

Instruction manual

Negative Pressure Monitor

aircontrol S 1 / S 2 / S 3 (requires 2G network / GSM)



aircontrol S 2



aircontrol S 1



aircontrol S 3

Manufacturer: deconta GmbH
Im Geer 20, D - 46419 Isselburg

Description / Type No.:	aircontrol S 1	Type 480
	aircontrol S 2	Type 481
	aircontrol S 3	Type 522

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1 Introduction

Thank you for selecting a **deconta** product.

With this device you obtain a practical solution with simple operation, which was completed in a compact and functional way.

The **deconta** products guarantee:

- Stability, long life and serviceability on site
- Mechanics with „kick“
- Pleasing design

The copyright of this instruction manual remains with **deconta**. This manual is intended for assembly, operation and maintenance personnel. It contains instructions and drafts of technical nature which may neither be distributed nor used in any unauthorised way for competitive purposes or passed on to others.

For more information, please visit our website www.deconta.com

2 Basic safety advice

The handling of the appliance technology is only allowed for instructed staff. The exact knowledge of the instruction manual is an important condition for your staff in regard to the handling of the machine.

2.1 Intended use

As an operator, you are obliged by **deconta** to follow the instruction manual and to use this engineered technology equipment only in accordance with the regulations and its suitability! In the event of non-observance, **deconta** assumes no liability.

2.2 Operation

In order to ensure the safety during the operation of the device, the following must be observed:

- Do not place in an explosive area
- Necessary repairs, maintenance and cleaning, in particular in the field of electrical equipment has to be realized only by qualified staff
- The safety and protective equipment has to be kept in perfect functioning.
- Attached safety instructions have to be kept in a readable state and have to be followed.

In order to ensure safety, any changes to the machine are prohibited.

ATTENTION!

The device is not suitable for the use in a condensed, corrosive, flammable and explosive compartment air. The ambient and medium air temperature must be situated in a sector from -10 up to+50°C

Protect against moisture!

3 Transport

3.1. Delivery

Unless agreed otherwise, the lock system is packed completely and securely for transport by deconta. Transport damages have to be documented at once during the handing over of the carrier or another supplier. Please note the possible damages additionally on the way bill. To avoid damages caused by improper handling or carelessness, it is common practice to handle the Transport with care.

3.2 Transport

In order to protect the device during the transport, it is located in a transport box. Care must be taken to ensure the device is not exposed to impacts or blows, because otherwise the function and safety of the device cannot be guaranteed.

4 Scope of delivery

If no other agreements have been made, the scope of delivery of a negative pressure control device consists of:

- Portable set
- Power cable (only aircontrol S 1)
- Short description
- Instruction manual

5 Technical description

The **aircontrol S** is designed to measure, document and react to alarm conditions in regard to the Negative Pressure Monitoring.

The devices can be equipped with individual extension modules according to customer requirements.

There are 3 different versions available. **aircontrol S 1** offers space for 4 extension modules, **aircontrol S 2** offers space for 10 extension modules, **aircontrol S 3** offers space for 5 extension modules and is provided with an additional automatic telephone device (Telealarm GSM), to initiate an alarm via the mobile phone network, as well as with integrated connectible sockets for Standby-units.

For the calibration or service it is sufficient to change the concerned modules.

Thanks to the combination of an easy operation and high flexibility the **aircontrol S** represents a powerful and future-proof measuring device for your site.

