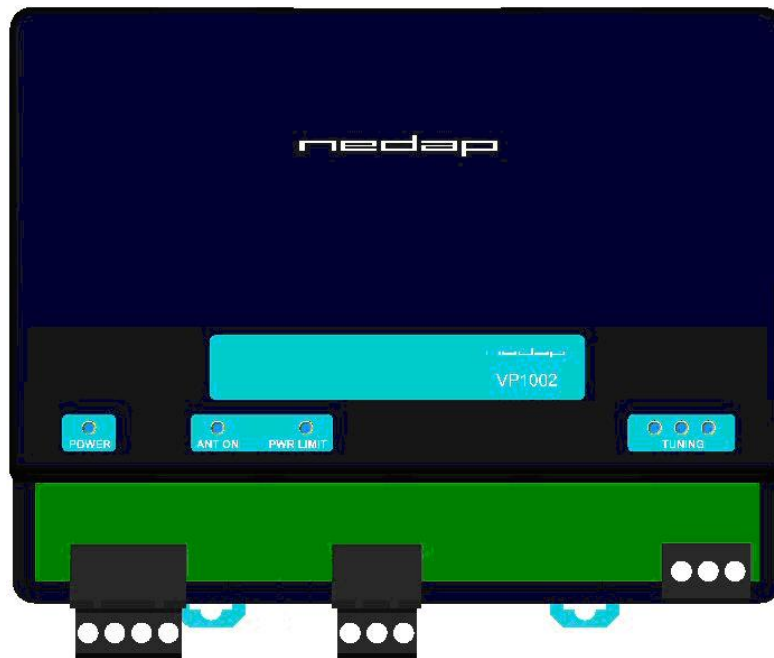


VP1002

ISO-Booster



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VP1002

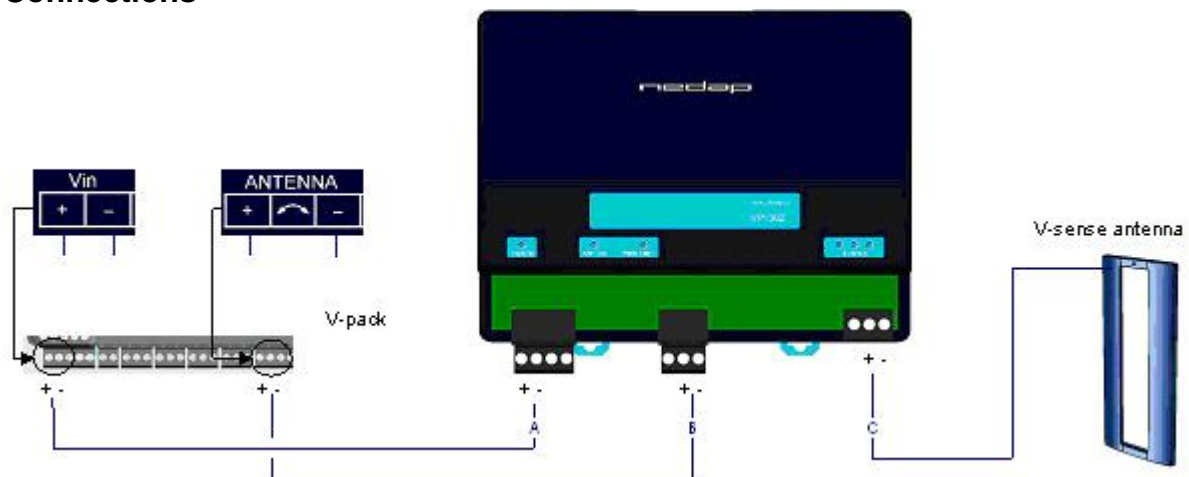
ISO-Booster

General

The ISO Booster or VP1002 is used for improving reading distance of antennas specially in case of using small (ear) tags. The ISO Booster must be connected to a V-pack with identification.

