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# S-10

## Apartment Model Digital Electric Meter



3.625"H x 8"W x 3"D  
Face Plate: 6.5"H x 11"W



3.75" H x 8.25"W x 3"D

## Installs Within Apartment & Communicates Remotely

- Compact, Unobtrusive Design
- LCD Shows Electrical Consumption
- Reliable Power Line Communications
- Interval Data & Time of Use Capability
- Collects Data From Water & Gas Meters
- Easy to Install
- Proven Accuracy-ANSI Compliant

For over 25 years, Quadlogic has been using a patented Power Line Communications technology to transmit meter data over buildings' existing power lines. No additional wiring or meter readers are required. Leading property management companies all over the world depend on Quadlogic systems to provide reliable and accurate electric meter readings. Quadlogic meters provide all the data you need to bill tenants, allocate energy costs and make smart energy decisions.

## Features

### Easy To Install

Installation of this flush or surface mount design limits tenant disruption. (Knockouts available on side or back of meter.)

### Integrated Power Line Communications

Utilizes existing electrical wiring for communications  
Requires no additional dedicated hard wires, additional modules or attachments for communications

### Tamper Resistant

Rugged steel enclosure with built-in tamper detection

### Flexible Data Programming

Interval data down to 5 minutes allows flexible load profiling and Time of Use billing options

### Accurate

Meets ANSI C12.1 and C12.16 specifications

### Comprehensive Information

Event reporting with date and time stamps regarding power consumption, power ups and power downs, time changes, and tampers

### Liquid Crystal Display

LCD provides consumption readings

### Multi-utility Submetering System

Integrates and stores pulse data from gas and water meters

### Data Integrity

Utilizes flash memory for accurate data storage and integrity without battery reliance

### Installation Verification

Display allows on-site verification of proper installation

### Manufacturer's Warranty

Three year meter warranty

### Easy Access To Data

Software package available for on or off-site meter reading

## QUADLOGIC

# S-10 Technical Specifications



## Metering Specifications

<b>Metered Voltage:</b>	120, 220, 240, 1Ø2W, 2Ø3W or 3Ø4W Wye, 50/60 Hz
<b>Current Input:</b>	0.1Amp input (50A, 100A or 200A Primary)
<b>Four quadrant Consumption &amp; Demand:</b>	Delivered and received: kW, kVARLeading, kVARLagging, & kVA Volts-squared hours & amp-squared hours
<b>Programmable Interval Data &amp; Peak Demand:</b>	5 min to hourly window Meter total and/or by phase
<b>Real time per phase:</b>	Voltage, current, phase angle, power factor, THD, watts, VARs, VA and frequency
<b>Time of Use:</b>	Up to 16 blocks per day available for all metering parameters
<b>Meets ANSI C12.1 and C12.16</b>	
<b>UL, UL-C File E204142</b>	
<b>IEC Optical Communication Interface (Standard Feature)</b>	

## Additional Features

<b>Pulse Datalogger:</b>	Up to 4 Form A dry contact pulse inputs for water, BTU, gas, other
<b>Specifications:</b>	Max. Distance: 300 feet from external pulse meter to S-10 (18 gauge min.) Min. Pulse Width: Power on: 50 msec, Power off: 500 msec When the S-10 loses power, the pulse accumulator still has the capability to record pulses but the sample rate is reduced. Max. Pulse Rate: Power on: 10 pulses/sec max, Power off: 1 pulse/sec max Peak voltage: 5.5V, Peak current: not applicable Isolation: 2.5kV isolation between pulse output and AC line Max. signal debounce tolerance: 20 msec
<b>Data Integration Options:</b>	IQ Software MV-90 TIM module ASCII-based, open-data protocol Open-source data conversion program

## Communications

Power Line Communications (standard feature)
Modbus RTU protocol (2-wire RS-485)

## Accuracy

+ 0.5% @ unity and 50% power factor; 1-100% of full-scale (excluding external CT error)
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## Liquid Crystal Display

