OVERVIEW

Controlux Air Prime Node - Next-generation Smart City lighting controller

With Controlux Air Prime Node, cities can effortlessly upgrade their streetlights with intelligent controls turning them into smart city connectivity hubs. When combined with a smart driver, Controlux Air Prime Node delivers advanced system health analytics, power metering and asset management support. A standardized Zhaga interface (Book 18) ensures a quick installation and universal luminaire compatibility.

features

- Smart Driver ready
- Lighting control via DALI / DALI 2.0 / SR / D4i, DALI Multi-Master mode
- Controls up to 4 drivers
- Lux sensor to measure ambient light 2.4 GHz communication levels
- Adaptive, autonomous, AstroClock and calendar-based dimming
- IP65 with similar rated Luminaire +UV Stabilized
- Compatible with all existing Controlux Air products
- 2.4 GHz communication

benefits

- Universal luminaire compatibility via standard Zhaga socket (Book 18)
- Advanced luminaire health information and monitoring
- External sensor input; trigger surrounding lights creating a safe circle of light around the road user
- Open API for third party software compatibility
- High accuracy power metering; ANSI 136.52 compliant for supported drivers

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An Acuity Brands Company

electrical input data

rated supply voltage range	18-30VDC
rated supply voltage	24VDC
rated supply current	125mA
power consumption operating	~1.5W
power backup (RTC)	24 hours
logical system input (LSI)	0 - 30VDC
LSI logical low	0 - 6VDC or open
LSI logical high	7 - 30VDC
LSI max current draw	10mA
LSI output range	0 - max supply voltage
dimming control	DALI / DALI 2.0 / SR / D4i, DALI Multi-Master mode
DALI supply bus voltage	20VDC
DALI supply current	60mA
DALI supply current guarantee	53mA

communication data

rated supply voltage range	18-30VDC
network	2.4GHz IEEE 802.15.4 self-forming, self-healing wireless network
radio (max. transmit power)	+9.5dBm (EU)
radio (receiver sensitivity)	-96dBm
security	128 AES encryption
wireless range	200m*
gateway to device ratio	1:200*

*depending on field conditions

certificates & standards

approval marks	CE
IEC protection class	Class 3
ingress protection classification	IP65 with similar rated Luminaire

operational temperatures & humidity

ambient temperature (Ta)	-30 to +60ºC	Higher ambient temperature allowed as long as $T_{case-max}$ is not exceeded
relative humidity	10 to 90%	Non-condensing
$T_{case-max}$	+85ºC	
$T_{case-life}$	+70ºC	

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mechanical data

enclosure	Transparent Polycarbonate, UL94 V-0
colour	Pantone - Cool Grey 5 C
antenna	Integrated
weight	88g
dimensions	80 x 50mm

protection

supply protection	Reverse polarity protection
output protection	Short circuit protection with auto-recovery
	Reverse polarity protection and over-voltage protection on DIMMING lines (pin 2/3)
	LSI I/O mode protection; configuration of incorrect function mode will not damage device
	LSI output over-current protection with auto-recovery

operational temperatures & humidity

storage temperature	-40 to +60ºC	
relative humidity	5 – 95%	Non-condensing

lifetime

device lifetime	50k hours	At T_{case} = +70ºC at Tc point / 10% failure rate

additional information

default ambient light sensor setting	ON	Turn light ON: 30 Lux / Turn light OFF: 45 Lux
default light output	100 %	
default LSI function	OFF	Refer to latest product documentation for supported functions
default LSI mode	INPUT	

69 mm

50 mm

80 mm

80 mm
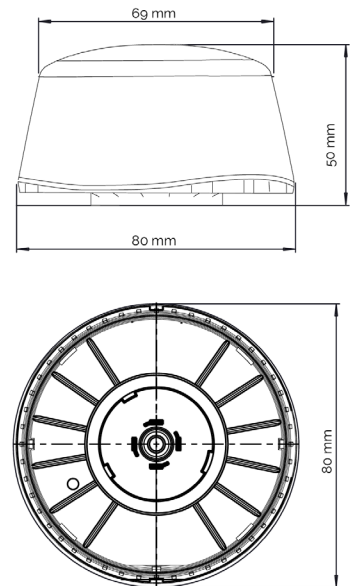
wiring information

pin number	function
1	+24V power supply
2	Negative pole for analogue or DALI or DALI based protocol and shared ground return for 24V supply
3	Positive pole for analogue or DALI or DALI based protocol
4	General digital i/o (greater than 7VDC)
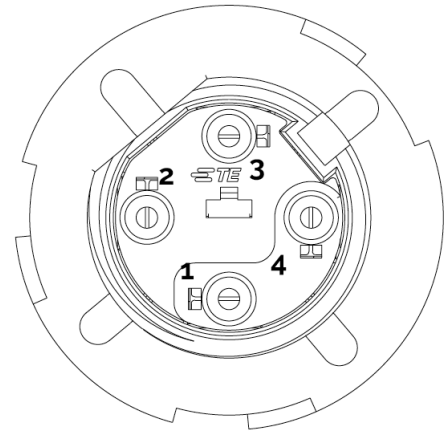
Bottom view: Receptacle Assembly
(Gasket, Nut and Washer not shown for clarity)

approved accessories

accessory type	Mounting assembly
manufacturer	TE
manufacturer's part description	Receptacle Assem., Lumawise Endurance S
part code	2213858-1

