neat

User Manual

D-POS II

English

Hereby NEAT Electronics AB declares that the radio equipment type D-POS II is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address:

http://www.neat-group.com/downloads/documentation

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1 Important

1.1 Safety notes

- Read instructions prior to use.
- Always test the system per instructions prior to use.
- The product may not be suitable for all persons.
- Check device regularly and replace when necessary.
- Always check the function of the product after making adjustments.
- Our units are NOT intended for any life support device, thus intending a device whose malfunction may result in damage to a life.

1.2 Use

- Use only original parts.
- Do not expose to direct sunlight.
- Keep away from dust, moist and dirt.
- Do not drop, knock, twist or shake the device.
- Do not warm up the device or use it near fire.
- The D-POS II may not be painted.
- For repairs, contact a NEAT dealer.

1.3 Cleaning

- Clean the device with a soft cloth, dampened slightly with mild soapy water.
- Do not clean the device with harsh chemicals, solvents or other corrosive substances.

1.4 Recycling

- Dispose of properly. The worn out product must be returned to a recycling facility for proper disposal or returned to NEAT.

2   Product overview

The D-POS system is a versatile and highly customizable system for monitoring and surveillance of wardens, users, zones, doors, stairs etc. in order to create a safe, flexible and easily manageable environment for the dementia care sector.

2.1   D-POS II kit contents

The list below shows the included parts in the package. If any part is missing or is defect, please contact your reseller or distributor.
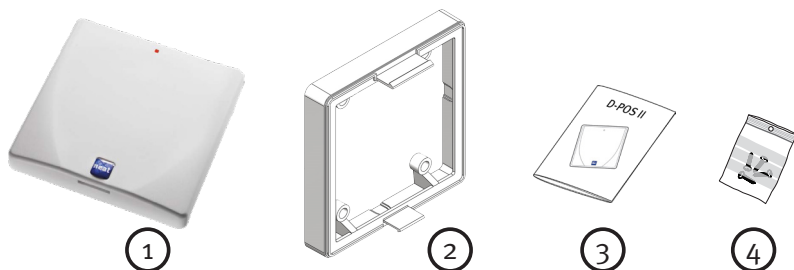
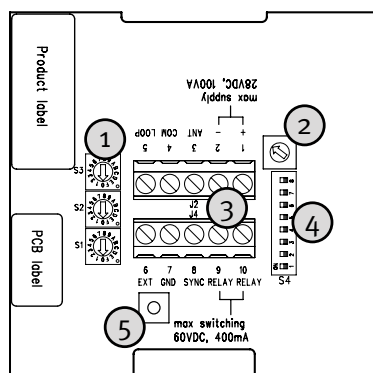| #	Denomination	#	Denomination
1	1 x D-POS II unit	3	User manual
2	Mounting frame, 13 mm	4	Zip lock bag with 2 screws

1 x AC (Not displayed)*

* AC adaptor depending on your country/region, see Table 7.

2.2   Hardware overview

#	Denomination
1	Rotary switches, S1-S3
2	Potentiometer, P1
3	Connectors, J2 & J4
4	DIP switches, DIP1 - DIP8
5	Radio button, B1

Table 1. Unit PCB overview

3 Installation

D-POS II is designed to be installed either on a wall (with the supplied 13 mm mounting socket) or in a junction box with cc 60 mm using an optional 1 mm mounting socket.

Connect the power input to screw terminals #1 & #2.

Only use AC/DC adaptor provided by NEAT, see Table 7 or use 12-24 V_{DC} as central power supply. The central power supply must be limited to supply maximum 36 VA.

To adjust the rotary switches and potentiometers we recommend a flat screwdriver with a 2.4 x 0.5 mm blade. Use max. 10 meters of cable with cable area 0.4 mm² or more (AWG 21) for ferrite and loop antennas.

D-POS II and its corresponding parts must be installed by a professional fitter.

3.1 Configuration with DIP switches DIP 1 - DIP 8

The DIP switches DIP1 - DIP8 configures some parameters in the D-POS II. The table below displays the functions for a particular DIP switch.


