Data Flow Controller DX-series

Practices Guide

SynapseSync Signal Light Controller

DX100-□□□□

V312-E1-01

Revision History

Version	Revised content	Date
Version 1.0	Original production	April 21, 2025
Version 1.1	Made corrections to the description of *3. Component Execution*.	June 10, 2025
Version 2.0	Made corrections due to package support.	September 17, 2025
Version 2.0.1	Made changes to the activation code evaluation logic.	March 13, 2026
Version 2.1.0	Added support for English UI display.	March 31, 2026
Version 2.1.1	Changed the component name	April 10, 2026

CONTENTS

1.About the SynapseSync Signal Light Controller Package

1.1.Overview

This package provides a custom component that runs with SpeeDBee Synapse (hereinafter referred to as Synapse).

The component included in this package enables the control of signal tower operations, such as turning on/off lights and sounding the buzzer, based on input data values, which are evaluated against thresholds. It allows you to specify multiple control conditions (thresholds and controlled components) in the control condition list, with priority given to the condition at the highest position.

By registering this package, you can use the *Signal Light Controller.*

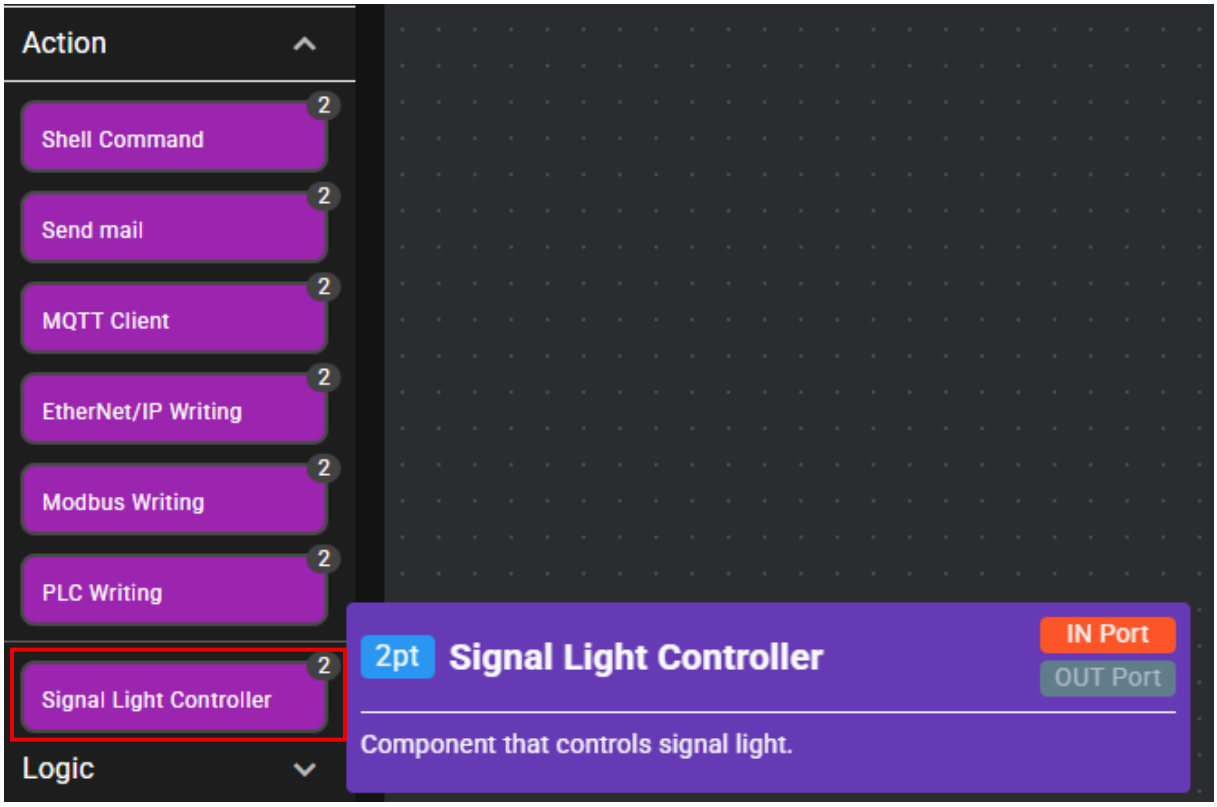
1.2.Basic Information About the Package

The component package provided is as follows.

