





Display Screen

1) 1st display

Displays the measurement value or type of setting data.

2) 2nd display

Displays the unit or the parameter name of the measurement data or setting data. 3) Operation display

· OUT1: The light turns ON in conjunction with the output set to the OUT1 terminal. · STOP: Lights ON when power is supplied after the time measurement function stops following back-up power failure during power OFF. Lights OFF by setting time data. When using the product with lights ON, measurement data log cannot be recorded. • On (Key): Lights ON at protect setting.

4) Temperature unit

When selecting Celsius in the temperature unit setting, °C is shown. When choosing Fahrenheit, °F is shown.

Segment display

	Α	В	С	D	Е	F	G	Н	Ι	J	K	L	Μ	Ν	0	Ρ	Q	R
7SEG	R	Ь	Ε	d	Ε	F	ū	Н	Ē	Ē	μ	L	ñ	п	ō	Р	9	r
11SEG	R	Ь	Ε	d	Ε	F	ū	Н	Ē	Ъ	K	L	М	N	ō	Р	IJ	R
	IS	Т	U	l v l	W	X	Y	Z	0	1	2	3	4	5	6	7	8	9
7SEG	S 5	Т Ł	U U	V u	W U	X ū	Ү У	Z	0 ū	1	2 2	3 3	4 4	5 5	6 5	7 7	8 8	9 5

Basic usage

Setting Examples				
Applicable circuit type: 1-phase 3-wire				
Dedicated CT type: 5ACT				
Time: March 5, 2010, 17:15				

A. After checking the wiring, turn ON the power supply.

"YM501" is displayed and EEPROM is read ("WR12" is displayed for 16 sec max). When the power is turned ON for the first time, "E - L is displayed and STOP turns ON because time has not been set. 3 sec later, active power in measurement mode is displayed. (STOP remains ON).

B. Set applicable circuit type to 1-phase 3-wire.

- 1. Press the 🖃 key for more than 3 sec to go to applicable circuit type "DDL YP" in operation setting mode.
- Press the key to shift to setting state. Press the key to change the applicable circuit type from "∃P∃¼" to " IP∃¼", and then press the key to confirm.

C. Set dedicated CT type to 5ACT.

1. Press the ≫ key to move to dedicated CT type "□ I.E.P.L".

2. Press the likely to shift to setting state. Press the likely to change the dedicated CT type from " IDDR" to "5R", and then press the □ key.

D. Set the time to March 5, 2010, 17:15.

To use the log function, time setting is required.
1. Press the ≫ key to move to time setting " I !L ⊂ M".
2. Press the ≪ key to shift to setting state. Check that the year is "20 !l^m, and then press the ○ key.

- Change the value of Month/Date with the key and shift the digit with the key to change the value from "□ 1/□ 1" to "□ 3/□5", and then press the key.
 Change the value of Hour-Minute with the key and shift the digit with the key to change the value from "□ -□□" to " 1" 15", and then press the key. The content of the time setting will be saved and STOP will be turned OFF. 5. Press the 🖃 key for more than 3 sec to move to measurement mode
- (measurement start). When you move to measurement mode, the setting will be saved and "5RVE" is displayed. This completes the basic settings.

Mode configuration and key operation

1) Mode configuration

Mode Group			Meaning	Necessity of operation and setting
Measu mode	rement	Basic level	Read the measurement data of the basic level	Operate only at reading
Pro level		Pro level	Read the measurement data of the Pro level	Operate only at reading
Protect	t setting mode	•	Limit the function	Set only when needed
Setting	Operation	Basic level	Set the basic level function	Setting required at first setting
mode	setting mode	Pro level	Set the Pro level function	Set only when needed
Communication setting mode		ion	Set the communication function	Set only when using the communication function

2) Key operation Monitoring state is a state in which setting value is displayed in protect setting mode and setting mode. Setting state is a state in which setting can be changed.

