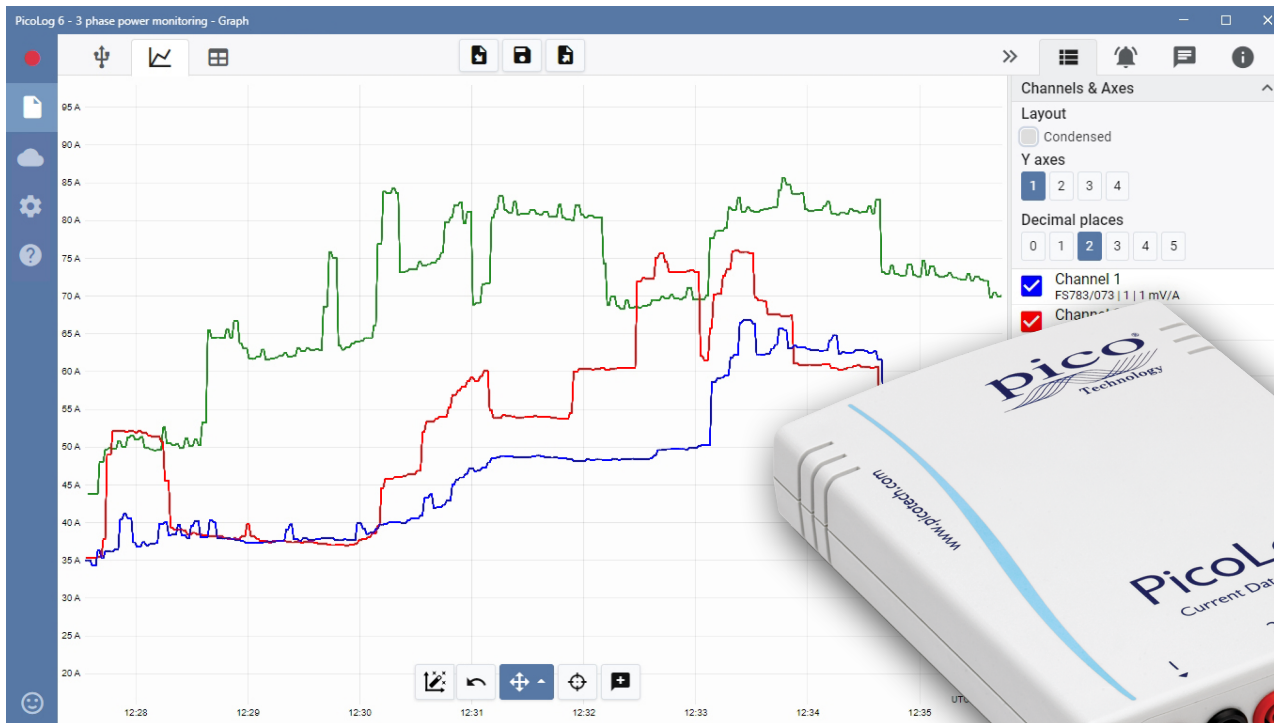


## PicoLog<sup>®</sup> CM3 Current data logger



- High accuracy with 24-bit resolution**
- Suitable for single or three-phase AC currents
- Optional 0 to 200 A AC current clamps
- Can also be used to measure AC RMS voltage
- Up to 20 units can be run on a single PC
- Connected via Ethernet (PoE compatible) or USB
- Free PicoLog 6 Cloud<sup>®</sup> software
- Free PicoLog 6 Cloud account

### Typical applications

- Mains current monitoring
- Three-phase load balancing
- Long-term energy use recording
- Energy and cost saving / ISO14001 monitoring

## PicoLog CM3 Current monitoring data logger



4 mm sockets for up to three current clamps

The PicoLog CM3 USB/Ethernet Current Data Logger is a compact, easy-to-use instrument for measuring the current consumption of buildings and machinery. With three channels, high accuracy and low noise, it is ideal for recording data from both single-phase and three-phase AC supplies. The logger is supplied on its own or as a kit with three AC current clamps and the PicoLog software is free to download. The USB and Ethernet interfaces allow the logger to be used as a USB-only device, as a USB-powered device with Ethernet interface, or as a Power-

over-Ethernet (PoE) device. Using the Ethernet interface, the PicoLog CM3 can be located anywhere on a LAN or on the internet.

