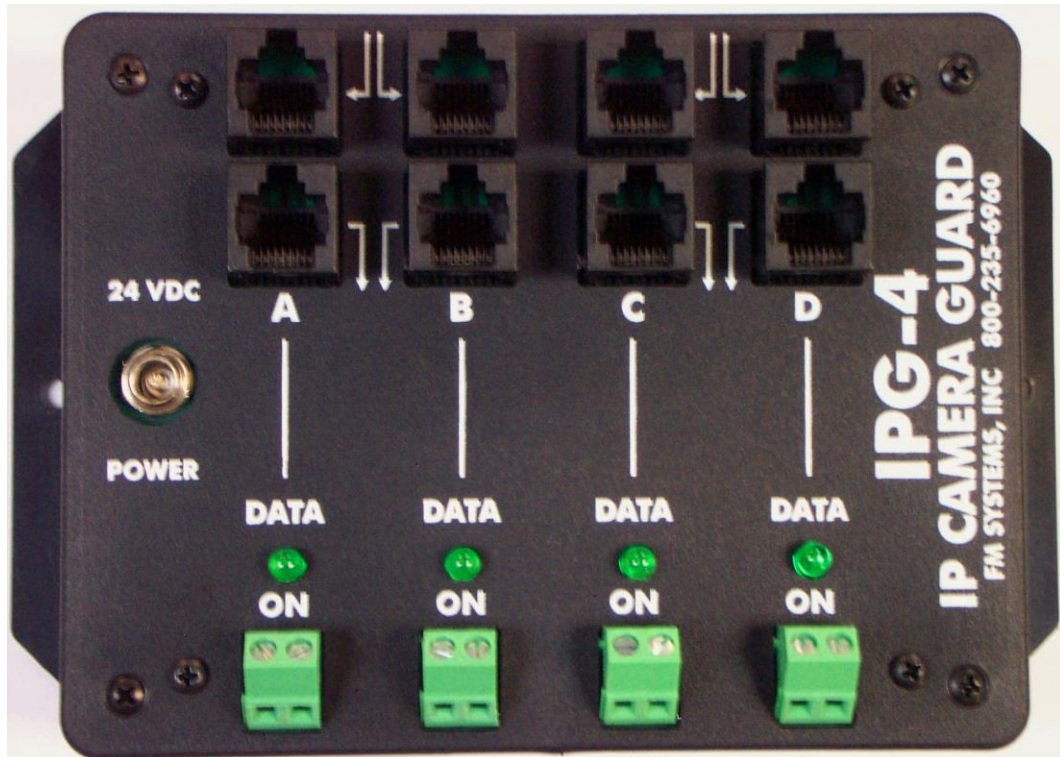


# IPG-4



# IP CAMERA-GUARD

INSTRUCTION BOOK  
IB6444-01

## TABLE OF CONTENTS

<u>DESCRIPTION</u>	<u>2</u>
<u>MOUNTING INSTRUCTIONS</u>	<u>2</u>
<u>HOW TO CABLE THE IPG-4</u>	<u>3</u>
<u>POWER SUPPLY INSTALLATION</u>	<u>3</u>
<u>OPERATION</u>	<u>3</u>
<u>CARE AND MAINTENANCE</u>	<u>3</u>
<u>APPLICATIONS (WHERE TO USE THE SYSTEM)</u>	<u>3</u>
<u>GROUND LOOPS THAT CAUSE INTERMITTANT DATA</u>	<u>3</u>
<u>PROGRAMMING THE RELAY OUTPUT</u>	<u>4</u>
<u>TROUBLE SHOOTING THE DATA SIGNAL</u>	<u>5</u>

## DESCRIPTION

The **IPG-4 Camera Guard** monitors the communication path of four separate IP camera data signals. This supervisory system will identify the loss of any video data signal due to removal of the camera, loss of power to the camera, a camera cable disconnect, or a defective camera output. The IPG-4 continuously displays the "Data on" condition of 4 IP cameras with individual L.E.D. indicators for each camera channel and relay contact outputs for external alarms. Use it to monitor your IP cameras and shut down un-attended gas pumps if the IP camera is tampered with.

