APP1. SW 1 Standard Commands.

Following are the commands for the standard software listed in alphabetic order.
Please see the SW appendix for detail explanation of every command.
Not all commands are available in all SW versions. Please see in the specific command description, from which SW version the given command is valid.

STANDARD COMMANDS. summary

AD X . . .	Read value from an ADC channel.
ADR . . .	Read the address of the MPS.
ADR XXX . .	Write an address to a MPS.
ADRS . . .	Read the address of the MPS.
ADRS XXX. .	Write an address to a MPS with the address number as response.
ASW . . .	Enters answer mode.
CLOCK . .	Reads the current time
CLOCK XX,XX,XX,XX,XX,XXXX	Sets the clock.
CMD . . .	Read current control mode.
CMDSTATE .	Read current control state.
DA XXXXXX	Writes a value to an Digital to Analog converter. (Alternative to W(x) or WA command.)
DA 0,xxxxxx,y	Writes a value xxxxxx to the Digital to Analog converter 0, which is used for the current setting, through HW register 0 or 1 given by the value y.
ERRC . . .	Coded error message.
ERRT . . .	Text string error message.
F	Main Power OFF.
F1	Auxiliary-1 output line OFF.
“F2" . . .	Auxiliary-2 output line OFF.
GOFF . . .	Global OFF Same as N1 command
ID	User configurable identification text field
IEEE . . .	Used to set IEEE interface communication if present
LALL . . .	Listen ALL.
LOC . . .	Change to Local Control.
LOCK . . .	Lock the MPS in Local Control.
N	Main Power ON.
N1	Auxiliary-1 output line ON.
“N2" . . .	Auxiliary-2 output line ON.
NASW . . .	No answer mode.
NERR . . .	No error message.
PO	Polarity status.
PO +/- . . .	Change to Normal polarity.
PRINT . . .	Reads internal user information about the MPS
R(x) . . .	Read slew DAC 1 or 2
R3 . . .	Read slew DAC 1 absolute
RA . . .	Read the set value. (Preferred new command: DA 0)
REM . . .	Change to remote control.
RLOCK. . .	Remote line only
RS	Reset interlocks.
S1	Read the internal status.
S1H . . .	Read internal status in HEX format
S1FIRST . .	Read the interlock first catch status.
S1FIRSTH . .	Read the interlock first catch status in HEX format
S1TIME . .	Read the time when the first interlock occurred..
S3	Read the internal extended status.
S3H . . .	Read internal extended status in HEX format
SOFF . . .	Slow OFF Off command followed by an WA 000000
TD . . .	Test DAC function
TYPE . . .	AD type in use
UNLOCK . .	Unlock the MPS
VER . . .	Reads the software version
W(x) . . .	Write slew DAC 1 or 2
W3 . . .	Write slew DAC 1 absolute
WA XXXXXX .	Write a set value (Set output current). (Preferred new command: “DA 0,xxxxxx”)

X is a number from 0 to 9 and Commands in quotation marks are optional.

Following are the set up commands in alphabetic order.
Please see the SW appendix for parameter formats and further detail explanation.

Esc SET UP COMMANDS. summary

Esc<AD . . . Configures the AD converter attainling and routing (Output reading adjustment or output reading in % or Amps)

.

Esc<ADR. . . Configures the communication address setting (in RS422 mode).

Esc<ADSET. . Auto Configures the scaling "gain" and Offset for an AD converter channel.

Esc<AUX . . Configures the special options.

Esc<AUX2 . . Configures the special options.

Esc<BAUD. . Configures the Baud rate for the serial lines.

Esc<COLDBOOT
Configures the power up state. (Wake up position)

Esc<CPURESET
Resets the CPU.

Esc<DA . . Configures The Digital to Analog converters. (Slew rate setting in A/sec or set value in Amps)

Esc<DASET. . Auto Configures the scaling (gain) and Offset for a DA converter channel.

Esc<ID . . . Sets User configurable identification text field

Esc<INTERLOCK
Configures which input that has to be latched. Other inputs will act as status inputs.

Esc<LINE . . Configures the protocol for the serial lines.

Esc<PPULS. . Configures the ON pulse with.

Esc<PPULS1 . Configures the Auxiliary output line ON pulse with.

Programming:

The power supply communication protocol is build upon plain ASCII characters where each command or reply is delimited by a "Carriage Return" <CR> character. However replies has a “Line Feed” <LF> character added before the <CR> for a friendlier display when using a terminal. <LF> characters on commands will be ignored.

Hint. Actually the protocol allows full control of the power supply from a "dumb" terminal. In case of a service- debug- situation a terminal can be used to tap the communication transfer by a simple parallel connection.

Hint: When debugging, the "ERRT" command enables error messages to be given as a read able text.

More commands may be transmitted in a chain but each single command must be trailed individually with the delimiter character <CR>. The power supply is able to execute up to 200 commands a second depending of the complexity of each command.

Ps. Issuing short commands faster than the time to transmit the answer eg. “S1" will overload the internal transmit buffer regardless of the selected baud rate.

All commands can be divided into three sections.

a) Directive commands. Eg. the "N" command that turns the power supply ON
b) Status commands . Eg. the "S1" that returns the power supply status
c) Set up commands. Eg. the “ESC”<PPULS 5 that sets the ON pulse to 0.5 seconds.

Status commands delivers always a reply whereas directive- and setup- commands only responds with an error message if the command couldn’t be understood or if the given parameters are incorrect. From SW version SCS110 it is possible to set the power supply to always generate an answer (See ‘esc’LINE setup for SW version SCS110.). This feature is very useful when using RS485 protocol.

Hint. When using the "Always Answer" mode (‘OK’ respond From SW version SCS110) a re-transmission of the last given command can be performed if no answer or an error message is received. The System 8500 respond time is around 5ms after receiving the last bit of the termination character.

Answer scheme if set to “Always Answer” mode.

d)	Directive commands.	Answer:	- No answer - ERROR message - OK if set to always answer mode (From SW ver. SCS110)
e)	Status commands .	Answer:	- Data - ERROR message
f)	Set up commands.	Answer:	- No answer - ERROR message - OK if set to always answer mode (From SW ver. SCS110)

Below is an example written in BASIC on how to turn ON the power supply and read the status without and with acceptance answer:

Turning the power supply ON and reading/evaluating the status with always answer disabled.

```
LPRINT "N"+CHR$(13)              :REM Turns the power supply on
LPRINT "S1"                      :REM Issues the status command
LINPUT S1$                       :REM Read the MPS reply
IF LEFT$(S1$,1) = CHR$(?)        :REM Is it an error message reply?
 GOTO ERROR_HANDLING             :REM Yes then go to error module
ENDIF
J=1
DO                               :REM evaluate status reply
 IF MID$(S1$,J,1)="!"
  GOSUB STATUS(J)_ACTIVE         :REM set this status bit active
 ELSE
  GOSUB STATUS(J)_ACTIVE         :REM set this status bit inactive
 ENDIF
 J=J+1
UNTIL J=24
```

Turning the power supply ON with always answer enabled

```
J=0 :ERROR$=”“
DO
 J=J+1                           :REM Counter for maximum attempts
 LPRINT "N"+CHR$(13)             :REM Turns the power supply on
 LINPUT RE$                      :REM Read the MPS reply with 0.1 Sec. time out
 IF LEFT$(RE$,1) = CHR$(?)       :REM Is it an error reply?
  ERROR$=RE$                     :REM Mark the error code
 ELSEIF RE$=”OK”                 :REM Is it a good reply
  BRAKE                          :REM then exit DO loop
 ELSEIF J=6                      :REM Try only six times
  IF LEFT$(ERROR$,1) = CHR$(?)   :REM Was it error reply?
   GOTO ERROR_HANDLING           :REM Yes then go to error module
  ELSEIF
   GOTO NO_COMMUNICATION         :REM Yes then go to “No answer” error module
  ENDIF
 ENDIF
UNTIL -1                         :REM loop endless
```

Ps. An ERROR message includes a "?BELL". (Bell = ASCII 7.)

AD - AD X

Command: AD'sp'ch'cr'

ch: ASCII digit 0 to 16

Example: AD 0
Syntax: AD'sp'0'cr'

Answer: 'val'lf''cr'
ch: ASCII digit 0 to 16
val: ch 0 to 5, 7 and 9, and 10 to 15 ASCII digit 000 to 999
ch 6 ASCII +/-00 to +/-99
ch 8 ASCII 00000 to 99999
ch 16 ASCII 00000 to 99999
(If a signed response is chosen will a sign be added to the front of the value. See also 'ESC'< AD command for further information.)
or Error message

Errors: **ILLEGAL COMMAND** means that line-in-command is wrong.

SYNTAX ERROR, means a missing space between the command and parameter or wrong syntax.

Description:

The AD command is used to read the different Analog to Digital converters. The AD channels and their response are described on the next column.

AD channel 6 differs from the other by containing a sign, plus or minus, before the value.

Note: It is possible to change the number of digits and the sign representation for each channel in the "Esc<" setup command. If an M-Panel is attached, please do not change the number of digits for the first 9 channels.

Over flow will be limited to a reading of all digits equal to 9. Under flow to 0 if unsigned format is used.

Nothing else is affected.

AD continued

CHANNEL (X)	VALUE	UNITS	RESPONSE
0	Output current	(I/In)*100	"SDDD"
1	Tesla	T*100	"DDD"
2	Output Voltage	(V/Vn)*100	"SDDD"
3	Internal +15V sup.	V*10	"DDD"
4	IInternal -15V sup.	Num.(V*10)	"DDD"
5	Internal +5V sup.	V*10	"DDD"
6	Delta temperature	(DEg.○C*10)	"SDD"
7	Trans. Bank Vce	V	"DDD"
8	Optional Iout (16 Bit)	(I/In)*99999	"SDDDDD"
9	Aux. Iout (Ctr. Panel)	(I/In)*120	"DDD"
10	Aux. Iout (Ctr. Panel)	(I/In)*12000	"DDDDD"
11	Iout Optional	(I/In)*100	"DDD"
12	Vout Optional	(V/Vn)*100	"DDD"
13	Water flow	(L/Min)*10	"DDD"
14	Free on plug P29 (±1V)	(V)*100	"SDDD"
15	Free on plug P19 (10V)	(V)*10	"DDD"
16	Optional Iout (16 Bit)	(I/In)*99999	"SDDDDD"

Where D is a number from 0 to 9, and S is a sign character (either "", "+" or "-").

The UNITS of AD 0 and AD 2 can be in AMPS and VOLTS if bit 4 (leaver 5 on dip switch) is set to 0 in the Auxiliary setup. The scaling factor for these two channels must be adjusted accordingly.

Channel 8 & 10 has a built is running average filter with a time constant of several seconds for stable output reading.
Channel 16 is the same as channel 8 but unfiltered Update rate is 60 to 300ms. but typically around 70ms.

ADR - AdDRess (write)

Command: ADR address'cr'

address: ASCII digits 00 to 255 in decimal notation.

Example: ADR 23
Syntax: ADR 23'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors:

SYNTAX ERROR	means wrong syntax.
ILLEGAL COMMAND	means that line-in-command is wrong.
DATA CONTENTS	means that parameter format is incorrect or a non-digit character is found in the data field or the parameter is outside the specification.

Description:

The **ADR** command used to select an actual power supply(unit) working RS422 multi drop mode. The previously addressed unit is automatically de-selected.

Please note, ADR=0 and ADR=255 are interpreted as always addressed. That is it will respond to any command in the line.

There is only one exception using the **ADR** command due to the **LALL** mode. When all connected units are in **LALL** mode, an **ADR** command given after the **LALL** command will disable the **LALL** function.

Related commands: **ADR** (read)

Affected commands: **LALL**

ADR - AdDRess (read)

Command: ADR'cr'

Answer: Address

or Error message

Example: Command: ADR
Syntax: ADR'cr'

Answer: address
Syntax: address'lf''cr'

Address: ASCII digits 000 to 255 in decimal notation.

Errors: **SYNTAX ERROR** means wrong syntax.

Description:

The **ADR** command is used to verify the address of the addressed power supply (unit). The command returns the address of the addressed unit.
There is only one exception to the **ADR** command due to the **LALL** mode. When all connected units are in **LALL** mode, an **ADR** command given after the **LALL** command will disable the **LALL** function. For the same reason, no answer will be generated, because the **LALL** mode has to be cancelled before any answer can be generated. In this case, if you want to know the address of the addressed unit, the **ADR** command.has to be repeated.

In cases where no answer is given, even after the second **ADR** command, maybe a non-existing unit has been address or the actual unit-address has been switched off. In that case just address another unit to verify the communication line and then re-address to the "dead" address for test.

Related commands: **ADR** (write)

Affected commands: **LALL**

ADRS - AdDRessSpecial (write)

From SW version SCC113.

Command: ADR address'cr'

address: ASCII digits 00 to 255 in decimal notation.

