TELESTE

User Manual

Single and triple channel video only link

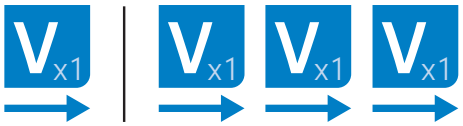
For low cost video transmission

CFO First Mile series consist of fibre optic modems which provide a high quality and losless video transmission for variety of CCTV applications over multimode fibre

Contents

CFO100 - Single and triple channel video only link

CFO100 Digital First Miles series offers a 10-bit video transmission over one mutimode fibe / video channel for fixed camera applications



Welcome, and thank you for purchasing Teleste's CFO Products.

General

DIGITAL CFO100 First Mile series offers a highly cost-effective single channel composite video transmission over one multimode fibre.

High quality video image can be transmitted over distances up to 6.5 km depending on the type of multimode fibre in use. A typical application is a point-to-point transmission from a fixed CCTV camera to a monitoring centre.

DIGITAL CFO100 series consist of mini sized stand-alone video transmitter followed by standard 5HP size CFO cards for triple channel video transmitter as well as for single and triple channel receiver operation.

The CPT101 stand-alone transmitter is temperature hardened and is capable of using both 12 VDC or 24 VAC supply voltage. **CPT101 unit is a compact size housing for special stand-alone installations requiring minimal installation space. Also as an optional DIN rail mounting is possible (item code CIK001).**

CRT103 and CRR101/103 cards are compatible with all CFO rack systems. Stand-alone options are available with the CMA011 module adapter and separared CPS series mains adapter.

As with all CFO platform products these specific models do meet all typical EMC as well as other environmental and manufacturing related requirements. The permitted operational temperature range is -34...+74 °C.

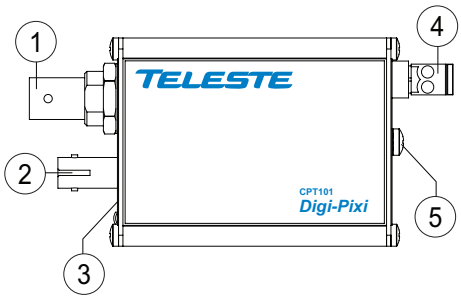
> ***Note!*** *New generation CFO100 products are based on digital transmission and are not therefore compatible with previous analog 100 series.*

Features

- >> Low cost video transmission
- >> High performance uncompressed zero delay digital video transmission, SNR 65 dB typical, 10 bit video sampling
- >> One CVBS (PAL/NTSC) video channel
- >> Transmission over on one or three multimode fibre up to 6.5 km
- >> Card format applicable both for rack mount and stand-alone installations
- >> One and triple channel units available for both transmitter and receiver
- >> Transmitter unit available in a special compact-size stand-alone design
- >> Feasible for field hardened operation
- >> Mechanically compact and ruggedised
- >> EMC and environmental conformance

CPT101 - Mini sized stand-alone video transmitter

side view

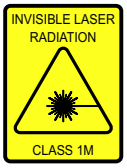


CPT101 Optical Transmitter

1) Video input (BNC female)
2) Optical output (ST)
3) Power led
4) Power supply connector (2-pin screw terminal)
5) Grounding

top view

ST Connectors.
Make sure the key is aligned in the slot properly before tightening!



CAUTION:
THESE OPTICAL UNITS USES CLASS 1M LASER DIODE. DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS. APPLICABLE STANDARD IEC60825-1: 2001

General

The **CPT101** is a one channel optical transmitter for uni-directional video transmission in a multimode fibre. The current consumption is max. 130 mA (+12V DC).

Video Input

The video input impedance (BNC female) is 75 Ω. The nominal input level is 1 Vpp.

Fibre connection

The optical connector is of the type **ST**. The optical output level is typically -4 dBm. For testing purposes the CFO100 series transmitter and receicer can be connected with a short fibre patch cable.
The operating wavelenght is 1310 nm.

When installing the fibre optic cable, do not exceed the minimum bending radius when connecting cable to the system.

