

VEHICLE ELECTRONIC ARCHITECTURES

Power Node



Power Node 9406 Series

Features

- 18 - 32V DC operating range
- -46°C to +71°C operational temperature range
- Compliant to DEF STAN 61-5 Part 6 Issue 6
- Ten output power channels
 - Configurable remotely
 - Controllable by Electronic Architecture
 - Status reporting via MilCAN
 - Up to 15A (continuous) per output channel
- 75A nominal max current pass-through capability
- MilCAN interface
- Up to 15 unit ID configurations
- Multi-layer output protection
 - Thermal
 - Current trip
 - Remotely re-settable following trip
 - Load dump protection

The Power Node has been specifically developed by Ultra Electronics - Precision Control Systems, to provide a standalone unit or a core building block for military vehicle distributed and intelligent power management systems.

Utilizing Ultra's solid state switching and protection circuitry, each node can supply up to ten discrete consumer circuits, greatly enhancing protection and reliability over legacy distribution panels. The Power Node supports MilCAN for switching, monitoring and remote re-set following a trip scenario.

Distributing protection away from large legacy panels of manual circuit breakers regains space in the operator's immediate environment. By locating the Power Node close to its consumers, a significant saving can be realized in vehicle harnessing cost and space

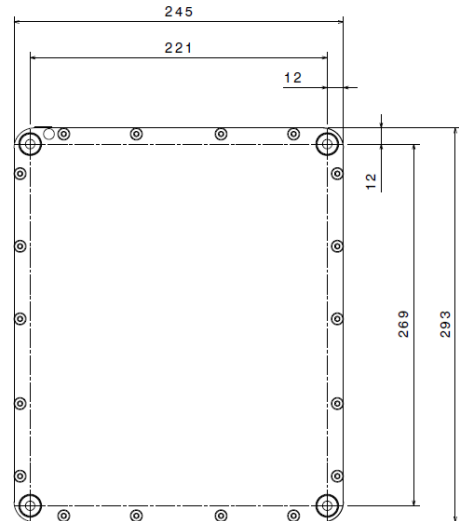
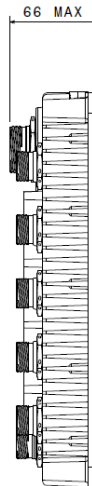
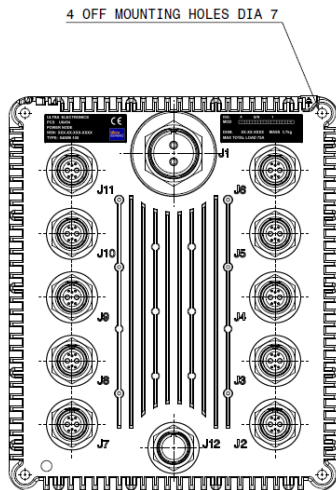
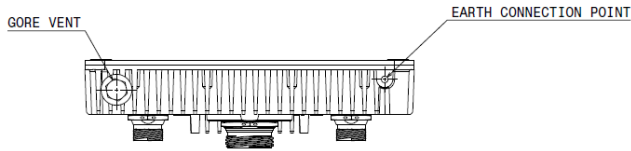
By combining multiple Power Nodes with a rugged vetronics processor, a fully intelligent vehicle power management system can be developed for new vehicles or mid-life update. Once installed, a core system can be easily scaled up with additional nodes and software configured for particular mission fits.

Benefits

- Scalable architecture
- Greatly enhances consumers and harnessing protection
- Configurable reversionary mode
- Inherent flexibility to support intelligent power management
- Small space claim
- Mass 3.7 kg max.
- Real time current monitoring for HUMS
- Generic Vehicle Architecture (GVA) interface compliant
- Reduces power wiring

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Ultra's Power Node contains ten identical power switches, each offering independent switching and user configurable current protection up to 15 amps.

The Power Node is compliant to DEF STAN 61-5 Part 6 Issue 6, has multiple levels of output over current protection ensuring safe operation without false tripping removing the reliability and maintenance / supportability burden of fuses.

Power Node control

Each output is controlled by a processor which sets trip levels whilst monitoring the current draw and status of the output. This data is continuously passed over MilCAN for action by the vetronic processor. The Power Node processor utilizes a hardware watchdog and BIT to enhance availability.



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Consumer protection

- Overload protection
- Inductive load tolerant
- Incandescent load tolerant

Designed for the environment

The Power Node is designed and proven specifically for the land military vehicle environment and provides the following features:

- Withstands DEF STAN 00-35 environments:
 - has a robust design that withstands the vibration , shock and mine blast requirements of Tracked AFVs
 - Automotive grade components coupled to effective heat management withstand operating temperatures -46°C to +71°C at maximum current load
 - Painted aluminium enclosure for full environmental protection including sealing against moisture, sand & dust, salt mist, and fluids
- Compatible to EMC requirements:
 - DEF STAN 59-411
 - DEF STAN 61-5 Part 6 Iss.6
 - EU EMC Directive Testing EN50498 / ISO 7637-2