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SmartID and Smar

INSTALLATI

Document Number 803

SmartID Proximity Reader - 8030-901, Rev A.0

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DRAFT

6.5 DGT / NCC

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

According to "Administrative Regulations on Low Power Radio Waves Radiated Devices" Without permission granted by the DGT, any company, enterprise, or user is not allowed to change frequency, enhance transmitting power or alter original characteristic as well as performance to a approved low power radio-frequency devices. The low power radio-frequency devices shall not influence aircraft security and interfere legal communications; If found, the user shall cease operating immediately until no interference is achieved. The said legal communications means radio communications is operated in compliance with the Telecommunications Act. The low power radio-frequency devices must be susceptible with the interference from legal communications or ISM radio wave radiated devices.

SmartID Proximity Reader - 8030-901, Rev A.0

Contents

List of Figures

1 Products List

This guide is applicable for the following SmartID and SmartTRANS products:

HID Part Number	HID Model	Description
*8030xyzz	S10	SmartID Mullion Reader
*8045xyzz	SK10	SmartID Mullion Keypad Reader
**8100xyzz	SP10	SmartTRANS Mullion Reader with HID/AWID Prox
**8110xyzz	SPK10	SmartTRANS Mullion Keypad Reader with HID/AWID Prox
***8140xyzz	SP10	SmartTRANS Mullion Reader with Indala Prox
***8141xyzz	SPK10	SmartTRANS Mullion Keypad Reader with Indala Prox

Notes: 'x' = Revision of Main Board, 'y' = color of plastic housing and 'zz' = application

* UL Listed to UL 294.

** ETL Listed to UL 294 – UL Listing to UL 294 Pending.

*** UL Listing Pending.

Accessories:

HID Part Number	Manual Section	Description
500-0300	5.3	Tamper Switch
500-8090	5.4	Mullion SPMD – Switch Box Mounting Plate
500-9287	5.5	Mullion Reader Mounting Plate – Spacer

The accessories are not listed to UL294.

Accessories are compatible with all readers in this manual.

SmartID Proximity Reader - 8030-901, Rev A.0

6 Regulatory

6.1 UL

These proximity readers are intended to be powered from a output of a previously certified power supply. These readers used with listed (UL294) control equipment.

6.2 FCC / Canada Radio Certification

These devices comply with part 15 of the FCC rules.

Operation is subject to the following two conditions: (1) This harmful interference, and (2) This device must accept any i including interference that may cause undesired operation. modifications not expressly approved by the party responsi void the user's authority to operate the equipment.

Le fonctionnement est soumis aux deux conditions suivante peut pas causer de perturbations nuisibles et (2) ce disposi perturbation quelconque qu'il reçoit, y compris des perturba provoquer un fonctionnement indésirable. Les changement n'ayant pas été expressément approuvés par la partie resp conformité peuvent faire perdre à l'utilisateur l'autorisation matériel.

This Category II radiocommunication device complies wit Standard RSS-310.

Ce dispositif de radiocommunication de catégorie II respe d'Industrie Canada.

The Carrier Frequencies and output power are as follows :

803xD, 810xD	13.56MHz	-6.5
810xD	125kHz	<-4

6.3 CE Marking

HID Global hereby declares that these proximity readers ar essential requirements and other relevant provisions of Dire

6.4 Asia and Pacific Rim

Pending

5.5 Mullion Reader Mounting Plate – Spacer

The sizes in the drawing are in millimeters, 1 mm is 0.039 in.

