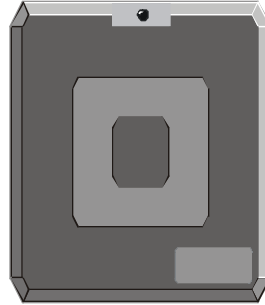


PAC International Ltd.

Low Profile DualTech Reader Installation Instructions

Part Numbers 20467 (Black) and 20473 (White)



Introduction

The PAC Low Profile DualTech Reader is a proximity reader. This means that no physical contact is required between the ID device and the reader for the ID device to be read. It usually works with a door controller to control access through a door. In this case, to open a door, an ID device is presented to the reader, the reader passes the code to the door controller, and the door controller validates the code and unlocks the door.

DualTech

PAC produces two categories of ID device, PAC and KeyPAC series format, these are based on different reading technologies. Readers are available which read either just PAC Format format or just KeyPAC Format format, however, the PAC DualTech reader is capable of reading both.

Compatible ID Devices

This reader can read PAC and KeyPAC Format ID-devices.

Unpacking

Check that all the parts are supplied with your reader. If anything is missing or damaged, contact your suppliers immediately. The readers are each supplied with the following:

2 x 1" no.6 self tapping screws

Label

Ten cable crimps

MOV

Mounting backplate

Installation

Locating the Reader

Be aware of the following when you choose the location of your reader:

- The cable distance from controller to reader should never exceed 3000ft (1000m) (PAC equipment only with the appropriate cable, see later). Consult the specification of the chosen lock to ensure that the maximum distance from controller to lock is acceptable.
- If you use a Request To Exit (RTE) switch, route the wiring so that it is not accessible if the reader is removed.
- Ensure that the LED is visible to the keyholder, avoid mounting the reader in direct sunlight.
- The best place for a reader is next to the door on the unhinged side at roughly the same height as the door handle.
- Readers may be located inside or outside, no special protection is needed for readers mounted outside although corrosion resistant fixings should be used.
- Leave enough room behind the reader for the flying lead.
- Readers can be mounted behind a non-metallic material, such as glass, plastic or wood without affecting their reading range.
- There should be a minimum 1-metre distance between readers (this includes in and out readers on opposite sides of a door).

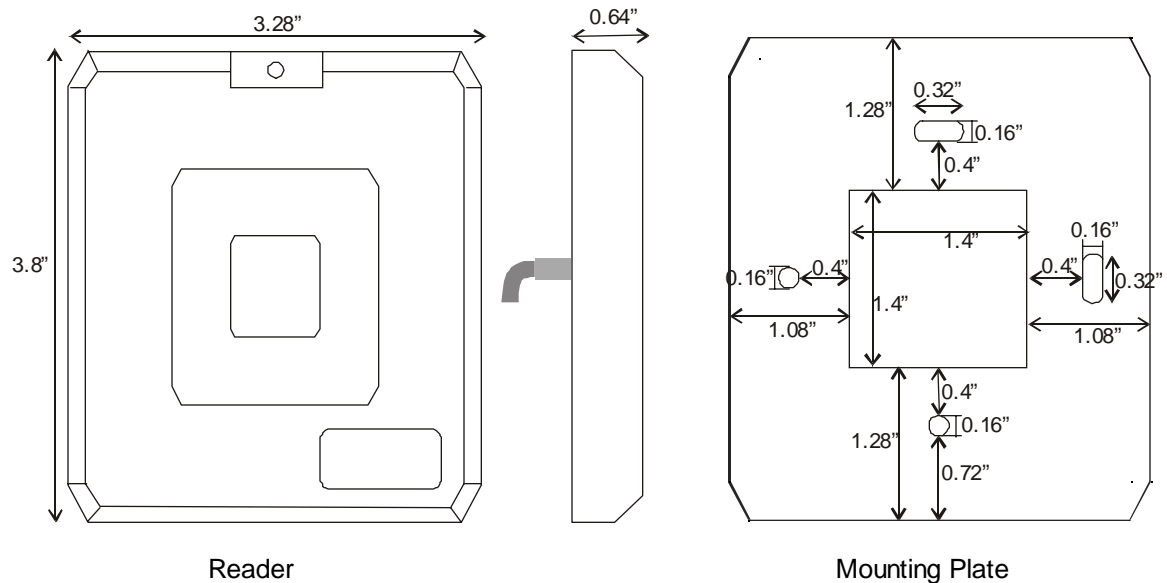
Cable Lengths and Wire Gauges (PAC Equipment Only)

When locating the reader you also need to consider the maximum cable distance to the control equipment. The following table provides a summary for PAC door controllers only.

Cable Gauge			Distance (reader to PAC door controller)
7/0.2	0.22 mm ²	24 AWG	Up to 750 feet (250 metres)
16/0.2	0.5 mm ²	20 AWG	Up to 1500 feet (500 metres)
32/0.2	1.0 mm ²	18 AWG	Up to 3000 feet (1000 metres)

If you use 24AWG (0.22mm²) cable, you should twist the wires and double them over before inserting them in the crimps.

Fixing the Reader



This reader comes in two parts, the reader itself and the backplate. The backplate has a rubber spacer at the rear.