application

Roadways
Area lighting
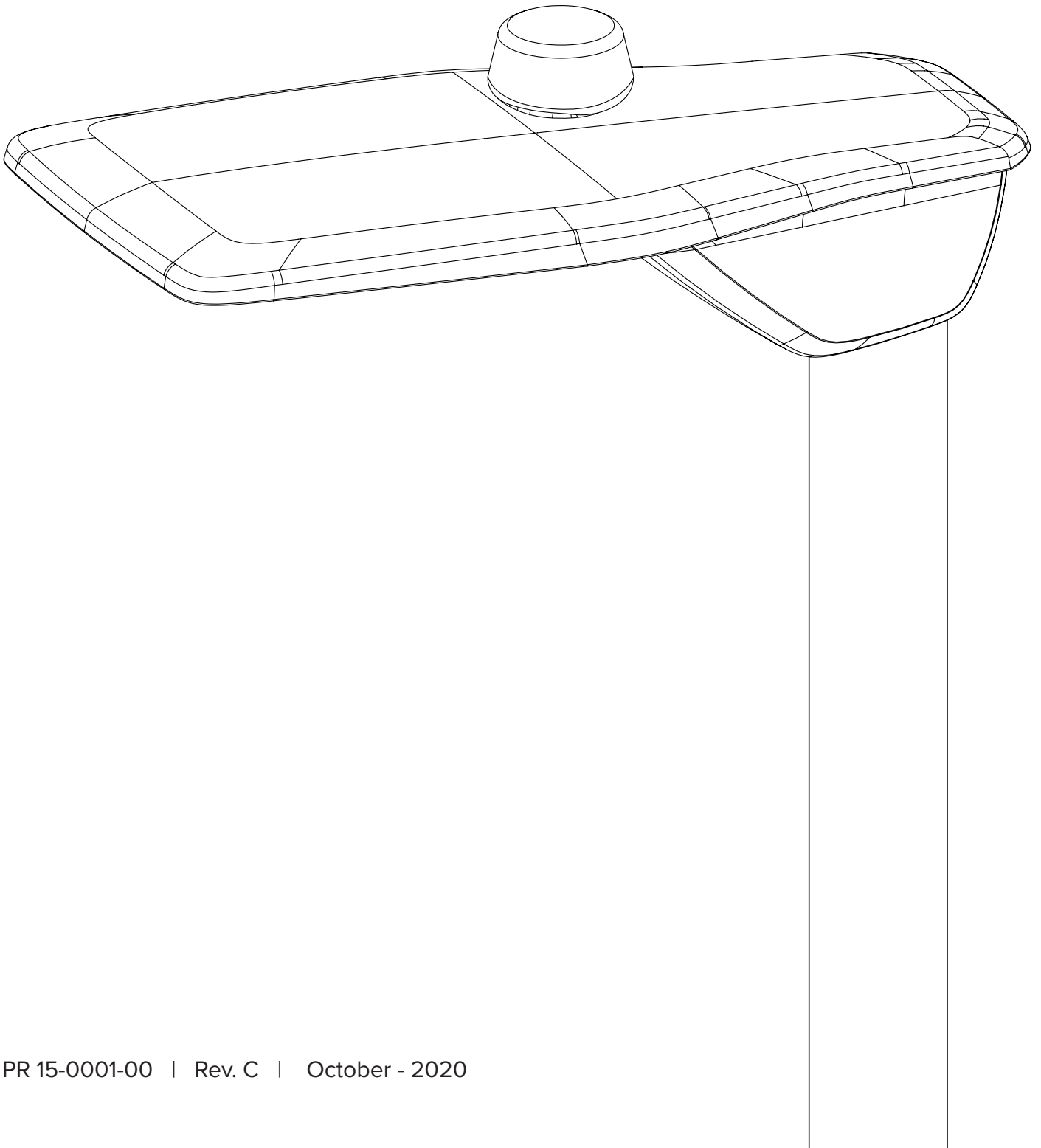Residential
Urban
Industrial
Parking
Ports
Rail stations

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SkyLite Prime

Installation Manual

In box:

SkyLite Prime

1 x Pole ID Label

TVILIGHT

TVI-SKL50ZD-A00-00000

www.tvilight.com

You Will Need

Scan&Go App

Available in the
Apple App Store
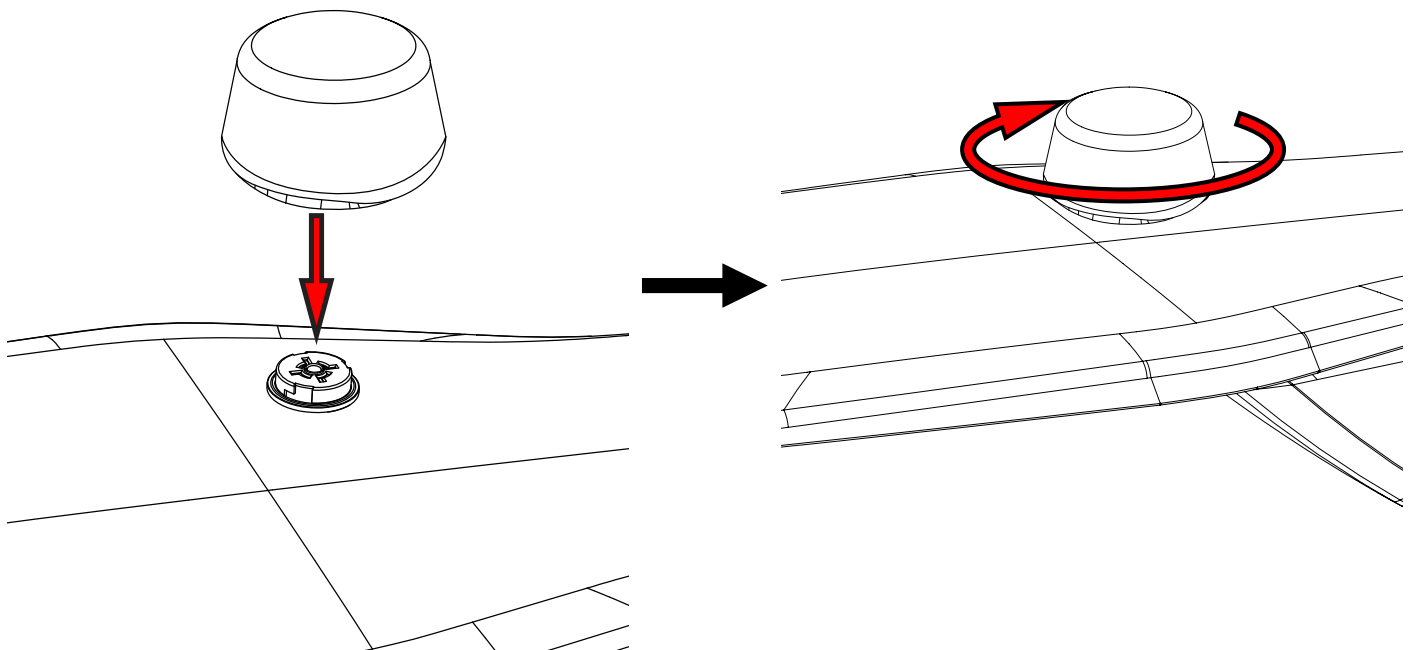and in the
Google Play Store

