

**HID**

ACCESS flexibility.

U90 (U90.915 & U90.865)  
Reader

Ultra High Frequency

# iCLASS SE<sup>®</sup>

## INSTALLATION GUIDE



PLT-01545, A.0

## Parts List

### PARTS

- 1 - iCLASS Reader
- 1 - Installation Guide
- 2 - #6-32 x .375" Phillips machine screws
- 2 - #6-32 x .375" Spanner security screw, anti-tamper
- 2 - 7-pin Terminal connectors
- 1 - 10-pin Terminal connector
- 1 - Mounting Gasket
- 1 - Back Box



### RECOMMENDED

- Cable, 5-9 conductor (Wiegand or clock-and-data)
- Linear DC Power supply
- Metal or plastic junction box
- Security Tool (for anti-tamper screw) HID 04-0001-03
- Drill with various bits for mounting hardware
- Mounting Hardware

## Specifications

PRODUCT	BASE PART NUMBER	INPUT VOLTAGE (VDC)	CURRENT			OPERATING TEMPERATURE	CABLE LENGTH	UL REF NUMBER
			Standby AVG <sup>1</sup>	Max AVG <sup>2</sup>	PEAK <sup>3</sup>			
U90	960N	12 VDC	320mA	400mA	1.0 A	-30° to 150° F (-35° to 65° C)	<b>Power Supply Lines</b> 40 ft (12 m) - 22 AWG 100 ft (30 m) - 18 AWG <b>Communication Lines</b> <b>Wiegand / Clock-and-Data</b> 500 ft (152 m) - 22 AWG <b>RS-485</b> 4,000 ft (1,219 m) - 24 AWG	U90A <sub>X<sub>1</sub></sub> <sub>X<sub>2</sub></sub> <sub>X<sub>3</sub></sub>
		24 VDC	160mA	200mA	0.5 A			

<sup>1</sup> Standby AVG - RMS current draw without a card in the RF field.

<sup>2</sup> Maximum AVG - RMS current draw during continuous card reads. Not evaluated by UL.

<sup>3</sup> Peak - highest instantaneous current draw during RF communication.

#### UL Reference Number Deciphering

X<sub>1</sub> Reader Colors: K = Black

X<sub>2</sub> Wiring: T = Terminal

X<sub>3</sub> Communications: N = No Module

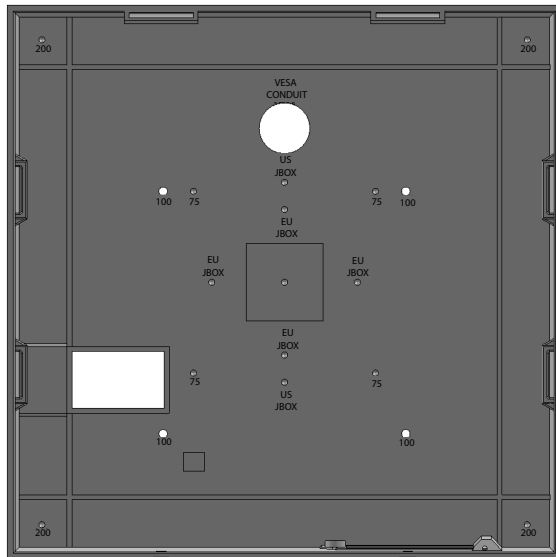
## Relays

Three (3) each dry relays for operating external audio and visual indicators. Not to be used for Access Control. Rated 30VDC, 2A resistive.

