SYLVANIA

SylSmart Standalone

SSC

How to commission a motion sensor

Application note

Rev 01

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Introduction

This application note covers the options available when commissioning motion sensors in the SylSmart Standalone (SSC) system, and is based on feedback from site-visits and commissioning.

Topics covered include: the different types of manual control, the role of "automation", and the way in which they interact and override each other.

The last page of this application note is a checklist that can be printed out to help during the commissioning on-site, to ensure no step is forgotten.

Sensors

It is required to use one or multiple sensors from the available sensors in the Standalone offering, some examples listed below. Note that the list is subject to change overtime, always liaise with the local smart expert for the correct product codes.

- **9041534**   SYLSMART HB17MIP65 SENSOR SSC
- **9041531**   SYLSMART SENSOR 5DP 38RC SSC
- **9041532**   SYLSMART SENSOR 5DP 38RC SM KIT SSC*
- **9041541**   SYLSMART HB SENSOR+BRACKET SSC Granit version

Note that SKU 9041532 is only the surface mounting kit, sensor is not included and need to be ordered separately.

Figure 1: 9041531 SYLSMART SENSOR 5DP 37RC SCC

Pre-requisites

It is important to have a grasp understanding how to use the SylSmart Standalone mobile application and system architecture.

Before starting commissioning, the following should be in place:

- Standalone network is created according to the typical recommendations
- Luminaires are grouped to simplify and speed-up the commissioning
- Sensor(s) are added to the network, it is recommended to rename the sensor so it can be identified faster which one to commission into the appropriate zone
- Control strategy is known according to customer requirements

Figure 2: SYSMART SENSOR 5DP 38RC SM KIT SSC

Commissioning steps

Control options and Control hierarchy

Access "…More" More located for iOS devices on the bottom right and for Android devices on the top left. In the menu, access "Network setup" => "Control Options".

Remember last state

When this option is activated, (which is by default) the system will let the luminaires return to their previous state when activated through a sensor or wall switch. The risk with this, however, is that when previous occupants have dimmed the light to a very low level or 0% within the ON scene, when the next occupant activate the lights to the ON scene through a sensor or switch, will result that lights remained dimmed or switched off as the previous state was being dimmed into this level. This is confusing for occupants and can result in negative feedback from users.

In the majority of projects where SylSmart Standalone is used with a switch and/or sensor, (classrooms, meeting rooms, warehouse, …) it is highly recommended to deactivate remember last state.

There are always cases where it is beneficial to leave remember last state activated. E.g., in museums when lights are put in specific light intensities and colour temperatures and should remained unchanged, remember last state should be activated.

Use control hierarchy

In order to ensure the right controls are given the right priorities, we must enable "Control hierarchy". Without control hierarchy enabled, timers and sensor capabilities cannot be activated.

The order of the control hierarchy is as following, from 1 to 7 respectively highest in priority to lowest in priority:

1. Manual control (app, switches, pushbuttons)
2. Date timers (with sensor override)
3. Weekday timers (with sensor override)
4. Presence sensors
5. Date timers
6. Weekday timers

Once the control hierarchy is enabled, new features will appear linked to the control hierarchy.

The manual control behaviour will determine how the system will exit manual control actions, below are the three options:

1 Always timeout – *Manual* control behaviour will always time out based on the specified timeout periods further down the page.

2 Timeout if automation is waiting – *Manual control behaviour will time out when it is only controlled by the control hierarchy such as a presence sensor or a timer.*

3 Don't timeout – *Manual control behaviour is not automatically timed out. There are options within the system to revert back to automation, E.g. a button on the battery free kinetic wireless wall switch can be specified to resume automation.*

Figure 3: Example control hierarchy enabled with defaults listed

It is recommended to use the item "Timeout if automation is waiting" in typical application such as offices, closed offices, meeting rooms and warehouses.

The manual control fade out is the time that can be specified to fade from the manual light output to revert to the automation. This is fully customisable, however field application engineers typically select values from 10s to 2min.

