ERROR CODES

ERROR CODE	ISSUE	SUGGESTED CORRECTION
SET CHART	Sensor not compatible with current chart	Change chart setting to compatible chart or replace sensor with compatible sensor
SET TIME	Startup incomplete	Set time
ADJ PENS	Startup incomplete	Adjust pens
ERR PROBE	Thermocouple is disconnected	Connect thermocouple
SENSOR	Sensor is unplugged or not installed	Connect sensor
PEN ERROR	Homing failure	Power down to reset

MODELS

MODELS: DEPENDING ON YOUR SENSOR TYPE, MODELS ARE AS FOLLOWS:

MODEL	SENSOR TYPE	CHANNELS	REPLACEABLE SENSOR™
TH8-10	Temperature/Humidity	2 Pen	RS010
TH8-11	Temperature/Humidity	2 Pen	RS010
TH8-11R	Temperature/Humidity	2 Pen	RS010 & Relay
KT8-20	Single Temp Thermistor	1 Pen	RS020
KT8-21	Dual Temp Thermistor	2 Pen	RS010
KT8-30	Single Temp K-TC	1 Pen	RS030
KT8-30R	Single Temp K-TC	1 Pen	RS030 & Relay
KT8-31	Dual Temp K-TC	2 Pen	RS031
KT8-31R	Dual Temp K-TC	2 Pen	RS031 & Relay
KT8-40	RTD Temperature	1 Pen	RS040
KT8-50	Temperature	1 Pen	RS050

Need additional support?

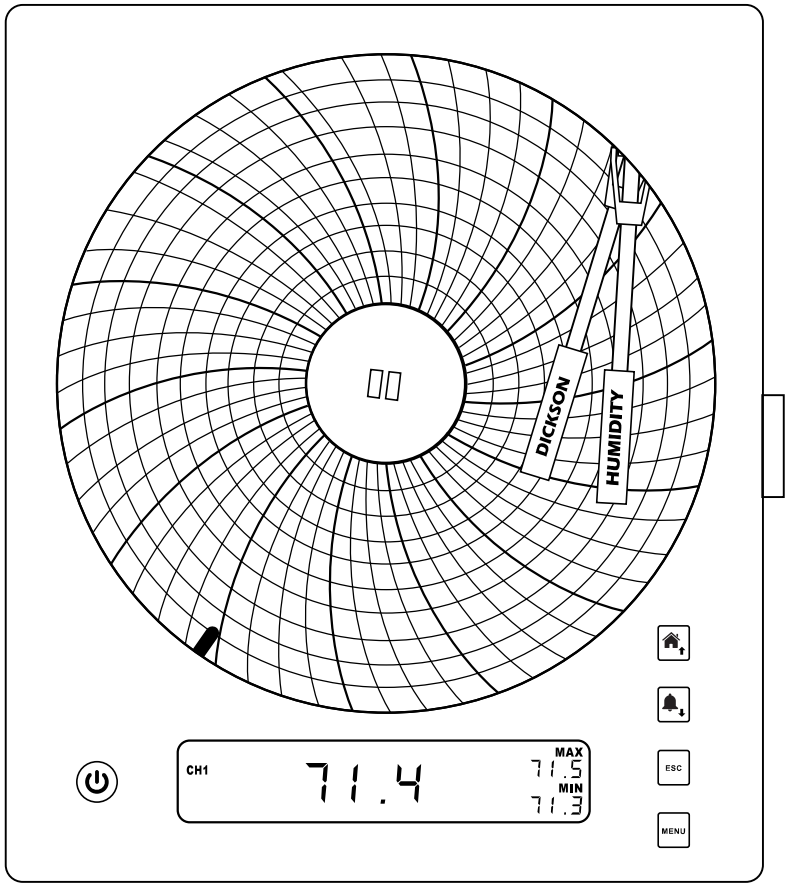
Web: DicksonData.com
Telephone: 630.543.3747
Email: support@dicksondata.com

930 S. Westwood Avenue
Addison, IL 60101

REV 11/2023

DICKSON
Environmental Monitoring + Compliance Experts

USER MANUAL & PRODUCT GUIDE



8" One and Two Pen Chart Recorders

GETTING STARTED

IMPORTANT

Dickson Chart Recorder accuracy specifications are only valid with the use of authentic Dickson brand charts and pens. The specifications for chart printing, die cutting and paper absorption rates, and the complementary bleed rate specifications of pens are critical factors in determining system accuracy.

