Contamination Control System gold (CCS gold)

Control system for the handling and evaluation of one or two AFGUARD® free water sensors in refuelling applications according JIG bulletin 110.
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1 Amendment Record

<table>
<thead>
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<th>Revision Number</th>
<th>Revision Details and Date</th>
<th>Received and Entered by</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Standard manual</td>
<td>Matthias Aden</td>
<td>30/04/2019</td>
</tr>
<tr>
<td>1</td>
<td>Revision 1</td>
<td>Matthias Aden</td>
<td>06/05/2019</td>
</tr>
<tr>
<td>2</td>
<td>Revision 2 – Software version CCS_201906225</td>
<td>Matthias Aden</td>
<td>01/07/2019</td>
</tr>
<tr>
<td>3</td>
<td>Update newest screenshots and JIG requirements</td>
<td>Matthias Aden</td>
<td>09/07/2019</td>
</tr>
</tbody>
</table>

Notes on safety icons and symbols

**Warning!**
This symbol alerts you to hazards. They can cause serious damage to the instrument or to persons if ignored.

**Caution!**
This symbol alerts you to possible faults which could arise from incorrect operation. They could cause damage to the instrument if ignored.

**Note!**
This symbol indicates important items of information.
1.1 Purpose

The Contamination Control System has been designed for a continuous evaluating of water contamination in fuel measured by an AFGUARD® - free water sensor. If water contamination is too high for a while it interrupts the refuelling process via a safety relay. Additionally, it can evaluate other sensors like a SLUGGUARD®. The contamination control system is especially made for guarding a filter water separator or a dirt-defence filter system. The CCS will also log information on a USB drive for every refuelling cycle.

1.2 Safety instructions

This manual provides operation and routine maintenance instructions for the FAUDI Aviation Contamination Control System. Read this manual and ensure that you fully understand its content before you attempt to install, use or maintain the Contamination Control System. Work on electrical equipment is to be conducted by trained specialists only, according to valid regulations. Attention must be paid to the requirements of VDE 0100 when setting up high-power electrical units with nominal voltages of up to 1000V, including associated standards and stipulations. Check the details on the type plate to ensure that the equipment is connected to the correct mains voltage. Protect against touching dangerously high electrical voltages. Before opening the equipment, it must be switched off and hold no voltages. This also applies to any external control circuits that are connected. The equipment is only to be used within the permitted temperature and operation ranges.

Check that the location is weather-protected. It is recommended that the Contamination Control System should not be exposed to either direct rain or moisture. Installation, maintenance, monitoring and any repairs may only be conducted by authorized personnel with respect to the relevant stipulations. All CHANGEs of the standard Contamination Control System with parts which are not specified or approved by FAUDI Aviation GmbH, as well as repair and service with unspecified parts will result in loss of the CE conformity and guarantee. In case of doubt, please turn directly to FAUDI Aviation GmbH, respectively to your FAUDI Aviation Distributor or Service organization.

1.3 Designated use

The CCS is suitable for indication and measuring operation of the AFGUARD® during the flow of a medium to be monitored (kerosene, diesel, AVGAS, etc.). Its intention is to catch up electrical signals coming from electrical sensors to detect water content values during flow. Additionally, hereto it provides the functionality to detect and give out alarm status if high free water values are detected. The manufacturer is not liable for damages caused by improper or non-designated use.
1.4 Installation, commissioning and operation

Please refer to installation manual for cabling and mechanical setup of CCS. Installation, electrical connection, commissioning, operation and maintenance of the measuring system must only be carried out by trained technical personnel. The technical personnel must be authorized by the system operator to conduct the specified activities. Technical personnel must have read and understood these Operating Instructions and must adhere to them.

Before commissioning the entire measuring point, check all the connections for correctness. Ensure that electrical cables are not damaged. Do not operate damaged products and secure them against unintentional commissioning. Mark the damaged product as being defective. Measuring point faults may only be rectified by authorised and specially trained personnel. If faults cannot be rectified, the products must be taken out of service and secured against unintentional commissioning.

Repairs not described in these Operating Instructions may only be carried out by manufacturer or by a designated service organisation.

1.5 Operational safety

The CCS has been designed and tested according to the state of the art and left the factory in perfect functioning order. Relevant regulations and European standards have been met.

As the user, you are responsible for complying with the following safety conditions:
- Installation instructions
- Local prevailing standards and regulations.

1.6 Return

If the device requires repair, please send it in cleaned condition to the appropriate sales centre. Please use the original packaging, if possible.

When sending for repair, please enclose a note with a description of the error and the application.

1.7 Contact

| Contact address of manufacturer: | Telephone: | +49 6428 4465 - 275 |
| FAUDI Aviation GmbH | Fax: | +49 6428 4465 - 221 |
| Scharnhorstrasse 7 B | Mail: | Sensor@faudi-aviation.com |
| D- 35260 Stadtallendorf | Web: | www.faudi-aviation.com |
| Germany | | |
1.8 Identification

1.8.1 Incoming acceptance, transport, storage

You should have received a device like above.

Make sure the packaging is undamaged!
Inform the supplier about damage to the packaging.
Keep the damaged packaging until the matter has been settled.
Make sure the contents are undamaged!
Inform the supplier about damage to the delivery contents. Keep the damaged products until the matter has been settled.
Check that the scope of delivery is complete and agrees with your order and the shipping.
The packaging material used to store or to transport the product must provide shock protection and humidity protection. The original packaging offers the best protection. Also, keep to the approved ambient conditions (see "Technical data").
If you have any questions, please contact your supplier or your sales centre responsible.
1.9 Product structure

The CCS is marked with the following, permanently identification marking.

You may wonder about the naming “DPGUARD PROFESSIONAL GOLD”

The difference between DPGUARD gold and CCS gold is based on different software to run the devices. Reason to always use the master device out of the family which is the DPGUARD PROFESSIONAL GOLD type.
1.10 Scope of delivery

The following items are included in the delivery:

A set comprises of:

① - DPGUARD® – mounted in cabinet with ingress protection of IP 65 for wall mounting

USB-Memory Stick with 4 GB included

② - Mounting kit for wall mounting

③ - Key locker with two keys

④ - PG-fittings

⑤ - CD with manuals in different languages – or download on FAUDI WEB server
1.11 Installation and dismantling

1.12 Dimensions

Version 1) Secure mounting using inside fixation holes 180 * 180 mm square

Version 2) Fixation using hangers – fixation holes: 186.5 * 206 mm square

with:

A = 186.5 mm
B = 206 mm
C = 220.3 mm
1.13 Mounting Position

The CCS should be mounted on walls in safe area location, vibrant free. Do not mount the CCS in harsh environment / direct solar radiation or without weather/rain protection.

1.14 Place of Installation

Select the installation location so that there is easy access. In case of adjustment, CHANGE of values or readout of memory – you need to easily access the device. Make sure that the CCS and related assemblies are secured safely and vibration-free.

1.15 Housing

1.15.1 Installation of Key locker

CCS will be delivered without mounted key locker (first units have been send out with mounted key lockers to be delivered via airfreight. This sometimes resulted in vacuum inside the housing). Key lockers intention is to prevent misuse. CCS could even been used with or without key locker.

1.15.2 Step by step installation procedure for key locker

open key locker and put key locker into opening at front door. Adjust it till end position is reached.
1.16 Key locker to open the front door of the CCS

The CCS is installed in an IP65 housing with plexiglas door. To prevent misuse the door could be locked. It is locked when it left the factory. To unlock – please proceed as follows:

Press key locker into hole till you reach the end position

Close front door till it clicks and shut key locker to remove the key.
Insert the key into the keyhole and turn it 90 degree counterclockwise. Then open the housing by pressing the locking device.

Open the door carefully. You will feel a slight resistance during opening (100 degree of opening angle) to overcome. The resistance is very useful to hold the door open during service operation.

1.17 Access to mainboard

Disconnect the service cover by the use of a screw driver to get access to the mainboard for installation purposes.
Now you can see the plug connector for power input, analog sensor input and Relays output etc.

In front of any cable connection please install the required numbers of PG-fittings to bring the cables in – see next chapter.

1.18 Installing the PG-fittings for cabling purposes

1.18.1 Preparation for assembling

The CCS has 7 prepared holes on his bottom side to bring the cables into the housing. These holes could either be used for single cables or multiwire cables. Please make sure to assemble the required number of PG-fittings in front of wall mounting.
View from bottom side

<table>
<thead>
<tr>
<th>Identification</th>
<th>Wire cross section / clamping range</th>
</tr>
</thead>
<tbody>
<tr>
<td>M16 * 1.5 mm</td>
<td>4 to 10 mm</td>
</tr>
<tr>
<td>M20 * 1.5 mm</td>
<td>6 to 12 mm</td>
</tr>
</tbody>
</table>

1.18.2 Preparation of housing

Procedure:

1) Remove residual plastic in prepared hole for PG-fittings e.g. by the use of a cutting edge.

2) Remove plastic and screw in the PG-fitting into the prepared hole

3) Connect the counter nut and pull it tight.
Proceed with all other required PG-fittings.

1.19 Following cables are effective:

**AFGUARD sensor:**
M16*1,5 for blue 2 wire cable with IP 67 connector (part of AFGUARD delivery)

**Pressure sensor:**
- differential pressure
  - M16*1,5 mm cable: Ölflex classic recommended
- 2 independent Pressure sensors
  - M16*1,5 mm cable: Ölflex classic recommended

**Flow sensor:**
- Pulse or current
  - M 16*1,5 mm shielded cable recommended

**Trigger:**
- M16*1,5 mm cable: Ölflex classic recommended

**Reset switch:**
- M16*1,5 mm cable: Ölflex classic recommended

**Blue lamp:**
- M16*1,5 mm cable: Ölflex classic recommended

**Power supply:**
- M16*1,5 mm cable: Ölflex classic recommended

**Relays output:**
- Max 3 Relays
  - M20*1,5 mm multi wire cable
2 Wiring and Assembly

The Circuit board inside the CCS has inscriptions for the mounting of the signal cables. To prevent damage, please make sure, not to connect power supply during wiring. Connect power supply when all other connections are made. Please use proper tools for making the connections. Use flexible copper wire to connect signals to the CCS. We recommend flexible wire with a cross-section of 1 mm². It is not allowed to mount wires without ferrules. An appropriate crimping tool must be used to apply the ferrules to the wires (see chapter 1.19).

