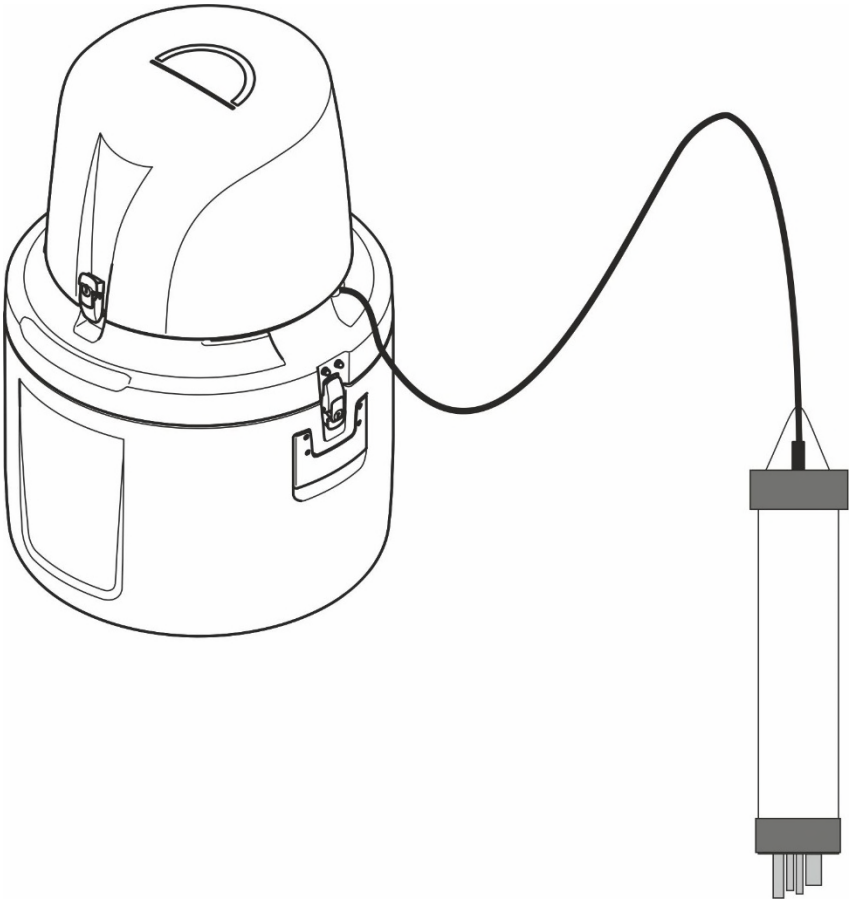
MAXX
Mess- und Probenahmetechnik GmbH

SUPPLEMENT TO MANUAL
– sampler with SDI-12 Interface –

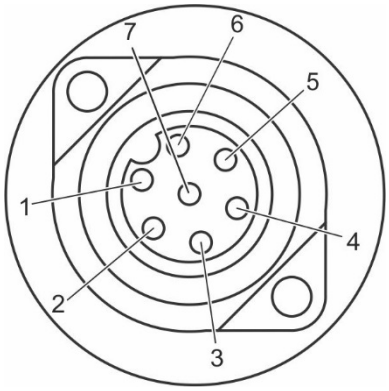


Ver. 02- 2020

Innovation made in Germany

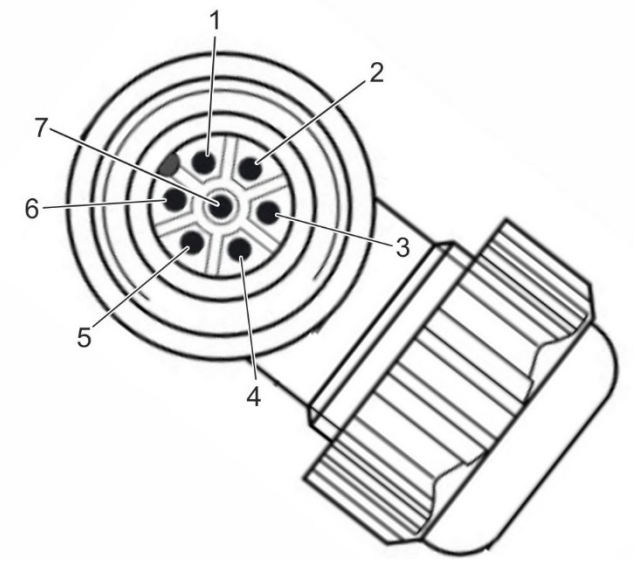
SDI-12 Signal connection

Sampler



SDI-12 female socket

SDI-12 unit



SDI-12 male plug
(the male plug (0010363) is always part of the SDI-12 Kit)