QUICK START

TO BEGIN OPERATION

1. Remove the protective pen cap.
2. Plug the Replaceable Sensor™ firmly into the logger (lower left side of case)
3. Insert Batteries (4 C type) and plug into AC adapter
4. Install chart. Confirm the chart is aligned on the hub and slid underneath the pen home ramp and chart clip
5. Press the power button and follow the display prompts to configure. NOTE: Unit may power on automatically when AC and battery power applied

SET CHART

1. Press MENU 2x
2. Use UP or DOWN buttons to scroll through available chart number options (chart options determined by attached sensor)
3. Press MENU to Save
4. Default Unit of Measure will display. Use UP or DOWN buttons to scroll and select alternate (option may not display depending on chart selected)
5. Press MENU to Save

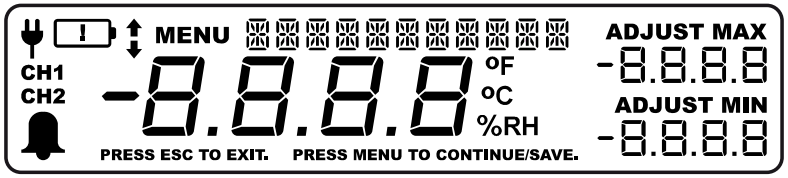
ADJ PEN

1. Press MENU
2. Pen(s) will move onto the outer edge of the chart
3. SET PEN 1: Press and hold UP or DOWN buttons to align the red pen tip on the outermost bold printed line on the chart
4. Press MENU to Save
5. If two pen model, SET PEN 2 will display. Align the blue pen on the same line. MENU to save
6. Pens will move onto the pen ramp

SET TIME

1. Press MENU
2. ADJ TIME will display press and hold UP or DOWN button to rotate chart to the correct time or day/time as referenced by the timing arrow (just below the pen ramp
3. Press MENU to save
4. Press HOME. Pens will move onto the chart to being recording

