

Quick-Start Guide

POWERLINC - INSTEON MODEM

Serial RS-232 and TTL Interface (#2412S)

INSTEON power line interface with RS-232 serial and electronic TTL communications for full-time software and hardware host applications.

Need Help? For assistance call your friendly support person @ 800-SMARTHOME (800-762-7846)

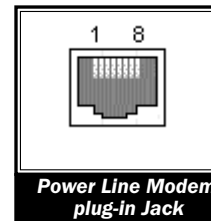


Key Features

- No background software needed with computer programs
- Straightforward and simplified command set
- Simple to use RS-232 communications
- Direct TTL connection for hardware devices
- Stores over 417 INSTEON Links in 32Kb of non-volatile memory
- Uncontrolled feed-through AC outlet other electrical devices
- Able to supply unregulated 12VDC power (300 mA max) for a host device

Connector Specifications

- Pin 1: RS232 to PC pin 2 (Rx)
- Pin 2: Unregulated +12VDC output, maximum 300mA
- Pin 3: TTL Output (from PLM)
- Pin 6: TTL Input (from PLM)
- Pin 7: Common ground
- Pin 8: RS232 from PC pin 3 (Tx)
- Pins 4&5: Not connected



Power-up Behavior

LED On Steady	PLM detected an external EEPROM for storage of database links.
LED blinks six times	PLM has not detected an external EEPROM and will use the internal EEPROM of the processor chip.
LED is Off	While being plugged in, the user pressed and held the SET button for 10 seconds causing the PLM to perform a factory reset. At the conclusion of the reset, the PLM's LED will operate like one of the two modes above.

Communications

The RS-232 Serial communications to the Power Line Modem (PLM) are:

19,200 baud	8 data bits	No parity	1 stop bit
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For developers and programmers interested in learning more about the the PowerLinc, information on the PowerLinc Modem Developer Kit can be found at: <http://www.smarthome.com/insteon/sdk2600s.html>

Note: each byte sent to the Power Line Modem will be echoed back to the host.

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Tips for Using Power Line Modem

- Do not plug Power Line Modem into a power strip or AC line filter.
- Some computers and their accessories can absorb Power Line Carrier (PLC) signals off the power lines. Since Power Line Modem will be so close to the computer, **the power strip for the computer should be filtered.** Use Smarthome's FilterLinc™ #1626 on the computer's power strip to keep the Power Line Modem's signals from getting absorbed by the computer equipment.
- Don't plug other PLC transmitters into the same outlet as Power Line Modem. Every PLC transmitter will absorb the other transmitter's PLC signals when they are not transmitting. In some cases, up to half the signal can be lost due to nearby transmitters.
- If the computer's serial port is shared with another hardware device (scanner, PDA, etc.) be sure to turn off that device's program on the PC. If left running, the home automation software will not be able to communicate to the Power Line Modem.
- To reset the Power Line Modem to its original factory settings, unplug it from the wall outlet and wait 10 seconds. Press and hold its SET button, plug it back in, continue holding the SET button for 3 seconds and release. After several seconds, the Status LED will turn on, indicating a reset is complete.



Specifications

General	
SmartLabs Product Number	2412S – Power Line Modem Module
Warranty	2 years
Software:	Sold Separately
Operation	
Operation Modes	INSTEON only, X10 only, INSTEON and X10 Combo Mode
Interface	
Connector Type	RJ-45
Interface	RS-232 & TTL & 12VDC (unregulated) @ 300mA
Features	
INSTEON Addresses	1 hard-coded out of 16,777,216 possible
INSTEON Links	417 out of 16,777,216 possible
INSTEON Device Category	0x03 (Network Bridges)
INSTEON Device Sub-Category	0x05
INSTEON Powerline Frequency	131.65 KHz
Minimum Transmit Level	3.2 Vpp into 5 Ohms
Minimum Receive Level	20 mVpp nominal
INSTEON Messages Repeated	Yes
X10 Powerline Frequency	121 KHz
X10 Messages Repeated	No
Mechanical	
Operating Conditions	Indoors, 40 to 132°F, up to 85% relative humidity
Physical	3.9" H x 2.6" W x 1.5" D - 9.6 oz
Electrical	
Supply Voltage	120 Volts AC +/- 10%, 60 Hertz, single phase
Surge Protection	MOV rated for 150 Volts
Pass-through outlet	Un-controlled 3-prong (with ground) 120V, 15 amps
Certification	Safety tested for use in USA and Canada (ETL #3017581)

SmartLabs Limited Warranty

SmartLabs warrants to the original consumer of this product that, for a period of two years from the date of purchase, this product will be free from defects in material and workmanship and will perform in substantial conformity to the description of the product in the owner's manual. This warranty shall not apply to defects or errors caused by misuse or neglect.