How to connect your probe: SIGNAL OUTPUT ADAPTER to the male-plug

male plug

Pin No.	Function
1	SDI-12 DATA
2	SDI-12 GND
3	12 VDC
4	GND
5	ERROR SIGNAL
6	12 VDC
7	PROG. INPUT

GENERAL INFORMATION

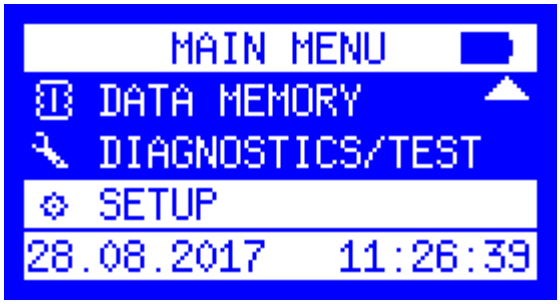
With the SDI-12 Interface it is possible to connect a Sonde, which supports the SDI-12 interface.

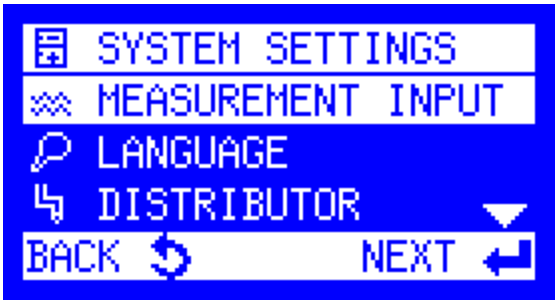
Note: After you switched on the sampler, the sonde with its adapter are supported with energy form the sampler. It can take a while (up to 2 minutes) until the sonde is linked to the sampler.

When an SDI-12 Sonde is connected to the sampler, its measurements are available as setpoint sampling triggers.

A maximum of 4 Trigger channels can be enabled.

The measurement input can be configured in:
SETUP -> SYSTEM SETTINGS-> MEASUREMENT INPUT

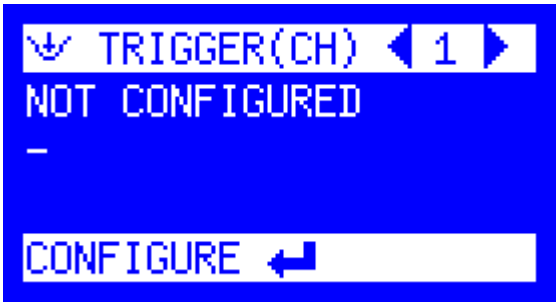




There are **4 Trigger channels,** that can be configured.

The menu shows TRIGGER (CH) 1 which is still not configured. Just press the ENT-key to configure.

Note: to change the channel (1-4), press arrow-key right or left



Next step is, to select one INPUT CHANNEL out of the list of 9 SDI-12 CHANNELS for configuring. (e.g. SDI-12 CHANNEL 1)

Important :

Before you start to configure the sampler channels, your Sonde must be already configured (with the Softwaretool of your Sonde) with all channels you would like to use for triggering e.g. CH1=Temperature, CH2= Conductivity.

After you selected e.g. SDI-12 CHANNEL 1, you have to set this channel **equal** to the configuration of the channel of your Sonde.

Sonde: CH1 = C°	->	**Sampler** CH1 = C°
•		•
•		•
CH4 = pH	->	**Sampler** CH4 = pH

SETPOINT HIGH or LOW

Each measurement trigger can be defined as a high or low setpoint.

Additionally, an optional deadband value can be set (HYSTERESIS).
The purpose of a deadband is to keep the trigger from rapidly fluctuating between active and inactive states when the trigger measurement value hovers near the defined setpoint.

