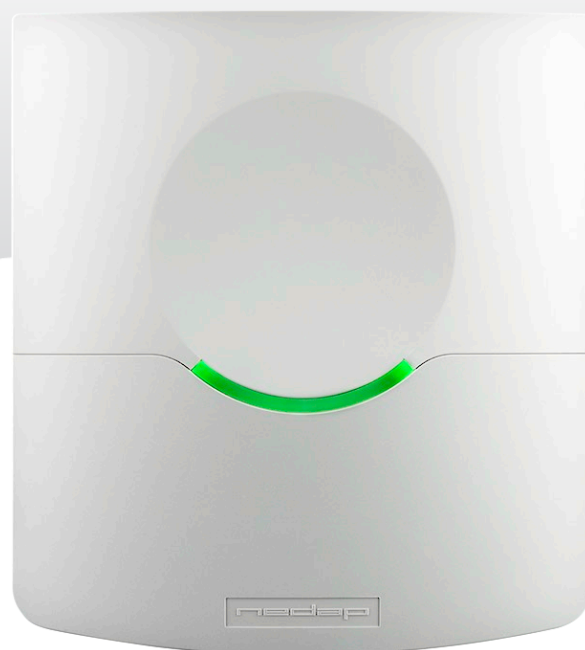


uPASS Reach

quick reference guide

2020-04-08 | v4.03 | Doc. no. 5276896



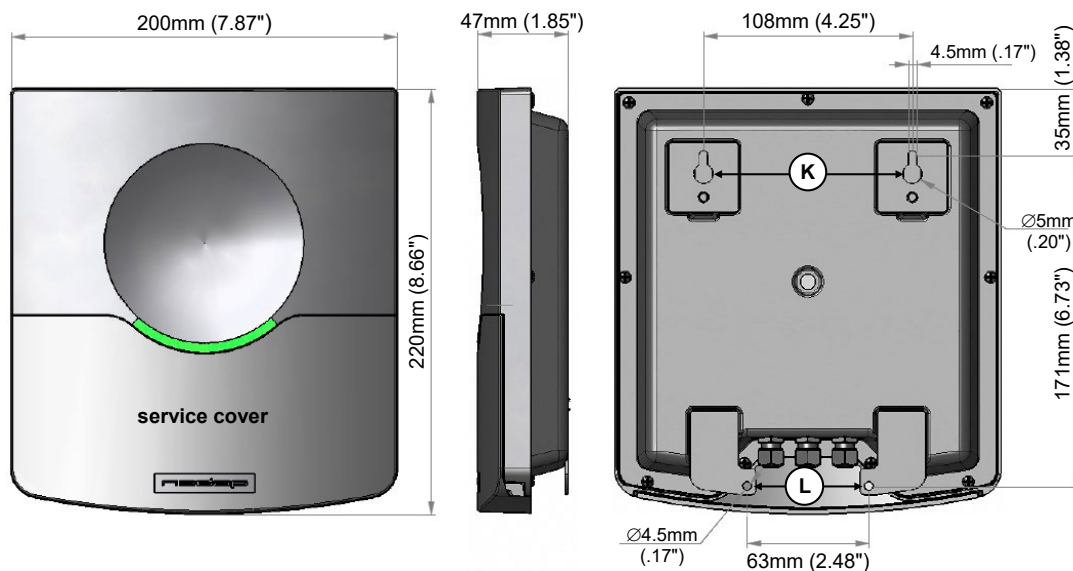
Safety precautions

The following safety precautions should be observed during normal use, service and repair.

- All shields of the mandatory shielded cable shall be connected with safety ground.
- The uPASS Reach may only be installed and serviced by qualified service personnel.
- Disconnect the power supply before removing or installing any parts.
- To be sure of safety, do not modify or add anything to the uPASS Reach other than mentioned in this installation guide or indicated by NEDAP N.V.

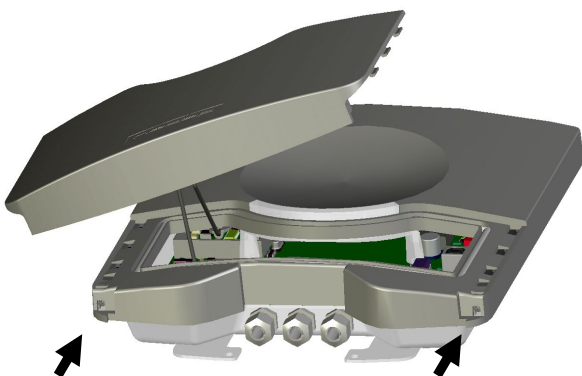
Mounting instruction

The uPASS Reach can be mounted to any surface, including directly to metal. Locate an appropriate position. Use the upper two keyholes (K) to mount the reader. Open the service cover to secure the reader using the two lower mounting positions (L). See the picture below for details about the dimensions and the locations of the mounting positions.



