

TOUCHTEK 10 POWER DISTRIBUTION SYSTEM Installation and Instruction Sheet

! CAUTION ! : Terminal nuts for all connections MUST be torqued as specified in this document. Failure to torque as specified may result in excessive heat and fire!

General Description

The touchtek 10 is a power distribution system intended to provide control over typical emergency vehicle loads. The system consists of up to two 10 position switch panels and a single 10 output power center. Each switch panel input will turn on a corresponding numbered output at the power center.

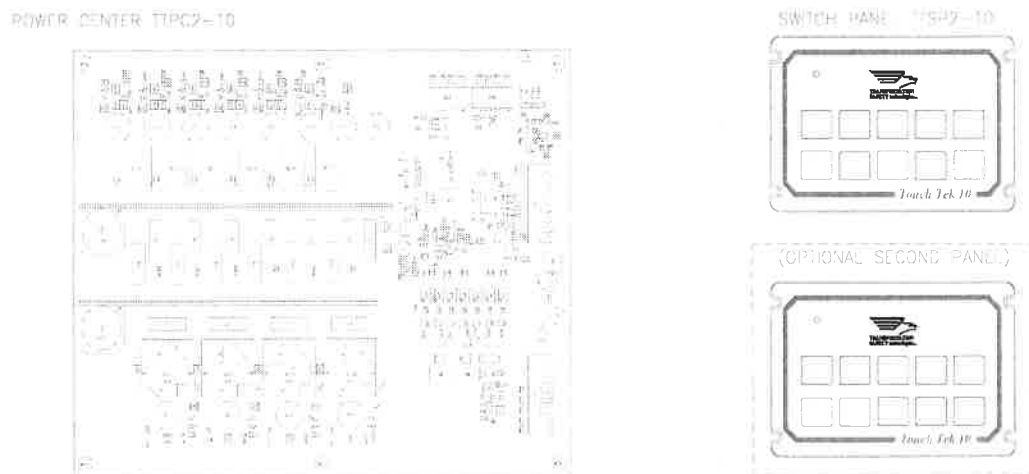


Figure 1: Touchtek 10 System.

Features

- Independent backlight brightness control.
- Programmable sequencing for Pursuit Mode.
- Programmable sequencing for On Scene Mode.
- Programmable load management functionality with selectable threshold.
- Optional High Idle functionality with brake shutdown.
- Optional High/Low voltage alarm with switched output.
- 6 - 20A replaceable relays with +12V or GND output polarity select.
- 4 - 30A replaceable relays with +12V outputs.
- Visual diagnostic LED's.
- Replaceable fuses.

Specifications

- Operating Voltage – 9 to 16VDC.
- Ignition Off Current (typical) – 7mA.
- Operating Temperature Range – -40C to 70C.



The Touchtek 10 designates switch/relay 10 to operate as the hi-idle output if dipswitch 4 of bank 2 is "ON". The high idle switch will only function if the vehicle is in park/neutral, and the brake is not pressed. If the hi-idle output is on, and the brake is pressed, or the vehicle goes out of park/neutral, switch 10 will turn dark, and output 10 will turn off. Upon the brake being removed and the vehicle going back into park/neutral, the switch will return to its previous state.

Automatic Hi-idle Output –

With hi-idle functionality enabled (dip 4 bank 2=ON), the hi-idle output can be configured to turn on automatically in a low voltage condition. If dipswitch 5 of bank 2 is in the ON position, the hi-idle output will automatically turn on if the system voltage has fallen below the LVT for > 30 seconds. The output will remain on until the system voltage recovers to greater than the RVT for 1 minute or until the brake or park/neutral inputs do not meet the previously described hi-idle functionality.

High/Low Voltage Alarm

The TouchTek 10 has a High/Low Voltage alarm function activated with dipswitch 7 of bank 2. If the Neutral input is **active** and the system voltage goes below its low voltage setpoint, 12.2volts, Relay 10 will activate, Switch 10 on the user panel will flash, and the front panel will emit a warning beep. If load management is setup, the system will begin shedding load as programmed. If the Neutral input is **inactive** and the system voltage rises above 15.3V, Relay 10 will activate and switch 10 on the user panel will flash until the system voltage returns within operating parameters.

Programming menu

The programming menu allows selection of pursuit mode switches, on-scene mode switches, and switches to be load managed. Entering the program menu is accomplished by pressing and holding switch 1 and switch 9 for 3 seconds. ****The park/neutral signal must be active, and the program lockout dipswitch (bank2 switch8) must be OFF to enter program mode.*** Upon entering the program menu, any output that was on will be shut off. The three available menu items in order are pursuit mode switches, on-scene mode switches, and load management switches. Only latching switches may be programmed in any of the three menu items.

