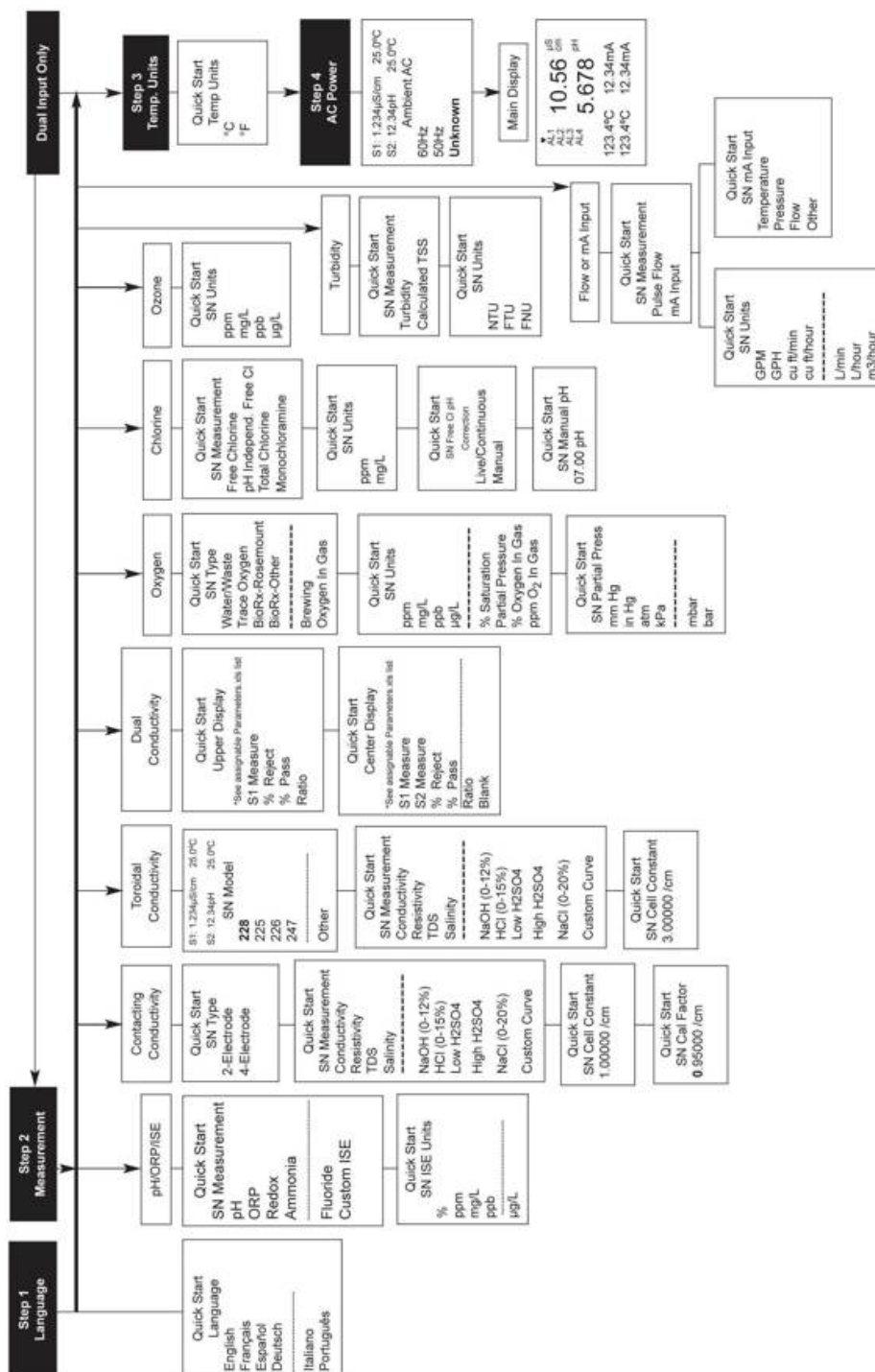


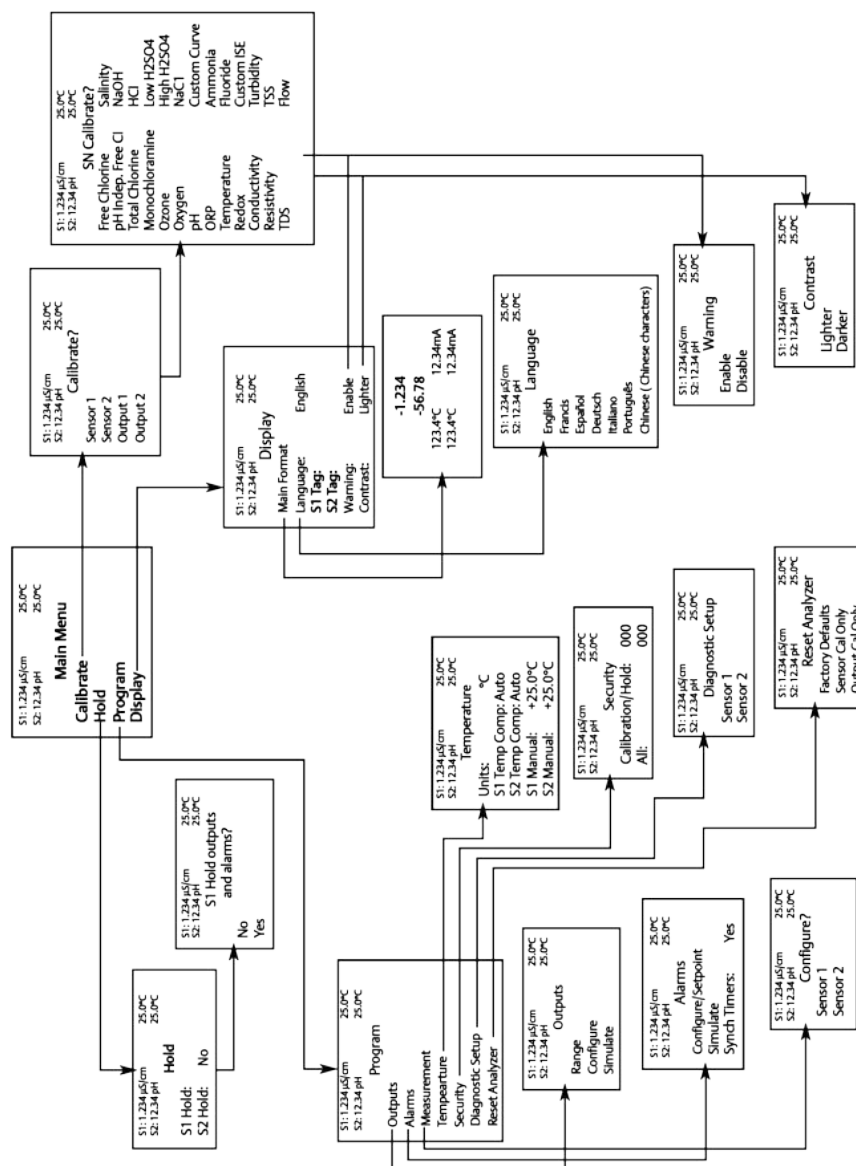
Figure 4-1: Quick start flow diagram



After the last step, the main display appears. The outputs are assigned to default values.

- To change output and temperature-related settings, go to **Main Menu** → **Program**. Follow the prompts.

Figure 4-2: Rosemount 1056 menu tree



- To return the transmitter to the factory default settings, go to **Program** → **Reset**. Call the Emerson Customer Support Center at +1-800-999-9307 if you need further support.