6 Technical data

6.1 Technical data

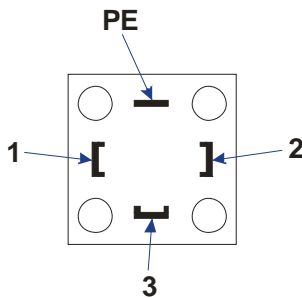
	S 1	S 2	S 3
Measurements in mm (L x W x H)	305 x 350 x 177	475 x 350 x 177	495 x 350 x 187
Weight	5,5 kg	7,9 kg	8,4 kg
Power connection	230 V / 16 A	230 V / 16 A	230 V / 16 A
Range of measurement	0 - 100 Pa	0 - 100 Pa	0 - 100 Pa
Pressure resistance Load cell	max. 0,25 bar	max. 0,25 bar	max. 0,25 bar
Occupied extension slots	1	1	1
Free extension slots	4	10	5

6.2 Basic equipment and upgrades

	S 1	S 2	S 3	
Powder coated lockable housing	✓	✓	✓	
Large display with light	✓	✓	✓	
Keyboard vandal-proof	✓	✓	✓	
Dry alarm contact (e.g. for external Telealarm GSM)	✓	✓	✗	
Alarm plug 230 V / 16 A	✗	✓	✓	
Connectible socket 230 / 16 A for Standby-units	✗	✗	✓	
Measuring connection for tube 8 x 1 mm	✓	✓	✓	
1 piece measuring channel	✓	✓	✓	
Telealarm GSM integrated	✗	✗	✓	Art.-No.
Additional measuring channels	○ (max. 4)	○ (max. 7)	○ (max. 5)	BE2324
Printer module (occupies 3 extension slots)	○	○	○	BE2326
Emergency-battery (occupies no extension slot)	✗	○	✓	BE2327
Measuring data memory module	○	○	○	BE2328

✓ = standard ○ = optional ✗ = not possible

6.3 Terminal assignment dry alarm contact (only aircontrol S 1 und S 2)



In normal condition:	contact 1 and 2 open, contact 1 and 3 closed
In alarm condition:	contact 1 und 2 closed, contact 1 and 3 open
Without main voltage:	contact 1 and 2 closed, contact 1 and 3 open

7 Initial operation

Important instructions:

- Before every use, please check the device, cable and plug for damages.
- In the event of malfunction, you have to stop the device at once and secure it. Have the malfunctions repaired immediately.
- The device and their electrical connections may not get wet or be operated in a humid environment
- The screw caps of the measuring and reference connections have to be screwed down tightly.
- The measuring tubes may not be flexed or damaged.
- Do not place the measuring tube in an area where they can be pressed together
- Do not expose the reference connection to dynamic pressure ratios (e.g.: wind)
- The device has to stand horizontally on an even surface.
- Do not expose the device in operational state to any vibrations or shocks.
- Short tube lengths shorten the response time of the measuring device.
- By measuring tube lengths over 150 m, tubes with bigger diameter should be used.
- The pressure on the measuring connections must not exceed 0,1 bar (10.000 Pa), because otherwise the device can be damaged. **Never blow inside of it, suck or impinge it with other pressures!**

Starting position:

- Connect negative pressure areas with measuring tubes to the device „connection -“
- Choose the reference measuring point and connect through measuring tube to the device „connection +“.
- Turn on the instrument

Important: Rooms adjoining to the area of operations have to be chosen as reference measuring points. A configuration of the reference measuring point can be cancelled, if the Negative Pressure Monitor is placed at the location of the reference measuring point.

Attention: Never use the Negative Pressure Monitor in the contaminated work area!

7.1 Telealarm GSM, inserting of Sim-Card (only aircontrol S 3)

If the Sim-Card is protected by a PIN-Number, this Number must be saved in the Telealarm before the Sim-Card is inserted. (Enter #20, see Code-chart).



Switch-off unit and pull power plug.

Loosen screws of protective cover and take off cover.



Press on the yellow button with a sharp-pointed object, e.g. ballpoint pen. Push out the Sim-Card-Holder and remove from slot.



Insert Sim-Card into Holder. Ensure that the chamfered corner is in the correct position.



Reinsert Sim-Card-Holder. Ensure the correct installation position of the Sim-Card-Holder.

Replace protective cover.

7.2 Standby Function (only aircontrol S 3)

The Standby Function is activated via a Code-Entry (Code-chart aircontrol, Code 60).

