Home

SysMik Scalibur IO driver for Niagara^{N4}

This manual is intended to provide support for installation and usage of the sysmikScaIo ndriver module within the Niagara^{N4}framework. The information is believed to be accurate and reliable. However, SysMik GmbH Dresden assumes no responsibility for possible mistakes and deviations in the technical specifications. SysMik GmbH Dresden reserves the right to make modifications in the interest of technical progress to improve our modules and software or to correct mistakes. We are grateful for any feedback and suggestions. Further information (device description, available software) can be found on our homepage www.sysmik.de. Please ask for latest information via email at sales@sysmik.de or info@sysmik.de. SysMik disclaims all warranties in case of improper use or disassembly and software modifications not described in this document or when using improper or faulty tools. Commissioning and operation of the device by qualified personnel only. All applicable regulations have to be observed.

Table of Contents

SysmikScaIoDi1

SysmikScaIoDi4

SysmikScaIoDi8

SysmikScaIoDi16

SysmikScaIoDi32

SysmikScaIoDo1

SysmikScaIoDo2

SysmikScaIoDo4

SysmikScaIoDo8

SysmikScaIoDo16

SysmikScaIoDo32

SysmikScaIoAi2

SysmikScaIoTemp2

SysmikScaIoAi4

SysmikScaIoAi4EcoAmp

SysmikScaIoAi4EcoVolt

SysmikScaIoAi4EcoTemp

SysmikScaIoAi8

SysmikScaIoAo2

SysmikScaIoAo4

SysmikScaIoAo4EcoAmp

SysmikScaIoAo4EcoVolt

SysmikScaIoAo8

SysmikScaIoDi8S0

SysmikScaIoDali

SysmikScaIoDaliMm

SysmikScaIoMBus

SysmikScaIoRsUni

Preface

Home
This help document gives you a brief description about using the SysMik Scalibur devices and managing connected Inline terminals within Workplace[N4] via `sysmikScaIo` ndriver module.

Document Change Log

Home

Description

- Version: 4.2.0.3

  Published: Nov 14, 2017

  Project now a Git project, no changes on code sources.

- Version: 4.2.0.2

  Published: August 8, 2017

  Bugfix for MP-Bus support.

- Version: 4.2.0.1

  Published: July 27, 2017

  Added support Inline Ecoline terminals.

- Version: 4.1.0.10

  Published: April 25, 2017

AI updateOnDelta (precision 4) + UpdateOnPoll.

- Version: 4.1.0.8

  Published: April 12, 2017

  Synchronized Transaction IDs.

- Version: 4.1.0.7

  Published: December 16, 2016

  No connection break on inactivity.

- Version: 4.1.0.6

  Published: September 21, 2016

  Using help feature 'GuideOnTarget' added for the most important components.

- Version: 4.1.0.2

  Published: Jun 16, 2016

  New 'Eth Switch' component in 'Local Platform' component with 'Sysmik Sca Switch cfg View'.

- Version: 4.1.0.1

  Published: Apr 11, 2016

  Note: This is the first release version.

Compatibility and Installation

Home

NiagaraN4 Platform Compatibility

Home

The `sysmikScaIo` module will function on all NiagaraN4 releases 4.1 and newer on Windows or Linux Operating Systems.

License requirements

Home

The module “sysmikScaIo” is provided by SysMik GmbH Dresden and is licensed by a separate license file SysMikGmbH.license. The license file will be included in each delivered SCA device and needs no additional license request.

> Note: Other device limits or proxy-point limits may apply to this license.

Hardware requirements

Home

The sysmikScaIo ndriver module can be used with all SysMik Scalibur devices containing the kernel version 4.1.3 or higher.

Scalibur IO driver concepts

Home

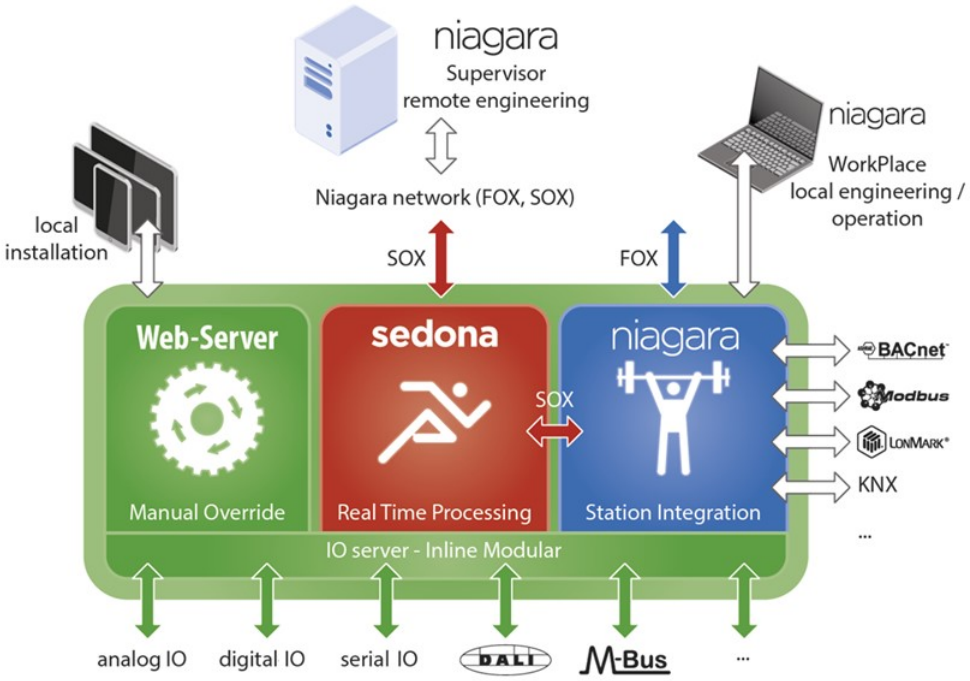
The Scalibur controller is a bus controller for the Inline system and can use many Inline IO terminals from a big terminal pool. Inline is a modulare IO system from Phoenix Contact (Germany) that allows a flexible, fast and space-saving build of automation stations.
An Inline station contains of a bus controller and variable IO terminals with various IO types and channel numbers. The bus controller manages the Inline station and has interfaces to the upper system. One bus controller can use upto 63 IO terminals. There are IO terminals for nearly all applications available:

- Digital inputs and outputs for 1, 2, 4, 8, 16 and 32 channels per terminal
- TRIAC and relay outputs for switching signals and for larger capacities(example lamp loads)
- Analog inputs for measuring of voltages, currents, resistances and temperatures in steps of 2, 4 and 8 channels per terminal
- Analog outputs for output of currents and voltages in increments of 2, 4 and 8 channels per terminal
- Function terminals for the input and output operations or gateway functions (DALI, MBus, S0 pulse counting, serial interface)
- Supply terminals, for example, to build separate power circuits within an Inline station
- The width of the Inline terminals is 1, 2 or 4 dividing unit(s) (12.2 mm)

Inline terminals feature a pluggable wiring level, enabling pre-wiring and easy module replacement. The mechanics of the system allows the exchange of terminals within the station without their complete disassembly.

