VTAP

Installation Guide - VTAP200 NFC Reader

DOT ORIGIN

If you need help to set up or use your VTAP200, beyond what is contained in this Installation Guide, then please contact our support team.

Email: **vtap-support@dotorigin.com**

Download the latest documentation and firmware from **https://vtapnfc.com**

Telephone UK and Europe: +44 (0) 1428 685861

Telephone North America and Latin America: +1 (562) 262-9642

If you have any feedback on setting up or using your VTAP200 or this documentation, then please contact our support team. The product is constantly being reviewed and improved and we value feedback about your experience.

Contents

Safety instructions

⚠ **WARNING: INTENDED USE**

The VTAP200 equipment is intended for use by suitably qualified integrators, who will integrate the VTAP200 into their own hardware, without any changes or modifications to the VTAP200 device. Although the enclosure may be opened when the device is not connected, components mounted on the VTAP PCB are not user-serviceable.

⚠ **WARNING: ESD PRECAUTIONS**

If the enclosure is opened, to access the PCB, ESD precautions should be observed when handling the PCB.

⚠ **WARNING: POWER SUPPLY**

The power supply current or fusing rating should not exceed the rating of the wire used to connect to the VTAP200. If the power supply is connected to the mains it must be of class 1 or class 2 construction, providing a safe electrical connection to the VTAP200. Although the product has no accessible conductive parts, it does not provide insulation from hazardous voltages.

⚠️ **WARNING: FCC COMPLIANCE**

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and a human body.

1   Using this guide

This guide is for first-time users of the VTAP200.

Figure 1-1 VTAP200 front view

It contains the information you need to physically install and connect your VTAP200.

Consult the VTAP Configuration Guide for more about custom configuration and maintenance features for any VTAP200, including how to update the firmware on your VTAP200, when a new release is available.

If you need help beyond what is contained in this guide please contact **vtap-support@dotorigin.com**.

2 How the VTAP200 works

With the VTAP200 connected, simply tap your smartphone against the VTAP. Your mobile NFC pass will be read and data sent to the connected equipment. The default for a VTAP200 is to connect to remote equipment transfer data over Wiegand, to interact with a door controller in an access control system, and/or over RS485 for infrastructure equipment. Wi-Fi connection is used for continuous wireless connection to the infrastructure equipment. The VTAP200 can be configured to send pass payload to Wiegand, RS485 or Wi-Fi; with customisation options in pass payload prefix/postfix, extracting only a section of the pass payload, as well as LED or buzzer response to pass presentation. During initial configuration and testing we recommend that an RS485 to USB converter is used, to connect the VTAP to a PC. Alternatively, if Wiegand and RS485 are not required, the VTAP200 can be provided with power input only and the Wi-Fi connection can be used to connect with infrastructure equipment.

Of course, the data can only be read if your phone contains a mobile NFC pass, which has been issued in connection with the Merchant ID(s)/Collector ID(s) and key(s) that are known to the VTAP. The unit comes with default values, so that you can test default operation on factory settings before you begin customising any settings.

Consult the VTAP Configuration Guide and VTAP Commands Reference Guide for more about configuration and maintenance of a VTAP200. Configuration file changes can be made over the RS485 serial interface.

3   Choose a location for your VTAP200

Position the VTAP200 so that users can easily tap their smartphone against the label, on top of the device.

CAUTION: Never allow a metal surface between the VTAP200 and the user's phone or card.

The circular case for a VTAP200 has a maximum 78mm diameter at the front and is 25mm deep. Cabling enters the rear of the VTAP200. The connector and associated wiring requires a depth of at least 25mm.

The VTAP200 must be stored and operated under the following conditions:

- Ambient temperature -25 to +70°C (-13 to 158°F)
- Humidity 0 to 95% RH non-condensing
- Pressure 86-106kPa

