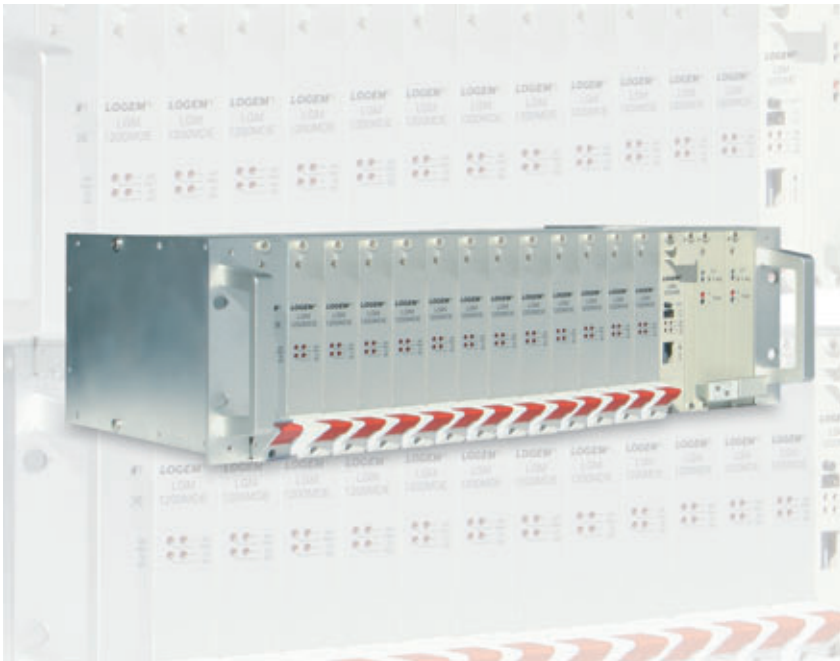


LOGEM 1200MD E.T.

Multidrop modem for operation with extreme environmental conditions



Subrack (BGT3) with LOGEM 1200MD E.T. modules

- **Multidrop modems for traffic control and data transport**
- **Suitable for operation in environments with temperatures between -40 °C und +85 °C**
- **Transmission speed asynchronous 1,200 bps halfduplex acc. to ITU-T V.23**
- **Permanent transmit control**
- **Construction as 19" module**

■ Partyline modems

The partyline modem LOGEM 1200MD E.T. (MD = multidrop) is optimised for operation with switched two wire lines using the so-called partyline procedure.

The LGM 1200MD E.T. is intended for operation in a 19" subrack as well. It has an extended temperature range that allows safe operation even in extreme climatic conditions.

Using partyline operation several modems (slave) are served by a main station (master) on only one line (polling operation).

Even equal operation of many data terminal equipment (DTE) on a common line is possible if a transmit collision is prevented by the DTE. The modems are configured with DIP switches and can be easily adapted to the respective system.

As addressing of the modems is not necessary this has to be preserved by the application protocol.

■ Areas of application

The partyline concept is always reasonable if you have to transfer data between a main computer and remote control computers on very long distances.

Traffic telecontrol for motorways, valve controls in pipelines, signal controls for railway tracks etc. are only some of the applications reflecting the possible characteristic of the transmission route. Thus up to nine slave modems can exchange data with a master modem.

■ Transmission procedures

The partyline modems operate in the voiceband with FSK modulation acc. to V.23 using halfduplex or simplex procedures.

Due to the processor controlled »fast clamping« of receive data the generation of disturbing tracking bits (at deactivation of the remote transmitter) is impossible to a large extent.

At asynchronous operation the transmission is possible independent from the code or rate at 0...1,200 bps.

If the DTE is controlled by the modem clock transmit data can be transferred phase-locked to the modem.

As the modulation procedure acc. to V.23 is asynchronous an operation with the transmit clock from the DTE is possible as well.

■ Extended temperature range

With the LOGEM 1200MD E.T. a modem is available that operates perfectly even with extreme climatic conditions.

