

POWER MONITORING & PROTECTION

INTELLIGENT POWER MONITOR

ENGENIUSSM - PATENT PENDING

DESCRIPTION

The **EnGeniusSM** is a two processor based power monitoring device that monitors and records numerous power system parameters. The **EnGeniusSM** continuously measures voltage and current to calculate and display over 65 values. 120 to 600V can be monitored without the need of potential transformers. 601 to 32000 V can be monitored with the use of potential transformers. All scaling calculations are handled by the meter.

The **EnGeniusSM** comes standard in a NEMA 4 rated enclosure ready to be mounted. A data port is provided on the front interface for easy setup and trend retrieval via **EnGeniusSM** desktop software. Built for the future, the **EnGeniusSM** allows for feature upgrades through the data port.

FEATURES

- **NEMA 4 Enclosure Standard**
- **KWH Accuracy class 0.5% ANSI C12.20 For meter alone with unmatched CT's OR for Meter-CT set with factory calibrated matched CT's**
- **Data port for setup and trend retrieval**
- **Measure voltages up to 32000 VAC (*voltages over 600VAC require the use of a potential transformer, not included)**
- **Supports 0.333V safe CTs and 5 AMP CTs (must use optional 5 AMP adapter board)**
- **BACnet MSTP, Lonworks, N2 and Modbus RTU available**
- **Password protected configuration**
- **Powered by separate 24 VAC supply**
- **On board data logging * This feature expected Late 2012***
- **Auto Configuration**
- **Upgradable firmware through data port**
- **Bidirectional power measurement**

NEW!



EnGeniusSM Patent Pending

Kele
Precision
Manufacturing



PARAMETERS

Parameters that can assigned to 4-20 mA output:

- Total Positive KW
- Total Bi-directional KW (12 mA = 0 KW)
- Total Sliding Window KW (user configured, 5 to 60 min.)
- Peak Sliding Window KW
- Total KVA
- Total PF
- Average System Volts
- Average System Amps

Parameters that can be assigned to Digital Outputs:

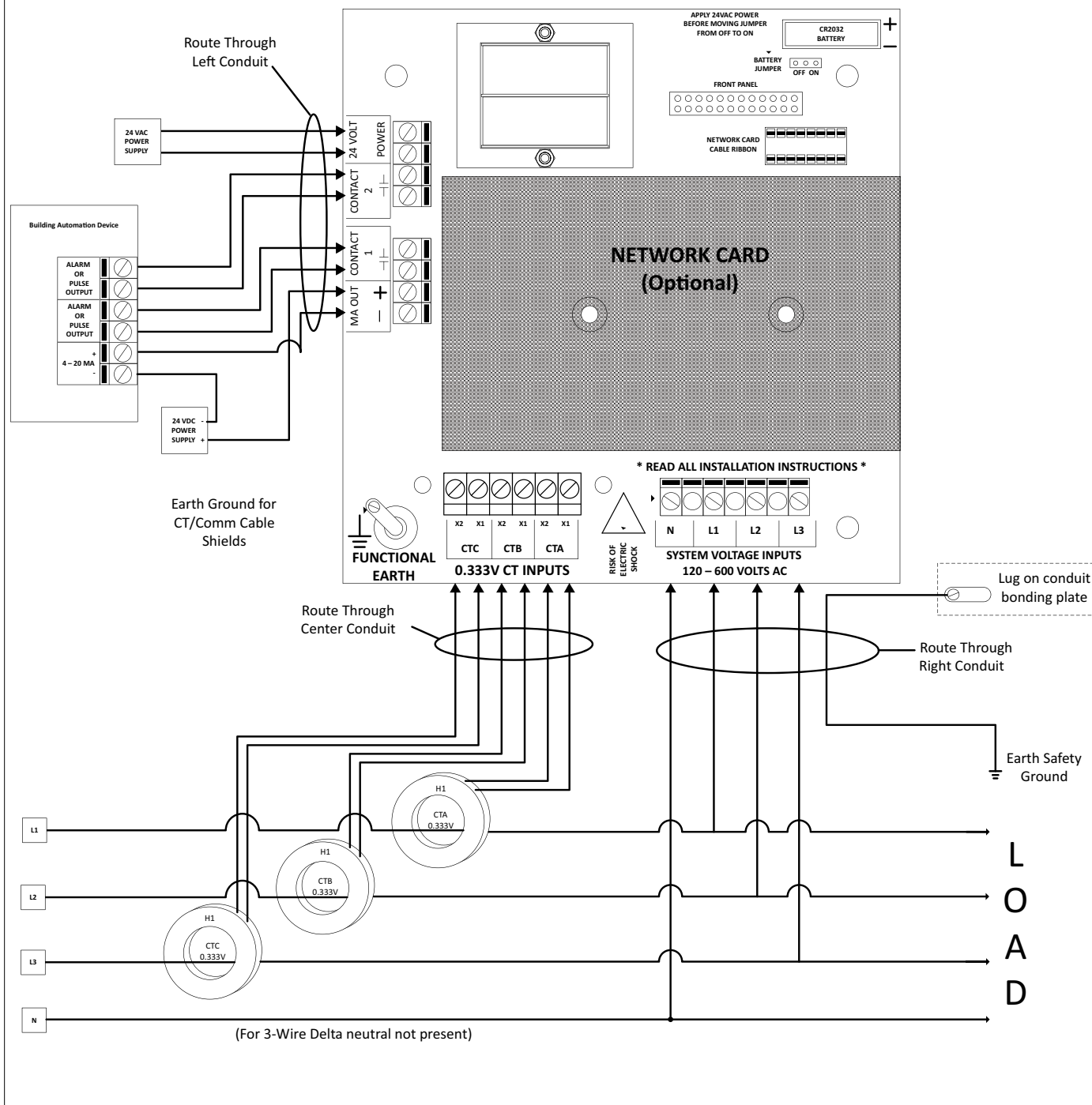
- Positive KWH pulse
- Negative KWH pulse
- Low volts - alarm
- Unbalanced volts - alarm
- Low or unbalanced volts - alarm

