

# WATT TRANSDUCERS

## VARIABLE FREQUENCY WATT TRANSDUCER

MODEL P

WATT TRANSDUCERS

### VARIABLE FREQUENCY (5 TO 500 HERTZ)

#### FEATURES

- Accurate from 5 to 500 Hz., **Factory calibrated.**
- Available in single phase and any three phase configuration.
- Available with split-core current sensors.

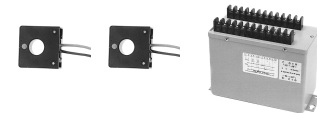
#### APPLICATIONS

- Accurate monitoring of power that contains dc and non-sinusoidal AC components.
- Ideal for use in phase angle firing circuits or frequency synthesizers.
- Bi-directional output.



#### SINGLE PHASE (ONE ELEMENT)

INPUTS		F.S. (WATTS)	SENSOR SIZE	STANDARD OUTPUTS MODEL P-					
AC VOLTS	AC AMPS			±1mA <sub>dc</sub>	±10V <sub>dc</sub>	4 - 20mA	4-12-20mA	0 - 20mA	±5V <sub>dc</sub>
0 - 150	0 - 100	10K	C	121B	121D	121E	121EM	121EA	121X5
	0 - 200	20K	D	124B	124D	124E	124EM	124EA	124X5
	0 - 400	40K	D	127B	127D	127E	127EM	127EA	127X5
	0 - 600	60K	E	130B	130D	130E	130EM	130EA	130X5
	0 - 1000	110K	E	133B	133D	133E	133EM	133EA	133X5
	0 - 2000	200K	E	136B	136D	136E	136EM	136EA	136X5
0 - 300	0 - 100	20K	C	122B	122D	122E	122EM	122EA	122X5
	0 - 200	40K	D	125B	125D	125E	125EM	125EA	125X5
	0 - 400	80K	D	128B	128D	128E	128EM	128EA	128X5
	0 - 600	120K	E	131B	131D	131E	131EM	131EA	131X5
	0 - 1000	200K	E	134B	134D	134E	134EM	134EA	134X5
	0 - 2000	400K	E	137B	137D	137E	137EM	137EA	137X5
0 - 600	0 - 100	40K	C	123B	123D	123E	123EM	123EA	123X5
	0 - 200	80K	D	126B	126D	126E	126EM	126EA	126X5
	0 - 400	160K	D	129B	129D	129E	129EM	129EA	129X5
	0 - 600	240K	E	132B	132D	132E	132EM	132EA	132X5
	0 - 1000	400K	E	135B	135D	135E	135EM	135EA	135X5
	0 - 2000	800K	E	138B	138D	138E	138EM	138EA	138X5



#### THREE PHASE - THREE WIRE (TWO ELEMENT)

INPUTS		F.S. (WATTS)	SENSOR SIZE	STANDARD OUTPUTS MODEL P-					
AC VOLTS	AC AMPS			+1mA <sub>dc</sub>	+10V <sub>dc</sub>	4 - 20mA	4-12-20mA	0 - 20mA	+5V <sub>dc</sub>
0 - 150	0 - 100	20K	C	142B	142D	142E	142EM	142EA	142X5
	0 - 200	40K	D	145B	145D	145E	145EM	145EA	145X5
	0 - 400	80K	D	148B	148D	148E	148EM	148EA	148X5
	0 - 600	120K	E	151B	151D	151E	151EM	151EA	151X5
	0 - 1000	200K	E	154B	154D	154E	154EM	154EA	154X5
	0 - 2000	400K	E	157B	157D	157E	157EM	157EA	157X5
0 - 300	0 - 100	40K	C	143B	143D	143E	143EM	143EA	143X5
	0 - 200	80K	D	146B	146D	146E	146EM	146EA	146X5
	0 - 400	160K	D	149B	149D	149E	149EM	149EA	149X5
	0 - 600	240K	E	152B	152D	152E	152EM	152EA	152X5
	0 - 1000	400K	E	155B	155D	155E	155EM	155EA	155X5
	0 - 2000	800K	E	158B	158D	158E	158EM	158EA	158X5
0 - 600	0 - 100	80K	C	144B	144D	144E	144EM	144EA	144X5
	0 - 200	160K	D	147B	147D	147E	147EM	147EA	147X5
	0 - 400	320K	D	150B	150D	150E	150EM	150EA	150X5
	0 - 600	480K	E	153B	153D	153E	153EM	153EA	153X5
	0 - 1000	800K	E	156B	156D	156E	156EM	156EA	156X5
	0 - 2000	1600K	E	159B	159D	159E	159EM	159EA	159X5

All units require 85-135VAC instrument power, (50-400 Hz.).

