

## **Twisted Pair – Video Transmission Series 225**

**ernitec**

### **Description**

The Ernitec Series 225 is a range of units capable of transmitting colour and black and white video signals on twisted pair cables up to a distance of

2000 m. The Series 225 consists of a range of transmitter, receiver and repeater units, as listed below.



### **Description**

Type	Description
BVT-225/2	Boxed video transmitter with built-in 115/230 VAC power supply
BVR-225	Boxed video receiver with built-in 115/230 VAC power supply
BVX-225	Boxed video repeater with built-in 115/230 VAC power supply
EVT-225	Euroboard video transmitter to be fitted in the RVU-200 rack frame
EVR-225	Euroboard video receiver to be fitted in the RVU-200 rack frame
RVU-200	19" 3HU rack frame for up to 16 boards type EVT-225 or EVR-225 or a combination of both
MVTPS-225	Miniature video transmitter with 12 VDC camera power supply to be fitted in CHN or CHM housings

The various types of transmitters and receivers are fully compatible, meaning that a BVT transmitter can send to an EVR receiver without any problems.

The transmitter units have a coax composite video input and a twisted pair output. They also feature

a galvanic separator thereby eliminating hum problems. The BVT and EVT units furthermore have a coax video output for local monitoring.

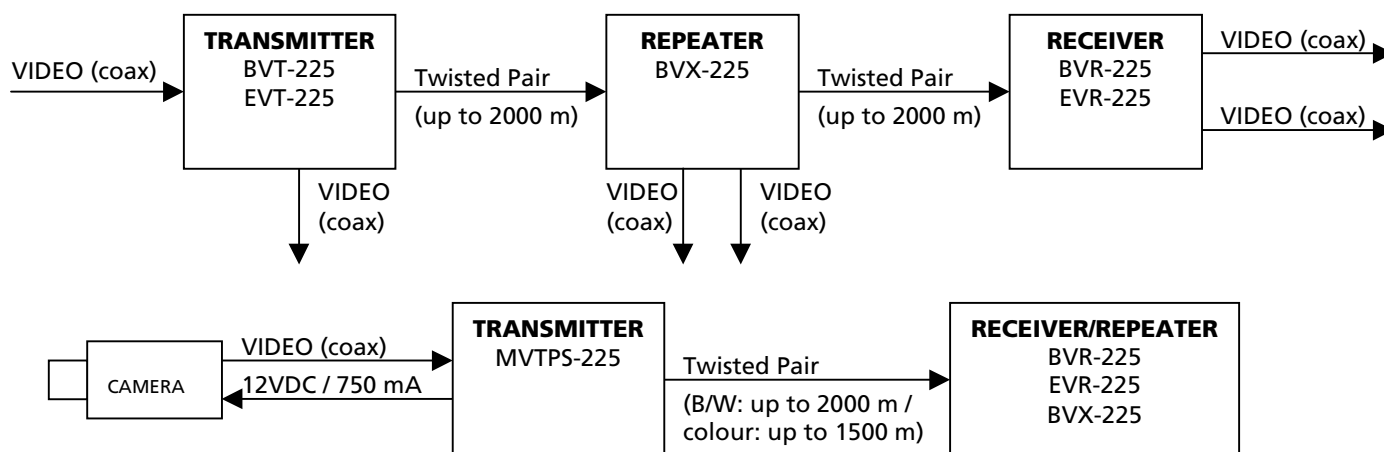
The MVTPS-225 is a combined twisted pair transmitter and 12 VDC camera power supply for

installation in a CHN or CHM housing. The transmitter part features galvanic separation. The power supply provides 12 VDC / 750 mA for a camera.

The receiver units have a twisted pair input and two coax composite outputs. This allows the distribution of the same signal to two different locations without the need for a distribution amplifier. The loss introduced by the twisted pair cable length is compensated on the receivers by means of five potentiometers which must be adjusted at the time of installation.

The repeater units are used when the transmission distance exceeds 2000 m. The repeaters are inserted in the transmission chain for every 2000 m of cable for transmission distances up to approx. 6 km. The units have a twisted pair input, a twisted pair output and two coax composite video outputs for local monitoring. Furthermore, galvanic separation is provided between input and output.

The Series 225 is fully compatible with other Ernitec twisted pair video equipment. However the specified technical data including transmission distance assumes the use of Series 225 equipment only.



