

LFC7500/00 Datasheet
Amplight CPU



General description

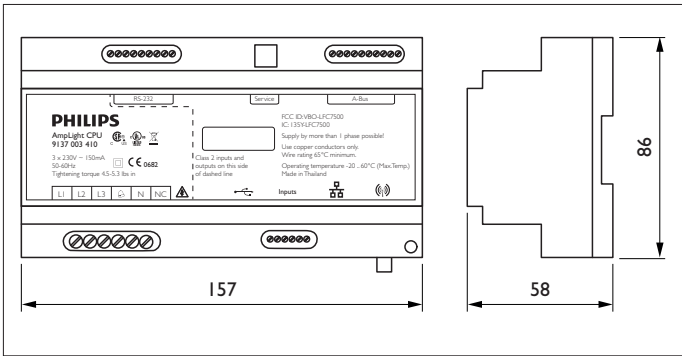
The Amplight CPU is the central processing unit in the Amplight Module System. Equipped with a powerful ARM9 processor and a Linux kernel, the module monitors and controls all other modules in the Amplight Module System.

Direct communication between the modules takes place by means of an A-Bus interface, which is based on the industrially proven RS-485 technology. The A-Bus interface is also used for power supply between the modules.

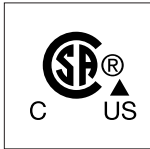
The Amplight CPU serves as a WAN communications and data concentrator module. Two-way communication with the central server takes place via GPRS, SMS or Ethernet. The module has the ability to automatically switch between different available communications carriers in order to provide stable and reliable communication. New carrier types like, e.g. WIFI and WIMAX can be implemented later (using the USB or the Ethernet port on the module) to obtain the best, most reliable and cheapest communication in the future. Data are either delivered to the server immediately or stored locally in the built-in flash memory of the Amplight CPU until scheduled delivery. Software and configurations are updated remotely from the server and stored on the Amplight CPU enabling it to autonomously execute tasks, e.g. turn the streetlight on/off or collect meter readings based on the configurations set up by the user.

Voltage values on all three phases of the main supply are monitored by the Amplight CPU. If the module is installed together with an Amplight Battery, the Amplight CPU will be supplied with backup power via the A-Bus in the event of power failure. This enables the Amplight CPU to store data and send a main power failure alarm to the central server before it shuts down safely.


For more detailed information see the specific manuals & guides.




Dimensions in mm





Functionality


Monitoring	<p>Battery shutdown (in combination with Amplight Battery)</p> <p>Battery low (in combination with Amplight Battery)</p> <p>Communication class availability</p> <p>Over/under mains voltage (on every phase)</p> <p>Mains power failure</p> <p>Phase fault (only in multi phase mains networks)</p> <p>Mains rated input for cabinet door detection</p> <p>Photocell input for streetlight control</p>	Local storage of data	Collected data is stored in non-volatile memory, which holds the values until the data is sent to the server. The Amplight CPU has the capacity to store data for up to 150,000 historical measurements, depending on the data size of the values.
Main processor + OS	ARM9 - 200 MIPS with Linux® operating system	Remote software updates	Secure PAK based software update management system designed to maintain the software on Amplight CPUs remotely. This system enables installation, removal and upgrade of software through a web user interface on one or more selected Amplight CPUs. It also allows on-site upgrades with an authenticated USB memory stick.
WAN Communications	<p>The Amplight Communication Framework enables two-way multi-carrier communication.</p> <p>The Amplight Communication Framework uses communication classes to define the priority of the data.</p> <p>One or more carriers are assigned to each class. If one carrier is not available, another carrier is used instead.</p> <p>Supported carriers: GPRS, SMS, Ethernet.</p>	Sub system software	Subsystem software, e.g. Amplight logic etc. can be downloaded from the Data Centre application for installation and upgrade.
		Battery	Internal battery for RTC backup and digital input monitoring
		 Attention Battery is not user replaceable. Risk of explosion if the battery is replaced by an incorrect type. Disposal of used batteries must be in accordance with local environmental regulations.	
LAN Communications	<p>Direct communication between the modules takes place by means of an A-Bus interface, which is based on the industrially proven RS-485 technology.</p> <p>The A-Bus interface is also used for power supply between the modules.</p>		<p>From the server application, Amplight CPU configuration data can be changed, as required. The configuration data include:</p> <ul style="list-style-type: none"> • Several alarm criteria and light program including dimming (via a centralized streetlight control system) • Communication classes • Surveillance of communication classes • Metering features (an advanced metering infrastructure (AMI) system)
LAN Auto discovery	<p>All modules and meters connected to the Amplight CPU are automatically discovered by the system. In case a module/meter is disconnected from the Amplight CPU, this is reported to the server application and the module/meter is listed as missing. If the module/meter is reconnected to the Amplight CPU or another Amplight CPU, it will be rediscovered by the system.</p>	Indicator LEDs	<p>CPU LED (red): indicates whether the Amplight CPU is up and running.</p> <p>Communication status LED (green): indicates whether a GPRS or an Ethernet connection has been established with the server.</p> <p>Amplight status LED (green): indicates whether the A-Bus is up and running.</p>
Real-time clock	<p>The Amplight CPU has a calendar and a real-time clock (RTC) with an absolute maximum deviation of ± 7 seconds per 24 hours in the full temperature range. This is without synchronization with external units.</p> <p>Under normal conditions, clock deviation is automatically adjusted according to the Network Time Protocol (NTP) which gives a maximum deviation of ± 1 second with respect to the server.</p>		

Functional specifications

With respect to the primary Power connections (L1, L2, L3, , N) all other connections (secondary) are double insulated. The Ethernet connection is, in addition to this, functionally insulated with respect to the secondary connections. See for detailed information the technical specification section.

Primary

Power (L1, L2, L3,  , N)	Three mains rated phase (line) inputs: L1, L2 and L3 One mains rated alarm monitor input:  One mains neutral input: N
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The Amplight CPU can be mains powered by one, two, or three phases + neutral. When powered by multiple phases, the Amplight CPU is able to detect phase faults on the mains power supply. If a fault occurs on one or two phases, the Amplight CPU will still be powered by the remaining phase(s). In this case, the Amplight CPU will send an alarm to the central server. The alarm monitor () is a mains rated input (related to mains Neutral (N)) for cabinet door monitoring.



Attention

Make sure all primary inputs are disconnected from mains before making any changes in the installation!

Secondary

USB	One USB 2.0 (12 MB/s) host port for additional devices
Inputs	
2x Analog	Low voltage measurement inputs analog input 1 and analog input 2 (positive voltage with respect to GND).
1x Digital	Low voltage input digital input (positive voltage w.r.t. GND). This input is intended for use with a relay contact or a NPN open collector device. This input has the special feature to be checked even in power-fail mode using the internal backup battery.
Ethernet	RJ-45 connector; 100 Mbps/10 Mbps, half & full duplex, functional insulated from the secondary connections
GSM/GPRS	SMA connector for external GSM antenna. GSM900, GSM1800, GSM1900
SIM Card	SIM card is inserted behind top part of the cabinet. When installing first disconnect the mains power supply!
A-Bus	2x5 internally connected signals that are used for the A-Bus. The internal connection makes it easier to daisy-chain to other Amplight modules.
Service port	Intended for service purposes
RS232 interface	For use with RS-232 power meters, maximum data transfer rate 115.2 kbps

Reliability & Maintainability

Software upgrade/installation	The software on the Amplight CPU can be updated remotely from the central server. New software is transferred without interrupting the normal functionality of the Amplight CPU. When the software has been transferred, the integrity of the software is checked and the software is installed.
Multi-layer system	Various internal processes ensure that the system is up and running at all times. In case a process has failed, it is restarted without disturbing other processes.
System health	
Self-test	A built-in self-test is performed after power-up.

Installation

The Amplight CPU should be protected from dust and water, preferably by enclosing the system in a metal IP class 65 (NEMA type 4) outdoor cabinet.

Connections on the primary side

Keep wiring short from the mains circuit breaker towards the mains power input.

When using an Amplight Guard, the wires between the Amplight Guard and the Amplight CPU may not exceed 0.15m.

Philips recommends for outdoor applications to use an Amplight CPU Guard.

Connections on the secondary side

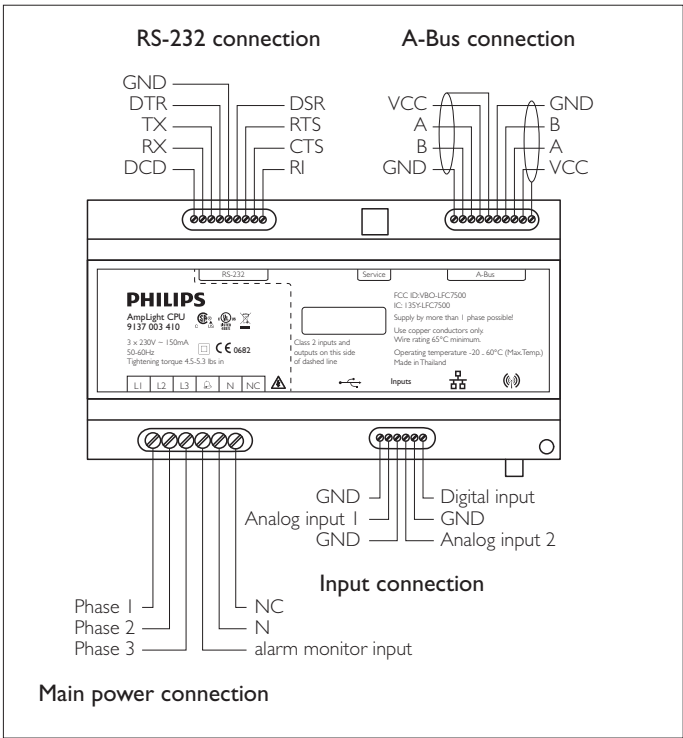
All cables on secondary side should preferably be shielded, with the shield connected to GND (pin5 and 10 for the A-Bus). If this is not possible keep the cable length as short as possible and away from disturbing sources (e.g. RF antenna and Mains power lines).

A-Bus cable	Use shielded twisted pair (2x2) cable. The Amplight CPU can be connected to any client module in the Amplight System, e.g. Amplight RS485, Amplight Switch. Double connections on the A-Bus makes daisy-chaining of the signals easy. For detailed information, see wiring diagrams.
A-Bus cable length	< 3 m
Input cable length	< 3 m
USB cable length	< 3 m
RS-232 cable length	< 3 m
Ethernet cable length	< 3 m
Inputs cable length	< 1.5 m

Antenna

Insert the antenna in the antenna socket of the Amplight CPU and tighten it gently with your fingers. Do not use tools.

