PTKR

Touch Keypad & Proximity Reader
"Series 1e"

FEATURES

- Suitable for indoor and outdoor usage.
- 12V DC operation.
- Weather Resistant (epoxy filled).
- Outputs Presco and wiegand data.
- Blue LED backlighting on keys with adjustable brightness.
- Compatible with all Nidac Presco controllers.
- Fully configurable for custom wiegand keypad modes.
- Operating temperature range of 0ºC to 40ºC.
- 36 month (3 year) manufacturer's warranty.

WIRES

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

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Black	0V (Ground).
Red	+12V D.C.
White	DTA (Presco data line) or D1 (Wiegand Data 1).
Green	D0 (Wiegand Data 0).
Blue	Green LED control wire, +3V to +14V active.
Yellow	Green 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 for the PTKR options.

SPECIFICATIONS

Voltage:	9V to 14V D.C.
Current:	70mA max.
Weight:	210 grams.
Dimensions:	116mm x 77mm x 17mm (H x W x D).

INSTALLATION

1. Use the supplied key to remove the hex allen screw at the bottom of the keypad that secures the backplate to the body.

hex screw
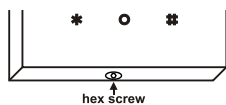
2. Swing the backplate up from the bottom and it will unhook at the top allowing it to be removed.
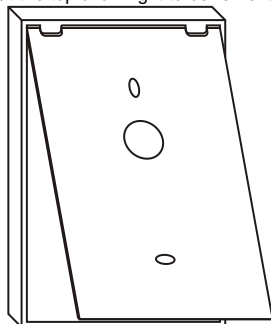
3. Attach the backplate to the wall using screws in the two oval mounting holes and drill out a hole for the cable.

4. Feed the cable through the hole in the backplate and wall, then slide the keypad down onto the backplate and reinsert the screw removed in step 1.

USING THE PTKR KEYPAD WITH PRESCO

The PTKR can be used to perform all the functions of a standard Presco PSK16 keypad. The only difference in operation is the use of the # key instead of the E key.

The # key is a dual purpose key. When it is pressed as the first key in a code sequence it generates a #, when pressed as a subsequent key it then becomes the E key.
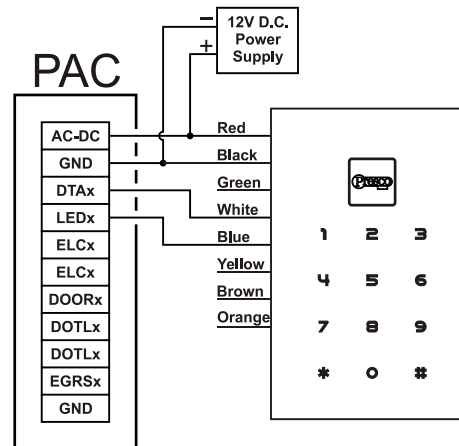
To use the keypad in Presco mode, press the code then the # key. The keypad can be set up to automatically send the code after a given number of key presses by setting memory 007 (refer to the General Options section).
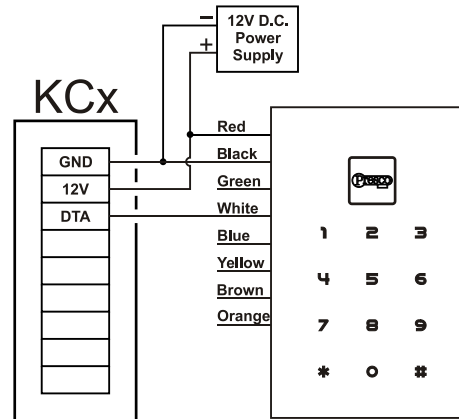
Example Code Sequences

	PSK16 or PRE sequence	PTKR equivalent
1.	* 0 0 0 1 E	* 000 1 #
2.	1 2 3 4 E	1234 #
3.	# 0 0 0 E	# 000 #

Remember to press # after the code to send it unless memory 007 has been set to auto send after a given number of keys.

PTKR TO PAC1 / PAC2 WIRING DIAGRAM


PTKR TO KC2, KC6 & PDA WIRING DIAGRAM

USING THE PTKR KEYPAD WITH WIEGAND

The PTKR can be used with any standard wiegand and most non standard wiegand controllers. The site (facility) code for the keypad can be set from the keypad itself (refer to the Wiegand Keypad Options section) and the wiegand data is fully configurable with up to 64 bits of data. The PTKR keypad also supports controllers that require burst mode format wiegand.

