

**MULTI POWER MONITOR
(4 digital displays)**

MODEL **54U**

BEFORE USE

Thank you for choosing M-System. Before use, please check contents of the package you received as outlined below. If you have any problems or questions with the product, please contact M-System's Sales Office or representatives.

■ PACKAGE INCLUDES:

Multi power monitor
(body + mounting bracket × 2 + gasket)(1)

■ MODEL NO.

Confirm Model No. marking on the product to be exactly what you ordered.

■ INSTRUCTION MANUAL

This manual describes necessary points of caution when you use this product, including installation, connection and basic maintenance procedures.

For detailed explanations to operate and program the module, please refer to Model 54U Operating Manual (EM-6487-B).

The 54U is programmable either by using the front control buttons or the PC Configurator Software. For detailed information on the PC configuration, refer to the PMCFG users manual.

Software and manuals are downloadable at M-System's web site: <http://www.m-system.co.jp>

POINTS OF CAUTION

■ AUXILIARY POWER SUPPLY RATING & OPERATIONAL RANGE

- Locate the auxiliary power supply rating marked on the product and confirm its operational range as indicated below:
100 – 240V AC rating: 85 – 264V AC, 47 – 66 Hz, < 8VA
110 – 240V DC rating: 99 – 264V DC, < 4W

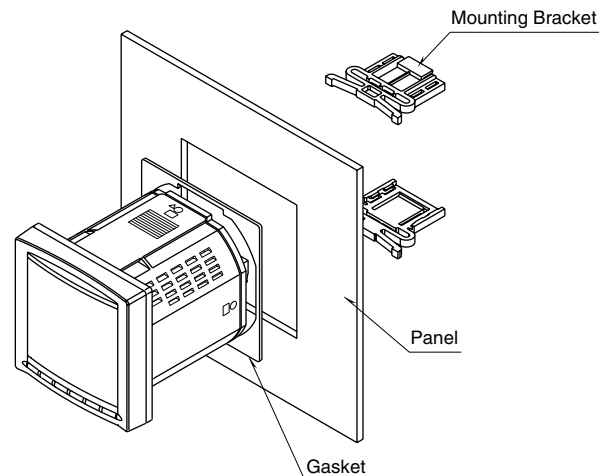
■ GENERAL PRECAUTION

- Before you remove or mount the unit, turn off the power supply and input signal for safety.

■ ENVIRONMENT

- Indoor use.
- Do not install the unit where it is directly exposed to rain, water droplets or sunlight.
- When heavy dust or metal particles are present in the air, install the unit inside proper housing with sufficient ventilation.
- Do not install the unit where it is subjected to continuous vibration. Do not subject the unit to physical impact.
- Environmental temperature must be within -10 to +55°C (14 to 131°F) with relative humidity within 90% RH in order to ensure adequate life span and operation.

- Contrast of the LCD screen depends upon viewing angles. Choose the height and angle where it is the most legible.
- Do not apply physical impact to the front face.
- To ensure the designated ingress protection, insert the gasket before attaching the mounting brackets.
- When using the mounting brackets, remove the mounting screws and turn back the gasket as shown below.



■ WIRING

- Wiring to the unit must be conducted by qualified service personnel.
- Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
- Do not bind these cables together with those in which noises are present. Do not install them in the same duct.

■ AND

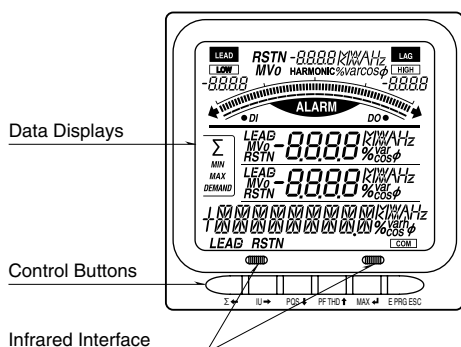
- The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.
- Altitude up to 2000 meters.
- The equipment must be mounted inside a panel.

LIGHTNING SURGE PROTECTION

M-System offers a series of lightning surge protector for protection against induced lightning surges. Please contact M-System to choose appropriate models.

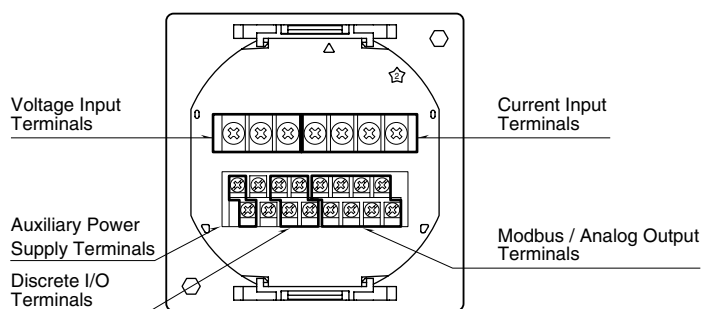
COMPONENT IDENTIFICATION

FRONT VIEW

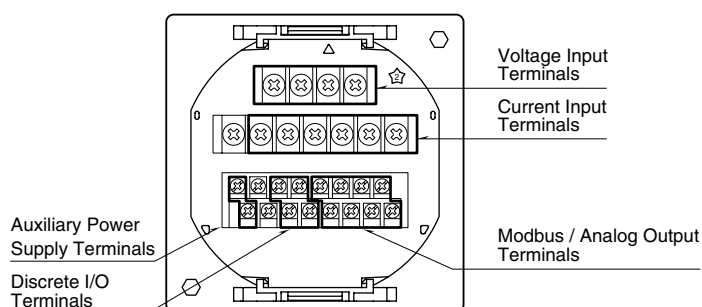


REAR VIEW

CONFIGURATION CODE: 1



CONFIGURATION CODE: 2

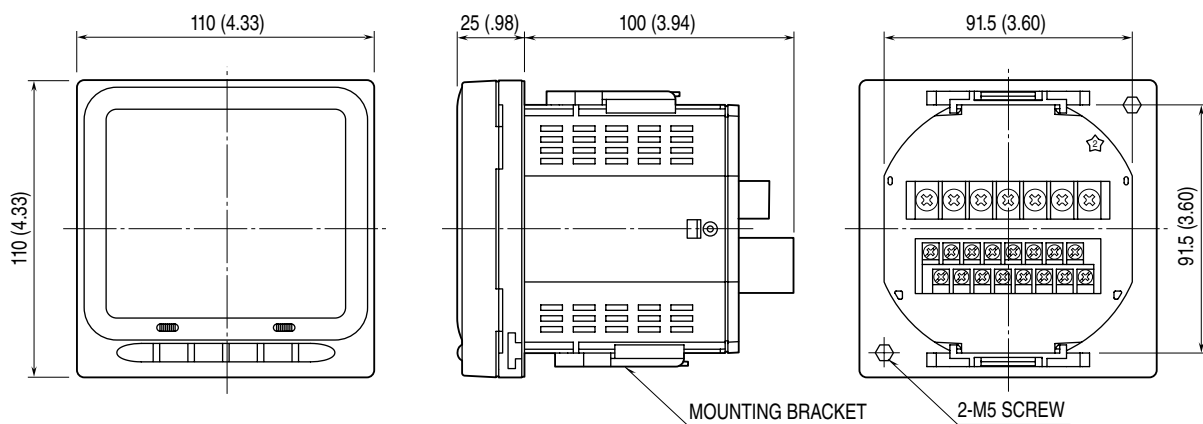


CONTROL BUTTON OPERATIONS

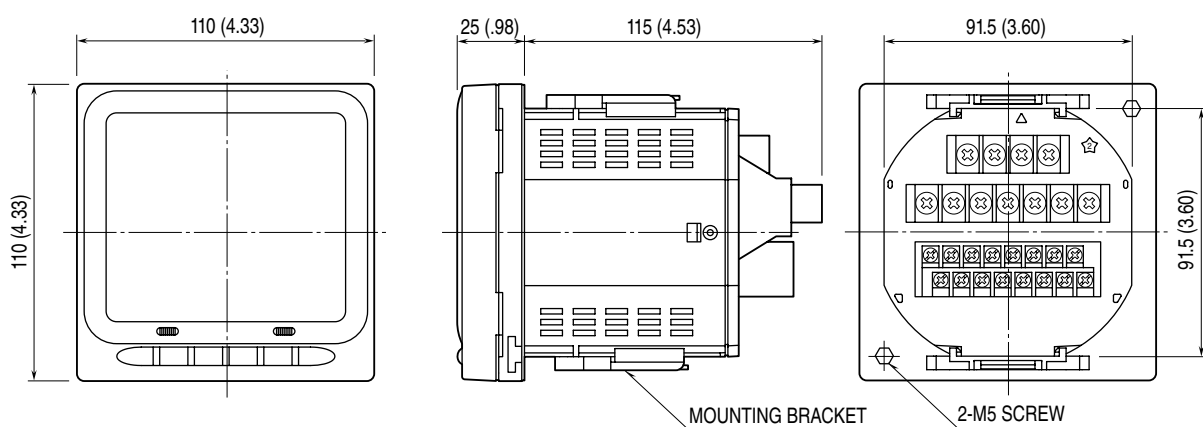
BUTTON OPERATION	FUNCTIONS	
	NORMAL MODE	SETTING MODE
Σ ◀	Indicates Σ values	Go Left
IU ▶	Indicates Voltage or Current	Go Right
PQS ▼	Indicates Power	Go Down
PF THD ▲	Indicates Power Factor or THD	Go Up
MAX ENTER	Indicates totalized values (max., min., average/demand)	Selects menu; Enables setting changes
E PRG ESCAPE	Switches Energy readings	Cancels setting changes
Σ ◀ Hold down	Switches to My Default mode	----
IU ▶ Hold down	Switches to PC Configuration mode	----
E PRG ESCAPE Hold down	Switches to Setting mode	----
IU ▶ + PF THD ▲ Hold down	Indicates Harmonics by degrees	----
Σ ◀ + E PRG ESCAPE Hold down	Switches Energy reading units	----
PQS ▼ Hold down	Indicates the shortcut menu	----

EXTERNAL DIMENSIONS unit: mm (inch)

■ CONFIGURATION CODE: 1

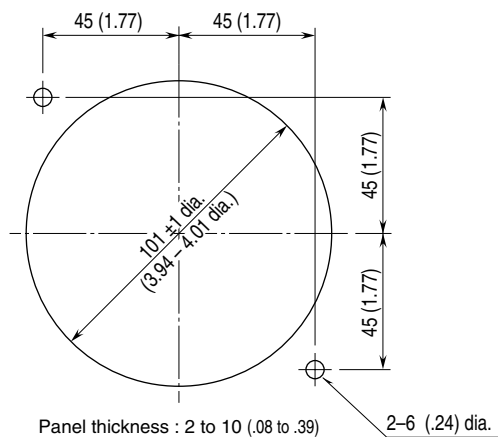


■ CONFIGURATION CODE: 2

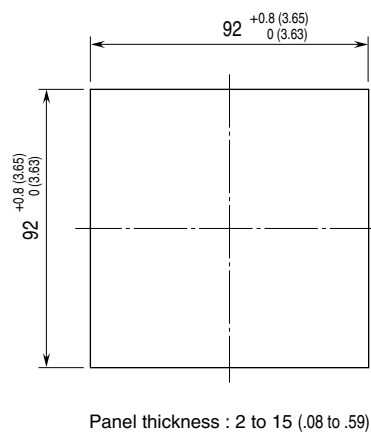


■ PANEL CUTOUT unit: mm (inch)

- USING MOUNTING SCREWS
Remove the mounting brackets.



