



KOVCOLABS

DATA-√8

Installation Manual

Datav8 Temperature Monitoring System

1. Introduction

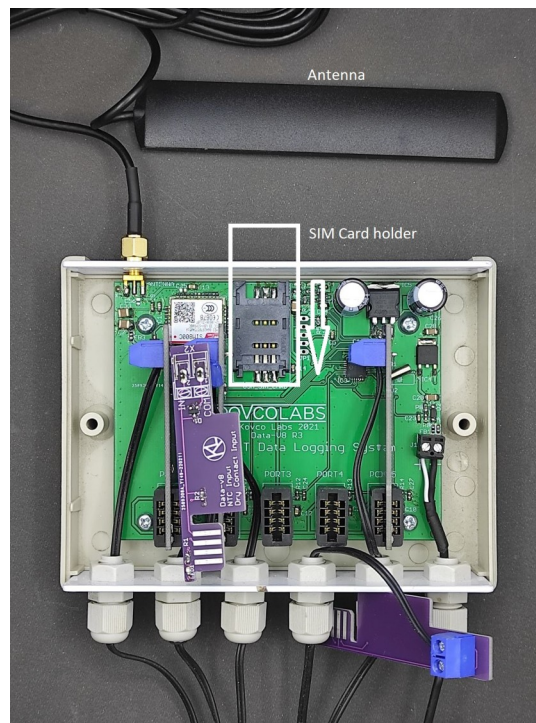
Congratulations on your purchase of the Data-v8 starter kit.

The kit that you have purchased is an online data logger that is set up to measure five temperature channels. Measurements are taken every two minutes on each of the channels. Measured data is uploaded to an internet server as soon as it is measured and is available for viewing in graph format on the web page discussed below. Data is available within a few minutes of being uploaded so that changes on the monitored system can be seen promptly. You can also download previous data in CSV format for import into a spreadsheet.

2. SIM card

Before starting you will need a SIM card with sufficient airtime. The logger uses approximately 30MB/month. Prepaid or contract options are available from all the cellular providers. Ensure that the network used has coverage in the logger's final location. It is suggested that you record the phone number of the SIM card before inserting it. This will allow you to recharge airtime without having to remove the SIM card.

In order to access the SIM card slot remove two input modules as shown by pulling them gently upward, as illustrated below.



Gently slide the SIM card slot cover towards the cable entry side. Lift the cover upwards and insert the SIM card into the grooves in the cover. Put the cover down and latch it closed by sliding it upward.

3. Position antenna

The antenna must be positioned where it will get a good cellular phone signal. It should be placed on a non-metallic surface and can be secured by means of the double sided-tape backing.

4. Power Up the Data-v8

Start by connecting the antenna and plugging in the power supply. As long as the device is powered up, has a cellular signal and has airtime it will log one sample of each channel every two minutes.

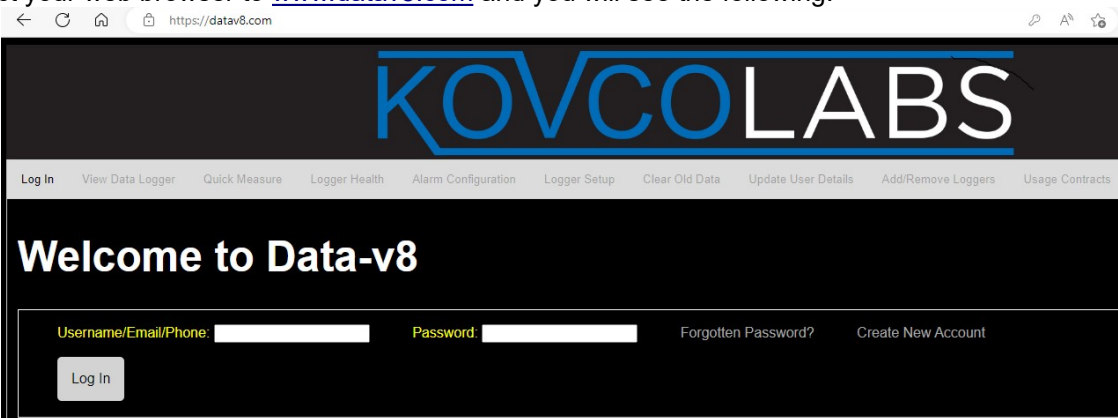
Screw the antenna into the antenna connector and plug the device in. Position the antenna where there is a strong cellphone signal. A red light on the end panel of the unit will come on to indicate that power is applied. When the unit has connected to the server via the cellular network then the red light should go out and the blue light will come on.