Wiring



Technical data

Environmental conditions

Storage temperature -40°C to +85°C
Operating temperature -20°C to +60°C
Max humidity 90% (non-condensing)

Supply characteristics

Input voltage 190 - 250 Vac (3P + N)
Nominal voltage: 230 Vac, Nominal frequency: 50/60 Hz (+/- 5 Hz)
Power consumption < 2 W, CPU only, no load on A-Bus and USB

Nominal system power consumption < 5.5 W, CPU with one Amplight Switch, one Amplight Current and one Amplight Battery

Maximum system power consumption < 18 W, CPU and 830 mA on A-Bus (= 10 W) and 250 mA on USB

Current consumption (powered via A-Bus) Typical 100 mA, Max 300 mA at 12 V

USB Maximum 250 mA, 5 V

Measurement characteristics

Input mains Accuracy within 190 - 250 Vac range: ± 2% FSD (Full Scale Deflection)
Outside that range ± 5% FSD

Analog inputs Input range 0-10 V, 4-20 mA (0-20 mA);
Impedance = 510 Ohms (DC)
Accuracy = ± 2% FSD
When used as digital input: Threshold of approximately 1 V
Absolute maximum input voltage = 12 V (A-Bus voltage can be used.)

Digital input Internal 100 kOhm resistor - 1 MOhm pull-up resistor: Connect terminal to GND for a digital low. Make sure that the terminal to GND resistance is below 1 kOhm (current internally limited to 3 uA). Keep wires connected to this high impedance input away from disturbing networks.

GSM/GPRS		Connections	
Bands	Tri band GSM900/EGSM900, GSM1800, 1900 MHz. Compliant to GSM Phase 2/2+	Mains power connector	0.14 - 1.5 mm ² (AWG 26-16) solid/stranded; copper conductors only; wire rating 65°C min.; wire strip length: 6mm; screwdriver; bladed, size 0.4 x 2.5 VDE insulated; Tightening torque: min 0.5 Nm, max 0.6 Nm (4.5 - 5.3 lbs in)
Transmit power	Class 4 (2 W) at EGSM900 Class 1 (1 W) at GSM1800/1900		
GPRS connectivity	GPRS multi-slot class 10 GPRS mobile station class B		
GPRS	GPRS data downlink transfer: max 21.4 kbps Coding scheme: CS-1, CS-2, CS-3 and CS-4 PPP: Two protocols PAP (Password Authentication Protocol) and CHAP (Challenge Handshake Authentication Protocol) Support of Packet Switched Broadcast Control Channel (PBCCH)	Input, A-Bus and RS-232 connector	0.14 - 0.5 mm ² (AWG 26-20) solid/stranded; wire strip length: 4.5 mm; screwdriver; bladed, size 0.4 x 2.0; tightening torque: min 0.12 Nm, max 0.15 Nm (1.1-1.3 lbs in)
		Service connector	4P4C modular jack (RJ-22)
		Ethernet	Tab-Down RJ-45 meets IEEE 802.3 Standard with minimum of 1500Vrms isolation
SMS	MT, MO, CB, Text and PDU SMS storage: SIM card plus. Transmission of SMS can alternatively be user defined.	USB	USB-A
		Antenna	SMA; Impedance 50 Ohms, Tightening torque: max 0.5 Nm.
SIM interface	Supported SIM card Class B: 3 V	Standards and approvals	
Mechanical		2006/95/EC, Low Voltage Directive (LVD)	
Housing		2004/108/EC, EMC Directive	
		1999/5/EC, R&TTE Directive	
		2002/95/EC, RoHS Directive	
		2006/121/EC, REACH directive	
		UL 916	
		C22.2 No.205-M1983	
Mounting		FCC part 15 B & RSSI 32, issue 1, RSSI 33, issue 3	
Weight		PTCRB	

Packing data

Type	Box dimensions (mm)	Qty	Material	Weight (Kg)	
				net	gross
LFC7500 Amplight CPU	395 x 290 x 205	16	Cardboard	4.2	5.1

Ordering Data

Type	MOQ	Ordering number	EAN code level 1	EAN code level 3	EOC
LFC7500 Amplight CPU	1	9137 003 41003	8727900 947489	8727900 947496	947489 00

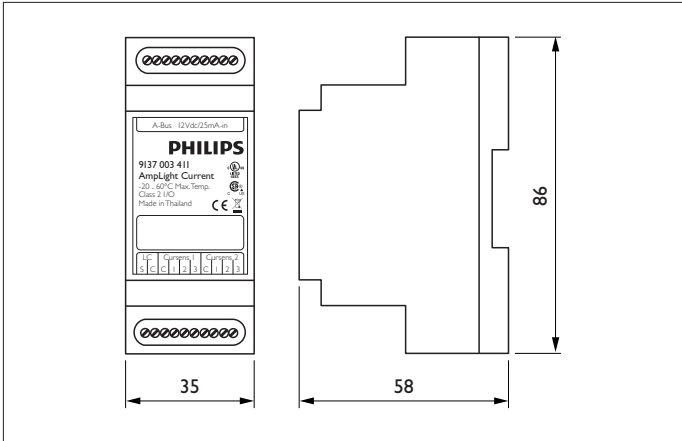
LFC75 I0/00 Datasheet

Amplight Current



General description

The Amplight Current is a client interface module in the Amplight System. It is a highly reliable monitoring device designed for detecting asymmetrical earth leakage in electrical systems and for monitoring current changes in each phase of up to two three-phase circuits. For this purpose, one leakage transformer and two three-phase current transformers can be connected to the module. Leakage and current threshold values can easily be configured to fit specific needs in Amplight Web - a web application that runs on a central server. The Amplight Current can be used for a wide range of monitoring purposes. In Amplight - a centralized streetlight control system - the module is used for monitoring the individual control cabinets. Power failures, cable breakages, street lamp failures, leakages, etc. are immediately reported to the central server. All modules in the Amplight System incorporate an A-Bus interface which is based on the industrially proven RS-485 technology. The A-Bus interface is used for power supply and for direct communication between the modules.



Dimensions in mm

For more detailed information see the specific manuals & guides.



Functionality

Communication	A-Bus two-way communication with A-Bus masters, e.g. Amplight CPU.
Auto discovery	The module is automatically discovered by the Amplight CPU. In case a module is disconnected from the Amplight CPU, this is reported to the server application, and the module is listed as missing. If the module is reconnected to the Amplight CPU or another Amplight CPU, it will be rediscovered.
Real-time clock	The real-time clock is automatically synchronized with the Amplight CPU, which in turn is synchronized with the Network Time Protocol (NTP).
LED	Status LED (green): indicates whether the A-Bus is up and running.

Functional specifications

A-Bus	A-Bus client module, check CPU specification for details
Leakage current	Input range: 1 - 15 mA, rel. accuracy: $\pm 0.3\%$ FSD, abs. accuracy $\pm 5\%$ FSD
Sensor input	Detection range: 170 - 1000 mA. Use with LCU7591 Amplight Leak Coil only.
3-phase	Input range: 1 - 100 mA, rel. accuracy: $\pm 0.3\%$ FSD, abs. accuracy $\pm 5\%$ FSD
Current sensor input(s)	Detection range: 5 - 65 A. Use with LCU7590 Amplight 3-Phase Coil only.
Measurement type	RMS, mean, peak
Frequency range	50 / 60 Hz

Reliability & Maintainability

Software upgrade	The software on the Amplight Current can be updated remotely from the central server.
Installation of new software	New software is transferred without interrupting the normal functionality of the Amplight Current. When the software has been transferred, the integrity of the software is checked and the software is installed.
Self-test	A built-in self-test is performed after power-up.
Watchdog and brown-out reset	Watchdog and brown-out reset ensure that the system is up and running at all times.

Installation

The Amplight Current should be protected from dust and water, preferably by enclosing the system in a metal IP class 65 (NEMA type 4) outdoor cabinet.

Use the Amplight Current with current transformers LCU7590 and LCU7591 only.

Use shielded cables, with the shield connected to GND (pin5 and I0 for the A-Bus). If the use of shielded cables is not possible keep the cable length as short as possible, and avoid placement close to disturbing sources (e.g. RF antenna and Mains power lines).

A-Bus cable	Use shielded twisted pair (2x2) cable The Amplight Current can be connected to any master module in the Amplight System, e.g. Amplight CPU. Double connections on the A-Bus makes daisy-chaining of the signals easy. For detailed information, see wiring diagrams.
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A-Bus cable length < 3 m

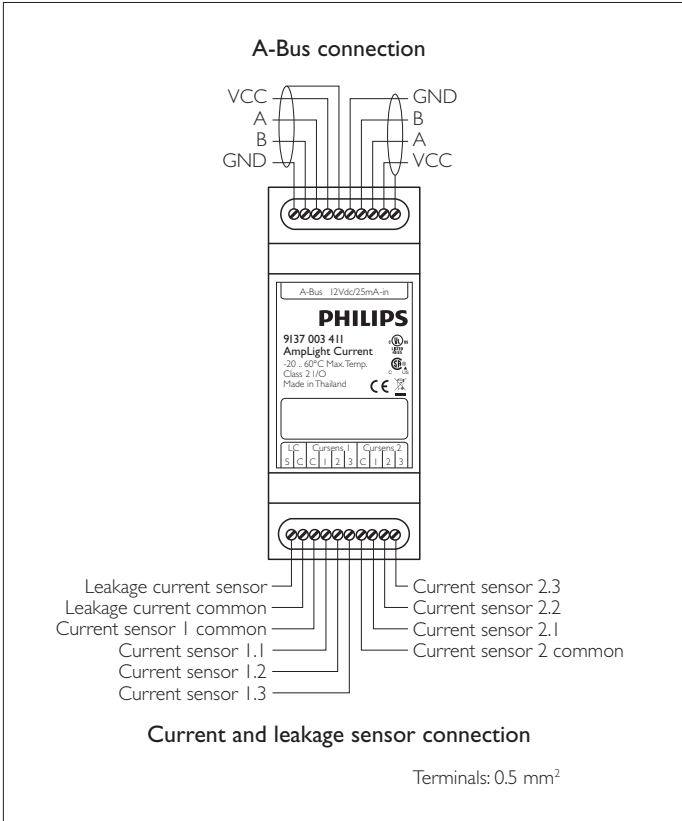
Sensor cable length < 3 m



Attention

Make sure all sensor wires are connected and don't leave wires of the sensors floating! Never connect the sensor wires while mains is connected!

