# Models MV1004/MV1006/MV1008/MV1012/MV1024

User's Manual

MV1000 First Step Guide

Please make the following alterations to the First Step Guide IM MV1000-02E (see underlined text).

## ■ Page 12 "MODEL and SUFFIX Code"

lodel code	Suffix code Description		ı
Power cord			
	Q	AC power: 3	B-pin inlet, BS <u>/PSB</u> Standard power cord
		DC power:	Screw terminal, BS/PSB cable for AC adapter
<u>P</u>		DC power: Screw terminal, EK cable for AC adapte	
Options			
		Mathematic	al functions <sup>₹</sup>

<sup>2</sup> Can not be selected if the supply voltage suffix code is -1.

## ■ Page 13 "Standard Accessories"

<u>Items</u>	Name	Part Number/ Model	Q'ty	Notes
	DAQSTANDARD	DXA120	1	MV configuration and data display software
	AC adapter and power cord for AC adapter	B8805GV	1	Only included if the supply voltage suffix code is -2 (except for power cord suffix W). When the supply voltage suffix code is -2, one of the following cables is included, depending on the power cable suffix code.
		B9988YA	1	Power cord suffix code D. Maximum rated voltage: 125 V
		B9988YB	1	Power cord suffix code F. Maximum rated voltage: 250 V
		B9988YC	1	Power cord suffix code R. Maximum rated voltage: 250 V
~ 6/		A1069WD	1	Power cord suffix code Q. Maximum rated voltage: 250 V
		B9988YJ	1	Power cord suffix code H. Maximum rated voltage: 250 V
		A1078WD	<u>1</u>	Power cord suffix code P. Maximum rated voltage: 250 V

## ■ Page 13 "Optional Accessories (Sold Separately)"

No.	Name	Model	Minimum Q'ty	Notes
<u>6</u>	Vertical stand	B8805JT	<u>1</u>	For vertical installation of the MV1000
7	Soft carrying case	<u>790501</u>	<u>1</u>	Soft carrying case for the MV1000
8	Rack mount fittings	B8805JL	<u>1</u>	EIA/ANSI standard-compliant
				For rack mounting the MV1000



**Notice of Alterations** 

## ■ Page 38 "Meas channel > Range, Alarm"

Setting	Default Value	
Mode=1-5V		
Range	1-5V	1-5V
Span Lower	Numeric value (0.800 to 5.200)	1.000
Span Upper	Numeric value (0.800 to 5.200)	5.000
Scale Lower	Numeric value ( <u>-30000 to 30000</u> , decimal place 0 to 4)	0.00
Scale Upper	Numeric value ( <u>-30000 to 30000</u> , decimal place 0 to 4)	200.00
Unit	Character string (up to 6 characters)	_
Low-cut	On/Off	Off
Mode=Sqrt		
Range	20mV/60mV/200mV/2V/6V/20V/50V	2V
Span Lower Numeric value (depends on the range)		-2.0000
Span Upper Numeric value (depends on the range)		2.0000
Scale Lower Numeric value (-30000 to 30000, decimal place 0 to 4)		0.00
Scale Upper Numeric value ( <u>-30000 to 30000</u> , decimal place 0 to 4)		200.00
Unit	Character string (up to 6 characters)	_
Low-cut On/Off		Off
Low-cut value	0.0 to 5.0 (%)	0.5

### ■ MV1000 Rechargeable Battery Model is added

#### Please add the following contents

#### **Safety Precautions**

## **WARNING**

- Because the electrolyte solution inside the battery is alkaline, harm can be done to the clothes
  or skin, if the battery leaks or explodes and the solution comes in contact. If the electrolyte
  solution enters the eye, it can cause blindness. In such case, do not rub the eye. Rinse
  thoroughly with water and immediately consult your eye doctor.
- To prevent the possibility of shorting the recharge circuit, electric shock, and accidents when replacing the battery box, always turn OFF the power to the MV1000 and remove the AC adapter power cord from the outlet.
- Only use the battery box from YOKOGAWA (B8805HA).
- Do not leave the battery in direct sunlight, inside a hot vehicle, or near fire. This can cause leakage or lower the performance and life of the battery.
- Do not disassemble or modify the battery. This can compromise the protection function provided by the battery and cause excessive heating and explosions.
- Do not short the battery connectors. You can receive burns from the generated heat.
- Do not throw the battery box into fire or apply heat to it. This can cause dangerous explosions or spraying of the electrolytes.
- Do not throw the batterybox or apply strong shock to it. This can cause leaks, excessive heating, and explosions.
- Do not use the battery box if abnormal symptoms are present such as leakage, deformity, and discoloration.
- Do not carry the battery box along with metallic objects such as paper clips. This may short the battery.

#### CAUTION

- Do not immerse the battery box in water or allow water to come in contact with it. This can cause excessive heating and rust and deteriorate its functionality.
- Due to its nature, Ni-MH batteries that have been over discharged cannot be recharged. If
  you are not going to use the MV1000 for an extended time, fully charge the battery, remove
  the battery box from the MV1000, and store it in the following environment to prevent over
  discharge. If you fail to do so, the battery may leak or rust. The battery performance and life
  may also deteriorate.
  - Storage for less than 1 year: Between -20°C and +35°C, at low humidity.
  - Storage for less than 6 months: Between -20°C and +45°C, at low humidity.
  - If you are storing the battery for more than six months, charge the battery at least once a year. We recommend that you charge the battery periodically even during the above-mentioned periods.
- · Do not use the battery model with the battery box removed.

## **Recycle Mark**

The Ni-MH battery that is used by the MV1000 is recyclable.

The following recycle mark is used on the battery to indicate that it is recyclable.