The device uses an internet based time server to acquire the current time and maintain this accurately without the need for user intervention.

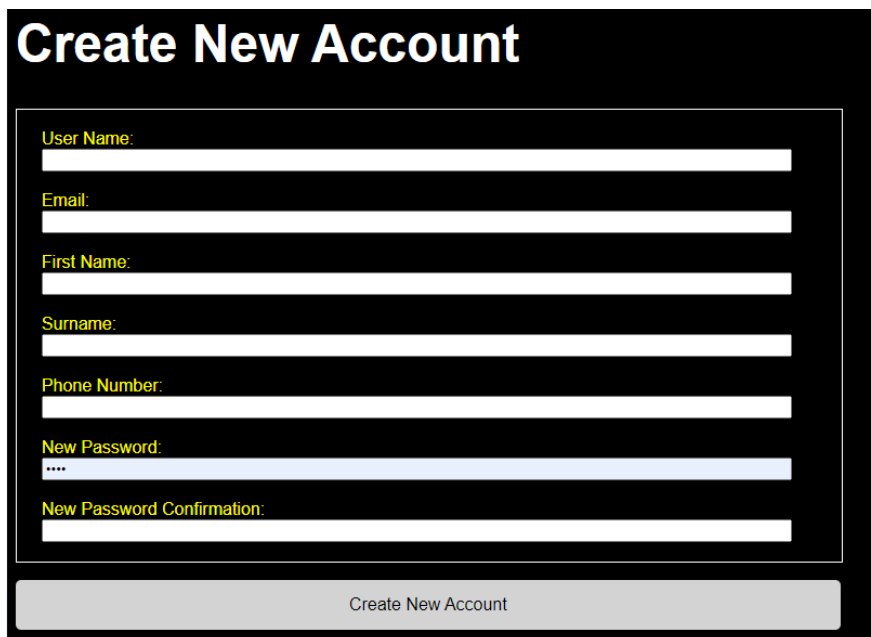
5. Setting up an account on datav8.com

This section should be skipped if you already have a log in on datav8.com

Direct your web browser to www.datav8.com and you will see the following:



Click the link to "Create New Account" and this page will appear:

A screenshot of the "Create New Account" page. The page has a dark background with white text and input fields. The heading "Create New Account" is at the top. Below it are several input fields with labels: "User Name:", "Email:", "First Name:", "Surname:", "Phone Number:", "New Password:", and "New Password Confirmation:". Each label is followed by a white input field. At the bottom of the form is a large grey button labeled "Create New Account".

Please enter all the information on the page. Passwords are stored with strong encryption.

Click “Create New Account”.

An email will be sent to your address with a validation link. Your account will not be active until you validate your email address.

When you click the validation link you will be directed to the login page and you can now add your new data logger to your account. You can add as many loggers to your account as you wish.

6. Add your Data-v8 to your account

Once you are logged in to your account a set of tabs will become active underneath the KovcoLabs Logo. Click the “Add/Remove Loggers” tab and you will see this screen:

The screenshot shows the 'Manage Loggers' interface. At the top, a navigation bar contains the following tabs: Log In, View Data Logger, Quick Measure, Logger Health, Alarm Configuration, Logger Setup, Clear Old Data, Update User Details, Add/Remove Loggers (which is highlighted), and Usage Contracts. The main content area has a dark background. The heading 'Manage Loggers' is prominently displayed. Below the heading, there are two distinct sections. The first section, titled 'Choose a Logger to View or Modify', features a dropdown menu currently showing 'Proto R3 #4' and a button labeled 'Remove Selected Logger'. The second section, titled 'Add a Logger', contains two input fields: 'Logger IMEI:' and 'Logger Password:', each with a white text box. Below these fields is a button labeled 'Add Logger'.

In the box with the Data-v8 there will be a piece of paper with the IMEI number (15 digits) and a password that is needed to add a logger to your account. Enter these under “Add a Logger” and click “Add Logger”. If the IMEI and password are correct then the logger will be added to your account.

Loggers can be added to multiple accounts if multiple people need access to the logger.

7. Set Up Active Channels and Channel Names

The unit can now be configured to give meaningful names to the logger and each channel. This is done by clicking the “Logger Setup” tab. Please ensure that the correct logger is shown in the heading and, if not, select the correct logger from the drop-down list of your loggers under the “View Data Logger” tab.

For each channel please give it a name. If the channel is not in use then it can be turned off so that data is not displayed. This makes the data screens simpler.

Different plug in modules are available for each channel. If these are being used then they can be selected from the drop-down list for each channel. By default the kit is supplied with a “NTC Temperature” probe on each of the five channels.