5 Programming the transmitter

5.1 General programming information

Typical programming steps include the following procedures.

- Change the measurement type, measurement units, and temperature units.
- Choose temperature units and manual or automatic temperature compensation mode.
- Configure and assign values to the current outputs.
- Set a security code for two levels of security access.
- Access menu functions using a security code.
- Enable and disable Hold mode for current outputs.
- Choose the frequency of the AC power (needed for optimum noise rejection).
- Reset all factory defaults, calibration data only, or current output settings only.

5.2 Changing start-up settings

To change the measurement type, measurement units, or temperature units you initially entered in Quick Start, select Reset or access the **Program** menus for the sensor.

Table 5-1 displays the choices for specific measurement type and measurement units available for each sensor measurement board.

Table 5-1: Measurements and measurement units

Signal board	Available measurements	Measurement units
pH/oxidation reduction potential (ORP) 22, 32	• pH • ORP • Redox • Ammonia • Fluoride	• pH • mV (ORP) • % • ppm • mg/L • ppb • µg/L

Table 5-1: Measurements and measurement units *(continued)*

Signal board	Available measurements	Measurement units
Contacting conductivity 20, 30	- Conductivity - Resistivity - Total dissolved solids (TDS) - Salinity - NaOH (0-12%) - HCl (0-15%) - Low H₂SO₄ - High H₂SO₄ - NaCl (0-20%) - Custom curve	- μS/cm - mS/cm - S/cm % (concentration)
Toroidal conductivity 21, 31	- Conductivity - Resistivity - TDS - Salinity - NaOH (0-12%) - HCl (0-15%) - Low H₂SO₄ - High H₂SO₄ - NaCl (0-20%) - Custom curve	- μS/cm - mS/cm - S/cm % (concentration)
Chlorine 24, 34	- Free chlorine - Total chlorine - Monochloramine - pH-independent free chlorine	- ppm - mg/L
Oxygen 25, 35	- Oxygen (ppm) - Trace oxygen (ppb) - Percent oxygen in gas - Salinity	- ppm - mg/L - ppb - μg/L % saturation - Partial pressure % oxygen in gas - ppm oxygen in gas
Ozone 26, 36	Ozone	- ppm - mg/L - ppb - μg/L

Table 5-1: Measurements and measurement units (continued)

Signal board	Available measurements	Measurement units
Temperature (all)	Temperature	°F °C

5.3 Choose temperature units and automatic/manual temperature compensation

Most liquid measurements (except oxidation reduction potential [ORP]) require temperature compensation.

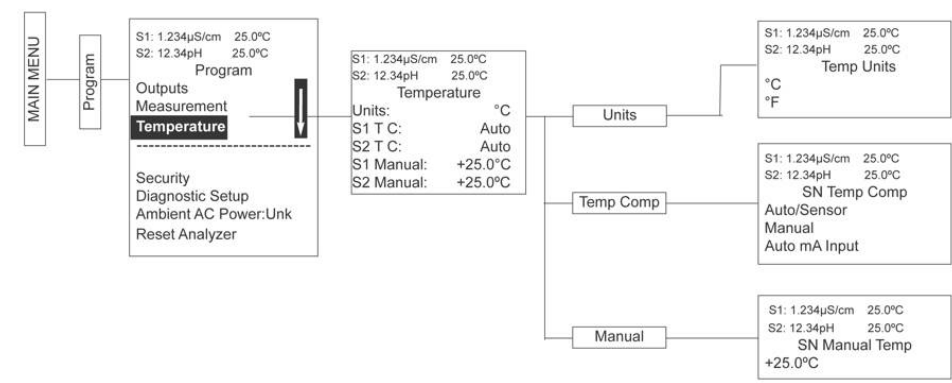
The Rosemount 1056 performs temperature compensation automatically by applying internal temperature correction algorithms. You can also switch to manual temperature compensation. If using manual temperature compensation, the temperature you enter bypasses the one detected by the RTD in the sensor. You can use this method if the RTD in the sensor is malfunctioning.

Procedure

1. From the main menu, go to **Program** → **Temperature**.
2. Select automatic or manual temperature compensation
3. Set the manual reference temperature
4. Program temperature units to °F or °C.

See Figure 5-1.

Figure 5-1: Choosing temperature units and manual temperature compensation



5.4 Configuring and ranging the current outputs

5.4.1 Purpose of configuring and ranging the current outputs

The Rosemount 1056 accepts input from two sensors and has two analog current outputs.

Ranging the outputs means assigning values to the low (0 or 4 mA) and high (20 mA) outputs.

NOTICE

Always configure the outputs before ranging them.

5.4.2 Definitions of outputs

Current outputs	The transmitter provides a continuous output current (4-20 mA or 0-20 mA) directly proportional to the process variable or temperature. You can set the low or high current outputs to any value.
Assigning outputs	Assign a measurement to Output 1 or Output 2.
Dampen	Output dampening smooths out noisy readings. It also increases the response time of the output. Output dampening does not affect the response time of the display.
Mode	You can make the current output directly proportional to the displayed value (linear mode) or directly proportional to the common logarithm of the displayed value (log mode).

5.4.3 Configure outputs

Under the **Program/Outputs** menu, [Figure 5-2](#) appears to allow configuration of the outputs.

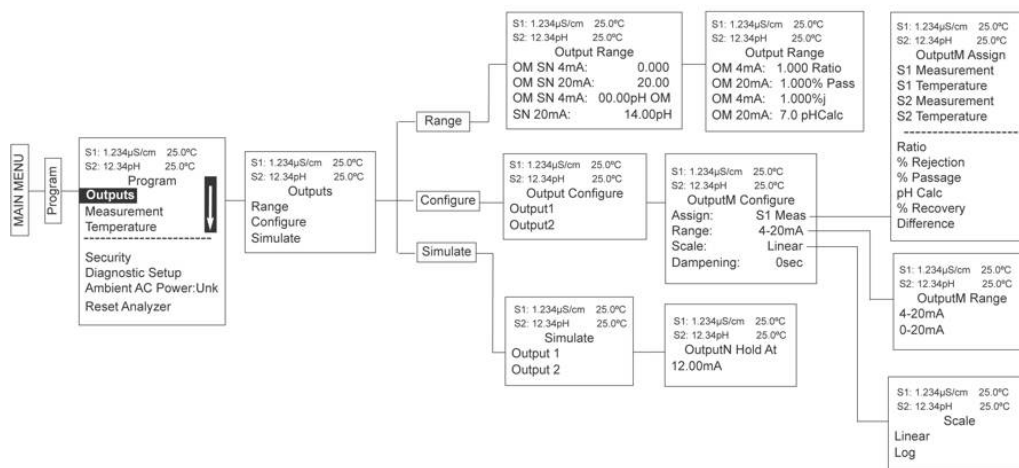
Figure 5-2: Configure Output screen

S1: 1.234μS/cm	25.0°C
S2: 12.34pH	25.0°C
OutputM Configure	
Assign:	S1 Meas
Range:	4-20mA
Scale:	Linear
Dampening:	0sec

Fault Mode: Fixed	
Fault Value: 21.00mA	

Follow the menu screens in [Figure 5-3](#) to configure the outputs.

Figure 5-3: Configure and range the current outputs



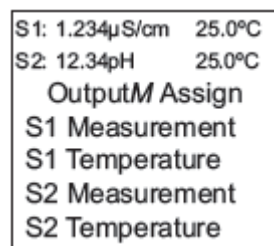
5.4.4 Assign measurements to the low and high current outputs

With these screens, you can assign a measurement, process value, or temperature input to each output

Procedure

1. Go to **Program** → **Output** → **Configure**.

Figure 5-4: Assign Output screen

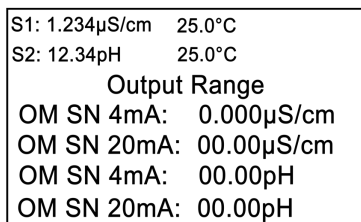


2. Assign measurements to the outputs.

5.4.5 Range current outputs

Go to **Program** → **Output** → **Range**.

