

3-wire control board

Control option
for EMX4e/EMX4i soft starters
Installation Guide



BENSHAW

Applied Motor Controls

710-22291-00A

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1 **Disclaimer**

The examples and diagrams in this manual are included solely for illustrative purposes. The information contained in this manual is subject to change at any time and without prior notice. In no event will responsibility or liability be accepted for direct, indirect or consequential damages resulting from the use or application of this equipment.

2 **Warnings**



WARNING

Isolate the soft starter from mains and control voltage before connecting or removing the board.

3 Product Overview

3.1 Description

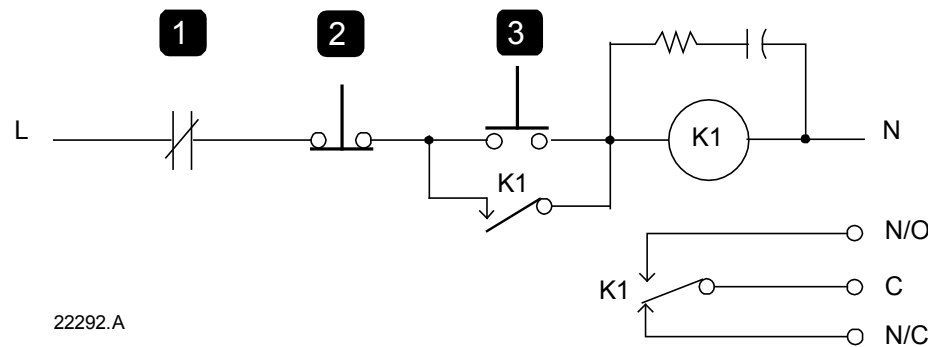
The 3-wire control board simplifies the connection of external pushbuttons to EMX4 soft starters.

3.2 Options

Select the correct 3-wire control board according to the application’s control voltage:

- BIPC-300200-01 120 VAC
- BIPC-300200-02 24 VDC

3.3 Design schematic



1	Trip
2	Stop
3	Start

4 Setup Procedure Overview

**WARNING**

Isolate the soft starter from mains and control voltage before connecting or removing the board.

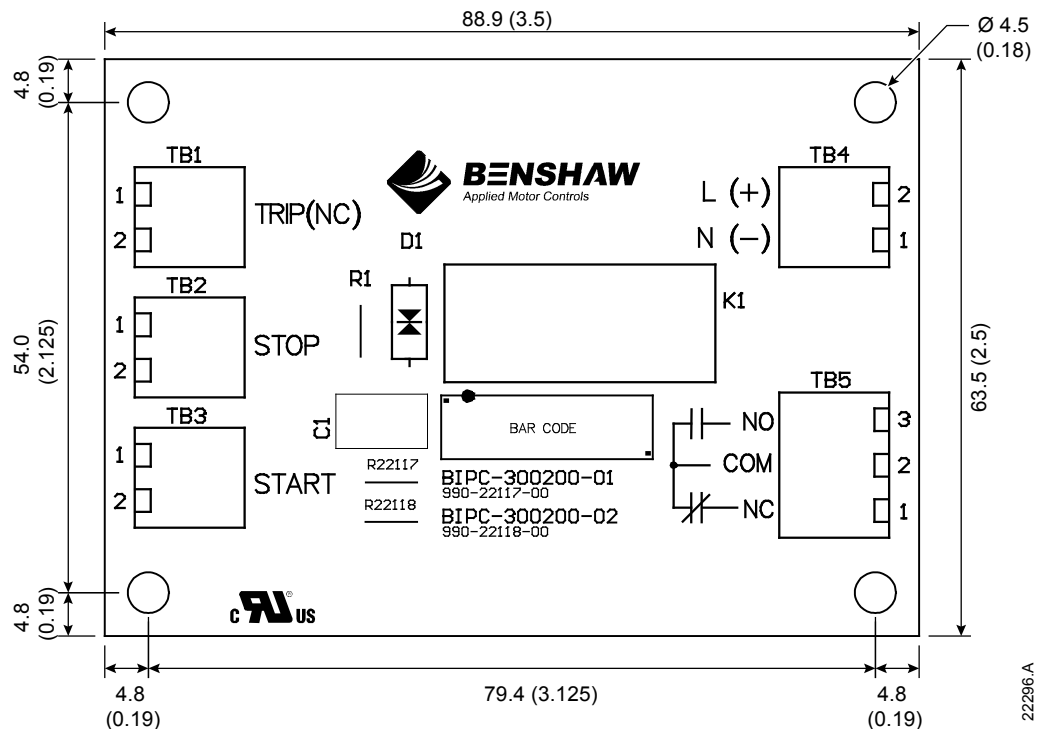
**WARNING**

Connect the 3-wire control board to control voltage from the same fuse or circuit breaker as the soft starter control voltage.

1. Mount the board on the soft starter panel.
2. Connect TB2 and TB3 on the control board to the external controls.
 - TB2: stop pushbutton
 - TB3: start pushbutton
3. Connect TB1 and TB5 on the control board to the soft starter control terminals.
 - TB1: Relay output A (41, 42, 44)
 - TB5: Reset (10,11) and Start/stop (11, 12)
4. Connect TB4 on the control board to control voltage.
5. Apply control voltage to the soft starter and control board.
6. Set soft starter parameter 8A *Relay A Function* to "Trip".

