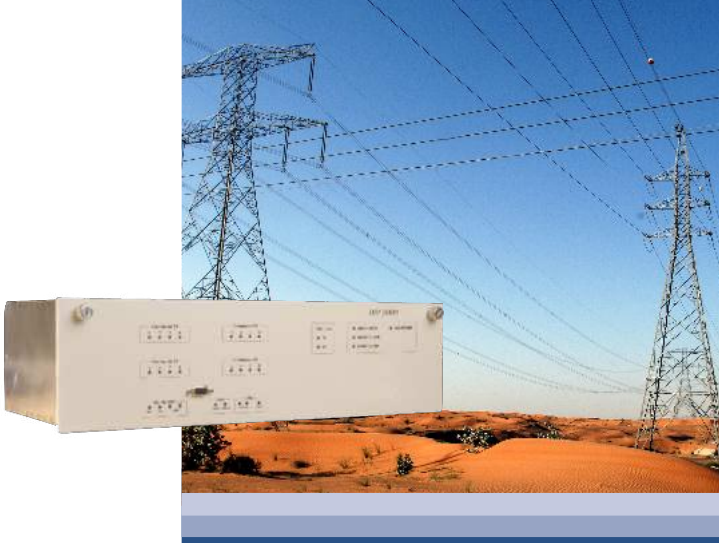
GE
Grid Solutions



Gridcom DIP

High-reliability, multi-support teleprotection

Telecommunication networks have undergone significant changes in recent years enhancing the capabilities for the exchange of information across the electrical power grid. The same changes, however, cause the diversity of transport media and communication impairments which can potentially impact the transfer of mission-critical signals such as protection commands.

Gridcom DIP is designed for reliable, prompt and secure transfer of protection signaling commands across a large variety of digital, analogue and optical telecommunication media with the appropriate interfaces and mechanisms to detect and overcome different anomalies in each case.

Unrivalled Speed, Security and Dependability

Using advanced digital signal processing and coding algorithms, the **GridcomDIP**, offers the highest levels of security and dependability for all protection schemes. Different transfer times and error detection/correction adjustments are programmed for direct tripping, permissive and blocking protection schemes. Transmission speeds remain in all cases far beyond values recommended by the international standards.

Embedded Commissioning and Maintenance Tools

Versatile embedded tools and a user-friendly HMI allow **Gridcom DIP** to be easily commissioned, maintained and remotely monitored, hence avoiding human errors and enhancing the security and the reliability of the system even further.

Adaptability to Customer Requirements

Gridcom DIP allows customising for specific requirements of each project such as the ability to set delays on command input/output and alarm contacts as well as the capacity to perform logical combinations of inputs.

World Class Expertise

Encompassing the entire range of products and services and through 50 years of experience in design, manufacturing and supply of power system telecommunications, GE provides full scope solutions enabling you to focus on your core business.

Main Features

- Drastically reduce the cost of optical infrastructures
- Reduced cost of ownership
- Easy to install and commission
- Extensive monitoring features
- Highly modular
- Wide range of communications interfaces
- Easy to manage