In a **HIGH SETPOINT** condition, the trigger becomes active when e.g. the rising pH value reaches the setpoint value of **7.0**. The trigger condition does not clear until the pH measurement value falls below **6.5** (the setpoint **minus** the deadband value). (here **0.5**)

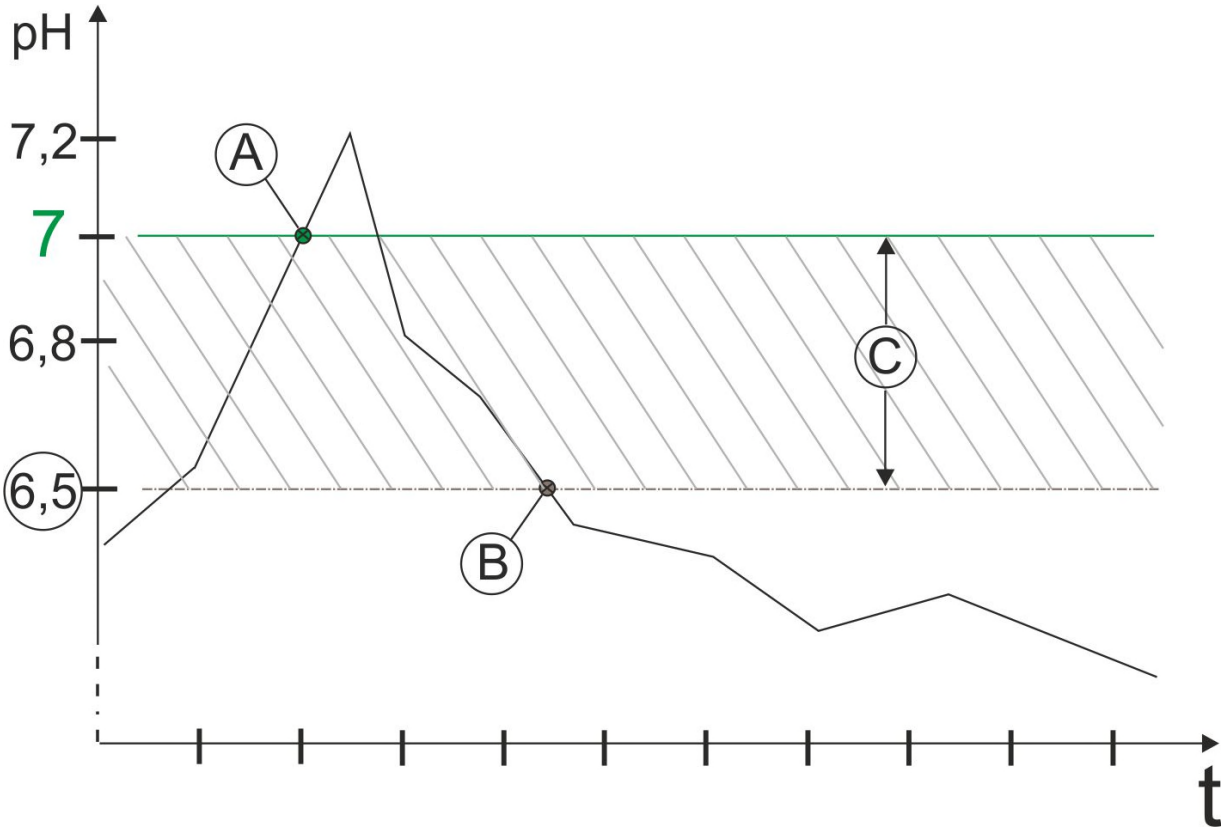


Figure 1 High Setpoint

A: Setpoint switches **ON**, pH = **7**

B: Setpoint switches **OFF**, pH = **6.5**

C: deadband value (Hysteresis) = **0.5**

In a **LOW SETPOINT** condition, the trigger becomes active when the decreasing pH measurement value reaches **7.0**. The trigger condition does not clear until the pH measurement value rises to **7.4** (the setpoint **plus** the deadband value).
(here **0.4**)

