

MCR-4V Specifications	
Measurement Channels	Voltage 4ch
Input Method	Scanning Method, Differential Input, Each Channel Isolated
Input Impedance	Approx. 1.1 MΩ
Input Frequency	DC-100 Hz
Measurement Range	±300 mV, ±1.5 V, ±6 V, ±24 V, Auto (*1) Absolute Maximum Input Voltage: ±50 V
Accuracy	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
Measurement Resolution	50 - 60 Hz Filter ON : 0.01 mV 50 - 60 Hz Filter OFF : 0.1 mV
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.
Logging Capacity (*2)	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
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. (*3)
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 250mA
Battery Life (*4)	Approx. 4.5 to 130 days 4 channels, Instantaneous value recording With AA alkaline batteries
Input Terminal / Preheat Terminal	Screwless Terminals Compatible Wires Single Wire: ϕ 0.32 to ϕ 0.65 mm (AWG 28 - 22) Twisted Wire: 0.08 to 0.32 mm ² (AWG 28 - 22), ϕ 0.12 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)
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)
Accessories	AA Alkaline Battery LR6 x 2, USB Mini-B Cable US-15C, Card Slot Cover, User's Manual Set (Warranty Included)
Software(*5)	PC Software (Windows) MCR for Windows, T&D Graph

- *1: When "Auto" is selected, measurement range will be automatically changed according to the voltage being measured.
 *2: If the logging capacity is not filled at the end of one recording session, the logger can record up to 30 times.
 *3: Group Recording may not be started depending on the recording or measurement interval specifications of the connected Master unit.
 *4: Battery life in the table above is for two AA Alkaline type batteries, and 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.
 *5: Software on CD-ROM is not supplied with the product. Free software download and information on OS compatibility is available on the Software page of our website at tandd.com/software/.

MCR-4TC Specifications	
Measurement Channels	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	Type K: -270 to 1370 °C Type S: -50 to 1760 °C Type J: -210 to 1200 °C Type R: -50 to 1760 °C Type T: -270 to 400 °C
Input Impedance	Approx. 1 MΩ
Accuracy (*1)	Thermocouple Measurement (Sensor inaccuracies not included) Type K, J, T: ±(0.5 °C + 0.3 % of reading) at -100°C or above Type 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 environment of the logger
Measurement Resolution	0.1 °C
Recording Interval	100, 200, 500 ms. / 1, 2, 5, 10, 15, 20, 30 sec. 1, 2, 5, 10, 15, 20, 30, 60 min.
Logging Capacity (*2)	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-4TC and MCR-4V is possible. (*3)
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 (*4)	Approx. 5 to 60 days 4 channels, Instantaneous value recording With AA alkaline batteries
Input Terminal	Screwless Terminals Compatible Wires Single Wire: ϕ 0.32 to ϕ 0.65 mm (AWG 28 - 22) Twisted Wire: 0.08 to 0.32 mm ² (AWG 28 - 22), ϕ 0.12 mm or more in diameter Stripping Length: 9 to 10 mm
Isolation	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)
Accessories	AA Alkaline Battery LR6 x 2, USB Mini-B Cable US-15C, Card Slot Cover, User's Manual Set (Warranty Included)
Software(*5)	PC Software (Windows) MCR for Windows, T&D Graph

- *1: 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.
 *2: If the logging capacity is not filled at the end of one recording session, the logger can record up to 30 times.
 *3: Group Recording may not be started depending on the recording or measurement interval specifications of the connected Master unit.
 *4: Battery life in the table above is for two AA Alkaline type batteries, and 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.
 *5: Software on CD-ROM is not supplied with the product. Free software download and information on OS compatibility is available on the Software page of our website at tandd.com/software/.

