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1 Introduction

1.1 Initial Situation

All controllers of type SCT will be updated to firmware version FW 1.10 as of April 2026. At the same time, hand controls with firmware FW 0.31 will be introduced.
(Exact changeover date depends on depletion of current stock.)

With this update, existing functions are optimized and new functions are implemented:

- 12 Memory positions *(«12 Memory»)* — Hand switch FW 0.31 required
- Maintain maximum lifting speed *(«Vmax»)* — Hand switch FW 0.31 required
- Automatic drive via double click *(«Double Click»)*
- Load-dependent duty cycle *(«I²t»)*

1.2 Affected Products

Purchasing Items
124.00254 Control box SCT2 iSMPS 580 230V
124.00250 Control box SCT4 iSMPS 580 230V
124.00258 Control box SCT4 iSMPS 580 110V
124.00265 Control box SCT4 iSMPS 24V
124.00286 Control box SCT2 MDT 100-240V
124.00287 Control box SCT4 MDT 100-240V

Sales Items
All SCTx controllers with programmed parameter files Vxxxx.

The four new functions are enabled in the standard product range via parameter files as follows:

	Vmax	Double Click	12 Memory	I²t
SCT2 iSMPS 230V	Yes	No	Yes	Yes
SCT4 iSMPS 230V	Yes	No	Yes	Yes
SCT4 iSMPS 110V	Yes	No	Yes	Yes
SCT4 iSMPS 24V	Yes	No	Yes	No
SCT2 MDT	Yes	No	Yes	No
SCT4 MDT	Yes	No	Yes	No

Note
Controllers with firmware older than FW 1.10 and hand controls older than FW 0.31 cannot be upgraded to the new functions.
A subsequent firmware update is not possible.

Note
Backward compatibility is ensured. A new controller with FW 1.10 can still be operated with existing parameter files.

2 Firmware 1.10 – New Function

2.1 12 Memory Positions

With the new hand switch SCT Memory C (124.00293), up to 12 memory positions can be stored. Storage is performed via level selection. A total of 4 levels are available. Each level allows storage of 3 positions.
This results in 12 selectable positions in total.

The function is described in the operating manual as follows:

1. Press and hold the M button for 3 seconds.

2. You will then enter the individual memory levels (P0–P3).

   - Up to 3 positions can be stored per level.
   - The levels are color-coded on the side (left):
     → P0: no color
     → P1: yellos
     → P2: orange
     → P3: purple

     The color coding allows you to easily identify the active memory level at any time.

3. Use the ▲ or ▼ buttons to select the desired level, then press the M button.

4. Move to the desired position and press the M button three times briefly.

5. Within 5 seconds, press one of the memory buttons 1 2 3
   After the saving process, the control unit emits one signal tone.

The position is now stored under the selected button and can be overwritten at any time using the same procedure.

Approaching a memory position:

Press and hold the selected memory button 1 2 3 until the desires working height is reached.

> NOTE
> Hand switch with firmware FW 0.31 required.

2.2 Maintain Maximum Lifting Speed «Vmax»

In synchronized multi-leg systems, installation stress or misalignment may cause overload situations on individual legs. Previously, this often resulted in error message E7A (motor position difference too high).

This situation can now be avoided by deactivating the “Maintain Maximum Speed under High Load” function via the hand control. As a result, the system moves at reduced speed.

The controller gains more time for regulation and can better compensate for position differences. This ensures more stable synchronous operation.

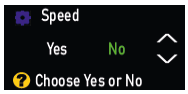
The function is described in the operating manual as follows:

1. Keep the buttons 1 2 and ▲ pressed simultaneously for 4 seconds.
   → The display shows «Use».

2. Press the button ▲ or ▼ until «Speed» is selected.

3. Confirm the selection «Speed» with the button M.

4. Use the ▲ or ▼ buttons to select «Yes» (activating) or «No» (deactivating).



5. Confirm with the button M.

6. Press the button 1 2 or 3 to leave the menu mode.

NOTE
Hand switch with firmware FW 0.31 required.

2.3 Automatic Drive «Double Click»

If automatic lifting movement via double-click on the up or down button is required, the controller can be programmed with a special parameter file.

NOTE
This function is only available upon request. The customer must carry out a risk assessment.
Ergoswiss assumes no liability.

2.4 Load-Dependent Duty Cycle «I²t»

Controllers of type SCT with firmware older than FW 1.10 have a fixed duty cycle (ED) of 2/18 or 2/40 (ON/OFF). The maximum continuous operating time is 2 minutes.
Afterwards, a pause of up to 40 minutes is required before the system can be operated again.

From firmware FW 1.10 onwards, duty cycle monitoring is power-dependent, i.e., load-dependent.
This means that with low system load, travel times exceeding 2 minutes are possible.

Guideline values according to systemcombination table:

SX Systems	SLX Systems	SNT Systems
Load 0–60% → Drive time 6 min. Load >60% → Drive time 2.5-5 min.	Load 0–70% → Drive time 6 min. Load >70% → Drive time 2-5 min.	Load 0–70% → Drive time 6 min. Load >70% → Drive time 2-4 min.

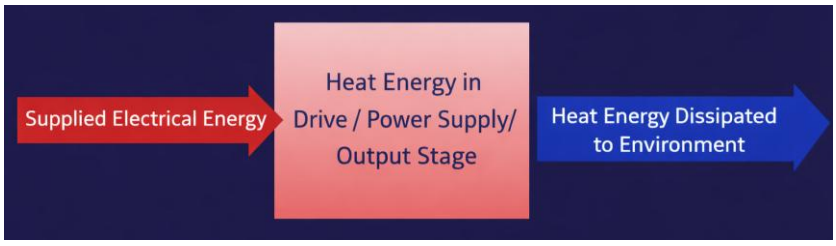
2.4.1 Functional Principle

A load-dependent duty cycle limitation is a thermal protection mechanism within the controller that limits the permissible operating time of a lifting column depending on the actual load.

The objective is to enable the lifting system to operate as long as possible without causing failure of sliding bearings, spindle nut, motor, or control electronics due to overheating.

The controller software contains a parameterizable mathematical model of the power path (power supply, output stage, and drive).
This model estimates the current temperature based on the current profile and limits travel time accordingly.

[$I^2 \cdot t$ = current squared multiplied by time]



NOTE
Valid for mains operation only – battery solutions are excluded!

2.4.2 I²t Drive Time Diagrams

The following diagrams show drive times as a function of load.
Values for 1-leg and 4-leg applications were measured.
Values for 2- or 3-leg applications were calculated.