## Flexible, expandable software included

PicoLog is a complete data acquisition software package for the PicoLog CM3 current data logger. It provides a visual, easy-to-use interface to help you quickly set up simple or complex acquisitions, record, view and analyze data.

- Real-time data collection and display
- Visual logger and channel setup for easy configuration and viewing
- Available for Windows, macOS and Linux
- Virtually unlimited logging capacity to PC
- Robust database format minimizes data loss and corruption
- Simple and complex programmable alarms
- Up to 4 independent graph axes
- Data can be exported as CSV, clipboard image and PDF
- Supports multiple different PicoLog data loggers on the same PC



## Non-invasive current clamps

The CM3 measures current using industry-standard AC current clamps. These clamps have opening jaws to encircle a conductor in seconds with no direct connection to high voltages. AC current clamps require no power supply or batteries making them ideal for long-term energy-use monitoring and logging.

If you need to measure higher currents we will be happy to advise on suitable clamps for your application.

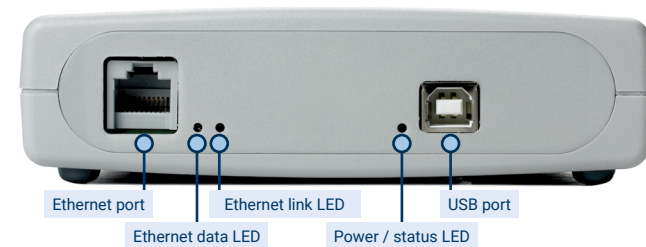
The CM3 is available on its own (and you can add your own current clamps) or as an optional cost-saving kit with three TA138 200 A AC current clamps included.



## USB or Ethernet connection for local or remote logging

With both USB and Ethernet interfaces your PicoLog CM3 can be used in a variety of situations. If you need a portable instrument that can be used at various locations and is fast to set up and use, simply connect your laptop to the PicoLog CM3 by USB. No external power supply is required as the CM3 is powered from the USB port.

Need to monitor a situation over a period of hours or days, or from a remote location? Plug your PicoLog CM3 into a spare port on your network and then access it remotely either from your LAN or over the internet. When using Ethernet the CM3 can be powered either by Power over Ethernet (PoE) or by using the USB connection just for power.



## PicoLog Cloud software – straightforward from the start

PicoLog is a complete data acquisition software package for the CM3 data logger, and is compatible with Windows, macOS, Linux and Raspberry Pi OS. With its clear and user-friendly layout, ideal for use with a mouse or a touchscreen, PicoLog allows you to set up the logger and start recording with just a few clicks of the mouse, whatever your level of data logging experience. Set up simple or advanced acquisitions quickly, and record, view and analyze your data with ease.

### Device settings, Graph and Table

Easily set up and adjust acquisition and math channels on one or more data loggers and check their status at a glance. You can also select Graph view to see live data trend lines and Table view to see data in tabular form in real-time.

### Cloud captures

Share your data for remote viewing

### Graph view

Display your data in real time, as it is collected, on up to four independent Y axes simultaneously: set them up by dragging and dropping the entries in the Channels & Axes panel on the right.

### Give instant feedback

We want to hear from you! Click here to contact Pico with your comments.

### Capture controls

Separate Record, Pause and Reset buttons make it harder to press any of them by mistake.