Block diagram of the Twisted Pair Series 225

## Specifications

<b>Transmitter specifications (BVT/EVT/MVTPS)</b>	
<i>Coax video input</i>	
Connector type, coax video input	75 ohm BNC
Nominal video input level, coax video input	1 Vpp
Max. video input level, coax video input	1.5 Vpp
<i>Coax video output, local monitoring (only BVT/EVT)</i>	
Connector type, coax video output (local monitoring)	75 ohm BNC
Video output level, coax video output (BVT)	1 Vpp, 1.2 Vpp, by jumper setting
Video output level, coax video output (EVT)	1 Vpp, 1.5 Vpp, by jumper setting
Frequency response, coax video output (BVT)	20 Hz to 8 MHz @ -1 dB
Frequency response, coax video output (EVT)	20 Hz to 7 MHz @ -2 dB
Frequency boost @ 5 MHz (BVT)	0 dB, +2 dB, by jumper setting
Frequency boost @ 5 MHz (EVT)	0 dB, +3 dB, by jumper setting
<i>Twisted pair video output</i>	
Connector type, twisted pair video output (BVT)	2 pole spring terminal
Connector type, twisted pair video output (EVT)	9 pole Sub-D
Connector type, twisted pair video output (MVTPS)	2 pole screw terminal
Video output level, twisted pair (BVT/EVT)	2 Vpp, 3 Vpp, 4 Vpp, by jumper setting
Video output level, twisted pair (MVTPS)	2 Vpp
Frequency response (BVT)	20 Hz to 15 MHz @ -1 dB
Frequency response (EVT)	20 Hz to 15 MHz @ -1.5 dB
Frequency response (MVTPS)	20 Hz to 15 MHz @ -1.5 dB
Frequency boost @ 5 MHz (BVT/EVT only)	0 dB, +2 dB, +4 dB by jumper setting
Signal to noise ratio, unweighted	> 50 dB, typ. 56 dB

<b>Transmitter specifications (cont.)</b>	
Common Mode Rejection Ratio (CMRR)	> 36 dB
<i>Camera power output (MVTPS only)</i>	
Output voltage	12 VDC
Available current	750 mA
<i>General specifications</i>	
Power supply (BVT)	207 to 253 VAC, 104 to 126 VAC, by switch setting
Power supply (EVT)	+/- 18 VDC
Power supply (MVTPS)	85 to 265 VAC, 47 to 63 Hz
Power consumption (BVT)	typ. 3 W
Power consumption (EVT)	< 3 W
Power consumption (MVTPS)	typ. 1 W (excl. camera consumption)
Temperature range (BVT)	-25° C to +55° C
Temperature range (EVT)	-20° C to +55° C
Temperature range (MVTPS)	-20° C to +55° C
Humidity	< 85 %RH
Dimensions, H x W x D (BVT)	90 x 160 x 250 mm
Dimensions, H x W x D (EVT)	18 x 100 x 168 mm
Dimensions (MVTPS)	Suitable for installation in CHN and CHM housings
Protection (BVT)	IP 65
Cable glands (BVT)	1 x PG13.5, 2 x PG11, 2 x PG9, 3 x PG7
EMC / EMI	EN 50081-1, EN 50082-2, EN 50130-4
Safety	EN 60950, EN 60742
<b>Receiver specifications (BVR/EVR)</b>	
<i>Twisted pair video input</i>	
Connector type, twisted pair video input (BVR)	2 pole spring terminal
Connector type, twisted pair video input (EVR)	9 pole Sub-D
Max. video input level, twisted pair	2 Vpp
Equalisation range	0 dB to +60 dB @ 5 MHz
Transmission distance, colour	> 2000 m (BVT and EVT) > 1500 m (MVTPS)
Transmission distance, B/W	> 2000 m (BVT, EVT, MVTPS)
<i>Coax video output</i>	
Connector type, coax video output	75 ohm BNC
Number of coax outputs	2
Video output level	0.7 Vpp to 1.5 Vpp, adjustable
Frequency response	20 Hz to 15 MHz, +/-1.5 dB
Signal to noise ratio, unweighted	> 56 dB
Common Mode Rejection Ratio (CMRR)	> 60 dB
<i>General specifications</i>	
Power supply (BVR)	207 to 253 VAC, 104 to 126 VAC, by switch setting
Power supply (EVR)	+/- 18 VDC
Power consumption (BVR)	typ. 9.5 W
Power consumption (EVR)	< 3 W
Temperature range (BVR)	-25° C to +55° C
Temperature range (EVR)	-20° C to +55° C
Humidity	< 85 %RH
Dimensions, H x W x D (BVR)	90 x 160 x 250 mm
Dimensions, H x W x D (EVR)	18 x 100 x 168 mm
Protection (BVR)	IP 65
Cable glands (BVR)	1 x PG13.5, 2 x PG11, 2 x PG9, 3 x PG7
EMC / EMI	EN 50081-1, EN 50082-2, EN 50130-4
Safety	EN60065, IEC950, EN 60950, EN 60742
<b>Rack frame specifications (RVU)</b>	
<i>General specifications</i>	
Power supply	207 to 253 VAC, 104 to 126 VAC, by switch setting
Power consumption	max. 110 VA
Temperature range	0° C to +55° C
Humidity	< 85 %RH
Dimensions, H x W x D	133 x 483 x 185 mm
EMC / EMI	EN 50081-1, EN 50082-2, EN 50130-4
Safety	EN 60065, IEC950, EN 60742

