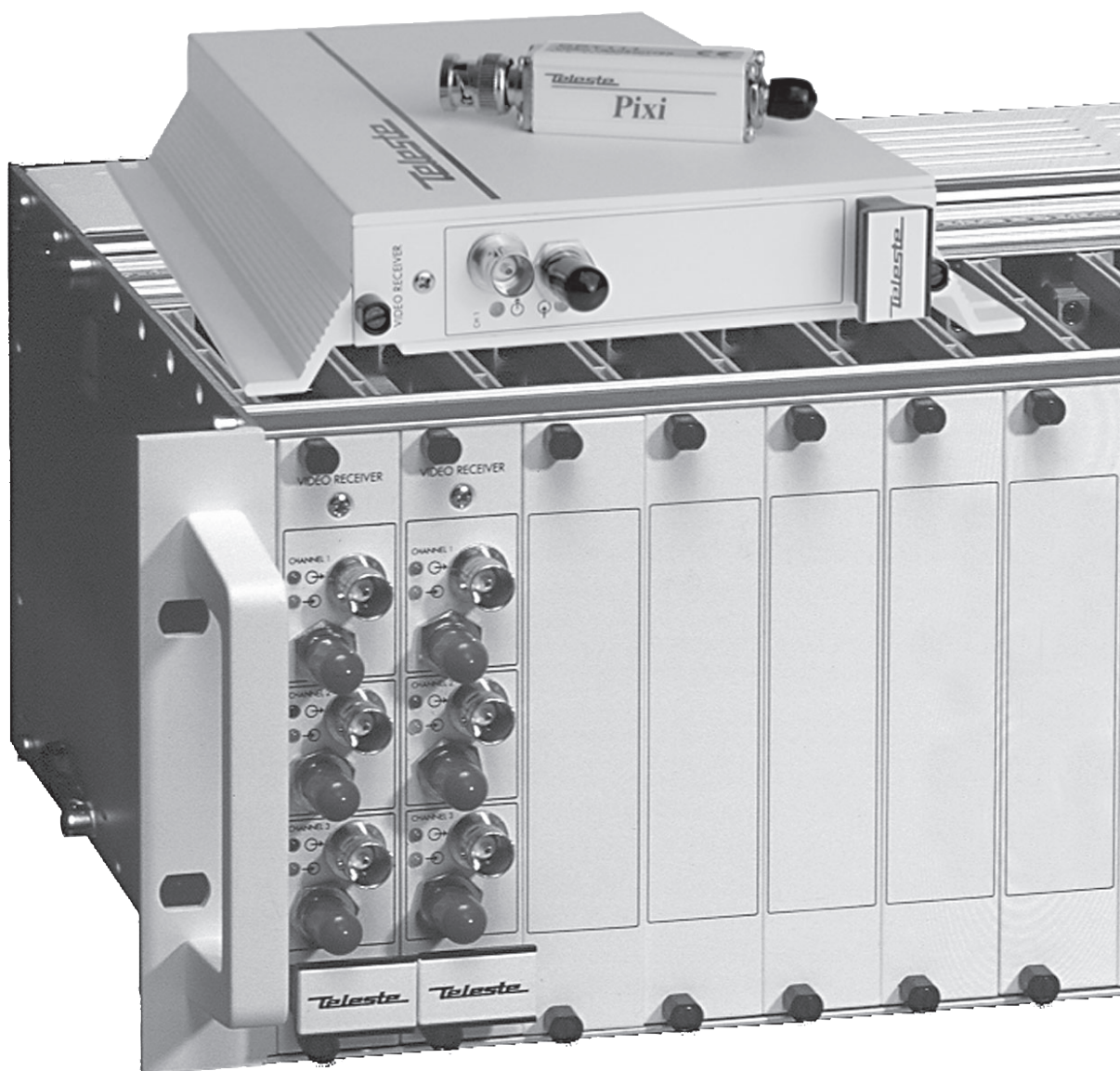


User Manual



**CFO100 - Single & triple channel video link only
for basic video applications**

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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.



