

General

The CS Technologies contact smartcard reader provides a versatile and flexible way to read a wide variety of smartcards. Often smartcards are used by educational and other institutions for a variety of purposes. Using the CS smartcard reader allows these cards to be used for access control.

The smart card reader is easily configured using a programming keypad. It provides output in the following formats:

Wiegand interface mode In this mode the controller sends the card information out in standard 34 bit wiegand format. The information consists of a start bit, 16 bit site code, 16 bit card number and a stop bit.

Clock and data interface mode In this mode the controller converts the appropriate card information to clock and data format, emulating a mag-stripe reader. This allows the smartcards to be used with just about any access control or security system available.

RS232 interface mode In this mode the controller sends the card number information out in RS232 format for interfacing to a PC, point of sale device etc.

The smart card reader reads a variety of unique ID's from the card depending on the type of card. Currently the reader supports the following card types:

Infineer/Absec This card type is used in many different schools worldwide. The reader uses the unique card number to identify the user. No additional programming of the card is necessary.

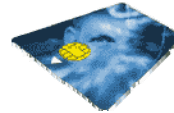
Proton card number The proton card scheme is used by many credit card suppliers. When in Proton mode the card number transmitted is the low 8 digits of the Proton e-Purse ID.

eCard number eCard uses the proton scheme but adds a unique eCard number to the card, as used by NSW TAFE. 8 digits of the eCard number are transmitted as the credential identifier in this mode.

Unicard card number The Unicard scheme is used by many universities. In this mode a 'student number' is encoded onto the card, and the reader transmits this (32-bit) number as the card identifier.

Unicard site code/card number For other Unicard applications a site code is also encoded, and when the reader is in this mode it transmits a 16-bit site code and a 16-bit card number as the credential.

The reader can be purchased pre-configured for a particular reader type and interface mode. Configuration of the system is done using a low-cost convenient keypad if necessary.



Features

- Durable steel case
- Easy to use, with convenient smartcard guide.
- Reader uses high quality 'landing' contacts to extend reliability and card life
- Attractive powder-coated/lexan enclosure
- Indication LED – bicolour, indicates that a card has been read, and can also be driven by a host access control or security system.
- Tamper-proof and tamper-evident construction
- Easy installation
- Compatible with any access control system
- Easily configured for a variety of output modes and card formats.
- Reads Infineer, Proton (purse ID), Proton (eCard ID), Unicard (card number) and Unicard (sitecode/card number) cards
- 100% Australian made and designed

Specifications

Power supply:	12VDC
Current Consumption:	150mA maximum
Temperature range:	0°C to 70°C
Humidity range:	0 to 95% relative noncondensing
Dimensions:	110mm x 49mm
Shipping weight:	300g
Housing:	Powder-coated steel with lexan overlay
Interfaces:	Presco keypad interface for programming
Smartcard formats	Infineer (card ID) Proton (purse ID) Proton (eCard ID) Unicard (card number) Unicard (site code/card number)
Output formats:	RS232 (9600 baud), Wiegand (34 bit), Clock and Data (ABA track 2 format)
Cabling	Smartcard reader to controller – shielded 6-core cable - max 100m

Cable Types

Function	Cable
Smartcard reader to controller	6-core shielded cable – max 100m
Programming keypad to controller	Figure-8 cable – optional keypad just plugs into board

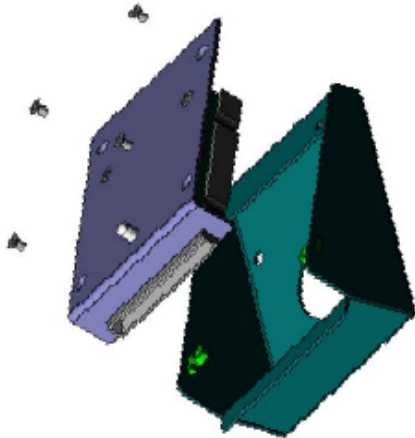
Installation procedure

Mounting the smartcard reader:

The reader should be mounted with the card entry aiming downwards in a convenient location. Generally the reader is mounted about 1200mm from the ground but local conditions may require some variation to this.

