

Please make the following alterations to the User's Manual IM253102-01E (see underlined text).

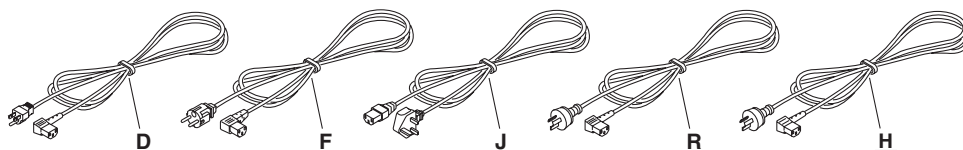
## Page 2 "SUFFIX"

Suffix Code	Description
-R	<u>AS</u> standard power cord
-J	BS standard power cord
-H	<u>GB standard power cord (complies with the CCC)</u>
/B5	Printer incorporated

## Page 3 "Standard Accessories"

No.	Name	Part No.	Quantity	Remarks
2	Spare fuse (supplied in the fuse holder)	<u>A1114EF</u>	1	100 VAC/200 VAC common (250 V, 5 A)

1 (One of these codes is supplied according to the suffix code.)



## Page 4 "Symbols"

The following symbols are used on this instrument.



To avoid injury, death of personnel or damage to the instrument, the operator must refer to an explanation in the User's Manual or Service Manual.

ON(power).



Protective Grounding Terminal.

To ensure safety, if the current to be measured exceeds 7 A (RMS), use a cable or conductor that allows current greater than the current to be measured to flow through it, and always connect protective grounding prior to use of this instrument. For products shipped as of January 2004, the protective grounding terminal is located on the rear panel. Products with a protective grounding terminal are not equipped with a function grounding terminal.

## Page 1-6 "Rear Panel"

**Function grounding terminal** 

Used for functional purposes.

**Protective grounding terminal** 

To ensure safety, if the current to be measured exceeds 7 A (RMS), use a cable or conductor that allows current greater than the current to be measured to flow through it, and always connect protective grounding prior to use of this instrument. For products shipped as of January 2004, the protective grounding terminal is located\* on the rear panel.

\* Products with a protective grounding terminal are not equipped with a function grounding terminal. For details, inquire with the dealer from whom you purchased the instrument.

**Page 3-1 “WARNING”**



**WARNING**

- To prevent hazards, a protective grounding connection must be made as follows. The power cord supplied with the instrument has a 3-pin plug. One of the three pins is used for grounding. The power cord must be connected to a 3-pin AC outlet (including a grounding terminal).
- To ensure safety, if the current to be measured exceeds 7 A (RMS), use a cable or conductor that allows current greater than the current to be measured to flow through it, and always connect protective grounding prior to use of this instrument. For products shipped as of January 2004, the protective grounding terminal is located\* on the rear panel.
  - \* Products with a protective grounding terminal are not equipped with a function grounding terminal. For details, inquire with the dealer from whom you purchased the instrument.
- Always turn OFF the power to the object being measured, before connecting it to the instrument. Never connect or disconnect the measurement lead wires from the object while power is being supplied to it, otherwise a serious accident may result.

**Page 3-1 “Note”**

**Note**

- To minimize stray capacitance to ground, route both lead wires and grounding wires so that they are as away from the instrument’s case as possible.
- To measure the apparent power and power factor more accurately when measuring the power of an unbalanced three-phase circuit, it is recommended that a three-voltage, three-current (3V3A) system be used to make the measurement.

**Page 3-5 Addition “Note”**

**Note**

To measure the apparent power and power factor more accurately when measuring the power of an unbalanced three-phase circuit, it is recommended that a three-voltage, three-current (3V3A) system be used to make the measurement.

**Page 3-8 “Note”**

**Note**

- It must be noted that measured values are affected by the frequency and phase characteristics of PT and CT.
- To measure the apparent power and power factor more accurately when measuring the power of an unbalanced three-phase circuit, it is recommended that a three-voltage, three-current (3V3A) system be used to make the measurement.
- For safety reasons, this section indicates wiring diagrams in which the common terminals (+/-) of the secondary side of the PT or CT are grounded.