The wiring diagram is shown in the photography:
### Terminal panel

<table>
<thead>
<tr>
<th>Terminal panel</th>
<th>Inscription</th>
<th>Connected Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>24V</td>
<td>Power Supply 24V DC</td>
</tr>
<tr>
<td>Power</td>
<td>GND</td>
<td>Power Supply GND</td>
</tr>
<tr>
<td>DIGITAL_INPUT</td>
<td>I01</td>
<td>Reset Key for WARNING and ALARM</td>
</tr>
<tr>
<td>DIGITAL_INPUT</td>
<td>I02</td>
<td>Trigger</td>
</tr>
<tr>
<td>DIGITAL_INPUT</td>
<td>I03</td>
<td>Reset for WARNING only – no PW</td>
</tr>
<tr>
<td>DIGITAL_INPUT</td>
<td>I04</td>
<td>DP-SWITCH (high dp)</td>
</tr>
<tr>
<td>DIGITAL_INPUT</td>
<td>I05</td>
<td>SLUGGUARD /Bulk sensor</td>
</tr>
<tr>
<td>P outlet</td>
<td>mA</td>
<td>AFGUARD Inlet</td>
</tr>
<tr>
<td>AFGUARD</td>
<td>mA</td>
<td>AFGUARD Outlet</td>
</tr>
<tr>
<td>DP / P inlet</td>
<td>mA</td>
<td>DP Transmitter</td>
</tr>
<tr>
<td>Flowmeter</td>
<td>mA or pulse</td>
<td>Flow (analogue) optional</td>
</tr>
<tr>
<td>DIGITAL OUTPUT</td>
<td>DO03</td>
<td>Blue LED</td>
</tr>
<tr>
<td>ALARM</td>
<td>REL_1</td>
<td>Deadman</td>
</tr>
</tbody>
</table>

Please connect all signals according to the table. All sensor signals are optional.

#### 2.1 AFGUARD® Inlet, Outlet

The main application of the CCS is to evaluate water levels measured by the AFGUARD®-free water sensor. You can connect one or two AFGUARD®s to the CCS. The P Outlet terminal is for the AFGUARD® in the Inlet of the vessel. The AFGUARD terminal is for the AFGUARD® in the Outlet. The “mA”-Terminal is the path where the given current-signal flows in. For Ex-i Safety, a barrier is needed. The barrier connects between AFGUARD® and CCS ANALOG_1 or ANALOG_2 input. To power and ground the barrier and the sensor, you can use the “24V”, “GND”, and “PE” connector of the terminal.

#### 2.2 Differential Pressure

The CCS can work with a DP signal. The CCS can use the DP as a trigger for the monitoring. It also logs the DP. The CCS can work with analogue DP transmitters with a current range between 0..20mA and 4..20mA. The ANALOG_3 terminal is for connecting a DP signal. The “mA”-Terminal is the path where the given current flows in. For Ex-i Safety, a barrier is needed. The barrier connects between DP sensor and CCS ANALOG_3 input. To power and ground the barrier or the sensor, you can use the “24V”, “GND”, an “PE” connector of the terminal.
2.3 Flow Rate

For basic function of the CCS, a flow signal is not necessary but highly recommended. With a flow signal, the CCS can calculate exact water average values. The flow can also be used as a trigger for the water monitoring, and the flow gets logged by the datalogger, if connected.

When you connect a flow meter, you need to know the signal type. The CCS can work with pulse-based flow meters and with analogue flow meters with a current range between 0..20mA and 4..20mA. Please check signal type of your flow meter. Use the upper table to connect the flow signal properly.

2.3.1 Analogue Flow Meter

When using an analogue flow meter, use the 0/4…20 mA terminal. The “mA”-Terminal is the path where the given current flows in. For Ex-i safety, a barrier is needed. The barrier connects between flow sensor and CCS input. To power and ground the barrier or sensor, you can use the “24V”, “GND” connector of the terminal.

2.3.2 Pulsed Flow Meter

When using a pulse-based flow meter, use the PULSE in terminal to connect the sensor. Connect the pulse output of the sensor to the PULSE connector. To power and ground the sensor, you can use the “24V”, “GND” connector of the terminal.

2.4 SLUGGUARD®

A SLUGGUARD® is a binary sensor which indicates water slug in pipes or vessels or which detects collected water on low points (vessel drain port). The SLUGGUARD® can trigger water alarms in the CCS. It is an optional sensor. It must be connected to the Input I05 connector in the DIGITAL_INPUT terminal panel. For Ex-i safety, a barrier between SLUGGUARD® and CCS will be needed.

2.5 Interlock

An interlock signal is an optional signal which can be connected to the CCS to detect when a refuelling process starts. **This has no effect on the clearance of the water relays.**

**It effects on the evaluation of the refuelling process.** When the truck gets parked under the aircraft and the operator takes the refuelling equipment out of its storage place, a binary signal gets created. You can connect a 24V interlock signal to the CCS which tells the system when the refuelling truck refuelling one aircraft. 24V means, refuelling process is active (truck parked under the aircraft). 0V means, that there is no refuelling process and no evaluation.

If you do not connect an Interlock signal, the detection of a refuelling process works in another way.

The 24V interlock signal gets connected to the I 02 connector in the Digital Input terminal panel.

2.6 Trigger

When there is no possibility to install a flow meter or a DP transmitter, the system needs a binary trigger, otherwise, there is no need to connect it. The trigger tells the system if there is a refuelling now. This condition activates the water monitoring with the AFGUARD®. **Do not mix up the trigger with the interlock signal!**
The trigger is usually the output of a Deadman. It must be a 24V signal. Connect the signal to the TRIGGER connector in the CONTROL terminal panel.

2.7 Reset
When an alarm occurs, it must be reset to continue refuelling. You can reset it by software over the visualisation by Entering a PIN or you can use the hardware reset. This is usually a key switch. In the CONTROL terminal panel “digital Input”, there is a connector called I01, connect the reset switch to 24V and I01, that the current path gets closed when applying reset.

2.8 Water Indicator
To indicate water warnings and water alarms to the operator, a blue flashlight should be connected to the CCS. The 24V Light must be connected between the DO03 of the Terminal panel X13 and GND.

2.9 Relay Outputs
The CCS has 4 relay outputs. 2 of them are in use.

<table>
<thead>
<tr>
<th>REL_1</th>
<th>Alarm levels for all critical modes of sensors and measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>REL_2</td>
<td>Water warning(s) (AFGUARD®s)</td>
</tr>
</tbody>
</table>

All relay outputs use inverted logic. This means, the relays are triggered if everything is okay. The relay releases if a warning/alarm/error occurs.

2.10 Power Supply
The CCS works with a power of 24V DC ±10 %, Residual ripple 5 %.

In the SYSTEM terminal panel, the supply voltage must be connected. Use the 24V and the GND terminal to connect the power supply. Optionally use PE to ground the CCS. It is highly recommended to use a DCDC converter close to the CCS to supply a stabilized power to the system.
3 Operation

CCS can handle different analogue and digital sensor signals which will be displayed on the screen if sensors are available and enabled.

For first initial setup of CCS a so-called INSTALLER will automatically appear to guide you through the settings.

If needed you can access it by clicking onto the menu button.

The next menu appears with four different buttons: SENSORS, TRIGGER, SYSTEM and INSTALLER

Click on INSTALLER
To access the INSTALLER menu
3.1 General procedure to operate the touch screen

CCS Gold uses a touch screen displays to show results and to set up sensors and to change general settings.

3.1.1 Use of touch screen

All blue coloured fields can be touched to activate the sub menus or to enter the setup screens for further settings of sensors, warning levels, alarms etc.

In some cases – there are multiple settings behind the buttons which need to be selected

Changing one setting might interfere with some others – please check for logical configuration.
3.2 INSTALLER

3.2.1 INSTALLER for first setup

Set the CCS under power (24 VDC). Ensure to have all required sensors connected. After successful booting the main screen should appear.

For first Installation of CCS – an INSTALLER appears that guides you through the configuration menu.

This subroutine could be called whenever you go into the setup menu to ENTER the INSTALLER.

The INSTALLER is a setup wizard which guides you through all necessary settings of the CCS.

On the first launch of the CCS the INSTALLER starts automatically with the language page. It is highly recommended to use the INSTALLER to setup the CCS on installation instead of setting up every menu point individually. Please go through the INSTALLER meticulously and know what values you set up on every page. There is a List of Settings at the end of the document which helps you going through the INSTALLER.

The INSTALLER routine consists of the following structure:

INSTALLER

- LANGUAGE
- DATE SETTING
- TIME SETTING
- CHANGE PIN
- DATA LOGGING
- FLOW METER
- DELTA PRESSURE
- DP SWITCH
- SLUGGUARD
- TRIGGER MONITORING
- AFGUARD SETTING
3.2.2 Manually start of the INSTALLER

In cases where you want to manually start the INSTALLER for a reconfiguration – please go on main screen and press the \textbf{MENU} button:

The menu appears where you need to press the \textbf{SETUP} button:

You will be asked to \textbf{ENTER} your PIN number (1 2 3 4 5 6 7 8):

Following PIN numbers are preconfigured:

\begin{itemize}
  \item \textbf{Administrator} – PIN level: 12345678
  \item \textbf{User} – PIN level: 00000000
\end{itemize}
Please type in **Administrator PIN** number and press **ENTER**. Now you are in Setup mode.

Press the **INSTALLER** button to enter the INSTALLER menu.

The INSTALLER launches with the Language page.

### 3.2.3 Handling of the INSTALLER

In the headline of the screen, there are two navigation buttons. Press the **NEXT >>** button to enter next menu step or go back to previous menu with the **<< BACK** button. In the INSTALLER some configuration dialogs get opened where you must enter some values. You can use the blue keypad on the screen or the buttons of the NUM Block of your keyboard as well.

Every change you make in the INSTALLER will be applied immediately. At the end of the INSTALLER, a reset will be applied to delete cable break errors which could come from configuration routine.

