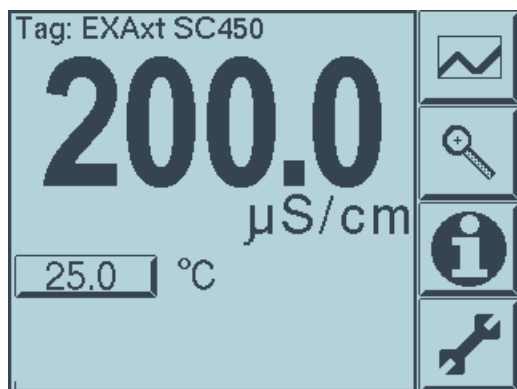# SC450 – Programming Percent Concentration Preprogrammed Curves

There are two methods for programming the SC450 for Percent Concentration measurement. The simplest, is to select one of the "built-in" tables provided in the SC450. However, if none of these meet the application requirements, then the second option of creating your own Table specific to your needs can be used.
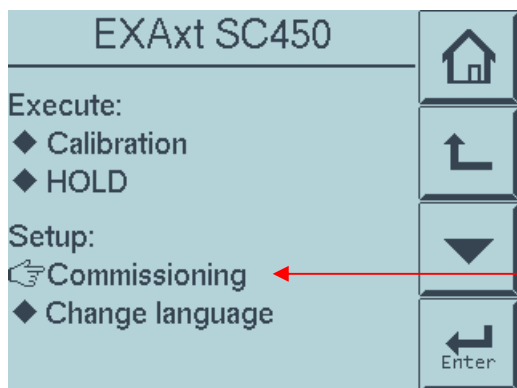
This Tech Note is designed to guide you through the programming steps required for selecting a preprogrammed table. All of the steps you will follow are in your SC450 Instruction Manual, but we have pulled out just those steps that deal with setting up percent concentration using one of the "built-in" tables.

You will be programming the Analyzer to display in "Percent Concentration"; Selecting the desired Percent Concentration Matrix; Setting your 4-20 mA output and finally, setting (or turning off your Alarm contacts to eliminate any error codes being displayed.
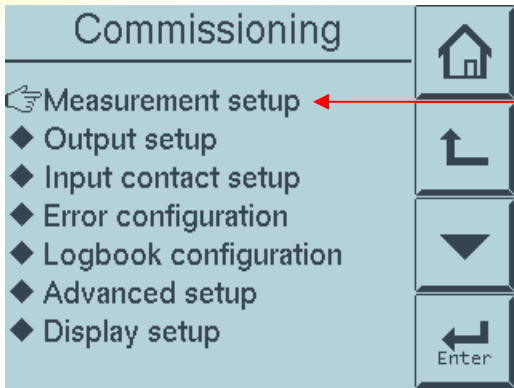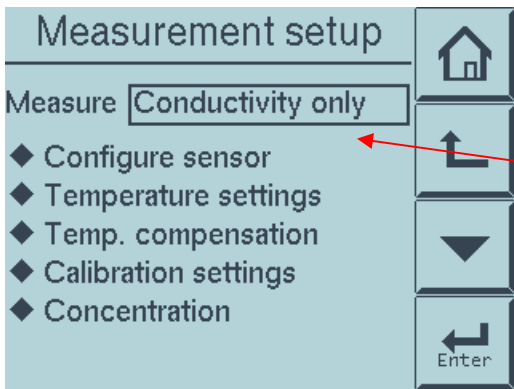
Option One -Programming using Preset Concentration Matrix
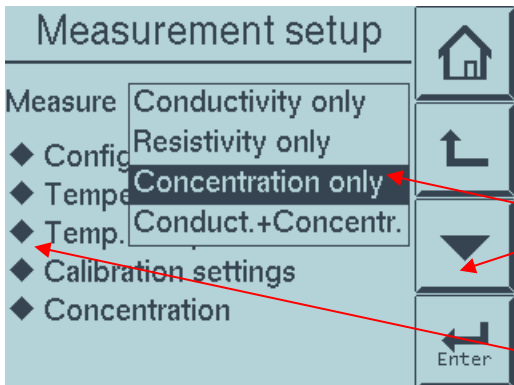

At the opening Screen – **Press the WRENCH Key**

2

Press the **Commissioning** diamond

Commissioning

☞ Measurement setup
◆ Output setup
◆ Input contact setup
◆ Error configuration
◆ Logbook configuration
◆ Advanced setup
◆ Display setup

Press the **Measurement setup** diamond

Measurement setup

Measure [Conductivity only]

