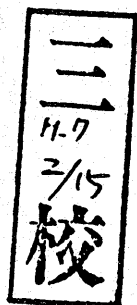# MITSUBISHI
INVERTER
Instruction Manual

INPUT/OUTPUT COMPATIBLE UNIT
TYPE FR-EPE

- Relay Output
- 12-Bit Digital Input
- Extension Analogue Output

Warning symbols For your own safety please pay special attention to instructions containing these symbols:

This warning symbol indicates the presence of dangerous voltage. It informs you of high voltage conditions, situations and locations that may cause death or serious injury if you do not follow precautions.

This symbol indicates a general warning.

This warning symbol indicates an electrostatic discharge hazard.

NOTES inform you of situations or conditions which will damage machinery or cause additional motor-operation downtime if you do not take suggested steps to correct or address such situations or conditions.

Thank you for choosing the option unit for the Mitsubishi FREQROL transistorized frequency inverters.
Please read this manual carefully to make optimum use of this option unit.

> I/O Compatible Option Unit (FR-EPE)
>
> This option unit is a multi-function unit designed for use with industrial machines of various I/O specifications and has the following functions:
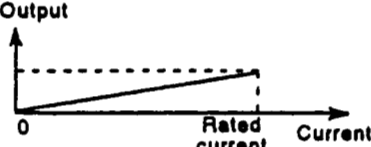>
> * Relay output
>
> * 12-bit digital input
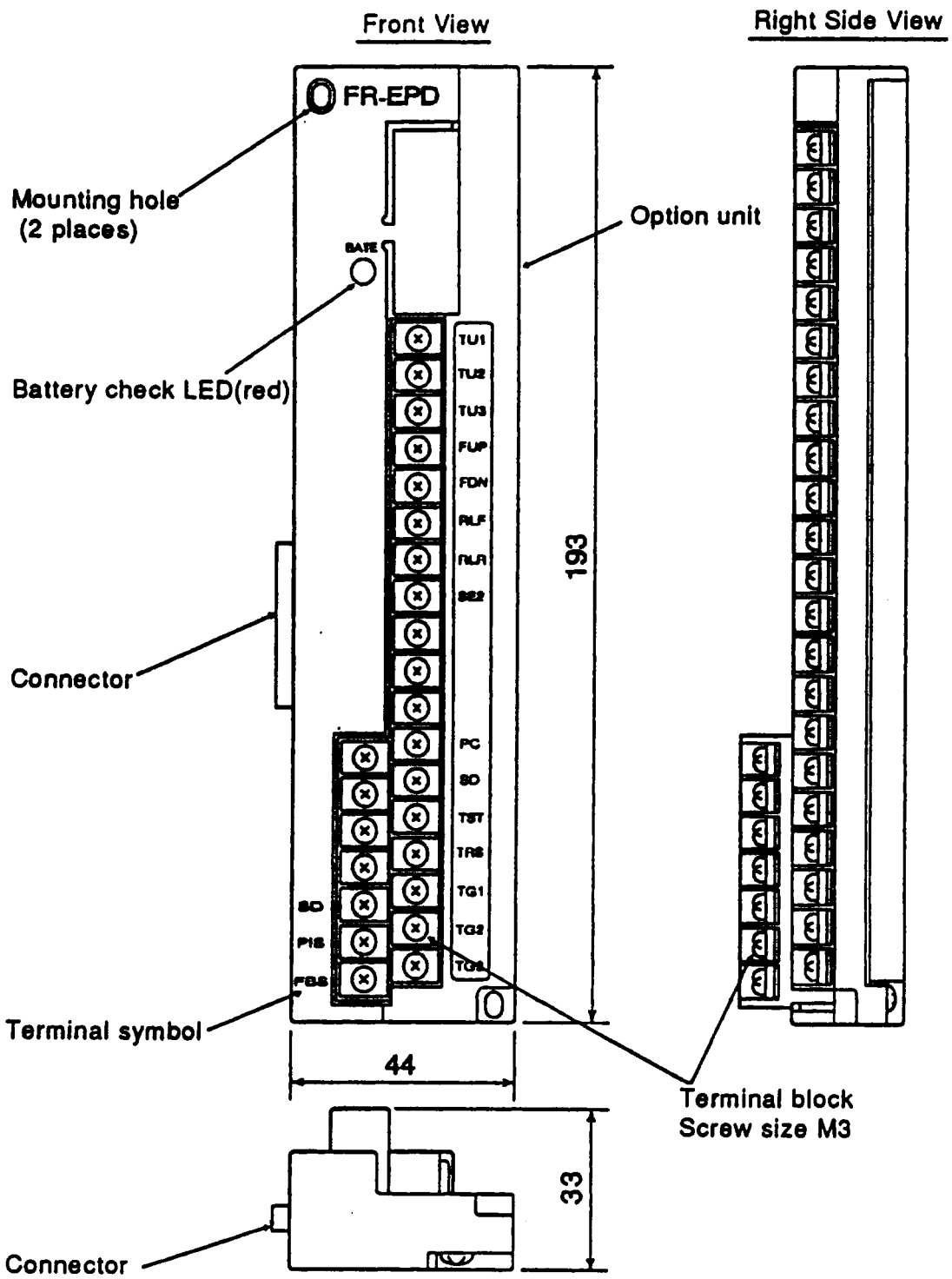>
> * Extension analogue output

CONTENTS

| CAUTION | Since this option unit has multiple functions, the initial settings of its functions are as listed in the following table. To make the required function valid, set the corresponding parameter in accordance with the relevant page.

Function	Initial Setting	Remarks
Relay output	Relay No. 1 (RUN), relay NO. 2 (SU) and relay No. 3 (IPF/UVT) signals are output.	The factory setting of Pr. 134 is '12'. To change the relay output setting, change the setting of this parameter. (See page 5.)
12-bit digital input	Invalid	The factory setting of Pr. 104 is '9999'. (See page 10.)
Extension analogue output	(Output current (A) is output.) Output / Rated current / Current	The factory setting of Pr. 135 is '2'. To select other outputs, change the setting of this parameter. (See page 15.)

1. STRUCTURE

Front View

Right Side View

Mounting hole
(2 places)

FR-EPD

BATE

Battery check LED(red)

Option unit

Connector

193

TU1
TU2
TU3
FUP
FDN
RLF
RLR
SE2

PC
SD
TST
TRS
TG1
TG2
TG3

SD
P1S
FBS

Terminal symbol

44

Connector

33

Terminal block
Screw size M3

2. INSTALLATION

Remove the inverter cover and install the option unit with the following procedure:

2.1 Pre-Installation Checks

(1) Check the inverter type.

This option unit may only be used with the FREQROL-A200E series inverters and must not be used with any other series (e.g.A200, A100, Z and F series). If you connect forcibly, the inverter may be damaged.