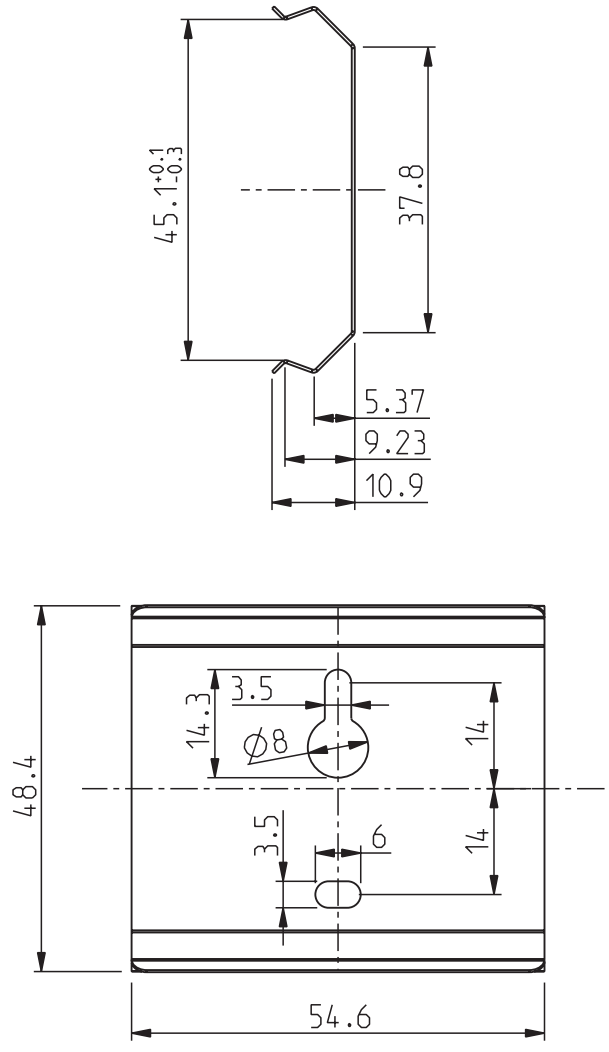
> ***Note!*** *For correct optical operation ensure that all optical connectors are cleaned immediately before mating. Connectors should always be cleaned using high purity alcohol (e.g. methyl or isopropyl alcohol). Dry the surfaces using clean compressed air or other equivalent pressurised gas. The female **ST** optical connectors on the equipment should always be protected with dustcaps when there is no fibre inserted.*

Optical connection meets class 1M laser safety requirements of IEC 60825-1: 2001 and US department of health services 21 CFR 1040.10 and 1040.11 (1990) when operated within the specified temperature, power supply and duty cycle ranges.

Stand-alone Installation

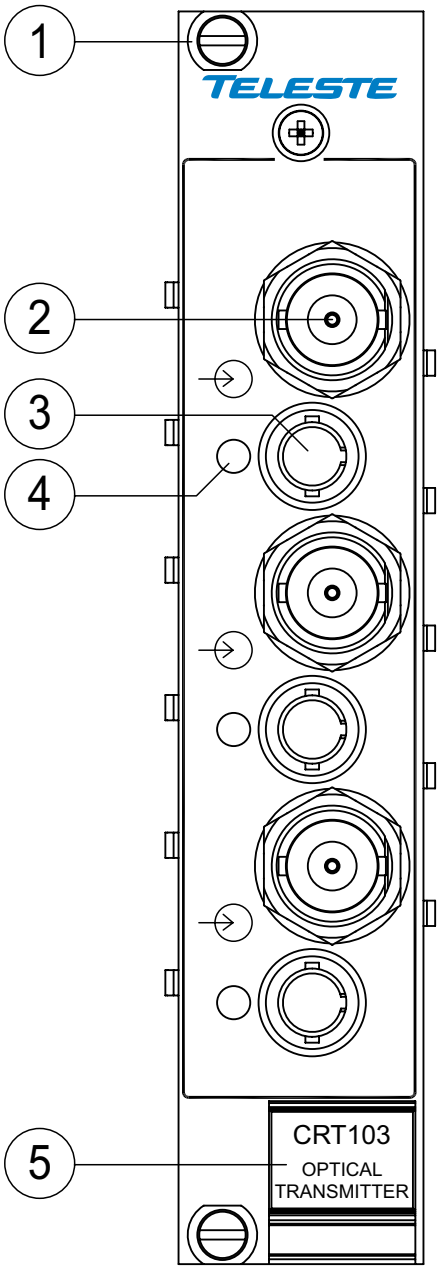
The **CPT101** units are designed for stand-alone installation. The unit should be mounted with a help of wall bracket to a installation place.