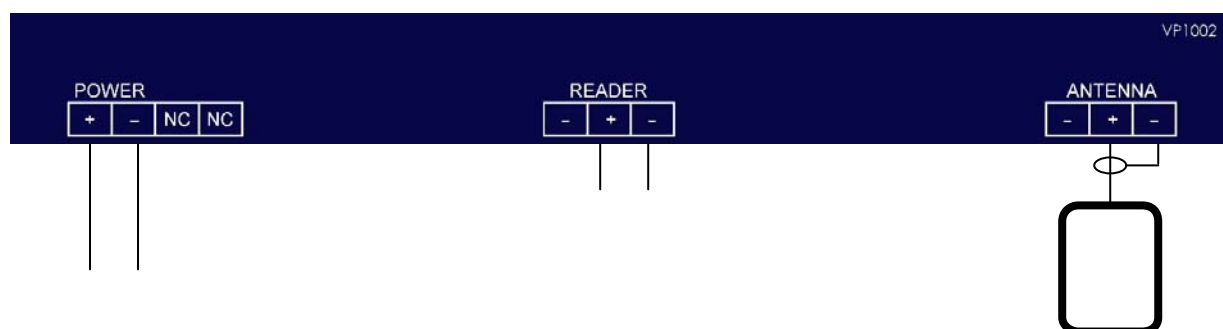
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Connections



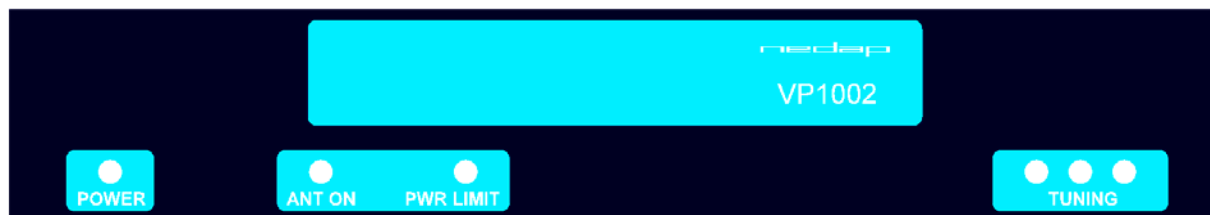
Cable specifications

- A Min. 0.5 mm² L.max 20m
- B Coax RG 58 L.max 100m. Shield connected to minus.
- C Coax RG 58 L.max 100m. Shield connected to minus.



POWER	+	Input voltage from V-pack 24 VDC, +20% -20%
	-	Minus of V-pack
READER	-	Not used
	+	To antenna input of V-pack
	-	To minus of antenna input from V-pack (shield of coax cable)
ANTENNA	-	Not used
	+	Antenna
	-	Antenna minus (shield of coax cable)

LED indicators



POWER	<ul style="list-style-type: none"> ● ○ 	<ul style="list-style-type: none"> Green on Off 	<ul style="list-style-type: none"> Power on No power
ANT ON	<ul style="list-style-type: none"> ● ○ 	<ul style="list-style-type: none"> Blue Off 	<ul style="list-style-type: none"> Antenna switch on by connected V-pack Antenna switch off by connected V-pack
PWR LIMIT	<ul style="list-style-type: none"> ● ○ 	<ul style="list-style-type: none"> Red on Off 	<ul style="list-style-type: none"> Antenna power to high, safety circuit activated Antenna power ok
TUNING	<ul style="list-style-type: none"> ○ ● ○ ● ○ ○ ○ ○ ● ● ○ ● ○ ○ ○ 	<ul style="list-style-type: none"> Green on Green blinking Red on Red on Red blinking All off 	<ul style="list-style-type: none"> Antenna adjustment ok Antenna ok and tag identified Antenna not tuned correctly, turn the screw "in" Antenna not tuned correctly, turn the screw "out" Antenna error / not connected Antenna switch off by the software

Adjustment of the VP1002

The adjustment consists of 2 steps.

1. Tuning the antenna
2. Set the antenna power level

Step 1 : Tuning the antenna

The antenna must be ON for tuning. Check the ANT ON led, blue is OK. If not, set the connected V-pack in "id" mode, see manual of the concerning V-pack. Tuning is done with LT on the antenna, see manual of the concerning antenna.