(2) Make sure that the inverter input power is off. The inverter may become faulty if the option unit is installed with the input power on. (The inverter or option unit may be damaged and the inverter may display the alarm "E. CPU".)

(3) Check that the following accessories are supplied with the option unit:
- • 1 - Instruction manual
- • 2 - Mounting screws M3 x 14
- • 1 - Jumper (installed on the terminal block)

2.2 Installation Procedure

(1) Insert the connector of the option unit into the connector of the inverter.

(2) Securely fix the option unit to the inverter at the top and bottom with the accessory mounting screws.

If the screw holes in the option unit do not match those in the inverter, check that the connectors have fitted correctly.

(3) For the installation diagram, see page 3.

* The empty terminals, which are used inside the option, must not be used as relay terminals. Otherwise, the option unit may be damaged.

Note: Route the cables neatly in the wiring space so that when the front cover is reinstalled, the cables to the inverter control circuit terminals and option terminals are not caught between the inverter and cover.

⚠ Warning! Hazardous voltage present.
Always isolate the power from the inverter, and wait 5 minutes to ensure the charge lamp has gone out before inserting or removing this option unit, or touching the terminals.

Inverter
(shown without the cover)

Accessory screw (2 pcs.)

MITSUBISHI

Option unit

Inverter-side
connector

Option-side
connector

R S T U V W

R1 S1 N P R
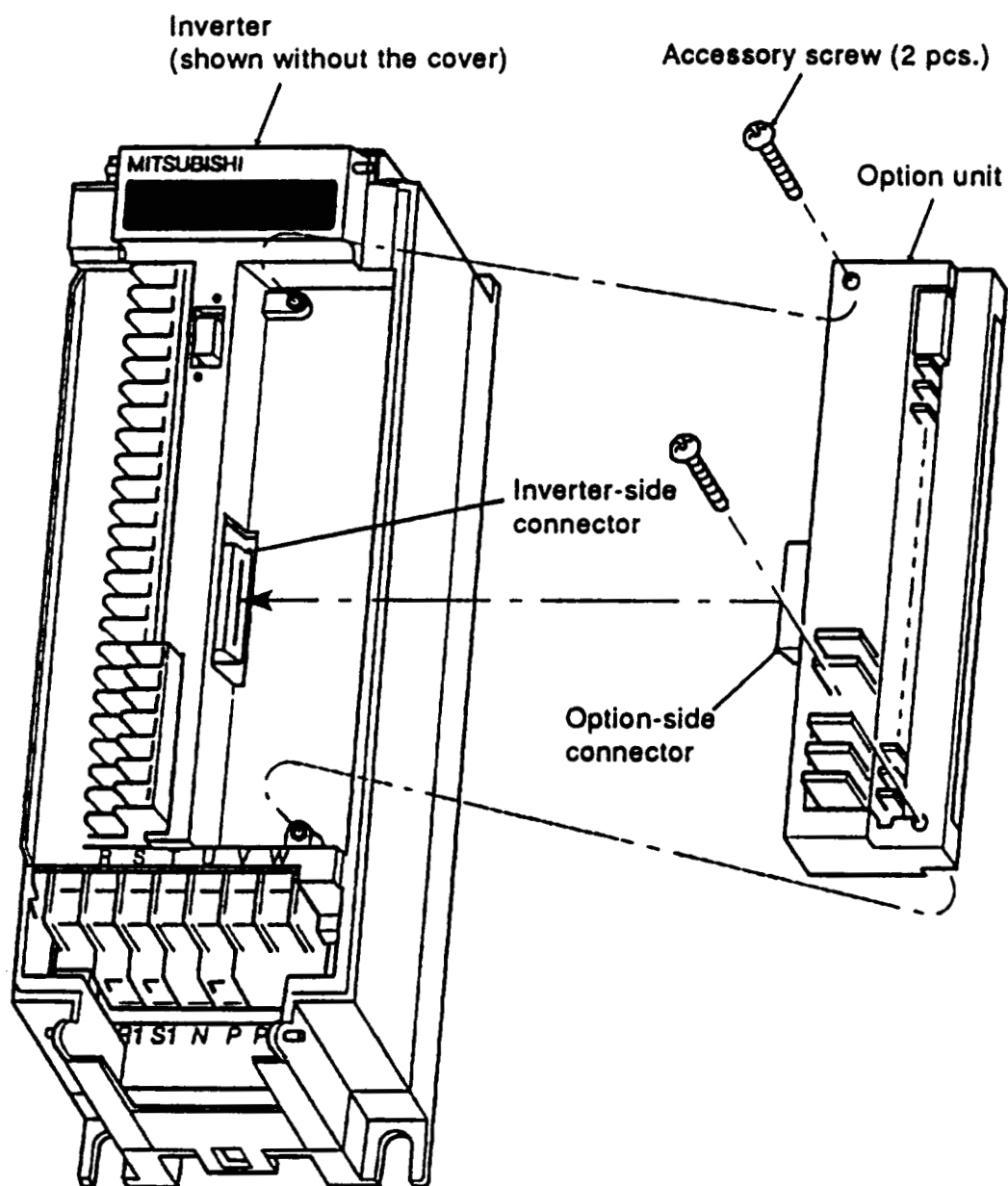
3. RELAY OUTPUT

This function allows three output signals to be selected optionally from among the 10 standard signals (RUN, SU, IPF/UVT, OL, FU1, FU2, RBP, THP, PRG and PU) of the inverter and to be output as relay contact (1C contact) signals.

3.1 Internal Block Diagram
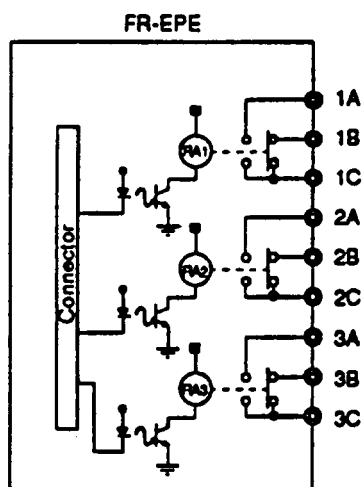
Internal Circuit Diagram

3.2 Terminals

Terminal Symbol	Description
1A	Normally open contact terminal for relay RA1
1B	Normally closed contact terminal for relay RA1
1C	Common terminal for contacts of relay RA1
2A	Normally open contact terminal for relay RA2
2B	Normally closed contact terminal for relay RA2
2C	Common terminal for contacts of relay RA2
3A	Normally open contact terminal for relay RA3
3B	Normally closed contact terminal for relay RA3
3C	Common terminal for contacts of relay RA3

*The operation of each relay depends on the output signal selected.

3.3 Adjustments

(1) Selection of output signals

Set the required value in parameter number 134 to select the output signals of relays RA1 to RA3.

Pr. 134 setting

• 3-digit numerical value

Note: When the parameter unit (FR-PU02E) is used to set the Pr. 134 value, the setting range shown on the display screen of the PU is 11 to 999 and 9999, but 0 to 10 outside this range may also be set in Pr. 134.