Picture 1. PCB DIP Switches

Text	Function	On	Off
DIP1	Configuration	Computer	DIP switches
DIP2	Not used	N/A	N/A
DIP3	External input mode	Normally closed	Normally open
DIP4	External input function	Antenna	Radio alarm
DIP5	Relay output source	Tamper	Radio received
DIP6	Send radio alarm at tamper	Yes	No
DIP7	Power level, see 3.8	High	Low
DIP8	Walk test mode on/off	Active	Not active

Table 2. DIP Switches (S4) functions

Max cable length LOOP: 10 meters with cable area >0.4 mm² (AWG 21).

3.2 Connectors
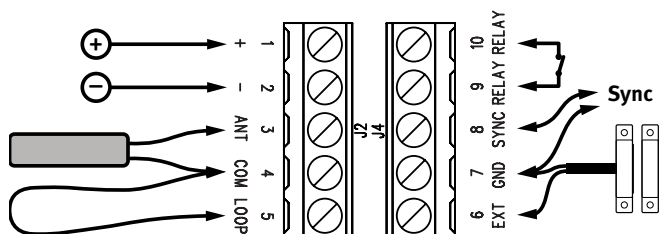
Picture 2. Connector J2 & J4 contacts

	#	Text	Function
	1	+	Source power, 10-28V_{DC}
	2	-	Source power, Ground
J2	3	ANT*	A ferrite antenna should be connected between ANT and COM
	4	COM	Common ground for ferrite- and loop antenna
	5	LOOP*	A loop should be connected between LOOP and COM
	6	EXT	External activation (DOOR magnetic contact depicted as example)
	7	GND	Common ground for SYNC and EXT
J4	8	SYNC	Synchronization of two D-POS units
	9	RELAY	Galvanic isolated relay output
	10	RELAY	Galvanic isolated relay output

Table 3. Connectors J2 & J4 functions

* Only one of either a D-POS Antenna OR a LOOP antenna must be connected!

Only use D-POS ANT (NEAT Ferrite Antenna), art#: NE31 07030-01.

3.3 Tamper switch

The unit is equipped with a tamper switch to alert if the unit is opened.

3.4 Relay

This relay output is closed under normal operation and is opened if any or all of the following occurs:

• The unit looses power

• A tamper alarm is triggered

• There is an antenna failure.

The output is open during boot up which normally

The relay output is open during boot up, which normally takes approx. 1 second and is closed when the unit has booted up and runs normally.

3.5 Setting position ID code

Each D-POS unit must be identified with a unique code and is composed as the hexadecimal value "00S1S2" (Zero ZeroS1S2), where 000000 (six zeroes) is forbidden. With the on-board rotary switches S1 and S2 it is possible to assign one of 254 valid position ID codes.

To set position ID codes and zone ID DIP 1 must be set to OFF.

Example: Setting S1 to "7" and S2 to "B" gives the position ID code 007B (ZeroZero07B).

3.6 Setting zone ID

Each D-POS unit must be configured to belong to one of 16 zones: 0-F (hexadecimal) and this is determined by rotary switch S3.

3.7 LED Indication

During normal operation the LED is lit green and when the D-POS II unit is powered up the LED flashes (0.1s On/0.1s Off) yellow twice.

LED Colour	Function
Red	Radio transmission in progress.
Green (2.0s on+1.0 off)	Acknowledgment received.
Red flash (0.5s on/0.5s off)	Tamper or antenna failure.
Red	Relay active due to received radio message.
Green	Normal operation (RFID is emitted).
Off	Waiting for external activation.

