DC V + DC V + Frequency	IQT5	T
Smart Quad Potentiometer/Resistance	ISSA	T
Smart Quad Pressure/Load Cell (50 Hz)	ISS7*	T
Smart Quad Pressure/Load Cell (60 Hz)	ISS8**	T
Smart Quad Thermocouple (50 Hz)	IST3*	T
Smart Quad Thermocouple (60 Hz)	IST4**	T
<b>RESISTANCE</b>		
Dual Resistance 0.2/2/20kΩ	IDR1	T
Resistance 200/2k/20kΩ, 2/3/4-Wire	IR01	T
Resistance 2kΩ	IR04	L
Resistance 2kΩ	IR05	Ly
Smart Quad Potentiometer/Resistance	ISSA	T
Smart Voltage and Resistance	ISD9	T
<b>RTD</b>		
3-wire RTD and DC V	IDT3	T
3-wire RTD and 4-20mA	IDP2	T
Dual RTD	IDT2	T
Quad RTD Platinum 2 wire	IQT2	T
Quad RTD Platinum 4 wire	IQT4	T
RTD + DC V + DC V + Frequency	IQT5	T
RTD, 100Ω Copper 2/3/4-wire	IT13	T
RTD, 100Ω Pt. 2/3/4-wire	IT02	L
RTD, 100Ω Pt. 2/3/4-wire (-199.9 to 199.9 °C)	IT14	T,L,Ly
RTD, 100Ω Pt. 2/3/4-wire (-199.9 to 199.9 °F)	IT05	T,L,Ly
RTD, 100Ω Pt. 2/3/4-wire (-200 to 800 °C)	IT03	T,L,Ly
RTD, 100Ω Pt. 2/3/4-wire (-200 to 1470 °F)	IT04	T,L,Ly
RTD, 100Ω Pt. 3/4-wire, °C/°F, 1°/0.1°	IT11	L
RTD, 120Ω Nickel 2/3/4-wire	IT12	T
RTD, 1000Ω Pt. Select 3/4-wire, °C/°F, 1°/0.1°	IT15	L
Smart Load Cell and RTD	ISSB	T
Smart Dual RTD (50Hz)	IST5*	T
Smart Dual RTD (60Hz)	IST6**	T
Smart 6 Input - 3 RTD, 2 Process, 1 Digital	IST1*	T
Smart 6 Input - 3 RTD, 2 Process, 1 Digital	IST2**	T
Triple RTD Platinum 100Ω, 4-wire	ITTC	T

Function	Module	For
Triple RTD Platinum 100Ω, 2-wire	ITT2	T
RTD and RTD and Frequency	ITTE	T

<b>SINGLE PHASE POWER</b>		
Single Phase Power, 300V/1A	IW01	T
Single Phase Power, 300V/5A	IW02	T
Single Phase Power, 600V/1A	IW04	T
Single Phase Power, 600V/5A	IW05	T

<b>STRAIN GAGE</b>		
Strain Gage and Frequency	IDS3	T
Dual Strain Gage	IDS1	T
Strain Gage	IS01	T,L

<b>THERMOCOUPLE</b>		
Dual Thermocouple JKRSTBN	IDT1	T
T/C JKRSTBN and 4-20mA	IDP3	T
T/C JKRSTBN and DC 50mV	IDT5	T
T/C JKRSTBN and DC 2V	IDT4	T
Thermocouple and Load Cell	IDT6	T
Smart Quad Thermocouple (50 Hz)	IST3*	T
Smart Quad Thermocouple (60 Hz)	IST4**	T
Thermocouple JKRSTBN	IT01	L
T/C, JKRT, Selectable °C/°F, 1°/0.1°	IT10	L
T/C JKRSTBN, 4-20mA and 4-20mA	ITT8	T
T/C JKRSTBN, 4-20mA and Counter	ITTF	T
T/C JKRSTBN, 4-20mA and DC 50mV	ITTA	T
T/C JKRSTBN, 4-20mA and DC 2V	ITTB	T
T/C JKRSTBN, DC 50mV and DC 50mV	ITT6	T
T/C JKRSTBN, DC 2V and DC 50mV	ITT9	T
T/C JKRSTBN, DC 2V and DC 2V	ITT7	T
T/C JKRSTBN, T/C and 4-20mA	ITT4	T
T/C JKRSTBN, T/C and DC 50mV	ITT5	T
T/C JKRSTBN, T/C and DC 2V	ITT3	T
T/C, 4-20mA and Frequency	ITTF	T
T/C, DC Volts and Frequency	ITTG	T
Triple Thermocouple JKRSTBN	ITT1	T

<b>TRIPLE INPUTS</b>		
Smart Load Cell and Two Digital Inputs	ISSC*	T
Smart Load Cell and Two Digital Inputs	ISSD**	T
Smart Pressure Direct & Dual Counter	ISP1	T
Triple 4-20mA	ITP1	T
Triple DC 50mV	IDT2	T
Triple DC 2V	IDT1	T
Triple RTD Platinum 100Ω, 4-wire	ITTC	T
Triple RTD Platinum 100Ω, 2-wire	ITT2	T
RTD and RTD and Frequency	ITTE	T
T/C JKRSTBN, 4-20mA and 4-20mA	ITT8	T
T/C JKRSTBN, 4-20mA and Counter	ITTF	T
T/C JKRSTBN, 4-20mA and DC 50mV	ITTA	T
T/C JKRSTBN, 4-20mA and DC 2V	ITTB	T
T/C JKRSTBN, DC 50mV and DC 50mV	ITT6	T
T/C JKRSTBN, DC 2V and DC 50mV	ITT9	T
T/C JKRSTBN, DC 2V and DC 2V	ITT7	T
T/C JKRSTBN, T/C and 4-20mA	ITT4	T
T/C JKRSTBN, T/C and DC 50mV	ITT5	T
T/C JKRSTBN, T/C and DC 2V	ITT3	T
T/C, 4-20mA and Frequency	ITTF	T
T/C, Volts and Frequency	ITTG	T
Triple Thermocouple JKRSTBN	ITT1	T

\*Optimized for 50 Hz rejection. \*\*Optimized for 60 Hz rejection.

### ENHANCED TIGER FAMILY MODELS



**DI-503**  
Triple Display Meters



Digital Meter with Annunciators  
**DI-50/AN6**



**DI-602A**  
Dual Display Meters



**DI-802X**  
Dual Line Alphanumeric LCD

## Texmate Application-Specific Meters

- 3<sup>1</sup>/<sub>2</sub> Digit, 4<sup>1</sup>/<sub>2</sub> Digit and Bargraph Meters
- LED and LCD Displays
- Variety of NEMA & DIN Case Sizes Down to 1/32 DIN
- AC, DC or Loop Powered
- Measure
  - DC Volts
  - AC Volts
  - DC Current
  - AC Current
  - Process mA
  - Temperature (Thermocouple, RTD)
  - Line Frequency
  - RPM
  - Pressure

### DU-SERIES 1/8 DIN (96 x 48mm) METERS

Standard user selectable 100/120 VAC or 200/240 VAC power supply, option 24 VAC, or auto sensing isolated AC/DC 9 to 24 VAC, 12 to 36 VDC. 0.56" std. red or optional green or super bright red LED display.

#### AC Current

DU-35AC1.....AC Amps, Average, 1A (built-in shunt), 3.5-Digit  
 DU-35AC5..... AC Amps, Average, 5A (built-in shunt), 3.5-Digit  
 DU-35AC1RMS...AC Amps, RMS, 1A (built-in shunt), 3.5-Digit  
 DU-35AC5RMS...AC Amps, RMS, 5A (built-in shunt), 3.5-Digit  
 DU-40AC1.....AC Amps, Average, 1A (built-in shunt), 4-Digit  
 DU-40AC5.....AC Amps, Average, 5A (built-in shunt), 4-Digit  
 DU-40AC1RMS...AC Amps, RMS, 1A (built-in shunt), 4-Digit  
 DU-40AC5RMS...AC Amps, RMS, 5A (built-in shunt), 4-Digit

#### AC Voltage

DU-35AC .....AC Volts, Average, 199.9/700.0 VAC  
 DU-35ACRMS ....AC Volts, True RMS 199.9V/700V  
 DU-40AC .....AC Volts, Average, 700.0 VAC, 4-Digit

#### AC Line Frequency

DU-35HZ .....Line Frequency 199.9 or 500 Hz up to 700V AC input w/3.5-Digit

#### DC Voltage

DU-35 .....DC Volts Selectable from 2V/20V/200V, 3.5-Digit  
 DU-35MV .....DC mV Selectable 50 mV/100 mV/200 mV, 3.5-Digit  
 DU-45 .....DC Volts Selectable from 2 V/20V/200V, 4.5-Digit  
 DU-45MV .....DC mV Selectable 50 mV/100 mV/200 mV 4.5-Digit

#### Process 4 to 20 mA

DU-35CL .....Process 4 to 20 mA, 3.5-Digit  
 DU-35CLE .....Process 4 to 20 mA with 24 VDC Excitation, 3.5-Digit  
 DU-45CL .....Process 4 to 20 mA, 4.5-Digit

#### Pressure

DU-35P. ....Strain Gauge, Load Cell, and Pressure, 4- and 6-Wire, 5 VDC Excitation, Selectable Sensitivity from 2 mV to 20 mV/V, 3.5-Digit, 0.56" LED Display

#### Temperature

DU-35JC.....Thermocouple J, °C, 3.5-Digit  
 DU-35JF.....Thermocouple J, °F, 3.5-Digit  
 DU-35KC.....Thermocouple K, °C, 3.5-Digit  
 DU-35KF.....Thermocouple K, °F, 3.5-Digit  
 DU-35RTDC.....100Ω Pt RTD, 2/3/4-wire, °C, 3.5-Digit  
 DU-35RTDF.....100Ω Pt RTD, 2/3/4-wire, °F, 3.5-Digit

#### Metal Case Option for 96 x 48mm DIN Case

OP-MTL96X48 Provides Extra Strength and Protection Against Fire  
 OP-MTLCLIP Mounting clips



### BN-SERIES 1/16 DIN (96 x 24 mm) SHORT-DEPTH METERS

Standard 24 VDC isolated power supply, option 12V or 15 V. 0.56" std. red, optional green or super bright red LED display.

#### Process 4 to 20 mA

BN-35CL .....Process 4 to 20 mA, 3.5-Digit

#### DC Voltage

BN-35I .....DC Volts Selectable from 2V/20V/200V, 3.5-Digit  
 BN-45I .....DC Volts Selectable from 2V/20V/200V, 4.5-Digit

Meters below, 5 VDC power supply. 0.56" standard red or optional green or super bright red LED display.

BN-35 .....DC Volts Selectable from 2V/20V/200V, 3.5-Digit  
 BN-45 .....DC Volts Selectable from 2V/20V/200V, 4.5-Digit

#### BCD Remote Display

BN-35BCD .....Remote BCD Display 3.5-Digit  
 BN-40BCD .....Remote BCD Display 4-Digit

Meter below, AC/DC auto sensing isolated power supply 85 to 256 VAC/90 to 380 VDC power supply. 0.3" standard red or optional green or super bright red LED display.

#### Dual AC Volts and Hertz, Signal Powered

DD-40VHZ .....3.5-Digit, 0.3" LED Display



### MU-SERIES 1/32 DIN (48 x 24 mm) METERS

AC/DC auto sensing isolated power supply 12 to 24 VAC/9 to 36 VDC power supply. 0.3" standard red or optional green or super bright red LED display.

MU-35.....DC Volts Selectable from 2V/20V/200V  
 MU-35MV.....DC mV Selectable from 50 mV/100 mV/200 mV  
 MU-35CL .....Process 4 to 20 mA



### UM-SERIES—NEMA CASE LOW-COST UTILITY METERS

Standard user selectable 100/120 VAC or 200/240V AC power supply, optn. 24 VAC, or auto sensing isolated AC/DC 9 to 24 VAC, 12 to 36 VDC. 0.56" std. red or optn. 0.8" std. red (3.5-digit and UM-40AC only) or green or super bright red LED display.

#### AC Current

UM-35AC1 .....AC Amps, Average, 1A, 3.5-Digit Display  
 UM-35AC5 .....AC Amps, Average, 5A, 3.5-Digit Display

#### AC Voltage

UM-35AC .....700 VAC and 199.9 VAC Full Scale, 3.5-Digit Display  
 UM-40AC .....700.0 VAC FS, 0.1V Resolution, 4-Digit Display

#### AC Line Frequency

UM-35HZ .....40 Hz to 199.9 Hz or 40 Hz to 500 Hz, 3.5-Digit

#### DC Voltage

UM-35 .....±2/20 VDC or Optionally ±2/200 VDC, 3.5-Digit  
 UM-35MV .....±50 mV and ±00 mV Inputs to Suit External DC Current Shunts, 3.5-Digit  
 UM-45 .....±2/20 VDC or Optionally ±2/200 VDC, 4.5-Digit  
 UM-45MV .....±50 mV, ±100 mV, or ±200 mV Inputs to Suit Standard DC Current Shunts, 4.5-Digit

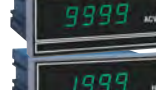
#### Process 4 to 20 mA

UM-35CL .....1.4V Loop Drop, Scalable in Engineering Units from -1999 to +1999, 3.5-Digit

UM-35CLE .....Built-In 24 VDC Loop Excitation  
 UM-45CL .....4.5-Digit Version of UM-35CL as Above

#### Temperature, 3.5-Digit - specify °C or °F

UM-35J .....J Thermocouple Input, 1° Resolution  
 UM-35K .....K Thermocouple Input, 1° Resolution  
 UM-35RTD .....3-Wire, 100-Ohm RTD, 0.1° or 1° Resolution (specify)



## Texmate Application-Specific Meters

Continued from previous page

### SD-SERIES 1/8 DIN (96 x 48 mm) ULTRA SHORT-DEPTH

Only 1.2" depth behind panel, including connectors.



#### 4-20mA Loop Powered

SD-50X .....5-Digit 0.5" LCD. 3.5-27.5mA input span, -19999 to 30000 count display. 6th digit displays F, C, inactive 0 or blank.

### SM SERIES 3-WIRE DC INPUT



#### 20 mV to 2 VDC, 3.5-Digit LED/LCD, 5 VDC Power

SM-35 .....2 to 20 VDC, 0.56" LED, Display Hold  
 SM-35X .....2 to 20 VDC, 0.48" LCD, Display Hold  
 SM-35MV .....20 mV to 2 VDC LED Constant Current 5 VDC  
 Power Supply Eliminates Ground Loop Problems  
 SM-35XMV .....20 mV to 2 VDC LCD Constant Current 5 VDC  
 Power Supply Eliminates Ground Loop Problems



### SLIM-BEZEL CASE LED AND LCD MINIATURE METERS



#### Loop-Powered, Process 4 to 20 mA, 0.48" LCD

CM-35XTL .....Less than 1 VDC Loop Drop and 1 Joule Energy Storage. Fully Scalable  
 CM-35XT .....Economical Standard 6.5V Loop Drop



#### DC and AC 2-Wire Signal-Powered, 0.48" LCD

SP-35X .....±3.5 VDC to 199.9 VDC  
 SP-35XRMS .....AC or DC 15.0V to 199.9V and 15.0V to 250V  
 SP-35XMV .....50 mV shunt/10 to 100 VDC Power



#### Low Cost DC Bargraph, 5 VDC Power

AM-20 .....20 Segment, 200 mV to 200 VDC, 5 VDC Power



#### DC Volts, 4.5 Digit LED/LCD, 5 VDC Power

PM-45X/45L .....200 mV to 1200V BCD Output Option, LCD  
 PM-45L .....200 mV to 1200 VDC and BCD Output Option, LED



#### J and K Thermocouple Meters LED/LCD

Differential Input Configuration Allows Several Meters to be Operated with Grounded Thermocouples from the same 5VDC Power Supply.



TM35JC.....Type J, °C, LED display  
 TM35JF.....Type J, °F, LED display  
 TM35KC.....Type K, °C, LED display  
 TM35KF.....Type K, °F, LED display  
 TM35JC.....Type J, °C, LCD display  
 TM35JF.....Type J, °F, LCD display  
 TM35KC.....Type K, °C, LCD display  
 TM35KF.....Type K, °F, LCD display

### RP AND PM SERIES METERS



#### DC Input, 110/230 VAC Power

RP-35U .....Economy DC inputs, 3.5-Digit, 0.56" LED Display  
 RP-35A .....Precision Differential DC Input, 3.5-Digit, 0.56" LED  
 RP-35AR .....Auto Dual Ranging, 3.5-Digit, 0.56" LED Display



RP-3500D2 .....3.5-Digit Differential Input with Optional BCD  
 RP-4500D2 .....4.5-Digit Differential Input with Optional BCD

#### DC Input, 5 VDC Power

PM-35U .....Low Cost, 3.5-Digit, 0.3" LED Display  
 PM-35A .....Differential Inputs, 3.5-Digit, 0.56" LED Display  
 PM-35AR .....Auto Range, 3.5-Digit, 0.56" LED Display  
 PM-45LU .....Differential Input, 4.5-Digit, 0.4" LED Display  
 PM-45LUBCD .....PM-45LU with tri-state parallel BCD Output  
 PM-45LUMXBCD ..PM-45LU with multiplexed BCD Output  
 PM-45XU .....Differential Input, 4.5-Digit, LCD Display



### MINI-METER DVM-5 SERIES, 1.378 x 0.5 x 1.375" CASE



#### Process 4 to 20 mA

DVM-5/4-20 .....3.5-Digits, 0.276" LED Display, 4-20mA input, 5V power  
 DVM-5/CL .....3.5-Digits, 0.276" LED Display, Loop powered



#### Volt and RTD, 5 VDC Power

DVM-5 .....2/20/200 VDC, 0.276" LED Display  
 DVM-5/G .....2/20/200 VDC, 0.276" Green LED Display  
 DVM-5/MV .....200mVDC, 0.276" LED Display  
 DVM-5/RTD1 .....RTD Input, 0.1 °C, 0.276" LED Display  
 DVM-5/RTD2 .....RTD Input, 1 °C, 0.276" LED Display

### AM-SERIES 1/16 DIN (96 x 24 mm) SHORT-DEPTH BARGRAPHS



5 VDC power supply. 30 segment standard red or optional green or amber LED display.

#### Selectable Process 4 to 20 mA or DC Voltage

AM-30 .....6 Header Selectable DC Ranges Plus 4 to 20 mA  
 AM-30R1 .....6 DC + 4 to 20 mA w/One 2A/120 VAC Relay  
 AM-30R2 .....6 DC + 4 to 20 mA w/Two 2A/120 VAC Relays

### LOOP POWERED LED BARGRAPH



1/16 DIN 96x24mm, 31 segment red or green LEDs. Only 4V loop drop, 3" behind panel.