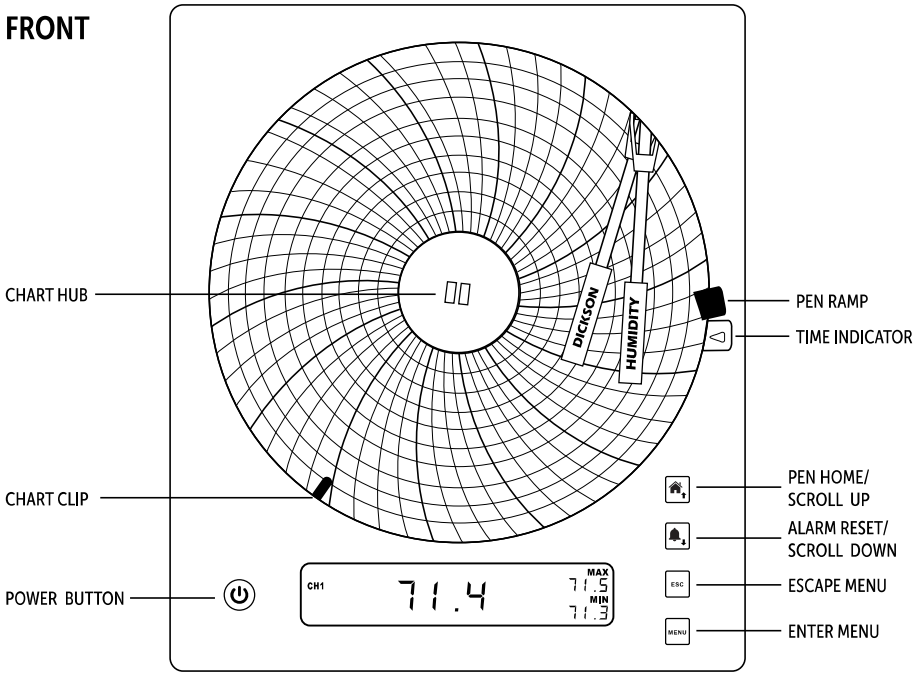
DISPLAY



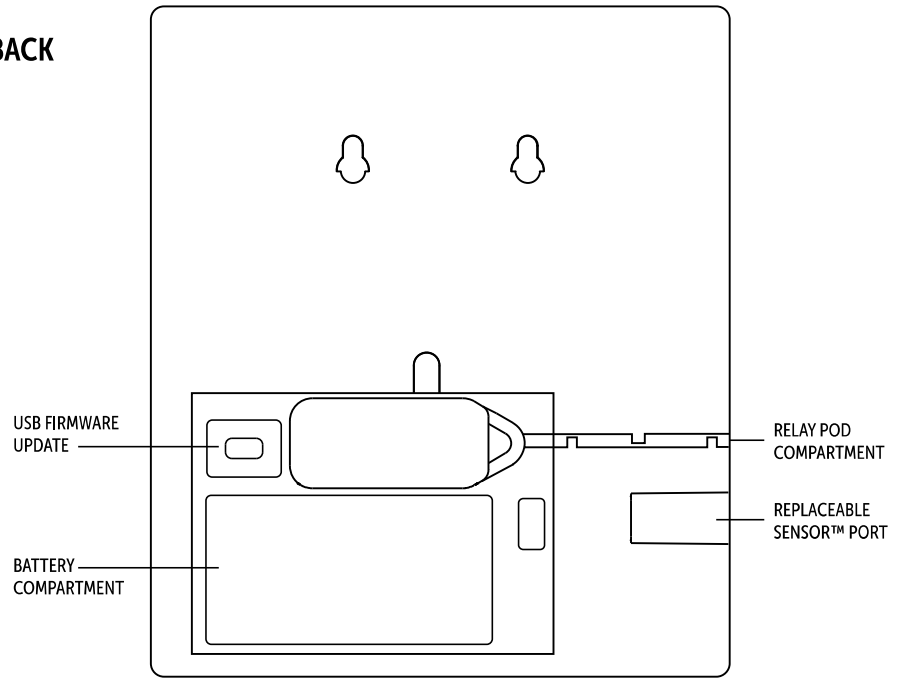
- AC POWER CONNECTED
- LOW BATTERY INDICATOR
- DISPLAYS WHEN ADDITIONAL OPTIONS ARE AVAILABLE WHEN IN MENU MODE
- MENU — DISPLAYS WHEN MENU IS PRESSED
- CH1 CH2 — CHANNEL INDICATOR
- ACTIVE ALARM/SET ALARM
- °F °C %RH — UNIT OF MEASURE
- ADJUST — DISPLAYS WHEN SETTING MAX/MIN ALARM VALUES
- MAX MIN — DISPLAYS MAX/MIN SAVED VALUE SINCE LAST CLEARED
- DP — DISPLAYS WHEN DEW POINT DATA IS DISPLAYED

CHART RECORDER

FRONT



BACK



MENU OPTIONS

NOTE: Menu can not be accessed until a Sensor Pod has been plugged into the recorder. Menu will default to the last menu option viewed when re-entering. Use the Up / Down buttons to select desired menu option.