Low-digit numeral : Indicates the output signal of relay RA3.
Middle-digit numeral : Indicates the output signal of relay RA2.
High-digit numeral : Indicates the output signal of relay RA1.

• 9999
The relays do not output.

(2) Definition of output signals

Set the corresponding numeral to each digit of parameter number 134 to select any of the following signals:

Set Value	Definition of Signal
0	Inverter running (RUN)
1	Up to frequency (SU)
2	Instantaneous power failure or undervoltage (IPF/UVT)
3	Overload alarm (OL)
4	Frequency detection (FU1)
5	Second frequency detection (FU2)
6	Regenerative brake prealarm (RBP)
7	Electronic thermal relay prealarm (THP)
8	Program mode operation in progress (PRG)
9	PU operation in progress (PU)

Example: When Pr. 134 = 012 (initial setting), the following signals are selected and output:
RA1: Inverter running (RUN)
RA2: Up to frequency (SU)
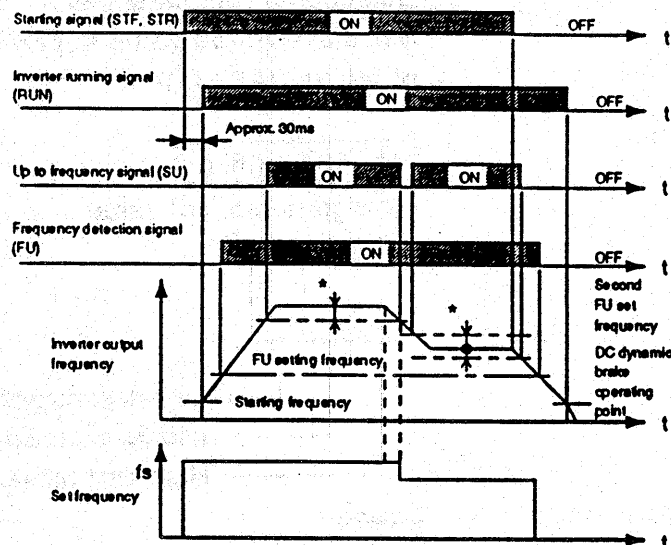RA3: Instantaneous power failure or undervoltage (IPF/UVT)

(Since the 0 at the beginning of the interger is not displayed, the value displayed actually is 12.)

3.4 Output Signal On/Off Timings

(1) Inverter running (RUN) (Set value = 0)

Switched on at not less than the starting frequency, and switched off while the inverter is at a stop or the DC dynamic brake is being operated.

(2) Up to frequency (SU) (Set value = 1)

The ON range(*) of the up to frequency signal is adjustable between 1 and 100% of the set frequency (fs) by using the "up to frequency sensitivity" parameter.

(3) Frequency detection (FU1, FU2) (Set value = 4, 5)

Switched on when the output frequency exceeds the value set in the "output frequency detection parameter."
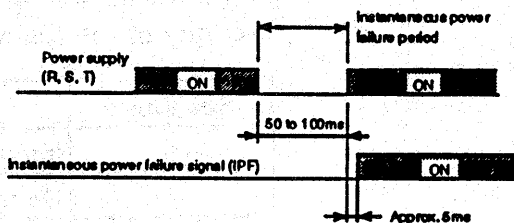
(4) Instantaneous power failure (IPF) (Set value = 2)

For more information on the IPF signal on/off timing, see the inverter catalogue, technical information, etc.

(5) Overload (OL) (Set value = 3)

Switched on when the output current or regenerative voltage exceeds the predetermined value and the stall prevention is activated. Switched off when the output current or regenerative voltage falls below the predetermined value and the stall prevention is reset.
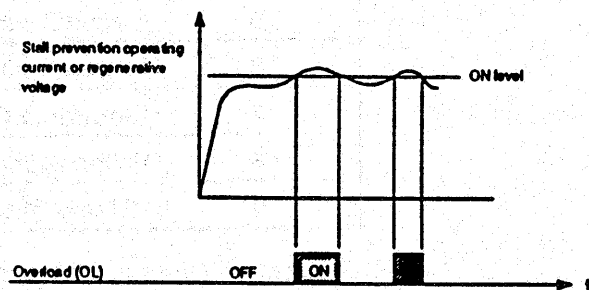
(6) Regenerative brake prealarm (RBP) (Set value = 6)
Output when the regenerative brake duty reaches 85% of the value set in Pr. 70.

Regenerative Brake Prealarm (RBP) Signal ON/OFF Timing Chart Example
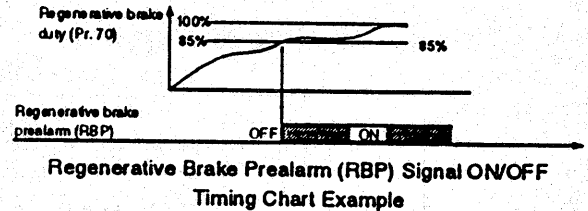
(7) Electronic thermal relay prealarm (THP) (Set value = 7)
Output when the accumulative electronic thermal relay value reaches 85% of the set level.

Electronic Thermal Relay Prealarm (THP) Signal ON/OFF Timing Chart Example
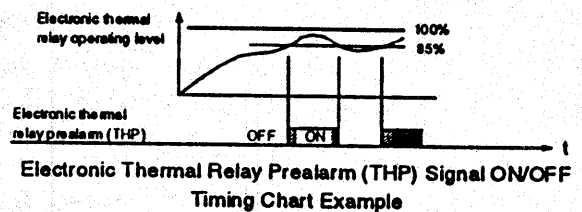
(8) Program mode operation in progress (PRG) (Set value = 8)
Output when the program mode (Pr. 75 = 5) is selected.

(9) PU operation in progress (PU) (Set value = 9)
Output when the PU operation mode is selected.

PRG and PU Signal ON/OFF Timing Chart Example
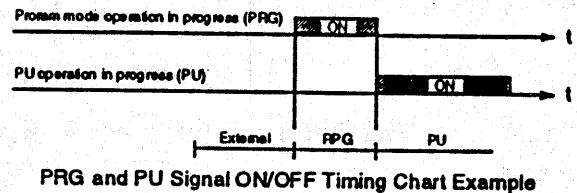
3.5 Instructions

(1) The same output signals can be selected for the three relays.

(2) The contacts should be used within the rated capacity to ensure long contact life and prevent them from being damaged.

3.6 Specifications

(1) Output signal type — 1C contact output (three relays used)

(2) Output signals — One of the 10 output signals may be selected for each relay (see page 5).

(3) Contact capacity — 230VAC 0.3A
30VDC 0.3A

4. 12-BIT DIGITAL INPUT

This function allows a frequency to be set by BCD or binary digital input signals.