Scalibur controllers comes with Linux OS, where different applications are processed in parallel.

Figure 1 - Scalibur Eco system overview



The IO server controls to the modular Inline terminals of Scalibur controller and regulates the possibly competing access to the hardware data points.
Communication between Niagara and IO server is implemented via a TCP connection. This opens the way for the remote control of the IOs by another Niagara station.
The remote control can be restricted by definition of the IP address of the controlling station or can be completely disabled.

The `SysmikScaIo` ndriver module has been designd to manage the Inline IO terminals via IO server and is described in the next chapters in more detail.

Scalibur IO driver installation

Home

From your PC, use the Niagara WorkplaceN4 `4.1.nn` installed with the “installation tool” option (checkbox “This instance of Workbench will be used as an installation tool”).This option installs the needed distribution files (*.dist* files) for commissioning various models of SCA platforms.
The dist files are located under your Niagara install directory under a “sw” subdirectory.

For details, see “About your software database” in the *Platform Guide*.

Apart from installing the `4.1.nn` version of the Niagara distribution in the SCA, make sure to also install the *SysmikScaIo* module.

For details, see "Software Manager" in the *Platform Guide*.

Following this, the remote SCA is now ready for ScaIo configuration in its running station, as described in the rest of this document.
See the next section *Scalibur IO Quick Start* for a series of task-based procedures, as well as other sections e.g. *Scalibur IO driver concepts* for conceptual and other sections for operational topics.

Scalibur IO Quick Start

Home

The chapters below will give you a brief overview of how the functions in `sysmikScaIo` module are used within the Workplace[N4].

Add a SysmikScaIoNetwork

Home

Use the following procedure to add an SysmikScaIoNetwork under the station's Drivers container.

To add an SysmikScaIoNetwork in the station:

1. Double-click the station's Drivers container, to bring up the Driver Manager.
2. Click the New button to bring up the New DeviceNetwork dialog. For more details, see "Driver Manager New and Edit" in the *Drivers Guide*.
3. Select "`SysmikScaIoNetwork`," number to add: `1`, and click OK.

   This brings up a dialog to name the network.

4. Click OK to add the SysmikScaIoNetwork to the station.

   You should have an SysmikScaIoNetwork named "SysmikScaIoNetwork" (or whatever you named it), under your Drivers folder now.

Add SysmikScaIo devices

Home

In ScaIo architecture, Inline terminals act as "device-level" components. An Inline terminal represents one IO *device*, servicing some number of I/O points (see Scalibur IO driver concepts).

Depending on the Inline configuration, the number of Inline terminals to be discovered varies.

To discover Inline terminals:

1. Double-click the SysmikScaIoNetwork, or:

   right-click the SysmikScaIoNetwork and select Views->N Device Manager.

   This brings up the Sca Io Device Manager (N Device Manager).

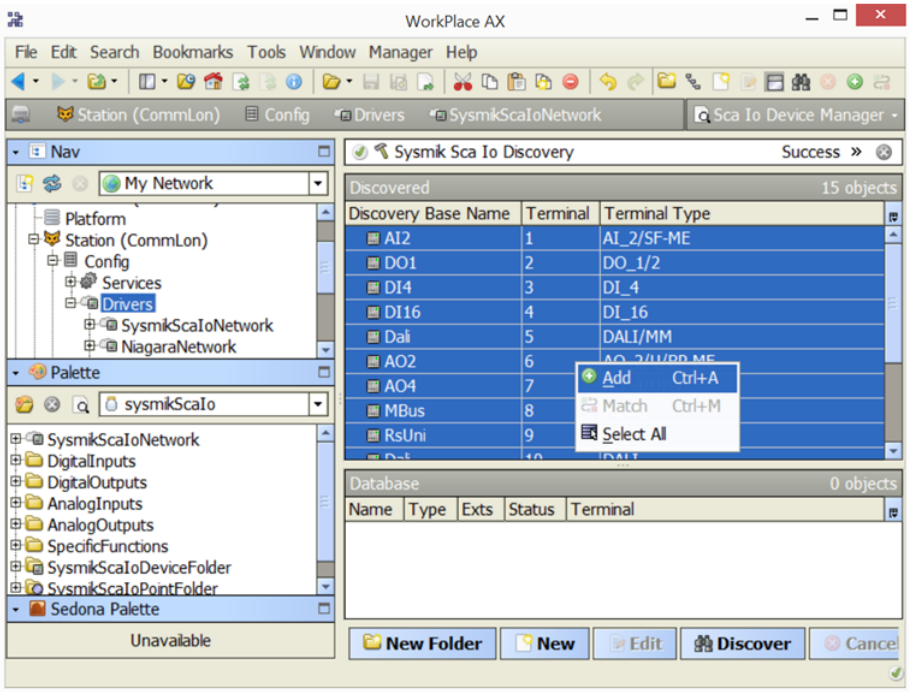
2. Click the Discover button to launch an Inline terminal Discovery job.

   A progress bar appears at the top of the view, and updates as the discovery occurs.

3. When the discovery job completes, discovered Inline terminals are listed in the *top pane* of the view, in the "Discovered" table

   The bottom pane, labeled "Database," is a table of Inline terminals that are currently mapped into the Niagara station—initially, this table will be empty.

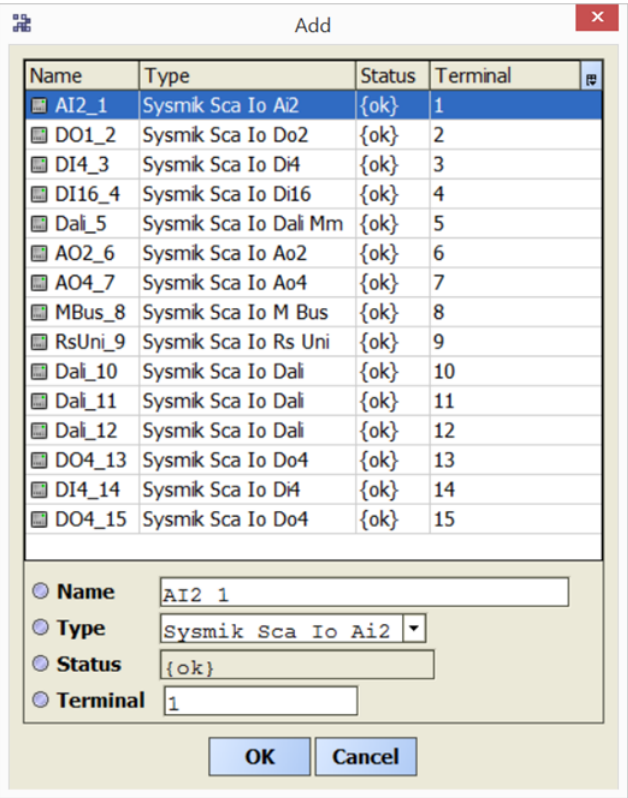
   Figure 1 - Discover Terminals



4. Click to *Select All* discovered Inline terminals, then click the Add button .

   The Add dialog appears, in which you can accept all defaults.