### Save and Export options

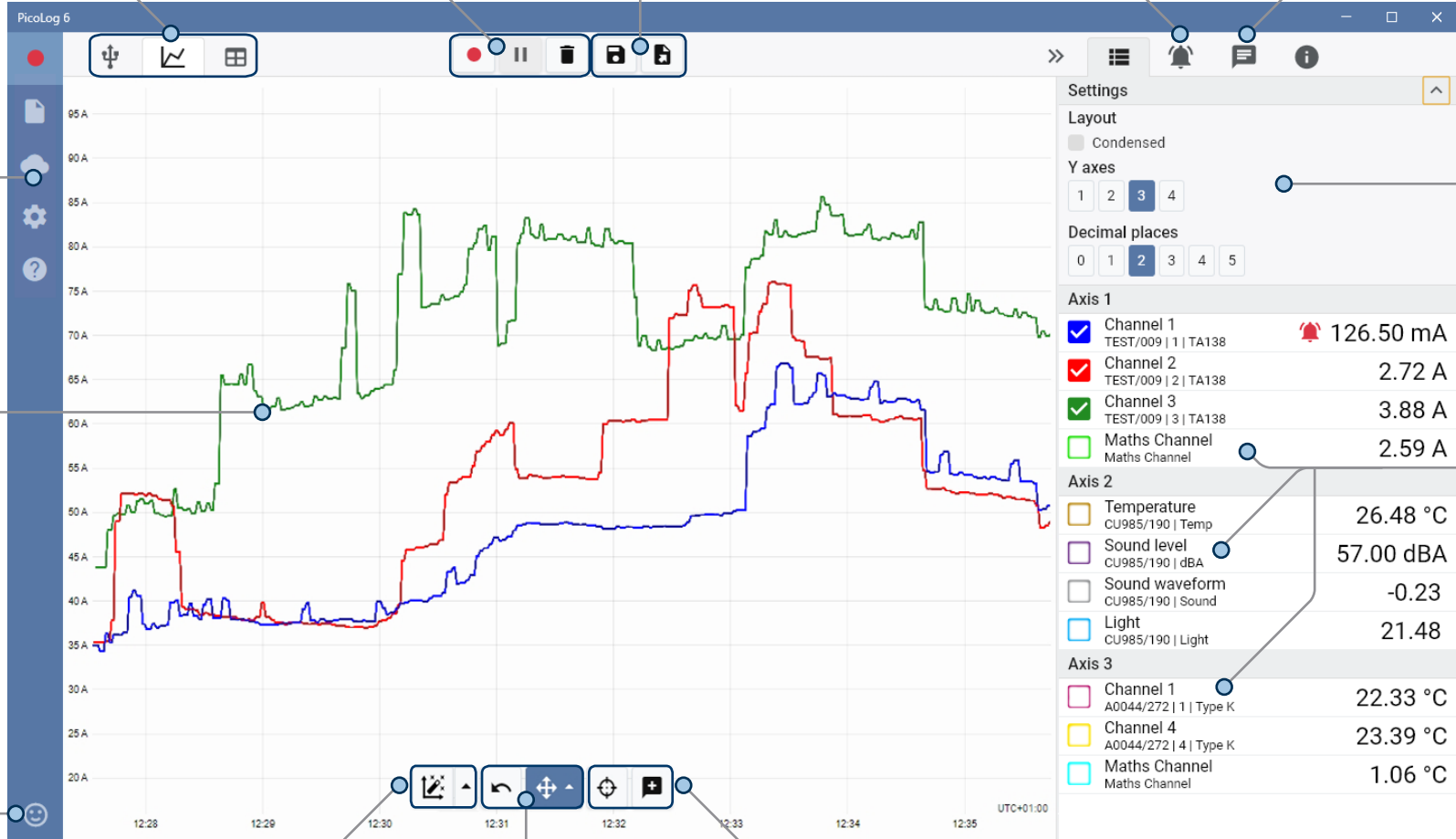
Copy your graph to the clipboard, save it as a PDF, export the raw data to a CSV file, or save the data and configuration as a robust picolog database file.

### Alarms

Set up alarms to alert you to a range of events. Alarms can take the form of sounds, visual notifications, graph annotations and more.

### Notes & annotations

Add notes about the dataset as a whole or annotations about particular points on the graph.



### Data view

Display all the data collected so far or keep the graph scale the same and pan along as new samples appear.

### Pan and zoom controls

Zoom in, zoom out, zoom to a selection or pan through the data with these tools. If you make a mistake, just click Undo.

### Cursors and annotations

Use cursors to highlight the data value and time at any point on the graph, or click Add annotation to mark that point with a text note.