Tuning sequence :

- Set the power of the connected V-pack to 50, see manual of the concerning V-pack.
- Adjust now with Lt of the antenna until the "TUNING" led on the VP1002 is green.

Step 2 : Set the antenna power level

The maximum power is set at the connected V-pack. See the manual of the V-pack for details about adjusting the power.

If power level is set to high at the connected V-pack the power limiter will be activated. The led PWR LIMIT will be on. After a delay of approximately five seconds ithe VP1002 restarts. If nothing has changed the safety circuit is triggered again until the transmitted powerlevel is lowered.

How to set the correct power level :

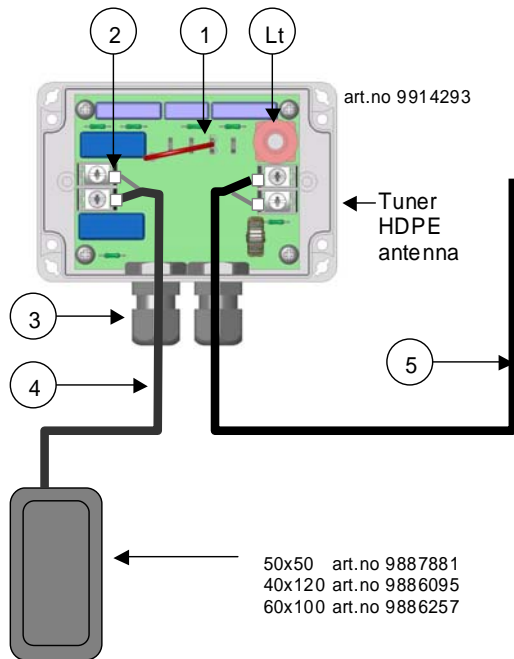
- Set power level AP at maximum 99.
- If the PWR LIMIT led is OF and the green TUNING led ON the adjustment is OK.
- If the PWR LIMIT led is ON (means safety circuit activated) the power must be lowered. Set the power level to 90 instead of 99 and check again. If this has no result, lower the power level to 80 etc.

Final check

Switch the power to the connected V-pack of and after 10 seconds on again. All red leds should be switched off.

Using a HDPE antenna instead of a V-sense antenna

To use a HDPE antenna a HDPE antenna tuner is required. The antenna is adjusted with trimmer Lt. Tuning is the same as described for a V-sense antenna.



HDPE Antenna tuner

Used to connect a HDPE antenna to a V-pack (or booster and V-pack)

1. Antenna type selection (default on 3)

When during antenna tuning the green led does not show up, set the antenna type selector on 1, 2 or 4 and try again.

2. Always use cable ferrules to connect coax
3. Install with swivels downwards
4. Standard antenna cable, do not change length of the coax antenna cable
5. To booster. Coax cable RG 58 max. length 100m

WARNING : High voltage

Do not touch with power on; switch off when changing type selection or coax cable.

Specifications VP 1002 (art.no. 9911022)

Dimensions	143 x 120 x 68 mm LxWxH (excluding mounting rail) Weight: ± 360 gr
Power	Input voltage 25 VDC, +20% -20%
Antennas	Different types possible
Detection distance	Varies per antenna
Environment	Temperature: Operating: -10 – 55 °C, Storage: -25 – 70 °C Relative humidity: 10 – 93% non condensing
IP class	IP 30. When installed in V-box IP 65 (cover and cables installed correctly !)

Cable specifications

Antenna Coax RG58. Max. Length depending on antenna type.

Always use NEDAP power supply

The Nedap guarantee-regulations are only valid when is installed as indicated in this manual.

Install data cables at a safe distance from (high) powered cables

More information

For more detailed information contact your local Nedap supplier or check the internet site.

TECHNICAL MANUAL

VP1006

OEM ISO-Reader

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VP1006

OEM ISO-Reader

General

The VP1006 is a local unit and usually installed for identification of animals for feeding, weighing, milking, heat detection etc.