Example: ADRS 23
Syntax: ADRS 23'cr'

Answer: Address of addressed unit or errors

Errors:

SYNTAX ERROR	means wrong syntax.
ILLEGAL COMMAND	means that line-in-command is wrong.
DATA CONTENTS	means that parameter format is incorrect or a non-digit character is found in the data field or the parameter is outside the specification.

Description:

The **ADRS** command used to select an actual power supply(unit) working RS422 multi drop mode. The previously addressed unit is automatically de-selected.
The only difference between the **ADR** and the **ADRS** command is, that the **ADRS** command responds with the address of the new addressed unit instead of 'OK' or no answer at all. In other words, is the **ADRS** command a merge of the **ADR(write)** and the **ADR(read)** into one command.

Please note, ADRS=0 and ADRS=255 are interpreted as always addressed. That is it will respond to any command in the line.

There is only one exception using the **ADRS** command due to the **LALL** mode. When all connected units are in **LALL** mode, an **ADRS** command given after the **LALL** command will disable the **LALL** function.

Related commands: **ADR, ADRS** (read)

Affected commands: **LALL**

ADRS - AdDRessSpecial (read)

From SW version SCC113

Command: ADRS'cr'

Answer: Address

or Error message

Example: Command: ADRS
Syntax: ADRS'cr'

Answer: address
Syntax: address'lf''cr'

Address: ASCII digits 000 to 255 in decimal notation.

Errors: **SYNTAX ERROR** means wrong syntax.

Description:

The **ADRS** command is exactly equal to the **ADR** command. Please refer to the **ADR** (read) description for further information.

Related commands: **ADR; ADRS** (write)

Affected commands: **LALL**

ASW - AnSWer (remote line only)

Command: **ASW'cr'**

Example: ASW
Syntax: ASW'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is local-line.

Description:

The **ASW** command is used to switch the remote line into an auto-answer mode in which some setup commands can generate an answer. The **ASW** mode is suppressed when the unit is in **LALL** mode. Commands which will generate an answer are listed in the following: **WA, PO+/-, W1, W2, W3.**

Nothing else is affected.

Related commands: **NASW**

CMD - CoMmanD line

Command: CMD'cr'

Answer: If line-in-command is remote line:
REM
Syntax: 'sp'REM'lf''cr'

or If line-in-command is local line:
LOC
Syntax: 'sp'LOC'lf''cr'

or Error message

Example: Command: CMD
Syntax: CMD'cr'

Answer: REM
Syntax: 'sp'REM'lf''cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **CMD** command is used to return an answer about which line is the line-in-command (the line that may give commands, both channels can always read status). The command is used by the control panel to decide the status of the line-in-command indicator. From remote line it can be used to decide if anyone has changed the mode, (from the control panel). For example if an unexpected ILLEGAL COMMAND has been returned to a set command..

Nothing else is affected.

Related commands: **CMDSTATE**

CLOCK - read

Command: CLOCK'cr'

Answer: hour,min,sec,day,month,year

Hour 00 - 23
Min 00 - 59
Day 01 - 31
Month 01 - 12
Year 2000 and up

Example: Command: CLOCK
Syntax: CLOCK'cr'

Answer: 19,54,03,08,03,2000'lf''cr'

or Error message

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **CLOCK** command returns the internal clock time.

Related commands: **CLOCK write, S4TIME**

CLOCK - write

Command: CLOCK hh,mm,ss,dd,mm,yyyy'cr'
hour,min,sec,day,month,year

Example: CLOCK 19,54,03,08,03,2000
Syntax: CLOCK'sp'19,54,03,08,03,2000'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

DATA CONTENTS means that parameter format is incorrect or a non-digit character is found in the data field or parameters are outside the specification

Description:

The **CLOCK** command is used to set the internal clock.

Related commands: **CLOCK read, S4TIME**

CMDSTATE - CoMmanD line STATE

Command: CMDSTATE'cr'

Answer: If line-in-command is in remote:
REMOTE
Syntax: REMOTE'lf''cr'

or If line-in-command is in local and the command is given from the remote line:
Syntax: LOCAL'lf''cr'

or If line-in-command is in local and the command is given from the local line or LOCKed from remote line:
Syntax: LOCK'lf''cr'

or Error message

Example: Command: CMDSTATE
Syntax: CMDSTATE'cr'

Answer: REMOTE
Syntax: REMOTE'lf''cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **CMDSTATE** command is an extended command similar to **CMD** command. It is used to return answer about which line is the line-in-command. The answer is more detailed than in **CMD** and is constructed to be used between the controller and the IEEE-488 interface unit, during initializing.

Nothing else is affected.

Related commands: **CMD**

DA - Read DAC

Command: DA'sp' 'chn','cr'

ch: Cannel number →
ch: 0 val: digits 000000 to 999999 in PPM. (RA)
ch: 1 val: digits 0 to 255. (R1)
ch: 2 val: digits 0 to 255. (R2)
ch: 3 val: digits 0 to 1550 (depends on the scaling factor). (R3)

Example: DA 0
Syntax: DA'sp'0'cr'
Means read value of DA channel 0 (Current setting channel)
or

Answer: 0'sp','val' Val
< 000000 to ±999999>
Depending on the DAC channel and scaling

Errors: **SYNTAX ERROR**, means a missing space between the command and the parameter or wrong syntax.

DATA CONTENTS, means that parameter format is incorrect, or a non-digit character found in the data field, or parameters is outside specification.

Description:

The Da read command is an new alternative to the **RA**, **R1**,**R2** and **R3**. Commands. For a more detailed description on each DA channel, please refer to the appropriate **Rx** command.

DA 0 equals RA. - Sets output current in ppm
DA 1 equals R1 - Set Slew rate through 8 bit optional port (added HW)
DA 2 equals R2 - Optional
DA 3 equals R3 - Set Slew rate through 8 bit optional port scaled to mA/sec
DA 4 - Set Slew rate through 12 bit serial DAC (From SW version SCS110)

DA - Write to DAC's

All SW versions

Command: DA'sp'ch','val'cr'

ch: 0 val: digits 000000 to 999999 in PPM. (WA)
ch: 1 val: digits 0 to 255. (W1)
ch: 2 val: digits 0 to 255. (W2)
ch: 3 val: digits 0 to 1550 (depends on the scaling factor). (W3)

!!!! Please note, that the DA value must always be entered using the trailing zero notation regardless of the WA setting.

Example: DA 0,480
Syntax: DA'sp'0,480'cr'
Means a set value of 480 ppm

Answer: No answer, except errors
OK if autoanswer mode is set. (From SW version SCS110)

Errors:

SYNTAX ERROR, means a missing space between the command and the parameter or wrong syntax.

DATA CONTENTS, means that parameter format is incorrect, or a non-digit character found in the data field, or parameters is outside specification.

ILLEGAL COMMAND Indicates that you are in a wrong command mode. Change to REMote or LOCal.

CHANGE IN PROGRESS Indicates that the controller is in the middle of an internal sequence eg. a polar change. While this is running, it is a new DAC setup is not allowed.

DA continued.

Description:

The DA command is an new alternative to the **WA**, **W1**,**W2** and **W3**. Commands. For a more detailed description on each DA channel, please refer to the appropriate **Wx** command.

DA 0 equals WA. - Sets output current in ppm
DA 1 equals W1 - Set Slew rate through 8 bit optional port (added HW)
DA 2 equals W2 - Optional
DA 3 equals W3 - Set Slew rate through 8 bit optional port scaled to mA/sec
DA 4 - Set Slew rate through 12 bit serial DAC (From SW version SCS110)

Nothing else is affected.

Related commands: **RA, R1, R2, R3, WA, W1, W2, W3**

DA - Write to DAC's

From SW version SCC108 amendment.

Command: DA'sp'ch','val'cr'

ch: 0 val: digits ±000000 to ±999999 in PPM. (WA)
ch 1, ch 2 & ch3 val no change. See previous page.

!!!! Please note, that the DA value must always be entered using the trailing zero notation regardless of the WA setting.

Example: DA 0,-0480
Syntax: DA'sp'0',-0480'cr'
Means a set value of -480 ppm

Answer: No answer, except errors
OK if autoanswer mode is set. (From SW version SCS110)

Errors:

SYNTAX ERROR, means a missing space between the command and the parameter or wrong syntax.

DATA CONTENTS, means that parameter format is incorrect, or a non-digit character found in the data field, or parameters is outside specification.

ILLEGAL COMMAND Indicates that you are in a wrong command mode. Change to REMote or LOCal.

CHANGE IN PROGRESS Indicates that the controller is in the middle of an internal sequence eg. a polar change. While this is running, it is a new DAC setup is not allowed.

DAC OWNED BY EXTERNAL INTERFACE
Indicates that the DAC is owned by the CAMAC interface

STACK IS RUNNING Indicates that the DAC is owned by a Ramp Profile application. (Auto slew rate, Arbitrary point or Equal time slot ramp profile).

DA continued.

Description:

See also the DA description on the previous page.

The amendment from SW version SCC108 gives the possibility to add a sign to the set value for ch-0 when controlling a bipolar power supply (Attached to a bipolar DAC).

Function in Uni Polar mode. (Aux switch 8 =”0" Default)

- MPS without a polarity change over switch (motor).
  Any sign will be ignored.

- MPS with a polarity change over switch (motor).
  Giving a set value with the opposite sign than the present one will automatically initiate a polarity change over operation.

Function in Bipolar mode. (Aux switch 8 =”1")

- The set value will follow the signed value.

The ‘+’ & ‘-‘ led’s on the M-Panel will indicate the polarity status.

The ‘+’ & ‘-‘ buttons on the M-Panel will change the polarity status. (‘PO +’ or ‘PO -‘ commands in remote control)

Reading the set value with the **DA 0** (without parameters) will automatically add a minus sign to the value, if the output polarity is negative.

Depending on the polarity status may the PO status be affected.

Related commands: **RA, WA**

DA - Write to DAC 0

From SW version SCC1114 amendment.

Command: DA'sp'0,'val1','val2'cr'

'val1': no change — See previous page.
'val2': 0 or 1 — Selecting register 0 or 1 for path storage

!!!! Please note, that the DA value must always be entered using the trailing zero notation.

Example: DA 0,-0480,0
Syntax: DA'sp'0,-0480,0'cr'
Means a set value of -480 ppm using register 0 for the output current setting

Answer: No answer, except errors
OK if autoanswer mode is set. (From SW version SCS110)

Errors:

SYNTAX ERROR, means a missing space between the command and the parameter or wrong syntax.

DATA CONTENTS, means that parameter format is incorrect, or a non-digit character found in the data field, or parameters is outside specification.

ILLEGAL COMMAND Indicates that you are in a wrong command mode. Change to REMote or LOCal.

CHANGE IN PROGRESS Indicates that the controller is in the middle of an internal sequence eg. a polar change. While this is running, it is a new DAC setup is not allowed.

Description:

See also the DA description on the previous page.

The amendment from SW version SCC114 gives the possibility to pass the DAC 0 value through two HW registers enabling quick shift between two stored set values this either through SW or a HW line (SYNC input) See chapter 3.3 for further description.

DA - Read DAC 0

From SW version SCC1114 amendment.

Command: DA'sp'0,'val'cr'

ch: Cannel number
Val: Blanc or R — R adds the status path of the "Two level set value function" registers to the answer. Ab SW version SCC114

Example: DA 0
Syntax: DA'sp'0'cr'
Means read value of DA channel 0 (Current setting channel)
or
DA 0,R — Ab SW version SCC114
Syntax: DA'sp'0,R'cr'
Means read value of DA channel 0 and the register routing path used by the "Two Level Set Function"

Answer: 0'sp','val' — Val
< 000000 to ±999999>
Depending on the DAC scaling

Or
0'sp''val','yy' — yy
00 Write to register 0, DAC from register 0
01 Write to register 0, DAC from register 1
10 Write to register 1, DAC from register 0
11 Write to register 1, DAC from register 1

Errors:

SYNTAX ERROR, means a missing space between the command and the parameter or wrong syntax.

DATA CONTENTS, means that parameter format is incorrect, or a non-digit character found in the data field, or parameters is outside specification.

The amendment from SW version SCC114 gives the possibility to read the DAC 0 register routing status See chapter 3.3 for further description.

ERRC - ERRor in Code (remote line only)

Command: ERRC'cr'

Example: ERRC
Syntax: ERRC'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The command **ERRC** is used to put the controller into a mode in which all errors will respond with a code number representing which error was encountered.
This mode can chosen, when the controller(s) is (are) connected to a host computer, which is able to interpret the error message.

Nothing else is affected.