Package file name (*1)	synapsesync_signal_light_controller.sccpkg
Operating environment	Platforms on which Synapse 4.9.5 or later is running
Component to be registered	• Signal Light Controller (*2)

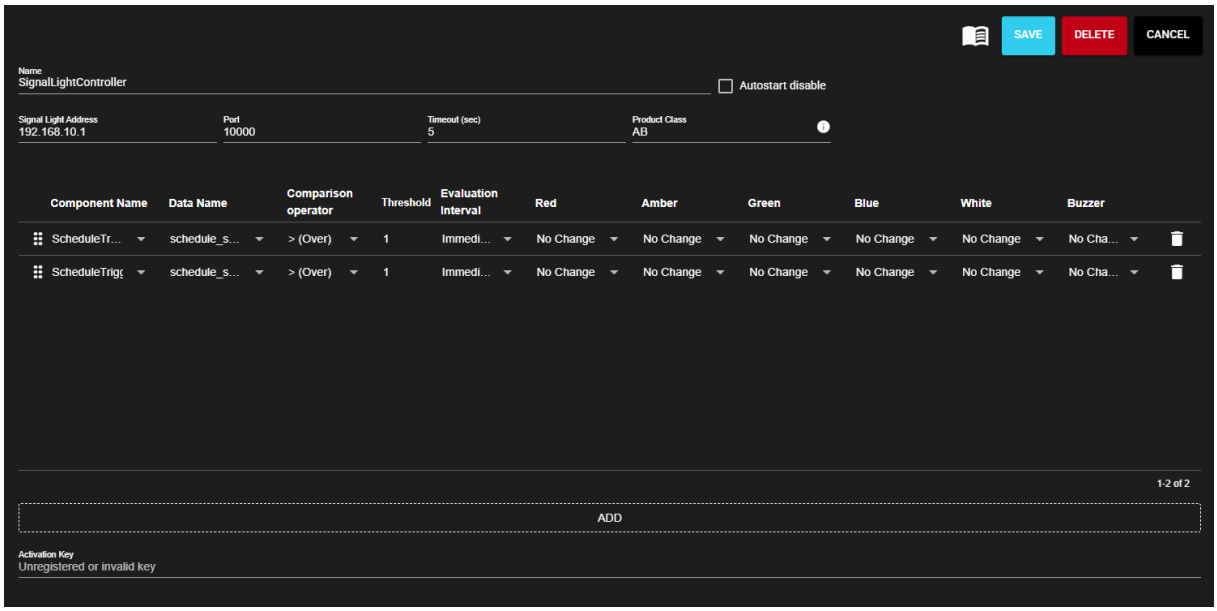
*1 Refer to *6.2.6.4 Registering SCCPKG File in and Deleting SCCPKG File from Synapse* in the *DX-series SpeeDBee Synapse User's Manual (Cat. No. V243)* for information on registering the package.

*2 The registered component will be displayed under the *Action* category in the component list.



1.3.Setting Screen

This section describes the setting items for the component.



Item	Description (Values in red are default values)
Name	Name of the component
Signal Light Address	IP address of the signal tower (192.168.10.1)
Port	Port number of the signal tower (10000)
Timeout (sec)	Timeout value for connection processing in socket communications (5)
Product Class*3	Classification by product series (AB)
Control condition list (Up to 20 conditions can be specified, with higher priority given to the condition that is positioned higher on the list.)*4	
Component Name	Name of the component connected to the input port
Data Name	Data name for the input port
Comparison operator	Comparison operator (>, <, >=, <=, =, or !=)
Threshold	Threshold (1) * Integer or decimal value
Evaluation Interval	Threshold evaluation interval (Immediate, 1 min, 10 min, 30 min, or 1 hour)
Red	Red light control (Off, On, Blink (3 types), Flash (3 types), or No Change)
Amber	Amber light control (Indications same as Red)
Green	Green light control (Indications same as Red)
Blue	Blue light control (Indications same as Red)
White	White light control (Indications same as Red)
Buzzer	Buzzer control (Stop, Sound, or No Change)
ADD	Click this button to add a new row to the control condition list.
Activation Key*5	Enter the activation key.*6

