

# IP4x4T/R



## ONE WAY REMOTE CONTROL RELAYS OVER IP VIDEO

(OR ANY TWISTED PAIR WIRE SET)

INSTRUCTION BOOK

IB6467-02  
5-10-2018

## TABLE OF CONTENTS

<u>DESCRIPTION</u>	<u>1</u>
<u>MOUNTING INSTRUCTIONS</u>	<u>1</u>
<u>HOW TO CABLE THE IP4x4T/R</u>	1-2
<u>POWER SUPPLY INSTALLATION</u>	2
<u>RELAY SET-UP OF THE IP4x4T/R</u>	2-3
<u>OPERATION</u>	3
<u>CARE AND MAINTENANCE</u>	3
<u>APPLICATIONS (WHERE TO USE THE SYSTEM)</u>	3
<u>BLOCK DIAGRAM</u>	4
<u>EQUIPMENT OPTIONS</u>	4

## DESCRIPTION

The IP4x4T-R is a remote-control system that puts one-way contact relay controls onto any IP video cable without affecting the IP video signal. It will work with P.O.E. power on IP systems without interfering with the P.O.E. It will also work on any twisted wire pair set or audio cable, and it will go anywhere an audio signal will go. Use this to install an access control system or an emergency button out at the camera when the cost of running additional wires is prohibitive. If you need to dig a trench, break holes in walls or tear up concrete, this unit can get you the remote control you need without the heavy labor and expense. Use this product to send relay control signals in one direction over the same network cable used for IP Video. The IP4x4T-R can use any twisted pair wire and does not require an IP signal to operate. Say you want to have a push button at a gate to announce someone at the gate or control the gate in the other direction, this relay control set will control up to 4 different relays in one direction.

The transmitter and receiver units have LED indicators for both the input switch signals and the relay output signals to monitor the status of all incoming and outgoing signals. The relay outputs can be set for normally open or normally closed contacts to work with any external equipment requirements. Both units are powered by 24 Volts AC or DC and can use the same power supply as the camera. These units are also available in a 12 VDC version at no additional cost, use part number IP4x4T-R-12 at time of order.

For added security the system has a “system alarm” relay and LED to indicate loss of communication between the transmitter and receiver caused by a signal disconnect or a cable failure. You get both transmitter and receiver with power supplies all included when you order the IP4x4T-R, and you can order this unit with supervised alarm contacts for even more security at no additional cost. When ordering a supervised system, specify the loop resistance and order part number IP4x4T-R/S. The IP4x4T-R will pass P.O.E. on the “4/5 and 7/8 wires”, wires 1,2/3,6 are for data only and do not pass P.O.E.

## MOUNTING INSTRUCTIONS

The rugged one-piece mounting structure allows you to mount the units firmly in place with two screws. Select a place to mount the unit away from harsh or wet environments indoors is recommended. The IP4x4T should be located near your originating contact switch signals and the IP4x4R unit should be near your alarm panel or the place you wish to have the relay contacts. Select a position that gives you the best access to the IP cable, and reduces the labor of installation.

## HOW TO CABLE THE IP4x4T/R

Connect the network cable coming from the IP video camera to the 8P8C connector marked "CAMERA/NVR" on either the transmitter or receiver unit depending on which direction you want the relay signals to go. Next connect another network cable that will go between the transmitter and receiver units to the other 8P8C connector on the unit marked “CABLE”. This cable will span the distance between the two units. CAUTION: There can be no equipment in between the transmitter and the receiver units, only striate cable is allowed. Then at the other end of the system where the mating IP4x4 transmitter or receiver is located, connect the same cable to the connector marked “CABLE”. To complete the cable installation, connect a network cable from the connector marked “CAMERA/NVR” to the Network Video Recorder or the receiver equipment. At this point in the system, if a reversal cable is needed it can be used.

It is not necessary for power to be on at this time, the IP video path will only be interrupted during the cable attachment. Next attach the alarm or control wires for up to 4 switches to the green screw terminal connector block marked “SWITCH INPUT” on the IP4x4T transmitter unit. Then connect the relay outputs of the terminal block marked “RELAY OUTPUT” to the equipment to be controlled. If you wish to use the system alarm, then connect the relay output marked “ALM” to your local alarm system or any indicator you want to use and if communication between the units are interrupted this relay will operate to let you know the communication path is down.

If no IP video source is being used the remote-control system can operate without the IP video. In fact, the remote-control system does not need the IP video signal to operate and can be used on any available twisted pair wire system.

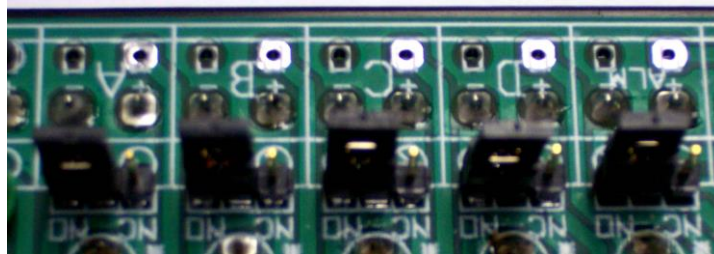
If you are using the system on twisted pair wires not associated with IP video then you can use one pair of wires for relay control, wire numbers “1-2” on the connector. For twisted pair operation connect your wire pair to an 8P8C type telephone connector attaching pins 1 and 2 to the twisted pair wire at each end of the wire run, polarity is not critical. The signal for relay control will pass through any audio amplifier in the direction of control however, amplification of the control signal is not required for lengths of wire up to 5000 feet. The control signal will go anywhere an audio signal can go even over wireless transmitters, so long as the audio path goes in the same direction as the control signal. Amplifiers and transmission equipment will not pass our control signals in the opposite direction.