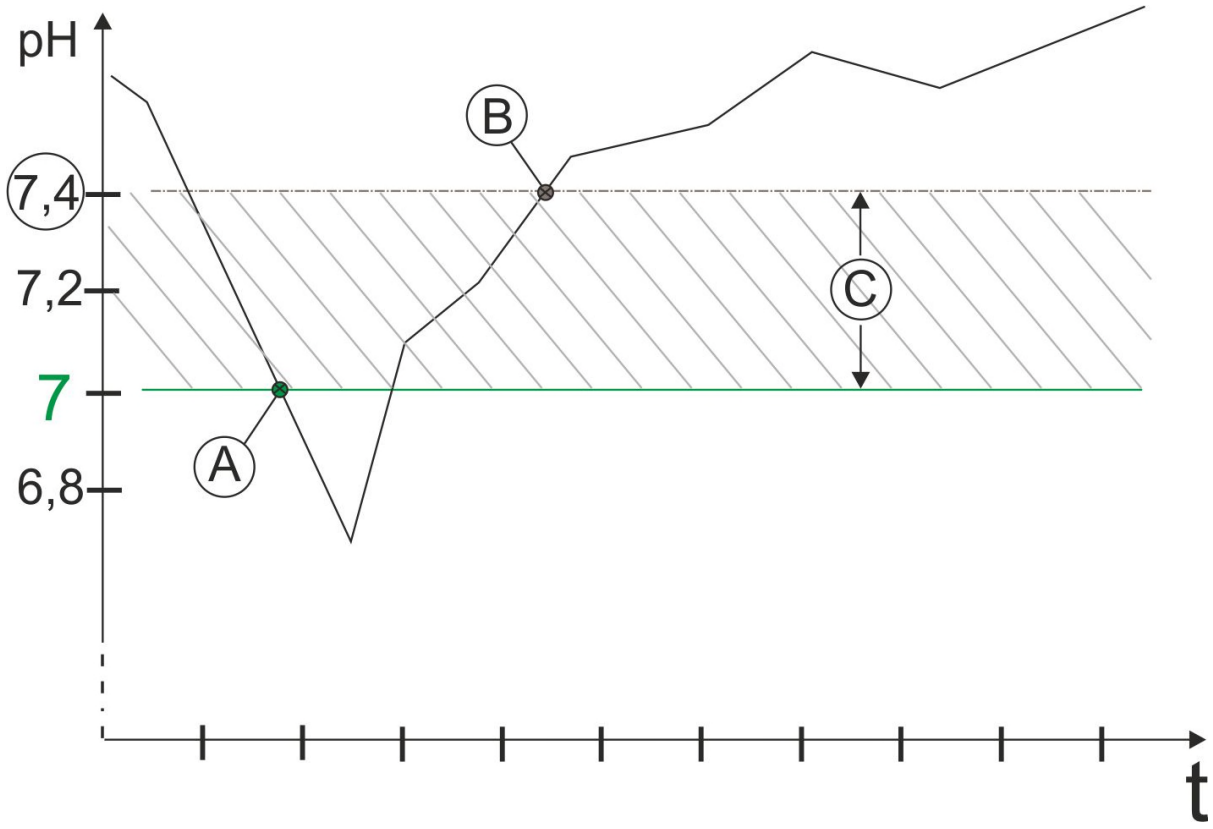


Figure 2 Low Setpoint

A: Setpoint switches **ON**, pH = **7**

B: Setpoint switches **OFF**, pH = **7.4**

C: deadband value (Hysteresis) = **0.4**

Here “HIGH SETPOINT” is selected for CHANNEL 1 (C°).

The setting for “HIGH SETPOINT CH.1” is 26°C for temperature.

The “DEADBAND CH.1” is selected with 0,5°C.

As last step, you have to select how to trigger the sampler.

EVENT: starts a sample program when the signal is received and stops the program when the signal is no longer received.

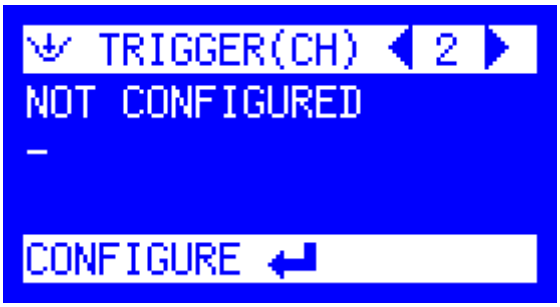
START PRG. 1: starts a sample program when the signal is received, and continues until the program is completed.
You can select 1 of the 12 preprogrammed programs.

After you have configured **TRIGGER(CH) 1**, it appears the menu already with the real measured value from your sonde.
(if it appears “LIMIT VALUE ”, it means an exceeded setpoint).

TRIGGER CHANNEL 2

The menu shows the **TRIGGER(CH) 2**, which can be configured.

Press ENT to configure



Now you have to select INPUT CHANNEL 2 to configure TRIGGER(CH) 2.

The TRIGGER (CH) 2 shall be **Conductivity**. Therefore you have to select **mS/cm** as UNIT for CHANNEL 2.

For channel 2 the LOW SETPOINT condition is 0.8000 mS/cm (Conductivity).

The DEADBAND CH.2 value is +0.01 mS/cm (Conductivity).

