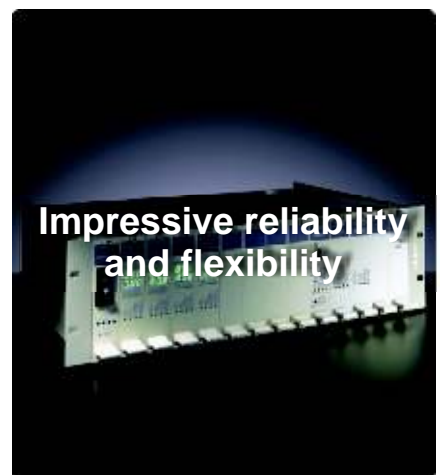




DIMAT

DIMAT TPD-2
digital teleprotection
terminal



Communication solutions for power utilities

Advances in digital teleprotection technology

The latest digital teleprotection technology has greatly enhanced the performance of teleprotection terminals: shorter transmission times, more advanced security and dependability, and the possibility of working with an even larger number of commands.

Product overview

TPD-2 terminals enable two-way transmission of up to eight independent and simultaneous teleprotection commands through a digital channel. The line interface of this digital channel can be electrical (G.703, V.11 and V.35) or optical. The available electrical line interfaces provide transmission speeds of 32 kbit/s, 64 kbit/s or 2 Mbit/s, while the optical line interface enables a transmission speed of 64 kbit/s.

TPD-2 terminals can manage two simultaneous line interfaces to enhance dependability: a main line and an alternative backup line, in case a fault occurs on the main line.

Management system

Choose between standard Windows-based management and optional integrated Web management with the possibility of a LAN connection:

Standard Microsoft® Windows® based management system

DIMAT TPD-2 terminals can be fully programmed, monitored and managed from a PC connected to the terminal via an RS-232C interface. The user interface is based on Web technology and the required PC software is supplied with the terminals.

Optional integrated Web management system

DIMAT TPD-2 terminals can be equipped with an optional Web server module integrating all HTML pages necessary for programming and monitoring, as well as Ethernet and RS-232 interfaces. Thanks to this optional module, TPD-2 terminals can be fully programmed, monitored and managed from a PC running a standard Web browser, without requiring any additional software.

The communication between the PC and the terminals can be carried out by a direct connection or through an IP network.

In both cases, an internal data channel allows the collateral terminal to be programmed and supervised from the terminal connected to the management system.

Key Features

- Modular design
- Extremely high security and dependability
- Transmission of up to 8 independent and simultaneous commands
- 32 kbit/s, 64 kbit/s or 2 Mbit/s transmission speed with electrical interfaces and 64 kbit/s with optical interface
- Possibility of managing a back-up line interface
- End-to-end supervision
- Standard Windows-based management system and optional integrated Web management system with LAN connection

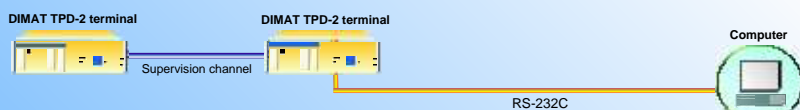
Modular design and flexibility

TPD-2 terminals, due to their modular design, can be equipped with up to eight commands and up to two line interfaces. This flexibility, together with the fact that each command can be programmed independently for direct trip, permissive trip or blocking applications, enables TPD-2 terminals to adapt perfectly to the teleprotection needs of each customer.

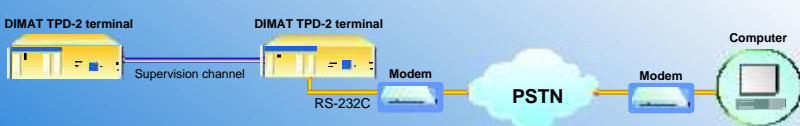
Standard Microsoft® Windows® based management system

Two types of connection:

Direct connection



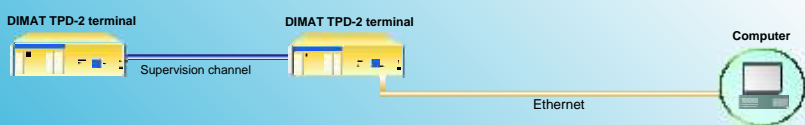
Connection via modem



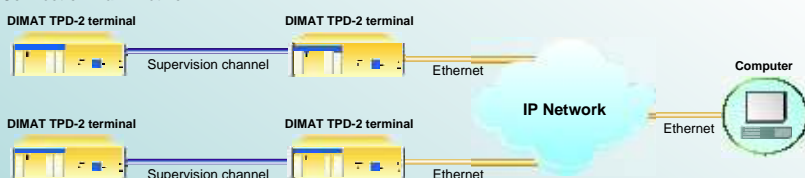
Integrated Web Management system

Two types of connection:

Direct connection



Connection via IP network



DIMAT TPD-2 digital teleprotection terminal – Technical Specifications

General characteristics

Capacity	From 1 to 8 commands
Communication protocol	HDLC with fixed sequence
Transmission time	
Transmission speed of 32 kbit/s	From 4.23 ms to 32.07 ms, depending on the security and dependability required
Transmission speed of 64 kbit/s	Between 3.30 ms and 17.22 ms, depending on the security and dependability required
Transmission speed of 2 Mbit/s	Between 3,80 ms and 18,10 ms, depending on the security and dependability required
Line interfaces	
Module IETD	64 kbit/s, G.703, V.35 or V.11 with SUB-D male 15-pin connector 32 kbit/s, V.35 or V.11 with SUB-D male 15-pin connector
Module IDTD	2 Mbit/s, G.703 with BNC connector
Module OWTD	64 kbit/s, single mode 1300 nm F.O. with ST female connector
Command inputs	
Number of inputs	Two per command, optoisolated, their decision logic is programmable by the user
Nominal activation voltage	Selectable among 24 V _{DC} , 48 V _{DC} , 110 V _{DC} and 220 V _{DC} (max. 260 V _{DC})
Command outputs	
Number of outputs	One per command, solid-state relay with voltage-free contact and current limitation
Maximum current	2A permanent and 3 A for maximum 20 s
Maximum voltage	300 V _{DC}
Signaling and alarm outputs	
Command-transmission signaling	One per command, and per relay. Contact rating: 1 A/250 V _{AC} /150 V _{DC}
Command-reception signaling	
Alarms	By 4 relays, changeover contact. Contact rating: 1 A/250 V _{AC} /150 V _{DC} Their deactivation conditions are programmable by the user
Command counters	Two 0 to 999 counters per command, one for transmission and one for reception
Power supply	24 V _{DC} to 48 V _{DC} 110 V _{DC} or V _{AC} to 220 V _{DC} or V _{AC}
Maximum power consumption	<50 W
Dimensions	482 x 133 x 302 mm with plug-in terminal blocks 482 x 133 x 322 mm with cabinet-mounting terminal blocks
Weight	7 kg
Operating conditions	
Temperature and humidity	From –5 °C to +55 °C and relative humidity not greater than 95%, in accordance with IEC 721-3-3 class 3K5 (climatogram 3K5)
Storage conditions	In accordance with IEC 721-3-1, class 1K5
Management computer	
Type	Compatible personal computer (PC) with 80486 processor or higher
Operating system	Windows 98 SE, Windows 2000 or Windows XP operating system
Web browser	Microsoft Internet Explorer v 5.5 or higher
Management interfaces	
Standard Windows-based management	RS-232C with SUB-D female 9-pin connector
Optional integrated Web management	RS-232C with SUB-D female 9-pin connector 10Base-T/100Base-TX with RJ-45 connector 100Base-FX with MT-RJ connector



DIMAT: A world of experience

DIMAT has 35 years of experience in the design and manufacture of communications and networking solutions for the power utilities market, worldwide. Our industry-leading reliability products range from digital and analog Power Line Carrier terminals and their accessories and digital and analog teleprotection terminals. All our products comply with IEC standards.

We aim to become the most advanced company in the world in the power utility communication market. That's why we dedicate more than 30% of our workforce to Research and Development.

DIMAT: Quality assurance you can count on

At DIMAT, we take quality as seriously as you do. Our quality assurance program aims to bring you industry-leading quality in our products and services. DIMAT is ISO 9001:2000 certified. Quality is built into our products every step of the way.

DIMAT: Full life-time service

At DIMAT, we pride ourselves on the quality of our Customer Care. Our workforce of highly qualified professionals is dedicated to developing, maintaining, and implementing the best solutions for your needs.

When you contact DIMAT, you will always talk to the right in-house expert for your query. And we offer complete after-sales assistance during the full life cycle of our products.



DIMAT continually strives to improve the quality and performance of its products and services. Consequently, technical information contained in this document is subject to change without prior notice.

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