Related commands: **ERRT, NERR**

ERRC continued

CODE NO.	ERROR TEXT	
0	EE Error buffer empty	
1	Syntax	
2	Data contents	
3	Data length	
4	Illegal command	
5	Can not execute command	
6	Status qou, no change	
7	Change in progress	
8	No data present	
9	Local line, input buffer full	
0	Remote line, input buffer full	
11	NOT USED	
12	Can not execute command	
13	NOT USED	
14	Datalog line, input buffer full	
15	NOT USED	
16	Program module not implemented	
17	NOT USED	
18	DAC owned by external interface	(From version SCC113)

ERRT - ERRor in Text (remote line only)

Command: ERRT'cr'

Example: ERRT
Syntax: ERRT'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The command **ERRC** is used to put the controller into a mode in which all errors will respond with a text string representing which error was encountered.
This mode is normally chosen, when the controller(s) is (are) connected to a low level host computer or terminal equipment.

Nothing else is affected.

Related commands: **ERRC, NERR**

F - offF

Command: F'cr'

Example: F
Syntax: F'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **F** command is used to switch-off the power supply (main contactor).
If the OFF and RESET commands both are set to clear non active interlocks, it also clears these interlocks.

All setting are left unaffected.

Nothing else is affected.

Related commands: **N, RS**

F1 - offF Auxiliary Line 1

Command: F1'cr'

Example: F1
Syntax: F1'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **F1** command is used to switch-off the Auxiliary 1 line output port.

All setting are left unaffected.

Nothing else is affected.

Related commands: **F,F2,N,N1**

F2 - offF Auxiliary Line 2 (Optional)

Command: F2'cr'

Example: F2
Syntax: F2'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **F2** command is used to switch-off the Auxiliary 2 line output port.
The polarity output port can also be used as an auxiliary output line giving a static or a pulse output level (open collector). This can be achieved by replacing the PO (+/-) command with the N2 and the F2 commands. Must be done at Danfysik or by authorised Danfysik service personnel.

All setting are left unaffected.

Nothing else is affected.

Related commands: **F,F1,N1,N2**

GOFF - Global OFF

(From version SCS108)

Command: GOFF'cr'

Example: GOFF
Syntax: GOFF'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **GOFF** command is used to switch-on the Auxiliary output port. This command is actually the same as the **N1** command, but is implemented to be compatible with the system 8800 SW. If using this command, the Auxiliary port will normally be connected to the main circuit breaker which again will turn OFF all the voltages including the control voltage.

If the Auxiliary port is connected to the main circuit breaker, power to the CPU will be removed, that is all communication will stop

Related commands: **N1**

ID - Identification read

(From version SCS114)

Command: ID 'cr'

Example: ID
Syntax: ID 'cr'

Answer: System 8500 -
Id __ ;Default after cold boot

or Error message

Errors: **ILLEGAL COMMAND** Wrong syntax (miss spelled).

Description:

The **ID** command is used to read a user set able text string of maximum 64 characters. The information stored could be information about the power supply as follows: (Ps. All characters are converted to upper case)

SYSTEM 8500 TYP 859H
1250A / 400V
SW VER SCC114
ID 1234567890

To write information in the identification field, please refer to the ESC<ID command.

Related commands: ESC<ID

Affected commands: NONE

IEEE - IEEE

Command: IEEE'cr'

Example: IEEE
Syntax: IEEE'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **IEEE** command is used internally between the MPS controller and the externally connected IEEE-interface. The command initiates some amendment to the communication to collaborate with the DF IEEE interface.

In normal use, NEVER use this command, only a power-down or reset of the MPS will remove this status.

Many internal functions are affected by this command.

LALL - Listen ALL **(remote line only)**

Command: LALL'cr'

Example: LALL
Syntax: LALL'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

Description:

The **LALL** command is used to put all the connected controllers into a pseudo-addressed mode. This means, that all controllers will respond to any setup command regardless of its addressed state, except for the o**N** command.
No answers will be available.

The only way to disable the **LALL** mode is by using an **ADR** command, either for a new address or to read the last addressed controller.

Remark: Concerning the **ADR** read, the first access will not give any response at all, in this case a second **ADR** command has to be issued to get an answer.

Nothing else is affected.

Related commands: **ADR**

LOC - LOCal (line)

Command: LOC'cr'

Example: LOC
Syntax: LOC'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

Description:

The **LOC** command is used to switch the line-in-command to the local line. The line-in-command can be locked to local-line by the **LOCK** command and released by the **UNLOCK.** command
If the change to local is done from the local-line (control panel), the line-in-command will automatically be **LOCK**ed to local, and can't be changed back from the remote line without releasing it with the **UNLOCK** command. A change to the remote line initiated from the control panel automatically releases the lock state.

Nothing else is affected.

Related commands: **REM, LOCK, UNLOCK**

Affected commands: **REM**

LOCK - LOCK (remote line only)

Command: LOCK'cr'

Example: LOCK
Syntax: LOCK'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is remote line.

Description:

The **LOCK** command is used to put the controller into a mode in which the line-in-command will be locked to the local line. The **LOCK** state is entered automatically when shift to the local state is initiated from the control panel. From the remote line the **LOCK** state can only be entered by issuing the **LOCK** command.
The **LOCK** feature is to avoid remote access, when serviced and controlled locally through the control panel. The **UNLOCK** command from remote line is implemented for one reason only, to be able to shut down the entire system in an emergency situation. One should avoid using the **LOCK** and **UNLOCK** feature, from the remote line except in an emergency situation.

Nothing else is affected.

Related commands: **UNLOCK, (REM, LOC, RLOCK)**

N - oN

Command: N'cr'

Example: N
Syntax: N'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

The **N** command is used to switch-on the power supply (main contact). All setting are left unaffected.
This command cannot be used in **LALL** mode.

Nothing else is affected.

Related commands: **F, RS**

N1 - oN Auxiliary Line 1

Command: N1'cr'

Example: N1
Syntax: N1'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

The **N1** command is used to switch-on the Auxiliary line output port.

Nothing else is affected.

Related commands: **F1,F2, N2**

N2 - oN Auxiliary Line 2 (Optional)

Command: N2'cr'

Example: N1
Syntax: N2'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

The **N2** command is used to switch-on the Auxiliary 2 line output port.
The polarity output port can also be used as an auxiliary output line giving a static or a pulse output level (open collector). This can be achieved by replacing the PO (+/-) command with the N2 and the F2 commands. Must be done at Danfysik or by authorised Danfysik service personnel.

Nothing else is affected.

Related commands: **F1,F2, N1**

NASW - No AnSWer **(remote line only)**

Command: NASW'cr'

Example: NASW
Syntax: NASW'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is local-line.

Description:

The **NASW** command is used to cancel the auto-answer mode, in which some setup commands generates an answer.

Nothing else is affected.

Related commands: **ASW**

NERR - No ERRor (remote line only)

Command: NERR'cr'

Example: NERR
Syntax: NERR'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The command **NERR** is used to put the controller into a mode in which all errors only will respond with a "?" + "Bell" without showing which error was encountered.
This mode is normally chosen, if one only wants to be kept informed about an error condition, but are not interested in the type.

Nothing else is affected.

Related commands: **ERRC, ERRT**

PO - POlarity (read)

Command: PO'cr'

Answer: polarity

or Error message

Example: Command: PO
Syntax: PO'cr'

Answer: polarity
Syntax: polarity'lf''cr'

polarity: ASCII sign plus or minus. (+ or -)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **PO** command is used to verify the actual output polarity of the power supply if a polarity reversal switch is attached or the power supply is in bipolar mode.
The command returns the polarity sign as an ASCII character.
(Bipolar operation from SW version SCC108)

If there is no polarity switch build-in, the returned polarity will be positive.

Related commands: **PO** (write), **WA** ±val, **DA 0** ±val, **DA 0**

Nothing else is affected.

PO {+/-} - POlarity (write)

Command: PO sign'cr'

sign: ASCII sign plus or minus. (+ or -)

Example: PO +
Syntax: PO +'cr'

Answer: no answer, except errors
or OK if autoanswer mode is set. (From SW version SCS110)

Errors:

SYNTAX ERROR	means wrong syntax.
ILLEGAL COMMAND	means that line-in-command is wrong or no polarity switch build-in.
DATA CONTENTS	means that the sign is neither plus nor minus.
STATUS QUO	means that the desired polarity is already present.

Description:
The **PO** command is used to change polarity of the power supply, either if a polarity reversal switch is implemented or when using a bipolar DAC (on bipolar supplier from SW SCC108). Having a polarity reversal switch, the command starts an internal state-machine, that sets the set value to zero, waits until the current gets to zero, switches the supply OFF, changes the polarity, restores the set value and at last switches the supply on again. If the power supply was OFF, then it will stay OFF after the polarity change is over.
For bipolar supplies, the polarity will be changed without turning the power supply OFF first. (Bipolar operation from SW version SCC108) Preferred command is DA 0,±val. Using this command, it is possible to change to a different negative/positive value.

The polarity command can be HW suppressed by pulling TP9 low. From version SCC107

If no polarity switch is attached or if not set in bipolar mode, an ILLEGAL COMMAND error will be returned if issued.
Related commands: **PO** (read), **WA** ±val, **DA** ±val

Nothing else is affected.

PRINT - PRINT

Command: PRINT'cr'

Example: PRINT
Syntax: PRINT'cr'

Answer: Two lines each containing up to15 characters plus terminator as:
SYSTEM 8500'cr''lf'
V1.0 A'cr''lf'

or Error message

Errors:

SYNTAX ERROR	means wrong syntax.
ILLEGAL COMMAND	means that line-in-command is wrong.

Description:

The **PRINT** command is used to return internal information about the MPS type. The contents of these two lines may differ between the power supplies depending of the version.
Line two of this command is used by the M-Panel graphical to initialize it self for different control modules.

The command can be used at the remote-line only.

Nothing else is affected.

R3 - Read slewdac 1 (absolute)

Command: R3'cr'

Answer: rampspeed'lf"cr'

rampspeed: digit 0.0 to 1550.40 in mA/sec.

or Error message

Example: Command: R3
Syntax: R3'cr'

Answer: 0048.64
Syntax: 0048.64'lf"cr'

Errors: **SYNTAX ERROR,** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The command **R3** is used to read an absolute value between 0.0 and 1550 from option port 0. Option port 0 is normally used to set the hardware controlled slew rate circuit (if present). (SLEW-DAC port).
The command is similar to **R1** command, except that this command converts the R1 value, that is between 0 and 255, to an absolute value between 0000.0 and 1550. Read-back from **W3**, will always be in a resolution of 0006. The R3 and W3 value can be interpreted at mA/sec slew rate setting. If other scaling for the mA/sec interpretation is needed, it is possible to reprogram the scaling. Please see the “Esc”<AD command for further information on changing the scaling factor.

Nothing else is affected.

Related commands: **W3, DA, (W1), (R1)**

RA - Read DAC

Command: RA'cr'

Answer: dac'lf"cr'

dac: digit 000000 to 999999

or Error message

Example: Command: RA
Syntax: R1'cr'

Answer: 004800
Syntax: 004800'lf"cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **RA** command is used to read the currently numerical set value in ppm resolution. That is between 0 and 999999 from the regulation-DAC. Use the PO command to read the polarity status.

Preferred command is though DA 0. Using DA 0 will automatically deliver the present polarity status.

Nothing else is affected.

Related commands: **WA, DA**

REM - REMote (line)

Command: REM'cr'

Example: REM
Syntax: REM'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors:

SYNTAX ERROR	means wrong syntax.
ILLEGAL COMMAND	means that line-in-command is locked to local-line. -- Unlock can be used to release this. --

Description:

The **REM** command is used to switch the line-in-command to the remote operation. The line-in-command can be locked to remote-line by the **RLOCK**, command (given from the remote-line). The locked state can be released by a LOC command, also given from the remote-line. The Local-line cannot change the command-line if locked into remote.

Nothing else is affected.

Related commands: **LOC, LOCK, UNLOCK, RLOCK**

Affected commands: **LOC**

RLOCK - Remote LOCK (remote line only)

Command: RLOCK'cr'

Example: RLOCK
Syntax: RLOCK'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors:

SYNTAX ERROR	means wrong syntax.
ILLEGAL COMMAND	means that the line-in-command is either remote line or unlocked in local line.
COMMAND ALREADY ACTIVE	means that the command has been given already and is still active.

Description:

The **RLOCK** command is used to lock the line-in-command to the remote state. The **RLOCK** is similar to the function existing, when line-in-command is switched to local by the local line. When the **RLOCK** command is given from the remote line, it will inhibit the control panel to switch the line-in-command to local.
The **RLOCK** can only be switched off with the **REM** or **LOC** command.

Nothing else is affected.

Related commands: **(LOCK, REM, LOC, UNLOCK)**

RS - ReSet

Command: RS'cr'

Example: RS
Syntax: RS'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **RS** command is used to clear all non pending interlocks.
If Reset and Off are combined will the O**F**F command also clear all the non pending interlocks.

Nothing else is affected.

