

WATT TRANSDUCERS

MULTIPLE OUTPUT AC POWER TRANSDUCER

MODEL PTB

FEATURES

- **Small Package**
- **Less Wiring**
- **High Accuracy**
- **Up to 9 Analog Outputs**
- **Circuit Board Design**
- **Direct Inputs to 600 Vac**
- **Low Cost**



PHASE		VOLTAGE		CURRENT		OUTPUTS		INST. PWR.		OPTION P	OPTION W	OPTION C
1	1 PH-2 W, 1 Ele	1	0 - 150 Vac	1	0 - 5 A	D	0 - 10Vdc	1	115Vac	Apparent Power (VA) & Power Factor (PF)	Watthours	NEMA Case 10 X 12 X 4
2	3 PH-3 W, 2 Ele	2	0 - 300 Vac			B	0 - 1mAdc					
*3	3 PH-4 W, 3 Ele	3	0 - 600 Vac			E	4 - 20mAdc	2	230Vac			
*4	1 PH-3 W, 2 Ele											

*Specify L-N Voltage

ORDERING INFORMATION

Example: PTB - (Phase = 3 Phase 3 Wire and 2 Element) - (Voltage = 0 To 150Vac) -
(Current = 0 To 5 Amps) - (Output = 10Vdc) - (Inst. Pwr. = 115Vac Instrument Power) - (Option = Watthour)
PTB-211D1W

DESCRIPTION

- The board level transducer is designed to measure and provide analog output signals for all parameters of voltage, current and total power.
- Optional outputs for power factor, apparent power "VA" and watt hours are available as plug-in circuit cards.
- The 10.75" X 8.9" X 2.5" circuit board is provided with mounting holes to fit a 10" X 12" NEMA case 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.
- All of the electronics circuitry uses solid state multipliers, RMS converters and amplifier. The unit requires 115Vac instrument power. **(Optional 230Vac is available)**
- The unit is calibrated at the factory using standards traceable to NIST.

SPECIFICATIONS

INPUT

VOLTAGE

F.S. Linear Range.....	See Table
Over Voltage.....	150Vac (175Vac)
	300Vac (350Vac)
	600Vac (610Vac)
Burden	<0.25VA/Phase

CURRENT

All models are linear through full-scale current range.

Continuous over current	
5A models	10Aac
All other ranges	125% of F.S.
Burden	< 0.25VA/Phase
frequency Range	(Linear)..... 48-70Hz
Power Factor.....	Any
Dielectric Test	(Input To Outputs) 1500Vac

OUTPUT SCALING

Voltage (RMS) (3).....0 - 10Vdc = 0 - F.S. Voltage
Current (RMS) (3).....0 - 10Vdc = 0 - F.S. Current
*Watts (True Power).....0 - 10Vdc = 0 - F.S. Watts

*Output Scaling Example

Full Scale Watts = F.S. Volts x F.S. Amps x No. of Elements x 0.8

Output Burden	10V.....	> 2K Ω
	1mA.....	0-10K Ω
	20mA.....	0-500 Ω

Ripple..... $< +1\%$ F.S.

OPTIONS

Apparent Power (VA) * Same as watts
Power Factor..... 0 - 10Vdc 0 - 1 Lead or Lag.
Watt hours

5A Models..... 1 WH/C
Relay Rating 120V, 0.5A
Relay Closure Duration.....200ms

ACCURACY

(Includes linearity, set point and power factor at 25°C)

5A Models.....	Voltage	±0.3% F.S.
	Current	±0.3% F.S.
	Power	±0.3% F.S.
Watthours	(Option)	±0.5% F.S.
Power Factor..(10-100% Input)....	(Option)	±0.01 PF
Response Time.....		250ms
Temperature Effects.....	(+10° to +35°C).....	±0.5%
Instrument Power.....	115Vac, ±15%, 50-400Hz, 8.5VA	
(Option)	230Vac, +15% 50/60Hz, 8.5VA	

