PROVE™ PSR2

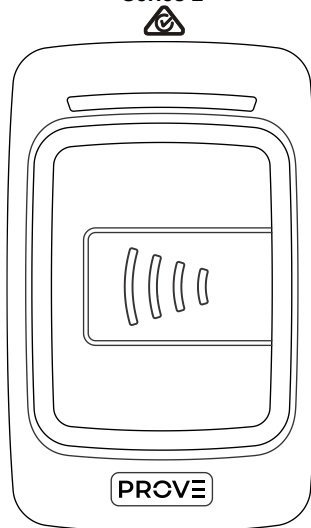**Prove Standard Proximity Card Reader**
"Series 2"

FEATURES

- Compatible with all NIDAC Presco controllers.
- Outputs Presco and wiegand data.
- Site code read from EM cards in wiegand mode is compatible with generic EM wiegand prox readers.
- Reads HID 125kHz cards.
- Suitable for indoor usage only.
- Audible and visual (buzzer & LED) feedback on card read.
- 12V DC operation.
- 17.5mm thin surface mounting with hidden screws.
- Operating temperature range of 0ºC to 40ºC.
- 5 year manufacturer's warranty.

IMPORTANT DIFFERENCES BETWEEN THE PSR2 AND PSR16

- When used in wiegand mode the site code read from EM cards is different. To make the Prove PSR2 read the same site code as the Presco PSR16 refer to the "Wiegand EM Card Proximity Reader Options" section and set memory 060 to 121.
- Standard 26 & 37 bit HID cards can be read, other HID formats will read but the output of some cards may not match that of an HID reader.

SPECIFICATIONS

Voltage:	9V to 14V D.C.
Current:	150mA max.
Operating Temp:	0°C to 50°C.
Weight:	150 grams.
Dimensions:	126mm x 80mm x 17.5mm (H x W x D).
Read Range:	Up to 20cm (8").
Excitation Freq:	125 ± 5 KHz.
Output:	Presco DTA or wiegand, pulse width = 50µs, pulse separation = 2ms.
Wiring Distance:	PSR2 to Presco PAC controller = 1Km using unshielded cable, 100Ω max. return resistance on DTA line. To achieve distances greater than 100m the PSR2 may require a separate local power supply depending upon the thickness of the cable used.

PSR2 to wiegand controller, shielded cable must be used.

| Wire Gauge	Distance	Wire Gauge	Distance
22 AWG	150m (490 ft)	26 AWG	60m (195 ft)
24 AWG	100m (330 ft)	28 AWG	40m (130 ft)

WIRES

There are 8 wires for the PSR2, not all will be needed for each installation. The unused wires should always be terminated and left unconnected.

Black	0V (Ground).
Red	+12V D.C.
White	DTA (Presco data line) or D1 (Wiegand Data 1).
Green	D0 (Wiegand Data 0).
Blue	Blue LED control wire, +3V to +14V active.
Yellow	Blue LED control wire, 0V active.
Brown	Buzzer control wire, 0V active.
Orange	Connect to 0V (black wire) on power up to enter option setting mode.
Drain	Shield (in wiegand mode connect to earth/ground at controller).

INSTALLATION

1. Mark the location using supplied template and drill out required holes.
2. Remove the front fascia by inserting a wide flat bladed screwdriver into the slot at the bottom of the unit and tilting the handle away from the front.
3. Attach the PSR2 to the wall using screws in the two oval mounting holes.

PSR2 TO PAC1 / PAC2
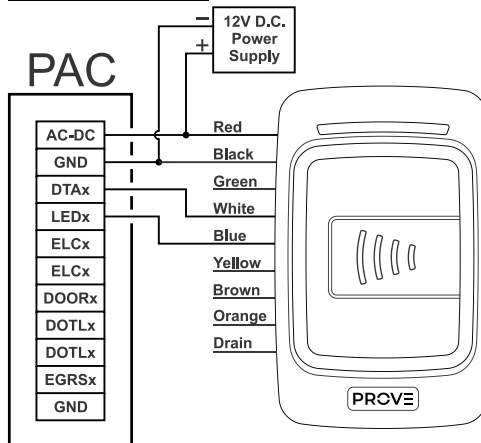
## Programming Prox cards & tags into a PAC controller

To program a proximity card or tag into a PAC controller follow the same steps as shown in the controller manual for programming a new user code. When it comes to the stage to enter the user code simply present the card or tag to the PSR2 that is connected to the same input as the programming keypad, or alternatively enter the 9 digit code for the proximity card, note that this code may contain star (*) and hash (#) symbols and leading zeroes (0) do need to be entered.

