Softstarter

S8x1 Change

Switching from S801+ to S811+
Parameterization via Keypad

Level 3	1 – Fundamental – No previous experience necessary 2 – Basic – Basic knowledge recommended 3 – Advanced – Reasonable knowledge required 4 – Expert – Good experience recommended

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Danger! - Dangerous electrical voltage!

- Disconnect the power supply of the device.
- Ensure that devices cannot be accidentally restarted.
- Verify isolation from the supply.
- Cover or enclose any adjacent live components.
- Follow the engineering instructions (AWA/IL) for the device concerned.
- Only suitably qualified personnel in accordance with EN 50110-1/-2 (VDE 0105 Part 100) may work on this device/system.
- Before installation and before touching the device ensure that you are free of electrostatic charge.
- The functional earth (FE, PES) must be connected to the protective earth (PE) or the potential equalization. The
  system installer is responsible for implementing this connection.
- Connecting cables and signal lines should be installed so that inductive or capacitive interference does not impair the automatic control functions.
- Suitable safety hardware and software measures should be implemented for the I/O interface so that an open circuit on the signal side does not result in undefined states.
- Deviations of the mains voltage from the rated value must not exceed the tolerance limits given in the specification, otherwise this may cause malfunction and/or dangerous operation.
- Emergency stop devices complying with IEC/EN 60204-1 must be effective in all operating modes. Unlatching of the emergency-stop devices must not cause a restart.
- Devices that are designed for mounting in housings or control cabinets must only be operated and controlled after they have been properly installed and with the housing closed.
- Wherever faults may cause injury or material damage, external measures must be implemented to ensure a safe operating state in the event of a fault or malfunction (e.g. by means of separate limit switches, mechanical interlocks etc.).
- Softstarter may have hot surfaces during and immediately after operation.
- Removal of the required covers, improper installation or incorrect operation of motor or Softstarter may destroy the device and may lead to serious injury or damage.
- The applicable national safety regulations and accident prevention recommendations must be applied to all work carried on live Softstarter.
- The electrical installation must be carried out in accordance with the relevant electrical regulations (e. g. with regard to cable cross sections, fuses, PE).
- Transport, installation, commissioning and maintenance work must be carried out only by qualified personnel (IEC 60364, HD 384 and national occupational safety regulations).
- Installations containing Softstarter must be provided with additional monitoring and protective devices in accordance with the applicable safety regulations. Modifications to the Softstarter using the operating software are permitted.
- All covers and doors must be kept closed during operation.
- To reduce the hazards for people or equipment, the user must include in the machine design measures that restrict the consequences of a malfunction or failure of the Softstarter (increased motor speed or sudden standstill of motor). These measures include: – Other independent devices for monitoring safety related variables (speed, travel, end positions etc.).
  – Electrical or non-electrical system-wide measures (electrical or mechanical interlocks).
  – Never touch live parts or cable connections of the Softstarter after it has been disconnected from the power supply. Due to the charge in the capacitors, these parts may still be alive after disconnection. Consider appropriate warning signs.

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1 General

The following information describes a change from the softstarter series S801+ to the series S811+.
In the following, the differences to be observed in terms of plant extension or new project planning with S811+ as well as the replacement of devices of the S801+ series are shown.

2 Exchange of the devices

The devices differ mainly in the following points:

2.1 Functions

1. Communication
2. Pump algorithm
3. Display
4. Programmable clamps
5. Safety function

Features	S811+	S801+
Communications	■	
Pump algorithm option	■	
Dials and DIP switches (CIM)		■
Digital interface (DIM)	■	
Programmable inputs	■	
Analog input	■	
Programmable relays	■	
Inside the delta	■	
Fault warnings	■	
690V option	■	
Long ramp option	■	
Integrated bypass	■	■
24 Vdc control	■	■
Overload	■	■

2.2 Terminal assignment

Here is a simple difference:
- The terminals of the S811+ are configurable
- the terminals assignment for the S801+ are not configurable

The S811+ has the same input configuration as the S801+, except for terminal 3.
The terminal assignment for S801+ and S811+ looks like:

S811+

Position	Options	Minimum	Maximum	Default
"–"	Not Programmable	—	—	"–"
"+"	Not Programmable	—	—	"+"
P	Not Programmable	—	—	P
1	Input Config Entry 0	0	10	1
2	Input Config Entry 1	0	10	3
3	Input Config Entry 2	0	10	4
4	Input Config Entry 3	0	11	5
13	Relay Config Entry 0	0	10	2
14				
95	Relay Config Entry 1	0	10	1
96				
98				

The following configuration options are available (digital input and relays):

Input Configuration Options

Option	Input Config Options	Notes
0	No Function	OFF
1	RUN1	One (1) RUN1 command required, minimum.
2	Ramp2	Selects 2nd ramp profile from Advanced I/O menu
3	JOG	Follows START ramp profile, no bypass operation
4	LOCAL	Enables Command control from the terminal block
5	RESET	Fault reset
6	E-Stop	External E-Stop
7	Alarm-No-Trip	Enables Alarm-No-Trip
8	Ext Trip	Fault Trip from external 24 Vdc signal
9	Ext Warn	Fault Warning Alarm from external 24 Vdc signal
10	Disable OL on Strt (edge only)	Disable Overload protection on Start Ramp
11	Analog	Analog Input

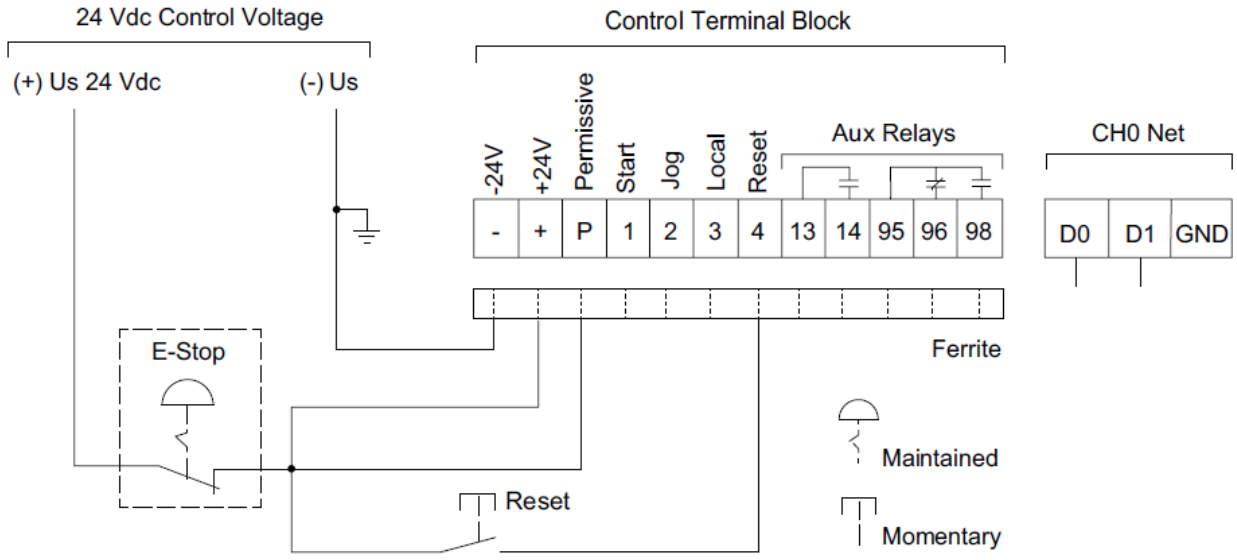
Relay Configuration Options

Option	Relay Config Options	Notes
0	No Function	OFF
1	Fault	Relay changes state when any Fault occurs
2	Fault NOT	
3	Bypassed	Relay changes state when internal bypass contactors close
4	Bypassed NOT	
5	Motor Energized	Relay changes state during Start ramp, Top of Ramp (Run), Soft Stop, or Pump stop.
6	Motor Energized NOT	
7	Warning	Relay changes state when any Fault Warning occurs.
8	Warning NOT	
9	Custom Flt/Warn	Relay changes state when any selected fault/warning code is detected, up to a maximum of three (3). Faults + Warnings are allowed. Faults take priority in reporting.
10	Custom Flt/Warn NOT	