◆ Configure sensor
◆ Temperature settings
◆ Temp. compensation
◆ Calibration settings
◆ Concentration
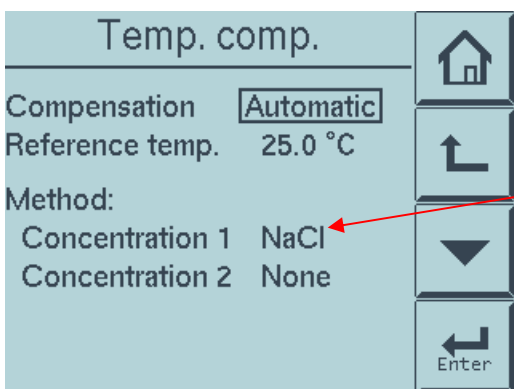
At the Measurement setup screen you will see that **Conductivity only** is displayed. Press the dropdown box to reveal the other options.

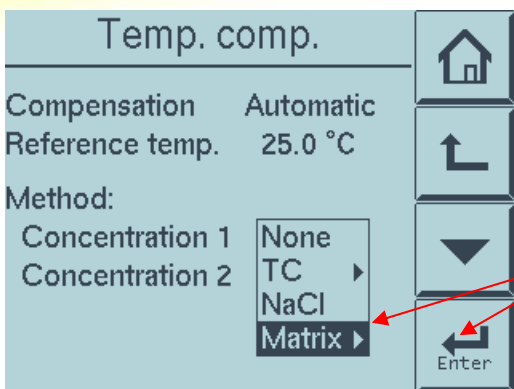### Measurement setup

Measure | Conductivity only
Resistivity only
◆ Config | Concentration only
◆ Tempe | Conduct.+Concentr.
◆ Temp.
◆ Calibration settings
◆ Concentration

Using the Down Key, select **Concentration only**

THEN . . . Press the **Temp. compensation** diamond

Temp. comp.

Compensation [Automatic]
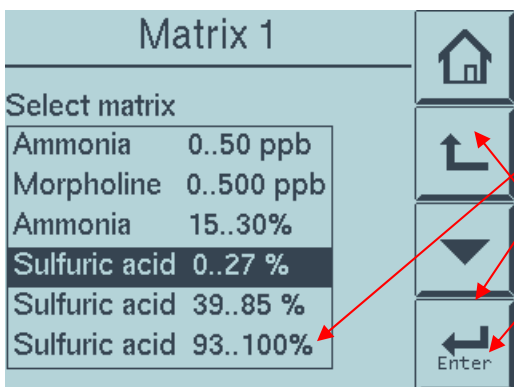Reference temp.   25.0 °C

Method:
Concentration 1   NaCl
Concentration 2   None

Press **NaCl** (next to Concentration 1) and a drop down menu will appear.

Temp. comp.

Compensation   Automatic
Reference temp.   25.0 °C

Method:
Concentration 1   None
Concentration 2   TC ▶
              NaCl
              Matrix ▶

Enter

Using the **Down** Key select **Matrix** and then press the **Enter** Key.

Matrix 1

Select matrix
Ammonia   0..50 ppb

Define matrix:
◆ User defined 1
◆ User defined 2

Enter

Press the **Drop Down** box

Matrix 1

Select matrix
Ammonia   0..50 ppb
Morpholine   0..500 ppb
Ammonia   15..30%
Sulfuric acid 0..27 %
Sulfuric acid 39..85 %
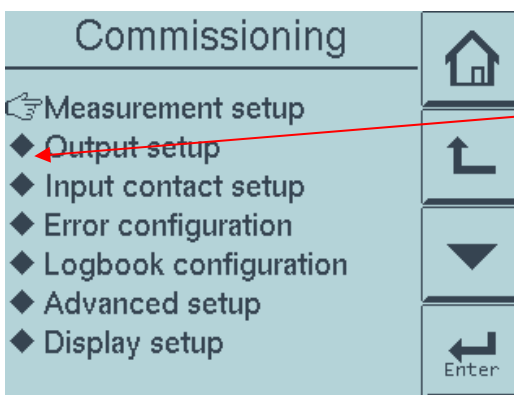Sulfuric acid 93..100%
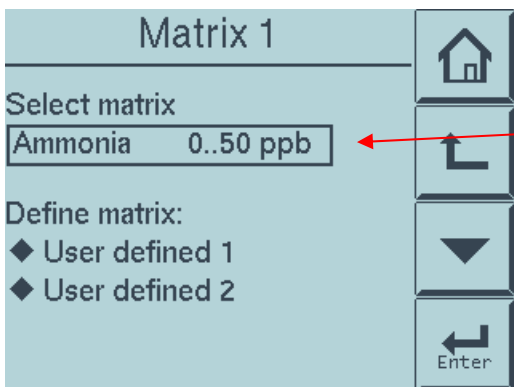
Enter

