OPC-2 *Analog Power-Line Carrier Terminal*

High reliability and robustness

Redundant power supply.

A single 6 s.u. shelf for 20 and 40 W.

The design is completely digital.

DIMAT

OPC-2

Key Features:

- Redundant power supply
- 20, 40 or 80 W PEP
- A single 6 s.u. shelf for 20 and 40 W
- Single or twin channel
- Carrier frequencies programmable with 1 Hz resolution
- End-to-end supervision
- Web management system with LAN connection

Description

DIMAT OPC 2 technology

Unlike the OPC-1 terminal, the technology used in the design of the OPC-2 analog Power-Line Carrier terminal is completely digital and uses latest generation elements. This technology together with an innovative signal modulation procedure has produced an equipment with fewer modules but at the same time being just as robust and reliable as its predecessor OPC-1.

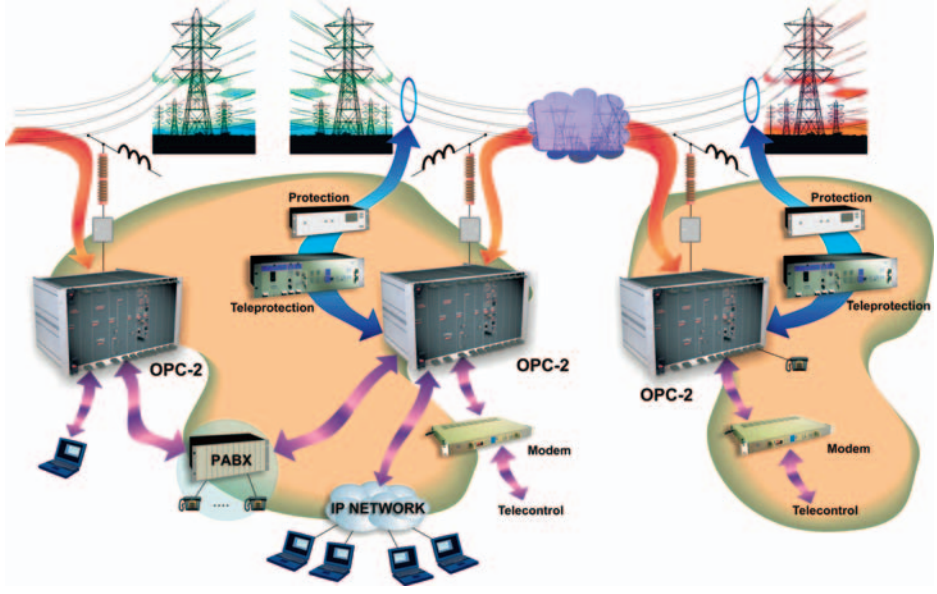
Product overview

There are two different models of the OPC-2 terminal, single-channel and twin -channel, with an output power (PEP) of 20, 40 or 80 W.
The twin-channel version of the OPC-2 terminal is obtained by simply substituting the corresponding basic module. In this way, the modules that make up the OPC-2 terminal are integrated in a single 6 s.u. shelf. An additional 3 s.u. shelf only being required in the case of 80 W.
One outstanding feature of the OPC-2 terminal is that it can be equipped with a redundant power-supply module.
As far as optional equipment is concerned, up to four optional modules can be added to an OPC-2 terminal, which fit perfectly in the 6 s.u. shelf with the rest of the basic modules. Some of these options are a four-command teleprotection system, an asynchronous programmable modem and a speech system.

In this way, the OPC-2 terminal continues to give great flexibility to power utilities, by enabling different types of information to be transmitted over high-voltage lines.

Management system

OPC-2 terminals have a Web server that integrates all the HTML pages necessary to carry out programming and monitoring of the system. In this way, OPC-2 terminals are programmed and monitored from a standard web browser installed in a PC, in what is known as Web Management. The connection between the computer and the OPC-2 terminal can be direct or by means of an IP network. In the last case it is possible for various computers of the IP network to manage various OPC-2 terminals connected to it.
An internal data channel allows the remote terminal to be programmed and supervised from the terminal connected to the management system.
The chronological register of alarms and events in the OPC-2 terminal is carried out based on its internal real-time clock, being possible to synchronize it with the GPS system.