Available in horizontal or vertical orientation

SB-B31 .....4-20mA Loop Powered Bargraph

### SLIM BEZEL CASE COUNTERS & TOTALIZERS



PC-45..... 4.5-Digit, 5V DC Power, LED  
 PC-45X..... 4.5-Digit, 5V DC Power, 0.48" LCD  
 PC-45XCA.....4.5-Digit, 110VAC Power, 0.48" LCD



### TACHOMETERS & LINESPEED METERS



90-260VAC Powered, 72x36mm Case  
 LT-30.....3-Digit, 0.8" LED Tachometer  
 LT-40.....4-Digit, 0.56" LED Tachometer  
 LT-50.....5-Digit, 0.56" LED Tachometer  
 LT-T30.....3-Digit, 0.8" LED Linespeed/Tachometer  
 LT-T40.....4-Digit, 0.56" LED Linespeed/Tachometer  
 LT-T50.....5-Digit, 0.56" LED Linespeed/Tachometer

### ACCESSORIES

OP-N4X/96x48.....NEMA-4X Clear, Lockable Dustproof & Waterproof Cover (for DU & SD series only)  
 OP-PSA/96x48.....NEMA-4X Panel to Case Seal Adapter  
 PS-2405.....120V AC Adapter, 24VDC @ 0.5A  
 PS-505.....120V AC Adapter, 5VDC @ 0.5A  
 PS-520.....120V AC Adapter, 5VDC @ 2A

## Simpson Digital Meters/Controllers

Includes new temperature measurement models (H340)

- All Parameters Set from Front Panel
- 7 Segment 4-½ or 3-½ Digit Bright Red Display
- Screw Terminals for Easy Installation
- 1/8 DIN Shallow Depth Case
- Peak/Valley and Password Lockout
- Optional Plug-In Output and Excitation Cards
- Optional Plug-In Cards for One, Two or Four 5 Amp Relays
- NEMA 4X Rated Front Panel



**H345**



### SPECIFICATIONS

<b>Display</b>			
Type:	7 segment, red LED		
Quantity:	H335: 3 ½ digit; H345: 4 ½ digit; H340: 4 digit		
Height:	0.56" (14.2 mm)		
Decimal Point:	H335 and H340: 4-position, user programmable H345: 5-position, user programmable		
Brightness:	5 Levels, user programmable		
Alarm Indicators:	4 LED indicators for up to four set points		
<b>Power Requirements</b>			
AC Voltages:	120, 85-250 VAC @ 10VA		
DC Voltages:	9-36 VDC @ 10 VA		
<b>Accuracy @ 25°C:</b>			
DC:	H335: 0.1% of input ±1 digit H345: 0.05% of input ±1 digit		
AC:	H335: 0.2% ±2 digits H345: 0.1% ±2 digits		
<b>Sensor Type</b>			
RTD Pt 100	Accuracy	Temperature Range	
J	0.2% of input ±2 counts	-200°C to +200°C	
K	0.2% of input ±2 counts	-100°C to +760°C	
E	0.2% of input ±2 counts	-200°C to +1250°C	
T	0.2% of input ±2 counts	-100°C to +800°C	
T	0.2% of input ±2 counts	-200°C to +400°C	
<b>Mechanical</b>			
Bezel:	3.93 x 2.04 x .52" (98.8 x 51.8 x 13.2 mm)		
Depth:	3.24" (82.33mm) behind panel		
Panel Cut-out:	½ DIN 3.62 x 1.77" (92 x 45 mm)		
Case Material:	PBT-ABS		
Weight:	10 oz (283.5g)		
Temperature:	0-50°C		
Sample Rate:	10/sec		

### ORDERING INFORMATION

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

A - B - C - D - E - F

<b>A Basic Temperature Meter</b>		<b>D Analog Output</b>	
H340	4 digit Red LED	0	None
		1	4-20 mA DC
		2	0-10V DC
<b>B Power Supply</b>		<b>E 5 Amp Relays</b>	
1	120V AC	0	None
3	9-36V DC	1	One
4	85-250V AC	2	Two
		4	Four
<b>C Function Range</b>		<b>F Excitation Output</b>	
91	J Thermocouple	0	None
92	K Thermocouple	1	12V DC (30mA max)
93	RTD, Pt100, 3-wire	2	24V DC (30mA max)
94	E Thermocouple		
95	T Thermocouple		

### ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.  
Order Example: H335-1-46-0-1-2

A - B - C - D - E - F

<b>A Basic Panel Meter</b>			
H335	3½ digit Red LED		
H345	4½ digit Red LED		
<b>B Power Supply</b>			
1	120VAC (3½ digit only)		
2	85-250 VAC (4½ digit only)		
3	9-36 VDC		
4	85-250 VAC (3½ digit only)		
<b>C Function/Range</b>			
11	200mV DC	51	200mV AC TRMS
12	2V DC	52	2V AC TRMS
13	20 VDC	53	20V AC TRMS
14	200V DC	54	200V AC TRMS
15	600V DC	55	600 AC TRMS
21	200µA DC	61	200µA AC TRMS
22	2m ADC	62	2mA AC TRMS
23	20mA DC	63	20mA AC TRMS
24	200mA DC	64	200mA AC TRMS
25	2A DC	65	2A AC TRMS
26	5A DC	66	5A AC TRMS
31	200mV AC	71	4-20mA DC Process
32	2V AC	72	0-10V DC Process
33	20V AC		
34	200V AC	81	200 Ohm
35	600V AC	82	2k Ohm
		83	20k Ohm
		84	200k Ohm
41	200µA AC		
42	2mA AC		
43	20mA AC		
44	200mA AC		
45	2A AC		
46	5A AC		
<b>D Output Signal</b>			
0	None		
1	4-20 mA DC Process		
2	0-10 VDC Process		
6	RS-485 (4 ½ digit only)		
<b>E 5 Amp Relay Outputs</b>			
0	None		
1	One		
2	Two		
4	Four		
<b>F Excitation Output (not available with Signal Output)</b>			
0	None		
1	12V DC (30mA max)		
2	24 DC (30mA max)		

## Simpson Digital Panel Meters



← F35



← M235

DIGITAL METERS

- Case Size: Standard 1/8 DIN
- Accuracy:  $\pm 0.1\%$  (F35);  $\pm 0.02\%$  (F45DCV);  $\pm 0.5\%$  (F45AC)
- Auto-Zero
- Choice of AC or DC Power Supplies
- Broad Range Scaling and Adjustable Zero Offset for Process Inputs
- User-Selectable Decimal Points
- Optional Excitation Output 12 VDC or 24 VDC
- Easy Installation Using Screw Terminals

- Case Size: Standard 3/64 DIN Dimensions
- Accuracy:  $\pm 0.5\%$  (M235);  $\pm 0.5\%$  (M245)
- Minimum Depth Indicator—Less Than 2.5" (60 mm) of Space
- User-Selectable Decimal Point
- Optional Negative Image, Bright Red Backlighting
- Standard Screw Terminals
- 85V to 250 VAC Power or 9V to 32 VDC

### ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number  
Order Example: F35-1-12-1

A	B	C	D
<b>A Basic Unit</b>			
F35	3 <sup>1</sup> / <sub>2</sub> -Digit Meter		
F45	4 <sup>1</sup> / <sub>2</sub> -Digit Meter		
<b>B Power Supply</b>			
1	120 VAC		
2	220 VAC		
3	9-32 VDC		
<b>C Input Range</b>			
	<b>DC Voltage</b>	<b>AC Voltage</b>	<b>AC RMS</b>
200 mV	11	31	51
2V	12	32	52
20V	13	33	53
200V	14	34	54
	<b>DC Current</b>	<b>AC Current</b>	<b>AC RMS (F35 Only)</b>
200 $\mu$ A	21	41	61
2 mA	22	42	62
20 mA	23	43	63
200 mA	24	44	64
2A	25	45	65
5A	26	46	66
<b>Process</b>			
71	4-20 mADC		
72	1-5 VDC		
73	0-10 VDC		
<b>Temperature (F45 only)</b>			
80	J T/C	84	E T/C
81	K T/C	85	R T/C
82	S T/C	86	mV DC
83	T T/C	90	RTD PT 100
	<b>Frequency</b>	<b>RMS (F35)</b>	<b>Sq. Wave (F35)</b>
	20-199.9 Hz	91	93
	20-1999 Hz	92	94
<b>D Excitation Output (DC Input Only)</b>			
0	None		
1	12 VDC		
2	24 VDC		

### Mini-Max—3/64 DIN, 3<sup>1</sup>/<sub>2</sub> and 4<sup>1</sup>/<sub>2</sub> Digit AC and Process Indicators

Simpson's Mini-Max AC Voltage/Current Indicators provide high quality, accuracy, and reliability in a compact 60 mm deep case.

### SPECIFICATIONS

Power:	85V-250 VAC @ 40 Hz-440 Hz; or 9V-32 VDC
Size:	2.84 x 0.95 x 2.36" WHD (72 x 24 x 60 mm)

### ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.  
Order Example: M235-1-0-11-0

A	B	C	D	E
<b>A Basic Unit</b>				
M235	3 <sup>1</sup> / <sub>2</sub> -Digit LCD Meter			
M245	4 <sup>1</sup> / <sub>2</sub> -Digit LCD Meter			
<b>B Display</b>				
0	Non-Backlit			
1	Negative Red Backlight			
<b>C Supply Voltage</b>				
0	85-250 VAC			
2	9-32 VDC*			
<b>D Function Range</b>				
11	200 mVDC	31	200 mVAC TRMS	
12	2 VDC	32	2 VAC TRMS	
13	20 VDC	33	20 VAC TRMS	
14	200 VDC	34	200 VAC TRMS	
21	200 $\mu$ ADC	36	270 VAC TRMS	
22	2 mADC	41	200 $\mu$ AAC TRMS	
23	20 mADC	42	2 mAAC TRMS	
24	200 mADC	43	20 mAAC TRMS	
25	2 ADC	44	200 mAAC TRMS	
26	5 ADC	45	2 AAC TRMS	
71	4-20 mADC	46	5 AAC TRMS	
72	1-5 VDC	81	20-199.9 Hz	
73	0-10 VDC	82	20-1999 Hz	
74	0-100 VDC	83	20-199.9 Hz Sq. Wave	
		84	20-1999 Hz Sq. Wave	
<b>E Excitation Output (NA with Frequency)</b>				
0	None			
1	12 VDC			
2	24 VDC			

\* Not Available on Frequency (Hz) Meters

## Laurel High Performance DPMs

### FEATURES

- ±99999 Display Span
- User Selectable Ranges
- 60 Readings Per Second
- Adaptive Digital Filter
- 1/8 DIN, NEMA-4X Front
- 5, 10, 24V DC Excitation Out

### OPTIONS (all outputs isolated)

- Dual Setpoint Relay Outputs
- Linearized Isolated Analog Transmitter Outputs
- USB, RS-232 & RS-485 Data I/O
- Custom Curve Linearization
- Datalogging PC Software

Laureate™ DPMs offer exceptional accuracy at high reading rates. Advanced programming features provide flexibility in measuring DCV, ACV, DCA, ACA, temperature, weight, strain, process & pot follower.



### SPECIFICATIONS

<b>Display</b>	Five 14.2 mm (.56") high LED digits
<b>A-to-D Conversion</b>	
A-to-D rate	60/s at 60 Hz, 50/s at 50 Hz
Display update	3.5/s at 60 Hz, 3/s at 50 Hz
<b>Accuracy at 25°C</b>	
DC, Process	< 0.01% FS ±1 ct
Strain, Load	< 0.01% FS ±1 ct
True RMS	< 0.1% FS (10 Hz-10 kHz)
	CF = 3.0 at full scale (AC or DC coupled)
Thermocouple	< 0.2°C
RTD	< 0.1°C
<b>Noise Rejection</b>	
CMR, DC to 60 Hz	130 dB
NMR to 50/60Hz line	90 dB with min filtering
<b>Transducer Excitation Output (std)</b>	
Output	100 mA @ 5V, 120 mA @ 10V, 50 mA @ 24V
<b>Dual Relay Output (opt)</b>	
Contact relays	8A @ 250 Vac or 24 Vdc
Solid state relays	0.13A @ 140 Vac or 180 Vdc
<b>Linearized Analog Output (opt)</b>	
Level	0-20 mA, 4-20 mA, 0-10 Vdc, ±10 V
Resolution	16 bits (0.0015%)
<b>Environmental</b>	
Operating temperature	0 - 55°C, 95% RH at 40°C, non-condensing
<b>Data Communications (opt)</b>	
Type	USB, RS-232, RS-485 (2- or 4-wire)
Protocol	Modbus RTU, Modbus ASCII or Laurel ASCII

### ACCESSORIES

CBL01	RJ11 TO DB9 Cable to PC Com port
CBL02	USB to DB9 Adapter
CBL05	USB Cable to PC USB Port

### ORDERING INFORMATION

Example: L10010DCV1

<input type="checkbox"/> Laureate Series	L	Laureate Panel Meter
	LW	Laureate Weight Meter
<input type="checkbox"/> Main Board	1	DPM with green LEDs
	2	DPM with red LEDs
	3	Extended, green LEDs
	4	Extended, red LEDs
<small>Note: Extended capability for DPMs is required for custom curve linearization.</small>		
<input type="checkbox"/> Power	0	85-264 Vac/90-370 Vdc
	1	10-48Vdc/12-30 Vac
<input type="checkbox"/> Setpoint Output	0	None
	1	Dual 8 A relays
	2	Dual solid state relays
<input type="checkbox"/> Analog Output	0	None
	1	0-20 mA & 0-10 V
<input type="checkbox"/> Digital Interface	0	None
	1	RS-232 (Isolated)
	2	RS-485 (Isolated)
	4	RS485 Modbus (Isolated)
	5	USB
	6	USB to RS-485 Converter
	7	Ethernet
	8	Ethernet to RS-485 Converter

<input type="checkbox"/> Input Type		
<b>DC Volts</b>	DCV1	200.00 mV
	DCV2	2.0000 V
	DCV3	20.000 V
	DCV4	200.00 V
	DCV5	600.0 V
<b>DC Amperes</b>	DCA1	2.0000 mA
	DCA2	20.000 mA
	DCA3	200.00 mA
	DCA4	5.000 A

<b>Process Signals (4-20 mA, 0-5 V, etc.)</b>	P	4-20 mA = 0-10000
	P1	Custom Scaling

<b>Strain Gage, Potentiometer (4-wire ratio)</b>	SG	0-200 mV = 0-20000
	SG1	Custom Scaling

Note: The same DC signal conditioner board can be user configured for DC Volts, DC Amps, process, or strain.

<b>100-Ohm Platinum RTDs</b>	P385C	-202 to 850°C
	P385F	-331 to 1562°F
	P392C	-202 to 850°C
	P392F	-331 to 1562°F

<b>Thermocouples</b>	JC	-210 to 760°C	EF	-400 to 1830°F
	JF	-347 to 1400°F	NC	-245 to 1300°C
	KC	-244 to 1372°C	NF	-410 to 2370°F
	KF	-408 to 2501°F	SC	-46 to 1768°C
	TC	-257 to 400°C	SF	-51 to 3214°F
	TF	-430 to 752°F	RC	-45 to 1768°C
	EC	-240 to 1000°C	RF	-49 to 3213°F

Note: The same temperature signal conditioner board can be user configured for all T/C and RTD types

<b>TRMS Volts</b>	RMV1	200.00 mV	RMV2	2.0000 V
	RMV3	20.000 V	RMV4	200.00 V
	RMV5	600.0 V (Not Agency Approved)		
	RMV6	300.0 V		

<b>TRMS Amperes</b>	RMA1	2.0000 mA	RMA2	20.000 mA
	RMA3	200.00 mA	RMA4	5.000 A

Note: The same AC RMS signal conditioner can be user-configured for AC Volts or Amps

<b>Load Cells (6-wire ratio)</b>	WM1	-99,999 to +99,999
----------------------------------	-----	--------------------

Note: Excitation is 10V DC for up to four 350Ω load cells in parallel

## Selco Digital Panel Meters

### Universal Type

- Seven Output Choices
- Front Panel Membrane Set Buttons
- Eighteen Input Choices
- Available Two Setpoint Displays
- 90-264VAC or 9-60VDC Power Supply
- RS-232C/RS-485 Communications
- Industry Standard 1/8 DIN Size
- 8-Amp Setpoint Contact Relays



### ▲ A5000 Series

#### SPECIFICATIONS

Main display:	4 Digit Red LED 14.2mm
Sub display:	Dual, Green LED 8mm (Hi & Lo setpoints)
Conversion rate:	12.5 times/sec
Maximum display:	9999
Overrange indication:	When input exceeds the maximum display, display OL or -OL
Zero display:	Leading zero suppression
Decimal point:	Settable to any digit position
External control:	Start/Hold, Peak Hold, Digital Zero
Operating temperature:	0 to 50°C, 35 to 85% RH
Storage temperature:	-10 to 70°C less than 60% RH
Power supply:	AC 100 to 240V ±10% (AC main unit) DC 9 to 60V (DC main unit)
Power consumption:	Approx. 4VA (at 100V)
Dimensions:	96mm x 48mm (H) x 147.5mm (D) DIN size
Dielectric strength (AC):	Power supply/input terminal/output terminal 2000VAC/1 min. Input terminal/output terminal 500VDC/1 min. Case/power supply/input terminal/output terminal 2000VAC/1 min.
Dielectric strength (DC):	Power supply/input terminal/output terminal 500VDC/1 min. Input terminal/output terminal 500VDC/1 min. Case/power supply/input terminal/output terminal 2000VAC/1 min.
Insulation resistance:	500VDC more than 100MΩ at the above terminals
Input:	
AC Voltage:	40Hz to 1kHz
AC Current:	40Hz to 1kHz
Frequency:	0.1Hz to 200kHz 30V p-p Max.
Strain Gauge:	
Adjustment Span:	1 to 3 mV/V
Excitation:	5V@15mA, 10V@30mA
Analog Output:	0-1V, 0-10V, 1-5V, 4-20mA
Setpoint Relays:	8A@240VAC, 30VDC Resistive

#### ORDERING INFORMATION

Example SE/A51/25-03

SE/A5 [A] [B] [C] - [D]

##### A Main Board

- 1 AC 100 - 240V (±10%)
- 2 DC 9 - 60V

##### B Display Board

- 1 Single (Main Display Only)
- 2 Multiple (Main & Sub Displays)

##### C Output

- 0 None
- 1 HI & LO setpoint
- 2 Analog output
- 3 RS-232C
- 4 RS-485
- 5 HI & LO setpoint + analog output
- 6 HI & LO setpoint + analog output + RS-232C
- 7 HI & LO setpoint + analog output + RS-485

##### D Input

D Input	Ranges
01 DC voltage (±99.99mV)	1
02 DC voltage (±999.9mV to ±600V)	4
03 DC current (±9.999mA to ±999.9mA)	3
04 AC voltage AVG (99.99mV to 9.999V)	3
05 AC voltage AVG (99.99V to 600V)	2
06 AC voltage RMS (99.99mV to 9.999V)	3
07 AC voltage RMS (99.99V to 600V)	2
08 AC current AVG (9.999mA to 999.9mA)	3
09 AC current AVG (5A)	1
10 AC current RMS (9.999mA to 999.9mA)	3
11 AC current RMS (5A)	1
12 Resistance (99.99Ω to 99.99KΩ)	4
13 Temperature (Thermocouple)	JKTSRB
14 Temperature (RTD)	Pt100
15 Frequency (Open collector, Logic, Magnet)	4
16 Frequency (50 to 500Vrms)	
17 Strain gauge	
18 1 to 5V, 4 to 20mA	

## Newport Panel Meters/Controllers

### INFCAC Series

- 4-Digit, 14-Segment LED Display, Red or Green
- High  $\pm 0.1\%$  of Reading Accuracy
- Wide Selection of AC Current and Voltage Ranges
- Smart Filtering Detects the Difference Between a Spike or Process Change (Patent Pending)
- Front Panel Configuration
- Available with Dual 6 Amp Relays and/or Analog Output