*3 This setting can normally be left unchanged. Only if using the PNS command with other series, enter the product class of that series. Refer to the general instruction manual for each series for details.

*4 The conditions in the control condition list can be reordered by dragging and dropping the icons on the far left.

*5 The Activation Key entry field is not displayed on SpeeDBee Synapse installed on products released by OMRON Corporation. This component is automatically set to Full mode.

*6 Refer to *1.4.2. Restricted Mode and Full Mode* for details.

1.4.Supplementary Information

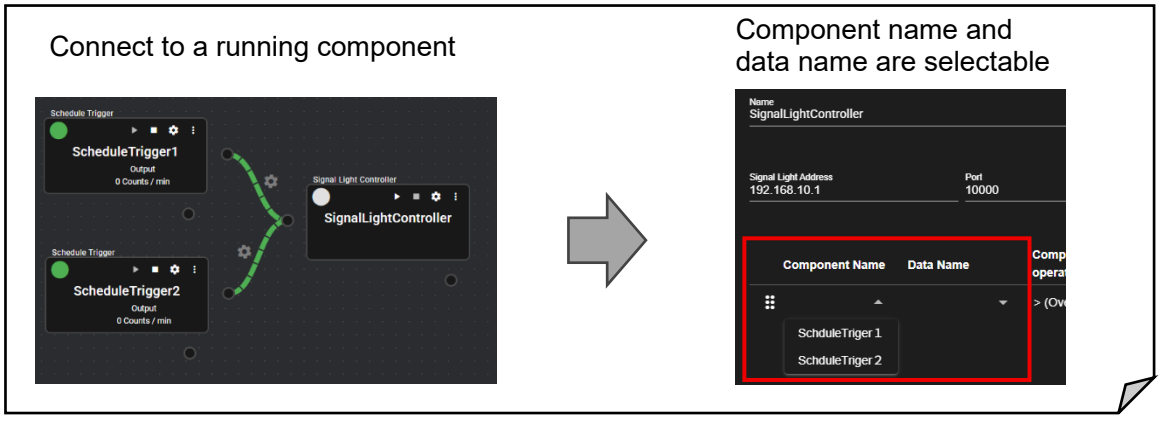
1.4.1.Supplementary Information on This Component

- Signal Light Controller products have 1- to 5-color indicator lights with or without a buzzer, depending on the model. Setting parameters for models without indicator lights and the buzzer causes no operation.
  You can change the IP address and port number of your signal tower by opening the management screen through the Web UI that navigates you to access the signal tower in the browser.

URL: IP address of the signal tower (Example: http://192.168.10.1)

  Refer to the general instruction manual for the LR5-LAN series for initial setup and other information.

- Connecting other running components to input ports automatically displays their information in the *Component Name* and *Data Name* list in the control conditions section of the settings screen, allowing you to select them. (Component names without numeric data or non-numeric data names are not displayed in the list.) For components that are not connected, enter the information manually.



- If control is executed when conditional evaluation is True, the next conditional evaluation will not be performed until the time specified in the *Evaluation Interval* has elapsed.

- Aggregate data that can be set for input ports (such as basic statistical analysis data over an arbitrary time span) cannot be specified as a control condition.

- If the data received from the input port meets multiple conditions, priority is given to the control condition at the highest position in the list.
  If the data meets any one of the control conditions, subsequent control conditions will not be evaluated.

- The signal towers that can be controlled by this component are the following models of the PATLITE LR5-LAN series, which support socket communications and the PNS command. The following models are considered operational based on the specifications.

