Dec. 2023

Voltage / Thermocouple Data Logger

MCR Series Features and Specs

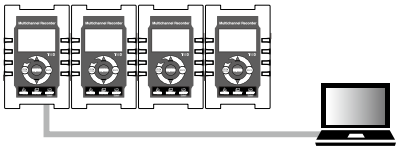
Measurement Items	Data Collection	Data Access	Warning Notification
Thermocouple Voltage	USB Connection, SD Memory Card	Local PC	None

Measure and record up to four channels in One logger. By coupling four units together, it is possible to simultaneously record up to 16 channels. This multi-channel battery powered data logger has an SD memory card slot with auto transfer capabilities to ensure your data is not lost when internal memory becomes full. It also comes with a touch panel for easy operation.

Common Features

Up to 16 Channels of Simultaneous Recording

It is possible to couple up to four MCR-4V and MCR-4TC loggers together. Recording Setting Items (Recording Mode, Recording Method, Recording Interval, and Recording Channels), and the timing for Recording Start can all be synchronized. Data can also be downloaded all at once.



Operates on Just Two Batteries

It operates on just 2 AAA alkaline batteries. Batteries can also provide backup power during a shortage.

Auto Data Export to SD Memory Card

To prevent data loss upon reaching memory capacity it is possible to automatically export recorded data to an SD memory card.

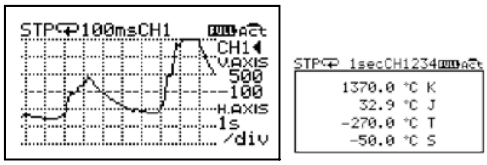
Touch Panel Operation

Designed with an easy-to-use touch panel for changing settings and data display.

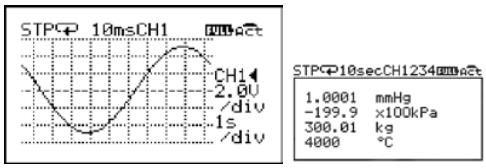
Check Data in Real Time

Trend Graph and Measurement Displays

MCR-4TC



MCR-4V



MCR-4V Features

Quick and Precise Voltage Measurement

MCR-4V features an ultra-quick 2msec recording interval a precise resolution of 10 µV.

Preheat Function

Save battery power and lengthen recording possibilities by using this function to supply power to the sensor only upon recording start.

Electrical Isolation between Channels

Channel isolation makes it possible to measure signals of different potentials.

Scale Conversion / Unit Settings

It is possible to change the input voltage for each channel to a record and display in a user desired scale and unit of measurement.

Logging Capacity of 480,000 Data Readings

One logger can hold up to 480,000 readings using just 1 channel, up to 120,000 readings per channel using 4 channels.

MCR-4TC Features

For K, J, T, S and R Type Thermocouple Sensors

This 4-channel thermocouple temperature data logger brings you a wide range of measurement and is compatible with a wide variety of thermocouple sensors.

Easy Setup and Installation

It is possible to remove the cover from the sensor and connect directly to the logger terminals.
And because each channel as well as the USB is isolated it is okay to install without worrying about covering the point of measurement.

Logging Capacity of 960,000 Data Readings

One logger can hold up to 960,000 readings using just 1 channel, up to 240,000 readings per channel using 4 channels.

