



# nPP16 IM EFP

## POWER / RELAY PACK

### FAMILY INSTALLATION INSTRUCTIONS



#### SPECIFICATIONS (NPP16 IM EFP)

##### Electrical Specifications

**Input Ratings** 120-277VAC, 50/60 Hz

**Output Ratings** 120-277VAC, 50/60 Hz, 16A - Tungsten,  
Standard Ballast, Electronic Ballast, General Purpose  
120VAC, 50/60 Hz, 1/2 HP - Motor  
SCCR: 5KA

**Relay Type** Latching

**Low Voltage Output Ratings** 15VDC, 40mA per RJ-45 Port (80mA total)

**Standards/ Ratings** Energy Management Equipment, UL916 (E167435)

##### Mechanical

**Dimensions** 3.38" H x 2.53" W x 1.83" D (86mm x 64mm x 47mm) - does not include 1/2" chase nipple

**Mounting** 1/2" Knockout (7/8" hole)

**Color** White

**Connection Type** RJ-45 nLight Network Ports (2)  
Line Voltage Leads

##### Environmental

**Warrantied Operating Temperature** Standard: 14° to 122° F (-10° to 50° C)  
LT Option: -4° to 122° F (-20° to 50° C)

**Relative Humidity** Up to 90%, Non-Condensing

**Standards/ Ratings** RoHS, Plenum UL2043



#### WARRANTY

5-year limited warranty. Complete warranty terms located at [www.acuitybrands.com/CustomerResources/Terms\\_and\\_conditions.aspx](http://www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx)

**READ AND FOLLOW ALL SAFETY INSTRUCTIONS!**  
**SAVE THESE INSTRUCTIONS AND DELIVER TO OWNER AFTER INSTALLATION**



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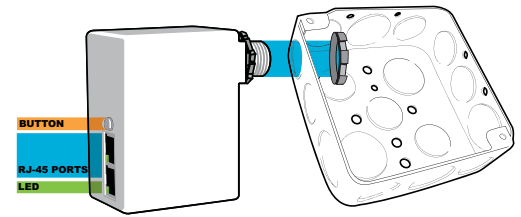
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#### INSTALLATION INSTRUCTIONS

- Disconnect or turn off power before installing or servicing the nPP16 IM EFP.
- The nPP16 IM EFP includes a factory-installed fuse holder attached to the red wire. For ease of installation, pass the lead with the fuse holder through the KO or lock nut first, then pass the other leads through the KO or lock nut. Care should be taken not to nick the wires while threading through the knockout.
- Mount through a 1/2" knockout in any junction box or luminaire. Secure with supplied lock nut.
- Following the wiring diagram below, connect wires to line voltage feed, neutral, and load. Relay and power supply must be connected to the same input circuit.
- Interconnect unit (via RJ-45 ports) with other nLight devices in lighting zone using CAT-5e cables.
- Test all wiring for shorts prior to powering up the unit from the circuit breaker, and ensure that there are no loose or exposed wires that could short to other wires or components. Once wiring is confirmed, power up the unit from the circuit breaker.
- Once power is received via CAT-5e connection, all devices in zone will automatically begin functioning together according to each device's defaults.



T568B pin/pair assignment is recommended for all CAT-5e cables. For Supply Connections, use 14 AWG or larger wires rated for at least 90° C.

#### NOTE

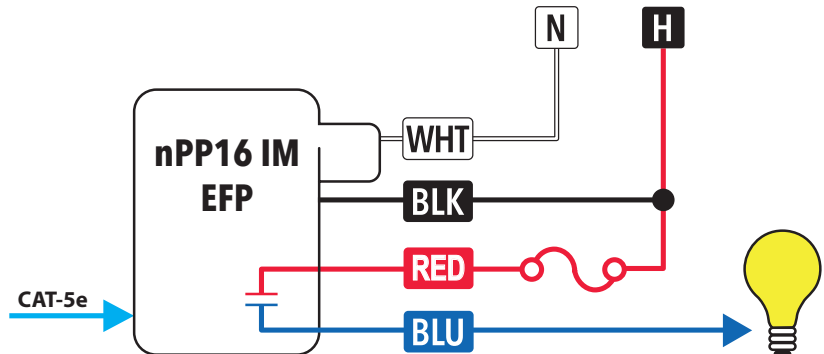
**Black wire is 120-277 VAC on nPP16 IM EFP.**