Figure 5-5: Output Range screen



Enter a value for 4 mA and 20 mA (or 0 mA and 20 mA) for each output.

5.5 Set security code

Security codes prevent accidental or unwanted changes to program settings, displays, and calibration.

The Rosemount 1056 has two levels of security codes to control access and use of the transmitter. The two levels of security are:

- All** This is the supervisory security level. It allows access to all menu functions, including programming, calibration, hold, and display.
- Calibration/Hold** This is the operator or technician level menu. It allows access to only calibration and hold of the current outputs.

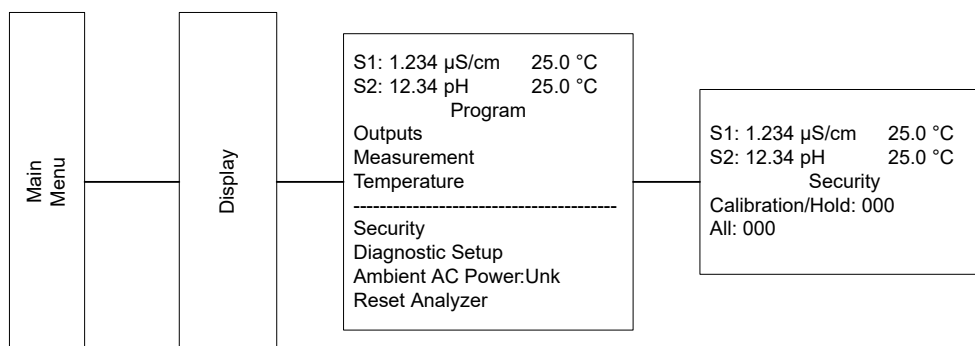
Procedure

1. Press **MENU**.
The **Main menu** screen appears.
2. Select **Program**.
3. Select **Security**.
The **Security** screen appears.
4. Enter a three digit security code for each of the desired security levels.
The security code takes effect two minutes after the last key stroke.
5. Record the security codes for future access and communication to operators or technicians as needed.

The display returns to the **Security** menu screen.

Figure 5-6 displays the security code screens.

Figure 5-6: Setting a security code



Postrequisites

Press **EXIT** to return to the previous screen. To return to the main display, press **MENU** and then **EXIT**.

5.6 Security access

5.6.1 How the security code works

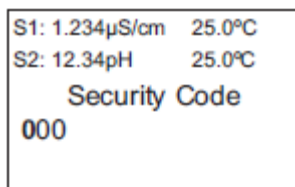
To access the **Calibration** and **Hold** menus, enter the correct access code for the Calibration/Hold security level. This allows operators or technicians to perform routine maintenance. This does not allow access to the **Program** or **Display** menus.

To access all menu functions, including programming, calibration, hold, and display, enter the correct access code for the All security level.

5.6.2 Use a security code

If someone has programmed a security code, selecting the Calibrate, Hold, Program, or Display top menu items causes the **Security Code** screen to appear.

Figure 5-7: Security Code screen



Procedure

Enter the three-digit security code for the appropriate security level.

If the entry is correct, the appropriate menu screen appears. If the entry is incorrect, the **Invalid Code** screen appears. The **Security Code** screen reappears after two seconds.

5.7 Using hold

5.7.1 Purpose of hold

The transmitter output is always proportional to measured value. To prevent improper operation of systems or pumps that are controlled directly by the current output, place the transmitter on hold before removing the sensor for calibration and maintenance.

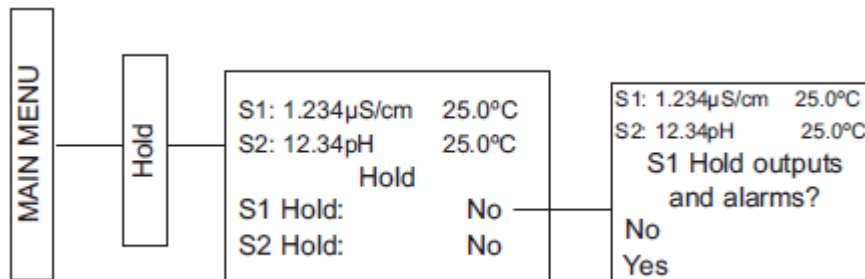
Be sure to remove the transmitter from hold once you have finished calibrating the sensor. During hold, both outputs remain at the last value.

NOTICE

Once on hold, all current outputs remain on hold indefinitely.

5.7.2 Put outputs on hold

Figure 5-8: Hold menu tree



Procedure

1. Press **MENU**.
The **Main Menu** screen appears.
2. Select **Hold**.
The **Hold Outputs and Alarms?** screen appears.
3. Select **Yes** to place the transmitter on hold. Select **No** to take the transmitter out of hold.

NOTICE

There are no alarm relays with this configuration. Current outputs are included with all configurations.

The **Hold** screen appears.

NOTICE

Hold will remain on indefinitely until someone disables it.

5.8 Resetting factory default settings

5.8.1 Purpose of resetting factory default settings

Resetting factory default settings also clears all fault messages and returns the display to the first **Quick Start** screen.

The Rosemount 1056 offers three options for resetting factory defaults:

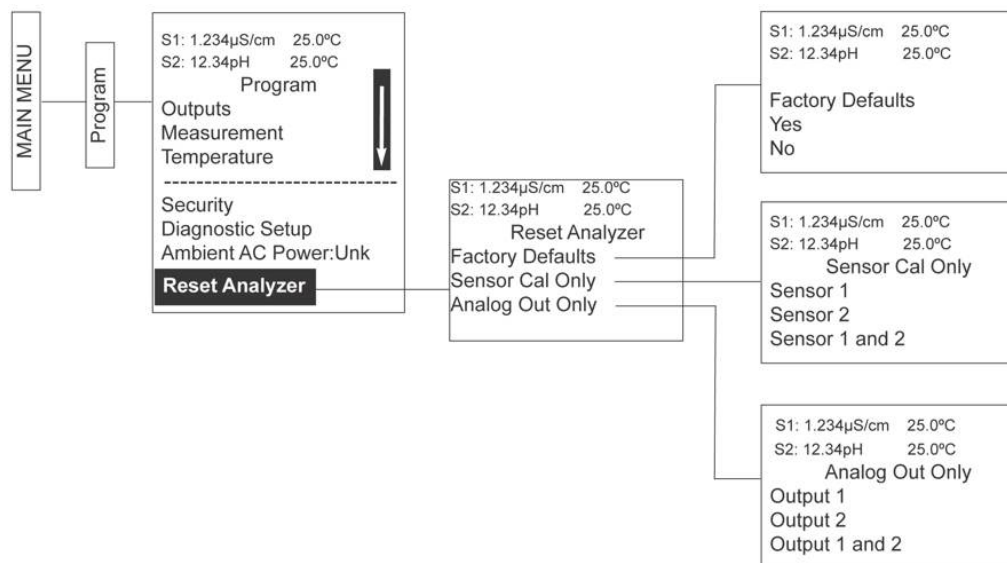
- Reset all settings to factory defaults.
- Reset sensor calibration data only.
- Reset analog output settings only.

