

LITROL™

Dimmer Actuator

for integrated operation of lighting ;
with LONMARK Association-Certified device



- 3-channel dimmer actuator for incandescent lamp
- Test button for the hardware check
- PI control algorithm for the constant light controller
- Hold timer function for the occupancy controller object
- Simple installation – DIN rail mounting device
- LONMARK Association-Certified device

Application

The DACT-IN3 is three-channel Triac Dimmer Actuator for the incandescent lamp. It has constant light controller objects and scene controller objects and they are used to turn On/Off, make the illumination of the incandescent lamp. The objects and functions provide versatile way for the lighting applications.

Technical data

Power requirements	Operating voltage Max. Operating Current	110V/220V, 50Hz/60Hz 70mA
Functions	Triac dimming output Max. output capacity	3 channel 400W/Channel, total 1,200W
Interfaces	Interface type Transceiver Baud rate	LON (LONMARK) FTT-10 78 kBit/s
Cable connection	Terminals LONWORKS Network (Polarity insensitive)	Screw terminals 2-wire twisted pair 0.2 ~ 1.0 mm ²
Hardware	Main Processor Processor clock Memory Sub Processor Processor clock Sub Memory	TMPN3150 10MHz 56KB(32K ROM, 24K RAM) PIC16C63A 6MHz 4.2KB(4K ROM, 192 RAM)
Industry standards	CE conformity to EMC directive Emission Immunity LONMARK conformance	89/336/EEC EN 55011 EN 50082-2 Guidelines Version 3.2

Operating Environments

Temperature
Humidity

0 ... 50 °C
Max 95 % RH (Non-condensing)

LonWorks® Interoperability

LONMARK ® Version 3.2 interoperability

Standard program ID	80:00:72:1E:1E:06:04:00
External Interface File	DACTIN_xx.XIF
Plug-In Software	DACTIN_xx.EXE

Objects

Object #0

Node object

Status request support: RQ_NORMAL for each Object
Status request support: RQ_OVERRIDE, RQ_RMV_OVERRIDE for constant light controller object and occupancy controller object
Configuration variables for Location String

Object #1 to #3

Lamp actuator object

Functional profile 3040 version 1.0
SNVT_switch for feedback output and signal input
Configuration variables for output function

Object #4 to #5

Constant light controller object

Functional profile 3050 version 1.0
SNVT_Lux for illumination level input
SNVT_switch for output value and manual override function
SNVT_setting set-point level (0 ~ 65,000lux)
Configuration variables for set point, constant value and override function

Object #6 to #7

Occupancy controller object

Functional profile 3071 version 1.0
SNVT_occupancy for occupant state of certain area
SNVT_setting for input value
SNVT_switch for lamp value output and manual override function
Configuration variables for hold time and prime value, override function

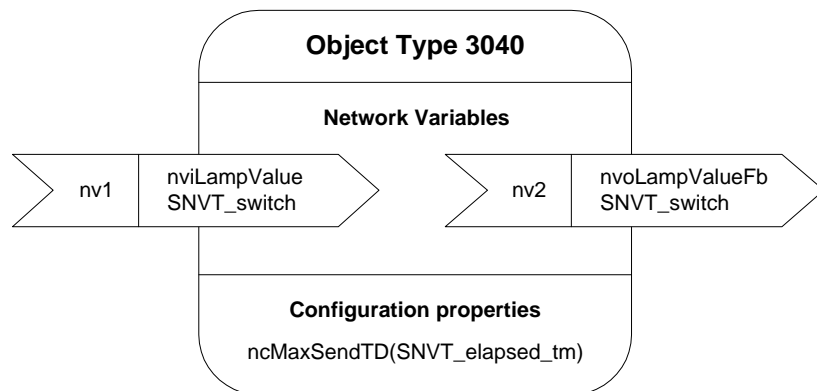
Object #8 to #10

Scene controller object

Functional profile 3251 version 1.0
SNVT_switch for control output, and SNVT_scene for scene trigger input
SNVT_scene_cfg for scene configuration
SNVT_setting for input value
Configuration variables for output value

Object #1 to #3

Dimmer actuator (DIM1, DIM2, DIM3)