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Multichannel Recorder

MCR-4V/4TC

Voltage / Temperature (Thermocouple)

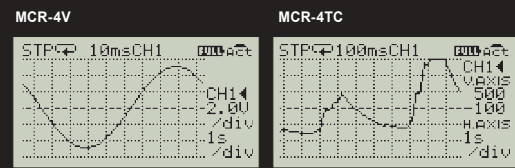


TANDD

4-Channel Battery Operated Data Loggers Up to 16 Channels of Simultaneous Recording

Easy Connection of MCR-4V and MCR-4TC for Synchronous Measurement of Voltage and Temperature

Trend Graph for Real-Time Data Check



Easy Touch Panel Operation

Large Capacity Internal Memory

MCR-4V: Data logging up to 480,000 readings
MCR-4TC: Data logging up to 960,000 readings

Electrical Isolation between Channels

MCR-4V: Capable of measuring signals of different potentials
MCR-4TC: Possible to directly connect the exposed thermocouple junction to the measured object

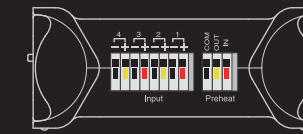
Runs on 2 AA Alkaline Batteries or USB Bus Power

SD Memory Cards for Long-Period Recording

Besides using a USB connection to directly send recorded data to a PC, it is possible to save the data into an SD card and then transfer to a PC.

MCR-4V Features

Preheat Function for Saving Battery Power

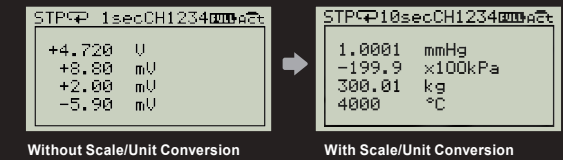


Quick and Precise Measurements Recording Interval as short as 2 msec / Resolution of 10µV

Number of Channels	Shortest Possible Recording Interval
1 ch	2 msec
2 ch	5 msec
4 ch	10 msec

- Number of channels determines shortest possible recording interval.
- Two recording methods: instantaneous value or average value.

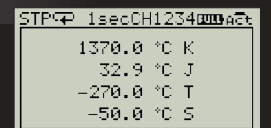
Scale and Unit Conversion for Recording and Viewing



MCR-4TC Features

Support for Variety of Thermocouple Types (K, J, T, S, R)

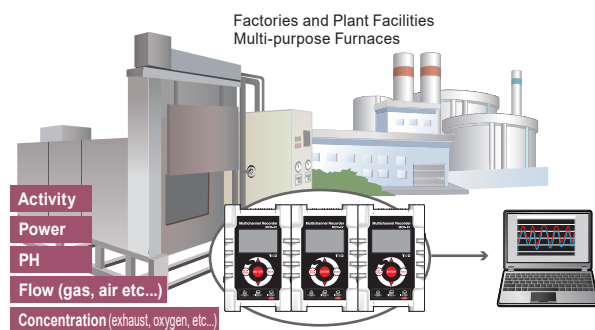
Wide Measurement Range from -270 to 1760°C (varies with sensor type)



Application Examples

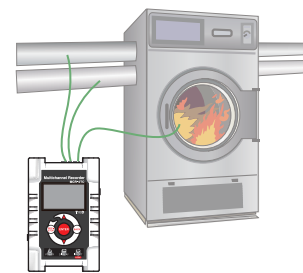
MCR-4V

- Measure and record data for control devices and measurement instruments in factories
- Record signals from actinometers, anemoscopes and CO2 meters
- Record output signals from a variety of sensors and analyzers
- Measure voltage in electrical circuits



MCR-4TC

- Record temperatures in pipes and ducts
- Record boiler temperatures
- Record temperatures in cooking equipment such as pans, fryers, and ovens
- For temperature management of refrigerated and frozen goods



MCR-4V and MCR-4TC

- For temperature and pressure measurements inside slow cookers, pressure cookers, or other enclosed cooking containers
- Measure air-conditioner gas pressure and outlet air temperature
- For measurement of engine combustion pressure and water cooling temperature

T&D Graph: High Performance Graph Tool

- View recorded data in colorful graph form as well as analyze data using generated cumulative values, highest, lowest, and average readings
- Add comments and memos directly to graphs
- Save data in CSV text format for use with spreadsheet software