32 digit liquid crystal display (16 digit x 2 rows)
6 whole digit consumption register
Data digit height: 0.31"
Programmable display scroll & decimal place display

## Operating Range

Voltage: Rated Voltage (90% to 110%)
Temperature: -20°C to +60°C
Humidity: 0 to 95% R.H. (non-condensing)
Transient/Surge Suppression: ANSI C37.90.1-1989

## Memory

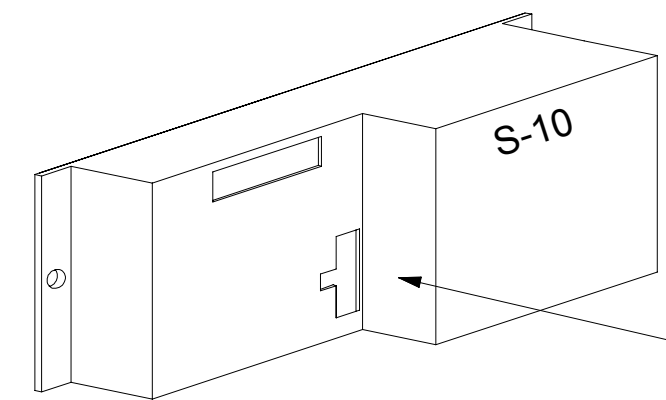
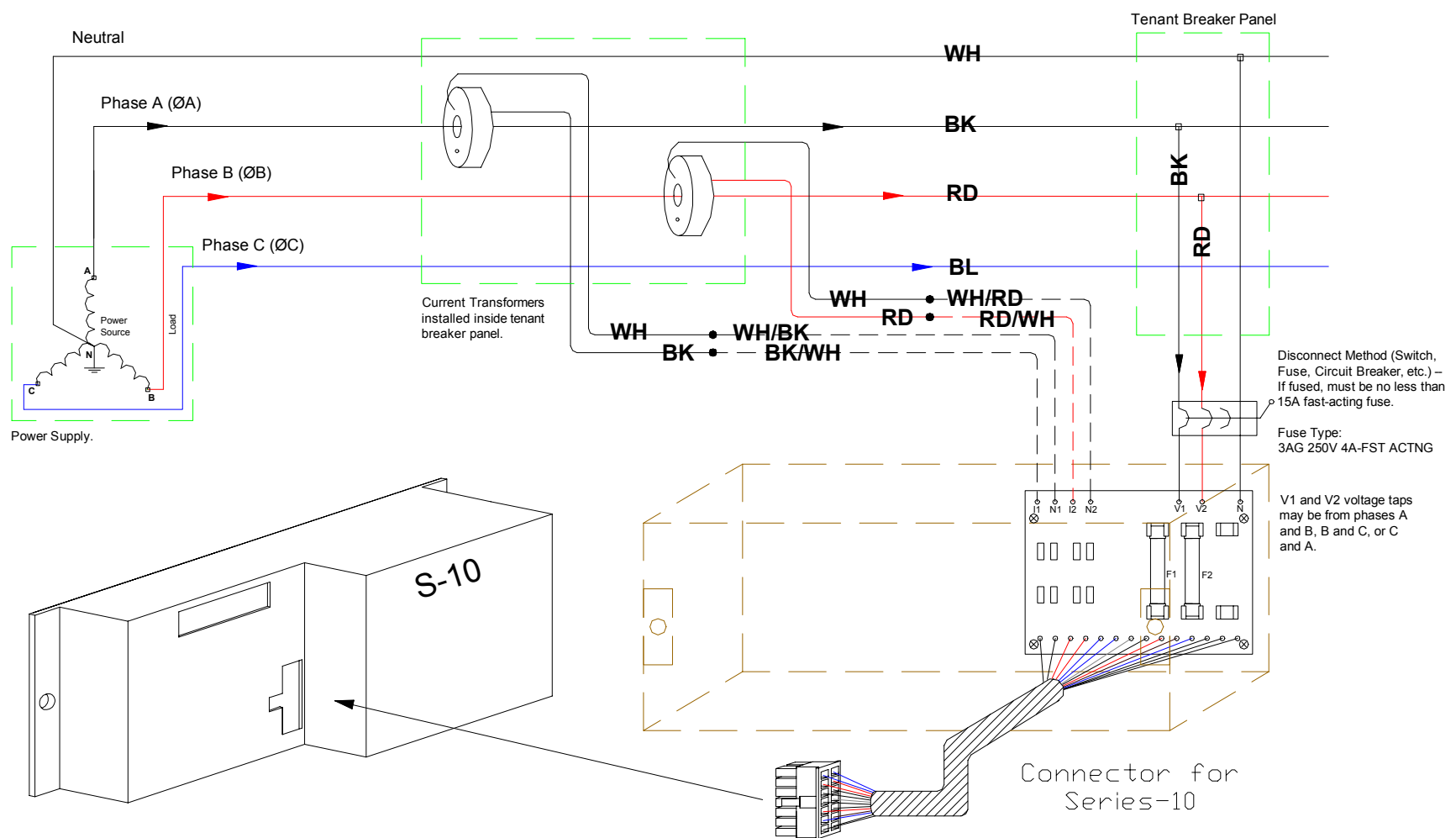
512 kbyte non-volatile flash memory retains daily and interval data
During power outage:
- Flash memory retains daily and interval data
- Long-life lithium battery maintains time, logs incoming pulses and retains data acquired within the incompleting interval at the time of the outage