4.1 Wiring Example

(1) Relay contact signal input	(2) Open collector signal input
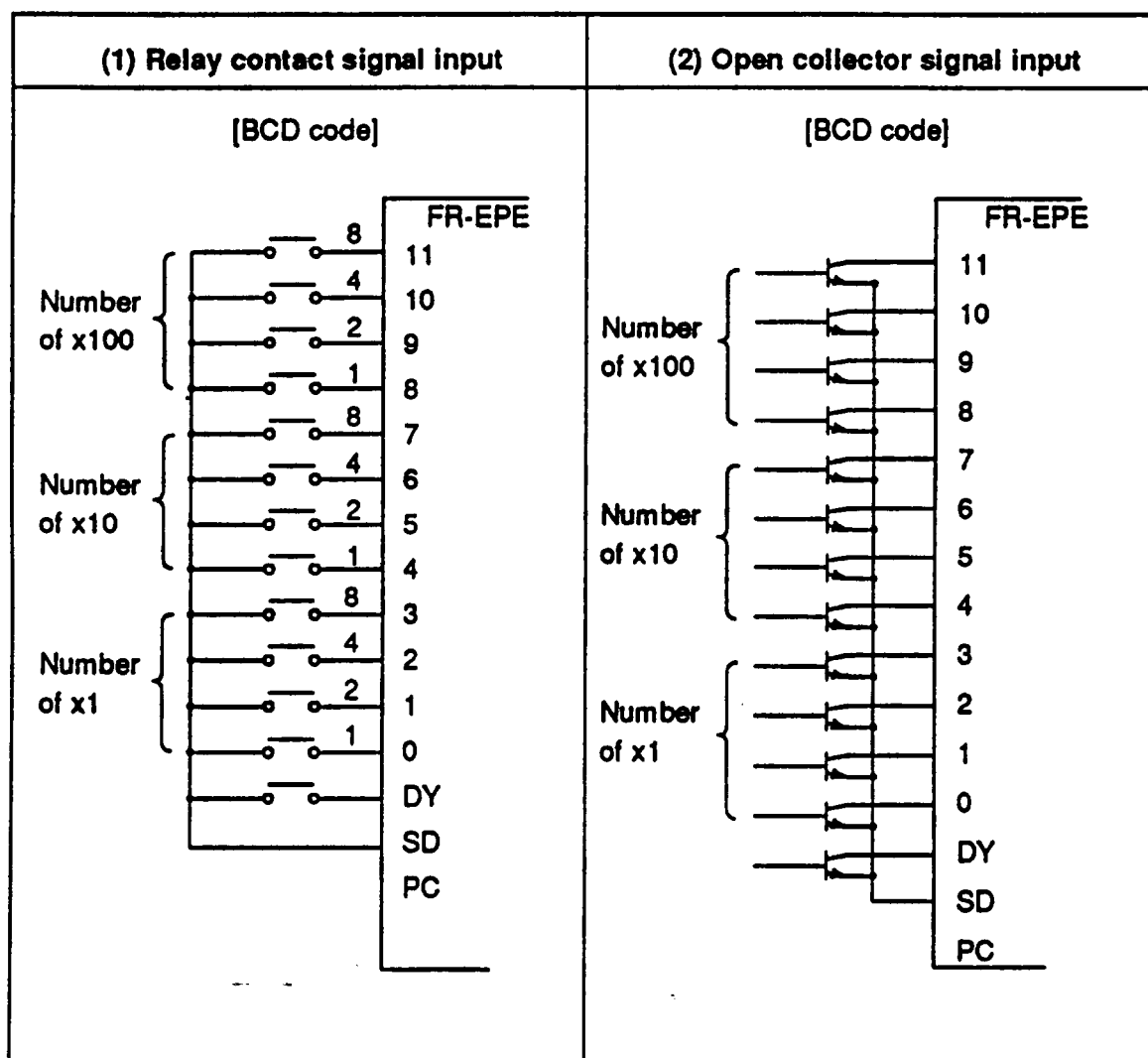
Note: 1 A microcurrent switching contact relay should be used for the relay contact signal.

2 A transistor of the following specifications should be selected for the open collector signal:

Electrical characteristics of the transistor used

- $Ic \geq 10mA$ -
- $V_{CE} \geq 30V$
- Leakage current: $100\mu A$ max.
- If $Ic = 10mA$, the base current should be specified so that V_{CE} voltage is 3V max.

4.2 Terminals

Terminal Symbol	Description
0 to 11	Digital signal input terminals (frequency reference signal terminals) To input 3-digit BCD (999 max.) or 12-bit binary (FFF H max.) signals using relay contact or open connector.
DY *	Data read timing input signal Use when a digital signal read timing signal is required. Data is only read while the DY and SD terminals are connected. By disconnecting terminals DY and SD, data at the time of terminal disconnection is retained.
SD	Common terminal Used for data input signals and data read timing signal.
PC	External transistor common When the transistor output (open collector output) of a programmable controller (PC), etc. is connected, connect the external power common (positive) to this terminal to prevent a fault occurring due to a sneak current.

* **"DY" Terminal**
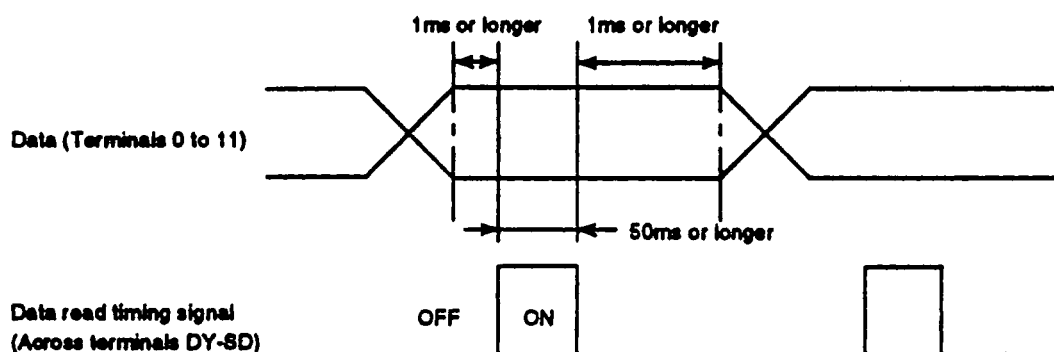
When the jumper has been removed from the DY and SD terminals, the inverter does not accept the set frequency data.

Hence, the set frequency data before removal of the jumper is used even if there are changes in the input states of terminals 0 to 11.

When the DY terminal is used, remove the jumper which has been connected to the DY and SD terminals before shipment from the factory.

12-BIT DIGITAL INPUT

4.3 Adjustments

(1) Parameters

Set the following parameters before starting inverter operation.