Manual control time-outs should be specified when the manual control behaviour is set to "Always timeout" or "Timeout if automation is waiting". A good exercise is to put the timeouts to the same timeouts as the sensor linger time. However, this is not mandatory.
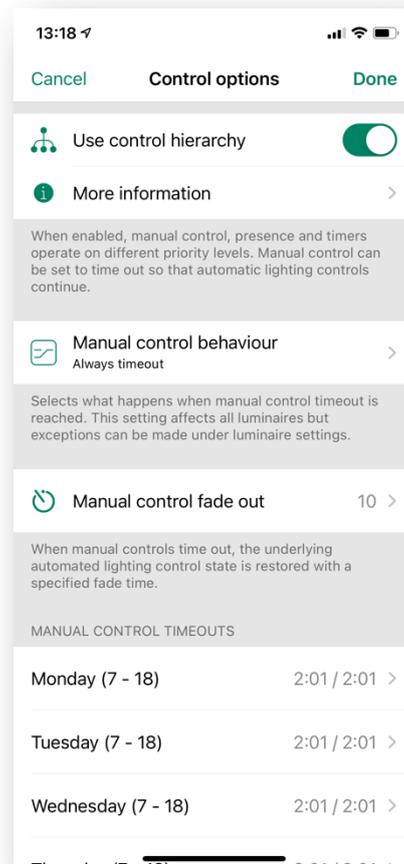
Configure all luminaires

All luminaires within a network can be simultaneously configured for certain settings. Some of these steps are mandatory to perform.

Disable smart switch –*Smart switching is related when on purpose power cuts happens, certain smart switching actions can be linked to these.*

Startup -> last state – *When a power cut happens on the system, enabling this feature to all luminaires, will let the luminaires start up after the power cut to the state before the power cut happened.*

Startup -> default mode – *When a power cut happens on the system, enabling this feature to all luminaires, will let the luminaires start up to their default mode.*

Save current state – *Activating this configuration will set the current light level present on the luminaires, as default mode.*

Reset network – T*his is not shown on the picture. Once the commissioning is done, it is always good to reset the network. Resetting the network will not wipe out all settings, but redefine the mesh network their connections, put the lights back to default and enable the automation.*

For normal office and classroom applications it is recommended to disable the smart switching, set startup -> default mode. Make sure all the lights are dimmed to what is expected to be the default mode (typically 0%) configure this with "Save current state".
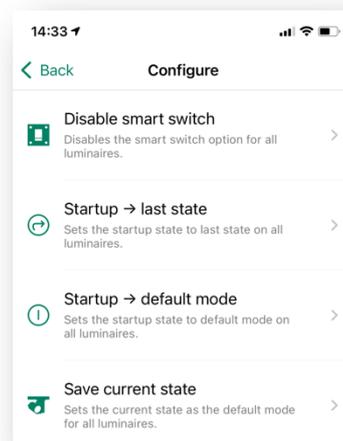
Figure 4: Configure all luminaires options

Sensors

Once the control hierarchy is enabled, occupancy and vacancy capabilities can now be used for sensors.

When using multiple sensors within a network, it is recommended to rename the sensors with a clear and logic name so they can be directly linked to a certain zone or room. These sensor names should also be marked on configuration drawings and record drawings for future reference.

Another prerequisite is that scenes are created. These scenes will be linked to certain available capabilities of the sensor. Scenes should also be named to their logical purpose. When using circadian rhythm and/or daylight harvesting, both are defined on scene level.

There are some specific sensor approaches:

Presence – *Presence will activate one or multiple scenes when the sensor has detected an occupant. When presence is no longer detected and the linger time has expired, the presence scene will fade out. Lights will fade to the default light level.*

Presence/absence – *This approach will enable one or multiple scenes when the sensor has detected an occupant. When presence is no longer detected and the linger time has expired, the presence scene will fade out and the system will go to the defined absence scene.*

Absence – *This approach requires first a manual activation of a certain scene through the app or wireless kinetic battery free wall switch. Once the manual control is active, and the sensor has no longer detect presence and the linger time has expired, the lights will fade to the default light level of each luminaire.*

Figure 5: Example when Presence/Absence is selected with some recommended values

Presence scenes (option 1 on Figure 5)