Wiring



Technical data

Environmental conditions

Storage temperature	-40°C to +85°C
Operating temperature	-20°C to +60°C
Max humidity	90% (non-condensing)

Supply characteristics

Input voltage	12 Vdc via A-Bus
Current	Typical 20 mA Maximum 25 mA

Mechanical

Housing	Top part Gray (RAL 7035) Lexan 940 Base part Black (RAL 7021) Noryl VO 1550 Coating Conformal coated DIN-rail (EN50022)
Mounting	
Weight	51 gr

Connections

A-Bus and Sensor connector	0.14 - 0.5 mm ² (AWG 26-20) solid/stranded; copper conductors only; wire rating 65°C min.; wire strip length: 4.5 mm; screwdriver; bladed, size 0.4 x 2.0; tightening torque: min 0.12 Nm, max 0.15 Nm (1.1-1.3 lbs in)
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Standards and approvals

2006/95/EC, Low Voltage Directive (LVD)
2004/108/EC, EMC Directive
1999/5/EC, R&TTE Directive
2002/95/EC, RoHS Directive
2006/121/EC, REACH directive
UL 916
C22.2 No.205-M1983

Packing data

Type	Box dimensions (mm)	Qty	Material	Weight (Kg)	
				net	gross
LFC7510 Amplight Current	395 x 290 x 205	60	Cardboard	3.06	3.9

Ordering Data

Type	MOQ	Ordering number	EAN code level 1	EAN code level 3	EOC
LFC7510 Amplight Current	1	9137 003 41103	8727900 947502	8727900 947519	947502 00



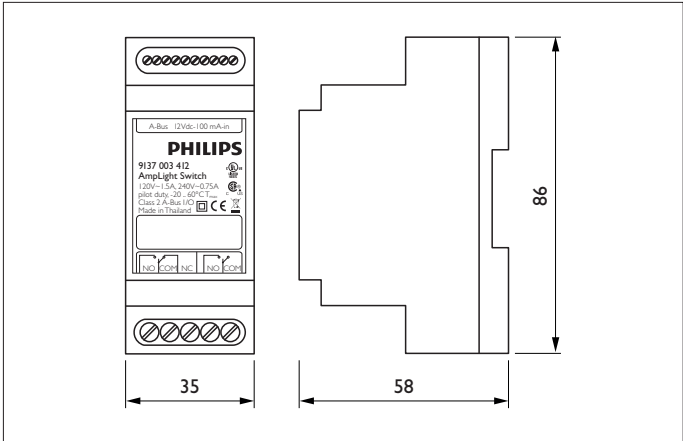


General description

The AmpLight Switch is a client interface module in the AmpLight System. It consists of two individually controllable relays. These relays are galvanically isolated and are used for switching minor loads on and off directly and three-phase or larger loads via an intermediate breaker. One of the two relays provides both NO and NC functionality, the other one only NO.

The AmpLight Switch can be used for a wide range of purposes that require stable and reliable control. In AmpLight - a centralized streetlight control system - the module is used for controlling streetlights via a breaker. All modules in the AmpLight System incorporate an A-Bus interface which is based on the industrially proven RS-485 technology. The A-Bus interface is used for power supply and for direct communication between the modules.

For more detailed information see the specific manuals & guides.



Dimensions in mm



Functionality

Communication	A-Bus two-way communication with A-Bus masters, e.g. Amplight CPU.
Auto discovery	The module is automatically discovered by the Amplight CPU. In case a module is disconnected from the Amplight CPU, this is reported to the server application and the module is listed as missing. If the module is reconnected to the Amplight CPU or another Amplight CPU, it will be rediscovered by the system.
Real-time clock	The real-time clock is automatically synchronized with the Amplight CPU which in turn is synchronized with the Network Time Protocol (NTP).
LED	Status LED (green): indicates whether the A-Bus is up and running.

Functional specifications

A-Bus	A-Bus client module, check CPU specification for details
Switch	
Maximum switching voltage COM1, NO 1	250 Vac (resistive) 1800 VA (120 V~ 1.5 A, 240 V~ 0.75 A Pilot Duty)
COM1, NC 1	1800 VA (120 V~ 1.5 A, 240 V~ 0.75 A Pilot Duty)
COM2, NO 2	1800 VA (120 V~ 1.5 A, 240 V~ 0.75 A Pilot Duty)
Endurance on given maxima	100.000 operations
Contact your local Philips representative for information about other types of loads.	

Reliability & Maintainability

Software upgrade	The software on the Amplight Switch can be updated remotely from the central server.
Installation of new software	New software is transferred without interrupting the normal functionality of the Amplight Switch. When the software has been transferred, the integrity of the software is checked and the software is installed.
Self-test	A built-in self-test is performed after power-up.
Watchdog and brown-out reset	Watchdog and brown-out reset ensure that the system is up and running at all times.

Installation

The Amplight Switch should be protected from dust and water, preferably by enclosing the system in a metal IP class 65 (NEMA type 4) outdoor cabinet.



Warning
The two independent relay contacts may only be connected to the same mains phase, the voltage between contacts may not exceed 250 Vac.



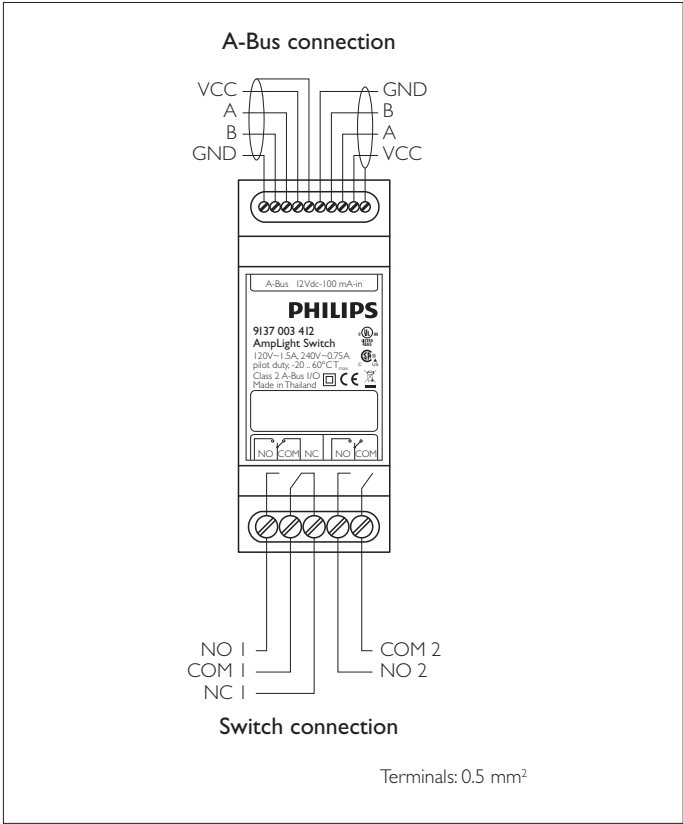
Warning
Risk of Electric Shock - More than one disconnect switch may be required to de-energize the equipment before servicing.

If it is needed to install multiple Amplight Switch modules, it is required to install the modules with the serial numbers in increasing order (from left to right).

Use shielded cables, with the shield connected to GND (pin5 and I0 for the A-Bus). If the use of shielded cables is not possible keep the cable length as short as possible and avoid placement close to disturbing sources (e.g. RF antenna and Mains power lines).

A-Bus cable	Use shielded twisted pair (2x2) cable The Amplight Switch can be connected to any master module in the Amplight System, e.g. Amplight CPU. Double connections on the A-Bus makes daisy-chaining of the signals easy. For detailed information, see wiring diagrams.
A-Bus cable length	< 3 m
Switch connection cable length	< 3 m
Switch connection cable	Use copper conductors only and wires rated of 65°C minimum.

Wiring



Technical data

Environmental conditions

Storage temperature	-40°C to +85°C
Operating temperature	-20°C to +60°C
Max humidity	90% (non-condensing)

Supply characteristics

Input voltage	12 Vdc via A-Bus
Current	Typical 20 mA Maximum 100 mA

Mechanical

Housing	Top part Gray (RAL 7035) Lexan 940 Base part Black (RAL 7021) Noryl VO 1550 Coating Conformal coated DIN-rail (EN50022)
Mounting	
Weight	64 gr

Connections

Switch connector	0.14 - 1.5 mm ² (AWG 26-16) solid/stranded; copper conductors only; wire rating 65°C min.; wire strip length: 6mm; screwdriver; bladed, size 0.4 x 2.5 VDE insulated; tightening torque: min 0.5 Nm, max 0.6 Nm (4.5-5.3 lbs in)
A-Bus connector	0.14 - 0.5 mm ² (AWG 26-20) solid/stranded; copper conductors only; wire rating 65°C min.; wire strip length: 4.5 mm; screwdriver; bladed, size 0.4 x 2.0; tightening torque: min 0.12 Nm, max 0.15 Nm (1.1-1.3 lbs in)

Standards and approvals

2006/95/EC, Low Voltage Directive (LVD)
2004/108/EC, EMC Directive
1999/5/EC, R&TTE Directive
2002/95/EC, RoHS Directive
2006/121/EC, REACH directive
UL 916
C22.2 No.205-M1983

Packing data

Type	Box dimensions (mm)	Qty	Material	Weight (Kg) net	gross
LFC7520 AmpLight Switch	395 x 290 x 205	60	Cardboard	3.84	4.74

Ordering Data

Type	MOQ	Ordering number	EAN code level 1	EAN code level 3	EOC
LFC7520 AmplLight Switch	1	9137 003 41203	8727900 947540	8727900 947557	947540 00



LFC7530/00 Datasheet

AmpLight Battery



General description

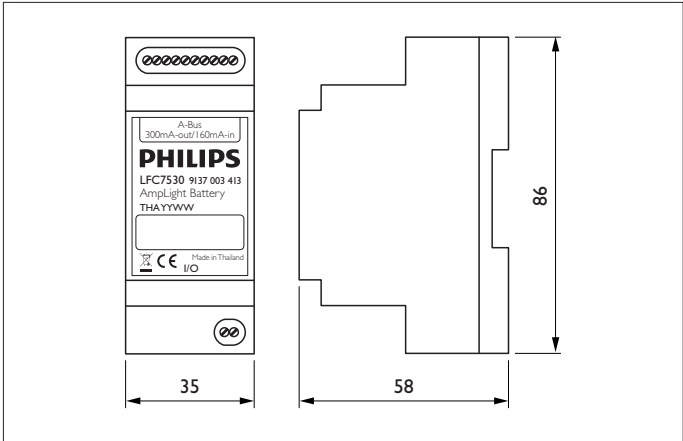
The AmpLight Battery is a client module in the AmpLight System. It is a backup/UPS module which is used for supplying other modules with emergency power in the event of power failure.