imagination at work

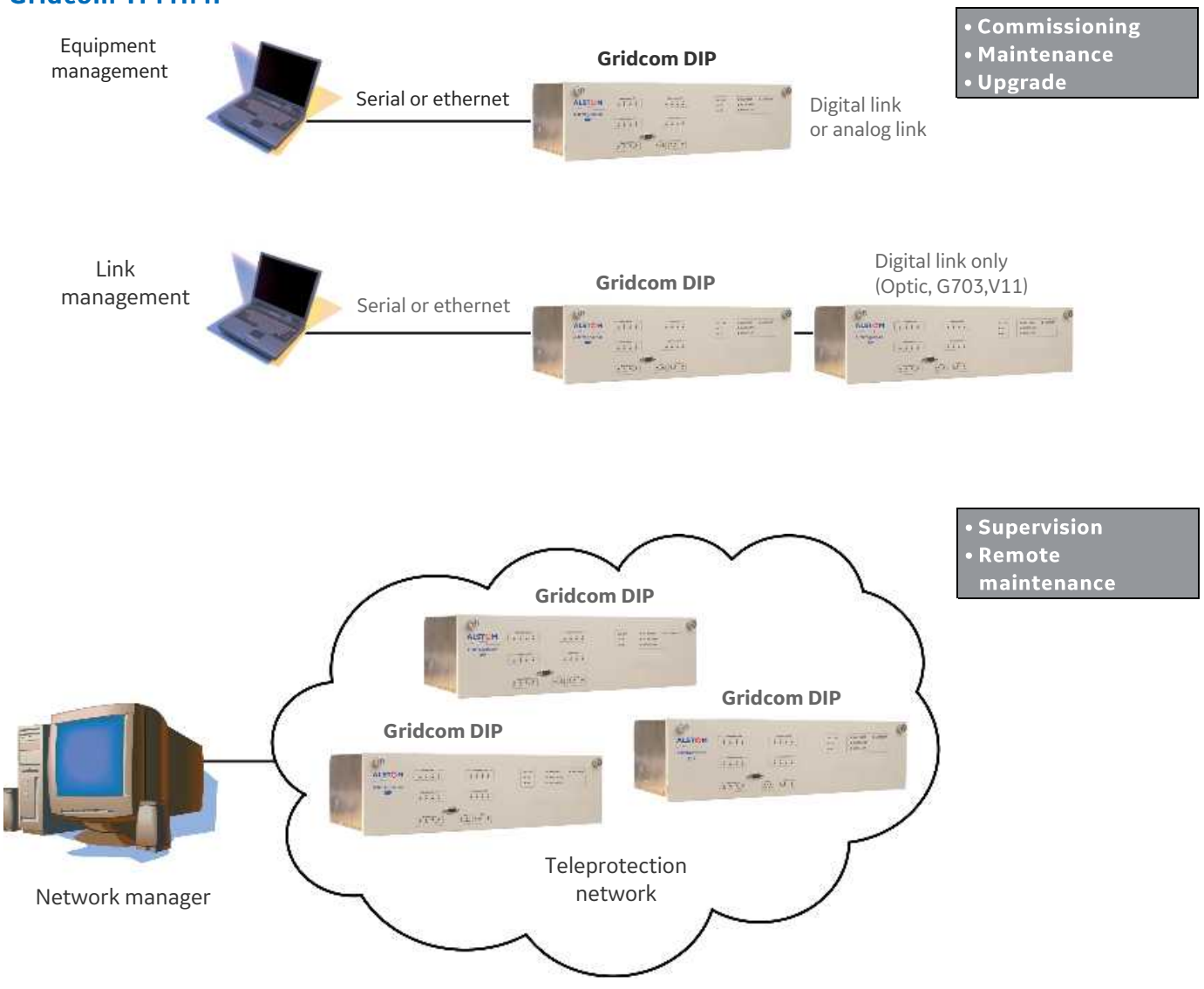
ADVAN ENERGI

Focus on Operational Issues

Gridcom DIP is designed for reduced time, effort and cost of deployment and operation based on GE's experience of power system project deployment.

- Incorporates embedded commissioning tools operated through user-friendly PC-based software
- Configuration can be performed offline and downloaded to target equipment via local or remote connection
- Communication channels can be tested using embedded tools with real-time BER measurements
- Command transfers can be extensively tested using forced activation of commands and loop tests
- Actions are protected using multiple levels of passwords and warning messages
- Continuous monitoring of the equipment and communication link with alarm generation on crossing of programmable thresholds (BER, transfer time, etc.)
- SNMP agent allowing the equipment to be monitored over GE's integrated management platform Sentinel
- Alarm and event records with 1 ms resolution

Gridcom TPI HMI



Technical Data

General Features

- Fully compliant IEC 60834-1 (exceeding requirements for security and dependability)
- Modular hardware with field replaceable modules
- 2, 4 or 8 independent commands (2 or 4 for Analog communications)
- Programmable for blocking, permissive and direct tripping
- Event and alarm recording: up to 1785 (resolution 1 msec)
- Time synchronization: IRIG-B
- User-friendly HMI, 2xRS232 (Optional Ethernet converter)
- SNMP management