Normally Open or Normally Closed Alarm contacts are provided for each channel to send an alarm or activate equipment when loss of data occurs. These contacts are field programmable for Normally Open or Normally Closed contact operation. Connect this unit to a local alarm panel to alert monitor personnel that a camera is being tampered with or send a message to a remote site by connecting the alarm output to external dialing equipment. It can be used to shut down equipment such as gas pumps when the IP video fails.

The IPG-4 will identify tampering or failure of cameras when it occurs, reducing the liability associated with extended and undetected loss of area security when cameras are rendered inoperative without notification. The IPG-4 increases the level of security provided by the IP video camera.

The IPG-4 Camera Guard can be connected anywhere between the camera and the Monitor equipment in the IP video data path. You can connect it near the IP camera to activate a local alarm or at the monitor location to alert guard personal and automatically shut down equipment. The "High Impedance Loop through Input" will not affect the data or picture quality of the video signal even if the power fails. The unit detects the loss of data communication between the IP camera and the monitor location for any reason such as power loss at the camera or camera failure, broken, shorted or disconnected wire cables and tampering of any kind.

Use this unit in any IP video installation that requires guaranteed continuous video monitoring. Use the IPG-4 to monitor the cameras in sensitive areas like loading docks or any area subject to the unauthorized movement of product or stock. Or use it to determine if you have an intermittent failure problem in any IP video system. The IPG-4 has an easy mounting flange that will mount to any surface with just two screws and is supplied with a 24 VDC power cube.

## MOUNTING INSTRUCTIONS

The rugged one piece mounting structure allows you to mount the unit firmly in place with two screws. Select a place to mount the unit away from harsh or wet environments indoors is recommended. The IPG-4 should be located near the monitor equipment or anywhere along the path of the IP video signal. Select a position that gives you the best access to cable the system and reduce the labor in installation.

## HOW TO CABLE THE IPG-4

Attach the cable coming from the camera to one of the IP Video 8P8C (RJ-45) connectors. These connector pairs loop through so you can use either one for the input or output. Then attach a cable from the other IP Video 8P8C (RJ-45) connector to the monitor equipment. Repeat this step for each channel you wish to monitor.

## POWER SUPPLY INSTALLATION

The IPG-4 is powered by a 24 VDC wall mount power transformer. Just plug the 24 VDC connector into the jack marked "24VDC PWR". The Green LED will not illuminate until both the power supply and the video data is applied.

## OPERATION

When IP video is applied to the IPG-4 it takes a continuous sample of the camera signal and monitors the data level and frequency of data transmission. When correct IP data levels are detected the unit displays a green LED on and the alarm relay is energized. The alarm output is field selectable with jumpers J1A-J1D on the PC card for normally open (NO) or normally closed (NC) contact operation. A separate set of jumpers J2A-J2D select Relay Contact output or Low Voltage Supply output. When the Low Voltage Supply is selected, the low voltage supply appears at the relay output terminals under the control of the Normally Open or Normally Closed relay jumpers.

If the IP Video level drops below operational limits a relay will de-energize to operate the alarm contacts and the LED will be off indicating a loss of data from the camera.

If the NVR "Network Video Recorder" fails to communicate with the camera the camera will stop transmitting video and go into a polling mode. This failure of the NVR will be detected by camera polling signals and the unit will output an alarm condition but the LED will slowly flash on and off indicating a loss of data communication from the NVR.

## CARE AND MAINTENANCE

There is no routine maintenance or calibration required with this equipment.

## APPLICATIONS (WHERE TO USE THE SYSTEM)

This system can be used anywhere that an IP video signal on cable exists. It can be used near the camera to operate a local alarm or at the monitor site for integration into the existing alarm system. It can be used with access control to prevent access to areas unless video is operational to guaranty that users are video taped entering the monitored area.