Network Variables

nviLampValue

Switch input valid values 0-100% and state on/off

nvoLampValueFb

Switch feedback output valid values 0-100% and state on/off

Configuration Properties

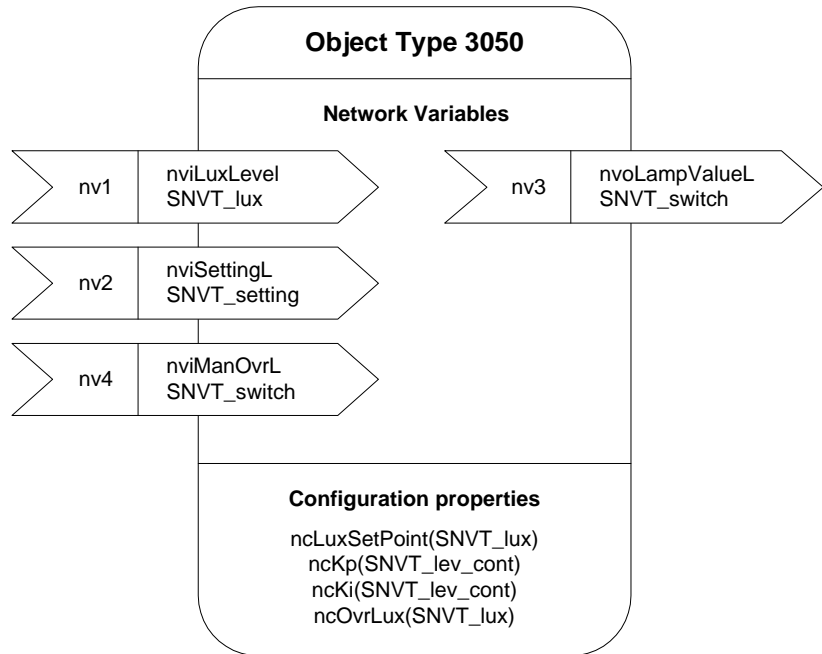
ncMaxSendTD

Time between subsequent updates.

This configuration property indicates the time that must pass without an update for mode definitions to be automatically retransmitted. A value of 0 indicates that there is no heartbeat. The default value is 0. Range 0min 0sec ~ 59min 59sec.

Object #4 to #5

Constant Light Controller (CLC1, CLC2)



Network Variables

nviLuxLevel
nviSettingL
nviManOvrL
nvoLampValueL

Lux level input
 Object enable/disable (SET_ON/SET_OFF)
 Manual override switch input. Passed through to nvoLampValueL
 Switch output for slave units, includes value 0~100% and state on/off

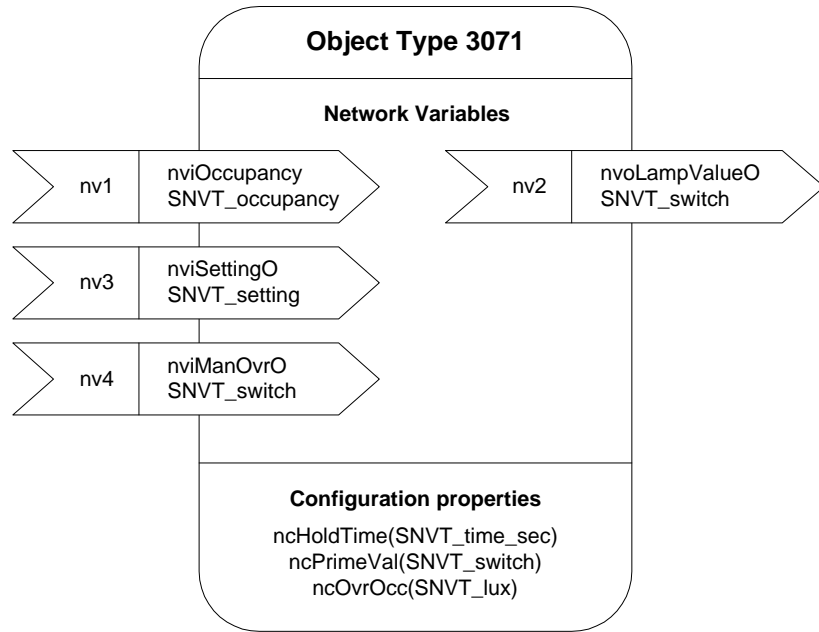
Configuration Properties

ncLuxSetPoint
ncKp
ncKi
ncOvrLux

Configuration input to set target lux value, default = 100.
 Range 0 ~ 65,000lux
 Proportional gain of the controller.
 Integral gain of the controller.
 It is substituted for nviLuxLevel when an object is overridden.

