

VOLTS, AMPS, WATTS, WATTHOURS, POWER FACTOR & VA

DESCRIPTION

The PTB board-level system monitor is designed to measure and provide analog output signals for all parameters of voltage, current, and total power in an electrical system. Optional outputs are available for power factor, apparent power, and Watthours as plug-in "daughter" boards.

The PTB comes standard with seven analog outputs for voltage, current, and power. As options, 0-10Vdc, 0-1mAdc and 4-20mAdc outputs are available.

The 10.75" x 8.9" x 2.5" circuit board is provided with mounting holes to fit a 10" x 12" NEMA case (option C) or the circuit board can be mounted in the user's cabinet with the stand-offs provided. Input and output terminals are located directly on the circuit board.

The electronic circuitry uses solid-state multipliers, RMS converters, and amplifiers. 115Vac or 230Vac instrument power options are available.

PTM Rack-mount models available - Consult factory

**FEATURES**

- Small Package
- Less Wiring
- High Accuracy
- Up to 9 Analog Outputs
- Circuit Board Design
- Direct Input to 600Vac
- Low Cost
- Calibrated with CTs

**5 YEAR
WARRANTY**

MODEL SELECTION

PTB -		<input type="checkbox"/>								
SYSTEM	VOLTS	AMPS	SENSOR SIZE	OUTPUTS		INST. PWR.		OPTION P	OPTION W	OPTION C
1	1Φ2W	1	0 - 150 Vac	1	0 - 5 Aac	(none)	D	0 - 10Vdc	1	115Vac
2	3Φ3W	2	0 - 300 Vac	2	0 - 100 Aac	W	B	0 - 1mAdc	2	230Vac
3	*3Φ4W	3	0 - 600 Vac	3	0 - 200 Aac	W	E	4 - 20mAdc		
4	*1Φ3W			4	0 - 400 Aac	X				

*Specify L-N Voltage

NOTE: External current sensors are included with models having an input current range of 100A and above (PTB-xx2xxx, PTB-xx3xxx, and PTB-xx4xxx models). For details, see dimension and connection diagrams.

ORDERING INFORMATION

Example: 3Φ3W, 2-element system, 0-150Vac & 0-100Aac Inputs, 0-10Vdc & Watthour Outputs, 115Vac instrument power, in NEMA case

PTB-212D1WC

OHIO SEMITRONICS, INC.

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SPECIFICATIONS

INPUT

Voltage	
F.S. Linear Range	See Table
Over-voltage	150Vac models 175Vac
	300Vac models 350Vac
	600Vac models 610Vac
Burden	<0.25VA/Phase
Current	
F.S. Linear Range	See Table
Over-current (continuous)	
0-5A models.....	10Aac
All other models..	125% of F.S.
Burden	<0.25VA/Phase
Frequency Range..... (Linear)	48-70Hz
Power Factor.....	Any

DIELECTRIC TEST..... (Input To Outputs).... 1500Vac

OPTIONS P, W or C

Apparent Power (VA).....	**Same Formula as Watts
Power Factor.....	0-1 Lead or Lag
Watthours	
0-5A Models	1 Wh/Cnt
0-100A Models	20 Wh/Cnt
0-200A Models	40 Wh/Cnt
0-400A Models	80 Wh/Cnt
Relay Rating.....	120V, 0.5A
Relay Closure Duration	200ms

OUTPUT

(Output range shown for D models. See table for other options.)	
Voltage (RMS) (3)	0-F.S. Volts Input= 0-10Vdc Output
Current (RMS) (3)	0-F.S. Amps Input = 0-10Vdc Output
Watts (True Power)	0-F.S. Watts Input = 0-10Vdc Output
**F.S. Watts = F.S. Volts x F.S. Amps x No. of Elements x 0.8	
Output Burden	10V models >2kΩ
	1mA models..... 0-10kΩ
	20mA models.... 0-500Ω
Ripple	<±1% F.S
Response Time	250ms

ACCURACY (Includes linearity, setpoint & power factor at 25°C)