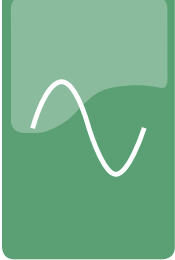
SPECIFICATIONS

Supply Voltage	24 VAC \pm 10% 60Hz	Analog Output	
Supply Current	250 mA maximum	Quantity	1
Monitored Voltage		Type	4-20 mA (loop powered)
Line to Line:	120 to 600 VAC	Accuracy	0.5% full scale
Line to Line with potential transformer:	601 to 32000 VAC	Maximum Loop Supply Voltage	30 VDC
Monitored Current	5 to 6000A using current transformers	Maximum Impedance	850 Ω @ 24 VDC
System Type		Digital Output	
	2-Wire Single Phase	Quantity	2
	3-Wire Single Phase	Type	Optically isolated solid state FET switch
	4-Wire Wye	Rated Voltage	28 VAC/40 VDC maximum
	3-Wire Delta	Rated Current	100 mA maximum
	4-Wire Delta	Operating Temperature	-22° to 158°F (-30° to 70°C)
Communication		Operating Humidity	0 to 95% (non-condensing)
Data Port:	Serial interface to EnGenius Desktop Software	Enclosure	NEMA 4, UL94 rated 5VA
Optional Communications		Dimensions	6.5" x 6.5" x 4" (16.5 x 16.5 x 10.1 cm)
BACnet MS/TP		Weight	3.1 lb (1.4 kg)
Lonworks		Approvals	ETL File #4004284, CE
Modbus RTU		Warranty	1 year
N2			



