



AD-11 Graphic Hall PI/Traveling Lantern



CAUTION: Always make SURE unit is fully connected BEFORE applying power, and remove power BEFORE removing any connectors. Failure to do so can potentially result in damage to the unit which is a non-warranty repair.



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Introduction

The AD-11 is a full color, graphical HALL PI. The unit can be used as a Traveling Indicator with PI. You can mount the unit either vertically or horizontally. The AD-11 has a 4.3” LCD Full Color TFT Backlit Display. The unit is controlled through a dedicated RS-422/RS-485 port from the Elevator Controller board. If the Elevator Controller does NOT have the capability of driving the AD-11 directly, then an EX-80 “Single Line Per Floor” module can be used to interface to the Elevator Controller. The AD-11 can be configured by setting up the SD card, or using the live PI configurator, through the ECC Manager HRZ Software (available on-line at no charge). The SD card setup provides the fullest control for configuring the units.

If the AD-11 is being used as a HALL PI, then a four wire cable must be run from the machine room, up the hoist way, daisy chained to each AD-11 unit. All AD-11 units are connected in parallel and up to 32 AD-11 Units can be connected together. A separate Power Wire, 18 AWG wire pair, +24VDC and Ground, **MUST** be Home Run from the machine room for each group of 7 Hall PI, AD-11 units.

The AD-11 has a built-in Gong that beeps once, on arrival, when going up and twice when going down. The unit can also drive two external Hall lanterns to indicate the post-arrival direction (ECC P/N L14063).



Vertically Mounted



Horizontally Mounted

Features

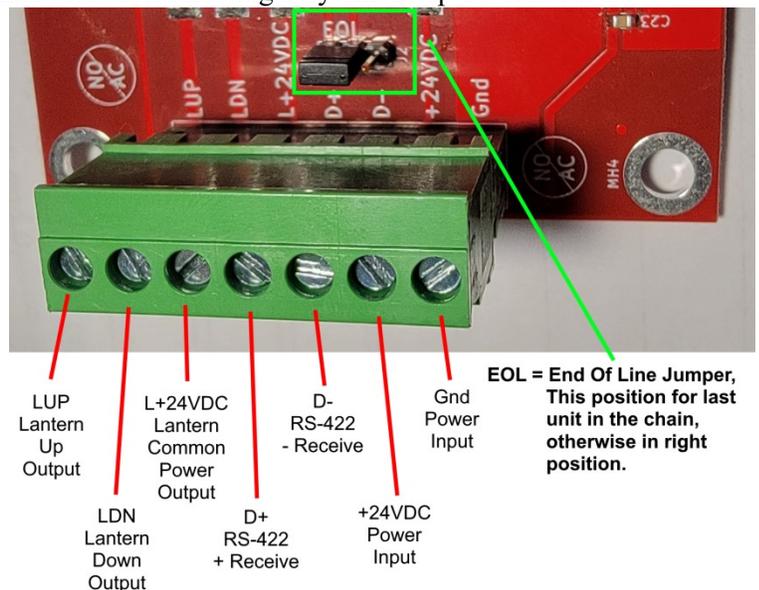
- Supports up to 50 Landings with ECC Manager HRZ - for applications with over 32, you MUST use an RS-422 REPEATER every 32 landings
- 4.3" Full Color Backlit TFT Display
- Vertical or Horizontal Mounting
- Can be used as a Hall PI, Traveling Indicator, or Passing Gong, with PI
- Shows Optional Direction Indicator on Graphical Screen
- Has Outputs to drive a 24VDC LED UP and DOWN Hall Lanterns
- Has built-in, adjustable level Gong
- Changeable Background graphic
- Changeable PI Graphic for each stop
- Software comes with a wide variety of both Background graphics and PI Graphics
- Custom Graphics can be made for both PI and Background if desired. These must be obtained from ECC
- Programmable Sleep mode allows the display to blank out when not in use to extend the life of the display. Can be Clock Controlled so that display does NOT blank out during BUSY times
- Displays "Fire Service", "Out of Service", "Hospital Service", and "Independent Service" graphics at the proper times
- Units can be daisy chained using a 4 wire, 18 AWG cable from the machine room
- Units are powered via 24V DC sourced from the machine room
- Units use an RS-422/485 communication cable
- A Maximum of 32 AD-11 units may be used in a single run
- The Elevator Controller MUST be compatible with the AD-11, or you can use an EX-80 to interface to the controller

Installation

The AD-11 has a 7 position, removable screw terminal connector allowing easy unit swap out if needed.

