

WARRANTY

D & R Electronics warrants its new products to be free from defects in material and workmanship, under normal use and service for a period of one year on parts replacement and one year on labor.

This warranty applies only to original purchasers acquiring the product directly from D&R Electronics, or its authorized dealers. Warranty will not be recognized without proof of purchase or bill of sale.

This warranty is not transferable.

The warranty begins on the date of delivery to the first user/purchaser.

This warranty shall not apply to products which must be repaired due to normal wear and tear, negligence, improper installation, abuse, misuse, or which have been altered or modified at a facility other than D & R Electronics, or its authorized depot centers.

Units proved to be defective within the warranty period, based on an examination by D&R Electronics, will be replaced or repaired at D & R Electronics' option. This warranty does not cover travel expenses or labor charges for removal or installation.

Lamps, flash tubes, batteries or other items considered consumables are not covered under warranty.

This warranty is in lieu of all other express warranties. D&R Electronics makes no warranties, expressed or implied, other than the express warranties contained herein.

PRODUCT RETURN POLICY

In order to provide you with faster service, product returns for repair or replacement, must have a **Return Goods Authorization Number (RGA number)**. Please contact our company to obtain a RGA number before you return the product to D & R ELECTRONICS. Write the RGA number clearly on the package. Be sure you use sufficient packing materials to avoid damage to the product being returned while in transit.

D&R ELECTRONICS Co. LTD.

CANADA

8820 George Bolton Pkwy.
Bolton, Ontario L7E 2Y4
Tel.: (905)951-9997
Fax: (905)951-0019

www.dandrelectronics.com

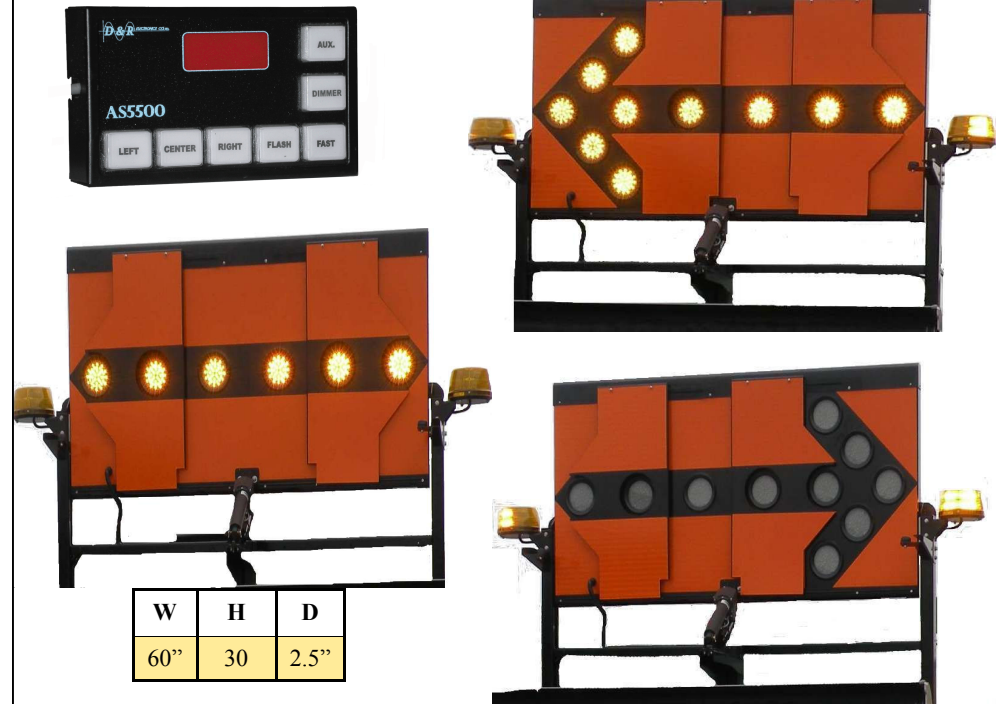
USA

40 Sonwil Drive
Cheektowaga, NY, 14225
Toll Free 1-800-538-7338



ELECTRONICS CO. LTD.
EMERGENCY VEHICLE SOUND, LIGHTING & EQUIPMENT

INSTALLATION, OPERATION & MAINTENANCE MANUAL ER306014KHT-FL



| W | H | D |
|-----|----|------|
| 60" | 30 | 2.5" |

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UNPACKING

Before beginning any installation, unpack the equipment received. After unpacking, examine **ALL** components received for any damage that may have occurred while in transit. If any damage has occurred, file a claim **IMMEDIATELY** with the courier stating the extent of damage. Check **ALL** envelopes, packing slips, shipping labels and tags before removing or destroying them.

