



# ClimaCheck

## Wireless FLTA System Manual

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# 1 Installation of FLTA Wireless Base station and wireless transmitters

The FLTA (500 500) wireless base station is used to enable wireless transmitters like the TEFL-RH (500 502) TEUFL (500 503) and KLUFL (500 509) in use with the ClimaCheck PA Pro.

The installation process is done in three steps, physical setup of base station and transmitters, configuration of FLTA and making the PA Pro configuration.

When a wireless system is purchased together with a PA Pro all necessary configuration is completed by ClimaCheck Sweden prior to delivery.

## 1.1 Connecting the FLTA

### Fixed installation

For fixed installations all the necessary connections are normally done by ClimaCheck Sweden before delivery except for the antenna that needs to be screwed on. Wiring details are shown in an enclosed electrical scheme for the PA Pro system.

### Field case version

The field case FLTA (500 520) has 2 – 3 types of connections, one 24VDC power inlet, one 9-pin DIN sub serial connection and optionally one or more analogue outputs.

In use with the latest version of the PA Pro Portable, the version II, only the serial cable is need to use the FLTA with Modbus communication since it is powered through the serial connection. For use with the older Mk I version a separate 24VDC supply is needed (900 139).

The optional analogue outputs are connected to the PA Pro panel with 5-pin DIN male – male cables (200 113) with one for every measured variable. No power is transmitted through the analogue cables and another power source is still needed (over serial or power input).



**Figure 1** FLTA in fixed installation



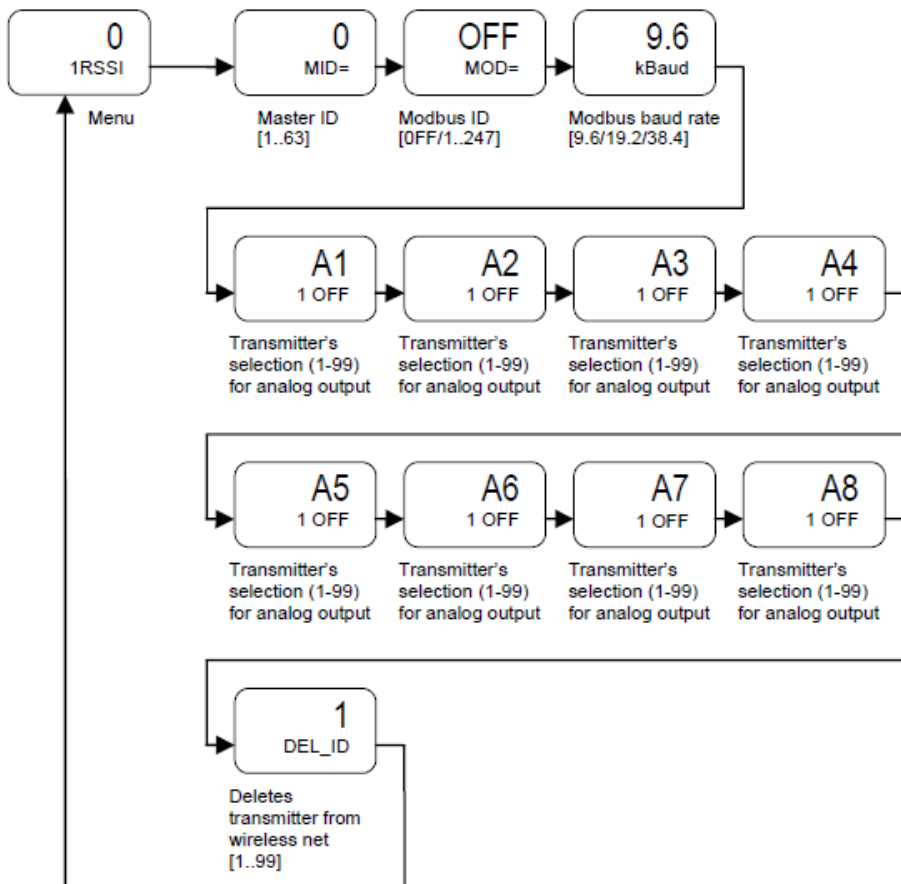
**Figure 2** Field case FLTA

## 1.2 FLTA Configuration

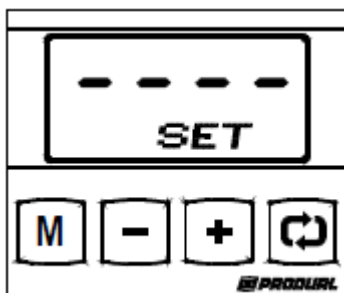
The base station has two ways of communicating with the PA Pro, either by RS485 Modbus or by 8 individual analogue outputs. The FLTA is the "Master" in the wireless net and several transmitters (slaves/ nodes) may be used in every net. It is also possible to use multiple base stations with a single PA Pro by assigning them individual Master ID's (MID).