Opening the service cover

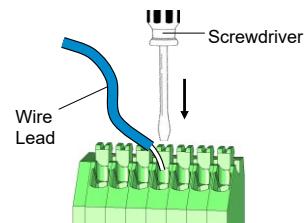
The service cover can be opened to access the connections (including the USB connector) and view the LED indicators. Open the screws on the bottom of the device to unlock the service cover. Once the service cover is unlocked, lift it off. Make sure the screws are completely opened (and closed when placing the cover back on).



Connections

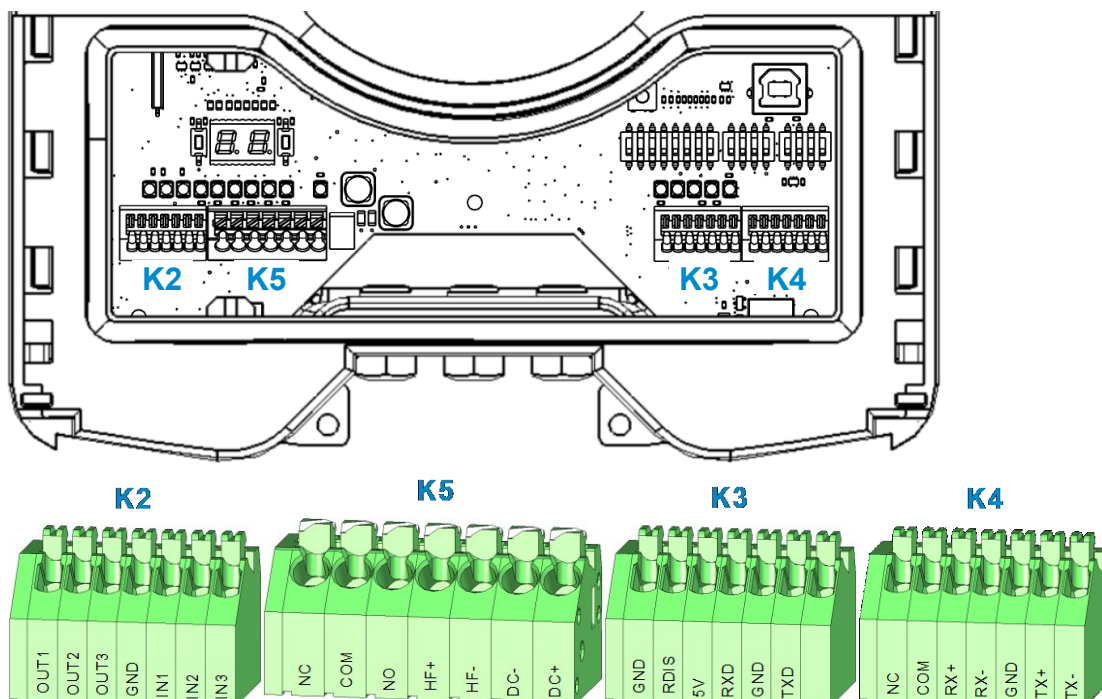
Connection procedure with spring cage terminal connectors.

1. Strip wire lead for about 9 mm (0.35 inch).
2. Push the screwdriver straight down to release the spring cage. Use a slotted, narrow-head screwdriver.
3. Insert the wire lead into the wire terminal.
4. Remove the screwdriver, this clamps the wire.
5. Gently pull on the installed wire to make sure the connection is reliable



Notes

- Shielded cable shall be used for all connections including the DC-supply connection.
- Each connector terminal can accommodate only 1 solid or stranded wire.
- Wiring is normally done without ferrules. When using ferrules, ensure they are properly crimped.



Power supply

The uPASS reader requires DC power supply in the range from 12 – 24V.

Maximum current consumption is 1A @ 12VDC, 0.5A @ 24VDC.

Connections

K5 DC-	Power supply 0V.
K5 DC+	Power supply 12 - 24VDC.

Wiegand / magstripe connection

Connections

K2 OUT1
K2 OUT2
K2 OUT3
K2 GND

Wiegand

-
Data-0 (green)
Data-1 (white)
Ground (black)

Magstripe

CLS: Card loaded
RCP: Clock
RDP: Data
GND: Ground

OSDP

OSDP_OUT output #1
OSDP_OUT output #2
OSDP_OUT output #3
GND: Ground

RS232 connection

SW1-2 ON = RS232.

Connections

K3 RXD	Receive data (input)
K3 GND	Ground
K3 TXD	Transmit data (output)

RS422 connection

SW1-2 OFF = RS422-485.

SW4-1 OFF = RS422.

Connections

K4 RX+	Receive line (positive)
K4 RX-	Receive line (negative)
K4 GND	Ground
K4 TX+	Transmission line (positive)
K4 TX-	Transmission line (negative)

RS485 connection

RS485 interface. Only uPASS Reach model 2020.

SW1-2 OFF = RS422-485.

SW4-1 ON = RS485.

SW4-2 ON/OFF = termination resistor enable/disable.