The VP1006 has the following main tasks :

- Identification of tags (134.2 kHz FDX/HDX)
- Controlling outputs, 6 outputs available to activate e.g. lights, motors, valves, relays
- Reading inputs, 6 inputs available for e.g. sensors, switches

Output/input 1 till 4 (I/O 1 till I/O 4) can be used to control feed motors or as normal output/input
Output/input 5 and 6 (I/O 5 till I/O 6) can only be used as output/input.

The use of feed motors or output/input must be configured in the software (see manual of the V-pu)

Following antenna types can be used :

- V-sense antennas
- EWA transformer with stainless steel antenna strip
- HDPE antenna with HDPE antenna tuner

A booster (VP1002) can be used to amplify the antenna field for high performance identification

Reference manuals :

PS0000-200PM-00 Velos general overview

VP1002-200PM-00 ISO-Booster

VP2001-200PM-00 Power supply

VP6001-200PM-00 V-sense

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.

Installation steps

1. Install all wiring
2. Switch on the power to the system
3. Check the adjustment of the antenna (green led on)
4. Check the connected equipment like lamps, motors, sensors etc. Use the display/push button menu to check the correct functioning.
5. Configure the VP1006 in the PC.

Connections

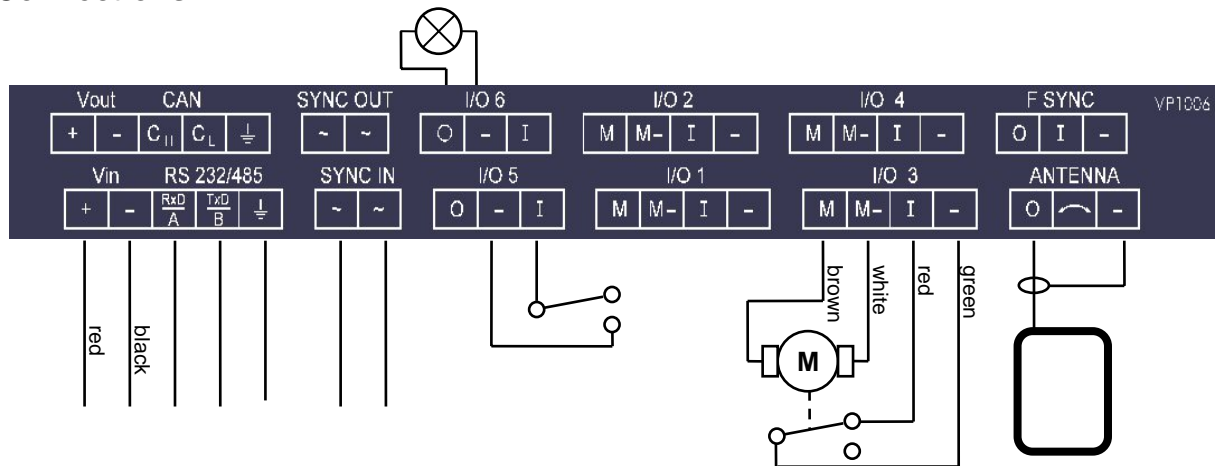
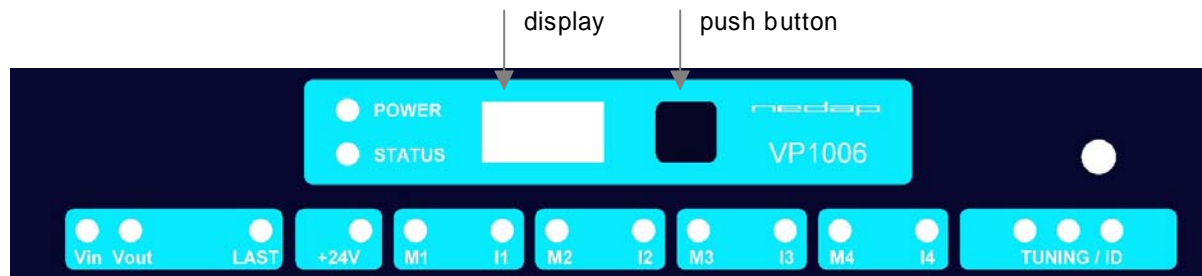


Figure above : motor, output and input is an example. Configuration is depending on the used behaviour components. Use display menu and push button to check and configure.

