

OSI SUBMETERING WATT/WATTHOUR TRANSDUCER MODEL WL55-

LOW COST

DESCRIPTION

The Model WL55 series of transducers provides a relay output with a closure rate proportional to measured energy consumption (kWh). An optional analog output signal proportional to Watts is available. Voltages up to 480 Volts can be directly connected to appropriately-rated transducers.

This unit is intended to use separately-supplied current transformers with industry-standard 5A secondaries. All transducers are self-powered from the circuit being measured.

Rugged metal enclosures and small size makes the WL55 ideal for retrofit or initial installation in sub-metering or building management applications.

Six diagnostic LED lamps are provided to assist in verification of installation. These LEDs will indicate phase sequence errors, missing phase, CT polarity reversal, etc. An additional LED indicates relay operation. Refer to WL55 Diagnostics for more information.

FEATURES

- Low Cost
- Analog Output Option
- Small Package
- Diagnostic Indicators

APPLICATIONS

- Sub-metering
- Building Management



ORDERING INFORMATION

Example: 240VL-L, 5A, 3Φ, 3W
WL55-343

System Configuration	AC Volts Nominal	AC Amps	Model Number WL55-	F.S. Input	kWh/Pulse*
3-Phase 3- or 4-Wire (3-element)	120 L-L 240 L-L 120/208	0 – 5A	343	2.1kW	5Wh (0.005kWh)
3-Phase 3- or 4-Wire (3-element)	480 L-L 277/480	0 – 5A	346	4.2kW	5Wh (0.005kWh)

Analog Watt Output Option:

- 0-1mAdc - add suffix B to model number
- 0-10Vdc - add suffix D to model number
- 0-5Vdc - add suffix X5 to model number
- 4-20mAdc - add suffix E to model number
- KYZ relay option - Add suffix K to model number

*kWh per each contact operation.

To calculate pulse scaling with different current transformer ratios, multiply the CT ratio by 0.005 kWh.

Example: To use 100:5 ratio CTs
Ratio = 100/5 = 20
20 X (0.005kWh) = 0.1 kWh per pulse

SPECIFICATIONS

INPUT

Voltage.....See Table
Measurement Range ±20% of nominal input
Over-range 150V, 300V, or 600V depending on model
Current..... See table
Over-range 150% of range
Frequency 50/60 Hz.
Power Factor.....0.5 Lead to 0.5 Lag
Burden
Voltage 0.4VA per line
Current 2.5VA
Instrument Power 2.5VA

OUTPUT

kWh Pulse..... Type Form A, Solid-State Contact
120V, 0.3A, 10VA max.
Scaling See Table
Contact Closure Duration.....200ms
Optional Analog Watt Output:
Loading
0-1mAdc models ≤10kΩ
0-5Vdc, 0-10Vdc models ≥2kΩ
4-20mAdc models ≤500Ω
Response (to 99%)..... ≤350ms

DIELECTRIC TEST

Input/Output/Case..... 1500Vac

ACCURACY..... ±0.5% F.S.
Includes linearity, setpoint, power factor & current sensor.

TEMPERATURE

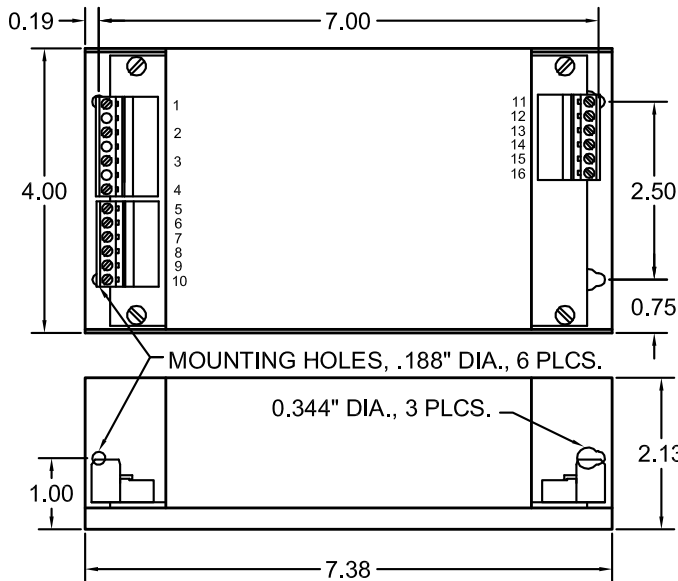
Temperature Effect..... (0-50°C) ±0.03%/°C

