MOLYNX SYSTEMS

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TX-CONTROL-C-BOXED
Molynx Coax to Third Party Dome
RS485 Interface

TX-CONTROL-C-BOXED: Molynx Coax Telemetry to RS485 converter fitted in a IP66 Box.

Installation Manual

Before attempting to connect or operate this product, please read the instruction manual completely

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About This Manual

Health & Safety Notice

Only suitably trained personnel, using the correct tools and recognised safe working practices should install this equipment. All installation work must be carried out in accordance with local and national codes of practice.

Ensure that the power is removed from the assembly before attempting installation and the power *cannot* be reconnected by external sources while the unit is being worked upon.

Contents Of Package

The product should reach you in perfect working order. If the unit is damaged in any way or if the supplied kit is incomplete, please contact your supplier immediately to organise a replacement.
    1 x Installation Manual
    1 X TX-Control main unit
    1 x 9V DC PSU (fitted in the enclosure)
    1 x 5 way telemetry connector

Before Starting Installation

1.   Ensure that the contents of the box are correct.
2.   Save these instructions for later use.

Network Termination

Tx-Control-C-BOXED has RS485 network termination factory set. The RS485 termination on the Dome should also be set, please see the domes instruction manual for instructions on how to do this.

Third Party Dome Control Using Tx-Control-C-BOXED

General Description

The Tx-Control-C-BOXED unit can be used to translate Molynx Coax data protocol camera telemetry (as used on Visilynx, 6000-Series and 600-Series) into Pelco D or Pelco P dome protocols to allow control of those domes from the control system.

Tx-Control-C Unit Setup

All configuration switches and links are situated inside the unit to avoid them being tampered with after installation. Access to these switches is by removing the four screws in the cover.

SW5-4 is factory set to open if you are using a 600-Series controller this should be set to closed. See camera address section if your camera number is > 32.

Coax connection to Controller

To provide telemetry to the unit it must be connected to a compatible telemetry controller. Effectively the Tx-Control-C-BOXED takes the place of a telemetry receiver in the system, taking in Molynx telemetry and using this to control the camera (i.e. the dome). It may be located either at the camera end of the network or at the controller end – both methods are equally acceptable and will depend on the specific installation.

The dome video BNC should be connected to the CAM IN BNC and the Visilynx, 6000, 600 should be connected to the TELEM IN BNC. (See below for connections). Please see the diagram inside the unit's lid.

Do Not use the input RS485 (Keyboard) on the Tx-Control-C-BOXED units. TX-Control-C-BOXED units have the RS485 output telemetry preset to either Pelco D or Pelco P at the factory.
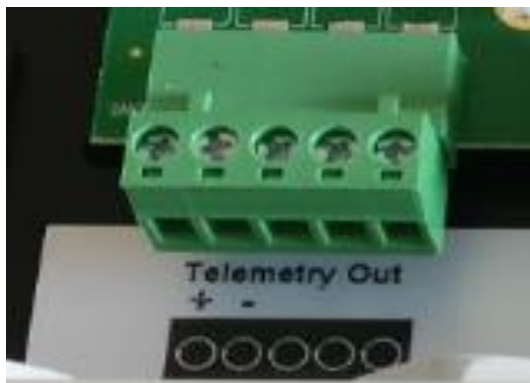
RS485 Connections to Dome

Video Connections controller and camera

Indicators

The STATUS indicator (green power LED) shows whether power is applied to the unit and also whether connection is made via the Coax telemetry interface.
- Power only connection: You will see a fast **regular** on/off flash.
- Visilynx V3i telemetry controller: While the joystick is being controlled the LED will flash with a slower **irregular** flash.
- 600 / 6000 series telemetry controller: Steady green light if power is being supplied correctly to it and it has established communication

Camera Addressing

On V3i VISILYNX systems set SW1 = 0 for cameras plugged into the master units and SW1 = 2 for cameras plugged into the slave units. Set the camera number to the Visilynx port the camera is plugged into (**1-32**)

For Visilynx II systems SW1 sets the base number of the camera that is addressed by the unit. The unit can then address 32 camera numbers upwards from this base number. The following table indicates which cameras are addressed for each bank setting —

SW1	Camera Numbers		SW1	Camera Numbers
0	1 - 32		8	129 - 160
1	17 - 48		9	145 - 176
2	33 - 64		A	161 - 192
3	49 - 80		B	177 - 208
4	65 - 96		C	193 - 224
5	81 - 112		D	209 - 240
6	97 - 128		E	225 - 256
7	113 - 144		F	241 - 256

The individual address of each camera within the bank is set by the address selector switches on the camera. This must be set to a number between 1 and 32. For example if SW1 is set to 1 (camera bank 17-48) and the dome address is set to 1 the camera will respond as camera 17 on the control system. If the dome address is set to 3 the camera will respond as camera 19.

Details for Each Dome Type

Each model of dome which the Tx-Control-C-BOXED unit can control is listed below and any connection and operating details unique to that model are described.

Pelco 'D' Protocol

Supported Functions

Note – testing was carried out on a Spectra II dome which is an obsolete model and may not support all the functions available on later models. Consult Pelco technical support for further information on which functions will operate on those models.

