ACTpro MIFARE Readers

ACTpro MF 1030e - Slimline Proximity Reader
ACTpro MF 1040e - Proximity Reader
ACTpro MF 1050e - PIN & Proximity Reader
ACTpro MF 1030PM - Panel Mount Proximity Reader

Installation Manual

Contents

| Product Code	Description
ACTpro MIFARE 1030e	MIFARE Classic Proximity reader, mullion mount
ACTpro MIFARE 1030PM	MIFARE Classic Proximity reader, panel mount
ACTpro MIFARE 1040e	MIFARE Classic Proximity reader, surface / flush
ACTpro MIFARE 1050e	MIFARE Classic Prox & PIN reader, surface / flush

Specifications Table

	MIFARE 1030e	MIFARE 1030PM	MIFARE 1040e	MIFARE 1050e
Connections	Pigtail	Terminal Block	Terminal Block	Terminal Block
Dimensions W x H x D	37 x 120 x 15mm	63 x 58 x 23mm	95 x 128 x 19mm	95 x 128 x 21mm
Mounting	Mullion	Panel	Flush or Surface	Flush or Surface
Weight	150g	65g	142g	155g
Power Supply	12Vdc-24Vdc	12Vdc-24Vdc	12Vdc-24Vdc	12Vdc-24Vdc
Selectable sector,serial & reverse serial	Yes	Yes	Yes	Yes
Current Consumption Typical	30mA	30mA	70mA	70mA
Current Consumption (Peak)	130mA	70mA	140mA	140mA
Operating Temperature	-10°C/50°C	-10°C/50°C	-10°C/50°C	-10°C/50°C
Transmit Frequency	13.56MHz	13.56MHz	13.56MHz	13.56MHz
Keypad	No	No	No	Yes
Environmental Rating	IP67	IP67	IP67	IP67
Cable Distance	100 m	100 m	100 m	100 m
Output Formats	Wiegand or Clock & Data	Wiegand or Clock & Data	Wiegand or Clock & Data	Wiegand or Clock & Data
Indoor & Outdoor	Yes	Yes	Yes	Yes
PIN or Prox	Prox	Prox	Prox	PIN & Prox

Product Description

ACT MIFARE classic readers support all ACT MIFARE cards and fobs. They can be configured to read serial, reverse serial or sector data from any third party MIFARE Classic card.
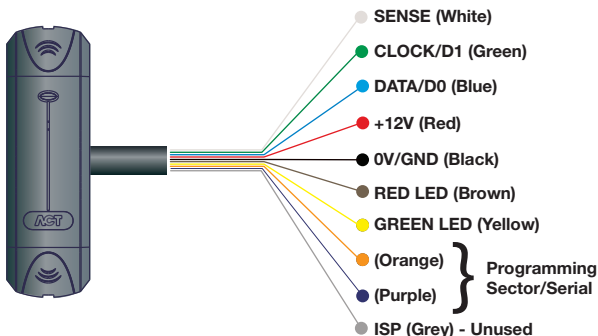
- Compatible with ACT MIFARE cards and fobs
- Configured to read ACT Sector data, Serial Number or reverse serial number
- Configured to read Sector data form any MIFARE Classic card (Read key required)
- Configured for Wiegand or Clock&Data output
- Configurable backlight (1050e only)

Reader Connections - ACTpro MIFARE 1040e/1050e

Sector/Serial Operation Jumper

+12V DC
Data
CLOCK
SENSE
BUZZ

0V
RED
GREEN
A
B
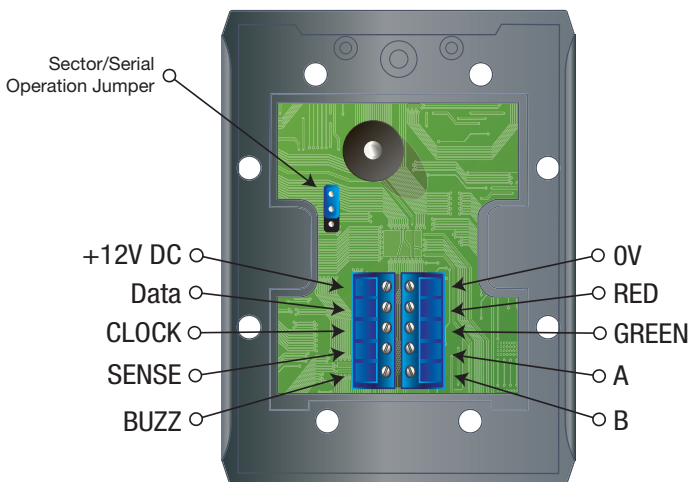
Reader Connections - ACTpro MIFARE 1030e

ACTpro MIFARE 1030e is supplied with 3m pigtail cable.