TVILIGHT

1. Remove Sealing Cap from the Zhaga Receptacle

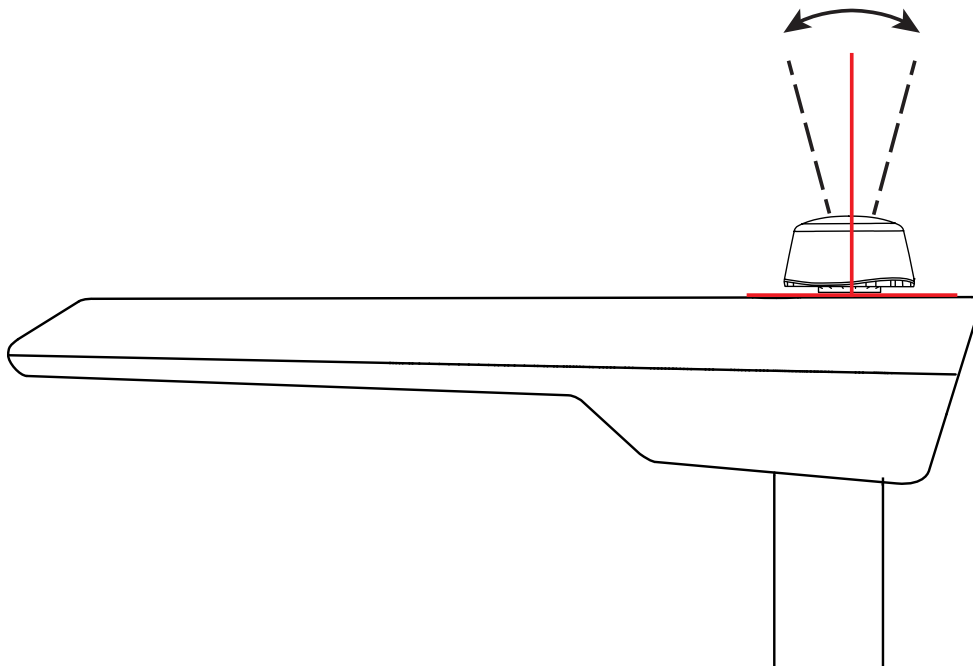NOTE: The receptacle, and threfore the SkyLite Prime, must be mounted on the top side of the luminaire.
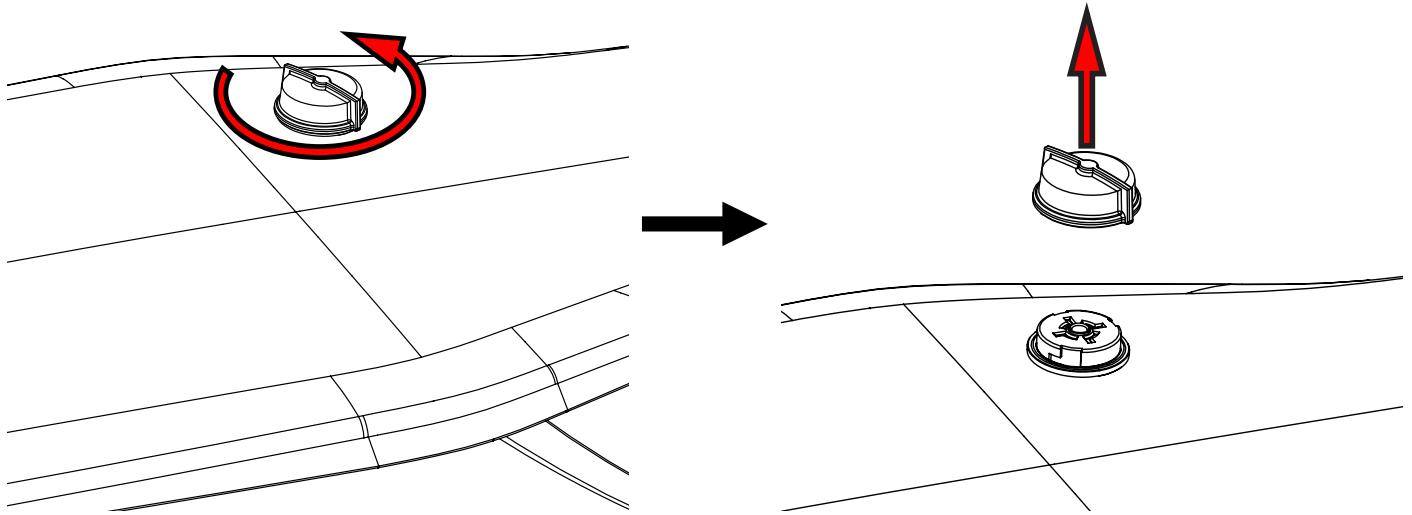
2. Connect Skylite Prime