To ensure your satisfaction, open all cartons and report any shortages **within 48 hours of receipt.**

GENERAL DESCRIPTION

The ER306015KHT-FL ARROWBOARD is a TC-12 compliant, rugged, aerodynamically advanced Traffic Control System suited for multipurpose applications. All the models are moisture-proofed in the manufacturing process to withstand all weather use and endure punishment created by high speeds and rough terrain. The unit's light weight allows for easy raise/lower operation and the High Intensity LED lamps provide a maximum visibility in night or day operation. In order to comply with the TC-12 requirement that, for positive guidance purposes, the two arrowheads should not normally be displayed at the same time, the arrowboard is fitted with 2 motorized flaps. When a pattern it is displayed by on the arrowboard, the flaps are going to move automatically and cover the arrowhead (s) which are not used in that pattern.

The arrowboard controller is a microprocessor controlled unit that provides a light control system for use in emergency vehicles. To allow for easy installation and replacement of electronics, the arrowboard controller makes use of plug-in terminals. In the case of a unit malfunctioning, it can be replaced simply by unplugging the defective electronics and re-plugging the new or repaired electronic board. A few of the many features include a front panel display that depicts the actual sign presentation, a push button dimmer control, and automatic sign raising and lowering.

The arrowboard controller can be mounted in any convenient location with the provided mounting bracket.

NOTE: The effectiveness of this system is highly dependent upon its proper installation. Please read and follow ALL instructions provided in this manual before attempting the installation.

INSTALLATION

The ARROWBOARD unit comes equipped with cabling for easy installation and removal. While making the wiring connections, refer to the wiring diagram provided on page 3 for proper installation and operation of the system.

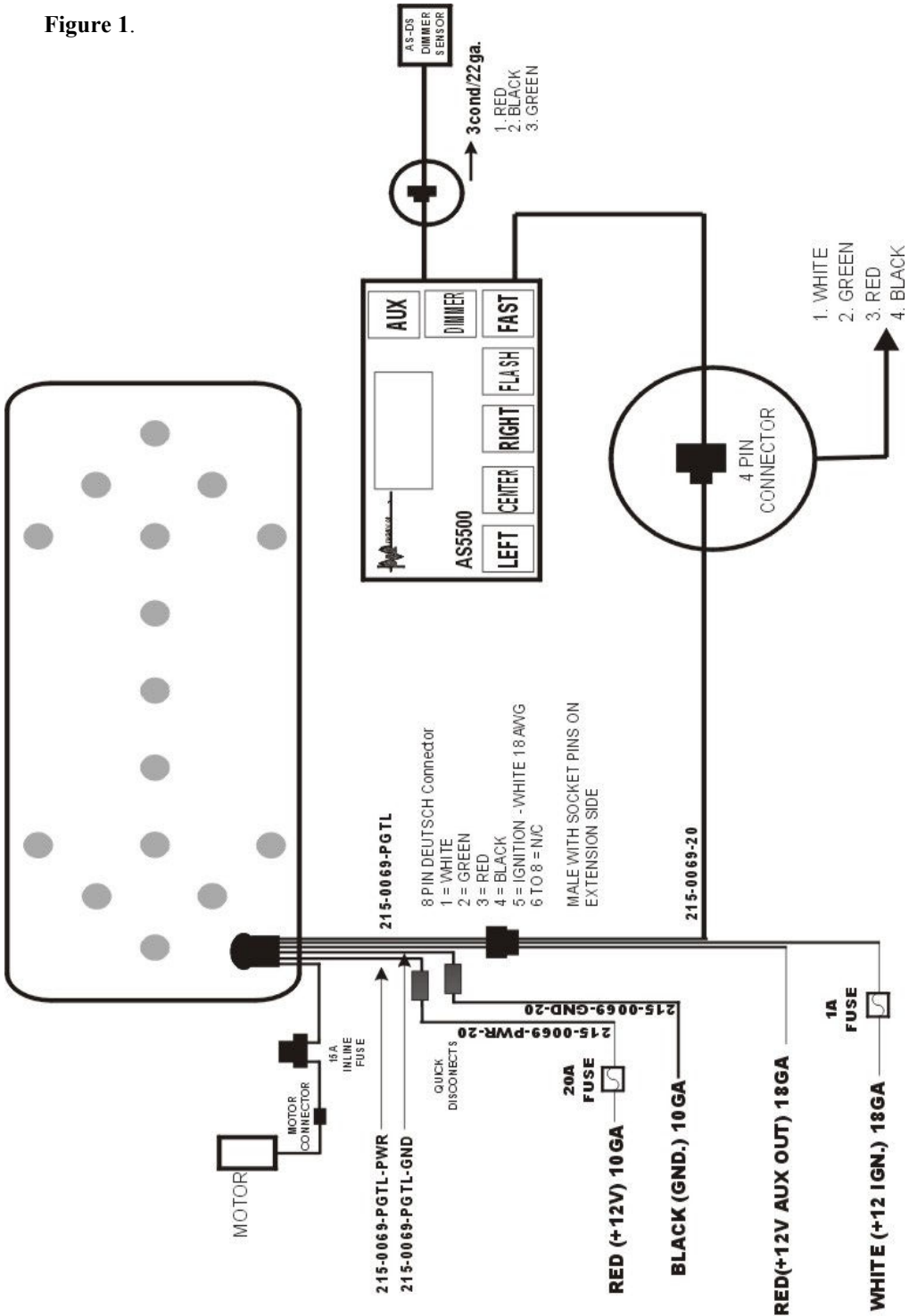
The factory recommended fuse values are:

- main power fuse 20AMP
- arrowboard up/down actuator fuse 15AMP
- arrowboard flaps actuators fuse 15AMP
- ignition input circuit 1AMP

NOTES:

NOTES:

Figure 1.



SPECIFICATIONS

- ENCLOSED ALUMINUM MODULE
- 175LB HEAVY DUTY ACTUATOR WITH QUICK RELEASE AND AUTO-UP AND AUTO-STOP FUNCTIONS
- APPROXIMATE WEIGHT - 115LBS
- 3M TYPE III TC12 REFLECTIVE BACKGROUND
- 14 ROUND AMBER LED SEALED MODULES
- STANDARD 20ft CABLE(OPTIONAL LENGTHS ARE AVAILABLE UPON REQUEST)
- COMPACT TOUCHPAD WITH BACKLIGHT, DIMMER SWITCH AND AUTO-DIMMER MODULE

ARROWBOARD DIMENSIONS:

- WIDTH - 152.4cm, HEIGHT - 76.2cm

ARROWBOARD WITH RACK DIMENSIONS:

- WIDTH - 158.75cm
- DEPTH - 91.44cm
- HEIGHT (when open) - 78.44cm
- HEIGHT (when closed) - 22.56cm

INPUT VOLTAGE:

- 12V

AMPERAGE DRAW:

- LESS THAN 2AMP
- DURING THE OPENING AND CLOSING PROCESS, LESS THAN 8 AMP

ELECTRONIC PATTERNS:

- LEFT ARROW / RIGHT ARROW
- CENTER-OUT ARROW
- BAR MODE

OPERATION

To turn ON the arrowboard press one of the direction switches from the AS5500 touchpad. The sign will go up and the arrowboard will display the selected arrow pattern. In the same time the flaps are going to move automatically to match the presentation of the selected arrow pattern. When the arrow pattern is changed, the arrowboard will display it right away and the flaps are going to move to new positions if it needed.

To end the operation of the Arrowboard, turn OFF the active switch from the AS5500 touchpad. The sign will go down and the illumination will turn off.

NOTE:When the arrowboard goes up there is a 20 seconds delay until the lights turn ON, which matches the time needed by the arrowboard to get to full open position. In this way it is minimized the load put on the electrical system of the truck.

PARTS LIST

| <u>PART NUMBER</u> | <u>Qty</u> | <u>DESCRIPTION</u> |
|-------------------------------|-------------------|--|
| 212-1016 | 1 | MANUAL FOR LED ARROWBOARD ERL306015KHT-FL |
| AS5500TP | 1 | ARROWBOARD TOUCHPAD CONTROLLER |
| 440-0213 | 2 | Flaps Actuator 10" Linear Series |
| 640-0100-01-02 | 14 | PAR36-40A, 40 LED solid module, AMBER |
| 184-0016 | 14 | Grommet Rubber for PAR36Led Arrowboard |
| 210-0012 | 1 | Arrowboard heavy-duty actuator |