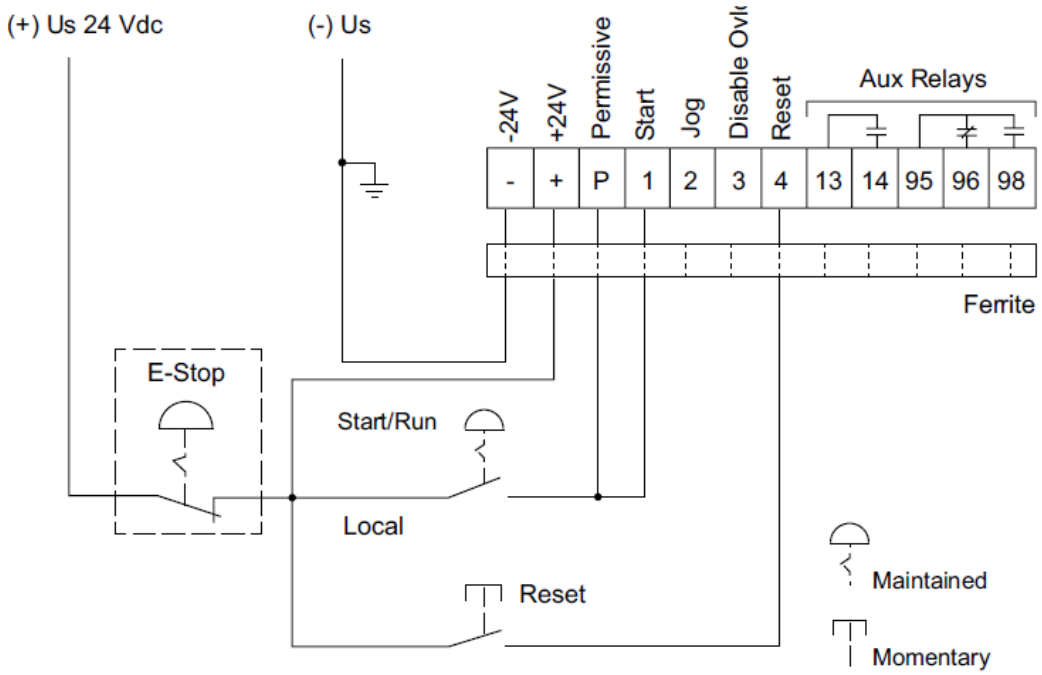
Position	Function	Notes
"–"	24 Vdc power "–"	Power supply negative
"+"	24 Vdc power "+"	Power supply positive
P	Permissive	Hardwired STOP command
1	Start	Hardwired START command
2	Jog	Jog
3	Overload	Disable on START
4	Reset	Fault reset
13	Relay, NO contact	Changes state when unit achieves internal bypass operation
14		
95	Fault relay	Changes state when unit fault trips
96		
98		