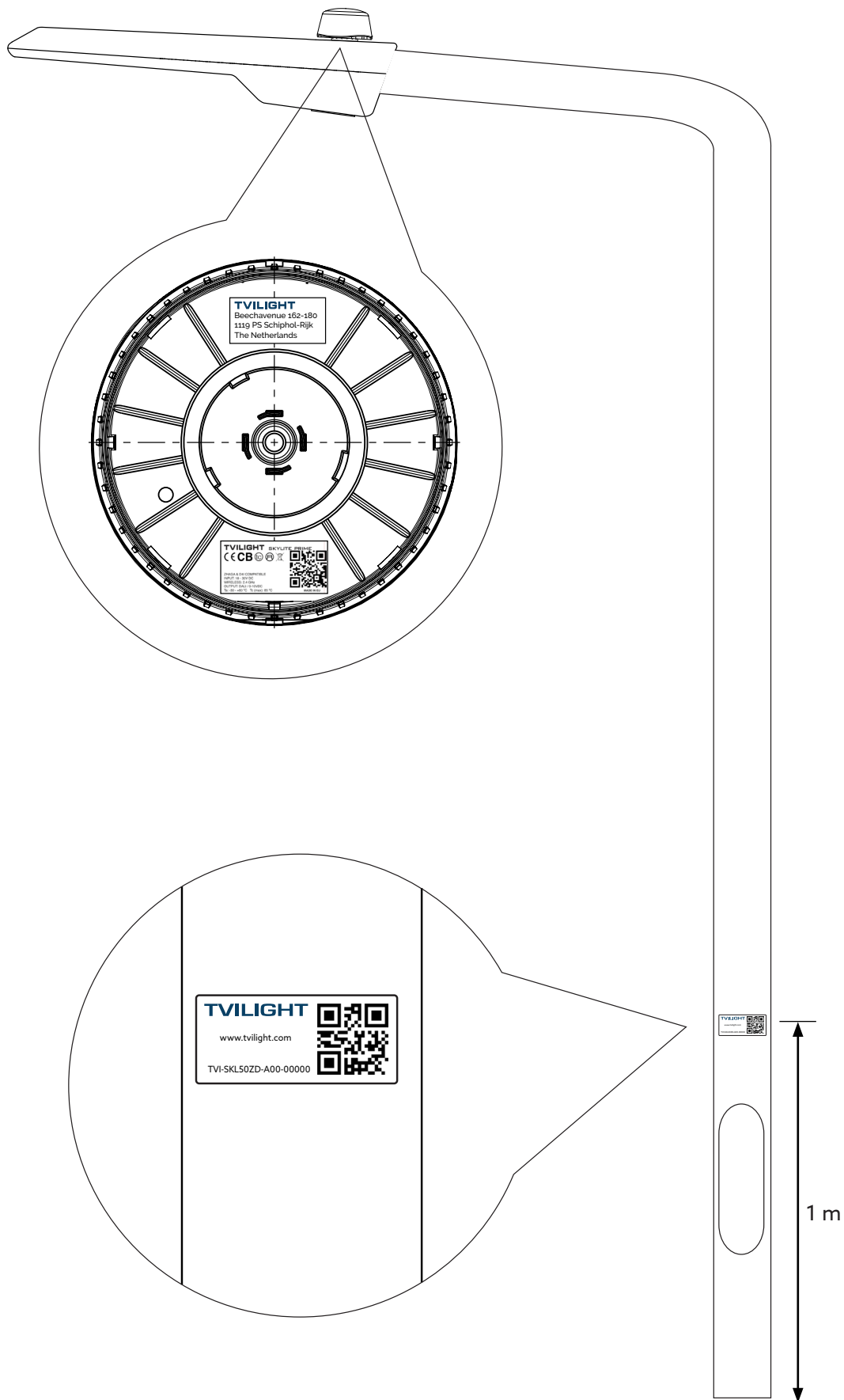Press SkyLite Prime onto the Zhaga Receptacle and twist to lock in place.

Note: SkyLite Prime has a maximum tilt angle of ±15° from horizontal

Max tilt ±15° from horizontal.