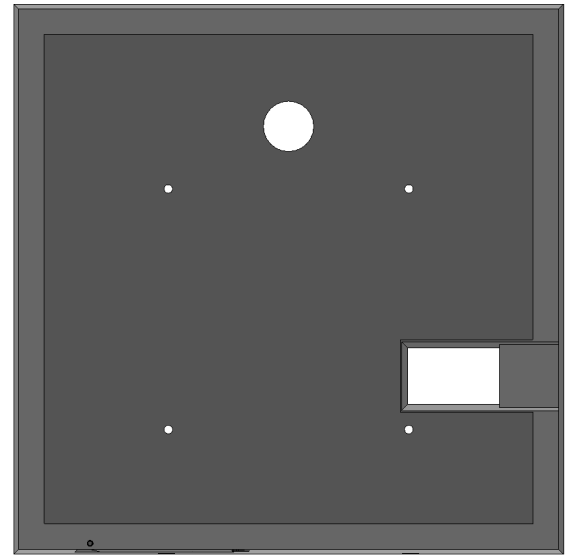
# 1

## Mounting

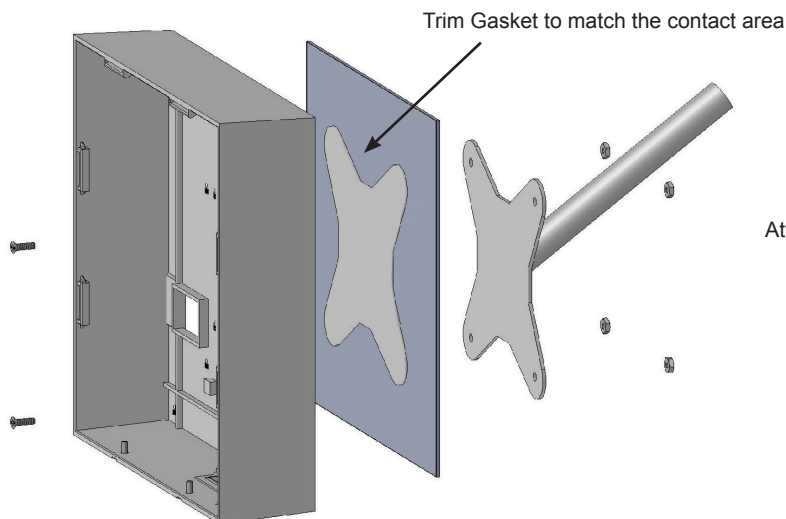
There are many options for mounting surfaces (pole, concrete, metal, wall bracket, etc.). See the iCLASS SE U90 Reader User Guide for detailed information.



Mounting holes need to be drilled to mate with the mount selected for the site.



Modify the gasket to match the large holes on the mounting plate and to match the area between the mount and the box, to create a seal against the elements (see below).



Attach the box with the gasket to the mount

# 2 Wiring



## ATTENTION

Observe precautions for handling  
ELECTROSTATIC SENSITIVE DEVICES

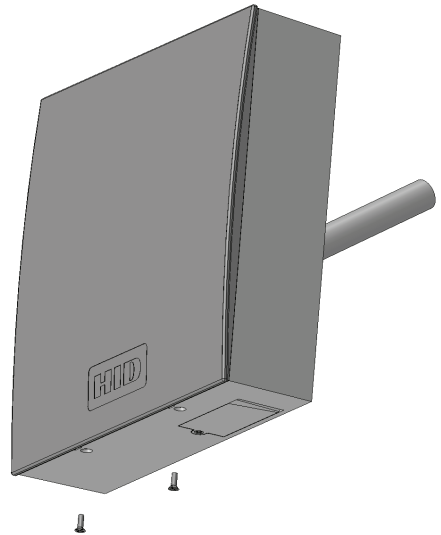
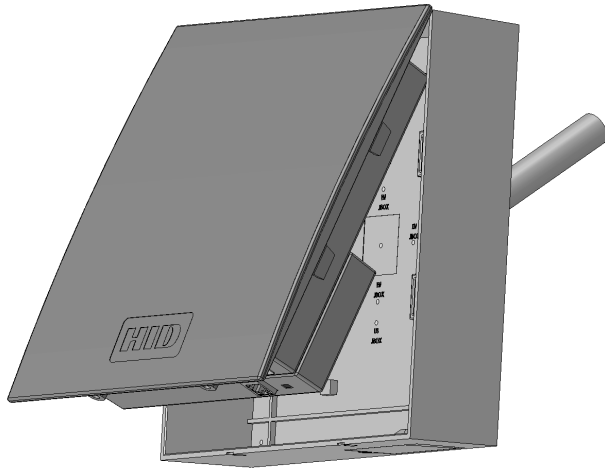
Terminal	Description	Terminal	Description	Terminal	Description
P1-1	Beeper Input (BEEP)	P2-1	GPIO4 (RS485-Y / TXA)	P3-1	Earth Ground
P1-2	LED Input (GRN)	P2-2	GPIO3 (RS485-Z / TXB)	P3-2	Normally Closed (NC) - Relay 1
P1-3	Ground (GND)	P2-3	** Wiegand Data 0 / Data (DATA0/DATA)	P3-3	Common (COM) - Relay 1
P1-4	+VDC	P2-4	** Wiegand Data 1 / Clock (DATA1/CLK)	P3-4	Normally Open (NO) - Relay 1
P1-5	Unused (DRAIN)	P2-5	* Open Collector Output / Tamper (OC/TMPR)	P3-5	Normally Closed (NC) - Relay 2
P1-6	LED Input (RED)	P2-6	GPIO2 (RS232-R / RS485-RXB)	P3-6	Common (COM) - Relay 2
P1-7	Hold Input (HOLD)	P2-7	GPIO1 (RS232-T / RS485-RXA)	P3-7	Normally Open (NO) - Relay 2
				P3-8	Normally Closed (NC) - Relay 3
				P3-9	Common (COM) - Relay 3
				P3-10	Normally Open (NO) - Relay 3

\* Tamper Output - When activated, output synchronizes to ground (default).