Electrical/EM Standards Compliance

- IEC/EN 61000-6-2
- TS 61000-6-5 (station and substation environment)
- IEC/EN 61000-6-4
- IEC/EN 60255-27 (Safety)
- ANSI C37.90.x compliant
- CE compliant

Communications Interfaces

- Single-mode and multi-mode optical fiber pair (1310/1550 nm)
- Single fiber bidirectional transmission
- Range > 200 km on optical fibers
- ITU-T G.703 64 kbps
- ITU-T G.703 2Mbps (E1)
- ITU-T V11/V35/X24 (RS422) 32-256 kbps
- Analog : 4 w 600 ohm or High Impedance (up to 4 commands)
- IEEE C37.94 optical interface

Input / Output interfaces

- 2, 4 or 8 commands with digital interface, 2 or 4 commands with analogue interface
- Command acquisition by voltage (48, 127 or 250 Vdc) with optoelectronic decoupling
- Command restitution by normally open contact (up to 300 Vdc, 650 W/5 A)
- 1 copy normally open contact per input and output (up to 300 Vdc, 12 W)

Operating condition

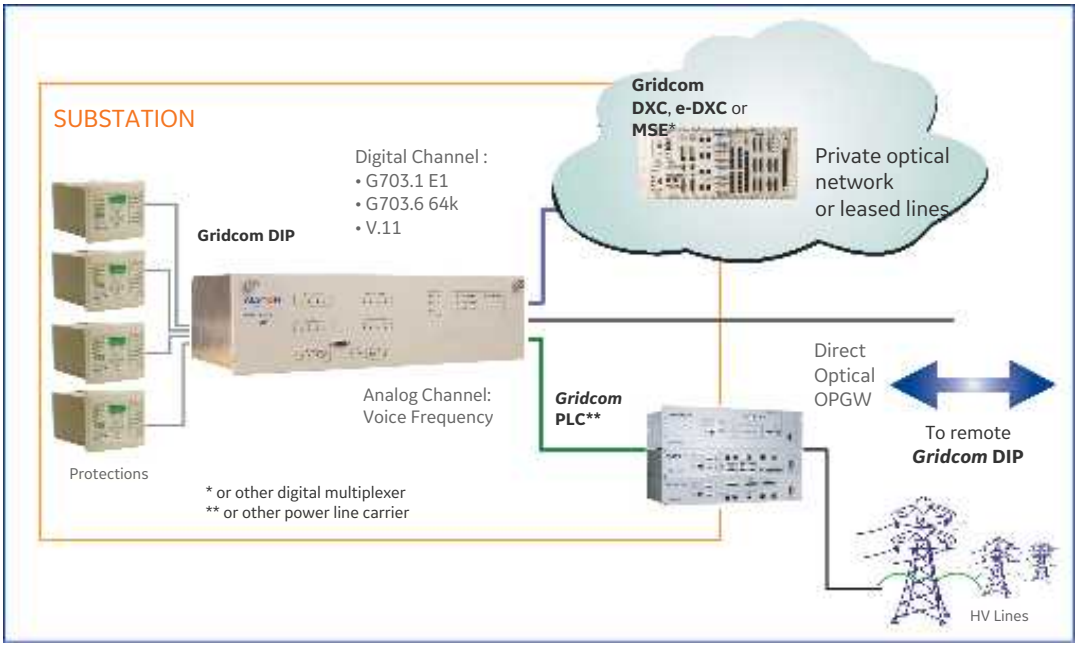
- Power supply voltage: 24 to 250 Vdc, -30 to +25%
- Operating temperatures: - 10°C / +55°C as per IEC 60068-2-1 and 60068-2-2
- Max. relative humidity: 95% at 40°C as per IEC 60068-2-3
- Storage Temperatures: - 25°C < T < + 70°C

