Remote terminal communication

1MRK 580 093-BEN
Page 1
Issued: January 2001
Status: New
Data subject to change without notice

Features

- Interfaces according to different standards available
- Galvanic and optical interfaces available for short distance as well as long distance communication

Application

The remote terminal communication modules are used both for differential line protection applications and for binary signal to remote end, for example for distance protections. The available modules adds hardware support for short to long distance communication depending on the module selected. Following modules are available:

- V.36
- X.21
- RS530
- G.703
- Short-range galvanic module
- Fibre optical communication module
- Short-range fibre optical module

Galvanic data communication module

The galvanic data communication modules according to V.36, X.21 and RS530 can be used for galvanic short range communication covering distances up to 100 m in low noise environment. Only contra-directional operation is recommended in order to get best system performance.These modules are designed for 64 kbit/s operation but can also be used at 56 kbit/s.

The galvanic data communication module according to G.703 is not recommended for distances above 10 m. Special attention must be paid to avoid problems due to noise interference. This module is designed only for 64 kbit/s operation.

Short range galvanic module

The short-range galvanic module can be used for communication over galvanic pilot wires and can operate up to distances between 0,5 and 4 km depending on pilot wire cable. Twisted-pair, double-screened cable is recommended.

Fibre optical communication module

The fibre optical communication module can be used both with multi-mode and single-mode fibres.The communication distance can typically be up to 30 km for single mode fibre, with high quality fibres even longer. This interface can also be used for direct connection to communication equipments of type FOX from ABB.

Short range fibre optical module

The short-range fibre optical module can only be used with multi-mode fibre.The communication distance can normally be up to 5 km. This modem can also be used for direct connection to communication equipments of type 21-15xx and 21-16xx from FIBERDATA

Technical data

Table 1: Galvanic data communication module

Interface type	According to standard	Connector type
V.36/V11 Co-directional (on request)	ITU (CCITT)	D-sub 25 pins
V.36/V11 Contra-directional	ITU (CCITT)	D-sub 25 pins
X.21/X27	ITU (CCITT)	D-sub 15 pins
RS530/RS422 Co-directional (on request)	EIA	D-sub 25 pins
RS530/RS422 Contra-directional	EIA	D-sub 25 pins
G.703 Co-directional	ITU (CCITT)	Screw

Table 2: Short-range galvanic module

Range	max 4 km
Line interface	Balanced symmetrical three-state current loop
Connector	5-pin divisible connector with screw connection
Isolation	2,5 kV 1 min. Opto couplers and isolating DC/DC-converter

Table 3: Fibre optical communication module

Optical interface		
Type of fibre	Graded-index multimode 50/ 125mm or 62,5/125mm	Single mode 9/125 mm
Wave length	1300 nm	1300 nm
Optical transmitter	LED	LED
injected power	-17 dBm	-22 dBm
Optical receiver	PIN diode	PIN diode
sensitivity	-38 dBm	-38 dBm
Optical budget	21 dB	16 dB
Transmission distance	typical 20 km	typical 30 km
Optical connector	Type FC-PC	Type FC-PC
Protocol	ABB FOX specific	ABB FOX specific

Table 4: Short-range fibre optical module

Optical fibre	Graded-index multimode 50/125mm or 62,5/125mm
Wave length	850 nm
Optical connectors	ST
Optical budget	15 dB
Transmission distance	max 5 km
Protocol	FIBERDATA specific

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