5.8.2 Reset factory default settings

Procedure

To reset factory defaults, reset calibration data only, or reset analog outputs only, follow [Figure 5-9](#).

Figure 5-9: Resetting factory default settings menu tree



5.9 Program alarm relays

The Rosemount 1056 24 Vdc (02 order code) and the AC switching power supply (03 order code) provide four alarm relays for process measurements or temperature. You can configure each alarm as a fault alarm instead of a process alarm. You can also program each relay independently and/or as an interval timer.

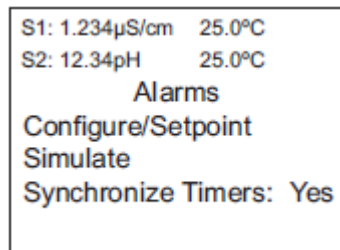
Section	Default	Description
Enter setpoints	100.0 µS/cm	Enter alarm trigger value.
Assign measurement	S1 Measure	Select alarm assignment.
Set relay logic	High	Program relay to activate at high or low reading.
Program the deadband	0.00 µS/cm	Program the change in process value after the relay deactivates.
Program USP safety	0% ↓	Program percentage of the limit to activate the alarm.
Set normal state	Open	Program relay default condition as open or closed for failsafe operation.
Set interval time	24.0 hours	Time in hours between relay activations.
Set relay on-time	10 minutes	Enter the time in seconds that the relay is activated.

Section	Default	Description
Set recovery time	60 seconds	Enter time after the relay deactivation for process recovery.
Program Hold while active	S1	Holds current outputs during relay activation.
Select alarms to simulate	N/A	Manually simulate alarms to confirm relay operation.
Synchronize timers	Yes	Control the timing of two or more relay timers set as interval timers.

Procedure

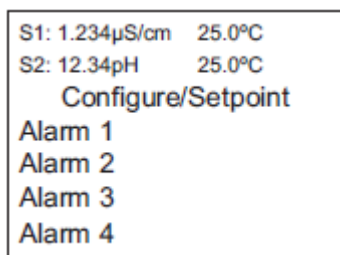
1. Go to **Program** → **Alarms**.
Figure 5-10 appears to allow you to configure the alarm relays.

Figure 5-10: Alarms screen



2. Follow the menu screens in Figure 5-3 to configure the outputs.
Figure 5-11 appears to allow you to select a specific alarm relay.

Figure 5-11: Configure/Setpoint screen



3. Select the desired alarm and press **ENTER**.
Figure 5-12 appears to allow complete programming of each alarm.

Figure 5-12: Alarm Settings screen

S1:	1.234μS/cm	25.0°C
S2:	12.34pH	25.0°C
AlarmM Settings		
Setpoint:	100.0uS/cm	
Assign:	S1 Measure	
Logic:	High	
Deadband:	0.00uS/cm	
USP Safety:	0%↓	

Interval time:	24.0 hr	
On Time:	120 sec	
Recover time:	60 sec	
Hold while active:	Sens1	

Factory defaults are displayed as they would appear for an installed contacting conductivity board. USP safety appears only if alarm logic is set to USP. Interval time, On Time, Recover time, and Hold while active only appear if the alarm is configured as an interval timer.

5.9.1 Enter setpoints

Go to **Program** → **Alarms**. See Figure 5-13 to configure the alarm relays.

Figure 5-13: Setpoint screen

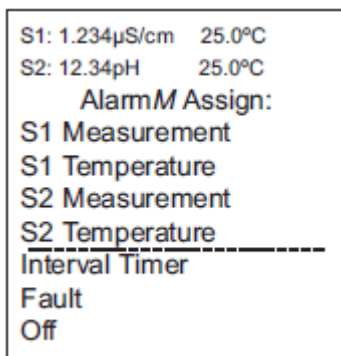
S1:	1.234 μ S/cm	25.0°C
S2:	12.34pH	25.0°C
Alarm1 S2 Setpoint		
+100.0uS/cm		

Enter the desired value for the process measurement or temperature at which to activate an alarm event.

5.9.2 Assign measurement

See [Figure 5-14](#) (under the **Alarm Settings** menu) to assign alarm relays.

Figure 5-14: Alarm Assign screen



S1: 1.234μS/cm 25.0°C
S2: 12.34pH 25.0°C
Alarm/M Assign:
S1 Measurement
S1 Temperature
S2 Measurement
S2 Temperature

Interval Timer
Fault
Off

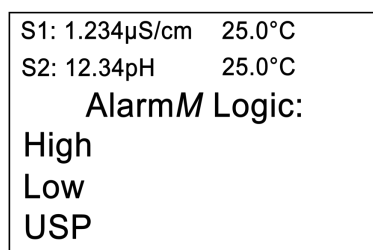
Procedure

Select an alarm assignment.

5.9.3 Set relay logic

See [Figure 5-15](#) (under the **Alarms Settings** menu) to set the alarm logic.

Figure 5-15: Alarm Logic screen



S1: 1.234μS/cm 25.0°C
S2: 12.34pH 25.0°C
Alarm/M Logic:
High
Low
USP

Select the desired relay logic to activate alarms at a high reading or a low reading. USP only appears if a contacting conductivity board is installed.

5.9.4 Program the deadband

See [Figure 5-16](#) (under the **Alarms Settings** menu) to program the deadband as a measurement value.

Enter the change in the process value needed after the relay deactivates to return to normal (thereby preventing repeated alarm activation).

Figure 5-16: Deadband screen



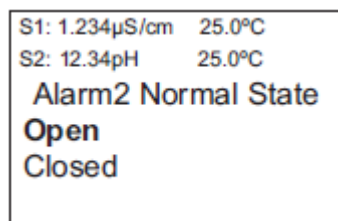
5.9.5 Set normal state

You can define a failsafe condition in the software by programming the alarm default state to normally open or normally closed upon power up. To display this alarm configuration item:

Procedure

1. Hold down the **EXIT** key for six seconds while in the main display mode to enter the **Expert** menus.
The screen prompt `Enable Expert Menu` appears.
2. Select Yes.
3. Under the **Alarm Settings** menu, select Normal State.

Figure 5-17: Normal State screen

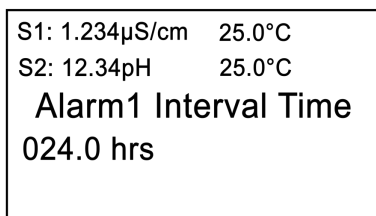


4. Select the alarm condition that you prefer each time the transmitter powers up.

5.9.6 Set interval time

See Figure 5-18 (under the **Alarms Settings** menu) to set the interval time.

Figure 5-18: Interval Time screen



Enter the fixed time in hours between relay activations.

5.9.7 Set relay on-time

See [Figure 5-19](#) (under the **Alarm Settings** menu) to set the relay on-time.

Figure 5-19: On-Time screen

S1: 1.234μS/cm	25.0°C
S2: 12.34pH	25.0°C
Alarm1 On-Time	
00.00sec	

Enter the time in seconds that you want the relay to be activated for.

5.9.8 Set recovery time

See [Figure 5-20](#) (under the **Alarms Settings** menu) to set the relay recovery time.

Figure 5-20: Recovery screen

S1: 1.234μS/cm	25.0°C
S2: 12.34pH	25.0°C
Alarm1 Recovery	
060sec	

Enter time for process recovery after the relay deactivation.

5.9.9 Program Hold while active

See [Figure 5-21](#) (under the **Alarms Settings** menu) to program the feature that holds the current outputs while alarms are active.