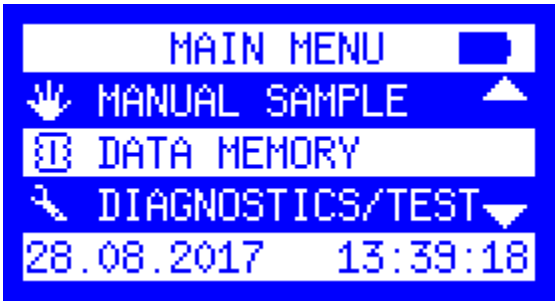
For CHANNEL 2 you can select again how to trigger the sampler. EVENT or START PROG. X.

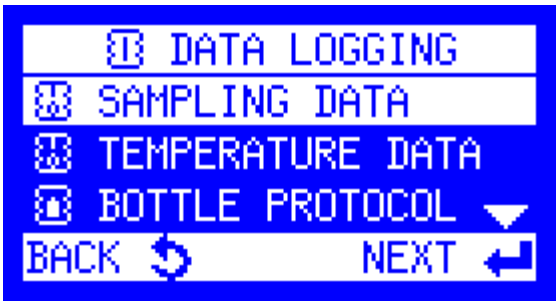
After you have finished to configure CH2, it appears the value for **mS/cm** from the connected sonde.

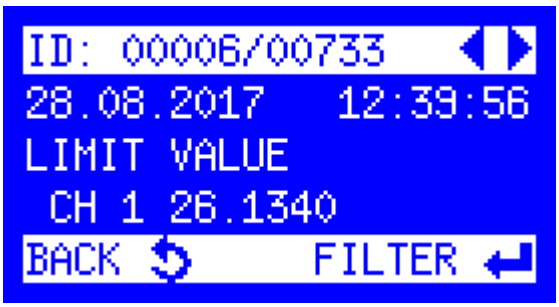
DATA LOGGING

The data logger of the sampler stores the following information of SDI-triggered sampling (additionally to the basically stored data):

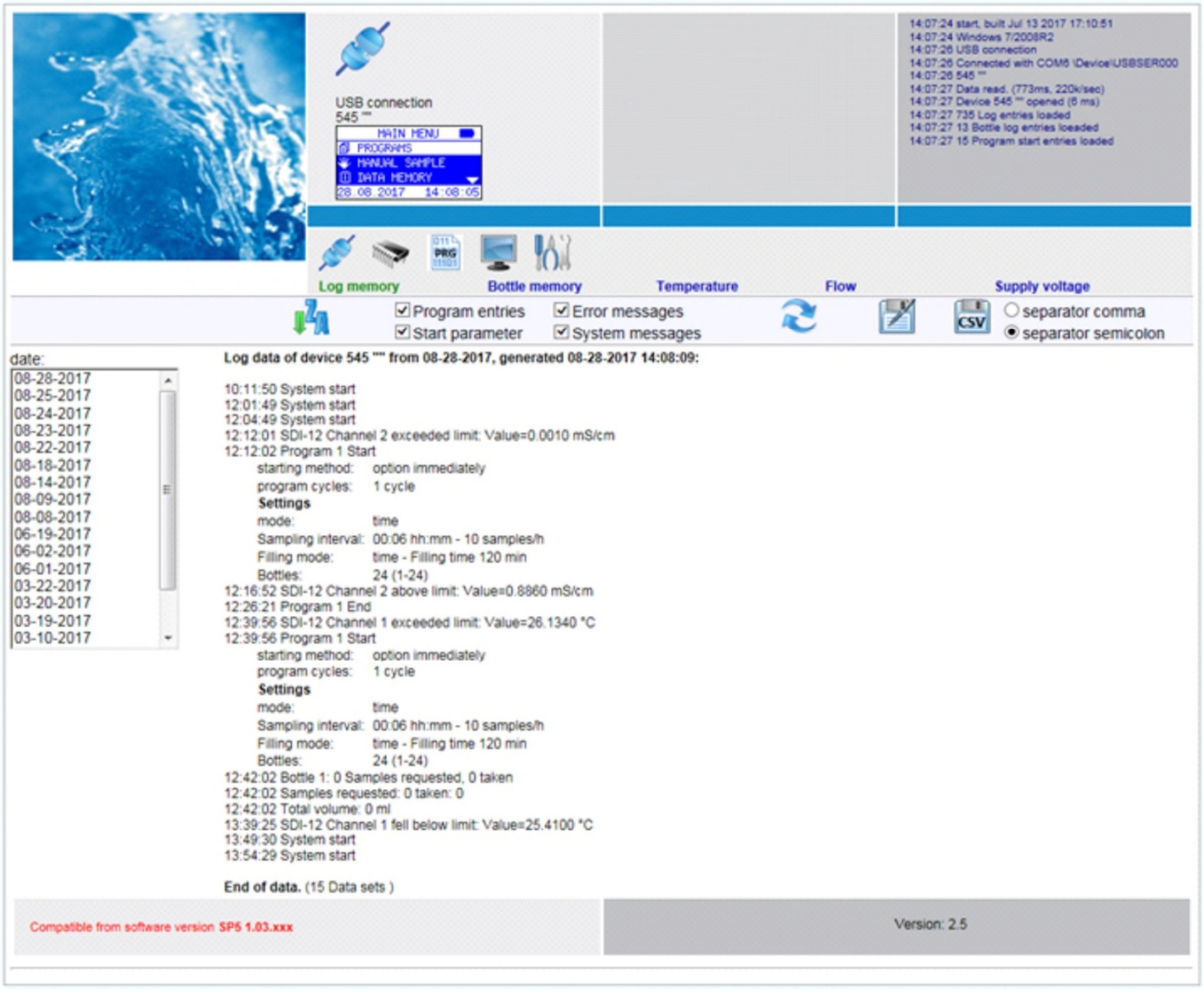
- The values of an exceeded **HIGH** Setpoint with date/time (see figure 1, Values A and B)
- The values of an exceeded **LOW** Setpoint with date/time (see figure 2, Values A and B)