PHYSICAL

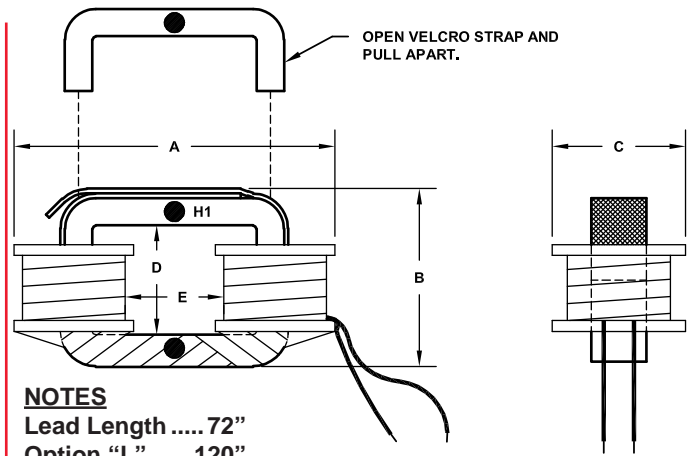
Termination 14 AWG max.
Net Weight 2.0 lbs

OHIO SEMITRONICS, INC. 4242 REYNOLDS DRIVE * HILLIARD, OHIO * 43026-1264
PHONE: (614) 777-1005 * FAX: (614) 777-4511
WWW.OHIOSEMITRONICS.COM * 1-800-537-6732

CASE DIMENSIONS



TRANSFORMER DIMENSIONS



NOTES
 Lead Length 72"
 Option "L" 120"

CURRENT RATING	A	B	C	D	E
50A thru 100A	2.80	2.00	1.12	0.90	0.85
200A thru 500A	3.85	3.80	1.30	2.40	1.25

All dimensions in inches

INSTALLATION DIAGNOSTICS

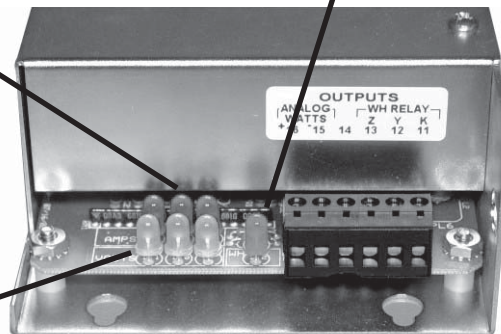
The WL55 has a set of 7 Light Emitting Diodes (LEDs) to aid in diagnosing problems with connections. There are 3 green LEDs for voltage, 3 red LEDs for current, and one red LED for load rate indication. LED indications are as follows:

CURRENT DIAGNOSTICS (assuming proper operating voltage)

CURRENT (RED LED)	Good CT Connection	CT Reversed	No Load Current
Φ 1	On	Off Blink On	Off
Φ 2	On	Off Blink On	Off
Φ 3	On	Off Blink On	Off

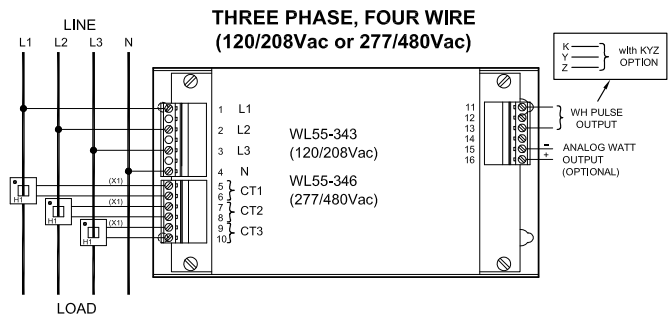
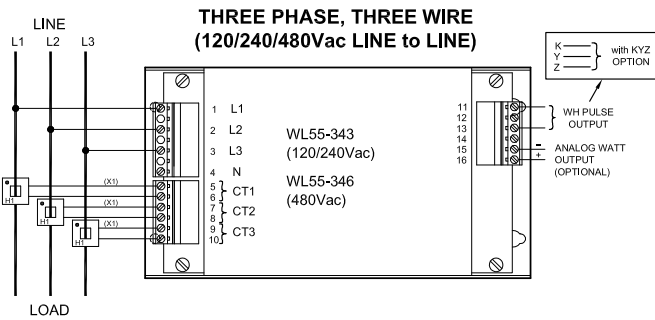
LOAD RATE INDICATOR:

Red LED will light for duration of contact closure (200 milliseconds standard) and at the same rate as described in model number chart.



VOLTAGE DIAGNOSTICS:

VOLTAGE (GREEN LED)	Voltage > 266V L-N (460V L-L)	265 L-N > Volts > 177 L-N (459V L-L) (306V L-L)	176 L-N > Volts > 85 L-N (305V L-L) (147V L-L)	Low or Missing Voltage Volts < 85 L-N (145V L-L)
Φ 1	On	On Blink Off	Off Blink On	Off
Φ 2	On	On Blink Off	Off Blink On	Off
Φ 3	On	On Blink Off	Off Blink On	Off



NOTES

CAUTION

To prevent damage to power lines, transducer, or personnel, **NEVER** connect current inputs directly to the line.

Use 600Vac-rated Current Transformers with 5A secondaries.
(100:5, 200:5, etc.)

DO NOT unplug the CT1, CT2, CT3 terminal block while CTs are connected to a live circuit.