The following options can be set via the menu:

- SET CHART: Select correct chart based on the part number printed in the center of the chart. Options limited to reflect the available chart options for the sensor pod connected to the recorder
- MIN/MAX: Clear saved Min/Max values
- RESET: Restore to factory default settings
- SETTINGS: Displays current settings
- SET TIME: Rotate chart to set correct time (can be adjusted manually via the chart hub as well)
- CALIBRATION: Apply an offset to available channels
- PEN ADJUST: Realign the pen start position
- PEN HOME: Move pens off the chart
- SET ALARM: Set Min/Max values for available channels with visual/audible notification

SET CHART

Setting a chart for the first time is mandatory when initially setting up the Chart Recorder and anytime a different chart is installed. To set chart:

1. Press MENU
2. Use the up/down arrow keys to navigate to the "Set Chart" submenu
3. Press MENU
4. Use the up/down arrow keys to navigate through the list of available charts. Select the chart type you have installed on the recorder and press MENU
5. "Saved" will appear on the screen. The main screen displaying data values will be displayed momentarily

MIN/MAX

The Chart Recorder will automatically store and update the min/max values as the next reading is taken (every minute). These values can be cleared and will populate on the next reading. To clear:

1. Press MENU
2. Use the up/down arrow keys to navigate to the "MIN/MAX" submenu
3. Press MENU
4. "Resetting" will appear on the screen then "Complete", and will return to the main screen displaying Temperature or Temp/RH values momentarily
5. The min/max values will have dashes until the next reading is sampled

RESET

The Chart Recorder has a factory reset feature which will reset the user settings to factory defaults and a user Calibration reset which will reset the pod to its factory calibration values.

RESET USER SETTINGS:

1. Selected Chart
2. Temperature Units
3. Alarm Settings
4. Pen(s) home offset (alignment with home)
   i. Press MENU
   ii. Use the up/down arrow keys to navigate to the "Reset" submenu. Press MENU
   iii. Toggle between "Settings" or "Calibration" using the up/down arrow keys. Select "Settings" and press MENU
   iv. Display will show "Homing", "Resetting" then "Complete" and will return to the main screen displaying data values momentarily. Press MENU

RESET USER CALIBRATION:

1. Press MENU
2. Use the up/down arrow keys to navigate to the "Reset" submenu. Press MENU
3. Toggle between "Settings" or "Calibration" using the up/down arrow keys. Select "Calibration" and press MENU
4. "Resetting" then "Success" will appear on the screen. The main screen displaying Temperature or Temp/RH values will be displayed momentarily

SETTINGS

The Settings menu feature will display the current configuration of the Chart Recorder.

1. Press MENU
2. Use the up/down arrow keys to navigate to the "Settings" submenu
3. Press MENU
4. The screen will display the current configuration:
   - Chart Type
   - CH1 (Pen 1) units – F° or C°, depending on chart type
   - CH2 (if equipped) units – RH% or F°/C°
   - CH1 Min/Max alarm values set
   - CH2 Min/Max (if equipped) alarm values set
   - CH1 active alarm condition (bell icon)
   - CH2 active alarm condition (bell icon)

SET TIME

The Set Time feature allows the user to rotate the chart to set the correct time. The correct time on the chart must be aligned with the arrow embedded into the case located just below the pen ramp. To set:

1. Press MENU
2. Use the up/down arrow keys to navigate to the "Set Time" submenu
3. Press MENU
4. "ADJ TIME" will appear on the screen. Use the up/down arrow keys to rotate the chart either clockwise or counter-clockwise to align the date and time on the chart with the arrow on the case located just below the pen ramp
5. Press MENU. "Saved" will appear on the screen. The main screen displaying data values will be displayed momentarily.CH1 active alarm condition (bell icon)
6. CH2 active alarm condition (bell icon)

CALIBRATION

The Chart Recorder has a user Calibration feature which allows the user to set an offset for each pod channel. The pod can be reset to factory calibration values later.