PAC1 Programming Example

This example uses a PAC1 controller, programming a momentary operation proximity card or tag into memory location 001.

1. Put the PAC1 into program mode using the management code or button on the PAC1.
2. Using the Prove keypad connected to the PAC1, open the memory location to store the Prox card in [*] [0] [0] [1] [1] [E]
3. Present the proximity card or tag to the PSR2.
4. Take the PAC1 controller out of program mode.

PSR2 TO WIEGAND
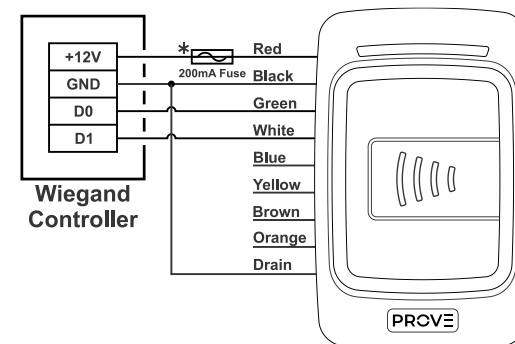
To change the LED colour from red to blue apply a negative signal (0 to 2V) to the Yellow wire or a positive signal (2.5 to 28V) to the Blue wire.

To sound the buzzer apply a negative signal (0 to 2V) to the Brown wire.

* If a fused output for readers is not provided use a 200mA inline fuse to protect the power supply from short circuiting if PSC2 wires are tampered with.

PSR2 OPTIONS

There are several options that can be set to alter the way in which the PSR2 behaves. These options fall into the 3 categories of General, Presco and Wiegand EM Card Proximity Reader, all of these are explained below.

General Options

These options set the functionality of the PSR2 independent of whether it is in wiegand or Presco mode.

Memory	Function	Default
005	Force Presco or wiegand mode [1]	255
200	Red LED brightness factor [2]	10
201	Blue LED brightness factor [2]	10

(1) - Force Presco or wiegand mode [Memory 005]
101 = Always in Presco mode.
202 = Always in wiegand mode.
All other values = Mode auto detected using white wire.

(2) - LED brightness factor [Memories 200 & 201]
The red & blue LEDs can have their brightness individually set
1 = LEDs are at lowest brightness.
20 = LEDs are at full brightness.

Presco Options

These options set how the PSR2 operates when in Presco mode. It is unlikely that these options will need to be changed.

Memory	Function	Default
011	Process received DTA characters [3]	255
012	Presco proximity reader output format (standard PAC format or KC compatible) [4]	255

(3) - Process received DTA characters   [Memory 011]
101 = Ignore all received DTA characters (PSR2 will not give beeps, warble, etc. after card is presented).
All other values = PSR2 will make beeps, warble, etc. for DTA characters received reading a card.

(4) - Presco proximity reader output format (standard PAC format or KC compatible)   [Memory 012]
101 = Presco output from the proximity reader is 7 digit KC compatible as per a PIM wiegand to Presco conversion (only works for 26 bit wiegand cards).
202 = Presco output from the proximity reader is 7 digit KC compatible using the lowest 7 digits of the 9 digit Presco PAC code.
All other values = Presco output from RFID is standard 9 digit PAC format.

Wiegand EM Card Proximity Reader Options

These options set the format of the wiegand data sent by the PSR2 when it is in wiegand mode and an EM RFID card or tag is being read.

Memory	Function	Default
060	26 bit wiegand EM card site code byte to use [5]	255
061	EM card custom wiegand format [6]	255
062	Number of bits in EM card site code [7]	8
063	Number of bits in EM card user code [7]	16
064	Number of bits for EM card start parity calculation [8]	255
065	Number of bits for EM card end parity calculation [8]	255
066	EM card parity polarity [9]	2
067	Data start bit from EM card for site code [10]	1
068	Data start bit from EM card for user code [10]	25

(5) - 26 bit wiegand EM card site code byte to use   [Memory 060]
121 = Presco reader site code byte used.
202 = Alternate site code byte 2 used.
All other values = Generic EM reader compatible site code byte used.

(6) - EM card custom wiegand format   [Memory 061]
101 = 34 bit wiegand (16 bit site code, 16 bit user code, even start & odd end parity bits for 16 data bits each) using Presco data.
121 = 34 bit wiegand as above using alternate site code data bytes.
202 = Custom wiegand format as defined by memories 62 to 68.
All other values = Standard 26 bit wiegand.

(7) - Number of bits in EM card site/ user code   [Memories 062 & 063]
A maximum of 40 data bits can be set as a sum of these 2 memories. If the sum exceeds 40 then the number of site code bits will be automatically reduced.