Symbol	Basic Meaning	IVIOde	State	Operation	Description	
O ENTER key	Mode switching Determination	Measurement mode	Measurement history (current day)	press for more than 3 sec	Clear the currently displayed MAX and MIN value of the present day.	
		Protect setting mode, Setting mode	Setting state	click	Determine the setting value.	
		Operation setting mode	Monitoring state	click	Move to communication setting mode.	
		Communication setting mode	Monitoring state	click	Move to operation setting mode.	
C MODE key	Mode switching Cancel	Measurement mode	Present measurement value, measurement history	press for more than 3 sec	Move to operation setting mode.	
			Measurement history	click	Move to present measurement value.	
		Setting mode	Monitoring state	press for more than 3 sec	Move to measurement mode.	
			Setting state	click	Cancel setting state.	
		Measurement mode, Setting mode	Pro level	click	Move to "PROLV" of the basic level.	
>	 Transition 	Measurement mode	Present measurement value	click	Change parameters.	
SHIFT key			Measurement history	click	Switch measurement history display.	
		Setting mode	Monitoring state	click	Change parameters.	
			Setting state	click	Change digits.	
*	Shift to	Measurement mode	Present measurement value	click	Move to measurement history.	
UP key	setting state		Measurement history	click	Move from measurement history.	
	setting value	Setting mode	Monitoring state	click	Shift to setting state.	
			Setting state	click	Change the setting value.	
		Measurement mode, Setting mode	Basic level ("PROLV" remains displayed)	click	Move to Pro level.	
@+»	Reverse	Reverse	Measurement mode	Present measurement value	click	Change parameters in reverse.
(Press the 🔊	transition		Measurement history	click	Switch the measurement history display.	
the 📼 key)		Setting mode	Monitoring state	click	Change parameters in reverse.	
			Setting state	click	Change digits in reverse.	
P+& (Press the & key while	· Change the	Measurement mode	Measurement history	click	Transit measurement history in reverse.	
holding the 🖂 key)	in reverse	Setting mode	Setting state	click	Change the setting value in reverse.	
@+0	·Mode switching	Measurement mode	Present measurement value, measurement history	press for more than 3 sec	Move to protect setting mode.	
		Protect setting mode	Monitoring state	press for more than 3 sec	Move to measurement mode.	

■Setting mode

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Ope	ration setting i	ITIQUE DASIC IEVEI			
Item		Setting range (1st display)	2nd display	Initial value	Remarks
Applica	Applicable circuit type IP2W, IP3W, 3P3W		00.E YP	ЗРЗW	IP2W: 1-phase 2-wire, IP3W: 1-phase 3-wire, 3P3W: 3-phase 3-wire
Dedicat	ed CT type	SA, SOA, IOOA, 200A, 400A, 600A	O I.C.RG	IDDR	
Rated pri	mary side current value	5 to 9999	02.5CE	5	Effective only when the dedicated CT type is 5A.
VT setting	VT primary side voltage value	NōNE, 220, 440, 3300, 6600, 11000, 22000, 33000	03.¥.RG	Näne	When the simple measurement is ON, sequentially measure the reactive voltage, VT primary voltage,
	VT secondary side voltage value	1 10, 220	¥.RG2	110	and VT secondary voltage. Unit: V
Current	low-cut value	0. I to 19.9	04.CUE	0.6	Unit: %
Pulse o	utput unit	I, IO, IOO, IK, 2K, 5K, IOK, 2OK, 5OK, IOOK	05.PL 5	100	Unit: Wh
Display	refresh period	öFF, 0.5, 1.0, 2.0, 4.0	06.REF	1.0	GFF is instantly updated. Unit: Sec
Averagi	ng times.	öFF, 2, 4, 8, 16, 32, 64, 128, 256, 5 12, 1024	07.RV G	8	
Simple measureme	Simple measurement	āFF, āN	08.5MP	ōFF	At ON, set voltage and power factor, Frequency is 50 Hz fixed.
setting	Fixed voltage value.	0.0 to 9999.9	<i>V</i> LE	1 10.0	Can be set only at simple measurement ON.
	Fixed power factor value.	0.00 to 1.00	PF	1.00	Can be set only at simple measurement ON.
CO ₂ cor	nversion factor	0.000 to 99.999	10.052	0.387	Unit: kg-CO₂/kWh
Charge (Rate s unit set	econversion setting etting and price ting)	0.000 to 99.999 JPY, USJ, EUR, ENY, KRW R to Z, 0 to 9, 7, -, _ (Space)	I I.E.H.G	10.000 JPУ	Sequentially set the rate and price unit display. 4-digit price unit can be set.
Pulse conversion 1 setting (Pulse conversion target, factor, decimal point position and display unit)		E - E.d, E - I.d, E - 2.d, E - E.A, E - I.A, E - 2.A 0000 to 9999 0000, 000.0, 00.00, 0.000 A to Z, 0 to 9, 7, -, - (Space)	12.57 1	C - I.d 000 I 0000 M3- I	Sequentially set the pulse conversion target, conversion factor, display unit. 4-digit display unit can be set. L - L d: Sum of pulse input counts L - L d: Pulse input count 1 L = L d: Pulse input count 1
Pulse c (Pulse factor, c position	onversion 2 setting conversion target, decimal point and display unit)	E - E.d, E - I.d, E - 2.d, E - E.R, E - I.R, E - 2.R 0000 to 9999 0000, 000.0, 00.00, 0.000 R to Z, 0 to 9, 7 , -, _ (Space)	13.072	6-2.4 1 000 0000 0000	L = 2.8: Pulse input count 2 L = L.R: Sum of total pulse input counts L = 1.R: Total pulse input count 1 L = 2.R: Total pulse input count 2
Time se (Year, n hour/mi	etting honth/day, nute)	20 10 to 2099 0 1/0 1 to 1273 1 00-00 to 23-59	14.EĨM	20 10 0 1/0 1 00-00	Year, month/day, and hour/minute should be set continuously. If it was canceled in process, all values will return to previous values. As soon as setting hour and minute, the settings are reflected.
Initialization		SEE, MRX, MEN, ENEEG, M.PRA, LAG, ALL	IS.ENE	SEE	 5EE: Initialize all setting values except time setting. MRX: Initialize all the max value of parameters of the present day. MI: NI: Initialize all the min value of parameters of the present day. INE EG: Initialize the total integral power consumption. MPRG: Initialize the measurement values in the Provel in measurement mode of the present day. Initialize all the measurement histories. RLL: Initialize set values other than clock time and all measurement histories.
Moving Setting	average time	00 / to 120	16.RV E	120	Set the moving average time of the Moving average Current. Cancel it during the input or set a value out of the range, come back before a change.