**NOTE!** In order to commissioning new wireless transmitters a separate service tool called FLSER (500 501) must be used. See chapter *Installation of FLTA Wireless Base station and wireless transmitters* for further details.

## Menu of FLTA



After switching power on the first time, the display on the FLTA indicates the version number shortly and after that blinks "SET". FLTA has its default settings and must be configured. Push M-button about 5 s. to proceed and do all needed settings in menu. FLTA saves settings after exiting menu.



In display FLTA shows any chosen measurement.

There are four (4) touch sensitive buttons:

- "M" -button to activate and step through menu
- "+/-" - buttons are for browsing transmitters 1...99.
- "Loop" -button is for browsing transmitter's individual measurements.

### 1.2.1 Connection to PA Pro with RS485 Modbus communication

- Set the Master ID, MID to the desired value. 1 for the first FLTA, 2 for the second etc.
- Set Modbus ID to an appropriate value. When configured by ClimaCheck Sweden address 100 is normally used for the first FLTA. Baud rate shall be kept at 9,6 kBaud.
- Make sure that all analogue outputs are in its "Off" position. An analogue output in its "ON" position prevents any communication over Modbus.

- Exit the setup mode and the configuration is finished.

## 1.2.2 Connection to PA Pro with analogue output

- Set the Master ID, MID to the desired value. 1 for the first FLTA, 2 for the second etc.
- There is no need of a Modbus ID but it can be left unchanged if needed later.
- Use the "Loop"-button to change an analogue output from "OFF" to a desired variable (e.g. temperature, humidity). Use the "+/-" -buttons to change from which transmitter the measurements is received.

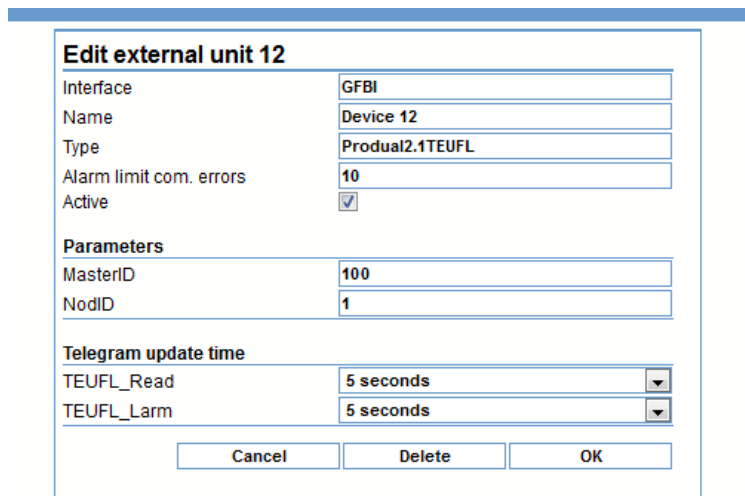
## 1.3 PA Pro setup

In order to make the PA Pro setup a PC is needed. It shall be connected according to instructions given in the PA Pro manual and the web based configuration page is accessed with instructions in chapter *Surfing to PA Pro*. When a connection is established a specific "snippet" file (supplied by ClimaCheck Sweden or reseller) shall be added to the PA Pro configuration. Process is described under chapter *Type Definitions* in the PA Pro Manual.

When the snippet file has been added follow these instructions:

- Go to **Settings – >Advanced -> External units**
- Click on a suitable free device, e.g. **12 Device 12...** and set it according to *Figure 3*.

