Siemens SAPHIR

Siemens SAPHIR communication protocol

Supported device types

Siemens SAPHIR is used to configure and monitor the controllers of Saphir and Climatix product lines produced by Siemens. Supported controllers: 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. The 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 the Saphir ACX32 controller 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 the protocol. Following line protocol parameters can be entered:

Table 1

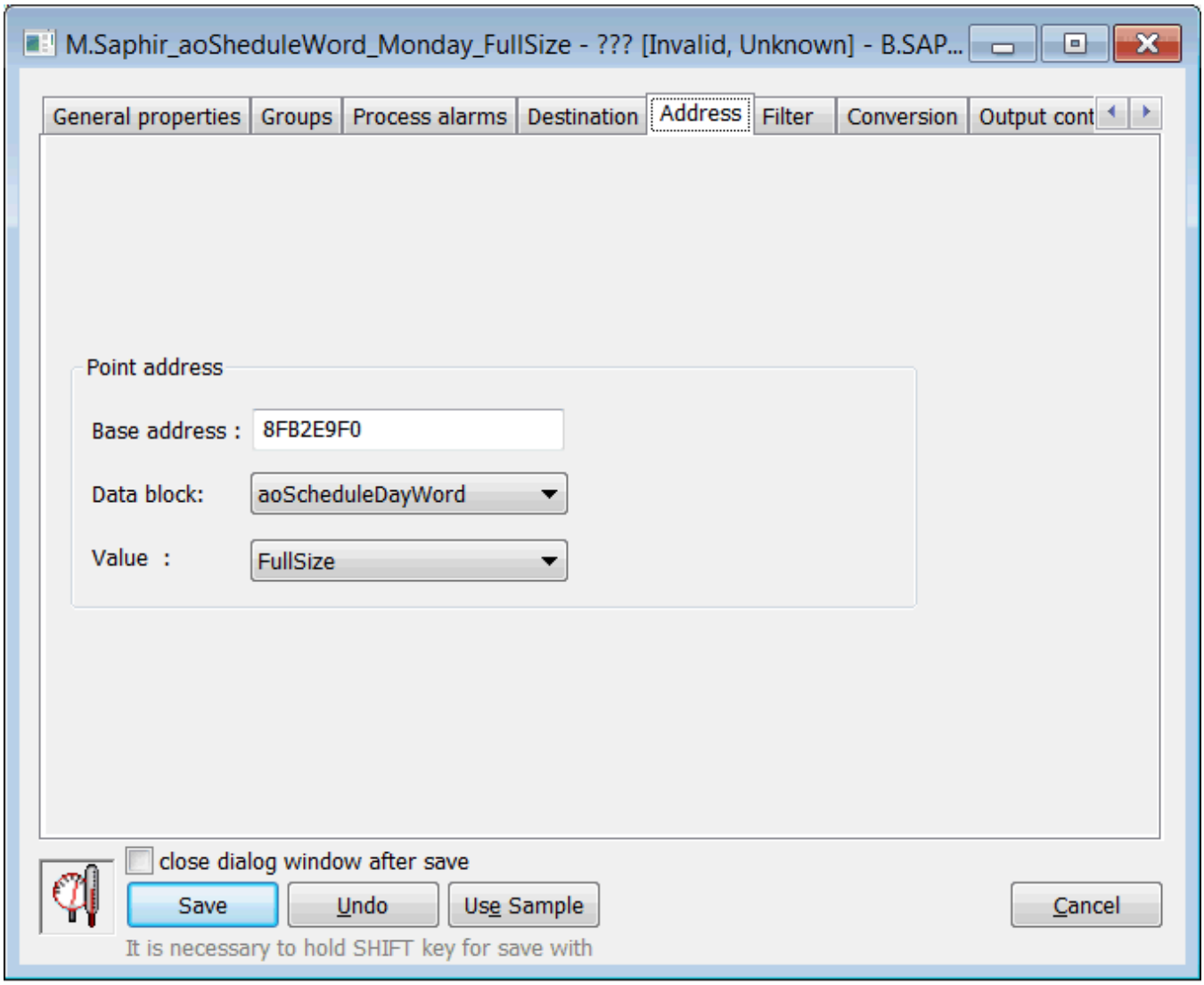
Parameter	Meaning	Unit	Default value
Full Debug	Logging of detailed debug information about communication in the line log.		NO
Type of Device	Type of used regulator.		ACX32
Retry Count	Maximum count of request retries. If no response returns after a request had been sent, the station's status will change to a communication error.		2
Retry Timeout	Timeout before resending a request if no response has been received.	s	0,1
Wait First Timeout	The delay after sending the request and before reading the response.	s	0,1
Wait Timeout	The delay between the response readings.	s	0,1
Max. Wait Retry	The maximum number of retries of the response reading.	-	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 a particular element in a given data block.



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

"**Data block**" is a type of data block located on a specified base address. The 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 an 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 - the creation of the document
- Ver. 1.1 - July 2, 2015 - implementation of data blocks DeviceGroup and aoDevice

Related pages:

Communication protocols