



## PULSE LINKS

# PRL-1600 WIRELESS PULSE LINK

### FUNCTIONAL SUMMARY

	IN	OUT
#	4 or 2	4 or 2
TYPE	2 or 3 Wire	2 or 3 Wire
FORM	A or C	A or C

# PRL-1600

## DESCRIPTION

The PRL-1600 SSI's 4th Generation wireless pulse link a point-to-point system with one transmitter and one receiver for shorthop pulse applications like parking lots, fields, roads, railroad tracks or anywhere where it is difficult to get a KYZ pulse from the meter. Using Frequency Hopping Spread Spectrum (FHSS) technology allows excellent reliability and rejection of any other noise sources. There are 6 selectable channels. Each channel incorporates 50 of the 64 possible frequencies within the 900 MHz band. The same channel is selected on both the transmitter and receiver. Other PRL-1600 systems within the same radio airspace (~2-4 mile radius) will need to be assigned a different channel number. The transmitter and receiver are paired such that the receiver will only accept meter pulse data from its specified transmitter, and all transmissions use AES encryption.

The PRL-1600 can transmit either 2 Form C (3-wire) pulses or 4 Form A (2-wire) pulses. Transmissions are sent once every 10 seconds with the number of pulses which have been received by the transmitter in the last 10 seconds. The receiver then re-creates the pulses over the next 10 seconds. In this way, pulses are always delayed by 10 seconds, and additional error-checking and transmission acknowledgement are used for high accuracy.

The PRL-1600 Wireless Pulse Link system consists of one PRT-1600 transmitter and one PRL-1600 receiver. The system operates in the 900MHz band and is FCC pre-certified, thus allowing unlicensed operation by the user. The PRL-1600 will transmit pulses up to 5,000 to feet in a line-of-sight (LOS) configuration. Distances vary with the terrain, obstacles, and greater elevation above the ground.

### PRT-1600 PULSE RADIO TRANSMITTER UNIT

The PRT-1600 Pulse Radio Transmitter unit is made up of two parts: The PRT-16 transmitter base unit and the PRNT-1600 transmitter radio/antenna unit which contains the radio transceiver and the antenna. The PRT-16 Base has a built-in low voltage transformer-isolated power supply generating a +13VDC sense (wetting) voltage. The sense voltage is connected to pulse sending devices, typically an electric meter's KYZ pulse initiator. Each time a packet is received by the PRNT-1600, it validates the pulse width and transmits the packet to the receiver. Propagation delay is very short so the pulse output at the receiver closely resembles the pulse widths received from the meter. The PRT-1600 can be operated using 120V or 277V AC line power or a +12VDC voltage source like SSI's SPS-2 solar power supply.

### PRR-1600 PULSE RADIO RECEIVER UNIT

The PRR-1600 can be configured as 2 Form C or 4 Form A output channels and acts as the system's receiver. The PRR-1600 consists of a PRR-16 receiver base unit where all connections are made and a PRNR-1600 receiver radio/antenna unit which contains the radio transceiver and antenna. The PRNR-1600 is intended to be mounted outdoors, in direct line-of-sight with the PRNT-1600 transmitter radio/antenna unit and should not be obstructed by trees, buildings or other objects. Each time a packet is received from the PRT-1600, the receiver validates the packet and outputs its respective pulses. An encoded FHSS communication scheme is used to ensure the accurate number of pulses are sent and received. The PRR-1600 consumes extremely low power and can be operated using 120V or 277V AC line power or a +12VDC voltage source. The pulse rate is up to 4pps (Form C).

\*Both the transmitter & receiver units are capable of operating on supply voltages of 120, 208-277VAC, as well as +125VDC, +12VDC, & +15 to +48VDC by employing the special SSI DCS power supply options.





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## SPECIFICATIONS

### ELECTRICAL

Power Input:	120, 208-277 VAC Burden: <10 mA at 120 VAC
Input Wetting Voltage to Meter:	+13VDC wetting voltage generated by the PRT-12 Transmitter Base unit.
Output:	Four sets of dry Form A contacts (K & Y) for energy pulses. These can be configured as two sets for dry Form C contacts. The contacts are solid state "no bounce" relays rated at 350 VDC or 250 VAC 1/10th Amp, 800mW max. Factory fused at 1/10 amp. (3AG)
Output Contact On-State Resistance:	18 ohms typical, 25 ohms maximum
Operate and Release Time:	1 to 3 milliseconds typical for solid state relay; Total propagation time up to 20mS.
Input/Output Isolation Voltage:	2500V
AES Encryption	YES

### MECHANICAL

Mounting:	Any position for base units; Must be line of sight for transceiver/antenna units
Size:	3.27" wide, 5.7" high, 1.50" deep
Weight:	2 pounds each

### TEMPERATURE

Temperature Range:	-38° C to +70° C, -36.4° F to +158° F
Humidity:	0 to 98% non-condensing

### AVAILABLE OPTIONS

Input Voltages:	Contact Factory
Enclosures:	10" x 8" x 4" NEMA 4X Fiberglass Enclosure for Base Units

**PRL-1600**