Vin	+	Power
	-	Minus
RS232 / 485	RxD / A	Data receive
	TxD / B	Data send
	\perp	Minus of RS232 / 485
SYNC	~	Synchronisation for HDX, AC (no plus or minus, cable must be twisted pair)
	~	See above
I/O 1 .. 4	M	Motor output or normal output max 3A
	M-	Minus for motor output or normal output
	I	Input of motor or normal input
I/O 5 .. 6	-	Minus for motor input or normal input
	O	Output max 3A
	-	Minus for output (O) and minus input (I)
ANTENNA	I	Input
	+	Antenna with external adjustment (adjustment not on this V-pack)
	\frown	Antenna with no adjustment, adjustment on this V-pack
F SYNC	-	Antenna minus (shield of coax cable)
	-	Frequency synchronisation (not used yet)

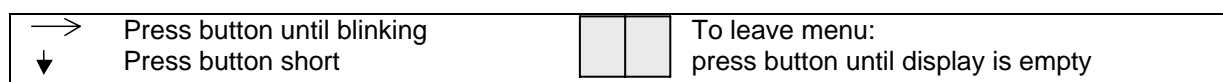
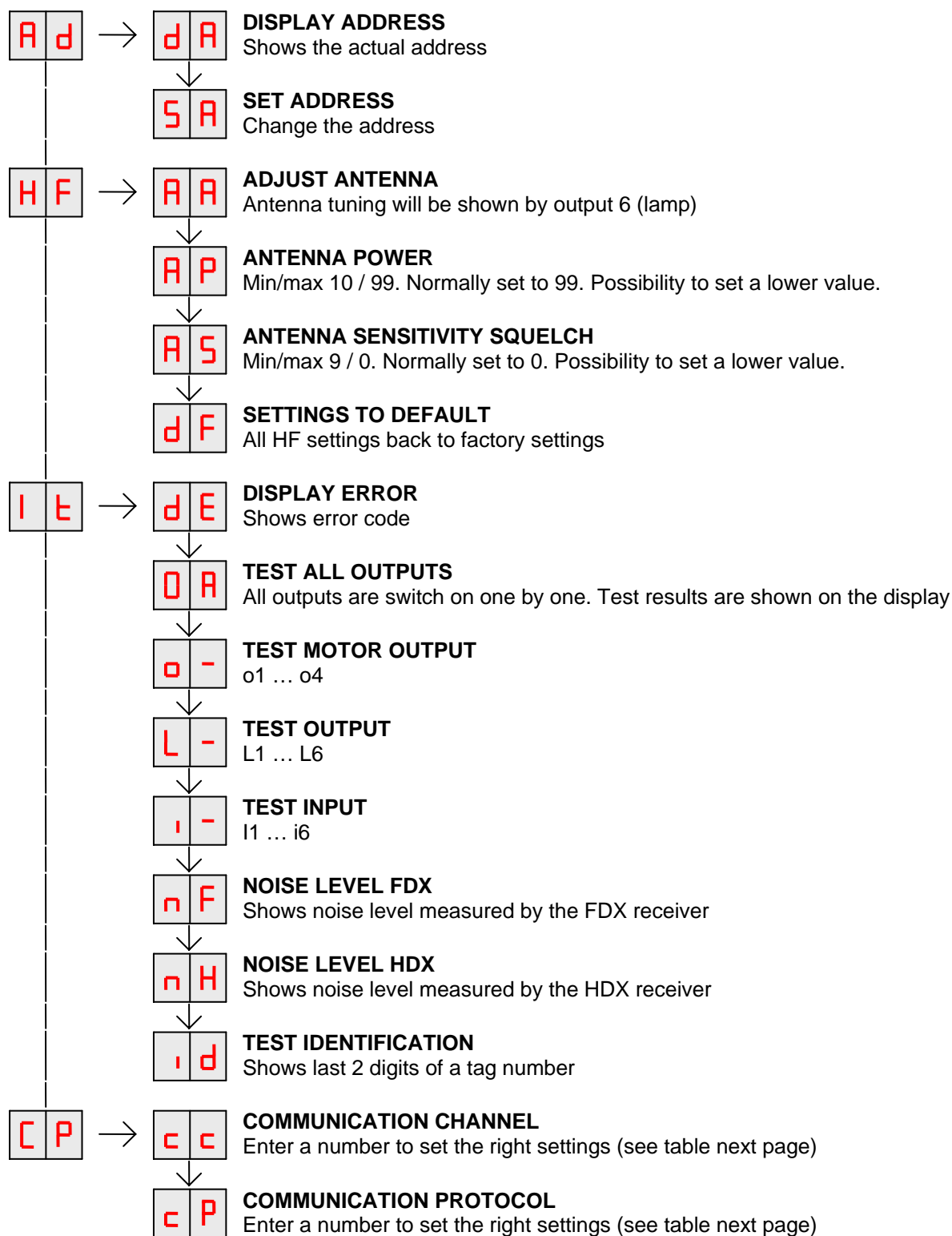
IMPORTANT : Use fuse 3.15A T between power supply and Vin of the VP1006