### 3.2.4 Menu structure of the INSTALLER

INSTALLER – menu structure

- LANGUAGE
- DATE SETTING
- TIME SETTING
- CHANGE PIN
- DATA LOGGING
- FLOW METER
- DELTA PRESSURE
- DP SWITCH
- SLUGGUARD
- TRIGGER MONITORING
- AFGUARD SETTING
3.2.4.1 LANGUAGE – selection of language to be used

First screen in INSTALLER Setup Menu is the menu to select the LANGUAGE. Selected language is shown in header (here it is English):

To CHANGE language – click on the appropriate flag - you will see CHANGES in the header between “LANGUAGE ENGLISH” and “Sprachauswahl Deutsch” for the selection of German. Than press NEXT >>

3.2.4.2 DATE SETTING

Next menu is DATE SETTING. Click on CHANGE button of Day, Month, Year and select the right numbers to set it appropriately.

Example: Press the CHANGE button for Day, Month or Year - you will ENTER the appropriate menu. This looks like the following:
3.2.4.3 TIME SETTING

To set up the right year, please only type in the last two digits e.g. 19 for 2019. The latest date supported by the system will be in year 2099. For Setting Day or Month type in the last one or two digits and press ENTER. You will go back to the Date and Time Screen. If the chosen value is 0 or if the value is out of the specified range, a press of ENTER won’t be accepted.

Same systematic for the TIME SETTING. To CHANGE HOUR, MINUTE or SECOND press the associated blue CHANGE or ZEROISE button. The menu for Hour or Minutes will open. Please ENTER a one- or two-digit value and press ENTER. If the value is out of range, the ENTER won’t be accepted. To CHANGE SECOND please only press ZEROISE when seconds switch to zero.

Click the NEXT >> button when finished.
3.2.4.4 CHANGE PIN

Next menu is to CHANGE PIN. Click on CHANGE button of ADMINISTRATOR or USER to set new PIN numbers:

Following PIN numbers are preconfigured:

**Administrator – PIN level:** 12345678  
**User – PIN level:** 00000000

Make sure to remember CHANGE PIN numbers. In cases of loss of CHANGE PIN numbers only FAUDI Aviation GmbH can reconfigure.
PIN – Insert new PIN

CHANGE PIN number with INSERT PIN menu:

The PIN must have 4 to 8 digits. If you have Entered a valid PIN, you will go back to the following screen. Changes affect immediately. Please check the new PIN on the following screen (example with new PIN 87654321):

Please repeat the same procedure to CHANGE the USER PIN level.
3.2.4.5 DATA LOGGING

Choose NEXT button to ENTER next menu step DATA LOGGING where you are asked to define timing for the log files and the display cycle for the graphs of AFGUARD on main screen.

DATA LOGGING

- RECORDING USB STICK: Defines the cycle time to log data from sensors and status messages on the memory stick. Remember: The more data you log – the better you can find unexpected effects on logged data after having measuring effects. The longer the recording cycles – the smaller the log files will be.
  It is recommended to start with a 2 second logging cycle and a 1 second display cycle.

- DISPLAY CYCLE

- RESET DATA LOGGING

for changes, press on the edit areas! 11:47:21

You can even disable the logging of data by pressing the DISABLE button. After setting the right numbers – press Enter to fix the settings.

Press back button to go back into DATA LOGGING menu to change the display cycle settings, to reset the data logging or to enter the next menu step.
3.2.4.6 FLOW METER

Select FLOW METER menu to set up the flow sensor:
When in use – switch MONITORING to ENABLED, when not in use – DISABLE it.

---

FLOW METER

MONITORING: ENABLED

INPUT SIGNAL:
- Pulse
- 0..20 mA
- 4..20 mA

FLOW UNIT:
- Liter
- US gallon
- m³/h

PULSES / Liter: 1,000

---

You are asked to select:
INPUT SIGNAL:
- Pulse
- 0..20 mA
- 4..20 mA

For a CHANGE click on the Button.

FLOW UNIT:
- Liter
- US gallon
- m³/h

For a CHANGE click on the Button.

---

When selecting pulses for the input signal – you will be asked to type in PULSES per volume
When selecting the current input signal (0 to 20 mA or 4 to 20 mA) you will be asked to type in MAX FLOW RATE:
If you use an analogue sensor, it is very important not to mix up the ranges 0..20mA and 4..20mA. Otherwise the system will work with invalid flow values or system will detect a sensor error or a wire break! **Please refer to original documentation of sensors to check for correct settings.**

It is required to know the max flow of the sensor when selecting the 0 to 20 mA or 4 to 20 mA range – this information is coming from manufacturer of flow sensor.

When operating with pulse signals – it is required to know the volume per pulse – this information should come out of the calibration protocol of flow meter.

Click NEXT >>

### 3.2.4.7 DELTA PRESSURE

The following page is to set up the differential pressure sensor. This sensor can be enabled or disabled. When disabled – the sensor will not be present. When enabled the sensor signals will be displayed and measurement levels can be used to generate alarms and shut off as well as to log these data together with other signals.
You are asked to select:

**INPUT SIGNAL:**
- 0..20 mA
- 4..20 mA
For a CHANGE click on the Button.

**PRESSURE UNIT:**
- psi
- kPa
- bar
For a CHANGE click on the Button.

**MAX. DELTA PRESSURE:** When pressing the blue button you will enter the next level where you will be asked to type in the **RANGE OF PRESSURE SENSOR** – which could be found in the calibration protocol of the pressure sensor (sometimes there is a label with the pressure range sitting on the unit)

You can use the CCS without a pressure sensor. If no pressure sensor is available, please disable the sensor. The CCS supports an analogue current driven differential pressure sensor with ranges of 0..20 mA and 4..20 mA. It is highly recommended to use 4 to 20 mA sensors as they supply a fail safe signal to ensure their availability.

**MAX. DELTA PRESSURE (20mA):** Click on the blue box to CHANGE the value of the pressure range. An input dialog will open and ask for a value. Please insert the value given by the documentation of your differential pressure sensor.

Click **NEXT >>**
3.2.4.8 DP SWITCH

Subroutine to enable / disable dp-SWITCH function by the use of analogue or digital sensor signals. Therefore following modes are available:

Monitoring:
- Enabled
- Disabled
For a CHANGE click on the button.

Operating Mode:
- Analog
- Digital
For a CHANGE click on the button.

Max. Delta Pressure for analog sensors:
- Type in max allowable differential pressure to switch off in case of dp increase

Input Alarm State for digital sensors:
- High or
- Low for digital signals (to invert signals coming from e.g. proximity sensors)
For a CHANGE click on the button.

Signal attenuation for analog sensors:
- Timespan for positive signal to get rid of spikes and peaks. Type in attenuation time.

Alarm delay for digital sensors:
- To get rid of peak sand spikes
3.2.4.9 SLUGGUARD

Sensor to detect bulk water e.g. in water sumps.
Following modes are available:
Monitoring:
- Enabled
- Disabled
For a CHANGE click on the Button.

Alarm delay:
- Type in time span to generate an alarm in case an activated sensor

Manual reset:
- Enabled
- Disabled
For a CHANGE click on the Button.

Input Alarm State:
- High or
- Low for digital signals (to invert the signal)
For a CHANGE click on the Button.
3.2.4.10 TRIGGER MONITORING

CCS offers different methods to generate a trigger for flow indication. Flow indication is required to only use AFGUARD signals in case of flow. Otherwise AFGUARD without flow can create false signals coming from condensation effects of condensed water in front of the detector.

Following modes are available:

**TRIGGER:**
- Continuous
- Flow meter
- Delta P
- Input signal

For a CHANGE click on the < > Button.

**DELAY MONITORING** for continuous trigger:
- Disabled
- Type in time span to start monitoring after trigger went on.

**STOP MONITORING** for continuous trigger:
- Type in time span to stop monitoring after trigger went off.

**START MONITORING** for FLOW METER option
- Type in flow rate to start monitoring (here – a flow signal can be used to indicate flow).

**START MONITORING** for DELTA P option
- Type in delta p rate to start monitoring (here – a signal from dp transmitter can be used to indicate flow – no flow --> no dp).
DELAY MONITORING for INPUT SIGNAL option:
- Disabled
- Type in time span to start monitoring after trigger went on.

Click NEXT >> to continue

3.2.5 AFGUARD® setting (free water sensor)

AFGUARD free water sensor is intended to measure the amount of free water in Jet fuel. Therefore the AFGUARD should be located in main stream of distribution path for Jet fuel to detect the amount of free water just in time of delivery. AFGUARD signals could be used to:

- show actual measured amount of free water to address Alarm and/or Warning using every peak in free water crossing the optical path of AFGUARD.
- give out average amount of free water as mathematical result coming from flow and free water measurement to give out averaged free water signal
- give out ALARM in case of high levels of water (water slug)

EACH AFGUARD has a calibration protocol. You will need the high value for setting up the measuring range of the AFGUARD.

High range could be found here:

![Part of calibration protocol of AFGUARD® free water sensor.](image)

Picture: part of calibration protocol of AFGUARD® free water sensor.
If you do not know about calibration range of AFGUARD® free water sensor - please contact your FAUDI Aviation sales contact. You need to have the serial no of AFGUARD® in use.

### AFGUARD Kalibrierung

<table>
<thead>
<tr>
<th>Sensorummer</th>
<th>AFG0/00020/c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Datum</td>
<td>11.11.2011</td>
</tr>
<tr>
<td>T. Prin</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Messwiderstand</th>
<th>470 kOhm</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 ppm - fine droplets</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Verstärkung</th>
<th>Trübung 2.22</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wasser</td>
<td>5.54</td>
</tr>
<tr>
<td>Diodenüberwachung</td>
<td>3.45</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DA-Wandlerwerte</th>
<th>Dunkelstrome 116</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offset Trübung</td>
<td>0</td>
</tr>
<tr>
<td>Offset Wasser</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DA-Output</th>
<th>4 mA - Wert 643</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 mA - Wert 3240</td>
<td></td>
</tr>
</tbody>
</table>

#### 3.2.5.1 SENSOR SETTING for AFGUARD inlet and outlet

CCS is prepared to run one or two AFGUARD sensors. To change between only one or two sensors – please contact FAUDI Aviation GmbH. There is a special password level to enable additional sensors like the inlet AFGUARD.
3.2.5.1.1 AFGUARD Inlet

Press [AFGUARD INLET] to enter the AFGUARD INLET menu:
To set up the AFGUARD Inlet, there are four submenus.

