Keller Center
PSIP
Princeton Startup
Immersion Program

NOTRAFFIC

2023 Challenge Puzzle

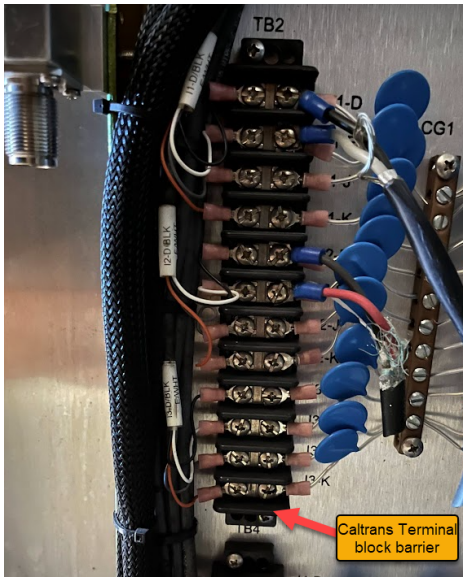
Technical Illustrations Specialist

Harness Design

NoTraffic uses a CU (control unit) which is Installed in the traffic light cabinet and retrofits all types of existing traffic controllers. See the following photo of CU:

One of the cabinets NoTraffic should be installed is the “Caltrans” cabinet while receiving all the traffic light signals from the traffic light controller. When connecting CU to traffic light cabinet equipment with an analog connection there is a need to connect to CU the traffic light cabinet 24VDC. The traffic light cabinet power supply usually distributes the 24VDC to an open terminal block on the side of the cabinet.

See the following photo which demonstrates the terminal block on the side of the cabinet:



Task definitions:

Design a harness for 24v power that connects the cabinet power connection at the CU to the traffic light cabinet 24VDC terminal block.

General Environmental conditions:

- Temperature range -34°C to 74°C
- Flammability of plastic parts

Technical harness definitions:

1. Cable: 2 Conductor Multi-Conductor 22AWG
2. Cable length: 1.5 m
3. Connector end:
    a. 2 Position Terminal Block Plug, Female Sockets
    b. Spade terminal which fits with TB300-12BS (CONN BARRIER STRP 12CIRC 0.562")
4. Expanded sleeve protection on the harness
5. Label mark on the sleeve
6. Label mark on spades (Red wire 24VDC, black wire GND)
7. The cable is packed in a plastic bag with PN.

The final exports should include a harness drawing containing BOM details (PN and vendor) and notes if necessary for assembly instructions.