# CYPRESS
## INTEGRATION SOLUTIONS

**CYPRESS**
INTEGRATION SOLUTIONS
Data Converter

1  8 - 16VDC
2  Ground

Status LED

1  RS-485(+)
2  RS-485(-)
3  +5V Out
4  AN 1
5  AN 2
6  Aux 1 / LED In
7  D1/D Out
8  D0/C Out

Relay 2 N.O.  1
Relay 2 COM  2
Relay 2 N.C.  3
Relay 1 N.O.  4
Relay 1 COM  5
Relay 1 N.C.  6
RS-232 TxD  7
RS-232 RxD  8
Ground  9
Aux 2 / LED Out  10
D1/D In  11
D0/C In  12

| Specifications | | | |
|---|---|---|---|
| **Part Number** | TSP-2105 | UPC: 816684004674 | Barcode Scanner and Wiegand Converter Kit |
| | | Scanner Part Number | CODE CR1100 |
| **Physical** | Scanner | | 2.7 x 2.1 x 1.2 inches / 0.275 lbs.<br>67.5 x 52.5 x 29.7 mm / 13 Kg |
| | Converter | | 4.5 x 2.9 x 0.94 inches / 0.3 lbs.<br>11.43 x 7.37 x 2.39 cm / 0.14 Kg |
| **Environmental** | Storage Temperature | Converter | 32ºF to 158ºF<br>0ºC to 70ºC |
| | | Scanner | -22ºF to 150ºF<br>-30ºC to 65ºC |
| | Operating Temperature | Converter | 32ºF to 158ºF<br>0ºC to 70ºC |
| | | Scanner | -4ºF to 131ºF<br>-20ºC to 55ºC |
| | Enclosure | Converter | Extruded aluminum, not sealed or weather rated |
| | | Scanner | Plastic housing |
| **Electrical** | Supply Voltage | Converter | 8-16Vdc @ 300mA |
| | | Scanner | 5Vdc @ 350mA |
| | 5Vdc 1A wall-plug power supply for scanner is included. | | |
| **Scan Performance** | Field Selection | High Density or Wide Field | |
| | Field of View | High Density: 30º horizontal by 20º vertical   \|   Wide Field: 50º horizontal by 33.5º vertical | |
| | Focal Point | High Density: approx. 3.94" / 100 mm   \|   Wide Field: approx. 4.53" / 115 mm | |
| | Optical Resolution | High Density: 960 x 640   \|   Wide Field: 960 x 640 | |
| | Pitch, Skew | ± 65º (from front to back), ± 60º from plane parallel to symbol (side to side) | |
| | Rotational Tolerance | ± 180º | |
| | Decode Capability | Standard 1D, PDF, 2D, Postal, and OCR symbologies. | |
| | Symbol Contrast | 15% minimum reflectance difference | |
| **Supported Symbologies** | 1D Symbologies | BC412, Codabar, Code 11, Code 32, Code 39, Code 93, Code 128, IATA 2 of 5, Interleaved 2 of 5, GS1 DataBar, Hong Kong 2 of 5, Matrix 2 of 5, MSO Plessey, NEC 2 of 5, Plessey, Straight 2 of 5, Telepen, Trioptic, UPC/EAN/JAN | |
| | Stacked 1D Symbologies | Codablock F, Code 49, GS1 Composite (CC-A/CC-B/CC-C), Micro PDF, PDF417 | |
| | 2D Symbologies | Aztec Code, Data Matrix, Data Matrix Rectangular Extension, Grid Matrix, Han Xin, Maxicode, Micro QR Code, QR Code, QR Model 1 | |
| | Postal Codes | Australian Post, Canada Post, Intelligent Mail, Japan Post, KIX Code, Korea Post, Planet, Post-net, UK Royal Mail, UPU ID-tags | |