The steps are explained in the following table:

<table>
<thead>
<tr>
<th>Submenu 1 of 4</th>
<th>DISPLAYED UNIT:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>It is possible to switch between ppm and %</td>
</tr>
<tr>
<td></td>
<td>General setting is ppm.</td>
</tr>
</tbody>
</table>

| SIGNAL ATTENUATION: |
| Possibility to average the measured signals for a defined period to get rid of spikes and peaks. General setting is disabled. |
| To enter a specific time frame press blue button and enter the required time. Press Enter to activate. |

| MAX. MEASURE RANGE: |
| please adjust AFGUARD® calibration range (most of them should be calibrated for 0 to 50 ppm. Type in high range of calibration (here: 50 ppm) - please refer to calibration protocol of free water sensor AFGUARD® for high level. |
| It is the ppm value when the AFGUARD® delivers a current of 20mA. |
**WARNING LEVEL**: A ppm value at which a water warning gets triggered. It should be 15 ppm according to JIG bulletin 110.

Press blue button and set the level.

**DELAY SWITCH ON**: Time for which the warning level should be present to switch the relay.

**MANUAL RESET**: To enable or disable manual reset options.

**MAX. NO. OF WARNINGS**: To activate the Alarm relay after predefined no of warnings.

---

**ALARM LEVEL**: The limit at which an alarm gets triggered and the alarm relay gets released.

**DELAY SWITCH-ON**: The time the water contamination must be above the specified value until the alarm relay gets triggered and the blue lamp blinks fast.

**MANUAL RESET**: To enable or disable manual reset options.
One Warning will release the warn relay (slow blinking LED) – several warnings will activate the alarm relay – dependent on “no of warnings”
Multiple warnings or one alarm or one water slug will release the alarm relay (fast blinking LED). This only will happen when the Water Monitoring is activated.
Go << BACK and access the AFGUARD OUTLET sensor

### 3.2.5.1.2 AFGUARD Outlet

To set up the AFGUARD OUTLET, there are four submenus.

The steps are explained in the following table:
**DISPLAYED UNIT:**
It is possible to switch between ppm and %. General setting is ppm.

**SIGNAL ATTENUATION:**
Possibility to average the measured signals for a defined period to get rid of spikes and peaks. General setting is disabled.

To enter a specific time frame press blue button and enter the required time. Press Enter to activate.

**MAX. MEASURE RANGE:**
Please adjust AFGUARD® calibration range (most of them should be calibrated for 0 to 50 ppm). Type in high range of calibration (here: 50 ppm) - please refer to calibration protocol of free water sensor AFGUARD® for high level.

It is the ppm value when the AFGUARD® delivers a current of 20mA.
Submenu 2 of 4 WARNING

OUTLET WARNING

<table>
<thead>
<tr>
<th>WARNING LEVEL:</th>
<th>15 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELAY SWITCH-ON:</td>
<td>9.0 sec</td>
</tr>
<tr>
<td>MANUAL RESET:</td>
<td>ENABLED</td>
</tr>
<tr>
<td>MAX. NO. OF WARNINGS</td>
<td>DISABLED</td>
</tr>
</tbody>
</table>

for changes, press on the edit areas! 12:23:24

WARNING LEVEL: A ppm value at which a water warning gets triggered. It should be 15 ppm according JIG bulletin 110.
Press blue button and set the level.

DELAY SWITCH ON: Time for which the warning level should be present to switch the relay.

MANUAL RESET: To enable or disable manual reset options.

MAX. NO. OF WARNINGS: To activate the ALARM relay after predefined no of warnings.

Submenu 3 of 4 ALARM LEVEL

OUTLET ALARM

<table>
<thead>
<tr>
<th>ALARM LEVEL:</th>
<th>30 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELAY SWITCH-ON:</td>
<td>9.0 sec</td>
</tr>
<tr>
<td>MANUAL RESET:</td>
<td>ENABLED</td>
</tr>
</tbody>
</table>

for changes, press on the edit areas! 12:24:41

ALARM LEVEL: The limit at which an alarm gets triggered and the alarm relay gets released. According JIG bulletin 110 – ALARM level should be 30 ppm for 10 seconds.

DELAY SWITCH-ON: The time the water contamination must be above the specified value until the alarm relay gets triggered and the blue lamp blinks fast.

MANUAL RESET: To enable or disable manual reset options.
Submenu 4 of 4 WATER SLUG

OUTLET WATER SLUG

DELAY SWITCH-ON: 4.0 sec
MANUAL RESET: ENABLED

for changes, press on the edit areas!

DELAy SWITCH-ON:
The time the water contamination must be above the specified value until the alarm relay gets triggered and the blue lamp blinks fast. It should be 5 sec according JIG bulletin 110.

MANUAL RESET:
To enable or disable manual reset options.

One Warning will release the warn relay (slow blinking LED)
Multiple warnings or one alarm or one water slug will release the alarm relay (fast blinking LED). This only will happen when the Water Monitoring is activated.

You will return to the setup screen where you can manually enter the sensor menu, the trigger menu or the system settings. Go back and you will enter the dashboard menu.
3.2.5.2 Check for the right settings

If your sensors are connected wrong, then the dashboard may show you some errors. E.g. if no sensors are connected yet, the screen could look like the following:

<table>
<thead>
<tr>
<th>CONTAMINATION CONTROL SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLOW RATE</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td><strong>ERROR</strong></td>
</tr>
<tr>
<td>INLET</td>
</tr>
<tr>
<td>MEASURED WATER</td>
</tr>
<tr>
<td>--.-- ppm</td>
</tr>
<tr>
<td>OUTLET</td>
</tr>
<tr>
<td>MEASURED WATER</td>
</tr>
<tr>
<td>--.-- ppm</td>
</tr>
</tbody>
</table>

Make sure every sensor is connected properly. If you don’t connect a sensor which is expected by the system, you will see Broken Wire Errors on the main screen. In this case, check the connections first.

If sensors are connected properly but system is waiting for a trigger signal to start measurement – it could look like below:

<table>
<thead>
<tr>
<th>CONTAMINATION CONTROL SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLOW RATE</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td><strong>45 l/min</strong></td>
</tr>
<tr>
<td>INLET</td>
</tr>
<tr>
<td>MEASURED WATER</td>
</tr>
<tr>
<td>--.-- ppm</td>
</tr>
<tr>
<td>OUTLET</td>
</tr>
<tr>
<td>MEASURED WATER</td>
</tr>
<tr>
<td>--.-- ppm</td>
</tr>
</tbody>
</table>

12:30:24
3.3 Setup

At the first launch of the CCS you should use the INSTALLER to set up the system. If you want to CHANGE any settings later, you can go to the setup. You should never open the setup and make CHANGEs during a refuelling process!

There are two levels for the setup:
- User
- Administrator

The User level has the following rights:
- CHANGE language
- CHANGE date and time

The Administrator has the following rights:
- CHANGE language
- CHANGE system settings
  - Date and time
  - Units
  - User PIN and Administrator PIN
  - Timing settings
  - Network settings
  - Reset configuration to defaults
  - Reset history
  - Filter Parameter
- CHANGE sensor inputs
  - Flow Rate
  - Pressure
  - Interlock
  - SLUGGUARD
  - AFGUARD Inlet
  - AFGUARD Outlet
  - Water Monitoring
- Launch INSTALLER

Setup screen – to be addressed from main screen
To ENTER the setup procedure – please click on Setup button.

There are two additional password levels available which are intended for service providers only.
In case of service needs – please ask your local service provider or contact FAUDI Aviation GmbH in Germany
3.3.1 Password level for setup of sensors:

![System Setup Diagram]

3.3.2 Super Master password level

To reset password levels and to assist in general settings. Ask FAUDI Aviation GmbH in case.
3.4 Setup menu

### CONTAMINATION CONTROL SYSTEM

<table>
<thead>
<tr>
<th>FLOW RATE</th>
<th>DELTA P</th>
<th>SLUGGUARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>47 l/min</td>
<td>0.000 psi</td>
<td>OK</td>
</tr>
</tbody>
</table>

**INLET**  
WAIT FOR TRIGGER

<table>
<thead>
<tr>
<th>MEASURED WATER</th>
<th>AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>--.-- ppm</td>
<td>--.-- ppm</td>
</tr>
</tbody>
</table>

**OUTLET**  
WAIT FOR TRIGGER

<table>
<thead>
<tr>
<th>MEASURED WATER</th>
<th>AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>--.-- ppm</td>
<td>--.-- ppm</td>
</tr>
</tbody>
</table>

After pressing the **MENU** button and afterwards the **SETUP** button,

### CONTAMINATION CONTROL SYSTEM

<table>
<thead>
<tr>
<th>INFO</th>
<th>DELTA P</th>
<th>SLUGGUARD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.000 psi</td>
<td>OK</td>
</tr>
</tbody>
</table>

WAIT FOR TRIGGER

<table>
<thead>
<tr>
<th>MEASURED WATER</th>
<th>AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>--.-- ppm</td>
<td>--.-- ppm</td>
</tr>
</tbody>
</table>

WAIT FOR TRIGGER

<table>
<thead>
<tr>
<th>MEASURED WATER</th>
<th>AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>--.-- ppm</td>
<td>--.-- ppm</td>
</tr>
</tbody>
</table>

---

– you are immediately asked to ENTER your PIN number:
Press ENTER when you are finished.