Please remember to click “Save Logger Setup” when you have entered all the channel information.

8. Set Up Alarm Parameters

Alarm conditions can be set so that if a channel value exceeds a threshold for a specified amount of time emails can be sent to a list of recipients.

For each of the five channels the following settings apply:

Alarm Active: Whether the channel is monitored or not.

Upper limit: If the channel reading is higher than the upper limit continually for more than the “holdoff time” then an alarm is triggered.

Lower limit: If the channel reading is lower than the lower limit continually for more than the “holdoff time” then an alarm is triggered.

Alarm Holdoff: If the channel’s reading is above the upper threshold or below the lower threshold then an alarm condition is detected. In some instances it is desirable to trigger the alarm after thresholds have been exceeded for some specified length of time. An example of this would be a small temperature probe placed in a freezer. If no delay is used then the defrost cycle might trigger an alert. Setting the delay to the length of the defrost cycle will prevent this. This is often a better approach than raising the thresholds to avoid false alerts.

Channel sends alarm every hour while in alarm condition: This is used for applications where hourly reminders are needed if a channel value is out of bounds.

The overall logger can be monitored in case of failure. This can occur in instances of power failure, loss of cellular network or lack of airtime. This is activated by ticking the “*Send Alarm if logger goes offline*” checkbox. In such cases the Data-v8 cloud server will notify you if it hasn’t received data from the logger for over an hour.

The list of email addresses to notify is at the bottom of the page. Multiple email addresses may be entered provided that you separate them with a comma.

When you have finished setting up your alarms please click “Save alarm configuration and send test email. This will cause a test email to be sent to the mailing list. Please ensure that all recipients receive it correctly.

9. View the Data

The data from your Data-v8 device can be viewed and downloaded by clicking the “View Data Logger” tab. This shows you graphs of the active channels. The relevant logger can be selected from the drop-down box if you have multiple loggers. The time period can be selected either by clicking the time picker boxes or by clicking one of the quick selection buttons just below the logger selection box.

Data can be downloaded to your device in CSV format which can be opened by popular spreadsheets.

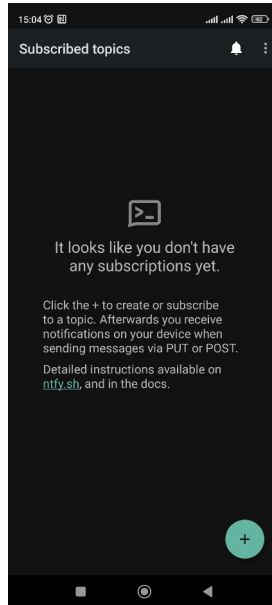
Each graph can be zoomed by dragging with a mouse or by a pinching gesture on a touch screen. Channels can be overlaid on top of each other on the graph at the bottom of the page.

Sometimes it is more convenient to get a few quick measurements from the logger, for example average (mean), minimum, maximum and current values. These can be accessed under the “Quick Measure” tab.

The logger’s system parameters can be seen under the “Logger Health” tab. This allows you to see your logger’s cellular signal strength (typically this should be 15/31 or higher), the logger supply voltage and whether the logger has been online or offline. The logger has three hours worth of onboard memory for when the cellular network is not available. If this is used then samples taken during this time will be uploaded gradually when the network returns and are considered “offline samples”.

10. Mobile App Notifications

Download and install the “ntfy” (Notify) application from the Android Play Store or the Apple App Store. When you run ntfy for the first time you will see a screen as follows:



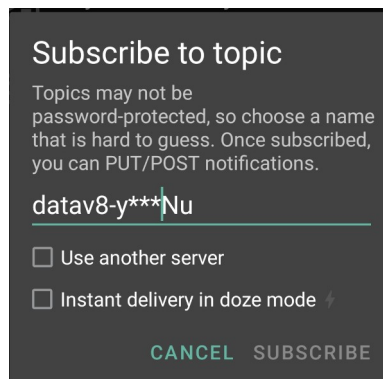
Log in to www.datav8.com with your computer or phone. Under the “View/Select Data Logger” tab choose the logger for which you wish to receive notifications.

Now navigate to the “Alarm Configuration” tab. Near the bottom of the tab you will see the following section:

Mobile App Notifications

To receive free mobile alarm notifications from this logger install the app "ntfy" from the Android Play Store or Apple App Store and subscribe to the following channel: **datav8-y***Nu**

Click the “+” button in the bottom right corner of ntfy and enter the information from the datav8 web page into ntfy, you should see this:



Click “Subscribe” and alarms and messages from Datav8 will be sent to your phone. Anybody subscribed to the channel will receive alerts. In order to stop receiving alerts you can unsubscribe from the relevant channel in ntfy.