WIRING - .333 V CURRENT TRANSFORMERS, 3-PHASE POWER SYSTEMS

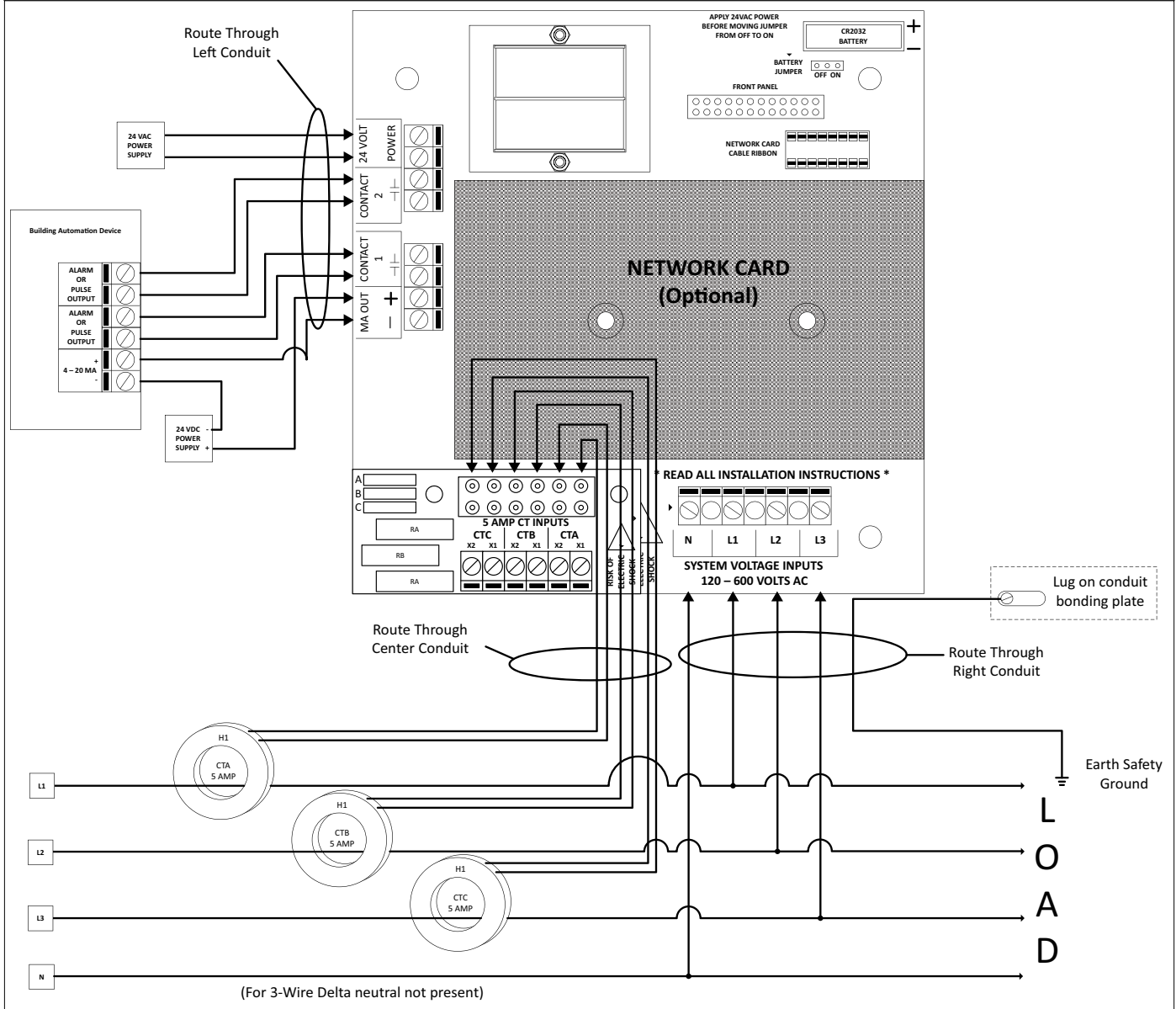




POWER MONITORING & PROTECTION

INTELLIGENT POWER MONITOR
GENIUSSM - PATENT PENDING

WIRING - 5 AMP CURRENT TRANSFORMERS, 3-PHASE POWER SYSTEMS



POWER MONITORING & PROTECTION

INTELLIGENT POWER MONITOR
ENGENIUSSM - PATENT PENDING



Parameters Available Via Display/Network*

Total KW*
Total Sliding Window KW (period programmable 5-60 minutes)
Total KVAR
Total KVA*
Phase A KW*
Phase B KW*
Phase C KW*
Phase A KVAR*
Phase B KVAR*
Phase C KVAR*
Phase A KVA
Phase B KVA
Phase C KVA
Total PF*
Phase A PF*
Phase B PF*
Phase C PF*
Average L-N Volts
Average L-L Volts
L1-L2 Volts**
L2-L3 Volts**
L3-L1 Volts**
L1-N Volts**
L2-N Volts**
L3-N Volts**
Average Amps
Phase A Amps*
Phase B Amps*
Phase C Amps*
Total Positive KWH*
Total Negative KWH
Total Absolute KWH (Sum of positive and negative)
Total Net KWH (Positive minus negative)
Phase A Positive KWH
Phase B Positive KWH
Phase C Positive KWH
Phase A Negative KWH
Phase B Negative KWH
Phase C Negative KWH
Total Positive KVARH
Total Negative KVARH
Total Absolute KVARH
Total Net KVARH
Phase A Positive KVARH
Phase B Positive KVARH
Phase C Positive KVARH
Phase A Negative KVARH
Phase B Negative KVARH
Phase C Negative KVARH
Timestamp (When energy counters were last cleared)
Peak Sliding Window KW (since last cleared)*
Timestamp (when Peak Sliding Window occurred)
Timestamp (when Peak Sliding Window KW was last cleared)

*ONLY Values with asterisk are available for LONWORKS

** For Delta System

For WYE System

Phase A = L1-L2

Phase A = L1-N

Phase B = L2-L3

Phase B = L2-N

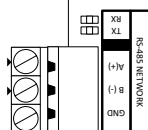
Phase C = L3-L1

Phase C = L3-N

COMMUNICATION CARDS

ENG-BACnet
 ENG-MODBUS
 ENG-N2

RS-485 Network



TO ENGENIUS MAIN BOARD

TO ENGENIUS MAIN BOARD

ENG-LONWORKS

LonWorks Network



TO ENGENIUS MAIN BOARD

TO ENGENIUS MAIN BOARD

POWER MONITORING & PROTECTION

INTELLIGENT POWER MONITOR

ENGENIUSSM - PATENT PENDING

ORDERING INFORMATION

EnGenius with or without CT's - NOT matedched**
See Charts A, B, C, and D for available options