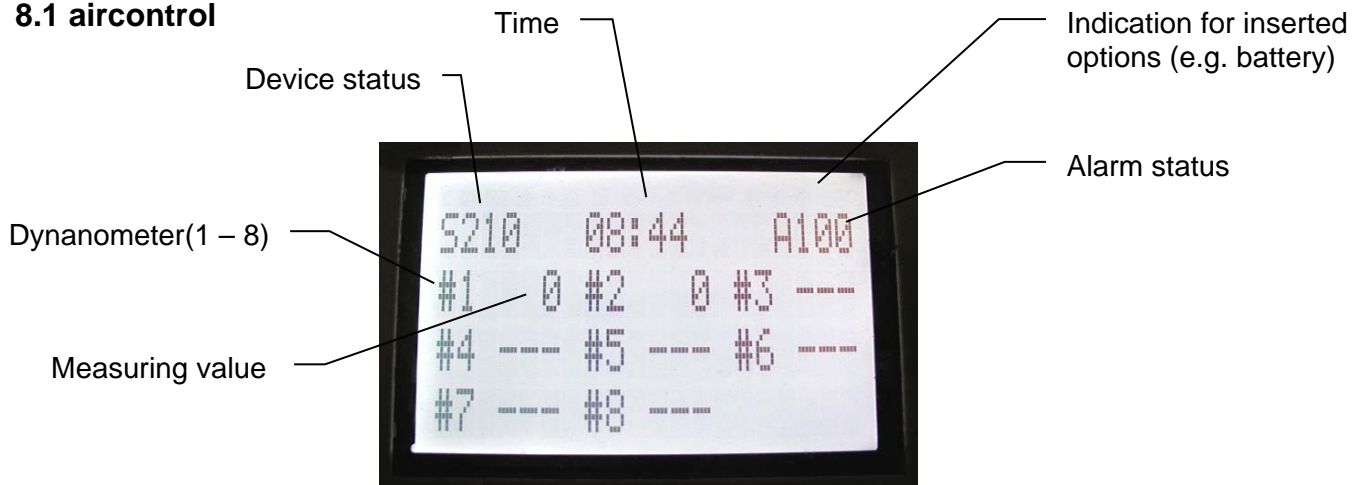
As soon as the Negative Pressure Monitor aircontrol notices a negative pressure in the removal area that is too low (constant alarm via X seconds, adjustable at aircontrol), an integrated Standby-mode is activated.

The Standby-Negative pressure unit is supplied with power by its connection to one of the blue sockets.

After the completion of the alarm the Standby-Negative pressure unit keeps on running and is switched off via a code-entry (Code-chart, aircontrol, Code 61) only after the cause of alarm is clarified and resolved.

8 Display-indication

8.1 aircontrol



After switching on the aircontrol there are 3 information displayed in the top line:

- **Top left** => device status

Possible status indications (S followed by 3 numbers):

First digit 1 to 8	Number of the present measuring channels
Second digit 1	Optional printer present
Second digit 2	Optional memory module present
Second digit 3	Printer and memory modules present
Third digit 1	Optional communication module present