To use the keypad in wiegand (non burst) mode, press the code then the # key. The keypad can be set up to automatically send the code after a given number of key presses by setting memory 007 (refer to the General Options section).

PTKR TO WIEGAND WIRING DIAGRAM
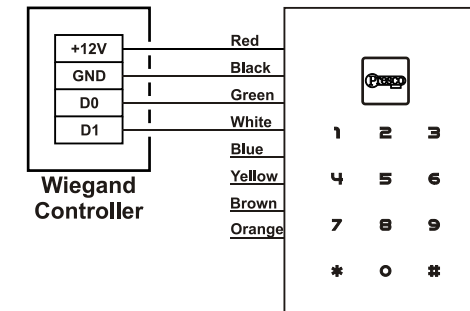
Remember to press # after the code to send it unless memory 007 has been set to auto send after a given number of keys.

Use a positive signal (2.5 to 28V) from the controller on the Blue wire to change the LED colour to blue.

Use a negative signal (0 to 2V) from the controller on the Yellow wire to change the LED colour to blue.

Use a negative signal (0 to 2V) from the controller on the Brown wire to sound the buzzer.

* If the controller does not provide a fused output use a 100mA inline fuse to protect the power supply from short circuiting if PTKR wires are tampered with.

PTKR OPTIONS

There are several options that can be set to alter the way in which the PTKR keypad behaves. These options fall into the 4 categories of General, Presco, Wiegand Keypad and Wiegand Emμ Card Proximity Reader, all of these are explained below.

General Options

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

Memory Number	Function	Default Value
005	Force Presco or wiegand mode [1]	255
006	Key press timeout	10
007	Auto send key count [2]	0
008	Backlighting LED brightness mode [3]	0

(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) - Auto send key count [Memory 007]

When this memory is set to a non zero value the PTKR keypad will automatically send the data after **x** keys have been pressed, where **x**=value set for this memory.

Note: In Presco mode the auto send is disabled if the first key pressed is a ✱ or ♯.

(3) - Backlighting LED brightness mode [Memory 008]

0 = LEDs are always at full brightness.
1 = LEDs are always at medium brightness.
2 = LEDs are always at low brightness.
3 = LEDs are at medium brightness but go to full brightness on a key press.
4 = LEDs are at low brightness but go to full brightness on a key press.
5 = LEDs are at low brightness but go to medium brightness on a key press.

Presco Options

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

Memory Number	Function	Default Value
010	Internal/External mode Presco keypad [4]	255
011	Process received DTA characters [5]	255
012	Presco proximity reader output format (standard PAC format or KC compatible) [6]	255

(4) - Internal/External mode Presco keypad [Memory 010]

101 = Internal mode keypad.
All other values = External mode keypad.
Note: When set to internal mode the two button Emergency (✱ ♯) and One Way Arm (♯ ♯) features are enabled when used with a KC2 or KC6. This setting has no effect when the unit is being used with any other Presco decoder (e.g. PAC1 or PAC2).

(5) - Process received DTA characters [Memory 011]

101 = Ignore all received DTA characters (keypad will not give beeps, warble, etc. after final ♯ is pressed).
All other values = Keypad will make beeps, warble, etc. for DTA characters received after pressing the final ♯ key.

(6) - Presco proximity reader output format (standard, KC compatible or wiegand data) [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 the using lowest 7 digits of the 9 digit Presco PAC code.
212 = Presco output from the proximity reader is an 8 digit code from the wiegand data, comprising of 3 digits for the site code then 5 digits for the card code, leading zeroes are added to the site and user codes to ensure they are 3 and 5 digits respectively (only works for 26 bit wiegand cards).
232 = Presco output from the proximity reader is a 9 digit code from the wiegand data, comprising of 3 digits for the site code then 5 digits for the card code, leading zeroes are added to the site and user codes to ensure they are 3 and 5 digits respectively (only works for 26 bit wiegand cards).
All other values = Presco output from RFID is standard 9 digit PAC format.

Wiegand Keypad Options

These options set the wiegand data format sent by the keypad when wiegand mode is selected. The keypad can send up to 64 bits of data including a site code up to 32 bits.