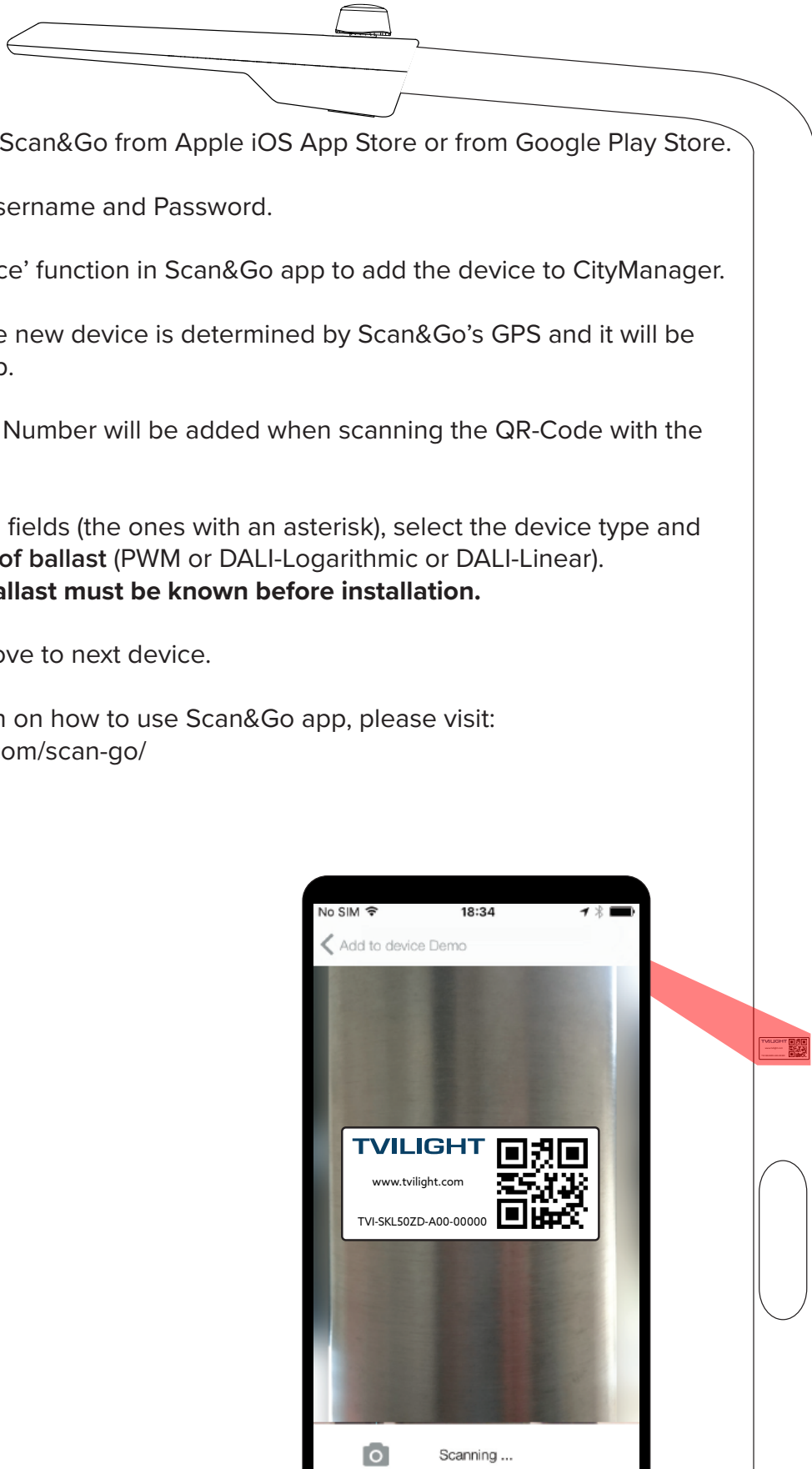# 3. Apply Pole ID Label to the pole

Ensure that the Product and Pole ID Labels match.

TVILIGHT
Beechavenue 162-180
1119 PS Schiphol-Rijk
The Netherlands

TVILIGHT SKYLITE PRIME

TVILIGHT
www.tvilight.com

TVI-SKL50ZD-A00-00000

1 m

4. Add device to CityManager

1. Download Tvilight Scan&Go from Apple iOS App Store or from Google Play Store.

2. Login with your Username and Password.

3. Use the 'Add device' function in Scan&Go app to add the device to CityManager.

4. The location of the new device is determined by Scan&Go's GPS and it will be indicated on the map.

5. The Device Serial Number will be added when scanning the QR-Code with the camera.

6. Fill in the required fields (the ones with an asterisk), select the device type and also **select the type of ballast** (PWM or DALI-Logarithmic or DALI-Linear).
Note: The type of ballast must be known before installation.

7. Press save and move to next device.

For more information on how to use Scan&Go app, please visit:
https://www.tvilight.com/scan-go/

# Appendix : Zhaga Receptacle Mounting and Wiring Specification

NOTE: The content in this Appendix is derived from the TE LUMAWISE Endurance S Connector System Application Specification 114-133074 (12 May 17 Rev 3). For more detailed installation instructions consult the latest TE Application Specification document.

A1. Mounting

A surface shall be provided on luminaire housing that is ideally flat. If a flat surface is not possible a secondary possibility is to have a flat surface in one direction and a minimum radius in the other of 500mm to mount the receptacle. To provide a water tight mounting seal, the luminaire surface must be free of dirt, debris, or burrs. Sealing gasket provided with the receptacle assembly must be used.
Receptacle can be used on a luminaire housing thickness between 1.5mm to 6.0mm. When mounting receptacle assembly, it must not rotate during locking washer and locking nut application. Torque mounting nut within the range of 1.8 to 2.4 N-m using a 27mm hex socket.
The location of the hole must be on the top side of the luminaire.

