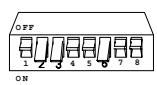


Baud Rate 1, Baud Rate 2, and Baud Rate 4 constitute Dip Switch switches 1, 2, and 3 respectively. If in Program mode, adjust the switches as indicated by the gray area shown below, to select the appropriate baud rate:

BD RT 1	BD RT 2	BD RT 4	Baud Rate
0	0	0	Test Mode
1	0	0	300 baud
0	1	0	600 baud
1	1	0	1200 baud
0	0	1	2400 baud
1	0	1	4800 baud
0	1	1	9600 baud
1	1	1	19200 baud

*A "0" in the above chart represents a switch which is **off** or **open**. A "1" in the chart represents a switch which is **on** or **closed**.*



Note: Set switches then cycle power. Switches are only read during power up.

Multiple Function Keys

Switch 5 on the Dip Switch. When this switch is activated, the Greyline is capable of recognizing multiple function keys.

Display Placeholder

Switch 6 on the Dip Switch. When this switch is activated, variable data placeholders appear as underscore characters on the Greyline display. When not activated, variable data placeholders appear as space characters on the Greyline display. Refer to your Greyline Universal Software Manual for further information.

Auto Repeat

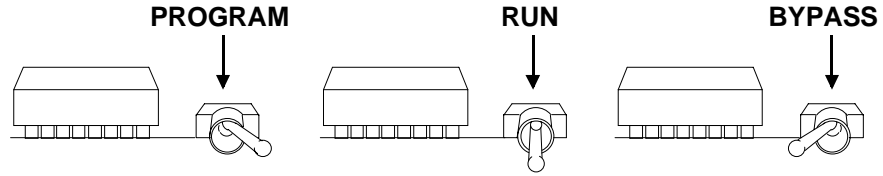
Switch 7 on the Dip Switch. When this switch is activated, the function keys will automatically repeat when pressed and held down.

Repeat All

Switch 8 on the Dip Switch. When this switch is activated, both the function keys and numeric function keys will automatically repeat when pressed and held down.

Program/Run/Bypass Switch

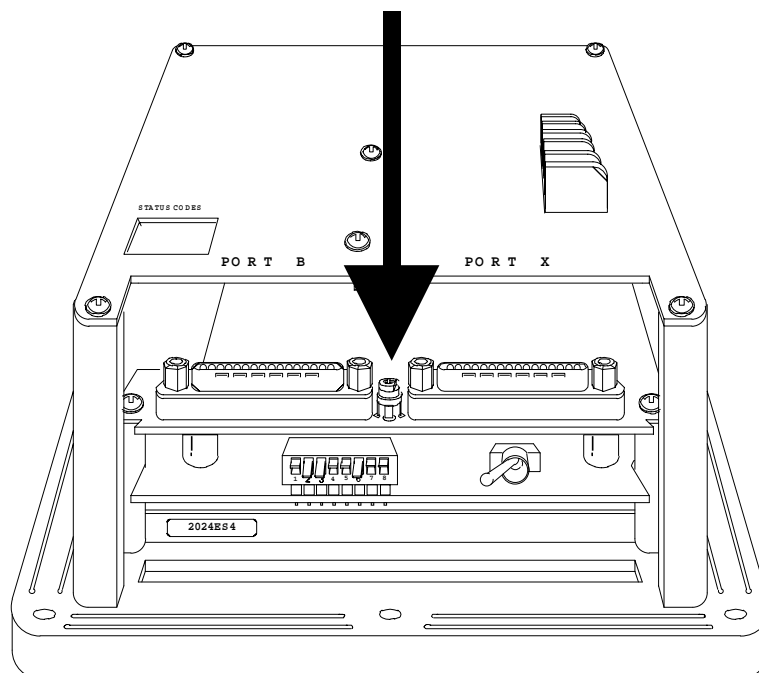
The illustration below shows the position of the toggle switch for all three modes.



LCD Contrast Adjust

To calibrate the Backlit Supertwist LCD display (2000 Series), use a Phillips type screwdriver and turn the Contrast Adjust until the desired contrast is achieved. The graphic below illustrates the location of the adjustment screw.