**OPTIONAL SPLIT-CORE CURRENT SENSOR**  
**AVAILABLE-ADD SUFFIX "S" TO PART NUMBER.**  
**ADDITIONAL CURRENT RANGES AVAILABLE**  
**CONSULT FACTORY**

**ORDERING INFORMATION**  
 Example Three Phase, Three Wire, 120V,  
 100A Input, Split-Core Sensor,  
 with 0-5V<sub>dc</sub> Output, Proportional to 0-20kW  
**P-142X5S**

**FLEX-CORE®**  
 Div. Morlan & Associates, Inc.  
 6625 McVey Blvd. Columbus, Ohio 43235

**WWW.FLEX-CORE.COM**  
 sales@flex-core.com

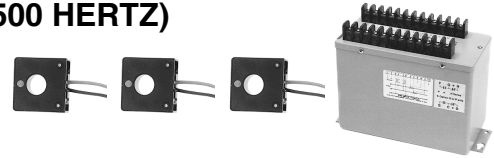
**PHONE** (614) 889-6152  
**TECH. ASSISTANCE** (614) 876-8308  
**FAX #** (614) 876-8538

# WATT TRANSDUCERS

## VARIABLE FREQUENCY WATT TRANSDUCER

**MODEL P**

VARIABLE FREQUENCY (5 TO 500 HERTZ)



**THREE PHASE - FOUR WIRE (THREE ELEMENT)**

INPUTS		F.S. (WATTS)	SENSOR SIZE	STANDARD OUTPUTS MODEL P-					
AC VOLTS	AC AMPS			±1mAdc	±10Vdc	4 - 20mA	4-12-20mA	0 - 20mA	±5Vdc
0 - 150 L-N	0 - 100	30K	C	160B	160D	160E	160EM	160EA	160X5
	0 - 200	60K	D	162B	162D	162E	162EM	162EA	162X5
	0 - 400	120K	D	164B	164D	164E	164EM	164EA	164X5
	0 - 600	180K	E	166B	166D	166E	166EM	166EA	166X5
	0 - 1000	300K	E	168B	168D	168E	168EM	168EA	168X5
0 - 300 L-N	0 - 2000	600K	E	170B	170D	170E	170EM	170EA	170X5
	0 - 100	60K	C	161B	161D	161E	161EM	161EA	161X5
	0 - 200	120K	D	163B	163D	163E	163EM	163EA	163X5
	0 - 400	240K	D	165B	165D	165E	165EM	165EA	165X5
	0 - 600	360K	E	167B	167D	167E	167EM	167EA	167X5
0 - 1000	600K	E	169B	169D	169E	169EM	169EA	169X5	
	0 - 2000	1200K	E	171B	171D	171E	171EM	171EA	171X5

### SPECIFICATIONS

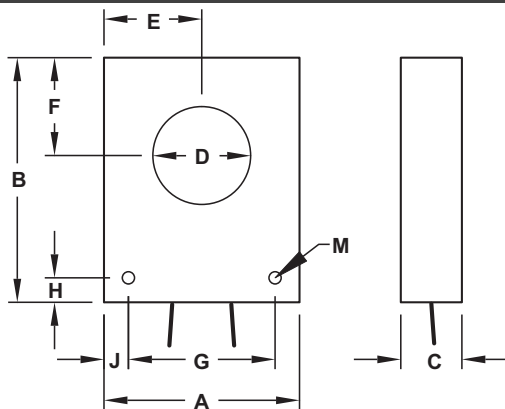
#### INPUT

Voltage ..... See Tables  
 Current ..... See Tables  
 Frequency Range ..... 5-500 Hz  
 Power Factor ..... Any  
 Response (Transient 90%) ..... 50 microseconds  
 Burden  
     Voltage ..... < 0.1VA/phase  
     Current ..... < 0.1VA/phase  
 Overload  
     Voltage ..... 600Vac max.  
     Current ..... 50 X F.S.  
 Dielectric Test...(Input/Output/Case) ..... 1500Vac  
 Instrument Power ..... 85-135Vac, 50-400Hz, 15VA  
 "-22" Option ..... 230Vac, 50/60Hz, +15%

