

## PLS-NC1

Power Line Network Node—Multiple Communications Channels & Load Control over Power Lines



### Key Features

- Load /Lighting control, 1-10V dimming and energy monitoring up to 4KVA.
- DALI bus
- Multiple communications channels – RS232, RS485, CAN, Bluetooth LE.
- Two external relay/contactor controls for larger loads
- Two general purpose inputs for logic level sensors
- Works over long distances over power lines and in areas where installing regular wired or wireless networks would be cost prohibitive or insecure.
- Industry leading 256-bit Elliptic Curve Cryptographic security, along with the isolation from the internet, provides a very secure, private control and communications network

## Applications—NC1

Load control, Power monitoring, Dimming, DALI, RS232, RS485, CAN, Relay control over Power lines

Network	<ul style="list-style-type: none"> <li>• G3-PLC (ITU-T G.9903) standards based and certified.</li> <li>• OFDM based IPV6 Auto Connect / Auto Healing Mesh network</li> <li>• 98.4 - 121.9KHz CENELEC B Band</li> <li>• 40Kbps minimum data rate</li> <li>• Up to 3-mile range between nodes</li> <li>• 255 nodes per sub-net with one DC (data concentrator)</li> <li>• PLS-DC can connect directly to the SCADA system via local Ethernet</li> <li>• Alternative Cellular or WIFI connection supported by PLS-DC</li> </ul>
Security	<ul style="list-style-type: none"> <li>• 256-bit Elliptic Curve Cryptographic security between nodes and data concentrator</li> <li>• Secure TLS/SSL based connection between data concentrator and operator terminal (SCADA)</li> <li>• Biometric and two factor authentications at the operator terminal</li> </ul>
Power	<ul style="list-style-type: none"> <li>• 80 – 305VAC, 50-60Hz, Single phase via screw terminal block</li> <li>• ANSI C136.37 surge requirements compliant</li> <li>• Fully protected against transients and brownouts with EN55022 Class B isolation</li> <li>• Screw terminal block for Line in and Load out connections</li> </ul>
Load Control & Metering	<ul style="list-style-type: none"> <li>• IEC 600335-1 compliant latching relay</li> <li>• Nominal switching capacity: 16A, 277VAC, inrush capable</li> <li>• Max switching power (resistive load): 4.432KVA</li> <li>• Single phase line &amp; neutral screw terminal block</li> <li>• 0.1% accurate energy metering</li> <li>• Active power, true RMS current, RMS voltage, Line frequency and power factor metering</li> <li>• 2x relay/contactors drivers. 12V, 150mA Open Drain for external load control</li> <li>• 2x TTL inputs for logic level sensors like PIR motion or dry contact closure</li> </ul>
Lighting Control	<ul style="list-style-type: none"> <li>• 1-10V analog dimming output</li> <li>• DALI control for clusters of lighting loads – all device types supported</li> <li>• Built-in energy metering of connected loads</li> </ul>
Communication Channels	<ul style="list-style-type: none"> <li>• RS232: variable up to 115Kbps. EIA-RS232 levels, transient and surge protected</li> <li>• RS485: 15Mbps, 5V tolerant, Half duplex, -7 to 12V common mode range, ±15KV ESD protection</li> <li>• CAN: 2.0B compliant, 1Mbps, 3 Tx and 2Rx buffers, six available filters and 2 masks, ±8KV ESD protection. Suitable for 12 and 24V systems</li> <li>• Bluetooth Low Energy 4.2 – 100m effective range, 8x simultaneous connections, Beacon/Broadcast modes</li> <li>• Tool less cage clamp connector for all signals</li> </ul>
Mechanical	<ul style="list-style-type: none"> <li>• Potted enclosure 3.05 x 3.05 x 1.56 in [77.5 x 77.5 x 39.6 mm]</li> <li>• IP66 protection level when mounted with connectors pointing down</li> <li>• -40°C to +75°C Operating temperature</li> </ul>