## Shipping Weight & Dimensions

	<b>1 meter box</b>	<b>8 meter box</b>
<b>Flush Mount:</b>	4.5 lbs	35 lbs
<b>Surface Mount:</b>	3.5 lbs	29 lbs
<b>Flush Mount Dimensions:</b>	3.625"H x 8"W x 3"D	Face Plate: 6.5"H x 11"W
<b>Surface Mount Dimensions:</b>	3.75" H x 8.25"W x 3"D	

# Installation Diagram:

120/208V 1P3W Network



Connector for Series-10

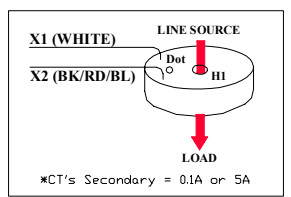


Diagram 1. CT Phasing. Dot or H1 should point towards the line or source.

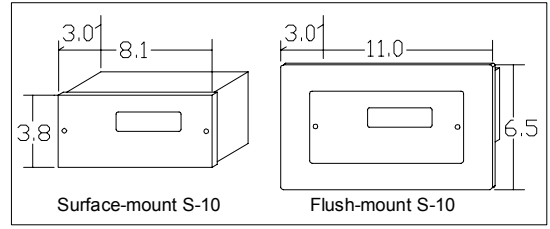


Diagram 2. Series-10 mounting types: Surface- and Flush-mount.

		Quadlogic Controls Corporation		<b>TITLE</b> 17-S10 1201P3WNTWK R3	
<b>SIGNATURES</b> MODEL JREA		<b>DATE</b> 07/18/08		<b>SIZE DRAWING</b> 17-S10 1201P3WNTWK R3	
<b>DETAIL</b> APPROVED JKIM		<b>DATE</b> 09/08/08		<b>REV</b> 3.0.R	
<b>APPROVED</b> NPAT		<b>DATE</b> 09/08/08		<b>SHEET</b> 1 of 2	

**BEFORE READING THE DISPLAY FOR ANY S-10 PRODUCT**

CAUTION: When reading the meter display, all consumption and demand values must be multiplied by the correct multiplier to calculate true value. This includes all register values (kWh, kW, kVARHLg, kVARHLd, etc.) and Phase Diagnostic values (real time Amps, Watts, etc.).

Volts, phase angle, frequency and power factor are displayed on the LCD as their true values and should not be multiplied.