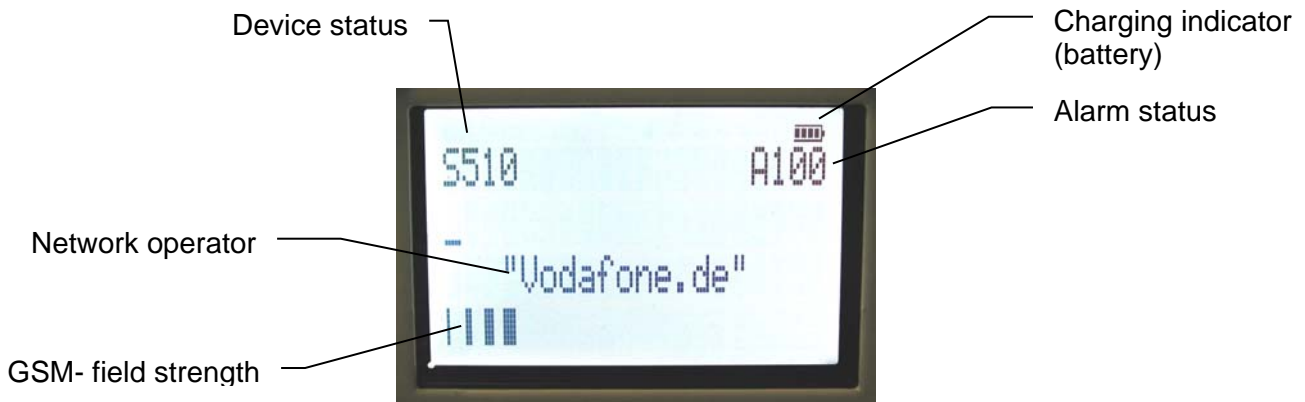
- **Top middle** => Actual time
- **Top right** => Alarm status

Possible alarm status indications:

A100	Alarm evaluation deactivated
A101	Alarm evaluation is activated, no alarm has been identified
A102	Alarm low identified, the delay time is running
103	Alarm high identified, the delay time is running
A104	External alarm identified, the delay time is running
A112	Alarm low identified, the delay time has expired
A113	Alarm high identified, the delay time has expired
A114	External alarm identified, the delay time has expired.

Underneath the top line, the dynamometer is displayed with the actual measured negative pressure values.

8.2 Telealarm (only aircontrol S 3)



After switching on the aircontrol there are 3 information displayed in the top line:

- **Top left** => Device status

Possible status indicators (S followed by 3 numbers):

S500	Sim-Card is missing
S501	Sim-Card is invalid
S502	No GSM-Network available
S503	PIN-Number is wrong
S504	GSM-Network available, but not logged in
S505	Searching for available GSM-Network
S510	home network logged in GSM-Network
S511	logged in GSM-Network, Roaming

- **Top right** => Alarm status

Possible Alarm status indicators:

A100	Alarm analysis deactivated
A101	Alarm analysis is activated, no alarm detected
A102	Alarm detected, delay time is running
A103	Delay time is expired, Call is effected
A104	Calls have been executed

- **Middle** => Name or Number of Network operator

- **Bottom left** => GSM-Field strength with 0 to 5 bars

9 Settings / Operation



Adjustments are always carried out according to the same procedure via the keypad:

- Push the key # => C will appear on the display
- Enter the code for the relevant adjustment (see following Code-chart)
- Push the key # => The actual adjusted value is indicated
- Enter a new value
- Confirm the entry with the key #

9.1 Possible adjustments / Code-chart aircontrol

Code	Function	Value
5	Activate / Inactivate Unit	0 = inactive 1 = active
11	Alarm low channel 1	0 - 290 Pa
12	Alarm low channel 2	0 - 290 Pa
13	Alarm low channel 3	0 - 290 Pa
14	Alarm low channel 4	0 - 290 Pa
15	Alarm low channel 5	0 - 290 Pa
16	Alarm low channel 6	0 - 290 Pa
17	Alarm low channel 7	0 - 290 Pa
18	Alarm low channel 8	0 - 290 Pa
21	Alarm high channel 1	0 - 300 Pa
22	Alarm high channel 2	0 - 300 Pa
23	Alarm high channel 3	0 - 300 Pa
24	Alarm high channel 4	0 - 300 Pa
25	Alarm high channel 5	0 - 300 Pa
26	Alarm high channel 6	0 - 300 Pa
27	Alarm high channel 7	0 - 300 Pa
28	Alarm high channel 8	0 - 300 Pa
30	Audible alarm signal switched off via key * for X minutes	0 - 240 minutes
31	Delayed switching alarm socket (only at S2/S3)	0 - 999 seconds
32	Delayed switching contact potential free (only at S1 / S2)	0 - 999 seconds
40	Time in hours	00 - 23
41	Time in minutes	00 - 59
42	Date day	00 - 31
43	Date month	01 - 12
44	Date year	00 - 99
50	Print out every X minutes, 0=off	0 - 240 minutes
51	Memory interval all X minutes	1 - 240 minutes
52	Number of memory data sets, which should be transferred on a USB-Stick	0 – 9998
53	Memory delete	0 = cancel 1 = delete
60	Switching status alarm socket <u>after</u> alarm (only at S 3)	0 = inactive 1 = active
61	Reset after alarm (only at S 3)	0 = Reset
62	Alarm socket manually (only at S 3)	0 = inactive 1 = active
801	Channel 1, indication of the dynamometer number and date of calibration	
802	Channel 2, indication of the dynamometer number and date of calibration	
803	Channel 3, indication of the dynamometer number and date of calibration	
804	Channel 4, indication of the dynamometer number and date of calibration	
805	Channel 5, indication of the dynamometer number and date of calibration	
806	Channel 6, indication of the dynamometer number and date of calibration	
807	Channel 7, indication of the dynamometer number and date of calibration	
808	Channel 8, indication of the dynamometer number and date of calibration	

