

Instruction Bulletin

ACE959 4-Wire RS485 Network Interface Installation Sheet

Retain for future use.

Function



PE59023

The ACE959 interface provides an electrical interface between Sepam™ and a 4-wire RS485 communication network. It is the main network cable branching box for connecting a Sepam with a CCA612 cable.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Only qualified electrical workers should install this equipment, after reading this entire instruction set
- NEVER work alone
- Before performing visual inspections, tests, or maintenance on this equipment, disconnect all sources of electric power. Assume that all circuits are live until they have been completely deenergized, tested, and tagged
- Use a properly rated voltage sensing device to confirm that power is off
- Screw tight all terminals, even those not in use

Failure to follow these instructions will result in death or serious injury.

Characteristics

ACE959 Module

Weight	0.441 lb (0.2 kg)
Assembly	Mounted on symmetrical DIN rail
Operating Temperature	-13°F to +158°F (-25°C to +70°C)
Environmental Characteristics	Same characteristics as Sepam base units

Two-Wire RS485 Electrical Interface

Standard	EIA 4-wire RS485 differential
Distributed power supply	External, 12 V DC or 24 V DC ±10%
Power burden	16 mA in receiving mode 40 mA maximum in sending mode

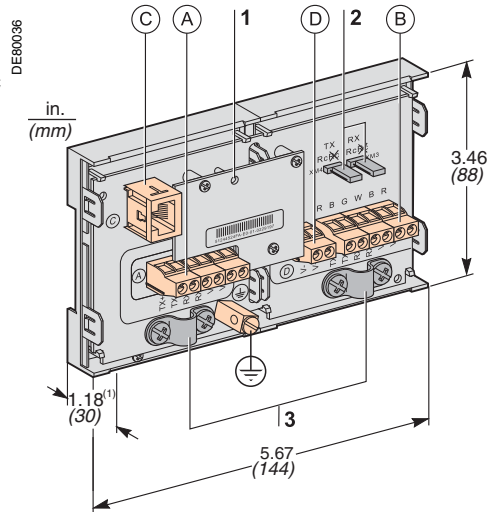
Maximum Length of Four-Wire RS485 Network with Standard Cable

Number of Sepam Units	Maximum Length with 12 V DC Power Supply	Maximum Length with 24 V DC Power Supply
5	1000 ft. (320 m)	3300 ft (1000 m)
10	590 ft (180 m)	2500 ft (750 m)
20	520 ft (160 m)	1500 ft (450 m)
25	410 ft (125 m)	1200 ft (375 m)

Description and Dimensions

- (A) and (B) are terminal blocks for network cable connection
- (C) RJ45 socket is used to connect the interface to the base unit with a CCA612 cable
- (D) Terminal block is for a separate auxiliary power supply (12 V DC or 24 V DC)
- ⏏ Grounding terminal

1. The Link Activity LED flashes when active communication occurs (sending or receiving is in progress).
2. The jumper for RS485 network line-end impedance matching with load resistor ($R_c = 150 \Omega$), is set to:
 - R_c if the module is not at one end of the network (default position). The "X" over the "Rc" indicates that the resistor is not in use
 - Rc, if the module is at one end of the network. This means the resistor is jumpered in
3. Network cable clamps connected to module ground (inner clamp diameter is 0.24 in or 6 mm).

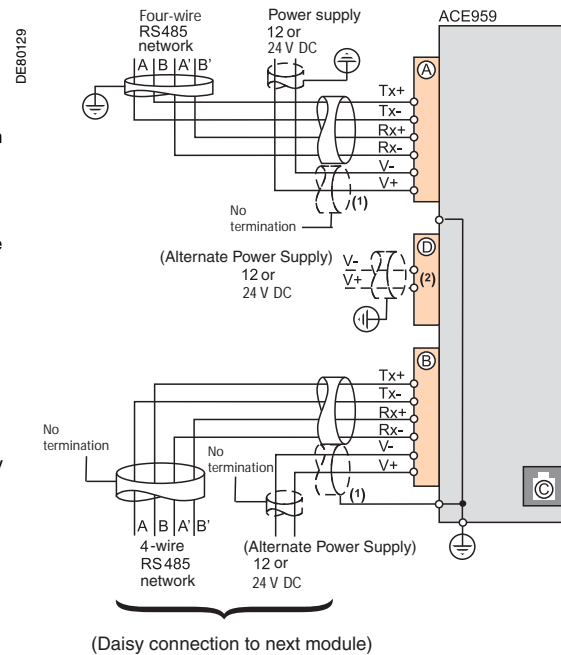


Connection

Perform the following steps when connecting the ACE959 network interface:

1. Connect the network cable to screw-type terminal blocks (A) and (B).
2. Connect the ground terminal by tinned copper braid with cross-section $\geq 6 \text{ mm}^2$ (AWG 10), or cable with cross-section $\geq 2.5 \text{ mm}^2$ (AWG 12), and length $\leq 200 \text{ mm}$ (7.9 in), fitted with a 4 mm (0.16 in) ring lug.
3. Check the tightness. Maximum tightening torque is 19.5 in-lb (2.2 Nm).
4. The interfaces are fitted with clamps to hold the network cable and recover shielding at the incoming and outgoing points of the network cable:
 - The network cable must be stripped
 - The cable shielding braid must physically contact (and wrap around) the clamp
5. Use a CCA612 cable (length = 9.8 feet, or 3 m, with green fittings) to connect the interface to connector (C) on the base unit.
6. Supply 12 V DC or 24 V DC to the interfaces.
7. The ACE959 can connect to a separate distributed power supply (not included in shielded cable). Terminal block (D) is used to connect the distributed power supply module.

NOTE: The cable shield grounding shown at right should only be done at one point, preferably at one end of the daisy chain.



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