# Cypress TSP-2105 Manual - Table of Contents

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4.5

0.6

1.48

0.2

Ø0.39

0.3

3.9

3.31

0.94

0.19
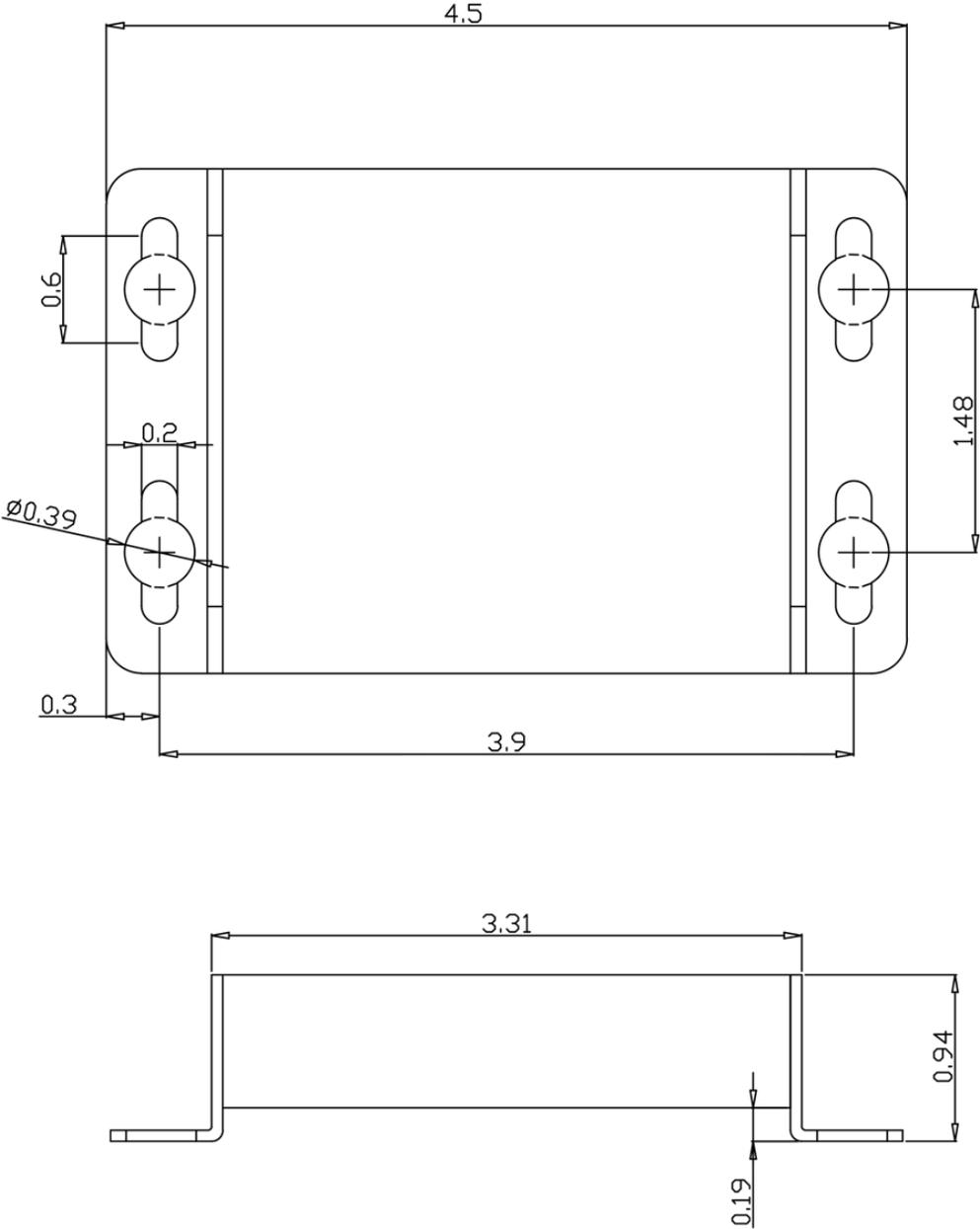
All dimensions are in inches.