Accessories

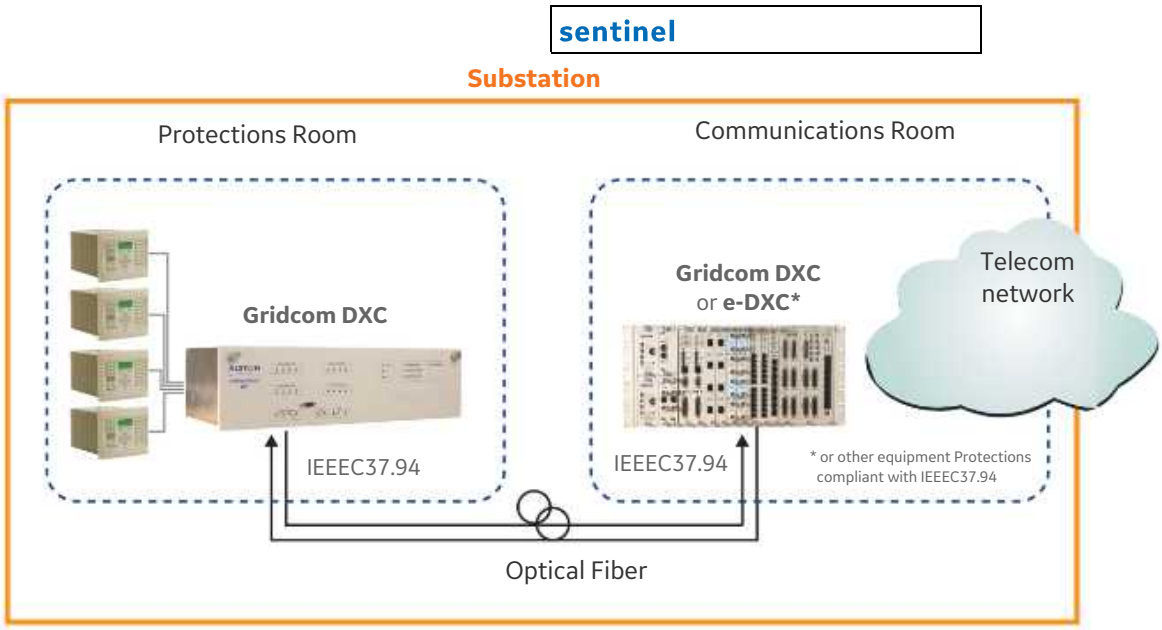
- Electrical to optical converter (1310 nm): **Gridcom CM**
- IP/LAN converter (HMI access via TCP/IP)

Dimensions

HxWxD (mm) : 132 (3U) x 483 (19") x 323

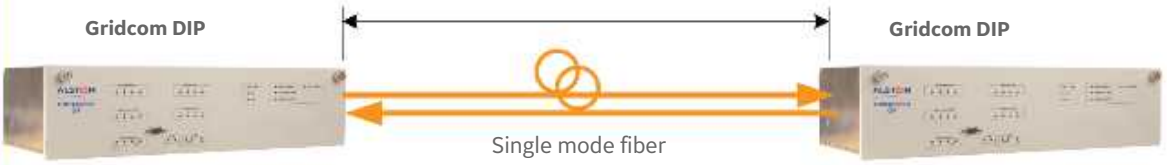


Optical Communications in the Substation



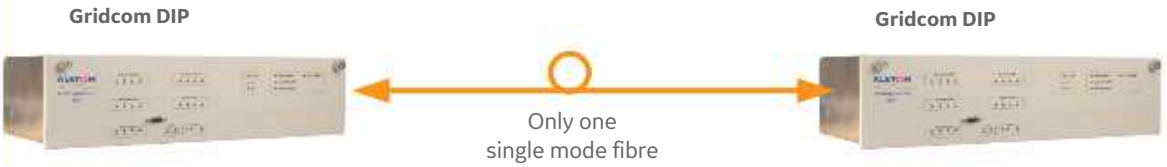
Ultra long-haul communications

No intermediate device needed to cover long distances



Bidirectional communications

New network architecture design possibilities



For more information please contact
GE Power
Grid Solutions

Worldwide Contact Center

Web: www.GEGridSolutions.com/contact
Phone: +44 (0) 1785 250 070

GEGridSolutions.com

imagination at work