Table 4. D-POS II LED indications

3.8 Antenna range adjustment

The antenna range can be tuned by adjusting the antenna power field. This is done by setting DIP7 to **On** (high power) or **OFF** (low power) in combination with the potentionmeter P1 where clockwise rotation increases field power.
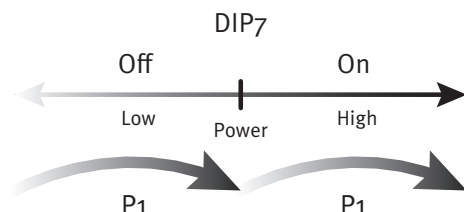
Picture 3. Antenna power adjustment with DIP7 and potentionemeter P1

3.9 Enter transmitters

D-POS II can work as a radio receiver. Adding radio transmitters is done by using button **B1**.

3.9.1 Program a radio transmitter id code

1. Press the button **B1**
2. After 3 seconds the LED starts flashing red (150ms on/400ms off) every 2 seconds according to below where the number of flashes corresponds to a radio position, e.g. 3 flashes equals radio position 3:

1 flash - 2 flash - 3 flash - 4 flash - 5 flash - 6 flash - 7 flash - 8 flash - 1 flash - ...

3. Release the button **B1** at the desired radio position.
4. Activate the radio transmitter.
5. If the radio code is successfully received, D-POS II flashing green rapidly for 2 seconds whereafter the unit returns to normal mode.

3.9.2 Erase a radio transmitter Id code

Follow steps 1-3 in "Program a radio transmitter id code" above.

After releasing the button **B1** at the desired radio position, press button **B1** for more than 3 seconds. The deletion is indicated by the LED flashing green rapidly for 2 seconds whereafter the unit returns to normal mode.

3.10 Synchronization

It is possible to synchronize D-POS units in order to avoid that they interfere with each other. This is done by connecting GND (screw terminal 7) and SYNC (screw terminal 8) on one unit to the corresponding screw terminals on the other unit.

It is possible to synchronize the unit with an old D-POS unit and up to three units can be connected for synchronization.
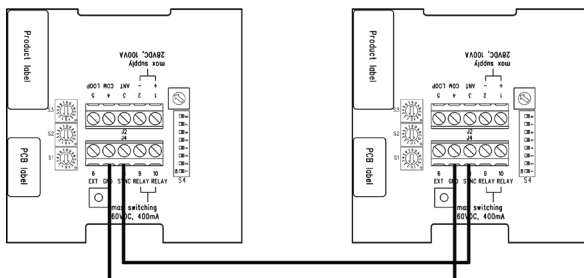
Picture 4. D-POS II synchronization connection

3.11 Walk test mode

To verify the size of the RFID field a walk test mode can be activated with DIP8.

When a portable trigger (e.g. SMILE ID or D-ATOM) is inside the RFID field, its LED will flash once per second. The color of the LED indicates if it is configured to send an alarm when passing an RFID field with the ID code and zone number transmitted by D-POS II: red for sending an alarm, green for not.

During walk test mode the portable trigger will not make any transmission to NOVO or TREX2G etc., so do not forget to return DIP8 to OFF position when RFID field check is done.

4 Technical data

Denomination	Data
Current	12-28 V_{DC}, 1,6 A
Measures	86 x 86 x 26 mm
Weight	85 g
Frequency$_{RF}$ - EU	869.2 MHz, Social alarms
Frequency$_{RF}$ - Non EU*	866.2, 868.2, 906.2. 916.2 MHz
* According local regulations for social alarms	
Output #9, #10	
Resistance$_{max}$ (Closed)	2 Ω
Blocking voltage$_{max}$	60 V_{DC}
Load current$_{max}$	400 mA
Leakage current$_{max}$ (Open)	1 μA
Isolation voltage	1500 V_{DC}

Table 5. D-POS II technical data

D-POS II parts

Article number	Denimonation
NE10 17003-01	D-POS II Kit. Standard
NE32 11003-04	Mounting frame, 1 mm
NE32 11003-05	Mounting frame, 13 mm

Table 6. D-POS II Parts and denominations

Approved AC adaptors

Country/Region	Article number
EU except UK	NE31 17003-01 (12V_{DC}, 1.6A Eurostick)
UK	NE31 17003-02 (12V_{DC}, 1.6A UK plug)

Table 7. AC adaptors for different regions

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