(8) - Number of bits for parity calculation   [Memories 064 & 065]
Number of bits for parity calculation (0 = no parity bit, if the value is greater than the total number of wiegand data bits (site code + user code bits) then it will use half the total number of bits, for an odd number of bits the end parity will use 1 more bit).

(9) - Parity polarity   [Memory 066]
0 = Start parity is Even, End parity is Even.
1 = Start parity is Odd, End parity is Even.
2 = Start parity is Even, End parity is Odd (Default).
3 = Start parity is Odd, End parity is Odd.

(10) - Data start bit from EM card   [Memories 067 & 068]
There are 40 bits of data in an EM card organised as D00-D03, D10-D13, D20-D23, D30-D33, D40-D43, D50-D53, D60-D63, D70-D73, D80-D83 and D90-D93. Bit D00 is referred to as bit 1 for this memory and bit D93 as bit 40.

Ensure that when setting the start bit that there are enough bits after the start bit for the number of bits set for the site or user code data.

SETTING THE OPTIONS VIA A PROVE KEYPAD

To set any of the above options a Prove keypad is required to be connected to the PSR2, as per the diagram below, and the PSR2 needs to be placed into option setting mode, this is done by following the steps below:
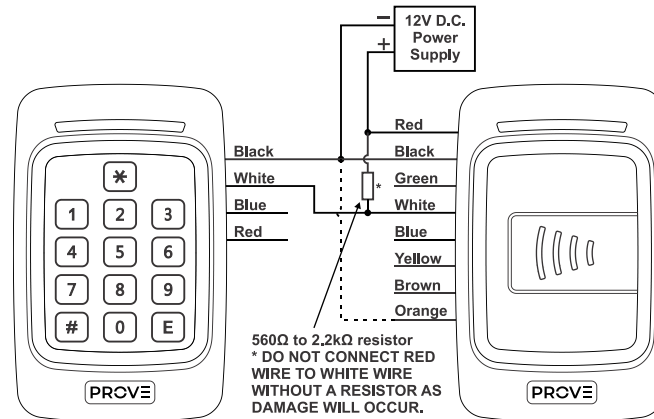
1. Remove power from the PSR2.
2. Connect the PSR2 to a PSK2 (or other Prove keypad) as per the above diagram. (If using a Prove keypad that requires external power remember to connect the red wire to +12V DC.)
3. Connect the Orange wire to 0V.
4. Reapply power.
5. Once the LED starts to double flash blue you are in option setting mode.
6. Disconnect the Orange wire.
7. The PSR2 will remain in option setting mode for 5 minutes from the last option setting sequence attempted.

Setting an option memory value
[*] <3 digit Memory> <1 to 3 digit value> [E].

Reset all option memories to factory defaults
[*][9][8][7][6][5][4][E] whilst in option setting mode.

Exit Option Setting Mode
[*][9][9][9][E] or wait 5 minutes after last option setting attempt.

NOTE: Remember to disconnect the orange wire from 0V so that the PSR2 will not start up in option setting mode after a power cycle.
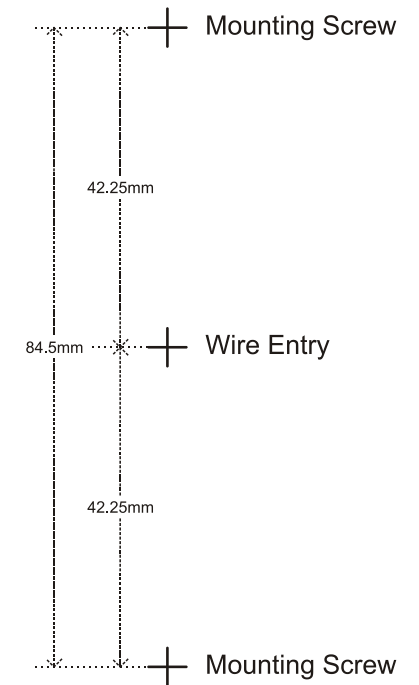
Set PSR2 to read same EM card site code as PSR16
[*][0][6][0][1][2][1][E]

WARRANTY

NIDAC Pty Ltd will repair or replace this product if proven to be faulty (excluding accidental or malicious damage) under the 5 year warranty offered from the date of purchase.

As NIDAC Pty Ltd or its agents do not perform the final installation, inspection or training in the use of this product, they cannot be held liable for injury, loss or damage directly or consequentially arising from the use or misuse of this product.

PSR2 Mounting Template

Revision 2