### Pullout information panel

Manage your channel and axis settings, alarms, notes and capture information in this easy-to-read layout. Close the panel to make more room for the capture graph, and reopen it at any time.

### Multiple devices

Log data on up to 20 devices at the same time. Here, three separate data loggers are in use: one CM3, one DrDAQ and one TC-08.



## Introducing PicoLog Cloud

Building on the proven design of PicoLog 6, PicoLog Cloud is a free upgrade that introduces many great features, expanding the capabilities of your Pico data logger. Whether you're an established user or a newcomer, you will benefit from the following new additions:

- Live captures streamed directly to the new PicoLog Cloud
- Secure and reliable storage
- Viewing of live and saved captures from a remote computer running PicoLog Cloud, anywhere in the world
- Viewing of live and saved captures on any device (smart phone, tablet, PC) using an internet browser
- Free PicoLog Cloud account
- Compatibility with all current USB PicoLog loggers and PicoScope real-time oscilloscopes
- Straightforward setup with no network settings changes
- Continuous capture with or without network connection
- Source clients for Windows, Linux, macOS and Raspberry Pi OS

## Stream live captures directly to the new PicoLog Cloud

In this update to PicoLog data logging software, your Pico data logger or oscilloscope not only captures to a local disk, but can now stream the capture directly to a secure online Cloud store. Did we mention our new cloud service is completely **free** for all new and existing customers?

This new major feature stays true to our vision of creating a data logging application with a simple user interface, and is equally straightforward for use by technical or non-technical users.

PicoLog Cloud is fundamentally the same application as before, but with enhancements to send the live capture data directly to your remote PicoLog Cloud space, and in addition view saved captures stored in the Cloud.

## Secure and reliable cloud captures

Security is at the top of the priority list with PicoLog Cloud, and we use the latest and greatest security techniques and processes to ensure your online data and credentials stay safe. To achieve this, PicoLog Cloud employs an Identity Management Platform to manage the login authentication process, keeping your identity anonymized and your data captures safely yours.



In everyday terms, this means you log in with your email and password from one of the following email account providers: Microsoft, Apple or Google. If you don't have an account with one of those, you can create an anonymized account with another email address. To add an extra layer of security, make sure to use an email account that offers 2FA (two-factor authentication)

PicoLog Cloud storage is hosted on another industry-standard service known for excellent reliability and global access: Microsoft Azure. It means you can rely on quality of service (uptime) and multiple server locations back up your data against a server outage.

## View live and saved captures anywhere in the world

Plugged into your PC or laptop, Pico's instruments have been harnessing the power of your computer's screen, processor, hard disk, keyboard and mouse for over three decades. But what if you can't be in the same room, factory, city or even country as your data-capturing equipment?

Now, PicoLog Cloud opens a window into your loggers and data, allowing other PCs to view and export your data from anywhere in the world. Of course, those PCs must be signed into your secure, personal PicoLog Cloud account to view any of your captures, live or saved.

To keep things simple and avoid making unwanted changes to a live capture, only the host PicoLog Cloud app can change the capture settings.

A screenshot of the PicoLog Cloud login page. At the top, it says "# auth.picolog.com". Below that is the Pico Technology logo and the word "Welcome". The page prompts the user to "Log in to Pico Technology to continue to PicoLog 6 Cloud Web." There are input fields for "Email address" and "Password" with a toggle for visibility. A "Forgot password?" link is below the password field. A blue "Continue" button is at the bottom of the form. Below the button, there is a link for "Don't have an account? Sign up". A horizontal separator with "OR" in the middle is followed by three social login options: "Continue with Google", "Continue with Apple", and "Continue with Microsoft Account".

# PicoLog Cloud<sup>®</sup>

## Can I view captures on my smartphone or tablet?

PicoLog 6 has always been based on a framework that uses Chromium (Google's open-source browser) and Java, meaning it is already "browser ready".

It couldn't be easier to use! Navigate to the URL [picolog.app](https://picolog.app) in any browser and log into your PicoLog Cloud account. This gives you instant and secure access to all your live and saved Cloud captures on any internet-connected smart device, anywhere in the world. Some browsers such as Google Chrome and Microsoft Edge make it possible to "install" PicoLog Cloud as a PWA (progressive web app), so it will be available on your home screen or desktop and work like a regular app.