### INFC Series

- Process (DC Voltage and Current), Strain Gauge, Thermocouple, and RTD
- Dual Differential Thermocouple and RTD
- pH ORP
- Relay Output Optional
- Isolated or Non-Isolated Analog Output Optional

### IDP Series

- Easy Scaling
- 4-Digit LED Display
- Max or Min Recall
- Short Case 4.1" (104 mm)
- Red or Green LED Display
- Power 115 VAC, 230 VAC or 10–32 VDC

### INFC ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.  
Order Example: INFCP-5-1-2

**A** - **B** - **C** - **D**

A	Basic Unit
INFCP	Process (DC Voltage and Current)
INFCS	Strain Input
NIFCT	Thermocouple
INFCDT	Dual/Differential Thermocouple
INFCR	RTD
INFCDR	Dual/Differential RTD
INFCPH	pH
INFCOR	ORP
INFCOP	pH/ORP
B	Power and Display
0	115 VAC, Red LED Display
1	230 VAC, Red LED Display
2	115 VAC, Green LED Display
3	230 VAC, Green LED Display
4	10–32 VDC, Red LED Display
5	10–32 VDC, Green LED Display
6	25–56 VDC, Red LED Display
7	25–56 VDC, Green LED Display
C	Relays
0	None
1	Two 6 Amp Form C Relays
D	Analog Output
0	None
1	Non-Isolated Analog
2	Isolated Analog Output


**INFCAC**

**IDP-0**

### INFCAC ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.  
Order Example: INFCAC-0-0-1-0-V5

**A** - **B** - **C** - **D** - **E** - **F**

A	Basic Unit
INFCAC	AC Voltage and Current Controller
B	Power and LED Color
0	115 VAC, Red LED Display
1	230 VAC, Red LED Display
2	115 VAC, Green LED Display
3	230 VAC, Green LED Display
C	Control Output
0	No Control Output
1	Two 6A Form "C" Relays
D	Analog Output
0	No Analog Output
1	4 to 20 mA or 0 to 10 VDC
E	Communications
0	No Serial Output
1	Isolated RS-232
2	Isolated RS-485 Half Duplex
F	Input Signal
V5	0–750 VAC User Programmable
C5	0–5 AAC User Programmable

### IDP ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.  
Order Example: IDP-0

**A** - **B**

A	Basic Unit
IDP	4-Digit Process Meter
IDT	4-Digit Thermocouple Meter
IDpH	4-Digit pH Meter
B	Display/Power
0	Red/115 VAC
1	Red/230 VAC
2	Green/115 VAC
3	Green/230 VAC
4	Red/10–32 VDC
5	Green/10–32 VDC

## Newport Digital Panel Meters/Controllers




These meters accept universal inputs—thermocouple, RTD, process voltage/current. Panel mounted, with NEMA-4 (IP65) front bezel, they offer multiple “firsts” for 1/8 DIN instruments:

- Display Changes Colors at Set Point (Yellow, to Green, to Red)
- Fully Programmable Color Display and the Largest Display (21 mm LEDs) of Any 1/8 DIN Instrument
- RS-232 and RS-485 Serial Communications (Optional) in One Instrument
- Built-In Excitation (10 or 24 VDC) is standard

Units also feature  $\pm 0.5^{\circ}\text{C}$  accuracy, free Active X Controls software, extended 5-year warranty at no extra charge. Available as monitors only or with two control/alarm outputs.

### ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.  
Order Example: i822-0-DC

**A** **B** - **C** - **D**

A Base Units	
i800	Monitor only (no control outputs) 1/8 DIN
i8C00	Monitor only (no control outputs) 1/8 DIN Short Case
i8A00	Monitor with Isolated Analog Output 1/8 DIN
i8	Two control outputs 1/8 DIN
i8C	Two control outputs 1/8 DIN Short Case
i8A	Isolated Analog Output with two control outputs
B Control Output #1 & #2 Direct (Cool) or Reverse (Heat) Acting	
22	Two solid state relays (SSR's)
23	SSR and relay: Form “C” SPDT
24	SSR and pulsed 10 Vdc (for use with external SSR)
33	2 Relays: Form “C” SPDT
34	Relay and pulsed (for use with external SSR)
44	Two pulsed 10 Vdc (for use with external SSR)
52	Analog Output (control or retransmission)
53	Analog Output and Relay
54	Analog Output and Pulse
C Network Options	
E1	Ethernet with Embedded Web Server <sup>2</sup>
C24	Isolated RS-232 and RS-485 (MODBUS & ASCII)
C4EI	Ethernet with Embedded Internet + Isolated RS-485 <sup>2</sup>
D Power Supply	
AC	Standard Power : 90 to 240 VAC/DC
DC	10-34 Vac/dc (optional)

<sup>1</sup> Not Available for the i8A Controller

<sup>2</sup> Not Available in the Short Case





- 6-Digits
- NEMA-4 (IP65) Front Bezel
- Four Isolated Open Collector Outputs
- Peak and Valley Detection and Memory
- Digital Tare
- 1.5 to 11 or 24 VDC Sensor Excitation



### ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.  
Order Example: INFP-0210-C2

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

A Basic Unit	
INFP	Process (DC Voltage and Current)
INFS	Strain Gauge
INFW	Weight
INF T	Thermocouple and RTD
INFU	Universal Input (Process, Strain and Temp.)
B Split Display—Insert Only If Required	
Z	Split Display (insert “Z” after INF in basic unit)
C Power and Display	
0	115 VAC, Red LED
1	230 VAC, Red LED
2	115 VAC, Green LED
3	230 VAC, Green LED
4	10–32 VDC, Red LED
5	10–32 VDC, Green LED
D Control Output	
0	Four NPN Open Collectors
1	Isolated Parallel BCD
2	Two 7A Relays
3	Two 7A Relays and Two 1A Relay
E Analog Output	
0	None
1	Isolated Analog Output
F Serial Output	
0	None
1	Isolated RS-232
2	Isolated RS-485
G Input Signal	
	Specify T/C, RTD type or DC range

## London Electronics Programmable Meter

**NEW**



**Intuitive 2** ▲

- 1/8 DIN, IP65 Front
- Large 0.55" LED Display
- Simplified Setup – No Menus
- Display Filtering
- 10-Point Custom Linearization
- 0.05% Basic DC Accuracy
- Variable Brightness Display



Input types to match common sensors & process signals.

### ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.  
Order Example: INT2-P-0-0-232-R-AC

INT2- **A** - **B** - **C** - **D** - **E** - **F**

<b>A Input Type</b>			
P	DC Process: 0-10V, 1-5V, 0-10mA, 4-20mA		
M	Millivolt Input for use with DC shunts		
T	Temperature: J K T R S N & Pt100, °F & °C		
R	4-Wire Resistance: specify range to 20kΩ		
L	Load Cell: 4/6-wire, w/ 10V excitation		
I	Flow Integrator: 0-10V, 4-20mA		
H	Clock/Timer, numeric or HH:MM:SS display		
C	Counter/Frequency/RPM/Quadrature		
S	Remote Display, serial ASCII data input		
<b>B Analog Output (Isolated)</b>			
O	None	ANV	0-10V
ANI	4-20 mA	ANB	-10 to +10V
<b>C Relay Output (2A@250 VAC)</b>			
O	None	AL4	4 Form A
AL2	2 Form A	SPCO	2 Form C
<b>D Serial Data Output</b>			
O	None	MB	RS-485 ModBus RTU
232	RS-232	EN	Ethernet
485	RS-485, ASCII		
<b>E Display Color</b>			
R	Red	Y	Yellow
G	Green		
<b>F Supply Voltage</b>			
AC	100-240 VAC		
DC	11-30 VDC		

DIGITAL METERS

## Crompton Digital Metering System



▲ **1630**

- 35 Measured Parameters
- 0.2% Basic Accuracy
- Field Selectable CT & PT Ratios
- Ethernet or RS-485 Interface
- 1/4 DIN Case

The Integra 1630 has Modbus communication and field selectable system configuration: single-phase, three-phase three-wire or three-phase four-wire.

### Measure & Display

- System (average) volts
- System (average) current
- System (total) kW
- System volts (average) THD%
- System current (average) THD%
- Volts L1 - N, L2 - N, L3 - N
- Volts L1 - L2, L2 - L3, L3 - L1
- Volts L1 - N THD%
- Volts L2 - N THD%

- Volts L3 - N THD%
- Volts L1 - L2 THD%
- Volts L2 - L3 THD%
- Volts L3 - L1 THD%
- Current L1, L2, L3
- Current line 1 THD%
- Current line 2 THD%
- Current line 3 THD%
- Neutral current
- Frequency
- Power factor (overall)
- kVAR, kVA, kW
- kW Hr import, export (7 digits)
- kVAHr import, export (7 digits)
- kW demand
- Current demand
- Maximum kW demand
- Maximum current demand
- Hours run

### SPECIFICATIONS

<b>Measuring Ranges</b>	
Voltage:	80-120% of nominal (functional 5-120%)
Current:	5-120% of nominal
Frequency:	45-66Hz
Power Factor:	0.8 capacitive to 0.8 inductive
THD:	Up to 31st harmonic 0% - 40%
Energy:	7 digit resolution
<b>Input</b>	
PT Ratio (primary):	up to 400kV **
CT Ratio:	9999:5A **
<b>Outputs</b>	
RS-485:	Half duplex (2-wire)
Baud rates:	4800, 9600, 19200, 38400
Pulsed:	1 or 2 Solid state relays
Pulse duration:	60, 100 or 200 milliseconds
Contact rating:	50mA max at 250V AC max.
<b>Auxiliary Supply</b>	
AC/DC supply:	85-287VAC, 85-312VDC, 45-66Hz
DC supply:	10.2-60VDC
Burden:	6VA

\*\* 360MW max at 120% of relevant input

### ORDERING INFORMATION

INT-1630 -Example INT-1630-M-5-M-110

**A** - **B** - **C** - **D**

<b>A Input Voltage</b>	
L	57.7-139 L-N (100-240 L-L)
M	140-277 L-N (241-480 L-L)
<b>B Input Current (CT secondary)</b>	
5	5A
1	1A
<b>C Auxiliary Voltage</b>	
L	12-48 V DC
M	100-250V AC/DC
<b>D Options</b>	
000	None
010	RS-485 Modbus RTU
100	One Pulse
200	Two Pulse
210	Two Pulse & Modbus
110	One Pulse & Modbus
070	Ethernet Modbus TCP

## Accuenergy DC Power Meter

- Measures Power & Energy
- 3 Line LCD Display
- Limit Alarm
- Analog & Relay Outputs
- Modbus Communication
- Digital Input & Output Options
- 72x72 DIN Mounting

**AcuDC243**

**Applications:**

- DC Energy Management
- Solar Photovoltaic Systems
- Industrial DC Control Systems
- Wind Power Generation
- Light Rail Transit Systems
- Metallurgy & Electroplating
- DC Excitation Systems
- Telecommunication Power Distribution

### SPECIFICATIONS

Parameter	Accuracy	Resolution	Range
Voltage	0.2%	0.001V	0~1200V
Current	0.2%	0.005A	0~±50000A
Power	0.5%	0.001kW	0~±60000kW
Energy	0.5%	0.01kWh	0~999999.99kWh
Voltage Input Range	Direct Input 0~1000V; Via Hall Effect Sensor 0~1200V		
Input Impedance / Load	2Mohm / <0.6W		
Current Input Range	0~±20A(Direct Input, pick up current 0.02A); 0~±50000A(Via Shunt or Hall Effect Sensor)		
Shunt	50~100mV(programmable)		
Hall Effect Sensor	0~±5V/0~±4V, 4~20mA/12mA±8mA		
Power Consumption	2W(Max)		
Digital Input (DI)	Dry Contact, 2500Vac isolation		
Relay Output (RO)	Form A, 250Vac/30Vdc@3A		
Isolation	4000Vac		
Digital Output (DO)	PhotoMOS, 2500Vac isolation		
Load Voltage Range	0~250Vac/dc, 100mA(max)		
Max Output Frequency	25Hz, 50% duty cycle		
Analog Output (AO)	4-20mA/0~20mA; 0~5V/1-5V		
Load Capacity	mA: 750 Ohm; V: 20 mA		
Communications	RS485, half duplex, 2500Vac isolation		
Protocol	Modbus-RTU, 1200~38400bps		
Operating Temperature	-25°C ~ +70°C 5%~95% RH (non-condensing)		

### ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.  
Order Example: AcuDC243-300-A2-P1-X1-C

AcuDC243— **A** — **B** — **C** — **D** — **E**

<b>A</b>	Voltage Input	
	1000	1000VDC nominal
	600	600VDC nominal
	300	300VDC nominal
	60	60VDC nominal
	5	5V/4V via Hall sensor
<b>B</b>	Current Input	
	A0	±20A
	A1	50 or 100mV shunt
	A2	Volt Hall Sensor 0 to ±5V/±4V
	A3	Current Hall Sensor 4-20mA
<b>C</b>	Power Supply	
	P1	100-415 VAC, 50-60 Hz; 100-300 VDC, 3 W
	P2	20-60 VDC, 3 W
<b>D</b>	I/O	
	X1	2DI+2AO (4-20mA/0-20mA)
	X2	2DI+2AO (0-5V/1-5V)
	X3	2DI+2RO
	X4	2DI+2DO
<b>E</b>	Communication	
	C	RS485, Modbus RTU
	(blank)	None

## Crompton Digital Meter System

- Display Voltage, Current & Frequency
- True RMS Measurement
- Fully Programmable PT and CT Ratios
- Simple Menu Driven Interface
- ANSI Case
- Bright LED Display


**Integra 640**

Display up to 12 electrical parameters on 4 screens:

1 System Volts System Current System Frequency	3 Volts L1 - L2 Volts L2 - L3 Volts L3 - L1
2 Volts L1 - N (4 wire only) Volts L2 - N (4 wire only) Volts L3 - N (4 wire only)	4 Current L1 Current L2 Current L3

### SPECIFICATIONS

Max Input Voltage:	120% of nominal continuous, 2x for 1 sec.
Input Voltage Burden:	0.2 VA per line, nominal
Max Input Current:	120% of nominal continuous, 20x for 1 sec.
Input Current Burden:	0.6 VA per phase, nominal
System PT (primary):	400kV or 360MW max
System CT:	9999:5A or 360MW max
Auxiliary Supply	
AC Supply:	100 - 250V AC or DC nominal (85 - 287V AC Absolute) (85 - 312V DC Absolute)
Frequency Range:	45 - 66 Hz
DC Supply:	12 - 48V DC (10.2 - 60V DC Absolute)
Supply Burden:	6VA
Measuring Ranges	
Voltage:	70 - 120% of nominal (functional 4 - 120%)
Current:	5 - 120% of nominal
Frequency:	45 - 66Hz
Accuracy	
Voltage:	±0.1% of range ±0.4% of reading
Current:	±0.1% of range ±0.4% of reading
Frequency:	0.15% of mid frequency
Operating Temperature:	-20 to +70°C, <95% RH non-condensing
Storage Temperature:	-30 to +80°C
Enclosure:	Polycarbonate front and base, steel case
Terminals:	Barrier terminal strip, 6-32 screw
Compliance:	UL140758, IEC 1010, IP54 (front face)
Dimensions:	4.31" high x 4.31" wide x 6.7" deep
Panel Cut Out:	4.06" (103mm) diameter, 4 stud positions

### ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.  
Order Example: CR/INT-0643-MIV-5-L

**A** - **B** - **C** - **D**

<b>A</b>	Basic Unit	
	CR/INT-0644	Integra 0640, 3 phase 4 wire
	CR/INT-0643	Integra 0640, 3 phase 3 wire
<b>B</b>	Input Voltage	
	ELV	100 - 120 V L-L (57.7 - 69.3V L-N)
	LOV	121 - 240 V L-L (70.1 - 139V L-N)
	MIV	241 - 480 V L-L (140 - 277V L-N)
	HIV	481 - 600 V L-L (278 - 346V L-N)
<b>C</b>	Input Current	
	5	5A CT input
<b>D</b>	Auxiliary Supply	
	10	100 - 120V AC
	19	190 - 240V AC

## Accuenergy Power Meters

- Revenue Grade Metering
- 5 Function Display
- Power Quality Analysis
- Over/Under Limit Alarm
- Data-Logging (Acuvim IIR)
- Web Server & Email Enabled
- Remote Switch Control
- Analog & Digital I/O Options
- 92x92 DIN or 4" ANSI Round Mounting



**Acuvim II** ▲ CE cUL US LISTED

The Acuvim II is a high-end multifunction power meter for monitoring and controlling power distribution systems. Plug-in modules expand the I/O capabilities. Alarms can be set for up to 16 parameters, selected from the 51 available. RS485 Modbus communication is standard, Ethernet is optional. The Acuvim IIR has 4M of onboard memory for datalogging in 3 assignable historical logs.