Figure 5-21: Hold while active screen

S1: 1.234μS/cm	25.0°C
S2: 12.34pH	25.0°C
Alarm1 Hold while active	
Sensor 1	
Sensor 2	
Both	
None	

Select whether or not to hold the current outputs for Sensor 1, Sensor 2, or both sensors while the relay is activated.

5.9.10 Select alarms to simulate

You can manually set alarm relays to check devices, such as valves or pumps.

See [Figure 5-22](#) (under the **Alarms Settings** menu) to set manual forced activation of the alarm relays. Select the desired alarm condition to simulate.

Figure 5-22: Simulate Alarm screen

S1: 1.234μS/cm	25.0°C
S2: 12.34pH	25.0°C

Simulate Alarm *M*

Don't simulate

De-energize

Energize

5.9.11 Synchronize timers

See [Figure 5-23](#) (under the **Alarms Settings** menu) to synchronize alarms that are set to interval timers.

Figure 5-23: Synchronize Timers screen

S1: 1.234μS/cm	25.0°C
S2: 12.34pH	25.0°C

Synchronize Timers

Yes

No

Select Yes or No to synchronize two or more timers.

6 Programming measurements

6.1 Introduction to programming measurements

The Rosemount 1056 automatically recognizes each installed measurement board upon first power-up and each time the transmitter is turned on.

Completing **Quick Start** screens upon first power-up enables measurements, but you may have to take additional steps to program the transmitter for the desired measurement application. This section covers the following programming and configuration functions:

1. Select measurement type or sensor type.
2. Identify the preamp location ([Program pH measurement](#)).
3. Enable manual temperature correction and enter a reference temperature.
4. Enable sample temperature correction and enter temperature correction slope.
5. Define measurement display resolution (pH and amperometric).
6. Define measurement display units.
7. Adjust the input filter to control display and output reading variability or noise.
8. Select a measurement range ([Program contacting conductivity measurement](#) and [Program toroidal conductivity measurement](#)).
9. Enter a cell constant for a contacting or toroidal sensor ([Program contacting conductivity measurement](#) and [Program toroidal conductivity measurement](#)).
10. Enter a temperature element/RTD offset or temperature slope ([Program contacting conductivity measurement](#) and [Program toroidal conductivity measurement](#)).
11. Create an application-specific concentration curve.
12. Enable automatic pH correction for free chlorine measurement ([Program chlorine measurement](#)).

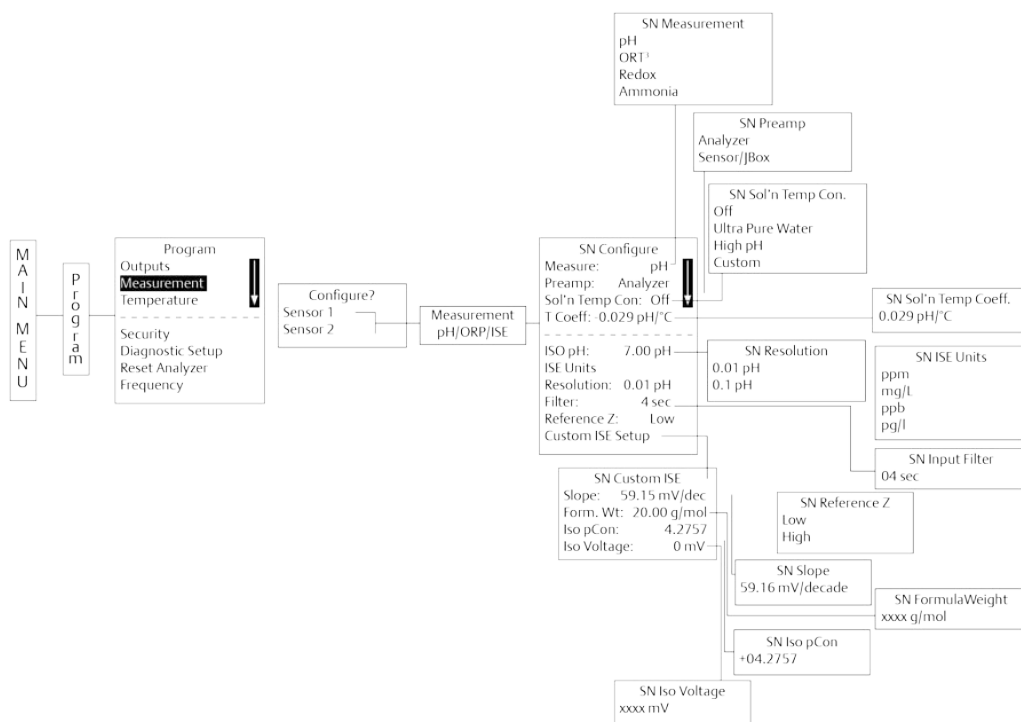
To fully configure the transmitter for each installed measurement board, you may use the following:

1. Reset Analyzer function to reset factory defaults and configure the measurement board to the desired measurement. Follow the **Reset Analyzer** menu to reconfigure the transmitter to display new measurements or measurement units.
2. Program menus to adjust any of the programmable configuration items.

6.2 Program pH measurement

[Figure 6-1](#) is a detailed flow diagram for pH programming to guide you through all basic programming and configuration functions.

Figure 6-1: Flow diagram for pH and oxidation reduction potential (ORP) programming

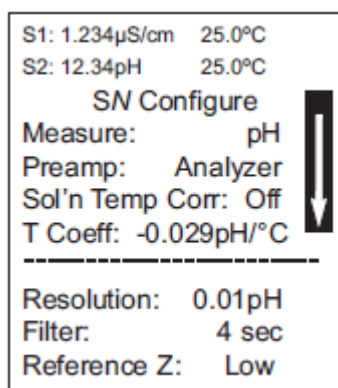


To configure the pH measurement board:

1. Press **MENU**.
2. Go to **Program** → **Measurement**.
3. Select Sensor 1 or Sensor 2 corresponding to pH. Press **ENTER**.

Figure 6-2 appears; factory default settings are shown.

Figure 6-2: Configure pH screen

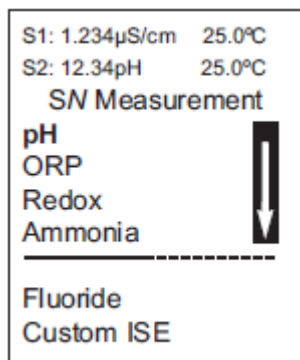


To change any setting, scroll to the desired item and press **ENTER**.

6.2.1 Select measurement type

See [Figure 6-3](#) to select the measurement type.

Figure 6-3: Measurement screen

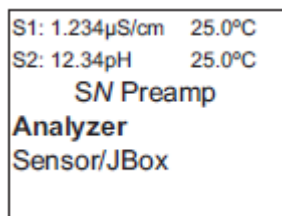


The default value (pH) is displayed in bold type. Refer to [Figure 6-1](#) to select a measurement type.

6.2.2 Select pH preamplifier location

See [Figure 6-4](#) to select the preamplifier (preamp) location.

Figure 6-4: Preamp screen

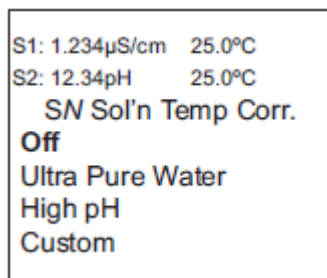


The default value (Analyzer) is displayed in bold type. Refer to [Figure 6-1](#) to select a preamp location.

6.2.3 Select solution temperature correction

See [Figure 6-5](#) to select the solution temperature correction algorithm.