**DO NOT REMOVE, BYPASS, OR TAMPER WITH FACTORY-INSTALLED FUSE HOLDER ATTACHED TO RED WIRE.**

For further troubleshooting guidance, please contact the Controls Technical Support Team

**1(800)-535-2465**

#### WIRING DIAGRAM



#### TROUBLESHOOTING (NPP16 IM EFP)

**Additional nLight devices do not show power from nPP16 IM EFP device**

- Confirm line voltage power (120VAC - 277VAC) is present to the nPP16 IM EFP unit
- Confirm all line voltage wiring connections
- Confirm RJ45 pinout connections

**RJ45 LEDs are showing rapid flash for 1 second, followed by two blinks**

- Confirm there is no debris or bent pins within the RJ45 connections on all devices in the daisy-chain, and that all connectors are properly snapped into the RJ45 port
- Use a CAT5 cable tester to confirm all cables are properly terminated
- Confirm no CAT5 cables are kinked or held with cable ties that are overtightened

**Restore Factory Defaults**

1. Press and hold button until LED flashes rapidly
2. Press button 9 times
3. During LED flash back (3 individual flashes), press the button twice
4. LED will flash twice to confirm reset, press and hold button until LED flashed rapidly
5. Press button 9 times. LED will blink twice to show successful factory reset



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Operational settings can be changed via the push-button sequence outlined below and right. Additional settings can also be configured via SensorView software.

#### A-LEVEL PROGRAMMING INSTRUCTIONS

Please read all 3 steps before programming

1. Enter a specific programming function by pressing button the number of times as the desired function number from the A-Level Detailed Function Tables (e.g., press 23 times for function 23, Occupied Bright Level).
2. LED will flash back the selected function's current setting (e.g., 11 times for 100%). To change setting, proceed to step 3 before flash back sequence repeats 3 times. To exit the current function or to change to a different function, wait for sequence to repeat 3 times then return to step 1.
3. Press button the number of times indicated in the particular function's detailed table for the NEW desired setting. As confirmation of setting change, LED flashes back the NEW setting 3 times before exiting.

#### A-LEVEL DETAILED FUNCTION TABLES

##### 17 = Secondary Zone Dimming Offset

Percentage voltage difference of unit's dimming output from primary dimming output (Function 26, Follow Photocell Mode, must be enabled)

1 -100%	8 -30%	15 40%
2 -90%	9 -20%	16 50%
3 -80%	10 -10%	17 60%
4 -70%	11 0%*	18 70%
5 -60%	12 10%	19 80%
6 -50%	13 20%	20 90%
7 -40%	14 30%	21 100%

##### 23 = Occupied Bright Level

The percentage of the controllable dimming range that the dimming output rises to when occupancy is detected. Setting is not applicable if Follow Photocell Mode is enabled. Note: Adjusting the dim level using a WallPod changes this setting when Follow Photocell Mode is disabled.

1 1%	5 40%	9 80%
2 10%	6 50%	10 90%
3 20%	7 60%	11 100%*
4 30%	8 70%	

##### 24 = Unoccupied Dim Level

The percentage of the controllable dimming range that a dimming output drops the lights to after the Idle Time Until Dim timer expires

1 1%*	5 40%	9 80%
2 10%	6 50%	10 90%
3 20%	7 60%	11 100%
4 30%	8 70%	

##### 26 = Follow Photocell Mode

Directs how a device's dimming output reacts relative to a photocell (ADC)

1 Disable*	2 Enabled (- only)	3 Enabled +/-
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#### NOTE

\* indicates default setting for base nPP16 (D) EFP models.

#### B-LEVEL PROGRAMMING INSTRUCTIONS

Please read all 4 steps before programming

1. Enter B-Level programming mode by holding down button until LED flashes rapidly, release, hold down until rapid flash again, release, then immediately enter programming function as described in step 2.
2. Enter a programming function by pressing button the number of times as the desired function number from the table labeled B-Level Functions (e.g., 12 times for function 12, Occupancy Tracking Channel).
3. LED will flash back the selected function's current setting (e.g., 1 flash for channel 1). To change setting, proceed to step 4 before flash back sequence repeats 3 times. To exit the current function or to change to a different function, wait for sequence to repeat 3 times then return to step 1.
4. Press button the number of times indicated in the particular function's detailed table for the NEW desired setting (e.g., press 2 times for channel 2). As confirmation of setting change, LED flashes back the NEW setting 3 times before exiting.