Technical specifications

General characteristics	
Modulation	Single side-band (SSB) with suppressed carrier
Number of channels	1 or 2
Basic bandwidth	4 kHz per channel
Synchronization	With synchronism or Plesiochronous (non-synchronism)
Pilot tone	150 Hz (virtual frequency), with FSK modulation for internal channel and telephone signalling. AGC control, S/N ratio estimation and link synchronization.
High-frequency characteristics	
Frequency range	From 36 kHz to 508 kHz
Nominal carrier frequency	Programmable in 1 Hz steps
Transmission and reception bands	Erect or inverted, adjacent or non-adjacent
Nominal impedance	Selectable among 50, 75, 125 and 140Ω
Return loss	Better than 11dB
Tapping loss	In accordance with IEC 495, figure 5
Transmitter	
PEP	20, 40 or 80 W
Spurious emission	In accordance with IEC 495 cls. 5.2.4 and figures 7 and A.2
Receiver	
Sensitivity	-30 dBm minimum pilot level for AGC threshold
Selectivity	Higher than 65 dB at 300 Hz, and higher than 75 dB starting from 4 kHz; in accordance with IEC 495 cls. 5.3.1.5
Automatic Gain Control	
Dynamics	Better than 55 dB with 10% pilot modulation
Efficiency	±20 dB input level variations provoke variations of less than ±0.2 dB at the output.
Audio-frequency characteristics	
Available band	From 300 Hz to 3850 Hz
Interfaces	Two 4-wire whole-band audio interfaces per channel
Nominal impedance	600Ω, balanced
Return loss	Better than 20 dB
Nominal level	Programmable between -20 dBm and +6 dBm
Optional speech module	
Speech cut-off frequency	Programmable between 2000 Hz and 3400 Hz (in 5 Hz steps)
Interfaces	4-wire and 2-wire exchange-side, and optional 2-wire subscriber-side
Nominal impedance	600Ω, balanced
Return loss	Better than 20 dB
Nominal level	Programmable between -20 dBm and +8dBm
Other optional modules that can be added to the terminal	• Asynchronous programmable modem • Synchronous and asynchronous configurable modem • 2 or 4-command teleprotection system using tones • 2 or 4-command teleprotection system using FSK channels • Digital transit filter • Input/output combiner
Alarms	3 relays that can be programmed by the user and 1 relay per power supply module. All having one voltage-free changeover contact. Contact rating: 1A/250 Vac, 0.4A/220Vdc
Power supply	48 Vdc ± 20% Others on request
Maximum consumption	160 W (OPC-220) and 210 W (OPC-240). (with options) 160 W (OPC-220), 210 W (OPC-240) and 360 W (OPC-280). (with options)
Dimensions	
OPC-220 (PEP 20 W)	482 x 266 x 313 mm (one 19"/6 s.u. shelf)
OPC-240 (PEP 40 W)	482 x 266 x 313 mm (one 19"/6 s.u. shelf)
OPC-280 (PEP 80 W)	482 x 400 x 313 mm (one 19"/6 s.u. shelf and one 19"/3 s.u. shelf)
Weight	9.4 Kg (OPC-220/240). (without options) 13.15 Kg (OPC-220/240). (without options and with terminal block). 24 Kg (OPC-280). (without options and with terminal block)
Operating conditions	
Temperature and humidity	From -5ºC to +45ºC and relative humidity not greater than 95%, in accordance with IEC 721-3-3 class 3K5 (climatogram 3K5)
Maximum temperature	+55ºC for a period not greater than 24 hours (IEC 495 cls.3.1)
Management computer	
Type	Compatible personal computer (PC) with Pentium III 350 MHz processor or higher
Operating system	Microsoft Windows 2000 or Microsoft Windows XP
Web browser	Microsoft Internet Explorer v 5.5 or higher
Web management interface	10/100Base-Tx with RJ-45 connector 100 Base-Fx with MT-RJ connector (optional)

24 h. Assistance in Europe and Africa

24 h. Assistance in USA and Canada

24 h. Assistance in Brazil and South America

Biscaia, 383
08027 Barcelona, Spain
Tel.: +34 93 349 0700
Fax: +34 93 349 2258
info@dimat.com
http://www.dimat.com

Other locations of ZIV Group:

Spain
Headquarters (ZIV Group):
Parque Tecnológico, 210
48170 Zamudio, Vizcaya, Spain
Tel.: +34 94 452 20 03 - Fax: +34 94 452 21 40
http: //www.ziv.es

Madrid:
Avda. Vía Dos Castillas 23, Chalet 16
28224 Pozuelo de Alarcón, Madrid, Spain
Tel.: +34 91 352 7056 - Fax: +34 91 352 6304

Sevilla:
Avda. Isaac Newton - 3ª Planta módulo NE
41092, Pabellón de Italia (Cartuja-93), Sevilla, Spain
Tel.: +34 954 461 360 - Fax: +34 954 462 484

U.S.A. and Canada:
2340 River Road
60018 Des Plaines, Chicago, Illinois
Tel.: +1 847 299 65 80 - Fax: +1 847 299 65 81

Brazil:
Rua Dr. Carlos Maximiniano, 18
24120-000 Fonseca, Niteroi, Rio de Janeiro
Tel.: +55 21 27 29 0170 - Fax: +55 21 26 20 2398

Dubai:
Mazaya Center - Block C - Suite 3005
P.O.Box: 3089 - Dubai - U.A.E
Tel.: +971 4 3438501 - Fax.: +971 4 3437501

Singapore:
10 Anson Road No. 27-05
International Plaza - Singapore 079903
Tel.: +65 6224 6680 - Fax: +65 6224 6757

Russia:
Ul. Bolshaya Dmitrovka, 7/5, str. 2, 4th floor
Tel.: +7 495 580 92 93

For our references, please consult DIMAT website.

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.

085000043L1
ENG-1000-06-08