INSTALLATION GUIDE

GOVERNMENT SOLUTIONS for Physical Access

R10-H, RP10-H, R40-H, RP40-H, RK40-H,
RPK40-H, RKCL40-P, RPKCL40-P, RKCLB40-P

pivCLASS® Reader

PLT-01134 A.7

Parts

1 - Reader and base plate assembly
1 - Installation guide
2 - Terminal connector - terminal readers only

RKCL40, RPKCL40 & RKCLB40

4 - M3.5 mm x 12 mm Phillips machine screw
4 - #6-32 x .375" Phillips self-tapping machine screw
4 - #6 x 1.5" Phillips sheet metal screw
3 - #6-32 x .4375" Spanner security screw, anti-tamper (black)
3 - #6-32 x .4375 Phillips security screw (black)
1 - Mounting gasket

R10, RP10, R40, RK40, RP40 & RPK40

2 - M3.5 mm x 12 mm Phillips machine screw
3 - #6-32 x .375" Phillips self-tapping machine screw
2 - #6 x 1.5" Phillips sheet metal screw
1 - #6-32 x .375" Spanner security screw, anti-tamper
1 - Mounting gasket (optional, recommended for outdoor installation)

Recommended

- Cable, 6 conductor, 22 or 24 AWG [65 mm or 51 mm] Twisted Pair, Over-All Shield (Belden 3108A or equivalent) - RS-485-FDX + power
- Cable, 4 conductor, 22 or 24 AWG [65 mm or 51 mm] Twisted Pair, Over-All Shield and UL approved (Belden 3107A, or equivalent) - RS-485-HDX + power
- Cable, 6 to 9 conductor, 22 or 24 AWG [65 mm or 51 mm] Over-All Shield, (Alpha 1296C or equivalent) - Wiegand + power
- DC power supply
- Metal or plastic double-gang junction box - **RPKCL40 / RPKCL40 / RKCLB40**
- Metal or plastic single-gang junction box - **R10 / RP10 / R40 / RP40 / RK40 / RPK40**
- Reader spacer when using metal junction boxes - see pivCLASS How to Order Guide
- Security tool (for spanner security screw, anti-tamper) HID 04-0001-03

Specifications

pivCLASS Protocol

PRODUCT	BASE PART NUMBER	INPUT VOLTAGE (VDC)	CURRENT			OPERATING TEMPERATURE	CABLE LENGTH	UL REF NUMBER
			Standby AVG[1]	Maximum AVG[2]	PEAK[3]			
R10-H	900NHR	12VDC	60mA	100mA	200mA	-30° to 150° F (-35° to 65° C)	**RS-485** = 500 ft - 22 AWG (152 m) 300 ft - 24 AWG (91 m)	R10E$X_1X_2X_3$
RP10-H	900PHR		75mA					RP10E$X_1X_2X_3$
R40-H	920NHR		65mA	110mA				R40E$X_1X_2X_3$
RP40-H	920PHR		85mA					RP40E$X_1X_2X_3$
RK40-H	921NHR		85mA	125mA	220mA			RK40E$X_1X_2X_3$
RPK40-H	921PHR		95mA					RPK40E$X_1X_2X_3$
RKCL40-P	923NPR		150mA	185mA	250mA	-4° to 149° F (-20° to 65° C)		RKCL40E$X_1X_2X_3$
RPKCL40-P	923PPR							RPKCL40E$X_1X_2X_3$
RKCLB40-P	924NPR		165mA	215mA	275mA	14° to 122° F (-10° to 50° C)		RKCLB40E$X_1X_2X_3$

[1] Standby AVG - RMS current draw without a card in the RF field.
[2] Maximum AVG - RMS current draw during continuous PIV card reads. Not evaluated by UL.
[3] Peak - highest instantaneous current draw during RF communication.