4 Mount a VTAP200 case

The VTAP200 case uses a mounting plate to fix the device in place. Drilling dimensions for the plate are shown in the diagram below. The VTAP200 clips on to the mounting plate and is secured by a security screw. Wiring to the VTAP200 comes from behind the mounting surface through the rectangular opening in the mounting plate.
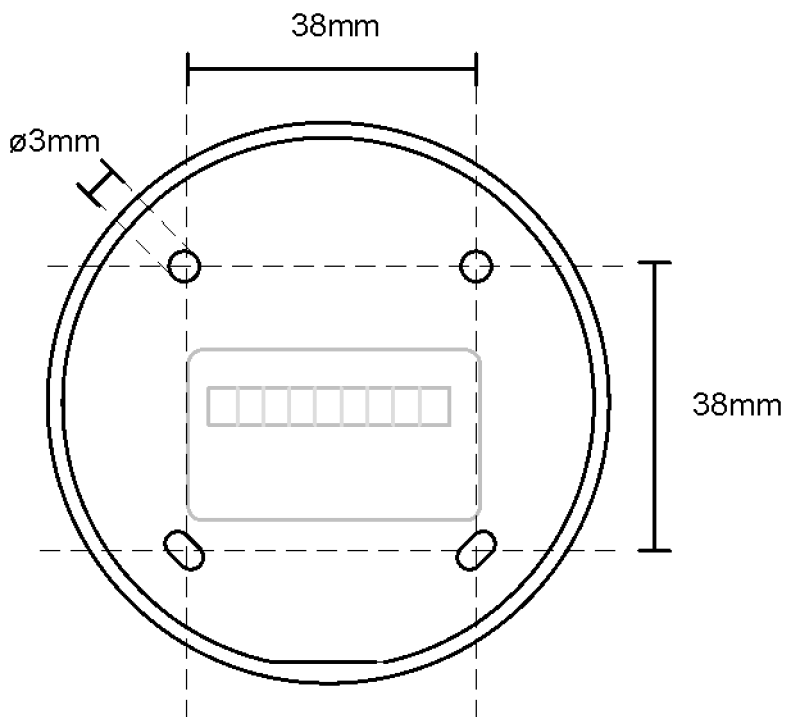
Figure 4-1 Mounting holes in the VTAP200 case base plate

We recommend that you complete and test your configuration before the VTAP200 is mounted. Detailed help is in the VTAP Configuration Guide.

5   Connecting the VTAP200

The VTAP200 has a single accessible connector on the back of the unit.

Figure 5-1 VTAP200 case

We recommend use of 24-26AWG shielded multi-core, overall screened, cable for the connection between VTAP200 reader and any controller and PC (for example Belden CR9538).

The VTAP200 power requirement is 10V-24V DC @ 500mA.

> **Note:** Screened cable should always be used to connect VTAP200 readers to door controllers, to avoid interference from other equipment. The cable screen must be connected electrically to GND at both the VTAP200 reader and controller ends of the cable, using the bare wire 'drain' conductor.
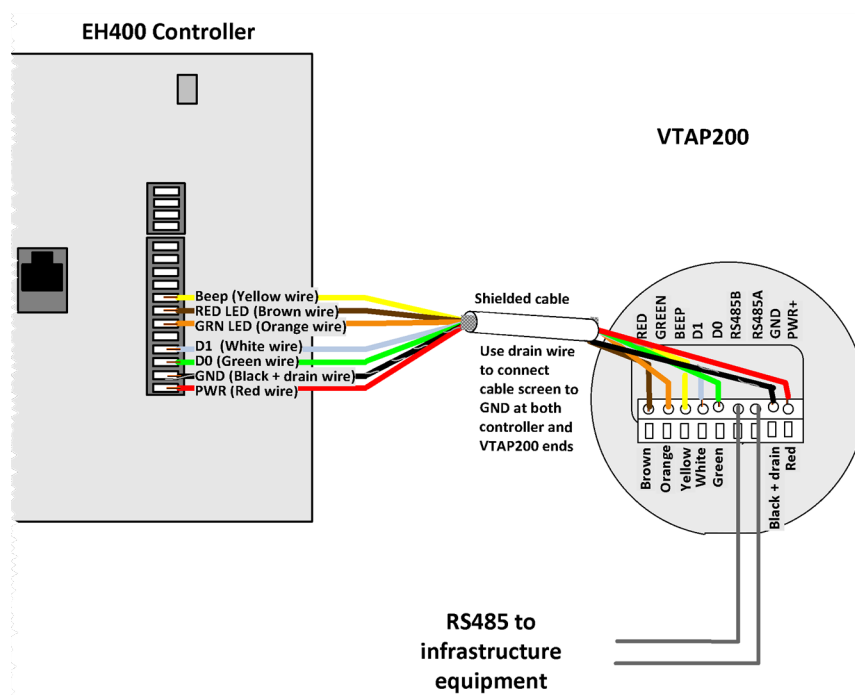
Figure 5-2 Wiegand connection between VTAP200 and EH400 access controller (for example)

EH400 Controller Signal Name (for example)	Wire colour (typical)	VTAP200 Signal Name (v2 rev2 hardware)
PWR	Red	POWER+
GND	Black	GND
N/A	-	RS485A
N/A	-	RS485B
D0	Green	D0
D1	White	D1
Beep	Yellow	BEEP
GRN LED	Orange	GREEN
RED LED	Brown	RED

6   Disposal

For safety and sustainability, it is the responsibility of the integrator to ensure that when equipment containing a VTAP200 reaches the end of its life, it is recycled in accordance with WEEE Regulations within the EU.

VTAP200 (PCB and cables) should not be disposed of in general waste. If you wish to discard electrical and electronic equipment (EEE), please contact your supplier for further information.