## Continuous capture, with or without network connection

Should your host PC lose network connection during a capture, PicoLog Cloud instantly switches to use the PC's own hard drive until the network connection is restored. Any missing data is promptly synchronized back to the Cloud.

As always, PicoLog 6 in local capture mode is compatible with all PicoLog data loggers and all PicoScope real-time oscilloscopes (with a sample rate limit of 1 kS/s). PicoLog Cloud is compatible with the same instruments, except that the sample rate is limited to 1 S/s per channel.

## Stream live Cloud capture data to your application with an API

Transferring captured data from a data logger software application to a third-party application while the capture is running has been one of the longest outstanding customer feature requests, and had been very difficult to implement until now. With PicoLog Cloud data residing on a server, we've developed a simple server-side API that allows programmers to request the live data in batches which is returned in a human- and database-readable ASCII format.

This feature is particularly useful to users who want to add extra functionality such as emailing alarms or captures, adding logger data to existing databases, or displaying data in a different way: fill tanks, percentage bars, throttle gauges, large numerical displays and so on!

Once the Cloud capture is set up and acquiring data, you enable public sharing for that capture to generate an unsearchable URL containing a unique ID for that capture on the PicoLog.app server. The API contains just two calls:

- Basic setup, channel IDs, last recorded value and channel names.
- Request a block of capture data with start and end time parameters for the specified channel(s)

```
https://api.picolog.app/v1/channels/622b235a-f178-4b51-8c4b-15b92c2ee60b
[
  {
    "id": "1dc54c6cd5-88a9-4a12-af4f-b4f085b3ea4",
    "name": "Channel 1",
    "value": 23.6658184814453
  },
  {
    "id": "1d17b11962-0be0-4787-8e17-a8c7dbab539c",
    "name": "Channel 2",
    "value": 23.00103416442871
  },
  {
    "id": "1d9d7271d7-a861-4cc3-8e16-1f4c08ff48b8",
    "name": "Channel 3",
    "value": 23.645185470581055
  },
  {
    "id": "1d7312b08c-a883-4af7-a787-364de52b9715",
    "name": "Channel 4",
    "value": 23.711412429808957
  },
  {
    "id": "1d8fa2573c-623e-47f7-8b8b-6789f48f0bf",
    "name": "Channel 5",
    "value": 23.57898581135254
  },
  {
    "id": "1dc6b2cd20-da80-4bd2-865c-af0268d17bfa",
    "name": "Channel 6",
    "value": 23.778282745361328
  },
  {
    "id": "1d40329cda-1735-4bd8-9d9d-135c37d68e62",
    "name": "Channel 7",
    "value": 23.778282745361328
  }
]
```

The API is server-side and sends raw data to your custom application or database, so no special software needs to be installed. Almost all relevant programming languages can call the API URL, and simple code examples are available.

Although PicoLog Cloud is limited to 30-day captures in Cloud capture mode before it overwrites the oldest data, you can use this API to transfer and back up your data to a local or online database of your own.

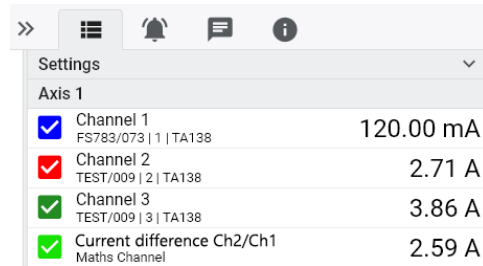
## PicoLog Cloud capture specifications

- No limit to the number of stored captures
- Sample rate up to 1 S/s per channel in cloud mode
- Maximum capture duration is 30 days
- Capture can be set to continuous overwrite or stop after set duration
- Multiple host PicoLog Cloud captures can be used simultaneously on one user account
- View all your devices and captures from one place
- Remote clients can export into CSV, PDF and HDF5 files from live and saved captures

## Math channels

Sometimes you need to use data from one or more measurement channels to graph and record a calculated parameter. You can use the PicoLog equation editor to set up simple math channels such as A-B or more complex functions such as log, sqrt, abs, round, min, max, mean and median.