Following PIN numbers are preconfigured:

Administrator – PIN level: 12345678
User – PIN level: 00000000

After ENTERing your PIN number, you should ENTER one of the following menu levels:

- Setup
  - System
  - Display Units
  - Date and Time
  - Network
  - CHANGE PIN
- Timing
- Reset
  - Reset Config
  - Reset History
- Filter Parameter (optional)
- Sensor Input
  - Pressure
  - Flow Rate
  - AFGUARD Inlet
  - AFGUARD Outlet
  - SLUGGUARD
  - Interlock Settings
  - Water Monitoring
- Language
- INSTALLER

Warning: settings in setup have effect to alarm behaviour, data logging and more. Never CHANGE settings of the system during operation!
In the following the Admin Setup is explained.
3.4.1 Sensors

This menu is to set up the right values for the sensors in use:
Press the `SENSORS` button – you will enter the following screen where you can select
AFGUARD INLET
AFGUARD OUTLET
SLUGGUARD
FLOW METER
DELTA PRESSURE
DP SWITCH
3.4.1.1 AFGUARD INLET

You can choose four setup masks:

- **AFGUARD** – where you are asked to set up the measurement values:

  ![AFGUARD INLET](image)

  Press a button: 14:40:26

  You can choose four setup masks:

  - AFGUARD
  - WARNING
  - WATER SLUG
  - ALARM

  **DISPLAYED UNIT:** ppm

  **SIGNAL ATTENUATION:** 1.0 sec

  **MAX. MEASURE RANGE:** 50 ppm

  For changes, press on the edit areas! 14:42:01

Displayed Unit: select ppm or %
Signal attenuation: to slow down the speed of response for the AFGUARD signals. Max. measurement range. Related to the calibration range: In most cases 50 ppm due to the calibration of 0 to 50 ppm for the 4 to 20 mA signal.

Water Slug – where you are asked to set up the behaviour of the AFGUARD in case of water slug indication:

Delay Switch on: to only generate an alarm if the slug is active for the time setting: between 0.1 and 600 sec. – JIG bulletin 110 is asking for 5 seconds for the outlet AFGUARD only.
Warning: where you are asked to set up the behaviour in case of water levels above the warning range (JIG bulletin 110 is asking for more than 15 ppm):

- **Warning level**: 30 ppm
- **Delay switch-on**: 9.0 sec
- **Manual reset**: Enabled
- **Max. no. of warnings**: Disabled

For changes, press on the edit areas! 14:51:48

Warning level should be 15 ppm.

Delay switch on should be 10 seconds in total.

Manual reset should be enabled to enter a password level in case of alarm.

Max. no of warnings can be used to go for an alarm if there are several warnings in between one refuelling operation and the operator likes to be informed about the multiple warnings.

More than 2 warnings in between one refuelling operation should generate an alarm.

Alarm: Where you are asked to set up the behaviour in case of water levels above the alarm range (JIG bulletin 110 is asking for more than 30 ppm):
Alarm level should be 30 ppm

Delay switch on should be 10 sec in total

Manual reset should be disabled to only reset using a password level.

**3.4.1.2 AFGUARD OUTLET**

Same procedure for the AFGUARD outlet:
Ppm level = 30 ppm, delay time = 10 sec, password required to set back the alarm
3.4.1.3 SLUGGUARD

SLUGGUARD is a sensor according EI 1592, intended to inform about high levels of water in fuel / to shut down flow in case of water. Can be mounted in the pipe section to prevent water slugs or can be mounted on low points to inform about the build-up of water in sumps or drain ports.

Monitoring: Should be enabled when using a SLUGGUARD sensor
Alarm delay should be 1 sec max to be fast enough
Manual reset should be disabled – It will only show an alarm in case of water. After drainage – alarm automatically disappears. In case of required password to reset the alarm – please enable manual reset.
Input alarm state dependant on the configuration of the SLUGGUARD sensor
3.4.1.4 Flow meter

Monitoring should be enabled if connected to the flow meter.
Input signal can be changed from pulse, 0 to 20 mA and 4 to 20 mA – choose the right setting.
Flow unit must be selected when using current signals.
Max. flow rate shall be set in case of current signals. Otherwise pulse per volume in case of pulse signals:

FLOW METER

- Monitoring: Enabled
- Input signal: 4-20 mA
- Flow unit: Liter
- Max. flow rate: 4000 l/min

Press a button: 15:04:30

FLOW METER

- Monitoring: Enabled
- Input signal: Pulse
- Flow unit: Liter
- Pulses/Liter: 1.000

Press a button: 15:06:32
3.4.1.5 Delta Pressure

Monitoring must be enabled in case of existing dp transmitter, connected to the CCS gold
Input signal must be selected – to be chosen between 0 to 20 mA and 4 to 20 mA
Pressure units to be selected: choose between psi, kPa, bar
Max. delta pressure for the delta p transmitter must be selected (calibration range)
3.4.1.6 DP SWITCH

Should be enabled to stop fuelling when increasing max. allowed differential pressure over the filter elements.
Operating mode can be selected between analogue signals (dp transmitter in use) or digital signal (proximity switch in use).
Max. delta pressure to set alarm level for the filter elements (in most cases it is 15 psi)
Signal attenuation to have a slight delay for the measured signal to avoid peaks.
3.4.2 Trigger

To avoid false measurements and false warnings and alarms – CCS is asking for a status signal to clearly indicate a flow situation. Without flow – the likelihood for false signals is on the high level as condensation effects on the optics of the water sensors can happen. Under flow situation – condensed water will be washed away.

Trigger signals can be generated by the use of several devices like: flow meter, delta p transmitter, input signal coming from separate device, pulses coming from pulse meter, continuous signal coming from master device.
Dependant on the trigger setting – start monitoring signal must be chosen. E.g. 100 l/min for flow signal in case of a flow meter.

Trigger signal can be delayed to fold the signal in case of short stop in flow, dp or whatever trigger signal is chosen.
3.4.3 System

3.4.3.1 Network

To set up language, time, date, data logging, change pin and set up network.
To communicate with master device – IP address and possible FTP server address can be generated.

### 3.4.3.2 IP address

#### IP ADDRESS

- 192.168.10.231

#### SUBNET MASK

- 255.255.255.0

#### GATEWAY

- 10.1.1.254

---

**CAUTION!** Changing of the mask is effective only after a reboot!

[REBOOT]

---

change the single edit mask 15:22:31

### 3.4.3.3 FTP server settings

#### FTP DATA TRANSFER

#### FTP-SERVER

#### FTP SERVER TEST

press a button 15:23:24
3.4.3.4 FTP data transfer

Selection of datafiles to be transferred:

![Setup Data Transfer](image)

press a button 15:24:22

3.4.3.5 FTP file server

![FTP-Server Setting](image)

change the single edit mask 15:24:56
3.4.3.6 FTP file server test

To test FTP connection

---

FTP SERVER TEST

FTP CONNECTION IS NOT ACTIVE
PRESS THE "CONNECT" BUTTON

CONNECT

press a button 15:26:11

---

3.4.3.7 IP Settings

By a click on Network, the following dialog will open:

---

IP SETTING

<table>
<thead>
<tr>
<th>IP ADDRESS</th>
<th>192</th>
<th>168</th>
<th>10</th>
<th>231</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUBNET MASK</td>
<td>255</td>
<td>255</td>
<td>255</td>
<td>0</td>
</tr>
<tr>
<td>GATEWAY</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td>254</td>
</tr>
</tbody>
</table>

CAUTION! a changing of the mask is effective only after a reboot!

REBOOT

change the single edit mask 15:29:00
The system has one ethernet interface. For this interface you can CHANGE the network settings in this menu.

The Default IP Address is 192.168.10.231 with subnet mask 255.255.255.0 (Prefix length 24).

The internet gateway is 0.0.0.0 by default. This means it is undefined. It could be necessary for future functions of the CCS.

If you want to set the internet gateway, it must be in the same subnet than the system. In this case it should be in range 192.168.10/24. The internet gateway is the address of the router which connect the subnet with the internet.

To CHANGE the IP Address, Subnet mask or Internet gateway, click on the corresponding blue box. A dialog will open.

Use the keypad on the right to type in the decimal IPv4 address in four octets separated by a dot and press ENTER.
You will go back to the last screen.

It is very important to check the values in the blue boxes again after a click on ENTER. If you ENTER an invalid IP address, it can happen that the blue boxes are blank, or they show a wrong value. **The shown addresses will be set when the system reboots.** You can do this by disconnecting the power supply or by a click on Reboot now.
When you click on Reboot now, a confirm dialog opens:

**Reboot**

Are you sure you want to reboot now?

- Yes, Reboot
- No, go back

Press a Button | 11:30:30
### 3.4.3.8 Override

In some cases, it can be helpful to deactivate the alarm functionality of the System. The CCS supports an Override feature. To open the override mode, navigate to Setup and then click on **Override**.

#### CONTAMINATION CONTROL SYSTEM

<table>
<thead>
<tr>
<th>INFO</th>
<th>DELTA P</th>
<th>SLUGGUARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>min</td>
<td>0.000 psi</td>
<td>OK</td>
</tr>
</tbody>
</table>

**WAIT FOR TRIGGER**

<table>
<thead>
<tr>
<th>--.-- ppm</th>
<th>AVERAGE</th>
<th>--.-- ppm</th>
</tr>
</thead>
</table>

**WAIT FOR TRIGGER**

<table>
<thead>
<tr>
<th>--.-- ppm</th>
<th>AVERAGE</th>
<th>--.-- ppm</th>
</tr>
</thead>
</table>

#### MENU

| 15:30:44 |

You have to enter your pin no.,
The Override dialog will open.

#### ALARM OVERRIDE

**OVERLIDE MINUTES:**

| - | 10 | + |

**ALARM OVERRIDE**

please insert your PIN

15:31:39
With the button in the Override Time section, you can set up a time up to 60 min. For this time, the both relays will stay in ready position, they won’t get released when an alarm / water slug / warning / error appears. To indicate the unreadiness of the system, the blue lamp stays off. The time begins with a click on ALARM OVERRIDE.

To cancel the override function: press override again or reboot.

During override – the blue light is off and any alarm will not interfere with the relay outputs.
3.5 Dashboard (main screen)

The Dashboard is the main screen of the visualisation. It shows several information about status and sensor signals.

