

Sky-scanner

Serial command set

Ver. 24.1.2022

Port settings

115200 bps, 8 data bits, parity: None, stop-bits: 1, flow control: None

Introduction

Commands have fixed length of 8 characters. Sky-scanner waits until at least 8 characters are available in the queue. Then first 8 characters from the queue are read as a command, all other characters from the queue are thrown away. In such way the communication doesn't depend on the ending characters of the serial communication (e.g. CR, LF, CR+LF, None) set on the host.

The structure of each command is fixed to CCCnnnnn. CCC means 3 characters of the command, nnnnn means 5 digits of the parameter. If the parameter is shorter (e.g. 3 digits), the rest of the command has to be filled by any dummy character (e.g. 'X' as used in this manual).

The received command is displayed in the first line of the LCD display until the execution of the command is finished. Then an 8-character answer is sent to the host. The answer has the same structure as the command has. If unknown command was received, the answer is "UNKNOWN!"

Commands

IDNXXXXX – identification. XXXXX = dummy. Sky-scanner returns the identification string.

Answer: **SKY-SCAN**

SFLknnXX – sets the required filter. k = carousel (0 or 1), nn = position of the filter, XX = dummy.

Example: SFL011XX – sets filter 11 in the carousel 0

Answer: **FLTknnXX** – parameters have the same meaning as in the SFL-command

GFLkXXXX – returns the position of current filter in the carousel k. XXXX = dummy.

Example: GFL1XXXX – returns the position of the current filter in the carousel 1

Answer: **FLTknnXXX** – the same as in SFL command

RFLkXXXX – reset of the carousel k. XXXXX = dummy. The filter at the position 0 is set. Command also checks if the position of the carousel was not lost until now.

Example: RFL1XXXX – reset of the carousel 1

Answer: **FLTkISOK** or **FLTkLOST** – if “LOST” was returned, incorrect filters in the carousel k could be set after previous reset of the carousel k (all measurements after previous reset have to be re-run)

SCVnnnnn – sets the control voltage of the PMT. nnnnn = voltage in tenths of millivolts.

Example: SCV05234 sets the control voltage of 0.5234 V. The upper value is automatically limited to ca 1.15 V (maximum control voltage allowed for the PMT is 1.1 V). Default value: 0.4 V (minimum recommended value by the producer of the PMT is 0.5 V, for lower values the amplification of the PMT drops dramatically down).

Answer: **CVTnnnnn** – returns the current control voltage value. nnnnn has the same meaning as in SCV command

GCVXXXXX – returns the current value of the control voltage. XXXXX = dummy.

Answer: **CVTnnnnn** – the same as in SCV command.

GSVXXXXX – returns the current value of the signal voltage from the PMT. XXXXX = dummy.

Answer: **SVTnnnnn** - nnnnn = signal voltage in tenths of millivolts.

Example: SVT12345 – signal voltage is 1.2345 V

SNMnnnnn – sets the number of the measurements of the signal voltage to be averaged. nnnnn = number. 100 measurements take ca 1.0 s (100 is the default value).

Example: SNM01000 – sets the number of measurements to 1000 (ca 10.0 s of averaging).

Answer: **NMAnnnnn** – number of measurements to be averaged. nnnnn has the same meaning as in SNM command.

GNMXXXXX – returns the number of measurements that are currently averaged. XXXXX = dummy.

Answer: **NMAnnnnn** – the same as in SNM command.

STPsnnnn – sets the minimum temperature (the heating is started) snnnn – temperature in tenths of degree incl. signum +/-

Example: STP+0125 – sets the minimum temperature to 12.5°C. Default value: 5°C (minimum working temperature of the photomultiplier tube).

Answer: **TPVsnnnn** – the minimum temperature currently set. snnnn has the same meaning as in STP command.

GTPXXXXX – gets the current temperature in the case.

Answer: **TPVsnnnn** – the current temperature. snnnn has the same meaning as in STP command.