All modules in the AmpLight System incorporate an A-Bus interface which is based on the industrially proven RS-485 technology. The A-Bus interface is used for power supply and for direct communication between the modules.

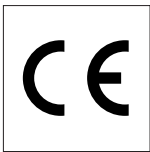
If the AmpLight Battery is installed together with an AmpLight CPU, it will be recharged with power as long as the battery is supplied with 12V from the A-Bus interface.

If the main power fails, the AmpLight Battery will instantaneously take over the power supply of the A-Bus. This enables the AmpLight CPU to store data and send a main power failure alarm to the central server via GPRS/SMS before it shuts down safely.

For more detailed information see the specific manuals & guides.



Dimensions in mm



Functionality

Communication	A-Bus two-way communication with A-Bus masters, e.g. Amplight.
Battery charging	Battery charging is performed from 22 p.m. to 6 a.m. (UTC), if required. The temperature in this time period must be between 0°C to + 40°C.
Auto discovery	The module is automatically discovered by the Amplight CPU. In case a module is disconnected from the Amplight CPU, this is reported to the server application and the module is listed as missing. If the module is reconnected to the Amplight CPU or another Amplight CPU, it will be rediscovered by the system.
Real-time clock	The real-time clock is automatically synchronized with the Amplight CPU, which in turn is synchronized with the Network Time Protocol (NTP).
LED	Status LED (green): indicates whether the A-Bus is up and running. Battery LED (red): indicates whether the Amplight Battery module is charging or supplying the Amplight CPU with backup power in the event of power failure.

Functional specifications

A-Bus	A-Bus client module, check CPU specification for details.
Battery	Initial capacity of 900 mAh (7.4 V). Li-Polymer rechargeable, incl. safety circuit Expected Cycle Life: > 300 cycles (> 70% of initial capacity).

Reliability & Maintainability

Software upgrade	The software on the Amplight Battery can be updated remotely from the central server.
Installation of new software	New software is transferred without interrupting the normal functionality of the Amplight Battery. When the software has been transferred, the integrity of the software is checked and the software is installed.
Self-test	A built-in self-test is performed after power-up.
Watchdog and brown-out reset	Watchdog and brown-out reset ensure that the system is up and running at all times.

Installation

The Amplight Battery should be protected from dust and water, preferably by enclosing the system in a metal IP class 65 (NEMA type 4) outdoor cabinet.

Use shielded cables, with the shield connected to GND (pin5 and I0 for the A-bus). If the use of shielded cables is not possible keep the cable length as short as possible and avoid placement close to disturbing sources (e.g. RF antenna and Mains power lines).

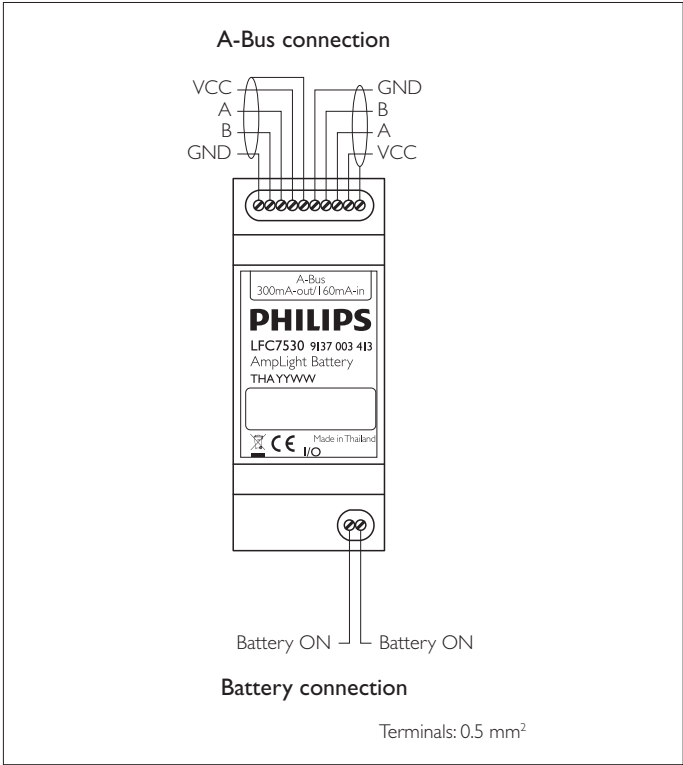
A-Bus cable	Use shielded twisted pair (2x2) cable The Amplight Battery module can be connected to any master module in the Amplight System, e.g. Amplight CPU. Double connections on the A-Bus makes daisy-chaining of the signals easy. For detailed information, see wiring diagrams.
A-Bus cable length	< 3 m
Battery turn on	To minimize self-discharge the module is delivered with the battery disconnected. To enable the battery, terminal 1 and 2 of the battery connection must be connected to each other. Keep this bridge wire short.



Attention

Battery is not user replaceable. Risk of explosion if the battery is replaced by an incorrect type. Disposal of used batteries must be in accordance with local environmental regulations.

Wiring



Technical data

Environmental conditions

Be careful, temperature range limited by battery!

Storage temperature -20°C to +60°C

Operating temperature Charging mode 0°C to +40°C

Discharging mode -20°C to +55°C

Humidity 45 +/- 20% (non-condensing)

Charge Retention/Storage [%]: 1 year at -20 to +20°C >70%

3 month at -20 to +45°C >70%

1 month at -20 to +60°C >70%

Supply characteristics

Input voltage 12 Vdc via A-Bus

Current (battery charged) Typical 20 mA

Maximum 55 mA

Current (during charge) 160 mA

Output current Maximum 300 mA

Mechanical

Housing Top part Gray (RAL 7035) Lexan 940

Base part Black (RAL 7021) Noryl VO 1550

Coating Conformal coated

DIN-rail (EN50022)

Weight 90 gr

Connections

A-Bus and Battery connector 0.14 - 0.5 mm² (AWG 26-20)

solid/stranded; copper conductors only; wire rating 65°C min.; wire strip length: 4.5 mm; screwdriver; bladed, size 0.4 x 2.0; tightening torque: min 0.12 Nm, max 0.15 Nm (1.1-1.3 lbs in)

Standards and approvals

2006/95/EC, Low Voltage Directive (LVD)

2004/108/EC, EMC Directive

1999/5/EC, R&TTE Directive

2002/95/EC, RoHS Directive

2006/121/EC, REACH directive

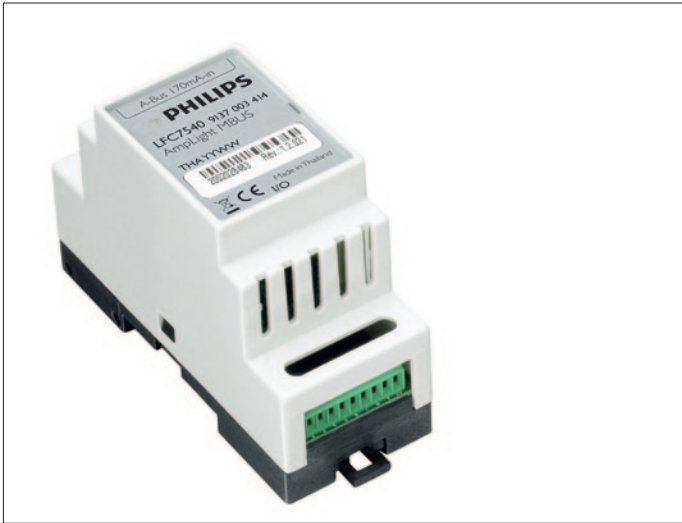
Packing data

Type	Box dimensions (mm)	Qty	Material	Weight (Kg)	
				net	gross
LFC7530 AmpLight Battery	395 x 290 x 205	60	Cardboard	5.4	6.3

Ordering Data

Type	MOQ	Ordering number	EAN code level 1	EAN code level 3	EOC
LFC7530 AmpLight Battery	1	9137 003 41303	8727900 947625	8727900 947632	947625 00

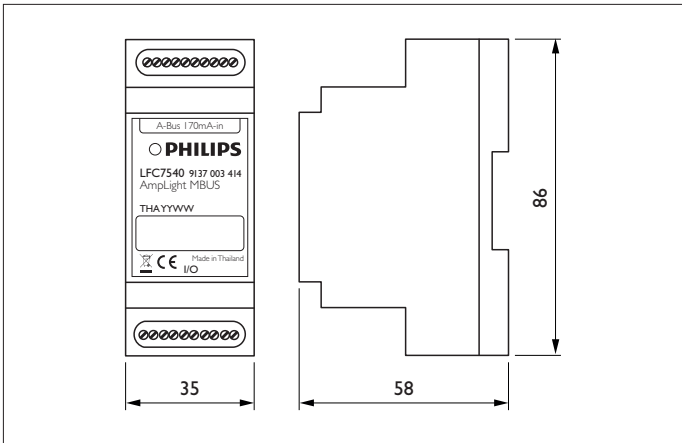




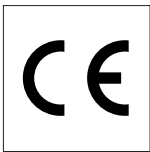
General description

The Amplight MBUS is a client interface module in the Amplight System. It is designed for two-way communication with M-Bus compatible equipment from various manufacturers. In Amplight Metering - an advanced metering infrastructure system - the Amplight MBUS is used for establishing two-way communication with M-Bus compatible electricity meters. The Amplight MBUS can easily be connected with up to ten utility meters. The Amplight MBUS collects readings and other data from the meters and subsequently transfers these data to an Amplight CPU which is acting as a data concentrator and WAN module. The Amplight CPU delivers the data to the central server when required. Direct communication and power supply between the Amplight MBUS and the Amplight CPU are handled by an incorporated A-Bus interface, which is based on the industrially proven RS-485 technology.