Read out of Data via maxxwareConnect

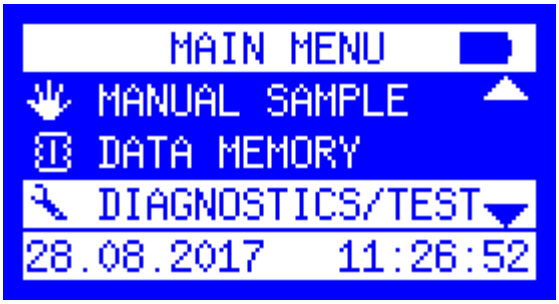


If you connect your sampler via USB cable, you can read out the data via maxxwareConnect software.

The screenshot above shows as example the logged and readout values of an SDI 12 triggered sampling cycle.

DIAGNOSTICS

In DIAGNOSTICS/TEST you can check whether your Sonde is connected correctly or not.

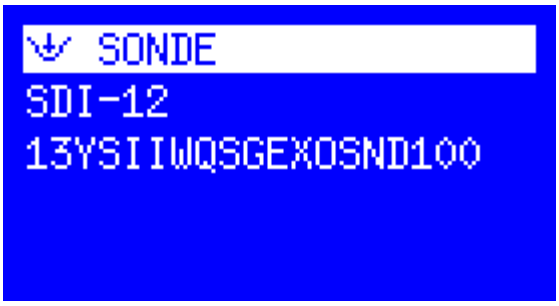


Select “SONDE” in the menu and confirm with the ENT-key.

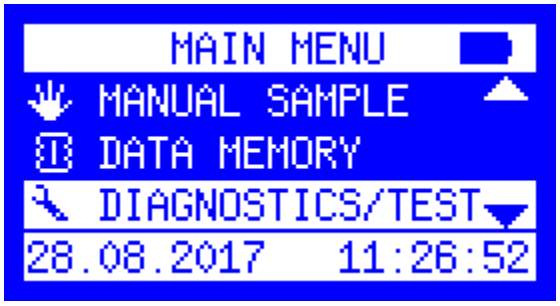
If there is no Sonde connected (or detected) it appears the blank menu, just with a “-“.

If a Sonde is connected and detected, it appears like this menu, with SDI-12 and the vendors name and device model name (this depends to the sonde model).

(If you disconnect the sonde, this information will be further shown until a restart or reboot)



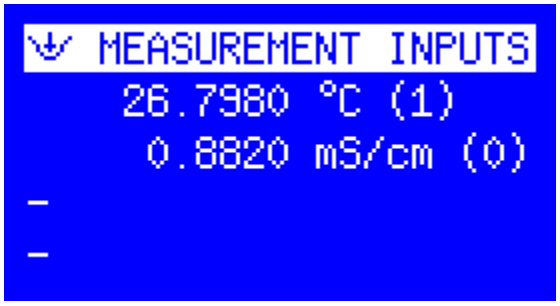
In DIAGNOSTICS/TEST you are also able to check, which channels are already configured.



Select MEASURMENT INPUT.