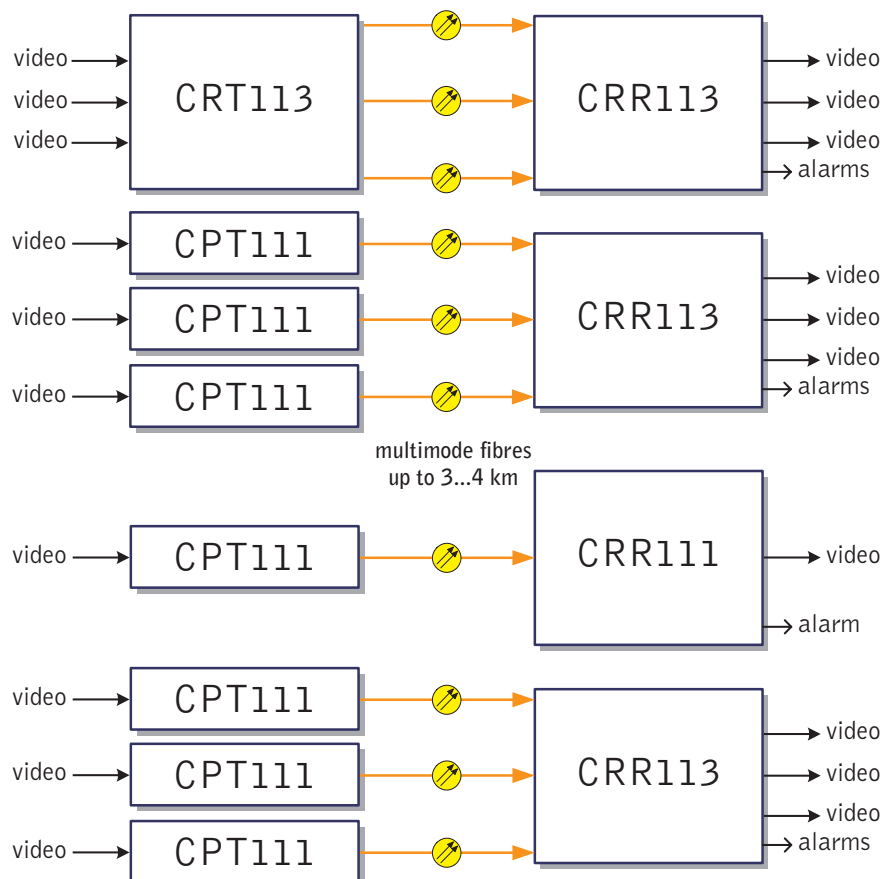
CFO100 multimode single & triple channel units

Introduction

CFO100 is a cost-effective fibre optic video transmission system. It operates using multimode fibres on a wavelength of 860 nm. Only one video channel per fibre can be transmitted.

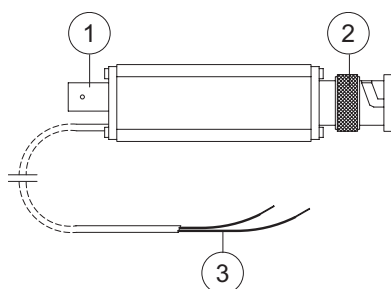
CFO100 series functions are available in an effective size, the mini transmitter unit **CPT111** can be attached directly to a surveillance camera. The **CRR111** is a standard one channel receiver card. The standard transmitter **CRT113**, as well as the receiver **CRR113**, contains separate sections for three different video channels. Optical transmission is based on the intensity modulation of a LED by the incoming video signal.

CRT113 and CRR111/113 units are compatible with all CFO rack systems. Stand-alone options are available with the CMA011 module adapter and a separate mains adapter.



Mini Video Transmitter CPT111

CAUTION:
THIS OPTICAL UNIT USES CLASS 3A LASER LED,
MAXIMUM OUTPUT 1mW AT WAVELENGTH 860 nm.
DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH
OPTICAL INSTRUMENTS. APPLICABLE STANDARD
IEC825-1: 1993



Picture 1.

CPT111 Video transmitter.

- 1) Optical output (ST).
- 2) Video input (BNC male).
- 3) Open wires for supply voltage.