Programming Pursuit mode -

Upon entering the pursuit mode menu item, the switches currently programmed for pursuit mode will sequence up in order, and switch 1 will flash out of synch with these switches. Pressing an available switch will clear the old programmed switches and start the selection of a new pursuit mode sequence. The order they are selected in will be the order they are turned on. After all desired switches are selected, pressing switch 10 will save the program and proceed to on-scene mode programming. If no pursuit mode switches are to be changed, pressing switch 1 will skip pursuit mode programming and proceed to on-scene mode.

Programming On-scene mode –

Upon entering the on-scene mode menu item, the switches currently programmed for on-scene mode will sequence up in order, and switch 10 will flash out of synch with these switches. Pressing an available switch will clear the old on-scene mode programmed switches and start the selection of a new on-scene mode sequence. The order they are selected will be the order they are turned on. After all desired switches are selected, pressing switch 10 will save the program and proceed to load management. If no on-scene mode switches are to be changed,



BANK 2-

POSITION 1 – SWITCH 9 - 0FF=LATCHING ON=MOMENTARY.

POSITION 2 – SWITCH 10 - 0FF=LATCHING ON=MOMENTARY.

POSITION 3 – LOAD MANAGEMENT THRESHOLD, 0 = LVT=11.8V RVT=12.6V, 1 = LVT=12.5V RVT=13.6V.

POSITION 4 – SWITCH 10 HI-IDLE, 0 = SWITCH10 HI-IDLE DISABLED, 1 = SWITCH10 HI-IDLE ENABLED.


POSITION 5 – AUTOMATIC HI-IDLE OUTPUT, 0 = AUTO-OUTPUT DISABLED, 1 = AUTO-OUTPUT ENABLED.

POSITION 6 – AUTOMATIC SEQUENCING CHANGE 0=AUTOMATIC CHANGE DISABLED 1=AUTOMATIC CHANGE ENABLED.

POSITION 7 – HIGH/LOW VOLTAGE ALARM, 0=DISABLED, 1=ENABLED

POSITION 8 – PROGRAM MENU LOCKOUT, 0=PROGRAMMING ALLOWED 1=PROGRAMMING NOT ALLOWED.

Installation & Electrical Connections

 **Caution: Before attempting any installations or repairs, ensure that the vehicles battery ground terminal is disconnected.**

Terminal Block Connections -

The connections for communications and chassis signal I/O are made through terminal blocks located at the switch panel and power center. These terminal blocks accept wire with diameter up to approximately 0.050". TST recommends 18 gauge wires for all terminal block connections. The terminal blocks are pluggable and spring loaded, requiring no wire termination which allows for standard 18g wire to be used. *This wire is not provided, but may be ordered as a separate part number TTCC2-25(25 foot), or TTCC2-15(15 foot).* To make connections, remove the terminal block from the power center or switch panel by gripping the block at each end and gently pulling away from the printed circuit board. Simply strip wires 1/8" and insert into the appropriate position of the terminal block. After each wire is inserted, close the spring loaded clamp for that position. When all positions are complete replace the plug back onto the switch panel or power center, observing pin 1 location, and ensuring the terminal block is fully seated against the circuit board. See the next two sections for detail of the connections.

Connecting the power center to a switch panel -

1. Remove the six screws, and lid from the power center. Remove the two screws and rear cover from the switch panel(s).

2. Connect the first four positions of the power center terminal block 1 to the first four positions of the switch panel terminal block 1(see figure 2). ***Note – Route wire through switch panel rear cover before inserting wires into terminal block.** If single panel system, replace the rear cover of the switch panel and tighten down the two screws.