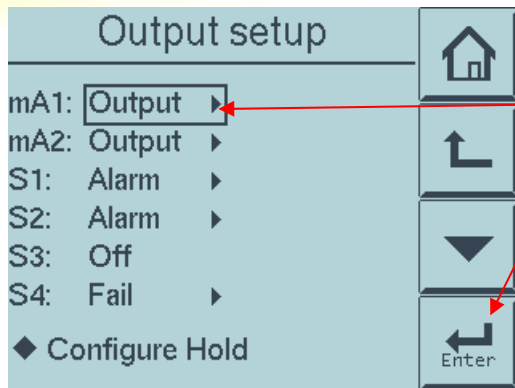Using the **Down** Key, go to **Sulfuric acid (H_2SO_4) 0..27%**

THEN . . . Press **Enter**

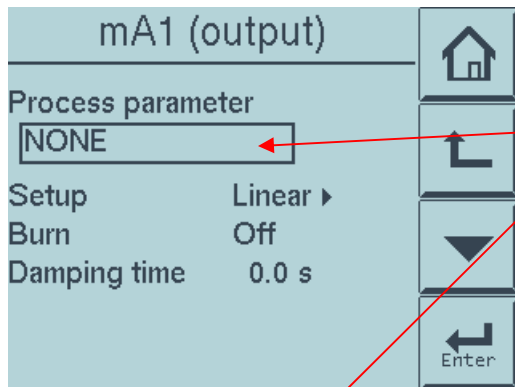You have now selected the "built-in" Conductivity versus Percent Concentration Matrix for 0-27% H_2SO_4.

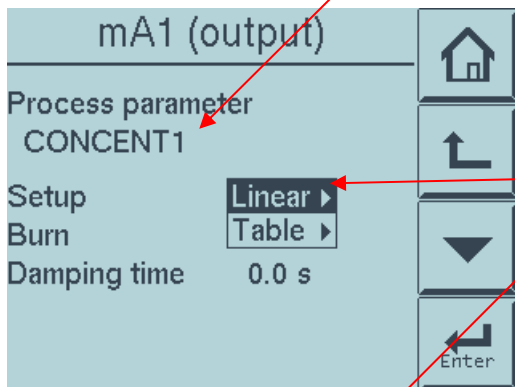NOW . . . Press the **RETURN** Key (3 times) ntil the **Commissioning** screen comes up again.

Commissioning

☞Measurement setup
◆ Output setup
◆ Input contact setup
◆ Error configuration
◆ Logbook configuration
◆ Advanced setup
◆ Display setup

Enter

Press the **Output setup** diamond

YOKOGAWA ◆

TECHNICAL NOTE

Output setup

mA1: Output ▸
mA2: Output ▸
S1:   Alarm ▸
S2:   Alarm ▸
S3:   Off
S4:   Fail ▸

◆ Configure Hold

Select **Output** on mA1 and then Press **Enter**

mA1 (output)

Process parameter
NONE

Setup   Linear ▸
Burn   Off
Damping time   0.0 s

Press Drop Down Menu and select **CONCENT1**

mA1 (output)

Process parameter
 CONCENT1

Setup   Linear ▸
Burn   Table ▸
Damping time   0.0 s

Press **Linear** in Drop Down box so that the **Linear mA1** menu appears.

Linear mA1

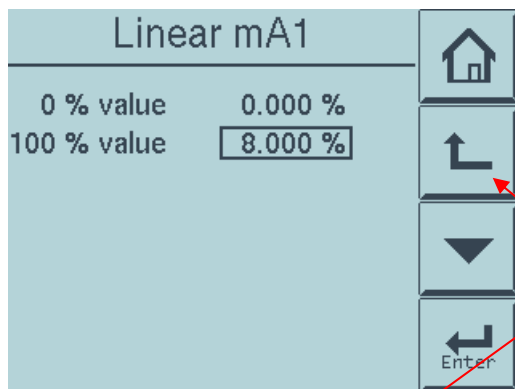0 % value   0.000 %
100 % value   0.001 %
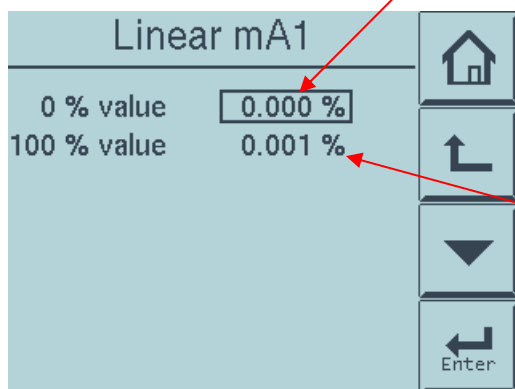
The **0% value** is equivalent to 4 mA and the **100% value** is equivalent to 20 mA. So, if your 4 – 20 mA range is to be 0-8% Sulfuric Acid, leave the **0% value** as it is.