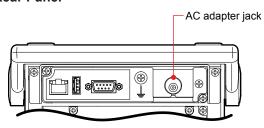
## Suffix code

Model code	Suffix code	Description
Power supply	-3	Rechargeable battery, with AC adapter <sup>1</sup>
Power cord	D	Rechargeable battery: DC plug, UL/CSA cable for AC adapter
	F	Rechargeable battery: DC plug, VDE cable for AC adapter
	R	Rechargeable battery: DC plug, AS cable for AC adapter
	Q	Rechargeable battery: DC plug, BS/PSB cable for AC adapter
	H	Rechargeable battery: DC plug, GB(CCC) cable for AC adapter
	P	Rechargeable battery: DC plug, EK cable for AC adapter
	W	Rechargeable battery: DC plug, withput AC adapter <sup>2</sup>

### **Standard Accessories**

Items	Name	Part Number /Model	Qty.	Notes
	AC adapter	B8070TN	1	Only included if the supply voltage suffix code is -3.
	and			When the supply voltage suffix code is -3, one of the
	power cord for			following cables is included, depending on the power
	AC adapter			cable suffix code.
	•	B9988YA	1	Power cord suffix code D. Maximum rated voltage: 125 V
		B9988YB	1	Power cord suffix code F. Maximum rated voltage: 250 V
		B9988YC	1	Power cord suffix code R. Maximum rated voltage: 250 V
~ 60		A1069WD	1	Power cord suffix code Q. Maximum rated voltage: 250 V
		B9988YJ	1	Power cord suffix code H. Maximum rated voltage: 250 V
		A1078WD	1	Power cord suffix code P. Maximum rated voltage: 250 V

## **Rear Panel**



### Connecting the AC Adapter (if the power supply voltage suffix code is -3)

#### **Before Connecting the Power Supply**

To prevent the possibility of electric shock and damaging the instrument, follow the warnings below. Make sure to comply with the warnings below.

## **WARNING**

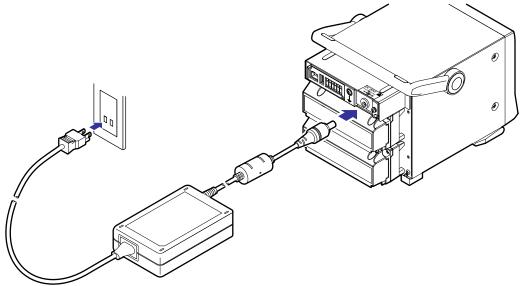
- Use only power cords supplied by YOKOGAWA for the instrument.
- Ensure that the supply voltage matches the rated supply voltage of the AC adapter before connecting the power cable.
- · Check that the power switch is turned OFF before connecting the power cord.
- If you are not going to use the instrument for an extended time, unplug the power cord of the AC adapter from the outlet.
- Use only the AC adapter (B8070TN) made by YOKOGAWA.
- Be sure nothing is placed on top of the AC adapter or power cord or let heat generating objects come in contact with them.
- When unplugging the power cord from the outlet, never pull the cord itself.
   Always hold and pull by the plug. If the power cord is damaged, contact your dealer for replacement.

Use a power supply that meets the following conditions:

Item	Specifications
Rated supply voltage	100 to 240 VAC
Operating supply voltage range	90 to 264 VAC
Rated supply frequency	50/60 Hz
Power supply frequency range	48 to 62 Hz
Maximum power consumption	115 VA (100 V), 125 VA (240 V)

#### **Connection Procedure**

- 1 Check that the power to the MV1000 is OFF.
- 2 Connect the AC adapter to the AC adapter jack of the MV1000.



- 3 Connect the power cord plug that came with the AC adapter to the power connector of the AC adapter.
- 4 Connect the plug on the other end of the power cord to the outlet that meets the above conditions.

### **Functional Grounding**

When using the AC adapter, connecting the functional grounding terminal of the instrument to earth ground reduce noise. Use the functional grounding terminal as necessary.

#### **Charging the Ni-MH Battery**

The battery box is not enough charged at the time of shipment. When using the battery box for the first time, fully recharge the battery before use.

The AC adapter (B8070TN) is also needed to charge up the battery.

## **WARNING**

- · Always charge the battery through the MV1000.
- Recharge the battery in an environment with a temperature between 10 and 40 °C. Otherwise, the battery may leak, heat up or not get fully charged.

#### **Charging procedure**

- 1 Install the battery box as explained previously and connect the AC power supply to the recorder.
- 2 The CHARGE LED (yellow) at the front of the battery box lights and the Ni-MH battery is charged. When the battery is fully charged, the CHARGE LED blinks rapidly.

The Ni-MH battery is charged whether the power switch is turned ON or OFF.

#### Note.

• When the CHARGE LED is blinking slowly (the LED is lit for approximately 1 s), the battery is waiting to be charged. The battery will enter the charge wait condition in the following cases:

When the ambient temperature around the battery is outside the 10 to 40 °C range.

When the battery performance has severally deteriorated due to over discharge, for example.

 Even if the CHARGE LED is blinking rapidly (indicating that the battery is fully charged), the battery may not be charged in the following cases:

If the battery temperature exceeded 65 °C during the charging operation.

When the ambient temperature changed drastically.

#### Charge time

The charge time is approximately 2.5 hours. The fast charge time (CHARGE LED blinking) is approximately 2 hours (depends on the ambient conditions). However, to fully charge the battery, auxiliary charging is required for an additional 10 minutes or more after fast charging. Thus, the charge time is approximately 2.5 hours. If you leave the AC adapter connected after fast charging, the MV1000 performs auxiliary charging (pulse charging) for approximately 3 hours. Then, the MV1000 switches to trickle charging.

#### CAUTION

If the CHARGE LED remains ON for over 2.5 hours, the MV1000 may have malfunctioned. In such case, contact your nearest YOKOGAWA dealer.