- USING MOUNTING BRACKETS
Remove the mounting screws.

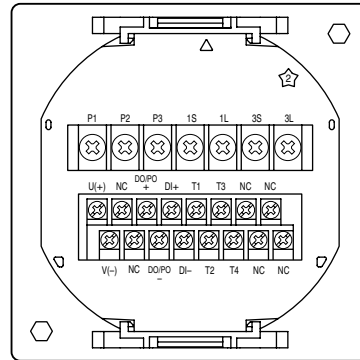
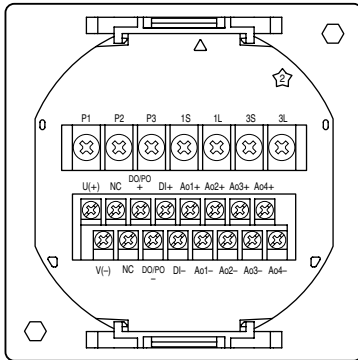


TERMINAL CONNECTIONS

■ CONFIGURATION CODE: 1

• Analog Output

• Modbus



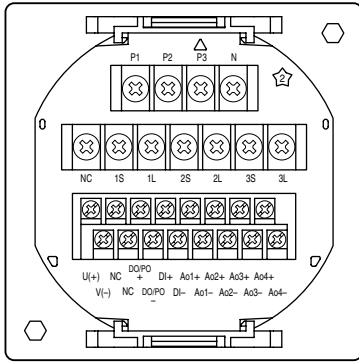
System / Application	Terminal
Single-phase / 2-wire	
Three-phase / 3-wire, balanced load	

System / Application	Terminal
Single-phase / 3-wire	
Three-phase / 3-wire, unbalanced load (2CT)	

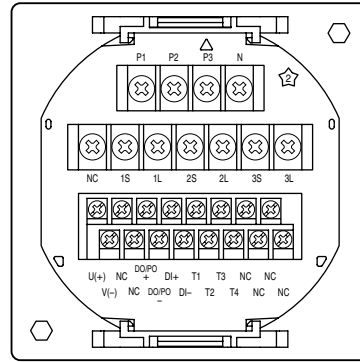
Note: For low voltage circuit, grounding is not required.

■ CONFIGURATION CODE: 2

• Analog Output



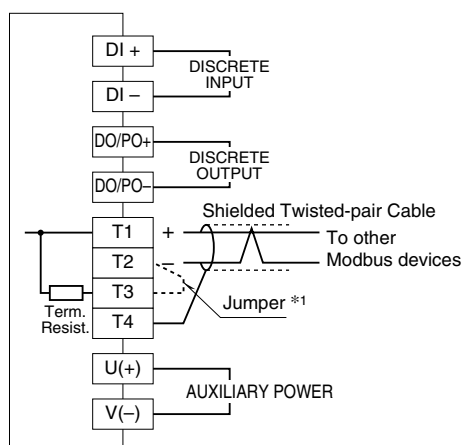
• Modbus



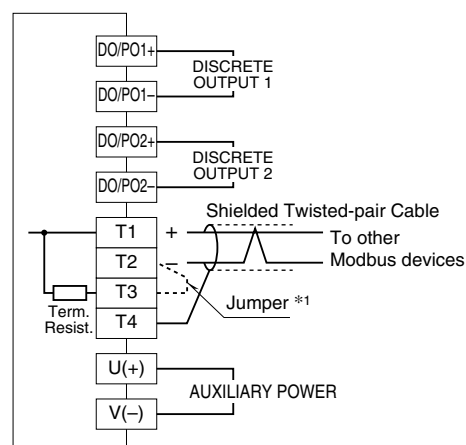
System / Application	Terminal	System / Application	Terminal
Single-phase / 2-wire		Single-phase / 3-wire Three-phase / 3-wire, unbalanced load (2CT)	
Three-phase / 3-wire, balanced load		Three-phase / 4-wire, balanced load	
Three-phase / 3-wire, unbalanced load (3CT)		Three-phase / 4-wire, unbalanced load	

Note: For low voltage circuit, grounding is not required.

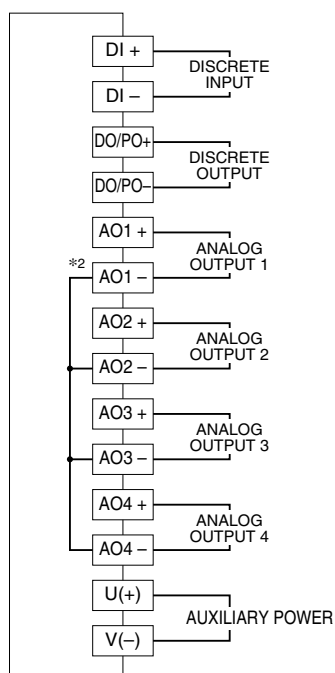
EXTERNAL INTERFACE CODE: 1



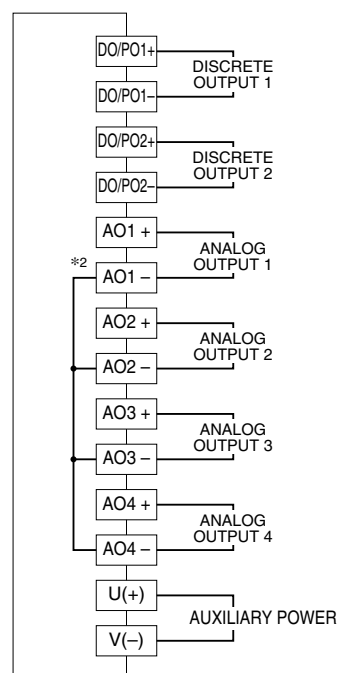
EXTERNAL INTERFACE CODE: 4



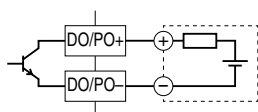
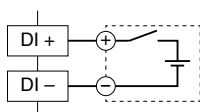
EXTERNAL INTERFACE CODE: 2, 3, 7, 8



EXTERNAL INTERFACE CODE: 5, 6, 9, A



Discrete Input Connection E.g. • Discrete Output Connection E.g.



*1. When the device is located at the end of a transmission line via twisted-pair cable, (when there is no cross-wiring), close across the terminal T2 – T3 with a leadwire.

When the device is not at the end, no shortcircuit wire is required.
*2. For 'External interface' code 7, 8, 9 and A, the analog outputs are isolated between each other.

WIRING INSTRUCTIONS

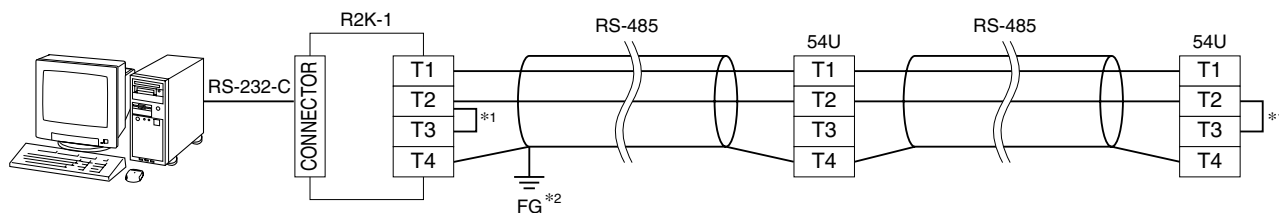
M3 Screw (discrete input, discrete output, analog output, Modbus, auxiliary power)

Torque: 0.6 N·m

M4 Screw (voltage input, current input)

Torque: 1.4 N·m

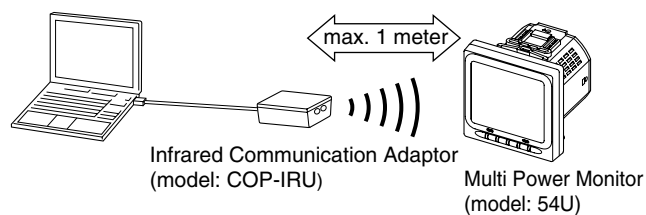
COMMUNICATION CABLE CONNECTION



*1. Internal terminating resistor is used when the device is at the end of a transmission line.

*2. Install shield cables to all sections and ground them at single point.

CONFIGURATION VIA INFRARED COMMUNICATION



Note 1: Hold down IU button to enter to Infrared Communication mode (IR-READY on the display).

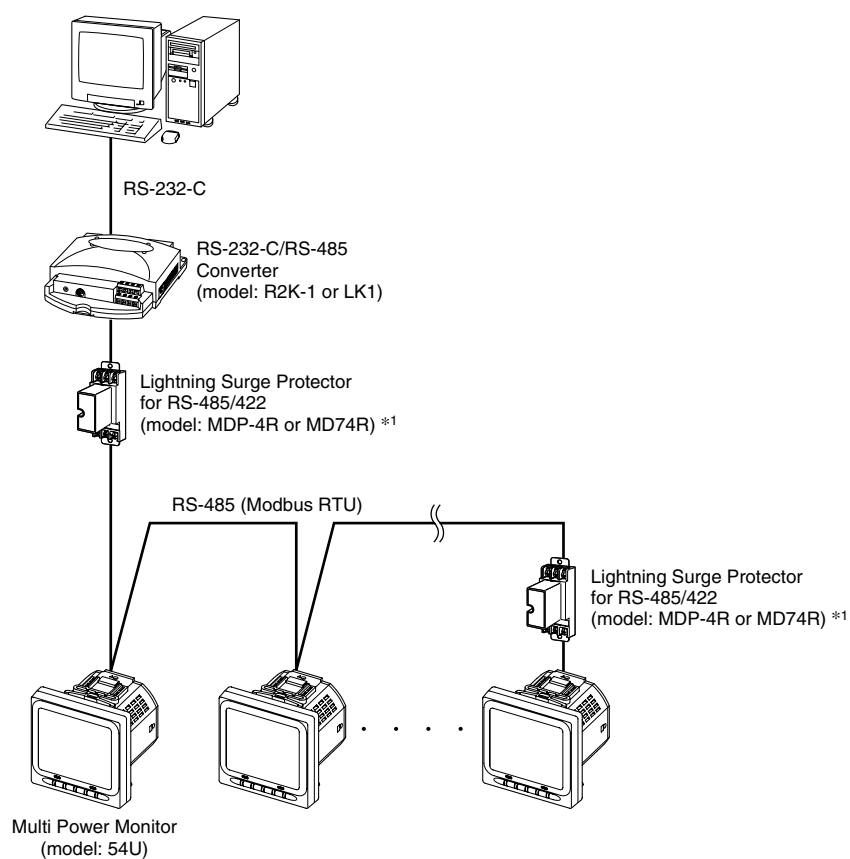
Hold down IU button to exit Infrared Communication mode.