Series name	Model name
LR5-LAN	LR5-102WENW-R/Y/G
	LR5-202WENW-RY/RG
	LR5-302WENW-RYG (Operation verified)
	LR5-402WENW-RYGB
	LR5-502WENW-RYGBC
	LR5-102WEBW-R/Y/G
	LR5-202WEBW-RY/RG
	LR5-302WEBW-RYG
	LR5-402WEBW-RYGB
	LR5-502WEBW-RYGBC
	LR5-102LENW-R/Y/G
	LR5-202LENW-RY/RG
	LR5-302LENW-RYG
	LR5-402LENW-RYGB
	LR5-502LENW-RYGBC
	LR5-102LEBW-R/Y/G
	LR5-202LEBW-RY/RG
	LR5-302LEBW-RYG
	LR5-402LEBW-RYGB
	LR5-502LEBW-RYGBC

* Socket communications are a mechanism for applications to exchange data over the Internet.

* The PNS command refers to a command for controlling indicator lights and a buzzer.

1.4.2.Restricted Mode and Full Mode

The components added in this package operate in restricted mode on DX1 version 1.0 (Synapse 4.9.9) and can continuously run for two hours.

To use without restrictions, use DX1 version 1.1 (Synapse 4.11.4) or later.

Additionally, the Synapse trial version for Windows PCs is also in restricted mode on Synapse 4.9.9.

For unrestricted use, use Synapse 4.11.4.

2.How to Use This Component

This section describes how to use this component. Before using this component, register the following component packages in Synapse.

* Refer to *6.2.6.4 Registering SCCPKG File in and Deleting SCCPKG File from Synapse* in the *DX-series SpeeDBee Synapse User's Manual (Cat. No. V243)*.

- SynapseSync Signal Light Controller (*This package)
- SynapseSync Schedule (Schedule Trigger)

* Since the package uses the same UUID for both V1 and V2, it cannot be used simultaneously in the same environment. If you want to use V2 in an environment where V1 is already installed, uninstall V1 first.

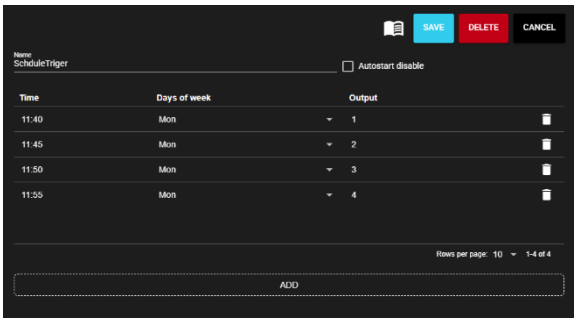
2.1.Panel Creation

Place the Schedule Trigger and this component on the Synapse panel, and configure the settings to control commands.

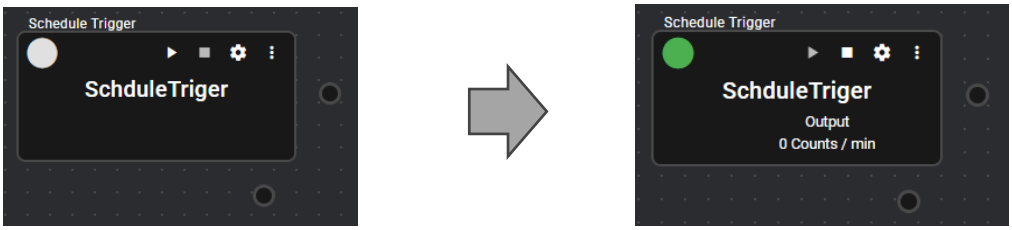
2.1.1.Schedule Trigger

(1) Place the Schedule Trigger using the following settings.
In this case, configure settings to turn on the red, yellow, and green LED units of the signal tower in sequence every 5 minutes, and turn off the LED unit that was on immediately before. (Change the time and days of the week as needed.)

