

# PSTN and Leased Line modem

## TR-36B

The TR-36B is a rack mount analogue V.34 PSTN and 2- or 4-wire leased line modem. It supports data rates of up to 115.2 kbit/s on the terminal side and modem modulation speeds of up to 33.6 kbit/s on the line side. The modem is designed to harsh industrial standards for applications where a number of modems are required in the same location. The unit has passed extensive approvals testing by both Westermo and external test houses, showing that the modem can operate in environments with a high level of electromagnetic interference.

### Ideal for critical industrial applications

The TR-36B features a number of security functions such as password protection, dial-back security and caller ID answering making the modem ideal for critical industrial applications. The TR-36B can also be remotely configured making it ideal for use in unmanned installations.

The modem is designed to be prepared for unexpected faults. The modem is equipped with transient protection on the line side and a watchdog function that monitors and automatically resets the modem in the event of a fault. In case of a leased line failure, a PSTN dial backup facility can be configured for additional reliability.

### High configurability

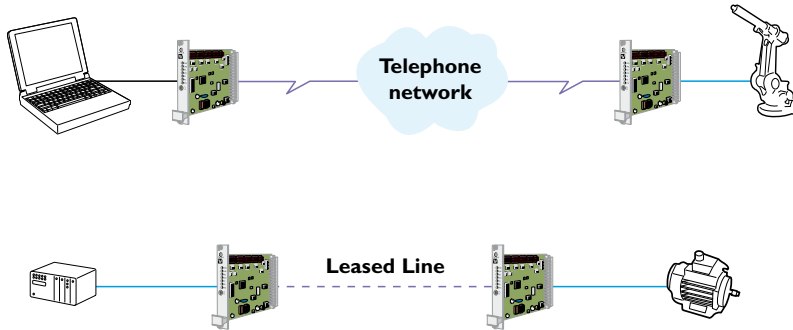
The TR-36B is configurable via its serial interface using standard terminal emulation software using Hayes AT commands or the Westermo TD-Tool modem configuration utility. Additionally many functions of the TR-36B can be configured via the onboard DIP-switches.

The modem is designed for use in the Westermo RV-07B 19" rack, which can hold up to 16 cards as well as two PS-20 power supplies and can also be externally powered by a 24 V supply. The modems slide into the chassis from the front with all line connections terminating onto the backplane.

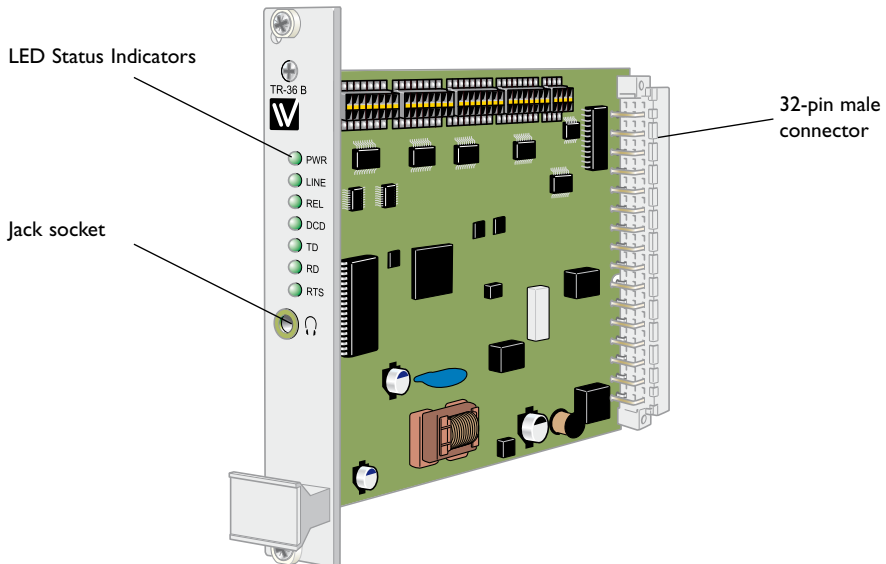
- ⌘ Data rate up to 33.6 kbit/s with Fast Connect
- ⌘ Terminal rate up to 115.2 kbit/s
- ⌘ RS232 and RS422/485 interface
- ⌘ 2- and 4-wire Leased Line
- ⌘ V23 HDX with multidrop
- ⌘ DTR and incoming data dialling
- ⌘ DIP-switch configuration
- ⌘ Watchdog security
- ⌘ Secure call back and access
- ⌘ Industrial environment transient protection on all interfaces
- ⌘ Up to 11 bits
- ⌘ Tri-Galvanic isolation (interface/line/supply)
- ⌘ Caller ID presentation and answering
- ⌘ Remote configuration
- ⌘ Dial backup for PSTN and Leased Line