5A Models	Voltage	±0.3% F.S.
	Current	±0.3% F.S.
	Power	±0.3% F.S.
100A - 400A Models	Voltage	±0.5% F.S.
	Current	±0.5% F.S.
	Power	±0.5% F.S.
Watthours	(Option)	±0.5% F.S.
Power Factor(10-100% Input).. (Option)	±0.01 PF	

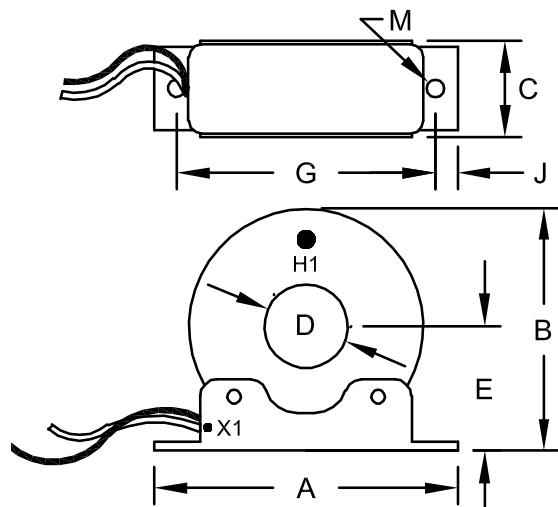
TEMPERATURE

Temperature Effects (10° to 35°C) | ±0.5% |

INSTRUMENT POWER

Option 1.....	115Vac, ±15%, 50-400Hz, 8.5VA
Option 2.....	230Vac, ±15%, 50/60Hz, 8.5VA

CURRENT SENSOR DIMENSIONS



LEAD LENGTH IS 24 INCHES.

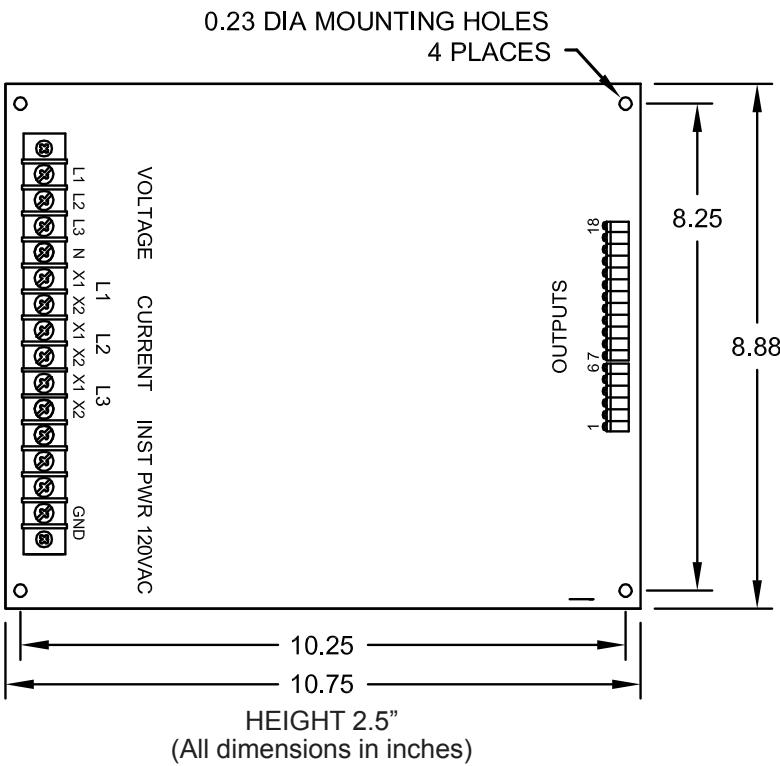
WHITE LEAD IS X1.

SENS. SIZE	SENSOR DIMENSIONS (in inches)							WT. LBS.
	A	B	C	D	E	G	J	
W	4.50	3.7	1.25	1.25	1.94	3.88	0.34	0.27 x 0.44 1.43
X	6.50	4.7	1.25	2.50	2.46	5.75	0.39	0.28 1.61

Dwg# 0902-00921-B Rev --

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OPTIONAL NEMA CASE

Dimensions 12" X 10" X 4"
 Mounting.... 12.5" X 8.12", 0.22" Dia. Holes
 Weight 3.0 lbs.

