



## SM15K Firmware Revision History

### Legend:

- B = Bug fix
- \$ = valuable improvement
- N = New feature

### Changes from P0104 to P0105

- N Master/Slave series operation:  
Up to 6 pcs SM500-CP-90 can be connected and controlled in series. Please contact factory if one or more units were delivered before Q4 2018.
- N Master/Slave series operation Limitation:  
The total system output voltage is limited to 750V when 2 or more SM500-CP-90 are connected in series. This applies if at least one of the units was delivered before Q4 2018. Please contact factory for upgrading to 1000V.
- N INT MOD CON:  
The four relay contacts can be linked to system status, like ACF, DCF, Output, etc. (See page 5-7 of Ethernet+Sequencer manual: 'Relay-Status-Linkage'). Furthermore, the contacts can not only be controlled by Ethernet, but also from the web page.
- \$ Sequencer:  
When the sequencer is linked to a programming source like Front, the front knobs will still be active, and the sequencer can manipulate these settings. (See page 6-7 of Ethernet+Sequencer manual: 'selecting a programming source')
- B Sequencer:  
The command SP is no longer limited, so it can be used for Master/Slave systems up to 300KW.

### Changes from P0103 to P0104

- N Master/Slave operation:  
Up to 20 pcs SM500-CP-90 can be connected and controlled in parallel.
- \$ Front / Eth/ Web:  
Ready for Master/Slave operation and control of systems up to 300KW.
- \$ INT MOD SER:  
Ready for systems up to 300KW.

- N     Interface updating:  
Installed interfaces are automatically detected and updated during a unit firmware update.
- B     PROG:SEL:LABEL?  
When two or more labels exist, only one was replied.
- B     Sequencer:  
INC and DEC commands didn't work properly on SCN and SPN.  
With the commands CJL and CJG, MC and MP didn't work properly on negative values.

*Changes from P0102 to P0103*

*Important*

- \$\$    Regulation:  
Output regulation is significantly improved for capacitive loads.
- \$     Temperature control:  
The regulation of the temperature could lose its smooth behaviour under certain conditions.  
Overshoots of the fans speed are suppressed now.
- N     Knob A:  
The function of Knob A can also be chosen on the web server page.
- B     \*PUD?:  
An empty PUD resulted in two linefeeds when queried by \*PUD?. Now it replies with just one terminator.
- B     Communication:  
A memory leak is repaired in the operating system, which resulted in communication problems after several days of continues operation.

*Changes from P0101 to P0102*

- N     Stepsize:  
Via Ethernet commands the digital step size of the voltage and current programming can be queried.
- \$     Manual:  
Content of the manual is updated.
- B     Program:catalog?:  
Entire list is replied instead of just one entry.