11. Extending Your Contract

The Data-v8 starter kit comes with one year's server access which starts when the unit is first configured using the procedure described above (section 5). This allows the system to be tested on-site so that you can see first-hand what the benefits of remote logging are. Should you wish to continue beyond this year then you will need to buy a contract.

The contract allows the Data-v8 to upload data to the server and allows you to view and download data for the past month. You will need to purchase data for the unit yourself. Typically the unit consumes 30MB/month but an allowance of 50MB/month is recommended.

12. Accessories and Measurement Options

Data-v8 has a large range of options and accessories to ensure that it can measure many physical parameters. Each of the five channels can be adapted to measure different parameters by means of unplugging a measurement module and plugging in a different module depending on what is to be measured. When purchasing new modules you will need to update the "Logger Setup" tab of the device and which channel it will be fitted to so that the online platform can be updated to reflect the new configuration.

If you want...	Then you need:
Low cost NTC temperature probe	NTC temperature probe and NTC measurement module. Stock code: HTE00325: (NTC probe) Stock code: HTE00315: (Measurement module)
A larger NTC probe to smooth out temperature fluctuations such as defrost cycles	NTC temperature probe and NTC measurement module. Stock code: HTE00323 (Large NTC probe) Stock code: HTE00315: (Measurement module)
To use a Pt1000 temperature probe	Pt1000 probe and Pt1000 measurement module. Stock code: DEV0111 (Pt1000 probe) Stock code: HTE0026 (measurement module)
To measure AC single phase current up to 30A	Clip on current transformer, split core 30A and current measurement module Stock code: HTE0034 (transformer) Stock code HTE0027 (measurement module)
To measure AC single phase current up to 50A	Clip on current transformer, split core 50A and current measurement module Stock code: HTE00345 (transformer) Stock code HTE0027 (measurement module)
To measure AC single phase current up to 100A	Clip on current transformer, split core 100A and current measurement module Stock code: HTE0035 (transformer) Stock code HTE0027 (measurement module)
To measure gas or water pressure	Pressure transducer, pressure measurement module and pressure transducer cable. Choose either a 10 bar

	<p>or a 35 bar sensor.</p> <p>Stock code: SPO9100 (10 bar max pressure sensor)</p> <p>Stock code: SPO9110 (35 bar max pressure sensor)</p> <p>Stock code: SPO9200 (Cable for pressure transducer)</p> <p>Stock code: HTE0030 (measurement module)</p> <p>Stock code: FBB0000 (Adapter to fit threaded garden tap)</p>
To measure DC voltage up to 60V	<p>Low DC voltage measurement board</p> <p>Stock code: HTE00296</p>
To measure DC voltage up to 600V	<p>High DC voltage measurement board</p> <p>Stock code: HTE00297</p>
To measure mains voltage, single phase	<p>Mains voltage measurement board</p> <p>Stock code: HTE00295</p>
To measure relative humidity	<p>RH and ambient temperature probe. The probe uses one channel for RH and one channel for temperature. The temperature measurement channel is optional. One measurement module is needed per used channel</p> <p>Stock code: HTE0028 (RH and ambient probe)</p> <p>Stock code: HTE0033 (measurement module. Use two if both RH and ambient temperature are used)</p>

13. Troubleshooting

Problem	Likely Cause
No lights come on at all	<p>Check that the unit is supplied with 12VDC. The power connector is on the right hand side of the circuit board and positive and negative terminals are marked. The supply must be the right polarity. The unit is reverse-polarity protected.</p>
No data is being logged but one of the lights is on	<p>Check that there is a cellular signal where the unit is installed. There must be signal on the same network as the SIM card fitted in the unit. A smartphone app such as "Network Cell Info Lite" (For Android) is very useful for determining the optimal antenna location.</p> <p>Check that there is airtime or data loaded onto the unit's SIM card. This can be done by putting the SIM card into a cellphone and following the cellular network provider's instructions.</p> <p>Please remove power from the unit when removing or replacing the SIM card.</p>

NTC temperature probe is displaying temperatures below -80°C	Probe is open circuit
Customer-supplied temperature probe is displaying incorrect temperature readings	Wrong type of probe is installed. NTC Probes must be 10kohms at 20°C and have a Beta of 3950 Pt1000 boards may only have Pt1000 probes connected.
A different measurement module and sensor type have been fitted to a channel but aren't reflecting on the graphs	Check that the correct modules are selected under "Logger Setup" tab
Other technical support needed	Email samuel.ginsberg@kovcolabs.co.za for engineering support