<table>
<thead>
<tr>
<th>CONTAMINATION CONTROL SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLOW RATE</td>
</tr>
<tr>
<td>1247 l/min</td>
</tr>
<tr>
<td>INLET</td>
</tr>
<tr>
<td>MEASURED WATER</td>
</tr>
<tr>
<td>OUTLET</td>
</tr>
<tr>
<td>MEASURED WATER</td>
</tr>
</tbody>
</table>

Information displayed:
- All activated sensors like FLOW RATE, DELTA P, SLUGGUARD, INLET AFGUARD (Upstream), OUTLET AFGUARD (Downstream)

Status information:
Time: 15:36:37
3.5.1.1 Status information

**CONTAMINATION CONTROL SYSTEM**

<table>
<thead>
<tr>
<th>FLOW RATE</th>
<th>DELTA P</th>
<th>SLUGGUARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1243 l/min</td>
<td>0.000 psi</td>
<td>OK</td>
</tr>
</tbody>
</table>

**INLET**
AFGUARD ERROR

**MEASURED WATER**

<table>
<thead>
<tr>
<th>ppm</th>
<th>ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

**OUTLET**
STATUS: OK

**MEASURED WATER**

<table>
<thead>
<tr>
<th>ppm</th>
<th>ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>1.1</td>
</tr>
</tbody>
</table>

In case of sensor fault – status line becomes red (Alarm) or amber (warning)

**CONTAMINATION CONTROL SYSTEM**

<table>
<thead>
<tr>
<th>FLOW RATE</th>
<th>DELTA P</th>
<th>SLUGGUARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERROR</td>
<td>ERROR</td>
<td>ALARM SUMP</td>
</tr>
</tbody>
</table>

**INLET**
WAIT FOR TRIGGER

**MEASURED WATER**

<table>
<thead>
<tr>
<th>ppm</th>
<th>ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

**OUTLET**
AFGUARD ERROR

**MEASURED WATER**

<table>
<thead>
<tr>
<th>ppm</th>
<th>ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

This enables service provider to search for the sensor which is generating the Warning / Alarm
Same procedure in case of water warnings or alarms:

### Contamination Control System

<table>
<thead>
<tr>
<th>Component</th>
<th>Status</th>
<th>Flow Rate</th>
<th>Delta P</th>
<th>Slugguard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inlet</td>
<td>Warning: Water Quantity</td>
<td>1244 l/min</td>
<td>0.000 psi</td>
<td>OK</td>
</tr>
<tr>
<td>Measured Water</td>
<td>53.9 ppm</td>
<td>Average</td>
<td>29.7 ppm</td>
<td></td>
</tr>
<tr>
<td>Outlet</td>
<td>Warning: Water Quantity</td>
<td>17.3 ppm</td>
<td>Average</td>
<td>8.4 ppm</td>
</tr>
</tbody>
</table>

**Menu** 08:26:29

---

<table>
<thead>
<tr>
<th>Component</th>
<th>Status</th>
<th>Flow Rate</th>
<th>Delta P</th>
<th>Slugguard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inlet</td>
<td>Warning: Water Quantity</td>
<td>1243 l/min</td>
<td>0.000 psi</td>
<td>OK</td>
</tr>
<tr>
<td>Measured Water</td>
<td>53.9 ppm</td>
<td>Average</td>
<td>35.3 ppm</td>
<td></td>
</tr>
<tr>
<td>Outlet</td>
<td>Alarm: Water Quantity</td>
<td>33.6 ppm</td>
<td>Average</td>
<td>12.7 ppm</td>
</tr>
</tbody>
</table>

**Menu** 08:27:00
3.5.1.2 History

JIG bulletin 110 is asking for a history of water levels for water peak and water average for the last 50 refuelling operations.

The history will be provided as a graph which can be activated by pressing on the dedicated sensor fields like
- INLET AFGUARD MEASURED WATER
- INLET AFGUARD AVERAGE
- OUTLET AFGUARD MEASURED WATER
- OUTLET AFGUARD AVERAGE

Press field area to activate graph of history for the sensors
Example of history for inlet and outlet AFGUARD

To leave the history screens – tip on it again.

3.5.2 Sensor faults

3.5.2.1 Broken wire alarm

Broken wire and sensor error can only get detected for current sensors with signal range “4..20 mA”. It is not possible to detect a wire break on a pulse flowmeter, a 0..20mA sensor or a binary 24V High/Low voltage input like trigger, reset or interlock.

The table explains the states of a 4..20mA sensor:

<table>
<thead>
<tr>
<th>Range</th>
<th>Status</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 3.8 mA</td>
<td>No sensor connected or wire break</td>
<td>Check connection, power supply of sensor / barrier</td>
</tr>
<tr>
<td>3.8 – 4mA</td>
<td>Sensor or barrier connected, error</td>
<td>Please refer to the manual of the sensor or barrier</td>
</tr>
<tr>
<td>4 – 20mA</td>
<td>Sensor works properly</td>
<td></td>
</tr>
</tbody>
</table>

Please consider that in Ex safe areas a safety barrier is mounted between sensor and CCS. The problems don’t need to come from the sensor, it can also come from the barrier or connection between.

Please check cabling to make sure that all connections are OK. Faulty alarm could either be caused by wrong pre-setting of sensor signals. In this case we recommend launching the INSTALLER again.
For the SLUGGUARD there is also a fail-safe option which allows to show a wire break. The SLUGGUARD should output 24V if everything is ok (no water). It should output 0V when it detects water. In this case the CCS shows a SLUGGUARD alarm, when it comes to a cable break. Make sure the SLUGGUARD® is programmed with this logic and the wiring matches the fail-safe requirements.

### 3.5.3 Reset Alarm

#### 3.5.3.1 Reset Alarm by Software

![Contamination Control System Table]

In any case of activated alarm – the alarm need to be reset by the use of a rest key (external key to trigger digital input which set back the alarm) or by the use of password level. Go into menu and press the reset key. Type in password to reset the alarm and press Enter.
If there is no ALARM condition present which means:
- When Water Monitoring is active and:
  o No Water warnings Inlet/Outlet
  o No Water alarm Inlet/Outlet
  o No Water slug Inlet/Outlet
- No SLUGGUARD alarm
- No wire breaks ($I < 38 mA$) or sensor errors ($I < 4 mA$) on all activated sensors
- No Overflow
- No Over DP
If the listed conditions don’t match, the reset won’t be accepted, affecting to the state of the relays and depending on the reason of the alarm to the blue flashlight.

3.5.3.2 Reset Alarm using external switch
Alarm could either be reset using an external reset switch. CCS consists of different digital inputs. Digital input RESET has been setup to reset Alarm or Warning via external switch, e.g. a key switch. Please refer to CCS installation instructions for hardware setup.
3.5.4 Operational States

This page describes the different states of the blue LED flashlight (water indicator). There are 5 different light patterns of the water indicator:

<table>
<thead>
<tr>
<th>Type</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ready blinking</td>
<td>- System ready, waiting for trigger condition (AFGUARDs unarmed)</td>
</tr>
<tr>
<td>Permanently on</td>
<td>- Actually refuelling, monitoring active (AFGUARDs armed)</td>
</tr>
<tr>
<td>Slow flashing (0.33Hz)</td>
<td>- Water warning</td>
</tr>
<tr>
<td>Fast flashing (2Hz)</td>
<td>- Water Alarm (multiple Warnings, Alarm, Slug)</td>
</tr>
<tr>
<td></td>
<td>- Caused by an AFGUARD or SLUGGUARD</td>
</tr>
<tr>
<td>Permanently off</td>
<td>- Overflow Alarm,</td>
</tr>
<tr>
<td></td>
<td>- Over DP Alarm,</td>
</tr>
<tr>
<td></td>
<td>- Sensor Error,</td>
</tr>
<tr>
<td></td>
<td>- Sensor cable break,</td>
</tr>
<tr>
<td></td>
<td>- CCS unpowered</td>
</tr>
<tr>
<td></td>
<td>- Override active</td>
</tr>
</tbody>
</table>

Caution: When you begin refuelling, by pressing the deadman, please check, that the blue indicator lamp turns on permanently within a few seconds. This is very important. When the lamp is not lighting permanently, this means, that the water monitoring is inactive. The measured water values by the AFGUARD®(s) will be ignored!
The different flashing patterns are shown in the following diagrams:

- **Ready Blinking**
  - Diagram showing intervals of blinking.

- **Permanently on**
  - Diagram showing continuous on.

- **Fast Flashing 2Hz (Water Alarm)**
  - Diagram showing fast, regular flashes.

- **Slow Flashing 0.33Hz (Water Warning)**
  - Diagram showing slow, regular flashes.

- **Permanently off**
  - Diagram showing constant off state.
3.5.4.1 Blue flash light options – using service password level

There is a special password available to set up the blue flashlight.

- **AFGUARD INLET**
  - Activate this field to generate a fast flashing blue light for better visibility

- **READY FLASH**
  - Activate this field to get the ready flash to inform about the status without flow (ready - blink frequency)

- **FLASH LIGHT**
  - Activate this field to generate a fast flashing blue light for better visibility

- **COMMA IN CSV**

**SYSTEM SETUP**

**BACK STEP TIME TO HOME**

<table>
<thead>
<tr>
<th>AFGUARD INLET</th>
<th>READY FLASH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FLASH LIGHT</th>
<th>COMMA IN CSV</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please insert your PIN

08:52:05
3.5.5 Info screen

When pressing the INFO button on the menu screen – all relevant contact info’s are displayed on this screen.

Contamination Control System

Version: 2019-02-20.1
IP Adress: 192.168.10.231
Subnet Mask: 255.255.255.0
Internet Gateway: 0.0.0.0

FAUDI Aviation GmbH
Scharnhorststraße 7B
D-35260 Stadtallendorf
Fax: +49 6428 4465 - 221
Email: sensor@faudi-aviation.com
Web: www.faudi-aviation.com

21.02.19 13:22:19

When contacting FAUDI Aviation GmbH for service purposes – please make sure to have data on info screen prepared. These data are relevant to make online service available.

Clicking on the screen again – will bring you back to main screen.
3.5.6 Override function

Press this button to override the alarm and warning function of the CCS. During Override – the blue flash light will be constantly off to indicate the special override situation.

To Override – you will be asked to type in your password

You will then be asked to type in the time frame for the override in minutes using the + and – buttons. Then press ALARM OVERRIDE.

Override function can be disabled by pressing the override function in Menu again or by a reset of the CCS.
Activated Override function will be displayed on the screen – blue flash light is off.
3.6 Datalogger

The CCS consists about a built-in data logger. All relevant data are stored there.

This data is stored during the process on a USB memory stick located on the PCB of the CCS in the front door.