## GROUND LOOPS THAT CAUSE INTERMITTANT DATA

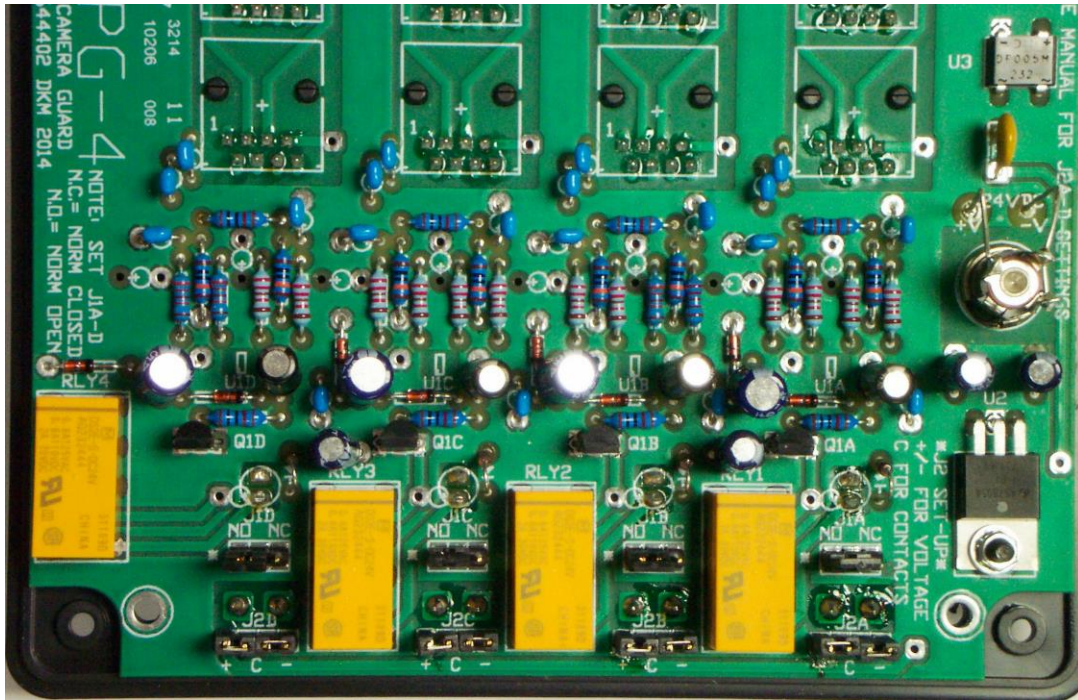
The IPG-4 is completely isolated from ground to prevent ground loops from occurring due to installation of the Camera Guard. Each camera connection is also isolated from each other to prevent ground loop creation. The IPG-4 will not induce ground loops in the data signal.

## PROGRAMMING THE RELAY OUTPUT

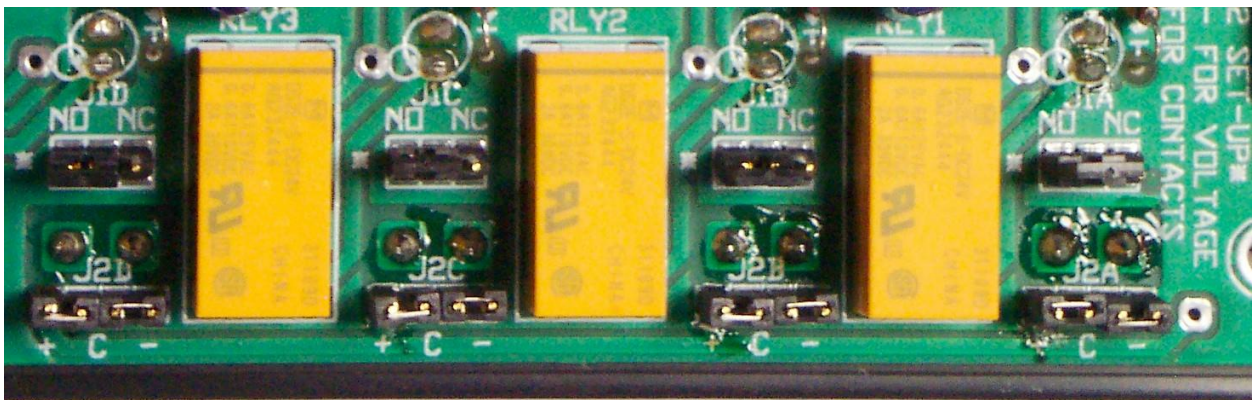
The relay output can be programmed in the field using the jumper jacks on the PC board. The units are shipped from the factory programmed for (NO) Normally Open contacts. If (NC) Normally Closed contacts are desired follow the steps below.