(Option) 230Vac, +15% 50/60Hz, 8.5VA

(CPA) 200.00, 210.00, 220.00, 230.00, 240.00, 250.00, 260.00, 270.00, 280.00, 290.00, 300.00, 310.00, 320.00, 330.00, 340.00, 350.00, 360.00, 370.00, 380.00, 390.00, 400.00, 410.00, 420.00, 430.00, 440.00, 450.00, 460.00, 470.00, 480.00, 490.00, 500.00, 510.00, 520.00, 530.00, 540.00, 550.00, 560.00, 570.00, 580.00, 590.00, 600.00, 610.00, 620.00, 630.00, 640.00, 650.00, 660.00, 670.00, 680.00, 690.00, 700.00, 710.00, 720.00, 730.00, 740.00, 750.00, 760.00, 770.00, 780.00, 790.00, 800.00, 810.00, 820.00, 830.00, 840.00, 850.00, 860.00, 870.00, 880.00, 890.00, 900.00, 910.00, 920.00, 930.00, 940.00, 950.00, 960.00, 970.00, 980.00, 990.00, 1000.00, 1010.00, 1020.00, 1030.00, 1040.00, 1050.00, 1060.00, 1070.00, 1080.00, 1090.00, 1100.00, 1110.00, 1120.00, 1130.00, 1140.00, 1150.00, 1160.00, 1170.00, 1180.00, 1190.00, 1200.00, 1210.00, 1220.00, 1230.00, 1240.00, 1250.00, 1260.00, 1270.00, 1280.00, 1290.00, 1300.00, 1310.00, 1320.00, 1330.00, 1340.00, 1350.00, 1360.00, 1370.00, 1380.00, 1390.00, 1400.00, 1410.00, 1420.00, 1430.00, 1440.00, 1450.00, 1460.00, 1470.00, 1480.00, 1490.00, 1500.00, 1510.00, 1520.00, 1530.00, 1540.00, 1550.00, 1560.00, 1570.00, 1580.00, 1590.00, 1600.00, 1610.00, 1620.00, 1630.00, 1640.00, 1650.00, 1660.00, 1670.00, 1680.00, 1690.00, 1700.00, 1710.00, 1720.00, 1730.00, 1740.00, 1750.00, 1760.00, 1770.00, 1780.00, 1790.00, 1800.00, 1810.00, 1820.00, 1830.00, 1840.00, 1850.00, 1860.00, 1870.00, 1880.00, 1890.00, 1900.00, 1910.00, 1920.00, 1930.00, 1940.00, 1950.00, 1960.00, 1970.00, 1980.00, 1990.00, 2000.00, 2010.00, 2020.00, 2030.00, 2040.00, 2050.00, 2060.00, 2070.00, 2080.00, 2090.00, 2100.00, 2110.00, 2120.00, 2130.00, 2140.00, 2150.00, 2160.00, 2170.00, 2180.00, 2190.00, 2200.00, 2210.00, 2220.00, 2230.00, 2240.00, 2250.00, 2260.00, 2270.00, 2280.00, 2290.00, 2300.00, 2310.00, 2320.00, 2330.00, 2340.00, 2350.00, 2360.00, 2370.00, 2380.00, 2390.00, 2400.00, 2410.00, 2420.00, 2430.00, 2440.00, 2450.00, 2460.00, 2470.00, 2480.00, 2490.00, 2500.00, 2510.00, 2520.00, 2530.00, 