

Controller menus

5500sc, 9610sc and 9611sc analyzers

Introduction

This document is a reference document that shows the menus in the 5500sc, 9610sc and 9611sc analyzers. There are 3 top-level menus:



Main menu on page 1



Cal menu on page 6



Diag menu on page 6



Main menu

Option	Description
START ANALYZER or STOP ANALYZER	Starts or puts the analyzer back into operation. If in operation mode, puts the analyzer in shutdown mode.
REAGENTS/STANDARDS	Sets and resets reagent, standard and cleaning solution levels. Primes the reagents. Sets the blank value (if applicable).
GRAB SAMPLE	Measures an external sample or dispenses a sample for external analysis.
SETUP SYSTEM	Sets the main configuration settings for the analyzer.
VIEW DATA	Shows measurement data, analyzer data and data logs.
LINK2SC	Lets the user share data between analyzers, process probes and compatible laboratory instruments.
SD CARD SETUP (conditional)	Shows when an SD card is installed. Updates the firmware and software. Downloads the event and data logs.



> REAGENTS/STANDARDS

Option	Description
SET REAGENT LEVEL	Sets the volume of a specific reagent in the reagent bottle to an approximate value. Range: 1–100%.
SET STANDARD LEVEL	Sets the volume of a specific standard solution in the standard bottle to an approximate value. Range: 1–100%.
SET CLEANING LEVEL	Sets the volume of the cleaning solution in the cleaning solution bottle to an approximate value. Range: 1–100%.
RESET REAGENT LEVELS	Sets the volume of reagent in the reagent bottles to 100% full.
RESET STANDARD LEVELS	Sets the volume of standard solution in the standard bottle to 100% full.
RESET CLEANING SOLUTION LEVELS	Sets the volume of the cleaning solution in the cleaning solution bottle to 100% full.

Option	Description
PRIME REAGENTS	Starts the flow of all reagents through the tube and valve system. IMPORTANT: Prime the reagents each time the reagents are changed to remove bubbles and push the new reagents through the system.
ENTER BLANK VALUE	Applicable only to silica analyzers with Hach-prepared reagents: Sets the reagent blank value to the value that is printed on the R1 bottle label.



> GRAB SAMPLE

Option	Description
GRAB SAMPLE IN	Analyzes an external sample or standard.
GRAB SAMPLE OUT	Removes a sample directly from a sample line for external analysis.



> SETUP SYSTEM

Option	Description
MEAS MODE	Changes the mode of the measurement cycle. Options: interval or continuous (default). The continuous mode measures approximately every 9 minutes.
EDIT INTERVAL (conditional)	Changes the interval time when MEAS MODE is set to interval. Options: 10 to 240 minutes (default = 15 minutes).
MEAS UNITS	Changes the measurement units that are shown on the display and in the data log. Options: ppb (default), ppm, mg/L, µg/L.
SIGNAL AVERAGE	Selects the number of measurements that are used to calculate an average measurement (1-5). The signal average reduces variability in measurements (default = 1, no averaging).
EDIT ANALYZER NAME	Changes the name that is shown on the top of the measurement screen (maximum of 16 characters).
EDIT CHANNEL NAME	Changes the name of the sample source that is shown on the measurement screen (maximum of 10 characters).
CONFIGURE SEQUENCER (optional)	Starts or stops measurements for individual sample sources. Sets the measurement order of the sample sources when there is more than one sample source.
SAMPLE MISSING	Sets the operation that occurs if no sample is detected. Options: ON DELAY (default) or OFF DELAY. ON DELAY: the instrument waits the remainder of the measurement cycle, then goes to the next sample in the sequence. OFF DELAY: the instrument waits 10 seconds, then goes to the next sample in the sequence.
SET DATE & TIME	Sets the analyzer time and date.
DISPLAY SETUP	Changes the analyzer language. Adjusts the order of the measurements on the screen. Adjusts the contrast of the display.
DISABLE REMINDERS	Stops scheduled maintenance alerts for individual components. Options: tubing, stir bar, colorimeter cell, air filter, stir motor, air relief valve, pinch valve, air compressor, reagent valves, sample valves, standard valves, colorimeter LED, fan filter, air check valve.
MANAGE DEVICES	Installs or removes input modules.
INSTRUMENT INFORMATION	Shows the analyzer information.
CALCULATION	Sets up variables, parameters, units and formulas for the analyzer.
SETUP OUTPUTS	Selects and configures the 4–20 mA setup , the relay setup and the error hold mode.
SETUP NETWORK (conditional)	Shows only if a network card is installed. The network card supports the Modbus, Profibus and HART communication protocols.