UL Reference Number Deciphering

X_1 Reader Colors: K = Black
X_2 Wiring: N = Pigtail, T = Terminal
X_3 Communications: N = No Module, R = RS-485

Wiegand and OSDP Protocol

PRODUCT	BASE PART NUMBER	INPUT VOLTAGE (VDC)	CURRENT[1]			OPERATING TEMPERATURE	CABLE LENGTH[5]	UL REF NUMBER
			Standby AVG[2]	Maximum AVG[3]	PEAK[4]			
R10-H	900N	5-16VDC 12VDC for RS-485	60mA	100mA	200mA	-30° to 150° F (-35° to 65° C)	Communication Lines **Wiegand** = 500 ft - 22 AWG (152 m) 300 ft - 24 AWG (91 m) **RS-485** = Max. bus length 4000 ft - 24 AWG (1,219 m) Max length between nodes: 1,640 ft - 24 AWG (500m)	R10E$X_1X_2X_3$
RP10-H	900P		75mA					RP10E$X_1X_2X_3$
R40-H	920N		65mA	110mA				R40E$X_1X_2X_3$
RP40-H	920P		85mA					RP40E$X_1X_2X_3$
RK40-H	921N		85mA	125mA	220mA			RK40E$X_1X_2X_3$
RPK40-H	921P		95mA					RPK40E$X_1X_2X_3$
RKCL40-P	923N	12VDC	150mA	185mA	250mA	-4° to 149° F (-20° to 65° C)		RKCL40E$X_1X_2X_3$
RPKCL40-P	923P							RPKCL40E$X_1X_2X_3$

[1] Communication protocols other than Wiegand or Clock & Data require an additional hardware module which increases current by 30 mA.

[2] Standby AVG - RMS current draw without a card in the RF field.

[3] Maximum AVG - RMS current draw during continuous PIV card reads. Not evaluated by UL.

[4] Peak - highest instantaneous current draw during RF communication.

[5] Wiegand Cable Lengths: 100 ft (30.5 m) 22 AWG @ 5 - 6.4VDC
500 ft (152 m) 22 AWG @ 6.5 - 16VDC

UL Reference Number Deciphering

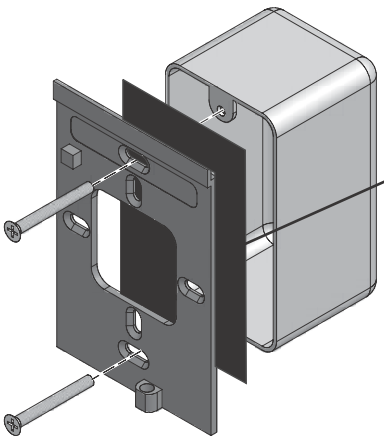
X_1	Reader Colors:	K = Black
X_2	Wiring:	N = Pigtail T = Terminal
X_3	Communications:	N = No Module, R = RS-485 (OSDP)

Installation

1 Mounting

Attach Backplate and Mounting Gasket to Junction Box.

Contactless Models

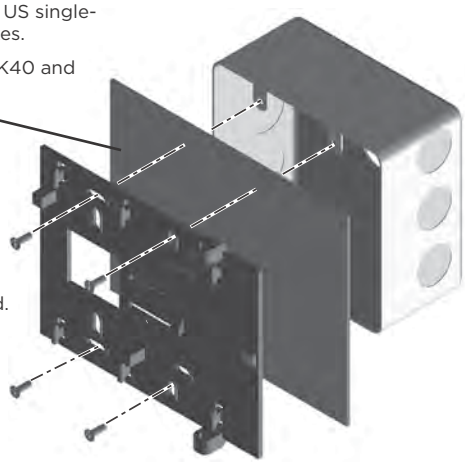


Mounting holes for US single-gang electrical boxes.

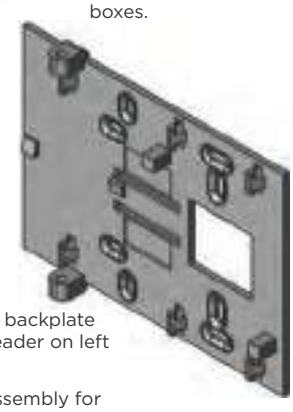
Install gasket for RK40 and RPK40 models.

Junction box not included.

Contact Models



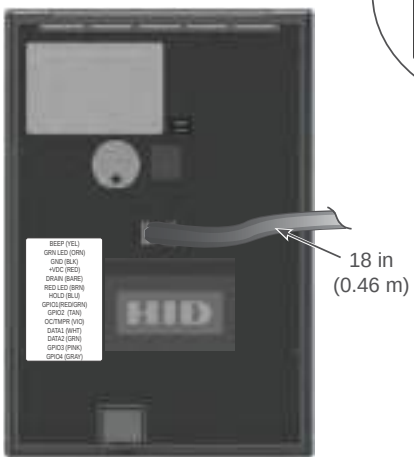
Mounting holes for US double-gang electrical boxes.



