

# Manual

**INSTALLATION AND ADJUSTMENT INSTRUCTIONS  
FOR BVT-65 & BVR-65**

## 1. Introduction to the Series 65

The Series 65 is designed for the transmission of colour and black & white composite video signals on twisted pair lines up to a distance of 1000 meters. The balanced output line driver on the BVT-65 twisted pair video transmitter is equipped with a galvanic separation circuit in order to eliminate mains ground loop problems. The Series 65 is fully compatible with other Ernitec twisted pair products, stand-alone units as well as built-in versions.

## 2. Installation

### 2.1. Box installation

Choose a plane surface to prevent the box from being twisted and thereby becoming leaky while mounted. When mounted out-door, the box should be oriented with the cable glands pointing downwards. Screws and plugs are supplied in the mounting kit. Drilling dimensions is shown on the figure.

### 2.2. Cable connections

Connect the cables exactly as described on the figure.

*Make sure to earth connect the equipment; otherwise the over voltage protection is inoperative!*

### 2.3. Mains installation

- Terminals marked with hazardous live symbol requires installation by an instructed person. - If permanently connected to mains, a readily accessible disconnect device shall be incorporated in the building installation wiring. - If pluggable connection to mains, the socket-outlet shall be installed near the equipment and shall be easily accessible.

**Warning:** Do not in any way connect the twisted pair shield to the BVT-65!

If the shield is connected to the transmitter the galvanic separation is inoperative.

## 3. Adjustment

The best performance is obtained by connecting a video generator to video in on the BVT-65 and an oscilloscope to video out on the BVR-65 receiver. Check that H2 line status indication (green LED) is quickly flashing.

If a negative or turned over picture is displayed the twisted pair cable should be reversed at the receiver Input terminal X1.

1. Set RV1 (gain) to centre position. Set jumper on W1 to position S for cable length below Approximately 100 meters, position M for 100-300 m cable lengths, and position L for 300+ m.

2. Adjust RV2 (LF/MF), S1 (MF/HF) and RV3 (HF) for best possible signal response.

3. Adjust RV1 (gain) to 1 Vpp output signal at 75 ohm load.

If a video generator and an oscilloscope are unavailable adjustments should be carried out in the order shown on the figure.

For optimum picture quality, the use of a video generator and an oscilloscope is necessary.

## Installation and Adjustment Instructions for BVT-65 & BVR-65

### Specifications for BVT-65

	Description		Min.	Typ.	Max.	Unit	Note
<b>Inputs</b>	Video input	Voltage	0,7		1,5	Vpp	Unbalanced
		Impedance		75		$\Omega$	
	Mains	Voltage, 230VAC ver.	207	230	253	VAC	
		Voltage, 115VAC ver.	104	115	126	VAC	(Optional)
		Frequency	45	50	60	Hz	
		Current consumption			22	mA	@230VAC
		Current consumption			43	mA	@115VAC
<b>Outputs</b>	Video (galvanic separated)	Voltage		1		Vpp	Balanced, @ 1 Vpp in, 120 $\Omega$
		Transmission distance			1	km	@ 0,6 mm twisted pair, 25°C
		Frequency	15		8M	Hz	+/- 3dB
		Signal/noise	60			dB	Weighted
<b>General</b>	Temperature range		-20		+55	°C	
	Relative humidity				85	%	
	Weight			0,6		kg	
			<b>W</b>	<b>D</b>	<b>H</b>		
	Enclosure	Dimensions	120	122	55	mm	excl. cable glands
		Protection	IP65				ABS box
		Cable glands					1 x PG13.5, 1 x PG9, 1 x PG7
EMC/EMI	EN 50081-1, EN 50130-4						
Safety	IEC 60950						

### Specifications for BVR-65

	Description		Min.	Typ.	Max.	Unit	Note
<b>Inputs</b>	Video input	Voltage	0,5		3,0	Vpp	Balanced
		Cable impedance	110		130	$\Omega$	
	Mains	Voltage, 230VAC ver.	207	230	253	VAC	
		Voltage, 115VAC ver.	104	115	126	VAC	(Optional)
		Frequency	45	50	60	Hz	
		Current consumption			35	mA	@230VAC
		Current consumption			70	mA	@115VAC
<b>Outputs</b>	Video	Voltage		1	1,2	Vpp	75 $\Omega$ Unbalanced
		Transmission distance			1	km	@ 0,6 mm twisted pair, 25°C
		Frequency	15		8M	Hz	+/- 3dB
		Signal/noise	60			dB	Weighted @ 24dB eq.
<b>General</b>	Temperature range		-20		+55	°C	
	Relative humidity				85	%	
	Weight			0,8		kg	
			<b>W</b>	<b>D</b>	<b>H</b>		
	Enclosure	Dimensions	120	122	55	mm	excl. cable glands
		Protection	IP65				ABS box
		Cable glands					1 x PG13.5, 1 x PG9, 1 x PG7
EMC/EMI	EN 50081-1, EN 50130-4						
Safety	IEC 60950						

### Recommended twisted pair cable specifications

Description	Min.	Typ.	Max.	Unit
Solid conductors, diameter ( $\varnothing$ )	0,5	0,6	1,0	mm
Characteristic impedance	110	120	130	$\Omega$
Capacitance			90	nF/km
Capacitance, unbalanced			800	pF/km
Inductance			0,7	mH/km
Isolation	500			$M_{\Omega}$
Loop resistance			130	$\Omega$
Attenuation @ 5 MHz			30-36	dB/km
Twists	5			pcs./m