For more detailed information see the specific manuals & guides.



Dimensions in mm



Functionality

A-Bus communication	A-Bus two-way communication with A-Bus masters, e.g. Amplight CPU.
M-Bus communication	Mini master; EN 13757-2 standard. Only primary addressing is used. A unique primary address within the range of 1 - 250 must therefore be assigned to every meter. For a complete list of all supported meter types, please contact your local Philips representative.
Auto discovery	The module and all connected meters are automatically discovered by the Amplight CPU. In case a module is disconnected from the Amplight CPU, this is reported to the server application and the module is listed as missing. If the module is reconnected to the Amplight CPU or another Amplight CPU, it will be rediscovered by the system.
Real-time clock	The real-time clock is automatically synchronized with the Amplight CPU, which in turn is synchronized with the Network Time Protocol (NTP).
LED	Status LED (orange): indicates whether the A-Bus is up and running.

Functional specifications

A-Bus	A-Bus client module, check CPU specification for details.
M-Bus	M-Bus+ and M-Bus- connect to one meter or a collection of meters. The total cable length between Amplight MBUS and connected meter(s) is limited to 3 meters. The meters are polarization independent. The bus is short circuit protected. Up to 10 devices, consuming maximal 1.5 mA each, may be connected to one M-Bus. The data transfer rate is 300 or 2400 bps.

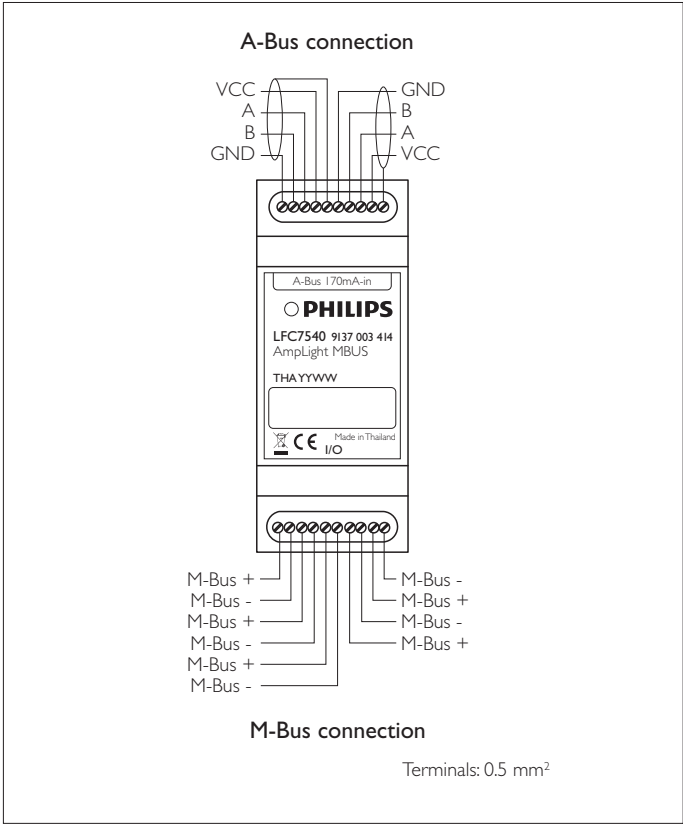
Reliability & Maintainability

Software upgrade	The software on the Amplight MBUS can be updated remotely from the central server.
Installation of new software	New software is transferred without interrupting the normal functionality of the Amplight MBUS. When the software has been transferred, the integrity of the software is checked and the software is installed.
Self-test	A built-in self-test is performed after power-up.
Watchdog and brown-out reset	Watchdog and brown-out reset ensure that the system is up and running at all times.

Installation

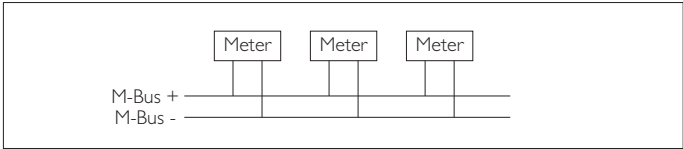
The Amplight MBUS should be protected from dust and water; preferably by enclosing the system in a metal IP class 65 (NEMA type 4) outdoor cabinet.	
Use shielded cables, with the shield connected to GND (pin5 and 10 for the A-Bus). If the use of shielded cables is not possible, keep the cable length as short as possible and avoid placement close to sources of disturbance (e.g. RF antenna and Mains power lines).	
A-Bus cable	Use shielded twisted pair (2x2) cable. The Amplight MBUS module can be connected to any master module in the Amplight System, e.g. Amplight CPU. Double connections on the A-Bus makes daisy-chaining of the signals easy. For detailed information, see wiring diagrams.
A-Bus cable length	< 3 m
M-Bus cable	Use shielded twisted pair (1x2) cable (leave shield floating).
M-Bus cable length	< 3 m

Wiring



Wiring

A collection of meters can be connected to each M-Bus+ / M-Bus-



Technical data

Environmental conditions	
Storage temperature	-40°C to +85°C
Operating temperature	-20°C to +60°C
Max humidity	90% (non-condensing)
Supply characteristics	
Input voltage	12 Vdc via A-Bus
Current consumption	Typical 115 mA, Maximum 170 mA
M-bus current	15 mA maximum (10 devices) + 20 mA space send makes I _{max} > 35 mA
M-bus voltage	36V maximum (=V _{mark} , V _{pase} > 12V, voltage drop U _r (V _{mark} - V _{pase}) > 12V
Mechanical	
Housing	Top part Gray (RAL 7035) Lexan 940 Base part Black (RAL 7021) Noryl VO 1550 Coating Conformal coated DIN-rail (EN50022)
Mounting	55 gr
Weight	
Connections	
A-Bus and M-bus connector	0.14 - 0.5 mm ² (AWG 26-20) solid/stranded; copper conductors only; wire rating 65°C min.; wire strip length: 4.5 mm; screwdriver; bladed, size 0.4 x 2.0; tightening torque: min 0.12 Nm, max 0.15 Nm (1.1-1.3 lbs in)
Standards and approvals	
2006/95/EC, Low Voltage Directive (LVD)	
2004/108/EC, EMC Directive	
1999/5/EC, R&TTE Directive	
2002/95/EC, RoHS Directive	
2006/121/EC, REACH directive	

Packing data

Type	Box dimensions (mm)	Qty	Material	Weight (Kg)	
				net	gross
LFC7540 AmpLight MBUS	395 x 290 x 205	60	Cardboard	3.3	4.2

Ordering Data

Type	MOQ	Ordering number	EAN code level 1	EAN code level 3	EOC
LFC7540 AmpLight MBUS	1	9137 003 41403	8727900 947649	8727900 947656	947649 00

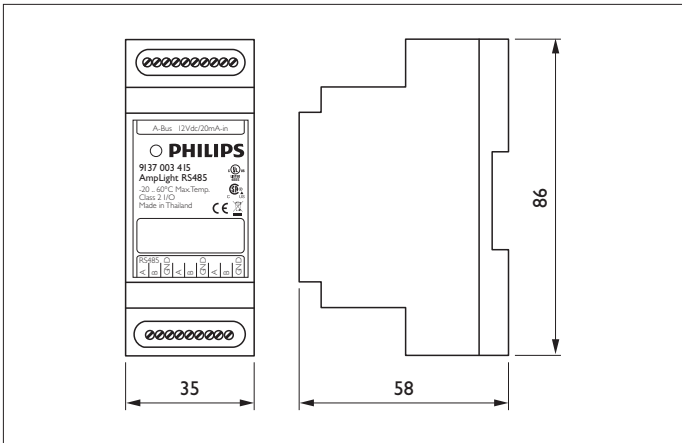




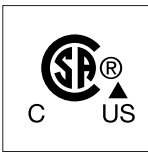
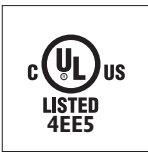
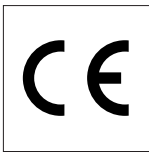
General description

The Amplight RS485 is a client interface module in the Amplight System. It is designed for two-way communication with RS485 compatible equipment from various manufacturers. In Amplight Metering - an advanced metering infrastructure system - the Amplight RS485 is used for establishing two-way communication with RS485 compatible electricity meters. The Amplight RS485 can easily be connected with up to ten electricity meters. The Amplight RS485 collects readings and other data from the meters and subsequently transfers these data to an Amplight CPU which is acting as a data concentrator and WAN module. The Amplight CPU delivers the data to the central server when required. Direct communication and power supply between the Amplight RS485 and the Amplight CPU are handled by an incorporated A-Bus interface, which is based on the industrially proven RS-485 technology.

For more detailed information see the specific manuals & guides.



Dimensions in mm



Functionality

Communication	A-Bus two-way communication with A-Bus masters, e.g. Amplight CPU.
RS-485 communication	According to ANSI TIA/EIA-485-A, half duplex. The module supports the following protocols: General purpose serial communication, dlms mode C, dlms/COSEM (HDLC). For a complete list of all supported meter types, please contact your local Philips representative.
Auto discovery	The module is automatically discovered by the Amplight CPU. In case a module is disconnected from the Amplight CPU, this is reported to the server application and the module is listed as missing. If the module is reconnected to the Amplight CPU or another Amplight CPU, it will be rediscovered.
Real-time clock	The real-time clock is automatically synchronized with the Amplight CPU, which in turn is synchronized with the Network Time Protocol (NTP).
LED	Status LED (orange): indicates whether the A-Bus is up and running.

Connections

A-Bus	A-Bus client module, check CPU specification for details.
RS485	RS485 A and RS485 B connect to one meter or a collection of meters (maximum 256 nodes). A = non-inverting data signal and B = inverting data signal. The total cable length between Amplight RS485 module and connected meter(s) is limited to 3 meters.

