BBV

Telemetry Receiver Installation Guide

Models covered

Rx200

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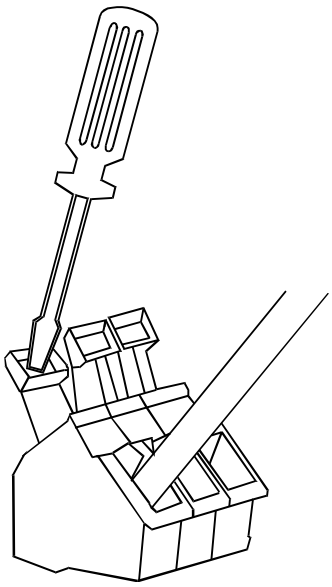
UNPACKING
Inspect the packaging for signs of damage. If damage has occurred, advise the carriers and or the suppliers immediately. Unpack the receiver carefully and check that all the items are present and correct.

SAFETY PRECAUTIONS
All normal safety precautions as laid down by British Standards and the Health and Safety at Work Act should be observed and servicing should be referred to qualified service personnel.

Rx300 TECHNICAL SPECIFICATION

Power Requirements:	240 volts 50Hz, or 110 volts 60 Hz **(240 volts standard)** IEC connector provided
Maximum Load:	6 amp at 240 volts
Receiver Current Draw:	6VA maximum
Fuses:	receiver fuse (F1): 63 mA T auxiliary fuse (F2): 5 amp T (mains driven head) auxiliary fuse (F2): 315 mA T (24-volt panning head)
Outputs	3 single pole change over relays (snubbed) either:- or:- 1. Left motor 1. Wash 2. Right Motor 2. Wipe 3. Autopan 3. Lights (Max 1000 watt load) For pan only heads, For static cameras autopan interlocks with left/right
Facilities/Options	Unit auto tunes to the coaxial telemetry signal. LED readout for continual system status . Diagnostic test button (SW1) activates each function for two seconds in turn. See Table 4 for test sequences. Video launch amplifier provided with Gain and Lift controls. Camera power outlet provided. Colour coded outlets - live, neutral and earth. 24 volt option available from factory, plugs into J5, (pre wired).
Telemetry signals	Up the co-ax telemetry signals, designed to operate over 1Km of CT125 co-ax. or Twisted pair 20mA loop
Auto-Iris Output	Returns to original setting 15 seconds after key release. Level programable from keypad.
Aux. output	Suitable for driving a single relay (See Installation Instructions for further details).
Video input	1v p-p 75R Terminated Input via BNC socket.
Video output	1v p-p to 4v p-p 75R Impedance via BNC socket.
PCB Size	Width 108 mm (4.25 inches) overall Length 178 mm (7 inches) without IEC inserted Height 38 mm (1.5 inches) above PCB
PCB Weight	0.35 Kg (12 ounces)
Boxed Size:	Width: 190 mm Length: 380 mm Height: 130 mm
Boxed Weight:	2.5 kg



WAGO CONNECTERS

The WAGO series 256 PCB terminal block is a simple-to-use method of attaching cables to PCBs quickly and easily. The correct method of attachment is as follows:

1. Use only cable between 0.08 and 2.5 mm²
2. Strip the cable to a length of 5 to 6 mm (0.23 in)
3. Press down the relevant terminal block lever with a screwdriver
4. Insert wire
5. Remove screwdriver

Detachment of wires is the reverse procedure of steps 3 to 5, ensuring that **power is disconnected** before starting

CABLING RECOMMENDATIONS FOR RX RANGE OF RECEIVERS

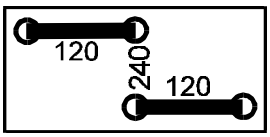
Although BBV do not specify any particular type, manufacturer or supplier of cables, the following ESD Electronic Services (0279 626777) cables have been used successfully for production and testing:

ESD Part Number:	Description:
071775G (100 m)	**Output Cable** 18-core 16/0.2mm PVC insulated/PVC sheathed cable Rated at 440 volts AC rms at 1600 Hz DEF 61-12 current rating per core 2.5 amp Maximum operating temperature: 70 degrees Celsius
038309R (100 m)	**Preset Cable** 8-core 7/0.2mm PVC insulated, overall braid screened Rated at 440 volts AC rms at 1600 Hz DEF 61-12 current rating per core 1.0 amp Maximum operating temperature: 70 degrees Celsius
0222586G (100 m)	**Co-Ax Cable (Minimum Specification)** RG59B/U ESD radio frequency co-ax cable to BS2316 and MIL-C-17 1/0.58mm copper-covered steel wire conductor with solid polythene dielectric, bare copper wire braid and PVC sheath Characteristic impedance: 75 Ohm Capacitance: 22pF/ft
020966D (100 m)	**Orange Coloured Lights Output Cable (1000 w)** 3183Y PVC Insulated 3 core cable 1.25mm² 40/0.2mm annealed copper conductor Current rating: 13 amp
0140467H (100 m)	**20mA Twisted Pair Cable (Minimum Specification)** British Telecom Spec. CW 1308 2-core 1/0.5mm PVC insulated Maximum conductor resistance at 20 degrees Celsius: 97.8 ohms/Km

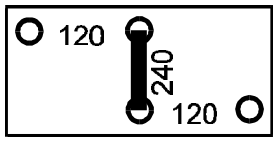
Rx200 INSTALLATION INSTRUCTIONS

The Rx300 requires all connections to the PCB to be made by the installer and via terminal blocks or by plug and socket. These connections are: power, video in, video out, and pan or auxiliary outputs. See Table for the correct connections.

The Rx300 is normally supplied pre-configured to suit the application for which it is intended, and this will be either to control a mains-operated panning head or other equipment, or to control a 24-volt panning head. The unit is prewired for **240 volt** mains operation. If a **110 volt** supply is to be used, it is most important to double-check the mains voltage selection jumpers at U1 **before** connection of power. **For operation at 110 volts F1 should be fitted with 100 mA T.**



110 Volts



240 Volts

For mains-voltage panning heads, the **110 or 240 volt** supply is made via the IEC socket J4 . (Note - for mains operations, J5 is linked Pins 1 to 4 and Pins 3 to 6.)

For 24-volt panning heads, the jumper plug fitted to J5 is removed and the **separate BBV 24-volt supply** (Part Number *BBV24VAC)* is connected to J5 and the auxiliary fuse F2 is changed from 5 amp to **315 mA T**. Mains connection is made via the IEC socket J4, to provide power for the system.

Dependant on the type of application required and the type of lens used there are two jumpers H1-1, H1-2 on the PCB which have to be set. Their functions are as listed below:-

H1-1

On Left right and autopan (Plus Aux. Light Relay Driver Output J3-5/6)
Off Wash wipe and lights (Plus Aux. Autopan Relay Driver Output J3-5/6)

H1-2 Controls auto-iris remote control features. (See Appendix for Lens List)

On Cosmicar lens 2.5 - 5.5 volts
Off Seiko/Video Technical lens 2.5 - 12 volts

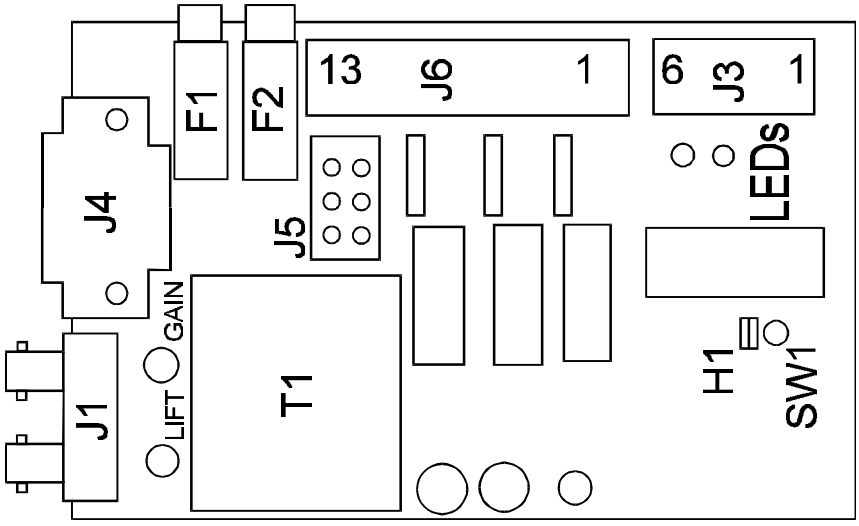
Two L.E.D.'s (Error and Cable) are mounted on-board to give simple system status information. Their functions are as follows:-

Cable LED
Regular Blinking - Telemetry and Sync signals OK
Blinking but mainly ON - No telemetry information from the transmitter
Blinking but mainly OFF - No sync information from the camera

Error LED
On - Transmission error (e.g. framing error, parity error)

Both LED's
Off - No power, or major PCB error

As all BBV equipment is designed to auto-tune and compensate for any discrepancies in the transmitter signal, there are no further adjustments that need to be made.