**Page 3-11 “Note”**

**Note**

- The external shunt must be wired so that the area between the wires connected to both ends of the shunt is minimized, in order to reduce the effect of the magnetic field generated by the current to be measured. Measurement is affected by magnetic field lines entering this area. Minimizing this area also reduces the effects of external noise.
- To measure the apparent power and power factor more accurately when measuring the power of an unbalanced three-phase circuit, it is recommended that a three-voltage, three-current (3V3A) system be used to make the measurement.
- To avoid the effects of common-mode voltage, the external shunt must be connected to the grounding side of the power source.

**Page 4-3 “Typical Waveform Types and Differences in Measured Values Between Measurement Modes”**

Name	Waveform	Measurement mode	rms value	Rectified mean value	Rectified mean value calibrated to the rms value	Linear averaging
		Display				
		RMS	RMS	—	MEAN	DC
Sine Wave			$\frac{E_p}{\sqrt{2}}$	$\frac{2}{\pi} \cdot E_p$	$\frac{E_p}{\sqrt{2}}$	0
:	:	:	:	:	:	:

**Page 4-4 “WARNING”**



**WARNING**

- To ensure safety, if the current to be measured exceeds 7 A (RMS), use a cable or conductor that allows current greater than the current to be measured to flow through it, and always connect protective grounding prior to use of this instrument. For products shipped as of January 2004, the protective grounding terminal is located\* on the rear panel.
  - \* Products with a protective grounding terminal are not equipped with a function grounding terminal. For details, inquire with the dealer from whom you purchased the instrument.

**Page 4-5 “Manual and Auto Range Setting”**

**Note**

- In auto range setting mode, the range may be switched frequently if a waveform such as a pulse, which has a high crest factor, is input. In this case, set the range manually.
- When measuring input signals that include pulse waveforms (such as PWM (Pulse Width Modulation) inverter waveforms) through a filter, turn the filter OFF, and set the range so that the peak value of the input signal does not cause a peak over (as indicated when the PEAK OVER LED lights). In the case of input signals that include pulse waveforms having frequencies which are higher than filter cut-off frequencies, the peak value of the input signal may not be detected correctly depending on the specified range. Especially when using auto range, the range may not be set correctly and measurements may be inaccurate.
- " - - - " will be displayed if no measured data is present, measuring range will not be selected automatically even if auto range setting mode is selected.

**Page 12-9 “Other Items”**

- When the measured values for voltage, current, and power are rated values for their respective ranges, D/A output is 5 V. For example, if the D/A output item is power, and the voltage and current ranges are set to 100 V and 1 A respectively, when the measured power value is 100 W, the D/A output is 5 V. Also, if the D/A output item is 3rd order harmonic current and the current range is set to 5 A, when the measured value of the 3rd order harmonic current is 5 A, D/A output is 5 V.
- The maximum output level is ±5.0 V for power factor (PF) and phase angle (deg). However, the output will be approx. +7.5 V if there is an error.

**Page 14-12 “Commands”**

- <ESC>S<terminator>
- <ESC>R<terminator>
- <ESC>L<terminator>
- <ESC>C<terminator>

**Page 15-4 “Fuse Ratings”**

Max. rated voltage	Max. rated current	Type	Approved standard	Part No.
250 V	5 A	Time lag	UL/VDE	A1114EF

**Page 16-3 “General specifications”**

- Emission<sup>\*1</sup> Complying Standard: EN61326 ClassA  
EN55011-Group1, ClassA  
This is a Class A product for industrial environment.
- Immunity<sup>\*1</sup> Complying Standard: 61326 Annex A<sup>\*2</sup>  
Susceptibility Under Immunity Condition
- Safety standard<sup>\*1</sup> Complyong Standard : EN61010  
Overvoltage Category II  
Measurement Category II  
Pollution degree 2

<sup>\*1</sup> Applies to products manufactured after Jan. 1997 having the CE Mark. For all other products, please contact your nearest YOKOGAWA representative as listed on the back cover of this manual.

<sup>\*2</sup> Annex A(normative): Immunity test requirements for equipment intended for use in industrial locations.

**App 2-16 “2.3.3 COMMunicate Group”**

**COMMunicate:LOCKout**

**Description** This command is available only for the RS-232-C interface.  
The corresponding GPIB command is defined by the GPIB controller. Please refer to your GPIB board User’s manual for the detail.

**COMMunicate:REMOte**

**Description** This command is available only for the RS-232-C interface.  
The corresponding GPIB command is defined by the GPIB controller. Please refer to your GPIB board User’s manual for the detail.