Option	Description
SECURITY SETUP	Enables or disables the pass code (default = HACH55).
AIR PURGE	Enables the air purge for use with an external air supply. Options: on or off (default). Off : an external air supply is not used. The vent fan is enabled and the air filter is installed. On : an external air supply is connected to the instrument. The vent fan is disabled. The air filter is replaced with a fan filter plug. To use this feature, make sure that the fan filter plug is installed. Refer to the documentation that is supplied with the air purge kit.
RESET DEFAULTS	Sets the configuration to the factory defaults.



> SETUP SYSTEM > SETUP OUTPUTS > 4–20 mA SETUP

Option	Description
ACTIVATION	Sets the output parameters such as high and low values. The available options change with the selected function in the SET FUNCTION menu.
SELECT SOURCE	Selects the output. Options: None (if the relay is not configured), the analyzer name or calculation (if a calculation formula has been configured).
SET PARAMETER	Selects the measurement channel from the list.
SET FUNCTION	Selects a function. Other options will change based on which function is selected. LINEAR CONTROL —Signal is linear. PID CONTROL —Signal works as a PID (Proportional, Integral, Derivative) controller. LOGARITHMIC —Signal is logarithmic within the process variable range. BILINEAR —Signal is given as two linear segments within the process variable range.
SET TRANSFER	Sets the transfer value when TRANSFER is or will be selected as the system ERROR HOLD MODE. Range: 3.0 to 23.0 mA (default = 4.000).
SET FILTER	Enters a time-average filter value of 0 to 120 seconds (default = 0).
SCALE 0mA/4mA	Selects the scale (0–20 mA or 4–20 mA).



> SETUP SYSTEM > SETUP OUTPUTS > RELAY SETUP

Option	Description
ACTIVATION	Sets the output parameters such as high and low alarm values. The available options change with the selected function in the SET FUNCTION menu.
SELECT SOURCE	Selects the output. Options: None (if the relay is not configured), the analyzer name or calculation (if a calculation formula has been configured).
SET FUNCTION	Selects a function. ALARM —The relay starts when the upper or lower alarm value is triggered. FEEDER CONTROL —The relay shows if a process value is larger or falls below a setpoint. EVENT CONTROL —The relay toggles if a process value reaches an upper or lower limit. SCHEDULER —The relay switches at times independently of any process value. WARNING —The relay shows warning and error conditions in probes. PROCESS EVENT —The relay switches when the analyzer does a specified operation.
SET TRANSFER	Selects active or inactive.
FAIL SAFE	Selects yes or no.



> VIEW DATA

Option	Description
ANALYZER DATA	Shows the analyzer status information.
MEASUREMENT DATA	Shows the measurement information.
LOG DATA	Selects the data log and/or the event log. DATA LOG—Shows the measurement values. EVENT LOG—Shows all analyzer information (e.g., alarms, warnings, configuration changes, and so on). Select the start time, number of hours and/or number of readings.