Parameter List

Function Number	Parameter Name		Setting Range	Initial Setting	Minimum Increment	Remarks
100	BCD input	Bias	0 to 400Hz	0Hz	0.01Hz	
101		Gain	0 to 400Hz, 9999	60Hz	0.01Hz	
102	Binary input	Bias	0 to 400Hz	0Hz	0.01Hz	
103		Gain	0 to 400Hz, 9999	60Hz	0.01Hz	
104	Digital input and analog compensation input enable/disable selection		0, 1, 2, 3, 9999	9999	1	

(2) Input selection (Pr. 104)

Parameter 104 allows a digital input signal type to be selected between BCD and binary and compensation for analogue input to digital input to be selected between enable and disable.

Set 9999 in Pr. 104 to make 12-bit digital input invalid.

Digital Input Signal Type	Analogue Compensation Input *	
	Compensation disable	Compensation enable
BCD input	0	2
Binary input	1	3

* The analogue compensation input signal is input across terminals 1-5.
  When "0" (factory setting) or "1" is set in Pr. 104, analogue signals are not accepted.

(3) Bias adjustment (Pr. 100)(Pr. 102)

Bias and gain are adjustable with respect to the digital input signal. Define the output frequency (set frequency when magnetic flux vector control has been selected) at the digital input of 0.

- BCD input .... Set the output frequency in parameter 100.
- Binary input ...... Set the output frequency in parameter 102.

(4) Gain adjustment (Pr. 101)(Pr. 103)

Gain may be defined in either of the following two ways:

● Setting the output frequency for the input signal of 999 (BCD) or FFF H (binary):

(The factory-set value is 60Hz for this input signal.)
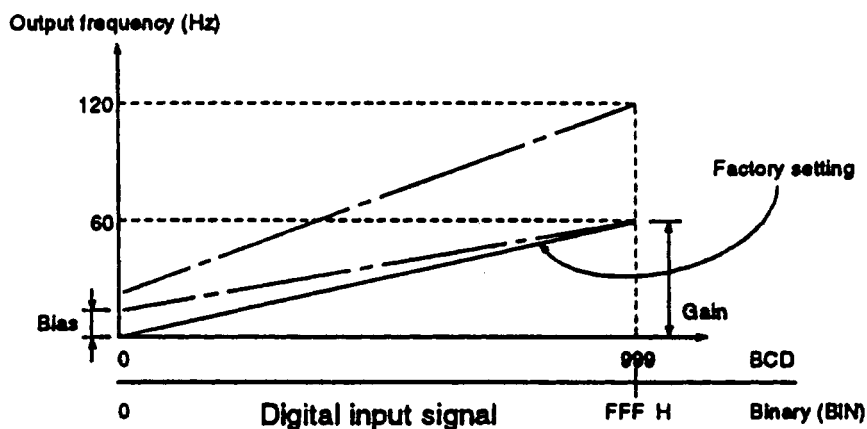
Note: Bias and gain are adjustable independently of the digital input signal. The output frequency at the digital signal of 0 is defined as bias and the output frequency at the digital signal of 999 (or FFF H) is defined as gain.

●- Setting the BCD or binary value as the output frequency set value

Setting of "9999" in parameter 101 (BCD) or 103 (binary) defines the digital input value intact as the set value of the output frequency.

(The following example shows that the output frequency is set to 120Hz at the BCD input of "120".)
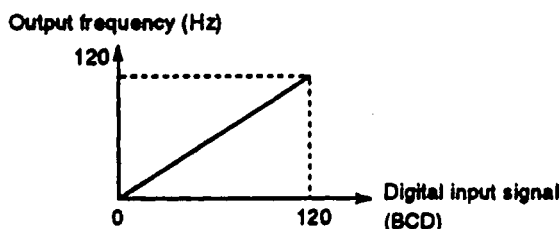
Note: When this setting method has been used, "bias" setting (parameter 100 or 102) cannot be used.

(5) Maximum output frequency

The maximum output frequency is the "gain" set value (see section (4)) when the inverter is operated by digital input signals.

To set the maximum output frequency beyond 60Hz, change the gain with the parameter unit.

(6) Acceleration/deceleration time

The acceleration/deceleration time is the period required to reach the "acceleration/deceleration reference frequency" set in parameter 20.

12-BIT DIGITAL INPUT

4.4 Instructions and Restrictions

(1) Digital input signals are restricted as follows:
- When BCD input is selected, 0A H to 0F H entered are invalid (ignored) and operation is performed with previous inputs.

(2) This option unit is designed for use in the FR-A200E series inverters. It cannot be used with the other series of inverters.

(3) Installation of the digital input card (FR-EPE) (Pr. 104 ≠ 9999) changes the availability of the functions and terminals of the FR-A200E inverters as indicated in the following table:

Availability of the Inverter Terminals

Symbol	Terminal	Availability of Inverter Terminals
STF	Forward rotation	Valid
STR	Reverse rotation	Valid
STOP	Start self-holding select terminal	Valid
RH, RM, RL	Multi-speed select terminals	Invalid (speed may be set but is inactive)
JOG/OH	Jog mode select or external thermal relay input terminal	Valid
RT	Second acceleration/deceleration time select terminal	Valid
MRS	Inverter output stop terminal	Valid
RES	Reset terminal	Valid
AU	Current input select terminal	Invalid
CS	Automatic restart after instantaneous power failure select terminal	Valid (only when Pr. 57 is not 9999)
2	Frequency setting (voltage signal) terminal	Invalid
1	Auxiliary frequency setting input (5V or 10V) terminal	Valid when Pr. 104 is set to 2 or 3
4	Frequency setting (current signal) terminal	Invalid

(4) When parameter 104 has been set to 2 or 3, an input of 0 to 5V (or 0 to 10V) to inverter terminal 1 from an external variable resistor allows the inverter fitted with the FR-EPE card to operate at the frequency of the BCD input from the FR-EPE plus the compensation input from terminal 1.
When the BCD and compensation inputs are used for different operations, e.g. the variable resistor input is used for manual operation and the BCD input for automatic operation, set the BCD input to "0" for the manual operation.

4.5 Specifications

- Digital input signal types .... 3-digit BCD or 12-bit binary
- Digital input signal selection ..... By the parameter unit
- Input current .... 5mA (24VDC) per circuit
- Input form .... Contact signal or open collector input
- Adjustment functions .... (1) Bias and gain
  (2) Analogue compensation input (set using the parameter unit)

5. EXTENSION ANALOGUE OUTPUT

This function allows any of 16 signals, such as output frequency or output current, to be selected, output as an analogue signal and indicated by an ammeter or a voltmeter connected to the terminals of the FR-EPE.

This function also allows different or same signals to be output simultaneously from the voltage output terminal (LM0) and current output terminal (LM1).