### POWER SUPPLY INSTALLATION

Both IP4x4 “T” and “R” units are powered by a 24 VAC wall mount power transformer (included), however the IP4x4 units use very little power and can be connected to the existing 24VAC power supply used by the camera if needed. Connect the 24 VAC power transformer to the Green terminal block marked “PWR”. At this time, you will see the Green LED turn on to indicated power up and if the two IP4x4 units are not connected together you will see the RED “ALM” LED on the IP4x4-R turn on and start to flash indicating no communication between the two units. A 24VDC power source can also be used if desired, input polarity is not critical.

### RELAY SET-UP OF THE IP4x4-R

To change the IP4x4-R relay configuration jumpers, remove the four screws in the outer most corners of the top lid. This can be done with all the wire and cable connections intact. Lift the lid and locate the five jumpers in front of the relays.



The relay output can be configured for normally open or normally closed contacts by using the jumper jacks located inside the unit located near the relays. The jumpers are marked “NC” for Normally Closed, and “NO” for Normally Open. Make sure that you have the jumper firmly connected to two pins, the center pin and one side pin to make the selection.

## OPERATION

When the transmitter and receiver have been installed and are operating you will see that when a switch contact on the IP4x4-T is closed a green LED will light up indicating the condition of the input switch and the relay on the IP4x4-R closes with another LED to indicate the condition of the relay. Through the network cable the alarm sense is relayed to the alarm panel or other equipment directly. Both remote control or telemetry can be accomplished on the same network cable being used by the IP video camera. If there is a power failure on the IP4x4-T or IP4x4-R unit the IP video path will not be obstructed. At the same time, the system alarm relay will release indicating an alarm condition and alerting you to a system communication failure.

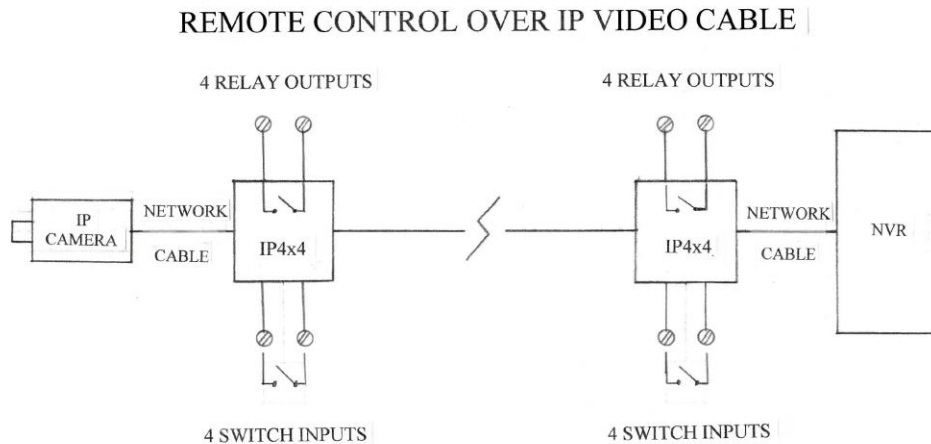
## CARE AND MAINTENANCE

There is no routine maintenance or calibration required with this equipment. There are no controls that require adjust inside the box. Open the box if necessary only to choose the desired operating configuration relay output sense.

## APPLICATIONS (WHERE TO USE THE SYSTEM)

This system can be used anywhere that a network cable or twisted pair wires exists. For access control, this unit can be used to install a button at a gate to get someone's attention, or in the opposite direction to control the gate. For industrial applications, it can be used to return contact information uses on equipment such as over temperature switches, pressure failure alarms, proximity alarms, or any switch control information. For security applications, any alarm information can be returned and control of doors or gate in the access control environment can be used. If two-way contact relay control is needed you can order a by directional version of the unit called IP4x4. It has two-way contact control and alarm functions with four relays in each direction.

## BLOCK DIAGRAM



## IP4x4 BLOCK DIAGRAM

### EQUIPMENT OPTIONS

At the time of order, you can purchase this equipment in these configurations:

- IP4x4-T/R Relay contact transmitter / receiver set units for one-way four relay control.
- IP4x4-T/S Relay contact transmitter unit with supervised contact input resistance.
- IP4x4-R/S Relay contact receiver unit with supervised contact output resistance.

And for TWO-WAY control:

- IP4x4 Relay contact control transmitter/receiver set units for two-way.
- IP4x4S Configured for "Supervised" contacts. This uses a predetermined Loop Resistance and must be specified at the time of order. Supervised units require a specific resistance in the loop for a valid normal alarm state. Any other resistance either higher or lower will be treated as an open loop.
- IP4x4-12 Configured for use with a 12 Volt DC power supply.
- IP4x4-12S Configured for both Supervised and 12 Volt power supply use.