



RLY-6

RELAY INTERFACE

INSTRUCTION MANUAL

RLY-6 Relay Interface Instruction Manual
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IMPORTANT SAFETY INSTRUCTIONS

Please read and follow these instructions before operating this product.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Only use attachments/accessories specified by the manufacturer.
10. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
11. Unplug this apparatus during lightning storms or when unused for long periods of time.
12. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
13. **WARNING:** To reduce the risk of fire or electric shock, do not expose this product to rain or moisture.

Please familiarize yourself with the safety symbols in Figure 1. When you see these symbols on this product, they warn you of the potential danger of electric shock if the station is used improperly. They also refer you to important operating and maintenance instructions in the manual.



This symbol alerts you to the presence of uninsulated dangerous voltage within the product's enclosure that might be of sufficient magnitude to constitute a risk of electric shock. Do not open the product's case.



This symbol informs you that important operating and maintenance instructions are included in the literature accompanying this product.

Figure 1: Safety Symbols

EMC AND SAFETY

The GPI-6 General Purpose Inputs Interface meets all relevant CE and FCC specifications set out below:

EN55103-1 Electromagnetic compatibility. Product family standard for audio, video, audio-visual, and entertainment lighting control apparatus for professional use. Part 1: Emissions.

EN55103-2 Electromagnetic compatibility. Product family standard for audio, video, audio-visual, and entertainment lighting control apparatus for professional use. Part 2: Immunity.

And thereby compliance with the requirement of Electromagnetic Compatibility Directive 2004/108/EC and Low Voltage Directive 2006/95/EC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

OPERATION

INTRODUCTION

This chapter describes how to configure and use the RLY-6 relay interface module. System operators can use this manual once the Eclipse System has been correctly installed and the relays have been assigned with the Eclipse Configuration System.

DESCRIPTION

The RLY-6 relay interface module provides six independent, single-pole, double-throw (SPDT) relays that are directly controlled by the matrix.

The RLY-6 provides six independent single-pole, double-throw (SPDT) relays that are directly controlled by the CPU card in the matrix frame. Like the GPI-6, this interface connects to the matrix through the separate RJ-45 accessory data connector on the matrix frame.

The Eclipse system supports up to 10 RLY-6 interfaces, for a total of 60 outputs. You can use a mix of GPI-6 and RLY-6 interfaces to support up to a total of 60 outputs and/or inputs. For example, five RLY-6 and five GPI-6 modules would provide 30 relays and 30 inputs for a total of 60 inputs/outputs.

All of the RLY-6 and GPI-6 interfaces in the system are daisy-chained from the GPI/RLY connection on the matrix. The matrix system will automatically identify both the type and "address" of every relay output or logic input.

The front panel of the RLY-6 has six green LEDs to indicate the operation of each of the relays in the module. A seventh yellow LED indicates that the module is communicating with the CPU card in the frame. There is also a TEST pushbutton switch for each relay to allow local activation of a relay for test of hardware connected to the relay contacts.

The RLY-6 interface module provides the following functions:

- Six independent sets of relay contacts which are activated from the matrix.
- DC isolation between relay device(s) and the central matrix.
- An LED indicator for each relay that lights when the relay is active.

Each RLY-6 interface relay contact is a single-throw double-pole pair for use by the user. They are rated at 1 ampere at 24 volts DC (resistive load). The RLY-6 is not designed for switching mains AC line voltage. To switch an external device that runs on the mains AC line voltage, use an external relay that is activated by the RLY-6.

General purpose outputs are also called "relays."

The RLY-6 interface contains circuitry to ensure that relays are not inadvertently activated during power-up until commanded by the matrix.

Logical control of the relays in the RLY-6 interface is provided by associating a relay with any other label in the system using the Eclipse Configuration System programming software. Activating a TALK or LISTEN label with a relay associated to it will also activate that relay. There is a special classification of labels for relays called Control Labels.

A TEST pushbutton switch is provided for each relay to allow local activation of the relay for hardware testing purposes.

OPERATION

Once the RLY-6 is installed and configured there are no controls for day-to-day operation. Operation of each individual relay is indicated by LEDs.

The TEST switches for each relay can be used to operate a given relay to test that connection.

The yellow LED should be 'on' all of the time indicating that the frame is communicating with the module.

CONFIGURATION

Control of these relays is accomplished by using the Eclipse Configuration System programming software. Refer to the *Eclipse Configuration System Manual* for more information.