2540.00, 2550.00, 2560.00, 2570.00, 2580.00, 2590.00, 2600.00, 2610.00, 2620.00, 2630.00, 2640.00, 2650.00, 2660.00, 2670.00, 2680.00, 2690.00, 2700.00, 2710.00, 2720.00, 2730.00, 2740.00, 2750.00, 2760.00, 2770.00, 2780.00, 2790.00, 2800.00, 2810.00, 2820.00, 2830.00, 2840.00, 2850.00, 2860.00, 2870.00, 2880.00, 2890.00, 2900.00, 2910.00, 2920.00, 2930.00, 2940.00, 2950.00, 2960.00, 2970.00, 2980.00, 2990.00, 3000.00, 3010.00, 3020.00, 3030.00, 3040.00, 3050.00, 3060.00, 3070.00, 3080.00, 3090.00, 3100.00, 3110.00, 3120.00, 3130.00, 3140.00, 3150.00, 3160.00, 3170.00, 3180.00, 3190.00, 3200.00, 3210.00, 3220.00, 3230.00, 3240.00, 3250.00, 3260.00, 3270.00, 3280.00, 3290.00, 3300.00, 3310.00, 3320.00, 3330.00, 3340.00, 3350.00, 3360.00, 3370.00, 3380.00, 3390.00, 3400.00, 3410.00, 3420.00, 3430.00, 3440.00, 3450.00, 3460.00, 3470.00, 3480.00, 3490.00, 3500.00, 3510.00, 3520.00, 3530.00, 3540.00, 3550.00, 3560.00, 3570.00, 3580.00, 3590.00, 3600.00, 3610.00, 3620.00, 3630.00, 3640.00, 3650.00, 3660.00, 3670.00, 3680.00, 3690.00, 3700.00, 3710.00, 3720.00, 3730.00, 3740.00, 3750.00, 3760.00, 3770.00, 3780.00, 3790.00, 3800.00, 3810.00, 3820.00, 3830.00, 3840.00, 3850.00, 3860.00, 3870.00, 3880.00, 3890.00, 3900.00, 3910.00, 3920.00, 3930.00, 3940.00, 3950.00, 3960.00, 3970.00, 3980.00, 3990.00, 4000.00, 4010.00, 4020.00, 4030.00, 4040.00, 4050.00, 4060.00, 4070.00, 4080.00, 4090.00, 4100.00, 4110.00, 4120.00, 4130.00, 4140.00, 4150.00, 4160.00, 4170.00, 4180.00, 4190.00, 4200.00, 4210.00, 4220.00, 4230.00, 4240.00, 4250.00, 4260.00, 4270.00, 4280.00, 4290.00, 4300.00, 4310.00, 4320.00, 4330.00, 4340.00, 4350.00, 4360.00, 4370.00, 4380.00, 4390.00, 4400.00, 4410.00, 4420.00, 4430.00, 4440.00, 4450.00, 4460.00, 4470.00, 4480.00, 4490.00, 4500.00, 4510.00, 4520.00, 4530.00, 4540.00, 4550.00, 4560.00, 4570.00, 4580.00, 4590.00, 4600.00, 4610.00, 4620.00, 4630.00, 4640.00, 4650.00, 4660.00, 4670.00, 4680.00, 4690.00, 4700.00, 4710.00, 4720.00, 4730.00, 4740.00, 4750.00, 4760.00, 4770.00, 4780.00, 4790.00, 4800.00, 4810.00, 4820.00, 48