#### B-LEVEL DETAILED FUNCTION TABLES

##### 12 = Occupancy Tracking Channel

The local channel on which a device's relay and/or dimming output receives occupancy information

1 - 16 (e.g., 1 = Channel 1\*, 2 = Channel 2; etc.)

##### 14 = Photocell Tracking Channel

The local channel on which a device's relay and/or dimming output receives photocell information

1 - 16 (e.g., 1 = Channel 1\*, 2 = Channel 2; etc.)

##### 16 = Switch Tracking Channel

The local channel on which a device's relay and/or dimming output receives switch information.

1 - 16 (e.g., 1 = Channel 1\*, 2 = Channel 2; etc.)

Note: Normal default is channel 1, units with SW2 and SA2 options are defaulted to channel 2

##### 17 = Override (Relay / Dimming)

Indicates whether a device's relay is forced on/off and/or dimming output is forced to max/min

1 Not forced\* 2 Override On 3 Override Off

##### 18 = Special Operating Mode

Unique defined behaviors of relays and/or dimming outputs, see right for function definitions

1 Normal*	5 Predictive Off
2 Manual On	6 Manual to Override On
3 Auto to Override On	7 Manual to Normal
4 Manual to Full Auto On	

##### 19 = Invert Relay Logic

Reverses functionality of relays

1 Normal Logic\* 2 Inverse Logic

##### 21 = WallPod Dimming Adjustments

Defines whether user dimming adjustments are maintained after lights are cycled, whether they revert to default levels, or whether they temporarily disable a connected dimming photocell (until lights cycle)

1 Permanent\* 2 Temporary 3 Photocell Temp Override

##### 22 = Maintain Dim Level when Vacant

Prevents lights from turning fully off once in unoccupied state

1 No\* 2 Yes

##### 23 = Special Switch Tracking Mode

Defines unique behavior related to how relays respond to particular switch information

1 Disable\* 3 Ignore Ons  
2 Ignore Offs 4 Ignore Ons & Offs

##### 27 = Relay Always On

Forces relay to stay closed even in off state

1 No\* 2 Yes

##### 28 = Dimming Always On

Maintains unoccupied dim level when in off state. Does not affect relay.

1 No\* 2 Yes

##### 29 = Occupancy Expiration of Manual Off

When enabled, operation of device will revert from a push-button triggered override off state to Normal mode once the Occupancy Time Delay (adjustable via SensorView or push-button) expires. Not used with Manual On operating modes.

1 Disable\* 2 Enable

##### 31 = High End Trim\*\*

Maximum voltage level of the device's dimming output. Commonly used for task tuning where absolute light level is not to be increased via a Wallpod or scene. When output is at high end trim, the reported control percentage will be 100%. Corresponding lumen output % is dependent on ballast/driver capabilities.

1 0.7V	4 3V	7 6V	10 9V
2 1V	5 4V	8 7V	11 10V
3 2V	6 5V	9 8V	

##### 32 = Low End Trim\*\*

Minimum voltage level of the device's active dimming range. Level can not be reduced via a WallPod or scene. When output is at low end trim, the reported control percentage will be 1%. Corresponding lumen output % is dependent on ballast/driver capabilities.

1 0.7V	4 3V	7 6V	10 9V
2 1V	5 4V	8 7V	11 10V
3 2V	6 5V	9 8V	

\*\* Setting precision of 0.1V is available via SensorView. Device status LED blinks out current value rounded to nearest selection above.

#### FUNCTION 18 DEFINITIONS

##### NORMAL

Operating Mode where occupancy sensors are capable of turning lights both on/off

##### AUTO TO OVERRIDE ON

Special Mode where lights are turned on initially by occupant detection but then left in the Override On state

##### MANUAL ON TO FULL AUTO

Special Mode that initially requires the occupant to manually turn on the lights, after which the sensor assumes full on/off control

##### MANUAL ON

Special Mode that always requires the occupant to manually turn the lights on, while having them turn off automatically by a sensor (default on models with SA and SA2 options)

##### PREDICTIVE OFF

When lights are switched off, this Special Mode determines whether occupants remained or left the room, so as to leave the lights in either the Override Off or Auto On state

##### MANUAL TO TIMED OVERRIDE ON

Special Mode where lights are initially turned on manually but remain in the Override On state for a pre-determined period (Timed Override Delay)

##### MANUAL TO NORMAL

Special Mode where lights are initially turned on manually but remain in the Normal State (enabling auto-dimming) for a pre-determined period (Timed Override Delay)

For further troubleshooting guidance, please contact the Controls Technical Support Team

**1(800)-535-2465**