Displayed in "Presence" and "Presence/Absence" feature. The scenes linked will be activated when the sensor is detecting an occupant. One or multiple scenes can be selected in the "Presence scenes" list.
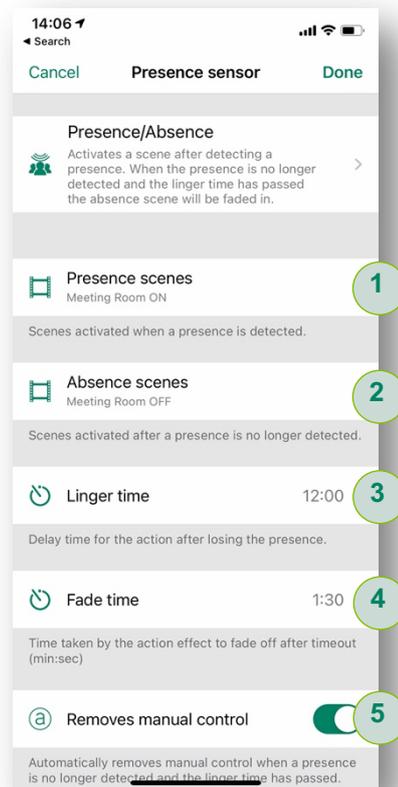
Absence scenes (option 2 on Figure 5)

Displayed in "Presence/Absence" and "Absence". The scenes linked will be activated when the sensor has seen no occupancy and the linger time has expired.

Linger time (option 3 on Figure 5)

Delay to take action after the last occupancy trigger or manual control input happened. This is the time for the system to go out of the presence and fade to the absence scene or to the default light level. When using multiple sensors and all sensors control the same scene, the sensor last triggered will be highest in priority and therefore the linger time will expire according the last triggered sensor.

Fade time (option 4 on Figure 5)

The time it will take to go from the current state to the absence scene or the default light level.

Removed manual control (option 5 on Figure 5)

In "Presence" mode and "Presence/Absence" mode, there is a possibility to enable "Removed manual control". This is mandatory to activate when manual control is possibly controlling the luminaires linked to the accordingly scene and the system should revert to auto mode after a prolonged vacancy.

For typical open office, closed office, meeting room, classroom and warehouse applications, only select "Presence" and link the presence scene(s) to the sensor. Choose the linger time and fade time according to specification or below recommendations. Timeouts are very client-centric, it is always the aim to balance occupancy comfort/safety vs. energy savings. Make sure "Removes manual control" is enabled.

Recommended settings:

Application	Linger min.	Linger max.	Fade time min.	Fade time max.
Closed office	5 minutes	15 minutes	10 seconds	2 minutes
Open office	4 minutes	10 minutes	10 seconds	2 minutes
Meeting room/classroom	8 minutes	20 minutes	30 seconds	3 minutes
Warehouse	1min	30 min	10s	4 minutes
Production hall	5 min	30min	3 min	5 minutes

Additional information

App download

iOS	Android

Figure 6: QR code to download the SylSmart Standalone SSC app on iOS platform

Link to the App Store

Figure 7: QR code to download the SylSmart Standalone SSC app on Android platform

Link to Google Play

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Apendix1: Commissioning checklist for typical office, meeting room, classroom and warehouse application

Floor: _____

Room name: _____

☐ Create network

☐ Add devices, make sure they are directly put in a group to save time. When using multiple sensors, make sure they are renamed to make the commissioning faster

☐ Create scenes (include daylight dimming and/or circadian if required)

☐ ”…more” => "Network setup":
- *Disable "Remember last state"*
- *Enable "Control hierarchy"*
- *Set "Manual control behaviour" to "Timeout if automation is waiting"*
- *Set manual control time outs for daytime and night time to the linger time of the sensors. (Take the largest linger time in case different linger times are active)*

☐ Configure all presence sensors
- *Make sure the right scenes are linked to presence*
- *Choose suitable time-outs. (office ideally between 6 and 12 minutes) // choose suitable linger time, typically 30s to 2min*
- *Make sure "Removes manual control" is activated*

☐ Link all wireless wall switches to the network and commission them correctly

☐ "…more" -> "Network setup" -> "Configure all luminaires"
- *Tap on "Disable smart switch"*
- *Go to the main screen of luminaires, switch off all luminaires and return to the configure all luminaires section*
- *Tap on "Save current state"*
- *Tap on "Startup -> default mode"*
- *In larger networks, when the full commissioning is done, tap on "Reset network"*

☐ Save a version of this network history as reference version