



Features 21-216 Fiber optic G.703 Codir - IEEE C37.94 Converter

- Fiber optic transmission, immune to EMI and RFI
- Standards compliant for power substation installation
- 19" mounting with only 200mm depth
- Single supply range from 48VDC to 230VAC

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.

*The 21-216 product is part of a wide **product family** of interface, speed and protocol converters.*

*Fibersystem also offer **many related products** like Relay Trip Links, Asynchronous Modems, 19" Rack Based Interface Conversion and Operator Station KVM extensions.*

*The 21-216 product has been **tested and approved** to be used with the REL and RED product lines from ABB Power Technologies.*

***Fibersystem AB** is an inventive Swedish company who since 1982 has been working with the application of fibreoptic technology in the delivery of solutions fulfilling the Customers' multitude of needs.*

Fiber optic link

Data speed	2048kbps.
Protocol	IEEE C37.94.
Fiber	Multi mode 50/125um or 62.5/125um, ST-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	48V DC to 250V DC, ±20%
AC	230VAC ±20%, 50–60 Hz
AC-connector	IEC 320, 3 pin.

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

Physical size	The unit is intendend to be mounted in a 19" rack. By adjusting the mount brackets the unit can also be mounted on a wall or similar Heigth 45 mm, Width 483 mm (Without brackets 380mm), Depth 173 mm
Weight	3 kg

Ordering information

Product number	Model	Description
60-00-7164	21-216	Fiberoptic G.703 Codir to C37.94 820-870nm MM
60-00-7156	21-216	Fiberoptic G.703 Codir to C37.94 1300nm SM.