RX-2

SELF-TEST AND DIAGNOSTIC SEQUENCES

The diagnostic system and status check, which will activate each camera function for two seconds in turn, is activated either locally by pressing a switch on the PCB or remotely from a BBV keypad. When testing the system locally, before initiating the diagnostic system and status check by pressing SW1, ensure that the Cable LED is on (i.e. either flashing or continuously). If not, this indicates that either the power is not attached to the PCB, or there has been a major PCB error. Rectify accordingly.

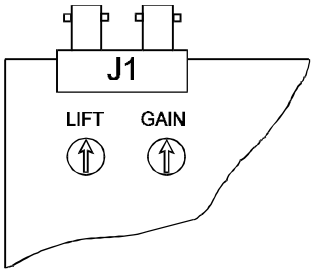
The Error LED flashes at a two-second rate during self-test. If the Cable LED fails to extinguish, then the unit is unable to self-tune and should be returned for repair.

Order of function test:

Major PCB Error. Replace board
Camera Moves Left
Camera Moves Right
Autopan
Relay Driver Activated
Auto Iris Open
Auto Iris Close
Diagnostic Check Complete, unit resets and continues normal operation.

LAUNCH AMPLIFIER

There are two variable controls, Lift and Gain, situated close to the BNC connector J1. These are pre-adjusted for a cable distance of 500m, and are adjustable to compensate for video detail or signal losses if and when longer or shorter cable lengths are used to connect the monitor to the receiver.



Default Position. For shorter cable lengths, turn the relevant control anti-clockwise until the required picture quality is obtained. For longer cable lengths, turn the relevant control clockwise until the required picture clarity is obtained.

The purpose of each control is:

Lift: boosts the high-frequency signal
Gain: adjusts the gain of the video signal

ATTENTION: Ensure that the cable is terminated at the monitor end **ONLY**

CABLE CONNECTIONS FOR Rx200 UNITS

Colour	Function	Pan Head Connection	Static Head Connection
	Main Cable (18 Core)		
	Wipe Auto Return Motor Live		J6-13 (See A)
Brown	Camera Power Live	J6-12	J6-12
Green	Camera Power Ground	J6-11	J6-11
Blue	Camera Power Neutral	J6-10	J6-10
Red	Pan Left	J6-9	
Turquoise	Motor Head Return (Neutral)	J6-8	
Green/Red	Motor Head Earth	J6-7	
Yellow	Pan Right	J6-6	
Red/Blue	Autopan	J6-3	
Black	Tilt Up	N/A	N/A
White	Tilt Down	N/A	N/A
Red/Brown	Wash Live		J6-9 (See B)
Red /Black	Wipe Live		J6-6
Yellow/Red	Wipe Earth		J6-5
White/Red	Wipe Neutral		J6-4
Orange	Lens Drive Zoom Motor	N/A	N/A
Grey	Lens Drive Motor Return /Ground	N/A	N/A
Pink	Lens Drive Focus Motor	N/A	N/A
	Auto Iris Override Ground	J3-4	J3-4
Violet	Auto Iris Override	J3-3	J3-3
	20 mA Twisted Pair Connection	J3-2	J3-2
	20 mA Twisted Pair Connection	J3-1	J3-1
	Lighting Cable (Orange 3 Core)		
Brown	Lights Live		J6-3
Green/Yellow	Lights Earth		J6-2
Blue	Lights Neutral		J6-1

Note A: This connection is Perminent Main Potential and is for use with camera wipe motor systems that require voltage to return the wipe arm to its home position

Note B: When the PCB is mounted in a housing and the cable not used Pins J6-9, J6-8 and J6-7 are available as Wash Live, Wash Earth and Wash Neutral.