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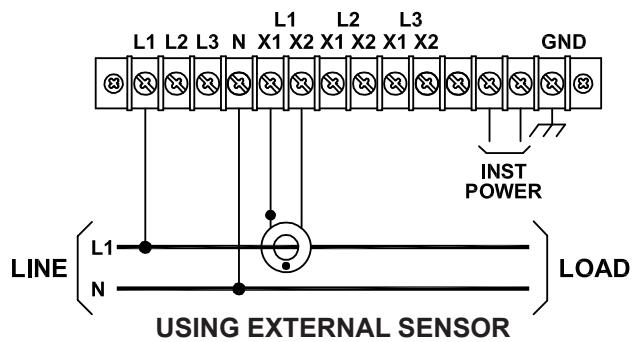
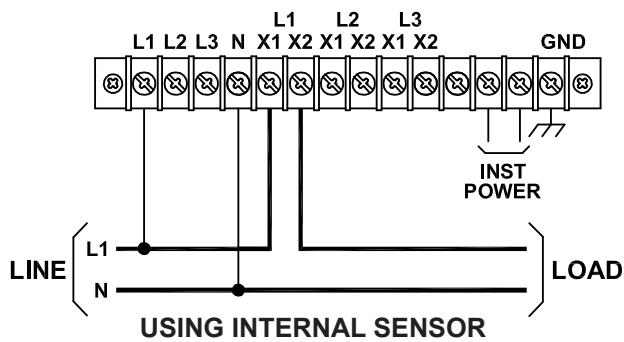
OUTPUT CONNECTIONS

1Φ2W SYSTEM		3Φ3W SYSTEM		3Φ4W SYSTEM		1Φ3W SYSTEM	
1	Watthour Relay						
2		2		2		2	
3	N/A	3	N/A	3	N/A	3	N/A
4	N/A	4	N/A	4	N/A	4	N/A
5	Common	5	Common	5	Common	5	Common
6	Common	6	Common	6	Common	6	Common
7	Common	7	Common	7	Common	7	Common
8	Power Factor						
9	Volt-Amperes	9	Volt-Amperes	9	Volt-Amperes	9	Volt-Amperes
10	Watts	10	Watts	10	Watts	10	Watts
11	Common	11	Common	11	Common	11	Common
12	N/A	12	L3	12	L3	12	N/A
13	N/A	13	L2	13	L2	13	L2
14	Current	14	L1	14	L1	14	L1
15	Common	15	Common	15	Common	15	Common
16	N/A	16	L1-L2	16	L3-N	16	N/A
17	N/A	17	L2-L3	17	L2-N	17	L2-N
18	Voltage	18	L3-L1	18	L1-N	18	L1-N