SENSE (White)

CLOCK/D1 (Green)

DATA/D0 (Blue)

+12V (Red)

0V/GND (Black)

RED LED (Brown)

GREEN LED (Yellow)

(Orange)

(Purple)
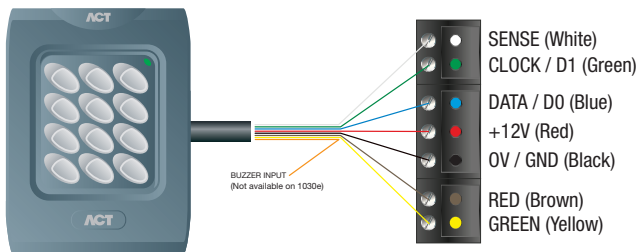
} Programming Sector/Serial

ISP (Grey) - Unused

CAT 5/6 Colour Code

The following is suggested colour coding if using CAT5 or CAT6 cabling.

Reader Output	Colour
Sense	White/Green
Clock / D1	Green
Data / D0	Blue
+12V	Orange
(0V) GND	White/Orange
Red LED	Brown
Green LED	White/Brown
Orange & Purple	Programming Sector/ Serial
ISP	Grey (Unused)

Clock & Data <u>Entry</u> Reader - Wiring

SENSE (White)
CLOCK / D1 (Green)

DATA / D0 (Blue)
+12V (Red)
0V / GND (Black)

RED (Brown)
GREEN (Yellow)

BUZZER INPUT
(Not available on 1030e)

Clock & Data <u>Exit</u> Reader - Wiring

DO NOT CONNECT SENSE (White cable)

SENSE (White)
CLOCK / D1 (Green)

DATA / D0 (Blue)
+12V (Red)
0V / GND (Black)

RED (Brown)
GREEN (Yellow)

BUZZER INPUT
(Not available on 1030e)
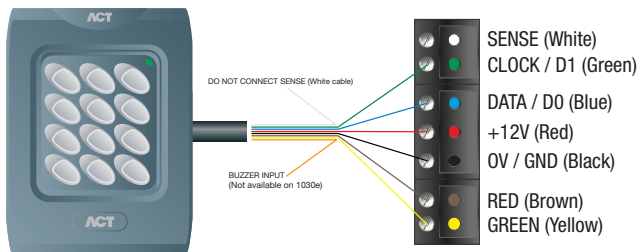
NB: Illustrations apply to all MIFARE readers

WIEGAND <u>Entry</u> Reader - Wiring

SENSE
CLOCK / D1 (Green)

DATA / D0 (Blue)
+12V (Red)
0V / GND (Black, White)

RED (Brown)
GREEN (Yellow)

BUZZER INPUT
(Not available on 1030e)
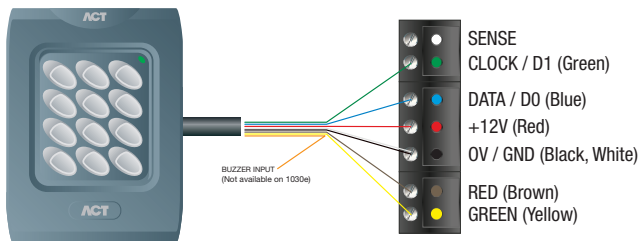
IMPORTANT: To put ACT readers into wiegand mode connect the SENSE on the reader to 0V/GND.

WIEGAND <u>Exit</u> Reader - Wiring

SENSE (Blue)
CLOCK / D1 (Green)

DATA / D0
+12V (Red)
0V / GND (Black, White)

RED (Brown)
GREEN (Yellow)

BUZZER INPUT
(Not available on 1030e)
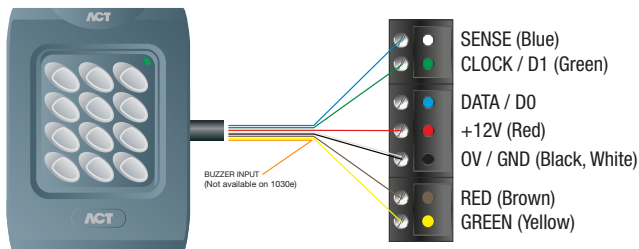
IMPORTANT: To put ACT readers into wiegand mode connect the SENSE on the reader to 0V/GND PIN and DATA/D0 to the SENSE PIN on the controller.