To get access to these data, remove the USB memory stick and plug it into a computer.

Caution: Do not remove the USB drive during a refuelling process of the system! This can cause in data loss of the currently opened logfile.

Logged data could be analysed with every computer-based software with the ability to read CSV data or Excel files. A simple text editor like Microsoft Notepad will do it as well. For a more comfortable evaluation we recommend Excel or an equivalent tool.
Please insert the memory stick into a computer. You can see following data structure:

There are three directories:

1. SYSTEM
2. JIG_REPORT
3. LOGGING

3.6.1 System

This folder stores the actual list with settings which can be downloaded and which should be used for possible service evaluation of CCS gold
### 3.6.2 JIG_REPORT

This folder does have an excel file which represents all refuelling operations since start of the device. For every refuelling CCS stores one row including peak and average values for the AFGUARD, sensors as well as status information which gives a good overview about critical refuelling operations where warning or alarms showed up.

![Excel file screenshot]

Including peak and average values for the AFGUARD, sensors as well as status information which gives a good overview about critical refuelling operations where warning or alarms showed up.
3.6.3 Logging

In the directory "logging" there are files for every refuelling process, which contains logged information of the refuelling.
Every time when the refuelling starts (by interlock or monitoring), then a new file will be created. The filename contains the date and time of the begin of the refuelling process. If the timestamp is wrong, this can be a sign that the system time of the CCS is set wrong or the battery for the real time clock is discharged.

3.6.3.1 How to use data

Find the match between critical JIG-REPORT and LOGGING file
For example:

JIG-LOGGING tells that there have been a refuelling event with a water warning for the outlet sensor on 10th of July 2019 - starting the log file at 10:16:04

➔ Try to select the file on the LOGGING folder with the corresponding naming:
Open this file and evaluate the data:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10.07.2019 10:16:05</td>
<td>2.2</td>
<td>1.1</td>
<td>1.4</td>
<td>1.1</td>
<td>1135</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.07.2019 10:16:07</td>
<td>3.1</td>
<td>1.3</td>
<td>1.7</td>
<td>1.1</td>
<td>1255</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.07.2019 10:16:09</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
<td>1254</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.07.2019 10:16:11</td>
<td>17.9</td>
<td>5.7</td>
<td>3.6</td>
<td>1.1</td>
<td>1255</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.07.2019 10:16:13</td>
<td>33.7</td>
<td>12.3</td>
<td>16.7</td>
<td>5.0</td>
<td>1253</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.07.2019 10:16:15</td>
<td>33.7</td>
<td>16.4</td>
<td>15.7</td>
<td>7.4</td>
<td>1246</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.07.2019 10:16:18</td>
<td>32.7</td>
<td>15.2</td>
<td>17.5</td>
<td>9.0</td>
<td>1246</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.07.2019 10:16:20</td>
<td>18.6</td>
<td>19.1</td>
<td>17.5</td>
<td>10.6</td>
<td>1246</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.07.2019 10:16:22</td>
<td>17.5</td>
<td>19.0</td>
<td>17.4</td>
<td>11.4</td>
<td>1240</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.07.2019 10:16:24</td>
<td>17.4</td>
<td>18.8</td>
<td>17.3</td>
<td>12.6</td>
<td>1245</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.07.2019 10:16:26</td>
<td>15.3</td>
<td>18.1</td>
<td>17.2</td>
<td>12.5</td>
<td>1247</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.07.2019 10:16:28</td>
<td>2.6</td>
<td>16.6</td>
<td>6.0</td>
<td>11.5</td>
<td>1245</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.07.2019 10:16:30</td>
<td>1.1</td>
<td>1.5</td>
<td>1.1</td>
<td>10.7</td>
<td>1245</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.07.2019 10:16:32</td>
<td>1.1</td>
<td>1.4</td>
<td>1.1</td>
<td>10.6</td>
<td>1245</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.07.2019 10:16:34</td>
<td>1.1</td>
<td>1.3</td>
<td>1.1</td>
<td>9.4</td>
<td>1247</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.07.2019 10:16:36</td>
<td>1.1</td>
<td>1.2</td>
<td>1.1</td>
<td>8.9</td>
<td>1247</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Here the logging interval is 2 second. To save memory, we recommend a value of 5 seconds. The needed memory on the USB drive increases linear to the number of logs. All sensors are optional. If no sensor is connected to the system, there will be no entry in the log. In this case, there is Inlet AFGUARD, Outlet aFGUARD, dp transmitter flow signal and SLUGGUARD sensor in the drain port of the filter activated.

Log file starts at 10:16:04, First log is delayed for 1 second as it represents a 2 second log (mid of the time frame for logging).

You can see a rise in inlet AFGUARD and OUTLET AFGUARD, peak levels are on the high value, average values went up (related to the flow values. After ten seconds OUTLET AFGUARD generates a warning which is logged in the file as well – reason why JIG-LOGGING does have the warning highlighted.

Using Excel – you can easily create charts out of the data:
3.7 Update via USB

A very comfortable way to do update whenever program CHANGEs or program updates are due could be done using built-in USB-connector.

Please replace the memory stick against the one with updated software and close the housing.
You should only proceed in the way described when there is no process running. Do not remove memory stick under process conditions (when DPGUARD is working or logs should be done)
Whenever update is needed, please make sure that no fuelling is ongoing.
4 Connection of CCS Gold to other devices

4.1 Connection Settings for local area network

You’re able to connect a Computer or a Smartphone or Tablet PC to the CCS via Local Area Network. This is necessary for setting up the system. Also, the refuelling process can be guarded via the so-called web visualisation.

The computer or smartphone and the CCS must be in the same IPv4 Network.

For connecting a Smartphone or Tablet PC, a Wi-Fi access point is required.

For an easy connection with a computer, you only need an Ethernet crosslink cable (Cat.5 or better).

4.1.1 Direct connection via Ethernet Cable

If you want to connect the computer directly without using a router with DHCP Server, follow these instructions:

1. Take your computer / laptop
2. Open the settings of your Ethernet connection (Network Adapter).
4. Open properties
   - Activate static network settings (no DHCP)
   - Change IP address to 192.168.10.100
   - Change Subnet mask to 255.255.255.0
   - Delete gateway settings
   - Delete DNS settings
   - Settings should be in accordance to the right picture
Press “OK”

Note the original settings e.g. by screenshot and carefully save the original information to set back your computer when finished with the settings on the CCS.

Connect your computer to the CCS using an Ethernet cable.

4.1.2 Connection via Wi-Fi

When you want to access to the CCS with a mobile device like a smartphone or a tablet PC or a Laptop using Wi-Fi, you need an access point or wireless router. The most routers support the Dynamic Host Configuration Protocol (DHCP). When you use a router with this feature, you don’t need to configure the IP Address of your smartphone / tablet / laptop manually, referring to the last chapter.

In the following steps, we show you how to configure a router. The screenshots show you the setup of the Teltonika® RUT955 router.

1. Connect the CCS to the router via an Ethernet cable
2. Connect your computer to the router (Ethernet or Wi-fi) the following pages show a configuration via Wi-fi using Windows
3. Open the adapter settings of your computer
4. Set the IP settings to automatic (DHCP) referring to the pictures
5. Open the configuration of your router by entering its IP address to your web browser. It is printed to the device
6. Change access password to router configuration and note
7. Set the IPv4 Address of the router to from default to 192.168.10.1
8. Set the Subnet mask to 255.255.255.0 or set the Prefix length to 24 (depending on the setup of your router)
9. Your router might disconnect because you changed its IP address. Reconnect by typing 192.168.10.1 to your web browser
10. Open the DHCP Settings of your router
11. Set the IP Address range to e.g. 192.168.10.100 to 192.168.10.199 (The CCS uses a static IP Address which is by default 192.168.10.231) The range must not contain the IP address of the CCS
12. Set a Wi-Fi passcode. It's recommended to use WPA2 or a better encryption
13. Rename the name (SSID) of the Wi-Fi. It is highly recommended to enter a number/code of the vehicle where the CCS is installed. Otherwise it will be difficult to differentiate between the devices if multiple CCS are installed at an airfield.
14. Now take your smartphone / tablet /laptop and access to the Wi-Fi of the router, enter the wi-fi passcode and make sure you are connected to the network.

Note that everybody who knows this passcode gets access to the CCS. For additional security we recommend setting another Wi-Fi code than the User and Administrator PIN of the CCS.
Autorisierung benötigt
Bitte Benutzernamen und Passwort eingeben.

Benutzername

Passwort: ********

Anmelden

Change password
You must change password to have this page! Password requirements: Minimum 8 characters, at least one uppercase letter, one lowercase letter and one number.

Administrator Password

New password: ********

Confirm new password: ********

Speichern

Übersicht
System 1
Now the address of the router changed from 192.168.1.1 to 192.168.10.1
You need to reconnect
Autorisierung benötigt

Bitte Benutzername und Passwort eingeben.

Benutzername: admin
Passwort: ********

Anmelden

Übersicht

Wireless Configuration

Wireless Access Points

Deaktivieren Bearbeiten Entfernen

Wireless Station Mode

Available when WAN is in WiFi operation mode only
### Wireless Access Point

Here you can configure your wireless settings like radio frequency, mode, encryption etc..

