

40W POWER LINE COMMUNICATIONS SMART LED POWER DRIVER



LFL-040-CP Class II Digital Power Supply

Overview

gridComm offers a state-of-the-art module consisting of a 40W LED power driver integrated with Power Line Communications (PLC) functionality (as shown above). It is ideal for Smart Street Light control, transforming traditional street lighting into energy-aware, remotely managed monitored networks. The core elements in the design are gridComm’s proven robust OFDMA (Orthogonal Frequency Division Multiple Access) PLC GC8800 module (Figure 1), which is based on gridComm GC2200 PLC transceiver chip, and the patented digital power supply technology. This complete unit, **known as LFL-040-CP Digital Power Supply (DPS)**, is housed within a compact waterproof enclosure.

Other components from gridComm that complement the LFL-040-CP DPS are the Master Light Controller, and the backend Street Light Management Software (SLMS) that together form a complete Smart Street Light control and management system. The complete Smart Street Light system enables real-time control and automatic scheduling of switching on and off, and dimming levels of individual lights from a central location. This enables the delivery of appropriate lighting levels based on predetermined schedules according to the time of day, seasons, and weather conditions or in response to emergencies. Key accident black spots on roads can have their lighting tailored to

ensure optimal lighting for maximum road user safety.

The LFL-040-CP DPS also provides metering functions for real-time monitoring of operational status, power consumption, current, voltage, and power factor of individual streetlights. This tremendously increases efficiency by reducing the need for manual checking of lights, and facilitates the timely repair of faulty lights.

Field proven for its acclaimed robustness and reliability, gridComm’s PLC streetlight solution serves as the cornerstone in the building of a Smart City with a reduced carbon footprint.

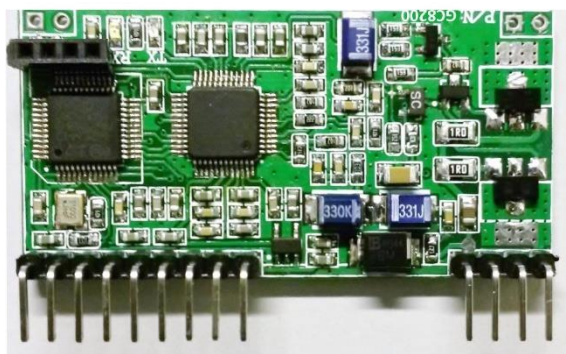


Figure 1 - PLC Module, GC8800

Benefits

gridComm’s streetlight solution comprising the SLMS, the Master Light Controller and the intelligent LFL-040-CP DPS delivers key benefits including:

- Less energy usage by using automatic lighting schedules, hence reducing the carbon footprint
- Savings in operating and maintenance costs
- Efficient remote monitoring system, thus doing away with using surveillance vehicles to check for faulty lights
- Flexibility in mixing different lamp types and technologies
- Scalability and extendibility to support other applications such as traffic, weather, and motion monitoring
- Display of street light locations on a map for real-time control and monitoring.
- Electronics Protection: Short-Circuit, Over-Voltage, Over-Current Over-Heating, Over-Loading, Electrostatic protection
- IP65 protection for outdoor and indoor
- Unique PHY_ID address to correspond with GIS information of streetlight on GUI map
- Support real-time data read-back such as power consumption, current, voltage, light status
- Support sending of system alerts to central management system
- Highly reliable compliant with worldwide lighting standards- CE, CCC
- Five-year warranty
- PLC Rx Sensitivity: -60dBV
- PLC Tx Signal Voltage Level under 1 ohm load: 2~ 8V
- Transparent PLC protocol
- Self-adaptive link, auto-routing PLC network topology
- Operating temperature range- -40 to 60 degrees Celsius
- Lightning protection - 4KV surge

Features

Digital Power Supply LFL-040-CP :

- Direct LED light driver
- Wide Input Power Voltage: 100Vac~240VAC
- Auto Power Factor Correction: >0.95

Dimensions

The overall dimensions of LFL-040-CP are shown in Figure 2, which are L142mm x H52.5mm x W35.5mm.