ENG	EnGenius
9000	No current transducers included
93xx	Includes (3) 0.333V output CT's
95xx	Includes (3) 5 Amp output CT's
B	BACnet Communication Board
L	LonWorks Communication Board
M	Modbus Communication Board
N	N2 Communication Board
D	Display

Example: ENG-9000-D = Power meter only, with Display

EnGenius with Matched CT's*

ENG	EnGenius
C9005	Includes (3) 5A:0.333V CT's
C9050	Includes (3) 50A:0.333V CT's
C9100	Includes (3) 100A:0.333V CT's
C9150	Includes (3) 150A:0.333V CT's
C9200	Includes (3) 200A:0.333V CT's
C9250	Includes (3) 250A:0.333V CT's
C9300	Includes (3) 300A:0.333V CT's
C9400	Includes (3) 400A:0.333V CT's
C9600	Includes (3) 600A:0.333V CT's
B	BACnet Communication Board
L	LonWorks Communication Board
M	Modbus Communication Board
N	N2 Communication Board
D	Display

Example: ENG-C9100-B-D = Power meter with 100A: 0.333V CT's; BACnet and with Display

CHART A

93xx - Choose one of the following split core 0.333V output CT's to be included*
Replace the xx with one of the numbers below designating your choice.

01	SCT-0750-005	5A:0.333V 0.75x0.75 WIN
02	SCT-0750-050	50A:0.333V 0.75x0.75 WIN
03	SCT-1250-100	100A:0.333V 1.25x1.25 WIN
04	SCT-1250-150	150A:0.333V 1.25x1.25 WIN
05	SCT-1250-200	200A:0.333V 1.25x1.25 WIN
06	SCT-1250-250	250A:0.333V 1.25x1.25 WIN
07	SCT-1250-300	300A:0.333V 1.25x1.25 WIN
08	SCT-1250-400	400A:0.333V 1.25x1.25 WIN
09	SCT-2000-600	600A:0.333V 2.0x2.0 WIN

CHART B

93xx - Choose one of the following solid core 0.333V output CT's to be included*
Replace the xx with one of the numbers below designating your choice.

20	UCT-0300-005	5A:0.333V 0.30 WIN
21	UCT-1000-050	50A:0.333V 1.0 WIN
22	UCT-1250-100	100A:0.333V 1.25 WIN
23	UCT-1250-150	150A:0.333V 1.25 WIN
24	UCT-1250-200	200A:0.333V 1.25 WIN
25	UCT-1250-250	250A:0.333V 1.25 WIN
26	UCT-1250-300	300A:0.333V 1.25 WIN
27	UCT-1250-400	400A:0.333V 1.25 WIN

CHART C

95xx - Choose one of the following split core 5A output CT's to be included*
Replace the xx with one of the numbers below designating your choice.

76	601T-301	CT SPLIT 300A:5A: 4.5x4.5 WIN
77	601T-401	CT SPLIT 400A:5A: 4.5x4.5 WIN
78	601T-501	CT SPLIT 500A:5A: 4.5x4.5 WIN
79	601T-601	CT SPLIT 600A:5A: 4.5x4.5 WIN

CHART D

95xx - Choose one of the following solid core 5A output CT's to be included*
Replace the xx with one of the numbers below designating your choice.

50	5RL500	CT SOLID 50A:5A 1.56 WIN
51	5RL750	CT SOLID 75A:5A 1.56 WIN
52	5RL101	CT SOLID 100A:5A 1.56 WIN
53	5RL151	CT SOLID 150A:5A 1.56 WIN
54	5RL201	CT SOLID 200A:5A 1.56 WIN
55	7RL251	CT SOLID 250A:5A 2.5 WIN
56	7RL301	CT SOLID 300A:5A 2.5 WIN
57	7RL401	CT SOLID 400A:5A 2.5 WIN
58	7RL501	CT SOLID 500A:5A 2.5 WIN
59	7RL601	CT SOLID 600A:5A 2.5 WIN

* If EnGenius ordered with matched CT's, the accuracy of the meter-ct set is 0.5%

** All EnGenius units ordered with matched CT's are shipped with SCT sensor. See Chart A.

*** If EnGenius ordered without matched CT's, accuracy of meter only is 0.5%. CT errors must be considered separately in overall system accuracy.

ACCESSORIES

ENG-5AMPBRD

5 AMP Input adapter board for ENG-9000

ENG-9500

EnGenius-KWH pulse output with 5A input adapter board

ENG-9500-D

EnGenius LCD -KWH pulse output with 5A input adapter board

ENG-CABLE

Data Cable for EnGeniusSM

ENG-SOFTWARE

Desktop Software for EnGeniusSM

NEW!