| PROBLEM | POSSIBLE CAUSE | PROBABLE SOLUTION |
|---|--|---|
| Arrowboard lights are working but the flaps are not moving when the pattern is changed. | Flaps actuator fuse blown Flaps actuator defective. Flaps control wires broken or loose connection with the arrowboard controller. Controller is damaged. | Check and replace fuse (Fig.4) Test and replace actuator. Check connections at the controller board (Figure 4). Replace controller board.. |
| Arrowboard touchpad has no backlight when IGNITION is ON. | Arrowboard ignition wire not connected. Arrowboard ignition fuse blown. Loose connection at arrowboard controller. Defective touchpad. | (Re)connect arrowboard ignition wire. Check and replace fuse (Fig.1). Check controller wiring (Figure4), replace controller. Replace touchpad. |
| When a switch is pressed it doesn't turn ON/OFF | Defective switch. | Replace touchpad. |
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| | | |

MAINTENANCE

The LED arrowboard has been designed to provide trouble-free service and minimum routine maintenance.

Occasional cleaning of the arrowboard LEDs is all that is required to produce maximum light output. Cleaning should be done with soft cloth to avoid scratching of the lens. The lens should not be removed at any time. If problems are encountered, please see the troubleshooting guide given in the manual. If the problems persist, contact D&R Electronics for further technical support.

CAUTION

ANY attempt to repair a unit under warranty by anyone else other than a technician authorized by D&R Electronics, without their express written consent, will void the warranty.

TROUBLESHOOTING

The arrowboard unit it is designed to offer an easy access to wiring, fuses, light modules and controller in case any troubleshooting is needed.

In order to access the arrowboard controller identify the mounting cover in the back bottom right corner of the unit. The panel it is installed using 6 stainless steel self tapping screws and has been factory sealed for water proofing the unit.

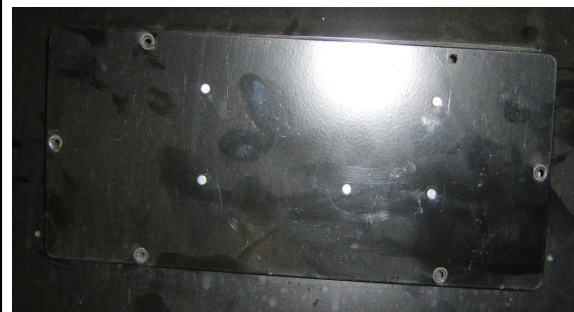


Figure 2.

Remove the screws and brake the water seal.

Pull slowly the cover in order to access the control board.

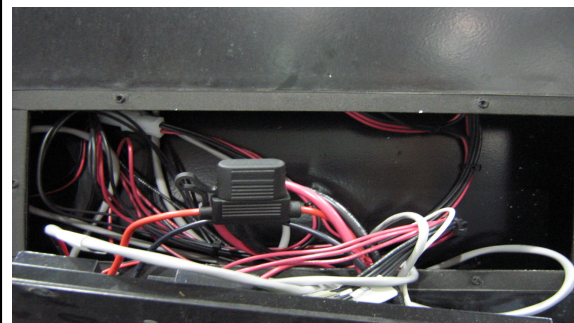


Figure 3.

At this moment can be accessed the flaps actuators fuse and the internal wiring connections of the arrowboard.

