

AmsRS485

Data Sheet

Description

The AmsRS485 module is a client interface module in the Amplex Module System. It is designed for two-way communication with RS485 compatible equipment from various manufacturers.

The AmsRS485 module can be used for establishing communication with RS485 compatible utility meters like DLMS meters or industrial monitoring devices running for example Modbus. The AmsRS485 module can easily be connected with up to ten child devices. The AmsRS485 module collects readings and other data from the devices and subsequently transfers these data to an AmsCPU module that acts as a data concentrator and WAN module. The AmsCPU module delivers the data to the central server when required. Direct communication and power supply between the AmsRS485 module and the AmsCPU module are handled by an incorporated A-Bus interface, which is based on the industrially proven RS-485 technology.

Functionality

Topic	Comments
A-Bus communication	A-Bus two-way communication with A-Bus masters, e.g. AmsCPU, AmsPLC+, AmsService.
RS485 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), Modbus. For a complete list of all supported meter types, please contact Amplex A/S.
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 by the system.
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 (orange): indicates whether the A-Bus is up and running.

Connections

I/O	Comments
A-Bus	A-Bus client module
RS485	RS485 A and RS485 B connect to one meter or a collection of meters. A = inverting pin and B = non-inverting pin. The AmsRS485 module can be connected to a maximum of 10 meters.

Reliability & Maintainability

Topic	Comments
Software upgrade	The software on the AmsRS485 module can be updated remotely from the central server.
Installation of new software	New software is transferred without interrupting the normal functionality of the AmsRS485 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.

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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 15 mA, Max 20 mA

Standards and approvals

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



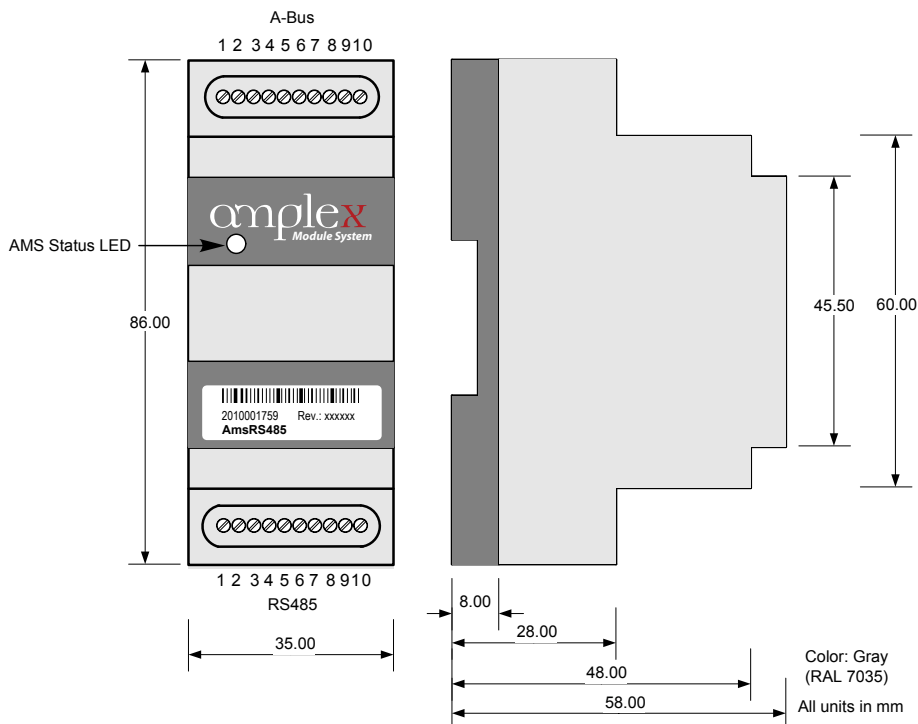
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Installation Guide

The AmsRS485 module can be connected to any master module in the Amplex Module System, e.g. AmsCPU, AmsPLC+ and AmsService. 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
RS485 cable	Use twisted pair cable.
RS485 cable length	< 3 m
0.5 mm ² terminals	Use a 2 mm slotted screwdriver to loosen/tighten the terminal screws.
Enclosure	The AmsRS485 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



Ordering Information

Product	Order number
AmsRS485	100-30-011

All specifications are subject to changes

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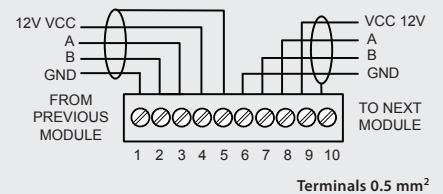
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Physical Specifications

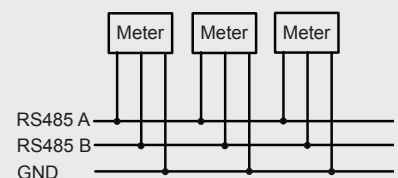
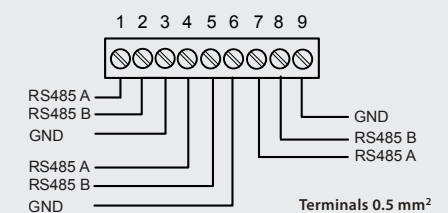
Weight	50 g
Top part	Gray (RAL 7035)
	Lexan 940
Base part	Black (RAL 7021)
	Noryl VO 1550
Coating	Conformal coated
A-Bus connector	0.14 - 0.5 mm ² (AWG 26-20)
RS485 connector	0.14 - 0.5 mm ² (AWG 26-20)
Mounting	DIN-rail (EN50022)

I/O Schematic

A-Bus connection



RS485 connection



A collection of meters can be connected to each RS485 A/RS485 B.

A = Inverting pin; B = Non-inverting pin

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