2 INSTALLATION

INTRODUCTION

This chapter describes the installation of the RLY-6 relay interface module and wiring to the external devices. The RLY-6 occupies one slot in an interface frame. Connections are made to the matrix frame via an 8-pin RJ-45 connector, and to the external devices via two DB-9M connectors. There are no adjustment controls for the RLY-6.

INSTALLATION

To install the RLY-6 interface module in the IMF-3 or IMF-102 interface frame, select a slot to install the interface in.

14. Remove the blank plates from the front and rear of the slot in which an interface module will be installed.
15. Install the interface module in the appropriate slot. Advance the front half the interface module along the guides in the front part of the slot until it connects to the midplane connector. Advance the rear half of the interface module along the guides in the rear part of the slot, until it connects with the midplane connector.
16. Install the provided screws on the front and rear panels of the interface module you have just installed, to secure the interface in place in the frame.

The rest of the installation consists of connecting the RLY-6 module to the control input and to the matrix frame (or to the “daisy-chain” output of another RLY-6 or GPI-6 interface module).

For more information on installing the RLY-6 interface in an IMF-3 or IMF-102 interface frame, see the *Interface Module Frames Instruction Manual*.

WIRING

The following sections describe connecting the RLY-6 to the matrix and external devices.

TO MATRIX

To connect the RLY-6 to the matrix, plug one end of a RJ-45 cable (eight wires with no reversal) into the GPI-RLY INTERFACE connector on the back of the matrix. Plug the other end into the top RJ-45 (CH. A MATRIX) connector for the RLY-6.

To connect an additional RLY-6 interface, plug one end of a short RJ-45 cable into the lower RJ-45 (CH. B MATRIX) for the first RLY-6.

Then, plug the other end into the top RJ-45 (CH. A MATRIX) connector additional RLY-6. (See Figure 2-1 on the next page.)

Additional RLY-6 interfaces are added in the same way, using "daisy-chain" wiring. If there are multiple RLY-6 interfaces, the inputs in the first interface are numbered 1 to 6 for RLY 1; in the second interface 1 to 6 for RLY 2, etc. RLY interface 0 is the internal Matrix RLY interface.

For Eclipse systems if both GPI-6 and RLY-6 interfaces are used the GPI-6 interfaces are required to be placed first in the daisy chain. This restriction does not apply to Matrix Plus 3 systems where interfaces can be mixed in this 'daisy-chained' scheme.

The maximum combined length of all the RJ-45 cables should not exceed 20 feet (6 meters).

TO EXTERNAL DEVICE

To connect external devices to the RLY-6 interface, use the two DB-9M connectors on the rear cable assembly panel for the interface. Figure 2-2 shows the pin assignment of these connectors as viewed from the frame side of the connector.

If a DB-9F is plugged into the connector labeled CH. A I/O, relays 1-3 are available on that connector. The connector labeled CH.A I/O has the contacts for relays 4-6. In the Figure 2-2, the labels on the pins apply to either connector. Example: #1/4 COM refers to the wiper of relay 1 if it is connected to CH. A and the wiper of relay 4 if it is connected to CH. B.

