

Select Scene- Select any scene on any GRAFIK Eye Main Unit.
Scene Lock- Prevent light level changes on GRAFIK Eye Main Unit(s).
Request Scene Status- Request the current scene of every GRAFIK Eye Main Unit in the system.
Sequence- Begin sequencing scenes 1-4 or 5-16 (dipswitch selectable) on selected GRAFIK Eye Main Unit(s).
Zone Lock- Prevent permanent changes of preset zone levels of GRAFIK Eye Main Unit(s).
Zone Raise/Lower- Raise/Lower any zone on any GRAFIK Eye Main Unit.

GRX-ATC Control Commands

In addition to the GRX-RS232 control commands, the following commands are available using the GRX-ATC:

Set Time- Set the time and date for the internal timeclock.
Report Time- Report the time, date, and day of the week set in the internal timeclock or the GRX-ATC.
Select Schedule- Select the schedule set up using the GRAFIK Eye Timeclock software to be run for the current day.
Report Schedule- Report the schedule being run for the current day.
Report Sunrise/Sunset Times- Report sunrise and sunset times for the current day based on location information downloaded using the Timeclock software.
Super Sequence- Start, pause, or resume the super sequence programmed using the Timeclock software.

Refer to the GRAFIK Eye GRX-RS232 and GRX-ATC Command Set (part No. 040-138) for detailed descriptions of available commands. In addition, refer to the Command Set for information on configuring your PC or auxiliary A/V equipment for use with Lutron's RS232 Interfaces.

Status Monitoring

The GRAFIK Eye RS232 Interface control will allow a PC or auxiliary A/V equipment to monitor a GRAFIK Eye system:

Raw Feedback- (DIP switch 6 ON) Report button presses and releases on all GRAFIK Eye Main Units and accessories.
Scene Status- (DIP switch 7 ON) Report scene changes on all GRAFIK Eye Main Units. Scene status may be changed by main units, accessories, sequences, or timeclock (GRX-ATC).

Description

The GRX-RS232 and GRX-ATC Interface controls allow up to eight 3000 and 4000 Series GRAFIK Eye Main Units to be interfaced with your personal computer or auxiliary audio/ visual equipment via RS232. The interface can be used to execute Control Commands or allow for Status Monitoring. Additionally, the GRX-ATC Interface provides an internal astronomical timeclock. Included with the GRX-ATC is Lutron's GRAFIK Eye Timeclock software (part number GRXTC-WIN) that can be used to schedule events or make super sequences.

NOTE: Only one GRX-RS232 or GRX-ATC Interface can be installed on the same MUX link. The GRX-RS232 can be configured to allow multiple GRX-RS232 interfaces on the MUX Link. If configured for multiple GRX-RS232 interfaces, the available control commands will be limited. Refer to DIP switch 5.

Features

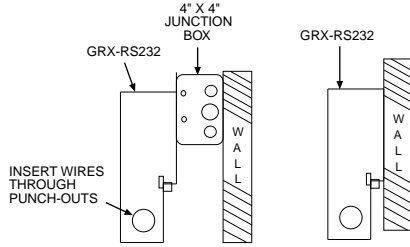
GRX-RS232 Control Commands

The GRAFIK Eye RS232 Interface can send commands from a PC or A/V equipment to up to eight 3000 or 4000 Series GRAFIK Eye Main Units. The following commands are available:

Installation

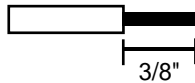
Mounting

1. Mount the RS232 Interface on a 4"x4" junction box or directly on a wall as shown in the Mounting Diagram. If the unit is not mounted to a junction box, ensure proper grounding of the metal casing by connecting a ground wire to the ground screw. Remove front enclosure cover to expose terminal blocks, DIP switches, and output status LEDs.



Mounting Diagram

2. Strip 3/8" (10mm) of insulation from #18 gauge wires. Each terminal will accept two such wires.



Important Notes

1. Install in accordance with all applicable regulations.
2. Do not connect high voltage power to device. Improper wiring can result in personal injury or damage to the device or to other equipment.
3. This control can use Class 2 wiring methods. Check with your local electrical inspector for compliance with local codes and wiring practices.

3. Connect wiring as shown in the Wiring Diagram. LED 1 will be lit when the MUX link is properly installed. Wires can be inserted through the circular punch-outs in the white metal enclosure so that the enclosure cover may be replaced after installation.