Figure 2 - Add Terminals



5. Click OK to add the Inline terminals to your station.

Add Scalo proxy points

Home

As with device objects in other drivers, each `Inline terminal device` has a Points extension that serves as the container for proxy points. The default view for any Points extension is the Point Manager (and in this case, the *`N Point Manager`*). You use it to create proxy points under any Inline terminal device object.

> The IO communication is event based. The poll scheduler registers periodically (adjustable by poll scheduler properties) for changes. A longer poll cycle saves processor time without performance loss. Especially analog inputs can produce frequent updates with irrelevant small changes that leads to high processor load. To reduce the load set the property `updateOnDelta` of analog inputs to a relevant change level (raw value in V, A, Ohm, °C, °F regarding sensor type). This will suppress actions on irrelevant small changes.

This is the recommended way to accurately add ScaIo (Inline terminal) proxy points under an Inline terminal device object.
Use the following procedures:

- discover
- add

> If your SysmikScaIoNetwork has multiple Inline terminal devices, repeat both procedures (discover and add) for *each* Inline terminal device, until you have all I/O points proxied in the station.

To discover I/O points

Perform this task to discover I/O points.

To discover I/O points of an Inline terminal:

1. In the N Device Manager, in the Exts column, double-click the Points icon in the row representing the Inline terminal you wish to explore.

   This brings up its N Point Manager.

2. Click the Discover button to learn what I/O points are on the Inline terminal.

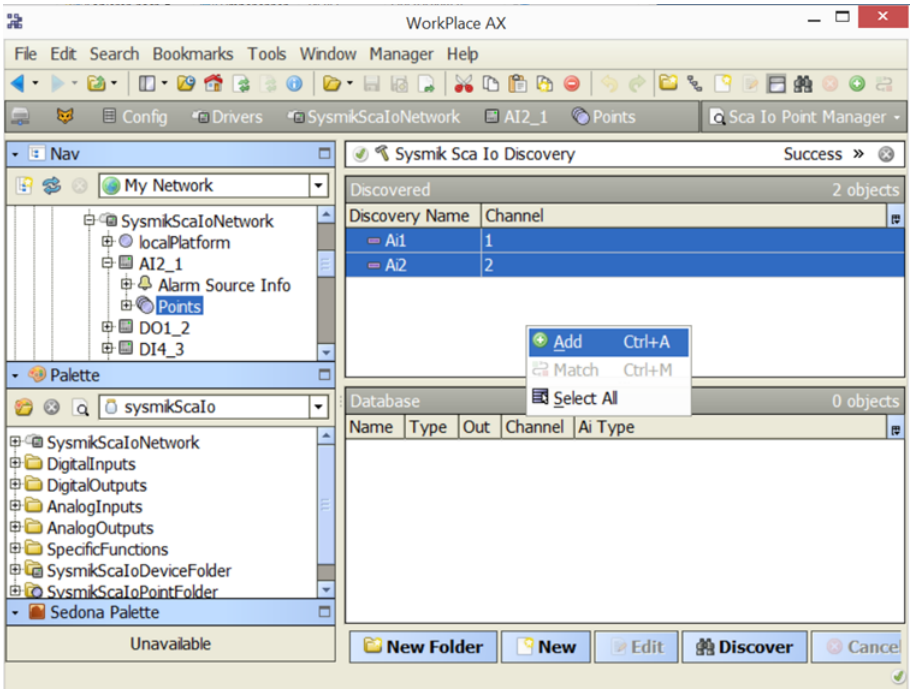
   When the discovery job completes, discovered I/O points are listed in the *top pane* of the view, in the “Discovered” table. Each I/O point occupies one row.

To add discovered I/O points as proxy points

To add discovered I/O points as proxy points:

1. Select the I/O point or points in the Discovery pane of the `N Point Manager`.

   Figure 1 - Add points

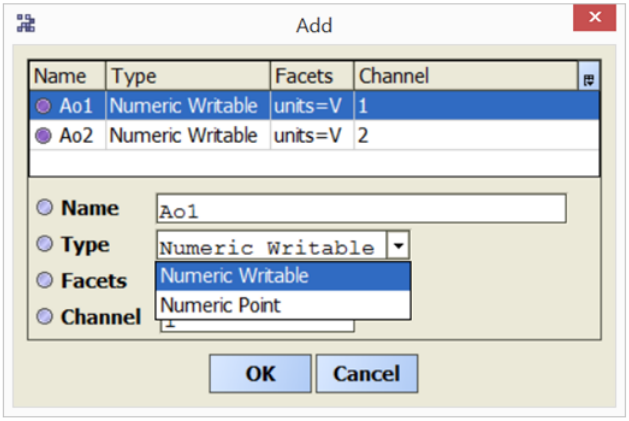


2. You can map selected points in the station in different ways:
    - Drag from the Discovered pane to Database pane (brings up an Add dialog).
    - Double-click an item in the Discovered pane (also brings up an Add dialog).

    This works the same as in other driver's Point Manager views.

3. When the Add dialog appears, you can change some properties like the `Type` if applicable.

Figure 2 - Configure points



The following brief summaries explain Add dialog fields:

- Name is the proxy point name—you typically change this to describe the I/O purpose.
- Type is the point "type," which is selectable for any "writable".

Unlike other entries in the Add dialog, you cannot edit the point's Type later.

- Channel is terminal number within the Inline station. Do not change this value!
- Facets are the proxy point's facets, for how the value should be displayed in Niagara.

4. When you have all proxy point(s) configured properly for your usage, click OK.

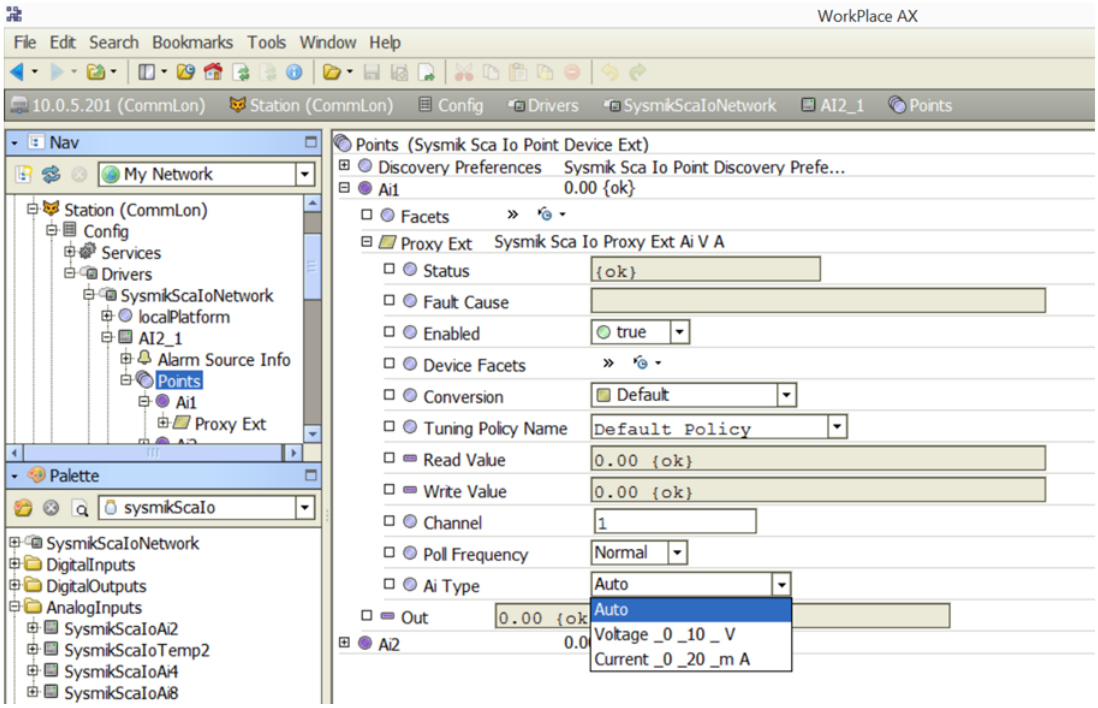
The proxy points ares added to the station, and appear listed in the Database pane.

