Siemens SAPHIR

Siemens SAPHIR communication protocol

Supported device types

Siemens SAPHIR is used to configure and monitor the regulators of Saphir and Climatix product lines produced by Siemens. Supported regulators: Saphir ACX32/ACX34 (via TCP/IP as well as via serial interface) and Climatix POL63x (specifically POL638 via TCP/IP).

Communication line configuration

- Communication line category: TCP/IP, TCP/IP-TCP Redundant
  Note: a reserved TCP port 4242 is usually used, but any other port can be configured, depending on the settings of communicating device. Line number is not used, it can be set e.g. to 1.
- Communication line category: Serial and SerialOverUDP Device Redundant (serial communication)
  Note: serial communication was tested only with Saphir ACX32 regulator via its serial port.

Communication station configuration

- Communication protocol "**Siemens SAPHIR**".

Station protocol parameters

Dialog window for station configuration - **Protocol parameters**.
They influence some optional parameters of protocol. Following line protocol parameters can be entered:
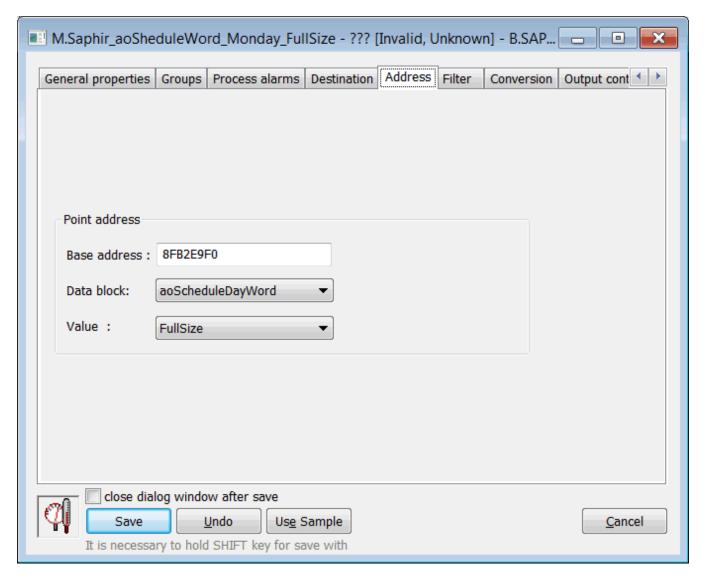
Table 1

Parameter	Meaning	Unit	Default value
Full Debug	Logging is enhanced with listings that enables fast error detection.		NO
Type of Device	Type of used regulator.		ACX32
Retry Count	Maximum number of request retries in case of communication error.		2
Retry Timeout	A delay before resending a request in case of communication error.	s	0,1
Wait First Timeout	Timeout between sending a request and first reading of a response.	s	0,1
Wait Timeout	Delay between reading the responses.	s	0,1
Max. Wait Retry	Maximum number of retries of reading the response.	-	20

I/O tag configuration

Possible value types: **Ai, Ao, Ci, Co, Di, Dout, TxtI, TxtO, TiA, TiR**.

I/O tag address

In Siemens Saphir the I/O tag address is defined as a combination of "Base address", "Data block" and particular element in given data block.

"**Base address**" is 32-bit number that uses hexadecimal format.

"**Data block**" is a type of data block located on specified base address. Current implementation supports these data blocks:

- Message
- MessageEx
- SetPointReal
- SetPointEnum
- LoopSetPoint
- MeasureEx
- SystemClock
- Diagnostic
- SwitchCommand
- LoopController
- PositioningCommand
- MBusCounter
- Counter
- AlarmList
- AlarmEntry
- RCC_Config
- UnitConfig
- TimePlanEnumV2_Day
- TimePlanEnumV2_Week
- HeatingCurve
- aoAlarm
- aoAlarmEntry
- aoDiagnostic
- aoSetptValue
- aoCurveCalc
- aoAnalogInput

- aoBinaryInput
- aoMultistateValue
- aoLoopController
- aoAnalogValue
- aoScheduleWord
- aoScheduleDayWord
- PosCommandEx
- DeviceGroup
- aoDevice

Each data block is N-tuple (different for every type of data block) of primitive data types. Supported primitive types:

- Boolean
- Word
- Unsigned Long
- Long
- Access
- Float
- String
- Integer
- Date
- Time
- Wnday

Literature

Changes and modifications

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Document revisions

- Ver. 1.0 - May 28, 2015 - creation of document
- Ver. 1.1 - July 2, 2015 - implementation of data blocks DeviceGroup and aoDevice

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Related pages:

[Communication protocols](#)