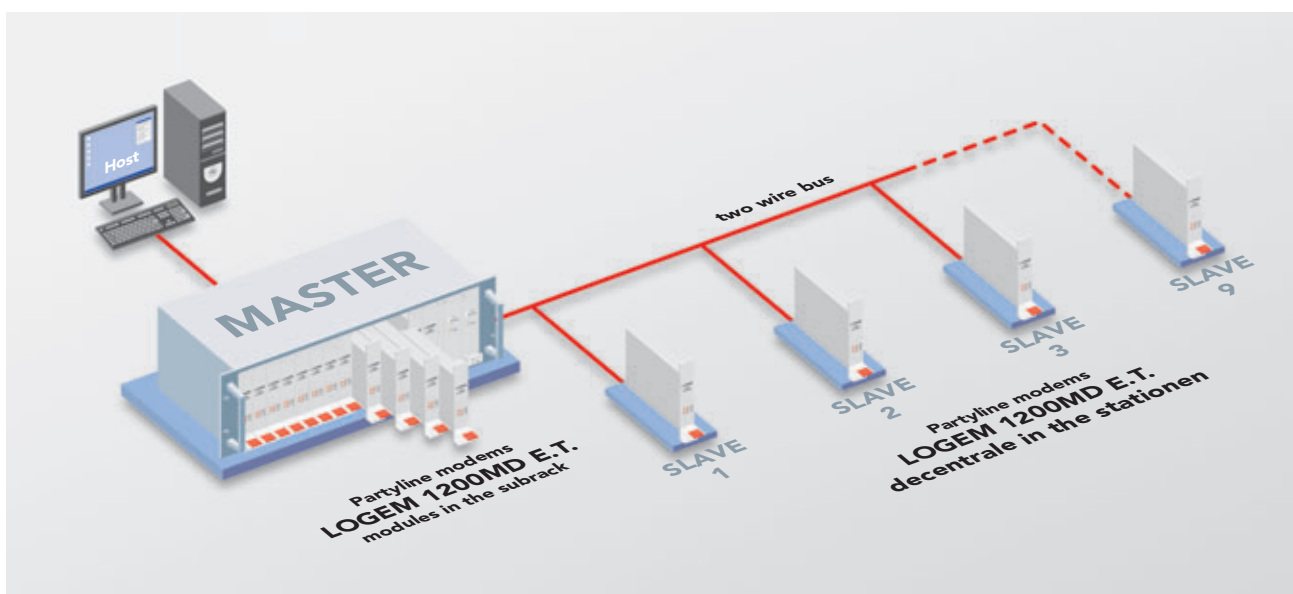
It can be employed from -40 °C up to +85 °C.

■ Permanent transmit control

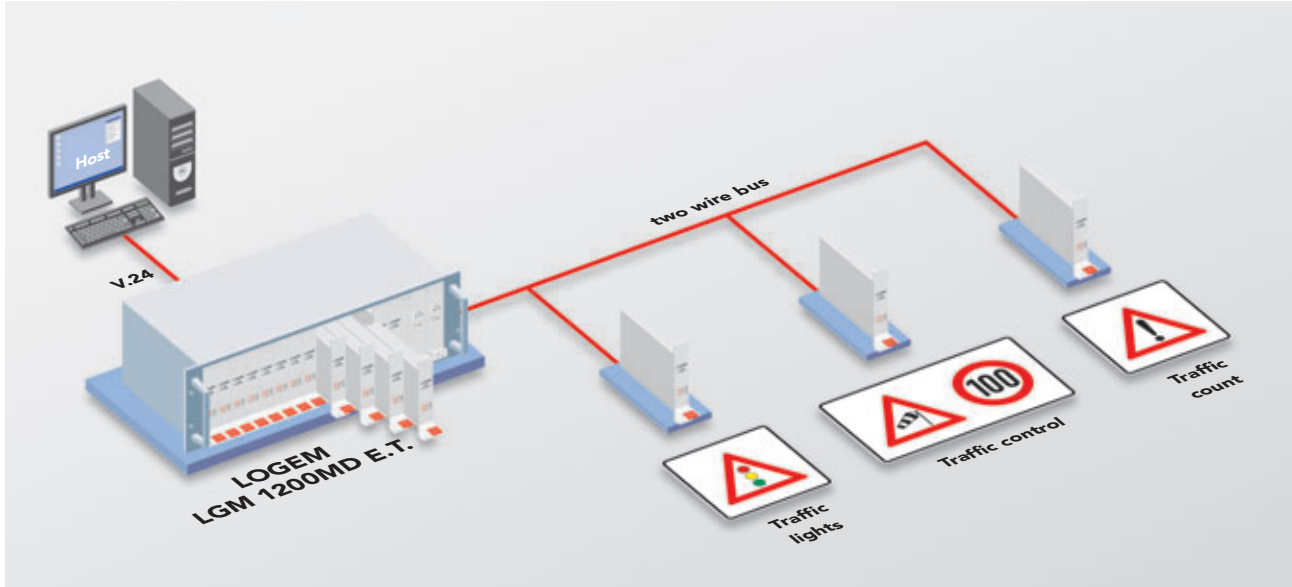
If a defective station on the route switches to permanent transmission and thus blocks the complete bus normally the whole route has to be inspected to detect the location of the failure.