<b>Repeater specifications (BVX)</b>	
<i>Twisted pair video input</i>	
Connector type, twisted pair video input	2 pole spring terminal
Max. video input level, twisted pair	2 Vpp
Equalisation range	0 dB to +60 dB @ 5 MHz
Transmission distance, colour or B/W	> 2000 m.
<i>Twisted pair video output</i>	
Connector type, twisted pair video output	2 pole spring terminal
Video output level, twisted pair	2 Vpp, 3 Vpp, 4 Vpp, by jumper setting
Frequency response	20 Hz to 15 MHz @ -1 dB
Frequency boost @ 5 MHz	0 dB, +2 dB, +4 dB by jumper setting
Signal to noise ratio, unweighted	> 50 dB, typ. 56 dB
Common Mode Rejection Ratio (CMRR)	> 36 dB
<i>Coax video output, local monitoring</i>	
Connector type, coax video output	75 ohm BNC
Number of coax outputs	2
Video output level	0.7 Vpp to 1.5 Vpp, adjustable
Frequency response	20 Hz to 15 MHz, +/-1.5 dB
Signal to noise ratio, unweighted	> 56 dB
Common Mode Rejection Ratio, CMRR	> 60 dB
<i>General specifications</i>	
Power supply	207 to 253 VAC, 104 to 126 VAC, by switch setting
Power consumption	typ. 12.5 W
Temperature range	-25° C to +55° C
Humidity	< 85 %RH
Dimensions, H x W x D	90 x 160 x 250 mm
Protection	IP 65
Cable glands (BVR)	1 x PG13.5, 2 x PG11, 2 x PG9, 3 x PG7
EMC / EMI	EN 50081-1, EN 50082-2, EN 50130-4
Safety	EN 60950, EN 60742

## Ancillary Products

### MVT-600 Mini transmitter

The Ernitec MVT-600 miniature twisted pair transmitter is designed for transmission of colour and B/W composite video signals on cable lengths of up to 1500 meters. This is a compact video transmitter and due to low power consumption can be connected to a built-in BNC plug and powered by a camera. The MVT-600 is fully compatible with all other Ernitec twisted pair equipment.

### Specifications MVT-600

Video input voltage	1 Vpp
Impedance	75 Ω
Power input	8 – 20 VDC
Current consumption	20 mA
Video output voltage	4 Vpp
Transmission distance	max. 1,5 km
Frequency	8 Hz – 8 MHz
Signal/noise, weighted	>68 dB
Temperature	0 – 50° C
Humidity	max. 85% RH
Weight	34 g
Dimensions	(Ø)17,5 x (L) 49 mm
Approvals	EN 55022, prEN 50082-2



### CHM-PSTP/2

The Ernitec CHM-PSTP/2 is a small power supply and twisted pair transmitter, designed for supply of 12 VDC CCD cameras and fits into the Ernitec CHM-housings. The built-in twisted pair video transmitter with galvanic separation can be used on cable distances up to 1500 meters for colour signals and 2000 meters for B/W signals.

### Specifications CHM-PSTP/2

Mains voltage, frequency	85 –264 VAC, 47 – 440 Hz
Power consumption	8 W
Output voltage, fully regulated	12 VDC
Current @ 0 – 55° C	400 mA
Current @ -10 - 60° C	350 mA
Video input voltage, impedance	1 Vpp, 75 Ω
Video output voltage, impedance (galvanic separated)	2 Vpp, 124 Ω
Bandwidth @ -2 dB	30 Hz – 15 MHz
Signal/noise, un-weighted	> 60 dB
Transmission dist. B/W @ 0,6 mm cable	2.000 m
Transmission dist. colour @ 0,6 mm cable	1.500 m
Temperature range	-10° - 60° C
Humidity, non-condensing	max. 95% RH
Dimensions	(L) 103 x (W) 62 x (H) 42 mm
Weight	0,5 kg
Approvals	EN 50081-1, EN 50130-4, EN 60950 (indoor use)