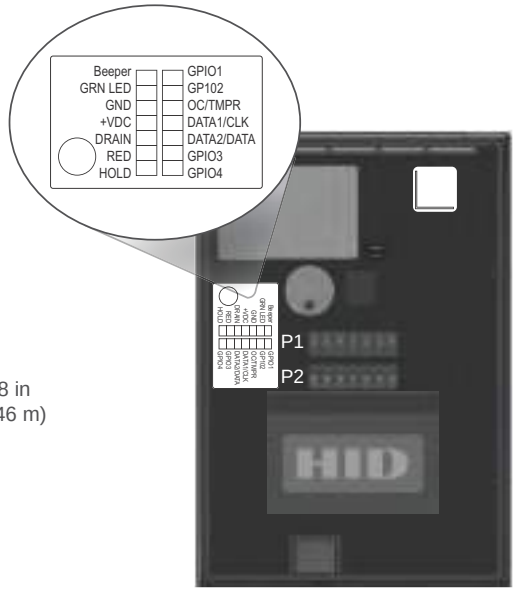
Reverse Configuration Rotating the backplate 180° allows for placing the Contact reader on left and the Keypad reader on right.

See Section B Reconfigure Reader Assembly for instructions, before proceeding to Section 2.

2 Wiring



Pigtail Reader
(Module position varies)



Terminal Reader
(Terminal block and module position varies)

ATTENTION
Observe precautions for handling
ELECTROSTATIC SENSITIVE DEVICES

Notes:

1. Previous iCLASS readers had reversed RS-485 wiring (P2-7 & P2-6 - A & B). When upgrading to a pivCLASS reader, ensure proper connections as defined below.
2. Wiring the reader incorrectly may permanently damage the reader.
3. For cable lengths greater than 200 ft. (61 m) or EMF interference, install 120Ω +/- 2Ω resistor across RS-485 termination ends.
4. It is possible to reuse existing Wiegand wiring for OSDP, however, using simple stranded cable (typical of Wiegand access control readers) usually does not meet RS-485 twisted pair recommendations.

Pigtail	Terminal	Description	Pigtail	Terminal	Description
Yellow	P1-1	Beeper Input	Red / Green	P2-7	*GPIO1/OSDP (RS485-FDX/HDX-A)
Orange	P1-2	LED Input (GRN)	Tan	P2-6	*GPIO2/OSDP (RS485-FDX/HDX-B)
Black	P1-3	Ground (RTN)	Violet	P2-5	**Open Collector Output / Tamper
Red	P1-4	+VDC	White	P2-4	***Wiegand Data 1 / Clock
Drain	P1-5	Unused	Green	P2-3	***Wiegand Data 0 / Data
Brown	P1-6	LED Input (RED)	Pink	P2-2	*GPIO3 (RS485-FDX-Z)
Blue	P1-7	Hold Input	Gray	P2-1	*GPIO4 (RS485-FDX-Y)

*RS-485 applicable for pivCLASS readers.
**Tamper Output - When activated, output synchronizes to ground (default).
***Dependent upon reader configuration. See the HTOG for Wiegand and Clock-in-Data configurations.

3 Attach to Backplate

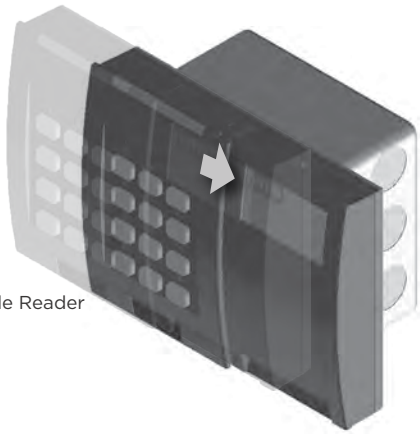
Contactless Models

Attach Reader

Install Security Screw

Contact Models

Default: Slide Reader Assembly towards the right to lock.

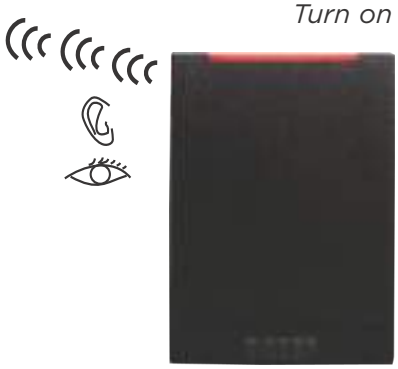


Reversed Configuration: Slide Reader Assembly to the left to lock.

