



The TB1.5 is an externally-controlled switch for circuits up to 40 Amp 480 Volt 3 Phase. The enclosure is partitioned with all high-voltage components shielded. The low-voltage side of the enclosure has a selectable 12 or 24 VDC board power supply and room for a variety of different access control boards and modules. Customizations available. Made in the USA.



INTEGRATIONS, CONTROL AND SUPERVISIONS

Integrations

- Manual switches, and stand-alone keypads, proximity card readers and biometric scanners
- Access Control Systems and Building/Environmental Control Systems
- Fire and Intrusion Alarm Systems and Sensors
- Video Surveillance Systems and Cameras
- Equipment Safety Switches and Sensors

Control Options (by an above integration)

- Close Contactor (AC power pass-through)
- Open Contactor (AC power pass-through denied)

Manual Control Options

- 3-Position Switch on Control Board (On/Off/Auto)

Ready for Supervision

- AC Power In (power at control board)
- Contactor Open (AC power out denied)
- Contactor Closed (AC power out allowed)
- Enclosure Tamper

SPECIFICATIONS

Input

- 120, 208, 240, or 480VAC

Output

- AC Output = AC Input
- 12VDC or 24VDC, 1A (for system control boards & auxiliary devices)

Battery Back-up

- External (if required)

Visual Indicators

- AC Input (to contactor)
- Contactor Closed (AC power out permitted)

Electrical

- Operating temperature: 0° F to 104° F ambient
- Integrated Transformer: 75VA, Fused
- Load rating table available at www.tekindproducts.com

Mechanical

- Enclosure Dimensions (H x W x D approx.): 14" x 12" x 4" (356mm x 305mm x 102mm)
- Mounting Plate for Control Board: 5.5# x 10.25" Predrilled for S2 Micronode & RS2 MR50, MR51E, EP1501. Custom drilling available.
- Product weight (approx.) 17.5 lbs. (8kg)

Agency Approvals

- UL 508A
- UL File Number E478024



INSTALLATION AND WIRING GUIDE

TB1.5

OVERVIEW

The TB1.5 is an externally-controlled switch for circuits up to 40 Amp 480 Volt 3 Phase. The enclosure is partitioned with all high-voltage components shielded. The low-voltage side of the enclosure has a selectable 12 or 24 VDC board power supply and room for a variety of different access control boards and modules. Customizations available. Made in the USA.

SPECIFICATIONS

Input

- 120, 208, 240, or 480VAC

Output

- AC Output = AC Input
- 12VDC or 24VDC, 1A (for system control boards & auxiliary devices)

Battery Back-up

- External (if required)

Ready for Supervision

- Enclosure Tamper Switch
- AC Power In (power at control panel)
- Contactor Closed (AC power out permitted)

Visual Indicators

- AC Input (to contactor)
- AC Output (AC power out permitted)

Electrical

- Operating temperature: 0° F to 104° F ambient
- Integrated Transformer: 75VA, Fused
- For load rating table, go to page 5 or www.tekindproducts.com

Mechanical

- Enclosure Dimensions (H x W x D approx.): 14" x 12" x 4" (356mm x 305mm x 102mm)
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TB1.5 Line Voltage Wiring Instructions

WARNING!

LINE VOLTAGE WIRING SHOULD ONLY BE PERFORMED BY A LICENSED ELECTRICIAN

The following describes the wiring instructions for the line voltage side of the TB1.5. The TB1.5 is designed to accommodate multiple line voltages and may need to be rewired from the default position.

NOTE: For ease of wiring, the terminal strip can be released from the DIN rail by placing a screwdriver in the small slot at the bottom and prying against the body of the terminal block. It can then be snapped back on by hand.

- (1) Remove the cover plate to access the line voltage portion of the TB1.5.
- (2) Connect line input to the contactor, L1 through L3. If there is a neutral wire, connect it to L4.
- (3) Adjust the Box 1.5 for the appropriate line voltage. See table below and wiring diagram on page 5.

120VAC Line Input:

Move the contactor end of the BROWN wire to the L4 terminal.
Move the terminal strip of the BROWN wire to the left-most terminal opposite the WHITE wire.

208VAC Line Input:

Move the contactor end of the BROWN wire to the L2 terminal.
Move the terminal strip end of the BROWN wire to the second terminal from the left, opposite the RED wire.

240VAC Line Input:

Move the contractor end of the BROWN wire to the L2 terminal.
Move the BROWN wire on the terminal strip to the third terminal from the left, opposite the ORANGE wire.