3 Connection example

3.1 S811+

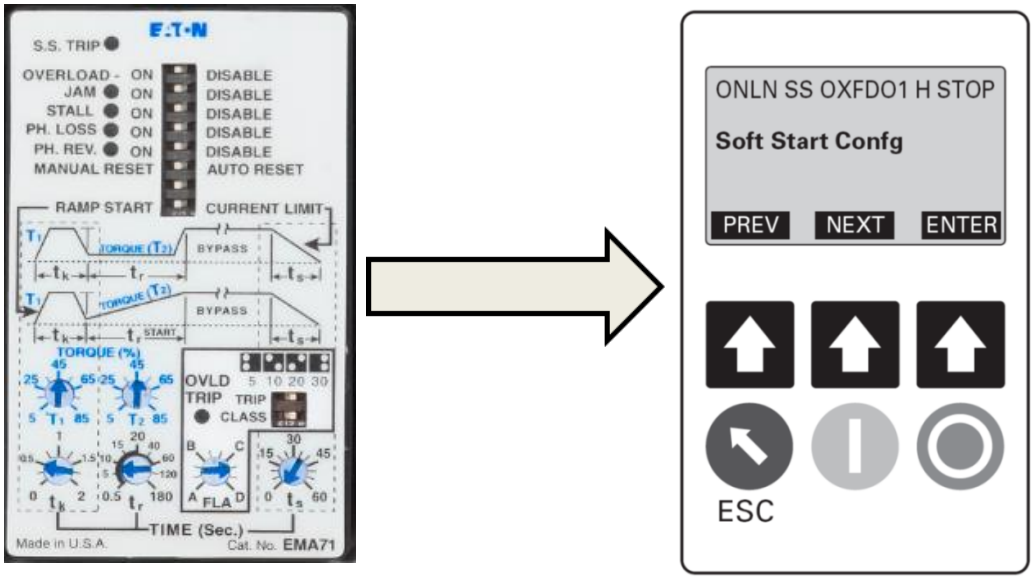


3.2 S801+

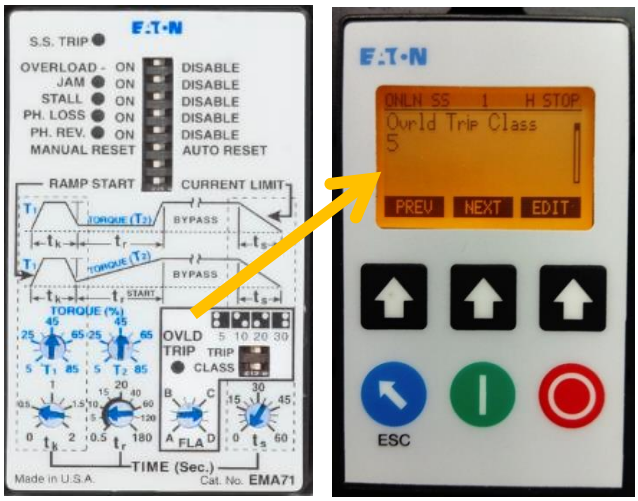


4 S811+ configuration

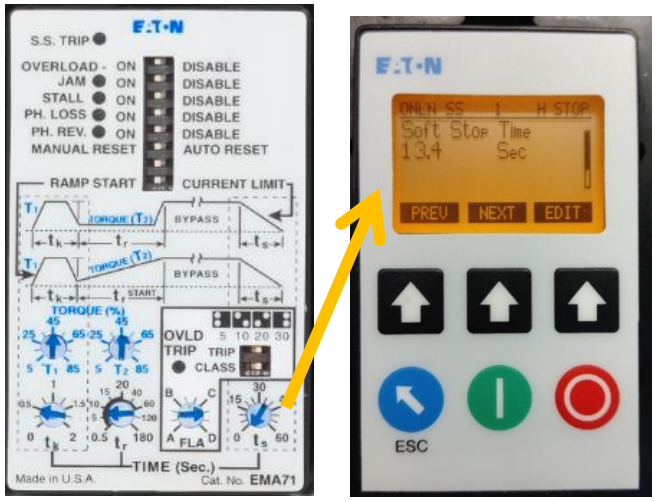
4.1 DIP switch on keypad



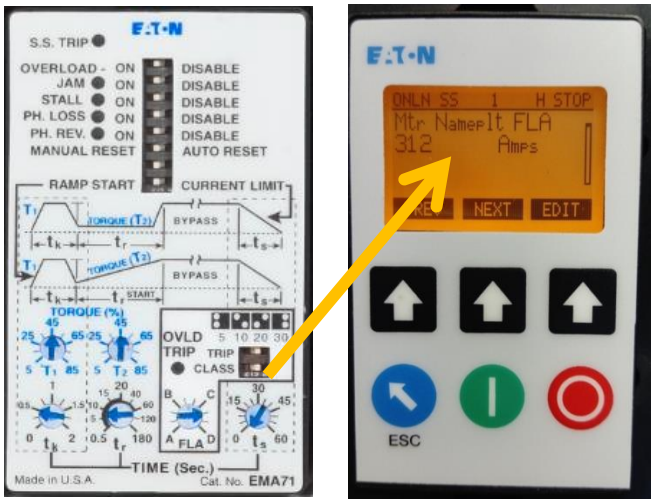
4.1.1 Overload Trip Class



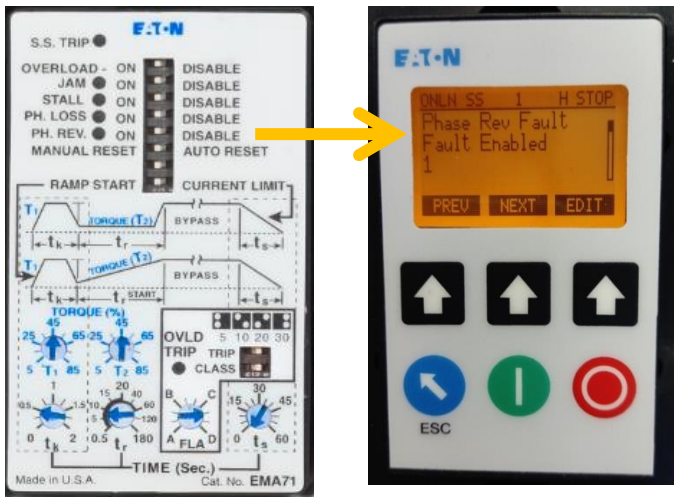
4.1.2 Soft Stop Time



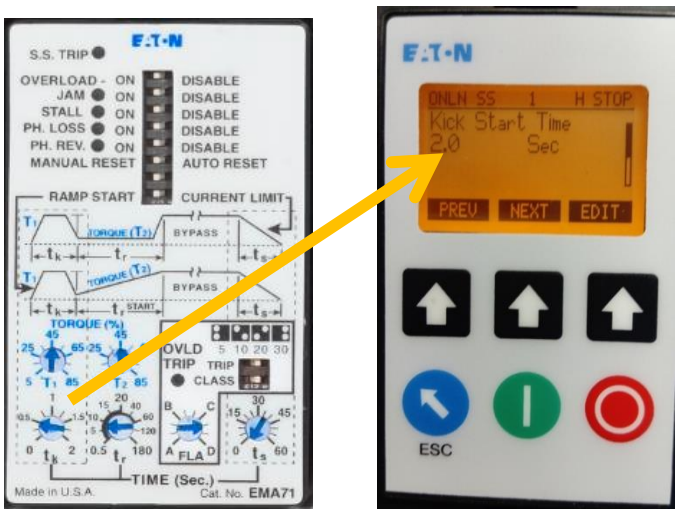
4.1.3 Motor Nameplate FLA



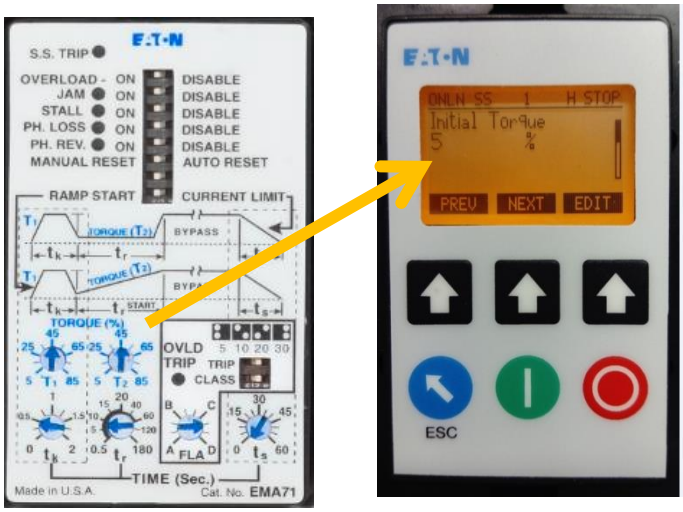
4.1.4 Phase Reversal Fault