Reader Configuration

Operation: ACTpro MIFARE 1030PM / 1040e / 1050e

ACTpro MIFARE readers can operate in sector, serial or reverse serial mode which is selectable via a jumper. To change the operation mode power down the reader, change the jumper for the desired operation and re-apply power.

Sector	1 2 3	Serial	1 2 3	Reverse Serial	1 2 3
Connect Pins 1&2		**Connect Pins 2&3**		**Do NOT connect Jumper**	

Operation: ACTpro MIFARE 1030e

The operation of the ACTpro MIFARE 1030e is selectable via cable configuration. To change the operation power down the reader, change the Orange and Purple cable for the desired operation and re-apply power.

Colour	Sector	Serial	Reverse Serial
Orange	0V	0V	Not Connected
Purple	0V	Not Connected	0V

Sector Reader

The default sector reader operation reads a numbers encoded into Sector 1 of the MIFARE cards and fobs. The ACT MIFARE readers can be programmed to read any specified sector data. See section on reader re-programming.

Serial and Reverse Serial Reader

When in Serial or reverse serial mode the MIFARE card serial number (CSN) is read by the reader.

Reader Re-programming

The ACTpro MIFARE readers will ship from the factory pre-configured to read ACT MIFARE cards and fobs. The ACT pro MIFARE reader can also be reconfigured for serial or reverse-serial by repositioning the jumpers. (See section on reader configuration)

On sites with an existing installation of MIFARE cards, it may be necessary to re-program MIFARE readers so that data on the existing MIFARE cards can be read. The ACTpro MIFARE readers are re-programmed using a programming card.

The programming card can be generated on site using ACTenterprise software and an ACTpro USB reader (ACTinstall->Advanced Setup ->card configuration->MIFARE format). You will require the following information on how the existing cards are encoded before generating the programming card: Data Format, Data Orientation, Start and End Byte Position and Read/Write Keys.

To re-program an ACTpro MIFARE reader the programming card must be presented to the reader after power up and while the LED is Red. The ACTpro MIFARE will acknowledge the re-programming by playing an ascending note tune. (Configuration is held in non-volatile memory)

Readers that have been re-programmed may be reset to read ACT issued MIFARE cards and fobs with an ACT Default Programming Card.

ACTpro MIFARE readers that have been programmed to read non ACT MIFARE cards and fobs will play a series of ascending notes after being powered up in addition to the standard beep codes, this is to indicate that it no longer reads the MIFARE cards and fobs issued by ACT.

Please see the "Application for an ACTpro MIFARE reader programming card" document for details on obtaining a programming card.

Backlight Operation - ACTpro MIFARE 1050e

The ACTpro MIFARE 1050e has backlight illumination of the keypad. The default operation is for the illumination to be switched on. During installation the back light operation may be switched off or changed to automatic. In automatic mode the keypad is illuminated for 20 seconds on a key press or when a card is presented to the reader.

To change the backlight operation: Firstly power up the reader, the LED on the top right hand side will cycle through green, blue and red and back to blue, while the LED is red enter the code below for the required operation. The code must be completely entered while the LED is red.
- Always on (Default): X014000
- Always Off: X014001
- Automatic: X014008

Note: the backlight operation for the ACTpro MIFARE 1030PM is controlled by jumpers marked LED.

Buzzer Operation

The Internal buzzer is activated by applying 0V to the Buzz PIN. The buzzer activates 4 seconds after the 0V is applied and sounds continuously until the 0V is removed (External Buzzer Control not available on the ACTpro MIFARE 1030) reader.

Power On Beep Codes

The Output Data Format and the Sector/Serial Operation of the reader can be determined by the beeps generated by the reader after power is applied. The reader will generate two sets of beeps, the first indicating the Output Data Format and the second set of beeps indicating Sector or Serial Operation. The first set of beeps will occur while the LED is Green, the second set of beeps occur half a second later while the LED is Blue.

