DELTA ELEKTRONIKA B.V.

SM15K Firmware Revision History

Legend:

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

Changes from P0106 to P0107

B   <u>Fixing disabled front panel:</u>
     After updating it might happen that the front panel is not working anymore. Especially when
     making a big jump in package version.

Changes from P0105 to P0106

N   <u>INT MOD ANA:</u>
     The interface INT MOD ANA can be used in the SM15000 series. Also in combination with
     Master/Slave operation.

N   <u>Master/Slave operation:</u>
     Now available for SM1500-CP-30 as well.

Changes from P0104 to P0105

N   <u>Master/Slave series operation:</u>
     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   <u>Master/Slave series operation Limitation:</u>
     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   <u>INT MOD CON:</u>
     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.

$ <u>Sequencer:</u>
     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   <u>Stepsize:</u>
    Via Ethernet commands the digital step size of the voltage and current programming can be queried.

$ <u>Manual:</u>
    Content of the manual is updated.

B   <u>Program:catalog?:</u>
    Entire list is replied instead of just one entry.