General

The **CPT111** is a one channel optical transmitter for video surveillance and monitoring systems in a multimode fibre. The optical output signal is modulated directly by the incoming baseband video signal.

Video connection

The **CPT111** is connected directly to the video output of a surveillance camera. The impedance of the video input (BNC male) is 75 Ω . The nominal input level is 1 Vpp.

Supply voltage

The supply voltage is provided by either a surveillance camera unit, or by an external mains adapter. The **CPT111** has two open wires for the connection of the supply voltage (red =positive terminal, black =negative terminal).

The permitted supply voltage range is 10.5...14 VDC. The current consumption is 100 mA. The permitted operational temperature range is from -10...+55 $^{\circ}\text{C}$.

Fibre connection

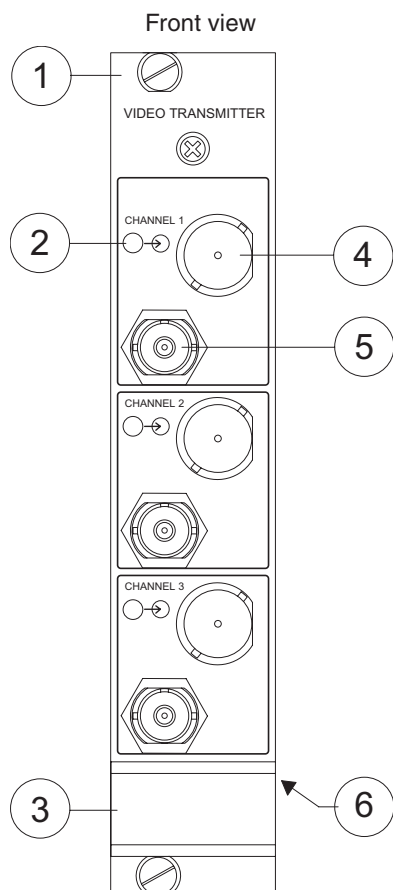
The optical connector is of the type **ST**. The optical output level depends on the modulating video signal and needs no adjustment. The nominal optical output level is -12 dBm (62.5 / 125 μm fibre) or -16 dBm (50 / 125 μm fibre) at a high white picture content. The operating wavelength is 860 nm.

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.*

Video transmitter CRT113

CAUTION:
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IEC825-1: 1993



Picture 2.
CRT113 Video transmitter.
1) Locking screw.
2) Video indicator (green).
3) Handle.
4) Video input connector
(BNC female).
5) Optical output (ST).
6) DIP switches.

General

The **CRT113** is a three channel optical transmitter for uni-directional video transmission in a multimode fibre. The current consumption is 360 mA (+12 VDC).

DIP Switch settings

The video B-alarm and B bus-alarm are set by the means of internal **DIP** switches (see table 1 for more details).

Frame installation

The module is to be pushed along the guide rails into the installation frame (e.g. **CSR216** or **CSR316**) 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 provided by a **CPS384** PSU which is installed back of frame.

Stand-alone installation

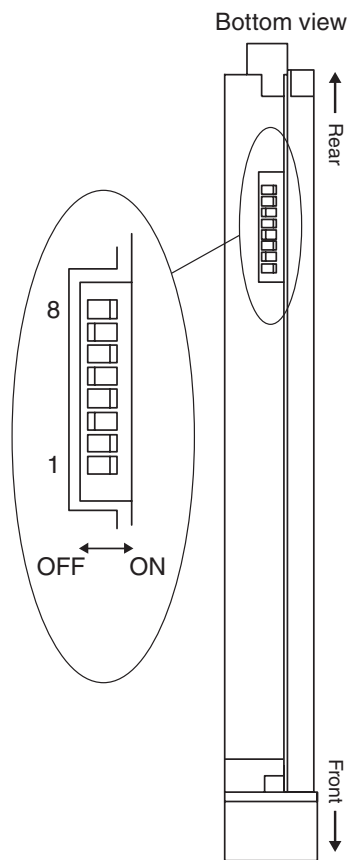
The unit can be installed for stand-alone use by using a **CMA011** module adapter (see picture 4). The module should be mounted to a vertical surface. The 12 VDC supply voltage is supplied by the means of a separate mains adapter with a regulated output, (e.g. **CPS221**).