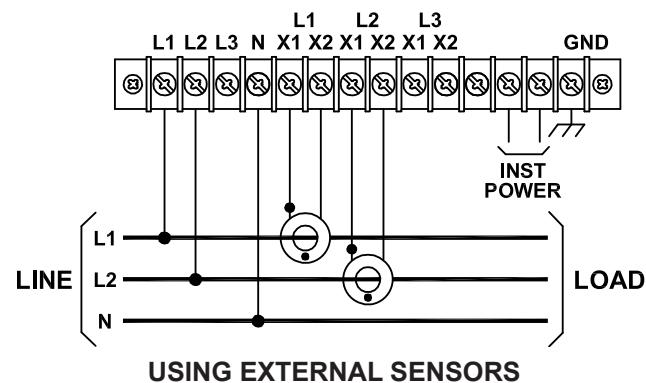
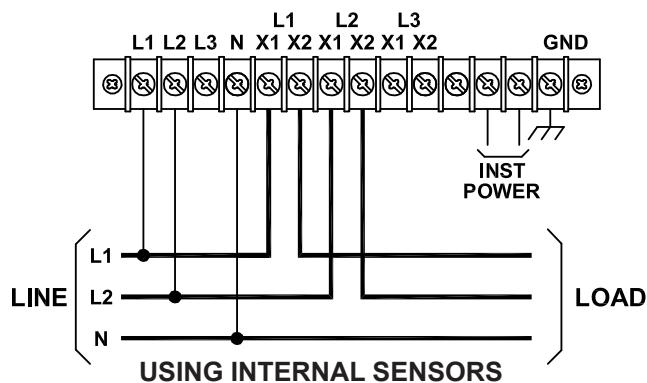
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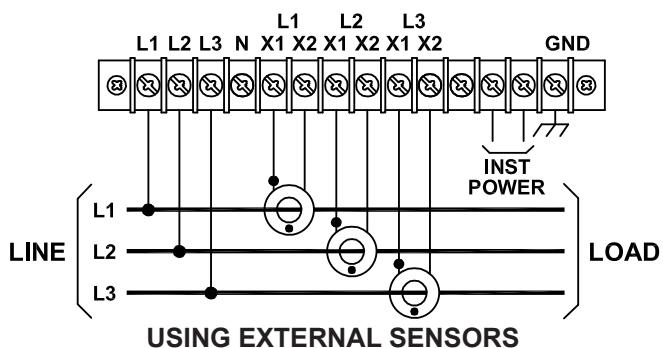
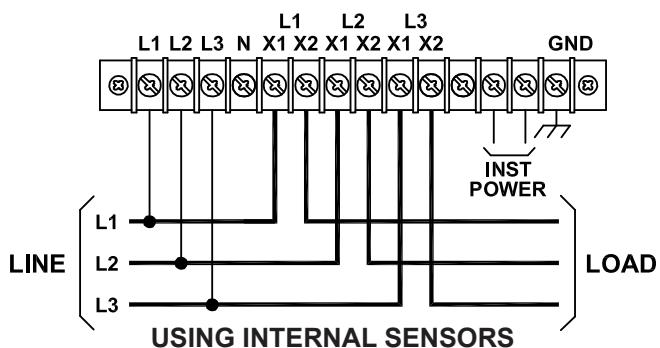
SINGLE-PHASE, TWO-WIRE CONNECTIONS



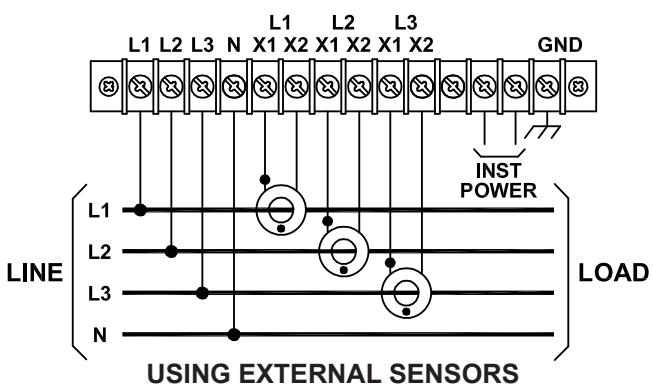
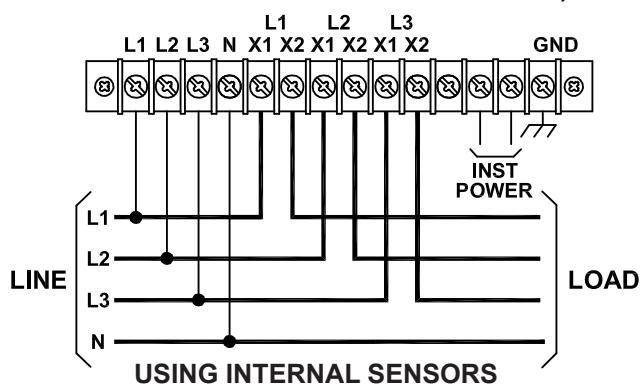
SINGLE-PHASE, THREE-WIRE CONNECTIONS



THREE-PHASE, THREE-WIRE CONNECTIONS



THREE-PHASE, FOUR-WIRE CONNECTIONS



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