Connections

K4 RX+	RS485 B (positive)
K4 RX-	RS485 A (negative)
K4 GND	Ground
K4 TX+	RS485 B (positive)
K4 TX-	RS485 A (negative)

Warning: while the USB cable is connected, the RS232, RS422 and RS485 interfaces are disabled!

Relay output

The relay output is automatically activated upon identification of a tag.

In OSDP operation, the relay output is set with command OSDP_OUT output #0.

Connections

K5 NC	Relay contact normally closed
K5 COM	Relay contact common
K5 NO	Relay contact normally open

Contact ratings

Max. switching current	2 A
Max. switching voltage	24 VDC
Max. switching power	50 W

Read disable input

The reading of the uPASS Reach can (optionally) be disabled with the RDIS input. This input is commonly used in combination with a sensor (e.g. inductive loop) that detects the presence of a vehicle. A potential-free contact (relay) should be used to activate this input and disable the reading.

Connections

K3 RDIS	Read disable input
K5 5V	Internal 5V source for read disable input

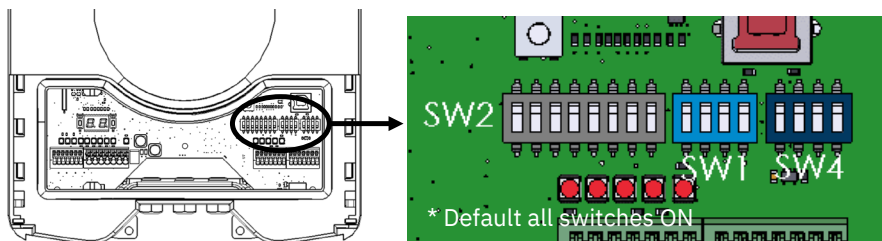
Warning: using an external voltage supply can damage the unit!

DIP-switches

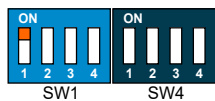
SW2 (1-8): TRANSIT compatible mode settings. Refer to the TRANSIT firmware manual for details.

SW1 (1-4): Hardware settings. Described below.

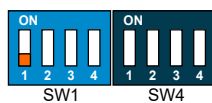
SW4 (1-4): Hardware settings. Only uPASS Reach model 2020. Described below.



uPASS Standard mode (*)

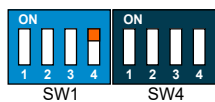


TRANSIT compatible mode

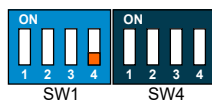


Requires NEDAP-XS formatted tags

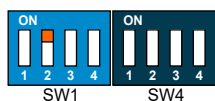
Buzzer enabled (*)



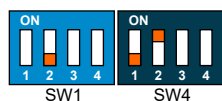
Buzzer disabled



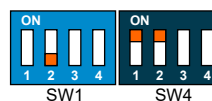
RS232 (*)



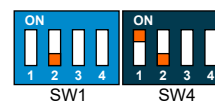
RS422



RS485 (terminated)

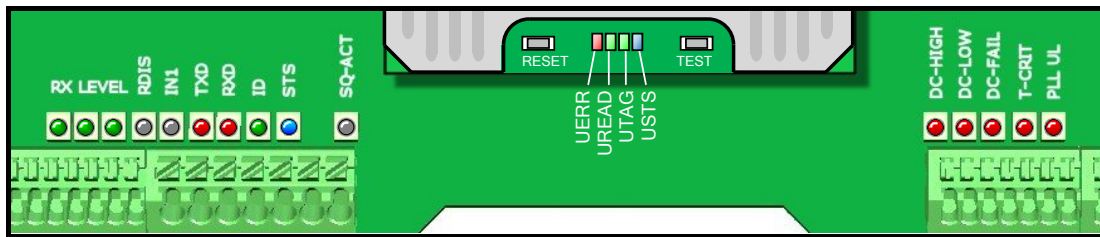


RS485 (not terminated)



LED indications

A number of LED's indicate the current status of the uPASS Reach reader.



The table below describes the function of each LED.

Led	Description
	LED bar indicating the received tag signal strength. This LED bar may also indicate the presence of radio interference. In case of interference, try switching to a different frequency.
RX	
LEVEL	
RDIS	Read Disable LED. On while reading disabled.
IN1	Input 1 status. On when input 1 contact is closed.
TXD	Transmit serial data.
RXD	Receive serial data.
ID	TRANSIT compatible processor ID LED. Blinks when a tag is identified.
STS	TRANSIT compatible processor status LED.
SQ-ACT	Squelch active. When squelch is enabled and the transponder return signal below threshold level.
DC-HI	Power supply voltage too high.
DC-LO	Power supply voltage too low.
DC-FAIL	Internal supply voltage failure.
T-CRIT	Temperature critically high.
PLL UL	PLL unlocked. Error indication only. No direct hardware action implemented.
USTS	UHF processor status LED. Should be slowly blinking. On when bootloader invoked.
UTAG	Tag found. RN16 received.
UREAD	Tag data read complete. On when bootloader invoked.
UERR	Error during tag identification.