Related commands: **F, N**

R(x) - Read slewdac 1 or 2

Command: R1'cr'
or R2'cr'

Answer: value'lf"cr'

value: digit 000 to 255

Leading zero's can be omitted in parameter
or Error message

Example: Command: R1
Syntax: R1'cr'

Answer: 025
Syntax: 025'lf"cr'

Errors: **SYNTAX ERROR,** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **R1** or **R2** commands are used to read a value between 0 and 255 from option port 0 or 1. Option port 0 is normally used for the SLEW-DAC port, and option1 port address is for extension use.

Nothing else is affected.

Related commands: **W1, W2, (W3/R3)**

S1 - Status 1

Command: S1'cr'

Answer: STATUS
Syntax: STATUS'lf''cr' Where STATUS consists of 24 signs “.” or “!” , each showing the status of a specific function, including all interlocks.

or Error message

Example: Command: S1
Syntax: S1'cr'

Answer: . ! ! . . . . . !
Syntax: . ! ! . . . . . ! 'lf''cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **S1** command is used to return an answer about the internal status. The returned status line consists of a mixture of interlocks (latched indications) and status (transparent indications).

Spare bits can be assigned to special functions in some power supplies.

Each sign is explained separately at the right column.

Nothing else is affected.

Related commands: **SIH, S3, S4**

S1 continued

A typical example for an S1 status answer could be as follows:

"! . ! . ! ! . . . ! . . . . ! . . . . . ! ."
1. Character. 24. Character.

The interpretation of the individual characters, when the exclamation mark is shown are:

CHARACTER NO.	CONTENTS.
1	MAIN POWER OFF.
2	POLARITY NORMAL.
3	POLARITY REVERSED.
4	REGULATION TRANSFORMER <> 0 * MAIN POWER OFF.
5	.→ DAC16 =0 !→DAC16=1 .→DAC16=0 !→DAC16=1
6	. →DAC17 =0 .→DAC17=0 !→DAC17=1 !→DAC17=1
7	! = % , . = AMPS and VOLTS.
8	SPARE INTERLOCK.
9	ONE TRANSISTOR FAULT.
10	SUM - INTERLOCK.
11	DC OVERCURRENT (OCP).
12	DC OVERLOAD.
13	REGULATION MODULE FAILURE.
14	PREREGULATOR FAILURE.
15	PHASE FAILURE.
16	MPS WATERFLOW FAILURE.
17	EARTH LEAKAGE FAILURE.
18	THERMAL BREAKER / FUSES.
19	MPS OVERTEMPERATURE.
20	PANIC BUTTON / DOOR SWITCH.
21	MAGNET WATERFLOW FAILURE.
22	MAGNET OVERTEMPERATURE.
23	MPS NOT READY.
24	SPARE

The above definitions are the default implementation. Special power supplies may have modified status/interlock functions. Please refer to the change note chapter for further information.

S1H - Status 1 in Hex

Command: S1H'cr'

Answer: STATUS
Syntax: STATUS'lf''cr' Where STATUS consists of 6 ASCII Hex digits, each position showing the status of a specific function, including all interlocks.

Example: Command: S1H
Syntax: S1H'cr'

Answer: 600001
Syntax: 600001'lf''cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **S1H** command is used to return an answer about the internal status in HEX format. The returned status line consists of a mixture of interlocks (latched indications) and status (transparent indications).

The HEX format is constructed from the 24 bit in the S1 status. These bits are divided into 6 nibbles and thereafter converted into six ASCII HEX digits. The individual bit placements in the HEX number are the same as for the S1 command. Please refer to the next column and to the S1 command for a detail bit definition.

Spare bits can be assigned to special functions in some power supplies.

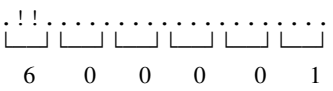
Each sign is explained separately under the S1 command.

Nothing else is affected.

Related commands: **S1, S3H, S1FIRSTH**

S1H continiued

HEX conversion examples.



└─┘ Equals one nibble.

S1FIRST - S1 FIRST Status

Command: S1FIRST'cr'

Answer: STATUS
Syntax: STATUS'lf''cr' Where STATUS consists of 24 signs "." or "!" , each showing the status of a specific function, including all interlocks at the time an interlock occurred.

or Error message

Example: Command: S1FIRST
Syntax: S1FIRST'cr'

Answer: . ! ! . . ! . . . . . !
Syntax: . ! ! . . ! . . . . . ! 'lf''cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **S1FIRST** command is used to return an answer about the state of all internal status at the time the first Interlock occurred including the first interlock. The bit definitions are the same as for the S1 command.Please refer to the S1 command for a detail bit definition.

Spare bits can be assigned to special functions in some power supplies.

Each sign is explained separately under the S1 command.

Nothing else is affected.

Related commands: **S1, S1FIRSTH**

SIFIRSTH - S1 FIRST Status in Hex

Command: S1FIRSTH'cr'

Answer: STATUS
Syntax: STATUS'lf''cr' Where STATUS consists of 6 Hex digits, each position showing the status of a specific function, including all interlocks.

or Error message

Example: Command: S1FIRSTH
Syntax: S1FIRSTH'cr'

Answer: 640001
Syntax: 640001'lf''cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **S1FIRSTH** command is used to return an answer about the state of all internal status at the time the first Interlock occurred including the first interlock.

The HEX format is constructed from the 24 bit in the S1 status. These bits are divided into 6 nibbles and thereafter converted into six ASCII HEX digits. The individual bit placements in the HEX number are the same as for the S1 command. Please refer to the S1 command for a detail bit definition.

Spare bits can be assigned to special functions in some power supplies.

Each sign is explained separately under the S1 command.

Nothing else is affected.

Related commands: **S1,S1H, S1FIRST**

S1TIME - S1 Status TIME

Command: S1TIME'cr'

Answer: hour,min,sec,day,month,year

or Error message

Example: Command: S1TIME
Syntax: S1TIME'cr'

Answer: 19,54,03,08,03,2009'lf''cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **S1TIME** command returns the exact time point when the first interlock occurred. The status of all interlock at this very time can be red with the **S1FIRST** command.

Related commands: **CLOCK, S1, S1FIRST**

Intentionally blank

S3 - Status 3

Command: S3'cr'

Answer: STATUS
Syntax: STATUS'lf''cr' Where STATUS consists of 16 signs "." or "!" , each showing the status of a specific function, including all interlocks.

or Error message

Example: Command: S3
Syntax: S3'cr'

Answer: . ! ! . . . . . .
Syntax: . ! ! . . . . . 'lf''cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **S3** command is used to return an answer about the extended internal status. The returned status line consists of a mixture of interlocks (latched indications) and status (transparent indications).

Spare bits can be assigned to special functions in some power supplies.

Each sign is explained separately at the right column.

Nothing else is affected.

Related commands: **S1, S3**

S3 continued

A typical example for an S3 status answer could be as follows:

"! . ! . . . . . "
1. Character. 16. Character.

The interpretation of the individual characters, when the exclamation mark is shown are:

CHARACTER NO. CONTENTS.

1 . . . . . OPTIONAL EXTERNAL INPUT 1; plug7 pin 9.
2 . . . . . OPTIONAL EXTERNAL INPUT 2; plug24 pin 1.
3 . . . . . OPTIONAL EXTERNAL INPUT 3; plug24 pin 3.
4 . . . . . OPTIONAL EXTERNAL INPUT 4; plug24 pin 4.
5 . . . . . SPARE INPUT 3; plug16 pin 5.
6 . . . . . SPARE INPUT 4; plug16 pin 7.
7 . . . . . SPARE INPUT 1; plug16 pin 1.
8 . . . . . SPARE INPUT 2; plug16 pin 3.
9 . . . . . BATTERY LOW
10 . . . . . Polarity switch enable (Status of TP9)
11 . . . . . Status of TP8
12 . . . . . DC OVERLOAD.
13 . . . . . NOT USED
14 . . . . . NOT USED
15 . . . . . NOT USED
16 . . . . . NOT USED

The above definitions are the default implementation. Special power supplies may have modified status/interlock functions. Please refer to the change note chapter for further information.

S3H - Status 3 in Hex

From version SCC107

Command: S3H'cr'

Answer: STATUS
Syntax: STATUS'lf''cr' Where STATUS consists of 4 ASCII Hex digits, each position showing the status of a specific function.

or Error message

Example: Command: S3H
Syntax: S3H'cr'

Answer: 6001
Syntax: 6001'lf''cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **S3H** command is used to return an answer about internal status signals in HEX format.

The HEX format is constructed from the 16 bit in the S3 status. These bits are divided into 4 nibbles and thereafter converted into four ASCII HEX digits. The individual bit placements in the HEX number are the same as for the S3 command.
HEX conversion examples.
. ! ! . . . . . ! will be represented in HEX as

6 0 0 1
Equals one nibble.

Each sign is explained separately under the S3 command. Spare bits can be assigned to special functions in some power supplies.

Nothing else is affected.

Related commands: **S3, S1H**

SOFF - Slow OFF

From version SCC108

Command: SOFF'cr'

Example: SOFF
Syntax: SOFF'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **SOFF** command is used to switch-off the power supply (main contactor) and automatically set the set value to zero (WA 000000). This command is actually the same as the **"F"-** followed by a "**WA 000000**" command, and is implemented to be compatible with the system 8800 SW.

If the OFF and RESET commands both are set to clear non active interlocks, it also clears these interlocks.

The set value will be set to zero.

Related commands: **N, RS**

S5 - Status 5, primary intl.

(Only applicable with 8100092559 "10+10+8 Intl. Module" installed)

Command: S5'cr'

Answer: STATUS
Syntax: STATUS'lf''cr' Where STATUS consists of 16 signs "." or "!" , each showing the status of a specific function, including all interlocks.

or Error message

Example: Command: S5
Syntax: S5'cr'

Answer: . ! ! . . . . . ! ! . . . .
Syntax: . ! ! . . . . . ! ! . . . .'lf''cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **S5** command is used to return an answer about the internal status. The returned status line consists of a mixture of interlocks (latched indications) and status (transparent indications).

Each sign is explained separately at the right column.

Nothing else is affected.

Related commands: **SIH, S3, S4**

S5 continued

A typical example for an S5 status answer could be as follows:

". ! ! . . ! . . . . ! ! . . . ."
1. Character. 16. Character.

The interpretation of the individual characters, when the exclamation mark is shown are:

CHARACTER NO.	CONTENTS.
1	P1 (Primary interlock 1)
2	P2 (Primary interlock 2)
3	P3
4	P4
5	P5
6	P6
7	P7
8	P8
9	P9
10	P10 (Primary interlock 10)
11	PSUM (Primary interlock Sum)
12	PSUM
13	Not used
14	Not used
15	Not used
16	Not used

The above definitions are the default implementation. Special power supplies may have modified status/interlock functions. Please refer to the change note chapter for further information.

S5H - Status 5 in Hex

(Only applicable with 8100092559 "10+10+8 Interlock module" installed)

Command: S5H'cr'

Answer: STATUS
Syntax: STATUS'lf''cr' Where STATUS consists of 4 ASCII Hex digits, each position showing the status of a specific function.

or Error message

Example: Command: S5H
Syntax: S5H'cr'

Answer: 6030
Syntax: 6030'lf''cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **S5H** command is used to return an answer about internal status signals in HEX format.

The HEX format is constructed from the 16 bits in the S5 status. These bits are divided into 4 nibbles and thereafter converted into four ASCII HEX digits. The individual bit placements in the HEX number are the same as for the S5 command.
HEX conversion examples.
. ! ! . . . . . ! ! . . . . will be represented in HEX as

6 0 3 0
Equals one nibble.

Each sign is explained separately under the S5 command.
Nothing else is affected.

Related commands: **S3, S1H**

Intentionally left blank

S5FIRST - S5 FIRST Status

(Only applicable with 8100092559 "10+10+8 Interlock module" installed)

Command: S5FIRST'cr'

Answer: STATUS
Syntax: STATUS'lf''cr' Where STATUS consists of 16 signs "." or "!" , each showing the status of a specific function, including all interlocks at the time an interlock occurred.

or Error message

Example: Command: S5FIRST
Syntax: S5FIRST'cr'

Answer: . ! ! . . . . . ! ! . . . .
Syntax: . ! ! . . . . . ! ! . . . . 'lf''cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **S5FIRST** command is used to return an answer about the state of the internal status at the time the first Interlock occurred including the first interlock. The bit definitions are the same as for the S5 command. Please refer to the S5 command for a detailed bit definition.

Nothing else is affected.

Related commands: **S5, S5FIRSTH**

S5FIRSTH - S5 FIRST Status in Hex

(Only applicable with 8100092559 "10+10+8 Interlock module" installed)

Command: S5FIRSTH'cr'

Answer: STATUS
Syntax: STATUS'lf''cr' Where STATUS consists of 4 Hex digits, each position showing the status of a specific function, including all interlocks.

or Error message

Example: Command: S5FIRSTH
Syntax: S5FIRSTH'cr'

Answer: 6030
Syntax: 6030'lf''cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **S5FIRSTH** command is used to return an answer about the state of the internal status at the time the first Interlock occurred including the first interlock.