LED indicators VP1006



POWER	●	Green on	Power on
	○	off	No power
STATUS	●	Blue	
	○	Slow blinking	Operating ok
	○	Very fast blinking	Service mode activ
	○	Fast blinking	Downloading or error during download
	○	1 short flash	V-pack not coupled
	○	2 short flashes	Firmware present but not activ
	○	3 short flashes	No firmware present
	○	Address indicated	No communication
Display	on		Communication status ok
	off		
V in	●	Green on	Power on
	○	off	No power
	●	Orange	Low power
	○	Orange blinking	Wrong power connection, in – out changed
V out	●	Red	Error
	○	Green on	Power on
	○	off	No power
	○	Orange blinking	Low power
LAST	●	Red blinking	Error
	○	Green on	V-pack is last one on the CAN-bus
	○	off	Status ok
	○	Orange blinking	CAN-bus error and last V-pack on CAN-bus
	○	Red	Not used
	○	Red blinking	Not used
+24V	●	Green on	24V output switched on
	○	off	Output switched off
M1 .. M4	●	Green on	Output on
	○	off	Output off
	○	Red blinking	Output error
I1 .. I4	●	Green on	Input on
	○	off	Input off
TUNING /ID	○ ● ○	Green on	Antenna ok
	○ ● ○	Green blinking	Antenna ok and tag identified
	● ○ ○	Red on	Antenna out of range
	○ ○ ●	Red on	Antenna out of range
	● ○ ●	Red blinking	Antenna error / not connected

Display menu



CP-menu communication possibilities

RS232 with Nedap extened protocol

	C	C		C	P
RS232	20		Nedap extened protocol 2400 Baud	21	
			Nedap extened protocol 9600 Baud	22	
			Nedap extened protocol 19200 Baud	23	
			Nedap extened protocol 38400 Baud	24	

RS485 with Nedap extened protocol

	C	C		C	P
RS485	Bias off - no. of breaks 0	40	Nedap extened protocol 2400 Baud	21	
RS485	Bias on - no. of breaks 0	41	Nedap extened protocol 9600 Baud	22	
RS485	Bias off - no. of breaks 2	42	Nedap extened protocol 19200 Baud	23	
RS485	Bias on - no. of breaks 2	43	Nedap extened protocol 38400 Baud	24	
RS485	Bias off - no. of breaks 4	44			
RS485	Bias on - no. of breaks 4	45			
RS485	Bias off - no. of breaks 6	46			
RS485	Bias on - no. of breaks 6	47			
RS485	Bias off - no. of breaks 8	48			
RS485	Bias on - no. of breaks 8	49			

RS232 with Texas Instruments protocol*

	C	C		C	P
RS232	20		Texas Instruments protocol	10	

*Serie 2000 reader systems ASCII protocol, 9600 baud, 8 databits, no parity, 1 stopbit

How to use the display and push button

Scroll down	press button short
Select	press button until blinking
Change and store	select item to change, open item by pressing till blinking, change by pressing short, store by pressing to blinking
Check a setting	select the item to check, press until blinking, first value shown is actual setting
Leave without saving	press button untill display blanks
Return to main menu	anywhere in the menu, press button untill display blanks

It is possible some program states are shown during operation.

