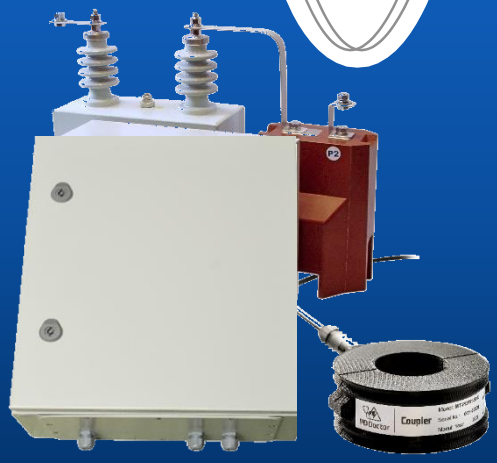
MT-MVPLC1-R

Medium voltage PLC modem

The MT-MVPLC1-R powerline modem is designed for use at existing MV lines up to 22 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

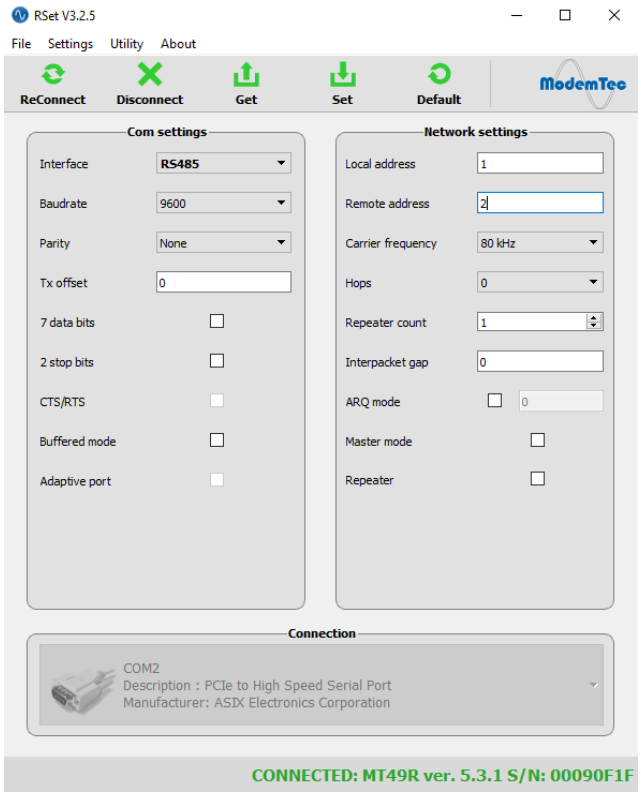
- RS485 data interface
- Data rate 10 kbit/s
- Advanced DSP algorithms and error-correcting codes
- High output power 100 W (max.)
- Capacitive coupler for MV lines up to 22 kV
- Inductive coupler for earth line installations

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 %
Power consumption	Max. 100 W

PLC communication

Impedance (50 Hz)	> 10 kΩ
Carrier frequency	40, 50, 60, 70, 80, 90, 100, 110, 120 kHz
Modulation	DBPSK
PLC standard	MTEC
Output amplitude	149 dB/µV (RL = 12 Ω)
Bandwidth	10 kHz
Output current	4 A (max)
Output power	100 W (max)
Input sensitivity	1 mV
Amplitude adjustment	Yes, manual
Minimal SNR	> 9 dB (BER 10^{-4})
Protections	Over-current, short-circuit, thermal
Error correction	FEC (Reed-Solomon)

Interfaces

Main data	RS485
Galvanic isolation	Yes
Protocol	Transparent
Baud rate	300 ÷ 230400 baud
Data bits	7, 8
Parity	None, odd, even
Stop bits	1, 2
Buffer	64 kB
Configuration	Over RS232

Inductive coupler

Primary voltage, maximum	500 V_{ac}
Primary current, I_n (50Hz)	100 A_{ac}
Connection cable length	5 m
Inner diameter	36 mm
Split core	Yes

Capacitive coupler

Line voltage	Max. 22 kV (line-to-line)
Dimensions	(W x H x D, mm)
Capacitor outdr.	430 x 150 x 560
Transformer outdr.	320 x 270 x 360
Transformer indoor	200 x 180 x 280
Weight	
Capacitor outdr.	23 kg
Transformer outdr.	30 kg
Transformer indoor	18 kg

Safety

Electrical appliance class I	
Comply with	EN 61010 EN 60529 EN 61000 EN 60870 EN 50065
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 %

** Non-condensation*

Mounting

Mounting	Vertical mounting on wall or pole
Enclosure	metal
Protection	IP65

Dimensions of metal case

W x H x D	400 x 500 x 200 mm
Weight	Approx. 17 kg