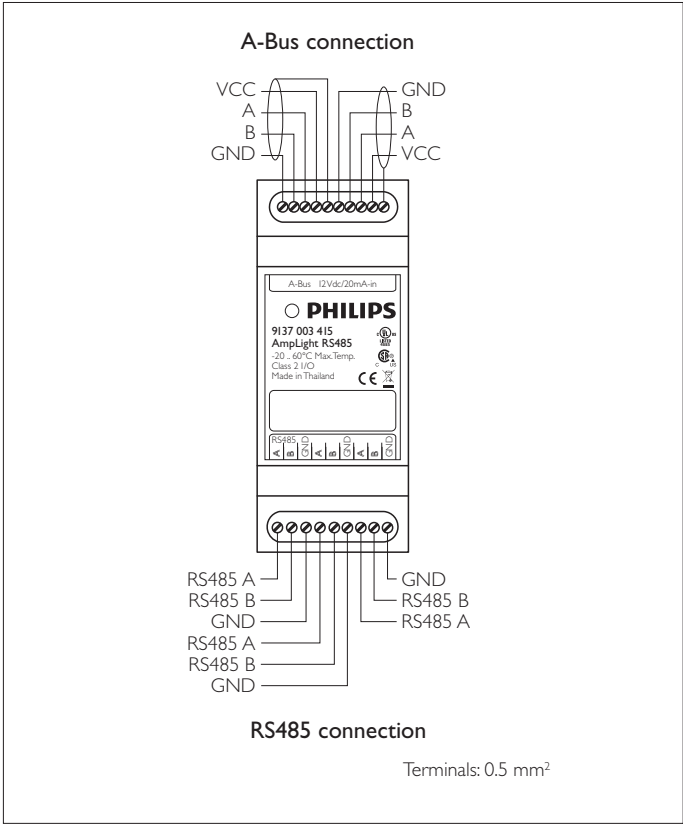
Reliability & Maintainability

Software upgrade	The software on the Amplight RS485 can be updated remotely from the central server.
Installation of new software	New software is transferred without interrupting the normal functionality of the Amplight RS485. When the software has been transferred, the integrity of the software is checked and the software is installed.
Self-test	A built-in self-test is performed after power-up.
Watchdog and brown-out reset	Watchdog and brown-out reset ensure that the system is up and running at all times.

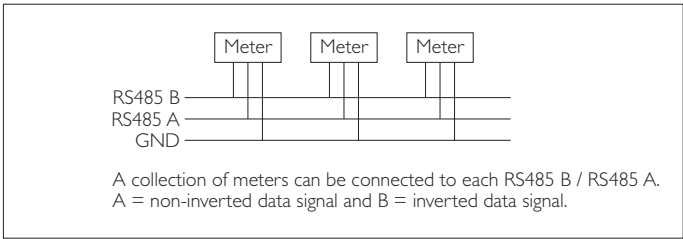
Installation

The Amplight RS485 should be protected from dust and water, preferably by enclosing the system in a metal IP class 65 (NEMA type 4) outdoor cabinet.	
Use shielded cables, with the shield connected to GND (pin5 and I0 for the A-Bus). If the use of shielded cables is not possible keep the cable length as short as possible and avoid placement close to sources of disturbance (e.g. RF antenna and Mains power lines).	
A-Bus cable	Use shielded twisted pair (2x2) cable. The Amplight RS485 can be connected to any master module in the Amplight System, e.g. Amplight CPU. Double connections on the A-Bus makes daisy-chaining of the signals easy. For detailed information, see wiring diagrams.
A-Bus cable length	< 3 m
RS485 cable	Use shielded twisted pair cable (leave shield floating).
RS485 cable length	< 3 m

Wiring



A collection of meters can be connected to each RS485 output.



Technical data

Environmental conditions

Storage temperature	-40°C to +85°C
Operating temperature	-20°C to +60°C
Max humidity	90% (non-condensing)

Supply characteristics

Input voltage	12 Vdc via A-Bus
Current consumption	Typical 15 mA, Maximum 20 mA
RS-485 voltage	Bus pin short circuit protection from -7 V to +12 V
RS-485 current	Pins short circuit protected

Mechanical

Housing	Top part Gray (RAL 7035) Lexan 940 Base part Black (RAL 7021) Noryl VO 1550 Coating Conformal coated DIN-rail (EN50022) Weight 50 gr
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Connections

A-Bus and M-bus connector	0.14 - 0.5 mm ² (AWG 26-20) solid/stranded; copper conductors only; wire rating 65°C min.; wire strip length: 4.5 mm; screwdriver, bladed, size 0.4 x 2.0; tightening torque: min 0.12 Nm, max 0.15 Nm (1.1-1.3 lbs in)
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Standards and approvals

2006/95/EC, Low Voltage Directive (LVD)
2004/108/EC, EMC Directive
1999/5/EC, R&TTE Directive
2002/95/EC, RoHS Directive
2006/121/EC, REACH directive
UL 916
C22.2 No.205-M1983

Packing data

Type	Box dimensions (mm)	Qty	Material	Weight (Kg)	
				net	gross
LFC7550 AmpLight RS485	395 x 290 x 205	60	Cardboard	3.0	3.9

Ordering Data

Type	MOQ	Ordering number	EAN code level 1	EAN code level 3	EOC
LFC7550 AmpLight RS485	1	9137 003 41503	8727900 947663	8727900 947670	947663 00

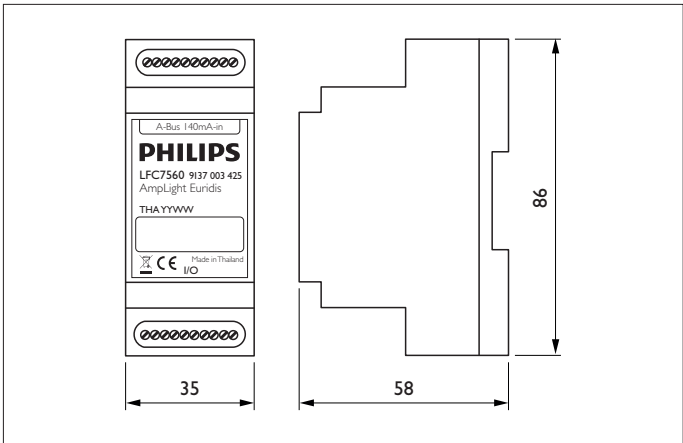




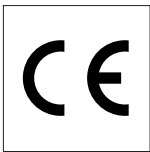
General description

The Amplight Euridis is a client interface module in the Amplight System. It is designed for two-way communication with Euridis compatible equipment from various manufacturers. In Amplight Metering - an advanced metering infrastructure system - the Amplight Euridis is used for establishing two-way communication with Euridis electricity meters. The Amplight Euridis can be connected with up to ten electricity meters. The Amplight Euridis collects readings and other data from the meters and subsequently transfers these data to an Amplight CPU that acts as a data concentrator and WAN module. The Amplight CPU delivers the data to the central server when required. Direct communication and power supply between the Amplight Euridis and the Amplight CPU are handled by an incorporated A-Bus interface, which is based on the industrially proven RS-485 technology.

For more detailed information see the specific manuals & guides.



Dimensions in mm



Functionality

A-Bus communication	A-Bus two-way communication with A-Bus masters, e.g. Amplight CPU.
Euridis communication	According to IEC 62056-31 The software of the Amplight Euridis is only compatible with Actaris ACE 5000 electricity meters.
Auto discovery	The module is automatically discovered by the Amplight CPU. In case a module is disconnected from the Amplight CPU, this is reported to the server application and the module is listed as missing. If the module is reconnected to the Amplight CPU or another Amplight CPU, it will be rediscovered by the system.
Real-time clock	The real-time clock is automatically synchronized with the Amplight CPU, which in turn is synchronized with the Network Time Protocol (NTP).
LED	Status LED (green): indicates whether the A-Bus is up and running.

Connections

A-Bus	A-Bus client module, check CPU specification for details.
Euridis	Euridis+ and Euridis- connect to one meter or a collection of meters. The total cable length between Amplight Euridis module and connected meter(s) is limited to 3 meters. The meters are polarization independent. Data transfer rate 1200 bps.

Reliability & Maintainability

Software upgrade	The software on the Amplight Euridis can be updated remotely from the central server.
Installation of new software	New software is transferred without interrupting the normal functionality of the Amplight Euridis. When the software has been transferred, the integrity of the software is checked and the software is installed.
Self-test	A built-in self-test is performed after power-up.
Watchdog and brown-out reset	Watchdog and brown-out reset ensure that the system is up and running at all times.

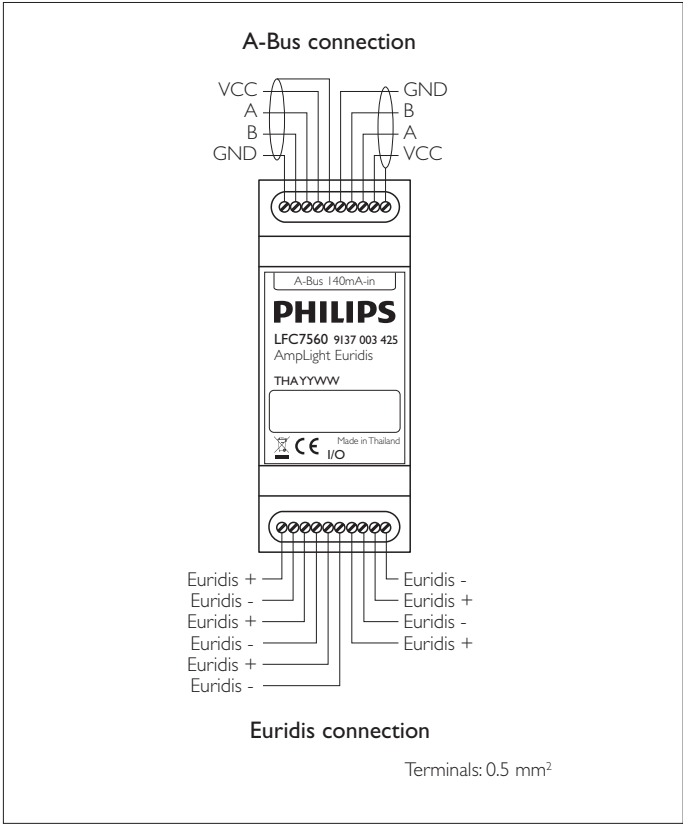
Installation

The Amplight Euridis should be protected from dust and water, preferably by enclosing the system in a metal IP class 65 (NEMA type 4) outdoor cabinet.

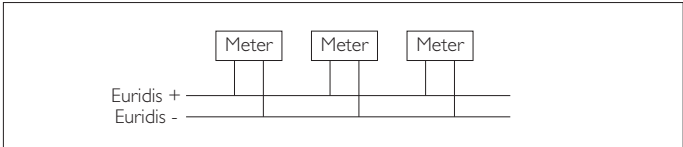
Use shielded cables, with the shield connected to GND (pin5 and 10 for the A-Bus). If the use of shielded cables is not possible keep the cable length as short as possible and avoid placement close to disturbing sources (e.g. RF antenna and Mains power lines).