The following are the terminations:

- LUP: External Up Lantern
- LDN: External Down Lantern
- L+24VDC: Common Lantern power
- D+: Positive connection of RS-422 cable
- D-: Negative connection of RS-422 cable
- +24: +24 VDC Power
- GND: Power Ground



Display Specifications

The AD-11 allows graphic imports of PNG files with the following specs:

- **Horizontal Orientation:**
 - **Size:** 800 pixels wide x 480 pixels high
 - **Colors:** 32 bits per pixel
- **Vertical Orientation:**
 - **Size:** 480 pixels wide x 800 pixels high
 - **Colors:** 32 bits per pixel

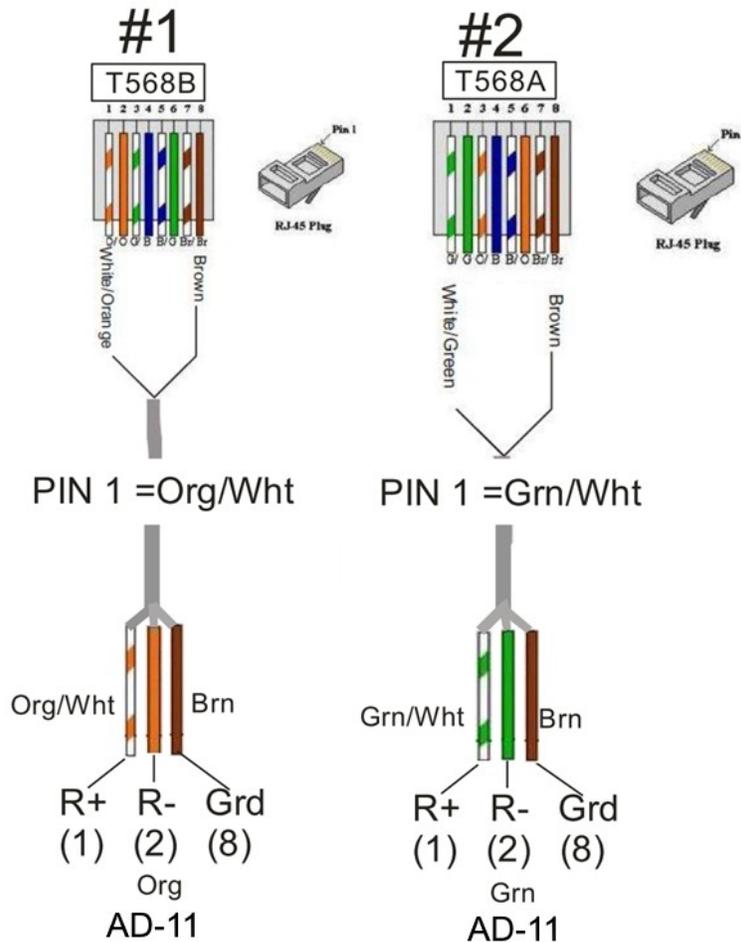
RS-422 Controller Interface

There are two types of CAT5/5e/6 cable wiring (T568A and T568B). Each has different color codes for the connector wiring. The first step is to determine which type you have. The color of the wire at PIN 1, determines which wires you will use. See the diagram below:

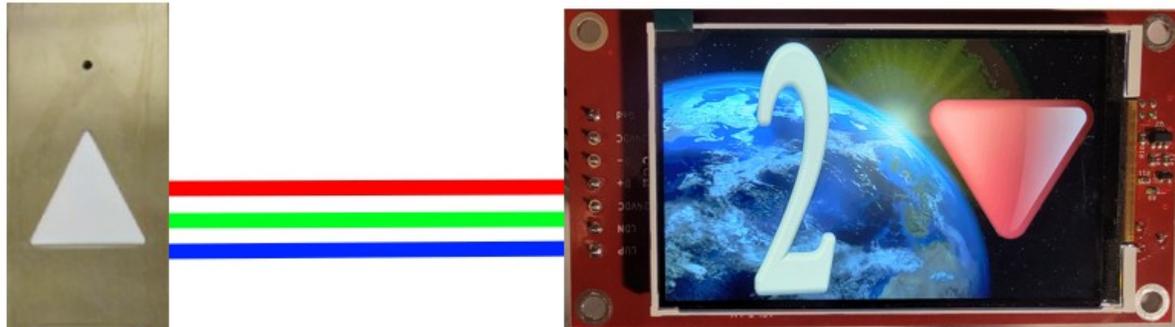
CAT5 Cable used on AD-11

Connects to AUX jack on SRU Board in machine Room

Check your CAT5 Cable for Color Code



Installation and External Lantern Connection

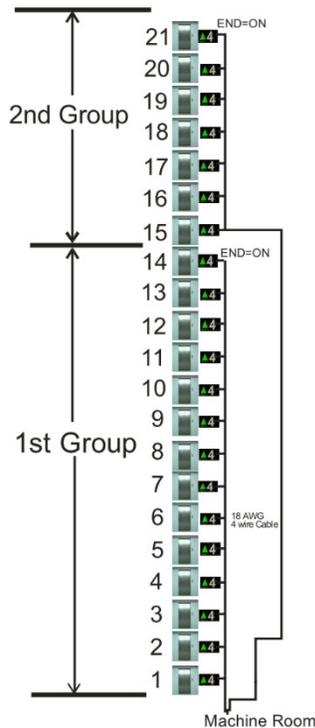
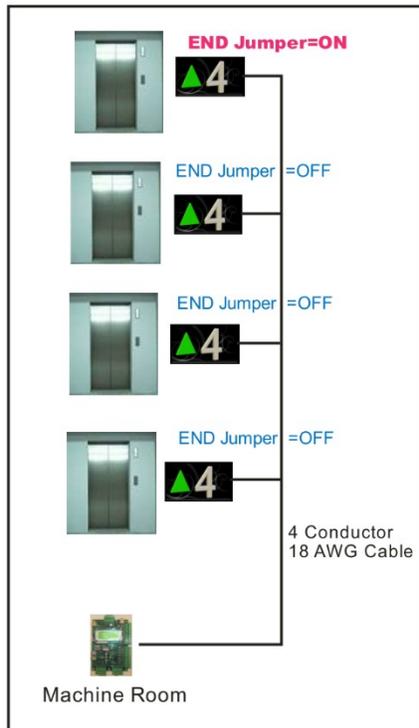


ECC Lanterns to AD-11

UP LED	LUP
DWN LED	LDN
Common	L+24VDC

Installation of Multiple AD-11s

Each AD-11 connects to the Elevator Controller Board in the Machine Room. A four wire, 18 AWG cable is used to daisy chain all the units together. A maximum of 14 floors can be daisy chained with a single cable run. If you need more than 14 floors, you run a separate cable for each additional group of AD-11s. Multiple runs must be wired in parallel from the machine room. If CAT5/5e/6 (24 AWG) wire is used, a maximum of 8 floors may be daisy chained per RUN.



END Jumper

The **END Jumper** on the **LAST** AD-11 in the daisy chain **GROUP**, **MUST** be set to **ON**. All other units **MUST** have the END jumper set to **OFF**.

Micro SD Cards

The Micro SD card on the AD-11 holds all the working files and setup information. The AD-11 will not function without a properly setup Micro SD card. All compatible Micro SD cards **MUST** be pre-setup with the ECC Manager HRZ software first. Blank Micro SD cards will NOT work in the AD-11.

The Micro SD Card can be removed from the AD-11 at any time. When re-inserting the Micro SD Card, always wait until prompted by the AD-11 before inserting the Micro SD card. You can also INSERT or REMOVE the Micro SD card when the AD-11 is powered down. To make changes to the information on the Micro SD card, you **MUST** remove the Micro SD card, insert it into a computer running the ECC Manager HRZ software, make the desired changes, then re-insert it into the AD-11. Removing the Micro SD Card and re-inserting it back into the AD-11 causes a system RESET.

Micro SD Card Specs

- **Micro SDHC Cards Only: 32GB** or smaller with a speed rating of **Class 10** or higher.
- Approved Brands = SanDisk Max Extreme 32Gb
- Partitioned to FAT (FAT 16) or FAT32 format
- Available through direct purchase from ECC



Maximum Car Speed

The AD-11 has a maximum travel speed of 800 feet per minute due to the display update speed.

ECC Manager HRZ

To setup the AD-11 for a site you must use the **ECC Manager HRZ** software package. This software is available **FREE** under a GNU General Public License agreement, from the following link:

<http://ecc-man.com>

To set up an AD-11, or to change parameters, simply remove the Micro SD card from the AD-11 and insert it into your computer. Use the **ECC Manager HRZ** to make the desired changes, write the profile to the Micro SD Card, and re-insert the Micro SD card into the AD-11. **ECC Manager HRZ** retains the information from the last profile until it is overwritten, and it allows you to maintain profiles for each car.