During Infrared Communication mode, the analog outputs and Modbus communication are not available.

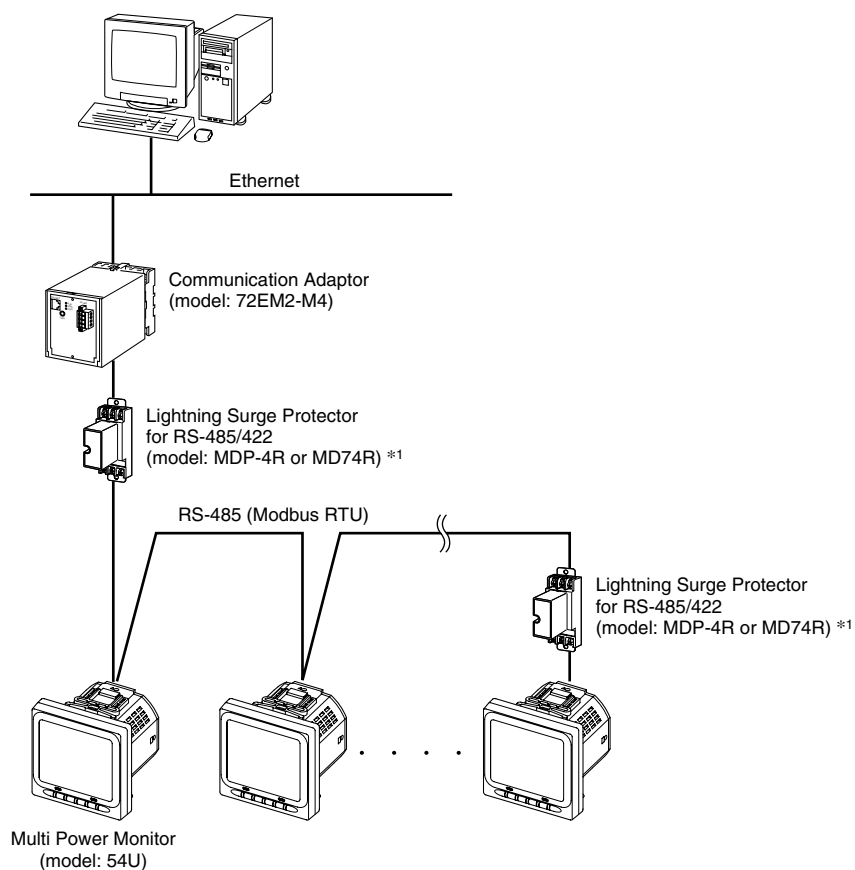
Note 2: COP-IRU communicates with one 54U. DO NOT set more than one 54U to Infrared Communication mode simultaneously.

SYSTEM CONFIGURATION EXAMPLES

■ RS-485 / RS-232-C



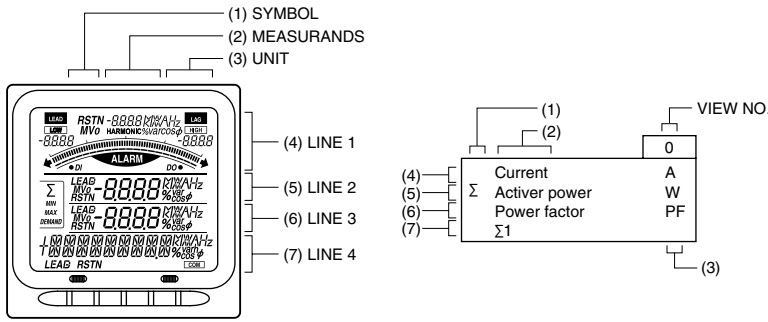
■ RS-485 / ETHERNET



*1. Insert lightning surge protectors recommended in this example if necessary.

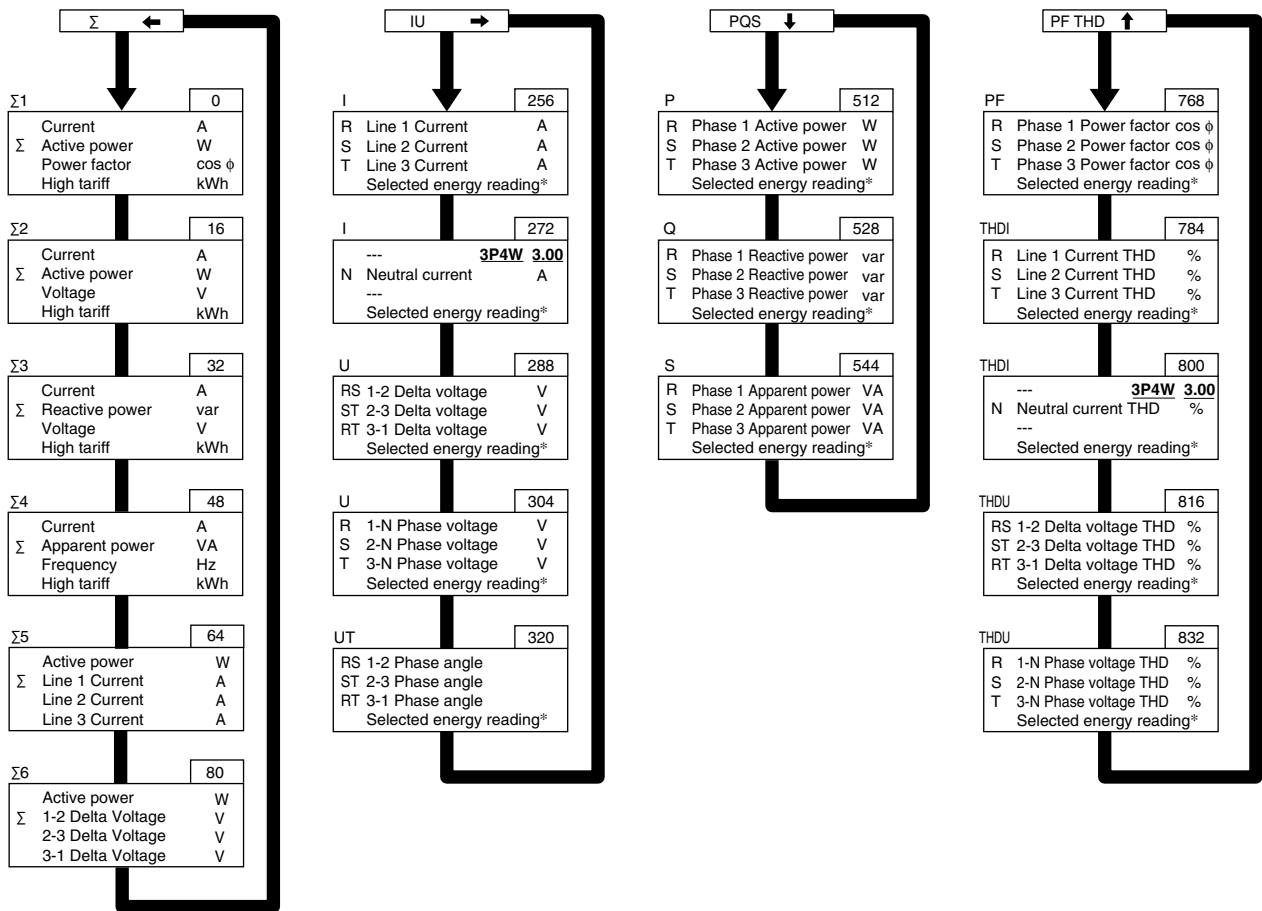
OPERATION FLOWCHART

■ DISPLAY



■ HOW TO SWITCH THE DISPLAY VIEWS

Pressing one of $\Sigma \leftarrow$, $IU \rightarrow$, PQS \downarrow , PF THD \uparrow buttons switches the view to the one of top among those assigned to the respective button. Pressing the same button continuously switches it to more selections in turn.



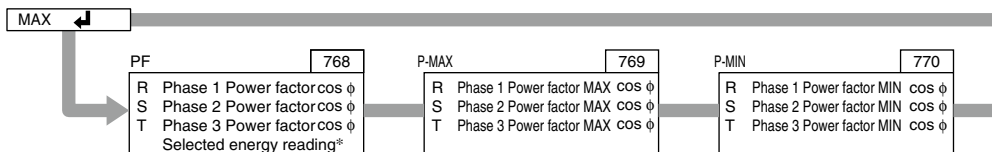
$\Sigma 1$ thr. $\Sigma 6$ views in the above figure shows the factory setting. These combinations can be changed.

$\text{MAX} \leftarrow$ button switches the presently displayed view to its extension views if any.

Pressing the same button continuously switches it to more selections in turn.

Basic and extension views are all listed in the table in the following page.

[Example] Pressing $\text{MAX} \leftarrow$ button on the view No. 768 (power factor) switches it to extension views as below.



*Selected with E PRG ESC button.