A-Bus cable	Use shielded twisted pair (2x2) cable. The Amplight Euridis can be connected to any master module in the Amplight System, e.g. Amplight CPU. Double connections on the A-Bus makes daisy-chaining of the signals easy. For detailed information, see wiring diagrams.
A-Bus cable length	< 3 m
Euridis cable	Use shielded twisted pair cable (leave shield floating).
Euridis cable length	< 3 m

Wiring



A collection of meters can be connected to each Euridis+ / Euridis-



Technical data

Environmental conditions

Storage temperature	-40°C to +85°C
Operating temperature	-20°C to +60°C
Max humidity	90% (non-condensing)

Supply characteristics

Input voltage	12 Vdc via A-Bus
Current consumption	Typical 115 mA, Maximum 140 mA
Euridis	Bus is protected against accidentally connecting to mains voltage (max 230 Vac) Communication according to IEC 62056-31 Output modulated carrier of 50KHz maximum 8 Vpp (no load) minimum 4 Vpp (100E load)

Mechanical

Housing	Top part Gray (RAL 7035) Lexan 940 Base part Black (RAL 7021) Noryl VO 1550 Coating Conformal coated DIN-rail (EN50022)
Mounting	57 gr

Connections

A-Bus and Euridis connector	0.14 - 0.5 mm ² (AWG 26-20) solid/stranded; copper conductors only; wire rating 65°C min.; wire strip length: 4.5 mm; screwdriver; bladed, size 0.4 x 2.0; tightening torque: min 0.12 Nm, max 0.15 Nm (1.1-1.3 lbs in)
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Standards and approvals

2006/95/EC, Low Voltage Directive (LVD)
2004/108/EC, EMC Directive
1999/5/EC, R&TTE Directive
2002/95/EC, RoHS Directive
2006/121/EC, REACH directive

Packing data

Type	Box dimensions (mm)	Qty	Material	Weight (Kg)	
				net	gross
LFC7560 Amplight Euridis	395 x 290 x 205	60	Cardboard	3.4	4.3

Ordering Data

Type	MOQ	Ordering number	EAN code level I	EAN code level 3	EOC
LFC7560 Amplight Euridis	1	9137 003 42503	8718291 112174	8718291 112181	112174 00



LFC7580/00 Datasheet

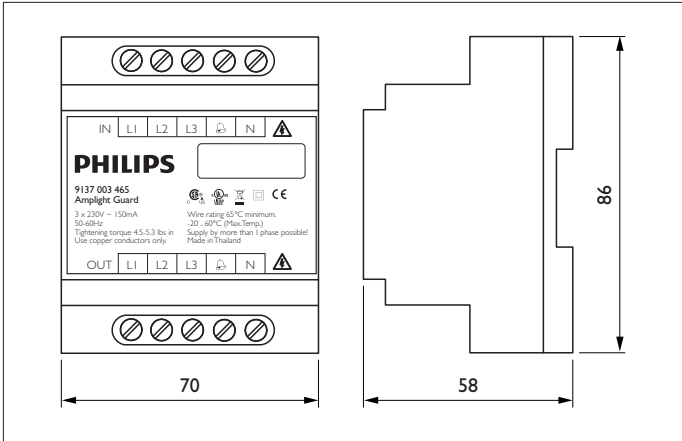
Amplight Guard



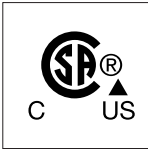
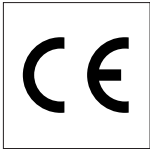
General description

The Amplight Guard is an overvoltage protection module for the Amplight CPU. It is used where the Amplight CPU standard protection level (EN61000-6-2, industrial immunity) is not sufficient. The Amplight Guard is designed specifically for the Amplight CPU, making this module able to withstand surge pulses up to ± 6 kV and burst pulses up to ± 4 kV. The module consists of four independent protected mains rated channels which each have a built-in thermal protection. The four mains channels are connected to the mains neutral. The Amplight Guard is designed to be installed on a DIN-rail next to the Amplight CPU.

For more detailed information see the specific manuals & guides.



Dimensions in mm



Functionality

Surge protection level	± 6 kV according to EN61000-4-5
Burst protection level	± 4 kV according to EN61000-4-4

Connections



Warning
Make sure all primary inputs are disconnected from mains before making any changes in the installation!

Input	Three mains rated phase (line) inputs: L1, L2 and L3 One mains rated alarm monitor input: One mains neutral input: N
Output	Surge and burst protected outputs, which may only be connected to the AmpLight CPU. Three mains rated phase (line) outputs: L1, L2 and L3 One mains rated alarm monitor output: One mains neutral output: N

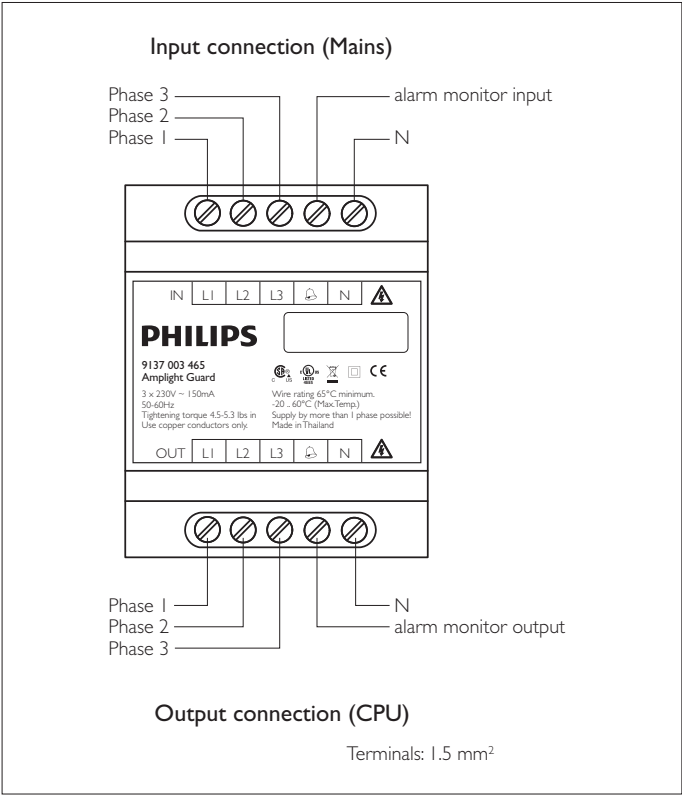
Installation

The AmpLight Guard is suitable only for use in combination with the AmpLight CPU.

The AmpLight Guard should be protected from dust and water, preferably by enclosing the system in a metal IP class 65 (NEMA type 4) outdoor cabinet.

Keep wiring short from the mains circuit breaker towards the mains power input. The wires between the AmpLight Guard and the AmpLight CPU may not exceed 0.15 meters.

Wiring



Technical data

Environmental conditions

Storage temperature	-40°C to +85°C
Operating temperature	-20°C to +60°C
Max humidity	90% (non-condensing)

Supply characteristics

Input voltage	LI,L2,L3 to N 190 - 250 Vac alarm monitor to N 0 - 250 Vac
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Nominal voltage: 230 Vac
 Nominal frequency: 50/60 Hz

Current	Typical 150 mA, Maximum 250 mA
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Power consumption	< 0.4 W with maximum load connected to CPU
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Mechanical

Housing	Top part Gray (RAL 7035) Lexan 940 Base part Black (RAL 7021) Noryl VO 1550 Coating Conformal coated
Mounting	DIN-rail (EN50022)
Weight	120 gr

Connections

Input and output connector	0.14 - 1.5 mm ² (AWG 26-16) solid/stranded; copper conductors only; wire rating 65°C min.; wire strip length: 6 mm, screwdriver; bladed, size 0.4 x 2.5 VDE insulated Tightening torque: min 0.5 Nm, max 0.6 Nm (4.5-5.3 lbs in)
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Standards and approvals

2006/95/EC, Low Voltage Directive (LVD)
 2004/108/EC, EMC Directive
 1999/5/EC, R&TTE Directive
 2002/95/EC, RoHS Directive
 2006/121/EC, REACH directive
 UL 916
 C22.2 No.205-M1983

Packing data

Type	Box dimensions (mm)	Qty	Material	Weight (Kg)	
				net	gross
LFC7580 Amplight Guard	395 x 290 x 205	32	Cardboard	3.9	4.8

Ordering Data

Type	MOQ	Ordering number	EAN code level 1	EAN code level 3	EOC
LFC7580 Amplight Guard	1	9137 003 46503	8718291 157069	8718291 157076	157069 00

LCU7590/00 Datasheet

AmpLight 3-Phase Coil



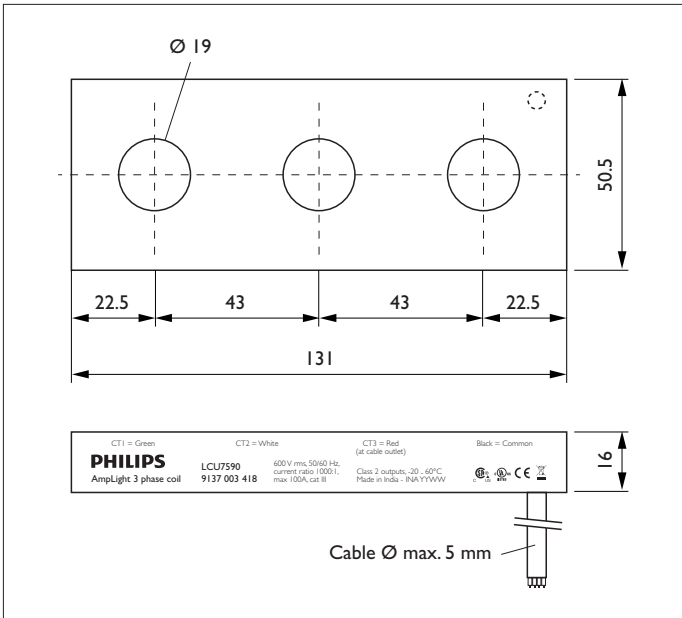
General description

The AmpLight 3-Phase Coil / current-sensor can be used in combination with the AmpLight Current to measure the supplied mains currents, in order to monitor possible failures and unsafe situations. Current threshold values can easily be configured to fit specific needs with a web application that runs on a central server.