**67.5 mm**
(2.7")

**29.7 mm**
(1.2")

**52.5 mm**
(2.1")

Diagram above is from Code CR1100 User Manual (D032078 _02 CR1100 User Manual).
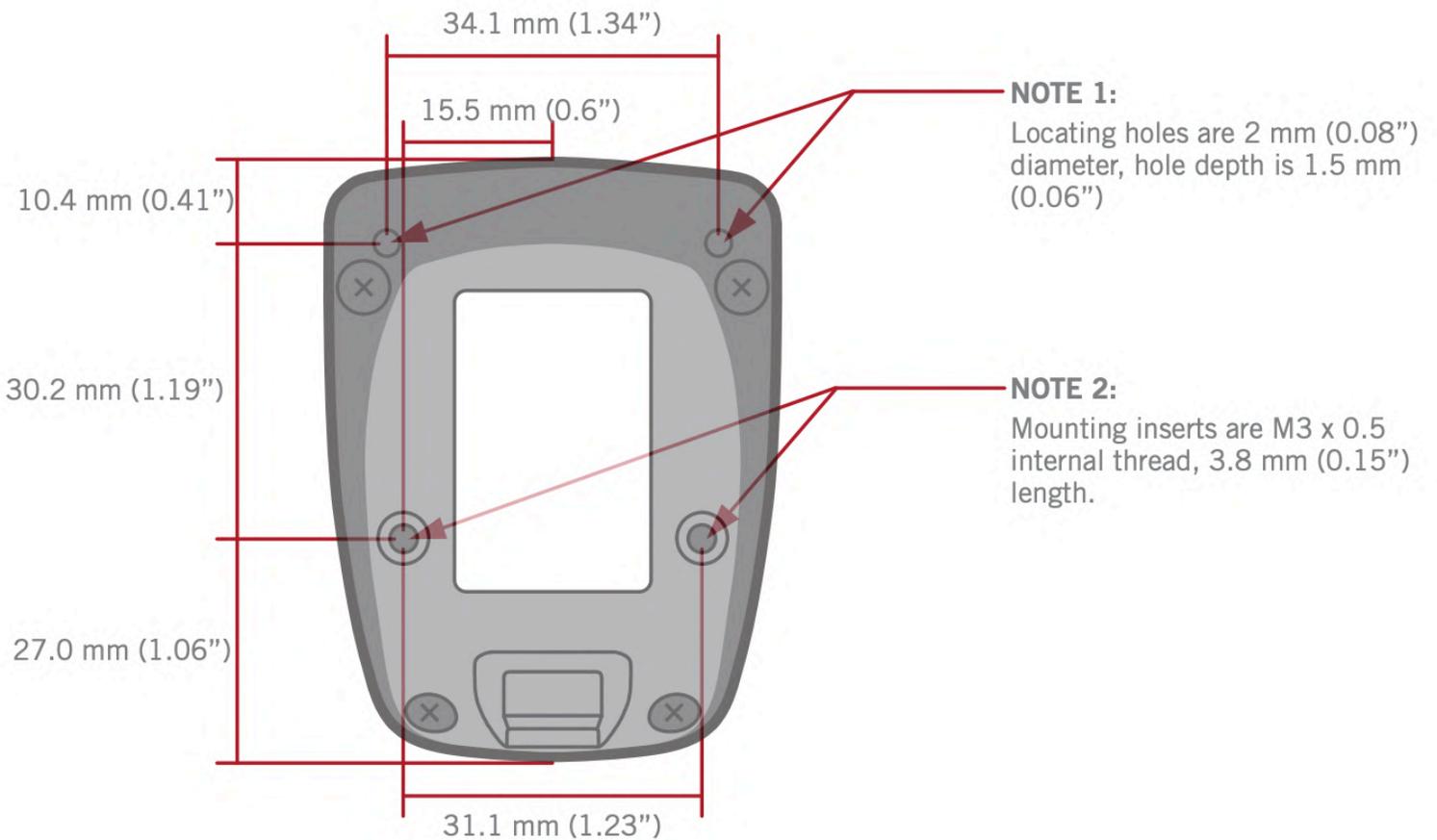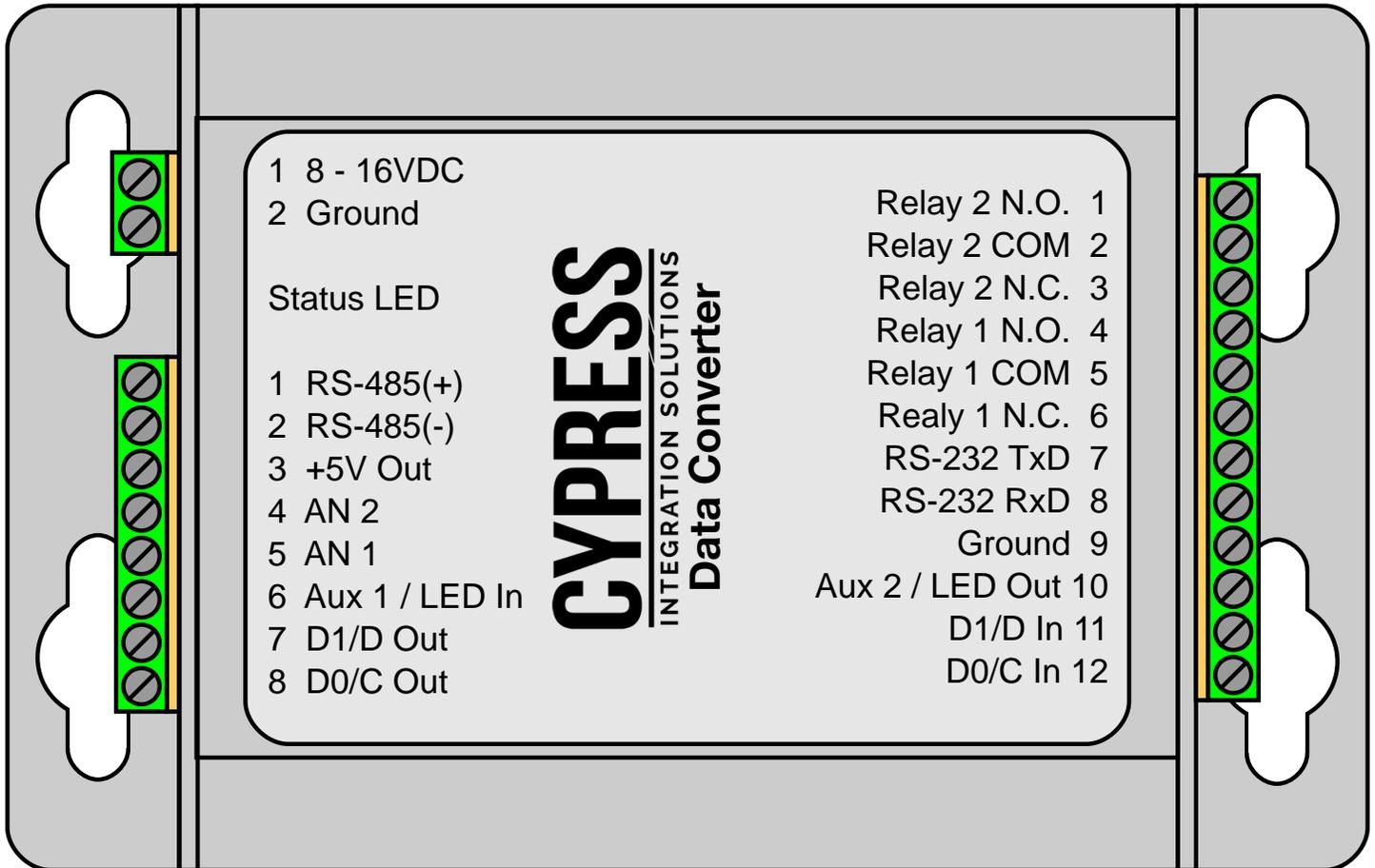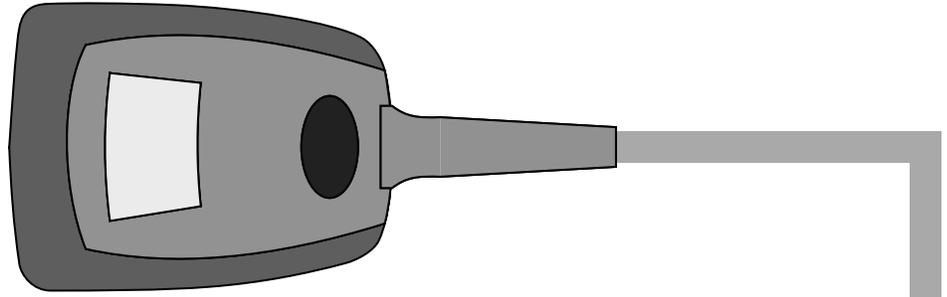
# Cypress TSP-2105 Manual - Scanner Mounting Hole Pattern