### Measured Parameters:

- Phase Voltage V1, V2, V3, Vlnavg
- Line Voltage V12, V23, V31, Vlnavg
- Current I1, I2, I3, In, Iavg
- Power P1, P2, P3, Psum
- Reactive Power Q1, Q2, Q3, Qsum
- Apparent Power S1, S2, S3, Ssum
- Frequency F
- Power Factor PF1, PF2, PF3, PF
- Energy Ep\_imp, Ep\_exp, Ep\_total, Ep\_net
- Reactive Energy Eq\_imp, Eq\_exp, Eq\_total, Eq\_net
- Apparent Energy Es
- Demand Dmd\_P, Dmd\_Q, Dmd\_S, Dmd\_I1, Dmd\_I2, Dmd\_I3
- Harmonics 2nd-31st\* & THD (V & I)
- Voltage Crest Factor
- THFF (TIF)
- Current K Factor
- Unbalance & Unbalance Factor (V & I)
- Max/Min Statistics with time stamps for 28 parameters
- Running Hours and Real Time Clock \*up to 63rd harmonic on Acuvim IIR

Parameter	Accuracy		Resolution	Range
	Acuvim II	Acuvim IIR		
Voltage	0.2%	0.2%	0.1V	20V~500kV
Current	0.2%	0.2%	0.001A	5mA~50000A
Power	0.5%	0.2%	1W	-9999MW~9999MW
Reactive Power	0.5%	0.2%	1var	-9999MVar~9999Mvar
Apparent Power	0.5%	0.2%	1VA	0~9999MVA
Power Demand	0.5%	0.2%	1W	-9999MW~9999MW
Reactive Power Demand	0.5%	0.2%	1var	-9999MVar~9999Mvar
Apparent Power Demand	0.5%	0.2%	1VA	0~9999MVA
Power Factor	0.5%	0.2%	0.001	-1.000~1.000
Frequency	0.2%	0.2%	0.01Hz	45.00~65.00Hz
Energy, Primary	0.5%	0.2%	0.1kWh	0-99999999.9kWh
Energy, Secondary	0.5%	0.2%	0.001kWh	0-999999.999kWh
Reactive Energy, Primary	0.5%	0.2%	0.1kvarh	0-99999999.9kvarh
Reactive Energy, Sec.	0.5%	0.2%	0.001kvarh	0-999999.999kvarh
Apparent Energy, Primary	0.5%	0.2%	0.1kVAh	0-99999999.9kVAh
Apparent Energy, Sec.	0.5%	0.2%	0.001kVAh	0-999999.999kVAh
Harmonics	2.0%	2.0%	0.1%	0.0%~100.0%
Phase Angle	2.0%	2.0%	0.1°	0.0°~359.9°
Unbalance Factor	2.0%	2.0%	0.1%	0.0%~100.0%
Running Time			0.01h	0~9999999.9h

### COMMON SPECIFICATIONS

System Configurations:	3LN/3CT, 3LN/2CT, 2LN/2CT*, 2LN/1CT*, 2LL/3CT, 2LL/2CT, 2LL/1CT*, 1Ø/3Line, 1Ø/2Line
Voltage Input:	400 VAC L-N, 690 VAC L-L full scale, 45-65 Hz
Withstand:	1500 VAC continuous, 3250 VAC for 1 minute
Input Z:	2 Mohm per phase
Current Input:	1 or 5 A nominal, 0-6A metering range
Withstand:	20 Arms continuous, 100A for 1 sec.
Burden:	0.05 VA typical @ 5 Arms
Display:	LCD with white backlight
Temperature:	-25 to 70 °C operating, <95% RH (non-condensing)
Environment:	Pollution degree 2
Dimensions:	3.8" H x 3.8" W x 2.0" D (96x96x51mm)

\*not on Acuvim IIR or Acuvim-EL

- Multifunction TRMS Meter
- 4 Quadrant Energy
- Power Quality Analysis
- Demand
- Over/Under Limit Alarm
- Wide Temperature Range
- RS485 Modbus Option
- 92x92 DIN or 4" ANSI Round Mounting



**Acuvim-L** ▲ CE cUL US LISTED

### Measured Parameters:

- Voltage V1, V2, V3, V12, V23, V31
- Current I1, I2, I3, In
- Power P1, P2, P3, Psum
- Reactive Power Q1, Q2, Q3, Qsum
- Apparent Power Ssum
- Frequency F
- Power Factor PF1, PF2, PF3, PF
- Energy Ep\_imp, Ep\_exp
- Reactive Energy Eq\_imp, Eq\_exp
- Demand Dmd\_I1, Dmd\_I2, Dmd\_I3, Dmd\_P, Dmd\_qInput
- Harmonics 2nd-15th & THD (V & I)
- Unbalance (V & I)
- Max/Min (V & I) with time stamps
- Max Demand (I & P)
- Running Hours

Parameter	Accuracy		Resolution	Range
	Acuvim-L	Acuvim-EL		
Voltage	0.5%	0.5%	0.1V	20V~500kV
Current	0.5%	0.5%	0.02%	0~50000A
Current Demand	0.5%	0.5%	0.02%	0~50000A
Power	1.0%	0.5%	0.1%	-4294MW~4294MW
Reactive Power	1.0%	0.5%	0.1%	-4294MVar~4294MVar
Apparent Power	1.0%	0.5%	0.1%	0~4294MVA
Power Demand	1.0%	0.5%	0.1%	0~4294MW
Reactive Power Demand	1.0%	0.5%	0.1%	0~4294MVar
Apparent Power Demand	1.0%	0.5%	0.1%	0~4294MVA
Power Factor	1.0%	0.5%	0.1%	-1.0~1.0
Frequency	0.2%	0.2%	0.01Hz	45~65Hz
Energy	1.0%	0.5%	0.1kWh	0~99999999.9kWh
Reactive Energy	1.0%	0.5%	0.1kvarh	0~99999999.9kvarh
Apparent Energy	1.0%	0.5%	0.1VAh	0~99999999.9kVAh
Harmonics	2.0%	--	0.1%	0~100.0%
Running Time			0.1h	0~9999999.9h

### ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.  
Order Example: Acuvim-EL-D-60-5A-P1

Acuvim—  —  —  —

<b>A</b> Model	II-D Acuvim II
	IIR-D Acuvim II with Datalogging
	AL-D Acuvim L
	BL-D Acuvim L with Energy Pulse & Alarm Outputs
	CL-D Acuvim L with RS485 Modbus Comm (half-duplex)
	EL-D Acuvim L with Time of Use & RS485 Modbus Comm

#### B Frequency

50	50 Hz
60	60 Hz

#### C Current Input

5A	5 Amp
1A	1 Amp

#### D Power Supply

P1	100-415 VAC, 50-60 Hz; 100-300 VDC, 3 W
P2	20-60 VDC, 3 W

### Plug-In Options for Acuvim II: (select up to 3)

DI	Four Digital Input (wet) 20-220V AC/DC, 2mA max.
RO	Two Form A Relay Out 250VAC/30VDC, 5A res., 2A inductive
DO	Two Isolated Digital Out 0-250V AC/DC, 100mA, photo-MOS
AO	Two Analog Out specify 0-5V, 1-5V, 0-20mA, 4-20mA (15V max)
AI	Two Analog In specify 0-5V, 1-5V, 0-20mA, 4-20mA
NET	Ethernet Communications 10/100M Modbus TCP/IP

## Electro Industries Power Meter

**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
- Modbus and DNP Protocol
- RS-485, Ethernet or fiber communication



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 / 100-370VDC, 10VA or 18-60VDC
Communications:	RS485 Port (rear), IrDA (faceplate), Ethernet 10/100BaseT
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-D2-485P-X

EI/SHARK	A	B	C	D	E	F	G
A	Model*						
	100	Power Meter/Transducer with LED Display					
	200	Advanced Power Meter/Transducer					
B	Frequency						
	50	50Hz					
	60	60Hz					
C	Current Input Class						
	10	0-11A (5A nominal)					
	2	0-2A (1A nominal)					
D	Functions	Model 100	Model 200				
	V1	Volts/Amps	V, A, Freq, Power, Energy				
	V2	V1 + Power & Frequency	V1+ 2M Datalogging				
	V3	V2 + Energy Counters	V2 + Harmonic Analysis				
	V4	V3 + Harmonics & Limits	V3 + Limit & Control				
E	Power Supply						
	D2	90-265VAC, 100-370VDC					
	D	18-60VDC					
F	Communications						
	X	None					
	485P	RS-485 & Pulse (standard on Model 200)					
	INP10	Ethernet & Pulse					
G	Mounting						
	X	ANSI					
	DIN	DIN mounting brackets					

\* Add suffix T for Transducer only (DIN mount) without display

## 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



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	120/208V		
	2	120/240V		
	3	277/480V		
	4	63/110V		
D	Current Input			
	1	5 Amp		
E	Other			
	0	None		
	1	ModBus Communication		

## 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

### 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 (2 $\frac{1}{2}$ Element)			
	55	Watt 3P4W (3 Element)			
	61	Vars 1P2W			
	62	Vars 1P3W			
	63	Vars 3P3W			
	64	Vars 3P4W (2 $\frac{1}{2}$ Element)			
	65	Vars 3P4W (3 Element)			
	71	Power Factor 1P2W			
	72	Power Factor 1P3W			
	73	Power Factor 3P3W			
	74	Power Factor 3P4W (2 $\frac{1}{2}$ Element)			
	75	Power Factor 3P4W (3 Element)			
	91	Phase Angle 1P2W			
	92	Phase Angle 1P3W			
	93	Phase Angle 3P3W			
	94	Phase Angle 3P4W (2 $\frac{1}{2}$ 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 $\pm 1$ mA			
	AHD	4 to 20 mA			
	AHF	12 $\pm 8$ mA			
F	Communication				
	0	None			
	1	RS-485			



2493 ▲



▲ 2491



2492 ▶

### 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 $\pm 1$ mA		
	AHD	4 to 20 mA		
	AHF	12 $\pm 8$ mA		
E	Communication			
	0	None		
	1	RS-485		

## Yokogawa AC Switchboard Meters

### AC VOLT OR AMP

To Order—Insert Number Code for Each Letter to Select Catalog Number.  
Order Example: 2493-3-01-AFA-1-1

A	B	C	D	E	F	G
A	2493	Triple Display				
B	Connections					
	1	3P3W Volts AC				
	2	3P4W Volts AC				
	5	3-Phase A, B, C Amps AC				
C	Input Rating					
	01	1 A				
	05	5 A				
	10	150 V				
	20	300 V				
	30	600 V				
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 Protocol					
	1	Yokogawa ASCII				
	1	Modbus				
G	Auxiliary Power					
	1	120/240 VAC				
	3	24 VDC				
	4	48 VDC				
	5	125 VDC				

### AC VOLT/AMP/HERTZ

To Order—Insert Number Code for Each Letter to Select Catalog Number.  
Order Example: 2493-08-51-1-AHD-1-1

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	AC Volt/Amp Rating					
	51	150V /1 A				
	55	150V /5 A				
	61	300V /1 A				
	65	300V /5 A				
	71	600V /1 A				
	75	600V /5 A				
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 Protocol					
	1	Yokogawa ASCII				
	2	Modbus				
G	Auxiliary Power					
	1	120/240 VAC				
	3	24 VDC				
	4	48 VDC				
	5	125 VDC				

### AC VOLT/AMP 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 Display			
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/VAR/POWER FACTOR

To Order—Insert Number Code for Each Letter to Select Catalog Number.  
Order Example: 2493-34-11-1-AFA-1-1

A	B	C	D	E	F	G
A	2492	Dual Display				
B	Function/Connection					
	40	Watt/VAR 1P2W				
	41	Watt/VAR 1P3W				
	42	Watt/VAR 3P3W				
	43	Watt/VAR 3P4W (2½ Element)				
	44	Watt/VAR 3P4W (3 Element)				
	45	Watt/PF 1P2W				
	46	Watt/PF 1P3W				
	47	Watt/PF 3P3W				
	48	Watt/PF 3P4W (2½ Element)				
	49	Watt/PF 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				
	AHD	4 to 20 mA				
F	Communication					
	0	None				
	1	RS-485				
G	Aux. Power Supply					
	1	120 Volt 50/60 Hz				
	2	240 Volt 50/60 Hz				
	2493	Triple Display				
B	Function/Connection					
	34	Watt/VAR/PF 1P2W				
	35	Watt/VAR/PF 1P3W				
	36	Watt/VAR/PF 3P3W				
	37	Watt/VAR/PF 3P4W (2½ Element)				
	38	Watt/VAR/PF 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				
D	Frequency					
	1	50/60Hz				
	2	400Hz				
E	Analog Output					
	AAA	None				
	AFA	0 to 1 mA				
	AHD	4 to 20 mA				
F	Communication Protocol					
	1	Yokogawa ASCII				
	2	Modbus				
G	Aux. Power Supply					
	1	120/240 VAC				
	3	24 VDC				
	4	48 VDC				
	5	125 VDC				

## Yokogawa Power and Energy Meters

- 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

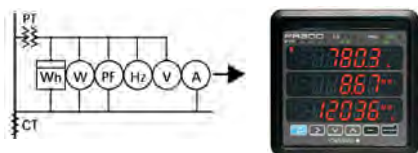


**PR300**  
**POWERCERT**



DIGITAL METERS

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

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

<b>A</b>	Basic Unit
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>B</b>	Input
1	Universal voltage (150/300/600V), 1A AC
2	Universal voltage (150/300/600V), 5A AC
<b>C</b>	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
<b>D</b>	Communications
0	RS-485 (PC Link, Modbus ASCII & Modbus RTU protocols)
3	Ethernet (Modbus TCP protocol)*
<b>E</b>	Optional Measuring Functions
0	None
3	Demand measurement (1 demand alarm output)
<b>F</b>	Power Supply
6	100-240V AC (50/60Hz) or 130-300V DC
<b>G</b>	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	

## Electro Industries Multi-Function Power Monitor

- Built-in Ethernet Connectivity (DMMS-350)
- ANSI Footprint
- True RMS .2% Accuracy (DMMS-300)
- .3% Accuracy (DMMS-425)
- Harmonic Distortion to 31<sup>st</sup> Order
- Harmonic Waveform Capture (DMMS-300)
- MIN/MAX Demand
- 10 Channels of Analog Transducer Output
- ModBus, DNP 3.0
- Utility Grade



### ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.  
Order Example: DMMS-300-R-2E-X-KV-KA-MW-120-115A-MODR-X

A	B	C	D	E	F	G	H	I	J	K	L
<b>A Basic Unit</b>											
DMMS-300	Multi-Function Power Monitor										
DMMS-350	Multi-Function Power Monitor										
DMMS-425	Multi-Function Power Monitor										
<b>B Reading Type (N/A for DMMS-425)</b>											
X	KVAH Reading										
R	KVARH Reading										
<b>C Connection</b>											
3E	3 Element-3-Phase 4-Wire Wye (3 PTs)										
2.5E	2.5 Element-3-Phase 4-Wire Wye (2 PTs)										
2E	2 Element-3-Phase 3-Wire Delta										
<b>D Harmonic Capability (N/A for DMMS-425)</b>											
X	None										
H	Harmonics to 31 <sup>st</sup> Order										
<b>E Volts Label</b>											
V	Volts Label										
KV	Kilovolts Label										
<b>F Amps Label</b>											
A	Amps Label										
KA	Kiloamps Label										
<b>G Power Label</b>											
KW	Kilowatts Label										
MW	Megawatts Label										
<b>H Operation Monitoring Voltage</b>											
120	120/208V (Direct Reading or PTs)										
G	277/480 (Direct Reading)										
<b>I Operating Power</b>											
115A	115 VAC ±20%, 6 VA										
230A	230 VAC ±20%, 6 VA										
D	24-48 VDC ±20%, 6 VA										
D2	125 VAC or DC ±20%, 6 VA Universal										
D4	12 VDC ±20%, 6 VA										
<b>J COM Protocol</b>											
MODR	ModBus RTU										
MODA	ModBus ASCII										
DNP	DNP 3.0										
EI	EI-Bus										
<b>K Relay Options</b>											
X	None										
NL	2 Relays-1 KYZ Pulse (DMMS-300 only)										
NL2	3 KYZ Pulses										
<b>L Output Module Option</b>											
SF485DB	RS485 Output (Digital)										
SF532DB	RS232 Output (Digital)										
SHNI-1	10 Channel 0-1mA (DMMS 300 only)										
SHNI-20	10 Channel 4-20mA (DMMS 300 only)										

The DMMS-300 is a four-quadrant multi-function power meter that measures:

- 3Ø Voltage (L-N, L-L)
- 3Ø Current
- Neutral Current
- Bi-directional KW (3Ø & Total)
- Bi-directional KVAR (3Ø & Total)
- KVA (3Ø & Total)
- PF (3Ø & Total)
- Bi-directional KWH
- KVAh
- Frequency
- %THD
- K Factor

It replaces individual single-function meters by providing three parameter displays and an easy to use front panel interface, as well as digital and analog connections to a control or monitoring system. The DMMS-300 includes advanced power measurements and min/max storage for power analysis & control. User-defined setpoints are available for most measured values.

The DMMS-350 adds a standard Ethernet TCP/IP connection. The meter is ideal for applications requiring real time metering or data streaming to a LAN or through the Internet. Information is reported using the industry standard Modbus TCP/IP protocol. Harmonic measurements are also standard in the DMMS-350.

The DMMS-425 is an economical power monitor that measures and calculates over 80 electrical parameters, including maximum and minimum values for every reading. This full four-quadrant meter has separate positive and negative Watthour counters and complies with ANSI C12 revenue metering accuracy requirements.

### SPECIFICATIONS

Accuracy	DMMS-300	DMMS-350	DMMS-425
Volts:	0.2% of Full Scale	0.2%	0.3%
Amperes:	0.2% of Full Scale	0.2%	0.3%
KW:	0.4% of Full Scale	0.4%	0.6%
KVA:	0.4% of Full Scale	0.4%	0.6%
KVAR:	0.4% of Full Scale	0.4%	0.6%
PF:	1.0% of Full Scale	0.4%	0.6%
KW Hour:	0.4% of Full Scale	0.4%	0.6%
KVA Hour:	0.4% of Full Scale	0.4%	0.6%
KVAR Hour:	0.4% of Full Scale	0.4%	0.6%
Frequency:	0.02 Hz	0.02 Hz	0.02 Hz
Harmonics:	0.50%	0.50%	NA
Input Voltage:	150V phase to neutral, 300V phase to phase-std. 300V phase to neutral, 600V phase to phase-G option 300V phase to neutral, 150V phase to phase-75 option		
Input Current:	5A at Full Scale, 10A maximum		
Burden:	Voltage 0.1 VA maximum; Current 0.1 VA maximum		
Operating Temp.:	-20°C to +70°C		
Sensing Method:	True RMS sampling at 64 samples per cycle		

## Electro Industries Utility Billing Meter


**NEXUS 1270**

- 0.6% W/Hr Revenue Meter
- 20 Year Time of Use
- Loss Compensation
- Power Quality
- Data Logging & Event Recording
- Multiple Communication Paths
- Modbus, DNP3, Ethernet, Web
- Graphical LCD Display
- Normal Mode, Time of Use Mode, Diagnostic Mode
- Two Historic Logs, Multiple Demand Windows
- CBEMA/ITIC Log (Model 1270)
- Setup Parameters Stored in Non-Volatile Memory
- Dial Out on Alarm or Event

### ORDERING INFORMATION

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

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

A	Model	
	1260	Nexus Utility Billing Meter
	1270	Nexus Utility Billing Meter with Advanced Power Quality
B	Memory	
	S	Standard
	A	Advanced
C	Form	
	9S	120-277V L-N; 3E, 4W, Wye
	35S	120-480V L-N; 2E, 3W, Delta
	36S	120-277V L-N; 2 1/2 E, 4W, Wye
	SWB	120-277V L-N; programmable
D	Class	(Amps)
	02	Class 2 (0 to 2 A)
	020	Class 20 (0 to 20 A)
E	Frequency	
	60HZ	
	50HZ	
F	Power Supply	
	S	Standard
	SE	Std External
	DE	18-60V DC
	LV	69V AC ±20%
G	Internal I/O	
	X	None
	INP2	Dial out Modem
	INP10	10Mb Ethernet
	INP100	10/100 Base T
	4IPO	4 Pulse Output Relays

### SPECIFICATIONS

<b>Accuracy:</b>						
Voltage	0.02%					
Current	0.05%					
Frequency	0.001Hz					
kWh @1.0PF	0.06%					
kWh @0.5PF	0.1%					
KVAR	0.1%					
kVA	0.1%					
PF	0.1%					
<b>Sensing:</b>	16 bit A/D inputs True RMS measurements 8 channel sample & hold					
<b>Digital Inputs:</b>	8 channels, self excited, dry contact					
<b>Solid State Outputs (KYZ):</b>	4 channels, form C, 350VDC/120mA					
<b>Timing:</b>	Internal clock accurate to 1 min/month IRIG-B input for sync to external GPS signal					
<b>Standard Communications:</b>	IR port Two RS-485 serial ports Modbus RTU, Modbus ASCII, DNP3.0 protocols Data Speeds to 115kbps Eight high speed input channels					
<b>Optional Communications:</b>	Internal modems with data buffering Internal Ethernet with multiple socket support & Modbus TCP/IP					
<b>Operating Temperature:</b>	-40°C to 85°C					
<b>Security:</b>	Hardware & Password Locks					
<b>Standard Power (S):</b>	96-550VAC 50/60Hz auto-ranging meter power from any of the 3 phases.					
<b>External Power (SE):</b>	96-275VAC 50/60Hz or 125VDC ±20%					
<b>Dimensions:</b>	S case 6.96" dia x 6.0" deep SWB case 6.813"W x 9.188"H x 9.30"D					
<b>Memory:</b>						
<b>Model</b>	<b>Log1</b> <b>Log2</b> <b>CBEMA</b> <b>Event</b> <b>Waveform</b> <b>Output</b> <b>Input</b>					
1260S	80 days 32 days		1024		512	512
1260A	691 days 132 days		1024		512	512
1270S	97 days 132 days	1024	1024	64	512	512
1270A	602 days 132 days	1024	1024	96	512	512