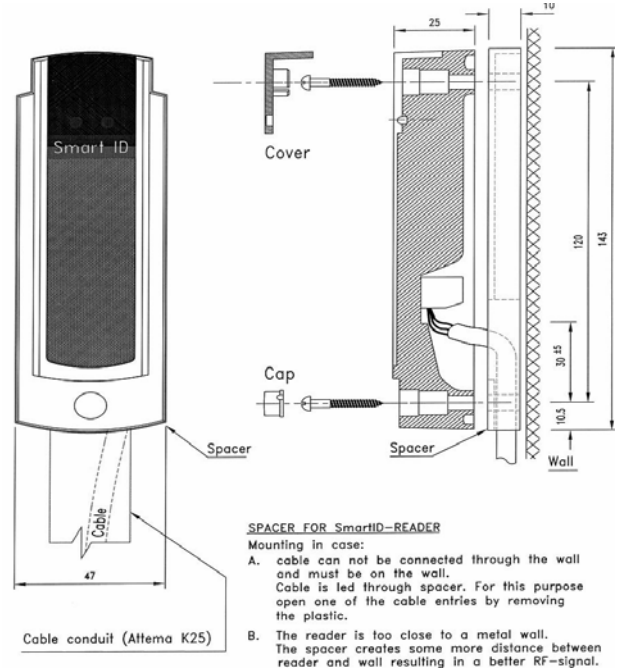


Figure 5 Mounting Plate Spacer

2 Overview

The SmartID 13.56MHz and SmartTRANS 13.56MHz + 12
slim door mountable design to match any installation enviro
LED's and buzzer allow the SmartID Readers to be mounte

The SmartID reader accepts 5 to 24 Volts DC. The reader
Wiegand, Clock-and-Data (Magstripe ABA / ISO7811), RS2
hardware interfaces.. The 5 Volt DC capabilities allow the r
reader systems without rewiring or pulling new cables. The
high reliability, consistent read characteristics and low powe

The SmartID reader family includes RS232/RS422/RS485
read-only and read/write operations.

Standard capabilities include host system controlled red an
buzzer.

2.1 Mullion Mounting

Ideally suited for mullion-mounted door installations or any
not cover junction box). An optional single-gang electrical b
available.

2.2 Indications

When a card is read successfully, the card data is sent to th
buzzer sounds a short 3KHz beep. Both LED's and the buz
by the host system.

2.3 Connections

The SmartID reader family has a flexible and reliable conne
space for the cable and the connector within the SmartID h
with silicone to withstand harsh environmental conditions.

2.4 Output Protocols

The SmartID reader family operates with any facility, syster
scheme. The data output format, contents and length are d
personalization of the card or configuration of the reader.

The readers are intended for connection to an Access Cont
compatibility to the reader is referenced in the control unit's

2.5 Security

The SmartID reader family offers high security challenge re
protect the RFID air interface against various attack schem
playback attacks.

3 Specifications

PRODUCT	INPUT VOLTAGE	POWER	OPERATING TEMPERATURE	CABLE DISTANCE
SmartID	5-24 VDC	Avg 600 mW Peak 1000 mW	-22° - 140°F (-30° - 60° C)	Wiegand 500 ft - 18 AWG (153 m) 300 ft - 20 AWG (91 m) 200 ft - 22 AWG (61 m) Clock-and-Data 82 ft - 22 AWG (25 m) RS232 50 ft (15.24 m) RS485 4000 ft (1,219.2 m) Recommended cable type: Stranded conductor with overall stranded shield or equivalent.
		Avg 1400 mW		
		Peak 2100 mW		

SmartID Proximity Reader - 8030-901, Rev A.0

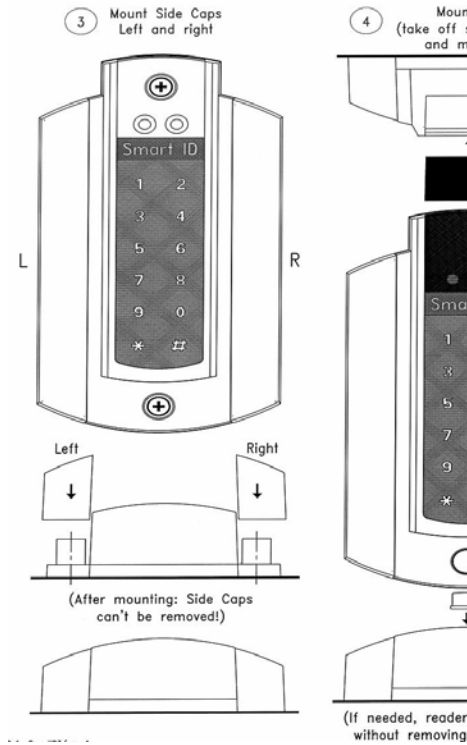


Figure 4 Mounting Plate Step 3 and 4

February 13, 2008

5.4 Switch Box Mounting Plate - Optional

The sizes in the drawing are in millimeters, 1 mm is 0.039 in.