The HEX format is constructed from the 16 bits in the S5 status. These bits are divided into 4 nibbles and thereafter converted into four ASCII HEX digits. The individual bit placements in the HEX number are the same as for the S5 command. Please refer to the S5 command for a detailed bit definition.

Nothing else is affected.

Related commands: **S5,S1H, S5FIRST**

S6 - Status 6, secondary interlocks.

(Only applicable with 8100092559 "10+10+8 Intl. Module" installed)

Command: S6'cr'

Answer: STATUS
Syntax: STATUS'lf''cr' Where STATUS consists of 16 signs "." or "!" , each showing the status of a specific function, including all interlocks.

or Error message

Example: Command: S6
Syntax: S6'cr'

Answer: . ! ! . . . . . ! ! . . . .
Syntax: . ! ! . . . . . ! ! . . . .'lf''cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **S6** command is used to return an answer about the internal status. The returned status line consists of a mixture of interlocks (latched indications) and status (transparent indications).

Each sign is explained separately at the right column.

Nothing else is affected.

Related commands: **S3, S4, S5**

S6 continued

A typical example for an S6 status answer could be as follows:

". ! ! . . ! . . . . ! ! . . . ."
1. Character. 16. Character.

The interpretation of the individual characters, when the exclamation mark is shown are:

CHARACTER NO.	CONTENTS.
1	S1 (Secondary interlock 1)
2	S2 (Secondary interlock 2)
3	S3
4	S4
5	S5
6	S6
7	S7
8	S8
9	S9
10	S10 (Secondary interlock 10)
11	SSUM (Secondary interlock Sum)
12	SSUM
13	Not used
14	Not used
15	Not used
16	Not used

The above definitions are the default implementation.

S6H - Status 6 in Hex

(Only applicable with 8100092559 "10+10+8 Interlock module" installed)

Command: S6H'cr'

Answer: STATUS
Syntax: STATUS'lf''cr' Where STATUS consists of 4 ASCII Hex digits, each position showing the status of a specific function.

or Error message

Example: Command: S6H
Syntax: S6H'cr'

Answer: 6030
Syntax: 6030'lf''cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **S6H** command is used to return an answer about internal status signals in HEX format.

The HEX format is constructed from the 16 bits in the S6 status. These bits are divided into 4 nibbles and thereafter converted into four ASCII HEX digits. The individual bit placements in the HEX number are the same as for the S6 command.
HEX conversion examples.
. ! ! . . . . . ! ! . . . . will be represented in HEX as

6 0 3 0
Equals one nibble.

Each sign is explained separately under the S6 command.
Nothing else is affected.

Related commands: **S5, S6**

Intentionally left blank

S7 - Status 7, added internal interlocks.

(Only applicable with 8100092559 "10+10+8 Intl. Module" installed)

Command: S7'cr'

Answer: STATUS
Syntax: STATUS'lf''cr' Where STATUS consists of 16 signs "." or "!" , each showing the status of a specific function, including all interlocks.

or Error message

Example: Command: S7
Syntax: S7'cr'

Answer: . ! ! . . . . . .
Syntax: . ! ! . . . . . .'lf''cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **S7** command is used to return an answer about the internal status. The returned status line consists of a mixture of interlocks (latched indications) and status (transparent indications).

Each sign is explained separately at the right column.

Nothing else is affected.

Related commands: **S1, S5, S6**

S7 continued

A typical example for an S7 status answer could be as follows:

". ! ! . . ! . . . . . ."
1. Character. 16. Character.

The interpretation of the individual characters, when the exclamation mark is shown are:

CHARACTER NO.	CONTENTS.
1	MINT1 (MPS added internal interlock 1)
2	MINT2 (MPS added internal interlock 1)
3	MINT3
4	MINT4
5	MINT5
6	MINT6
7	MINT7
8	MINT8 (MPS added internal interlock 8)
9	Not used
10	Not used
11	Not used
12	Not used
13	Not used
14	Not used
15	Not used
16	Not used

The above definitions are the default implementation.

S7H - Status 7 in Hex

(Only applicable with 8100092559 "10+10+8 Interlock module" installed)

Command: S7H'cr'

Answer: STATUS
Syntax: STATUS'lf''cr' Where STATUS consists of 4 ASCII Hex digits, each position showing the status of a specific function.

or Error message

Example: Command: S7H
Syntax: S7H'cr'

Answer: 6000
Syntax: 6000'lf''cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **S7H** command is used to return an answer about internal status signals in HEX format.

The HEX format is constructed from the 16 bits in the S7 status. These bits are divided into 4 nibbles and thereafter converted into four ASCII HEX digits. The individual bit placements in the HEX number are the same as for the S6 command.
HEX conversion examples.
. ! ! . . . . . will be represented in HEX as

6 0 0 0
Equals one nibble.

Each sign is explained separately under the S6 command.
Nothing else is affected.

Related commands: **S5, S6, S7**

Intentionally left blank

S7FIRST - S7 FIRST Status

(Only applicable with 8100092559 "10+10+8 Interlock module" installed)

Command: S7FIRST'cr'

Answer: STATUS
Syntax: STATUS'lf''cr' Where STATUS consists of 16 signs "." or "!" , each showing the status of a specific function, including all interlocks at the time an interlock occurred.

or Error message

Example: Command: S7FIRST
Syntax: S7FIRST'cr'

Answer: . ! ! . . . . . .
Syntax: . ! ! . . . . . 'lf''cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **S7FIRST** command is used to return an answer about the state of the internal status at the time the first Interlock occurred including the first interlock. The bit definitions are the same as for the S7 command. Please refer to the S7 command for a detailed bit definition.

Nothing else is affected.

Related commands: **S6, S5FIRSTH**

S7FIRSTH - S7 FIRST Status in Hex

(Only applicable with 8100092559 "10+10+8 Interlock module" installed)

Command: S7FIRSTH'cr'

Answer: STATUS
Syntax: STATUS'lf''cr' Where STATUS consists of 4 Hex digits, each position showing the status of a specific function, including all interlocks.

or Error message

Example: Command: S7FIRSTH
Syntax: S7FIRSTH'cr'

Answer: 6000
Syntax: 6000'lf''cr'

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **S7FIRSTH** command is used to return an answer about the state of the internal status at the time the first Interlock occurred including the first interlock.

The HEX format is constructed from the 16 bits in the S7 status. These bits are divided into 4 nibbles and thereafter converted into four ASCII HEX digits. The individual bit placements in the HEX number are the same as for the S7 command. Please refer to the S7 command for a detailed bit definition.

Nothing else is affected.

Related commands: **S7,S5H, S7FIRST**

TD - Test DAC

Command: TD'sp'set'cr'

set: ASCII digit 0 to 8

Example: TD 4
Syntax: TD'sp'4'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The command **TD** is used to set-up a certain bit-pattern to the DAC output. The command can be used to adjust or verify the DAC's functionality. The nine different patterns are:

TD 0:	All bit's are reset to zero	Output: 000000
TD 1:	Bit 19 is set on, remaining set to zero	Output: 500000
TD 2:	Bit 18 is set on, remaining set to zero	Output: 250000
TD 3:	Bit 17 is set on, remaining set to zero	Output: 125000
TD 4:	Bit 16 is set on, remaining set to zero	Output: 062500
TD 5:	Bit 19 to 16 are set to zero, bit 15 to 0 are set on.	Output: 062499
TD 6:	Bit 19 to 0 are set on	Output: 999999
TD 7:	Bit 19 to 1 are set to zero, bit 0 is set on	Output: 000001
TD 8:	Bit 19 to 16 are set to zero, bit 15 is set on, remain set to zero	Output: 031250

Previous **WA** and **RA** setting are affected. Make a new **WA** command to correct this.

TYPE - TYPE

Command: TYPE'cr'

Example: TYPE
Syntax: TYPE'cr'

Answer: T'sp'type'lf''cr'

Type:
T0, 16 bit ADC for current monitoring not present
T8, 16 bit ADC for current monitoring present

or Error message

Errors: **SYNTAX ERROR,** means wrong syntax.

Description:

The **TYPE** command returns a code indicating if the optional 16 bit ADC module for the current read back has been added.
If a T0 is returned the optional 16 bit ADC is not present and the current monitoring has to be taken from the 8 bit ADC through AD channel 0
If an T8 is returned is the optional 16 bit ADC mounted and the current monitoring can also to be taken from this 16 bit ADC through AD channel 8

The **TYPE** command is used by the control panel to determine the type of the AD-channel to be used for the current read back. If a T0 is returned, it will use AD channel 0 to display a 3-digit current value (8 bit resolution). If an T8 is returned, it will use AD channel 8 to display a 5-digit current value (16 bit resolution).

Nothing else is affected.

TYPE - TYPE

From version SCC114

Command: TYPE'sp',val,'cr'

	val	Empty = same as 'A' (compatible with old TYPE command) 'A' ask if 16 bit ADC is present 'R' ask size of EEPROM

Example: TYPE R
Syntax: TYPE'sp'R'cr'

Answer:	T'sp'type'lf'cr'	Type: T0, 16 bit ADC for current monitoring not present T8, 16 bit ADC for current monitoring present 0K, EEPROM size can't be verified (cold boot required) 1K, 1K byte EEPROM mounted 2K, 2K byte EEPROM mounted
or	Error message	

Errors:	**SYNTAX ERROR,**	means wrong syntax.

Description:

The **TYPE** command is used to return the status of different options of the control module. The status of following options can be given:
- 'A' → 16 bit ADC for the current monitoring present
- 'R' → Size of EEPROM for storing set ups, scaling factors and ID data

For further information of the 16 bit ADC status use, please see old TYPE description on previous page.

To store the min, max and initial settings for other channels than DA 0 a larger EEPROM than 1K must be present(see also 'esc'<daset command description). If only a 1K EEPROM is present the min and max settings for other channels than channel 0 can be set and used; but they will not be remembered after a power down.

Nothing else is affected.

UNLOCK - UNLOCK

(remote line only)

Command: UNLOCK'cr'

Example: UNLOCK
Syntax: UNLOCK'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors:	**SYNTAX ERROR**	means wrong syntax.
	ILLEGAL COMMAND	means that the line-in-command is either remote line or unlocked in local line.

Description:

The **UNLOCK** command is used to release the local **LOCK** state. The **LOCK** prevents access when controlled from the control panel. The **UNLOCK** command given from remote line can be used to remotely shut down the entire system in an emergency situation. One should normally avoid using the **UNLOCK** feature from the remote line except in an emergency situation.

Nothing else is affected.

Related commands: **LOCK, (REM, LOC, RLOCK)**

VER - VERsion

Command: VER'cr'

Example: VER
Syntax: VER'cr'

Answer: Three lines each containing max 23 characters plus terminator as:
Copyright DANFYSIK A/S'cr''lf'
RAMTEX Engineering Aps'cr''lf'
SCC V1.13 Aug 10 2008'cr''lf'

or Error message

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **VER** command is used to return internal information about the program and its version.
The contents of these three lines are copyright notes, SW version and release date.
The command was designed primarily as a service command, to get information about the internal program.
For special designed SW may these line differ.

The command can be used at the remote-line only.

Nothing else is affected.

W(x) - Write slewdac 1 or 2

Command: W1'sp'rampspeed'cr'
or W2'sp'value'cr'

rampspeed: digit 000 to 255
value: digit 000 to 255

Leading zero's can be omitted in parameter

Example: W1 025
Syntax: W1'sp'025'cr' (most readable syntax but slower)

or W1 25
Syntax: W1'sp'25'cr (recommendable syntax medium speed)

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **SYNTAX ERROR**, means a missing space between the command and parameters or wrong syntax.

DATA CONTENTS, means that parameter format incorrect or a non-digit character found in data-field or parameters outside specified.

Description:

The **W1** or **W2** command is used to write a value between 0 and 255 to option port 0 or 1.
Option port 0 is normally used as the SLEW-DAC port, and option1 port address is normally free.
For the slew rate setting, please see the regulation module chapter

Nothing else is affected.

Related commands: **DA, R1, R2, (R3/W3)**

W3 - Write slewdac 1 (absolute)

Command: W3'sp'rampspeed'cr'

rampspeed: digits 0 to 1550. in mA/sec.

Leading zero's, before decimal point, can be omitted in parameter.

Example: W3 0048.64
Syntax: W3'sp'0048.64'cr' (most readable syntax but slower)

or W3 48.64
Syntax: W1'sp'48.64'cr (recommendable syntax medium speed)

or Error message

Answer: No answer, except errors

Errors:

SYNTAX ERROR, means a missing space between the command and parameters or wrong syntax.