### EXTERNAL OPTIONAL MODULES

External Modules	
EI/1MAON4	4 Channel Analog Outputs, 0-1mA
EI/20MAON4	4 Channel Analog Outputs, 4-20mA
EI/1MAON8	8 Channel Analog Outputs, 0-1mA
EI20MAON8	8 Channel Analog Output, 4-20mA
EI/8AI1	8 Channel Analog Input, 0-1mA
EI/8AI2	8 Channel Analog Input, 4-20mA
EI/8AI3	8 Channel Analog Input, 0-5VDC
EI/8AI4	8 Channel Analog Input, 0-1VDC
4RO1	4 Relay Outputs
4PO1	4 Solid State Pulse Outputs
8DI1	8 Digital Status Inputs
MBIO	I/O Module Mounting Brackets
PSIO	Additional I/O Power Supply
<b>Software</b>	
NXDS1.0C	Single User Dial-in Server License
AIREPORTS1	AIREPORTS Single User License

## E-Mon D-Mon Three Phase Energy Meters

**NEW**



**G208**



**Split-Core Sensor**

- Direct-read 8-digit LCD display without multiplier displays accumulative kWh & "real-time" kW load
- User entered cost per KWH provides to-date energy cost & projected hourly cost based on metered load
- Displays total carbon (CO<sub>2</sub>) emissions in pounds (lbs.) & indicates hourly emissions based on metered load
- Utility Grade metering accuracy
- Split-core current sensors install without power interruption, promote enhanced safety and allow remote mounting up to 2000 feet from meter
- Current sensor installation diagnostic indicator
- Parallel up to three sets of current sensors for cumulative reading
- Industrial-grade JIC steel enclosure with padlocking hasp and mounting flanges for indoor installations
- Optional removable terminal block for pulse output
- Non-volatile memory
- UL Listed/CSA approved, made in USA
- Certified to ANSI C12.1 and C12.16 electronic meter National Accuracy Standards
- Certified to California metering standards Bureau of Weights and Measures
- New York City approved, Con Edison approved for RSP program

### Net Meter (GN Model) adds:

- Direct-read 8-digit LCD display of:
  - Delivered kWh
  - Net kWh
  - Received kWh
  - Real-time kW load
- Load profile data of delivered kWh, delivered kVARh and received kWh along with real-time readings of Power Factor, kW, kVA, kVAR, Amps per phase, Volts per phase and Frequency (available via E-Mon Energy software)
- RS-232/RS-485 Communication
- Optional Telephone Modem, Ethernet & Modbus
- Listed as eligible system performance meter by California Solar Initiative Emerging Renewables Program

### ORDERING INFORMATION

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

Example G208100R KIT

A	B	C	D	E
<b>A Model</b>				
G				3-phase Green Energy Meter
GN				3-phase Green Energy Net Meter
<b>B System Configuration</b>				
208				120/208-240V, 4W or 240V, 3W
480				277/480V, 4W or 480V, 3W
<b>C Split-core Sensor Rating*</b>				
100				100A (7/8" x 1 1/2" window)
200				200A (7/8" x 1 1/2" window)
400				400A (1 1/2" x 2 3/4" window)
800				800A (3 1/4" x 4 1/2" window)
1600				1600A (3 1/4" x 4 1/2" window)
3200				3200A (6" x 8" window)
<b>D Options</b>				
M				MMU mounting style (Model G only)
M				Telephone modem (Model GN only)
R				NEMA 4X Outdoor enclosure
E				Ethernet communications (Model GN only)
RTU				Modbus protocol (Model GN only)
<b>E</b>				
				KIT Includes meter & 3 split-core current sensors

\*Current sensors can be installed up to 2000' from meter.

Indoor enclosure is 7 1/4" H x 7" W x 3 1/4" D with 3/4" conduit knockout on bottom.

## E-Mon D-Mon Multiple Meter Cabinets

- Compact installation of multiple meters allows for easy and centralized reading.
- Available in configurations for up to 8, 16, or 24 meters. Meters can be factory installed to speed system installation.
- IDRs (Interval Data Recorders) can be factory installed along with the meters, for easy interface to the E-Mon Energy software.
- Three-phase MMU cabinets include prewired voltage feeds.

### ORDERING INFORMATION

Model	Capacity	Arrangement	Dimensions
MMU8	8 meters	2 across, 4 down	24"H x 12"W x 7"D
MMU16	16 meters	4 across, 4 down	24"W x 20"H x 7"D
MMU24	24 meters	5 across, 5 down	30"W x 24"H x 7"D

**MMU**



## E-Mon D-Mon Wireless Energy Meters

**NEW**

### Class 2100 Three Phase Meters


**RWT**

- Direct-read 8-digit LCD displays kW load & accumulative kWh.
- Demand option displays kW Demand & kW Peak date and time (15 min interval standard, 30 min available).
- Certified to ANSI C12.1 & C12.16 for Utility Grade Metering Accuracy ( $\pm 1\%$  from 1-100% of rated load).
- Built-in wireless transceiver is FCC certified not to interfere with existing infrastructure.
- Operates in the 915 MHz frequency-hopping, spread-spectrum license-free band.
- Interfaces with E-Mon wireless gateways & software for in-building remote data collection.
- Self-configuring wireless mesh network installs easily, without network management.
- NEMA 4X outdoor enclosure has 3/4" conduit knockout on bottom.
- Non-volatile Memory retains data during power interruption.
- Meters can be mounted inside building (range  $\approx 500$  feet line-of-sight, up to 200 feet through walls).
- Split-core current sensors install without power interruption, up to 2000 feet from meter.
- Current sensor diagnostics assist in installation

All E-Mon products are Made in USA.

 Dimensions: 7 $\frac{1}{2}$ " H x 7 $\frac{1}{2}$ " W x 4" D

#### ORDERING INFORMATION

 To Order—Insert Code for Each Letter to Select Catalog Number.  
 Example: 208100RWT KIT

A	B	C	D	E
---	---	---	---	---

<b>A</b>	System	
	208	120/208-240V, 4W or 240V, 3W
	480	277/480V, 4W or 480V, 3W
<b>B</b>	Split-core Sensor Rating	
	100	100A (7/8" x 1 $\frac{1}{2}$ " window)
	200	200A (7/8" x 1 $\frac{1}{2}$ " window)
	400	400A (1 $\frac{1}{2}$ " x 2 $\frac{3}{4}$ " window)
	800	800A (3 $\frac{1}{4}$ " x 4 $\frac{1}{2}$ " window)
	1600	1600A (3 $\frac{1}{4}$ " x 4 $\frac{1}{2}$ " window)
	3200	3200A (6" x 8" window)
<b>C</b>	Model	
	RWT	Three phase Wireless Energy Meter
<b>D</b>	Options (omit if no options)	
	D	Demand
<b>E</b>		
	KIT	Includes meter & 3 split-core current sensors

### Class 4100 Single Phase Meters


**WT**

- Easy-to-read 6-digit electro-mechanical display for diagnostics.
- Interfaces with E-Mon wireless gateways & software to automatically compile data.
- Can be mounted inside buildings within  $\approx 500$  feet line-of-sight from each other (up to 200 feet through walls)
- Revenue grade accuracy meets ANSI C12.1 and C12.16.
- On-board data memory.
- Split-core current sensors allow for safe installation up to 2,000 feet from meter.
- Non-metallic enclosure is ideal for installation inside commercial and residential spaces.
- Built-in wireless transceiver is FCC certified not to interfere with existing infrastructure.
- Wireless mesh network operates in the 915 MHz license-free band.
- Self-configuring network allows for easy installation - no network management required.

UL Listed. New York City approved. Con Edison approved for RSP program. Measurement Canada approved for revenue metering. California Bureau of Weights and Measures certified. Made in USA.

Dimensions: 7" H x 6" W x 2" D

 Split-core current sensors have 7/8" x 1 $\frac{1}{2}$ " window

#### ORDERING INFORMATION

2120100WT KIT	120V, 1-Phase, 2W meter with one 100A split-core sensor
2120200WT KIT	120V, 1-Phase, 2W meter with one 200A split-core sensor
3208100WT KIT	120/208-240V, 1- or 2-Phase, 3W meter with two 100A split-core sensors
3208200WT KIT	120/208-240V, 1- or 2-Phase, 3W meter with two 200A split-core sensors

#### ACCESSORIES

WGATEWAY	Wireless Gateway
WRSOFT	Wireless Meter Reading Software

## E-Mon D-Mon Single Phase KWH Meters



◀ **Class 1000**

- Direct-read kW & kWh (no multiplier)
- 8 digit LCD readout
- Revenue-grade accuracy:  $\pm 1\%$  from 1-100% of rated load
- Retains readings during power failure
- Split-core sensors for safe & easy installation up to 2000 feet from meter
- Parallel up to three (3) sets of current sensors for cumulative reading.
- Industrial grade JIC steel enclosure for indoor installations with  $\frac{3}{4}$ " conduit knockout on bottom
- UL/CUL Listed, made in USA
- New York City approved, Con Edison approved for RSP

Dimensions:  $6 \frac{3}{4}$ " H x  $5 \frac{3}{16}$ " W x  $3 \frac{1}{4}$ " D  
 Split-core current sensors have  $7/8$ " x  $1 \frac{1}{2}$ " window

### ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number. Example 2120100-SA KIT

A	B	C	D	E
---	---	---	---	---

<b>A</b>	System	
2120	120V, 2-Wire (1 sensor)	
3208	120/208-240V 3-Wire (2 sensors)	
2277	277V, 2-Wire (4 digit display, 1 sensor)	
<b>B</b>	Split-core Sensor Rating	
25	25A	
50	50A	
100	100A	
200	200A	
<b>C</b>	Model	
-SA	Class 1000 Single phase KWH Meter	
<b>D</b>	Options (not available on 277V systems)	
M	MMU mounting style	
R	NEMA 4X outdoor enclosure	
<b>E</b>		
KIT	Includes meter & split-core current sensor(s)	

DIGITAL METERS

## E-Mon D-Mon ENERGY™ Software

E-Mon Energy software allows users to read and monitor energy consumption easily and effectively via on-site or off-site non-dedicated computers. Requires E-Mon meter with RS-485 or wireless interface.

- Windows 2000, XP & Vista compatible
- Graphic profiling provides analytical charts and graphs with demand profiling for 5-, 15-, 30- or 60-minute sampling rates
- Generate and print itemized electric bills (using coincidental peak demand date and time). Software will generate bills from user-specific time periods via profile data
- Reads up to 8 time periods, 4 seasons and multiple holidays for time-of-use (TOU) monitoring
- Reads E-Mon D-Mon meters, either on-site or off-site, via modem (cellular or telephone), Ethernet or a directly connected computer
- Exports data to spreadsheets for analysis (.csv files)
- Exports data to MV-90 system (.hmf files)
- Optional modem allows meters to be read anywhere in the world where telephone or cellular service is available.
- Wireless metering option allows users to remotely read Class 2100 & Class 4100 E-Mon D-Mon meters via Internet, Ethernet or telephone communication.



### ORDERING INFORMATION

EMONENERGYSW	Energy Monitoring Software*
WRSOFT	Wireless Option for Software
IDR-8	1-8 Meter IDR**
IDR-16	1-16 Meter IDR**
RS232K	E-Mon Energy Key
USBK	USB Key
EKM-T	Telephone Key/Modem
EKM-E	Ethernet Key/Modem

\*Software packages include RS-232K Key (RS-485 to RS-232 converter)

\*\* Available with optional two-screw removable terminal blocks. Add suffix "ST" to the end of the model number. (i.e. IDR-8-ST)

## E-Mon D-Mon Three Phase kWh/Demand Meters

### Class 2000

- Direct-read 8-digit LCD display of accumulative kWh and "real-time" kW load (no multiplier).
- Demand option displays kW/Demand and kW Peak date and time (15 minute interval standard, 30 minutes available)
- Utility Grade metering accuracy
- Split-core current sensors install without power interruption and allow remote mounting up to 2000 feet from meter
- Current sensor installation diagnostic indicator
- Parallel up to three (3) sets of current sensors for cumulative reading
- Use on 3Ø 4-Wire, 3Ø 3-Wire & 2Ø 3-Wire systems
- Optional removable terminal block for pulse output
- Industrial-grade steel enclosure standard (for indoor installation); MMU (Multiple-Meter Unit) cabinet & NEMA 4X raintight enclosure optional
- Non-volatile memory
- UL Listed/CSA Approved, Made in USA
- Certified to California metering standards Bureau of Weights and Measures. Listed by the California Energy Commission. New York City approved, Con Edison approved for RSP program.

Dimensions: 7¼" H x 7" W x 3¼" D

### ORDERING INFORMATION

 To Order—Insert Code for Each Letter to Select Catalog Number.  
 Order Example: 208100DR KIT

A	B	C	D
---	---	---	---

<b>A</b>	System
208	120/208-240V, 4W or 240V, 3W
480	277/480V, 4W or 480V, 3W
<b>B</b>	Split-core Sensor Rating
100	100A (7/8"x1½" window)
200	200A (7/8"x1½" window)
400	400A (1½"x2¾" window)
800	800A (3¼"x4½" window)
1600	1600A (3¼"x4½" window)
3200	3200A (6"x8" window)
<b>C</b>	Options (omit if no options)
D	Demand
M	MMU cabinet
R	Outdoor enclosure
ST	Removeable terminal block for pulse output
<b>D</b>	
KIT	Includes meter & 3 split-core current sensors


 ← **Class 2000**
**IDR** →


## E-Mon D-Mon Interval Data Recorder

- Reads & records up to 8 or 16 meters; read meters individually or in groups
- Reads kWh (kilowatt-hours) and reads kW (Demand) in 15, 30 or 60-minute kW periods
- Internal data storage for 36 days of 15-minute intervals
- RS-485 communications to computer and other IRDs. Baud rate selectable up to 19200 bps
- Also supports up to 52 Class 3000 meters in either "daisy chain" or "star" configuration
- Powered from E-Mon D-Mon meters (IDR-ST requires 120V power)
- Non-volatile memory maintains data in case of power failure
- Can be mounted on the inside back wall of the MMU cabinet
- Industrial-grade JIC steel enclosure has padlocking hasp, mounting flanges & three ¾" conduit knockouts on bottom

Use with any model E-Mon Energy Meter except wireless units.

First meter (which supplies power to IDR) must be within 100 ft. Other meters can be up to 500 ft from IDR.

Dimensions: 9½" H x 6¾" W x 3¼" D

### ORDERING INFORMATION

IDR-8	Interval Data Recorder for up to 8 meters
IDR-16	Interval Data Recorder for up to 16 meters

#### Options:

For screw terminals in place of all RJ jacks, add suffix ST to the end of the model (e.g IDR-8-ST)
For IDR-16 with 8 RJ Jacks and 8 screw terminals, add suffix RJST to the end of the model (IDR-16-RJST)
For Built-In Telephone Modem, add suffix M
For Modbus communication, add suffix RTU

## Schneider Electric Energy Meters



**EM1250**

- Measures power, PF, energy - active, apparent, reactive
- Single row, backlit LCD display
- 4 digit TRMS readout with units displayed under each numeric value
- Direct read primary values - no multiplier
- User selectable default display page
- Permanent & resettable energy counters
- Modbus RS-485 interface

Recommended for load monitoring, load balancing, sub-metering & gensets.

### System Configurations (User selectable)

- |                            |              |
|----------------------------|--------------|
| 3 phase, 4-wire Y          | 3 CTs, 3 PTs |
| 3 phase, 3-wire delta      | 2 CTs, 3 PTs |
| 3 phase, 3-wire open delta | 2 CTs, 2 PTs |
| 1 phase, 3-wire            | 2 CTs        |
| 1 phase, 2-wire            | 1 CT         |



### ORDERING INFORMATION

EM1250	EM1250 class 0.5 accuracy, 5 Amp CT Secondary and RS 485 port
EM1251	EM1251 class 0.5 accuracy, 1 Amp CT Secondary and RS 485 port

### SPECIFICATIONS

Measurement:	True RMS, two quadrant power and energy
Accuracy:	Active power (kW) & energy (kWh) - class 0.5; Apparent power (kVA) & energy (kVAh) - class 0.5; Reactive power (kVAR) & energy (kVARh) - class 1.0; Power Factor (PF) - class 0.5;
Data update rate:	1 second
Voltage inputs:	V1, V2, V3, Vn
Measured voltage:	80-480 V L-L without PTs Up to 999 kV with external PTs
Overload:	600 V L-L
Burden:	0.2 VA per phase max.
Impedance:	3MΩ L-L and L-N
Frequency:	50/60 Hz ±5%
CT primary rating:	5 A to 99.0 kA for EM1250, 1 A to 99.0 kA for EM1251
CT secondary rating:	5 A for EM1250, 1 A for EM1251
Current inputs:	A1, A2, A3
Measurement range:	250 mA - 6 A (starting at 5 mA) for EM1250 150 mA - 1.2 A (starting at 1 mA) for EM1251
Overload:	10 A (EM1250) or 2 A (EM1251), continuous
Burden:	0.2 VA per phase max.
Input resistance:	< 0.1 ohm
Display:	3 parameter, 4 digit LCD with auto-scaling (k, M, G)
Displayed parameters:	Auto-scrolling with user selectable default display page & password protected setup parameters
Communications:	2-wire RS-485, Modbus RTU
Power supply:	44-277 VAC, 50/60 Hz; 44-277 VDC, 4 VA
Operating temperature:	-10 to +60°C, 5-95% RH non-condensing
Dimensions:	96mm x 96mm bezel, 83mm behind panel
Protection:	IP51 front, IP40 back
Rating:	CATIII, protection class 2, pollution class 2

ANALOG METERS

## Schneider Electric Advanced Energy Meter

**NEW**

- Use on 3φ LV & MV systems
- Measures, V, A, Freq, PF, plus 4 quadrant power & energy
- Power quality analysis to 15th harmonic
- Large, bright graphic display
- Predicts demand for load management
- Digital kWh output
- Modbus RS-485 interface
- 1/4DIN size



**PM5110**

Ideal for sub-metering and cost management.