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MCR Series Specifications

	MCR-4V	MCR-4TC
Measurement Channels	Voltage 4ch	Temperature 4ch
Input Method	Scanning Method, Differential Input, Each Channel Isolated	
Compatible Sensors	-	Thermocouple: Type K, J, T, S, R
Measurement Units	-	°C, °F
Measurement Range	±300 mV, ±1.5 V, ±6 V, ±24 V, Auto (*1) Absolute Maximum Input Voltage: ±50 V	K: –270 to 1370 °C S: –50 to 1760 °C J : –210 to 1200 °C R: –50 to 1760 °C T: –270 to 400 °C
Input Impedance	Approx. 1.1 MΩ	Approx. 1 MΩ
Input Frequency	DC - 100 Hz	-
Accuracy (*2)	When the 50-60 Hz filter is ON, varies with the Measurement Range as follows: ±300 mV: ±(0.06 mV + 0.3 % of reading) ±1.5 V: ±(0.3 mV + 0.3 % of reading) ±6 V: ±(0.6 mV + 0.3 % of reading) ±24 V: ±(2.4 mV + 0.3 % of reading) Auto: According to the range in use	Thermocouple Measurement (Sensor inaccuracies not included) K, J, T: ±(0.5 °C + 0.3 % of reading) at −100 °C or above S, R: ±(1.5 °C + 0.3 % of reading) at 100 °C or above Cold Junction Compensation ±0.5 °C at 10 to 40 °C ±0.8 °C other temperatures within the operating environmentof the logger
Measurement Resolution	50 - 60 Hz Filter: ON 0.01 mV OFF 0.1 mV	0.1 °C
Recording Interval	2, 5, 10, 20, 50, 100, 200, 500 ms. / 1, 2, 5, 10, 15, 20, 30 sec. 1, 2, 5, 10, 15, 20, 30, 60 min. The minimum interval will depend on the number of channels,measurement range, and 50–60 Hz filter setting.	100, 200, 500 ms. / 1, 2, 5, 10, 15, 20, 30 sec. 1, 2, 5, 10, 15, 20, 30, 60 min.
Logging Capacity (*3)	When recording 1 channel : up to 480,000 readings/ch When recording 2 channels : up to 240,000 readings/ch When recording 3 channels : up to 160,000 readings/ch When recording 4 channels : up to 120,000 readings/ch	When recording 1 channel : up to 960,000 readings/ch When recording 2 channels : up to 480,000 readings/ch When recording 3 channels : up to 320,000 readings/ch When recording 4 channels : up to 240,000 readings/ch

Recording Mode	Endless (Overwrite oldest data in the current recording session when capacity is full) or One Time (Stop recording when capacity is full)	
Group Recording	Up to 4 units (16 channels) can be recorded simultaneously. Coupling of MCR-4V and MCR-4TC is possible. (*4)	
LCD Display Items	Measurements, Recording Status, Recording Mode, Trend Graph, Battery Level, etc.	
Communication Interfaces	USB 2.0 (Mini-B connector)	
External Memory	SD Memory Card, SDHC Memory Card (For Manual or Automatic Data Export)	
Power	AA Alkaline Battery LR6 x 2, AA Ni-MH Battery x 2, AC Adaptor AD-05A2 or AD-05C2, USB Bus Power 5 V 250 mA	
Battery Life (*5)	Approx. 4.5 to 130 days 4 channels, Instantaneous value recording With AA alkaline batteries	Approx. 5 to 60 days 4 channels, Instantaneous value recording With AA alkaline batteries
Input Terminal Preheat Terminal	Screwless Terminals Compatible Wires: Single Wire: Ø0.32 to 0.65 mm (AWG 28 - 22) Twisted Wire: 0.08 to 0.32 mm^2 (AWG 28 - 22), Ø0.12 mm or more in diameter Stripping Length : 9 to 10 mm	
Isolation	CH1, CH2, CH3, CH4, USB, and Preheat are isolated. CH1-CH4 Maximum Applied Voltage : ±50 V Electrical Isolation Resistance : 50 MΩ or more (DC±250 V)	CH1, CH2, CH3, CH4, and USB are isolated. CH1-CH4 Maximum Applied Voltage : ±50 V Electrical Isolation Resistance : 50 MΩ or more (DC±250 V)
Dimensions	H 120 mm x W 75 mm x D 32 mm	
Weight	Approx. 140 g	
Operating Environment	Temperature: 0 to 50 °C Humidity: 90 %RH or less (no condensation)	
Included Items	AA Alkaline Battery LR6 x 2, USB Mini-B Cable US-15C, Card Slot Cover, Manual Set (Warranty Included) (Sensor not provided)	

*1: When "Auto" is selected, measurement range will be automatically changed according to the voltage being measured.
*2: MCR-4TC has superior noise filter, but the measurement may sometimes fluctuate due to strong noise. Especially when the recording interval is set to 200 ms or less, the filtering becomes weaker and hence the fluctuation may become greater.
*3: If the logging capacity is not filled at the end of one recording session, the logger can record up to 30 times.
*4: Group Recording may not be started depending on the recording or measurement interval specifications of the connected Master unit.
*5: Battery life varies depending upon multiple factors including ambient temperature, recording interval, number of measurement channels, and frequency of data export to a memory card. All estimates are based on operations carried out with a new battery and are in no way a guarantee of actual battery life.
The specifications listed above are subject to change without notice.