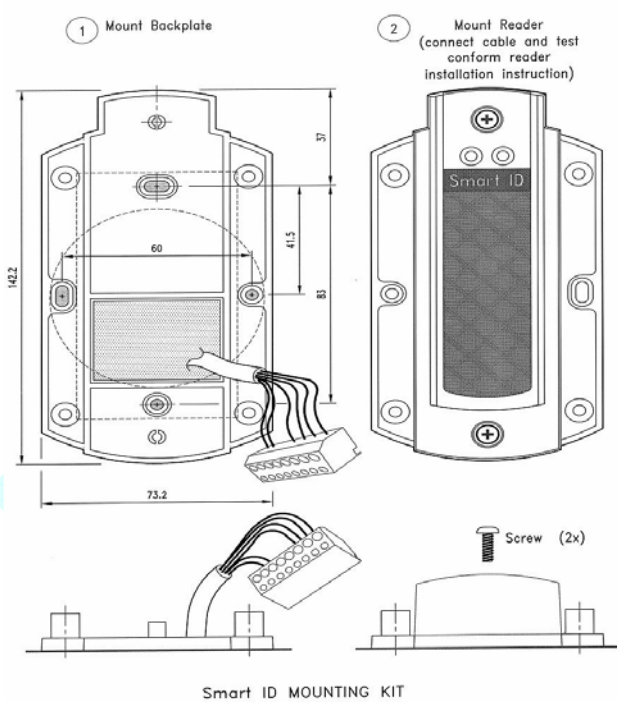


Figure 3 Mounting Plate Step 1 and 2

SmartID Proximity Reader - 8030-901, Rev A.0

SmartTRANS Indala Prox		Avg 1300 m Peak 1600

3.1.1 ISO Card Read Range

ISO14443	up to 1.6 in (4 cm)
DESFire	up to 1.6 in (4 cm)

3.1.2 Interface

Inputs EMC Prot. 10K ohm pull-ups

Outputs EMC Prot. open drain 0.5 A/max

3.1.3 Wiegand Signal Levels

Voh = Output Voltage idle high

Vol = Output Voltage active low

3.1.4 Reader Output Interface and Pull-up Resistors

The SmartID readers provide true open collector outputs for Wiegand, Clock-and-Data, ABA track 2 emulation, meaning the data output is not voltage driven.

External pull-up resistors are required when the controller does not provide internal pull-up resistors. The typical value for the pull-up resistors is 1kOhm. The recommended position to place the pull-up resistors is at the controller side.

The pull-up resistor #1 connects form Data/D1 (reader connector pin 3) to a 5 volt reference.

The pull-up resistor #2 connects form Clock/D0 (reader connector pin 4) to a 5 volt reference.