480VAC Line Input:

Move the BROWN wire on the contactor terminals to the L2 terminal.
Move the terminal end of the BROWN wire to the right-most terminal opposite the BLACK-RED wire.

- (4) Connect load output to the right side of the contactor, T1 through T3. If there is a neutral wire, connect it to T4.
- (5) Replace the cover plate.

TB1.5 Control Wiring Instructions

WARNING!

TB1.5 control panels do not provide motor overload protection. The installer must ensure that the correct overload protection is provided for all motors. In some cases, this may already be provided in the machine or installation.

WARNING!

TB1.5 control panels do not include branch circuit protection. The installer must ensure branch circuit protection not exceeding 60A is provided.

WARNING!

TB1.5 is NOT a recognized “disconnecting means”. The installer must ensure a disconnecting means is provided. A manually operated circuit breaker or disconnectable fuse supplying the branch will suffice. This is often included with the branch circuit protection mentioned above.

WARNING!

The supervisory and visual indicators are not rated for machine safety purposes and should not be used as such. The disconnecting means should be switched off and locked as necessary before servicing the load.

TB1.5 may be wired to a switch mechanism, timer, building automation system or access control system to control access to industrial equipment and other power circuits (up to the TB1.5’s max voltage and amp load rating). It may also be configured to allow access any time the box has power. See wiring diagram on page 5.

- Wiring to the contactor should be 4-14 AWG Cu/Al. The recommended tightening torque is 40 lb-in.
- Recommended tightening torque on the terminal block (for setting supply voltage) is 18 lb-in. **NOTE:** The terminal block may be removed from the DIN rail by inserting a screwdriver in the small slot at the bottom and prying against the body. It then snaps back in place.
- Fuse: 3/4A Midget cartridge fuse rated at or above the application voltage. Must be UL listed or recognized under UL 248-14, with UL Category Control Numbers JDYX or JDYX2 for USA, JDYX7 or JDYX8 for Canada. **NOTE:** Many midget cartridge fuses are listed or recognized under other UL standards, such as UL 248-4, and thus are not suitable for this application.

Some fuses that meet these requirements are:

- Ferraz-Shawmut/Mersen SBS-3/4
 - Bussman BBS-3/4
 - Bussman KTK-3/4
 - Littlefuse KLK-3/4
 - At 240V and lower, a 1A fuse may be used.
- The circuit board in the box is all part of a Class 2 control circuit. Use Class 2 conductors.



- A screw terminal block is provided on the top edge of the board allowing easy connection to the following:

1 - VOUT+, 2 – VOUT-

24VDC or 12VDC output, 1A max. Voltage output is determined by jumper J1 on the TB1.5 printed circuit board (PCB). For use with internal access control boards or associated accessories.

3 – AUX2, 4 – AUX1

Contact auxiliary switch. NO switch that closes when the contactor is engaged.

5 – TAMPER2, 6 – TAMPER1

Tamper switch. NO switch that closes when the door is closed.

7 - DISC2, 8 – DISC1

Disconnect auxiliary switch (if equipped). NC switch that opens when the disconnect switch is closed.

9 - AUTO, 10 – SW COM, 11 – SW COM, 12 - ON

Configuration monitor outputs

When configured for **AUTO**, the TEK Box will take instruction from any compatible switch mechanism or access control system through CONT1 and CONT2. To set the box to AUTO, move the slide selector switch next to the green terminal block to AUTO. The AUTO-SW COM outputs will be shorted when in AUTO mode for system monitoring.

