sorensensga30x501d EPICS module Documentation

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Contents

List of abbreviations

CSS	Control System Studio
EPICS	Experimental Physics and Industrial Control System
ESS	European Spallation Source
GUI	Graphical User Interface
PV	Process Variable

1 Scope

This document provides information about the use and control with EPICS of the Sorensen SGA 30x501d power supply in the context of the ESS's source at Catania. The module has been developed after documentation version M550129-03 Rev J.

2 Issuing Organisation

CEA Saclay was in charge of the EPICS control of the steerers power supplies of the ESS source.

3 Context

The sorensensga30x501d module [1] has been written to support Sorensen SGA 30x501d power supply. This document provides an overview of the module structure and explain the purpose of its signals.

4 Interface Description

4.1 Local Control

Local control is possible from the front panel, as described in the manufacturer's manual.

4.2 Digital Control

4.2.1 Streamdevice

Sorensen SGA 30x501d use the standard SCPI protocol. The file sorensen30x501d.proto in the Protocol folder of the sources contains the streamdevice EPICS module. Please note that only a subset of the full command list has been implemented (only those required by the source).

4.2.2 EPICS

The folder db contains templates and substitutions files, the startup folder contains startup files, the opi folder contains sample graphical interface. The src folder contains a C file used to return error codes.

The module is installed in /opt/epics/module/sorensensga30x501d/ .

5 EPICS PV list

Each command is prefixed with macros to setup section and device name. Those macros are replaced with values present in the .substitutions files present in the

[1] https://bitbucket.org/europeanspallationsource/m-epics-sorensensga30x501d/ .

module's db folder. Only signals (the last part of PV) are listed below.

When the EPICS command corresponds directly to a SCPI command, it is listed in the following table.

Signal	SCPI command	Unit	Description
CurRB	SOUR:CURR?	A	Get current readback value
CurR	MEAS:CURR?	A	Get current measure value
CurS	SOUR:CURR	A	Set current value
ErrClr	*CLS		Clear errors buffer
ErrR			Read error message
LckR	SYST:LOCAL?		Get lock status
LckS	SYST:LOCAL		Set lock status
NxtErrR	SYST:ERR?		Read next error
OvpErrR	SOUR:VOLT:PROT:TRIP?		Read over-voltage protection error
OvpS	SOUR:VOLT:PROT	V	Set over-voltage protection limit
PwrR	OUTP:STAT?		Get power status
PwrS	OUTP:STAT		Set power status
Rst	*RST		Reset power supply
Status	*STB?		Status byte
VolRB	SOUR:VOLT?	V	Read-back voltage value
VolR	MEAS:VOLT?	V	Get voltage measure value
VolS	SOUR:VOLT	V	Set voltage value

Table 1: Signals description

6 Manual

6.1 EPICS Commands

You can interact with previous PV List by using the provided example or the source's CSS GUI, or with caget and caput utilies.

6.2 IOC Configuration

A startup file looks like this:

```
require streamdevice, 2.7.1
require sorensensga30x501d, 0.1.0

## Asyn
drvAsynIPPortConfigure("SolPS-01", "10.0.0.1:5025")

dbLoadRecords("sorensen30x501d.db")
```