Object #6 to #7

Occupancy Controller (OC1, OC2)



Network Variables

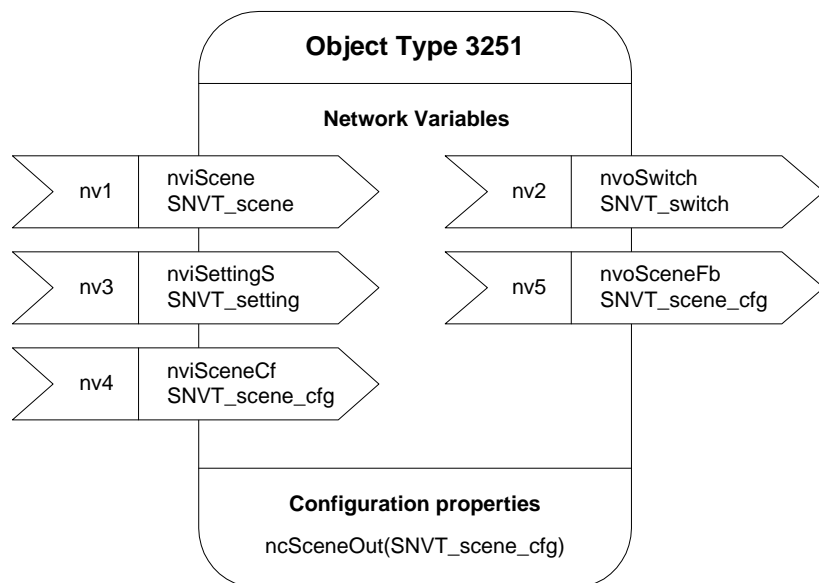
nviOccupancy	Occupancy Input
nviSettingO	Temporary UP/DOWN of the Prime Value and object enable/disable
nviManOvrO	Manual override control input. Passed through to nvoLampValueO
nvoLampValueO	Switch output for slave units, includes value 0~100% and state on/off

Configuration Properties

ncHoldTime	Hold time before output changes, when occupancy input goes UNOCCUPIED. Default = 600sec
ncPrimeVal	Value passed to Switch output when input nviOccupancy. Default = 100%
ncOvrOcc	It is substituted for nviOccupancy when an object is overridden.

Object #8 to #10

Scene Controller (SC1, SC2, SC3)



Network Variables

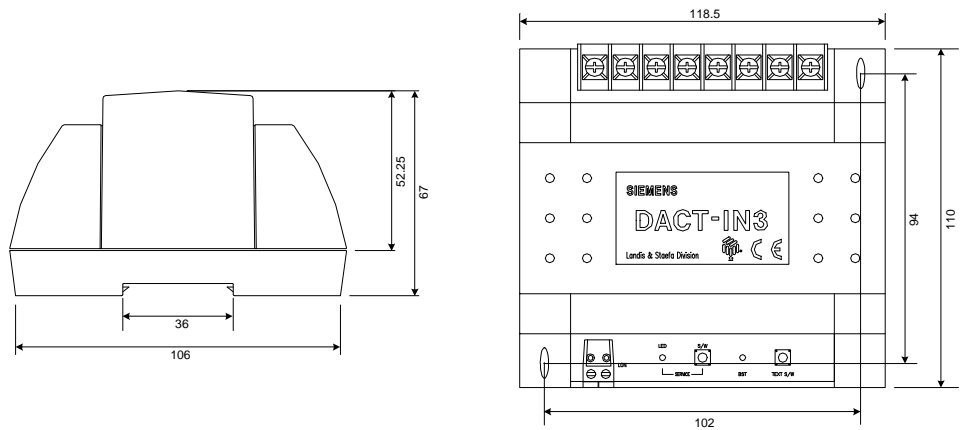
nviScene	Scene Input - RECALL is used to call scene from memory, valid range 1-30 - LEARN is used to record current level to scene, valid range 1-30
nviSettingsS nviSceneCf	Temporary UP/DOWN of the lux setpoint and object enable/disable Scene configuration input - SAVE records entered scene - CLEAR deletes entered scene - REPORT update the configuration output (nvoSceneFb) with scene contents - SIZE reports total number of scenes in controller - FREE reports number of free scenes in controller Valid ranges are for scenes 1-30 setting 0.0-100%, Fade time, Delay time and rotation fields are unavailable.
nvoSwitch nvoSceneFb	Switch output for slave units, includes value 0~100% and state on/off SceneCf feedback output