With the LOGEM modems the DCE is controlled by a processor-independent permanent transmit control. If the DCE triggers the modem for more than eight seconds the modem transmitter is deactivated.

A new transmission is only possible after an inactivity phase of 300 ms. A defective station on the route is indicated by a flashing LED on the modem.



LOGEM 1200MD E.T. in a partyline application



Traffic control with the LOGEM 1200MD E.T.

■ **Extended partyline concept**

For the connection of control computers at large distances an extended partyline concept is available.

The LineRunner SCADA provides further functions - but complies concerning pure partyline data transmission to the 1200MD modems.

The transmission of control data is realised for the LineRunner SCADA via 2 monomode optical fibers or on (even pupinised) copper cables.

The connection of local computers can be performed pin-compatible to the modems. Additionally the computers can be connected using the standard protocol PPP to the LineRunner SCADA.

Fail-safety and the speed of the partyline can be increased by the formation of rings.

The following interfaces are available:

- Baseband 144 kbps
- dial-up network connection with V.24/V.28

- G.703 with 64 kbps or 2 Mbps
- as well as modem heads with max. 33.6 kbps.

All interfaces can be selected freely for each device and each side.

For further information please refer to the data sheet LineRunner SCADA that is available separately.

Technical specifications

Transmission rate	
Asynchronous, halfduplex	0 ... 1,200 bps according to ITU-T V.23; code and rate transparent
Operation with time lead	"mark" or "1:1 alternation"
Data interfaces	
VG connector strip	96pin connector (DIN 41612 Part 6)
Level	TTL (logically inverted for V.28)
S2/M2 switchover time	30 or 200 ms (to be switched)
Line interfaces	
Impedance	check for DC-free lines!
Receive	36 kohms or 600 ohms
Transmit	300 ohms or 600 ohms (to be switched)
Sensitivity	≤ -43 dBm or ≤ -33 dBm (to be switched)
Transmit power	-6 dBm; -9 dBm; -3 dBm: ±0 dBm
Modulation procedure	FSK (Frequency Shift Keying)
Dielectric strength	max. 2 kV at surge 10/700 ms (ITU-T K.21)
Telephone line	
VG side	La: 3c; Lb: 3a; E: 8b (a2: 7c; b2: 7a)
Device front	FKS 8
Dummy termination	6 kohms (switched to La/Lb at voltage failure or deactivation of the module)
Listening jack	high-impedance (multiplier 10 kohm each) at La and Lb via ISEP jack resp. VG side
Power supply	
Supply voltage	+5 V, ±5 %
Power consumption	≤100 mA (transmit) ≤60 mA (receive)
Environmental conditions	
Temperature range operation	-40 °C ... +85 °C
Dimensions (h x w x d) and weights	
19" module	appr. 190 x 26 x 130 mm, (3 HU, 5 DU); 200 g
Licence	
Germany	A010717A
Switzerland	BAKOM 93.0282.D.N



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