DATA CONTENTS, means that parameter format incorrect or a non-digit character found in data field or parameters outside specified.
Or decimals given by more or less than 2.

ILLEGAL COMMAND Indicates that you are in a wrong command mode. Change REMote or LOCal.

W3 continued

Description:

The command **W3** is used to write an absolute value between 0.0 and 1550 from option port 0. Option port 0 is normally used to set the hardware controlled slew rate circuit (if present). (SLEW-DAC port).

The command is similar to **W1** command, except that this command converts the W1 value, that is between 0 and 255, to an absolute value between 0000.0 and 1550. This restricts the resolution to 0006.08 mA/sec Any given value outside the resolution will be rounded. The R3 and W3 value can be interpreted at mA/sec slew rate setting. If other scaling for the mA/sec interpretation is needed, it is possible to reprogram the scaling. Please see the “Esc”<DA command for further information on changing the scaling factor.

Decimal parameters may be entered but will be discarded in later calculation.

Nothing else is affected.

Related commands: **R3, (R1)**

Remark:

From the LOCAL-line the commands **W1** and **R1** are still used even with the absolute read-out value. The read-out is calculated inside the LOCAL-panel depending on the switch-setting. However, the commands **W3** and **R3** can be used at the LOCAL-line if wanted.

WA - Write DAC in ppm

All SW versions

Command: WA'sp'dac'cr'

dac: digits 000000 to 999999 in PPM.

!!!! Please note, that either a leading zero or a trailing zero format can be used by the power supply depending of the initial setup mode. Default factory setting is leading zeroes. (Read leading or trailing as important zeroes)

Example: WA 0480
Syntax: WA'sp'0480'cr'
For leading zeroes this means 48000 ppm
For trailing zeroes this means 480 ppm

Answer: No answer, except errors.

or OK if autoanswer mode is set. (From SW version SCS110)

Errors:

SYNTAX ERROR, means a missing space between the command and the parameter or wrong syntax.

DATA CONTENTS, means that parameter format is incorrect, or a non-digit character found in the data field, or parameters is outside specification.

ILLEGAL COMMAND Indicates that you are in a wrong command mode. Change to REMote or LOCal.

CHANGE IN PROGRESS Indicates that the controller is in the middle of an internal sequence eg. a polar change. While this is running, it is a new DAC setup is not allowed.

DAC owned by external interface
means that the HW DAC setting in AUX3-b3 is set.

WA continued

Description:

The command **WA** is used to write an PPM value between 0 and 999999 to the regulation module DAC for output set current. Preferred command is though DA 0.

Nothing else is affected.
Related commands: **DA, RA**

WA - Write ±DAC in ppm

From SW version SCC108

Command: WA'sp'dac'cr'

dac: digits ±000000 to ±999999 in PPM. (WA)

!!!! Please note, that either a leading zero or a trailing zero format can be used by the power supply depending of the initial setup mode. Default factory setting is leading zeroes. (Read leading or trailing as important zeroes)

Example: WA 0 -0480
Syntax: WA'sp'0'sp'-0480'cr'
For leading zeroes this means -48000 ppm
For trailing zeroes this means - 480 ppm

Answer: No answer, except errors.

or OK if autoanswer mode is set. (From SW version SCS110)

Errors:

SYNTAX ERROR, means a missing space between the command and the parameter or wrong syntax.

DATA CONTENTS, means that parameter format is incorrect, or a non-digit character found in the data field, or parameters is outside specification.

ILLEGAL COMMAND Indicates that you are in a wrong command mode. Change to REMote or LOCal.

CHANGE IN PROGRESS Indicates that the controller is in the middle of an internal sequence eg. a polar change. While this is running, it is a new DAC setup is not allowed.

DAC owned by external interface
means that the HW DAC setting in AUX3-b3 is set.

WA continued.

Description:

See also the DA description on the previous page.

The amendment from SW version SCC108 gives the possibility to add a sign to the set value when controlling a bipolar power supply. No prefixed sign equals no change in the present polarity. That is, if the output current was -500000 and a “WA 600000" was issued then the output current will become -600000. If otherwise a “WA +600000" was issued then the polarity will be altered and the output current become +600000..

Function in Uni Polar mode. (Aux switch 8 =”0" Default)

- MPS without a polarity change over switch (motor).
  Any sign will be ignored.

- MPS with a polarity change over switch (motor).
  Giving a set value with the opposite sign than the present one will automatically initiate a polarity change over operation.

Function in Bipolar mode. (Aux switch 8 =”1")

- The set value will follow the signed value.

The ‘+’ & ‘-‘ indicators on the display of M-Panel will indicate the polarity status.

The ‘+’ & ‘-‘ selectors in the menu on the M-Panel will change the polarity status. (‘PO +’ or ‘PO -‘ commands in remote control)

Preferred command is though DA 0,val. Using DA 0 will automatically deliver the present polarity status.

Depending on the polarity status may the PO status be affected.

Related commands: **RA, DA**

Esc<AD - AD setup

Command: 'Esc'<AD'sp'ch,scale_factor,no_Offset,digits,format,ch_reroute'cr'

ch:	ASCII digit 0 to 15	
Scale_factor:	9 digit floating point value plus sign.	
Offset:	5 digit floating point value plus sign.	From version SCC103
No_digit:	1 to 6	
format:	A (Absolute), D (Signed) or U (Unsigned)	
ch_reroute:	ASCII digit 0 to 15	

Example: 'Esc'<AD 0,101.0025,0,3,A,0
Syntax: AD'sp'0,101.0025,0,3,a,0'cr'
or
'Esc'<AD 0,101.0025
Syntax: AD'sp'0,101,0025'cr'
Non entered parameters are not changed.

Answer: No answer except errors.
or OK if autoanswer mode is set. (From SW version SCS110)

Errors:

ILLEGAL COMMAND	means that line-in-command is wrong.
SYNTAX ERROR,	means a missing space between the command and parameter or wrong syntax.
DATA CONTENTS,	means that the parameter format is incorrect or a non-digit character is found in the data field or a parameter is outside the specification.

Description:

The 'Esc'<AD command is used to scale and/or to reroute any of the 15 AD channels. Gain adjustments are also performed with this command.
All AD channels are internally normalized to 1 for full scale before multiplied with the scale factor positive or negative. This simplifies the scale factor to be nearly the same as the desired max output reading for most applications.
The number of digits returned is also programable between 1 and 6. But not to disturb the operation of the M-Panel, please do not change the number of digits for the first 9 channels.

AD continued

The number of digits also defines the max hold value during overflow. For example if no. of digits =3 then 999 is displayed as overflow.

On bipolar supplies a format parameter can issued to always return a positive value.
The "A" format converts the AD value to an absolute value. (-1 to 1)⇒ (1 to 0 to 1)
The "D" format converts the AD value to an signed value. (-1 to 1)⇒ (-1 to 1)
The "U" format converts the AD value to an unsigned value. (-1 to 1)⇒ (0 to 1)

Rerouting a channel can for example be used to display the water flow on the M-Panel display instead of the Tesla. Following example show this:

'Esc'<AD 13,25,3,U,1

Issuing an {'Esc'<AD ch} without any parameters will return the present channel setting.

The setting becomes first operational after a processor reset or a mode switch update.

Nothing else is affected.

CHANNEL –	VALUE	AD port	no. digit
0	Output current	12 bit port 0	3
1	Tesla	12 bit port 3	3
2	Output Voltage	12 bit port 2	3
3	Internal +15V sup.	10 bit port 1	3
4	Internal -15V sup.	10 bit port 2	3
5	Internal +5V sup.	10 bit port 3	3
6	Delta temperature	12 bit port 1	3
7	Trans. Bank Vce	12 bit port 5	3
8	Optional Iout (16 Bit)	17 bit port 1	5
9	Aux. Iout (Ctr. Panel)	mirror ch0 or ch8	3
10	Aux. Iout (Ctr. Panel)	mirror ch8	5
11	Iout Optional	12 bit port 6	3
12	Vout Optional	12 bit port 4	3
13	Water flow	16 bit frq. count	3
14	Free on plug P29 (±1V)	12 bit port 7	3
15	Free on plug P19 (10V)	10 bit port 0	3

Esc<ADR - ADdRess setup write

Command: 'Esc'<ADR'sp'ch,address

ch: ASCII digit 0 to 1 1=local; 0=remote
Address: ASCII digit 0 to 255

Example: 'Esc'<ADR 0,10
Syntax: 'Esc'<ADR'sp'0,10'cr'

Answer: No answer except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors:

ILLEGAL COMMAND means that line-in-command is wrong.

SYNTAX ERROR, means a missing space between the command and parameter or wrong syntax.

DATA CONTENTS, means that the parameter format is incorrect or a non-digit character is found in the data field or a parameter is outside the specification.

Description:

The 'Esc'<ADR command is used to configure the communication line address.
The setting becomes first operational after a processor reset or a mode switch update.

Giving the 'Esc'<ADR'sp'ch, without any address will return the current setting.

Default address is 0 for both local and remote line.

Esc<ADR - ADdRess setup read

Command: 'Esc'<ADR'sp'ch

ch: ASCII digit 0 to 1 1=local; 0=remote

Example: 'Esc'<ADR 0
Syntax: 'Esc'<ADR'sp'0'cr'

Answer: 'ch,address

or Error message.

Errors:

ILLEGAL COMMAND means that line-in-command is wrong.

SYNTAX ERROR, means a missing space between the command and parameter or wrong syntax.

DATA CONTENTS, means that the parameter format is incorrect or a non-digit character is found in the data field or a parameter is outside the specification.

Description:

The 'Esc'<ADR read command is used to verify the programmed line address.

Esc<ADSET - Analog to Digital converter SETting. From version SCC103

Command: 'Esc'<ADSET ch,val1,val2'cr'

ch: ASCII digit 0 to 15
val1: Z, F, B or T
val2: ASCII 00000 to 99999

Example: 'Esc'ADSET 8,F,999999
Syntax: 'Esc'ADSET 8,F,999999'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors:

SYNTAX ERROR	means wrong syntax.
ILLEGAL COMMAND	means that line-in-command is wrong.
DATA CONTENTS	means that parameter format is incorrect or a non-digit character is found in the data field or the parameter is outside the specification.

Description:

The **ADSET** command is used to automatically Gain and Offset adjust a specific AD channel to display a certain value equals to "val2". If val2 is not given, zero will be read for the Offset - and the factory default for the gain value.

! Be aware, there is no syntax check on the values. Wrong values may give meaningless output readings. !

ADSET continued

val1 interpretation

Z: Offset adjustment (to Zero) From version SCC104
F: Gain adjustment (To full scale) From version SCC104
B: Restores the Offset value to the factory default. (Bottom)
T: Restores the Gaint value to the factory default. (Top) From version SCC104

Related commands: **'Esc'<DASET, 'Esc'<AD**

Affected commands: **NONE**

Esc<AUX - AUXiliary setup write

Command: 'Esc'<AUX'sp b1,b2,b3,b4,b5,b6,b7,b8

bx:: ASCII 0 or 1

Example: 'Esc'<AUX 0,0,1,1
Syntax: 'Esc'<AUX'sp'0,0,11'cr'

Current setting are kept for non entered bits.

Answer: No answer except errors.
or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **ILLEGAL COMMAND** means that line-in-command is wrong.

SYNTAX ERROR, means a missing space between the command and parameter or wrong syntax.

DATA CONTENTS, means that the parameter format is incorrect or a non-digit character is found in the data field or a parameter is outside the specification.

Description:

The 'Esc'<AUX command is used to define the different auxiliary setting
The setting becomes operational immediately after then saving in the EEPROM..

The bit definition are illustrated at the right of this page and on the dip switch setting chapter.

Setting of bit 16 and 17 is intended for Offset DAC use. That is a 16 bit setting between 88 and 96% (Bit16=0 & BIT 17=1) or between 92% and 100% output current (Bit16=1 & BIT 17=1). For linear DAC settings, please set bit 16 & 17 to transparent mode.

Using the "WA" command a leading zeroes or trailing zeroes input format can be chosen.

- For leading zeroes: "WA 123" equals "WA 000123"
- For trailing zeroes: "WA 123" equals "WA 123000"

Giving the 'Esc'<AUX without any parameter will return the current setting.

Esc<AUX continued

b1 : DAC 16:	**0**:	Transparent	1: = 1	0: = 0	1: = 1		
b2 : DAC 17:	**0**:		0: = 0	1: = 1	1: = 1		
b3 : Interlock clear	**0**:	RS resets Interlocks	1:	RS and OFF resets Interlocks			
b4: WA zeroes	**0**:	WA uses trailing zeroes	1:	WA uses leading zeroes			
b5: Display Units	0:	Display in V and A	**1**:	Display in %			
b6: CAMAC Dir	**0**:	Disabled (Hi Z)	1:	Enabled as output			
b7: Wake up level	**0**:	0% output after reset	1:	100% output after reset			
b8: Uni/BI-polar	**0**:	Uni polar DAC	1:	Bipolar DAC			

Those in bold are the default setting.