The permitted supply voltage range is 10.5...14 VDC. The current consumption is 360 mA. The permitted operational temperature range is from -10...+55 °C.

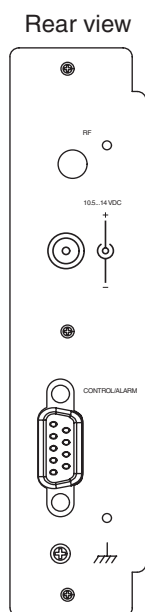
Video connections and indicator LEDs

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

Each video input is equipped with the green video signal LED on the front panel. In case a video signal is present and in nominal level (and the unit detects video synchronization pulses), the LED is lit. If there is no video signal, or the video signal level is too low, the LED is dark.



Picture 3.
Location of the video DIP switches. Data DIP switches are located at bottom side of the unit (see picture 2).



Picture 4.
CMA011 module adapter.

Fibre connections

The optical connectors are of the type **ST**. The optical output level depends on the modulating video signal and has no adjustment. The nominal optical output level is -10 dBm (62.5 / 125 µm fibre) or -14 dBm (50 / 125 µm fibre) at a high white picture content. The operating wavelength is 860 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.*

Settings and connections information

Function / ch & DIP switch	1	ch1	ch2	ch3	ch1	ch2	ch3	8
		2	3	4	5	6	7	
<u>Video B-alarm enable</u>	-	on	on	on	-	-	-	-
Video B-alarm disable	-	off	off	off	-	-	-	-
<u>B BUS-alarm enable</u>	-	-	-	-	on	on	on	-
B BUS-alarm disable	-	-	-	-	off	off	off	-

Table 1.

The DIP switch settings for the CRT113. The underlined functions are default factory settings (“-” =setting irrelevant). Video B-alarm is for the missing video input signal. B BUS-alarm is the common data bus to the backplane of the frame available for CCU-series alarm cards.

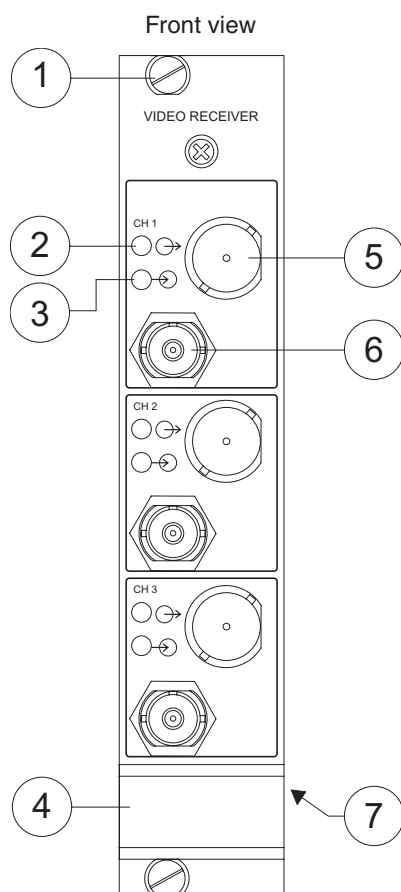
Pin	Signal	Note
1	BB input	Not available in CRT113
2	Ground	Not available in CRT113
3	A-alarm	Not available in CRT113
4	Supply voltage in / out	
5	B1-alarm	CH1 video B-alarm
6	B2-alarm / control 2	CH2 video B-alarm
7	B1-alarm / control 1	CH3 video B-alarm
8	Ground	Not available in CRT113
9	BB Output	Not available in CRT113

Table 2.

Pin information for the D9-male connector when CRT113 is installed in module adapter CMA011.

Video receiver CRR111/113

CAUTION:
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MAXIMUM OUTPUT 1mW AT WAVELENGTH 860 nm.
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Picture 5.

CRR113 Video receiver*.