5 Installation

5.1 Physical installation



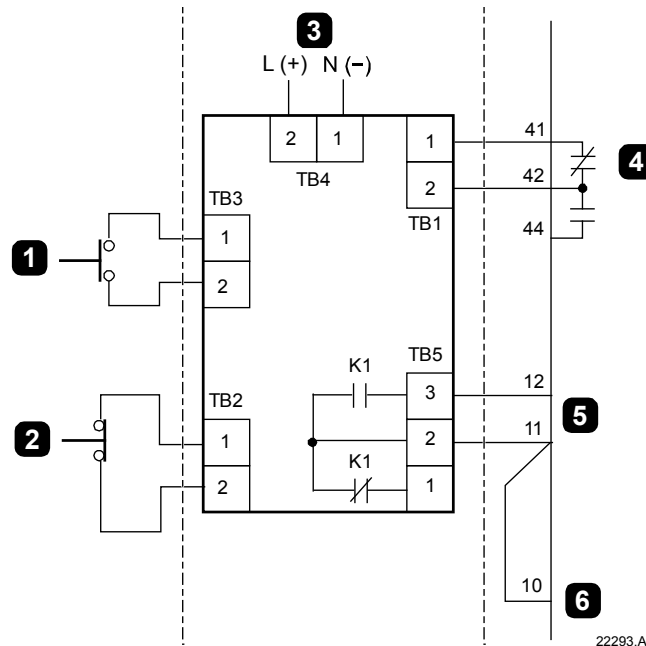
Screw the board to the soft starter panel or use the DIN rail clips supplied with the board.

5.2 Connections

External controls

3-wire control board

Soft starter



1	External controls: start pushbutton (normally open)
2	External controls: stop pushbutton (normally closed)
3	Control voltage
4	Soft starter: Relay output A (set = Trip)
5	Soft starter: Start/stop input
6	Soft starter: Reset input

5.3 Preventing immediate restart after a trip is reset

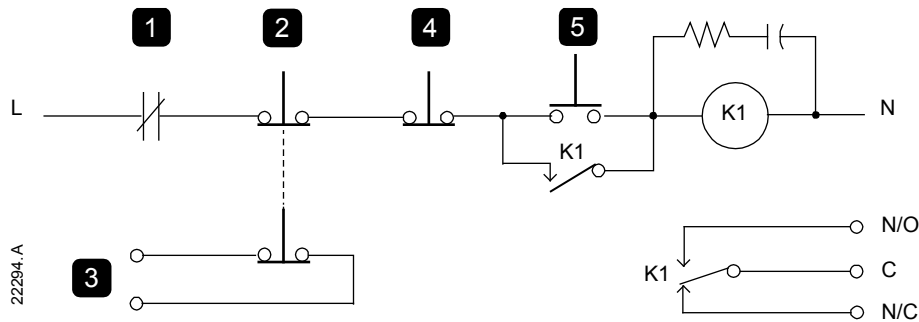


WARNING
The EMX4 start input shares a contact with the reset input. The motor could restart unexpectedly when a trip on the soft starter is reset.

Reset via soft starter digital input

If the application uses the soft starter reset input, the external reset pushbutton must be connected to two normally closed contact blocks:

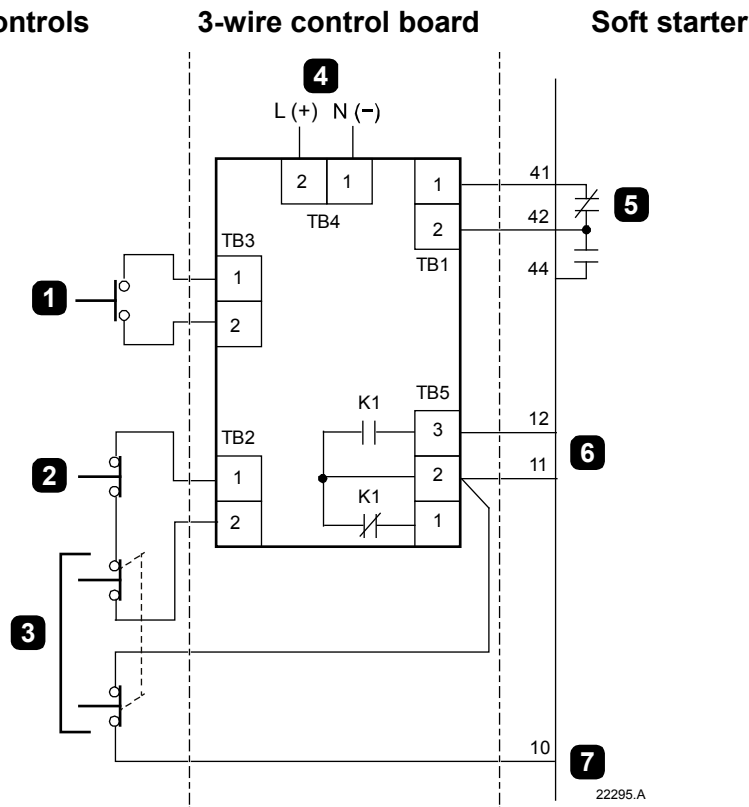
- Connect one contact block to the soft starter reset input (10, 11)
- Connect one contact block independently to the control board



1	Trip
2	External controls: reset pushbutton (normally closed)
3	Soft starter: Reset input
4	External controls: stop pushbutton (normally closed)
5	External controls: start pushbutton (normally open)

Reset via external pushbutton

If an external Reset pushbutton is installed, connect the pushbutton to the soft starter reset input and the external stop pushbutton.



1	External controls: start pushbutton (normally open)
2	External controls: stop pushbutton (normally closed)
3	External controls: reset pushbutton (normally closed)
4	Control voltage
5	Soft starter: Relay output A (set = Trip)
6	Soft starter: Start/stop input
7	Soft starter: Reset input

6 Specifications

- **Connections**

Terminal type (control board) screwless spring cage connectors

Terminal type (soft starter) unpluggable connectors

Maximum cable size 2.5 mm² (14 AWG)

- **Certification**

CE EN 60947-4-2

RoHS Compliant with EU Directive 2011/65/EU

UL UL508 Recognized



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