ADJUST LCD CONTRAST WITH PHILLIPS TYPE SCREWDRIVER



Chapter 5 - Electrical Connections

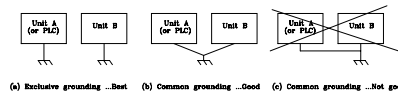
Power Connections

Power connections are made to the rear panel of the Greyline. The following sections address the specific connections for the standard 115 VAC, in addition to 230 VAC and 10-30 VDC.

Chassis Ground

Connect an exclusive grounding circuit to the power supply of the Greyline, at the connection marked "EARTH." Grounding is third wire grounding with less than 100 ohms resistance.

When exclusive grounding is not possible, use a common grounding circuit (Figure B).



Make the grounding point as close to the unit as possible, keeping the ground wire as short as possible.

Logic Ground

Important!

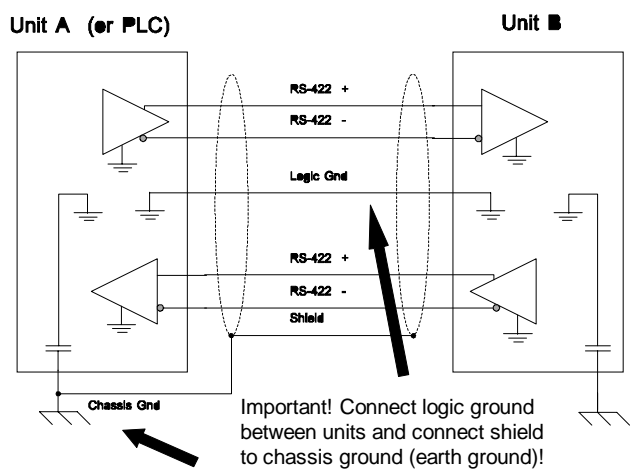
The communication driver circuits of some Total Control devices may be damaged if communication cables are not properly grounded! This will require that the device be returned to Total Control for repairs. Read the following material for grounding information.

It is important that communication cables connected to Total Control devices be properly grounded. This is true of all types of communication (RS-232, RS-422, and RS-485).

When connecting communication cables you must connect the logic ground line from each device to the next in the serial link.

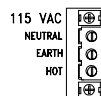
In addition to the logic ground, it is also important to properly connect the cable shield. For increased noise immunity, the shield should be connected to chassis ground, **not** logic ground.

Refer to the diagram below.



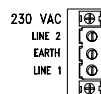
115 VAC

The following illustration indicates the power supply connections for standard 115 VAC.



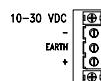
230 VAC

230 VAC is an option. The following illustration indicates the power supply connections for 230 VAC.



10-30 VDC

10-30 VDC is an option. The following illustration indicates the power supply connections for 10-30 VDC.



Chapter 6 - Greyline Communication Ports

SERIES TWO Devices on a Port

SERIES TWO devices may be connected to Port B or Port X.

PLCs on a Port

PLCs may be connected to either Port B or Port X, depending on the PLC model. Different PLCs may be connected to Port B and Port X at the same time.

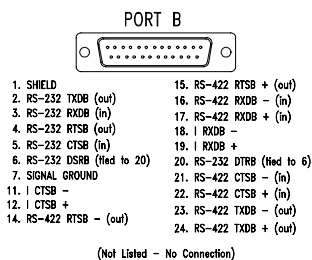
Port B

Port B may be commonly referred to as a "PLC Port," however, it is possible to connect more than just PLCs to Port B.

This port is configured as a DTE (Data Terminal Equipment) port.

Pinout - Port B

The pinout for Port B is illustrated below.



PLC Cables

To connect PLCs to the Greyline Operator Workstation, PLC cables are required. Since different cables are required for different PLC models, it is recommended that you contact Total Control Customer Service department for specific cable information.

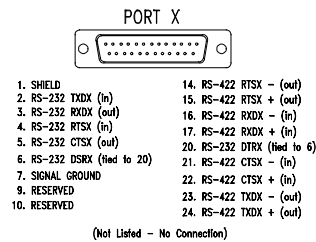
Port X

Port X is a serial expansion port, and may be connected to a SERIES TWO device, a serial printer, a host computer, or a PLC.

This port is configured as a DCE (Data Communication Equipment) port.

Pinout - Port X

The pinout for Port X is illustrated below.