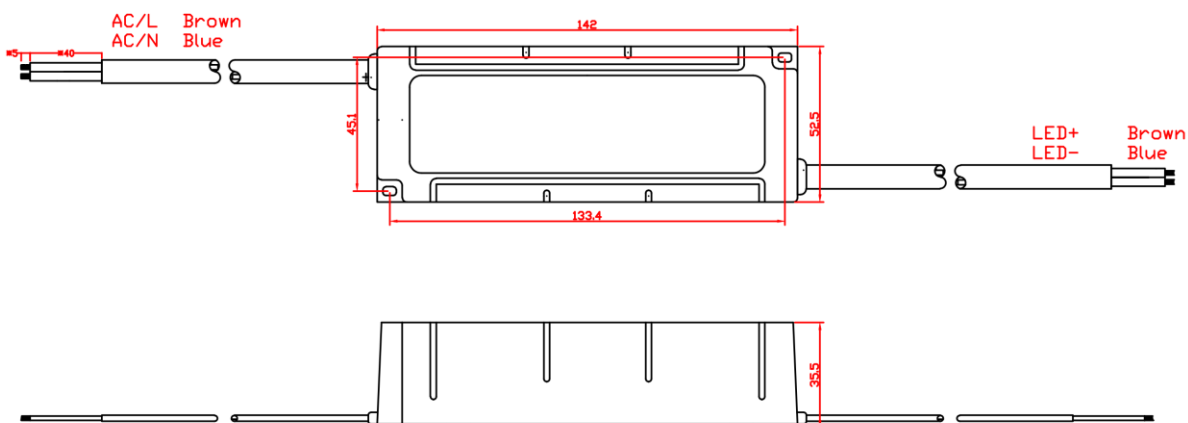
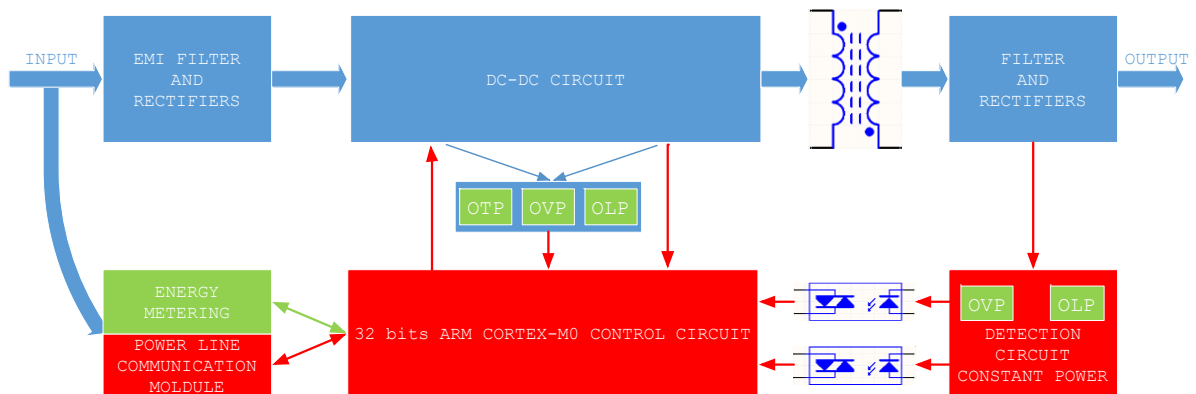


Figure 2 – LFL-040-CP Dimensions

Block Diagram of Streetlight DPS



Specifications

Part Number		LFL-040-CP
Output	Output voltage range	24V – 54Vdc
	Rated power	40W Constant output power mode
	Open circuit voltage	60V
	Constant power range	24V – 54V
	Startup Time	500ms @230Vac input
Input	Input voltage range	100V – 240Vac
	Frequency Range	47Hz – 63Hz
	Power Factor	PF ≥ 0.95/230Vac @ load ≥ 50%
	Total harmonic distortion	THD < 10%/230Vac @ load ≥ 50%
	efficiency	85% @230Vac and 100% load
	Input current	0.22A/230Vac 0.18A/277Vac
	Surge current	30A @cold startup
Protection	Short circuit	Snoring mode, self-recovery after short-circuit abnormality removal

	Over Input voltage	Shutdown: Input voltage < 90Vac or > 280Vac, self-recovery after abnormal removal
	Over Output power	Shutdown: Output power > 45W, self-recovery after abnormal removal
	Over temperature	Shutdown: Temperature > 95°C, self-recovery after abnormal removal
Environment	Operating temperature	-40°C - 60°C
	Maximum case temperature	Tcase = 90°C
	Operating humidity	20% - 95% RH
	Storage temperature, humidity	-40°C - 80°C, 10% - 95% RH
Safety and EMC	Safety	TBA
	Pressure rating	TBA
	Insulation resistance	TBA
	EMC and EMS	TBA
Others	MTBF	300Khrs min
	Dimension	L142mm x H52.5mm x W35.5mm

Contact Information

For more information regarding the LFL-040-CP including reference design, pricing, and ordering please contact:

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