Operation setting mode Pro level

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I	tem	Setting range (1st display)	2nd display	Initial value	Remarks
Event input s	setting	P.E.SP, H-āN, 3-5E	30.225	P.E 5P	P.£5P: Electric power consumption rate, H - āN: Pulse input ON time, ∃ - 5৮: 3-STATE
Event input 1 input mode s	I NPN/PNP setting	NPN, PNP	3 I.PN I	PNP	NPN: None voltage input PNP: Voltage input
Event input 2 input mode s	2 NPN/PNP setting	NPN, PNP	32.PN2	PNP	NPN: None voltage input PNP: Voltage input
Event input 1 input mode s	I N-O/N-C setting	N-ō, N-E	33.EN I	N-ā	N-ā: Normally open N-E: Normally close
Event input 2 input mode s	2 N-O/N-C setting	N-ō, N-C	34.EN2	N-ā	N-ā: Normally open N-£: Normally close
Measuremer	nt start time (*1)	00-00 to 23-59	35.5£[00-00	Time setting later than the measurement end time cannot be made.
Measuremer	nt end time (*1)	00-0 to 24-00	36.270	24-00	Time setting earlier than the measurement start time cannot be made.
Output termi function setti	nal 1 ng	öFF, P.öUE, RLRRM	50.ō I	P.õUŁ	<i>P.āUE</i> : Integral power consumption pulse output, <i>RLRRM</i> : Alarm output, When selecting " <i>RLRRM</i> ", the screen moves to the ON/OFF setting of various alarm outputs.
Active power (Upper/lower hysteresis and	alarm output r thresholds, d OFF-/ON-delay)	0.0 to 150.0 0.0 to 19.9 0.0 to 99.9	52.P.RL (*2)	See the remarks.	Sequentially set the upper/lower thresholds, hysteresis and OFF-/ON-delay. Upper threshold: 80.0%, Lower threshold: 0.0%, Hysteresis: 5.0%, OFF-delay: 3.0 sec, ON-delay: 0.0 sec
Regenerated output (Upper/lower hysteresis and	t power alarm r thresholds, d OFF-/ON-delay)	0.0 to 150.0 0.0 to 19.9 0.0 to 99.9	53.R.AL (*2)	See the remarks.	Sequentially set the upper/lower thresholds, hysteresis and OFF-/ON-delay. Upper threshold: 80.0%, Lower threshold: 0.0%, Hysteresis: 5.0%, OFF-delay: 3.0 sec, ON-delay: 0.0 sec
Current alarm output (Upper/lower thresholds, hysteresis and OFF-/ON-delay)		0.0 to 120.0 0.0 to 19.9 0.0 to 99.9	54.A.AL (*2)	See the remarks.	Sequentially set the upper/lower thresholds, hysteresis and OFF-/ON-delay. Upper threshold: <i>I</i> III.II%, Lower threshold: II.II%, Hysteresis: 5.II%, OFF-delay: J.II sec, ON-delay: II.II sec
Voltage alarm output (Upper/lower thresholds, hysteresis and OFF-/ON-delay)		0.0 to 120.0 0.0 to 19.9 0.0 to 99.9	55.1′.RL (*2)	See the remarks.	Sequentially set the upper/lower thresholds, hysteresis and OFF-/ON-delay. Upper threshold: 1 10.0%, Lower threshold: 0.0%, Hysteresis: 5.0%, OFF-delay: 3.0 sec, ON-delay: 0.0 sec
Power factor (Upper/lower hysteresis and	alarm output r thresholds, d OFF-/ON-delay)	0 to 100 0 to 19 0.0 to 99.9	56.PF.R (*2)	See the remarks.	Sequentially set the upper/lower thresholds, hysteresis and OFF-/ON-delay. Upper threshold: 100%, Lower threshold: 0%, Hysteresis: 5%, OFF-delay: 3.0 sec, ON-delay: 0.0 sec