### Measurements

Current:	per phase & neutral
Voltage:	total, per phase L-L and L-N
Power :	real, reactive & apparent; total & per phase
Energy:	accumulated active, reactive & apparent
% Unbalance:	current, voltage L-L and voltage L-N
Power Factor:	true & displacement, total and per phase
Demand:	present, last, predicted & peak for avg current, active power, reactive power & apparent power
Power Quality:	THD for current, voltage L-L and voltage L-N
Harmonics:	Individual harmonics to 15th
Timers:	I/O time, operating time, load time
Other Parameters:	Frequency, min/max of instantaneous values with time stamp, alarms with time stamp



### ORDERING INFORMATION

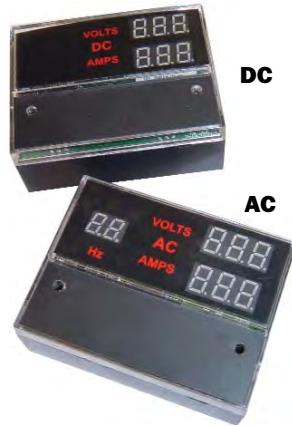
PM5110	Advanced Energy Meter with RS-485 communications
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### SPECIFICATIONS

Measurement:	True RMS, four quadrant power and energy
Sampling rate:	64 samples per cycle
Accuracy:	Active energy ±0.5%; reactive energy ±2%; Active power & apparent power - class 0.5; Current, Voltage - class 0.5; Frequency - ±0.05%
Voltage inputs:	V1, V2, V3, Vn
Measured voltage:	20 to 400 V L-N / 35 to 690 V L-L without PTs Up to 1 MV with external PTs
Absolute range:	35 V L-L to 760 V L-L
Impedance:	5MΩ
Current inputs:	A1, A2, A3; 1 A or 5 A nominal
Measured amps:	50 mA - 8.5 A (starting at 5 mA)
Withstand:	10 A continuous, 10s/hr 50A, 1s/hr 500A
Burden:	<0.0262 VA at 8.5 A
Impedance:	< 0.3 mΩ
Frequency:	50/60 Hz ±5%
Demand calculation:	Rolling, fixed and rolling block, thermal methods w/ settable interval; can be synchronized to clock or command. Peak demand time stamped & stored
Alarm time stamp:	1s resolution, data stored in non-volatile memory
Digital output:	one scalable from 1 to 9,999,999 pulses per kWh; 40 VDC, 20 mA, 25 Hz max, 50% duty cycle
Display:	Backlit monochrome graphic LCD, 128x128
Display modes:	Vector, graphical or 6 line numerical readout
Front panel indicators:	Green LED for heartbeat/communication; Amber LED for active alarm & energy pulse output
Communications:	2-wire RS-485, Modbus RTU, Modbus ASCII
Power supply:	100-277 VAC L-N or 415V ±5% L-L, 45-65 Hz, <11 VA; 125-250 VDC ±20%, <4W
Operating temperature:	-25 to +70°C, 5-95% RH @50°C non-condensing
Dimensions:	96mm x 96mm bezel, 77mm behind panel
Protection:	IP52 front, IP30 back
Safety:	cULus per UL61010-1, CE
Rating:	CATIII, protection class 2, pollution class 2

## Hoyt Multi-Function Digital Meters

- Displays multiple parameters
  - DC Volts & DC Amps
  - AC Volts, AC Amps, Frequency
- High visibility LED display
- Surface or window mounting
- Matches panel cutout of Yokogawa 260 & Modutec 3S
- Made in the USA



**D-CK920** ▶

### ORDERING INFORMATION

D-CK920-VADC	99.9ADC, 99.9VDC (STD)
D-CK920-VADC-1	200ADC, 99.9VDC
D-CK920-VADC-2	1000ADC, 200VDC
D-CK920-VADC-3	5.0ADC, 99.9VDC
D-CK920-VADC-4	4V@400ADC, 99.9VDC (SPECIAL)
D-CK920-VADC-5	99.9ADC, 99.9VDC
D-CK920-VADC-6	500ADC, 99.9VDC
D-CK920-VADC-7	100ADC, 200VDC, no decimals
D-CK920-VAFAC	99.9AAC, 285VAC (STD)
D-CK920-VAFAC-1	199AAC, 285VAC

### SPECIFICATIONS

<b>AC Models:</b>	TRMS Sensing
AC Volts Accuracy:	1% of reading ±1 count between 45 Hz and 65 Hz
Resolution:	1 Volt
Range:	0-285 VAC RMS
AC Amps Accuracy:	2% of reading ± 1 count
Resolution:	0.1 Amp to 99.9 A; 1 Amp from 100 to 999
Range:	999 Amps RMS using CT's with a maximum secondary of 100ma.
Frequency Accuracy:	0.5% from 45-65 Hz ±1 count
Crest Factor:	3:1
<b>DC Models:</b>	
DC Volts Accuracy:	0.1% of reading ±1 count
Resolution:	0.1 Volts to 99.9 VDC; 1 Volt from 100 to 999
Range:	Max. direct input is 100 VDC. Use an external divider to extend the range
DC Amps Accuracy:	1% of reading ±1 count (excluding shunt errors)
Resolution:	0.1 Amp to 99.9 Amps; 1 Amp from 100 to 200
Range:	200 Amps (requires external shunt)
<b>All Models:</b>	
Display:	0.38" LED, High Intensity
Common Mode Rejection:	86dB Typical
Common Mode Range:	±2 Volts
Overvoltage Protection:	1.5 times max input for 1 minute
Operating Temperature:	-20°C to +60°C, 0-95% RH non-condensing
Dimensions:	2.98" W x 2.25" H
Panel Cutout:	2.90" x 1.26" for window mounting

\* Overall accuracy of this measurement is predicated on the accuracy of the shunt & length of connecting leads between the shunt and the D-CK920. Drift in the least significant digit may occur due to thermal changes in shunt or the operating environment.

ANALOG METERS

## Schneider Electric Multi-Function Digital Meter

- Measure V, A, Freq, PF, Phase angle, Unbalance, RPM
- Use on 3 $\phi$  & 1 $\phi$  systems
- Large, bright LED display
- Modbus RS-485 interface
- Quick front panel setup
- Selectable CT & PT ratios
- Analog load bar
- 1/4DIN size

**DM6200** ▶



Ideal for control panels, motor control centers & genset panels.

### System Configurations (User selectable)

3 phase, 4-wire Y	3 CTs, 3 PTs
3 phase, 3-wire delta	2 CTs, 3 PTs
3 phase, 3-wire open delta	2 CTs, 2 PTs
1 phase, 3-wire	2 CTs
1 phase, 2-wire	1 CT



### Measurements

Current:	per phase & neutral
Voltage:	average phase to phase and phase to neutral
Power factor:	average & per phase
Unbalance:	current & voltage
Phase angle:	between V & A on ph1, ph2, ph3
RPM:	speed calculated on output voltage & # of poles (generators only)
Other parameters:	Frequency, Operating time (hours), Number of interruptions

### SPECIFICATIONS

Measurement:	TRMS up to 9th harmonic, 20 samples per cycle at 50Hz
Accuracy:	1.0% of reading (ACV, ACA, PF)* 0.1% of reading (Freq) 2 degrees (Phase angle)
Data update rate:	1 second
Voltage inputs:	V1, V2, V3, Vn
Measured voltage:	80-480 V L-L without PTs Up to 999 kV with external PTs
Overload:	1.1 Un (480 V L-L continuous)
Burden:	0.2 VA per phase max.
Frequency:	45-65 Hz
Current CT inputs:	1A to 99.0 kA primary, 1 A to 5 A secondary
Measured current:	50 mA - 6 A (starting at 5mA)
Overload:	10 A continuous
Burden:	0.2 VA per phase max.
Input resistance:	< 0.1 ohm
Display:	3 line, 4 digit LED with auto-scaling (k, M, G).
Displayed parameters:	Auto-scrolling with user selectable default display page & password protected setup parameters.
Analog load bar:	12 segment color coded LEDs
Communications:	2-wire RS-485, up to 19200 baud, Modbus RTU
Power supply:	44-277 VAC, 50/60 Hz; 44-277 VDC, 3 VA
Operating temperature:	-10 to +60°C, 5-95% RH non-condensing
Dimensions:	96mm x 96mm bezel, 83mm behind panel
Protection:	IP51 front, IP40 back
Rating:	CATIII, protection class 2, pollution class 2

\* 0.05% of full scale additional error for input current below 100mA

### ORDERING INFORMATION

DM6200	Multi-function digital meter with RS-485 communications
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## NLS Panel Meters

### MINIATURE PANEL METERS



**PM349**

- 0.1% Basic DC Accuracy
- Small Stackable Case
- Red, Green or Yellow Display
- Presetable Decimal Point
- MUX BCD Outputs

Temperature: 0-50°C operating  
Case Size: 3.125" W x 1.375" H x 3.375" D

DIGITAL METERS

### ORDERING INFORMATION

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

Order Example: NL/PM349/L/G/CS/5/20V

A - B - C - D - E - F

A Model	
NL/PM349	3½ digit DC Voltmeter
NL/PM352	3½ digit DC Voltmeter
NL/PM452	4½ digit DC Voltmeter
B Display Option	
-	0.3" LED digit height
L	Large 0.4" digits
C LED Display Color	
R	Red
Y	Yellow
G	Green

D Reading	
-	Normal
S	Scaled (specify value)
Z	Offset (specify value)
CS	Internal current shunt (specify range)
AC	AC reading (PM352 only)
E Power	
-	Normal
5	5VDC ±5%, 200mA
120	with 120VAC adapter
240	with 240VAC adapter
F Range R <sub>in</sub>	
200mV	100MΩ (PM349 only)
2V	1000MΩ
20V	1MΩ
20V	10MΩ
1000V	10MΩ

### SHORT DEPTH DC VOLTMETERS



**X37**

- Only ½" behind panel
- 0.56" LED or 0.6" LCD
- 0.1% or 0.2% Accuracy
- Presetable Decimal Point

Power: 5VDC ±5%, 200mA (6mA for X37)  
Temperature: 0-50°C operating  
Case Size: 4" W x 1.9" H x 1.1" D

### ORDERING INFORMATION

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

Order Example: NL/X37/L/-/20V

A - B - C - D - E

A Model	
NL/X32	3 digit, LED (unipolar)
NL/X34	3½ digit, LED (bipolar)
NL/X37	3 digit, LCD (bipolar)
B Display Option	
L	Backlit LCD
-	Standard LCD or LED
C LED Display Color	
R	Red LED
Y	Yellow LED
G	Green LED
-	LCD

D Reading			
-	Normal		
S	Scaled (specify value)		
Z	Offset (specify value)		
CS	Internal current shunt (specify range)		
E Range			
	X32	X34, X37	R <sub>in</sub>
	100mV	200mV	100MΩ
	1V	2V	1MΩ
	10V	20V	1MΩ
	100V	200V	1MΩ
	1000V	1000V	4MΩ

### 1/8 DIN PANEL METERS



**RM350**

- 0.1% or 0.2% Accuracy
- Amps, AC, Ω, Ratio Options
- Power Supply Options
- MUX BCD Outputs

Temperature: 0-50°C operating  
Case Size: 4.0" W x 1.9" H x 4.5" D

### ORDERING INFORMATION

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

Order Example: NL/RM350/TB/-/G/AC/120/20V

A - B - C - D - E - F - G

A Model	
NL/RM350	3½ digit, 0.56" LED
NL/RM351	3½ digit, 0.6" LCD
NL/RM452	4½ digit, 0.56" LED
NL/RM453	4½ digit, 0.4" LCD
B Connector (mating connector included)	
TB	Terminal block
EC	Edge connector
C Display Option	
-	Standard
L	0.8" LED (RM350 only)
D Display Color	
R	Red LED
Y	Yellow LED
G	Green LED
-	LCD

E Reading	
-	Normal
S	Scaled (specify value)
Z	Offset (specify value)
CS	Internal current shunt (specify range)
AC	AC reading
Ohm	Ohms reading
F Power	
5	5VDC ±5%, 200mA
12	12VDC
24	24VDC
28	28VDC
18	18-34VDC isolated
120	120VAC
240	240VAC
G Range R <sub>in</sub>	
200mV	100MΩ (RM3xx only)
2V	1000MΩ
20V	1MΩ
20V	10MΩ
1000V	10MΩ

## Lascar Multi-Function Graphics Meters

**NEW**

- Three Color TFT Screen Sizes
- Programmed via USB Interface
- User Selectable Meter Display Styles Including Touch Screen Applications
- 0-40V or 4-20mA DC Input
- 4 to 30 VDC Supply Voltage
- Screw Terminal Connections
- Free Windows Configuration Software
- Optional Thermocouple Add-on Board
- NEMA 6X Version Available

The Panel Pilot Series is a family of color TFT graphics meters that users can program to display a variety of meter styles. Available in 2.4", 2.8" and 3.5" sizes, the meters are programmable via USB interface with free Windows-based configuration software. Users can select the type of meter style they want and personalize the display by selecting preferences in color, text and voltage input scaling. Once programming is complete, the meter is detached and mounted in the panel. Each unit is supplied with a variety of standard display styles. A 2.4" NEMA 6X model is available for hostile environments.


 **Panel Pilot**


Connect PanelPilot display to PC via USB



Choose the best configuration for your application



Color individual display elements and customize text labels



Set-up the analog input scaling in software



Upload configuration and place meter in application

### SPECIFICATIONS

Input:	0-40V DC (single ended)
Ranges:	8 ranges, software selected
Accuracy:	0.05% typical, 0.1% max.
Linearity:	± 1 count
Sample Rate:	3/second
Display:	320 x 240 color TFT touchscreen
Operating Temperature:	0 - 40°C
Supply Voltage:	4 to 30 VDC
Supply Current:	35mA at 30V, 190mA at 4V supply
PC Software:	Windows 7, Vista, 2000, XP

### ORDERING INFORMATION

Part #	Description	Input	Dimensions (inch)
SGD24-M	2.4" Panel Pilot	0-40 VDC	3.0 x 1.9 x 0.75
SGD28-M	2.8" Panel Pilot	0-40 VDC	3.4 x 2.3 x 0.80
SGD35-M	3.5" Panel Pilot	0-40 VDC	3.7 x 3.0 x 0.90
SGD24-M420	2.4" Panel Pilot	4-20 mA	3.0 x 1.9 x 0.75
SGD28-M420	2.8" Panel Pilot	4-20 mA	3.4 x 2.3 x 0.80
SGD35-M420	3.5" Panel Pilot	4-20 mA	3.7 x 3.0 x 0.90
SGD24-M-IP	2.4" Panel Pilot NEMA 6X	0-40 VDC	3.0 x 1.9 x 0.75
SGD ADPT-TC	Thermocouple Add-on board, with Type K probe		
CABLE USB A-MF	Type A to Mini USB		

## Lascar Enhanced Digital Panel Meters


 **DPM950S**

### DUAL COLOR INDICATORS

- Backlit 3½ Digit LCD Display
- Adjustable Hi & Lo Thresholds
- Selectable Normal Color - Green or Red
- 3 Open Collector Outputs (Hi, Lo, OK)
- 4.5-5.5V DC Supply
- Selectable Decimal Point Position
- 3.0" x 1.73" Size with Large 0.75" Digits
- Simple DIP Switch & Pushbutton Setup

### ORDERING INFORMATION

DPM950S-FPSI	3.5 Digit Dual Color LCD Meter, ±200mV DC Bipolar Input
DPM942S-FPSI	3.5 Digit Dual Color LCD Meter, 4-20mA DC Input
BEZ900-IP	IP67, NEMA 4X Metal Bezel with Glass Window (fits above meters in same 2.83x1.57" panel cutout)


 **SP400**

### SPLASHPROOF LOW LIGHT DISPLAYS

- Backlit 3½ Digit LCD Display
- ±200mV DC Bipolar Input
- 4.75-7.5V DC Supply
- Selectable Decimal Point Position
- 1.38" x 0.88" Size, 0.38" Digit Height
- Auto-zero, Auto-polarity

### ORDERING INFORMATION

SP400-EB-W	Black LCD w/ white LED backlight
SP400-EB-R	Black LCD w/ red LED backlight
SP400-EB-B	Black LCD w/ blue LED backlight
SP400-EB-Y	Black LCD w/ yellow LED backlight
SP400-EB-G	Black LCD w/ green LED backlight
SP400-EB-O	Black LCD w/ orange LED backlight
SP400-EB-M	Black LCD w/ magenta LED backlight


 **DPM3AS**

### SUB-MINIATURE SNAP-IN 3½ DIGIT LCD METERS

### ORDERING INFORMATION

Part #	Description	Digit Height	Dimensions	Power Supply
DPM1AS-BL	±200mV DC Meter w/backlight	0.22"	1.18 x 0.55"	3.0-7.5 or 6.0-15.0 VDC
DPM3AS-BL	±200mV DC Meter w/backlight	0.43"	1.57 x 0.71"	3.0-7.5 or 6.0-15.0 VDC
DPM342	4-20mA Meter w/backlight	0.43"	1.57 x 0.71"	loop-powered

## Martel Digital Panel Meters

### 900 Series

- LED or Backlit LCD
- Large 0.75" Digit Height
- ±200mV A/D
- IP67/NEMA 4X Bezel Option



#### SPECIFICATIONS

Dimensions:	2.99" x 1.73" x 0.51" (76.0 x 44.0 x 15.0mm)
Panel Cut-out:	2.83" x 1.57" (72.0 x 40.0mm)
Operating Temp:	0°C to 50°C
LCD Backlight:	50mA@5V (except DPM942)

#### ORDERING INFORMATION

Model	Function	Accuracy ±1d	Supply VDC
DPM950	DCV*	±0.05%	7.5-14
DPM950S	DCV*	±0.05%	3.5-6.5
DPM595B	DCV*	±0.05%	4.5-5.5
DPM942	4-20mA	±0.05%	loop pwr
DPM970	ACV*	0.5%	7.5-14
DTM910	°C/°F (Pt100 RTD)	1°C	4.5-5.5
DTM995	°C (Type KTC)	1%	7.5-24

\*Specify input range or internal shunt for current measurement.

### 35/65 Series

- Red LED, Green LED or LCD
- Voltage or Process Inputs
- Display Hold
- 5V power



35X ▲

#### SPECIFICATIONS

35x Dimensions:	2.57" x 1.10" x 0.77" (64.0 x 28.0 x 16.8mm)
35x Panel Cut-out:	2.05" x 0.81" (52.1 x 20.6mm)
35x Mounting:	Window or bezel
65x Dimensions:	2.3" x 1.1" x 0.71" (59 x 29 x 18.1mm)
65x Panel Cut-out:	2.22" x 1.04" (56.5 x 26.5mm)
65x Mounting:	Snap-in bezel
Digit Height:	0.56" LED, 0.39" LCD
Accuracy:	±0.05% ±1d typ.
Operating Temp:	0°C to 50°C
Power:	5VDC ±5%

#### ORDERING INFORMATION

DPM35R	Red LED DPM, differential input
DPM35G	Green LED DPM, differential input
DPM65	LCD DPM, differential input
DPM65S	LCD DPM, single-ended input

### 700 Series

- 1/2" (or 2 x 1/4") Digit Height
- LED Backlight
- ±200mV A/D
- IP67/NEMA 4X Bezel Option^



#### SPECIFICATIONS

-BL Dimensions:	2.57" x 1.39" x 1.36" (65.2 x 35.2 x 32.0mm)
-BL Panel Cut-out:	2.38" x 1.20" (60.5 x 30.5mm)
702S Dimensions:	2.54" x 1.36" x 0.45" (64.5 x 34.5 x 11.5mm)
702S Panel Cut-out:	2.44" x 1.26" (62.0 x 32.0mm)
Operating Temp:	0°C to 50°C
LCD Backlight:	30mA@5V (except DPM702S)

#### ORDERING INFORMATION

Model	Function	Accuracy ±1d	Supply VDC
DPM750S-BL	DCV*	±0.1%	3-15
DPM702S	DCV*	±0.05%	3.5-7
DPM742-BL	4-20mA	±0.1%	loop pwr

\*Specify input range or internal shunt for current measurement.