**NOTE!** "MasterID" is here denoting the Modbus address and not the MID of the FLTA.



Edit external unit 12	
Interface	GFBI
Name	Device 12
Type	Produal2.1TEUFL
Alarm limit com. errors	10
Active	<input checked="" type="checkbox"/>
<b>Parameters</b>	
MasterID	100
NodID	1
<b>Telegram update time</b>	
TEUFL_Read	5 seconds
TEUFL_Larm	5 seconds
<input type="button" value="Cancel"/> <input type="button" value="Delete"/> <input type="button" value="OK"/>	

**Figure 3**

- Go to **External devices -> View values** to check that the PA Pro receives a signal

## External devices

External devices				
Setup	<b>View values</b>	WMSHare export	WMSHare import	Connections
<b>Email</b>				
Name	Type	Status	Last update	
1 EP_Pro1	EP_Pro EM24/EM2	OK	2012-08-09 13:43:41	
2 EP_Pro2	EP_Pro EM24/EM2	Error	2000-01-01 00:00:00	
5 EP_Pro 5	EP_Pro EM21	Error	2000-01-01 00:00:00	
10 EP_Pro10	EP_Pro EM24/EM2	Error	2000-01-01 00:00:00	
12 Device 12	Produal2.2TEUFL	OK	2012-08-09 13:43:35	
20 Device 1632	RTD04	Error	2000-01-01 00:00:00	
30 Flow1	Sharky BR773	Error	2000-01-01 00:00:00	

Figure 4

- If the status is OK and there are values you just need to setup the links between external connections and channels in the PA Pro Channel list under **External units -> Connections**
- As an example you need two channel connections for a TEUFL unit, temperature and 0-10V. Click on a free connection, e.g. No. 13. Set it up to point at a free channel in the channels list. e.g. 116 as example *Figure 5*. Repeat the procedure for the voltage variable and connection 14 and channel 117.

**Edit connection 13**

Channel	Channel_116
Direction	In
Device	Device 12
Value	Temp
Default value	0
Use default value	As startvalue
Error action channel	none

Figure 5

- Go to **Advanced -> Channels** click on a channel, set it up, rename and check the short database checkbox. Finish the setup by pressing Save on the upper right side.

116	TEUFL1_Temp	24.6°C	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	---	---	---	---	E: <input type="checkbox"/>					
117	TEUFL1_Voltage	0.00V	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	---	---	---	---	E: <input type="checkbox"/>					

Figure 6

- Now you should be able to make the necessary connections in the ClimaCheck software and use the temperature as you want.

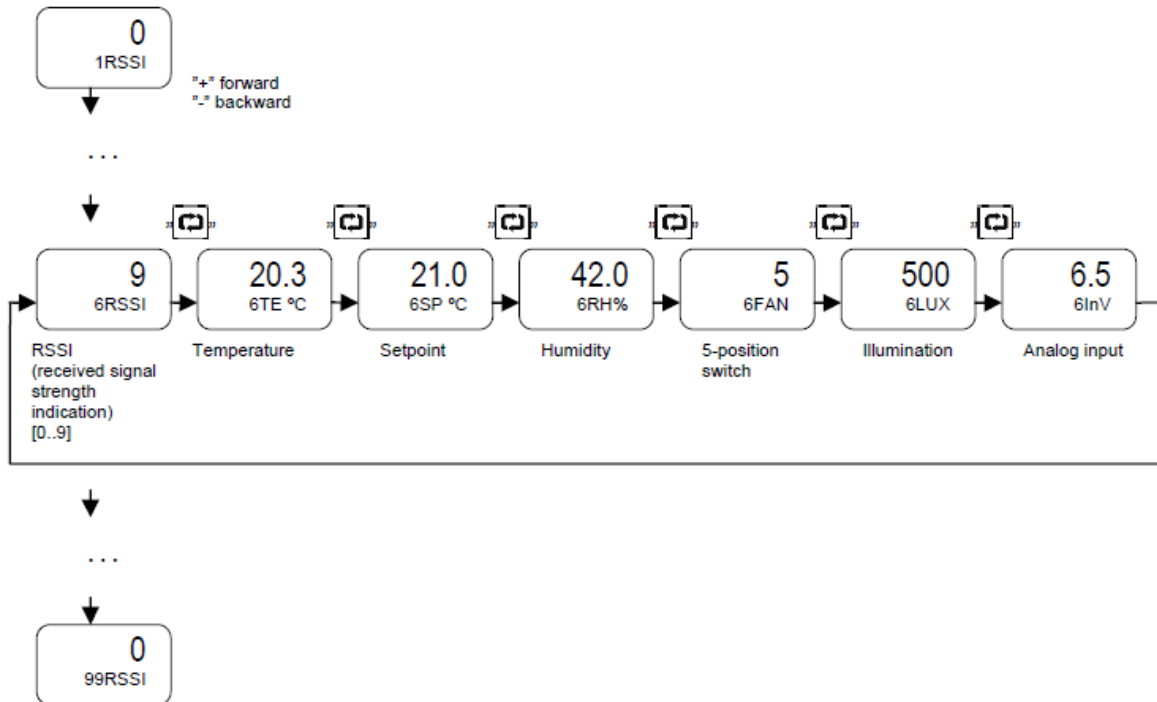
## 1.4 Configuration of wireless transmitter with offset