If nothing is configured it appears the blank menu (just with “-“)

This menu shows two configured channels (temperature and conductivity) with actual values of the connected sonde.
They can be used to trigger the sampler as described before.



CH1= °C

CH2= mS/cm

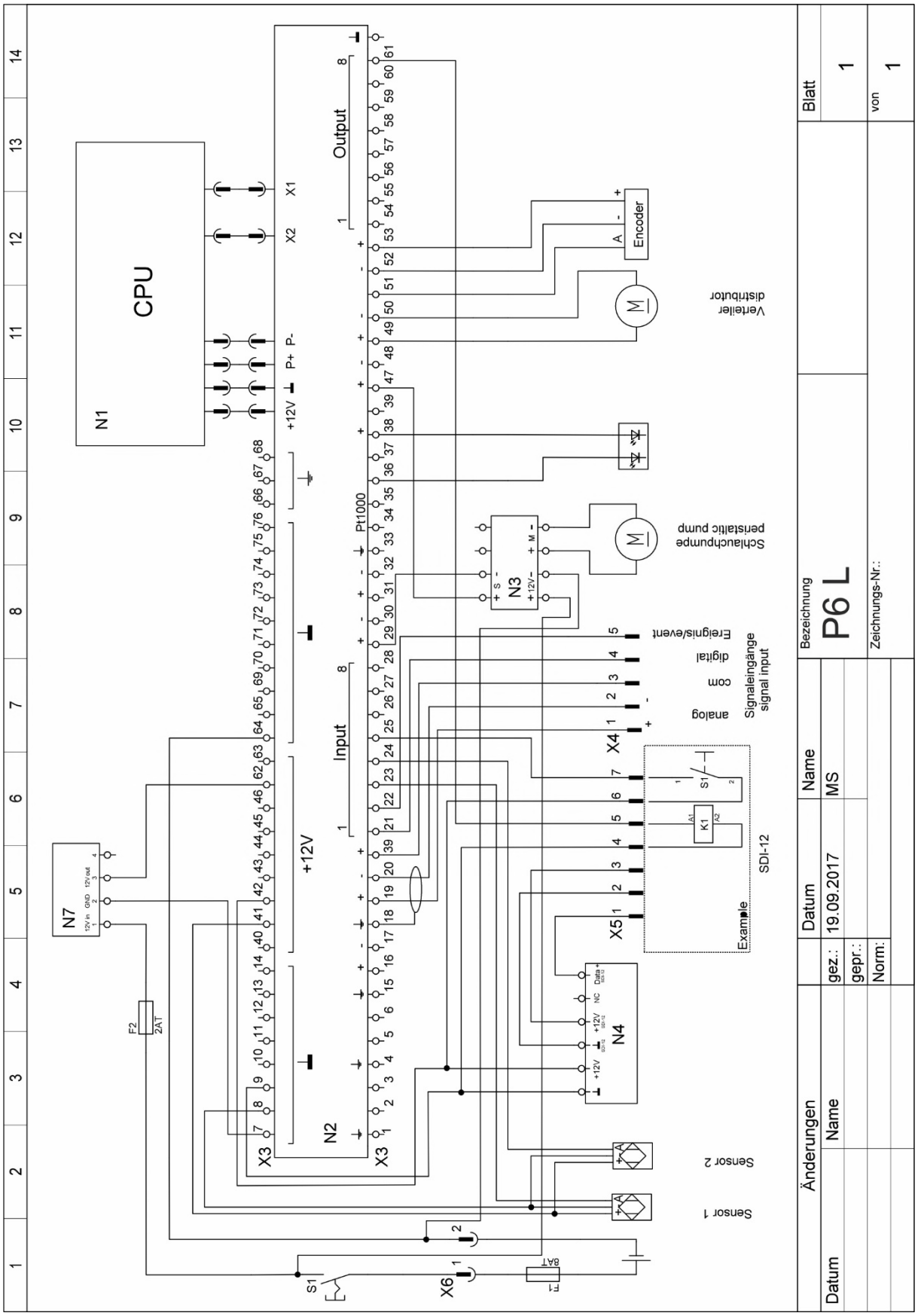
CH3= - (not configured)