■ BASIC AND EXTENSION VIEW PARAMETERS

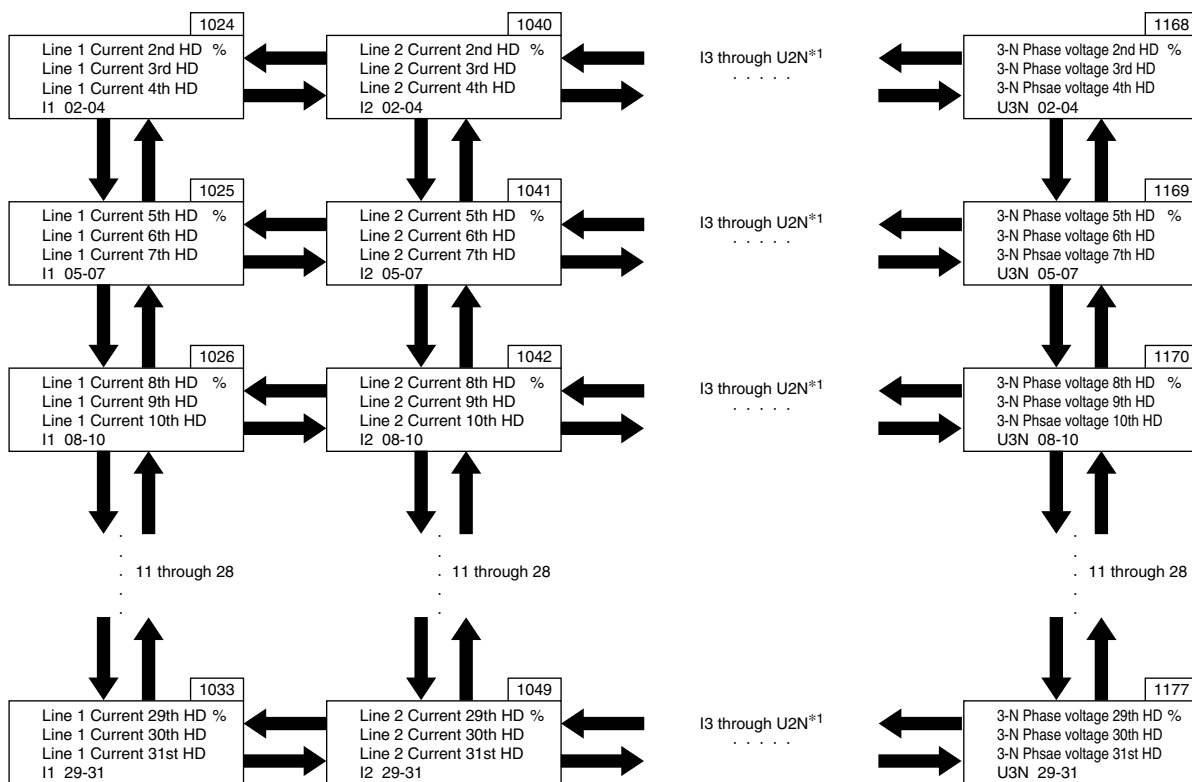
Σ view PRMTR	BASIC PARAMETER.	EXTENSION								
		MAX	MIN	AVE	AVE HIST1	AVE HIST2	AVE HIST3	AVE HIST4	MAX AVE	MAX AVE (out)
0	Not assigned									
1	Current	✓	✓	✓	✓	✓	✓	✓	✓	
2	Voltage	✓	✓	✓						
3	Active power	✓	✓	✓	✓	✓	✓	✓	✓	✓
4	Reactive power	✓	✓	✓	✓	✓	✓	✓	✓	✓
5	Apparent power	✓	✓	✓	✓	✓	✓	✓	✓	
6	Power factor	✓	✓							
7	Frequency	✓	✓							
8	Current, Line 1	✓	✓	✓	✓	✓	✓	✓	✓	
9	Current, Line 2	✓	✓	✓	✓	✓	✓	✓	✓	
10	Current, Line 3	✓	✓	✓	✓	✓	✓	✓	✓	
11	Neutral current 3P4W 3.00	✓	✓	✓	✓	✓	✓	✓	✓	
12	Delta voltage, 1 – 2	✓	✓							
13	Delta voltage, 2 – 3	✓	✓							
14	Delta voltage, 3 – 1	✓	✓							
15	Phase voltage, Phase 1	✓	✓							
16	Phase voltage, Phase 2	✓	✓							
17	Phase voltage, Phase 3	✓	✓							
18	Active power, Phase 1	✓	✓							
19	Active power, Phase 2	✓	✓							
20	Active power, Phase 3	✓	✓							
21	Reactive power, Phase 1	✓	✓							
22	Reactive power, Phase 2	✓	✓							
23	Reactive power, Phase 3	✓	✓							
24	Apparent power, Phase 1	✓	✓							
25	Apparent power, Phase 2	✓	✓							
26	Apparent power, Phase 3	✓	✓							
27	Power factor, Phase 1	✓	✓							
28	Power factor, Phase 2	✓	✓							
29	Power factor, Phase 3	✓	✓							
30	THD, Current, Line 1	✓								
31	THD, Current, Line 2	✓								
32	THD, Current, Line 3	✓								
33	THD, Neutral current 3P4W 3.00	✓								
34	THD, Delta voltage, 1 – 2	✓								
35	THD, Delta voltage, 2 – 3	✓								
36	THD, Delta voltage, 3 – 1	✓								
37	THD, Phase voltage, Phase 1	✓								
38	THD, Phase voltage, Phase 2	✓								
39	THD, Phase voltage, Phase 3	✓								
40	Phase angle between phase voltages, 1 – 2									
41	Phase angle between phase voltages, 2 – 3									
42	Phase angle between phase voltages, 3 – 1									
100	Active energy, high tariff, incoming									
101	Reactive energy, high tariff, LAG									
102	Apparent energy, high tariff									
103	Active energy, high tariff, outgoing									
104	Reactive energy, high tariff, LEAD									
105	Reactive energy, high tariff, incoming/LAG									
106	Reactive energy, high tariff, incoming/LEAD									
107	Reactive energy, high tariff, outgoing/LAG									
108	Reactive energy, high tariff, outgoing/LEAD									
109	Energy count time, high tariff									
110	Active energy, low tariff, incoming									
111	Reactive energy, low tariff, LAG									
112	Apparent energy, low tariff									
113	Active energy, low tariff, outgoing									
114	Reactive energy, low tariff, LEAD									

Σ view PRMTR	BASIC PARAMETER.	EXTENSION								
		MAX	MIN	AVE	AVE HIST1	AVE HIST2	AVE HIST3	AVE HIST4	MAX AVE	MAX AVE (out)
115	Reactive energy, low tariff, incoming/LAG									
116	Reactive energy, low tariff, incoming/LEAD									
117	Reactive energy, low tariff, outgoing/LAG									
118	Reactive energy, low tariff, outgoing/LEAD									
119	Energy count time, low tariff									
210	Reactive energy, high tariff, incoming									
211	Reactive energy, high tariff, outgoing									
212	Active energy, high tariff, incoming - outgoing									
213	Reactive energy, high tariff, incoming + outgoing									
310	Reactive energy, low tariff, incoming									
311	Reactive energy, low tariff, outgoing									
312	Active energy, low tariff, incoming - outgoing									
313	Reactive energy, low tariff, incoming + outgoing									

Note: The parameters 100 through 313 are available only on the line 4. These parameters have no extension.

■ HARMONIC

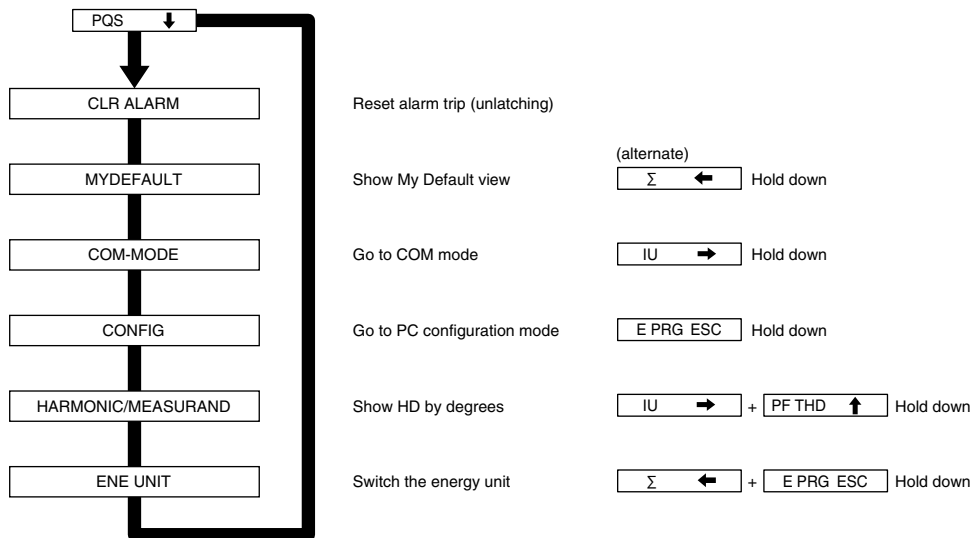
→ + ↑ Hold down both buttons for 1 second or more to switch from various setting mode to the harmonics.
 ← → ↓ ↑ Press triangle buttons to switch the views.



*1. I3 : Line 3 Current HD
 IN : Neutral current HD **3P4W 3.00**
 U12 : 1-2 Delta voltage HD
 U23 : 2-3 Delta voltage HD
 U31 : 3-1 Delta voltage HD
 U1N : 1-N Phase voltage HD
 U2N : 2-N Phase voltage HD

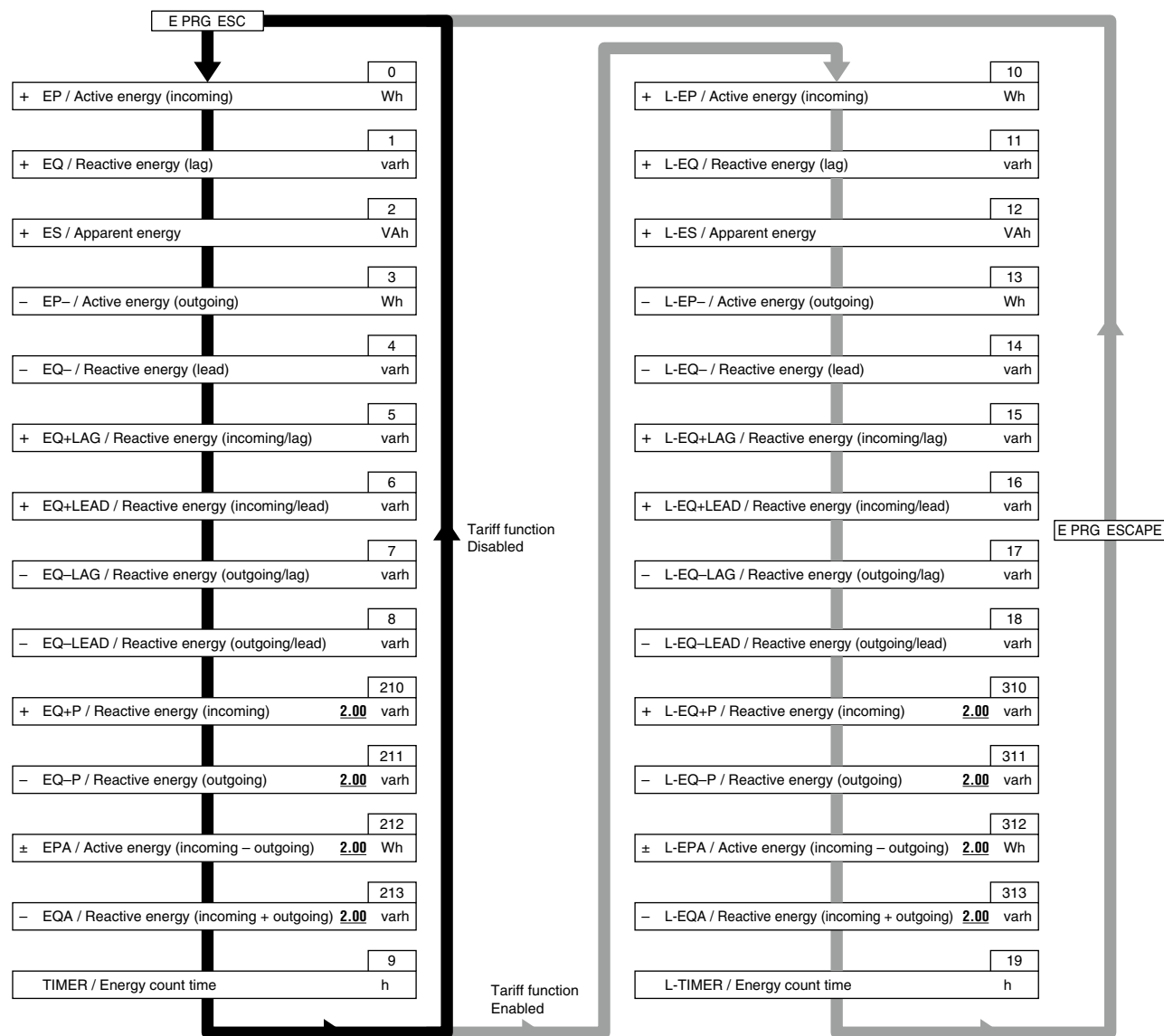
■ SHORTCUT MENU 2.00

Hold down ↓ button until the 4th line is switched to the shortcut menu.
 Resetting alarm trip and other operations are swiftly executed using this menu.
 Press ↓ button one or more times to scroll the menu.
 Press ↵ button to execute a menu command.
 Press any other button to exit the shortcut menu.