\*\* Dependent upon reader configuration. See the HTOG for Wiegand and Clock-in-Data configurations.

# 3

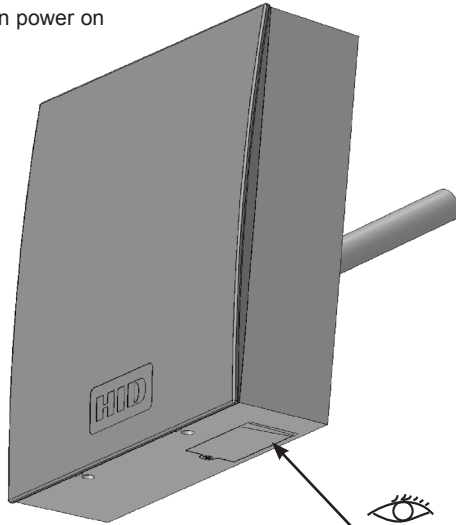
## Install Reader to Backbox



# 4

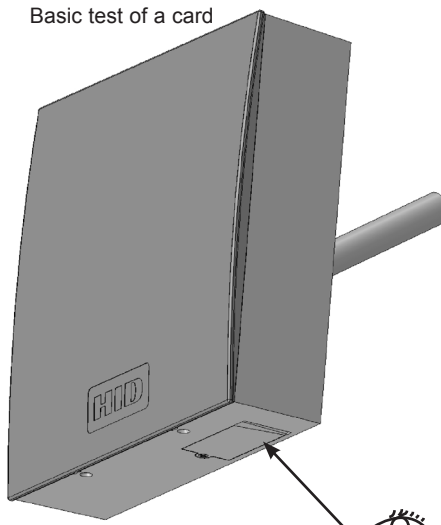
## Power & Testing

Turn power on



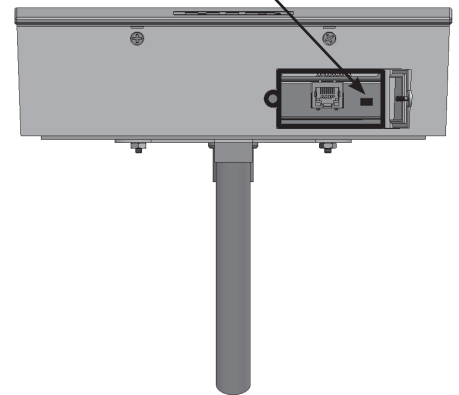
LED will be red  
(under the trap door)

Basic test of a card



LED will be Green  
Note: This is tested with a  
card mounted in a vehicle and  
driven by the reader.

LED is under the trap door



## Configurable Features

- Open Collector Output - Controls an external device (16 VDC Max) operating in Host Mode only. Sink - 40mA / Source - 1mA. See the iCLASS Application Note for details.
- Optical Tamper - Reader is configurable for Optical Tamper. Once activated, and when the reader is removed from the mounting box, the Optical Tamper is activated. Contact HID Technical Support for Optical Tamper options. See iCLASS SE U90 User Guide.
- Hold Input - when asserted, this line either buffers a card or disables a card read until released, as configured.

## UL

Connect only to a Listed Access Control / Burglary power-limited power supply. These readers are intended to be used with listed (UL294) control equipment.

Only Wiegand and RS-485 communications have been evaluated by UL.

**CAUTION: Any changes or modifications to this device not explicitly approved by the manufacturer could void your authority to operate this equipment.**

## FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### FCC RF Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna.

## Canada Radio Certification

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

## CE Marking

HID Global hereby declares that these proximity readers are in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Por el presente, HID Global declara que estos lectores de proximidad cumplen con los requisitos esenciales y otras disposiciones relevantes de la Directiva 1999/5/EC.

HID Global déclare par la présente que ces lecteurs à proximité sont conformes aux exigences essentielles et aux autres stipulations pertinentes de la Directive 1999/5/CE.

A HID Global, por meio deste, declara que estes leitores de proximidade estão em conformidade com as exigências essenciais e outras condições da diretiva 1999/5/EC.

HID Global bestätigt hiermit, dass die Leser die wesentlichen Anforderungen und anderen relevanten Bestimmungen der Richtlinie 1999/5/EG erfüllen.

HID Global dichiara che i lettori di prossimità sono conformi ai requisiti essenziali e ad altre misure rilevanti come previsto dalla Direttiva europea 1999/5/EC.

Download copies of the R&TTE Declaration of Conformity (DoC) at <http://www.hidglobal.com/certifications>.

# HID

## ACCESS experience.

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US Patents: See [www.hidglobal.com/patents](http://www.hidglobal.com/patents)  
Check reader label for current regulatory approvals.

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ACC Control READER



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