Telemetry Receiver Installation Guide

Models covered

Rx300 Mark II
Pan/Tilt/Zoom/Focus/1 Aux
Software Random Pan

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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: 230 volts 50/60Hz (options are available for 24Vac and 110Vac supply)
IEC connector provided (screw terminals with 24Vac supply option)

Maximum Load: 5 amp at 230 volts

Receiver Current: 6VA maximum

Fuse: Transformer contains a none resetting thermal fuse in series with the primary windings. If the transformer overheats, the fuse will protect the unit by going open circuit, removing power from the transformer.

F2: Auxiliary output fuse

Supply	Output	Fuse F2
230	230	5A T
230	24	315mA T
110	110	5A T
110	24	630mA T
24	24	5A T

Outputs: 5 single-pole changeover relays (snubbed):

1. Left motor
2. Right motor
3. Up motor
4. Down motor
5. A single auxiliary output

Auxiliary output selectable as ***one*** of following:

a. Wash
b. Wipe
c. Lights (maximum 1000 watt load)
d. Autopan, if selected, interlocks with pan left/right.

Facilities/Options: Unit auto-tunes to the coaxial telemetry signal
LED readout for continual system status
Diagnostic test button (SW8) activates each function for two seconds in turn; see the table 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 output option available from factory; plugs into J5 (pre wired)
Software Random Pan – doesn't require autopan card in head.

Telemetry Signals: (a) Up the co-ax telemetry signals, designed to operate over 500M of RG59/1Km Ct125 co-ax; or (b) Twisted-pair 20mA loop (1200,E,8,1)

Auto-Iris Output: Returns to original setting 15 seconds after key release. Level programmable from keypad

To drive overide input for cosmicar, or seiko style lens

Video Input: 1v p-p 75R Terminated Input via BNC socket

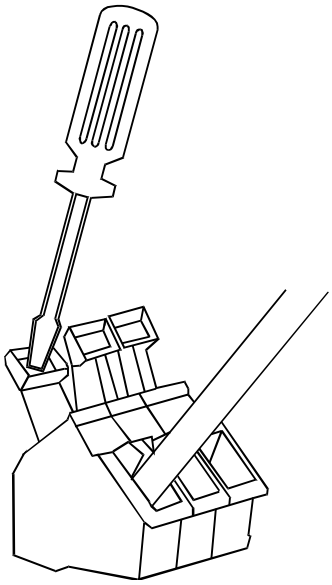
VideoOutput: 1v p-p to 4v p-p 75R Impedance via BNC socket

PCB Size: Width: 108 mm overall
Length: 203 mm without IEC inserted
Height: 38 mm above PCB

Boxed size: Width: 190mm
Length: 380mm
Height: 130mm

PCB Weight: 0.4 kg

Boxed Weight: 2.5kg



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 mm^2
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 (01279 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
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 1.25mm^2 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

Rx300 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 suitable for **230 volt** mains operation. As a factory fitted option, the receiver can be supplied to operate from 24Vac or 110Vac. This option must be specified at time of order.

For mains-voltage panning heads, the **110Vac or 230Vac** supply is made via the IEC socket J4 . (Note - for mains operations, J5 is linked Pins 1 to 4 and Pins 3 to 6.)

When using 24Vac heads, if the receiver is operating from a 110Vac or 230Vac supply either a 230/24Vac Kit or 110/24Vac Kit is used. The jumper fitted to J5 is removed and the plug supplied with the kit is connected to J5. Fuse F2 is changed to the value shown in the table on 2.

Receivers operating from 24Vac can only operate 24Vac heads. No kit is required.

When operating from a 24Vac supply, power connection is by means of a screw terminal replacing the IEC socket.

An 8 way DIL switch is provided allowing various options to be set as follows:-

SW1 On - 6 volt lens-motor drive
Off - 12 volt lens-motor drive

SW2 Controls auto-iris remote control features
On - Cosmicar lens, 2.5 - 5.5 volts
Off - Seiko/Video Technical lens, 2.5 - 12 volts

SW3 and **SW4** Select auxiliary function (**single function only**)