First Beep Set	Double Beep	Sector Reader
	Single Beep	Serial Reader
	Triple Beep	Serial Reader (byte reverse)
Second Beep Set	Double Beep	Clock & Data Output
	Single Beep	Wiegand 37 bit Output

Note: If the reader has been re-programmed (see next page), then a series of notes is played after the Second Beep Set, this indicates that the default programming to read ACT MIFARE cards has been changed.
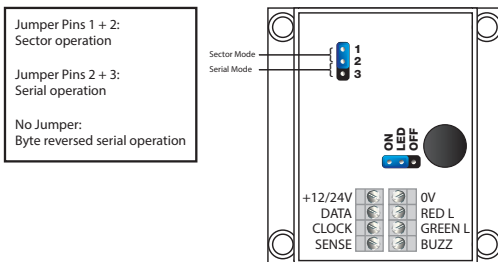
ACTpro MIFARE 1030PM Mounting Diagram

Audio entry panel

VR screen
printed perspex

M3 washers
and nuts

ACTpro mifare
panel mount reader
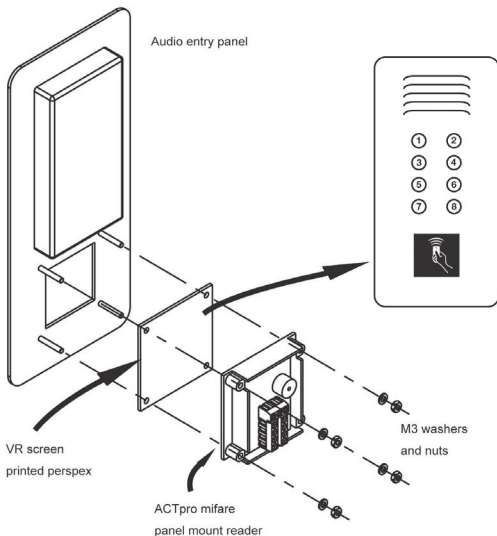
Mounting Instructions

1. Place the VR screen printed perspex over the four studs on the back of the audio entry panel.
2. Place the ACTpro MIFARE panel mount reader over the four studs.
3. Use the four M3 washers and nuts supplied with the product to secure the reader to the audio entry panel.
4. Use the wiring diagram below to connect the reader to the controller
5. When wiring is complete, place the front cover back onto the audio entry panel.
6. Apply power to the controller and test the reader with a card or fob.

ACTpro 1030PM MIFARE Panel Mount reader connections to the ACTpro Door Controllers & Door Stations

Jumper Pins 1 + 2:
Sector operation

Jumper Pins 2 + 3:
Serial operation

No Jumper:
Byte reversed serial operation

Sector Mode
Serial Mode

1
2
3

ON
LED
OFF

+12/24V   0V
DATA   RED L
CLOCK   GREEN L
SENSE   BUZZ

LED Control

The standby LED on the front of the reader can be configured using the link wire. When the link wire is connected between LED and OFF, the blue LED on the front of the reader will remain off while in standby. It will turn green on access granted and red on access denied

When the link wire is connected between LED and ON, the blue LED on the front of the reader will remain on while in standby. It will turn green on access granted and red on access denied.

Wiring for Clock & Data / Wiegand Reader

The standard wiring colours for ACTpro MIFARE readers are shown across.

Readers should be a maximum of 100m when powered from +12V.

White	SENSE
Green	CLOCK & DATA 1
Blue	DATA / DATA 0
Red	+12V
Black	0V
Brown	RED LED
Yellow	GREEN LED
ORANGE	(BUZZER Ctrl)

