

DM1400 Teleprotection Terminal

Technical Specification



Description

Teleprotection equipment such as the DM1400 system is used by electrical power utilities to protect electrical power distribution networks.

Dewar Electronics is a manufacturer of Teleprotection equipment providing a secure and dependable communication channel for the operation of protection systems that enable rapid and selective detection and isolation of faults in the electrical power distribution system.

The DM1400 Teleprotection equipment can be ordered in various configurations depending on customer requirements, and it offers:

- Faster than 3ms trip output relay operation time with both C37.94 or G.703 interface options in a back-to-back configuration
- Bi-directional transmission of 4 trip command inputs to 4 trip command outputs (solid-state)
- 8 programmable alarm relays (mechanical)
- IEEE C37.94-2017 compliant 2.084Mbps 850nm multi-mode optical link interface option for short reach optical links up to 2km
- IEEE C37.94-2017 compliant 2.084Mbps 1310nm single-mode optical link interface option for long reach optical links up to 120km without optical repeaters
- ITU-T G.703-2016 compliant 64Kbps co-directional digital data interface option for transmission over 4-wire electrical links
- Optional redundant power supply in 48V DC, 110VDC and 250VDC or AC configurations (1+1 redundant power)
- Optional redundant optical fibre interface (1+1 redundant optics)
- Compact standard 19-inch rack-mountable 1U high enclosure

Main Features

Front Panel:

- Backlit 4-Line 20 Character LCD Display to show current equipment status
- USB interface connector for local terminal access
- Status and system fault indication LEDs: (POWER, SYSTEM ALARM, LOS and RDI)

Back Panel:

- ON/OFF Power Switch 1 and Power Supply 1 connector
- On/OFF Power Switch 2 and Power Supply 2 connector (optional for redundancy)
- RJ45 10/100Base-T Fast Ethernet connector for remote access over an IP network
- 8-port Alarm Relay connector (for either NC or NO condition)
- 4-port trip command input connector
- IEEE C37.94 optical fibre ST-type connector, or ITU-T G.703 4-wire connector



Event and Alarm Logging:

- Time-stamped Alarm Logging
- Time-stamped Trip Event Logging

Management and Monitoring via DM1400 GUI Windows Software:

- USB Interface for local terminal access
- Standard 10/100Base-T Fast Ethernet for remote access over an IP network
- SNMP Ver.1, Ver.2 and Ver.3 management protocol for real-time remote monitoring and management over an IP network
- Visual I/O status shown on built-in backlit LCD display
- Encrypted password protection

Redundant Power Supply Options:

- 48V DC (operation range 20 to 70V DC)
- 110V DC (operation range 70 to 160V DC)
- 240V DC (operation range 130 to 300V DC)
- 240V AC (operation range 90 to 264V DC)

Technical Data

C37.94 Fibre Optic Interface

Data Speed: 2.048Mbps

Protocol: IEEE C37.94

Wavelength Options: 850nm Multi-mode Fibre OR 1310nm Single-Mode Fibre

G.703 Interface

Data speed: 64kbps

Protocol: ITU-T G.703

Impedance: 120Ω Balanced

Security and Dependability

Programmable security and dependability

Programmable debounce, input/output extend, hold off and cut off times

Environmental

Operating Temperature -10 to 70°C

Storage Temperature -20 to 80°C

Relative Humidity Operating 50 to 95%

Relative Humidity Storage 5 to 95% non condensing

Standards

EN 55032 Emissions

EN 55022 EMC Emissions

EN 55024 EMC Immunity

IEC 61326-1 EMC

IEC 61010 Safety

EN 60950 Safety

IE IEC 60834-1 Teleprotection

IEC 60870-2-1 Telecontrol

IEEE C37.94

RFC1157 SNMP

ITU-T G.703

ITU-T G.823

IEEE 802.3 Ethernet

IEEE 802.3u Fast Ethernet

ETS 300 019-1-1 Operational

ETS 300 019-1-2 Storage

Meets CE Requirements

Complies with IEEE and IEC standards

Dimensions and Weight

Physical Size: 43.8mm(H) 440.5mm(W) 241mm(D)

Weight: 3kg

Designed and manufactured in Australia