Antenna adjustments

Antenna tuning

After first time power up the antenna tuning must be checked. Check the TUNING led, green is OK and means the antenna is correctly tuned. When the green led is not ON the antenna must be tuned.

Antenna tuning :

- Turn Lt on the antenna till the green led is ON (use a plastic screw driver)

○ ● ○	Green on	Antenna tuning ok
● ○ ○	Red on	Antenna out of range, turn to the right till green led is on
○ ○ ●	Red on	Antenna out of range, turn to the left till green led is on
● ○ ●	Red on	No antenna connected or low antenna signal
○ ○ ○	All off	Antenna switch off by the software

If there is no antenna led on, software has set the antenna field off, first set the antenna in ID test mode by using the display/push button.

Antenna power

Default the antenna power is set to maximum (99) and needs no adjustments. Lowering the antenna power will reduce the reading distance of the antenna.

Check the antenna power

- The antenna power level is shown on the display in the service menu at HF option AP (Adjust Power)
- Select menu option AP (Adjust Power) on the display by using the push button next to the display
 - Push the button until the display starts to blink, a value will appear on the display
 - The value on the display is the actual power setting. 99 is the default factory setting.
 - To leave the menu without modifying the settings press the button until the display blanks (press about 4 seconds)

Modify the antenna power

- Select the actual antenna power on the display (see above check antenna power)
- Press the button shortly, the first value will change
- Press until the desired value, hold now the button until blinking
- The second digit can be changed in the same way
- When the desired value is on the display, press until the display blinks
- The next menu item AS is now indicated.
- To leave the service menu and return to normal operation, press the button until the display blanks (press about 4 seconds)

Antenna squelch

Antenna squelch is a possibility to set a threshold for the ID level of a tag. It means the antenna power is still the same, but the software will not transfer weak received tag numbers. Default the antenna squelch is set to minimum (-0). This means no threshold. Maximum is -9.

Check the antenna squelch level

The antenna squelch level is shown on the display in the service menu at HF, option AS (Adjust Squelch)

- Select menu option AS (Adjust Squelch) on the display by using the push button next to the display
- Push the button until the display starts to blink, a value will appear on the display
- The value on the display is the actual power setting. -0 is the default factory setting.
- To leave the menu without modifying the settings press the button until the display blanks (press about 4 seconds)

Modify the antenna squelch level

- Select the actual antenna squelch level on the display (see above check squelch level)
- Press the button shortly, the value will change
- Press until the desired value, hold now the button until blinking
- The next menu item "df" is now indicated.
- To leave the service menu and return to normal operation, press the button until the display blanks (press about 4 seconds)

Firm ware

A VP1006 is equipped with software to run in- and outputs, display / push button and a motor safeguard. This software is during production of the VP1006 already build-in. In case of an update it is possible to download new software thru the CAN-bus.

Specifications VP 1006 (art.no. 9915834)

Dimensions	143 x 120 x 68 mm LxWxH (excluding mounting rail) Weight: ± 360 gr
CAN	CAN-bus communication 125 kBit
Power	Input voltage 25 VDC, +20% -20% Minimal power consumption 300 mA with antenna switched on Maximum power consumption 2,5 A Protected against reverse connection power supply
Software	Downloadable thru network
Inputs	Reading inputs, analog (0-40V) and digital. Suitable for NPN and PNP sensors.
Outputs	Max. 2.5 Amp by current limiter, short-circuiting protected Motor safe-guard (after 25 sec)
Antennas	Different types possible
Detection distance	Varies per antenna
Synchronisation	Synchronisation according to ISO 11785
Environment	Temperature: Operating: -10 – 55 °C, Storage: -25 – 70 °C Relative humidity: 10 – 93% non condensing
IP class	IP 30. When installed in V-box IP 65 (cover and cables installed correctly !)