Name	ScheduleTrigger	
Time	Days of week	Output
11:40	Mon	1
11:45	Mon	2
11:50	Mon	3
11:55	Mon	4



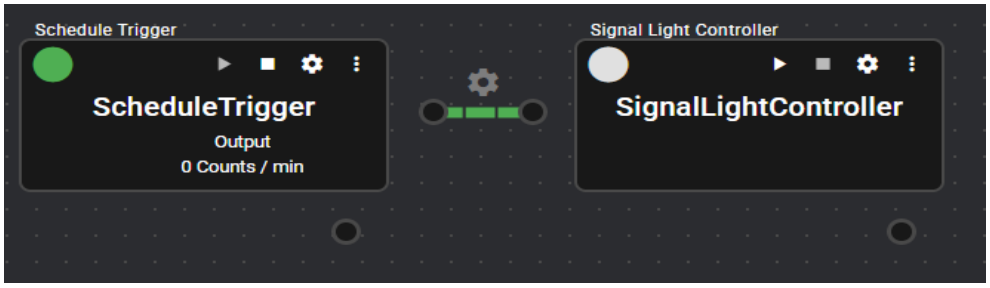
(2) Click the ▶ icon to start the Schedule Trigger.



* You can output values at specific times and days of the week.

* Refer to the *Data Flow Controller DX-series Practices Guide SynapseSync Schedule (Cat. No. V311)* for details on the Schedule Trigger.

(3) Place the Signal Light Controller, enter its name, and save it. Then, connect the output port of the Schedule Trigger to the input port of the Signal Light Controller.



2.1.2.Signal Light Controller

(1) Configure the following settings in the upper entry fields of the Signal Light Controller.

* Values in parentheses ( ) are the setting values for this case

Name	Signal Light Controller
Signal Light Address	IP address of the signal tower (192.168.103.195)
Port	Port number of the signal tower (10000)
Timeout	5
Product Class	AB

(2) Next, set the control conditions.

Control condition No.	Item	Setting value
Control 1	Component Name	ScheduleTrigger
	Data Name	schedule_sch_op
	Comparison operator	= (Equal)
	Threshold	1
	Evaluation Interval	Immediate
	Red	On
	Amber	No Change
	Green	No Change
	Blue	No Change
	White	No Change
	Buzzer	No Change

Control condition No.	Item	Setting value
Control 2	Component Name	ScheduleTrigger
	Data Name	schedule_sch_op
	Comparison operator	= (Equal)
	Threshold	2
	Evaluation Interval	Immediate
	Red	Off
	Amber	On
	Green	No Change
	Blue	No Change
	White	No Change
	Buzzer	No Change
Control 3	Component Name	ScheduleTrigger
	Data Name	schedule_sch_op
	Comparison operator	= (Equal)
	Threshold	3
	Evaluation Interval	Immediate
	Red	No Change
	Amber	Off
	Green	On
	Blue	No Change
	White	No Change
	Buzzer	No Change
Control 4	Component Name	ScheduleTrigger
	Data Name	schedule_sch_op
	Comparison operator	= (Equal)
	Threshold	4
	Evaluation Interval	Immediate
	Red	No Change
	Amber	No Change
	Green	Off
	Blue	No Change
	White	No Change
	Buzzer	No Change

With the above settings, the signal tower will be controlled as follows.

When the input data from the schedule trigger (schedule_sch_op) is 1:

- The red LED unit of the signal tower turns on.

When the input data from the schedule trigger (schedule_sch_op) is 2:

