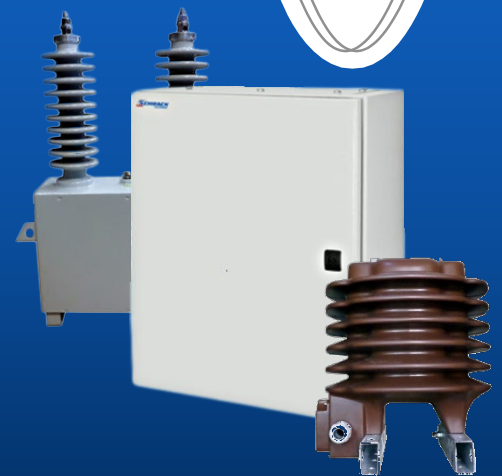# MT-MVPLC1-R
Medium voltage PLC modem

ModemTec

The **MT-MVPLC1-R** powerline modem is designed for use at existing MV lines up to 35 kV. Provided data channel is characterized by excellent noise immunity and long communication distance without the need for repeaters. The MT-MVPLC1-R is protocol-independent, in a typical application can work with Modbus, IEC, DLMS etc. or as a generic transparent data channel for any customer-specific protocol.

Typical applications

- Communication in smart grid
- Substation remote management
- Customer-specific applications (especially in industry)

Key features

- Operated on MV lines up to 22 kV (35 kV version on request)
- Data rate 10 kbit/s
- RS485 data interface
- Advanced DSP algorithms and error-correcting codes
- High output power 100 W (max.)

Reliable communication

The communication channel provided by the MT-MVPLC1-R is characterized by its excellent noise immunity, very long reach without repeaters and protocol flexibility thanks to transparent data transfer. There are also possibilities including routing, addressing, repeating etc.

Easy configuration

The MT-MVPLC1-R uses the RSet configuration tool as well as other MTEC based modems. This tool is simple and easy to use Windows application which allows modem configuration via the RS232 interface (or USB to serial converter) from a PC.

Technical data

Power supply

Voltage	230 V ±10 %
Frequency	50 Hz ±3 %
Backup input	24 V DC

Power consumption

Transmitting	100 VA max.
Idle	< 2 VA

PLC communication

Line voltage	Max. 22 kV (line-to-line) (35 kV on request)
Impedance (50 Hz)	> 10 kΩ
Output current	4 A (max)
Output power	100 W (max)
Protections	overcurrent, thermal
MV coupler	capacitive
PLC standard	MTEC
Carrier frequency	40 ÷ 120kHz
Modulation	single carrier DBPSK
Bandwidth	10 kHz
Error correction	FEC (Reed-Solomon)
Minimal SNR	> 9 dB (BER 10^{-4})

Interfaces

Main data	RS485
Binary	with module MT1044
Galvanic isolation	yes
Protocol	transparent
Baud rate	300 ÷ 230400 baud
Data bits	7, 8
Parity	none, odd, even
Stop bits	1, 2
Buffer	65 kB (RX) / 65 kB (TX)
Configuration	over RS232

Safety

Electrical appliance class I	
Comply with	ČSN EN 60060-1 ČSN EN 61010 ČSN EN 60529 ČSN EN 61000 ČSN EN 60870 ČSN EN 50065 ČSN EN 60065
Certificates	Test certificate power capacitor PUJS 23-24 no.: TR7 – 8222; Test certificate power current transformation type CTS 25X Sch

Environment

Operating temperature	-40 ÷ +70 °C
Storage temperature	-40 ÷ +80 °C
Relative humidity	0 ÷ 90 % (w/o condensation)

Mounting

Mounting	vertical mounting on wall or pole
Enclosure	metal
Protection	IP65

Dimensions

W x H x D	400 x 500 x 155 mm
Weight	Approx. 15 kg

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