CURRENT® family

MV BPL
api-2000-sa2 Modem

Reliable innovation. Personal solutions.
Preface

The Ormazabal CURRENT® family Communication Portfolio provides real-time, Connected Intelligence™ that allows you to cost effectively connect to locations or assets within your distribution grid. Our MV BPL api-2000-sa2 is a small, compact, stand-alone Medium Voltage Broadband Powerline communication product to extend communications over medium voltage (MV) lines. Together with our MV BPL Coupler it provides a powerful and field proven communication solution. Combined with CURRENT® family network and device management software OpenGrid® Networking, our MV BPL maximizes total Smart Grid benefit for capital invested whilst reducing overall cost and risk. Simply easy to use!

Proven Technology

The MV BPL is our latest offering in the api-2000 product line and features the robust MV BPL solution based on OPERA technology that has been widely and intensively tested in different MV/LV environments.

Our MV BPL modem has reached a high degree of maturity and offers several benefits:

- It offers sufficient bandwidth to aggregate various utility data traffic generated from a large quantity of substations.
- It contains a built-in filter to support two frequency bands for seamless deployment.
- It contains a built-in splitter to enable the connection of two MV BPL Couplers directly without external components.
- It supports High Availability solutions with multiple master and backhaul connections to realize a scalable redundancy of the communication network.
- It is easy to integrate into your utility’s core network.

Managed Solution

OpenGrid® Networking is a highly scalable network management software platform that allows your utility to remotely provision, manage, troubleshoot and control software versions as well as manage assets. OpenGrid® offers you a cockpit to manage your devices - an easy-to-use web-based graphical interface.

Key features and benefits

Fully Managed Solution

OpenGrid® Networking greatly reduces the cost of ownership with savings in all areas, including turn-key provisioning, Smart Grid analytics and increased system availability through real-time monitoring and maintenance tools.

High Availability

The High Availability solution allows operation of the communication even case of individual link or device loss. It is fully managed and supports configuration and recovery of the network.

Cost effective

Together with our MV BPL Coupler, the MV BPL modem forms a very compelling cost model for MV BPL technology that is unrivalled in the industry.

Security

All Ormazabal CURRENT® family Communication products fully support a variety of mechanisms to ensure the confidentiality and data integrity of the data transmitted through the communication network.

Based on Industry standards

SNMP agents enable efficient integration into standard network management systems. HTTP enables individual node configuration and monitoring through an easy to use graphical user interface.

Designed for utility use

The units are designed to fit in your utility distribution substation environment.

Standard Protocols

The MV BPL api-2000-sa2 supports a wide range of standard protocols that assure seamless integration of any Smart Grid communications solutions.

- AML, bringing meter data from the transformer stations to the meter data management system.
- Transformer monitoring, protection and control equipment in the transformer station to the SCADA.
- Renewable generation connection to the monitoring and control communication network.

Our MV BPL is a vital part of the Smart Grid communications infrastructure. It supports and extends other existing communication infrastructures like fiber or wireless in areas where these are technically challenging and costly to use.

Technical data

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>195 / 150 / 75 mm</td>
<td>Metal fixed configuration, model 9136-2</td>
<td>DIN rail</td>
<td>-25°C to +70°C</td>
<td>-25°C to +70°C</td>
<td>Max 8 W</td>
<td></td>
<td></td>
<td>Directive 2004/108/ec: Electromagnetic Compatibility (EMC)</td>
<td>Integrated management</td>
<td>TCP/IP, DCHP, FTT VLAN, HTTP, RSTP, QoS</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Directive 2006/95/EC: Low Voltage Electrical Equipment (LVD); Directive 2004/108/EC: Electromagnetic Compatibility (EMC)</td>
<td>w/SNMPv-2, OpenGrid® Networking</td>
<td>RJ4S port for use with CURRENT ASDB 9124, RJ4S 10/100 Ethernet port for device access, RJ9 console port</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>RJ9 console port</td>
<td></td>
</tr>
</tbody>
</table>

PLC Signalling Specifications

- Modulation: OFDM, up to 1536 Sub Carriers
- Data Rate: up to 200Mbps (PHY Layer)
- Transmit Power: up to +24 dBm
- Spectral Power Density: up to -50dBm/Hz

- 50 ohm BNC ports, selectable dual or single port operation, for connecting to couplers
- RJ4S port for use with CURRENT ASDB 9124
- RJ45 10/100 Ethernet port for device access
- RJ9 console port

Port Specifications

- BPL-A & B
- BPL-C
- Ethernet