## Application



## Interfaces



## Technical Data

Power	
Rated voltage	12 to 48 VDC
Operating voltage	10 to 60 VDC
Rated current	130 mA @ 12VDC 63 mA @ 24VDC 40 mA @ 48VDC
Rated frequency	DC
Power consumption	2W
Inrush current, I <sup>2</sup> t	6 mA <sup>2</sup> s
Startup current	0.22 A <sub>peak</sub>
Polarity	Polarity dependent
Connection	32-pin Europe connector

## Type tests and environmental conditions

Electromagnetic Compatibility			
Phenomena	Test	Description	Test levels
ESD	EN 61000-4-2	Enclosure contact	± 6 kV
		Enclosure air	± 8 kV
RF field AM modulated	IEC 61000-4-3	Enclosure	20 V/m 80% AM (1 kHz), 80 – 2 700 MHz
Fast transient	EN 61000-4-4	Signal ports	± 2 kV
		Power ports	± 2 kV
Surge	EN 61000-4-5	Signal ports unbalanced	± 2 kV line to earth, ± 2 kV line to line
		Signal ports balanced	± 2 kV line to earth, ± 1 kV line to line
		Power ports	± 2 kV line to earth, ± 2 kV line to line
RF conducted	EN 61000-4-6	Signal ports	10 V 80% AM (1 kHz), 0.15 – 80 MHz
		Power ports	10 V 80% AM (1 kHz), 0.15 – 80 MHz
Voltage dips and interruption	EN 61000-4-11	AC power ports	10 & 5 000 ms, interruption 10 & 500 ms, 30% reduction 100 & 1 000 ms, 60% reduction
Mains freq. 50 Hz	EN 61000-4-16	Signal ports	100 V 50 Hz line to earth
Mains freq. 50 Hz	SS 436 15 03	Signal ports	250 V 50 Hz line to line
Voltage dips and interruption	EN 61000-4-29	DC power ports	10 & 100 ms, interruption 10 ms, 30% reduction 10 ms, 60% reduction +20% above & -20% below rated voltage
Radiated emission	EN 55022	Enclosure	Class A
	FCC part 15		Class A
Conducted emission	EN 55022	AC power ports	Class B
	FCC part 15	AC power ports	Class B
	EN 55022	DC power ports	Class B
Dielectric strength	EN 60950	Signal port to other isolated ports	2 kVrms 50 Hz 1 min
		Power port to other isolated ports	3 kVrms 50 Hz 1 min 2 kVrms 50 Hz 1 min (@ rated power <60V)
Environmental			
Temperature		Operating	-40 to +70°C
		Storage & Transport	-40 to +70°C
Humidity		Operating	5 to 95% relative humidity.
		Storage & Transport	5 to 95% relative humidity.
Altitude		Operating	2 000 m / 70 kPa
Reliability prediction (MTBF)	MIL C217F2	Operating	676000 h @ 25°C
Service life		Operating	10 year
Packaging			
Dimension W x H x D			20 x 100 x 175 mm
Weight			0.14 kg
Degree of protection	IEC 529	Enclosure	IP 20
Cooling			Convection
Mounting			RV07B 19" rack

## Approvals