If a CAMAC Control Module is not inserted at slot P3 (Pin P3.A32 pulled low), the DAC port may be configured as output by setting b6: to '1' (Enabled as output). This enables either the DAC bits to be analysed or to be connected to another power supply in a parallel tracking mode. (the second supply must be configured for CAMAC control).

Wake up to 100% output current (From version SCC109) is intended to be used with the 20bit multiplying DAC and having analogue input reference (The DAC is used as an multiplication factor for the reference signal)

Esc<AUX - AUXiæliary setup read

Command: 'Esc'<AUX'

Example: 'Esc'<AUX
Syntax: 'Esc'<AUX'cr'

Answer: b1,b2,b3,b4,b5,b6,b7,b8

Errors: **ILLEGAL COMMAND** means that line-in-command is wrong.

Description:

The 'Esc'<AUX read command is used to verify the programmed auxiliary bit setup.

Esc<AUX2 - AUXiliary setup write

From version SCS110

Command: 'Esc'<AUX'sp b1,b2,b3,b4,b5,b6,b7,b8

bx:: ASCII 0 or 1

Example: 'Esc'<AUX 0,0,1,1
Syntax: 'Esc'<AUX'sp'0,0,11'cr'

Current setting are kept for non entered bits.

Answer: No answer except errors.
or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **ILLEGAL COMMAND** means that line-in-command is wrong.

SYNTAX ERROR, means a missing space between the command and parameter or wrong syntax.

DATA CONTENTS, means that the parameter format is incorrect or a non-digit character is found in the data field or a parameter is outside the specification.

Description:

The 'Esc'<AUX command is used to define the different auxiliary setting
The setting becomes operational immediately after then saving in the EEPROM..

The bit definition are illustrated at the right of this page and on the dip switch setting chapter.

Giving the 'Esc'<AUX without any parameter will return the current setting.

Esc<AUX2 continued

b1 : 1= AD 0,8, 9 and 10 will be multiplied by -1 That is negated.
b2 : 1= Inverts the polarity status line.
b3 : 1= ON/OFF enabled through serial remote line in CAMAC mode *1
b4: Auto slew rate ramp profile shape. 0= Cosine & 1=Square *2
b5: 1= HW control of "Two Level Set Function" (Sync input line) *3
b6: Not used
b7: Not used
b8: Not used

Default setting: 0,1,0,0,0,0,0,0

*1) From SW version SCC112
With a custom interface plugged into P3 and pulling pin C32 low and enabling b3 will allow DAC settings through the CAMAC port, but ON/OFF/RESET must still be issued through the remote serial interface.
*2) From SW version SCC113 (see also command 'eac'<slopetime)
*3) From SW version SCC114 (see also command 'da 0' read and write)

Esc<AUX2 - AUXiæliary setup read

Command: 'Esc'<AUX'

Example: 'Esc'<AUX
Syntax: 'Esc'<AUX'cr'

Answer: b1,b2,b3,b4,b5,b6,b7,b8

Errors: **ILLEGAL COMMAND** means that line-in-command is wrong.

Description:

The 'Esc'<AUX read command is used to verify the programmed auxiliary bit setup.

Esc<BAUD - BAUD rate setup write

Command: 'Esc'<BAUD'sp'ch,baud,parity, odd/even,no_bits,stop_bits

ch:	ASCII digit 0 or 1	1=local; 0=remote
baud	ASCII 1200, 2400, 9600, 19200, 38400, 57600, 76800, 115200	
parity	ASCII digit 0 or 1	0: OFF, 1: ON
odd/even	ASCII digit 0 or 1	0=odd; 1=even
no_bits:	ASCII digit 7 or 8	0=8; 1=7
Stop_bits	ASCII digit 0 or 1	0=1½; 1=2

Example: 'Esc'<BAUD 0,9600,0,8,1
Syntax: 'Esc'<BAUD'sp'0,9600,0,1,1'cr'

Current setting are kept for non given settings

Answer: No answer except errors.

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **ILLEGAL COMMAND** means that line-in-command is wrong.

SYNTAX ERROR, means a missing space between the command and parameter or wrong syntax.

DATA CONTENTS, means that the parameter format is incorrect or a non-digit character is found in the data field or a parameter is outside the specification.

Description:

The 'Esc'<BAUD command is used as UART HW setup for both channels..
The setting becomes first operational after a processor reset or a mode switch update.

Default setting is "9600Baud, No party, 8 Bits, 1½ Stop bits" for both local and remote line.

Giving the 'Esc'<BAUD'sp'ch, without any parameter will return the current setting.

Esc<BAUD - BAUD rate setup read

Command: 'Esc'<BAUD"sp'ch

Example: 'Esc'<BAUD 0
Syntax: 'Esc'<BAUD'sp'0'cr'

Answer: 'ch,baud,parity, odd/even,no_bits,stop_bits

1,9600,0,0,0,0

ch:	ASCII digit 0 or 1	1=local; 0=remote
baud	ASCII 1200, 2400, 9600, 19200, 38400, 57600, 76800, 115200	
parity	ASCII digit 0 or 1	0: OFF, 1: ON
odd/even	ASCII digit 0 or 1	0=odd; 1=even
no_bits:	ASCII digit 7 or 8	0=8; 1=7
Stop_bits	ASCII digit 0 or 1	0=1½; 1=2

or Error message

Errors: **ILLEGAL COMMAND** means that line-in-command is wrong.

SYNTAX ERROR, means a missing space between the command and parameter or wrong syntax.

Description:

The 'Esc'<BAUD read command is used to verify the programmed baud rate setup (UART HW setup).

Esc<COLDBOOT - Wake up mode setup write

Command: 'Esc'<COLDBOOT' 'sp'b1,b2,b3,b4,b5,b6,b7,b8

bx:: ASCII 0 or 1

Example: 'Esc'<COLDBOOT 1,1,1,0,1,0
Syntax: 'Esc'<COLDBOOT'sp'1,1,1,0,1,0'cr'

Current setting are kept for non entered bits.

Answer: No answer except errors.

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **ILLEGAL COMMAND** means that line-in-command is wrong.

SYNTAX ERROR, means a missing space between the command and parameter or wrong syntax.

DATA CONTENTS, means that the parameter format is incorrect or a non-digit character is found in the data field or a parameter is outside the specification.

Description:

The 'Esc'<COLDBOOT command is used to define the wake up control mode, i.e. which line has to be active after a reset and what error response should be returned if encountering an error.

The setting becomes operational immediately after then saving in the EEPROM..

The bit definitions are illustrated at the right of this page and on the dip switch setting chapter.

Giving the 'Esc'<COLDBOOT command without any parameter will return the current setting.

Esc<COLDBOOT continued

b1 : Remote addressing:	0: Enabled	**1**: Disabled						
b2 : Local addressing:	0: Enabled	**1**: Disabled						
b3 : Default line in	0: Remote	**1**: Local						
b4: Auto answer	**0**: Disabled	1: Enabled						
b5: ERR response	**0**: ?♬ only	1: ?♬ and ERR code		0: ?♬ and ERR text		1: ?♬ and ERR text		
b6: ERR response								
b7: not used								
b8: not used								

Those in bold are the default setting.

Esc<COLDBOOT - Wake up mode setup read

Command: 'Esc'<COLDBOOT'

Example: 'Esc'<COLDBOOT
Syntax: 'Esc'<COLDBOOT'cr'

Answer: b1,b2,b3,b4,b5,b6,b7,b8

or Error message

Errors: **ILLEGAL COMMAND** means that line-in-command is wrong.

Description:

The 'Esc'<COLDBOOT read command is used to verify the programmed wake up bit setup.

Esc<CPURESET -

From version SCC112

Command: 'Esc'<CPURSET 'cr'

Example: 'Esc'<CPURSET
Syntax: 'Esc'<CPURSET'cr'

Answer: Start up character. 'R' if the control module starts in the Remote mode as default or "L" if the Local mode is set. (Until SW version SCC112 was the start up character always "FF" in hex)

Errors: **SYNTAX ERROR** means wrong syntax.

ILLEGAL COMMAND means that line-in-command is wrong.

Description:

The **CPURESET** command is used to restart the CPU in exact the same way as the hardware reset button.

Useful for setup settings that requires a reset which are (Not listed commands gets operational immediately after issued):
'Esc'<ADR
'Esc'<AUX setting b6, b7 and b8
'Esc'<AUX2 setting b3
'Esc'<BAUD
'Esc'<COLDBOOT setting b4, b5 and b6
'Esc'<LINE

Related commands: **NONE**

Affected commands: **Esc<COLDBOOT**

Intentionally blank

Esc<DA - DA setup

Command: 'Esc'<DA'sp'ch',scale_factor,Offset,no_digits,format,ch_reroute'cr'

ch:	ASCII digit 0 to 15	
Scale_factor:	9 digit floating point value plus sign.	
Offset:	5 digit floating point value plus sign.	From version SCC103
No_digit:	1 to 6	
format:	A (Absolute), D (Signed) or U (Unsigned)	
ch_reroute:	ASCII digit 0 to 15	

Example: 'Esc'<DA 3,12345,0,3,U,3
Syntax: DA'sp'3,12345,0,3,U,3'cr'

or

'Esc'<DA 3,12345
Syntax: AD'sp'0,12345'cr'
Non entered parameters are left unchanged.

Answer: No answer except errors.

or OK if autoanswer mode is set. (From SW version SCS110)

Errors:

ILLEGAL COMMAND means that line-in-command is wrong.

SYNTAX ERROR, means a missing space between the command and parameter or wrong syntax.

DATA CONTENTS, means that the parameter format is incorrect or a non-digit character is found in the data field or a parameter is outside the specification.

Description:

The 'Esc'<DA command is used to scale and/or to reroute any of the present four DA channels. All DA channels are internally normalized to 1 for full scale before multiplied with the scale factor positive or negative. This simplifies the scale factor to be nearly the same as the desired max set value for most applications.
The number of digits for the set value is also programable between 1 and 6.

ESC<DA continued

The number of digits also defines the max hold value during overflow. For example if no. of digits =3 then 999 is maximum allowable value.

On bipolar supplies a format parameter can be issued to always return a positive value.
The "A" format converts the AD value to an absolute value. (-1 to 1)⇒ (1 to 0 to 1)
The "D" format converts the AD value to an signed value. (-1 to 1)⇒ (-1 to 1)
The "U" format converts the AD value to an unsigned value. (-1 to 1)⇒ (0 to 1)

This command can be used if the current set value has to be in amps (or milii Amps) or to change the absolute slew rate setting for the W3 (DA 3) command.

Issuing an {'Esc'<DA ch} without any parameters will return the present channel setting.

The setting becomes operational immediately after then saving in the EEPROM..

Nothing else is affected.

Below are listed the a viable DA channels.

CHANNEL (X)	VALUE	DA channel spec.	Equal to
0	Output current	24 bit(/32 bit)	WA range as default
1	Slew rate DAC 1 direct	8 bit	W1, R1 setting
2	Optional DAC 2	8 bit	W2, R2 setting
3	Slew rate DAC 1 Absolute	8 bit	W3, R3 setting

Esc<DASET - Digital to Analog converter SETting. From version SCC104

Command: 'Esc'<DASET ch,val1,val2'cr'

ch: ASCII digit 0 to 15
val1: Z, F, B or T
val2: ASCII 00000 to 99999

Example: 'Esc'DASET 0,F,999999
Syntax: 'Esc'DASET 0,F,999999'cr'

Answer: No answer, except errors

or OK if autoanswer mode is set. (From SW version SCS110)

Errors:

SYNTAX ERROR	means wrong syntax.
ILLEGAL COMMAND	means that line-in-command is wrong.
DATA CONTENTS	means that parameter format is incorrect or a non-digit character is found in the data field or the parameter is outside the specification.

Description:

The **DASET** command is used to automatically Gain and Offset adjust a specific DA channel to given value "val2". If val2 is not provided, zero will be taken for the Offset - and all nines for the Gain adjustment.
This feature is specially designed for "non HW calibrated" DACs as for the 855 DAC or for changing the slew rate setting value directly in Amp/Sec. (DA 3)

! Be aware, there is no syntax check on the values. Wrong values may give meaningless output readings. !