9.2 Possible adjustments / Code-chart Telealarm (only aircontrol S 3)

Code	Function	Value
1	Recording of message (record text via microphone, max. 20 seconds)	
2	Listen to announcement	
5	Activate / inactivate unit	0 = inactive 1 = active
11	Phone number 1	
12	Phone number 2	
13	Phone number 3	
14	Phone number 4	
15	Phone number 5	
19	Delete all saved phone numbers	0 = cancel 1 = delete
20	PIN-Number of Sim-Card	4-digit
31	Delay time alarm message	0 - 999 seconds
40	Number of redials	0 - 9
41	Time in between redials	0 - 999 seconds
42	Stop dialling after receipt of call	0 = after first contact 1 = choose all numbers

Note:

To delete a recorded message, a new message without text must be recorded.

Possible approach:

- Press key #
- Enter 1
- Press key # 2x twice in succession

10 Extension modules

aircontrol S 1 offers space for 4 extension modules, **aircontrol S 2** offers space for 10 extension modules and **aircontrol S 3** offers space for 5 more extension modules.

10.1 Additional measuring channels

For the **aircontrol S 1**, 4 more measuring channels can be upgraded or managed, in addition to the existing measuring channel

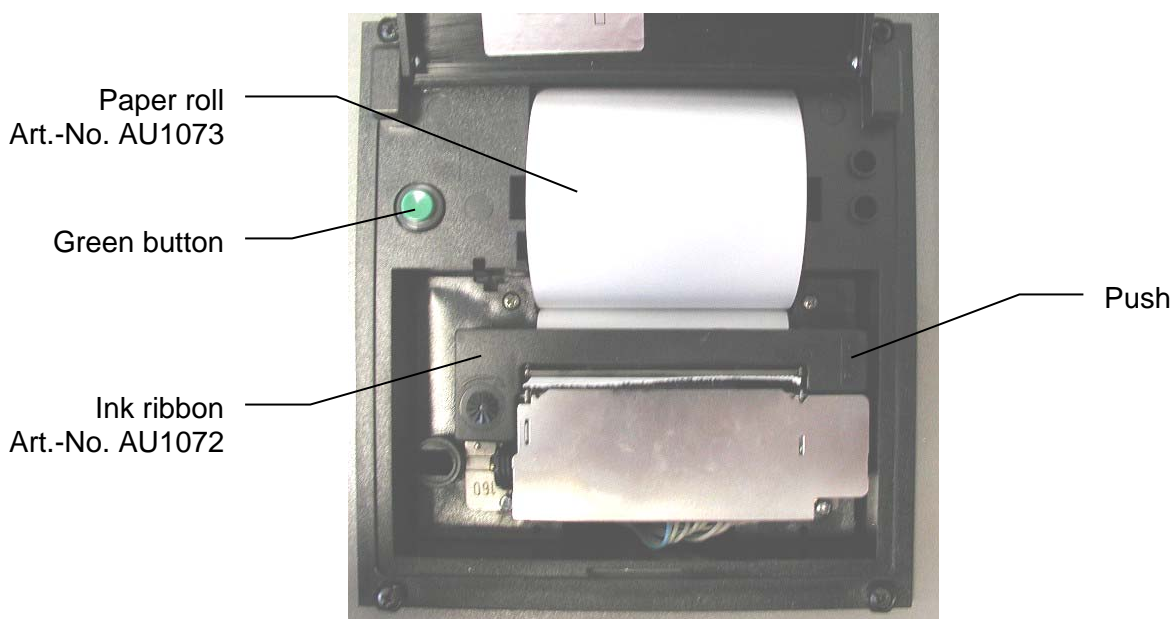
For the **aircontrol S 2**, 7 more measuring channels can be upgraded or managed, in addition to the existing measuring channel