Receptacle assembly with pre-installed gasket

Top Side of the Luminaire housing

Mounting hole

Lock washer
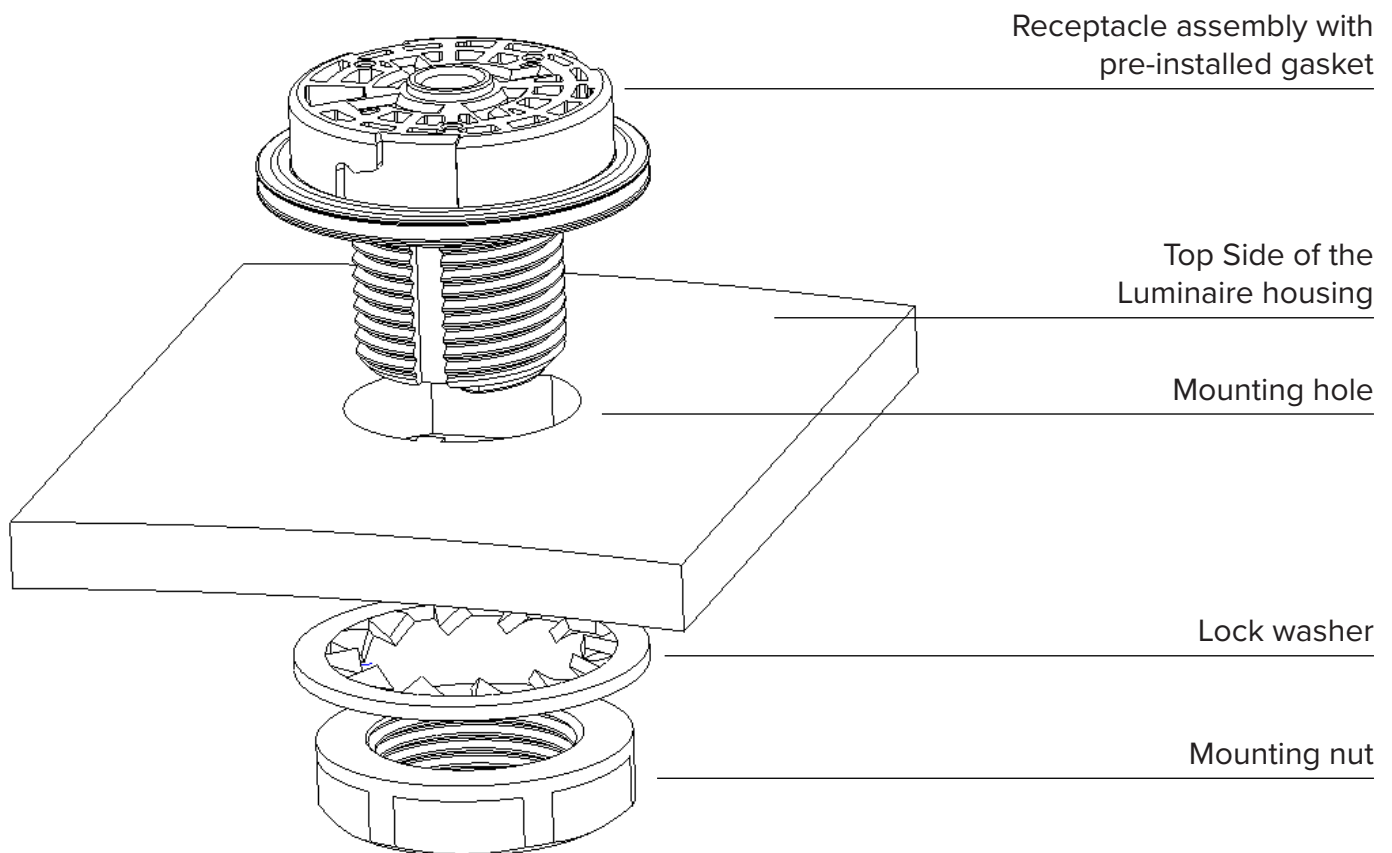
Mounting nut

A2. Mounting Hole Pattern

The recommended mounting hole can be seen below. Refer to product drawing for additional details.
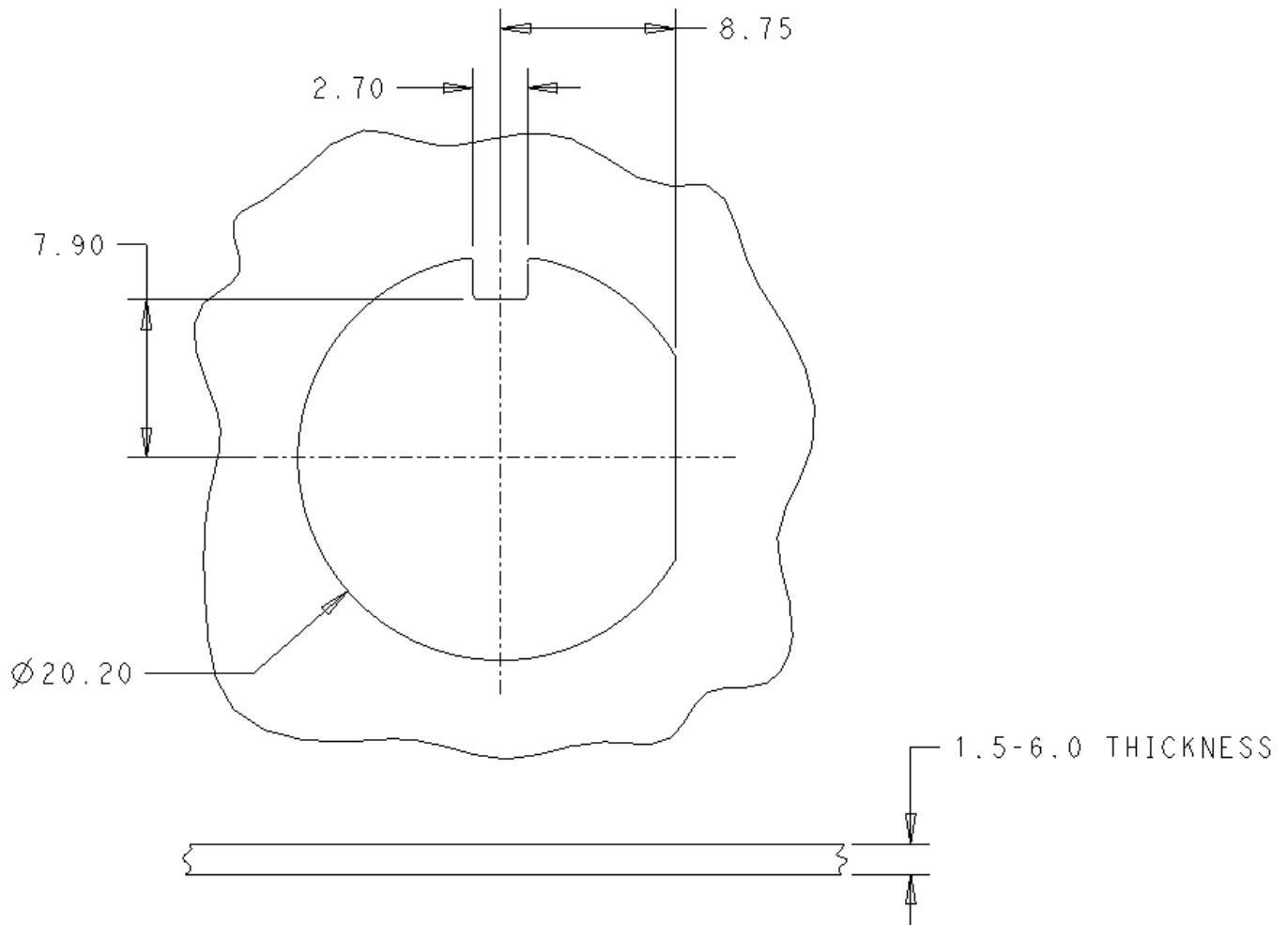
NOTE: Variations to the recommended mounting hole are possible but must be verified by the end user to ensure they do not result in excessive movement of the receptacle assembly during mounting or use. Excessive movement could result in reduced system performance. An absolute maximum hole diameter of 22.0mm should be used.