Sca Io Proxy Extensions

Home

Each Inline terminal proxy point has a special proxy extension slot where device and point specific properties are added.

Figure 1 - Point extension



The extensions are like known from other drivers and contain the basic features

- Status
- Fault Cause
- Enabled
- Device Facets

- Conversion
- Tuning Policy Name
- Read Value
- Write Value
- Poll Frequency

All `SysmikScaIoDevices (Inline terminals)` have an additional slot *`Channel`* containing the IO channel number within this terminal.

> Note: You have to change this number rarely. Normally this value is set by the discover job and must not be changed.

Depending on the Inline terminal type (AI, AO, DI, DO, Special functions, see Scalo Device Types in Palette) the extension can have still one *`??`* *`Type`* slot (example `Ai Type` for AI points). This slot can be used to change the behaviour of the point (see the Inline Terminal datasheet for details).

> Note: The `SysmikScaIoTemp2` device has still an second additional slot `Wire Type`.

Scalo Device Types in Palette

Home

The palette of the `sysmikScaIo` module contains all supported Inline terminal types. You can manually configure a Inline station by using the devices (Inline terminals) from palette and putting them into the station by Drag and Drop.

> Note: If later on a SCA device with a valid Inline station is bound to this configuration, the physical station must match this configuration 100 percent. Normally the best way to get a valid Inline station for a SCA device is to use the `Discover` function (see Add SysmikScalo devices)

Digital Inputs

Home

The following digital input devices are supported

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoDi1`**
  This terminal has 1 digital input.
  (see datasheet of terminal type ILT_120_DI_1 for details.)
- **`SysmikScaIoDi4`**
  This terminal has 4 digital inputs.
  (see datasheet of terminal type ILT_24_DI_4-ME for details.)
- **`SysmikScaIoDi8`**
  This terminal has 8 digital inputs.
  (see datasheet of terminal type ILT_24_DI8_HD for details.)
- **`SysmikScaIoDi16`**
  This terminal has 16 digital inputs.
  (see datasheet of terminal type ILT_24_DI_16_ME or ILT_24_DI_16 for details.)
- **`SysmikScaIoDi32`**
  This terminal has 32 digital inputs.
  (see datasheet of terminal type ILT_24_DI32_HD for details.)

Digital Outputs

Home

The following digital output devices are supported

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoDo1`**
  This terminal has 1 digital output.
  (see datasheet of terminal type ILT_24_230_DOR1W for details.)
- **`SysmikScaIoDo2`**
  This terminal has 2 digital outputs.
  (see datasheet of terminal type ILT_24_48_DOR2_W for details.)
- **`SysmikScaIoDo4`**
  This terminal has 4 digital outputs.
  (see datasheet of terminal type ILT_24_230_DOR4_W, ILT_24_230_DOR4_HC, ILT_24_DO_4-ME or ILT_DO_4_AC-1A for details.)

- **SysmikScaIoDo8**

  This terminal has 8 digital outputs.

  (see datasheet of terminal type ILT_24_DO8_HD for details.)

- **SysmikScaIoDo16**

  This terminal has 16 digital outputs.

  (see datasheet of terminal type ILT_24_DO_16-ME for details.)

- **SysmikScaIoDo32**

  This terminal has 32 digital outputs.

  (see datasheet of terminal type ILT_24_DO_32_HD for details.)

Analog Inputs

Home

The following analog input devices are supported

- **SysmikScaIoAi2**

  This terminal has 2 analog inputs.

  The Ai type can be changed like below:.

  - Auto ... means untouched, lower prioritized programs (like ScaIo remote) can configure the analog input
  - Voltage_0_10_V
  - Current_0_20_mA
  - Default is Voltage_0_10_V (if all priority levels are set to Auto)

  (see datasheet of terminal type IB_IL_AI_2_SF-ME for details.)

- **SysmikScaIoTemp2**

  This terminal has 2 analog temperature inputs.

  The Ai type can be changed like below:.

  - Auto ... means untouched, lower prioritized programs (like ScaIo remote) can configure the analog input
  - Resistance_400Ohm
  - Resistance_4kOhm
  - Temperature_Ni1000
  - Temperature_Pt1000

- Temperature_Pt100
- Temperature_LgNi1000
- Default is Temperature_Pt1000 (if all priority levels are set to Auto)

The Wire type can be changed like below:.

- Wire_2
- Wire_3
- Wire_4 (only available for channel 2)
- Default is Wire_2 (if all priority levels are set to Auto)

(see datasheet of terminal type IB_IL_TEMP_2_RTD for details.)

- **SysmikScaIoAi4**

  This terminal has 4 analog universal inputs.
  The Ai type can be changed like below:.

  - Auto ... means untouched, lower prioritized programs (like ScaIo remote) can configure the analog input
  - Voltage_0_10_V
  - Resistance_3kOhm
  - Resistance_30kOhm
  - Resistance_300kOhm
  - Temperature_Ni1000
  - Temperature_Pt1000
  - Temperature_Pt100
  - Temperature_LgNi1000
  - Default is Voltage_0_10_V (if all priority levels are set to Auto)

  (see datasheet of terminal type IB_IL_AI_TEMP4RTD for details.)

- **SysmikScaIoAi8**

  This terminal has 8 analog inputs.

  The Ai type can be changed like below:.

  - Auto ... means untouched, lower prioritized programs (like ScaIo remote) can configure the analog input
  - Voltage_0_10_V
  - Current_0_20_mA
  - Default is Voltage_0_10_V (if all priority levels are set to Auto)

  (see datasheet of terminal type IB_IL_AI_8_SF for details.)

- **SysmikScaIoAi4EcoAmp**

  This terminal has 4 analog inputs with 4..20mA.

- **SysmikScaIoAi4EcoVolt**

  This terminal has 4 analog inputs with 0..10V.

- **SysmikScaIoAi4EcoTemp**

  This terminal has 4 analog temperature inputs.

  The Ai type can be changed like below:.

  - TempC (°C)
  - TempF (°F)

Analog Outputs

Home

The following analog output devices (0 to 10V) are supported

- **SysmikScaIoAo2**

  This terminal has 2 analog outputs.

