REMOTE INDICATION INTERFACE
TYPE **RIS-FS**
retrofittable circuit board

Description

The retrofittable circuit board is used to integrate fault indicators of the FLA3.1 product line into a remote indication system. It provides bidirectional connectivity to all functions of the indicators.
The board can be equipped with whether a TTL interface, an RS232 or an RS485 interface for the connection to a remote terminal unit (RTU). Further equipment options are a relay output for notifications, a d-sub DE9 socket and an U.FL connector for external antennas.
Via the Modbus protocol or a customer-specific ASCII-based protocol all functions of the fault indicators of the FLA3.1 product line can be used remotely.

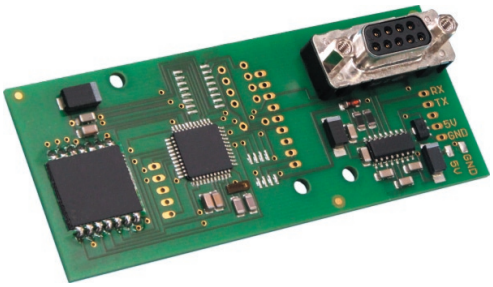

figure 1 - RIS-FS circuit board

Functions provided for the FLA3.1 product line

- Remote setting of all functions, such as trip current, response delay, reset time, automatic recloser settings etc.
- Remote test and reset
- Remote read-out of line current
- Remote indication of faults. Distinct remote indications for permanent and temporary fault or transient currents.

Special functions for the fault indicators type FLA3.1V and FLA3.1VL:

- Remote indication of voltage or current status
- Datalogging of current read-outs and voltage status
- Remote indication via short transmissions for optimized power consumption

General Data

Subject	Value
dimensions	(WxH) 40mm x 96mm
connections	a) 3Pin TTL connection (3.3V) **or** RS232 **or** RS485, 2W cabling b) optional: potential-free relay output c) optional: d-sub DE9 socket (only for RS232)
power supply	external 3.3V DC - 3.6V DC for TTL interface / RS485 interface **or** external 5V DC / 8-24V DC for RS232 / RS485 interface
power consumption	Depends on hardware interface and configuration used: lowest possible value approx. 7 µA
radio communication	433MHz bidirectional radio interface
antenna	a) internal b) optional: U.FL connector for external antenna
protocol	Modbus (RTU mode, slave device) **or** customer-specified (ASCII-based)
operation temperature range	-20°C to +70°C

ELEKTRO-MECHANIK EM GMBH
Ringstr. 4 - D-42553 Velbert / Germany
Tel: +49 2053 422890 - Fax: +49 2053 422899
www.emg-ger.com

Installation scenario

The remote indication interface type RIS-FS provides a fully bidirectional communication to the fault indicators of the FLA3.1 product line. The RIS-FS acts as a translator between RTU and the fault indicators. It will signal fault indication from the indicators to the RTU and it will perform commands from the RTU on the indicators.
In case of a fault the RIS-FS can act as initiator of a communication. Depending on the configuration and the protocol used, the initiation is performed via potential-free output or via initial communication on the selected interface.
The communication between RTU and RIS-FS can be done via Modbus protocol or a customer-specified, ASCII-based protocol. Like the protocol the hardware interface can be selected on ordering. Depending on the demand an energy-efficient TTL interface or a standard RS232 or RS485 interface can be used. By using a TTL interface and certain communication procedures the power consumption can be reduced to approx. 5 µA.
Due to the small size of the circuit board, it is easily integrable into existing RTUs.

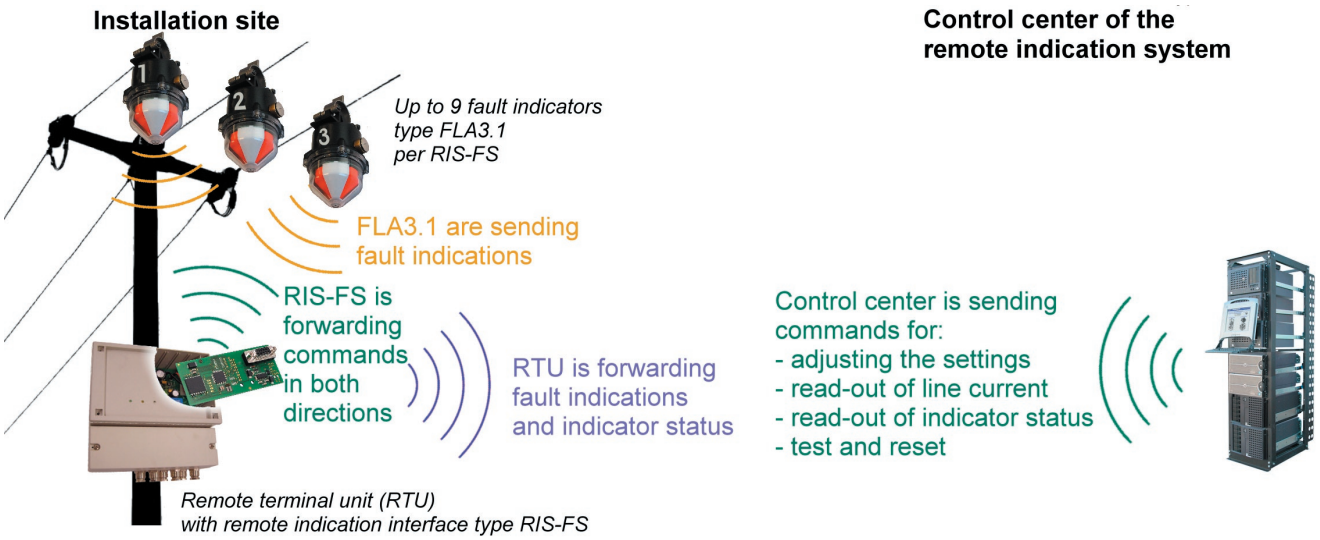

figure 3 - Installation scenario with fault indicators type FLA3.1

Dimensions and connectors

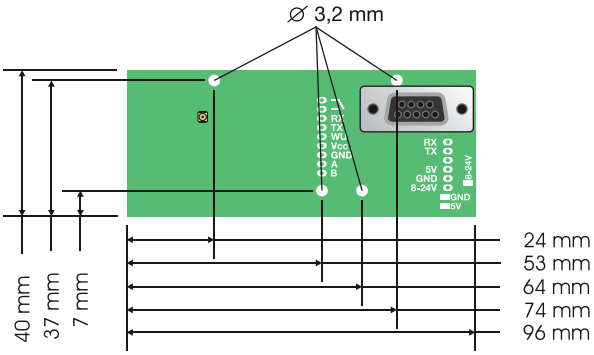

figure 4 - Dimensions of the circuit board

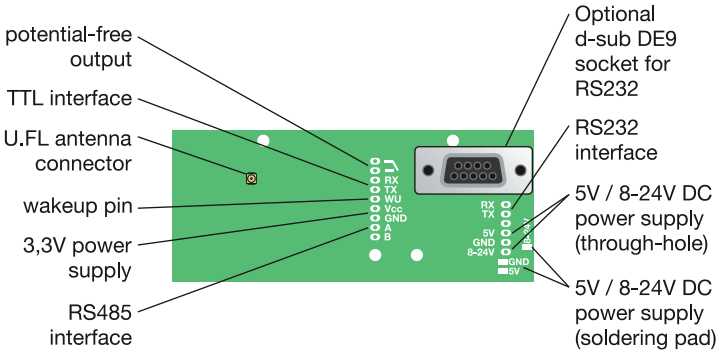

figure 5 - available connectors
(Please note: some connectors are mutually exclusive)