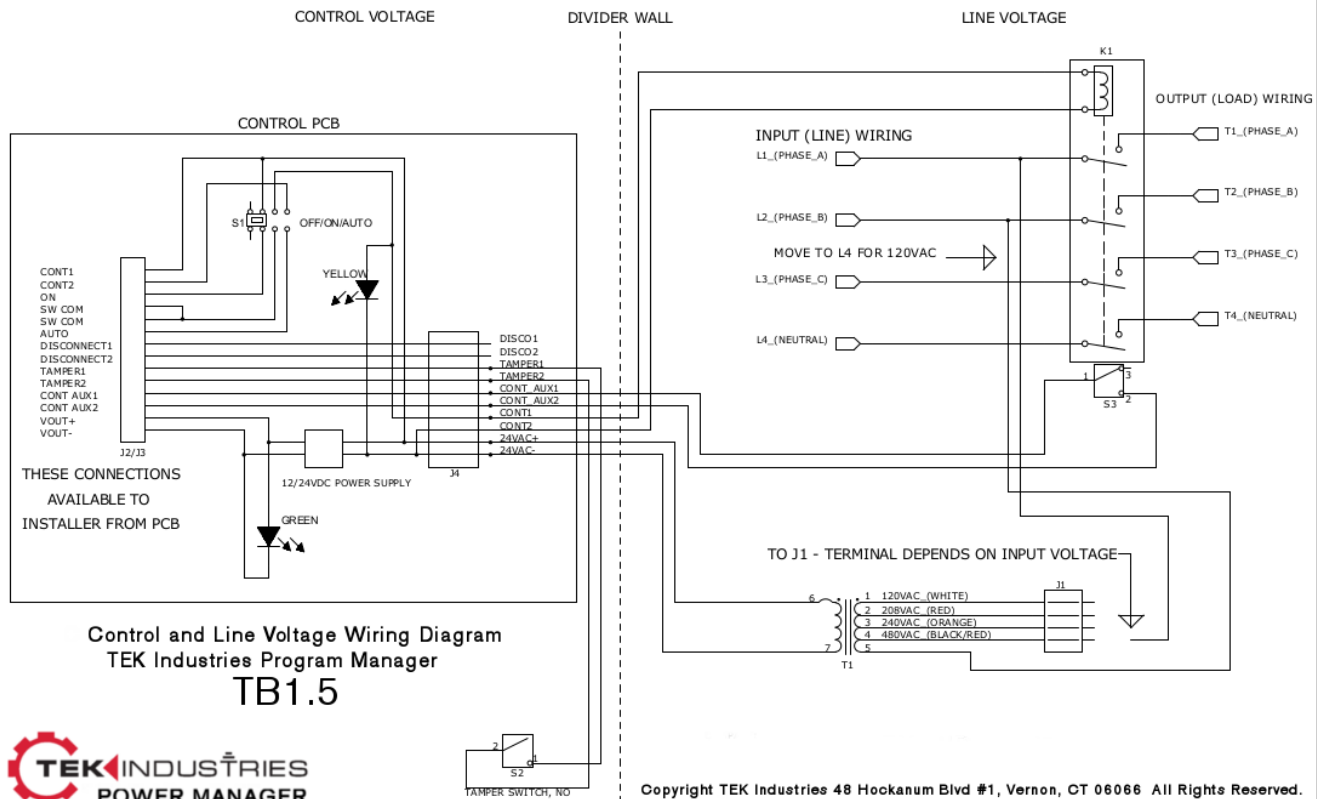
When configured for **ON**, the TEK Box will engage the contactor as soon as power is applied to the box, regardless of any signal from a switch mechanism or access control system. To set the box to ON, move the slide selector switch next to the green terminal block to ON. The ON-SW COM outputs will be shorted when in ON mode for system monitoring.

When configured for **OFF**, the TEK Box will not engage the contactor under any circumstances. To set the box to OFF, move the slide selector switch next to the green terminal block to OFF. The ON-SW COM and AUTOSW COM outputs will both be open when in OFF mode for system monitoring.

The SW COM terminals are connected on the TB1.5 printed circuit board (PCB) and should be wired as such.

13 – CONT2, 14 – CONT1

Contact coil connection. Close connection to engage the contactor. NOTE: CONT2 and CONT1 contacts have 24VAC present on them when not connected. They should be connected using a relay or other isolated switching element.



LOAD RATING TABLE

Output Ratings	HP	FLA	GPA
120V Single phase	2	24	40
208V Three Phase	10	21	40
240V Single Phase	5	31	40
240V Three Phase	10	28	40
480V Three Phase	20	27	40

LIMITATIONS AND EXCLUSIONS:

THIS WARRANTY IS IN LIEU OF ALL OTHER REPRESENTATIONS EXPRESSED OR IMPLIED (INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR USE) AND UNDER NO CIRCUMSTANCES SHALL TEK INDUSTRIES BE RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL PROPERTY DAMAGE OR LOSSES. PRIOR TO USE, THE USER SHALL DETERMINE THE SUITABILITY OF THE PRODUCT FOR ITS INTENDED USE, AND THE USER ASSUMES ALL RISKS AND LIABILITY FOR SUBSEQUENT USE. No statement or recommendation not contained herein shall have any force or effect unless in an agreement signed by officers of seller and manufacturer.