  (see datasheet of terminal type IB_IL_AO_2_U_BP_ME for details.)

- **SysmikScaIoAo4**

  This terminal has 4 analog outputs.

  (see datasheet of terminal type IB_IL_AO_4USF for details.)

- **SysmikScaIoAo8**

  This terminal has 8 analog outputs.

  (see datasheet of terminal type IB_IL_AO_4_8_U_BP for details.)

- **`SysmikScaIoAo4EcoAmp`**

  This terminal has 4 analog outputs with 4..20mA.

- **`SysmikScaIoAo4EcoVolt`**

  This terminal has 4 analog outputs with 0..10V.

Special Functions

Home

The following special functions devices are supported.

> Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoDi8S0`**

  This terminal has 8 S0 counter inputs. (see datasheet of terminal type ILT_DI_8_S0 for details.)

  Each proxy point `Count` contains on the `proxy extension` property an action slot `Init Counter`. This action can be used to adjust the counter value.

- **`SysmikScaIoDali`**

  This terminal is a serial DALI standard interface and can manage upto 64 DALI ballasts. (see datasheet of terminal type ILT_DALI_PWR or ILT_DALI for details.)

  > Tip: The proxy points of this device type can be used to realize a runtime control application for DALI lamps, but not to configure the DALI network. Use the module `sysmikSedonaDali` (see "SysMik DALI Quick Start") or the build-in DALI configurator from SCA webserver (http://SCA-IP-Address:81/sca/sox.html?f=&p=ilt_dali.html);) to configure the connected DALI network. (Getting help via: http://SCA-IP-Address:81/sca/help/ScaliburSedona_DaliWebConfigurator_SBE.pdf).

  Each available proxy point within the address#, group#, broadcast point group has the following actions:

  - Off ... Switch the lamp(s) off
  - Up ... Dimming up for 200ms, Hint: If the lamp(s) is(are) Off they will not be switched on!
  - Down ... Dimming down for 200ms, Hint: The lamp(s) is(are) not switched off.

- Step Up ... Increment the current value by one (until maximum value is reached)
- Step Down ... Decrement the current value by one (until minimum value is reached)
- Recall Max Level ... Set the current value to the maximum value
- Recall Min Level ... Set the current value to the minimum value
- On And Step Up ... Dimming up for 200ms, Hint: If the lamp(s) is(are) Off they will be switched on first!
- Step Down And Off... Dimming down for 200ms, Hint: The lamp(s) is(are) switched off finally.
- Goto Scene ... Set the current value to value of scene# (# = 0..15)
- Command ... This action slot can be used to set the previously described commands from one slot by using an enumeration parameter value

- **SysmikScaIoDaliMm**

  This terminal is a serial DALI multi-master interface and can manage upto 64 DALI ballasts. (see datasheet of terminal type ILT_DALI_MM for details.)

  > Tip: The proxy points of this device type can be used to realize a runtime control application for DALI lamps, but not to configure the DALI network. Use the module `sysmikSedonaDali` (see "SysMik DALI Quick Start") or the build-in DALI configurator from SCA webserver (http://SCA-IP-Address:81/sca/sox.html?f=&p=ilt_dali.html);) to configure the connected DALI network. (Getting help via: http://SCA-IP-Address:81/sca/help/ScaliburSedona_DaliWebConfigurator_SBE.pdf).

  Each available proxy point within the address#, group#, broadcast point group has the actions described above, too

  Additional to proxy point groups address#, group#, broadcast there are still three additional point groups - occupancy, brightness, remote control - with 15 points per group available.
  The brightness proxy extensions contain a property `timeout`. If within this time no update of the DALI sensors has been occured the point goes to {fault} state.
  The occupancy proxy extensions contain a property `hold`. If within this time no new occupancy signal has been occured the occupancy state goes to inactive.
  The points within the remote control group are set if any key of a remote control is pressed.

- **SysmikScaIoMbus**

  This terminal is a serial MBus interface and can manage upto 30 MBus slaves

The serial interface names will be assigned starting with COM3 and accordingly to the station terminal order.

(see datasheet of terminal type ILT_MBUS for details.)

- **`SysmikScaIoRsUni`**

  This terminal is a universal serial MBus interface and can manage upto 30 MBus slaves The serial interface names will be assigned starting with COM3 and accordingly to the station terminal order.

  The Rs type can be changed like below:.

  - Rs232
  - Rs485
  - Rs422

  (see datasheet of terminal type ILT_RS_UNI for details.)

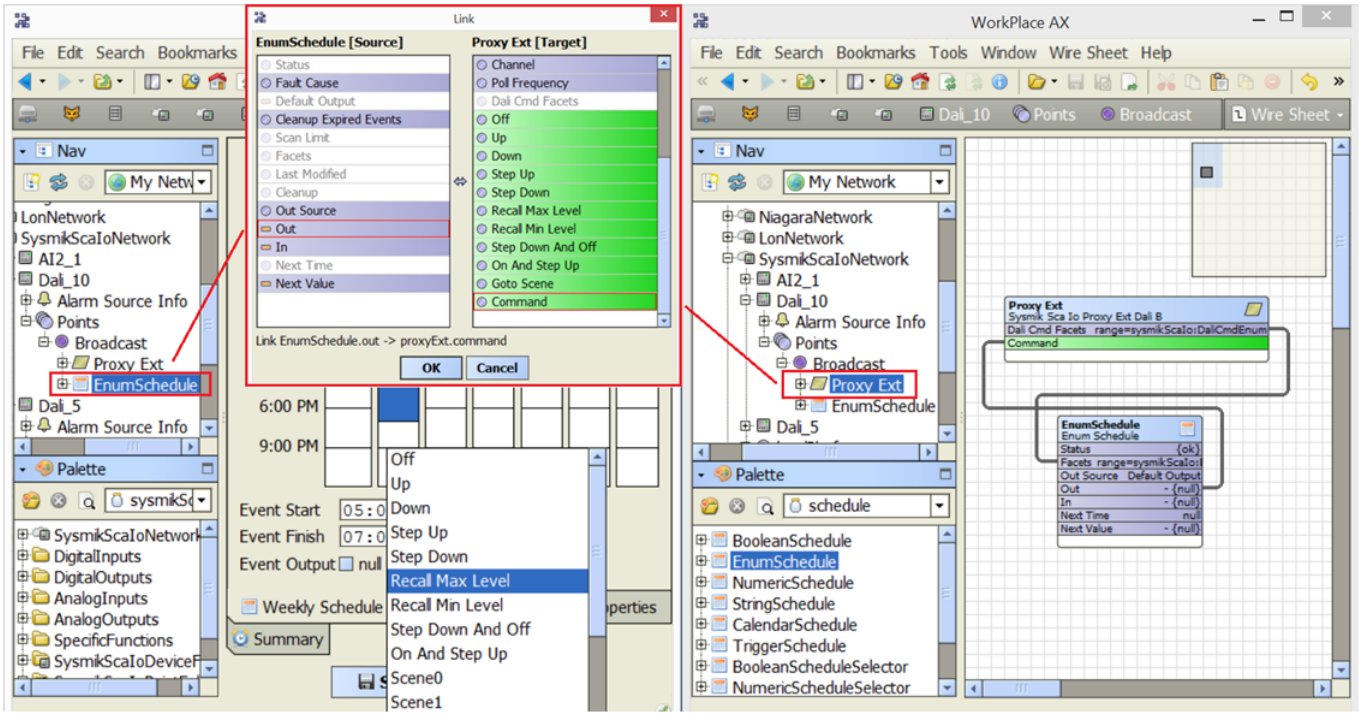
Configure Scalo DALI command EnumSchedule

Home

If you have added proxy points to `Sysmik Sca Dali` or `Sysmik Sca Dali Mm` terminals each proxy point contains a `readonly` property slot `Dali Cmd Facets`.