4. **Wiring to your PC or A/V equipment.** For the RS232 Link use the 9 pin cable provided or follow the chart below:

| RS232 Link of RS232 Interface | Typical PC or A/V equipment | Pin on 9 pin cable |
|-------------------------------|-----------------------------|--------------------|
| 1 Common | Com | 5 |
| 2 Data In | TxD | 3 |
| 3 Data Out | RxD | 2 |
| 4* +Voltage In | DTR | 4 |
| 5* -Voltage In | RTS | 7 |

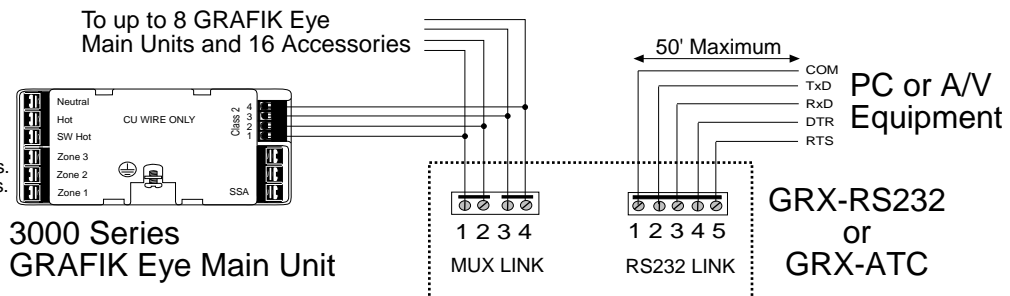
* **Voltage between 4 and 1 must be +5V to +20V**
Voltage between 5 and 1 must be -5V to -20V
OR
an external 12V DC power supply must be used.

DTR and RTS are used to supply power to the RS232 side of the GRX-RS232, which is electrically isolated from the GRAFIK Eye MUX link. DTR needs to be set between +5VDC and +20VDC, and RTS between -5VDC and -20VDC, with respect to pin 5, the common of the PC or A/V equipment. If you are using Lutron's GRAFIK Eye Timeclock software, the voltage levels of DTR and RTS are set automatically. If you are not using Lutron's GRAFIK Eye Timeclock software, and are not able to set the voltage levels appropriately, you must use an external 12 volt DC supply. To be compatible, the DC power supply must be isolated, have a minimum rated output of at least 25 mA, and must accept a 2.0 mm center positive pin. Contact the Lutron hotline if you require information on compatible power supplies.

5. **Addressing GRAFIK Eye Units-** Main Units and accessories must be uniquely addressed for use with the RS232 Interface. For addressing, see the GRAFIK Eye Installer's Guide, included with the Main Units. The RS232 Interface Control does not require an address.

Wiring Diagram

Note: Wiring will differ on 4000 Series GRAFIK Eye Main Units. See Installer's Guide for details.



DIP Switches

The setting of the DIP switches affect the interface control between GRAFIK Eye Main Units and your PC or auxiliary A/V equipment. DIP switch options are described below:

















DIP Switch 1: ZONE LOCK RETAIN

DIP Switch 2: SCENE LOCK RETAIN

DIP Switch 3: SEQUENCE RETAIN- In the event of a power outage, the RS232 Interface will retain which GRAFIK Eye Main Units were in ZONE LOCK, SCENE LOCK and SEQUENCE (set using the RS232 Interface), respectively. Upon returning power, Main Units that had been in Zone Lock, Scene Lock, or Sequencing (set using the RS232 Interface) will stay locked or sequencing if the DIP switches are in the ON position. When these DIP switches are in the OFF position, this information will **not** be restored on power up. These DIP switches do not affect Zone Lock, Scene Lock, or Sequencing set by an NTOMX-4Q or GRX-AV in 4Q mode.

DIP Switch 4: SEQUENCE TYPE- Set the scene range that GRAFIK Eye Main Units will sequence, using the SEQUENCE command of the RS232 Interface. In the OFF position, GRAFIK Eye Main Units will sequence scenes 1 through 4. In the ON position, they will sequence scenes 5 through 16.

DIP Switch 5: FIXED ADDRESS (GRX-RS232 only) - If multiple RS232 Interfaces are required, the fixed address option can be used by setting DIP Switch 5 ON. DIP Switches 1-4 are then used to address the Interface. Refer to the addressing table below.

| Address | Address |
|---|---|
| 1  | 9  |
| 2  | 10  |
| 3  | 11  |
| 4  | 12  |
| 5  | 13  |
| 6  | 14  |
| 7  | 15  |
| 8  | 16*  |

* Do not use address 16 if a GRX-PRG unit is present.

A fixed address GRX-RS232 unit can only do one of the following 4Q functions at any time: Zone Lock (ZL), Scene Lock (SL) and Sequencing (SQ). The first GRX-ATC or GRX-RS232 Interface on a system should NOT use the FIXED ADDRESS option. Any additional GRX-RS232 Interfaces added should set DIP Switch 5 ON, for FIXED ADDRESS operation.

DIP Switch 6: RAW FEEDBACK- In the ON position, the RS232 Interface will report when a button has been pushed or released on a GRAFIK Eye Main Unit or low-voltage accessory. This response varies depending on the type of unit.