5.1 Wiring Example

Connect a voltmeter or an ammeter as shown below.
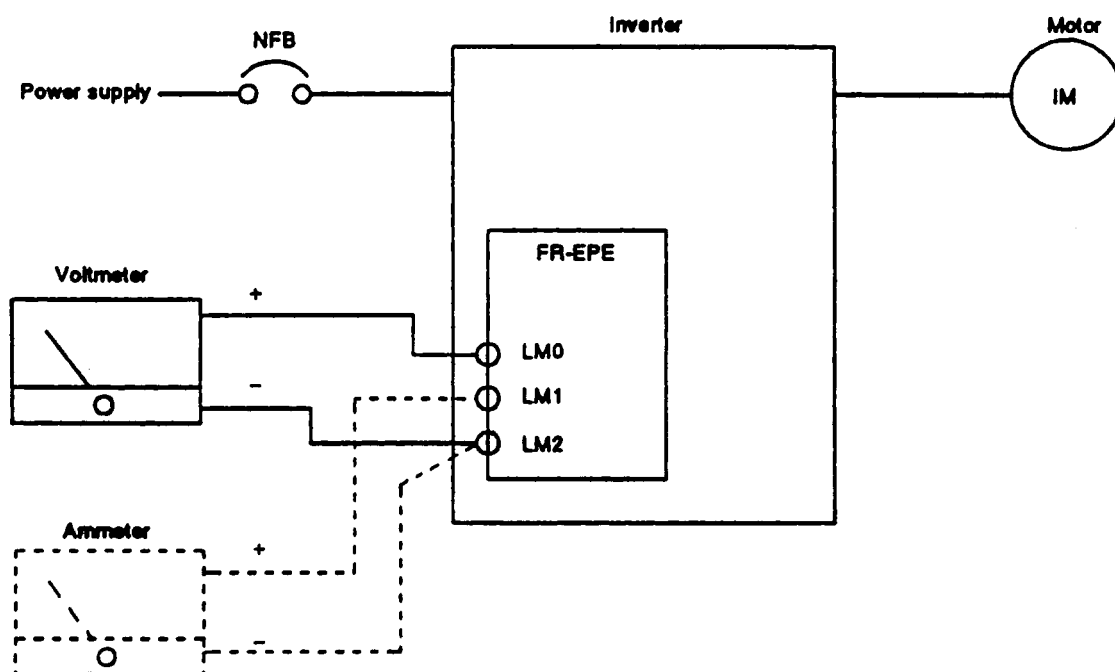
Note: The cable length of the voltmeter or ammeter must be within 10m.

5.2 Terminals

Symbol	Terminal	Description
LM0	Voltage output terminal	Connect a DC voltmeter (10VDC).
LM1	Current output terminal	Connect a DC ammeter (1mADC).
LM2	Common terminal	Common terminal for LM0 and LM1.

EXTENSION ANALOGUE OUTPUT

5.3 Adjustments

Set the following parameters before starting inverter operation:

Function Number	Function Name	Setting Range	Minimum Increment	Factory Setting	Remarks
135	Analogue output signal selection	1 to 21	1	2	4, 15, 16, 19 and 20 must not be set.
136	Setting for zero analogue output	0 to 100%	0.1%	0%	
137	Setting for maximum analogue output	0 to 100%	0.1%	100%	
146	Voltage/current selection for analogue output signal	0, 1	1	0	
147	Analogue meter voltage output selection	1 to 21	1	2	4, 15, 16, 19 and 20 must not be set.
148	Setting for zero analogue meter voltage output	0 to 100%	0.1%	0%	
149	Setting for maximum analogue meter voltage output	0 to 100%	0.1%	100%	

[Adjustment procedures]

(1) Setting the voltage/current selection for analogue output signal [Pr. 146]

Use Pr. 146 to select whether the same or different signals are output from the voltage output terminal (LMO) and current output terminal (LM1).

Voltage/Current Selection for Analogue Output Signal [Pr. 146]	Description	Parameters for Setting		Parameter for Adjustment
Set value = 0 (factory setting)	The same select signals are output from the voltage output terminal (LMO) and current output terminal (LM1).	LMO	Pr. 135: Select the output signal. Pr. 136: Output signal value for zero output Pr. 137: Output signal value for maximum output	Pr. 901
		LM1		
Set value = 1	Different select signals are output from the voltage output terminal (LMO) and current output terminal (LM1).	LMO	Pr. 147: Select the output signal. Pr. 148: Output signal value for zero output Pr. 149: Output signal value for maximum output	Pr. 900
		LM1	Pr. 135: Select the output signal. Pr. 136: Output signal value for zero output Pr. 137: Output signal value for maximum output	Pr. 901

—14—

(2) Analogue output signal selection [Pr. 135] [Pr. 147]

Select any of the following analogue signals output from terminals LM0 and LM1.

To output the same signals from LM0 and LM1 (Pr. 146=0), select the analogue signal from the following table and set the corresponding signal number in parameter 135. (The Pr. 147 setting is ignored.)

To output different signals from LM0 and LM1 (Pr. 146=1), set the signal number of LM0 in Pr. 147 and that of LM1 in Pr. 135.

Output Signal List

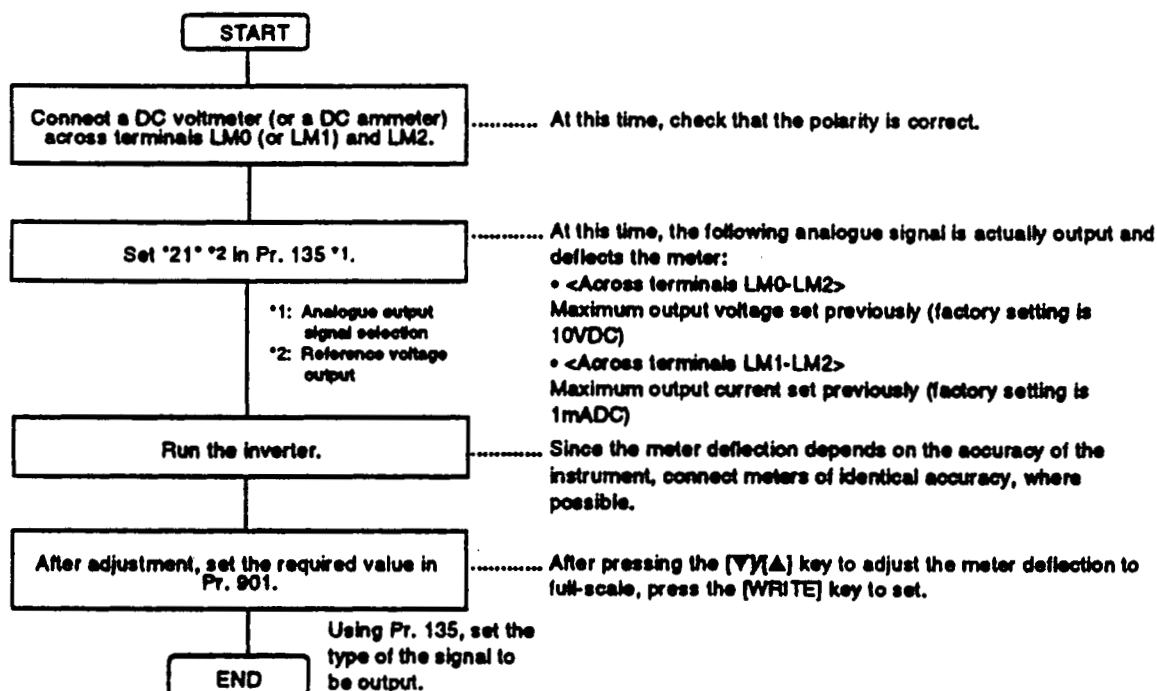| Signal Number	Definition of Output Signal	Full-Scale Value
1	Output frequency (Hz)	Value set in Pr. 55
2	Output current (A)	Value set in Pr. 56
3	Output voltage (V)	400V or 800V
5	Frequency set value (Hz)	Value set in Pr. 55
6	Running speed	Value converted from the Pr. 55 value by the Pr. 37 value
7	Motor torque (%)*	(Rated torque of applied motor) x 2
8	Converter output voltage (V)	400V or 800V
9	Regenerative brake duty (%)	Value set in Pr. 70
10	Electronic overcurrent protection load factor (%)	Overcurrent protection level
11	Output current peak value (A)	Value set in Pr. 56
12	Converter output voltage peak value (V)	400V or 800V
13	Input power (kW)	(Rated power of inverter) x 2
14	Output power (kW)	(Rated power of inverter) x 2
17	Load meter (%)	Value set in Pr. 56
18	Motor excitation current (A)	Value set in Pr. 56
21	Reference voltage output	Full-scale voltage or current is output to terminal LM0 or LM1.