For the **aircontrol S 3**, 5 more measuring channels can be upgraded or managed, in addition to the existing measuring channel

10.2 Printer module (occupies 3 free extension slots)

With the help of the printer module, the measuring values can be recorded and documented (archive-safe on normal paper rolls).

Change of paper and ink ribbon



Change of paper roll

- Open the black printer cover
- Pull out the empty paper roll and exchange
- Insert the bottom of the paper in the printer, at the same time press the green key

-
- When the top of the paper comes out, release the green key.
 - Insert the top of the paper through the slot of the printer cover
 - Shut the printer cover

Changing of ink ribbon:

- Cut unit from the mains
- Open printer cover
- Push on the field marked „Push“
- The ribbon comes off
- Change the ribbon

10.3 Emergency battery (only for aircontrol S 2 / S 3, occupies no slots)

When battery is fully charged the Negative Pressure Monitor can maintain the measuring during a period of approx. 2-3 h without power supply. In battery mode the display backlight and the printer module are switched off. An indication regarding the battery mode is printed by the printer.

10.4 Measuring data-memory module (from Software version 1.3)

Saving of the measuring data (max. 90000 Data sets) with adjustable memory intervals. Export as txt-Data for further treatment via USB-Stick. **The USB-Stick must be formatted as FAT or FAT 32.** If the maximal capacity of memory is exceeded, the oldest data sets are overwritten.

The content of the raw txt file looks like this:

Date	Time	Measuring channel 1	Channel 1 measured negative pressure in Pa														
29.04.10	08:29	#1	24	#2	22	#3	14	#4	12	#5	0	#6	0	#7	0	#8	0
29.04.10	07:59	#1	22	#2	23	#3	12	#4	13	#5	0	#6	0	#7	0	#8	0
29.04.10	07:29	#1	23	#2	22	#3	13	#4	11	#5	0	#6	0	#7	0	#8	0
29.04.10	06:59	#1	21	#2	24	#3	13	#4	13	#5	0	#6	0	#7	0	#8	0
29.04.10	06:29	#1	22	#2	26	#3	14	#4	12	#5	0	#6	0	#7	0	#8	0
29.04.10	05:29	#1	24	#2	27	#3	12	#4	12	#5	0	#6	0	#7	0	#8	0
29.04.10	04:29	#1	23	#2	28	#3	13	#4	12	#5	0	#6	0	#7	0	#8	0
29.04.10	03:29	#1	23	#2	29	#3	15	#4	11	#5	0	#6	0	#7	0	#8	0
29.04.10	02:29	#1	24	#2	25	#3	15	#4	11	#5	0	#6	0	#7	0	#8	0
29.04.10	01:29	#1	26	#2	25	#3	17	#4	13	#5	0	#6	0	#7	0	#8	0
29.04.10	00:29	#1	25	#2	26	#3	16	#4	12	#5	0	#6	0	#7	0	#8	0
28.04.10	23:29	#1	24	#2	24	#3	13	#4	12	#5	0	#6	0	#7	0	#8	0
28.04.10	22:29	#1	23	#2	27	#3	13	#4	11	#5	0	#6	0	#7	0	#8	0
28.04.10	21:29	#1	25	#2	24	#3	14	#4	11	#5	0	#6	0	#7	0	#8	0
28.04.10	20:29	#1	22	#2	24	#3	14	#4	13	#5	0	#6	0	#7	0	#8	0
28.04.10	19:29	#1	21	#2	24	#3	15	#4	13	#5	0	#6	0	#7	0	#8	0
28.04.10	18:29	#1	22	#2	26	#3	13	#4	12	#5	0	#6	0	#7	0	#8	0
28.04.10	17:29	#1	24	#2	23	#3	12	#4	11	#5	0	#6	0	#7	0	#8	0
28.04.10	16:29	#1	22	#2	24	#3	16	#4	13	#5	0	#6	0	#7	0	#8	0
28.04.10	15:29	#1	24	#2	24	#3	15	#4	12	#5	0	#6	0	#7	0	#8	0
28.04.10	14:29	#1	25	#2	25	#3	14	#4	11	#5	0	#6	0	#7	0	#8	0
28.04.10	13:29	#1	26	#2	27	#3	12	#4	13	#5	0	#6	0	#7	0	#8	0
28.04.10	12:29	#1A	17	#2	26	#3	12	#4	12	#5	0	#6	0	#7	0	#8	0
28.04.10	12:17	#1	28	#2	21	#3	13	#4	13	#5	0	#6	0	#7	0	#8	0
28.04.10	11:17	#1	23	#2	21	#3	12	#4	13	#5	0	#6	0	#7	0	#8	0
28.04.10	10:17	#1	22	#2	26	#3	13	#4	11	#5	0	#6	0	#7	0	#8	0
28.04.10	09:17	#1	25	#2	24	#3	14	#4	12	#5	0	#6	0	#7	0	#8	0
28.04.10	08:17	#1	22	#2	25	#3	15	#4	12	#5	0	#6	0	#7	0	#8	0
28.04.10	07:17	#1	23	#2	26	#3	15	#4	12	#5	0	#6	0	#7	0	#8	0
28.04.10	06:17	#1	24	#2	23	#3	13	#4	11	#5	0	#6	0	#7	0	#8	0
28.04.10	05:17	#1	23	#2	23	#3	14	#4	12	#5	0	#6	0	#7	0	#8	0
28.04.10	04:17	#1	25	#2	24	#3	12	#4	13	#5	0	#6	0	#7	0	#8	0

Alarm, marked by „A“ behind the measuring channel


The file containing the saved data can be edited freely using a text editor.

Example:

Project: Munich
Bauleitung: Mr. Mustermann
Measuring device: aircontrol S2 Type: 481 Series: 583
Removal period: 27.04.2010 08:00 to 29.04.2010 08:29
Channel 1: Working area 1 Setting: min. 20Pa – max. 50Pa
Channel 2: Working area 2 Setting: min. 20Pa – max. 50Pa
Channel 3: Personnel lock Setting: min. 10Pa – max. 19Pa
Channel 4: Material lock Setting: min. 10Pa – max. 19Pa
Channel 5 to channel 8 not occupied