The supply voltage can be either +12V DC or 24V AC.
The supply voltage is provided by either a surveillance camera unit, or by an external mains adapter. The permitted supply voltage range are 10.5...14 VDC and 16...28 VAC. In DC use the +12V DC supply voltage is supplied by the means of a separate mains adapter with a regulated output, (e.g. **CPS231**). The permitted operational temperature range is from –34 to +74 °C.



Wall bracket dimensions.

CRT103 - Triple channel video transmitter



CRT103 Optical Transmitter

1) Locking screw (2 pcs)
2) Video input (BNC female)
3) Optical output (ST)
4) Link status indicator led
5) Handle (with unit information)

See further information on dedicated sections.

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THESE OPTICAL UNITS USES CLASS 1M LASER DIODE. DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS. APPLICABLE STANDARD IEC60825-1: 2001

General

The **CRT103** is a three channel optical transmitter for uni-directional video transmission in a multimode fibre. The current consumption is 300 mA (+12 VDC).

Frame Installation

The **CRT103** module is to be pushed along the guide rails into the installation frame (e.g. **CSR216** or **316** series) and secured with the two locking screws. The unit can be freely positioned in any slot in the frame. The empty positions in the frame should be blanked off with cover plates. The supply voltage is to be provided by a **CPS384** or **CPS390** power supply unit which are installed back of frame.

Stand-alone Installation

The unit can be installed for stand-alone use by using a **CMA011** module adapter. The module should be mounted to a vertical surface. The + 12 VDC supply voltage is supplied by the means of a separate mains adapter with a regulated output, (e.g. **CPS221**).

The permitted supply voltage range is 10.5...14 VDC. The current consumption is 300 mA. The permitted operational temperature range is from –34...+74 °C.

Video connections

The impedance of the video inputs (BNC female) is 75 Ω. The nominal input level is 1 Vpp.

Link status indicator LEDs

In the (uni-directional) CRT103 units the LINK STATUS led is only monitored by the optical receiver CRR101/103. Therefore the LINK STATUS led in CRT103 units has no real value and is always green.

top view

ST Connectors.
Make sure the key is aligned in the slot properly before tightening!

Fibre connection

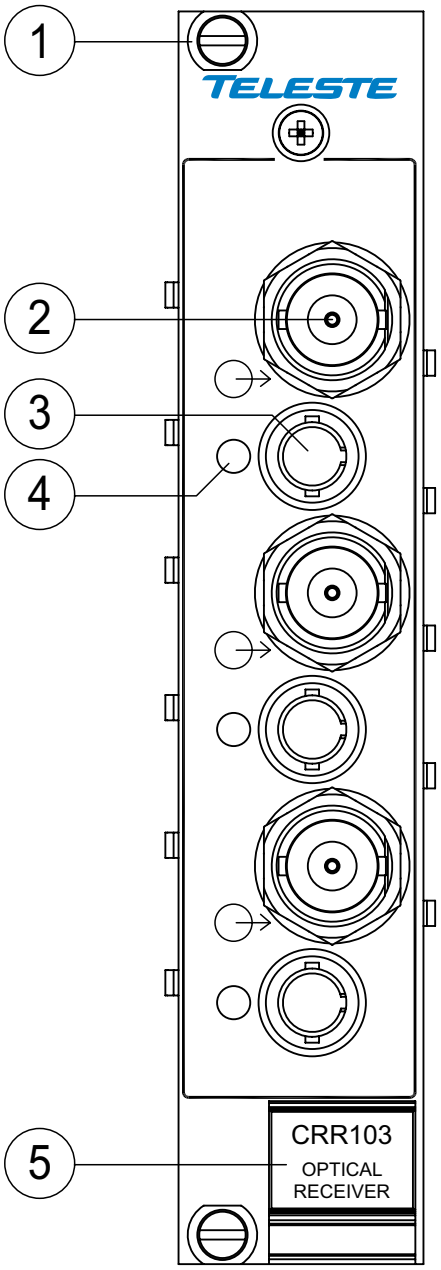
The optical connector is of the type **ST**. The optical output level is typically -4 dBm. For testing purposes the CFO100 series transmitter and receicer can be connected with a short fibre patch cable.
The operating wavelenght is 1310 nm.