34.1 mm (1.34")

15.5 mm (0.6")

10.4 mm (0.41")

30.2 mm (1.19")

27.0 mm (1.06")

31.1 mm (1.23")

**NOTE 1:**

Locating holes are 2 mm (0.08") diameter, hole depth is 1.5 mm (0.06")

**NOTE 2:**

Mounting inserts are M3 x 0.5 internal thread, 3.8 mm (0.15") length.

Diagram above is from Code CR1100 User Manual (D032078 _02 CR1100 User Manual).

# Cypress TSP-2105 Manual - Converter Pin Designations

1  8 - 16VDC
2  Ground

Status LED

1  RS-485(+)
2  RS-485(-)
3  +5V Out
4  AN 2
5  AN 1
6  Aux 1 / LED In
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Relay 2 N.O.  1
Relay 2 COM  2
Relay 2 N.C.  3
Relay 1 N.O.  4
Relay 1 COM  5
Realy 1 N.C.  6
RS-232 TxD  7
RS-232 RxD  8
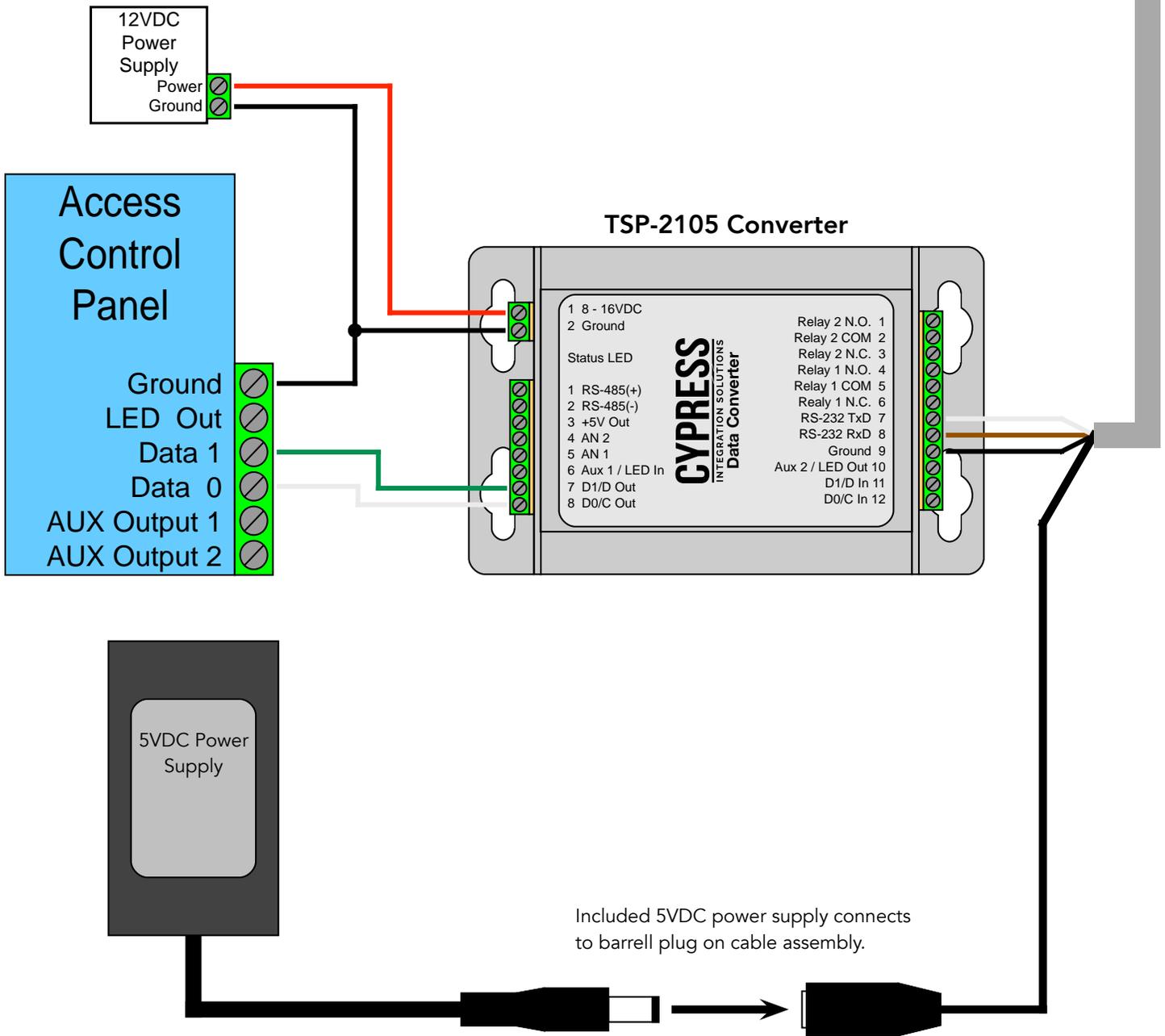Ground  9
Aux 2 / LED Out 10
D1/D In 11
D0/C In 12