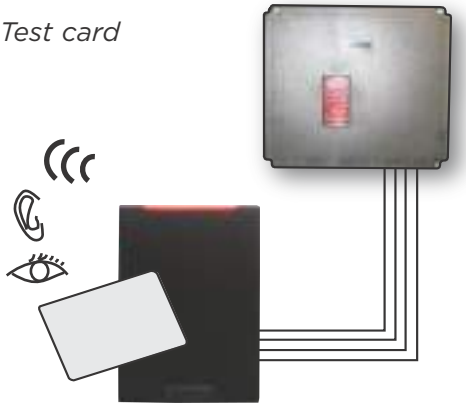
4 Power & Testing

Contactless Models

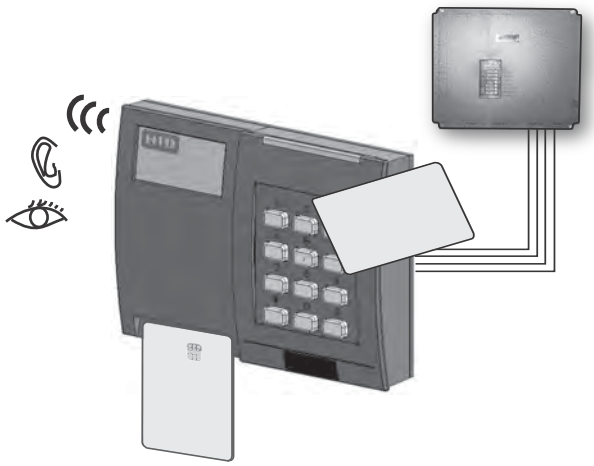
Turn on power



Test card



Contact Models



Note:
With a keypad reader operating as 26 bit emulation, upon power up you have 5 seconds to enter the Facility Code followed by #.
If unsuccessful, the reader LED displays solid Red. Power-cycle the reader and retry entering the Facility Code.

The Facility Code needs to be manually entered as 3 digits (for example, if the Facility Code is 10, enter 0-1-0-#).
SE readers only use Facility Codes between 1-255. There is no default Facility Code.
Once the Facility Code has been entered, the LED will display Violet and then to a final Red. Then power-cycle the reader.

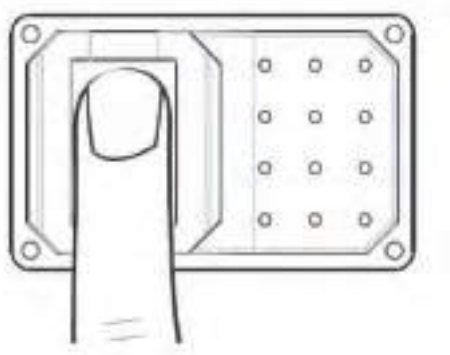
When using a keypad, if there are 2 short beeps after entering your PIN, the reader does not have a Facility Code configured yet.
In this event, an Administrator will need to power-cycle the reader and enter the Facility Code before the reader will accept your PIN.

A Biometric Reader

Proper Usage

Ensure a good quality Contact:

- Do not press too hard
- Do not move during image acquisition
- Leave your finger on the sensor at least 2 seconds
- Do not slide or roll your finger across the sensor



Cleaning

For optimum performance, it is recommended that the user clean the bio-reader periodically.

The use of a dry cloth is recommended to clean the acquisition surface.

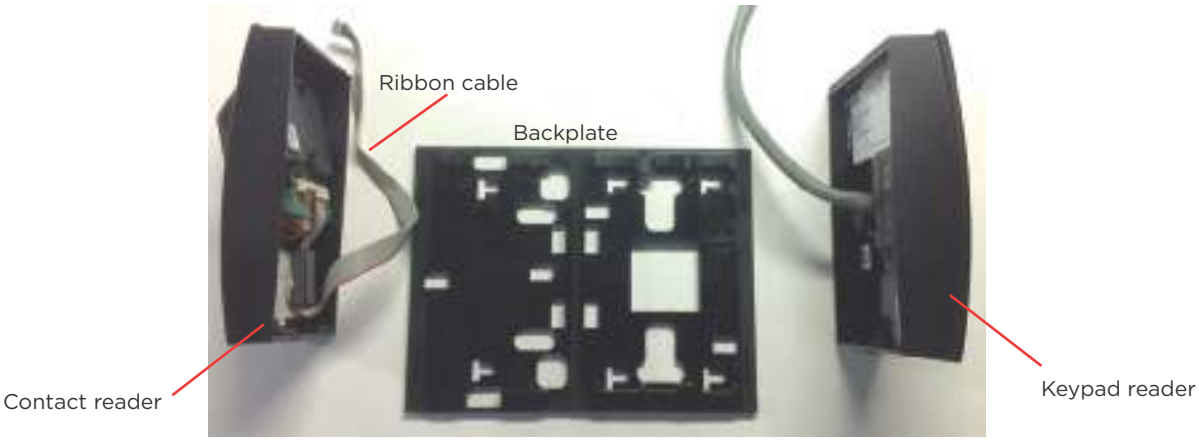
Caution: Acidic liquids, alcohol or abrasive materials are prohibited.