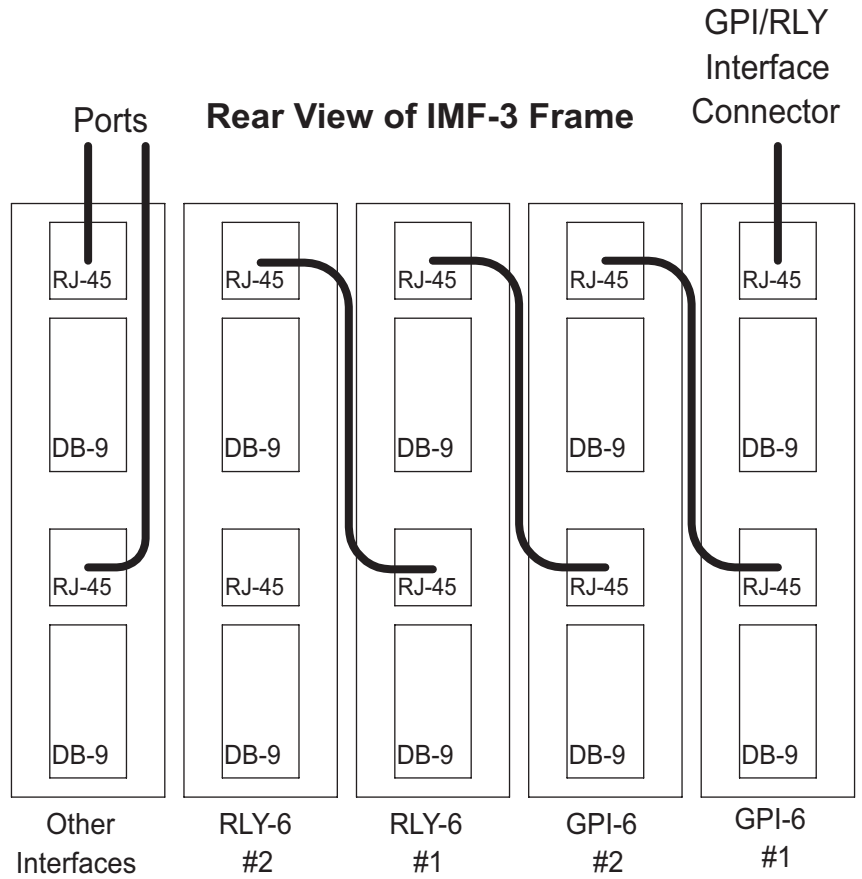


Figure 2-1: "Daisy-Chaining" RLY-6 Modules

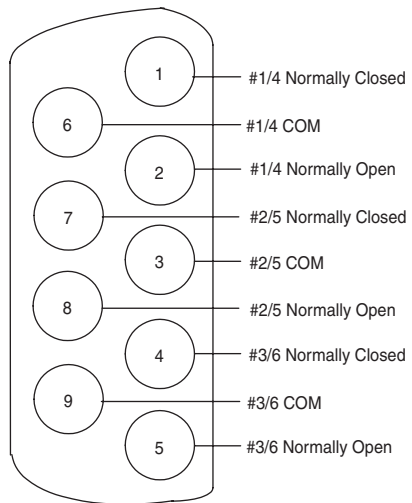


Figure 2-2: RLY-6 Interface DB-9M Connector Pinout

CONFIGURATION

To associate a relay to a label, use the Eclipse Configuration System (ECS) programming software, as described in its manual.

3

SPECIFICATIONS

Relay

Type	1 Form C
Quantity	6
Contact Max. Volts	24 volts DC
Contact Max. Cur.	1 ampere continuous, (2 amperes peak at 24 volts DC (resistive load)
DC Isolation	10 mega-ohms

Module Power Supply Requirements

Voltage Required	8 – 10 volts DC
Current Required	150 mA max (25 mA per relay when active)

Connectors

Relay Contacts	2 ea. DB-9M
Matrix Connection	2 ea. RJ-45 each

Indicators and Controls

LED Indicators	6 Green (1 ea. per relay) 1 Yellow (Frame Data)
Pushbutton Switches	6 (1 Test Pushbutton per relay)

Wiring Requirements

Maximum line lengths for connection to Matrix Frame	
Matrix Frame to interface frame	shall be less than 15 feet (5 meters)
Maximum line length between interface frame inputs	6 inches (15 cm)

Operating Environment

Temperature	0 and 70° C (32 -150° F)
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Package Dimensions

Height	5 1/16" (129 mm)
Width	1 3/8" (35 mm)
Depth	9 5/32" (233 mm)
Weight	.35 LBS (.15 kg)

Notice About Specifications

While Vitec Group Communications makes every attempt to maintain the accuracy of the information contained in its product manuals, that information is subject to change without notice. Performance specifications included in this manual are design-center specifications and are included for customer guidance and to facilitate system installation. Actual operating performance may vary.

LIMITED WARRANTY

Vitec Group Communications (VGC) warrants that at the time of purchase, the equipment supplied complies with any specification in the order confirmation when used under normal conditions, and is free from defects in workmanship and materials during the warranty period.

During the warranty period VGC, or any service company authorized by VGC, will in a commercially reasonable time remedy defects in materials, design, and workmanship free of charge by repairing, or should VGC in its discretion deem it necessary, replacing the product in accordance with this limited warranty. In no event will VGC be responsible for incidental, consequential, or special loss or damage, however caused.

WARRANTY PERIOD

The product may consist of several parts, each covered by a different warranty period. The warranty periods are:

- Cables, accessories, components, and consumable items have a limited warranty of 90 days.
- Headsets, handsets, microphones, and spare parts have a limited warranty of one year.
- UHF wireless IFB products have a limited warranty of one year.
- UHF wireless intercom systems have a limited warranty of three years.
- All other Clear-Com and Drake brand systems and products, including beltpacks, have a limited warranty of two years.

The warranty starts at the time of the product's original purchase. The warranty start date for contracts which include installation and commissioning will commence from the earlier of date of the Site Acceptance Test or three months from purchase.