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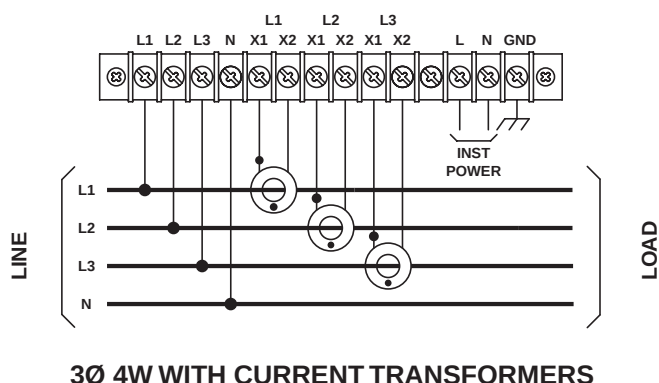
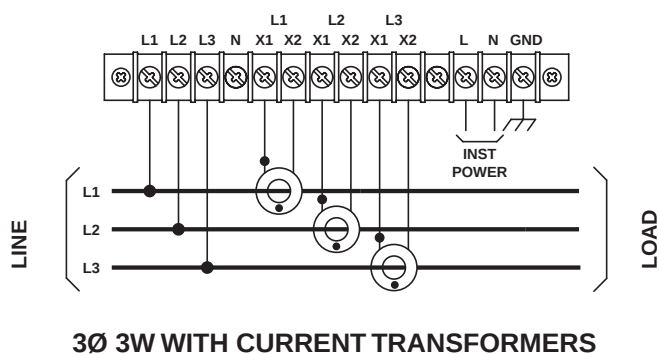
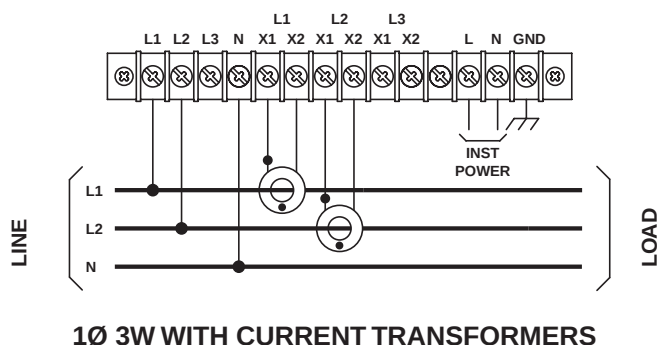
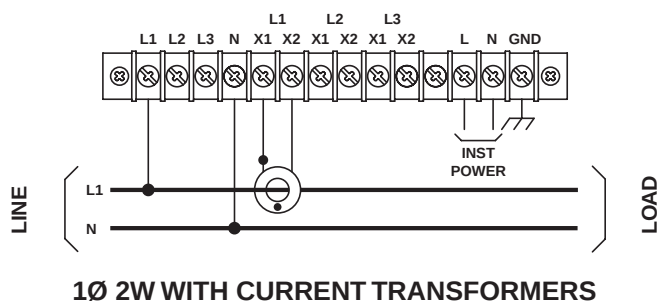
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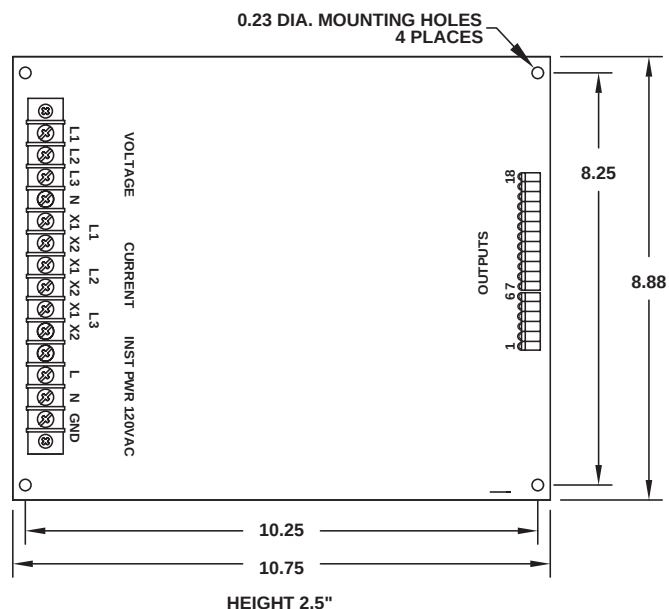
MULTIPLE OUTPUT AC POWER TRANSDUCER

MODEL PTB

CONNECTION DIAGRAMS



DIMENSIONS



Optional NEMA Case 12" X 10" X 4"
 Mounting..... 12.5" X 8.12", .22 Dia. Holes
 Weight 3.0 Lbs.

All Dimensions In Inches

OUTPUT CONNECTIONS

1 Phase, 2 Wire		3 Phase, 3 Wire		3 Phase, 4 Wire		1 Phase, 3 Wire	
1	Watt-hour Relay	1	Watt-hour Relay	1	Watt-hour Relay	1	Watt-hour Relay
2		2		2		2	
3	NA	3	NA	3	NA	3	NA
4	NA	4	NA	4	NA	4	NA
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	8	Power Factor	8	Power Factor	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	NA	12	L3 Current	12	L3 Current	12	NA
13	NA	13	L2 Current	13	L2 Current	13	L2 Current
14	Current	14	L1 Current	14	L1 Current	14	L1 Current
15	Common	15	Common	15	Common	15	Common
16	NA	16	L1-L2 Voltage	16	L3-N Voltage	16	NA
17	NA	17	L2-L3 Voltage	17	L2-N Voltage	17	L2-N Voltage
18	Voltage	18	L3-L1 Voltage	18	L1-N Voltage	18	L1-N Voltage

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