When installing the fibre optic cable, do not exceed the minimum bending radius when connecting cable to the system.

> ***Note!*** *For correct optical operation ensure that all optical connectors are cleaned immediately before mating. Connectors should always be cleaned using high purity alcohol (e.g. methyl or isopropyl alcohol). Dry the surfaces using clean compressed air or other equivalent pressurised gas. The female **ST** optical connectors on the equipment should always be protected with dustcaps when there is no fibre inserted.*

Optical connection meets class 1M laser safety requirements of IEC 60825-1: 2001 and US department of health services 21 CFR 1040.10 and 1040.11 (1990) when operated within the specified temperature, power supply and duty cycle ranges.

CRR101/103 - Single and triple channel video receiver



CRR103 Optical Receiver

1) Locking screw (2 pcs)
2) Video output (BNC female)
3) Optical input (ST)
4) Link status indicator led
5) Handle (with unit information)

See further information on dedicated sections.

Note! *CRR101 is a single channel version of CRR103.*

General

The **CRR101** is a one channel optical receiver for uni-directional video transmission in a multimode fibre. The current consumption is 130 mA (+12 VDC).
The **CRR103** is a three channel optical receiver for uni-directional video transmission in a multimode fibre. The current consumption is 300 mA (+12 VDC).

Frame Installation

The **CRR101/103** module is to be pushed along the guide rails into the installation frame (e.g. **CSR216** or **316** series) and secured with the two locking screws. The unit can be freely positioned in any slot in the frame. The empty positions in the frame should be blanked off with cover plates. The supply voltage is to be provided by a **CPS384** or **CPS390** power supply unit which are installed back of frame.

Stand-alone Installation

The unit can be installed for stand-alone use by using a **CMA011** module adapter. The module should be mounted to a vertical surface. The 12 VDC supply voltage is supplied by the means of a separate mains adapter with a regulated output, (e.g. **CPS221**).

The permitted supply voltage range is 10.5...14 VDC. The current consumption for **CRR101** is 130 mA and for **CRR103** 300 mA.
The permitted operational temperature range is from –34...+74 °C.

Video connections and indicator LEDs

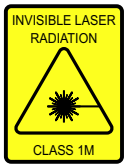
The impedance of the video outputs (BNC female) is 75 Ω. The nominal output level is 1 Vpp.

Link status indicator LEDs

When the optical input signal level is adequate and syncronization on link level is achieved, the LINK STATUS led on the front panel is green. If optical input signal is missing or it's level is too low, the LINK STATUS led is yellow.

top view

ST Connectors.
Make sure the key is aligned in the slot properly before tightening!



Fibre connection

The optical connector is of the type **ST**. Minimum optical intput level is typically -23 dBm. No adjustments for input are needed. The operating wavelenght is 1310 nm.

When installing the fibre optic cable, do not exceed the minimum bending radius when connecting cable to the system.

> ***Note!*** *For correct optical operation ensure that all optical connectors are cleaned immediately before mating. Connectors should always be cleaned using high purity alcohol (e.g. methyl or isopropyl alcohol). Dry the surfaces using clean compressed air or other equivalent pressurised gas. The female **ST** optical connectors on the equipment should always be protected with dustcaps when there is no fibre inserted.*

Optical connection meets class 1M laser safety requirements of IEC 60825-1: 2001 and US department of health services 21 CFR 1040.10 and 1040.11 (1990) when operated within the specified temperature, power supply and duty cycle ranges.