* The motor torque is only valid when magnetic flux vector control has been selected in the inverter.
The rated torque of the applied motor is calculated from the settings of the magnetic flux vector control parameters (Pr. 80, 81).
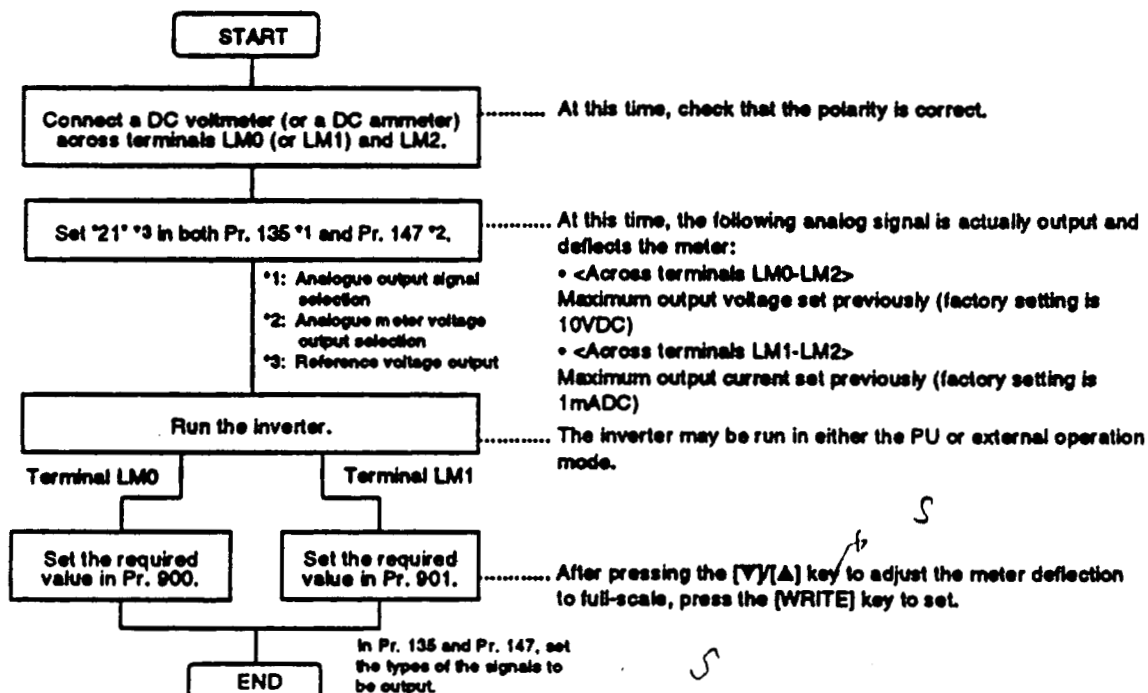
EXTENSION ANALOGUE OUTPUT

(3) Meter calibration (Pr. 135, Pr.147, Pr.900, Pr. 901, [▼], [▲] keys)

1) Outputting the same select signals from terminals LM0 and LM1

```
        ┌──────────┐
        │  START   │
        └──────────┘
             │
┌─────────────────────────────────┐
│ Connect a DC voltmeter (or a DC  │ .......... At this time, check that the polarity is correct.
│ ammeter) across terminals LM0    │
│ (or LM1) and LM2.                │
└─────────────────────────────────┘
             │
┌─────────────────────────────────┐ .......... At this time, the following analogue signal is actually output and
│     Set "21" *2 in Pr. 135 *1.   │            deflects the meter:
└─────────────────────────────────┘            • <Across terminals LM0-LM2>
    *1: Analogue output                         Maximum output voltage set previously (factory setting is
        signal selection                        10VDC)
    *2: Reference voltage                       • <Across terminals LM1-LM2>
        output                                  Maximum output current set previously (factory setting is
             │                                  1mADC)
┌─────────────────────────────────┐
│        Run the inverter.         │ .......... Since the meter deflection depends on the accuracy of the
└─────────────────────────────────┘            instrument, connect meters of identical accuracy, where
             │                                  possible.
┌─────────────────────────────────┐
│ After adjustment, set the        │ .......... After pressing the [▼]/[▲] key to adjust the meter deflection to
│ required value in Pr. 901.       │            full-scale, press the [WRITE] key to set.
└─────────────────────────────────┘
             │            Using Pr. 135, set the
        ┌──────────┐      type of the signal to
        │   END    │      be output.
        └──────────┘
```