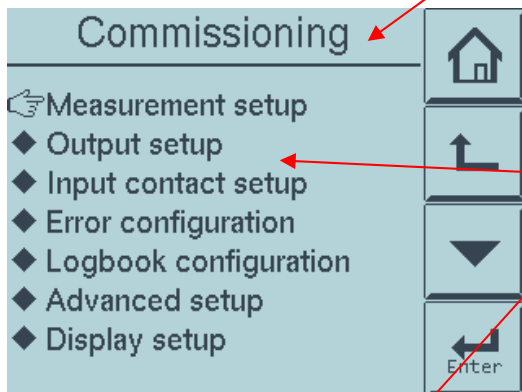Press the **100% value** window to bring up the Key pad

New value: 8.00_ %

Units 0-9	7	8	9
.	4	5	6
0	1	2	3
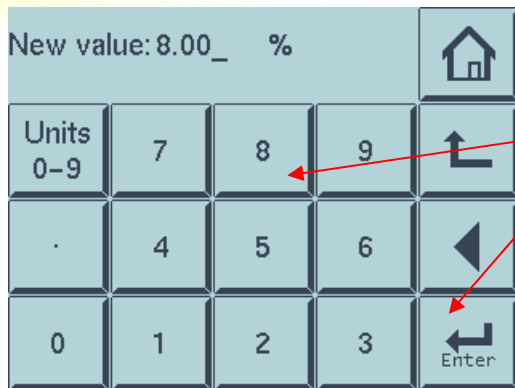
Using the Numeric Pad, enter 8.00 and Press the **Enter** Key

Linear mA1

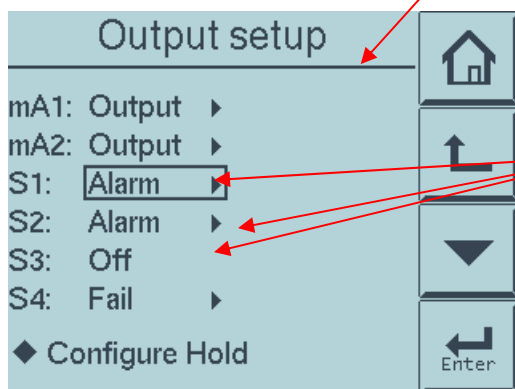| 0 % value | 0.000 % |
| 100 % value | 8.000 % |

Now the 4-20 mA on mA1 of the Analyzer is set for 0-8% percent concentration

NOW . . . Press the **RETURN** Key until the **Commissioning** screen comes up again

Commissioning

☞Measurement setup
◆ Output setup
◆ Input contact setup
◆ Error configuration
◆ Logbook configuration
◆ Advanced setup
◆ Display setup

Press the **Output setup** diamond

Output setup

mA1: Output ▶
mA2: Output ▶
S1: Alarm ▶
S2: Alarm ▶
S3: Off
S4: Fail ▶

◆ Configure Hold

Now you can set up your Alarms (**S1**, **S2**, and **S3**) if you desire. If you are NOT using them, Press the Drop Down Menu and select **Off**. This will eliminate any setup errors being displayed on the Main Menu.
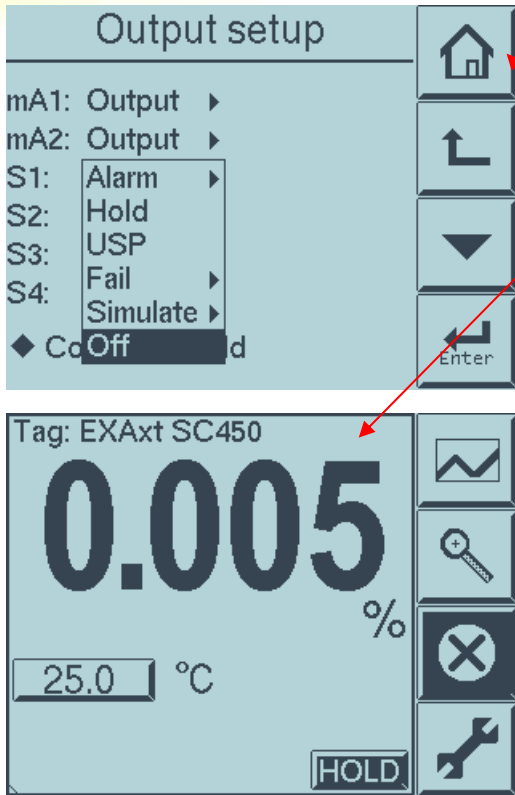
When you are finished, Press the **Home** Key.