Technical Specifications

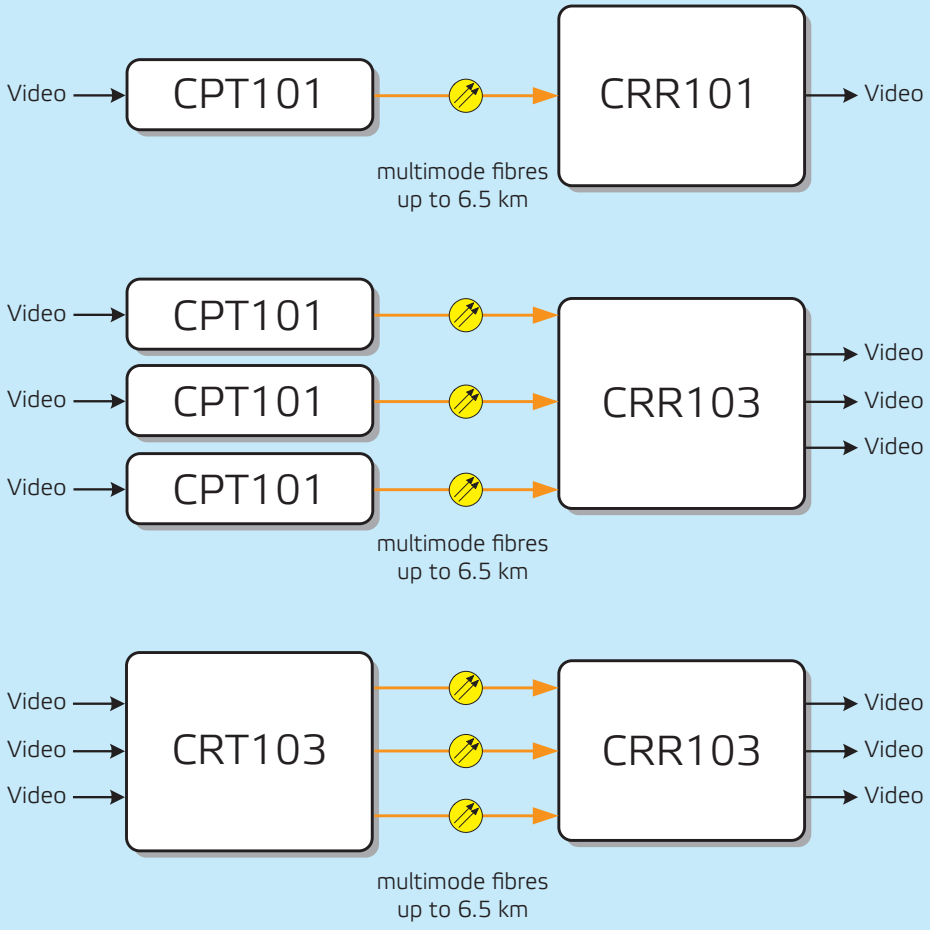
Optical		
Wavelength	1310 nm	multimode fibre
Output power	-4 dBm	max
Input sensitivity	-25 dBm	max
Bit rate	200 Mbps	
Link distance	6.5 km	max
Optical connector	ST	

Video		
Number of channels	1 uni-directional	CPT/CRR101
	3 uni-directional	CRT/CRR103
Standard	PAL/NTSC	CVBS
Input level	1 Vpp	
Input overload level	1.75 Vpp	
Impedance	75 ohm	
Sampling resolution	10 bit	
Sampling rate	20.0 MHz	
Bandwidth	8 MHz	-1 dB
Insertion gain	+/-1 dB	
C/L gain inequality	4 %	
C/L delay inequality	40 ns	
Differential gain	2 %	
Differential phase	1°	
SNR	65 dB	weighted
Video connector	BNC female	

General		
Supply voltage	10.5...14 VDC	regulated
	16...28 VAC	CPT101
Current consumption (max)	130 mA	CPT/CRR101
	300 mA	CRT/CRR103
Power supply connector	2-pin screw terminal	CPT101
Dimensions (H x W x D)		
CRT103 & CRR101/103	3U • 5HP • 190 mm	without CMA
CPT101	25 • 48 • 62 mm	without connectors
Weight	0.2 kg	CPT101
	0.5 kg	CRT103 & CRR10x
Alarms / indicator LEDs		
Link status	LED	CRR101/103
Power	LED	CPT101, CRT103
Operating temperature	-34...+74 °C	
Storage temperature	-34...+74 °C	recommended
Humidity	0...95 %	non condensing
EMC compatibility	EN61000-6-3, EN50130-4, CE	

Notes

Typical values unless otherwise stated



Copyright acknowledgements

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WEEE directive

Directive 2002/96/EC of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE) obliges that producers appropriately mark electrical and electronic equipment with the symbol indicating separate collection. This obligation applies to the equipment put on the market in EU after 13 August 2005.

Teleste devices which belong to the scope of the directive have been marked with the separate collection symbol shown below. The marking is according to the standard EN 50419. The symbol indicates that the device has to be collected and treated separately from unsorted municipal waste.

User manual revision history note:
The latest version is always available in pdf-format on our web site:
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