

**EMX3/EMX4i GROUNDED DELTA SUPPLY OPERATION**

<b>Product Note #:</b>	720-21485-00A	<b>Product series:</b>	EMX3, EMX4
<b>Date of issue:</b>	13/08/2019	<b>Related NCR:</b>	811

**1 Overview**

EMX3 and EMX4i soft starters are designed to operate on a wide range of AC supply grid typologies, including grounded delta. The soft starters are also designed to automatically detect the motor connection configuration (3-wire/in-line or 6-wire/inside delta).

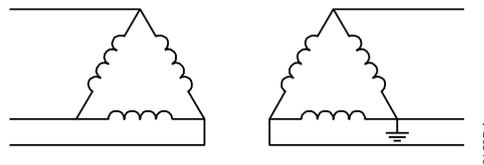
When connected to a grounded delta AC supply, the motor connection auto-detect may not operate correctly and the unit will trip on Motor Connection during the starting sequence.

The motor voltage as displayed on the EMX4i display may also be inaccurate when connected to a grounded delta AC supply.

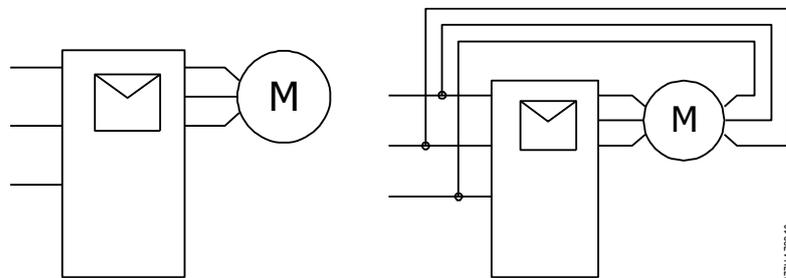
**2 Detail**

EMX3 and EMX4i soft starters automatically detect the motor wiring configuration (3-wire/in-line or 6-wire/inside delta). The starter checks the motor connection as part of the pre-start sequence for every start.

*Delta-connected (primary) and grounded delta (secondary)*



*In-line (3-wire) and inside delta (6-wire) motor connections*



The detection process compares the feedback waveforms to an artificial neutral point derived within the soft starter. When the soft starter is connected to a grounded delta supply, the neutral point may shift. The extent of the shift depends on site-specific factors such as the size of the motor relative to the impedance of the AC supply and the length and type of cabling used for connecting the motor.

The automatic motor connection process includes some tolerance for the artificial point shifting, but if it shifts beyond the tolerance the soft starter will trip on Motor Connection during the starting sequence.

Auto-detection can be disabled by configuring the soft starter to either in-line (3-wire) or inside delta (6-wire) motor connection.



### 3 Actions Required

To override auto-detection, change the soft starter’s motor connection parameter from auto-detect (default) to either in-line (3-wire) or inside delta (6-wire) configuration as appropriate.

#### 3.1 EMX3

Motor Connection is parameter 20A, within the Advanced parameter group.

To access the Advanced parameters, use password **1978**.

Soft starter version	Action required
All	1. Adjust Parameter 20A – Motor Connection: Auto detect (Default) In-line Inside delta

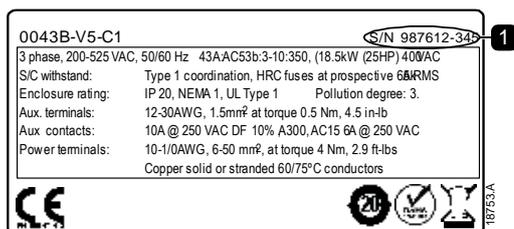
#### 3.2 EMX4i

Some EMX4i versions require a firmware update to enable motor connection selection. Download the firmware files from [hub.aucom.com](http://hub.aucom.com). We recommend you also review the version control document which is also available in the firmware download section.

Soft starter version	Action required
01, 02 & 03	Update the EMX4i firmware using firmware update 14/06/18 (3-wire inline lock). The firmware will set the EMX4i motor connection to 3-wire (in-line) connection. No other motor connection parameters can be adjusted. Note: This update is suitable for 3-wire (in-line) motor connections only. For use with 6-wire (inside delta) applications, contact AuCom Product Support.
04	Update the EMX4i firmware using firmware update 12/08/19 (R2 Motor Connection). Adjust Parameter 20F – Motor Connection Auto detect (Default) In-line Inside delta
05	No firmware update is required. Adjust Parameter 20F – Motor Connection Auto detect (Default) In-line Inside delta

### 4 Identifying the soft starter version number

The soft starter version number is the last two digits of the first part of the serial number (xxxx**VV**-xxx).



**1** Serial number

### 5 Further Product Notifications

No further notifications will be made.