

## DLM-336

Dial-up line modem  
for industrial applications



DLM-336S  
DLM-336R



DLM-336D

### Introduction

The MuLogic DLM-336 is a voice band modem for reliable data communication over dial-up lines and 2-wire leased lines. It supports data rates up to 33.6 kbps. The DLM-336 was designed for industrial applications: it can be powered from a 9 to 36 Volts power source and can be mounted against a DIN rail.

The modem supports full and half duplex operation modes for data transmission. The DLM-336 can also be used as a Class1 Fax modem for communication with group 3 fax machines.

Although the DLM-336 is mainly intended for dial-up line applications, the modem can also be used on 2-wire leased lines where the modem is controlled by the connected computer system or PLC.

The DLM-336 is also available in a rugged steel housing and as rack card for the 19" [UCF-16.3](#) and [MCF-16.3](#) racks.

### Features

- V.34, V32bis, V.32, V.22bis, V.22, V.21; full duplex operation from 300 bps to 33,6 kbps
- V.23; half duplex operation with DTE interface rate conversion.
- T.4/T.30, V.17, V.29, V.27ter fax operation from 4800 to 14,4 kbps
- Automatic dial and automatic answer
- Automatic dial on signal from PLC or other device
- Automatic mode detection for full duplex modes
- 2-wire leased line operation under control of DTE
- Asynchronous data rates up to 115.2 kbps for buffered or error corrected data
- Synchronous data rates up to 33,6 kbps
- V.42/MNP2-4 error correction for asynchronous data
- V.42bis/MNP5 data compression for asynchronous data
- Isolated 24 Vdc supply voltage for industrial applications
- Din-Rail mounting bracket
- Extended temperature range

### Application Areas

#### Asynchronous applications

For applications with asynchronous data, the DLM-336 supports a buffered DTE (terminal) interface. The modem accepts data rates from 300 bps to 230400 bps and supports error correction and data compression according to the V42/V.42bis and MNP5 protocols.

## Synchronous applications

For applications with synchronous data, the DLM-336 supports data rates from 1200 to 33600 bps. Synchronous transmit clocking information can be generated by the modem, externally supplied by the DTE, or slaved to the receive clock.

## Half duplex applications

The DLM-336 supports half duplex (switched carrier) operation in V.23 mode and offers a buffered interface which enables the DTE to operate at a higher rate than the modem. This feature is often used for communication with cash terminals and pay phone systems.

## Power supply

The DLM-336 is equipped with an internal galvanic isolated power supply that can be powered from any 9 to 36 Vdc or 9 to 30 Vac source. For 230 Volts AC operation a regular 12 Vac power adapter can be used. A version for 48 Vdc operation is available on request.

## Extended temperature range

The modem can be used in many environments. It is suitable for operating at ambient temperatures ranging from -25 to +70 C

## Technical Specifications

### Full duplex modulation modes

- ITU/TSS V.34; 33k6, 28k8, 26k4, 21k6, 19k2, 14k4, 12k and 9600 bps async/sync.
- ITU/TSS V.32bis; 14k4, 12k and 7200 bps async/sync.
- ITU/TSS V.32; 9600 and 4800 bps async/sync.
- ITU/TSS V.22bis; 2400 and 1200 bps async/sync.
- ITU/TSS V.22; 1200 bps async/sync.
- ITU/TSS V.21; 0..300 bps asynchronous.

### Half duplex modulation mode

- ITU/TSS V.23; 1200 bps asynchronous.

### Fax modes

- ITU/TSS V.17; 14.400 bps
- ITU/TSS V.29; 9600 bps
- ITU/TSS V.27ter; 4800 bps
- ITU/TSS T.4/T.30.
- Class 1 DTE interface

### Error correction and data compression

- ITU/TSS V.42 LAPM error correction
- MNP2-4 error correction
- ITU/TSS V.42bis data compression
- MNP5 data compression

## Auto dial and configuration

- AT commands
- Dial on DTR (circuit 108.1 mode)
- Dial on contact closure.
- DTMF tone dial and pulse dial

## Supported DTE data rates

- Async.: 300, 600, 1200, 2400, 4800, 7200, 9600, 19k2, 38k4, 57k6, 115k2 bps
- Sync.: 1200, 2400, 4800, 7200, 9600, 12k, 14k4, 16k8, 19k2, 21k6, 26k4, 28k8, 33k6 bps

## Supported DTE interface signals

- TxD, RxD, RTS, CTS, DSR, DCD, DTR, RxClk, TXclk, ExtClk, TST, RI

## Line connection

- PSTN line at RJ-11 connector
- RJ-11 connector for telephone set
- Line impedance 600 Ohms
- Transmit level: -9 .. -15 dBm
- Receive threshold -43 dBm On, -48 dBm Off.

## Versions

- DLM-336D: Compact plastic housing (Stand alone or DIN rail mounting)
- DLM-336R: 3HE, 5TE Rack card for the UCF-16.3 and MCF-16.3 racks
- DLM-336S: Rugged steel housing (mounting flanges optional)

## Dimensions and weight

- DLM-336D: 95x145x30 mm LxWxH, Weight: 220 gr.
- DLM-336R: 3 units high (3HE) 5TE wide Eurocard, 160 mm.
- DLM-336S: 250x130x30 mm LxWxH, Weight: 1450 gr.

## General

- Power supply: 12 Vac mains power adapter, 9..30 Vac or 9..36 Vdc (48 Vdc optional)
- Power consumption: 2 W
- Temperature range: -25~+70 C Humidity: 5~95%

## Compliances

- CE mark: 89/336/CEE, 72/23/CEE, EN55022, EN50082-2, EN60950
- PSTN operation: CTR21
- Leased line operation CTR15
- Climate: EN50125-3
- Vibration: EN50125-3