Figure 6-5: Solution Temperature Correction screen

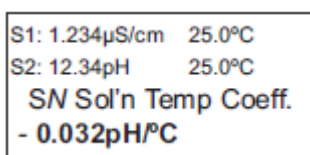


The default value (Off) is displayed in bold type. Refer to [Figure 6-1](#) to select a solution temperature correction algorithm.

6.2.4 Enter custom solution temperature coefficient

See [Figure 6-6](#) to enter a custom solution temperature coefficient.

Figure 6-6: Custom Solution Temperature Coefficient screen

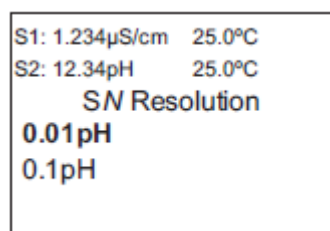


The default value (-0.032 pH/°C) is displayed in bold type. Refer to [Figure 6-1](#) to enter a custom coefficient.

6.2.5 Select display resolution

See [Figure 6-7](#) to select a display resolution.

Figure 6-7: Resolution screen

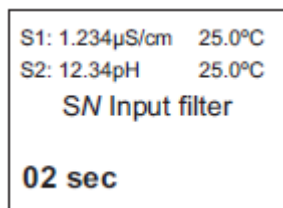


The default value (0.01 pH) is displayed in bold type. Refer to [Figure 6-1](#) to select a resolution.

6.2.6 Enter input filter value

See [Figure 6-8](#) to enter the input filter value in seconds.

Figure 6-8: Input Filter screen

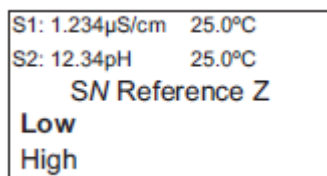


The default value (02 seconds) is displayed in bold type. Refer to [Figure 6-15](#) to enter the input filter value.

6.2.7 Select reference impedance

See [Figure 6-9](#) to select the reference impedance.

Figure 6-9: Reference Z screen



The default value (Low) is displayed in bold type. Refer to [Figure 6-1](#) to select the reference impedance.

6.3 Program oxidation reduction potential (ORP) measurement

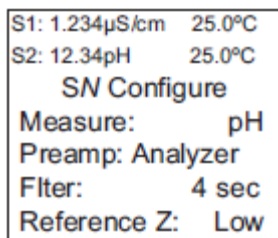
[Figure 6-1](#) displays a detailed flow diagram for ORP programming to guide you through all basic programming and configuration functions.

To configure the ORP board:

1. Press **MENU**.
2. Go to **Program** → **Measurement**.
3. Select Sensor 1 or Sensor 2 corresponding to ORP. Press **ENTER**.

[Figure 6-10](#) appears; factory settings are shown.

Figure 6-10: Configure ORP screen



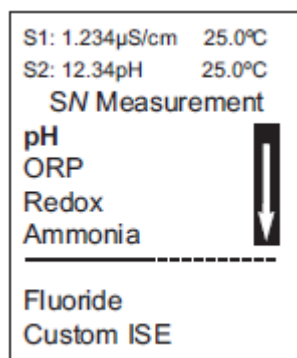
S1: 1.234 μ S/cm 25.0°C
S2: 12.34pH 25.0°C
SN Configure
Measure: pH
Preamp: Analyzer
Filter: 4 sec
Reference Z: Low

To change any setting, scroll to it and press **ENTER**.

6.3.1 Select measurement type

Figure 6-11 displays the screen from which you can select the measurement type.

Figure 6-11: Measurement Screen



S1: 1.234 μ S/cm 25.0°C
S2: 12.34pH 25.0°C
SN Measurement
pH
ORP
Redox
Ammonia

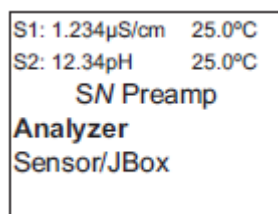
Fluoride
Custom ISE

The default value is displayed in bold type. Refer to [Figure 6-1](#) to select the measurement type.

6.3.2 Select preamp location

Figure 6-12 displays the screen from which you can select the preamp location.

Figure 6-12: Preamp Screen



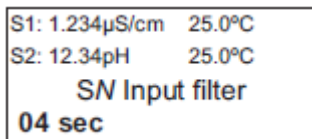
S1: 1.234 μ S/cm 25.0°C
S2: 12.34pH 25.0°C
SN Preamp
Analyzer
Sensor/JBox

The default value is displayed in bold type. Refer to [Figure 6-1](#) to select the preamp location.

6.3.3 Enter input filter value

Figure 6-13 displays the screen on which you can enter the input filter value.

Figure 6-13: Input Filter Screen



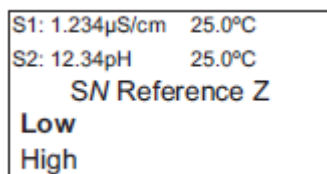
S1: 1.234 μ S/cm 25.0°C
S2: 12.34pH 25.0°C
SN Input filter
04 sec

The default value is displayed in bold type. Refer to Figure 6-1 to enter the input filter value.

6.3.4 Select reference impedance

Figure 6-14 displays the screen from which you can select the reference impedance.

Figure 6-14: Reference Z Screen



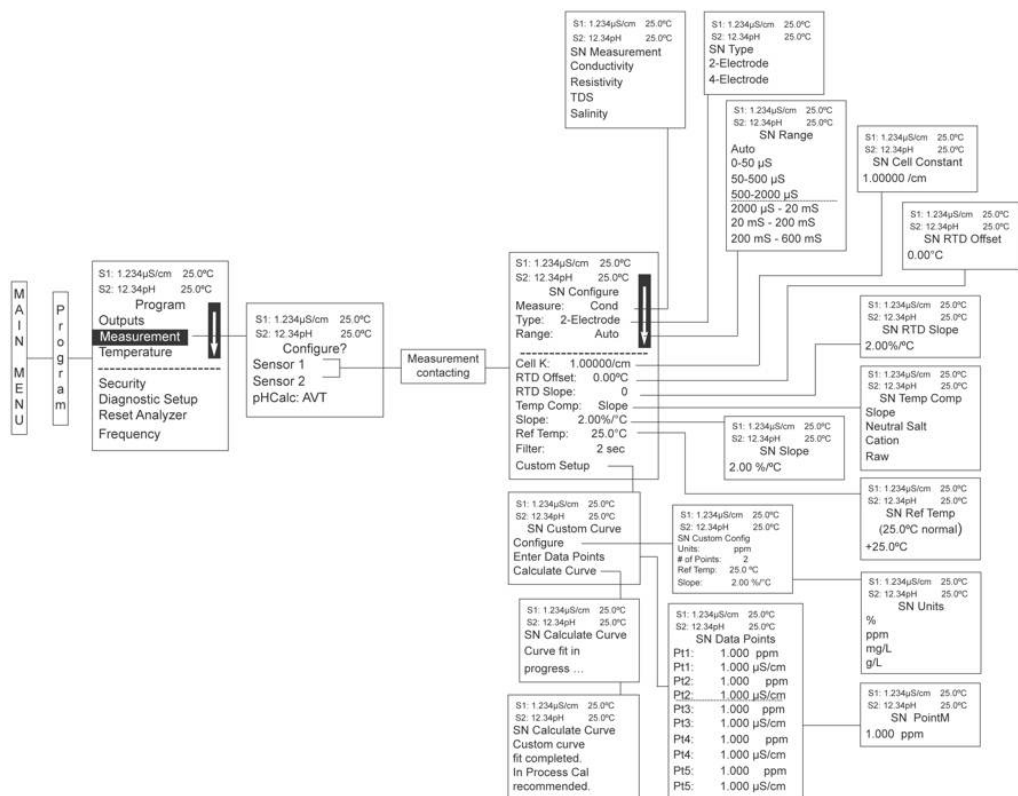
S1: 1.234 μ S/cm 25.0°C
S2: 12.34pH 25.0°C
SN Reference Z
Low
High

The default value is displayed in bold type. Refer to Figure 6-1 to select the reference impedance.