■ HOW TO SWITCH THE DISPLAY FOR LINE 4

Σ ← + E PRG ESC Hold down both buttons for 1 second or more to switch the watt-hour unit with or without 'k.'



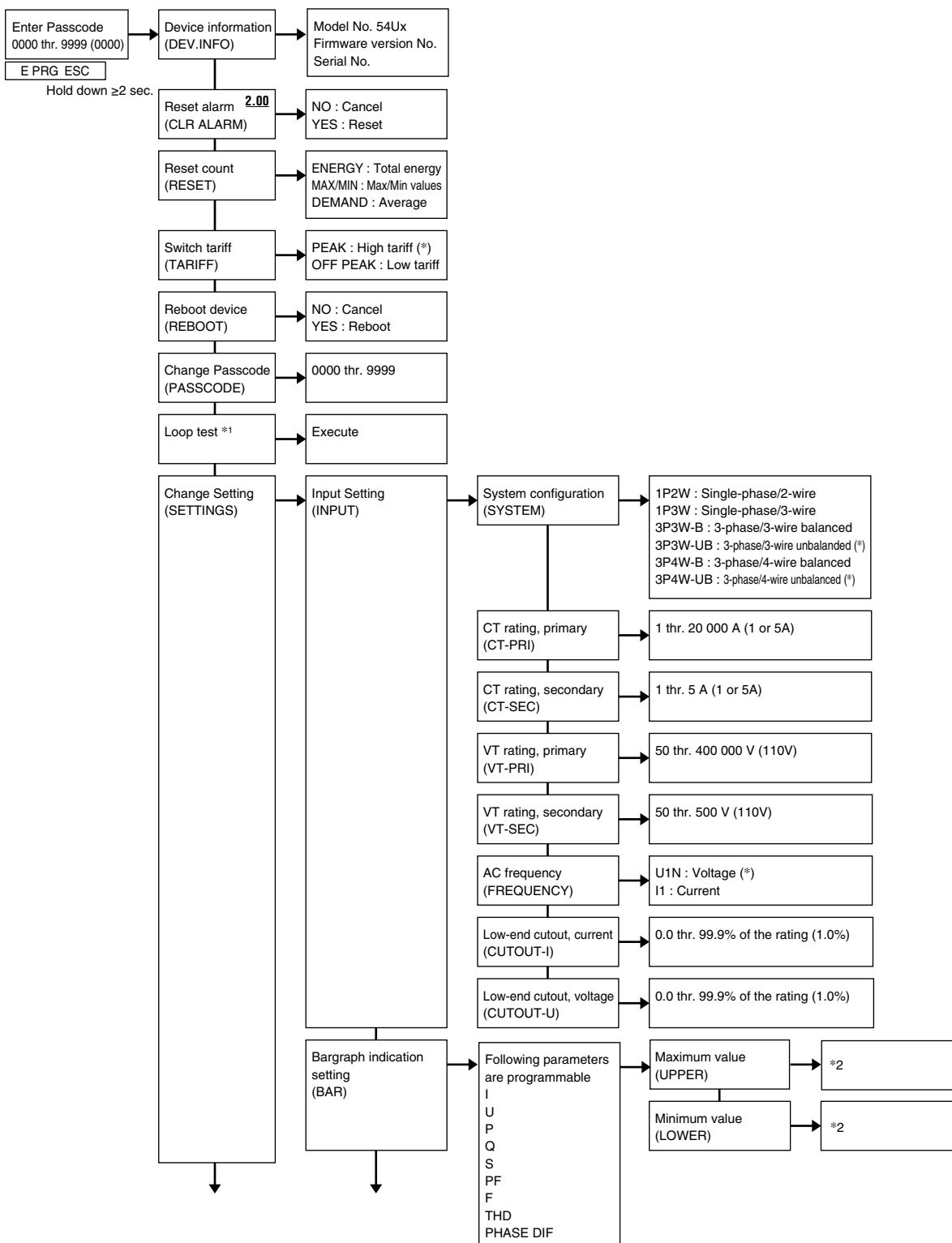
OL or ERR reading flashes in case of errors. Refer to "ERROR MESSAGES" section for detailed information.

PROGRAMMING FLOWCHART

PF THD ↑ PQS ↓ : Move between menu items

MAX ← : Select

E PRG ESC : Go up one level in the chart



(*) or () : Factory setting

System configuration factory setting

54U-1: 3P3W-UB

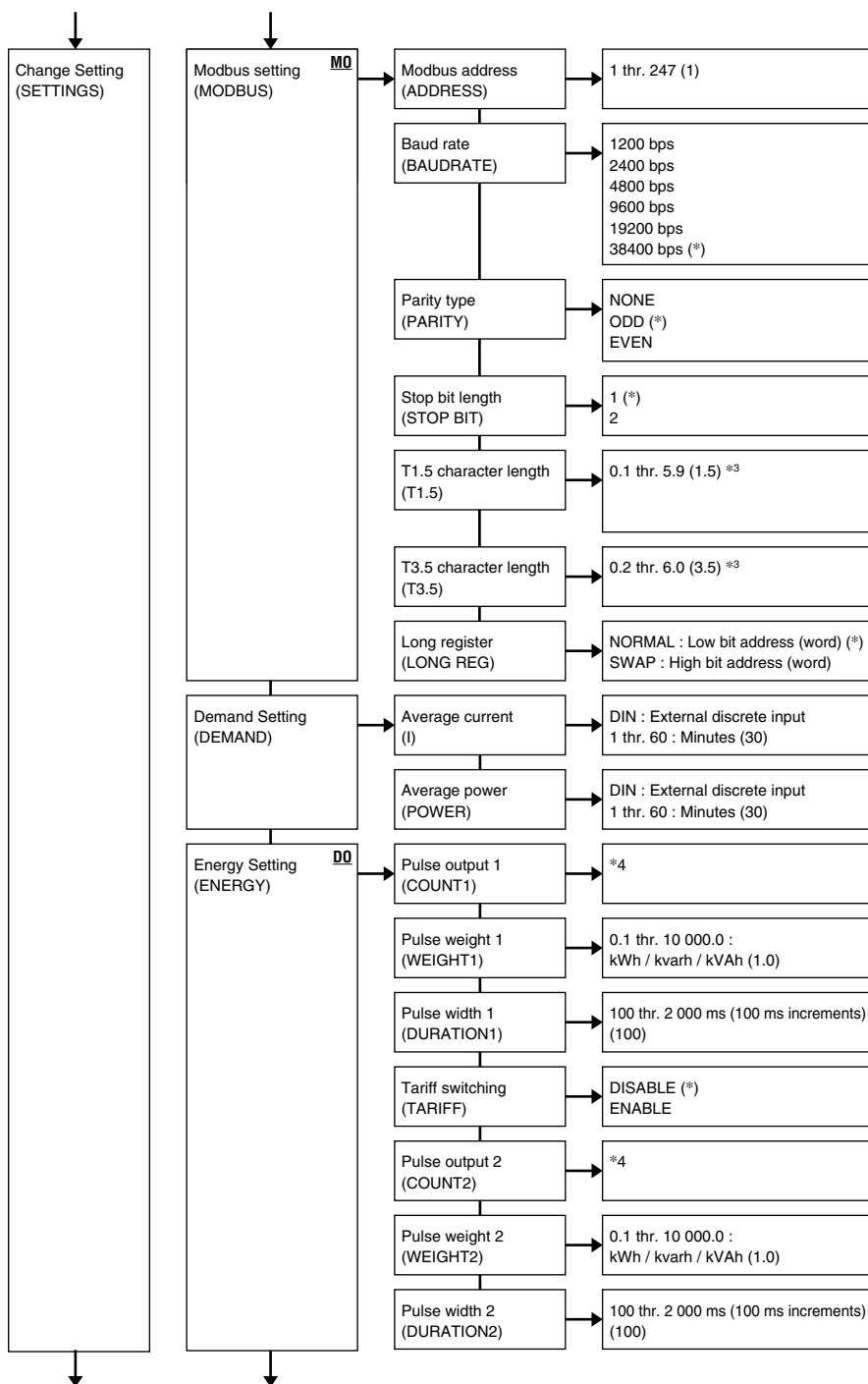
54U-2: 3P4W-UB

*1. Simulated output without applying actual input signals.

[Loop Test]

Press MAX ← button to switch among outputs. Press Σ ← IU → PQS ↓ PF THD ↑ buttons to increase/decrease output signal or to change output status (ON or OFF).