A3. Wire Locations

The receptacle is wired on the bottom side of the assembly; access from the inside of the luminaire. Wire entry locations are labelled 1, 2, 3, and 4. Corresponding contact designations are marked the same on the module bases for PCB alignment.
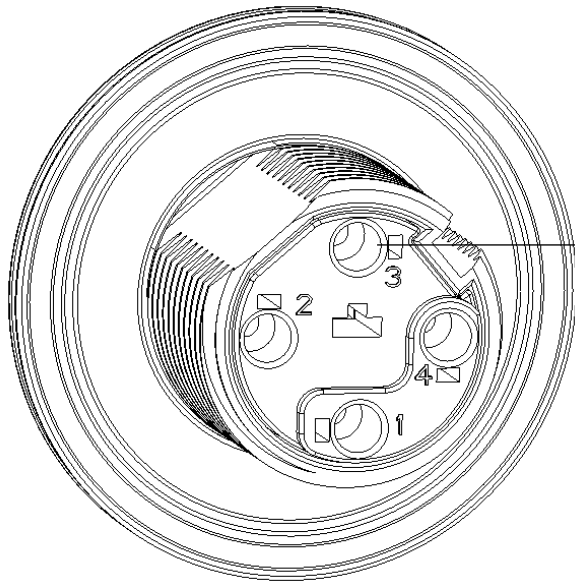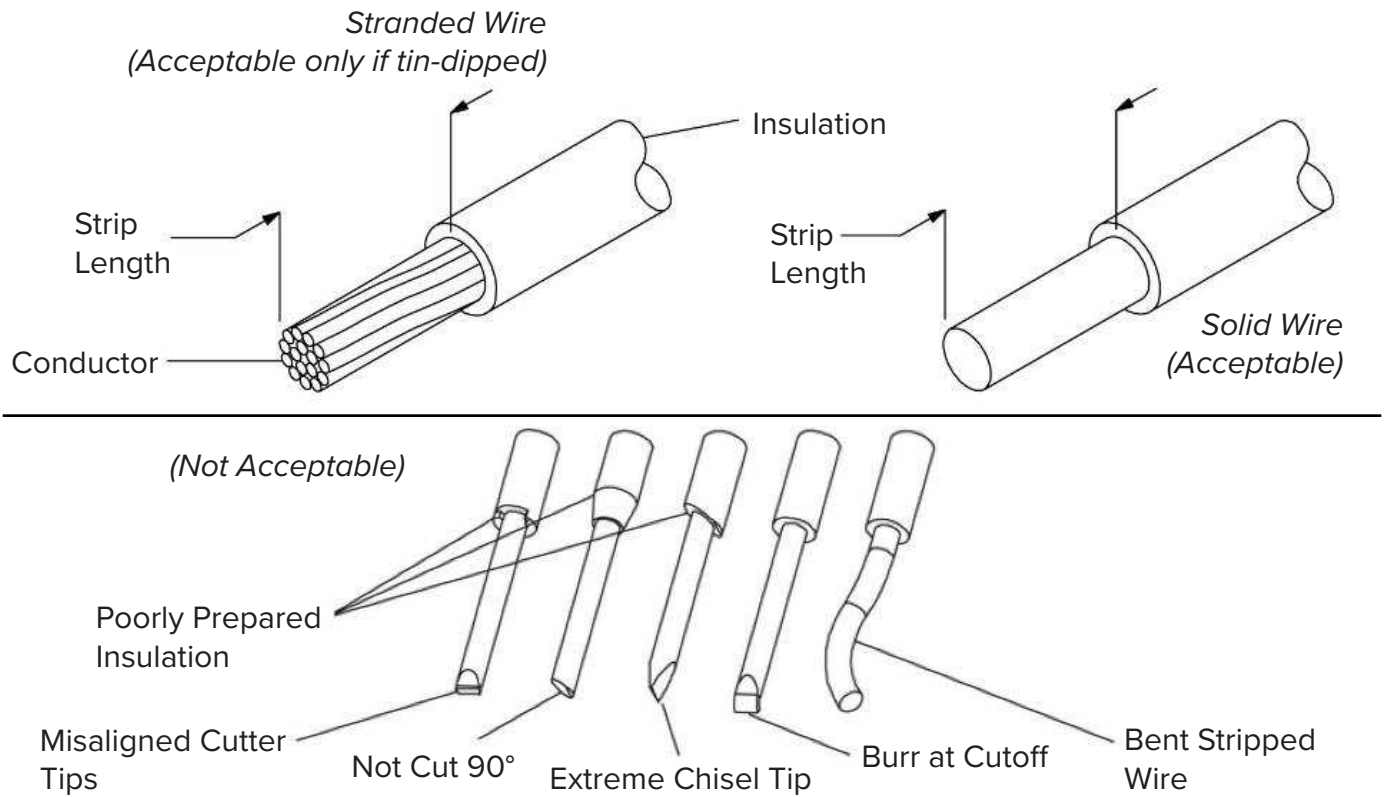
Receptacle assembly with pre-installed gasket

Pun Number	Function
1	+24V power supply
2	Negative pole for DALI or DALI based protocol and shared GND return for 24V power supply
3	Positive pole for DALI or DALI based protocol
4	General digital I/O (greater than 7V)

A4. Wire Selection and Preparation

The receptacle assembly will accept 16 through 20AWG solid and 18 through 20AWG stranded tin-dipped copper wire only. The table in Figure 5 provides wire selection for the Poke-In Connectors.

Stranded Wire
(Acceptable only if tin-dipped)

Insulation

Strip Length

Conductor

Strip Length

Solid Wire
(Acceptable)

(Not Acceptable)

Poorly Prepared Insulation

Misaligned Cutter Tips

Not Cut 90°

Extreme Chisel Tip

Burr at Cutoff

Bent Stripped Wire

Recommend Wire			
Wire Size	Wire Type	Insulation Diameter	Strip Length
16 AWG	Solid	ø2.95 MAX ø1.90 MIN	11.0 ±1.0
18 AWG	Solid		
	Stranded (tin-dipped)		
20 AWG	Solid		
	Stranded (tin-dipped)		

NOTE: Recommended maximum insulation diameter should be as provided in Figure 5. Wires with larger insulation diameters will not fit within the housing's poke-in hole insulation tunnel. Wires utilizing semi-rigid insulation are recommended to minimize movement of the insulation along the axis of the wire. Movement of the insulation will result in variation of the wire strip length which can lead to incorrect wire termination.