6.4 Program contacting conductivity measurement

Figure 6-15 guides you through how to configure transmitter to measure contacting conductivity.

Figure 6-15: Contacting Conductivity Flow Diagram



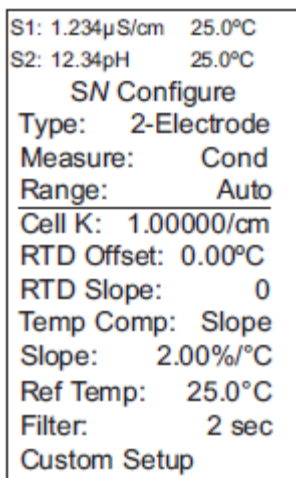
To configure the contacting conductivity measurement board:

Procedure

1. Press **MENU**.
2. Scroll down to Program. Press **ENTER**.

3. Select Sensor 1 or Sensor 2 corresponding to contacting conductivity. Press **ENTER**. [Figure 6-16](#) appears; factory default settings are shown.

Figure 6-16: Configure Conductivity Screen



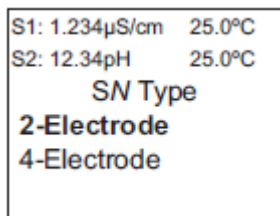
S1: 1.234 μ S/cm 25.0°C
S2: 12.34pH 25.0°C
SN Configure
Type: 2-Electrode
Measure: Cond
Range: Auto
Cell K: 1.00000/cm
RTD Offset: 0.00°C
RTD Slope: 0
Temp Comp: Slope
Slope: 2.00%/°C
Ref Temp: 25.0°C
Filter: 2 sec
Custom Setup

4. To change any settings, scroll to the desired item and press **ENTER**.

6.4.1 Select sensor type

[Figure 6-17](#) displays the screen from which you can select the sensor type.

Figure 6-17: Sensor Type Screen



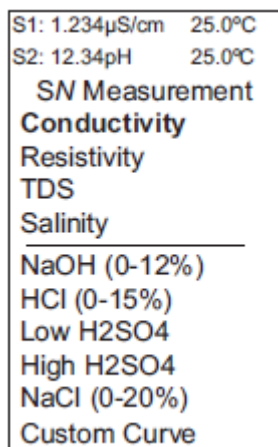
S1: 1.234 μ S/cm 25.0°C
S2: 12.34pH 25.0°C
SN Type
2-Electrode
4-Electrode

The default value is displayed in bold type. Refer to [Figure 6-15](#) to select the sensor type.

6.4.2 Select measurement type

Figure 6-18 displays the screen from which you can select the measurement type.

Figure 6-18: Measurement Screen

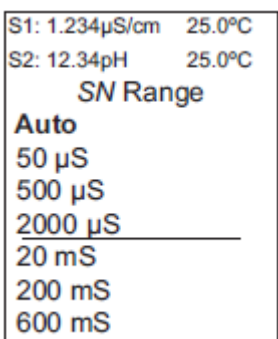


The default value is displayed in bold type. Refer to [Figure 6-15](#) to select a measurement type.

6.4.3 Select range

Figure 6-19 displays the screen from which you can select the sensor range.

Figure 6-19: Range Screen



The default value is displayed in bold type.

Note

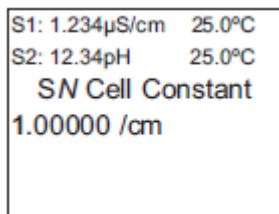
Ranges are shown as conductance, not conductivity.

Refer to [Figure 6-15](#) to select a range.

6.4.4 Enter cell constant

Figure 6-20 displays the screen on which you can enter the cell constant. The cell constant is on the sensor tag.

Figure 6-20: Cell Constant Screen

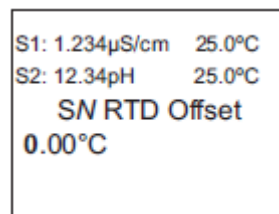


The default value is displayed in bold type. Refer to Figure 6-15 to enter the cell constant.

6.4.5 Resistance temperature detector (RTD) offset

Figure 6-21 displays the screen from which you can enter the RTD offset for a contacting conductivity sensor.

Figure 6-21: RTD Offset Screen

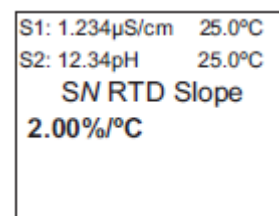


The default value is displayed in bold type. Refer to Figure 6-15 to set the RTD offset.

6.4.6 Resistance temperature detector (RTD) slope

Figure 6-22 displays the screen from which you can enter the RTD slope.

Figure 6-22: RTD Slope Screen

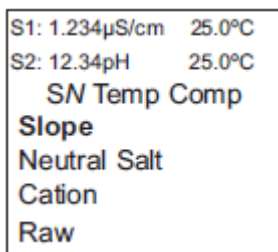


The default value is displayed in bold type. Refer to Figure 6-15 to enter the RTD slope.

6.4.7 Enter temperature compensation

Figure 6-23 displays the screen from which you can select the temperature compensation.

Figure 6-23: Temperature Compensation Screen



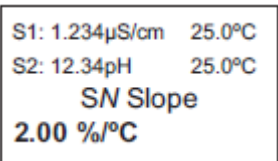
S1: 1.234µS/cm 25.0°C
S2: 12.34pH 25.0°C
SN Temp Comp
Slope
Neutral Salt
Cation
Raw

The default value is displayed in bold type. Refer to Figure 6-15 to select a temperature compensation.

6.4.8 Enter slope

Figure 6-24 displays the screen on which you can enter the slope.

Figure 6-24: Slope Screen



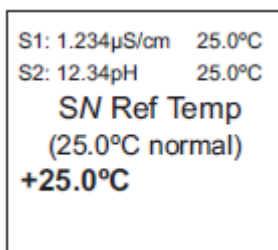
S1: 1.234µS/cm 25.0°C
S2: 12.34pH 25.0°C
SN Slope
2.00 %/°C

The default value is displayed in bold type. Refer to Figure 6-15 to enter the slope.

6.4.9 Enter reference temperature

Figure 6-25 displays the screen on which you can enter the reference temperature manually.

Figure 6-25: Reference Temperature Screen



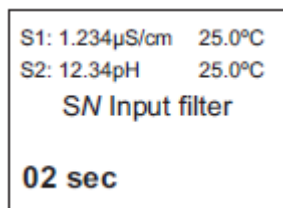
S1: 1.234µS/cm 25.0°C
S2: 12.34pH 25.0°C
SN Ref Temp
(25.0°C normal)
+25.0°C

The default value is displayed in bold type. Refer to Figure 6-15 to complete this function.

6.4.10 Enter input filter value

See [Figure 6-26](#) to enter the input filter value in seconds.

Figure 6-26: Input Filter screen

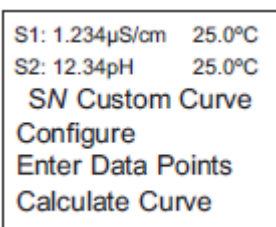


The default value (02 seconds) is displayed in bold type. Refer to [Figure 6-15](#) to enter the input filter value.