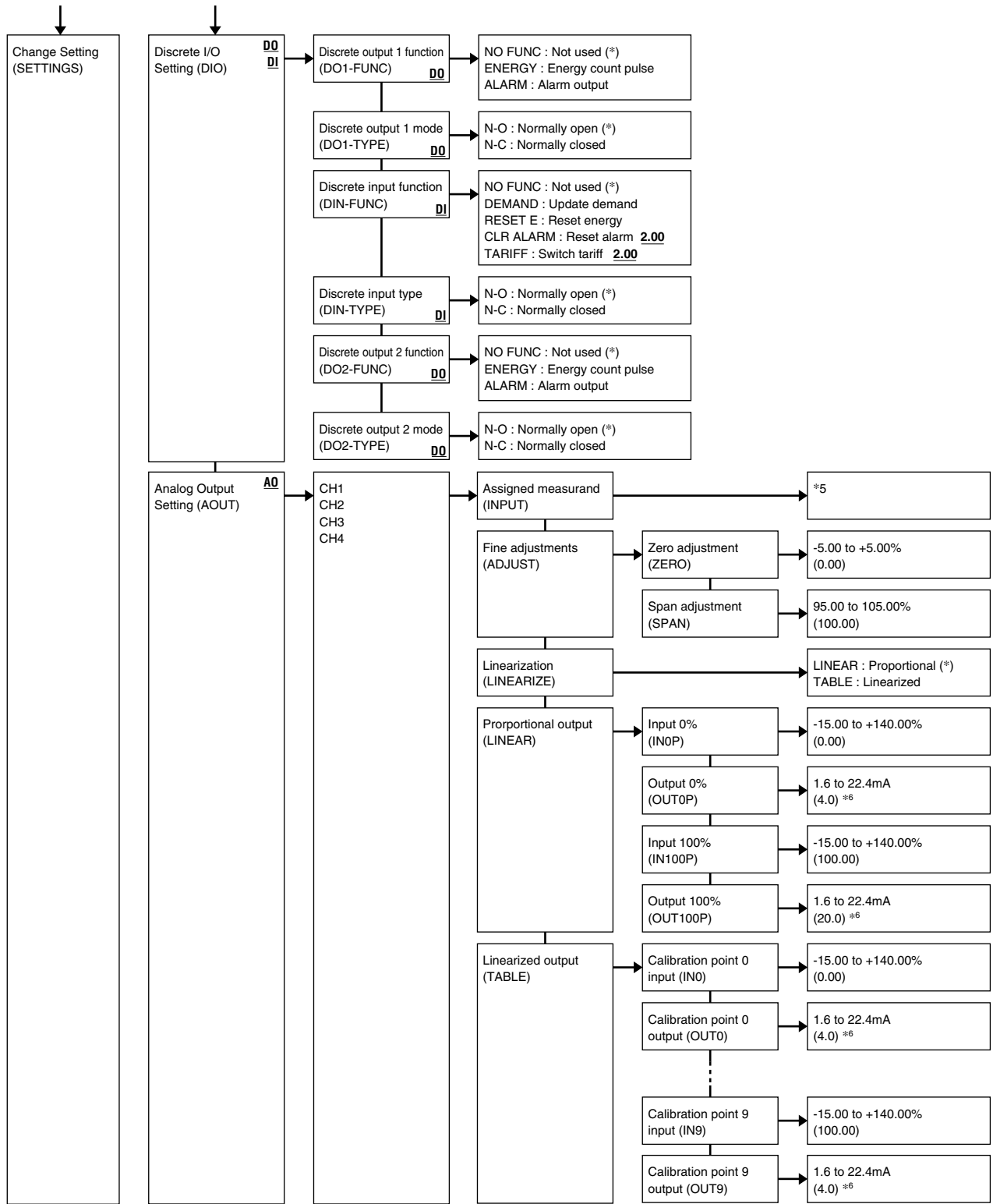
*2. Bi-directional indication is available when the maximum value is 0. Refer to "SETTING BARGRAPH INDICATION" in "SETTING EXAMPLE" section.



(*) or () : Factory setting

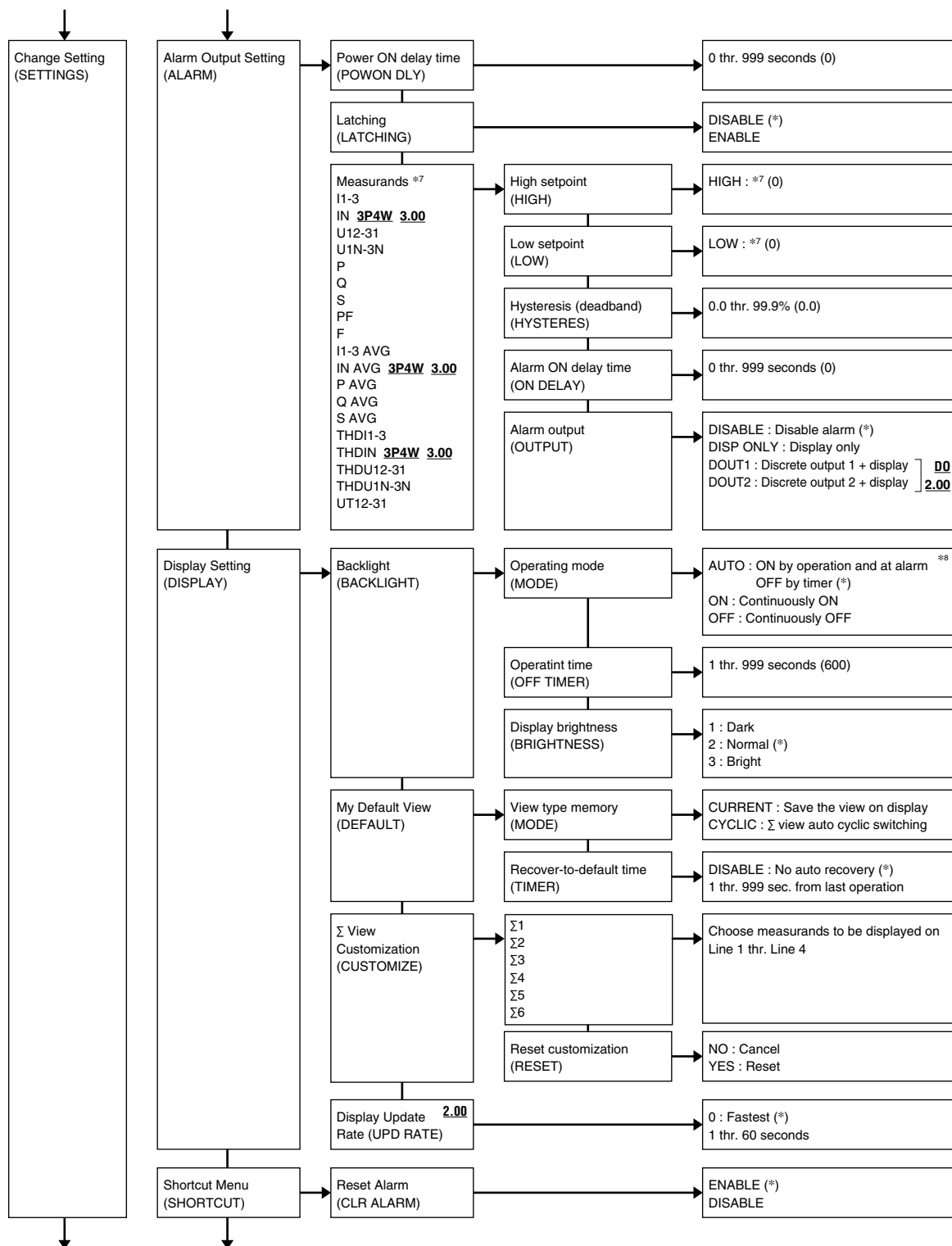
*3. $0.1 \leq T1.5 \text{ character length} < T3.5 \text{ character length} \leq 6.0$

*4. Refer to Modbus - Setting - Energy setting - Energy count type, for selectable options.



(*) or () : Factory setting

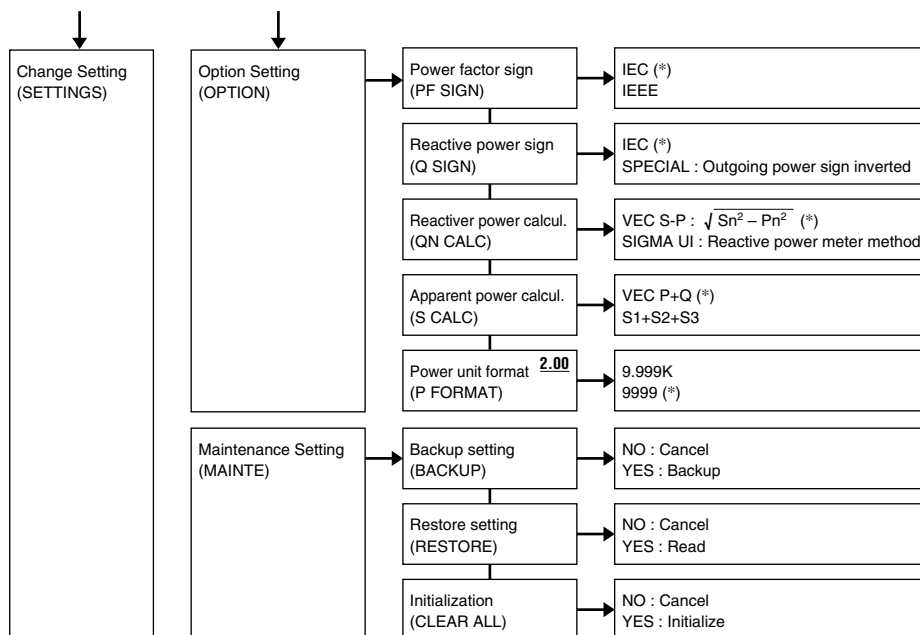
*5. Refer to "PARAMETERS TO BE ASSIGNED ANALOG OUTPUTS."
*6. 0.4 to 5.6V for voltage output.



(*) or () : Factory setting

*7. Refer to "ALARM OUTPUT SETTING."

*8. The backlight turns on regardless of this setting in case of alarms/errors.



(*) or () : Factory setting

ALARM OUTPUT SETTING

ID *1	DEFINITION	LOW SETPOINT	HIGH SETPOINT	UNIT
I1-3	Current, Line 1 thr. Line 3	0.000	20 000.000	A
IN	Neutral current 3P4W 3.00	0.000	20 000.000	A
U12-31	Delta voltage, Line 1 - 2, 2 - 3, 3 - 1	0.00	400 000.00	V
U1N-3N	Phase voltage, Phase 1 thr. Phase 3	0.00	400 000.00	V
P	Active power	-2 000 000 000	2 000 000 000	W
Q	Reactive power	-2 000 000 000	2 000 000 000	var
S	Apparent power	0	2 000 000 000	VA
PF	Power factor	-1.0000	1.0000	---
F	Frequency	45.00	65.00	Hz
I1-3 AVG	Average current, Line 1 thr. Line 3 (demand)	0.000	20 000.000	A
IN AVG	Average neutral current (demand) 3P4W 3.00	0.000	20 000.000	A
P AVG	Average active power (demand)	-2 000 000 000	2 000 000 000	W
Q AVG	Average reactive power (demand)	-2 000 000 000	2 000 000 000	var
S AVG	Average apparent power (demand)	0	2 000 000 000	VA
THD I1-3	THD, Current, Line 1 thr. Line 3	0.0	999.9	%
THD IN	THD, Neutral current 3P4W 3.00	0.0	999.9	%
THD U12-31	THD, Delta voltage, Line 1 - 2, 2 - 3, 3 - 1	0.0	999.9	%
THD U1N-3N	THD, Phase voltage, Phase 1 thr. Phase 3	0.0	999.9	%
UT12-31	Phase angle between voltages, Phase 1 - 2, 2 - 3, 3 - 1	-180	180	°

*1. Indicated while in alarm conditions.

