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Fiber Optical Converter G.703 Codir - IEEE C37.94 - Secure Series (21-216)

- Fiber optic transmission, immune to EMI and RFI
- Standards compliant for power substation installation
- ½ 19" mounting, 2 units can be mounted side-by-side
- New design of power supply, from 36VDC to 230VAC
- Optional extra removable power supply for redundancy

Secure Series features

- Optional extra removable power supply DC or AC for redundancy
- Optional extra removable power supply for PoE feed
- Optional extra removable battery pack (UPS functionality)
- Tampering proof casing to prevent external sabotage or change of code
- ALARM function, detects if G.703 or C37.94 link is down

IEEE C37.94

Fiber optic interface according to standard "IEEE C37.94-2002, IEEE Standard for N times 64 Kilobit per Second Optical Fiber Interfaces between Teleprotection and Multiplexer Equipment" describes a fiber optic intra-substation communication links between teleprotection equipment and multiplexers.

G.703 Codir 64 kbps

The standard "G.703 64kbit/s codirectional interface" describes a galvanic interface commonly used by teleprotection equipment for connection to multiplexers.

Function

The 21-216 is an electro-optical interface converter between electrical G.703 Codir. 64Kbps (balanced) interface and IEEE C37.94, N times 64Kbps optical interface.

The 21-216 can be used to extend the reach of balanced G.703 interfaces up to 2km allowing for a cost effective transmission without electromagnetic interference and signal degradation.

The 21-216 works with any channel selection in the IEEE C37.94 data format and can be easily configured.

Usage

The 21-216 Fibre optic G.703 Codir. – IEEE C37.94 converter from Fibersystem is intended for connecting teleprotection equipment to telecom multiplexers at substations.

The 21-216 converter can also be used to directly interconnect protection equipment where one or both equipments lack optical interfaces.

The 21-216 generally allows protection equipment and multiplexers to use the IEEE C37.94 standard to interconnect with equipment that only support G.703 interfaces.

Fiber Optical Link

Data speed	2048kbps
Protocol	IEEE C37.94
Fiber	Multi mode 50/125um or 62.5/125um, LC connector
Optical system budget	13dB in 62.5/um. 9dB in 50/125um fiber
Typical distance	0 - 2km (3dB system margin for 50/125um and 6dB for 62.5/125um)

Galvanic

Data speed	64kbps.
Protocol	G.703, Codir
Connector	RJ45, S/FTP cable

Power Supply

DC input	36-75VDC Connector, Terminal block with plug
AC input	85-264 VAC, 50-60 Hz, + 20%, or 120-370 VDC AC-connector IEC 320, 3pin, locking

Environmental

Operating temperature range	-25 to +55 °C
Storage teperature range	-40 to +85 °C
Relative humidity operating	5 to 95 %
Relative humidity storage	5 to 95 % non condensing

CE compliance

Immunity	EN 61000-6-2
Emission	EN 61000-6-4
LVD	EN 50178; RIV = 250 V OVC = III

Mechanical

Vibration	IEC 60255-21-1 Klass 2
Shock	IEC 60255-21-2 Klass 2
Seismic	IEC 60255-21-3 Klass 2

EMC compliance

ESD	IEC 60255-22-2 Class 3, contact 6kV, air 8kV
Radiated	IEC 60255-22-3 / IEEE/ANSI C37.90.2; 35V/m
Burst Power	IEC 60255-22-1 Class III
Burst Communication	IEC 60255-22-1 Class II; 0,5 kV diff; 1 kV common mode
Fast transient Power	IEC 60255-22-4 Class IV
Fast transient Communication	IEC 60255-22-4 Class II; 1kV

Insulation

Dielectric test	IEC 60255-5, 2,0kV 1min
Impuls voltage test	IEC 60255 / EN 50178 5kV / 6kV
Insulation resistance	IEC 60255-5; > 100 Mohm at 500 VDC

Dimensions and Weight

Dimintions:	44 mm, Width 221 mm, Depth 228 mm
Weight	1,4 kg

The unit is intended to be mounted in a 19" rack. It is delivered with an Angle Bracket Kit and Single Mounting Bracket that fits 19" rack. Double Mounting Kit is available as an accessory for mounting two in parallel. By adjusting the mount brackets the unit can also be mounted on a wall or similar

Ordering information

Product number	Model	Description
60-00-7264	21-216	Fiber Optical Converter G.703 Codir - IEEE C37.94 DC- Secure Series
60-00-7265	21-216	Fiber Optical Converter G.703 Codir - IEEE C37.94 AC- Secure Series