The diagram above shows the pin designations for the three terminal blocks/headers on the converter unit.

# Cypress TSP-2105 Manual - Wiring Diagram

**CODE CR1100 Barcode Scanner**

12VDC
Power
Supply
Power
Ground

**TSP-2105 Converter**

Access
Control
Panel

Ground
LED  Out
Data 1
Data  0
AUX Output 1
AUX Output 2

1  8 - 16VDC
2  Ground

Status LED

1  RS-485(+)
2  RS-485(-)
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5VDC Power
Supply

Included 5VDC power supply connects
to barrell plug on cable assembly.

| Default Enabled Symbologies | Default Disabled Symbologies |
| --- | --- |
| Aztec | Codablock F |
| Codabar | Code 11 |
| Code 39 | Code 32 |
| Code 93 | Code 49 |
| Code 128 | Composite |
| Data Matrix | Grid Matrix |
| Data Matrix Rectangle | Han Xin Code |
| All GS1 DataBar | Hong Kong 2 of 5 |
| Interleaved 2 of 5 | IATA 2 of 5 |
| PDF417 | Matrix 2 of 5 |
| QR code | Maxicode |
| UPC/EAN/JAN | Micro PDF417 |
| | MSI Plessey |
| | NEC 2 of 5 |
| | Pharmacode |
| | Plessey |
| | Postal Codes |
| | Standard 2 of 5 |
| | Telepen |
| | Trioptic |

To enable or disable symbologies, scan the symbology barcodes located in the CR1100 Configuration Guide found on the product page at codecorp.net.

The CR1100 barcode scanner is configured with the three configuration QR codes to the right. They are scanned in order: A4, E4, C2.

The converter unit serial interface is configured for 9600 baud, the scanner baud rate must be configured to match. The last configuration QR code set the unit to scan barcodes automatically when one is presented.

**The scanner is preconfigured at the factory to work out of the box for typical applications.**

If the default configuration does not work for a specific application, see the configuration options in the CR1100 Configuration Guide found on the product page at codecorp.net.