PARAMETERS TO BE ASSIGNED TO ANALOG OUTPUTS

SYMBOL	DEFINITION
CT1	CT primary rating
VT1	VT primary rating
1P2W	Single-phase/2-wire
1P3W	Single-phase/3-wire
3P3W-B	3-phase/3-wire balanced
3P3W-UB	3-phase/3-wire unbalanced
3P4W-B	3-phase/4-wire balanced
3P4W-UB	3-phase/4-wire unbalanced
P	CT1 × VT1 × n n=1P2W: 1, 1P3W: 2, 3P3W: $\sqrt{3}$, 3P4W: 3

ID	DEFINITION	RANGE (0 to 100%)	1P2W	1P3W	3P3W-B	3P3W-UB (2CT)	3P3W-UB (2CT)	3P4W-B	3P4W-UB
NO ASSIGN	Not assigned*1		✓	✓	✓	✓	✓	✓	✓
I	Current	0 to CT1	✓	✓	✓	✓	✓	✓	✓
U	Voltage	0 to VT1	✓	✓	✓	✓	✓	✓	✓
P	Active power	±P	✓	✓	✓	✓	✓	✓	✓
Q	Reactive power	±P	✓	✓	✓	✓	✓	✓	✓
S	Apparent power	0 to P	✓	✓	✓	✓	✓	✓	✓
PF	Power factor	-1.0000 to +1.0000	✓	✓	✓	✓	✓	✓	✓
F	Frequency	45.00 to 65.00	✓	✓	✓	✓	✓	✓	✓
I1	Current, Line 1	0 to CT1	✓	✓	✓	✓	✓	✓	✓
I2	Current, Line 2	0 to CT1			*	*	✓	*	✓
I3	Current, Line 3	0 to CT1		✓	*	✓	✓	*	✓
IN	Neutral current 3P4W 3.00	0 to CT1		✓					✓
U12	Delta voltage, Line 1 – 2	0 to VT1			✓	✓	✓	✓	✓
U23	Delta voltage, Line 2 – 3	0 to VT1			✓	✓	✓	✓	✓
U31	Delta voltage, Line 3 – 1	0 to VT1		✓	✓	✓	✓	✓	✓
U1N	Phase voltage, Phase 1	0 to VT1	✓	✓				✓	✓
U2N	Phase voltage, Phase 2	0 to VT1						*	✓
U3N	Phase voltage, Phase 3	0 to VT1		✓				*	✓
P1	Active power, Phase 1	± (VT1 × CT1)	✓	✓				✓	✓
P2	Active power, Phase 2	± (VT1 × CT1)						*	✓
P3	Active power, Phase 3	± (VT1 × CT1)		✓				*	✓
Q1	Reactive power, Phase 1	± (VT1 × CT1)	✓	✓				✓	✓
Q2	Reactive power, Phase 2	± (VT1 × CT1)						*	✓
Q3	Reactive power, Phase 3	± (VT1 × CT1)		✓				*	✓
S1	Apparent power, Phase 1	0 to (VT1 × CT1)	✓	✓				✓	✓
S2	Apparent power, Phase 2	0 to (VT1 × CT1)						*	✓
S3	Apparent power, Phase 3	0 to (VT1 × CT1)		✓				*	✓
PF1	Power factor, Phase 1	-1.0000 to +1.0000	✓	✓				✓	✓
PF2	Power factor, Phase 2	-1.0000 to +1.0000						*	✓
PF3	Power factor, Phase 3	-1.0000 to +1.0000		✓				*	✓
THD I1	THD, Current, Line 1	0.0 to 100.0	✓	✓	✓	✓	✓	✓	✓
THD I2	THD, Current, Line 2	0.0 to 100.0					✓		✓
THD I3	THD, Current, Line 3	0.0 to 100.0		✓		✓	✓		✓
THD IN	THD, Neutral current 3P4W 3.00	0.0 to 100.0		✓					✓
THD U12	THD, Delta voltage, Line 1 – 2	0.0 to 100.0			✓	✓	✓	✓	✓
THD U23	THD, Delta voltage, Line 2 – 3	0.0 to 100.0			✓	✓	✓	✓	✓
THD U31	THD, Delta voltage, Line 3 – 1	0.0 to 100.0		✓	✓	✓	✓	✓	✓
THD U1N	THD, Phase voltage, Phase 1	0.0 to 100.0	✓	✓				✓	✓
THD U2N	THD, Phase voltage, Phase 2	0.0 to 100.0						✓	✓
THD U3N	THD, Phase voltage, Phase 3	0.0 to 100.0		✓				✓	✓

ID	DEFINITION	RANGE (0 to 100%)	1P2W	1P3W	3P3W-B	3P3W-UB (2CT)	3P3W-UB (2CT)	3P4W-B	3P4W-UB
T-Q	Reactive power for bidirectional current		✓	✓	✓	✓	✓	✓	✓
T-PF	Power factor for bidirectional current		✓	✓	✓	✓	✓	✓	✓

✓: Measurable

* : Measured values calculated from the other inputs are calculated.

*1. If it is set to "NO ASSIGN," the last value will be held until the power is turned off.

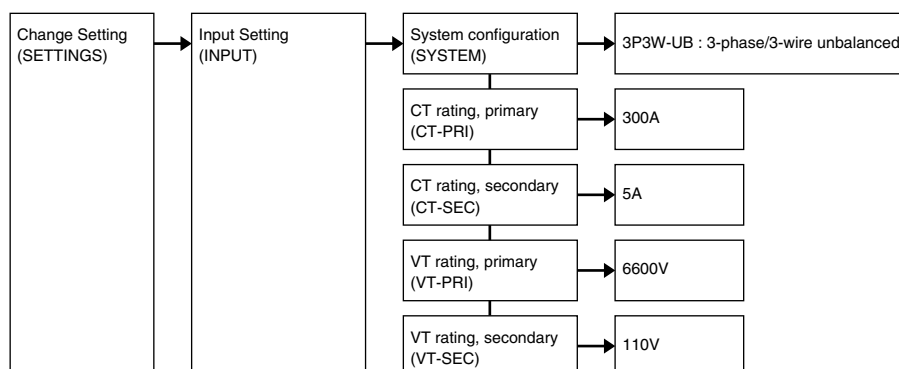
SETTING EXAMPLES

■ SETTING INPUT CONFIGURATION

Input system: Three-phase / 3-wire, unbalanced load

CT ratio: 300 A / 5 A

VT ratio: 6600 V / 110 V



■ **SETTING BARGRAPH INDICATION (Refer to “PROGRAMMING FLOWCHART” in “OPERATION FLOWCHART” section.)**

Current range: 0 – 150 A

Voltage range: 0 – 9000 V

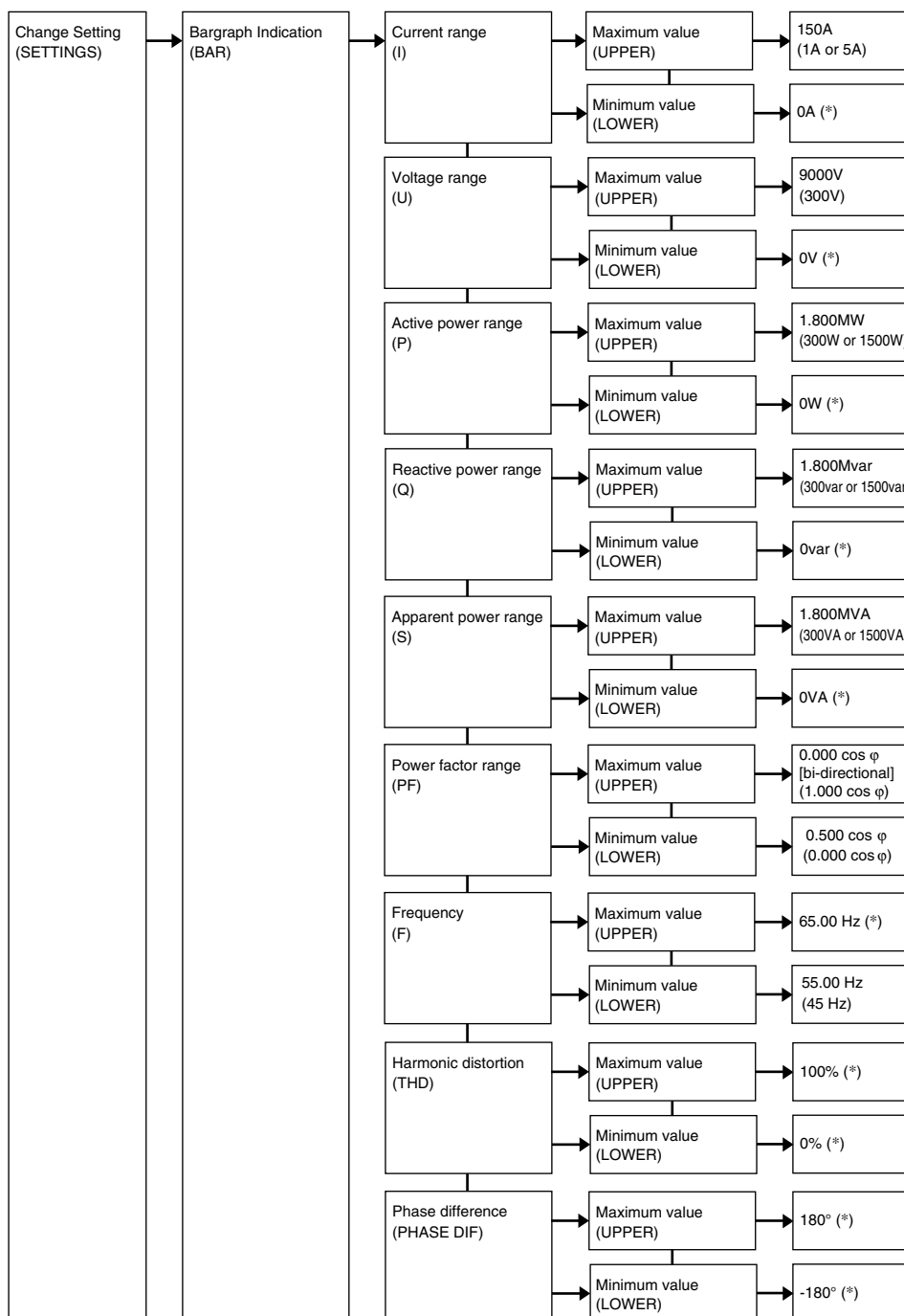
Active power range: 0 – 1.800 MW

Reactive power range: 0 – 1.800 Mvar

Apparent power range: 0 – 1.800 MVA

Power factor range: LEAD 0.5 – 1 – LAG 0.5 (bi-directional)