ACTpro MIFARE 1040e/1050e Surface Mount Diagram

Security screw supplied with the unit

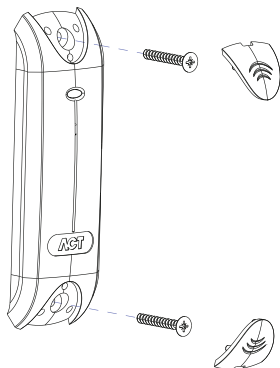Place the cap onto the unit and push firmly in place
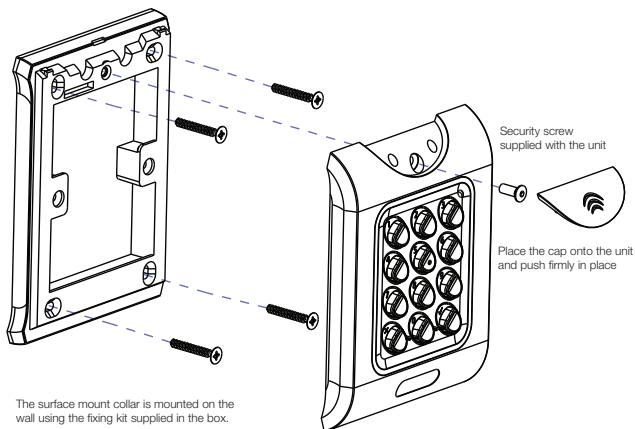
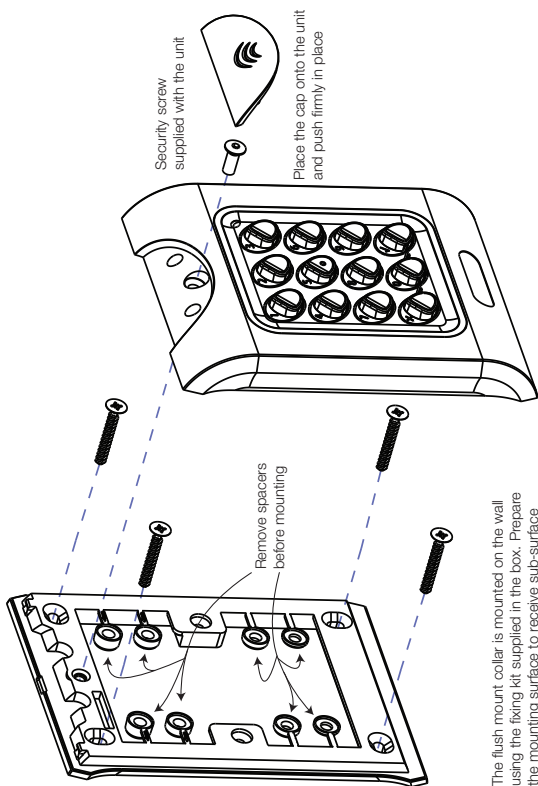The surface mount collar is mounted on the wall using the fixing kit supplied in the box.

Place the reader / keypad onto the surface mount collar and clip down into place. Use the security screw supplied to attach the unit to the surface mount collar.

ACTpro 1030e MIFARE Mounting Diagram

Screw unit to the surface. Place caps on to the unit and push firmly into place.

ACTpro MIFARE 1040e/1050e
Flush Mount Diagram

Security screw supplied with the unit

Place the cap onto the unit and push firmly in place

Remove spacers before mounting

The flush mount collar is mounted on the wall using the fixing kit supplied in the box. Prepare the mounting surface to receive sub-surface terminals.

Place the reader / keypad onto the flush mount collar and clip down into place. Use the security screw supplied to attach the unit to the flush mount collar.

ACTpro MIFARE 1040e/1050e Flush Mounting to UK Pattress Box
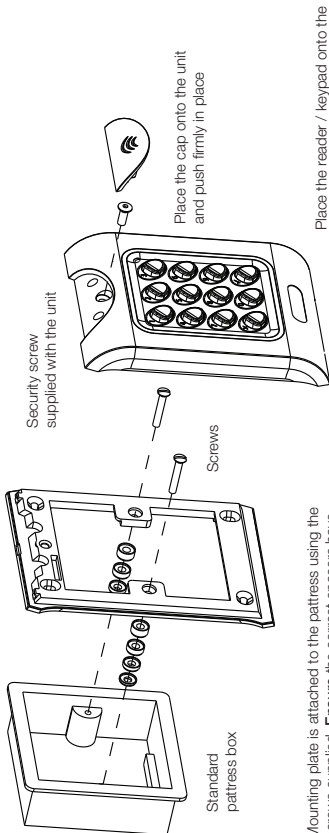
Place the cap onto the unit and push firmly in place

Place the reader / keypad onto the surface mount collar and clip down into place. Use the security screw supplied to attach the unit to the flush mount collar.

Security screw supplied with the unit

Screws

Standard pattress box

Mounting plate is attached to the pattress using the screws supplied. **Ensure** the correct spacers have been used to bridge the gap between the mounting plate and the fixing wings of the pattress box to avoid the mounting plate being distorted.

Note:
Determine the distance between the pattress box and the mounting plate, using the spacers that are labelled 1mm to 4mm. A spacer of the correct length is assembled by stacking the spacers together.

View showing spacer stacking

Spacers break away from main component when required by installer for use

View shows mounting plate before spacers are broken away by installer

ACT
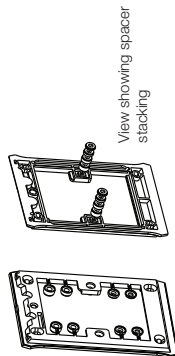
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CE

Ireland Office
Unit C1, South City Business Centre, Tallaght, Dublin, D24 PN28, Ireland

United Kingdom Office
601 Birchwood One, Dewhurst Road, Birchwood, Warrington, WA3 7GB, UK

Ireland: +353 (0)1 466 2570
UK: +44 (0)161 236 9488
Email: info@act.eu
www.act.eu
www.act-access.com (USA)