Pan / Tilt
64 speeds, matched to variable speed from joystick. Turbo-pan speed not supported. When using a fixed speed 600-Series keyboard the pan/tilt speed may be increased by simultaneously operating the AUX2 function.

Lens Functions (Zoom / Focus / Iris)
The Zoom and Focus functions are supported to run at one of two speeds depending on the state of the Lens Slow function. On the model tested the LensSlow did not appear to have any effect so only one lens speed was supported. The Iris function is not affected by LensSlow and operated at a single speed. The AutoIris function is supported but on the model tested it did not have any effect.

Latched Functions
The following latched functions are supported –
AutoFocus   –   turned on and off by the AutoFocus function. On a 600 keyboard the Camera OnOff function may be used in place of AutoFocus. On the model tested this function did not have any effect.
AutoIris   –   operated by the AutoIris function on the controller (not operational on unit tested)
Aux1 (Relay) –   operated by the Wipe function on the controller
Aux2   –   operated by the Aux1 function on the controller

Aux3 – operated by the Lamps function on the controller (not supported on unit tested)

All On/Off
Supports all latched functions, i.e. AutoFocus, AutoIris, Aux1 (Wipe), Aux2 (Aux1), and Aux3 (Lamps).

Camera Reset: Initialises dome. Does not clear presets.

Presets
Presets 1-32 can be saved and recalled. Only presets 1-16 are available on a 600-Series. The Home command recalls preset 1. Recalling presets 33 and 34 have special functions – Flip and Home (PanZero).

Certain other presets are used to access special features. Recalling preset 97/98/99 starts Auto Scan / Frame Scan / Random Scan; recalling preset 96 stops a scan. Programming preset 95 enters OSD menu mode; programming presets 92/93 sets the right/left limit stop for auto operation. These features are not available when using a 600-Series controller.

Preset Sequence / Tour
A synthesised preset sequence and preset tour may be run on the dome and is initiated by activating the Preset Sequence or Preset Tour function on the controller. The dome is sent to each preset position at the required time by a command from the Tx-Control.

A preset tour differs from a sequence in that the dwell times at each position are individually programmable (a sequence has a global dwell time for all positions).

The sequence / tour is programmed using the Program Preset Seq/Tour facility on the Visilynx or 6000-Series or the Program Preset Sequence on a 600-Series controller. A maximum of 16 positions may be programmed. Presets may be from 1 to 96; dwell times from 0 to 255s; speeds are always full speed as the dome does not have the facility to move to presets at other than 100%.

It is not possible with a 600-Series controller to recall an already programmed tour, only a sequence.

Patterns
A pattern can be programmed by using [1] [DEFINE PATTERN] from the Camera Setup menu on a Visilynx. The dome will then learn the following series of movements. To stop the pattern learn sequence press the [END/SAVE PATTERN] key. To recall the saved pattern press [1] [PRESET TOUR] on the Visilynx.

It is not possible to use patterns with 600-Series or 6000-Series controllers.

OSD Setup
To enter the on-screen camera setup mode program preset 95. It is then possible to use the [TILT UP] and [TILT DOWN] functions to navigate up and down through the menu. To select an item use the [IRIS OPEN] button and [TILT UP] and [TILT DOWN] to scroll through the options for that item.

It is not possible with a 600-Series controller to use the on-screen setup facility.

Connections

The 'TELEMETRY' connections from the Tx-Control-C-BOXED should be connected to the appropriate RS485 connections on the dome, Rx+ and Rx-.

Initial Camera Setup

Communication Speed Setting
The dome(s) connected to the Tx-Control-C-BOXED should be set to Pelco 'D' protocol at 2400 baud, no parity, 8 data bits, 1 stop bit.

Pelco 'P' Protocol

Supported Functions

Note – testing was carried out on a Spectra II dome which is an obsolete model and may not support all the functions available on later models. Consult Pelco technical support for further information on which functions will operate on those models.

Pan / Tilt
64 speeds, matched to variable speed from joystick. Turbo-pan speed not supported. When using a fixed speed 600-Series keyboard the pan/tilt speed may be increased by simultaneously operating the AUX2 function.

Lens Functions (Zoom / Focus / Iris)
The Zoom and Focus functions are supported to run at one of two speeds depending on the state of the Lens Slow function. On the model tested the LensSlow did not appear to have any effect so only one lens speed was supported. The Iris function is not affected by LensSlow and operated at a single speed. The AutoIris function is not supported by this protocol.

Latched Functions
The following latched functions are supported –

Aux1 (Relay)	–	operated by the Wipe function on the controller
Aux2	–	operated by the Aux1 function on the controller
Aux3	–	operated by the Lamps function on the controller (not supported on unit tested)
Camera OnOff	–	(not supported on unit tested)

All On/Off
Supports all latched functions, i.e. Aux1 (Wipe), Aux2 (Aux1), Aux3 (Lamps) and CameraOnOff.

Camera Reset: Initialises dome. Does not clear presets.