For the TEUFL and KLUFL wireless transmitters it is possible to exchange the built in temperature sensor to any other ClimaCheck Pt1000 sensor. The TEUFL unit also has a 0-10V input that may be used for an external sensor. In any of these cases it is necessary to apply an offset to the measurement.

Instructions for entering offsets for the FLTA in use with Modbus are found in the PA Pro Manual chapter *External Units -> Connections*. For analogue communication offsets are set as for other analogue sensors, see PA Pro Manual chapter *Sensors*.

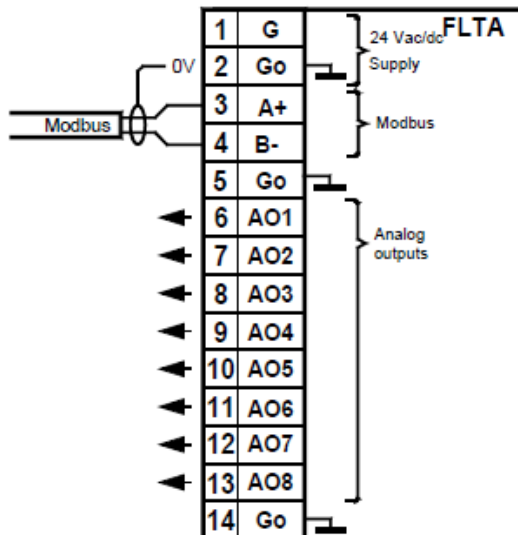
## 1.5 User mode

Overview of the user interface of the FLTA



## 1.6 Wire connection

Overview of the in- and outputs of the FLTA Base station.



## **1.7 Trouble shooting – no communication between FLTA and PA Pro**

First check that all equipment are plugged in and powered on.

### **1.7.1 Modbus**

Check that the settings are correct. Primarily that the Modbus address is correct and that no analogue outputs are active. It is also important to check the Baud rate as it may have been changed from the standard value of 9,6 kBaud.

### **1.7.2 Analogue**

As for the Modbus communication check that the settings are ok. If several connections, does any of them work? Try to see what differ from the rest of the connections.

### **1.7.3 Connection wiring**

#### **Field case version**

Check all of the wiring. In the field case version of the FLTA (500 520) the outer housing may be opened to visual and physically inspect the wiring.

**NOTE!** Make sure to remove any external cable connections to the FLTA on beforehand.

The external cables (serial and/or power supply) should normally not cause any problem. But if possible try to switch cables between the PA Pro/EP Pro and the FLTA.

#### **Fixed installation**

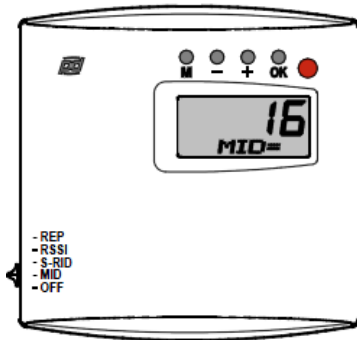
In a fixed installation all wires are visual behind the front cover of the distribution board panel.

**NOTE!** Make sure to power off the system before opening the panel. This work should only be performed by qualified professionals.



## 2 Operating instructions FLSER service tool (500 501)

### 2.1 Commissioning of TEFL, TUFL or KLUFL unit with FLSER tool



a) In the switch position MID the wireless transmitter (slave/node) can be connected to the wanted FLTA receiver (1- 63) by using the - and + buttons on the top of the display. (Picture 1)

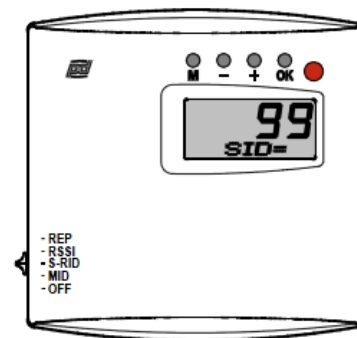
b) Choose the switch position S-RID to define the node unit's own ID (SID 1-99) (picture 2)

c) Press the "OK" button and on the display appears flashing text "WAIT"

d) Remove the battery from the chosen node unit for a moment and put it back. This must be done in 30 seconds, otherwise the FLSER tool goes back to the normal stage.

e) When the chosen node unit starts up and the programming has been successful, there appears a text OK to the display. Also the LED's of TEFL room unit and FLSER tool will flash 5 times simultaneously.