Configuration Properties

ncSceneOut	Save Scene. Saving scene number up to 30.
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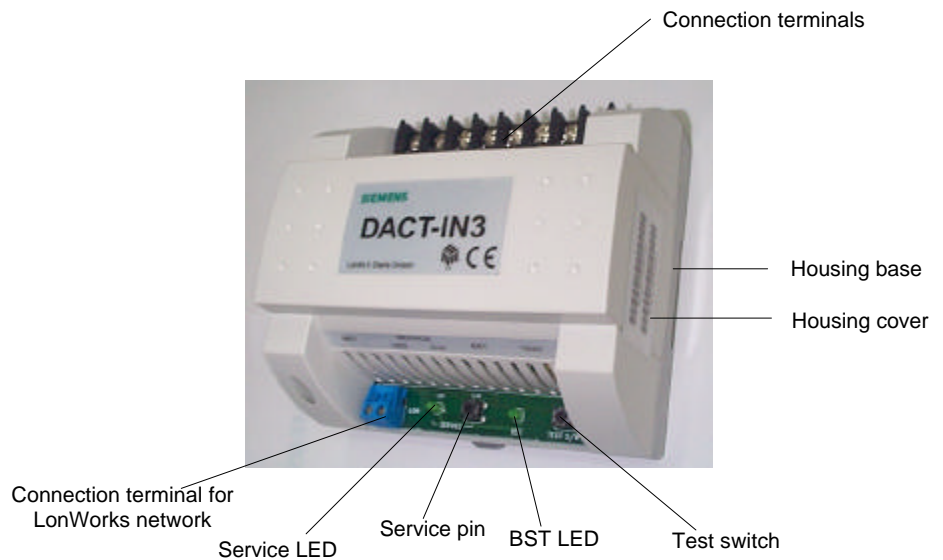
Dimensions

All dimensions in mm



Mechanical design

The DACT-IN3 comprises a housing base and a housing cover. The device also has a service Pin/LED, a BST LED and connection terminals for NET A/B.



Test switch

Test the dimmer Actuators. When the test switch is pressed, the illumination of the lighting bulbs are changed by means of different level.:

0% ⇒ 25% ⇒ 50% ⇒ 75% ⇒ 100% ⇒ previous level

BST LED

Blinking BST(Basic Sanity Test) LED shows the status of the DACT-IN3 in normal condition and operating mode.

Service LED

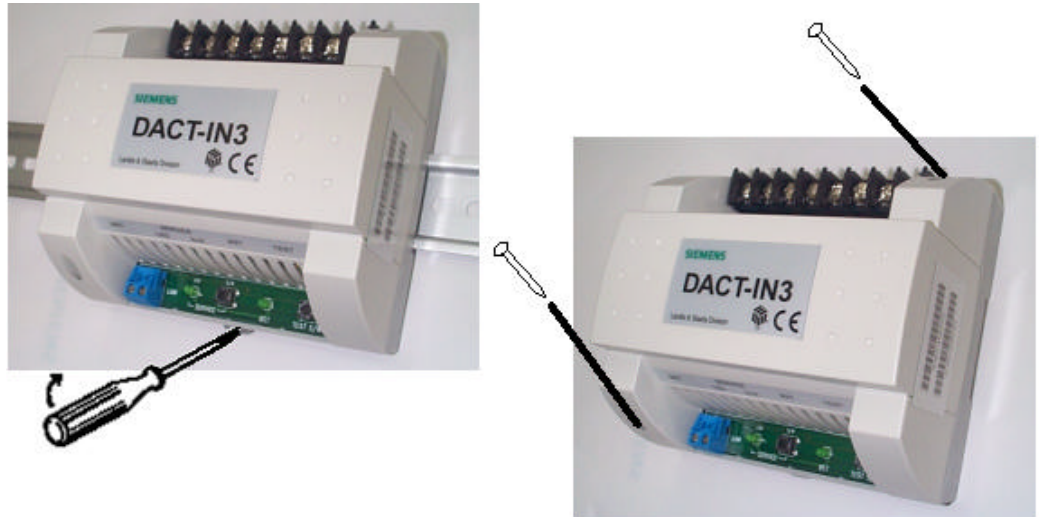
This LED shows the overall status of the LonWorks device. When the device application is not configured, this LED flashes green and off. When the device application is configured, the LED goes off.

Service pin

The service pin is used to identify the device at commissioning. When the service pin is pressed, program ID and LonWorks Unique ID(Neuron ID) contained in the device are transmitted to the commissioning or service tools.