Connect this slot with the `facets` property of an `Enum Schedule` and then the schedule `Out` slot with the action slot `Command` of the `Proxy Ext` slot to configure scheduled DALI command events. This opens the comfortable way of using enumerated DALI commands within an `Enum Schedule` instead of using only number values.

Figure 1 - Using `Dali Cmd Facets` as value source in Enum Shedules



Configure Scalo Remote Server

Home

A `SysmikScaIoNetwork` can act as remote IO server for other ScaloNetworks. This behaviour can be configured via `SysMikScaIoNetwork/localPlatform` property slot.

> Important: This property slot is not available if the `SysmikScaIoNetwork` is part of a Supervisor[N4] station!

The following properties can be configured:

- **`IoRemoteAddr`**

  The default value is 255.255.255.255. That means each IP address can use this IO server from remote. Set this property to a single valid IP address to restrict the access only to this IP address or set an invalid IP address (like "") to disable this feature.

- **`IoPort`**

  This property can be used to change the default (2015) IO server port.

- **`Sedona Enabled`**

  This property can be used to enable or disable the Sedona Virtual Machine.

Configure Scalo Remote Client

Home

A `SysmikScaIoNetwork` can act as remote client for any IO server. This behaviour can be configured via `SysMikScaIoNetwork/Address` property slot.

> Tip: The main focus of this feature is the remote usage of SCA Inline terminal proxy points from a Supervisor[N4] station!

The following properties can be configured:

- **`Ip Address`**

  The default value is 127.0.0.1. That means the local IO server is used.

  This is only possible if the `SysmikScaIoNetwork` is part of an SCA station!

  Set this property to a single valid IP address to use a remote SCA IP address to connect to the IO server of this SCA.

- **`IoPort`**

  Set this property accordingly to the IO server port configuration (default value is 2015).

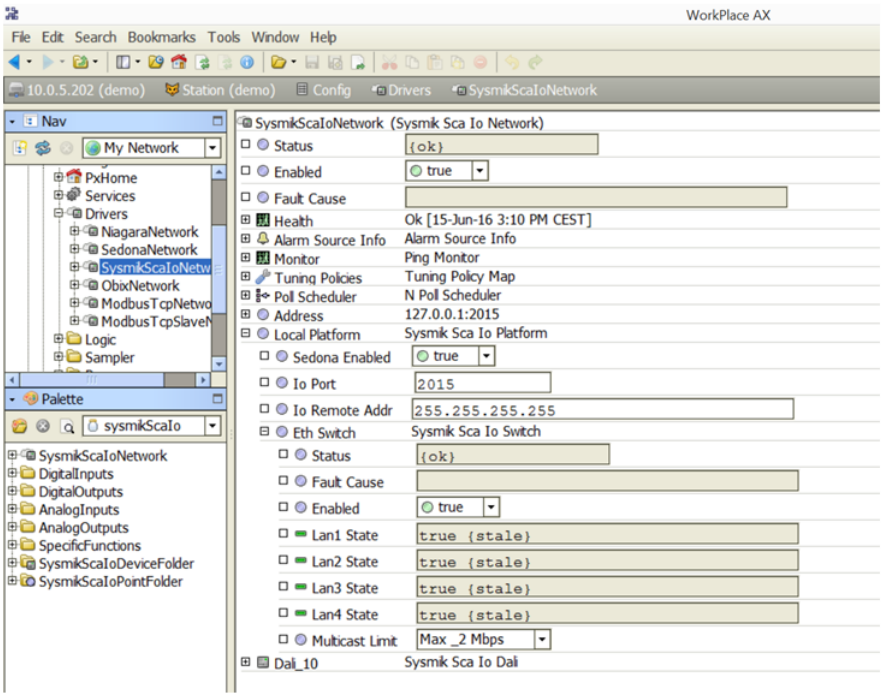
Configure and Watch Ethernet Switch

Home

The `SysmikScaIoNetwork` contains within the `Local Platform` component since version 3.8.41.5 a new slot `Eth Switch`.

This component can be used to configure the behaviour of the SCA ethernet switch and to watch the port status.

Figure 1 - Property sheet view of SysmikScaloNetwork



Tip: The main focus of the switch configuration is to allow the usage of ethernet topologies with loops and the Rapid Spanning Tree Protocol (RSTP).

The following properties can be configured:

- **`Enabled`**

  This boolean property can be used to enable or disable the cyclic check of the switch port status properties `LAN1 State` ... `LAN4 State`. If set to `true` a check is performed every two seconds. But the status values are only valid if ports are configured for Loop and/or RSTP usage.

  The following values are possible:

  - **true {ok}** = Forwarding, redundancy is used
  - **false {ok}** = Blocking, redundancy is available
  - ***** **{stale}** = No information provided, i.e. no RSTP and/or Loop configured
  - ***** **{disabled}** = The cyclic status check has been disabled