### 2.2 Commissioning of FLREP repeater with FLSER tool



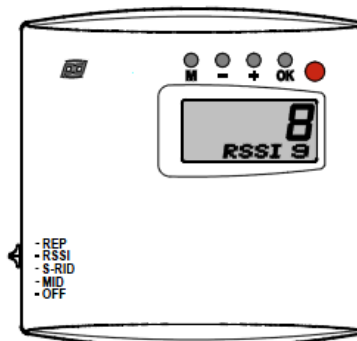
a) Choose the switch position S-RID and press button M on the top of the display. After that there appears a text RID to the display and the repeater ID 1-8 can be chosen by using the - and + buttons.

b) Press the "OK" button and on the display appears flashing text "WAIT"

c) Connect the supply voltage 24 V ac/dc to the FLREP repeater. This must be done in 30 seconds, otherwise the FLSER tool goes back to the normal stage.

d) When the chosen FLREP repeater starts up and the programming has been successful, there appears a text OK to the display. Also the LED's of FLREP repeater and FLSER tool will flash 5 times simultaneously.

### 2.3 Signal strength measuring with the FLSER tool



a) In the switch position RSSI the FLSER tool can be used for the measuring of signal strength

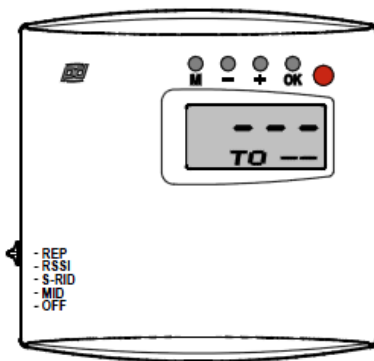
**NOTE!** When the switch is in the RSSI position, the FLTA receiver ends the normal service of the network. There appears also a text "ON CARE" to the FLTA receiver's display. FLTA receiver goes back to its normal stage after 30 seconds, when the RSSI position is switched off. During the "ON CARE" stage, it is possible that the node units go to the energy saving mode. The node units go back to the normal stage 5 minutes after the FLTA receiver is back on its normal stage.

b) FLSER tool shows now on its display the intensity of its own signal strength (upper reading) and the signal strength measured by the FLTA receiver (lower reading)

Adequate signal strength is reached with values 2-9, if the value is lower than 2 it is recommended to use the FLREP repeater between the room units and the receiver.

**NOTE!** FLSER tool shows the direct intensity of the signal strength between the FLTA receiver and the FLSER tool. FLSER tool doesn't use the possibly installed FLREP repeaters to the signal strength measuring.

## 2.4 FLSER tool in the repeater emulation



In the switch position REP the FLSER tool can be used to emulate the FLREP repeater. During this application there shouldn't be installed any FLREP repeaters. The feature of this application is to ease up the installation of actual FLREP repeater and to find a suitable location for it.

For example, if the installation location doesn't have adequate signal strength, the FLSER tool can be used to emulate the position of FLREP repeater and the adequate intensity can be checked by using the FLTA receiver's own signal strength measuring. By these measures can be assured that the signal strength is adequate (RSSI 2-9)

**NOTE!** The repeater emulation will deplete the battery of FLSER tool in 100h, therefore the FLREP repeaters will need 24 V ad/dc supply.

## 2.5 Trouble shooting – no communication between FLTA and wireless sensor

Are there several wireless transmitters on the same system? Do any of them work? If one or several works; check what differs in the setup from the non-functioning sensors.

### 2.5.1 Battery

The wireless sensors are powered with an internal 3,6V battery with an operation life time of approx. three years. If the sensor has been working in the past but suddenly stops, check the battery and possibly replace it with a new one. ClimaCheck spare part. No. 500 540.

### 2.5.2 Wireless reception

If possible try to relocate the sensor closer to the FLTA base station or remove any objects that could interfere with the radio communication. If a FLSER service tool is available use the instructions in chapter 2.3.