

# Single Port RS-485 Bridge™

## Installation Guide

### PART NUMBERS

**FREEDOM**  
by IDENTIV

**50-40-485, 50-40-485L, 50-1302-1**  
Replaces 50-40-10

**ENTERPHONE**  
by IDENTIV

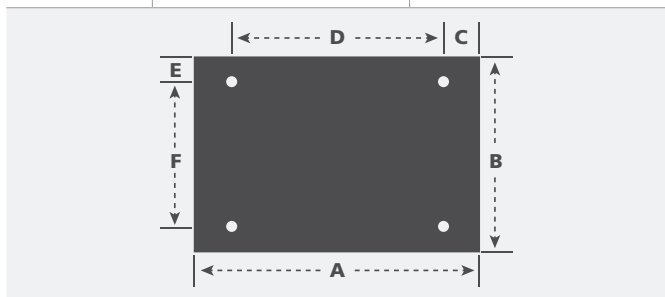
**50-24-485**  
Replaces 50-24-10

### PHYSICAL SPECIFICATIONS

|                   |   |
|-------------------|---|
| Length            | 76 mm (3.00 in.)  |
| Width             | 48 mm (1.90 in.)  |
| Height            | 17 mm (0.67 in.)  |
| Weight            | 34 g (1.20 oz.)   |
| Readers           | 1   |
| Supervised Inputs | 6   |
| Relay Outputs     | 2   |
| Certifications    | <b>Electrical:</b> UL294<br><b>EMI Radiation:</b> FCC Part 15 Class B |

### BASE PLATE MOUNTING

| Dimension | Millimeters | Inches |
|-----------|-------------|--------|
| A         | 116.07      | 4.57   |
| B         | 78.74       | 3.10   |
| C         | 15.24       | 0.60   |
| D         | 85.59       | 3.37   |
| E         | 10.16       | 0.40   |
| F         | 58.42       | 2.30   |



### SUMMARIZED LEVELS OF ACCESS CONTROL COMPONENTS

|                      |         |
|----------------------|---------|
| Destructive Attack   | Level I |
| Line Security        | Level I |
| Endurance            | Level I |
| Standby Power        | Level I |
| Single Point Locking | Level I |

### ⚙️ INSTALLATION REQUIREMENTS

Freedom Bridges should only be installed in dry, non-condensing environments. The ambient temperature of the environment should range between -40°C and 50°C.

Freedom Encryption Bridges should only be mounted to non-conductive surfaces. Incorrect mounting may short-circuit the electronics, which will cause it to malfunction.

DC power, reader, input contact, and output device wires should be between 16-28 AWG. They should also be stripped 5.5mm to sufficiently fit the terminal blocks and ensure that they do not come in contact with each other.

### ✔️ INSTALLATION PROCEDURE

For each of the following steps, be sure to reference the wiring diagram on page 2 for additional details:

- Connect an RS-485 Reader to the RS-485 Reader Input on the Freedom Bridge. The selection of 2-wire or 4-wire operation is done via UDP configuration, as is the baud rate (nominally 57600)
  - A 2-wire RS-485 reader must be connected with a 4-position connector for +12, A, B, 0v, leaving the other 2 pins (R- and R+) empty. Connect the +12, A, B and the reader shield wire to the appropriate terminal points on the Reader Input.
  - A 4-wire RS-485 requires a 6-position connector for +12, T-, T+, 0v, R-, R+, where T- means Transmit Inverted signal, and R+ means Receive non-inverted signal.
- Any unused wires on the reader must be evenly snipped and have their tips insulated using electrical tape or equivalent. The shield wire on the reader must also be completely insulated to prevent ground loops.
- If you have any supervised input contacts, wire them to the Digital Contact Inputs using Method 1 or Method 2.
- If you have any non-supervised input contacts, wire them to the Digital Contact Inputs.
- If you have a relay output contact, wire it to the Relay Output.
- Supply power to the Freedom Bridge using either or both of the following methods:
  - Wire 12 - 16Vdc power, up to 400mA, directly to the terminal on the Freedom Bridge.
  - Connect a Cat5, 5e, or Cat6 cable from any PoE port on an Ethernet Switch to the RJ-45 port on the Freedom Bridge. **Note:** Ethernet only supports a maximum cable segment length of 100m (328ft).
- To add the Freedom Bridge to a Freedom Server and configure it, refer to the Freedom Solution Guide manual.