A5. Wire Termination

All wires must be pushed firmly inside the contact wire openings. The wires must be fully inserted so that the wire insulation is inserted between three and five millimeters into the rear of the housing.
The required wire termination depth is achieved when the wire has bottomed in the connector housing. Connector design has an internal wire stop.

Stripped wire inserted into housing

Insulation inside housing
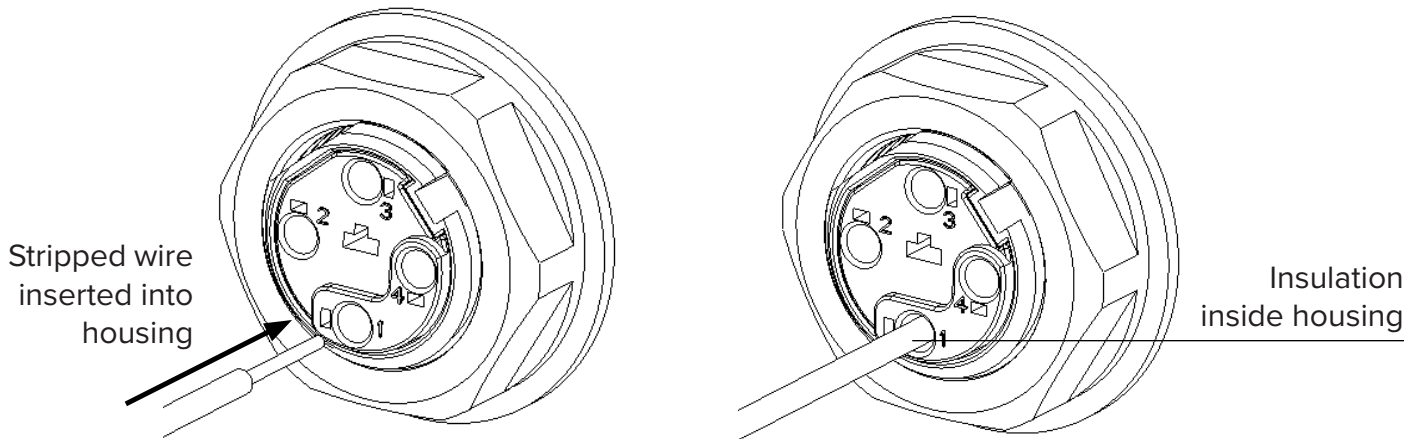
A fully inserted wire can be extracted from the receptacle using a tool and the release tool window located on the bottom of the receptacle housing. Using tool tip that is 0.8mm x 1.4 mm in cross section and 16.0mm long, insert it into the window (one per wire) and open the contact beams. The wire may then be extracted from the connector along the axis of wire insertion direction.

Release tool window

Release tool

Release tool fully inserted

Wire can be retracted from housing
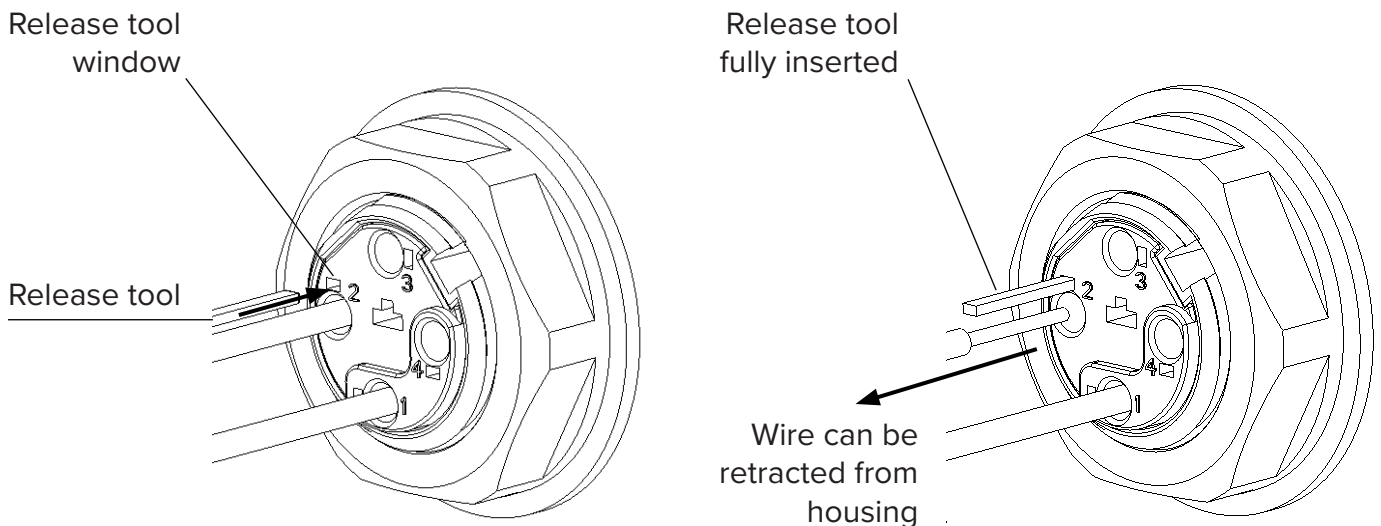
⚠ CAUTION: Extraction device to be free from burrs and sharp edges to ensure no damage is done to connector terminals.

⚠ CAUTION: A new stripped wire must be re-inserted into cavity after extraction of existing wire. DO NOT re-use extracted wire.

⚠ DANGER: Extreme caution to ensure there is no power in the system prior to insertion of wire extraction device. Electrical shock or system damage can result if care is not taken.