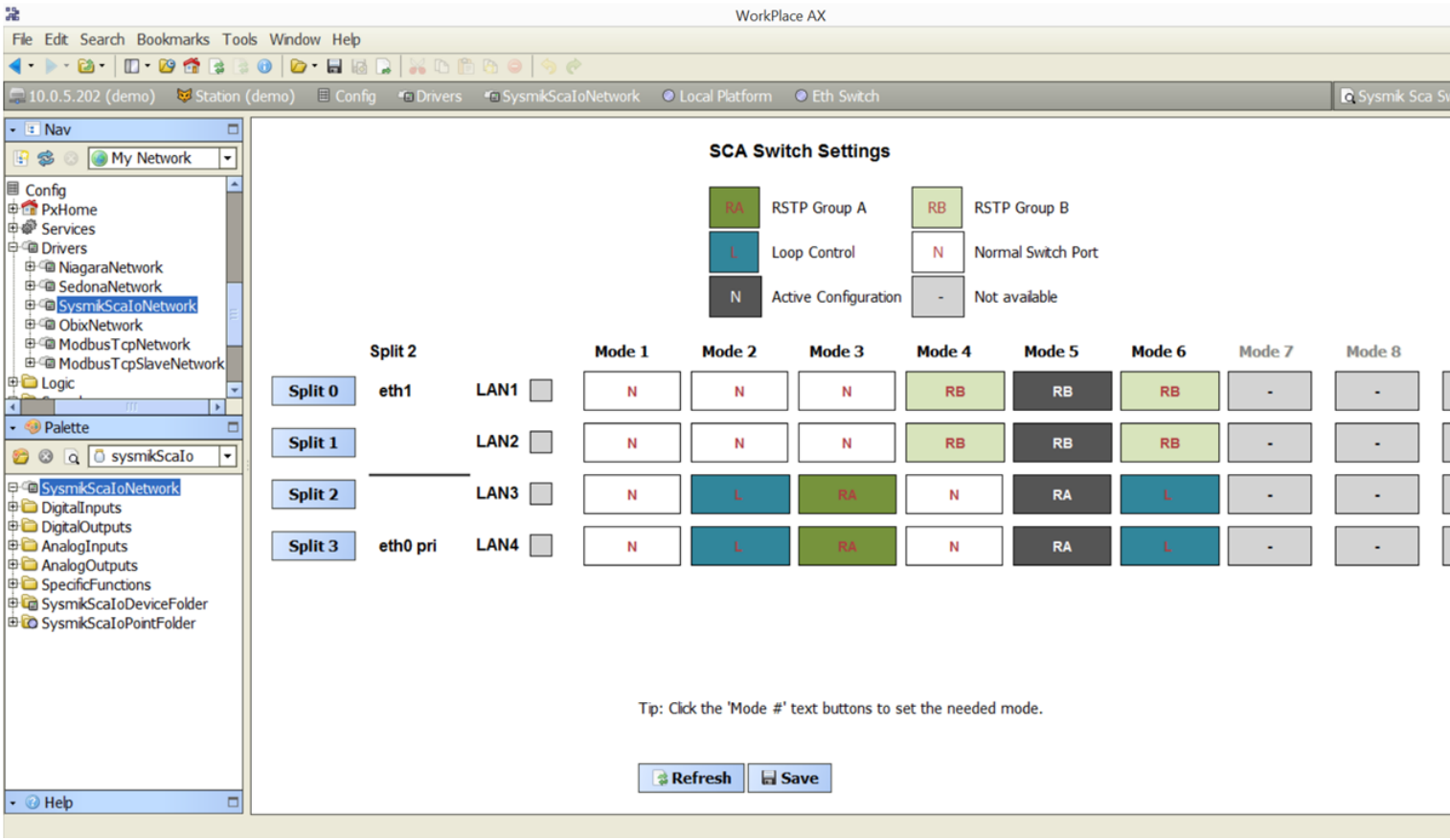
- **`Multicast Limit`**

  The enumeration property can be used to change the multicast limit value as needed.

  The default value is set to `Max_2Mbps`.

  If set to `Off` the broadcast or multicast storm protection is disabled. This should be used with care.

Figure 2 - Configure the SCA ethernet switch



Use the `Sysmik Sca Switch Config View` to configure the ethernet switch behaviour. This is the default view of `Sysmik Sca Switch Config` component.

In this view you can change the splitting and the mode of the LAN ports. Use the `Split #` buttons to change the number of switches (1 or 2) and the number of ports used by the switches.

Split	eth1 ports	eth0 ports
0	0	4
1	1	3
2	2	2
3	3	1

Click a `Mode #` button to change the port mode to this option. If the text color is lightgray this mode option is not available in the selected splitting type. The loop control option is using a simple proprietary loop preventation algorithm.

Note: The available mode options depends on the selected splitting type.

Component Details

Home

SysmikScaIoNetwork

Home

`SysmikScaIoNetwork` is the base container for all SymikScaIo components in the station. In addition to being the network container for `SysmikScaIoDevice`s and their child proxy points, it contains the station's SysmikScaIo communications protocol stack, which configures the station's representation as a SysmikScaIo device.

As with other NiagaraN4 driver networks, the SysmikScaIoNetwork should reside under the station's Drivers container. For general information, see *Scalibur IO driver concepts* and *Add a SysmikScaIoNetwork*.

SysmikScaIoDeviceFolder

Home

`SymikScaIoDeviceFolder` is the SysmikScaIo implementation of a folder under a `SysmikScaIoNetwork`. Typically, you add such folders using the New Folder button in the `N Device Manager` view of the SysmikScaIoNetwork. Each SysmikScaIoDeviceFolder has its own `N Point Manager` view. The SysmikScaIoDeviceFolder is also available in the `SysmikScaIo` palette.

SysmikScaIoPointFolder

Home

`SysmikScaIoPointFolder` is the SysmikScaIo implementation of a folder under a SysmikScaIoDevice's Points container. You add such folders using the New Folder button in the `N Point Manager` view of the Points component. Each SysmikScaIoPointFolder has its own `N Point Manager` view. The `SysmikScaIoPointFolder` is also available in the bacnet palette.

SysmikScaIoDi1

Home

> Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoDi1`**

  This terminal has 1 digital input. (see datasheet of terminal type ILT_120_DI_1 for details.)

SysmikScaIoDi4

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoDi4`**
  This terminal has 4 digital inputs.
  (see datasheet of terminal type ILT_24_DI_4-ME for details.)

SysmikScaIoDi8

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoDi8`**
  This terminal has 8 digital inputs.
  (see datasheet of terminal type ILT_24_DI8_HD for details.)

SysmikScaIoDi16

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoDi16`**
  This terminal has 16 digital inputs.
  (see datasheet of terminal type ILT_24_DI_16_ME or ILT_24_DI_16 for details.)

SysmikScaIoDi32

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoDi32`**
  This terminal has 32 digital inputs.
  (see datasheet of terminal type ILT_24_DI32_HD for details.)

SysmikScaIoDo1

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoDo1`**

  This terminal has 1 digital output.
  (see datasheet of terminal type ILT_24_230_DOR1W for details.)

SysmikScaIoDo2

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoDo2`**

  This terminal has 2 digital outputs.
  (see datasheet of terminal type ILT_24_48_DOR2_W for details.)

SysmikScaIoDo4

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoDo4`**

  This terminal has 4 digital outputs.
  (see datasheet of terminal type ILT_24_230_DOR4_W, ILT_24_230_DOR4_HC, ILT_24_DO_4-ME or ILT_DO_4_AC-1A for details.)

SysmikScaIoDo8

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoDo8`**

  This terminal has 8 digital outputs.
  (see datasheet of terminal type ILT_24_DO8_HD for details.)

SysmikScaIoDo16

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoDo16`**

  This terminal has 16 digital outputs.

  (see datasheet of terminal type ILT_24_DO_16-ME for details.)

SysmikScaIoDo32

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoDo32`**

  This terminal has 32 digital outputs.

  (see datasheet of terminal type ILT_24_DO_32_HD for details.)

SysmikScaIoAi2

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoAi2`**

  This terminal has 2 analog inputs.

  The Ai type can be changed like below:.

  - Auto ... means untouched, lower prioritized programs (like ScaIo remote) can configure the analog input
  - Voltage_0_10_V
  - Current_0_20_mA
  - Default is Voltage_0_10_V (if all priority levels are set to Auto)

  (see datasheet of terminal type ILT_AI_2_SF-ME for details.)

SysmikScaIoTemp2

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **SysmikScaIoTemp2**

  This terminal has 2 analog temperature inputs.