Related commands: **'Esc'<DASET, 'Esc'<DA**

Affected commands: **NONE**

ESC<DASET continued

val1 interpretation

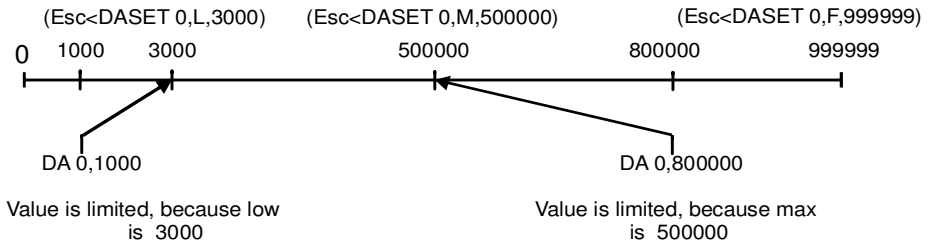
Z:	Offset adjustment (to Zero)	From version SCC104
F:	Gain adjustment (To full scale) *	From version SCC104
B:	Restores the Offset value to the factory default. (Bottom)	From version SCC104
T:	Restores the Gain value to the factory default. (Top)	From version SCC104
L:	Low(min) value	From version SCC114
M:	Max value *	From version SCC114
I :	Initial value after reset	From version SCC114

* Be aware when performing the full scale adjustment 'F', that the set value (DA 0,xxxxxx) can not be set higher than the given max value 'val2' by the 'M' setting. That is, perform the full scale adjustment before the limit setting.

Example on limit setting

```
Esc<DASET 0,F,999999      ;Gain Adjustment
Esc<DASET 0,M,500000      ;Set max allowed output current to 50%
Esc<DASET 0,L,3000        ;Set lowest allowed output current
```

DA 0,800000 ' → Value will be limited and set to 500000 with Error message "value is limited"
DA 0,1000 ' → Value will be limited and set to 3000 with Error message "value is limited"
Esc<DASET 0,I,2000 ' → Value will be limited. Initial value has to be higher than low set value



Ps. When autoscaling: Using a unipolar DAC, the initially Offset value must always be negative and the gain a bit too high. From version SCC108, a bipolar DAC can be attached, that is, the Offset may be initially either positive or negative but the gain must still be a bit too high. On bipolar DACs, the gain can only be auto adjusted at +100%.

Related commands: **'Esc'<DASET, 'Esc'<AD**
Affected commands: **NONE**

Esc<DASET - DA converter SETting read.

From version SCC114

Command: 'Esc'<DASET ch'cr'

ch: ASCII digit 0 to 4

Example: 'Esc'DASET 0
Syntax: 'Esc'DASET 0'cr'

Answer: val1,val2 ,val3 ,val4, val5
val1 = 000000 to ±999999 (Full scale)
val2 = 000000 to ±999999 (Zero offset)
val3 = 000000 to ±999999 (Low/min value)
val4 = 000000 to +999999 (Max value)
val5= 000000 to +999999 (Initial value)

or

Errors: **SYNTAX ERROR**, means wrong syntax.

ILLEGAL COMMAND, means that line-in-command is wrong.

DATA CONTENTS, means that parameter format is incorrect or a non-digit character is found in the data field or the parameter is outside the specification.

Description:

The ESC<DASET read command is used to read the scaling and setting values for a given DA channel. Possible channels are 0,1,2 and 4.

Related commands: **'Esc'<DASET, 'Esc'<DA**

Affected commands: **NONE**

Esc<ID - IDdentification write.

From version SCC114

Command: 'Esc'<ID val'cr'

val: ASCII character (up to 64 characters)
\r is reserved word that will generate a carriage return and a line feed ('cr' 'lf')

Example: 'Esc'<ID SYSTEM 8500 typ 859\r 1250A/400V\rSW ver SCS 114\rID 1234567
Syntax:
'Esc'<ID'sp'SYSTEM 8500 typ 859\r 1250A/400V\rSW ver SCS 114\rID 1234567 'cr'

Answer: No answer, except errors
or OK if autoanswer mode is set

Errors: **SYNTAX ERROR**, means wrong syntax.

DATA CONTENTS, means that parameter format is incorrect or the number of characters is outside the specification.

Description:
The **'esc'<ID** command is used to enter a user defined text string of maximum 64 characters in length that will be stored in the EEPROM. The information stored could be the information about the power supply as follow:

SYSTEM 8500 TYP 859H
1250A / 400V
SW VER SCC114
ID 1234567

Ps. - All characters are converted to upper case regardless if they are typed in lower case
- If the input string is larger than 64 characters, the whole string will be ignored and an error message "data length" will be generated.

Related commands: **ID**
Affected commands: **NONE**

Esc<INTERLOCK - INTERLOCK Bits Definition setup write

Command: 'Esc'<INTERLOCK' 'sp'interlock_set,crc_check

interlock_set:: 8 Hex digits
crc_check:: 2 Hex digits

Example: 'Esc'<INTERLOCK 03FFFC80,0F
Syntax: 'Esc'<INTERLOCK'sp'03FFFC80,0F'cr'

Leading zeroes can be omitted

Answer: No answer except errors.

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **ILLEGAL COMMAND** means that line-in-command is wrong.

SYNTAX ERROR, means a missing space between the command and parameter or wrong syntax.

DATA CONTENTS, means that the parameter format is incorrect or a non-digit character is found in the data field or a parameter is outside the specification.

Description:

The 'Esc'<INTERLOCK command is used to define which input bits have to be treated as interlocks and which bits as status. The Interlock bits will be latched and capable to trigger the first catch register.

The setting becomes operational immediately after then saving in the EEPROM..

The interlock_set and the crc_check values can be calculated by Danfysik service personnel only. In case of a reentry is needed (accidentally used COLDBOOT), please use the "interlock_set,crs_check" value given in the test report. (Standard setting do not need reentry after COLDBOOT.)

Giving the 'Esc'<INTERLOCK command without any parameter will return the current setting.

Esc<INTERLOCK - INTERLOCK Bits definition setup read

Command: 'Esc'<INTERLOCK'

Example: 'Esc'<INTERLOCK
Syntax: 'Esc'<INTERLOCK'cr'

Answer: interlock_set,crc_check

or Error message.

Errors: **ILLEGAL COMMAND** means that line-in-command is wrong.

Description:

The 'Esc'<INTERLOCK command is for factory use only. The read option is used to verify which of the input bits are defined as latched inputs and which are transparent statuses. The answer is a coded message. The factory set value is written in the test report.
.

Esc<LINE - Serial LINE working mode setup write

Command: 'Esc'<LINE' 'sp'ch',b1,b2,b3,b4,b5,b6,b7,b8

bx:: ASCII 0 or 1
Ch: 1 = LOCAL & 0 = REMOTE

Example: 'Esc'<LINE 1,0,0,0,0,1
Syntax: 'Esc'<LINE'sp'ch',1,0,0,0,0,1'cr'

Current setting are kept for non entered bits.

Answer: No answer except errors.

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **ILLEGAL COMMAND** means that line-in-command is wrong.

SYNTAX ERROR, means a missing space between the command and parameter or wrong syntax.

DATA CONTENTS, means that the parameter format is incorrect or a non-digit character is found in the data field or a parameter is outside the specification.

Description:

The 'Esc'<LINE command is used to configure the working protocol of the serial lines.

The setting becomes first operational after a processor reset or a mode switch update.

The bit definitions are illustrated at the right of this page and on the dip switch setting chapter.

Giving the 'Esc'<LINE sp'ch', command without any parameter will return the current setting.

Esc<LINE continued

b1: RS485 Communication:	**0**: Disabled	1: Enabled	
b2: RS485 Line Turn Around:	**0:** 0	1: 1	(From SCC110)
b3: RS485 Line Turn Around::	**0:** 0	1: 1	(From SCC110)
b4: 'OK' Answer Mode:	**0**: Disabled	1: Enabled	(From SCC110)
b5: BOOT character:	**0**: "FF"	1: "R" (remote) "L"(local)	
b6: Not Used:	**0**: Disabled	1: Enabled	
b7: XON/XOFF Protocol:	**0:** Disabled	1: Enabled	
b8: Not Used:	**0**: Not included	1: Included	

Those in bold are the default setting.

b2, b3 : 0,0 Delay=0
b2, b3 : 0,1 Delay=time to transmit 2 dummy characters
b2, b3 : 1,0 Delay=time to transmit 4 dummy characters
b2, b3 : 1,1 Delay=time to transmit 8 dummy characters

Esc<LINE - Serial LINE working mode setup read

Command: 'Esc'<LINE' 'sp'ch',

Example: 'Esc'<LINE' 'sp'ch',
Syntax: 'Esc'<LINE' 'sp'ch"cr'

Answer: LINE' 'sp'ch',b1,b2,b3,b4,b5,b6,b7,b8

or Error message

Errors: **ILLEGAL COMMAND** means that line-in-command is wrong.

Description:

The 'Esc'<LINE read command is used to verify the programmed wake up bit setup.

Esc<PPULS - on PULS setup write

Command: 'Esc'<PPULS'sp'val'

val: ASCII digit 0 to 255 in 100msec. Steps

Example: 'Esc'<PPULS 5
Syntax: 'Esc'<PPULS'sp'5'cr'

Answer: No answer except errors.

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **ILLEGAL COMMAND** means that line-in-command is wrong.

SYNTAX ERROR, means a missing space between the command and parameter or wrong syntax.

DATA CONTENTS, means that the parameter format is incorrect or a non-digit character is found in the data field or a parameter is outside the specification.

Description:

The 'Esc'<PPULS command is used to configure the ON pulse time. That is, within this time, the main contactor must be activated so it can be latched on. The ON time is used as inrush current limit time to charge up large capacitor banks. Normally on switch mode power supplies.

The setting becomes operational immediately after then saving in the EEPROM..

Be aware, that after a cold boot, the PPULS time will be reset to the default value which is **500 msec.**

Giving the 'Esc'<PPULS without any address will return the current setting.

Esc<PPULS - on PULS setup read

Command: 'Esc'<PPULS'

Example: 'Esc'<PPULS
Syntax: 'Esc'<PPULS'cr'

Answer: pulse time value 0 to 255 in 100msec. Steps

or Error message

Errors: **ILLEGAL COMMAND** means that line-in-command is wrong.

Description:

The 'Esc'<PPULS read command is used to verify the programmed on pulse time.

Esc<PPULS1 - Auxiliary on PULS setup write

Command: 'Esc'<PPULS1'sp'val'

val: ASCII digit 0 to 255 in 100msec. Steps

Example: 'Esc'<PPULS1 5
Syntax: 'Esc'<PPULS1'sp'5'cr'

Answer: No answer except errors.

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **ILLEGAL COMMAND** means that line-in-command is wrong.

SYNTAX ERROR, means a missing space between the command and parameter or wrong syntax.

DATA CONTENTS, means that the parameter format is incorrect or a non-digit character is found in the data field or a parameter is outside the specification.

Description:

The 'Esc'<PPULS1 command is used to configure the Auxiliary ON pulse time.

Giving a Zero pulse time, equals to setting the output line to a static operation. That is, the auxiliary line can only be turned OFF with the F1 Command.

The setting becomes operational immediately after then saving in the EEPROM..

PPULS1 time will after a Coldboot be reset to the default value that is 0 or equal to static operation

Giving the 'Esc'<PPULS1 without any address will return the current setting.

Esc<PPULS1 - Auxiliary on PULS setup read

Command: 'Esc'<PPULS1'

Example: 'Esc'<PPULS1
Syntax: 'Esc'<PPULS1'cr'

Answer: pulse time value 0 to 255 in 100msec. Steps

or Error message

Errors: **ILLEGAL COMMAND** means that line-in-command is wrong.

Description:

The 'Esc'<PPULS read command is used to verify the programmed on pulse time.

Esc<POLDEALAY - Polarity DELAY setup write (From version SCC108)

Command: 'Esc'<POLDELAY'sp'val'

val: ASCII digit 0 to 255 in 100msec. Steps

Example: 'Esc'<POLDELAY 50
Syntax: 'Esc'<POLDELAY'sp'50'cr'

Answer: No answer except errors.

or OK if autoanswer mode is set. (From SW version SCS110)

Errors: **ILLEGAL COMMAND** means that line-in-command is wrong.

SYNTAX ERROR, means a missing space between the command and parameter or wrong syntax.

DATA CONTENTS, means that the parameter format is incorrect or a non-digit character is found in the data field or a parameter is outside the specification.

Description:

The 'Esc'<POLDELAY command is used to set a time delay between the OFF state and the activation of the polarity change over switch. This to let the rest energy in the magnet to decay. The time delay is only inserted, if the power supply was ON before invoking the POL +/- command. That is, when just changing the polarity in the power OFF mode, no time delay will be inserted..

Giving the 'Esc'<POLDELAY without any value will return the current setting.

Esc<POLDEALAY - Polarity DELAY setup read (From version SCC108)

Command: 'Esc'<POLDELAY'

Example: 'Esc'<POLDELAY
Syntax: 'Esc'<POLDELAY'cr'

Answer: pulse time value 0 to 255 in 100msec. Steps

or Error message

Errors: **ILLEGAL COMMAND** means that line-in-command is wrong.

Description:

The 'Esc'<POLDELAY read command is used to verify the programmed polarity pulse delay time.