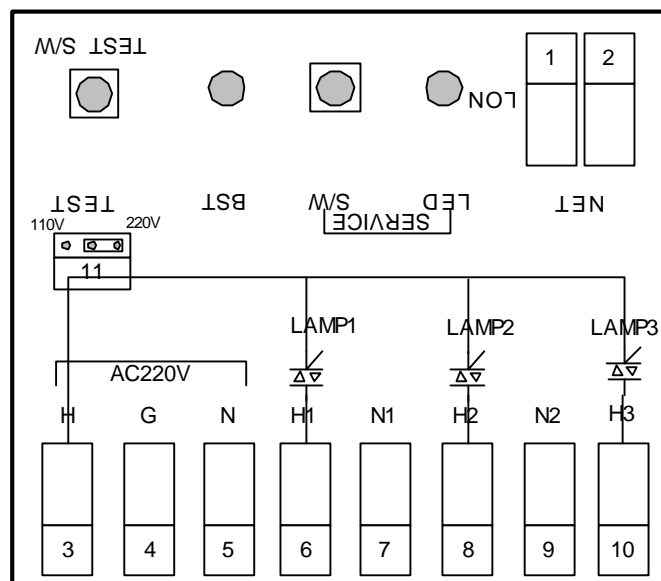
Mounting notes

The device can be mounted in any orientation and fixed as follows:



Rail mounting	Direct mounting
The housing base is designed for snap-mounting on DIN rails. (can be released with a screwdriver)	Two drill holes are provided for screw-mounting.

Connection terminals



LonWorks network

- 1 Data B
- 2 Data A
- 3


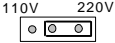
Power supply for relay outputs

- 3 AC 110/220V (HOT)
- 4 Ground
- 5 AC 110/220V (Neutral)
- 6

Triac outputs

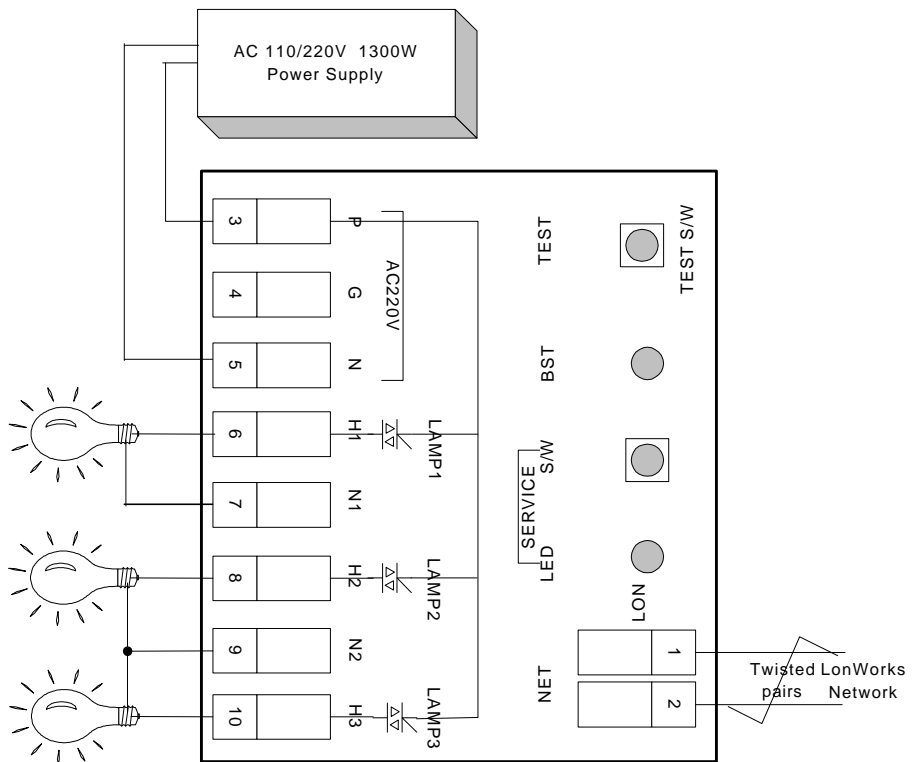
- 6 Triac output for lamp1
- 7 Neutral for 6
- 8 Triac output for lamp2
- 9 Neutral for 8 or 10
- 10 Triac output for lamp3

Selection of power supply

- 11  110V 220V 

Connection diagrams

Connection of lighting bulbs, LonWorks network and power supply.



Installation instructions

1. Mount the DACT-IN3 in the required location by firmly fixing to the wall with a minimum of two screws or by fixing to the din rail.(See mounting notes)
2. Connect the cable as per connection diagram.(See connection diagrams)
3. Once the connections are completed, you must commission the device using LonWorks commissioning tool.
4. Once the device is successfully added in the LonWorks network, you have to check the following.
"The service LED is indicated by 5 flashes by **Wink** command."
5. If you want to set unconfigured state of the device, press the "Service pin" during 10 second.

Ordering information

Model	Description	P/N	Remark
DACT-IN3	Dimmer Actuator for Incandescent, 3 channels, Triac Output, for LonMark	35-140	