TECHNICAL SUPPORT

To ensure complete and timely support to its customers, VGC's User Support Center is staffed by qualified technical personnel. Telephone and email technical support is offered worldwide by the User Support Center.

The User Support Center is available to VGC's customers during the full course of their warranty period.

Instructions for reaching VGC's User Support Centers are given below.

Return Material Authorization (RMA) numbers are required for all returns.

Both warranty and non-warranty repairs are available.

Telephone for Europe, Middle East and Africa: +49 40 6688 4040 or +44 1223 815000

Telephone for the Americas and Asia: +1 510 337 6600

Email: vitec.support@AVC.de

Once the standard warranty period has expired, the User Support Center will continue to provide telephone support if you have purchased an Extended Warranty.

For latest contact information please refer to the Service and Support section at www.clearcom.com.

WARRANTY REPAIRS AND RETURNS

Before returning equipment for repair, contact a User Support Center to obtain a Return Material Authorization (RMA). VGC representatives will give you instructions and addresses for returning your equipment. You must ship the equipment at your expense, and the support center will return the equipment at VGC's expense.

For out-of-box failures, use the following contact information:

Europe, Middle East and Africa

Tel: +44 1223 815000 Email: customerservicesEMEA@vitecgroup.com

North America, Canada, Mexico, Caribbean & US Military

Tel: +1 510 337 6600 Email: customerservicesUS@vitecgroup.com

Asia Pacific & South America

Tel: +1 510 337 6600 Email: customerservicesAPAC@vitecgroup.com

VGC has the right to inspect the equipment and/or installation or relevant packaging.

For latest contact information please refer to the Service and Support section at www.clearcom.com.

NON-WARRANTY REPAIRS AND RETURNS

For items not under warranty, you must obtain an RMA by contacting the User Support Center. VGC representatives will give you instructions and addresses for returning your equipment.

You must pay all charges to have the equipment shipped to the support center and returned to you, in addition to the costs of the repair.

EXTENDED WARRANTY

You can purchase an extended warranty at the time of purchase or at any time during the first two years of ownership of the product. The purchase of an extended warranty extends to five years the warranty of any product offered with a standard two-year warranty. The total warranty period will not extend beyond five years.

Note: VGC does not offer warranty extensions on UHF wireless intercom systems, or on any product with a 1-year or 90-day warranty.

LIABILITY

THE FOREGOING WARRANTY IS VGC'S SOLE AND EXCLUSIVE WARRANTY. THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ANY OTHER REQUIRED IMPLIED WARRANTY SHALL EXPIRE AT THE END OF THE WARRANTY PERIOD. THERE ARE NO OTHER WARRANTIES (INCLUDING WITHOUT LIMITATION WARRANTIES FOR CONSUMABLES AND OTHER SUPPLIES) OF ANY NATURE WHATSOEVER, WHETHER ARISING IN CONTRACT, TORT, NEGLIGENCE OF ANY DEGREE, STRICT LIABILITY OR OTHERWISE, WITH RESPECT TO THE PRODUCTS OR ANY PART THEREOF DELIVERED HEREUNDER, OR FOR ANY DAMAGES AND/OR LOSSES (INCLUDING LOSS OF USE, REVENUE, AND/OR PROFITS). SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES OR THE LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. IN ANY EVENT, TO THE MAXIMUM EXTENT PERMITTED UNDER APPLICABLE LAW, VGC'S LIABILITY TO CUSTOMER HEREUNDER SHALL NOT UNDER ANY CIRCUMSTANCES EXCEED THE COST OF REPAIRING OR REPLACING ANY PART(S) FOUND TO BE DEFECTIVE WITHIN THE WARRANTY PERIOD AS AFORESAID.

This warranty does not cover any damage to a product resulting from cause other than part defect and malfunction. The VGC warranty does not cover any defect, malfunction, or failure caused beyond the control of VGC, including unreasonable or negligent operation, abuse, accident, failure to follow instructions in the manual, defective or improperly associated equipment, attempts at modification and repair not approved by VGC, and shipping damage. Products with their serial numbers removed or defaced are not covered by this warranty.

This warranty does not include defects arising from installation (when not performed by VGC), lightning, power outages and fluctuations, air conditioning failure, improper integration with non-approved components, defects or failures of customer furnished components resulting in damage to VGC provided product.

This limited warranty is not transferable and cannot be enforced by anyone other than the original consumer purchaser.

This warranty gives you specific legal rights and you may have other rights which vary from country to country.