SW3	SW4	Function
On	On	Wash
On	Off	Lights
Off	On	Wipe
Off	Off	Autopan

SW5,6,7 **Unused**

SW8 **Start receiver self test, see later in manual.**

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

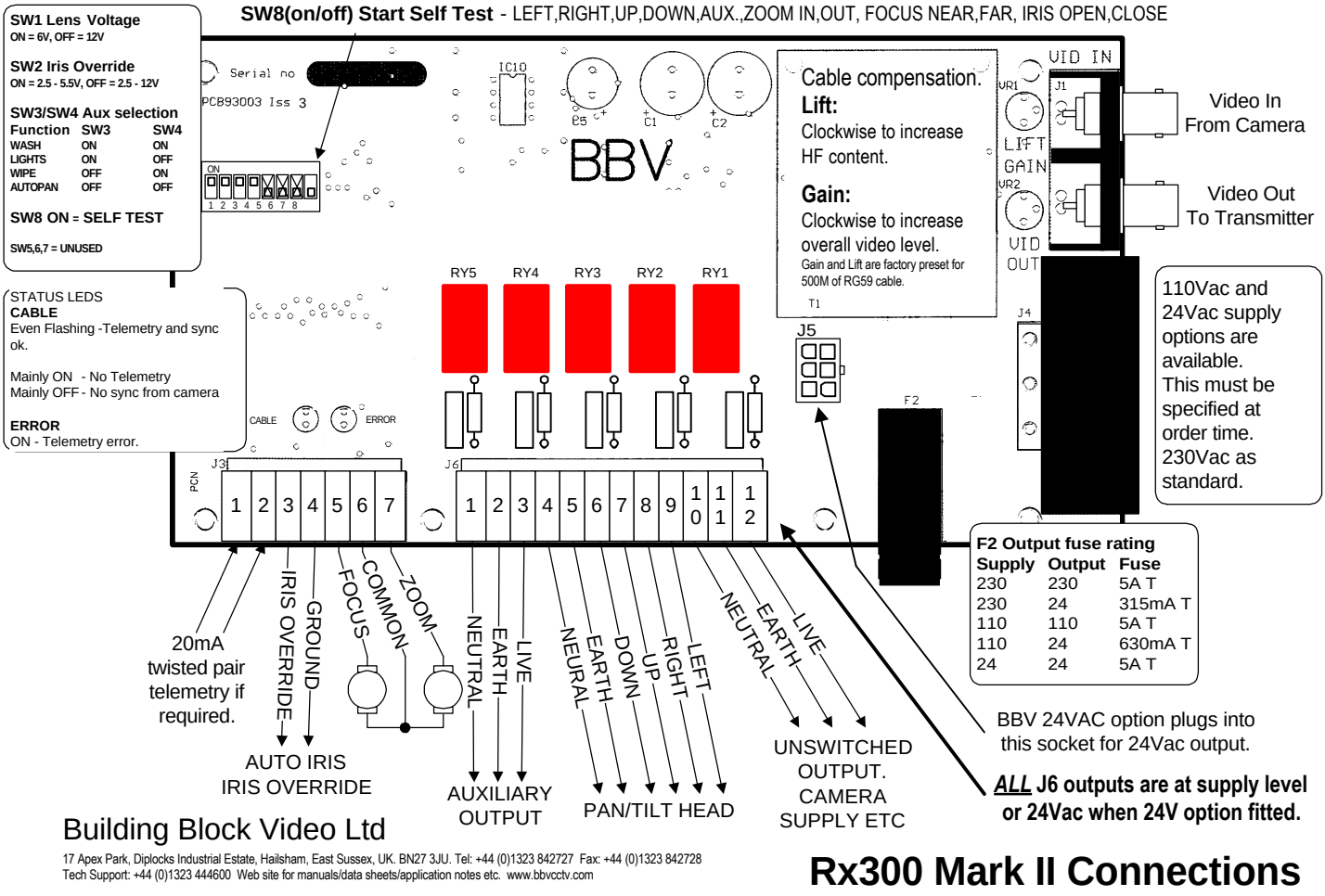
Cable LED
Regular Blinking - Telemetry and Sync signals OK
Blinking but mainly ON - No telemetry information from the transmitter
Blinking but mainly OFF - No sync information from the camera

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.

Random Pan
The Random Pan feature allows the receiver to drive the head in a left or right direction at random for a random time. The head will pause for a random time between movements. Over a period of time, the head will move between the right and left end stops. This feature does not require an autopan card to be fitted to the head. The Random Pan is started by issuing a PATROL 1 command from the telemetry controller. The key strokes required will vary depending upon the model of controller. Please refer to the controller handbook for details.



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Rx300 Mark II Connections

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 turning SW8 ON momentarily, 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.

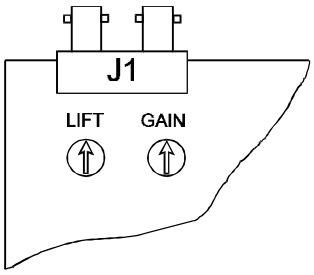
The Error LED flashes at a two-second rate during self-test. If the Cable LED fails to extinguish, then the unit is unable to self-tune and should be returned for repair.

Order of function test:

Camera Moves Left
Camera Moves Right
Camera Moves Up
Camera Moves Down
Auxiliary Function
Lens Zoom-In
Lens Zoom-Out
Lens Focus Near
Lens Focus Far
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 Rx300 UNITS

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

Depending on the jumper selection of SW3 and SW4, only **one of the four auxiliary functions can be selected at any one time.