ECC Manager HRZ is a Windows based software package that was designed to run on Windows 10 and higher. We presently do **NOT** support MACs. The program can run on a laptop or a Desktop Computer. The computer **MUST** have an available USB port or Micro SD Card reader, **we recommend a USB based Micro SD Card reader** (these are readily available for around \$20.00).

ECC Manager HRZ Setup Functions

- Change the background Graphic
- Change the PI Graphics
- Change the Display SLEEP MODE settings
- Set to either Vertical or Horizontal Mounting
- Set Door position
- Enable or Disable displayed Traveling Arrows
- Enable of Disable Internal Gong
- Control Display operation during Special Service Modes

Initializing Information Screen

When the AD-11 powers up, or by removing the Micro SD Card and re-inserting it, the unit will display important information about its setup. This information will be displayed for approximately 5 seconds before proceeding to normal operation.

Firmware Ver

This shows the current Firmware Version of the AD-11. The operating Firmware can be updated over the Micro SD Card ONLY which is easily downloaded through the **ECC Manager HRZ**.



Location

This shows the Location (Profile) Name of the AD-11 as entered in **ECC Manager HRZ**. You can use this to help identify the location where the AD-11 is installed.

Floor

This shows the STOP No (Landing) that the AD-11 is installed at. This parameter controls when the unit arrival Gong and Lanterns operate. When the AD-11 is installed as a **Car PI**, the word **TRAVELING** is displayed.

Door Location

This is either FRONT or BACK and controls the arrival Gong.

Comm Lost Icon

This icon appears when there is **No Communication** with the Elevator Controller.





External Lanterns

The lanterns activate on arriving, showing the direction the car will be going when it leaves. They stay active until ArvFlr or the Arrival Up/Down bits change. The trigger event for the lanterns requires all the following conditions:

1. The ArvFlr (Byte 8) matches the **Installed Stop No** of the AD-11.
2. The StatusB (Byte 4) bits 0 or 1 (Door Open bits) match the **Door Position** of the AD-11.
3. The StatusA (Byte 3) bits 2 or 3 (Arrival bits) are set to the new traveling direction.

Door Gong

The Door Gong is activated, one Gong for Up and two Gongs for down, according to the following requirements:

- Only if the Elevator Controller is outputting “Gong Enabled”, StatusA (Byte 3) bit 4
- The StatusA (Byte 3) bits 2 or 3 (Arrival bits) set to the direction the car will travel
- The StatusB (Byte 4) bits 0 or 1 (Door Open bits) match the **Door Position** of the AD-11

The Gong will sound according to the following modal conditions:

- **Car (Traveling) PI mode:** when the correct elevator doors open at any floor
- **Hall PI mode:** when the correct elevator doors open at the assigned AD-11 floor
- **Passing Chime mode:** any time the current floor changes

Optionally, the door gong can be disabled in the Controller setup and a mechanical gong (like the StarLight Multi-Voltage Chime, P/N 1E-642-T) can be connected across the External Lantern outputs to produce a gong whenever the external lanterns activate.

Traveling Arrows (Graphical Display Arrows)

The Traveling Arrows are located on the Graphic Display and show the current direction that the car is travelling. This information is received from StatusA (Byte 3) bits 0 or 1; Up Travel Direction and Down Travel Direction.

Position Indicator

The “Position Indicator” displays the floor Identifier for the current landing where the car is located. CurFlr (Byte 2) controls the graphic that is displayed in the PI of the AD-11. If this value is 0, no floor position information will be displayed.

Fire Service Modes

- **STEADY FIRE HAT** - the Elevator Controller must output “Fire Service Icon Active” StatusB (Byte 4) bit 2 set and “Fire Service Flashing” StatusB (Byte 4) bit 6 clear
- **FLASHING FIRE HAT** - the Elevator Controller must output “Fire Service Icon Active” StatusB (Byte 4) bit 2 set and “Fire Service Flashing” StatusB (Byte 4) bit 6 set
- **NOTE:** If the “Display ENABLED during Fire Service” option is cleared in the setup, then the display will be blank during the entire time the Fire Service signals are active
- **NOTE:** If the “Disable Fire Service” option is set in the setup, then all Fire Service and Special signals will be ignored by the AD-11 **AND** the “Display ENABLED during Fire Service” option will be ignored

Out of Service ICON

The Elevator Controller must output “Out Of Service Icon Active” StatusB (Byte 4) bit 3 set.