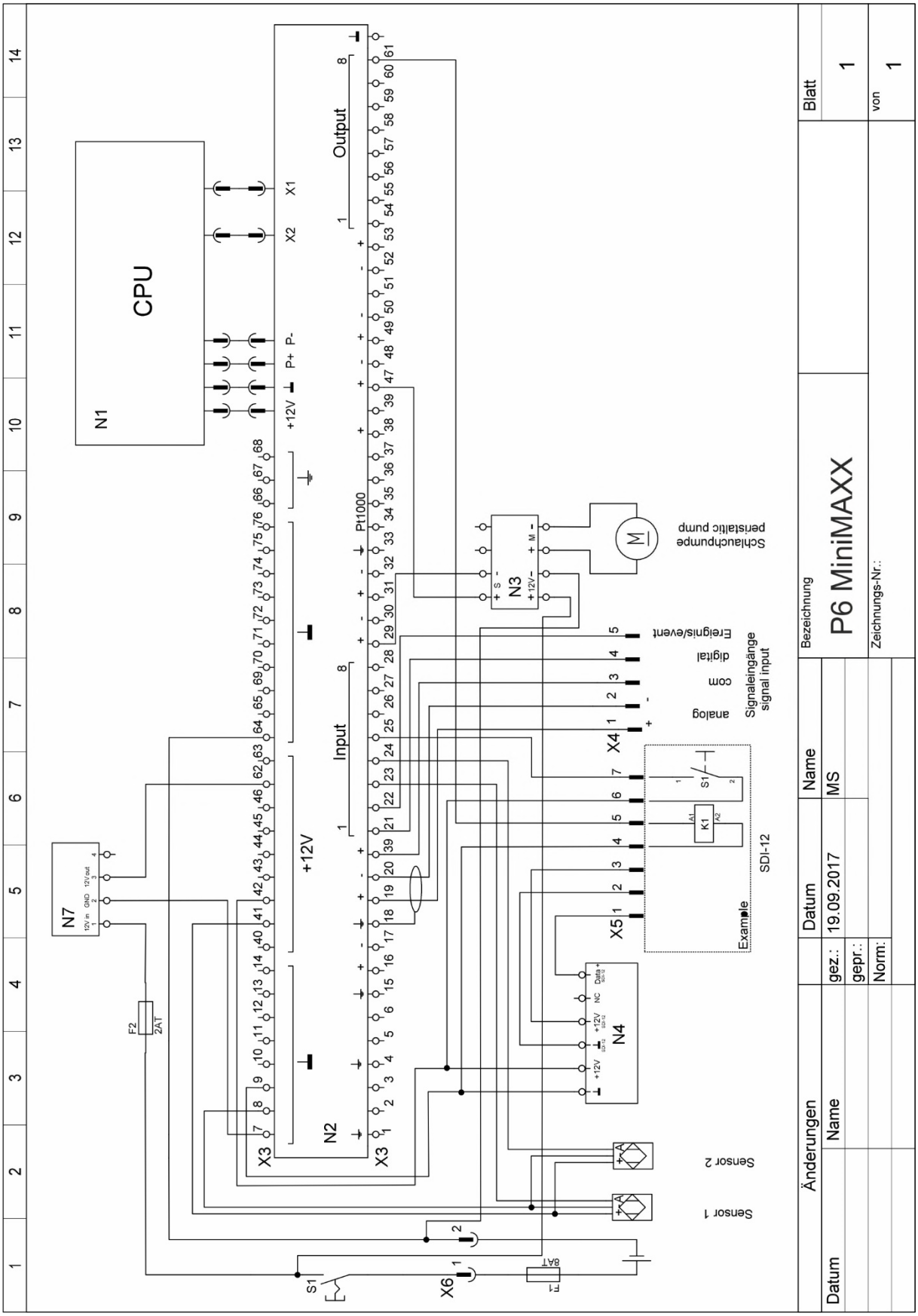
CH4= - (not configured)

Note:
- **(1)** behind the value means, that at this moment is an exceed of that setpoint.
- **(0)** behind the value means, that there is actually no setpoint exceeded.

(If you disconnect the sonde, this information will be further shown until a restart or reboot)

Circuit diagram




CPU
N1
N2
N3
N4
N7
Output
Input
Pt1000
+12V
P+ P-
X1
X2
X3
X4
X5
X6
F1 8AT
F2 2AT
S1
K1
Schlauchpumpe
peristaltic pump
Signaleingänge
signal input
analog
com
digital
Ereignis/event
Sensor 1
Sensor 2
SDI-12
Example
Änderungen
Datum
Name
gez.: 19.09.2017 MS
gepr.:
Norm:
Bezeichnung
P6 MiniMAXX
Zeichnungs-Nr.:
Blatt 1
von 1