The cover has four screws; removing these will enable the entire front of the reader to be removed which includes the circuit board and reader mechanicals. The 'back box' can then be mounted and cable entry from the rear arranged.

Once the reader back box is mounted the cabling can be terminated (see below) and the front plate reattached; this will position the card entry slot correctly on the guide lip. The screws can be done up and to finish the installation (after testing) the lexan overlay placed over the screws to hide them and provide a neat finish.



Terminations

The reader has 5 wires. The termination of these varies depending on the configured output format of the reader.

WIEGAND OUTPUT:

Red wire - +12VDC
Black wire – GND
Yellow wire – LED
Green wire (A)– DATA 0
White wire (B)- DATA 1

CLOCK AND DATA OUTPUT:

Red wire - +12VDC
Black wire – GND
Yellow wire – LED
Green wire (A)– CLOCK
White wire (B)- DATA

RS232 OUTPUT:

Red wire - +12VDC
Black wire – GND
Yellow wire – LED
Green wire (A)– no connection
White wire (B)- TX DATA

The RS232 output is at 9600 baud, 8 data bits, 1 stop bit, no parity, no handshaking.

Connecting the programming keypad:

The programming keypad is a Presco reader, which has GND and DAT lines. These connect to the JP3 connector with the white (DAT) wire connecting to the right hand pin (closest to the smartcard connector) and the black (GND) wire connecting to the left hand pin (closest to the corner).



Note that the keypad only needs to be connected for configuration purposes; once the reader is configured the keypad can be removed. Generally the reader will be supplied pre-configured.

Configuring the reader:

The reader only needs to be configured if not pre-configured at the factory.

Programming of the reader is done very simply using the programming keypad. Keypad commands consist of strings of numbers terminated by pressing the 'E' key. When a correct command is entered the keypad will 'warble' to indicate valid data. If an incorrect command is entered the keypad will output a long beep.

There are two commands available, as follows:

1 * OUTPUT TYPE E

This command sets the output type as follows:

1 * 1 E – set magstripe/clock+data output
1 * 2 E – set wiegand output
1 * 3 E – set RS232 output

2 * CARD TYPE E

This command sets the type of smartcard as follows:

2 * 1 E – set infineer mode
2 * 2 E – set proton purse ID mode
2 * 3 E – set proton eCard number mode
2 * 4 E – set Unicard card number mode
2 * 5 E – set Unicard sitecode/card number mode
2 * 7 E – set direct infineer (requires board mod).
2 * 8 E – set NEW infineer mode

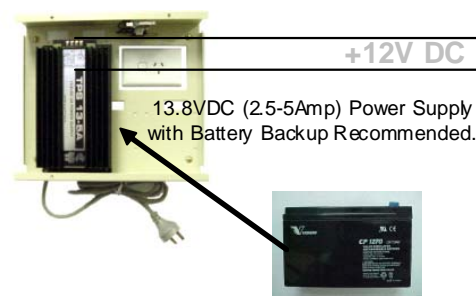
Once configured the keypad can be removed.

■ Smartcard reader

Links for Clock + Data Reader:
 LK19, LK18, LK17, LK8, LK20 – OFF
 LK21 – DOWN, LK22 – DOWN, LK3 – DOWN.
 LK9, LK10, LK11, LK12 – ALL ON
 VR2, VR3, VR4, VR5 – 1.5k Resistance

Reader on Reader 1: no link changes
Reader on Reader 2: LK19 – ON
Reader on Reader 3 &/or 4: LK17 – ON
Lift Controller: LK3 – UP