Below is a test barcode. The default converter setting is Setting 65 (see table on page 12). This barcode should be output by the converter as a 26 bit (H10301) Wiegand read. The facility code value is 123, the card number value is 12345.

Test Barcode

0012312345

M20112_01

Reset to RS232 Factory Defaults M2

A4

M20163_01

RS232 Interface - 9600 Baud Rate M2

E4

M20199_01

Motion Detect Always On M2

C2

# Cypress TSP-2105 Manual - Converter DIP Switches

The converter included in the TSP-2105 supports many different conversion settings that are selectable with DIP switches on the converter board. The circuit board must be removed from the enclosure in order to access the DIP switches.

The picture below shows converter circuit board removed from the enclosure.
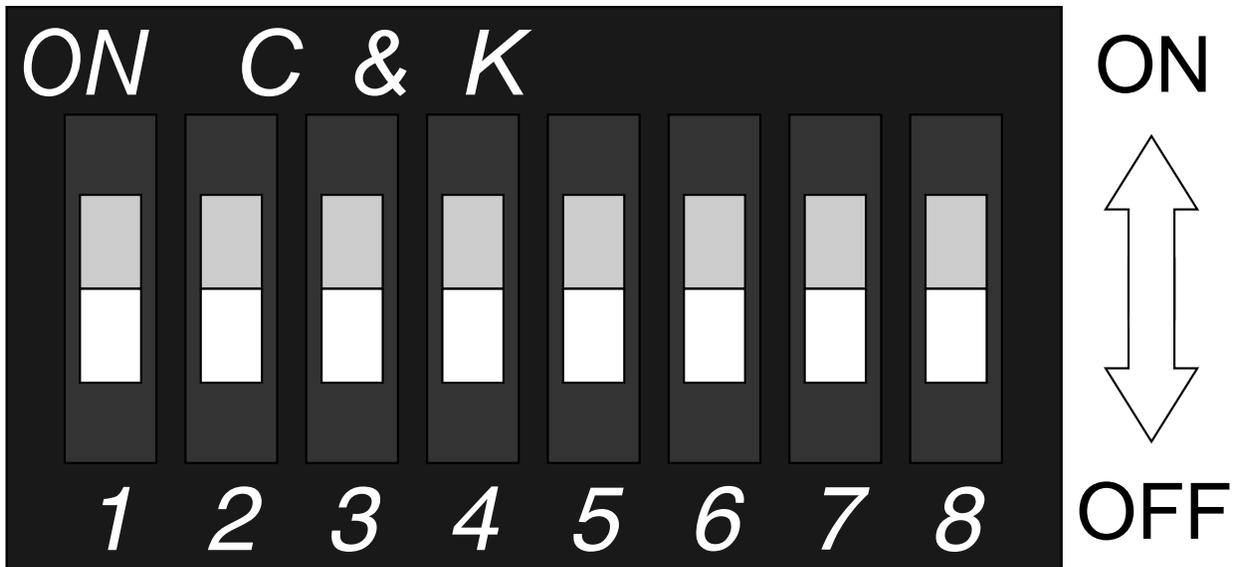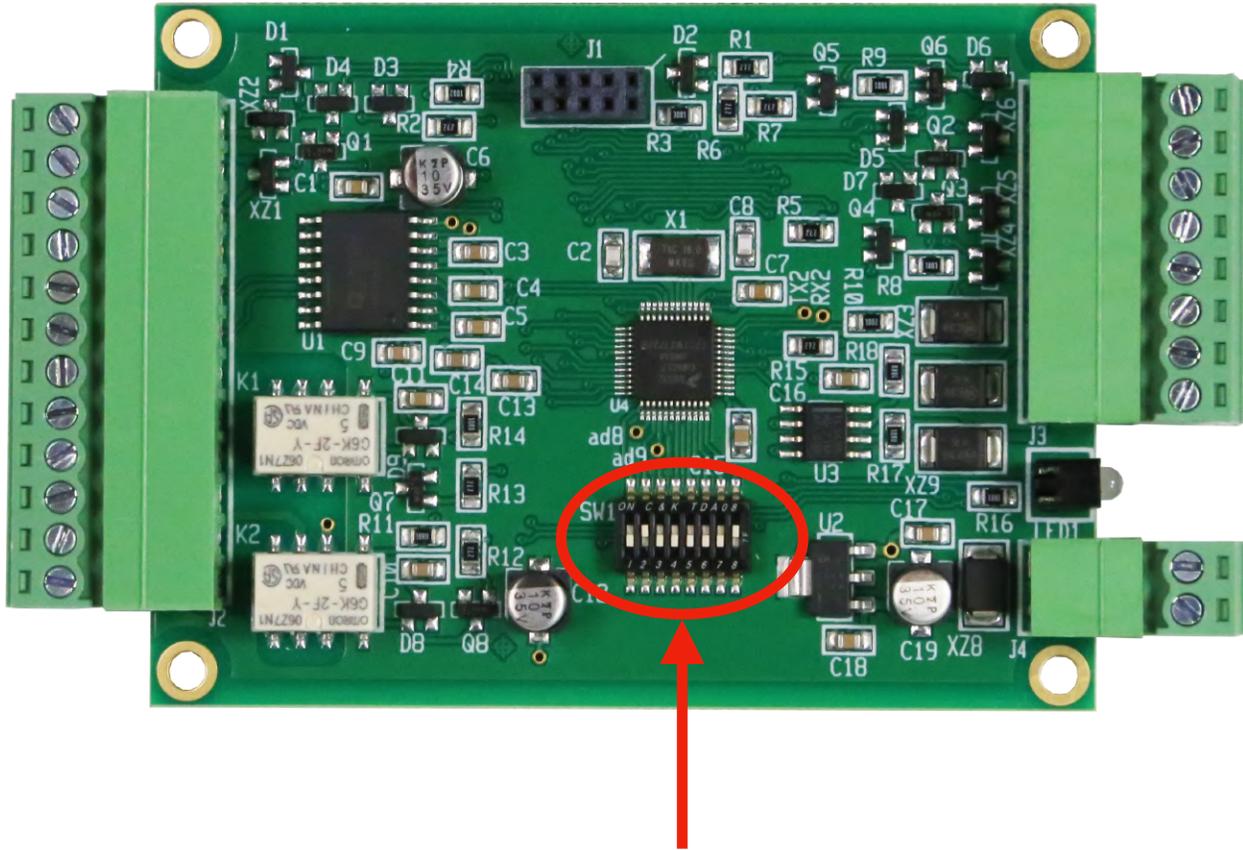
# Cypress TSP-2105 Manual - Conversion Settings