1. Press MENU
2. Use the up/down arrow keys to navigate to the "Calibration" submenu
3. Press MENU
4. "CAL ADJ" will appear on the screen. Use the up/down arrow keys to adjust the values for the 1st channel. Press MENU when at the desired value. "Calibrating" will appear on the screen, then "Success" will be displayed
5. The 2nd channel will then appear on the screen to be adjusted. Follow the same steps above to adjust. The main screen displaying data values will be displayed momentarily, and the process is complete. NOTE: Channels can only be offset +/-5 degrees

PEN ADJUST

The Pen Adjust feature allows the user to align the pen(s) correctly with the outer bold ring on the chart (home). NOTE: perform only if the pens do not match the displayed channel value AND the setting have been checked to confirm the selected chart and mounted chart numbers match.

1. Press MENU
2. Use the up/down arrow keys to navigate to the "Pen Adjust" submenu
3. Press MENU
4. Both pen(s) will move to the pen ramp, then move out onto the chart. "Set Pen 1" will appear on the screen to adjust pen 1 (Red/Temperature), use the up/down arrow keys to adjust the pen to be positioned directly on the outer bold ring on the chart
5. Press MENU. "Saved" will briefly appear on the screen. If the Chart Recorder is a 2-pen unit, "Set Pen 2" will appear on the screen to adjust pen 2. Use the up/down arrow keys to adjust the pen to be positioned directly on the outer bold ring on the chart. Press MENU when finished. "Saved" will briefly appear on the screen. The main screen displaying Temperature or Temp/RH values will be displayed momentarily

Perform a Pen Home procedure to return the pen(s) back out to their correct position(s) on the chart.

PEN HOME

Same process as pressing the Home Button. The Chart Recorder Pen Home feature will move both pen(s) from their position(s) on the chart to the pen ramp (hardware home). When activated, both pen(s) will move together to the home (outer bold ring on chart) then move up the pen ramp together.

1. Press MENU
2. Use the up/down arrow keys to navigate to the "Pen Home" submenu
3. Press MENU
4. "Homing" will briefly appear on the screen. Both pen(s) will move from their position(s) on the chart together to the outer bold ring on chart (home). Then they will both move up the pen ramp together. The main screen displaying Temperature or Temp/RH values will be displayed momentarily

Once the pen(s) are on the pen ramp, performing another Pen Home procedure will send the pen(s) back out to their correct position(s) on the chart. The pen(s) will move together off the pen ramp to the home first (outer bold ring on chart), then move out to their appropriate position(s).values will be displayed momentarily.

SET ALARM

The Chart Recorder has an alarm feature that can be configured to set a visual alert (bell icon on the screen), and/or audible alarm, and/or relay control. To set:

1. Press MENU
2. Use the up/down arrow keys to navigate to the "Set Alarm" submenu
3. Press MENU
4. Alarm settings for the 1st channel need to be set. "Disabled" will appear on the screen, use the up/down arrow keys to toggle to Enabled and press MENU
   a. Adjust the MAX value for the alarm by using the up/down keys. Press MENU when at the desired value. Press MENU. "Saved" will appear on the display
   b. "Disabled" will appear on the screen for the MIN value. Use the up/down arrow keys to navigate to "Enabled" to enable the MIN alarm and press MENU. Use the up/down arrow keys to select the desired MIN value and press MENU. "Saved" will appear on the display
   c. Follow the same procedure above to enable CH2, if equipped
   d. After setting the above, "BUZZER OFF" will appear on the screen. Toggle the audible alarm on by using the up/down keys and choosing "Enabled". Press MENU. "Saved" will appear on the display. The main screen displaying Temperature or Temp/RH values will be displayed momentarily

Next "Relay OFF" will appear on the screen. Toggle the relay pod ON by using the up/down keys and choosing "ON". Press MENU. "Saved" will appear on the display. The main screen displaying Temperature or Temp/RH values will be displayed momentarily.

POWER

The 8" chart recorder operates on AC power with optional 4C battery power / backup. Operates for 1 month on battery only power.