- 1) Locking screw.
- 2) Video output indicator LED.
- 3) Optical input indicator LED.
- 4) Handle.
- 5) Video output connector (BNC female).
- 6) Optical input connector (ST).
- 7) DIP switches.

* Note! In the **CRR111** is only one video channel.

General

The **CRR111** is a one channel optical receiver for uni-directional video transmission in a multimode fibre. The current consumption is 200 mA (+12 VDC).

The **CRR113** is a three channel optical receiver for uni-directional video transmission in a multimode fibre. The current consumption is 450 mA (+12 VDC).

DIP Switch settings

The video alarm and optical alarm functions are set by means of internal **DIP** switches (see table 3 for more details).

Frame installation

The module is to be pushed along the guide rails into the installation frame (e.g. **CSR216** or **CSR316**) 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 provided by a **CPS384** PSU which is installed back of frame.

Stand-alone installation

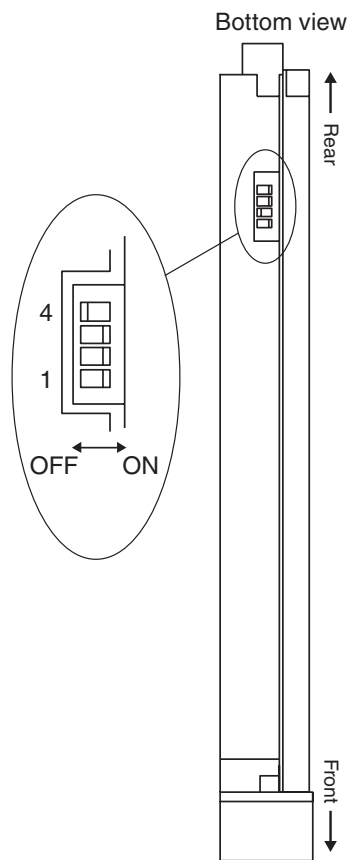
The unit can be installed for stand-alone use by using a **CMA011** module adapter (see picture 7). The module should be mounted to a vertical surface. The 12 VDC supply voltage is supplied by the means of a separate mains adapter with a regulated output, (e.g. **CPS221**).

The permitted supply voltage range is 10.5...14 VDC. The current consumption for **CRR111** is 200 mA and for **CRR113** 450 mA. The permitted operational temperature range is from -10...+55 °C.

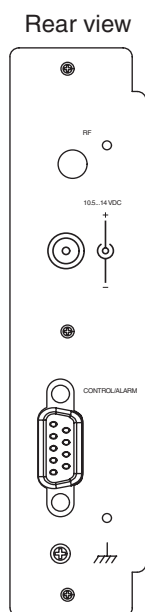
Video connections and indicator LEDs

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

Each video output is equipped with the green video signal LED on the front panel. In case a video synchronization is detected, the LED is lit. If there is no video signal, or the video signal level is too low, the LED is dark.



Picture 6.
Location of the video DIP switches. Data DIP switches are located at bottom side of the unit (see picture 5).



Picture 7.
CMA011 module adapter.

Fibre connections and indicator LEDs

The optical connectors are of the type **ST**. The permitted optical input level range is -10...-27 dBm with high white picture content. If there is no video signal connected to the system, or video signal is not synchronized, or the optical signal is missing, the optical input indicator LED is yellow. The operating wavelength is 860 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.*

Settings and connections information

	ch1	ch2	ch3	
Function / ch & DIP switch	1	2	3	4
B-alarm enable	on	on	on	-
B-alarm disable	off	off	off	-

Table 3.

The DIP switch settings for the CRR111/113. DIP switch number 4 is not in use.

Pin	Signal	Note
1	BB input	Not available in CRT113
2	Ground	Not available in CRT113
3	A-alarm	Not available in CRT113
4	Supply voltage in / out	
5	B1-alarm	CH1 video B-alarm
6	B2-alarm / control 2	CH2 video B-alarm
7	B1-alarm / control 1	CH3 video B-alarm
8	Ground	Not available in CRT113
9	BB Output	Not available in CRT113

Table 4.

Pin information for the D9-male connector when CRR111/113 is installed in module adapter CMA011.