GRAFIK Eye Main Units (GRX3000 & GRX4000 series)

Scene Selection Control (NTGRX-4S & NTGRX-4S-IR)

Architrave Door Jamb Control (GRX-4S-DW)

Infrared Ceiling Receiver (GRX-CIR)

Wireless Remote Controls (GRX-IT & GRX-8IT)

The first parameter indicates the address of the unit upon which the button was pushed or released. A capital letter indicates a button was pushed, and a lowercase letter indicates a button was released. The following is a list of how addresses are indicated.

| Unit: | Addressed as: | Indicated by: |
|-----------|---------------|---------------|
| Main Unit | A1 | A or a |
| | A2 | B or b |
| | A3 | C or c |
| | A4 | D or d |
| | A5 | E or e |
| | A6 | F or f |
| | A7 | G or g |
| | A8 | H or h |
| Accessory | 1 | I or i |
| | 2 | J or j |
| | 3 | K or k |
| | 4 | L or l |
| | 5 | M or m |
| | 6 | N or n |
| | 7 | O or o |
| | 8 | P or p |
| | 9 | Q or q |
| | 10 | R or r |
| | 11 | S or s |
| | 12 | T or t |
| | 13 | U or u |
| | 14 | V or v |
| | 15 | W or w |
| | 16 | X or x |

The second parameter indicates the scene which was selected. If the Off button is pushed, it is indicated by a zero. A Master Raise is indicated by a 17, while a Master Lower is indicated by an 18.

EXAMPLE of response:

D3<CR><LF>

The select scene 3 button was pushed on GRAFIK Eye Main Unit addressed as A4

Entrance Control (NTGRX-2B)

Fine Tuning Control (NTGRX-RL)

The first parameter indicates the address as above. The second parameter is a 1 to indicate that the Raise or top button has been pushed and is a 0 to indicate that a Lower or bottom button has been pushed.

Special Function Control (NTGRX-4Q)

Unlike the other controls, the first parameter will be a capital letter if any of the control's four functions, Sequence, Zone Lock, Scene Lock or Fade Override, are active. A lower case letter indicates that no functions are active. The second parameter will be a character that contains encoded information about which functions are active. For details on the format of this response, contact Lutron.

Master Control (NTGRX-4M)

Partition Control (NTGRX-4PS)

The status of these accessories cannot be decoded by the RS232 Interface. When buttons are pushed on the Master Control and Partition Control, 1s and 0s may be returned by the RS232 Interface.

DIP Switch 7: SCENE STATUS- In the ON position, the RS232 Interface will return the current scene of all eight GRAFIK Eye Main Units on the MUX link when a new scene is selected. The response will be a ":ss", followed by a string of eight ASCII characters, one for each GRAFIK Eye Main Unit. Each character represents the scene of each GRAFIK Eye Main Unit. The scene will be indicated by its number. Scene 10 will be indicated by an 'A'; scene 11 will be indicated by a 'B', and so on up to scene 16. A '0' will be returned if the GRAFIK Eye Main Unit is off, and an 'M' will be returned if the GRAFIK Eye Main Unit is missing or not responding. An 'R' will be returned if a Master Raise is being sent, and an 'L' will be returned if a Unit is sending a Master Lower. Regardless if this switch is in the ON or OFF position, the current scene can be obtained by using the REQUEST SCENE STATUS command. See the Command List for details.

EXAMPLE of response:

:ssM180R2D2<CR><LF>

Main Unit A1 is missing
Main Unit A2 is in scene 1
Main Unit A3 is in scene 8
Main Unit A4 is off
Main Unit A5 is sending a Master Raise
Main Unit A6 is in scene 2
Main Unit A7 is in scene 13
Main Unit A8 is in scene 2

DIP Switch 8: Timeclock ON/OFF (GRX-ATC only)- In the ON position, the internal timeclock of the GRX-ATC can control the operation of the GRAFIK Eye Main Unit(s). Timeclock schedules and the Super Sequence are configured and programmed using Lutron's GRAFIK Eye Timeclock software (part number GRXTC-WIN).

Technical and Sales Assistance

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Warranty

Lutron warrants each new unit to be free from defects in materials and workmanship and to perform under normal use and service. This warranty shall run only for a period of one year from the date of purchase and Lutron's obligations under this warranty are limited to remedying any defect or replacing any defective part and shall be effective only if the defective unit is shipped to Lutron postage prepaid within 12 months after purchase. Damage due to abuse, misuse, inadequate wiring or insulation is not covered by this warranty. In no event shall Lutron or any other seller be liable for any other loss or damage, including consequential or special damages that may arise through the use by a purchaser or others of this device and the purchaser assumes and will hold harmless Lutron in respect of all such loss. Although every attempt is made to ensure that catalogue information is accurate and up-to-date, please check with Lutron before specifying or purchasing this equipment to confirm availability, exact specifications, and suitability for your application.

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