PENS

The blue pen has a longer pen arm and records CH 2 temperature or humidity (depending on the channel setting and sensor type). The red pen has a shorter arm and records temperature. The pens are offset to allow the red pen to glide under the blue pen. The blue pen indicates the correct time and the red pen precedes it by 3/16 of an inch.

FACTORY SERVICE AND RETURNS

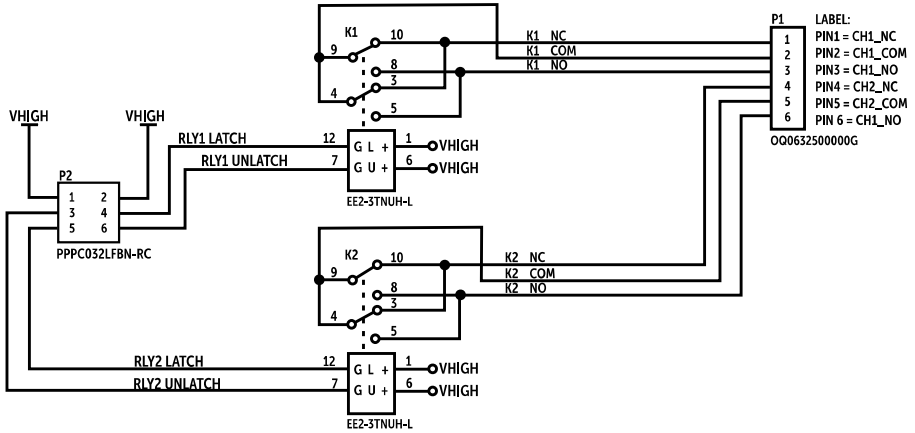
Contact Customer Service at 630.543.3747 for a Return Authorization Number (RA) before returning any instrument. Please have the model and serial numbers and PO ready before calling.

Note: Dickson shall not be liable for consequential or incidental damages resulting from failure or malfunction of its products.

ALARM RELAY POD

The SPST 24V 500mA relay pod contains both a normally open and normally closed contact per channel. Depending on the alarm conditions configured the relays will either turn ON or turn OFF during minimum and maximum alarm conditions. Single pen models can only use relay pod CH1.

- 1 SPDT 50V DC, 100mA, NO/NC Relay per channel
- Maximum 22 gauge solid wire recommended
- Relays are not a controller and can not be used to turn on/off remote devices
- It is designed for resistive loads, not inductive or capacitive
- Operates under battery power



REPLACEABLE SENSOR™ CERTIFICATE OF VALIDATION

The Undersigned ensures that the Replaceable Sensors™ / Instruments listed below were developed, tested and validated together.

Replaceable Sensor / Instrument:

RS010 / TH8-10	RS010 / TH8-11R	RS030 / KT8-30R	RS050 / KT8-50	RS021 / KT8-21
RS010/ TH8-11	RS030 / KT8-30	RS031 / KT8-31R	RS020 / KT8-20	RS040 / KT8-40

Operation: The Instruments and Replaceable Sensor models listed above were specifically designed to work together. No other sensors will work with the Instrument models listed. No other Instrument will work with the Replaceable Sensors listed. The Replaceable Sensor must be connected to the Instrument for the Instrument to operate properly.

Calibration: Only the Replaceable Sensor is calibrated. The sensor, and all calibration defaults and adjustments are stored on the Replaceable Sensor. Accuracy is strictly controlled by the sensor – no adjustments are made by the Instrument. Readings are sent from the Replaceable Sensor to the Instrument for storage purposes only. Certificates of Calibration / NISTs are only supplied for the Replaceable Sensor for this reason.

Recalibration: When a Replaceable Sensor is due for recalibration the existing Replaceable Sensor can be replaced with a new Replaceable Sensor thus eliminating the need to return the entire instrument for recalibration. Replaceable Sensors can be returned for recalibration as well.

John Schmitz
Sr. Quality Manager