Cable specifications

CAN-bus	Power min. 1.0 mm ² CAN min. 0.34 mm ² twisted pair.
Antenna	Coax RG58. Max. length depending on antenna type.
Outputs	CE approved at cable length < 3m
Inputs	CE approved at cable length < 3m
Synchronisation	Twisted pair minimum 2x0.24mm ² . Total max. 500m

Always use a NEDAP power supply

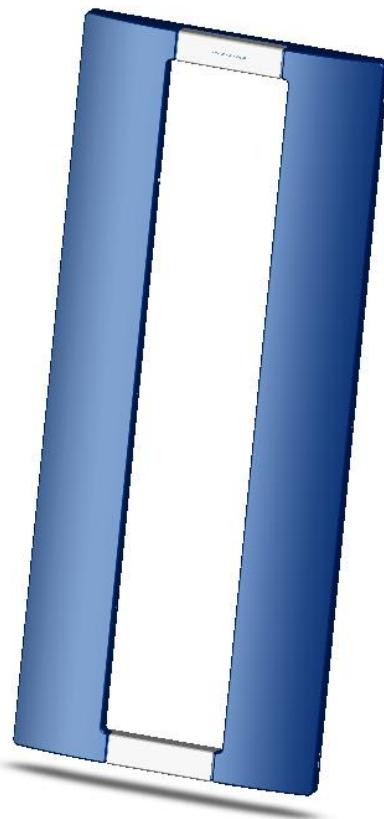
The Nedap guarantee-regulations are only valid when is installed as indicated in this manual.
Install data cables at a safe distance from (high) powered cables

More information

For more detailed information contact your local Nedap supplier or check the internet site.

VP6001

V-sense antenna



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VP6001

V-sense antenna

General

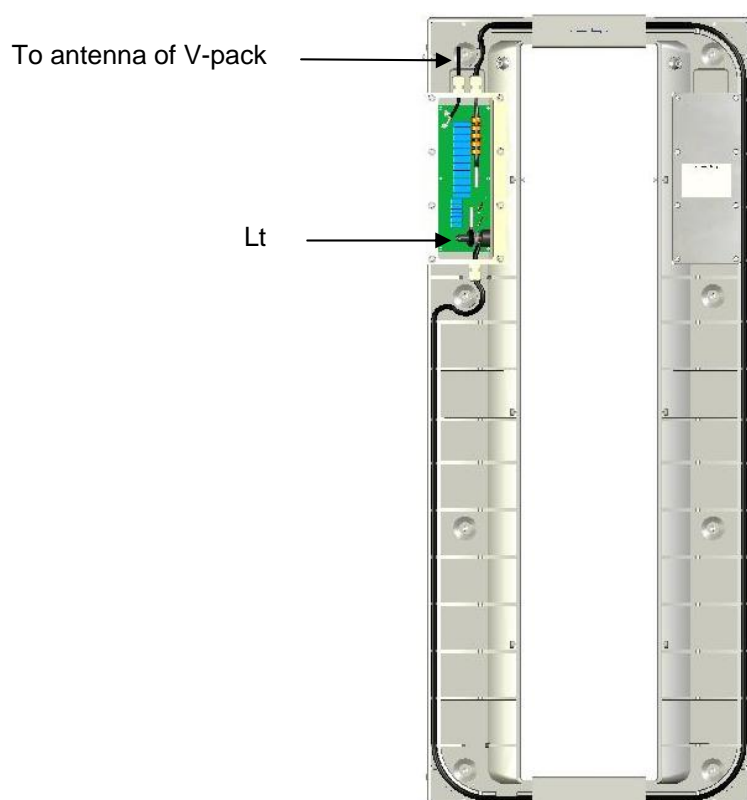
The VP6001 is used as antenna in Velos system and connected to a V-pack with identification.

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.

Connections

The VP6001 is connected to a V-pack by a coax cable, see manual of the concerning V-pack.

To open the VP6001 : remove screws at the side.



Adjustment

Tuning must be done by Lt with a plastic screw driver.
See manual of the connected V-pack for tuning instructions.