Please consult Table 1 CT Multipliers for the appropriate value dependent upon the rating (or size) of the CT.

**HOW CT MULTIPLIERS ARE CALCULATED:**

The multiplier values for CTs with 0.1A secondary ratings are derived by dividing the primary side rating by 100. For example, a 50:0.1A-rated CT will have a multiplier of  $50 \div 100$ , which is 0.50. A 100:0.1A rated CT will have a multiplier of  $100 \div 100$  which is 1.)

**EXAMPLE:**

Meter point with 400:0.1A CT

LCD reading for meter is 3422.119kWh


The correct cumulative consumption (kWh) for this meter is **13688.476** kWh.

( $400 \div 100 = 4$ . Multiply face value for consumption and demand values by 4.  $3422.119 \times 4 = 13688.476$ )

**NOTE: Failure to use the appropriate multiplier will result in an incorrect diagnosis of the meter's functionality and incorrect revenue billing.**

	CT Rating	Multiplier for 0.1A CT
<b>120/208V S-10 Meters</b>	50A	x0.5
	100A	x1.0
	200A	x2.0
	400A	x4.0

Table 1. CT Multipliers

		Quadlogic Controls Corporation	TITLE	
SIGNATURES		DATE	17-S10 1201P3WNTWK R3	
MODEL	JREA	07/18/08	SIZE	DRAWING
DETAIL			17-S10 1201P3WNTWK R3	REV 3.0.R
APPROVED	JKIM	09/08/08	SCALE:	SHEET 2 of 2
APPROVED	NPAT	09/08/08		