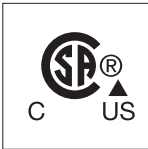
The AmpLight 3-phase coil must be used in combination with the AmpLight Current. In AmpLight - a centralized streetlight control system - the AmpLight Current is used for monitoring the individual control cabinets. The AmpLight Current can be used for a wide range of monitoring purposes.

Power failures, cable breakages, street lamp failures, leakages, etc. are immediately reported to the central server. Direct communication between the modules takes place by means of an A-Bus interface, which is based on the industrially proven RS-485 technology. The A-Bus interface is also used to power supply the other modules.

For more detailed information see the specific manuals & guides.



Dimensions in mm



Functionality

Communication The coil consists of three independent AC measurement coils with one common. The output signal represents the mains-current wave-form that can be interpreted by the AmpLight Current.

Functional specifications

Current sensor specifications (three per product):
 Frequency range 48 - 62 Hz
 Transformer ratio 1000:1 (primary:secondary)
 Maximum primary voltage 600 Vrms
 Rated primary current 100 A, cat III
 Maximum primary current 250 A
 Nominal secondary current 0 - 100 mA
 Accuracy 1.5% (in combination with AmpLight Current)
 Insulation between primary and secondary ≥ 4 kV

Installation

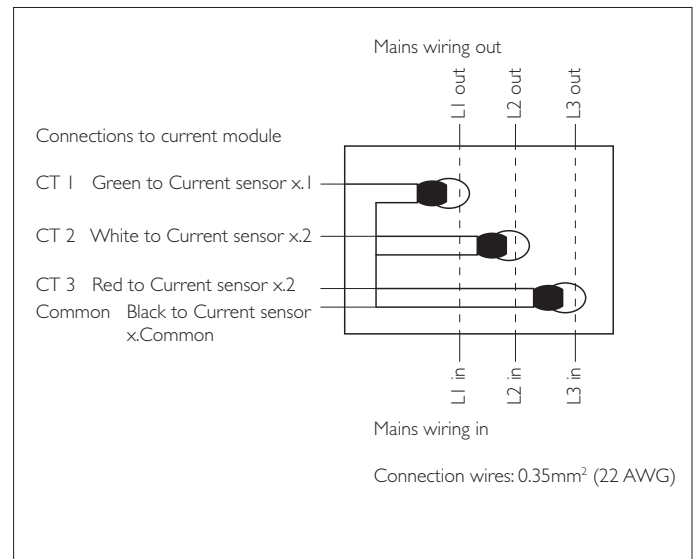
The AmpLight 3-Phase Coil should be protected from dust and water; preferably by enclosing the system in a metal IP class 65 (NEMA type 4) outdoor cabinet.



Warning

Do not cut the cable connected to the sensor.
 Make sure all sensor wires are connected to the right input of the AmpLight Current.
 Don't leave wires of the sensor floating!
 Never connect the sensor wires while mains is connected!

Wiring



Technical data

Environmental conditions

Storage temperature	-40°C to +85°C
Operation temperature	-20°C to +60°C
Max humidity	90% (non condensation) (IP protection level 54)

Output characteristics

See functional specifications

Mechanical

Mounting	No mounting holes or flanges present, only fix with insulating materials
Color	black
Cable	
Length	2500 mm +/- 10mm
Cores	0.35 mm ² (22 AWG)
Colors	Black pvc sheath, cores: red, white, black and green
Weight	404 gr

Connections

Stripped length	outer insulator (sheath) 20 mm +/- 1 mm cores insulators (wires) 10 mm +/- 1 mm
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Standards and approvals

2006/95/EC, Low Voltage Directive (LVD)
 2004/108/EC, EMC Directive
 1999/5/EC, R&TTE Directive
 2002/95/EC, RoHS Directive
 2006/121/EC, REACH directive
 UL 916
 C22.2 No.205-M1983

Packing data

Type	Box dimensions (cm)	Qty	Material	Weight (Kg)	
				net	gross
LCU7590 AmpLight 3-Phase Coil	41x31x21.5	52	Cardboard	20.8	22.0

Ordering Data

Type	MOQ	Ordering number	EAN code level 1	EAN code level 3	EOC
LCU7590 AmpLight 3-Phase Coil	1	9137 003 41803	8727900 947724	8727900 947731	947724 00



LCU7591/00 Datasheet

AmpLight Leak Coil

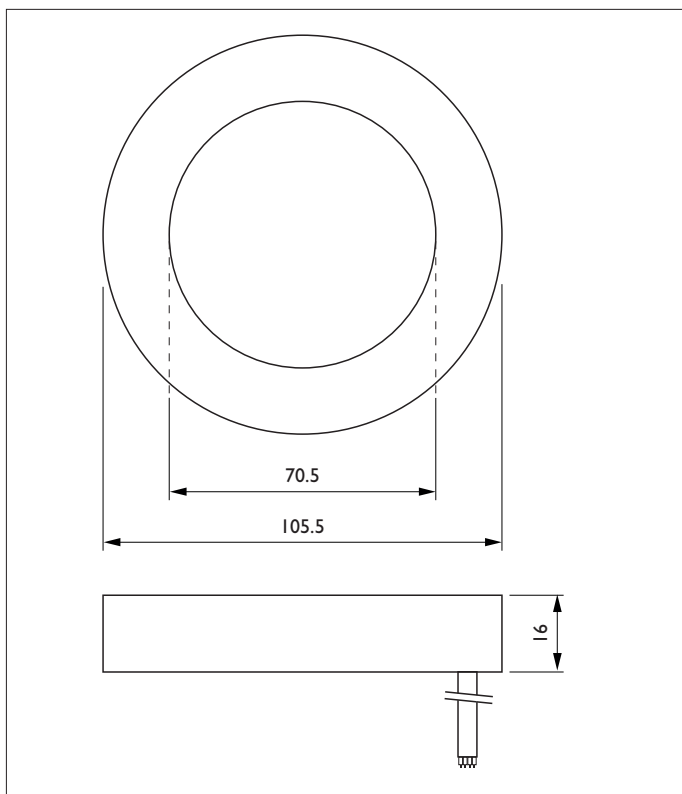
1/3



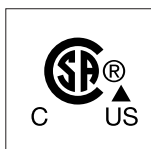
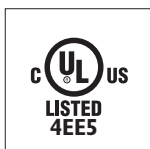
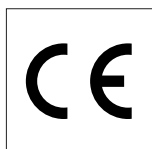
General description

The AmpLight Leak Coil / current-sensor can be used in combination with the AmpLight Current to measure the leakage current, in order to monitor possible failures and unsafe situations. The leakage current threshold value can be configured to fit specific needs with a web application that runs on a central server. The AmpLight 3-phase coil must be used in combination with the AmpLight Current. In AmpLight - a centralized streetlight control system - the AmpLight Current is used for monitoring the individual control cabinets. The AmpLight Current can be used for a wide range of monitoring purposes. Power failures, cable breakages, street lamp failures, leakages, etc. are immediately reported to the central server. Direct communication between the modules takes place by means of an A-Bus interface, which is based on the industrially proven RS-485 technology. The A-Bus interface is also used to power supply the other modules.

For more detailed information see the specific manuals & guides.



Dimensions in mm



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Functionality

Communication

The AmpLight Leak Coil is an AC measurement coil. The output signal represents the wave-form of the leakage current that can be interpreted by the AmpLight Current.

Functional specifications

Current sensor specifications:

Frequency range	48 - 62 Hz
Transformer ratio	200 : 1 (primary : secondary)
Maximum primary voltage	600 Vrms
Rated primary current	10 A, cat III (maximum leakage current, not the individual current per conductor)
Maximum primary current	100 A
Nominal secondary current	0 - 100 mA
Accuracy	1.5% (in combination with AmpLight Current)
Insulation between primary and secondary	$\geq 4\text{kV}$

Installation

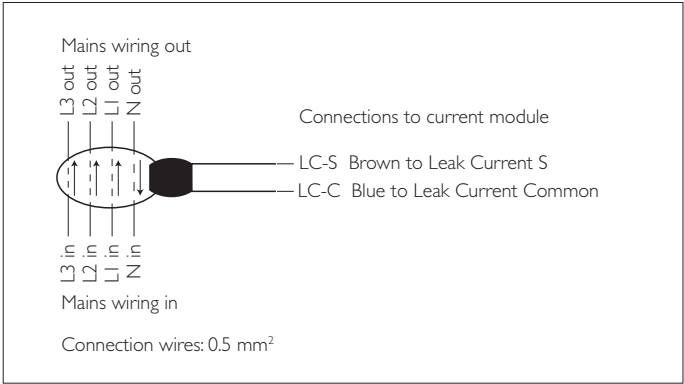
The AmpLight Leak Coil should be protected from dust and water; preferably by enclosing the system in a metal IP class 65 (NEMA type 4) outdoor cabinet.



Warning

- Do not cut the cable connected to the sensor.
- Make sure all sensor wires are connected to the right input of the AmpLight Current.
- Don't leave wires of the sensor floating!
- Never connect the sensor wires while mains is connected!

Wiring



Technical data

Environmental conditions

Storage temperature	-40°C to +85°C
Operating temperature	-20°C to +60°C
Max humidity	90% (non condensation) (IP protection level 54)

Output characteristics

See functional specifications

Mechanical

Mounting	No mounting holes or flanges present, only fix with insulating materials.
Color	Black
Cable length	3000 mm +/- 50 mm
Cores	0.5 mm ²
Colors	Black pvc sheath, cores: blue and brown
Weight	425 gr

Connections

Stripped length	Outer insulator (sheath) 40 mm +/- 5 mm Cores insulators (wires) 5 mm +/- 1 mm
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Standards and approvals

2006/95/EC, Low Voltage Directive (LVD)
 2004/108/EC, EMC Directive
 1999/5/EC, R&TTE Directive
 2002/95/EC, RoHS Directive
 2006/121/EC, REACH directive
 UL 916
 C22.2 No.205-M1983

Packing data

Type	Box dimensions (cm)	Qty	Material	Weight (Kg)	
				net	gross
LCU759I AmpLight Leak Coil	36x28.5x18	18	Cardboard	7.65	8.28

Ordering Data

Type	MOQ	Ordering number	EAN code level 1	EAN code level 3	EOC
LCU759I AmpLight Leak Coil	1	9137 003 41903	8727900 947748	8727900 947755	947748 00

3222 636 36280

11/2011

Data subject to change

www.philips.com/lightingcontrols