Programming Cable

A programming cable CBL-154 (9 pin or AT) is necessary when downloading to the Greyline. Connect the programming cable to Port X and your personal computer, and disconnect when programming is completed.

Chapter 7 - Power On and Self Test

Power On

To power on, simply plug in the Greyline Operator Workstation unit.

Note: If there is no power, check to be certain that you have connected power to the unit, that you have correct polarity and the proper supply (AC, DC, ample current). Refer to the sections which discuss connections and specifications.

Self Test

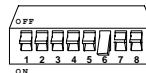
Self Test automatically occurs when the unit is powered on. Upon completion of self test, the display prompts:

```
TOTAL CONTROL PRODUCTS  
SELF TEST PASSED
```

Note: If the unit does **not** pass the Self Test, it is possible that you have a defective unit. Contact Total Control Products, Inc.

Local Self Test

Switches 1, 2 and 3 of the Dip Switch must be set to the "Off" position (Test mode) for Local Self Test.



Testing Switch Settings

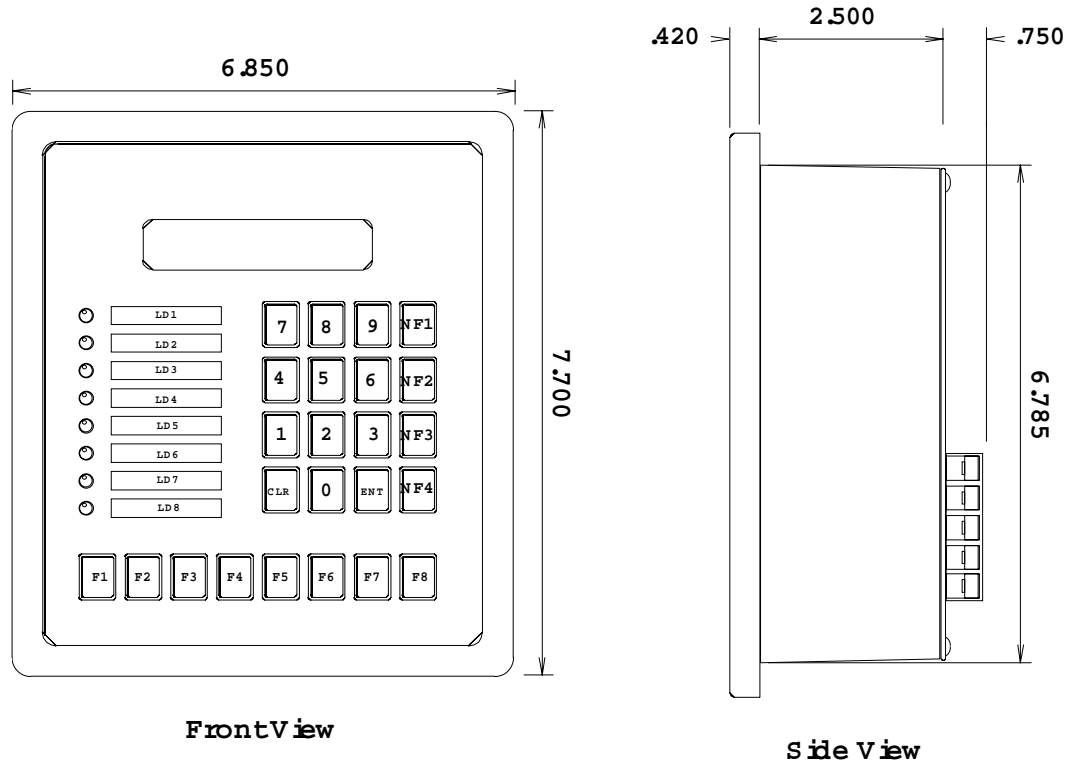
In Test mode, test the switch settings of the Dip Switch by pressing numeric keypad digit "0." The display will promptly display the corresponding switch settings in ON and OFF position. (i.e. "00010000"). If the Greyline does not display the actual switch setting(s), a defect may exist. Contact Total Control Products, Inc.' Customer Service department.

