

Description

The AmsCurrent module is a client interface module in the Amplex Module 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 two three-phase circuits. For this purpose, one leakage current sensor and two three-phase current sensors are connected to the module. Leakage and current threshold values can easily be configured to fit specific needs in AmpWeb - a web application that runs on a central server.

The AmsCurrent module can be used for a wide range of monitoring purposes, e.g. for detecting power failures, cable breakages, leakages, theft detection, etc.

All modules in the Amplex Module 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.

Functionality

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

Connections

I/O	Comments
A-Bus	A-Bus client module
Leakage current sensor input	Input range: 1 - 15 mA, rel. accuracy: $\pm 0.3\%$ FSD, abs. accuracy $\pm 5\%$ FSD Detection range ¹ : 170 - 1000 mA
Three-phase current sensor input	Input range: 1 - 100 mA, rel. accuracy: $\pm 0.3\%$ FSD, abs. accuracy $\pm 5\%$ FSD Detection range ² : 5 - 65 A
Measurement type	RMS, mean, peak
Frequency range	40 Hz - 60 Hz

¹ Specified for 1 A Amplex leakage current sensor. ² Specified for 65 A Amplex three-phase current sensor.

Reliability & Maintainability

Topic	Comments
Software upgrade	The software on the AmsCurrent module can be updated remotely from the central server.
Installation of new software	New software is transferred without interrupting the normal functionality of the AmsCurrent module. 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 (BIST) 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.



Technical Specifications

Operational specifications

Storage temp.	-40°C to +85°C
Operating temp.	-20°C to +65°C
Max humidity	90% (non-condensing)
IP grade	IP20
Input voltage	12 V DC via A-Bus
Current consumption	Typical 20 mA Max 25 mA

Standards and approvals

2006/95/EC, Low Voltage Directive (LVD)
2004/108/EC, EMC Directive
2002/95/EC, RoHS Directive



AmsCurrent

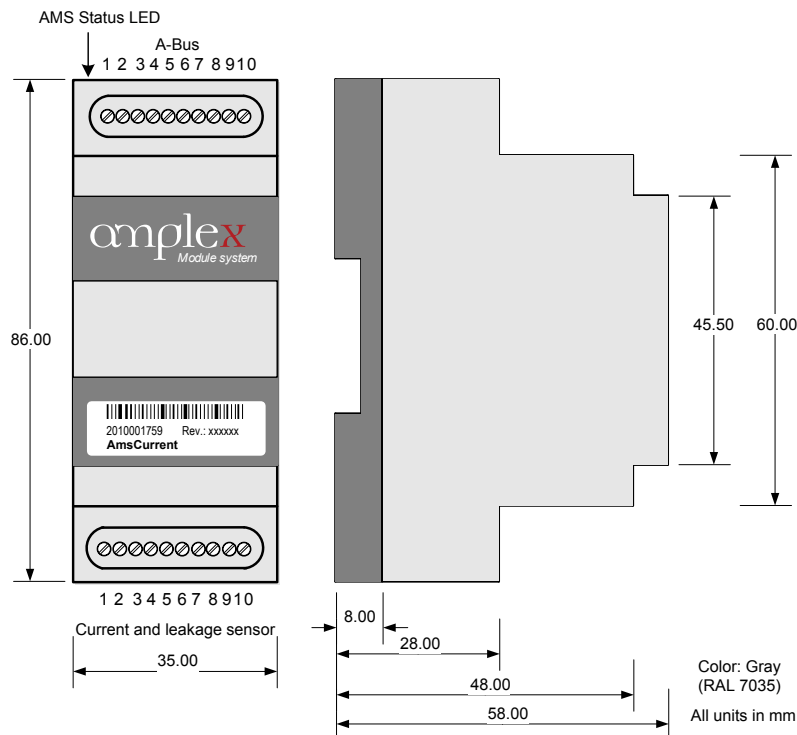
Data Sheet

Installation Guide

The AmsCurrent module can be connected to any master module in the Amplex Module System, e.g. AmsCPU or AmsCPU-IO. The A-Bus connections are internally daisy-chained for easy installation.

Topic	Comments
A-Bus cable	Use shielded twisted pair cable.
A-Bus cable length	< 3 m
Transformer cables	< 3 m
0.5 mm ² terminals	Use a 2 mm slotted screwdriver to loosen/tighten the terminal screws.
Enclosure	The AmsCurrent module must be installed in an enclosure of protection degree IP65 or installed at a location that provides the module with the same level of protection.

Drawing

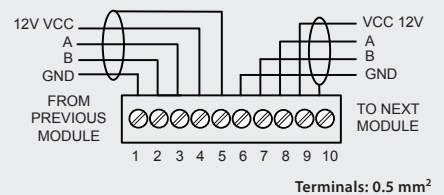


Physical Specifications

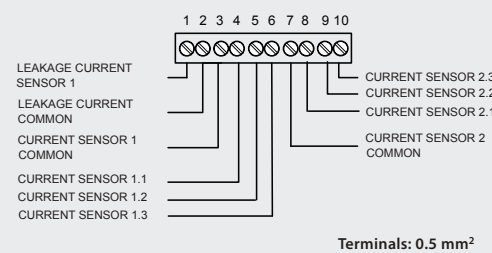
Weight	51 g
Top part	Gray (RAL 7035) Lexan 940
Base part	Black (RAL 7021) Noryl VO 1550
Coating	Conformal coated
A-Bus connector	0.14 - 0.5 mm ² (AWG 26-20)
Sensor connector	0.14 - 0.5 mm ² (AWG 26-20)
Mounting	DIN-rail (EN50022)

I/O Schematic

A-Bus connection



Current and leakage sensor connection



Ordering Information

Product	Order number
AmsCurrent	100-20-004
Leakage current sensor	200-20-000
Three-phase current sensor	200-10-000

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