

IP-100™
Ambulance Indicator Panel
(Version 1.1)

Manufactured by:

Delta Vehicle Systems, Inc.

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This manual can be found online at:

www.deltaveh.com/ip.pdf

WARNING:

This product is designed to be installed and serviced ONLY by a qualified automotive electrician. Working with automotive batteries can be extremely hazardous. If you are not a qualified automotive electrician, DO NOT attempt to install or service this product. Always make sure you are wearing protective clothing and eyewear whenever working on any motor vehicle. Be sure your work area is properly ventilated.

BACKGROUND

The modern ambulance is a modified truck chassis designed for medical care in the field. There are several pieces of information a driver of an ambulance requires that are not displayed in other types of trucks. Therefore displays must be added to the standard truck chassis. These indicators are specified in following publications. The US General Services Administration standard KKK-A-1822F, the National Truck Equipment Association AMD series and the Ford QVM manual.

The Delta Vehicle Systems IP-100 instrument panel is designed to provide a display in accordance with these published standards.

The IP-100 provides a display of:

- a) Module power indicator
- b) Doors Open indicator
- c) Compartments Open indicator
- d) Digital voltage display
- e) Flashing low voltage indicator with beeper
- f) Silent intercom with beeper for patient condition

FEATURES

- a) Compact design and lightweight - only 5" x 4-1/8" x 1/2 " and 4 ounces.
(13cm x 11cm x 1.5cm and 120 grams)
- b) Very low current consumption- 400 mA with all displays lit, only 150 mA
When only the Voltmeter and "Module light" on
- c) All LED construction. No incandescent bulbs to burn out.
- d) Simple plug in connector, readily available from AMP-TYCO.
- e) Uses standard rocker switches from Carlingswitch or other manufacturers.
- f) Digital voltmeter
- g) Flashing LED with beeper to warn of low voltage
- h) Flashing "compartment open" and "door open" lights. Flashes
3 times per second, approximately.
- i) Low side-ground based switching for easy installation.
- i) Red LED's used only for warnings- compliant with some European requirements.

DIGITAL VOLTMETER

The IP-100 contains an LED digital voltmeter with a low voltage indicator. This system is more accurate and much easier to read than needle meters and provides a clear warning of electrical problems.

The voltmeter turns on whenever the ignition is turned on, or the Module Master is activated. When the vehicle voltage goes below 11.8 volts for 120 seconds the low voltage light flashes and the beeper sounds, as required by the K-standard.

If this light and beeper should sound during ambulance operation, the driver should either return to a service center if close by or should park in a safe location and call for assistance.

SILENT INTERCOM

A silent intercom is a system of 3 lights and a beeper used by an EMT/Paramedic to advise the driver about the patient's condition without altering or scaring the patient or their friend or family member, who may be riding along. The display includes a beeper for the EMT to advise the driver of a change in status. Historically the code is as follows:

Green---proceed normally

Amber--slow down because the ride is too bumpy

Red-----pull over to the right and stop as soon as safe to do so

CHOICE OF SWITCHES

The IP-100 requires the use of 3 rocker switches, 2 door switches and several compartment switches to feed into the panel.

Rocker switches- Any low current switch is suitable- CARLINGSWITCH is a major manufacturer for this type of switch. The switch used for Silent Intercom Beeper should be a momentary switch. The current is only 1/30th of an amp per switch and is purely resistive. No "flyback" diodes are needed.

Door and compartment switches- A high quality door-jamb switch is suitable for this application. The current is only 1/30th of an ampere per switch.

CONNECTOR INFORMATION

The IP-100 uses one connector from AMP-TYCO. The connector is keyed so it can only go in the correct way.