#### Gerätekonfiguration

<table>
<thead>
<tr>
<th>Allgemeine Einstellungen</th>
<th>Erweiterte Einstellungen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable wireless</td>
<td></td>
</tr>
<tr>
<td>Kanal</td>
<td>automatisch</td>
</tr>
</tbody>
</table>

#### Schnittstellenkonfiguration

<table>
<thead>
<tr>
<th>Allgemeine Einstellungen</th>
<th>WLAN-Verschlüsselung</th>
<th>MAC Filter</th>
<th>Erweiterte Einstellungen</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSID</td>
<td>Faudi.CCS.AP[Number]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hide SSID</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**WPA2-PSK**

Verschlüsselung: **WPA2-PSK**

Verschlüsselungsalgorithmus: **Erweiterte TKIP und CCMP (AES)**

Schlüssel: **********

**Speichern**
4.1.3 Open the web visualisation

When you connected your device to the CCS via Local Area Network, follow these steps:
- Make sure the CCS is powered on and wait about a minute until it has been booted. The status LED on the CCS on the left side of the battery must stop blinking and stationary light green.
- Start web browser. The browser must support HTML5.
- Type in http://192.168.10.231:8080/webvisu.htm

Following screen should appear (On first run, the installer appears instead of the dashboard):

<table>
<thead>
<tr>
<th>CONTAMINATION CONTROL SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLOW RATE</td>
</tr>
<tr>
<td>1249 l/min</td>
</tr>
<tr>
<td>DELTA P</td>
</tr>
<tr>
<td>0.000 psi</td>
</tr>
<tr>
<td>SLUGGUARD</td>
</tr>
<tr>
<td>OK</td>
</tr>
<tr>
<td>INLET</td>
</tr>
<tr>
<td>STATUS: OK</td>
</tr>
<tr>
<td>MEASURED WATER</td>
</tr>
<tr>
<td>1.1 ppm</td>
</tr>
<tr>
<td>AVERAGE</td>
</tr>
<tr>
<td>1.1 ppm</td>
</tr>
<tr>
<td>OUTLET</td>
</tr>
<tr>
<td>STATUS: OK</td>
</tr>
<tr>
<td>MEASURED WATER</td>
</tr>
<tr>
<td>1.1 ppm</td>
</tr>
<tr>
<td>AVERAGE</td>
</tr>
<tr>
<td>1.1 ppm</td>
</tr>
<tr>
<td>MENU</td>
</tr>
<tr>
<td>08:32:44</td>
</tr>
</tbody>
</table>

If there is a loading logo, try to actualize the site.
## 5 List of settings

Attached you will find a list of settings to be used for setup procedures.

<table>
<thead>
<tr>
<th>Section</th>
<th>Menu Point</th>
<th>Default Value</th>
<th>Recommended Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>Language</td>
<td>English</td>
<td></td>
</tr>
<tr>
<td>Date and Time</td>
<td>Year</td>
<td>Current Date</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Month</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Day</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Seconds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIN</td>
<td>PIN User</td>
<td>00000000</td>
<td>CHANGE and note</td>
</tr>
<tr>
<td></td>
<td>PIN Admin</td>
<td>12345678</td>
<td></td>
</tr>
<tr>
<td>Units</td>
<td>Pressure Unit</td>
<td>bar</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Volume Unit</td>
<td>liters (l)</td>
<td></td>
</tr>
<tr>
<td>Flow Rate Sensor</td>
<td>Signal (Sensor type)</td>
<td>Pulse</td>
<td>Check flow meter documentation</td>
</tr>
<tr>
<td></td>
<td>Measure range (20mA)</td>
<td>4000 l/min</td>
<td>Check flow meter documentation</td>
</tr>
<tr>
<td></td>
<td>Volume per Pulse</td>
<td>1 l</td>
<td>Check flow meter documentation</td>
</tr>
<tr>
<td></td>
<td>Attenuation time</td>
<td>2 sec</td>
<td>2 sec</td>
</tr>
<tr>
<td>Pressure Sensor</td>
<td>Signal (Sensor type)</td>
<td>N/A</td>
<td>Check DP sensor documentation</td>
</tr>
<tr>
<td></td>
<td>Measure range (20mA)</td>
<td>2.5 bar</td>
<td>Check DP sensor documentation</td>
</tr>
<tr>
<td></td>
<td>Attenuation time</td>
<td>2 sec</td>
<td>2 sec</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Min. flow for Monitoring</td>
<td>50 l/min</td>
<td>150 l/min</td>
</tr>
<tr>
<td></td>
<td>Min DP for Monitoring</td>
<td>0.05 bar</td>
<td>0.1 bar</td>
</tr>
<tr>
<td></td>
<td>Off delay Monitoring</td>
<td>10 sec</td>
<td>10 sec</td>
</tr>
<tr>
<td>AFGUARD Inlet</td>
<td>Available</td>
<td>no</td>
<td>Check assembly</td>
</tr>
<tr>
<td></td>
<td>Measure range (20mA)</td>
<td>50 ppm</td>
<td>50 ppm</td>
</tr>
<tr>
<td></td>
<td>Signal Attenuation time</td>
<td>0 sec</td>
<td>0 sec</td>
</tr>
<tr>
<td></td>
<td>Limit Warning</td>
<td>15 ppm</td>
<td>15 ppm</td>
</tr>
<tr>
<td></td>
<td>No. Of Warnings</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Level Alarm</td>
<td>30 ppm</td>
<td>30 ppm</td>
</tr>
<tr>
<td>Parameter</td>
<td>AFGUARD Outlet</td>
<td>SLUGGUARD</td>
<td>Interlock</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>Level Water Slug</td>
<td>&gt;50 ppm</td>
<td>&gt;50 ppm</td>
<td></td>
</tr>
<tr>
<td>On Delay Warning</td>
<td>10 sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On Delay Alarm</td>
<td>10 sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On Delay Water Slug</td>
<td>5 sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Available</td>
<td>yes</td>
<td>Check assembly</td>
<td></td>
</tr>
<tr>
<td>Measure range (20mA)</td>
<td>50 ppm</td>
<td>50 ppm</td>
<td></td>
</tr>
<tr>
<td>Signal Attenuation time</td>
<td>0 sec</td>
<td>0 sec</td>
<td></td>
</tr>
<tr>
<td>Limit Attenuation time</td>
<td>15 ppm</td>
<td>15 ppm</td>
<td></td>
</tr>
<tr>
<td>No. Of Warnings</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Level Alarm</td>
<td>30 ppm</td>
<td>30 ppm</td>
<td></td>
</tr>
<tr>
<td>Level Water Slug</td>
<td>50 ppm</td>
<td>50 ppm</td>
<td></td>
</tr>
<tr>
<td>On Delay Warning</td>
<td>10 sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On Delay Alarm</td>
<td>10 sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On Delay Water Slug</td>
<td>5 sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On Delay</td>
<td>0 sec</td>
<td>0 sec</td>
<td>1 sec</td>
</tr>
<tr>
<td>Off Delay</td>
<td>1 sec</td>
<td>1 sec</td>
<td>1 sec</td>
</tr>
<tr>
<td>Available</td>
<td>no</td>
<td>Check assembly</td>
<td></td>
</tr>
<tr>
<td>On Delay</td>
<td>5 sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Off Delay</td>
<td>5 sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interlock</td>
<td></td>
<td></td>
<td>No Interlock</td>
</tr>
<tr>
<td>No Interlock</td>
<td></td>
<td></td>
<td>End Refuelling Process after</td>
</tr>
<tr>
<td>Filter Parameter</td>
<td>Rated Flow</td>
<td>4000 l/min</td>
<td>Check Filter documentation</td>
</tr>
<tr>
<td></td>
<td>DP CHANGEout</td>
<td>1.5 bar</td>
<td>Check Filter documentation</td>
</tr>
<tr>
<td>Timing</td>
<td>Logger Interval</td>
<td>2 sec</td>
<td>2 sec</td>
</tr>
<tr>
<td>Network</td>
<td>IP Address</td>
<td>192.168.10.231</td>
<td>CHANGE only if necessary</td>
</tr>
<tr>
<td></td>
<td>Subnet Mask</td>
<td>255.255.255.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Internet Gateway</td>
<td>0.0.0.0</td>
<td></td>
</tr>
</tbody>
</table>
# 6 Troubleshooting

<table>
<thead>
<tr>
<th>Issue</th>
<th>Reason</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>I cannot reach the web visualisation with my computer or smartphone</td>
<td>The system has not been booted yet</td>
<td>Wait until the CCS has been booted. The Status LED must light green permanently. This can take up to 2 minutes</td>
</tr>
<tr>
<td></td>
<td>The PC or Smartphone is not in the same network with the CCS</td>
<td>Make sure the devices are connected, directly with an Ethernet cable or via a Wi-Fi router in between. Make sure the PC, or smartphone has a valid IP address. If you connect directly to the CCS with an Ethernet cable, make sure the network adapter of the PC has a static IP Address, no use of DHCP. Maybe a restart of the PC is necessary after CHANGE. Apply a ping command to the IP address of the CCS to check the connectivity.</td>
</tr>
<tr>
<td></td>
<td>The browser is too old and does not support HTML5</td>
<td>Get the latest version of your web browser.</td>
</tr>
<tr>
<td></td>
<td>The URL of the web visualisation is miswritten</td>
<td>The URL is: <a href="http://192.168.10.231:8080/webvisu.htm">http://192.168.10.231:8080/webvisu.htm</a> Only if the IP Address of the CCS didn’t get CHANGEd since delivery in factory condition. Otherwise, replace the IP address in the shown URL</td>
</tr>
<tr>
<td></td>
<td>The status LED of the CCS is blinking. The CCS does not boot.</td>
<td>Note the blinking pattern and contact the manufacturer.</td>
</tr>
<tr>
<td></td>
<td>There is a failure of the device. Usually this should not happen.</td>
<td>To Setup -&gt; Sensor Input and fix it. Refer to the datasheet of your sensor</td>
</tr>
<tr>
<td>The CCS shows wrong values for analogue sensors.</td>
<td>Wrong signal type is set</td>
<td>Do not mix up ranges 0..20mA and 4..20mA.</td>
</tr>
<tr>
<td></td>
<td>Wrong signal limits are set (Value for 20mA)</td>
<td>To Setup -&gt; Sensor Input and fix it.</td>
</tr>
<tr>
<td></td>
<td>The alarm relay is still released.</td>
<td>Wait until the CCS has been booted.</td>
</tr>
<tr>
<td></td>
<td>There is an alarm in memory.</td>
<td>Open the web visualisation (Dashboard) to find the reason for the alarm.</td>
</tr>
<tr>
<td></td>
<td>The system has not booted yet</td>
<td>Wait until the CCS has been booted.</td>
</tr>
<tr>
<td>The blue indicator lamp is permanently off.</td>
<td>Interlock signal is installed but it is 0V</td>
<td>Check wiring. check source of interlock signal. If there is no interlock signal, go to Setup -&gt; Interlock and check settings.</td>
</tr>
<tr>
<td></td>
<td>Lamp or wiring is broken</td>
<td>Check functionality of lamp</td>
</tr>
</tbody>
</table>
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