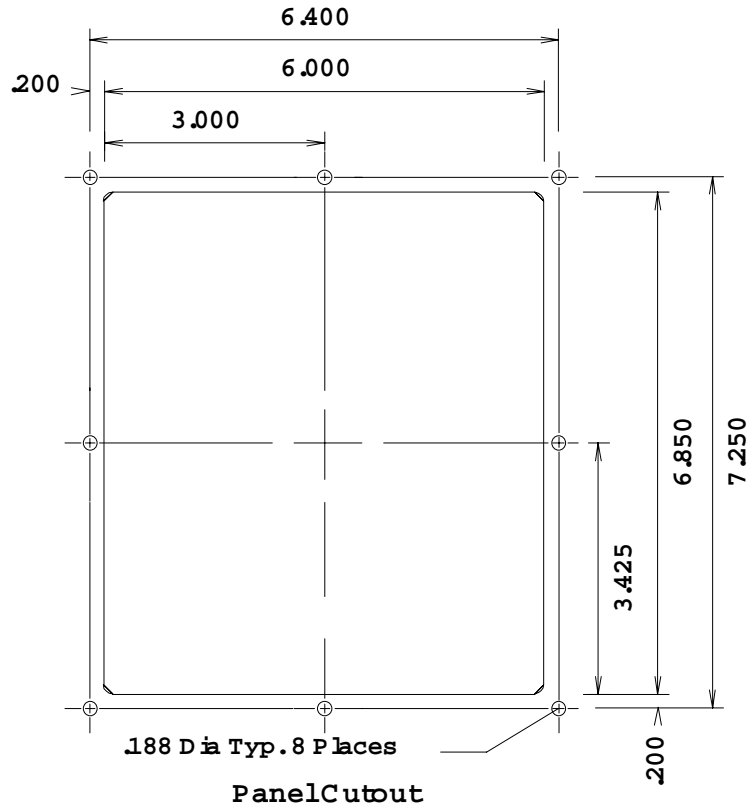
Testing Keys

In Test mode, test the keys of the Greyline Operator Workstation by pressing the individual function keys, numeric function keys and keypad numeric keys (digits 0-9, including Clear and Enter). The display will indicate the key pressed (i.e. "F8/Self Test Passed"). If the Greyline does not recognize the key pressed, a defect may exist. Contact Total Control Products, Inc.' Customer Service department.

Chapter 8 - Dimensions

The following illustrations show the front panel, side view, and panel cut out dimensions for the Greyline Operator Workstation.





Important!

When mounting the unit, the special 10-16 x 3/8" Hi-Lo Thread Forming Fasteners with Blunt Point must be used.

Ten of these fasteners have been shipped with the Greyline Operator Workstation. Only 8 fasteners are required; 2 spares are included.

Under no circumstances, should other types of fasteners be substituted.

Note:

The correct panel thickness range for the unit is .060" - .135".

Chapter 9 - Specifications

2000 Series

Power Requirements:	93-135VAC, 50/60HZ, 6W 190-270VAC, 50/60HZ, 6W 10-30 VDC (unreg.), 6W, max 550 mA @ 10VDC
Panel Sealing:	Type 4X (Indoor Only)
Operating Temperature:	0° to 40° C, -32° to 104°F
Storage Temperature:	-20° to +60° C, -4° to 140°F
Humidity:	10% to 95%, non-condensing
Size:	6.850 W x 7.700 H x 3.670 D (inches) 173.99 W x 195.58 H x 93.22 D (millimeters)
Weight:	Approx. 2 lbs., .907 Kg.
Display Type:	Backlit Super Twist LCD
Display Features:	20 characters per line Adjustable Contrast
Number of Lines:	2 (2024), 4 (2025)
Characters:	5 mm, 5 x 7 dot matrix
Program/Message Storage:	Flash EPROM 128K optional
Greyline Port (Port A):	Internal, fixed parameters
PLC Port (Port B):	Communication: Serial RS-232, RS-422, RS-485 or current loop Baud Rate: 300, 600, 1200, 2400, 4800, 9600, 19.2K
Auxiliary Port (Port X):	Serial RS-232, RS-422, RS-485
Baud Rate - Program:	Only 9600 is supported.
Baud Rate - Run:	300, 600, 1200, 2400, 4800, 9600, 19.2K, Software Selectable
Mounting Hardware:	Mounting Screw Torque: 6-8 in./lb. Panel Thickness Range: .060" - .135" when using supplied 10-16 x 3/8" Hi-Lo Thread Forming Fasteners with Blunt Point; and Lockwashers.
Agency Approval:	UL and CUL.