In order not to scratch the surface, remove all dust and residue with gentle movements.

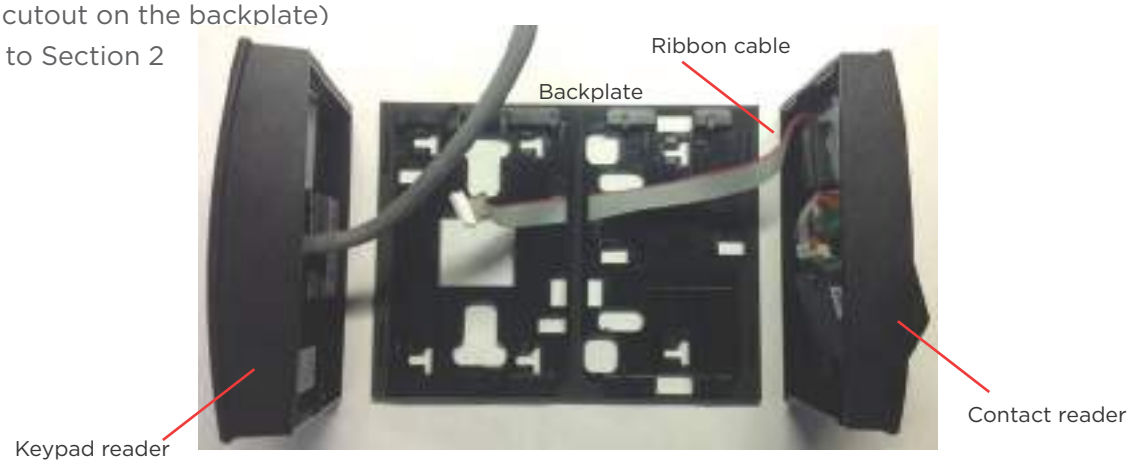
B Reconfigure Reader Assembly

The following steps reconfigure the reader assembly to position the Contact reader component on the left side of the assembly.

1. Disassemble the reader.
   - Remove the Keypad reader from the backplate
   - Carefully unplug the ribbon cable from the module in the back of the Keypad reader. Caution: Do not pull on the ribbon cable as this may damage the connection to the connector.
   - Remove the Contact reader from the backplate
   - Gently pull the ribbon cable through the backplate



2. Reassemble with the Contact reader on the left side of the assembly.
   - Rotate the backplate so that the large cutout for the power cable is on the left
   - Gently route the ribbon cable back through the backplate slots, as shown below
   - Plug the ribbon cable back into the module (back of Keypad reader) and ensure module is fully seated into the reader
   - Attach the Contact reader to the backplate (this must be installed first, as the Keypad Reader will fit slightly over the Contact reader)
   - Attach the Keypad reader to the backplate (power cable must be threaded through the large square cutout on the backplate)
   - Return to Section 2



Credential Presentation Best Practices

To ensure a successful read of a PIV card:

1. Hold card between the thumb and index finger.
2. Present the card so that the index finger creates a spacing between the card and the reader face. Do not place the card flat on the reader.
3. Place the card parallel to the reader form factor. Do not angle to the right or left
4. Place the card parallel to the reader face. Do not angle the card up or down from the reader face.

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.

All models are suitable for outdoor use.

Evaluated for use over Wiegand and RS-485 communications.

Evaluated for use with the M2000 pivCLASS Authentication Module as well as Standard Wiegand and OSDP panels.

FCC Certification

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

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.

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SECURITY LISTED Equipment 8T29 ACC Control Reader

c LISTED General Signaling Equipment