This is displayed whenever:

- The car is in any Inspection Mode
- There is a FAULT condition that renders the car unusable

Other System Screens

These include EMS (Hospital) StatusB (Byte 4) bit 4, and Independent Service StatusB (Byte 4) bit 5. These are displayed by the Elevator Controller.

AD-11 Controller Communication Protocol (v4.11)

Specifications:

1. Port Type: Standard RS-422 Port using separate Transmit and Receive pairs (**NOT an RS-485 port**).
2. Serial Format: 1 Start Bit, 8 data bits, 1 stop Bit, No Parity
3. Baud Rate: 19.2K
4. Received Data from Controller: a 10 byte string, no more than 1.04ms between bytes, **ONLY the Header and Checksum can be over a value of 127**, followed by a silence gap within **75ms to 410ms**, the Checksum is a sum of ALL the Data Bytes (02-09) and just use the last 8 bits (Byte) of the result (i.e. a value of 3048 would be 3048 [0xBE8] AND 255 = 232 [0xE8]).

Received Data from Controller

Byte 01 Header 0xAA	Byte 02 CurFlr 0-99	Byte 03 StatusA 0-127	Byte 04 StatusB 0-127	Byte 05 ClockD 1-7	Byte 06 ClockH 0-23	Byte 07 ClockM 0-59	Byte 08 ArrFlr 0-99	Byte 09 Future 0	Byte 10 ChkSum 0-255
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Byte Number

Byte Variable

Acceptable Value Range

Received Data from Controller - Detailed

Description	Byte Number	Value/Range
Header	01	170
CurFlr	02	0-99, Current floor to display, 0=Lost PI
StatusA	03	Bits: <ul style="list-style-type: none"> 0. 1=UP Travel Direction 1. 1=DOWN Travel Direction 2. 1=UP Arrival Direction 3. 1=DOWN Arrival Direction 4. 1=Gong Enabled 5. 1=Future_B1 6. 1=Future_B2 7. Bit 7 – Always 0
StatusB	04	Bits: <ul style="list-style-type: none"> 0. 1=Front Door is OPEN 1. 1=Rear Door is OPEN 2. 1=Fire Service Icon Active 3. 1=Out of Service Icon Active 4. 1=Hospital Icon Active 5. Independent Service Icon Active 6. Fire Service Icon Flashing 7. Bit 7 – Always 0
ClockD	05	1-7, Day of the week, 1=Monday, 2=Tuesday, 3=Wednesday, 4=Thursday, 5=Friday, 6=Saturday, 7=Sunday
ClockH	06	0-23, 24 hour format; 0=12am, 1=1am, 12=12pm, 23=11pm, etc.
ClockM	07	0-59
ArrFlr	08	0-99, 0=Off, 1-99=Floor Arriving At, (Not Displayed), Controls Arrival Lantern/Gong
Reserved 1	09	0, N/A
ChkSum	10	Add all the data bytes, 02-09, and just use the last 8 bits of the result, i.e. for 0xBE8 it is 0xE8



Repair and Support

1. If trouble is experienced with the AD-11, for repairs or warranty information, please contact E.C.C. at:
16521 SATICOY ST
Van Nuys, CA 91406
(818) 753-5669 in the U.S.A.
2. No repairs to the AD-11 should be made by the customer (user). All repairs **MUST** be made by the manufacturer or authorized repair facility.

Limited One Year Parts & Labor Warranty

This E.C.C. PRODUCT is warranted against defects for a period of one (1) year from the date of the original invoice. Within this period, we will repair it without charge for parts and labor. To obtain warranty service the product must be returned, at the customer's expense, to E.C.C. with a copy of the original invoice. After the unit has been repaired, E.C.C. will ship the PRODUCT back via UPS GROUND service at our expense. If any other form of return shipment is requested, the customer will pay for 100% of the shipping cost.

This Warranty does not apply if in the sole opinion of E.C.C., the PRODUCT has been damaged by lightning, or any other Acts of God, or by accident, misuse, neglect, improper location (high dust or tobacco smoke prone areas), improper packing, shipping, modification, or servicing by other than an authorized E.C.C. Service Center.

Except as specifically provided in this agreement, there are no other warranties, expressed or implied, including, but not limited to, any implied warranties or merchantabilities or fitness for a particular purpose and in no event shall E.C.C be liable for loss of profits or benefits, indirect, special, consequential, or other similar damages arising out of any breach of this warranty or otherwise.