^IP67 bezel not available on DPM702S

### EM32 Series

- 0.31" Digit Height
- Metal Bezel
- Mounts in 32.5mm (1.28") Cutout
- IP67/NEMA 4X Front



EM32 ▲

#### SPECIFICATIONS

Dimensions:	1.5" dia x 0.93" (38.0 x 23.5mm) excluding pins
Accuracy:	±0.1% ±1d typ.
Input:	±200mV DC*
Operating Temp:	0°C to 50°C
Power:	5VDC ±5% @500microA (50mA for LED)

#### ORDERING INFORMATION

EM32-1B	Circular LCD DPM
EM32-1B-LED	Circular LED DPM

\*Specify other ranges or internal shunt for current measurement.

## Martel Quick Mount LCD Panel Meters

### QM130M Wiper Type

- 9 Segment LCD
- Color Scale



Input:	0-1 VDC
Resolution:	125 mVDC
Supply:	5-12 VDC @ 1.5 mA

### QM100V40 2-Wire Voltage

- Monitoring System Voltage
- Powered from Measured Signal
- Reverse Polarity Protected



Input:	4.0-40.0 VDC
Accuracy:	0.4V ± 1 count
Max:	50 VDC @ 3 mA

### QM140V Voltage/Current

- 200 mV Full Scale
- Auto-zero, Auto-polarity
- Optional Ranging Board



Ranges:	200mV, 2V, 20V, 200µa, 2ma, 20ma, 200ma
Accuracy:	0.05% ± 1 count
Supply:	7.5-15 VDC @ 150 µA

### QM120C Elapsed Time

- 9999.9 and 99999 Hour Ranges
- Reset & Trip/Total Inputs
- Pulse Output every 100 Hours



Supply:	5-27 VDC @ 2.5 µA
---------	-------------------

 DIGITAL  
METERS

### QM110T Temperature

- Readout in Degrees C or F
- Reads Internal Sensor or External 10kΩ NTC Thermistor



	Internal Sensor	External Sensor
Range:	-10 to +50°C -14 to +122°F	-20 to 220°C -4 to +428°F
Resolution:	0.5°	1°
Supply	4-28 VDC	4-28 VDC

### SPECIFICATIONS FOR ALL METERS

Sample Rate:	3 sec.
Character Height:	0.5" (12.5mm) except 0.35" (9mm) on QM120C
Operating Temperature:	0-50°C
Dimensions (W x H):	1.71" x 0.84" (43.0 x 21.4 mm)
Mounting:	7/32" (5.5 mm) hole
Sealing:	IP65 Front

## Yokogawa Loop Powered Indicators

- Explosion-Proof NEMA 4X Case
- Analog and Digital Models
- FM and CSA Approved Versions
- Wall Mount or 2" Pipe Mount

MLD ▶



### SPECIFICATIONS

Input Resistance:	100Ω (MLD 4-20mA) < 6.5Ω (MLA 4-20mA) < 13.5Ω (MLA 10-50mA) ≈4kΩ (MLA 1-5V)
Standard Scale:	0-100.0% (MLD) 0-100% (MLA)
Accuracy:	±0.05% of full scale [1999] ±1 digit (MLD) ±1.5% of full scale (MLA)
Operating Temperature:	0 to 60°C (MLD), -20 to 60°C (MLA)
Electrical Classification:	FM, CSA, EXPLOSIONPROOF CL1, DIV1, GPS A,B,C,D, DUST-IGNITIONPROOF CLII / III, GPS E,F,G
Case and Cover:	Die cast aluminum, baked polyurethane paint. Dark green; NEMA 4X
Electrical Connection:	1/2" NPT

For special analog scale, add /SC to catalog number and describe (i.e. 0-300 PSI). For special digital readout, add /ENG to catalog number and describe (i.e. 50.0-150.0 GPM).

### ORDERING INFORMATION

A	B	C	D	E	Example: MLD-A2/FF1/WHT
<b>A</b>	<b>Model</b>				
	MLA	Loop Indicator (Analog)			
	MLD	Loop Indicator (Digital)			
<b>B</b>	<b>Input Signal</b>				
	-A	4 to 20 mA DC			
	-B	10 to 50 mA DC (MLA only)			
	-C	1 to 5 VDC (MLA only)			
<b>C</b>	<b>Mounting</b>				
	1	2" Horizontal Pipe			
	2	2" Vertical Pipe (or wall mount)			
<b>D</b>	<b>Electrical Class</b>				
	/FF1	FM Explosion Proof			
	/CF1	CSA Explosion Proof			
<b>E</b>	<b>Options</b>				
	/WHT	White scale or face plate			
	/ENG	Engineering Unit Calibration (MLD Only)			
	/SC	Scale in Engineering Units (MLA Only)			
	/SST	Stainless Steel Tag -Up to 8 Characters			

## London Electronics DC Loop Powered Meters

- Powered Entirely from the Input Signal
- High Contrast LCD Display
- Clear Visibility in Direct Sunlight
- 1/8 DIN Case
- Detachable Screw Terminal Connectors
- Wide Ranging Zero and Span Control
- Selectable Decimal Point Location
- Simple to Install
- Low Cost
- X10 and X100 Add-On Zeros (Jumper Selectable)

### SPECIFICATIONS

Input Ranges:	2-wire connection, 4 mA–20 mADC, 125Ω 10 mA–50 mADC, 50Ω, 1 mA–5 mADC
Display Type:	7-segment, HI-C LCD
Display Height:	12.7 mm 0.50"
Decimal Points:	Selectable internally
Power Voltage:	Line drop <2.5V DC
Power Consumption:	100 mW maximum
CMRR:	65 dB, DC to 450 Hz
Size:	1/8 DIN panel area and cutout
Weight:	150 grams typically
Case Material:	94V-0 UL polycarbonate
Operating Temperature:	-10°C to 50°C
Storage Temperature:	-40°C to 85°C
Relative Humidity:	Non-condensing 90% maximum @ 40°C

**PRO** ▶


### 88-PRO

The 88-PRO is a low-cost, 3 ½-digit, scalable, process input indicator. It has an easy-to-read LCD display and detachable screw terminals. The basic 3 ½-digit offers 0 to 1,999 display range. This can be extended to 0 to 199,900 with both add-on zeroes enabled.

### ORDERING INFORMATION

88-PRO 3 ½-Digit Loop Powered Meter

## Monarch Panel Tachometers and Totalizer

### ACT Series

- Universal Input from Optical, Infrared, Proximity and Magnetic Sensors
- Direct TTL and 200 mV to 50 VAC Input Signals
- Selection of Sensors For All Environments

The ACT tachometers offer a simple RPM display or can be interfaced with data acquisition systems in your control room. The ACT-1B/115 operates from a single pulse per revolution. ACT-3/115 is front panel programmable for single or multiple pulses per revolution and for scaling. The ACT-3 is supplied with NIST CERTIFICATE and has 2 alarm set points, offset analog voltage, current, TTL pulse and RS-232 outputs and offers a counter (totalizer) mode.

**ACT-1B** ▼


### SPECIFICATIONS

	ACT-1B/115	ACT-3/115
Speed Range	5 to 100,000 RPM	5 to 999,99 RPM
Accuracy	1 RPM	.001%, .0001 to 10 RPM
Display	.56" H red LED	.56" H red LED
Totalizer	N/A	1-99,999
Alarm Capability	N/A	Two alarm set points. Front panel programmable as high or low.
Analog Outputs	N/A	Voltage(0-5 VDC), Current (4-20 mA)
Pulse Repeater	N/A	Pulse Output, 0-5V TTL compatible
Dimensions	1/8 DIN by 4.5" deep	1/8 DIN by 7" deep.

**Compatible speed sensors on page 118**

### ORDERING INFORMATION

ACT-3/115	Tach/Totalizer
ACT-1B/115	Tach (1 Pulse/Rev)

## London Electronics Large Display Meters

### Fusion

- Analog & Digital Inputs
- Large, Bright Digits
- Setup Without Menus
- Indoor & Outdoor Models
- Choice of Mounting Position



### Easy Reader



### SPECIFICATIONS

Process Input:	0-10V, ±13V, 4-20mA, ±24mA	Serial Input:	RS232 or RS485
Resistance:	1MΩ on V, 33Ω on mA		300-115200 baud
Excitation:	24V 60mA	Display:	-1999 to 9999 (4d)
Temperature Input:	Type J, K, T, R, S, B		-199999 to 999999 (6d)
	3 or 4 wire PT100 RTD	Accuracy:	±0.05% of range
Counter Input:	4 channels	Analog Out:	>1kΩ 16 bit resolution
Signal Type:	Logic level; AC tach; NPN, PNP pulses <24V; 100mV inductive pickup; Contact closure	Relays:	SPST 2A@250VAC resistive Selectable NO or NC Selectable energize or deenergize
Range:	0-40kHz	Temperature:	0-50°C operating
Excitation:	24V 60mA	Connectors:	detachable screw terminals
Loadcell Input:	4 or 6 wire	Power:	50VA max.
Resistance:	>10MΩ	Case:	Black uPVC, 75mm depth
Excitation:	10V 120mA		

### ORDERING INFORMATION

Example: Fusion2-F2-4N-P-0-AL2-232-B-AC-1-0

Fusion2 - **A** - **B** - **C** - **D** - **E** - **F** - **G** - **H** - **I** - 0

<b>A Digit Height</b>	F2 2" (57mm) F4 4" (102mm) F6 6" (150mm) F8 8" (200mm) F12 12" (300mm) F16 16" (400mm)	<b>E Alarm Outputs</b>	0 None AL2 2 alarms AL4 4 alarms SPCO 2 SPDT relays DSS 2 solid state relays
<b>B Digit Format</b>	4N 4 digit numeric 4C 4 digit clock 6N 6 digit numeric 6C 6 digit clock 8N 8 digit numeric	<b>F Serial Output</b>	0 None 232 RS232 485 RS485
<b>C Function</b>	C Counter H Clock/timer L Loadcell M Millivolt P Process S2 RS232 slave S4 RS485 slave T Temperature	<b>G Display Color</b>	R Red G Green Y Yellow B Blue W White RDLV Red bright GDLV Green bright YDLV Yellow bright BDLV Blue bright
<b>D Analog Output</b>	0 None ANI 4-20mA ANV 0-10V ANB ±10V	<b>H Supply</b>	AC 95-265VAC 50/60Hz DC 11-30VDC
		<b>I Mounting</b>	1 Panel, IP65 front 2 Wall, IP65 3 Top Suspension, IP65 4 Wall, IP54 5 Top Suspension, IP54 6 Rear Suspension IP54

A simple and affordable way to see and share important measurements over large distances:

- 2" (57mm) digits for viewing up to 65ft (20m)
- 4" (102mm) digits for viewing up to 130ft (40m)

Available in 5 input types, these meters can be configured from the front panel.

### SPECIFICATIONS

Process Input (Type P):	4-20mA, 0-10V, 1-5V, scalable
Accuracy:	±0.1% range ±1d @25°C
Display by:	1, 2, 5, 10, 20, 50
Count Input (Type C):	NPN, PNP or contact closure
Accuracy:	±0.05% range ±1d @25°C
Slave Input (Type S):	RS232, RS422, RS485 or TTY
Format:	ASCII data from 300-9600 baud
Addressing:	00 to FF
Reset:	Front panel or remote contact closure
Excitation:	24VDC, up to 30mA (except Slave)
Operating Temperature:	0-50°C, <95% RH non-condensing
Power:	95-265VAC, 11-30VDC
Dimensions:	ER2 10.3x5.8x1.8" (260x140x45mm) ER4 16.4x7.7x1.8" (415x195x45mm)
Sealing:	IP54 dust tight (IP65 optional)

### ORDERING INFORMATION

To Order—Insert Code for Each Letter to Select Catalog Number. Example ER4P-2-0-0

ER **A** **B** - **C** - **D** - **E**

<b>A Digit Size</b>	2 2" 4 4"
<b>B Type</b>	P Process Input C Count/rate Input S Slave (ASCII) H HH:MM Clock T TC & PT100 RTD
<b>C Mounting</b>	1 Flush Panel 2 Wall 3 Suspension 6 Top of Cabinet
<b>D Power</b>	0 95 - 265VAC DC 11-30VDC
<b>E Brightness</b>	0 Normal DLV Ultrabright

## Laurel Programmable Counters

### FUNCTIONS

- Rate, Frequency, Period
- Simultaneous Total & Rate
- Time Interval, Stopwatch
- Quadrature Position or Rate
- Ratio / Draw
- Batch Controller
- Analog Totalizer
- Phase Angle & Power Factor
- Duty Cycle

### FEATURES

- ±999,999 Display Span
- Scaling in Engineering Units
- Crystal Time Base Error <0.001%
- Sensor Excitation Output
- 1/8 DIN, NEMA-4X Front Panel

### OPTIONS

- Dual Relay Outputs
- Isolated Analog Outputs
- USB, RS-232 & RS-485 Data I/O
- Custom Curve Linearization
- Datalogging PC Software

Exceptional flexibility is provided by advanced programmable features and by modular architecture with a choice of main boards (basic or extended), signal conditioners (FR, VF or QD), power supplies, analog output, relay outputs, and serial data I/O.

The FR module provides two independently scalable frequency/pulse input channels. These channels can be combined arithmetically to display the sum or difference of two flows, the ratio of two rates, etc. As a counter, each channel may be independently set and scaled to count up to or down from a preset value. The displayed channel (A or B) is selected via front panel pushbutton. The totals are stored in non-volatile memory & retained in the absence of power.

### SPECIFICATIONS

<b>Display</b>	Six 14.2 mm (.56") high LED digits
<b>Conversion Technique</b>	
Frequency measurement technique	1/period
Rate	Gate time + 30 ms + 0-2 input periods
Gate time	Selectable 0 to 199.99 sec
Scale Factor	±10 <sup>-10</sup> to ±10 <sup>6</sup>
Isolation	250V RMS working, 2.3kV RMS test
<b>FR Signal Conditioner (2 channels)</b>	
Inputs	AC, pulses from NPN or PNP transistors, contact closures, magnetic pickups
Level	±12 mV min, 250 Vac max
Frequency	CH A: 0 Hz to 1 MHz; CH B: 0 Hz to 250 kHz
<b>VF Signal Conditioner</b>	
Inputs	0-10 V, 0-1 mA, 4-20 mA
Span error	< 0.015% of full scale ±1 count
Span tempco	< 0.003% of reading/°C
Zero tempco	< 0.001% of full scale/°C
<b>QD Signal Conditioner</b>	
Inputs	Quadrature encoders to 250 kHz
Polarity	Differential or single-ended
Error correction	Zero index (z-channel)
<b>Transducer Excitation Output (std)</b>	
Output	100 mA @ 5 V, 120 mA @ 10 V, 50 mA @ 24 V
Isolation	50 Vdc to meter ground
<b>Data Communications (opt)</b>	
Type	USB, RS-232, RS-485 (2- or 4-wire)
RS-485	Modbus RTU, Modbus ASCII, or Laurel ASCII
<b>Operating Temperature</b>	0°C to 55°C



### ORDERING INFORMATION

Example: L50010FR

<input type="checkbox"/> L	Laureate™ with plug-in screw terminal connectors		
<input type="checkbox"/> Main Board			
5	Meter with green LEDs		
6	Meter with red LEDs		
7	Extended, green LEDs		
8	Extended, red LEDs		
<input type="checkbox"/> Power			
0	85-264 Vac/90-300 Vdc		
1	10-48 Vdc/12-30 Vac		
<input type="checkbox"/> Setpoint Output			
0	None		
1	Dual 8 A relays (250 Vac/24 Vdc)		
2	Dual 130mA solid state relays (140 Vac/180 Vdc)		
<input type="checkbox"/> Analog Output			
0	None		
1	0-20 mA, 4-20 mA, 0-10 V, ±10 V		
<input type="checkbox"/> Digital Interface			
0	None	5	USB
1	RS-232 (Isolated)	6	USB to RS-485 Converter
2	RS-485 (Isolated)		
4	RS-485 Modbus (Isolated)		
<input type="checkbox"/> Input Type			
FR	Frequency		
With main boards 5 & 6: Scalable to ±999,999 for frequency, period, up/down total, interval, rate or square root of rate. With main boards 7 & 8: Above plus rate and total simultaneously, custom curve linearization, atio, draw, arithmetic functions			
VF1	4-20 mA		
VF2	0-1 mA		
VF3	0-10 V		
With main boards 5 & 6: V-to-F converter for rate or square root of rate from differential pressure or target type flow meters. With main boards 7 & 8: Above plus rate and total simultaneously, linearization of nonlinear inputs, batch counting, 1/rate (time).			
QD	Quadrature		
With main boards 5 & 6: Scalable to ±999,999 for position from encoders.			
QDR	Quadrature Rate		
With main boards 7 & 8: Scalable to ±999,999 for position or rate from encoders.			

### ACCESSORIES

CBL01	RJ11 TO DB9 Cable to PC Com port
CBL02	USB to DB9 Adapter
CBL05	USB Cable to PC USB Port

## Simpson 1/8 DIN Counter Totalizer, Rate/Totalizer/Batch



▲ **S664**



- NEMA-4X Front Panel
- Four Frequency Ranges Available (99 Hz, 999 Hz, 9 kHz, 35 kHz)
- Easy to Use (Install/Wire/Mount, Select Range, and Go)
- Bright Red LEDs for Easy Viewing
- Minimum Mounting Depth Required
- 120 or 240 VAC
- Optional Excitation Output 12 VDC @ 100 mA
- Modular Design
- Screw Terminals for Easy Installation

### SPECIFICATIONS

Display Type:	7 segment, bright red LED, 0.56" H
Power:	120/240 VAC
Operating Temp:	0 to 55°C
Size:	3.6" W x 1.8" H x 3.24" D (92 x 48 x 82 mm)

### ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number. Order Example: S664-1-1-0-0-0

A - B - C - D - E - F

<b>A Basic Unit</b>	
S664	Frequency Counter
<b>B Power Supply</b>	
1	120 VAC
2	240 VAC
<b>C Input Type</b>	
1	Standard Pulse Input
2	Quadrature input
<b>D Output Type</b>	
0	None
1	1 Mechanical Relay
2	2 Mechanical Relays
<b>E Excitation Output</b>	
0	None
1	12 VDC
<b>F Other</b>	
0	None



▲ **S660**



- NEMA-4X Front Panel
- Uses Words, Not Symbols for Easier Programming
- Bright Red LEDs for Easy Viewing
- Large, Tactile Buttons Can Be Pressed with Gloves On
- Standard 1/8 DIN Cutout
- Up to Two 5 Amp Relays Optional
- Optional Excitation Output 12 VDC
- Screw Terminals for Easy Installation

### SPECIFICATIONS

Display Type:	7 segment, bright red LED, 0.56" H
Power:	120/240 VAC
Operating Temp:	0 to 55°C
NMRR:	60 dB @ 50/60 Hz
Size:	3.6" W x 1.8" H x 3.24" D (92 x 48 x 82 mm)

### ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number. Order Example: S660-1-2-2-1-0

A - B - C - D - E - F

<b>A Basic Unit</b>	
S660	Preset Up/Down Counter
S661	Preset Rate Counter
S662	Preset Totalizing/Batch Counter
S663	Preset Totalizing/Rate Counter
<b>B Power Supply</b>	
1	120 VAC
2	240 VAC
<b>C Input Type</b>	
1	Standard Pulse Input
2	Quadrature
<b>D Output Type</b>	
0	None
1	1 Mechanical Relay
2	2 Mechanical Relays
<b>E Excitation Output</b>	
0	None
1	12 VDC
<b>F Other</b>	
0	None

## ATC Westcon Counters

### W3830 Series

6-Digit Indicator/Totalizer with Optional Outputs



#### FEATURES

- Automatic Square Root Extraction
- Logic Controlled Up/Down Counter
- Preset Up Counter
- Preset Down Counter
- FLUME 5/2 Calculation
- WEIR 3/2 Calculation

#### SPECIFICATIONS

MODEL:	RANGE:	ACCURACY:
3830-23	0-5 VDC	±0.08% reading, ±0.05% FS
3830-25	0-10 VDC	±0.08% reading, ±0.05% FS
3830-27	4-20 mA	±0.08% reading, ±0.05% FS
<b>OPERATING TEMP:</b>	0°C to 50°C (32°F to 122°F)	
<b>FRONT/CASE:</b>	NEMA 4X / Anodized Aluminum	

#### OPTIONAL OUTPUTS

- Option C:** 3 Form-C 5 amp relay outputs activate when programmable high and low limits are exceeded. Permits on-off control of external circuitry, or alarm status communication with other equipment.
- Option H:** 1-4 analog outputs, 0-5 VDC, ±5 VDC, 0-10VDC or 4-20 mA. Accuracy is 0.35% of scaled range. Output signals are proportional to meter display.
- Option P:** Excitation 10VDC & 24VDC
- Option T:** RS232C serial data communications interface at 9600 Baud rate.
- Option V:** Totalizer pulse output. Solid-state relay (SSR). Operating range: ±80V peak. continuous load current: 150 mA. Pulse width: 60mS (consult factory if faster output is required).