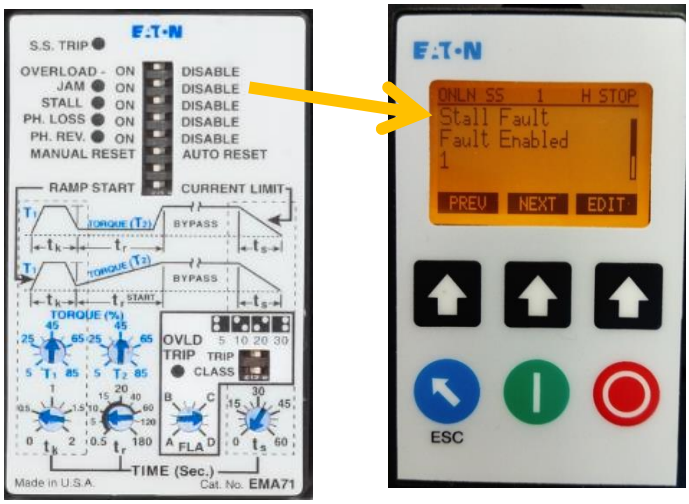
4.1.5 Kick Start Time



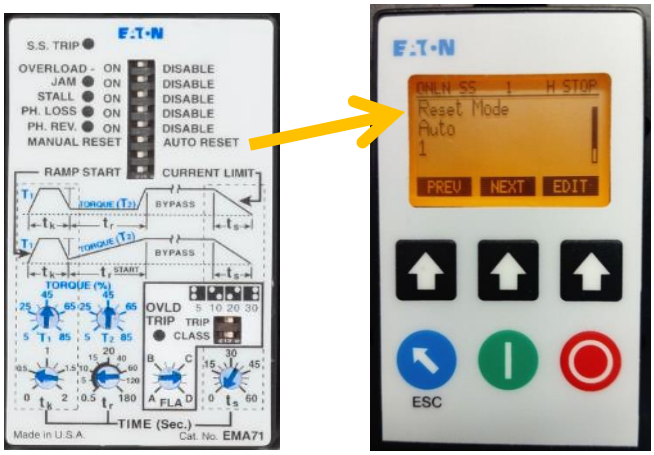
4.1.6 Initial Torque



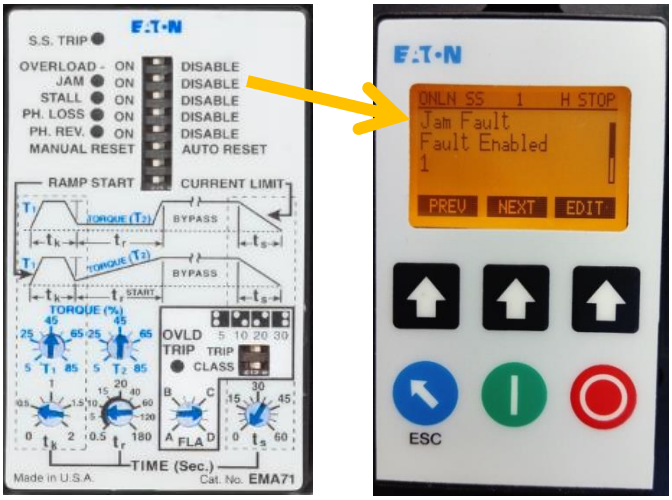
4.1.7 Stall Fault



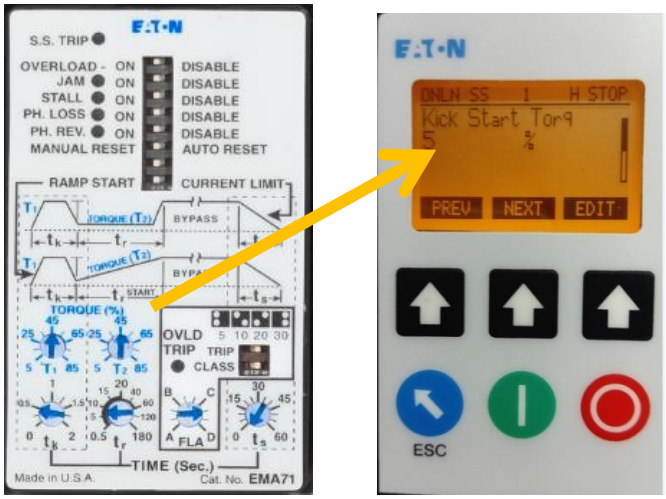
4.1.8 Reset Mode



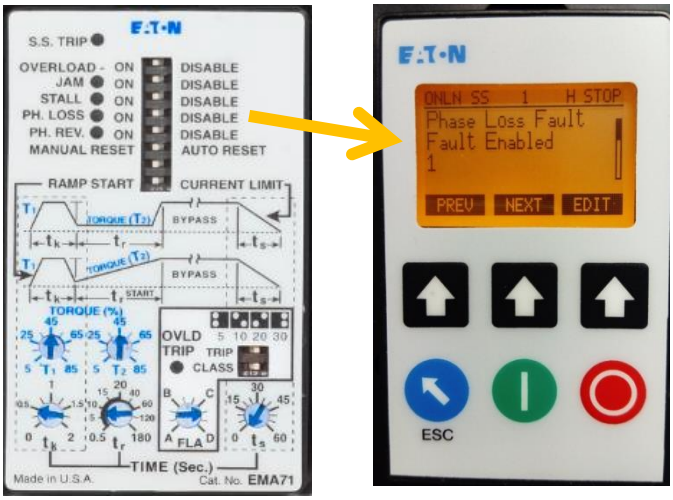
4.1.9 Jam Fault



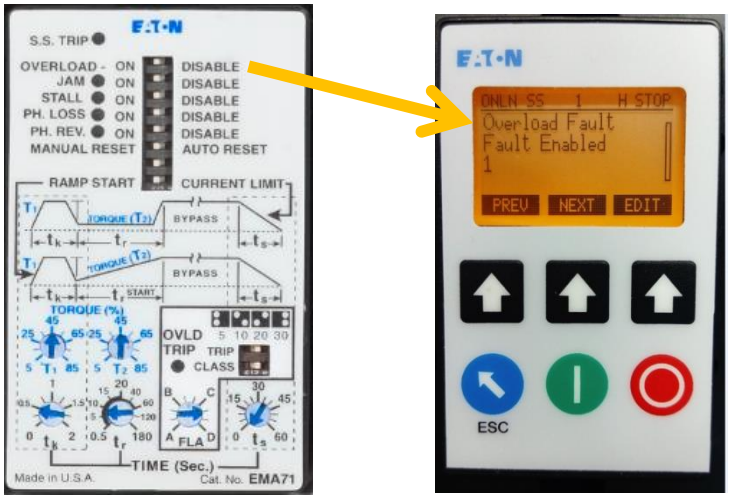
4.1.10 Kick Start Torque



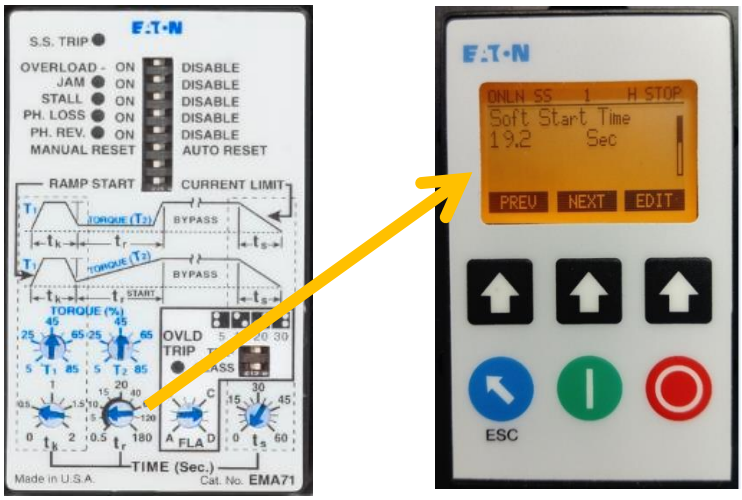
4.1.11 Phase Loss Fault



4.1.12 Overload Fault



4.1.13 Soft Start Time



4.2 Parameter at S811+

4.2.1 Display menu (monitoring)

- Fault/Warning (actual fault)
- Fault/Warning list
- Fault/Warning history
- 3 Ø current
- Current in % (motor rated current)
- DC control voltage
- 3 Ø voltage
- Frequency
- Phase sequence
- Average phase power
- Power factor
- Temperature memory
- Pol temperature
- Start counter
- Auto reset counter
- …. Have a look in the manual

4.2.2 Menu: Soft start configuration

- Motor nameplate FLA
- Overload trip class
- Phasenreihenfolge
- Start Methode
- Soft start time
- Kick start torque
- Kick start time
- Reset mode
- Auto reset delay
- Auto reset limit
- Motor connection configuration

4.2.3 Menu: Privacy settings

- Overload fault active
- Overload at start
- Motor rated voltage
- Enable undervoltage shutdown
- Switching point undervoltage
- Delay undervoltage cutoff
- Enable overvoltage shutdown
- Switching point overvoltage
- Delay shutdown overvoltage

5 Documentation

S801+	S811+
MN03900002E	MN03900001Z-DE