  The Ai type can be changed like below:.

  - Auto ... means untouched, lower prioritized programs (like ScaIo remote) can configure the analog input
  - Resistance_400Ohm
  - Resistance_4kOhm
  - Temperature_Ni1000
  - Temperature_Pt1000
  - Temperature_Pt100
  - Temperature_LgNi1000
  - Default is Temperature_Pt1000 (if all priority levels are set to Auto)

  The Wire type can be changed like below:.

  - Wire_2
  - Wire_3
  - Wire_4 (only available for channel 2)
  - Default is Wire_2 (if all priority levels are set to Auto)

  (see datasheet of terminal type ILT_TEMP_2_RTD for details.)

SysmikScaIoAi4

Home

> Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **SysmikScaIoAi4**

  This terminal has 4 analog universal inputs.

  The Ai type can be changed like below:.

  - Auto ... means untouched, lower prioritized programs (like ScaIo remote) can configure the analog input

- Voltage_0_10_V
- Resistance_3kOhm
- Resistance_30kOhm
- Resistance_300kOhm
- Temperature_Ni1000
- Temperature_Pt1000
- Temperature_Pt100
- Temperature_LgNi1000
- Default is Voltage_0_10_V (if all priority levels are set to Auto)

(see datasheet of terminal type ILT_AI_TEMP4RTD for details.)

SysmikScaIoAi4EcoAmp

Home

- **`SysmikScaIoAi4EcoAmp`**

  This terminal has 4 analog inputs with 4..20mA.

SysmikScaIoAi4EcoVolt

Home

- **`SysmikScaIoAi4EcoVolt`**

  This terminal has 4 analog inputs with 0..10V.

SysmikScaIoAi4EcoTemp

Home

- **`SysmikScaIoAi4EcoTemp`**

  This terminal has 4 analog temperature inputs.
  The Ai type can be changed like below:.

  - TempC (°C)
  - TempF (°F)

SysmikScaIoAi8

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoAi8`**

  This terminal has 8 analog inputs.

  The Ai type can be changed like below:.

  - Auto ... means untouched, lower prioritized programs (like ScaIo remote) can configure the analog input
  - Voltage_0_10_V
  - Current_0_20_mA
  - Default is Voltage_0_10_V (if all priority levels are set to Auto)

  (see datasheet of terminal type ILT_AI_8_SF for details.)

SysmikScaIoAo2

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoAo2`**

  This terminal has 2 analog outputs.

  (see datasheet of terminal type ILT_AO_2_U_BP_ME for details.)

SysmikScaIoAo4

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoAo4`**

  This terminal has 4 analog outputs.

  (see datasheet of terminal type ILT_AO_4USF for details.)

SysmikScaIoAo4EcoAmp

Home

- **SysmikScaIoAo4EcoAmp**

  This terminal has 4 analog outputs with 4..20mA.

SysmikScaIoAo4EcoVolt

Home

- **SysmikScaIoAo4EcoVolt**

  This terminal has 4 analog outputs with 0..10V.

SysmikScaIoAo8

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **SysmikScaIoAo8**

  This terminal has 8 analog outputs.
  (see datasheet of terminal type ILT_AO_4_8_U_BP for details.)

SysmikScaIoDi8S0

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **SysmikScaIoDi8S0**

  This terminal has 8 S0 counter inputs.
  (see datasheet of terminal type ILT_DI_8_S0 for details.)

  Each proxy point `Count` contains on the `proxy extension` property an action slot `Init Counter`. This action can be used to adjust the counter value.

SysmikScaIoDali

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **SysmikScaIoDali**

  This terminal is a serial DALI standard interface and can manage upto 64 DALI ballasts.
  (see datasheet of terminal type ILT_DALI_PWR or ILT_DALI for details.)

Tip: The proxy points of this device type can be used to realize a runtime control application for DALI lamps, but not to configure the DALI network. Use the module `sysmikSedonaDali` (see "SysMik DALI Quick Start") or the build-in DALI configurator from SCA webserver (http://SCA-IP-Address:81/sca/sox.html?f=&p=ilt_dali.html);) to configure the connected DALI network. (Getting help via: http://SCA-IP-Address:81/sca/help/ScaliburSedona_DaliWebConfigurator_SBE.pdf).

Each available proxy point within the address#, group#, broadcast point group has the following actions:

- Off ... Switch the lamp(s) off
- Up ... Dimming up for 200ms, Hint: If the lamp(s) is(are) Off they will not be switched on!
- Down ... Dimming down for 200ms, Hint: The lamp(s) is(are) not switched off.
- Step Up ... Increment the current value by one (until maximum value is reached)
- Step Down ... Decrement the current value by one (until minimum value is reached)
- Recall Max Level ... Set the current value to the maximum value
- Recall Min Level ... Set the current value to the minimum value
- On And Step Up ... Dimming up for 200ms, Hint: If the lamp(s) is(are) Off they will be switched on first!
- Step Down And Off... Dimming down for 200ms, Hint: The lamp(s) is(are) switched off finally.
- Goto Scene ... Set the current value to value of scene# (# = 0..15)
- Command ... This action slot can be used to set the previously described commands from one slot by using an enumeration parameter value

SysmikScaIoDaliMm

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoDaliMm`**

  This terminal is a serial DALI multi-master interface and can manage upto 64 DALI ballasts. (see datasheet of terminal type ILT_DALI_MM for details.)

Tip: The proxy points of this device type can be used to realize a runtime control application for DALI lamps, but not to configure the DALI network. Use the module `sysmikSedonaDali` (see "SysMik DALI Quick Start") or the build-in DALI configurator from SCA webserver (http://SCA-IP-Address:81/sca/sox.html?f=&p=ilt_dali.html);) to configure the connected DALI network. (Getting help via: http://SCA-IP-Address:81/sca/help/ScaliburSedona_DaliWebConfigurator_SBE.pdf).

Each available proxy point within the address#, group#, broadcast point group has the actions described above, too

Additional to proxy point groups address#, group#, broadcast there are still three additional point groups - occupancy, brightness, remote control - with 15 points per group available.
The brightness proxy extensions contain a property `timeout`. If within this time no update of the DALI sensors has been occured the point goes to {fault} state.
The occupancy proxy extensions contain a property `hold`. If within this time no new occupancy signal has been occured the occupancy state goes to inactive.
The points within the remote control group are set if any key of a remote control is pressed.

SysmikScaloMBus

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoMbus`**

  This terminal is a serial MBus interface and can manage upto 30 MBus slaves
  The serial interface names will be assigned starting with COM3 and accordingly to the station terminal order.
  (see datasheet of terminal type ILT_MBUS for details.)

SysmikScaloRsUni

Home

Note: The ILT manuals can be found in folder `^docs\docSysmikScaIo`.

- **`SysmikScaIoRsUni`**

  This terminal is a universal serial MBus interface and can manage upto 30 MBus slaves

The serial interface names will be assigned starting with COM3 and accordingly to the station terminal order.

The Rs type can be changed like below:.

- Rs232
- Rs485
- Rs422

(see datasheet of terminal type ILT_RS_UNI for details.)