2100 Series

Power Requirements:	93-135VAC, 50/60Hz, 6W 190-270VAC, 50/60Hz, 6W 10-30 VDC (unreg.), 6W, max 550 mA @ 10VDC
Panel Sealing:	Type 4X (Indoor Only)
Operating Temperature:	0° to 50° C, -32° to 122°F
Storage Temperature:	-20° to +60° C, -4° to 140°F
Humidity:	10% to 95%, non-condensing
Size:	6.850 W x 7.700 H x 3.670 D (inches) 173.99 W x 195.58 H x 93.22 D (millimeters)
Weight:	Approx. 2 lbs., .907 Kg.
Display Type:	Vacuum Fluorescent (green)
Display Features:	20 characters per line Adjustable Contrast
Number of Lines:	2 (2124), 4 (2125)
Characters:	5 mm, 5 x 7 dot matrix
Program/Message Storage:	Flash EPROM 128K optional
Greyline Port (Port A):	Internal, fixed parameters
PLC Port (Port B):	Communication: Serial RS-232, RS-422, RS-485 or current loop Baud Rate: 300, 600, 1200, 2400, 4800, 9600, 19.2K
Auxiliary Port (Port X):	Serial RS-232, RS-422, RS-485
Baud Rate - Program:	Only 9600 supported.
Baud Rate - Run:	300, 600, 1200, 2400, 4800, 9600, 19.2K, Software Selectable
Mounting Hardware:	Mounting Screw Torque: 6-8 in./lb. Panel Thickness Range: .060" - .135" when using supplied 10-16 x 3/8" Hi-Lo Thread Forming Fasteners with Blunt Point; and Lockwashers.
Agency Approval:	UL and CUL.

Index

1

10-30 VDC 19
10-30 VDC Powered Unit 5
115 VAC 19
128K Flash EPROM 6

2

230 VAC 19
230 VAC Powered Unit 5

A

Alphanumeric Display 6
Auto Repeat 14

B

Baud Rate 13

C

Chassis Ground 17
Clock/Calendar Chip 6

D

Dimensions 27
Dip Switch 11, 13
Display Placeholder 14

F

Front Panel 6
Function Keys 8

L

LCD Adjust 12
LCD Contrast Adjust 16

LEDs 8
Local Self Test 25
Logic Ground 17

M

Multiple Function Keys 14

N

Numeric Function Keys 7
Numeric Keypad 7

P

Pinout - Port B 22
Pinout - Port X 23
PLC Cables 23
PLCs on a Port 21
Port B 11, 22
Port X 11, 23
Power Connection 10
Power Connections 17
Power On 25
Program/Run/Bypass Switch 12, 15
Programming Cable 23

R

Rear Panel 10
Repeat All 15
Replaceable Legends 8

S

Self Test 25
SERIES TWO Devices on a Port 21
Specifications 29
Status Codes 11

T

Testing Keys 26
Testing Switch Settings 26



Artisan Technology Group is your source for quality new and certified-used/pre-owned equipment

- FAST SHIPPING AND DELIVERY
- TENS OF THOUSANDS OF IN-STOCK ITEMS
- EQUIPMENT DEMOS
- HUNDREDS OF MANUFACTURERS SUPPORTED
- LEASING/MONTHLY RENTALS
- ITAR CERTIFIED SECURE ASSET SOLUTIONS

SERVICE CENTER REPAIRS

Experienced engineers and technicians on staff at our full-service, in-house repair center

*InstraView*SM REMOTE INSPECTION

Remotely inspect equipment before purchasing with our interactive website at www.instraview.com ↗

WE BUY USED EQUIPMENT

Sell your excess, underutilized, and idle used equipment. We also offer credit for buy-backs and trade-ins. www.artisanng.com/WeBuyEquipment ↗

LOOKING FOR MORE INFORMATION?

Visit us on the web at www.artisanng.com ↗ for more information on price quotations, drivers, technical specifications, manuals, and documentation

Contact us: (888) 88-SOURCE | sales@artisanng.com | www.artisanng.com