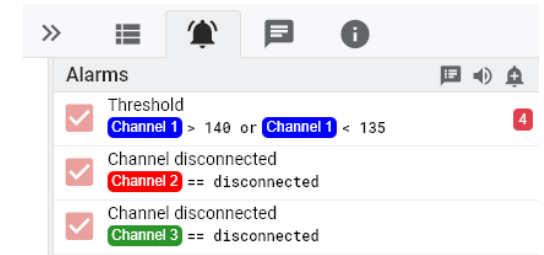
PicoLog treats math channels like any other channel, so you can still set alarms and annotate them.



Channel	Value
Channel 1 FS783/073   1   TA138	120.00 mA
Channel 2 TEST/009   2   TA138	2.71 A
Channel 3 TEST/009   3   TA138	3.86 A
Current difference Ch2/Ch1 Maths Channel	2.59 A

## Alarms

In PicoLog, you can set up alarms to alert you to various events. These can be as simple or as complex as you like: alarms can trigger on a signal threshold or disconnection of the data logger, or you can set up a logic expression of your own. Alarms can play sounds, display visual alerts, run applications or mark when the event occurred on the graph.



Alarm Rule	Status
Threshold Channel 1 > 140 or Channel 1 < 135	Active
Channel disconnected Channel 2 == disconnected	Active
Channel disconnected Channel 3 == disconnected	Active

## Intuitive logger and channel setup

The **Devices** view lets you set up a multichannel acquisition system in a simple way, with the option to use up to 20 different Pico data loggers simultaneously. PicoLog shows you an image of each connected device, so you can quickly and easily enable or disable channels and set up their properties.

On the right, you can see the device setup for current data logging on three channels.



The screenshot shows the PicoLog 6 interface. On the left, a PicoLog CM3 device (FS783/073) is shown with three channels (1, 2, 3) selected. On the right, the 'Channels & Axes' panel displays the following configuration:

Channel	Value
Channel 1 FS783/073   1   TA138	122.00 mA
Channel 2 TEST/009   2   TA138	2.79 A
Channel 3 TEST/009   3   TA138	3.99 A

## Robust file format

At the heart of PicoLog is the file system, which stores live capture data directly to a robust database, rather than to a single file that is vulnerable to corruption and data loss. If the computer is shut down and rebooted, PicoLog will only lose the data during the outage – and will continue saving data when you restart the software.

This file system also means that the size of the dataset you can capture you is virtually unlimited – the only restriction is the size of your computer's hard disk!

The .picolog file format is compatible across all operating systems, and there is no need to set up a file to save to before the capture is complete. You can also save mid-capture if you wish to share the data collected so far. Since anyone can download and install PicoLog for free, you can easily share saved data with co-workers, customers and suppliers for offline post-analysis.

Data can be exported as CSV. In addition, you can export a PDF containing a graph, channel configuration, capture notes, annotation notes and alarm trigger history.

## PicoSDK®

Pico's software development kit, PicoSDK, is available free of charge and allows you to write your own software and interface to third-party software packages.

Pico also maintains repositories of example code on GitHub ([github.com/picotech](https://github.com/picotech)), showing how to use PicoSDK with software packages such as Microsoft Excel and National Instruments LabVIEW, or with programming languages including C, C++, C# and Visual Basic .NET.

PicoSDK and the *PicoLog CM3 Programmer's Guide* are available to download from [www.picotech.com/downloads](http://www.picotech.com/downloads).



## Try the PicoLog software today!

PicoLog's built-in demo mode allows you to try out the full functionality of the software with a choice of virtual devices and simulated live data. You also can use PicoLog to view previously saved data, even with no device connected. Visit [www.picotech.com/downloads](http://www.picotech.com/downloads) and select **PicoLog Data Loggers** to get your copy.