Memory Number	Function	Default Value
020	Site code byte 3	0
021	Site code byte 2	0
022	Site code byte 1	0
023	Site code byte 0 (used for the standard 8 bit site code of 26 bit format)	1
024	Number of bits in site code (0 to 32)	8
025	Number of bits in user code (8 to 64)	16
026	Number of bits for start parity calculation [7]	12
027	Number of bits for end parity calculation [7]	12
028	Parity polarity [8]	2
029	Error handling [9]	255
032	Wiegand burst mode [10]	255
033	Custom wiegand total number of bits [11]	255
034	Send LSB first [12]	255
035	Site code start bit number	255
036	User code start bit number	255
040	Default custom wiegand pattern byte 7 [13]	255
041	Default custom wiegand pattern byte 6 [13]	255
042	Default custom wiegand pattern byte 5 [13]	255
043	Default custom wiegand pattern byte 4 [13]	255
044	Default custom wiegand pattern byte 3 [13]	255
045	Default custom wiegand pattern byte 2 [13]	255
046	Default custom wiegand pattern byte 1 [13]	255
047	Default custom wiegand pattern byte 0 [13]	255

(7) - Number of bits for parity calculation [Memories 026, 027, 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).

(8) - Parity polarity [Memory 028]

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 value).
3 = Start parity is Odd, End parity is Odd.

(9) - Error handling [Memory 029]

This memory specifies what information is sent via the wiegand interface when a code is entered that is too large to be represented by the current wiegand format.
E.g. Standard 26 bit wiegand has a 16 bit user code which allows a maximum code number of 65535. This memory determines what happens when a number greater than 65535 is entered.
101 = A code of 0 is sent.
202 = No information is sent, the keypad ignores the input.
All other values = The maximum allowable code number for the current format is sent (for 26 bit wiegand this is 65535).

(10) - Wiegand burst mode [Memory 032]

101 = 4 bit burst mode, ✱ & ♯ keys enabled.
121 = 4 bit burst mode, ✱ & ♯ keys disabled.
202 = 8 bit burst mode, ✱ & ♯ keys enabled.
212 = 8 bit burst mode, ✱ & ♯ keys disabled.
All other values = Standard, non burst mode wiegand.

(11) - Custom wiegand total number of bits [Memory 033]

When this memory is set to a value from 8 to 64 it overrides the standard wiegand format of *start parity* then *site code, user code and end parity* and replaces it with a fully customisable format with a total number of bits (including any parity bits) as specified in this memory.

Note that using this option requires a high understanding of wiegand data. Nidac will only offer limited support for this feature.

(12) - Send LSB first [Memory 034]

101 = LSB of data is sent first for both site and user code.
All other values = MSB of site and user code data sent first.

(13) - Default pattern bytes [Memories 040 to 047]

When the custom wiegand format is used by setting memory 033 then the data in these memories is used to define the value for those bits not in use by the site code, user code and parity bits. The data used starts from Bit 0 (LSB) in Default Pattern byte 0 (memory 047), e.g. if the total number of bits is set to 24 then Default Pattern bytes 2, 1 & 0 are used.

Wiegand Emμ Card Proximity Reader Options

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

Memory Number	Function	Default Value
060	26 bit wiegand Emμ card site code byte to use [14]	255
061	Emμ card custom wiegand format [15]	255
062	Number of bits in Emμ card site code [16]	8
063	Number of bits in Emμ card user code [16]	16
064	Number of bits for Emμ card start parity calculation [7]	255
065	Number of bits for Emμ card end parity calculation [7]	255
066	Emμ card parity polarity [8]	2
067	Data start bit from Emμ card for site code [17]	1
068	Data start bit from Emμ card for user code [17]	25

(14) - 26 bit wiegand Emμ card site code byte to use [Memory 060]

101 = Use alternate site code byte 1 from Emμ card.
202 = Use alternate site code byte 2 from Emμ card.
All other values = Standard Presco reader site code byte used.

(15) - Emμ 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.

(16) - Number of bits in Emμ 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.

(17) - Data start bit from Emμ card [Memories 067 & 068]

There are 40 bits of data in an Emμ 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.

Be careful when setting the start bit to ensure 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 THE PTKR KEYPAD

To set any of the above options the keypad first needs to be placed into option setting mode, this is done by following the steps below:

1. Remove power from the PTKR keypad.
2. Connect the Orange wire to 0V.
3. Reapply power.
4. Once the Presco logo LED starts to double flash green you are in option setting mode.
5. Disconnect the Orange wire from 0V.
6. The PTKR will remain in option setting mode for 5 minutes from the last attempted option setting sequence.

Setting an option memory value
✱ <3 digit memory number> <1 to 3 digit value> ♯.

Reset all option memories to factory defaults
✱ 9 8 7 6 5 4 ♯ whilst in option setting mode.

Exit Option Setting Mode
✱ 9 9 9 ♯ or wait 5 minutes after last option setting attempt.

NOTE: Remember to disconnect the orange wire from 0V afterwards so that should power go off the PTKR will not start up in option setting mode when the power is restored.