# **Installation Diagram:**

120/208V 3P4W

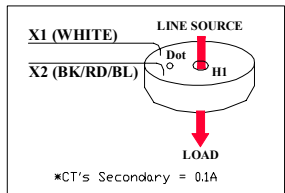
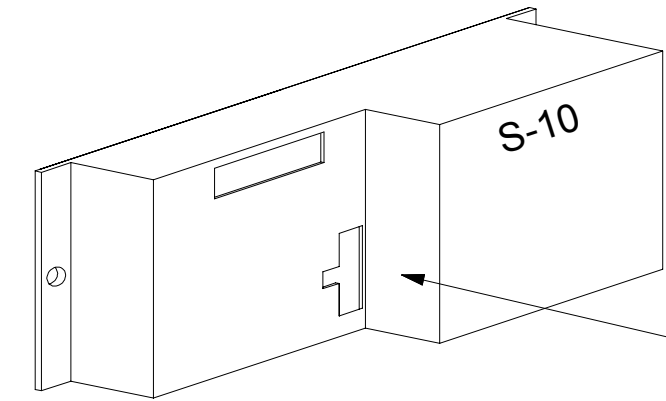
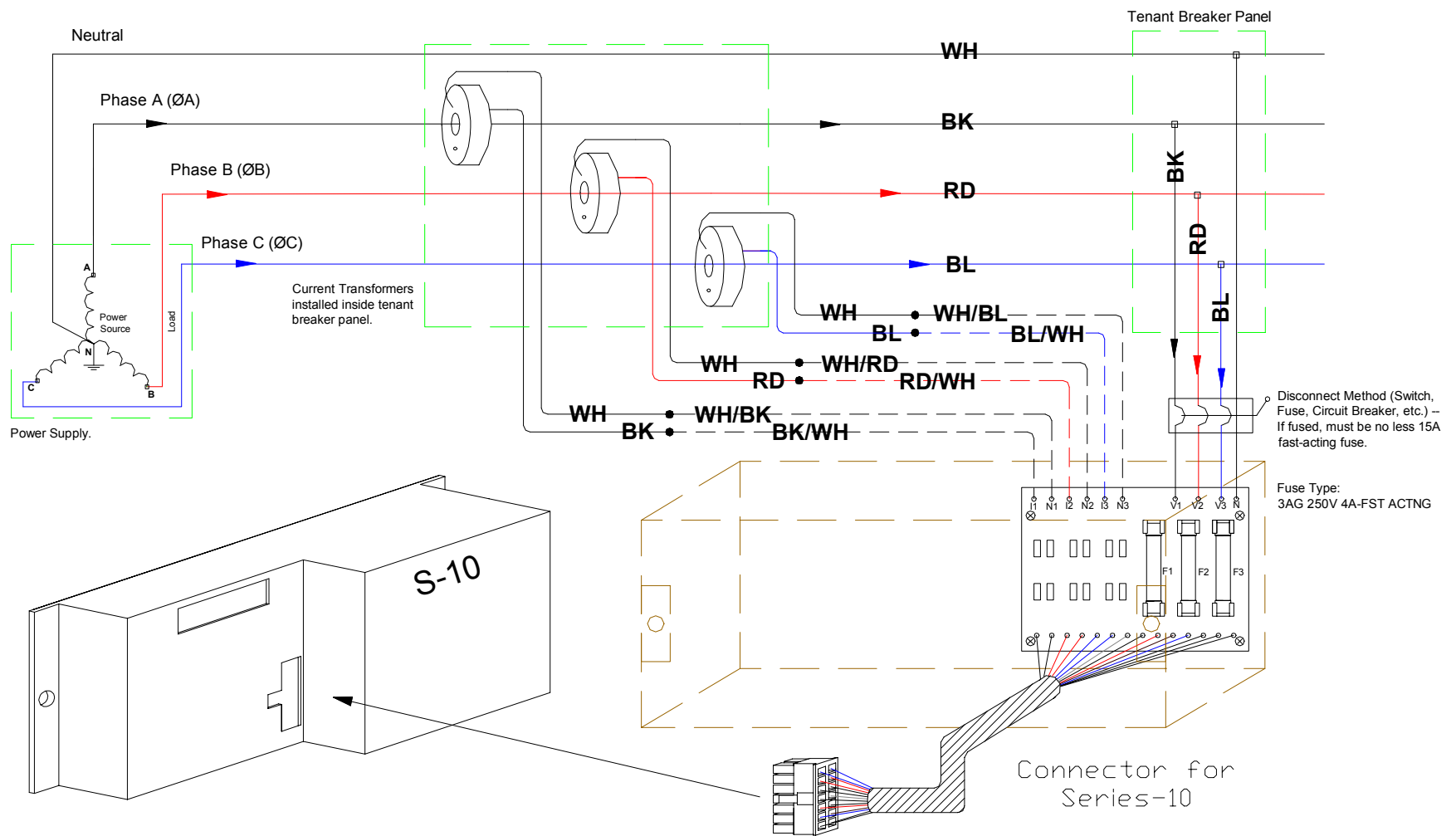


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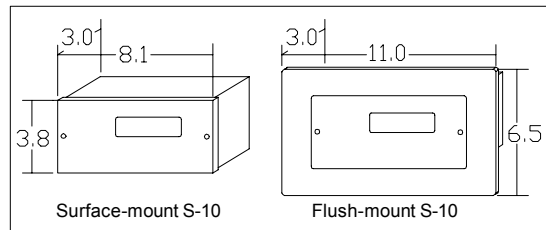


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<b>QUAD LOGIC</b> Quadlogic Controls Corporation	
SIGNATURES	DATE
MODEL JREA	07/18/08
DETAIL	
APPROVED JKIM	9/16/08
APPROVED NPAT	9/16/08

TITLE	17-S10 120/208V3P4WR3	
SIZE DRAWING	17-S10 120/208V3P4WR3	REV 3.0.R
SCALE:		SHEET 1 of 2



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MODEL	JREA	07/18/08			
DETAIL			SIZE	DRAWING	REV
APPROVED	JKIM	09/16/08		17-S10 120/208V3P4WR3	3.0.R
APPROVED	NPAT	09/16/08	SCALE:		SHEET 2 of 2