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**OPTIONAL DC POWER IN**

|                     |  |
|---------------------|--|
| 0v                  | DC Power Ground  |
| +12                 | DC Power Input   |
| <b>Requirements</b> | <ul style="list-style-type: none"> <li>• 12 – 16 Vdc</li> <li>• 350 mA (300 mA external &amp; 50 mA internal)</li> </ul> |

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**RS-485 READER (2 WIRE)**

|     |              |
|-----|--------------|
| +12 | Power Output |
| A   | Data A Input |
| B   | Data B Input |
| 0v  | Ground       |

**RS-485 READER (4 WIRE)**

|                              |  |
|------------------------------|--|
| +12                          | Power Output   |
| T-                           | Transmit Inverted Signal   |
| T+                           | Transmit Non-Inverted Signal   |
| 0v                           | Ground   |
| R-                           | Receive Inverted Signal  |
| R+                           | Receive Non-Inverted Signal  |
| <b>Power Output Using DC</b> | <ul style="list-style-type: none"> <li>• 8.5 - 16 Vdc</li> <li>• 350 mA max current</li> </ul> |

3

**RESET BUTTON**

Press and hold this button for 10 seconds to reset the configuration back to default.

4

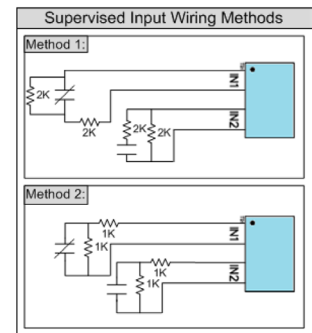
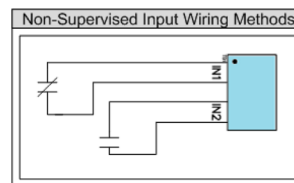
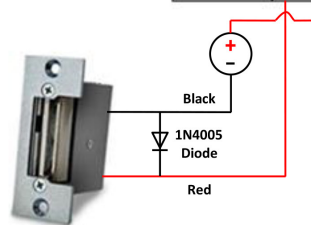
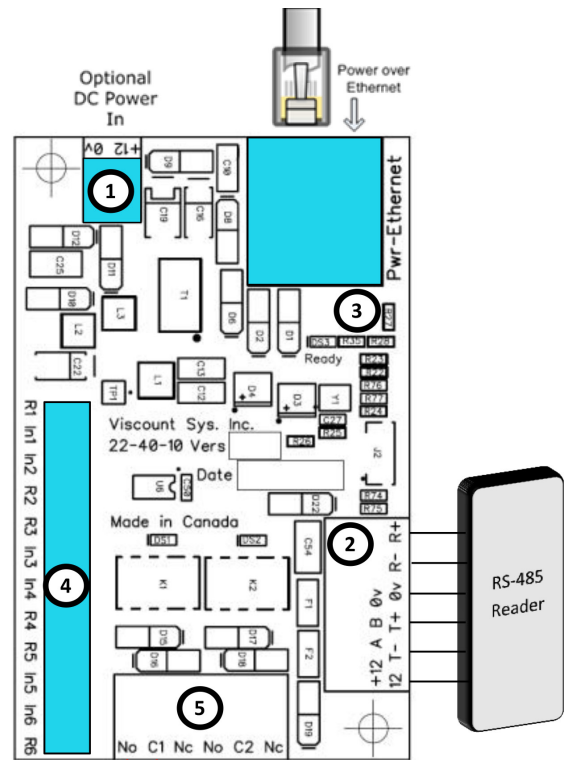
**DIGITAL CONTACT INPUTS**

|           |   |
|-----------|---|
| R1 - R6   | Ground                                  |
| In1 - In6 | Non-supervised or supervised inputs 1-6 |

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**RELAY OUTPUT**

|                      |                    |
|----------------------|--------------------|
| NC                   | Normally closed    |
| C                    | Common             |
| No                   | Normally open      |
| <b>Relay Contact</b> | DC: 30 Vdc @ 1 Adc |



A flashing green "Ready" LED light on the Freedom Bridge circuit board indicates that the bridge is powered but not connected to a server.



A solid green "Ready" LED light indicates that the Freedom Bridge has established a connection to the server and is ready to use.

**CAUTION**

**This product is sensitive to Electrostatic Discharges (ESD).**

Take precautions while handling the product by using proper grounding straps at all times.

**NOTE**

As long as the total current of the reader plus a door strike DOES NOT EXCEED 300mA, you may power the door strike using the power out and ground from the reader Input terminal block.