## Specifications

Functional	
Number of channels	3
Maximum number of units	20
Range (voltage input)	0 to 1 V AC true RMS, 20 Hz to 1 kHz
Accuracy (voltage input)	
< 200 mV RMS	±1%
< 1 V RMS	±2.5%
RMS noise	60 µV
Resolution	24 bits
Conversion time per enabled channel	720 ms
Input connectors	4 mm sockets
Input impedance	> 1 MΩ, AC coupled
Overvoltage protection	±30 V DC
Environmental	
Operating temperature range	0 to 50 °C (20 to 28 °C for stated accuracy)
Operating humidity range	20 to 80 %RH, non-condensing
Storage temperature range	-20 to +80 °C
Storage humidity range	5 to 95 %RH, non-condensing
General	
Software	PicoLog Cloud, PicoSDK (available from <a href="http://www.picotech.com/downloads">www.picotech.com/downloads</a> ) Example code (available from Pico's GitHub organization page, <a href="https://github.com/picotech">github.com/picotech</a> )
PC requirements (PicoLog Cloud app)	Windows, macOS, Linux or Raspberry Pi OS. For supported OS versions, see <a href="#">PicoLog 6 Release Notes</a> . Hardware as required by the operating system.
PC requirements (viewer)	Any device with internet access, a web browser and a screen
PicoLog user interface languages	English, French, Italian, German, Spanish, Chinese, Japanese, Korean, Russian
Additional hardware (supplied)	USB 2.0 cable, Ethernet cable, Quick Start Guide (three TA138 current clamps are supplied in the optional PicoLog CM3 kit)
USB port	Conforms to USB 2.0 Full-Speed (12 Mbps)
Ethernet port	Conforms to IEEE 802.3 10Base-T. Compatible with 10/100/1000Base-T networks. Conforms to IEEE 802.3af Power-over-Ethernet (PoE).
Power requirements	Powered from USB port or Ethernet USB: 5 V ±10% @ <100 mA USB (Ethernet enabled): 5 V ±10% @ <200 mA Ethernet: 48 V ±20% @ <40 mA (< 2 W)
Dimensions	184 x 135 x 36 mm (approx 7.2 x 5.3 x 1.4 in)
Compliance	European EMC and LVD standards; FCC Rules Part 15 Class A; RoHS compliant
Warranty	5 years

## Specifications - TA138 current clamp

The TA138 current clamps supplied optionally with the PicoLog CM3 can also be connected to other brands of oscilloscopes and multimeters.

<b>Overvoltage protection</b>	600 V CAT II 300 V CAT III
<b>Range (1 mV/A)</b>	0.1 A to 200 A AC RMS
<b>Accuracy</b>	±2% of reading, ±0.5 A
<b>Maximum output impedance</b>	1 kΩ
<b>Bandwidth</b>	40 to 400 Hz
<b>Maximum conductor size</b>	16 mm
<b>Operating environment</b>	0 °C to 50 °C
<b>Storage environment</b>	-30 °C to +60 °C
<b>Dimensions (W x L x D)</b>	111 x 50 x 33 mm (approx 4.3 x 1.9 x 1.3 in)
<b>Weight</b>	129 g (approx 4.5 oz)
<b>Standards</b>	EN 61010-1:2010 EN 61010-2-032:2012

For full information on current clamp specifications, characteristics and prices, go to: [www.picotech.com/accessories/current-probes-clamps](http://www.picotech.com/accessories/current-probes-clamps)



## Ordering information

Order code	Product name	Description
PP815	PicoLog CM3	Three-channel current data logger
PP803	PicoLog CM3 kit	CM3 with 3 x 200 A AC current clamps

## Optional accessories

Order code	Product name	Description
TA138	200 A AC current clamp (4 mm)	Current clamp for AC-only current measurements
MI106	USB 2.0 cable, 1.8 m*	Replacement Pico blue USB 2.0 cable, 1.8 m
TA268	USB 2.0 cable, 0.5 m*	Pico blue USB 2.0 cable, 0.5 m

\* Pico blue USB cables are designed and built specifically for use with Pico Technology oscilloscopes and data loggers in order to minimize voltage drop and noise. Take care to use your PicoLog CM3 data logger with Pico blue USB cables only.



®

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