2) Outputting different select signals from terminals LM0 and LM1

```
        ┌──────────┐
        │  START   │
        └──────────┘
             │
┌─────────────────────────────────┐
│ Connect a DC voltmeter (or a DC  │ .......... At this time, check that the polarity is correct.
│ ammeter) across terminals LM0    │
│ (or LM1) and LM2.                │
└─────────────────────────────────┘
             │
┌─────────────────────────────────┐ .......... At this time, the following analog signal is actually output and
│ Set "21" *3 in both Pr. 135 *1   │            deflects the meter:
│ and Pr. 147 *2.                  │            • <Across terminals LM0-LM2>
└─────────────────────────────────┘            Maximum output voltage set previously (factory setting is
    *1: Analogue output signal                  10VDC)
        selection                               • <Across terminals LM1-LM2>
    *2: Analogue meter voltage                  Maximum output current set previously (factory setting is
        output selection                        1mADC)
    *3: Reference voltage output
             │
┌─────────────────────────────────┐
│        Run the inverter.         │ .......... The inverter may be run in either the PU or external operation
└─────────────────────────────────┘            mode.
   ┌────────────┐    ┌────────────┐
   │ Terminal LM0│    │ Terminal LM1│
   └────────────┘    └────────────┘
        │                 │
┌──────────────┐  ┌──────────────┐
│ Set the      │  │ Set the      │ .......... After pressing the [▼]/[▲] key to adjust the meter deflection
│ required     │  │ required     │            to full-scale, press the [WRITE] key to set.
│ value in     │  │ value in     │
│ Pr. 900.     │  │ Pr. 901.     │
└──────────────┘  └──────────────┘
        │                 │
        └────────┬────────┘
        ┌──────────┐   In Pr. 135 and Pr. 147, set
        │   END    │   the types of the signals to
        └──────────┘   be output.
```
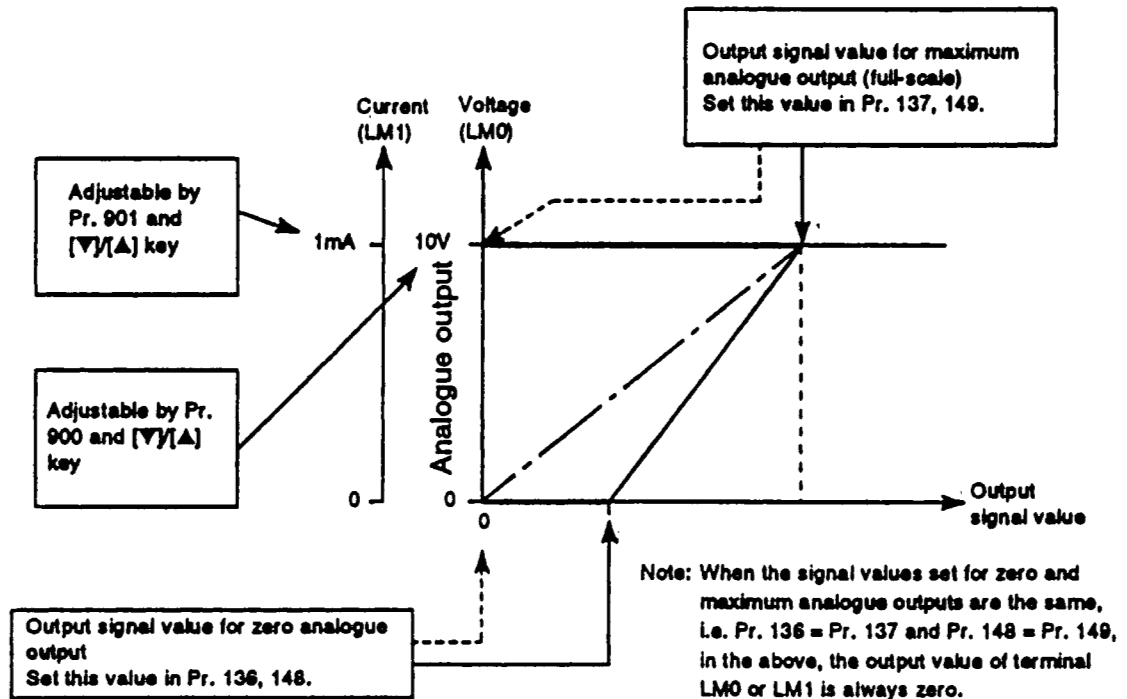
Note: At the beginning of pressing the [▼]/[▲] key, the meter deflection changes slowly. Hence, it can be used for fine adjustment. Hold down the key to change the deflection faster.

(4) Analogue signal adjustment [Pr. 136, Pr. 137, Pr. 148, Pr. 149]

To provide the output signal in the form of a 0-10VDC or 0-1mADC analog output signal (output signal for meter), set the zero analogue output (meter zero) and maximum analogue output (full-scale) points as shown below in accordance with the following table:

Pr. 146 Setting	Output Signals	Parameters for Setting		Parameter for Adjustment
0 (factory setting)	Same signals from LM0 and LM1	LM0	Pr. 136: Output signal value for zero output	Pr. 901
		LM1	Pr. 137: Output signal value for maximum output	
1	Different signals from LM0 and LM1	LM0	Pr. 148: Output signal value for zero output Pr.149: Output signal value for maximum output	Pr. 900
		LM1	Pr. 136: Output signal value for zero output Pr. 137: Output signal value for maximum output	Pr. 901

Output signal value for maximum analogue output (full-scale)
Set this value in Pr. 137, 149.

Adjustable by Pr. 901 and [▼]/[▲] key

Adjustable by Pr. 900 and [▼]/[▲] key

Output signal value for zero analogue output
Set this value in Pr. 136, 148.

Note: When the signal values set for zero and maximum analogue outputs are the same, i.e. Pr. 136 = Pr. 137 and Pr. 148 = Pr. 149, in the above, the output value of terminal LM0 or LM1 is always zero.

EXTENSION ANALOGUE OUTPUT

5.4 Instructions

(1) A voltmeter having smaller internal impedance (or an ammeter having larger internal impedance) than the value indicated in the Specifications (Section 5.5) may not deflect to full-scale and may not be calibrated.

(2) This option is factory-set to provide full-scale output 10VDC and 1mADC meters. Hence, a voltmeter (7VDC or less) or an ammeter (0.7mADC or less) with a small full-scale value may be damaged accidentally during calibration. When calibrating a meter having a small full-scale value, first set the output of terminal AM0 (AM1) to the minimum without connecting the meter, then connect and calibrate the meter.

(3) If calibration is made without 21 (reference voltage output) set in Pr. 135, the AM terminal of the inverter is calibrated.
To make calibration for the extension analogue output, 21 must be set in Pr. 135. After the end of the calibration, select the output signal.

5.5 Specifications

(1) Output signals
Voltage output (across terminals LM0-LM2)   0 to 10VDC
Current output (across terminals LM1-LM2)   0 to 1mADC

(2) Output resolution
Voltage output   3mV
Current output   1μA

(3) Display accuracy (reference value)
± 10% of the full-scale output value.
Depends on output signal types.

(4) Meters used
• Voltmeter
DC voltmeter full-scale 10V (internal impedance 10kΩ or more)
• Ammeter
DC ammeter full-scale 1mA (internal impedance 800Ω or less)
• Cable length
Max. 10m

(5) Output signal types
One of the following signals can be selected and displayed (output):
inverter output current (motor current), output frequency, output voltage, frequency set value, running speed, motor torque*, converter output voltage, regenerative brake duty, electronic overcurrent protection load factor, output current peak value, converter voltage peak value, input power, output power, load meter, motor excitation current and reference voltage output.
* The FR-A100 series inverters cannot output this signal.

REVISIONS

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