Communication:
 LK4, LK5, LK6, LK7 – ALL OFF



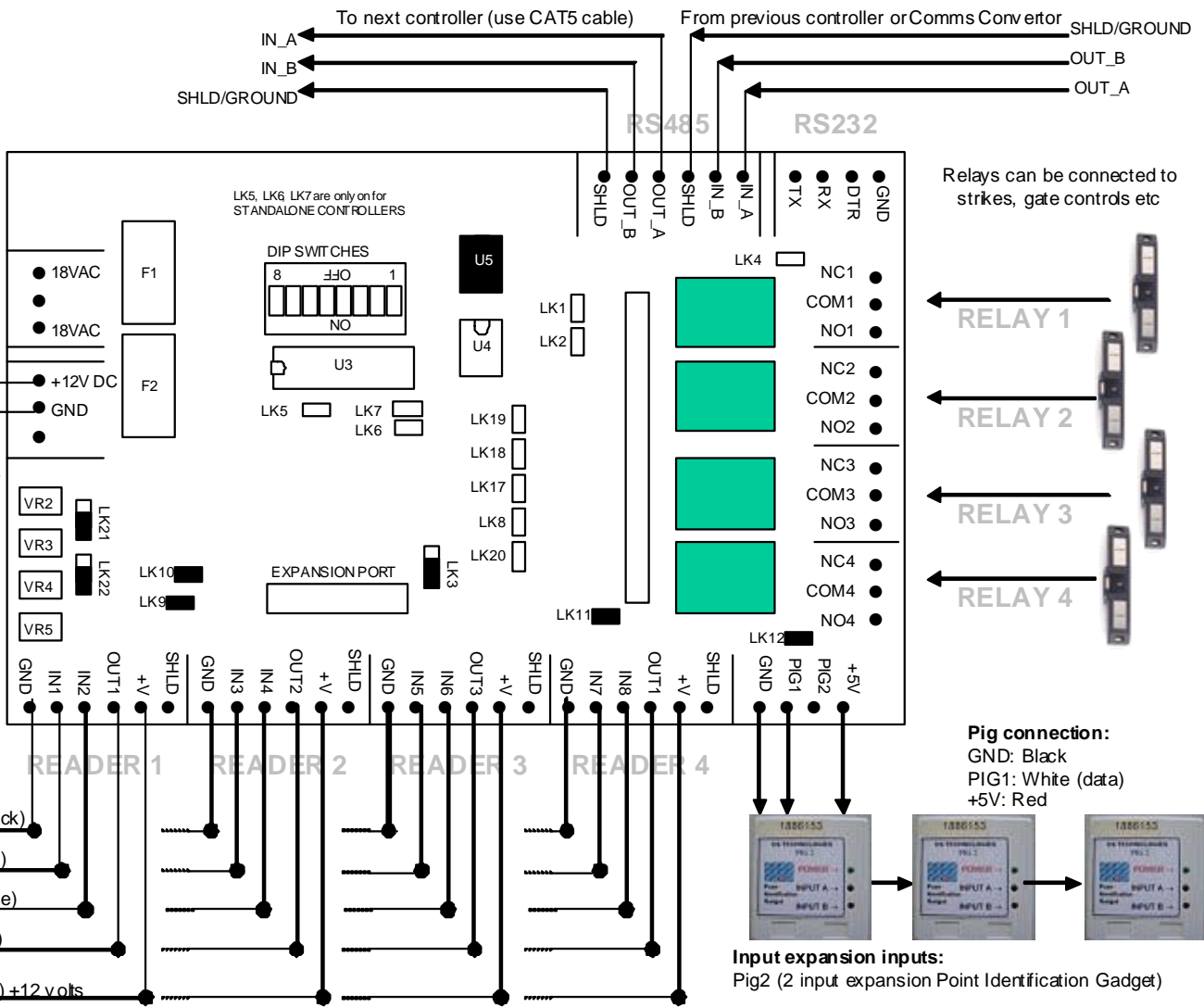
Note: The recommended cable type is 6 core shielded cable.
 Maximum distance is 100 meters from the controller.



Ensure the reader type is set to CLOCK + DATA.

Don't scan 1-wire bus on IN1 IN2 IN3 IN4
 IN5 IN6 IN7 IN8
 PIG1 PIG2
 OUT1 OUT2 OUT3 OUT4

Reader options
 Reader interface: **Clock+Data**
 Type: **CARD** or Type: **ABACARD**



Input expansion inputs:
 Pig2 (2 input expansion Point Identification Gadget)

'Technician/Site/Edit Card options': set as shown

Magstripe
 Site code: Start 0 Length 0
 Count from Start End
 Card number: Start 1 Length 8
 Count from Start End
 Card type: **Track 2**
 No error checking Turn on diagnostics
 Allow access to undefined cards
 Match site code Enforce length 0