1. Remove the four black screws in the outer most corners of the product enclosure. These are the recess flat-head screws. DO NOT REMOVE THE PAN HEAD SCREW THAT ARE AT THE INSIDE EDGE OF THE BOX.

- For contact relay output locate the black jumper jacks J1A, J1B, J1C, and J1D next to the relays on the top of the PC Board. There are three gold pins under each jumper jack. Select (NO) for Normally Open or (NC) for Normally Closed and place the jumper jack on two of the three pins for each of the 4 channels A-D. The top of the PC Board is marked with graphic to make programming easy. Note for relay contact outputs the J2A, J2B, J2C, and J2D jumpers must be in the “C” position and only one shunt on these jumper pins.



- For Low Voltage output operation position one shunt onto J2A+ and another shunt onto J2a-. There should be two jumper shunts on this jack for supply voltage output. Then choose normally open or normally closed operation for the low voltage output. Repeat this step for each of the channels you wish to have low voltage outputs on. You may mix and match the output configurations as needed. For low voltage supply output this unit is available in two versions. The 12 Volt version IPG-4/12 and the standard 24 Volt version IPG-4.



- Replace the four black screws in the outer most corners of the enclosure.

## TROUBLE SHOOTING THE DATA SIGNAL

The IPG-4 IP Camera Guard monitors the data flow from camera to the NVR and any switches that might be in the system. The unit detects the loss of data transmission and operates a relay to control pumps and other equipment. This unit will work best when the IP video data is operating at full frame video, or high frame rate setting on the camera.

Features like built-in IP camera motion detection that only sends data when motion is detected by the camera should be avoided as they radically reduce the amount of consistent data flow and can cause a video loss detection to occur. Frame rates of 30 frames per second is suggested with data rates set on low settings to even out the data flow. The purpose of these setting is to provide as continuous a flow of data as possible. The IPG-4 is monitoring the amount of data, so if the camera data is sent in quick bursts at high data rates and has long periods of no data transmission in between the unit will consider that a loss of data transmission and operate the relays accordingly. If the unit is placed after a data compressing switch or repeater that causes the data flow to be compressed with long gaps in the data transmission this can cause the unit to detect the long gaps in data flow as a failure of the video.

An indication of low data transmission can be determined by examination of the Green LED lights on the IPG-4 unit. If the data rate is too low or un-even you may observe these LED lights flickering or very dim and the relays could be turning on and off. This is a visible indication of low data traffic and the frame rate on the camera should be selected to a high rate. Check to see if the camera has any feature like built-in motion detection and turn it off in the camera. If you suspect that a data switch or repeater is compressing the data by raising the data rate and sending it at a higher Bit per second rate then temporarily move the unit to the input to the switch and see if you get the same results. If the unit operates normally ahead of the switch, then the switch should be replaced with one that does not re-configure the data flow.

If motion detection is needed to extend record time, do the motion detection and reduction at the NVR in the recording setting and not in the camera itself. The IPG-4 uses the data traffic of or amount of data sent by the camera to detect a loss of data so any equipment that diminishes that data flow can affect how the unit operates the relays. Set the camera setting for the best continuous flow of data possible for the best Camera Guard operation.