SmartID Proximity Reader - 8030-901, Rev A.0

5.3 Tamper Switch - Optional

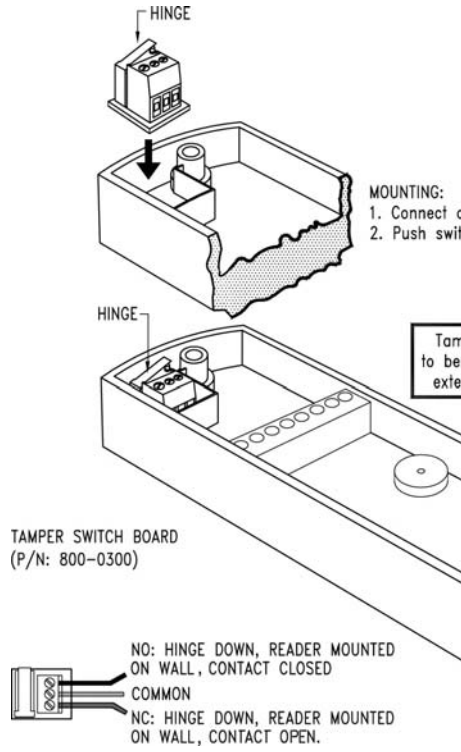


Figure 2 Tamper Switch

5.2 Conductor Connections (All Models)

	Clock-in-Data (ABA)	Wiegand	RS232	RS422	RS485
1	Green LED input	Green LED input	Green LED input**	Green LED input**	Green LED input**
2	Red LED input	Red LED input	Red LED input**	Red LED input**	Red LED input**
3	Data	D1	Do not connect	TXA	TRX
4	Clock	D0	TXD	TXB	TRX
5	Buzzer input	Buzzer input	Do not connect	RXA	Do not Connect
6	Do not Connect	Do not Connect	RXD	RXB	Do not Connect
7	Ground	Ground	Ground	Ground	Ground
8	Power 5 to 24VDC	Power 5 to 24VDC	Power 5 to 24VDC	Power 5 to 24VDC	Power 5 to 24VDC

CAUTION: 5 VDC is minimum voltage at reader connector pins.

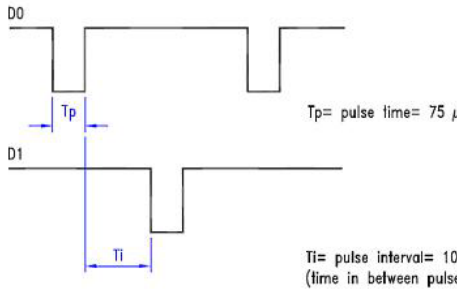
Tamper contact (optional): rating 1A 30 VDC.

** LED input only valid in read-only applications.

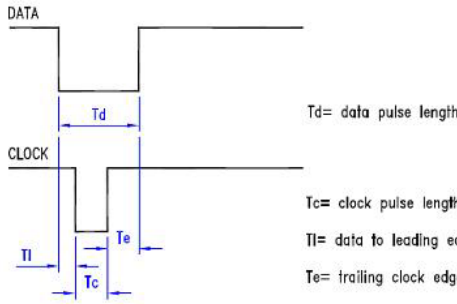
SmartID Proximity Reader - 8030-901, Rev A.0

4 Timing

Typical timing for Wiegand



Typical timing for ABA track 2 emulation



5 Installation Instructions

1. Drill two holes for mounting the reader (see Figure 1 Mullion Mounting, page 11). Do not mount readers less than 20 cm (7.87 in) from each other. Make sure that enough room to connect the cable is allowed. Protect the cable against sharp edges and any damage from chaffing.

2. Remove the Terminal Connector 8 pin from the back of the reader. Use a small flat head screwdriver to loosen all terminals. The end of the cable should be prepared by cutting it back to expose the wires and each end should be twisted to eliminate any loose or frayed wires.

3. Connect the wires to the reader inline with the connector assignments. Wire ends outside the shielding and optional permanent LED links should be kept as short as possible. Twist the connector a few times to twine the wire ends avoiding differential mode interference on the data lines.

Note: Wires at the connector must be kept as short as possible: long, unshielded connections will reduce the sensitivity of the reader.

4. After wiring the reader and the Host system, the reader is ready to be tested. Apply power and present a card to the reader. The green LED should flash and the buzzer should beep indicating a read. If the Host system is connected to the red and green LED inputs these should follow the functionality of the Host system.

5. Secure the reader using the appropriate screws. Mount the black cover (sticker) and mount the cap over the mounting hole.

SmartID Proximity Reader - 8030-901, Rev A.0

5.1 Wall Mounting Drawing (All Mode

The drawing dimensions are in millimeters. 1 mm equals 0.039 inch

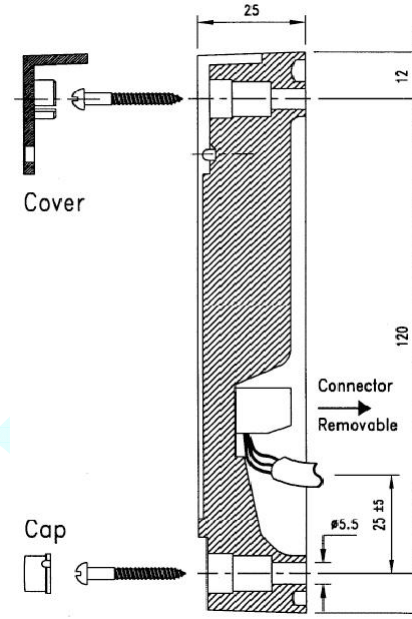


Figure 1 Mullion Mounting