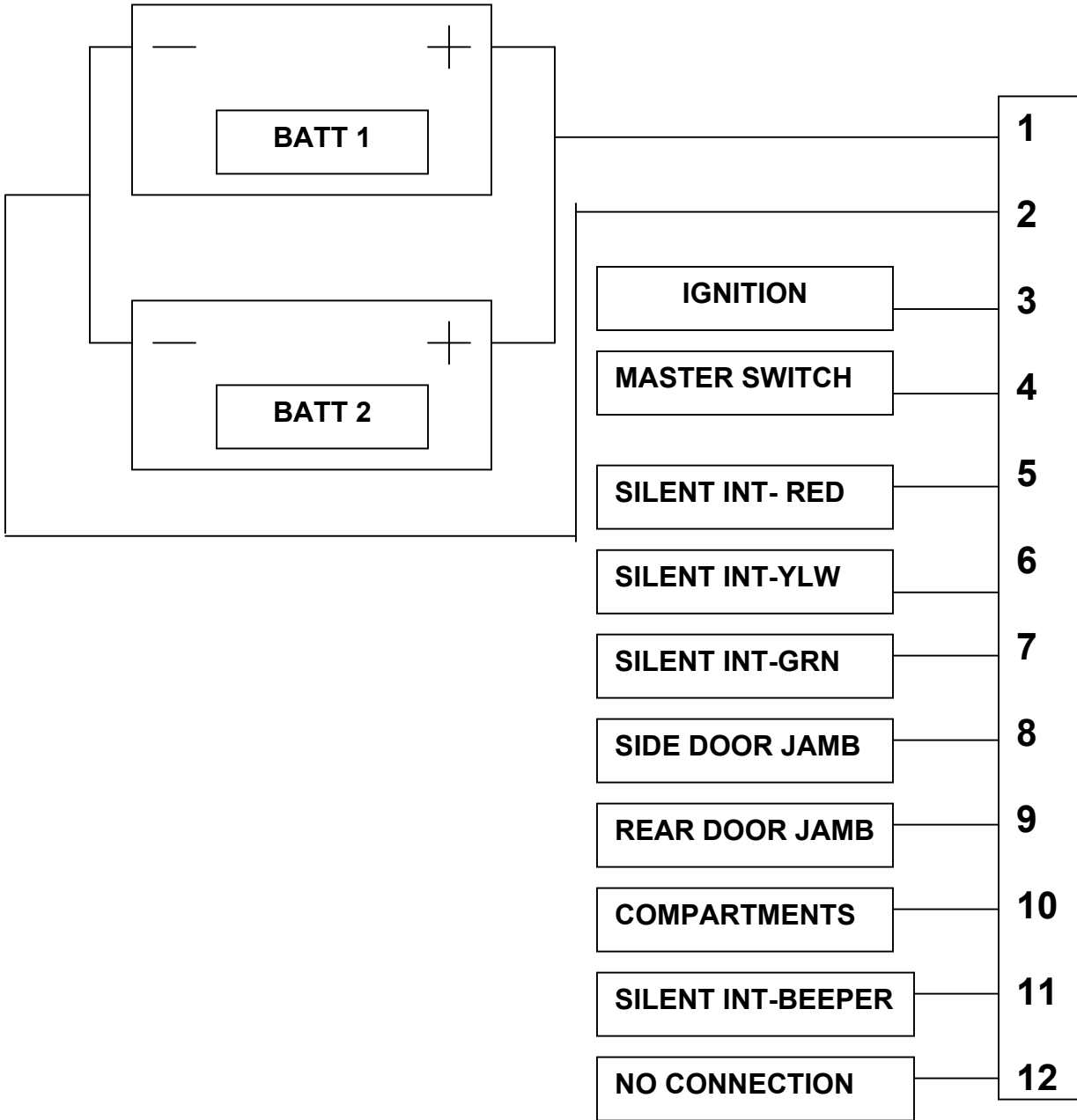
PARTS REQUIRED:

<u>Qty</u>	<u>Brand</u>	<u>Part#</u>
1	AMP/TYCO	1-487769-0
11	AMP/TYCO	794956-1

The connector pin out is as follows:

- Pin
- 1) Vehicle battery positive
 - 2) Vehicle battery ground
 - 3) Ignition line
 - 4) Master switch input- ground actuated
 - 5) Silent intercom RED- ground actuated
 - 6) Silent intercom YELLOW- ground actuated
 - 7) Silent intercom GREEN- ground actuated
 - 8) Side doorjamb switch- ground actuated
 - 9) Rear doorjamb switch- ground actuated
 - 10) Compartment switches- ground actuated
 - 11) Silent Intercom- Beeper
 - 12) No Connection

HOOK UP DIAGRAM



Notes:

- Place lines 11 and 12 as close to the battery as possible
- The ignition line is +12 Volts
- Lines 2 to 9 are all grounded through switches to actuate

INSTALLATION REQUIRMENTS

The IP-100 is a very low current device and is designed for ease of installation. 20 gauge-stranded wire is more than adequate for all lines. The lines going to pin 1 and pin 2 are where the voltmeter is measuring the system voltage. These wires should be connected as close to the batteries as possible. The lines going to pin 3 goes to the ignition line to activate the panel

Lines going to pins 2 to 9 are ground activated and can be run to the rear of the vehicle without much concern to length or placement. Since they are ground-side switching, if they get shorted to ground for any reason, it will not damage the board, although a light will go on inappropriately.

The “Compartment open” is tied to as many compartments are you have. There is no limit. If any of the compartments are open, the light will flash.

TROUBLESHOOTING

The IP-100 is designed with no moving parts for years of reliable service. The LED's are rated to operate for approximately 100,000 hours of continuous use. They are not user replaceable. If any of the displays do not work, it is more likely a defective switch or wiring problem. Check the switches and wiring carefully. If the problems persist, contact Delta Vehicle Systems for assistance.

CLEANING THE DISPLAY

The display panel is covered with a plastic overlay. Over time it may need to be cleaned. Use a damp paper towel and a small amount of dishwashing liquid. **DO NOT** use harsh chemicals or abrasives cleaners because they will damage the graphics. Be sure not to pour water on the panel, since fluids should not be allowed to enter.

LIMITED WARRANTY

The IP-100 is warranted by DELTA VEHICLE SYSTEMS for a period of 5 years from the date of installation by the ambulance builder. During that period, DELTA VEHICLE SYSTEMS will repair or replace, at its option, any defective parts necessary to return the unit to original operating condition. This warranty excludes any damage caused by fire, accident, abuse or unauthorized repair. No responsibility is assumed for any incidental or consequential damage resulting from the use of this product. Delta Vehicle Systems reserves the right to improve specifications without notice.