4. Attach desired loads to output studs 1 through 10 - 1/4" using the supplied lock washers and hex nuts (see figure 7 for output stud locations).
 - a. TST recommends a minimum size of 10 gauge GXL type wire for feeds less than 15 feet at rated current for outputs 1 - 4.
 - b. TST recommends a minimum size of 14 gauge GXL type wire for feeds less than 15 feet at rated current for outputs 5 -10.
 - c. ⚠ Torque all output hex nut to 5 ft-lbs ± 0.5 ft-lbs, or 60 in-lbs ± 6 in-lbs (see figure 4).
5. Connect battery negative (-) feed to the 3/8" stud labeled GROUND using the supplied lock washer and hex nut. TST recommends a minimum size of 2 gauge GXL type wire for feeds less than 15 feet at rated current.
 - a. ⚠ Torque ground hex nut to 7.5 ft-lbs ± 0.5 ft-lbs or 90 in-lbs ± 6 in-lbs (see figure 5).
6. Connect battery positive (+) feed to the +12VDC 3/8" stud using the supplied lock washer and hex nut. TST recommends a minimum size of 2 gauge GXL type wire for feeds less than 15 feet at rated current.
 - a. ⚠ Torque power hex nut to 7.5 ft-lbs ± 0.5 ft-lbs or 90 in-lbs ± 6 in-lbs (see figure 5).
7. Use the power center enclosure to mark holes for pre-drill in the desired mounting location. The mounting holes are located at the four corners inside the enclosure. Pre-drill and secure using the appropriate hardware (not included). Use recommended mounting location and practices as described by the chassis manufacturer.
8. Use the switch panel enclosure to mark holes for pre-drill in the desired mounting location. Pre-drill and secure using the appropriate hardware (not included). Use recommended mounting location and practices as described by the chassis manufacturer.
9. Configure outputs 5 through 10 for +12V or GROUND outputs. Each output has a fuse holder location for +12V or GROUND. Install the fuse in the +12V location for a +12V output when turned on, or install in the GROUND location for a GROUND output when turned on. **Do not install a breaker in both locations!** **Note all fuses will be installed for +12V outputs from the factory.*
10. Configure dipswitch banks 1 & 2 located on the power center according to the desired operation. The dipswitch settings are described under Dipswitch Settings on page 5.
11. Configure the polarity switches located on the power center for the park/neutral and brake inputs (see figure 7). If the switch is in the "+" position, a +12V signal is an active input, and if in the "-" position, a ground signal is an active input.
12. Re-place power center enclosure lid and tighten down screws. Reconnect the vehicle battery negative terminal.



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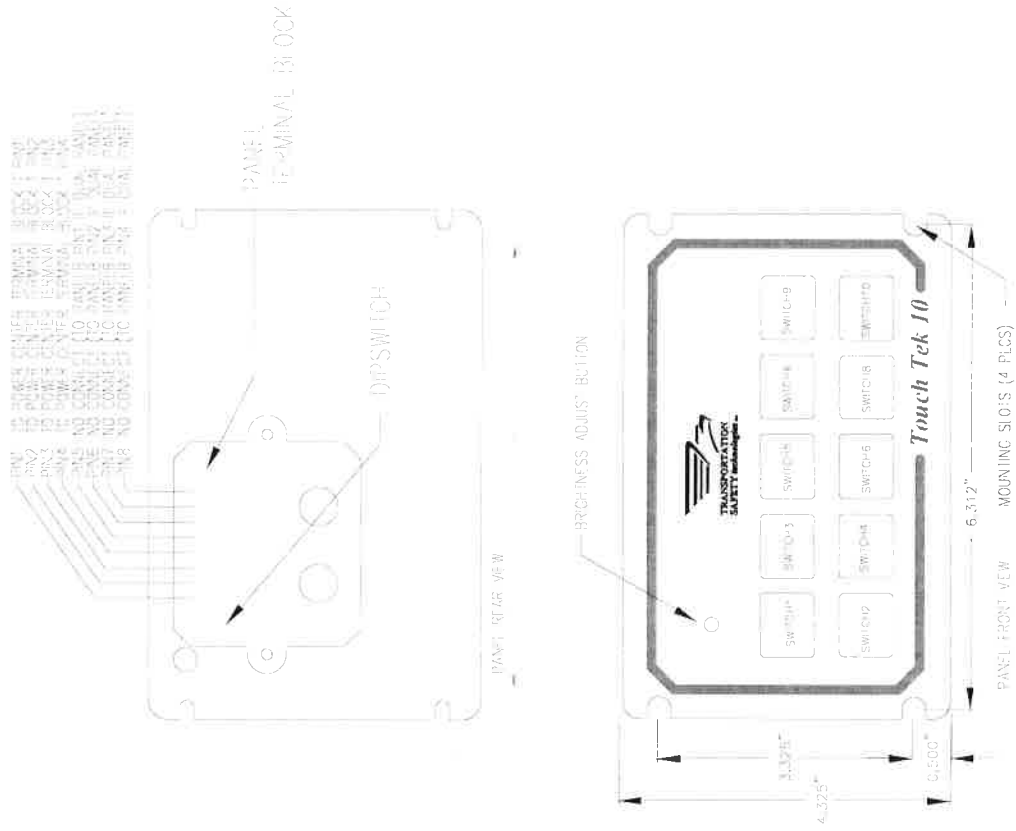


Figure 6: Panel Detail.