#### OUTPUT

**ACCURACY ..... + 1.0% F.S.**  
 Includes combined effects of linearity, repeatability and frequency.  
 Output Ripple ..... Less than 1.0% F.S. @ 60Hz  
 Output Loading (Ohms)  
     +1mA ..... 0-10K  
     +10Vdc ..... 2K min.  
     4-20mA, 4-12-20mA, 0-20mA ..... 0-500  
     +5Vdc ..... 2K min.  
 Response Time...(90%) ..... 500 milliseconds  
 Field Adjustable Cal. .... + 10%  
 Temperature Range ..... -0°C to +40°C  
 Temperature Effect ..... +1.0% of Rdg., +0.1% F.S. Output  
 Optional Split-Core Current Sensor Available ..... Add Suffix "-S"

### SENSOR DIMENSIONS/CONNECTIONS

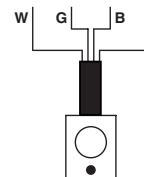


#### 1 CABLE

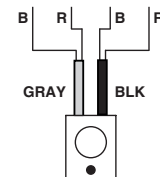
WHITE  
 GREEN  
 BLACK  
 RED

#### 2 CABLE

= GRAY "B"  
 = GRAY "R"  
 = BLACK "B"  
 = BLACK "R"



ONE CABLE  
CURRENT SENSOR



TWO CABLE  
CURRENT SENSOR

SENS SIZE	SENSOR DIMENSIONS										WT. LBS.
	A	B	C	D	E	F	G	H	J	M	
C	2	2	3/4	3/4	1	7/8	1 1/2	1/4	1/4	5/32	0.28
D	3 1/8	4	3/4	1 1/8	1 9/16	1 1/2	2 1/8	1/2	1/2	11/64	0.75
E	4 1/8	5	1 1/4	2	2 1/16	2	3 1/4	7/16	7/16	17/64	2.80

Solid-core models are supplied with 18 inch cables on sensor sizes C & D. All other solid-core models supplied with detachable 8 foot cable. Sensor size C split-core models are supplied with 8 foot attached cable. All other split-core models are supplied with detachable 8 foot cable. Longer cables are available.

**FLEX-CORE®**

Div. Morlan & Associates, Inc.