> VIEW DATA > ANALYZER DATA

Element	Definition
CELL TEMP	Shows the temperature of the colorimeter cell block heater (ideally 49.8 °C to 50.2 °C (121.64 °F to 122.36 °F)).
REAGENT TEMP	Shows the reagent temperature before it enters the colorimeter.
AMBIENT TEMP	Shows the air temperature inside the electronics area.
SAMPLE TEMP	Shows the sample pre-heater block temperature (typically 45 °C to 55 °C (113 °F to 131 °F) but could reach 58 °C (136.4 °F)).
AIR PRESS	Shows the reagent air pressure in the reagent bottles (ideally 3.95 to 4.10 psi).
LED DUTY CYCLE	Depends on condition of colorimeter cell and age of analyzer (typically 7,200 to 40,000 counts).
HEATER DUTY CYCLE	Shows the percentage of time the colorimeter heater is on to keep a constant temperature of 50 °C (122 °F).
SAMPLE FLOW	Shows the approximate sample flow into the colorimeter, measured during the flush cycle.
SAMPLE PRESS 1	Shows the sample pressure before the pre-heater block (ideally 2 to 4.5 psi based on incoming sample pressure).
SAMPLE PRESS 2	Shows the sample pressure after the sample pre-heater, which is used to calculate the sample flow. The sample pressure is almost zero when the flush is set to off and is approximately 0.2 psi when the flush is on (depends on inlet pressure and flow).
REAGENT 1	Shows the level of the reagent in the reagent 1 bottle.
REAGENT 2	Shows the level of the reagent in the reagent 2 bottle.
REAGENT 3	Shows the level of the reagent in the reagent 3 bottle.
REAGENT 4 (if applicable)	Shows the level of the reagent in the reagent 4 bottle.
STD SOLUTION (if applicable)	Shows the level of the standard solution in the standard solution bottle.
STANDARD 1 (if applicable)	Shows the level of the standard solution in the standard solution 1 bottle.
STANDARD 2 (if applicable)	Shows the level of the standard solution in the standard solution 2 bottle.
FAN SPEED	Shows the speed of the ventilation fan.
LEAK COUNTS	Shows the leak counts (range 0 to 1023). A count of more than 511 indicates a fluid leak.



> VIEW DATA > MEASUREMENT DATA

Element	Definition
LAST MEAS CHANNEL	Shows the last channel that was measured.
LAST MEAS TIME	Shows the time of the last measurement.
LAST ABS	Shows the last absorbance reading.
LAST CONC	Shows the concentration of the last measurement.
NEXT MEAS TIME	Shows the time of the next measurement.
DARK	Shows the number of A/D counts that were measured when the LED was off.
REF	Shows the reference A/D count that is used to compensate for natural color and turbidity.
SAMPLE	Shows the A/D counts measurement (after color development) that is used to determine the concentration of the sample.
DARK STD DEV	Shows the standard deviation of the dark counts from six readings.
REF STD DEV	Shows the standard deviation of the reference counts from six readings.
SAMPLE STD DEV	Shows the standard deviation of the sample counts from 6 readings.
SAMPLE VOLUME	Shows the total sample flush volume through the colorimeter for the measurement cycle.
REAGENT 1	Shows the calculated reagent delivery time to the sample based on temperature, pressure and viscosity.
REAGENT 2	Shows the calculated reagent delivery time to the sample based on temperature, pressure and viscosity.
REAGENT 3	Shows the calculated reagent delivery time to the sample based on temperature, pressure and viscosity.



> LINK2SC

Option	Description
CREATE A NEW JOB	Starts the grab sample operation for the measurement value exchange between the analyzer and the laboratory.
JOB LIST	Selects the job file to send the job to the laboratory or deletes the job. JOB TO LAB—the analyzer data is sent to the SD card as a job file. ERASE JOB—deletes the data.
JOB ID MIN	Specifies the minimum value for the ID number range.
JOB ID MAX	Specifies the maximum value for the ID number range.



> SD CARD SETUP

Option	Description
UPGRADE SOFTWARE (conditional)	Shows when an upgrade file is available on the SD card. Select the specific device for the upgrade.
SAVE LOGS	Selects the device for the download data and to save the logs for last day, last week, last month or all.

Option	Description
MANAGE CONFIGURATION	Saves and restores the backup settings, restore settings and/or transfer settings between instruments.
WORK WITH DEVICES	READ DEVICE FILES—Selects the data for each device to save on the SD card. Options: sensor diag, measurement data (curve data for a measurement cycle), cal history, cal data and/or test script. WRITE DEVICE FILES—shows when an upgrade file is available for a new measurement cycle script.



Cal menu

Option	Description
START MANUAL CAL	Starts a calibration immediately or at the end of the current measurement cycle.
SET AUTO CALIBRATION	Sets a schedule for calibration at regular intervals.
CALIBRATION DATA	Shows data from the last calibration and the due date and time of the next scheduled calibration.
OVERRIDE CALIBRATION	Enters a new slope and/or zero value (reagent blank). When OVERRIDE CALIBRATION is selected, the automatic calibration is disabled for the selected option.
OUTPUT CALIBRATION	Selects a 4–20 mA output and sets the output values to be sent.
RESET DEFAULT CAL	Resets the calibration data to the default values and disables the automatic calibration. When complete, calibrate the analyzer.