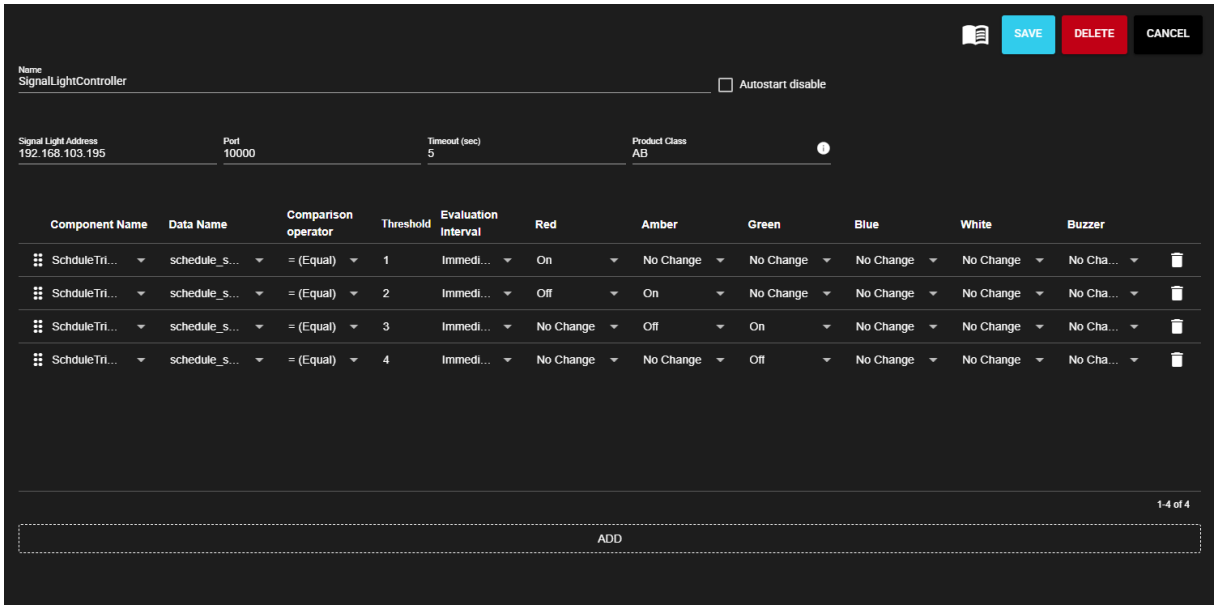
- The red LED unit of the signal tower turns off.
- The amber LED unit of the signal tower turns on.

When the input data from the schedule trigger (schedule_sch_op) is 3:

- The amber LED unit of the signal tower turns off.
- The green LED unit of the signal tower turns on.

When the input data from the schedule trigger (schedule_sch_op) is 4:

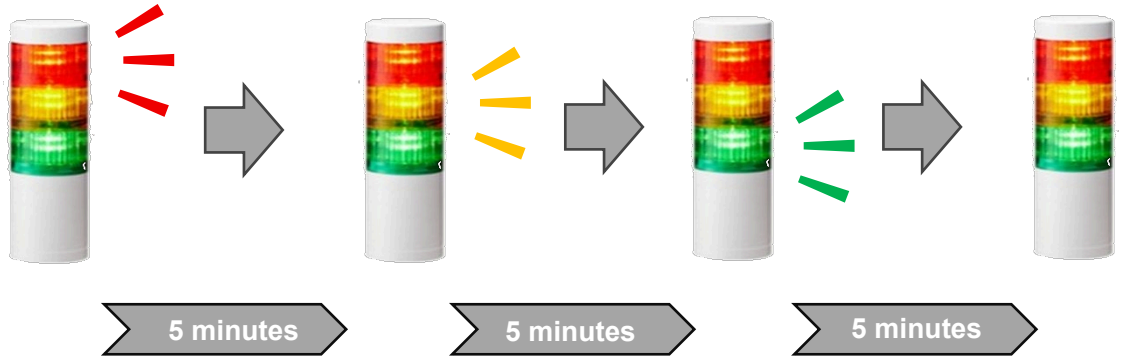
- The green LED unit of the signal tower turns off.



(3) Click the ▶ icon to start the Signal Light Controller.

2.2.Result of Execution of Signal Light Controller

When each component is started, the Schedule Trigger outputs values from 1 to 4 at intervals of 5 minutes, causing the signal tower to turn on and off in the sequence of red, amber, and green.



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Tutorial Video

https://www.fa.omron.co.jp/dx1/video-manual/en/

Cat. No. V312-E1-01 0526