Presets
Presets 1-66 (not 33 or 34) can be saved and recalled. Only presets 1-16 are available on a 600-Series. The Home command recalls preset 1. Recalling presets 33 and 34 have special functions – Flip and Home (PanZero).

Certain other presets are used to access special features. Recalling preset 97/98/99 starts Auto Scan / Frame Scan / Random Scan; recalling preset 96 stops a scan. Programming preset 95 enters OSD menu mode; programming presets 92/93 sets the right/left limit stop for auto operation. These features are not available when using a 600-Series controller.

Preset Sequence / Tour
A synthesised preset sequence and preset tour may be run on the dome and is initiated by activating the Preset Sequence or Preset Tour function on the controller. The dome is sent to each preset position at the required time by a command from the Tx-Control.

A preset tour differs from a sequence in that the dwell times at each position are individually programmable (a sequence has a global dwell time for all positions).

The sequence / tour is programmed using the Program Preset Seq/Tour facility on the Visilynx or 6000-Series or the Program Preset Sequence on a 600-Series controller. A maximum of 16 positions may be programmed. Presets may be from 1 to 96; dwell times from 0 to 255s; speeds are always full speed as the dome does not have the facility to move to presets at other than 100%.

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It is not possible with a 600-Series controller to use the on-screen setup facility.

Connections

The 'TELEMETRY' connections from the Tx-Control-C-BOXED should be connected to the appropriate RS485 connections on the dome, Rx+ and Rx-.

Initial Camera Setup

Communication Speed Setting

The dome(s) connected to the Tx-Control-C-BOXED should be set to Pelco 'P' protocol at 4800 baud, no parity, 8 data bits, 1 stop bit.
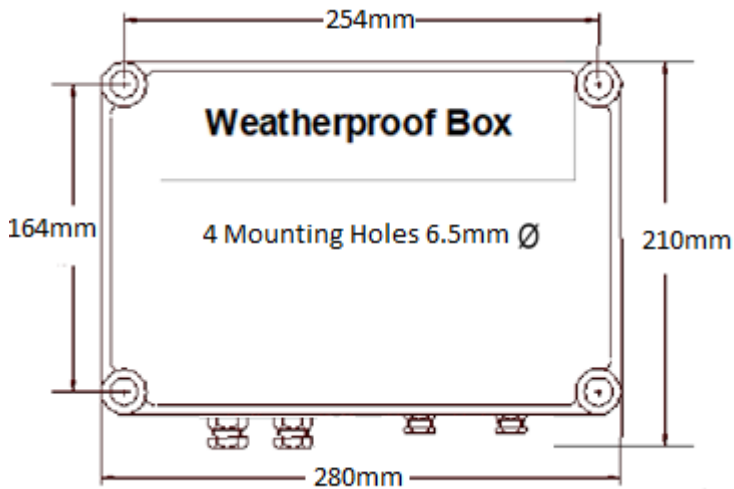
Specifications

Electrical

| Supply	110-230 V ac, 50/60Hz 0.3A
Fuse Boxed version	Fuse: T2AH (2A 250 V AC 5x20 Type (T), HBC)
PCB Power	9 V DC 0.3 A Centre pin positive
Telemetry RS485	Pin Signal 1 RS485 bi-directional 2 RS485 bi-directional 3 no connection 4 no connection 5 0V

Mechanical

Mounting	ENSURE THAT THE MOUNTING SURFACE IS SOUND AND WILL SUPPORT UP TO 10KG.
Weight	External IP66 Boxed version 1.8Kg
Operating Temperature Range	Boxed version: -10 to +40°C (RH 20-95% non-condensing) IP66
Construction internal	Case Flame retardant ABS to UL 94-V0 Panels anodised aluminium
Construction boxed	Polycarbonate enclosure RAL 7035 - light grey UL 746C
Glands Boxed	To ensure weatherproof enclosure IP66 rating, insert one cable per cable gland only. 2 x large cable glands: Cable range 8mm to 13mm (diameter) 2 x small cable glands: Cable range 3mm to 5mm (diameter)

Physical Dimensions

The dimensions for the Tx-Control-C-BOXED case are shown below. All measurements are given in millimetres.

Underside View
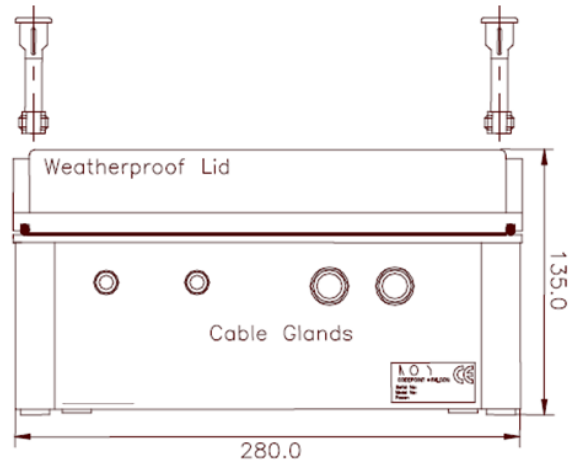
Side View

Before attempting to connect or operate this product, please read the instruction manual completely
Note: All specifications are subject to change without prior notice.