Fixing the Reader

1. The cable from the controller should be routed through the aperture in the backplate. Leave enough cable exposed to allow easy wiring of the reader.
Note: There is limited room between the reader and backplate. You should ensure there is a void large enough behind the backplate to accommodate any excess on the cable.
2. Fix the backplate to a flat surface using the No.6 screws provided - or a fixing suitable for the material to which the reader is being mounted. The two holes are 2.4 inches (60mm) apart. Use the top (round) hole first, and the lower (oval) hole to ensure the reader is straight.
3. Ensure that the reader cable is **not** connected to the controller. Wire the reader to the cable as described in this datasheet and in the door controller Installation Manual
4. Push the reader, with the LED to the top, onto the backplate, the fixing tabs on each side should snap into place.

5. Place label on front of reader.

Removing the Reader

The reader can be removed by placing a small flat-bladed screwdriver into the apertures at the edges of the snap-fit cover. Take care not to damage the reader or cover.

General Tips

- The cable distance from controller to reader should never exceed 3000ft (1000m).
- If using a Request to Exit switch, ensure that the wiring is not accessible if the reader is removed.
- Ensure that the LED is always visible to the keyholder.
- Do not mount in close proximity to metals.

Wiring

All connections are made to the flying lead using the 10 cable crimps provided. Cable gauge depends on distance from the Door Controller to Reader. The flying lead is 3 ft (1m) long and has a gauge 24AWG (0.22mm²).

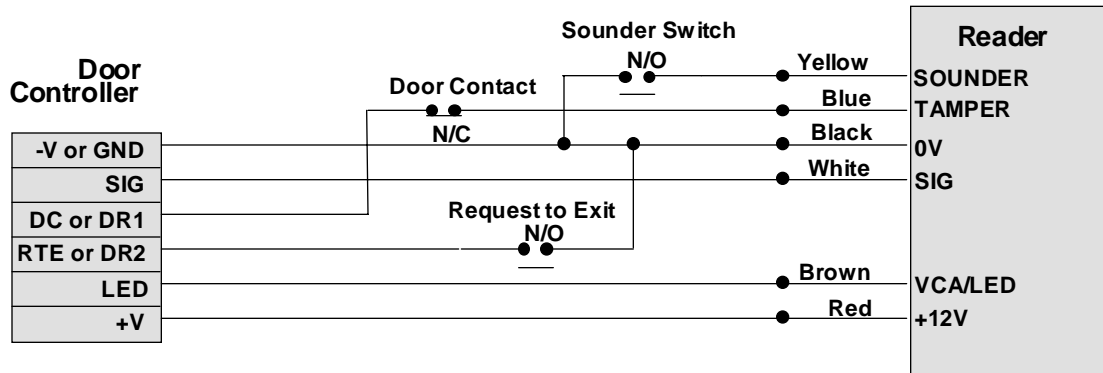
With 24AWG (0.22mm²) cable twist the wires and double them over before inserting them in the crimps. This includes the flying lead.

Flying Lead	PAC
Black	GND
White	SIG
Green	Not Used
Brown	VCA/LED
Yellow	SOUNDER – GND to activate
Red	12V DC (+10.5 to +20V)
Blue	TAMPER

Typical PAC Door Controller Wiring

PAC Door Controllers to PAC DualTech Readers can be wired as follows:

Caution: Always consult your door-controller instructions before wiring a reader.

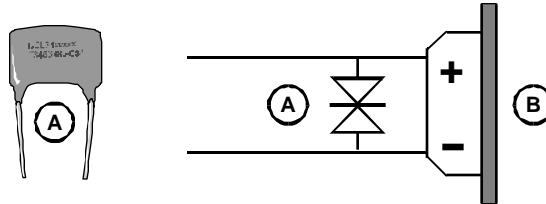


Note: Always refer to your controller manual before connection.

MOV - Lock Suppression

A metal-oxide-varistor (MOV) is provided with each reader although it is used to protect the door controller. It prevents high voltage spikes (back e.m.f.s) being returned from the lock unit to the door controller. High voltage spikes can cause erratic operation and eventually severe damage to the door controller if not controlled.

CAUTION: Failure to install the MOV at the lock will result in early failure of the door controller. It will also invalidate the warranty.



The MOV (A) should be installed across the power terminals of the lock (B).

Reader Operation

Normal Operation

The reader LED will normally be red when the door is locked. When a key is presented within range of the reader, and the key is valid for that door at that time, the LED will go green and the lock will release. The LED will stay green while the lock is released.

Tamper Protection

To ensure complete tamper protection the DR1 or DC terminal of the door controller should be connected to the blue lead of the reader. If a door contact is being used then this should be connected in series with DR1/DC and the blue lead. See the door controller installation manual for full details of how to set up tamper protection and alarm monitoring.

Sounder Operation

Note: ID devices will **not** be read while the sounder is operating.

The internal sounder will operate when the **yellow lead** is grounded. The sounder will continue until the connection to ground is broken. A relay, such as provided on the 2100 and 2200 Series door controllers, may be used to provide this operation under various conditions, e.g. Door Left Open.

Specification

Other important features include:

- Integral red/green LED
- Tamper protection
- Integral sounder

Dimensions

See installation diagram.

Approximate Reading Range

KeyPAC Format: up to 3.2 inches (80mm)

PAC Format: up to 1.6 inches (40mm)

Note: These ranges will reduce if the readers are exposed to local sources of electrical noise.

Power Requirements

Voltage 12V DC (nominal), tolerance +10.5 to +20V. Current < 85 mA

Environmental

Temperature: Operating -20°C (-4F) to +55°C (131F)

Storage -30°C (-22F) to +80°C (176F)

Humidity: Operating 0-90% RH at 30 ± 2°C (1.8F) for 24 hours

Ingress

Protection: Sealed to IP 66

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 ID OQL-PAC-D-LP