Diag menu

Option	Description
DIAGNOSTICS	Shows the errors and warnings for the instrument or the installed modules. The active warnings or reminders show until they are acknowledged or reset. Then, the color of the display background goes to white.
PROGNOSYS	Shows the variables that trigger the service indicator and the measurement health indicator on the display.
CURRENT STATUS	Shows the current instrument statuses that follow: OPERATION—Current measurement mode. SAMPLE CHANNEL—Current sample channel. STEP STATUS—Current step in the measurement cycle. STEP TIME—Step time remaining. MINUTES LEFT—Minutes left in the current step. COMPLETION—the percent completion of the current measurement cycle.
ANALYZER HELP	Shows all possible errors, warnings and reminders with troubleshooting hints.
PERFORM TEST	Runs a diagnostic test for individual analyzer components.
OUTPUTS	Shows the current status of the 4–20 mA and relay outputs with the options to examine, hold and simulate the outputs.
VIEW LED	The LED shines in the colorimeter cell for improved viewing during troubleshooting. The LED can stay on for 1 to 999 seconds.
MODBUS STATS	Shows the status of the Modbus ports: sensor, controller, network and service. Shows the number of good and bad transmissions.
SERVICE	Shows the service parts information and the history. SERVICE PART—Shows the last and the next service date and the remaining days. PART INFORMATION—Shows the replaced part and the current run time. UPCOMING SERVICE—Shows the next part which needs to be replaced. SERVICE HISTORY—Shows the date and time of the replaced parts.

Option	Description
SYSTEM DATA	Shows the system information. TEMPERATURE—Shows the measured temperature of the A/D device in Celsius (C). POWER SOURCE FREQUENCY—Shows the line power frequency (Hz). POWER SOURCE VOLTAGE—Shows the line power voltage (V). 12 V VOLTAGE—Shows the measured power supply voltage (V DC). 3.3 V VOLTAGE—Shows the measured regulated 3.3 V supply (V DC). 12 V CURRENT—Shows the measured 12 V power supply current (Amps).
I2C DATA	Shows the display information (I2C) and the version number.
OVERFEED RESET	Resets the overfeed timer.



> **PERFORM TEST**

Option	Description
REAGENT DELIVERY	Opens each reagent valve for a specified time (50 milliseconds to 65 seconds) or a specified volume (20 to 9,999 µL).
SAMPLE DELIVERY	Opens each sample valve for a specified time (1 to 9999 seconds).
CAL SOL. DELIVERY	Opens the calibration standard valve for a specified time (1 to 9999 seconds).
MIXER	Starts the mixer in a clockwise or counterclockwise (CCW/CW) direction at a specified speed (10 to 500 rpm) for a specified time (1 to 9999 seconds).
COLORIMETER HEATER	Sets the colorimeter heater to a specified temperature (20 to 60 °C / 68 to 140 °F). The measured temperature is shown.
SAMPLE HEATER	Sets the sample heater to a specified temperature (20 to 60 °C / 68 to 140 °F). The measured temperature is shown.
COLORIMETER	Increases the colorimeter LED duty cycle in 5% increments from 0% until saturation. The A2D counts are shown for 0%, a percent between 0% and saturation and the first saturation value.
STATUS LED	Operates each of the LED indicators on the front panel (off, red, green, yellow). The test operates continuously until stopped.
A2D	Sets the colorimeter LED intensity to examine the cell transmittance for the A2D output.
AIR PUMP	Changes and controls the air pressure. SET SETPOINT—Range: 1 to 9.99 psi. LOW and HIGH DEADBAND—Range: 0 to 1 psi. SET LOW and HIGH VALUE—Range: 5–99.99 psi. START—Starts the air pump with the entered settings.
FAN	Adjusts the fan duty cycle.
ANALYZER TYPE	For use by technical support only.
SELECT SCRIPT	Toggles between normal instrument script and test script.
SET CHANNELS	For use by technical support only.

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