6625 McVey Blvd. Columbus, Ohio 43235

WWW.FLEX-CORE.COM

sales@flex-core.com

PHONE (614) 889-6152

TECH. ASSISTANCE (614) 876-8308

FAX # (614) 876-8538

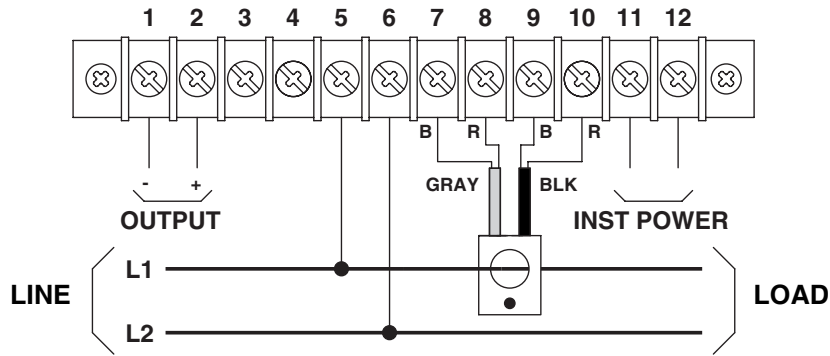
# WATT TRANSDUCERS

## CASE DIMENSIONS

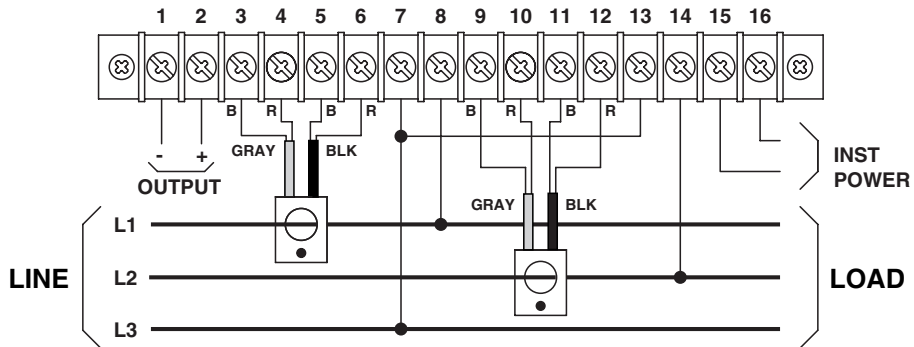
MODEL P

WATT TRANSDUCERS

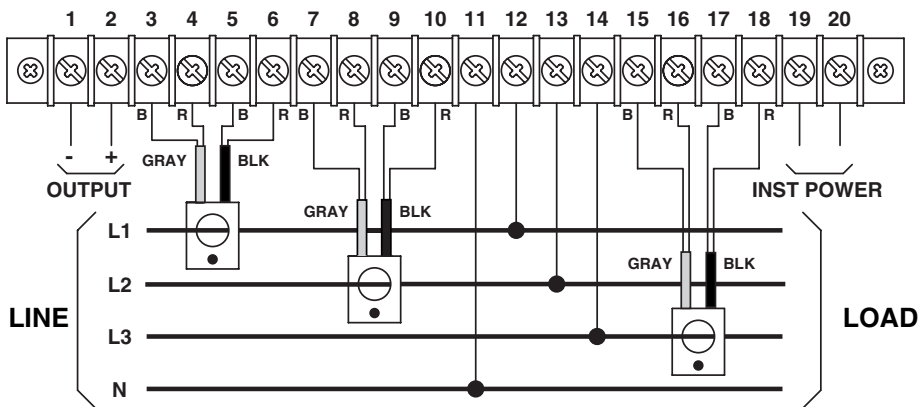
### SINGLE-PHASE CONNECTIONS



### THREE-PHASE, THREE-WIRE CONNECTIONS

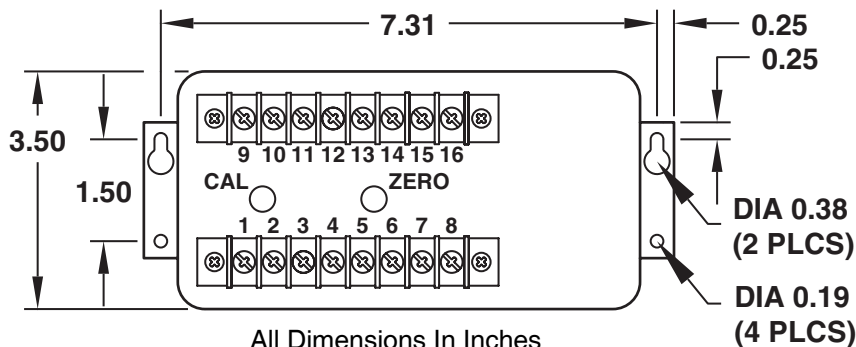


### THREE-PHASE, FOUR-WIRE CONNECTIONS



**WARNING: SHOCK HAZARD**  
**CURRENT SENSOR TERMINALS**  
**ARE AT LINE VOLTAGE.**

## CASE DIMENSIONS



All Dimensions In Inches

**CASE HEIGHT 5.88"**  
**1PH 2W TYP 3.0 LBS**  
**3PH 3W TYP 3.5 LBS**  
**3PH 4W TYP 4.0 LBS**

**FLEX-CORE®**

Div. Morlan & Associates, Inc.

6625 McVey Blvd. Columbus, Ohio 43235

[WWW.FLEX-CORE.COM](http://WWW.FLEX-CORE.COM)

[sales@flex-core.com](mailto:sales@flex-core.com)

PHONE (614) 889-6152

TECH. ASSISTANCE (614) 876-8308

FAX # (614) 876-8538