29.04.10 08:29 #1	24 #2	22 #3	14 #4	12 #5	0 #6	0 #7	0 #8	0
29.04.10 07:59 #1	22 #2	23 #3	12 #4	13 #5	0 #6	0 #7	0 #8	0
29.04.10 07:29 #1	23 #2	22 #3	13 #4	11 #5	0 #6	0 #7	0 #8	0
29.04.10 06:59 #1	21 #2	24 #3	13 #4	13 #5	0 #6	0 #7	0 #8	0
29.04.10 06:29 #1	22 #2	26 #3	14 #4	12 #5	0 #6	0 #7	0 #8	0
29.04.10 05:29 #1	24 #2	27 #3	12 #4	12 #5	0 #6	0 #7	0 #8	0
29.04.10 04:29 #1	23 #2	28 #3	13 #4	12 #5	0 #6	0 #7	0 #8	0
29.04.10 03:29 #1	23 #2	29 #3	15 #4	11 #5	0 #6	0 #7	0 #8	0
29.04.10 02:29 #1	24 #2	25 #3	15 #4	11 #5	0 #6	0 #7	0 #8	0
29.04.10 01:29 #1	26 #2	25 #3	17 #4	13 #5	0 #6	0 #7	0 #8	0
29.04.10 00:29 #1	25 #2	26 #3	16 #4	12 #5	0 #6	0 #7	0 #8	0
28.04.10 23:29 #1	24 #2	24 #3	13 #4	12 #5	0 #6	0 #7	0 #8	0
28.04.10 22:29 #1	23 #2	27 #3	13 #4	11 #5	0 #6	0 #7	0 #8	0
28.04.10 21:29 #1	25 #2	24 #3	14 #4	11 #5	0 #6	0 #7	0 #8	0
28.04.10 20:29 #1	22 #2	24 #3	14 #4	13 #5	0 #6	0 #7	0 #8	0
28.04.10 19:29 #1	21 #2	24 #3	15 #4	13 #5	0 #6	0 #7	0 #8	0
28.04.10 18:29 #1	22 #2	26 #3	13 #4	12 #5	0 #6	0 #7	0 #8	0
28.04.10 17:29 #1	24 #2	23 #3	12 #4	11 #5	0 #6	0 #7	0 #8	0
28.04.10 16:29 #1	22 #2	24 #3	16 #4	13 #5	0 #6	0 #7	0 #8	0
28.04.10 15:29 #1	24 #2	24 #3	15 #4	12 #5	0 #6	0 #7	0 #8	0
28.04.10 14:29 #1	25 #2	25 #3	14 #4	11 #5	0 #6	0 #7	0 #8	0
28.04.10 13:29 #1	26 #2	27 #3	12 #4	13 #5	0 #6	0 #7	0 #8	0
28.04.10 12:29 #1A	17 #2	26 #3	12 #4	12 #5	0 #6	0 #7	0 #8	0
28.04.10 12:17 #1	28 #2	21 #3	13 #4	13 #5	0 #6	0 #7	0 #8	0
28.04.10 11:17 #1	23 #2	21 #3	12 #4	13 #5	0 #6	0 #7	0 #8	0
28.04.10 10:17 #1	22 #2	26 #3	13 #4	11 #5	0 #6	0 #7	0 #8	0
28.04.10 09:17 #1	25 #2	24 #3	14 #4	12 #5	0 #6	0 #7	0 #8	0
28.04.10 08:17 #1	22 #2	25 #3	15 #4	12 #5	0 #6	0 #7	0 #8	0
28.04.10 07:17 #1	23 #2	26 #3	15 #4	12 #5	0 #6	0 #7	0 #8	0
28.04.10 06:17 #1	24 #2	23 #3	13 #4	11 #5	0 #6	0 #7	0 #8	0
28.04.10 05:17 #1	23 #2	23 #3	14 #4	12 #5	0 #6	0 #7	0 #8	0
28.04.10 04:17 #1	25 #2	24 #3	12 #4	13 #5	0 #6	0 #7	0 #8	0

11 Declaration of conformity

EU Declaration of Conformity	
deconta GmbH Im Geer 20 D-46419 Isselburg	
Product: Negative Pressure Monitor	Type: 480, 481, 522
The design of the units complies with the following directives:	EU- Machine directive 2006/42/EG EU- Low voltage directive 2006/95/EG EU- Directive 89/336/EEG
Applied harmonised standards:	EN 60335-1
Applied national standards:	DIN VDE 0701, DIN VDE 0702
 W. Weßling	Isselburg, 10.04.2013