Frequency: 55 – 65 Hz



(*) or (): Factory setting

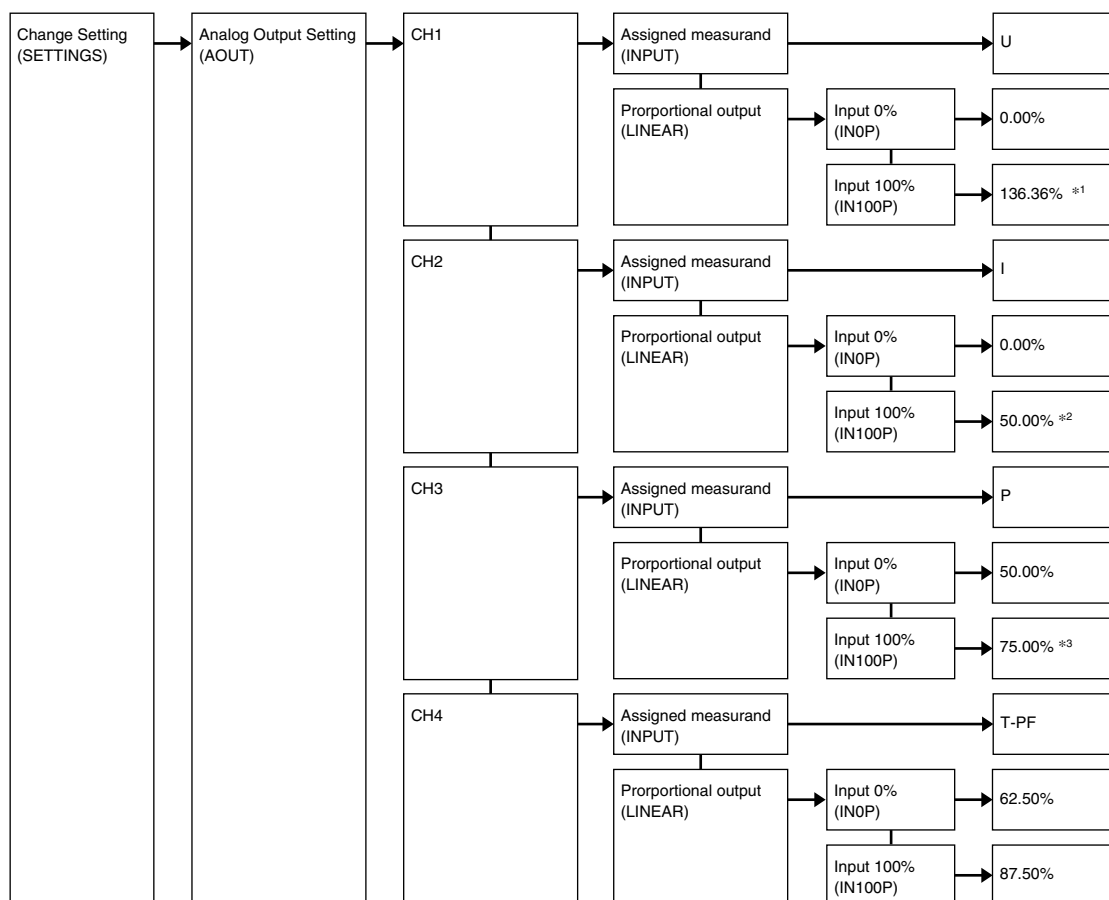
■ SETTING ANALOG OUTPUT

CH1: Voltage, 0 – 9000 V input, 4 – 20 mA output

CH2: Current, 0 – 150 A input, 4 – 20 mA output

CH3: Active power, 0 – 1715 kW, 4 – 20mA output

CH4: Power factor, LEAD 0.5 – 1 – LAG 0.5, 4 – 20 mA output



*1. 9000 = 1.36 x 6600 (primary VT rating)

*2. 150 = 0.5 x 300 (primary CT rating)

*3. 1715 kW = 75% of the full scale range -3429 to +3429 kW (6600 x 300 x 3 / $\sqrt{3}$)
0 = 50% of the full scale range -3429 to +3429 kW.

■ SETTING ALARM OUTPUT

Measurand: Current

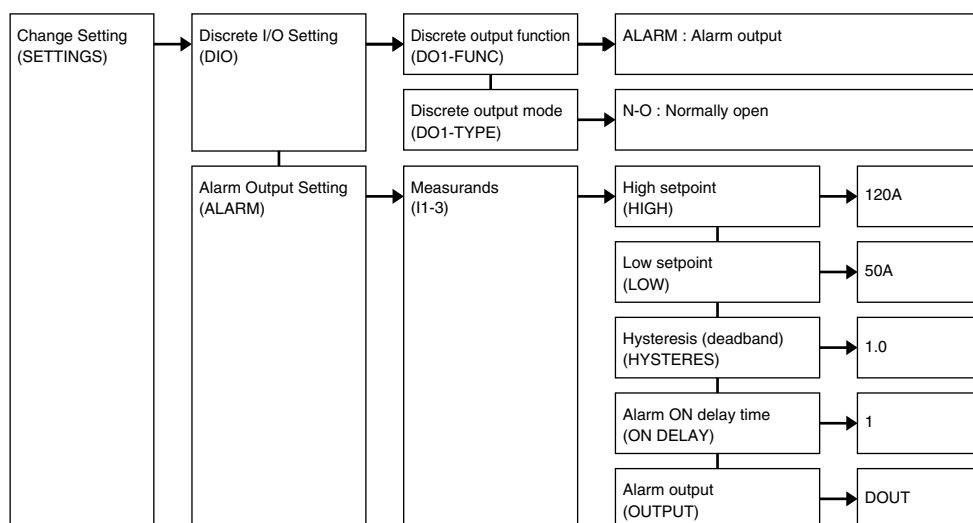
Low setpoint: 50 A

High setpoint: 120 A

Hysteresis (deadband): 1%

Alarm ON delay time: 1 second

Discrete output: DO1



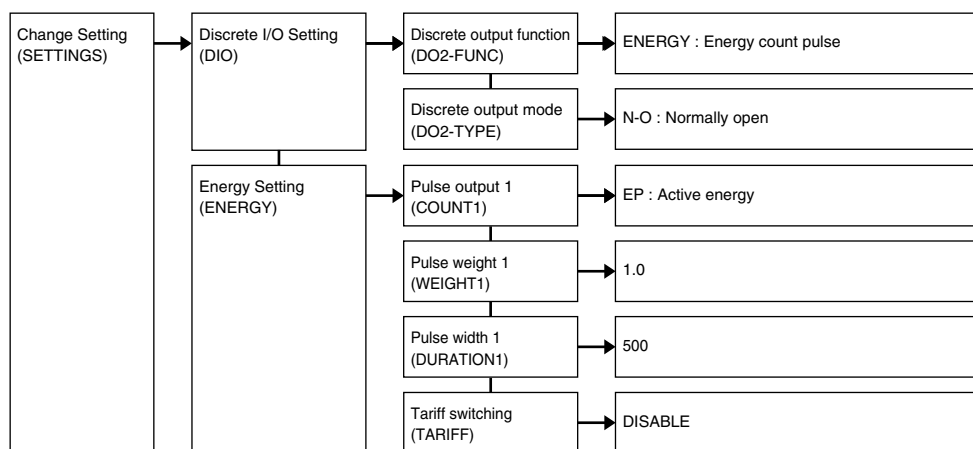
■ SETTING ENERGY COUNT OUTPUT

Measurand: Active energy

Pulse weight: 1 kWh/count

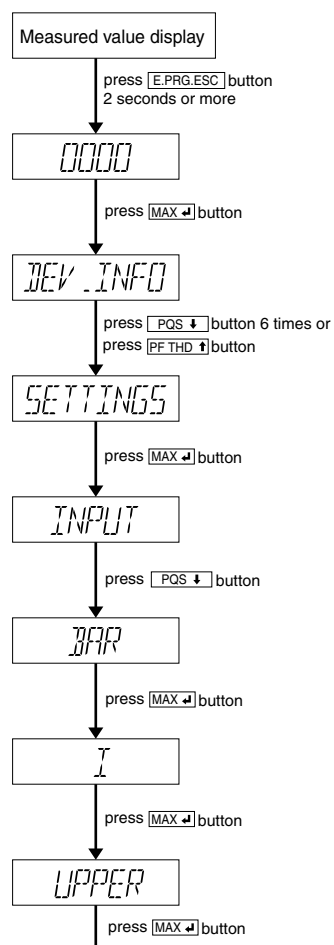
ON pulse width: 500 msec.

Discrete output: DO2

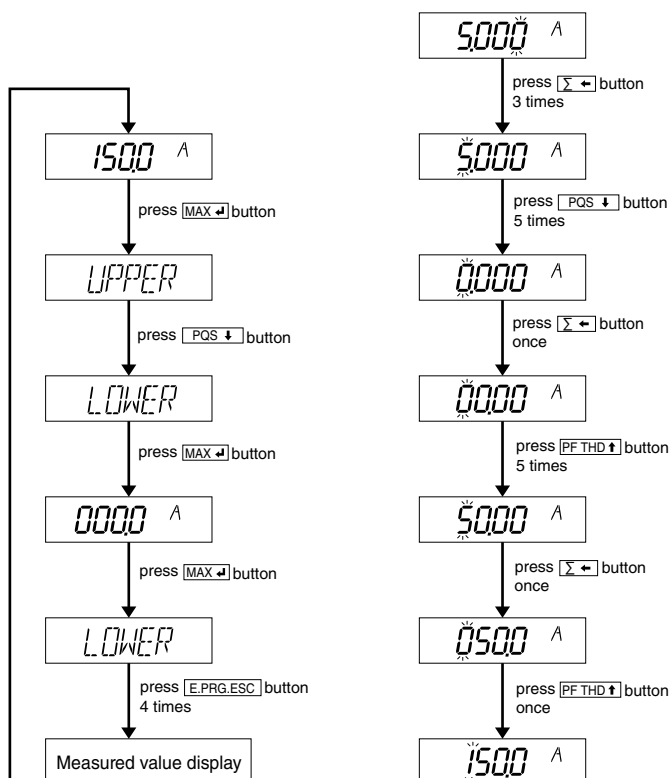


OPERATION EXAMPLES

■ HOW TO SET BARGRAPH INDICATION



■ HOW TO CHANGE VALUES (e.g. 5.000A to 150.0A)



Press [POS ↓] [PF THD ↑] to increase or decrease the value.

Press [Σ ←] [IU →] to move between digits.

Pressing [Σ ←] at the leftmost digit shifts the value on display to the right by 1 digit.
The decimal point and unit are also switched to appropriate ones.

ERROR MESSAGES

ERR024

'ERR' followed by numerical figures means a system error. Each figure indicates a particular system error status if there are more than one digit of figures.

FIG	ERROR DIAGNOSTICS	WHAT TO DO
1	Firmware destroyed	Repair at the factory
2	Calibration data destroyed	Repair at the factory
3	System parameters destroyed System parameters stored in the device are destroyed, often due to excessive noise interference.	Initialize the system parameters and set them up again. Go to SETTINGS → MAINTEN → ALL CLEAR → YES
4	Energy reading data destroyed Energy reading data stored in the device are destroyed, often due to excessive noise interference.	Reset the energy readings (all energy and time count) to zero. Go to RESET → ENERGY
5	Average (demand) data destroyed Average (demand) data stored in the device are destroyed, often due to excessive noise interference.	Reset the average readings to zero. Go to RESET → DEMAND
6	Statistical data destroyed Statistical data (e.g. MAX/MIN values) stored in the device are destroyed, often due to excessive noise interference.	Reset the statistical data to zero. Go to RESET → MAX/MIN

OL FIU

'OL' followed by a space and alphabets means an input overload error. Each alphabet indicates a particular input error if there are more than one digit of alphabets.

CHR	ERROR DIAGNOSTICS	WHAT TO DO
F	Either U1N or I1 (selectable) input is lost or the input line frequency is out of measurable range (45 – 65 Hz).	Check the input signals/wiring.
I	Either of the current inputs is overload (120% or more of the rating).	Check the input signals.
U	Either of the voltage inputs is overload (120% or more of the rating).	Check the input signals.