6.4.11 Create custom curve

[Figure 6-27](#) displays the screen from which you can create a custom curve for converting conductivity into concentration.

Figure 6-27: Custom Curve Screen



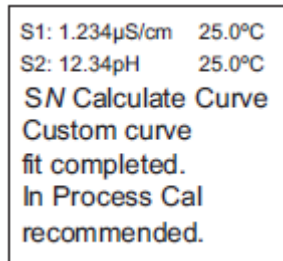
Refer to [Figure 6-15](#) to create a custom curve.

Procedure

Enter the custom curve data. Press **ENTER**.

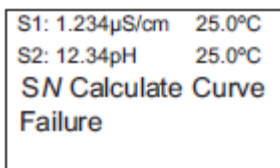
The display confirms the determination of a custom curve fit to the entered data by displaying [Figure 6-28](#).

Figure 6-28: Calculate Curve Screen



If the custom curve fit is not completed or is unsuccessful, [Figure 6-29](#) appears. The transmitter returns to the screen shown in [Figure 6-27](#).

Figure 6-29: Calculate Curve Failure Screen



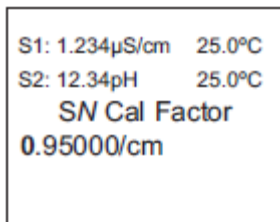
S1: 1.234 μ S/cm 25.0°C
S2: 12.34pH 25.0°C
SN Calculate Curve
Failure

6.4.12

Enter calibration factor

Figure 6-30 displays the screen on which you can enter a calibration factor.

Figure 6-30: Calibration Factor Screen



S1: 1.234 μ S/cm 25.0°C
S2: 12.34pH 25.0°C
SN Cal Factor
0.95000/cm

The default value is displayed in bold type.

Procedure

If you selected 4-electrode for the sensor type in the **Quick Start** menus, enter a cell constant and a calibration factor using the transmitter keypad.

The cell constant is needed to convert measured conductance to conductivity, as displayed on the transmitter screen. The calibration factor entry is needed to increase the accuracy of the live conductivity readings, especially at low conductivity readings below 20 μ S/cm. Both the cell constant and the calibration factor are printed on the tag attached to the four-electrode sensor cable.

6.5 Program toroidal conductivity measurement

Configure the transmitter for conductivity measurements using inductive/toroidal sensors.

Figure 6-31: Toroidal Conductivity Flow Diagram

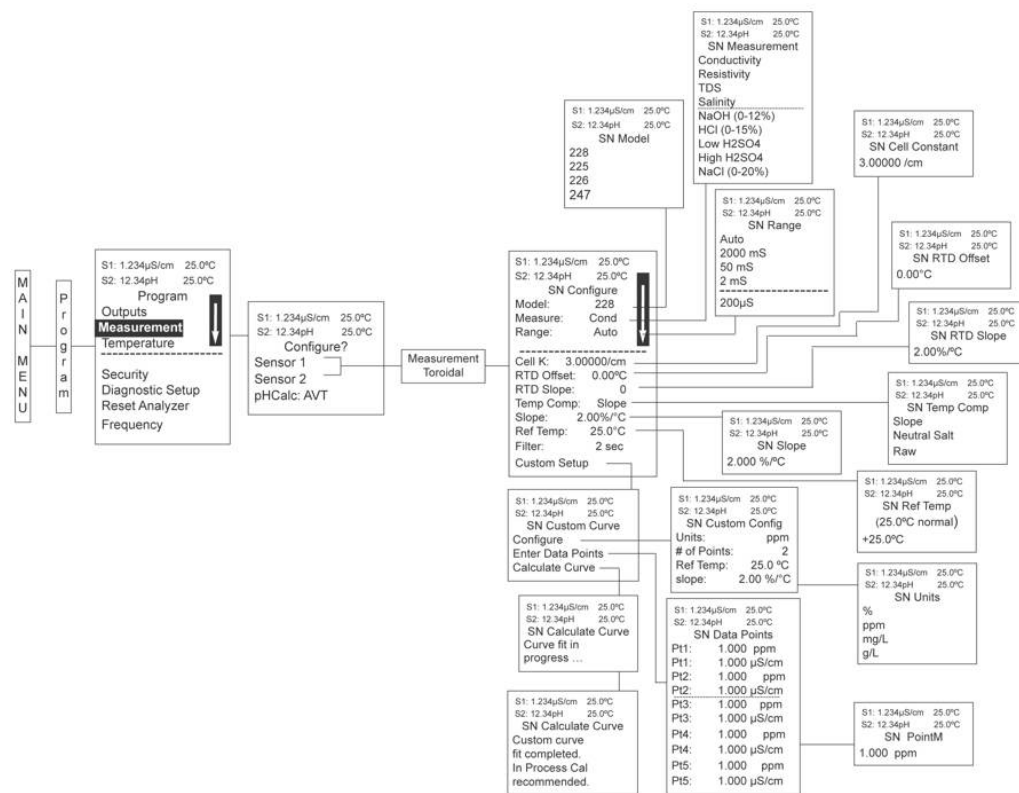


Figure 6-31 is a detailed flow diagram for programming toroidal conductivity.

To configure the toroidal conductivity measurement board:

Procedure

1. Press **MENU**.
2. Scroll down to Program. Press **ENTER**.
3. Scroll down to Measurement. Press **ENTER**.

4. Select Sensor 1 or Sensor 2 corresponding to toroidal conductivity. Press **ENTER**. [Figure 6-32](#) appears; factory default settings are shown.

Figure 6-32: Configure Toroidal Conductivity Sensor Screen

S1:	1.234μS/cm	25.0°C
S2:	12.34pH	25.0°C
SN Configure		
Model:	228	
Measure:	Cond	
Range:	Auto	
Cell K: 3.00000/cm		
RTD Offset: 0.00°C		
RTD Slope: 0		
Temp Comp: Slope		
Slope: 2.00%/°C		
Ref Temp: 25.0°C		
Filter: 2 sec		
Custom Setup		

5. To change any setting, scroll to the desired item and press **ENTER**.

6.5.1 Select sensor model

[Figure 6-33](#) displays the screen from which you can select the sensor model.

Figure 6-33: Sensor Model screen

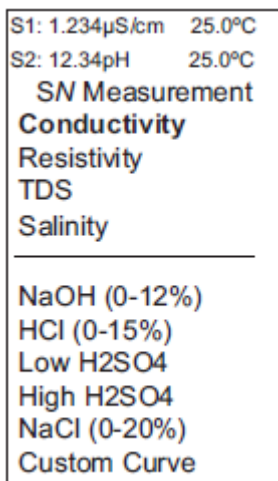
S1:	1.234μS/cm	25.0°C
S2:	12.34pH	25.0°C
SN Model		
228		
225		
226		
242		
Other		

The default value is displayed in bold type. Refer to [Figure 6-31](#) to select a sensor model.

6.5.2 Select measurement type

Figure 6-34 displays the screen from which you can select the measurement type.

Figure 6-34: Measurement Type Screen

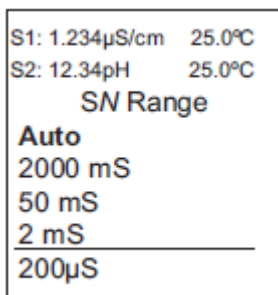


The default value is displayed in bold type. Refer to Figure 6-31 to select the measurement type.

6.5.3 Select sensor range

Figure 6-35 displays the screen from which you can select the sensor range.

Figure 6-35: Range Screen



The default value is displayed in bold type.

Note

Ranges are shown as conductance, not conductivity.

Refer to Figure 6-31 to select a range.