#### ORDERING INFORMATION

Model #:	<u>3830</u>	-	<u>XX</u>	<u>XXXX</u>
Input	23	0-5 VDC		
	25	0-10 VDC		
	27	4-20 mA		
Options	C	3 Relays		
	H1	1 Analog Output		
	T	RS232		
	V	Totalizer Pulse Output		
	P	Excitation		

### W3870 Series

6-Digit Frequency Input Indicator/Totalizer with Optional Outputs



#### SPECIFICATIONS

<b>RANGE:</b> User programmable decimal, scale factors and insignificant zero blanking yield a display range of 0.00001 to 999999.	<b>PULSE WIDTH:</b> 5 micro- seconds minimum
<b>INPUT RESPONSE:</b> 0.0005 to 99,999 Hz	<b>TRIGGER MODE:</b> Negative edge of input pulse
<b>PROTECTION:</b> ±200 V peak	<b>INPUT IMPEDANCE:</b> 12k ohms
<b>SENSITIVITY:</b> TTL, CMOS or contact compatible	<b>FILTER/DEBOUNCE:</b> Front panel programmable digital filter
	<b>FRONT/CASE:</b> NEMA 4X / Anodized Aluminum

#### OPTIONAL OUTPUTS

- Option C:** 3 Form-C 5 amp relays activate when programmable high and low limits are exceeded. Permits on-off control of external circuitry, or alarm status communication with other equipment.
- Option G:** Input amplifier, 30 mV peak input at 5 Hz to 99,999 Hz.
- Option H:** 1-4 analog outputs, 0-5 VDC, ±5 VDC, 0-10VDC or 4-20 mA. Accuracy is 0.35% of operating range. Output signals are assignable to rate and total.
- Option P:** Excitation 10VDC & 24VDC
- Option S:** 230 VAC Power.
- Option T:** RS232C serial data communications interface at 9600 Baud rate.
- Option X:** Screw terminal block connector. Accepts up to #14 AWG wire.

#### ORDERING INFORMATION

Model #:	<u>3870</u>	-	<u>XXXXX</u>
Options	C	Relay Outputs	
	G	Input Amplifier	
	H1	1 Analog Output	
	S	230 VAC Powered	
	T	RS232	
	X	Screw Terminal	
	P	Excitation	

## ATC Digital Timers

### Direct Replacement for Electromechanical Timers

- Replaces Round Case *Eagle* Timers
- Two Timing Modes - On Delay or Reverse Start Delay
- Five Timing Ranges - 1ms to 199 hrs
- Data Retention with EEPROM Memory or Battery Backup
- Simple Keypad Time Setting
- DIP Switches for Mode & Range Setting
- Sealed Faceplate
- Keypad Lockout of Time Setting
- Instantaneous Contact Directly Tracks Control Input



▲ 655



The 655 plugs directly into the mounting case of many older timers, without wiring changes.

#### SPECIFICATIONS

Timing Ranges:	0.001 SEC to 19.999 SEC 0.01 SEC to 199.99 SEC 0.1 SEC to 1999.9 SEC 1 SEC to 199 MIN 59 SEC 1 MIN to 199 HR 59 MIN
Timing Modes:	On Delay or Reverse Start Delay
Reset Time:	25 mSEC
Control Voltage Initiate Time:	25 mSEC
Memory:	EEPROM or Lithium Battery (Replaceable)
Time Setting:	Front Panel Keypad
Time Repeat Accuracy:	± 0.005 SEC
Display:	LCD, 4½ Digit, 7/16" High
Relay Outputs:	2 N.O., 2 N.C. Contacts
Relay Life:	50,000,000 mechanical operations
Contact Rating:	7 Amps resistive, 240 VAC
Temperature Rating:	32° to 140°F (0° to 60°C) operating
Power:	120 or 240 VAC, +10%, -20%, 50/60 Hz.
Power Consumption:	5.2VA
Short Circuit Protection:	1/4 Amp Fuse
Transient Voltage Protection:	Metal Oxide Varistor
NEMA Rating:	NEMA 12
Terminals:	Screw Terminals
Mounting:	Plug-in Case
Dimensions:	3.07" dia x 4.25" long barrel 4.15" w x 3.76" h x 1.3" d bezel

#### ORDERING INFORMATION

655-8-1000	Timer 120VAC w/EEPROM Memory
655-8-1001	Timer 240VAC w/EEPROM Memory
655-8-3000	Timer 120VAC w/Battery Memory
655-8-3001	Timer 240VAC w/Battery Memory

#### Accessories:

652-3-0130	Replacement Lithium Battery
600-3-3950	Base Mounting Bracket (surface mount)
651-3-0128	Mounting Gasket, 1/8" Thick (Included with Timer)
651-3-0129	Mounting Gasket, 1/4" Thick (Included with Timer)

### Repeat Cycle Timer

**NEW**

- Selectable T1 & T2 Times
- Simple Front Panel Setup
- Rugged, SPDT Solid-state Relay Outputs
- Reset Input Synchronizes Multiple Units
- Standard 15 Terminal Plug-In Round Case
- Panel Mounts in Switchboard Housing or 3.19" Cutout
- Easily Replaces Round Case *Eagle* Timers



▲ CS100

The CS100 is a simple repeat cycle timer with T1 and T2 timers up to 25 seconds each, plus a third timer (T3) that extends the T1 time to a maximum of 50 seconds. The four front panel push-buttons provide easy access to timer settings. A Reset input on the back of the unit allows multiple units to be synchronized.

The four SSR (Solid State Relay) outputs are configured as three SPDT (Single Pole Double Throw) and one SPST (Single Pole Single Throw). Relay outputs and control voltage initiate times have a maximum reset time of approximately 10 milliseconds.

The CS100 has a standard 15 terminal, plug-in round case, which is designed to minimize down time during replacement. The CS100 is quickly & easily removed from the front. A replacement timer can be plugged into the existing housing, eliminating the need for rewiring. The CS100 can also be panel mounted in a 3.19" round cutout.

#### SPECIFICATIONS

Timing Ranges:	T1 = 0.1 - 25 SEC T2 = 0 - 24 SEC T3 = 0-25 SEC
Timing Mode:	Repeat Cycle
Time Setting:	Front Panel Pushbuttons
Time Repeat Accuracy:	± 0.005 SEC
Display:	Red LED, 2 Digit
Relay Outputs:	4 Solid state relays
Relay Contacts:	Three SPDT (form C), one SPST (form A)
Contact Rating:	4 A @ 130 VAC, zero-crossing
Off-State Leakage Current:	0.1 mA at maximum voltage
Reset Time:	10 mSEC
Temperature Rating:	32° to 122°F (0° to 50°C) operating
Power:	100-132 VAC, 50/60 Hz.
Power Consumption:	2.4VA
Transient Voltage Protection:	Metal Oxide Varistor
NEMA Rating:	NEMA 12
Terminals:	Screw Terminals
Mounting:	Plug-in Case
Dimensions:	3.07" dia x 4.1" long barrel 3.15" w x 4.72" h x 2.2" d bezel

#### ORDERING INFORMATION

CS100	Repeat Cycle Timer
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## KEP Counters & Timers

### KAL-D06 8 Digit Electronic Counter

- Low speed input for contact closures
- High speed input sinks 18V max
- Optional quadrature & high voltage inputs
- 10 year lithium battery – no external power needed
- NEMA 4X (IP65) front
- UL recognized



### KAL-DTIME 8 Digit Electronic Timer

- Electronic or contact closure input
- Powered by 10 year lithium battery
- High voltage input optional
- NEMA 4X (IP65) front
- UL Listed



### 924K Counter, Rate Meter & Timer

- Displays actual value, presets, batch count or total count
- 3 predefined parameter settings
- Tracking presets
- 4 stage RESET modes
- 2 relay outputs
- 3 stage key lockout



#### SPECIFICATIONS

Display:	LCD, digits 0.35" (9mm) high
Readout:	8 digits with leading zero blanking
Reset:	Panel or external (can be disabled)
Backlight:	Requires external 5V supply (20 mA)
Hi-speed Input:	NPN sink; 18V, 10kHz max
Lo-speed Input:	NPN sink or contact closure; 18V, 30Hz max
Quadrature Input:	NPN sink or push pull, 18V, 2.5kHz max
Reset Input:	>15ms NPN sink or contact closure; 18V max
Direction Input:	NPN sink or contact closure; 18V max (Lo=down)
Hi-voltage Input:	Count 10 pulses/sec max; opto-isolated 250VAC/120VDC max
Hi-voltage Reset:	>15ms, opto-isolated 250VAC/120VDC max
Temperature:	-10 to 60°C operating
Case:	24 x 48 x 52 mm

#### SPECIFICATIONS

Display:	LCD, digits 0.35" (9mm) high
Readout:	8 digits with leading zero blanking SECONDS: 99999999 MINUTES and SECONDS: 99999-59 HOURS and 1/100ths: 99999-99 HOURS and MINUTES: 99999-59
Reset:	Panel or external (can be disabled)
Backlight:	Requires external 5V supply (20 mA)
Timing Input:	NPN sink, negative edge trigger; 18V max
Reset Input:	>15ms NPN sink or contact closure; 18V max
Direction Input:	NPN sink or contact closure; 18V max (Lo=down)
Hi-voltage Input:	Opto-isolated 250VAC/120VDC max
Hi-voltage Reset:	>15ms, opto-isolated 250VAC/120VDC max
Temperature:	-10 to 60°C operating
Case:	24 x 48 x 52 mm

#### SPECIFICATIONS

Display:	2 line, 6 digit red LCD
Count Inputs:	NPN/PNP, 5kΩ, 55 kHz max
Switching Level:	Low=0-4 VDC, High=12-30 VDC (924KA)
Count Modes	
Pulse:	cnt.dir, up.dn, up.up, quad, quad 2, quad 4, A/B, (A-B)/A x 100%
Frequency:	A, A-B, A+B, quad, A/B, (A-B)/A x 100%
Timer:	FrErun, Auto, InpA.InpB., InpB.InpB.
Monitor/Reset Inputs:	MPI, lock, gate, reset
Pulse Duration:	10 ms/1 ms min.
Relay 1:	Form A, programmable NO or NC
Relay 2:	Form C
Max. Switching:	250 VAC / 110 VDC, 3 A, 750 VA / 90 W
Sensor Supply:	24 VDC, 80mA
Temperature:	-20 to +65 °C operating
Protection:	IP65 (front)
Case:	1/8 DIN (48 x 48 x 107mm)

#### ORDERING INFORMATION

KAL-D06	8 digit counter with 10 yr battery	KAL-DTIME	8 digit timer with 10 yr battery
KAL-DQUAD06	8 digit counter with 10 yr battery & Quadrature Input	KAL-DTIMEAC/DC	8 digit timer with 10 yr battery & High Voltage Input
KAL-D06AC/DC	8 digit counter with 10 yr battery & High Voltage Input	924KA*	Counter, Rate, Timer; 90-260 VAC power
		924KB*	Counter, Rate, Timer; 10-30 VDC power

\*Add suffix 0 for relay outputs, 1 for opto-coupler outputs

## KEP Counter/Timer

### LCD preset add/subtract counter, timer, frequency meter

#### 903K/904K Series

- 6-Digit Counter, Timer or Frequency Meter
- 2 Preset Values (Type 903K 1 Preset)
- Input Scaling (0.0001 to 9.9999) Multiplier
- 2-Line LCD Display
- Count and Preset Range of -999999 to 999999
- Add or Subtract Count Control
- AC or DC Operation
- Secondary Preset Batch Counter (904K)
- 24 VDC to Power Peripherals



▲ 904K

#### SPECIFICATIONS

Display:	6-digit, 2-line, 7 segment LCD with sign
Preset:	Type 904 two preset values Type 903 one preset value
Supply voltage:	115 VAC, 230 VAC, 48 VAC or 24 VAC (tolerance $\pm 10\%$ ) or 11 to 30 VDC
Housing:	48 x 48 mm DIN
Protection:	IP 65 (front)
Power Supply:	24 VDC, 80 mA

#### ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number  
Order Example: 904K-A-0-A

A - B - C - D

A Basic Unit	
903K	Single Output
904K	Dual Outputs
B Input Voltage	
A	115 VAC
B	230 VAC
C	11 to 30 VDC
D	24 VAC
E	48 VAC
C Outputs	
0	Relay
1	Opto-Isolated collector and emitter
D Options	
—	Blank if None
A	Backlit LCD Display (904K only)

## KEP Totalizer/Rate Meter

### Ratemeter/totalizer/process monitor from analog inputs



▲ INT69RT

#### Intellect-69 Series

- High/Low Scaling from Front Panel
- 2 Set Points Assignable To Rate or Total
- Display Rate (Pressure, Level, Watts, Etc.), Peak and Valley and Integrated Total
- 0-5V, 0-10V, 1-5V, 4-20 mA or 0-20 mA Analog Input
- NEMA 4X/IP 65 Front Panel
- +24V Output for Peripherals
- RS-422/RS-232 Serial Communications
- 4-20 mA Output
- Square Root Extraction
- Optional Rate Per Day Feature

#### ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.  
Order Example: INT69RT-A-L-1-A-C1

A - B - C - D - E

A Basic Unit	
INT69RT	Ratemeter/Totalizer
INT69R	Ratemeter Only
INT69PM2	Process Monitor Displays from -19999 to +49999
INT69T	Totalizer Only
B Operating Voltage	
A	110 VAC $\pm 15\%$ or 12 to 24 VDC
B	220 VAC $\pm 15\%$ or 12 to 24 VDC
C Inputs	
—	Blank for INT69PM2
L	Linear (standard)
S	Square Law (optional)
D Control Outputs	
1	2-Open Collector Outputs (standard)
2	2-10 Amp Form C Relays (optional)
E Options (Multiple Options Available)	
A	Analog Output (4-20 mA)
D	Rate per Day, Hour or Minute
C1	RS-232 communications
C2	RS-422 communications

## KEP Totalizer/Rate Meter

**Low Cost, Pulse Input,  
Totalizer & Ratemeter**



### MINItronic Series

- CSA Approved
- Separate Scaling Factors for A and B Inputs
- Display Rate and Total
- Pulse Input—10 kHz Maximum
- Security Lockout
- RS-422/RS-232 Serial Communication
- NEMA-4X/IP65 Front Panel
- Separate Add/Subtract Simultaneous Inputs
- Quadrature and U/D Direction Control Inputs
- 30 mV Magnetic Pickup Inputs
- 4–20 mA or 0–20 mA Analog Output



### ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number.  
Order Example: MRT-A-3-1

A - B - C - D

A Basic Unit	
MRT	6-Digits, Counter/Ratemeter
MC2	6-Digits, Counter Only
MR2	5-Digits, Rate Only
B Operating Voltage	
A	110 VAC ±15% or 12 to 15 VDC
B	220 VAC ±15% or 12 to 15 VDC
C	24 VAC ±15% or 12 to 15 VDC
C Count Inputs	
3	Standard, 4–30 VDC Simultaneous Inputs
3M	Mag. Input, Input A Only, 30mV Input (Input B, 4–30V)
3MB	Mag. Input, Inputs A and B, 30 mV input
5	4–30V Pulses on Input A, 4–30V Direction Control Input on Input B
5M	30 mV Pulses on Input A, 4–30V Direction Control Input on Input B
9	Quadrature, Accepts 4–30V Pulses
9MB	Quadrature, Accepts 30 mV Pulses (A and B)
D Control Outputs	
1	RS-232 Communications
2	RS-422 Communications
A	Analog Output (4–20/0–20 mA)
CE	CE Approved Version

NOTE: RS-232/RS-422 and analog output options can not be combined.

## Newport 6-Digit Rate Meter/Totalizer

6-digit ratemeter/totalizer offers user programming via the 5 front-panel keys. Scale factor may be programmed from -99,999 to 999,999 (any decimal point, multiply or divide), while offset may be programmed from -99,999 to 999,999 (any decimal point).



Programs are stored in non-volatile memory, with three levels of program lockout for security. Optional features include Hi or Lo setpoints for control or alarm, plus RS-232 communication. Fixed decimal point or autoranging is standard.



### SPECIFICATIONS

Functions:	Rate and totalize selected by menu
Display:	6-digit, 7-segment red LED display
<b>Inputs</b>	
Type:	Single input. TTL, CMOS, NPN open collector, contact closure and magnetic pickup compatible; selected by dip switch. Non-isolated
Level:	Max. 60V; min. 25 mV rms
Frequency:	30 kHz maximum
Excitation:	Regulated, 5.0, 8.2, or 12.5V selected by DIP switch, 100 mA max
Accuracy:	± 1/2 LSD of total; 0.01% of the rate ± 1/2 LSD
Setpoints:	Two, optional
Alarm Outputs:	Optional
Communication:	RS-232, analog output, optional
Power:	230 ±15% VAC
Dimensions/Weight:	1.9" H x 3.8" W x 6" D (48 x 96 x 152 mm)/16 oz (454g)
Panel Cutout:	1.8" H x 3.6" W (45 x 92 mm)

### ORDERING INFORMATION

To Order—Insert Number Code for Each Letter to Select Catalog Number. Order Example: INFCTRA-0-1-1-0-R

A - B - C - D - E - F

A Basic Unit	
INFCTRA	
B Power and Display	
0	115 VAC, Red LED
1	230 VAC, Red LED
2	115 VAC, Green LED
3	230 VAC, Green LED
C Control Output	
0	None
1	Dual 6 Amp
D Analog Output	
0	None
1	Analog Output
E Serial Output	
0	None
1	RS-232
F Configuration	
R	Ratemeter
T	Totalizer