| # | DIP SWITCH SETTING 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | INPUT Interface | Format | OUTPUT Interface | Format |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 | X | X | X | X | X | | | | Serial RS-232 9600 Baud TEST MODE | | | |
| 32 | | | | | | X | | | Wiegand Output TEST MODE - 26 Bit, FC = 123, Card # = 4567 | | | |
| 57 | X | | | X | X | X | | | RS-232 (9600) | 12 Digit ASCII Dec | Wiegand | 40 Bit Binary |
| 58 | | X | | X | X | X | | | RS-232 (9600) | 16 Digit ASCII Dec | Wiegand | 64 Bit Binary |
| 65* | X | | | | | | X | | RS-232 (9600) | 10 Digit ASCII Dec | Weigand | 26 Bit |
| 68 | | | X | | | | X | | RS-232 (9600) | 12 Digit ASCII Hex | Wiegand | Variable |
| 71 | X | X | X | | | | X | | RS-232 (9600) | ASCII Dec | Wiegand | 26 Bit |
| 86 | | X | X | | X | | X | | RS-232 (9600) | ASCII Dec | Wiegand | 36 Bit |
| 87 | X | X | X | | X | | X | | RS-232 (9600) | 10 Digit ASCII Dec | Wiegand | 37 Bit |

* Default converter setting.