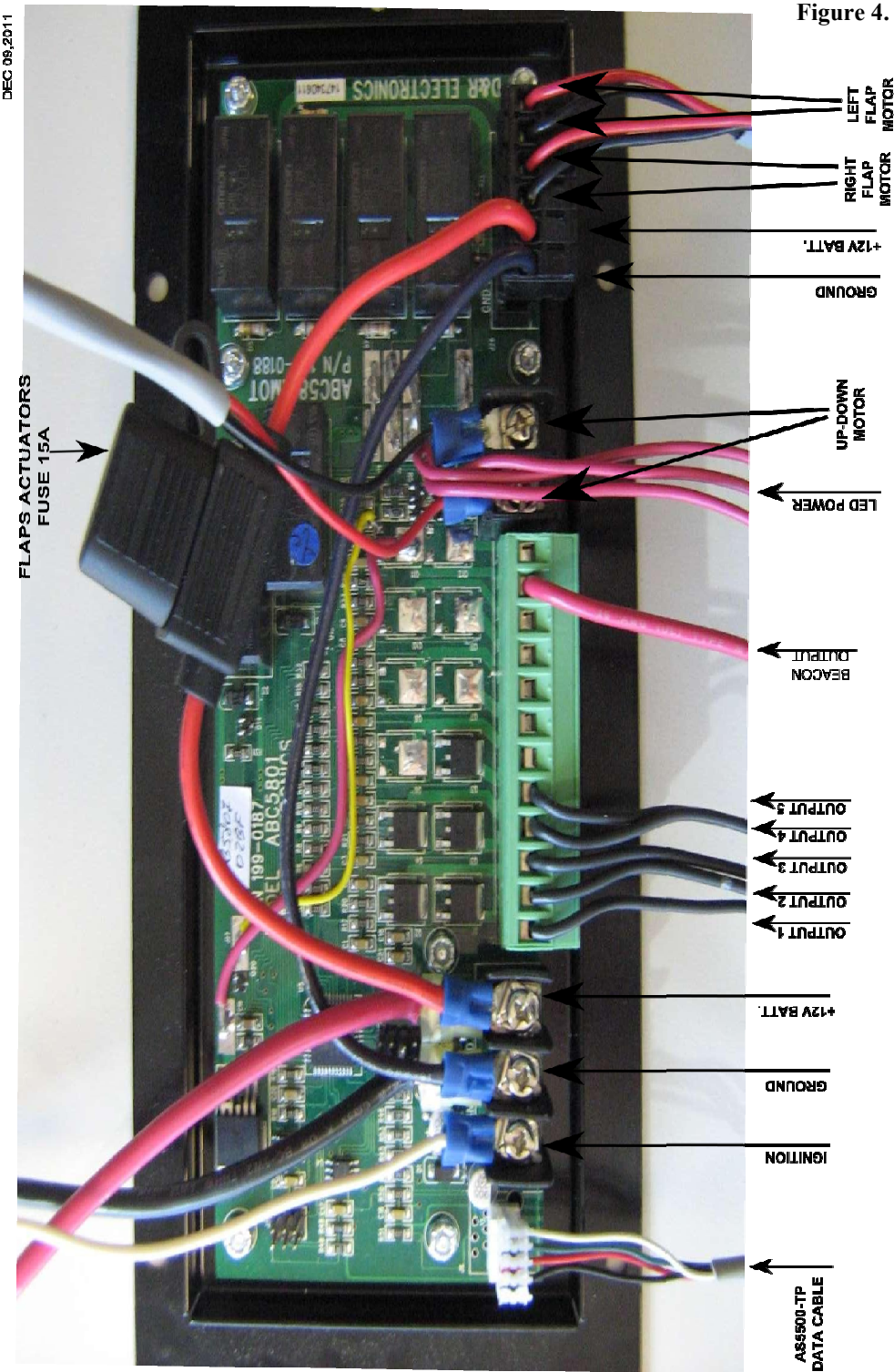


Figure 4.

ERT306014KHT-FL CONTROL BOARD

| PROBLEM | POSSIBLE CAUSE | PROBABLE SOLUTION |
|---|--|---|
| Arrowboard does not function when turned ON. | Data plug at the rear of the arrowboard or at the touchpad controller is loose or disconnected. Main power fuse burnt. Faulty ground connection. Faulty power connection. Controller is damaged. | Reconnect the plug. Check and replace fuse Verify ground connection. Verify +12VDC connections Check connections at the controller board and the board itself (Figure 4). Test by replacing touchpad with a spare, if available. If problem still persists, call Technical Assistance at D&R Electronics. |
| One or more lights in the arrowboard do not light and arrow indicator LED's on touchpad function correctly. | Defective light(s). Bad wiring connection Defective controller | Replace light(s). Verify connections at light module and controller (Fig.4) Replace controller. |
| Some LEDs do not light on the arrowboard and arrow indicator LEDs on touchpad not functioning. | Touchpad damaged. | Return touchpad to D&R Electronics or call Technical Assistance at D&R Electronics. |
| LED's on touchpad burn continuously. | Touchpad damaged. | Return touchpad to D&R Electronics or call Technical Assistance at D&R Electronics. |
| Light output appears dim. | Low battery voltage. Faulty ground connection. "DIMMER" mode activated | Check connections or battery. Verify ground connections. Select appropriate intensity mode. |
| Buttons turn ON in a cycle as a result of a communication error. | Data cable has loose connection, a reverse or broken wire(s). | Verify connections. Repair or change the cable. |
| Lights are working but the arrowboard it is stuck in open or closed position. | Arrowboard actuator fuse blown. Arrowboard actuator defective. Controller defective. | Check/replace fuse. Test motor and replace if defective. Check controller wiring (Figure 4), replace controller board. |