Reactive pov (Upper/lower hysteresis and	ver alarm output r thresholds, d OFF-/ON-delay)	0.0 to 150.0 0.0 to 19.9 0.0 to 99.9	57.0.AL (*2)	See the remarks.	Sequentially set the upper/lower thresholds, hysteresis and OFF-/ON-delay. Upper threshold: 80.0%, Lower threshold: 80.0%, Hysteresis: 5.0%, OFF-delay: 3.0 sec, ON-delay: 8.0 sec
Integral powers aving select	er consumption tion	-W, V AR.d, V AR.G, V AR.A	60.C.SL	- W	- #: Integral regenerated power consumption #RR.d: Integral leading reactive power consumption #RR.f: Integral lagging reactive power consumption #RR.R: Integral total reactive power consumption
Automatic rotatio	n Automatic rotation	ōFF, ōN	6 I.REE	ōFF	At ON, set the transition time.
setting	Transition time	/ to 99	REIM	3	Can be set only at automatic rotation ON.
Measuremer display selec	nt parameter stion	ōFF, ōN	62.d.5L	See the remarks.	Set it for each parameter of the measurement mode. For the charge conversion value, pulse conversion 1 and 2, integral regenerated power consumption, integral leading/lagging/total reactive power consumptions and simple temperature, these initial values are <i>aFF</i> .
Display lighti	ng time	0 to 99	63.d5P	0	🛙 is always lighting, Unit: Min
Incorrect volta	ge wiring detection	oFF, ōN	64.V - E	οN Γ	Convertible opt the temperature with and the temperature
setting	Temperature unit Temperature correction value	- 50.0 to 50.0	25.0-U E.Rd	0.0	correction value. £: Celsius, Unit: °C, F: Fahrenheit, Unit: °F
*1 It applies	to the pulse inpu	It count, power co	nsumption ration	e, pulse i	nput ON time.

Communication setting mode

Item	Setting range (1st display)	2nd display	Initial value	Remarks
Protocol select	EāMPF, Mādb	80.PSL	EGMPF	LaMPF: CompoWay/F, Madb: Modbus
Unit No.	CompoWay/F: 1 to 99, Modbus: 1 to 99	8 I.U.Nã	1	
Baud rate	I.2K, 2.4K, 4.8K, 9.6K, 19.2K, 38.4K	82.6P5	9.6%	Unit: bps
Data bit length (*1)	Л, В	83.LEN	7	Unit: bit
Stop bit length (*2)	1, 2	84.562	2	Unit: bit
Vertical parity	NōNE, ādd, E¥EN	85.PRŁ	EVEN	
Time to wait for sending	🛙 to 99	86.5 <i>d</i> W	20	Unit: ms

*1 When protocol is Modbus, data bit length is 8-bit fixed.

*2 When protocol is Modbus, stop bit length cannot be set due to automatic setting. When vertical parity is NONE, the length is 2, when vertical parity is ODD or EVEN, the length is 1.

Protect setting mode

	v				
Settina			Limit content		
content	Displayed value transition	Move to setting mode	Move to pro level	Clear measurement history	Change setting content
0	Yes	Yes	Yes	Yes	Yes
1	Yes	Yes	Yes	No	No
2	Yes	Yes	No	No	No

i thresholds or hysteresis is set, the operating value which is converted from the setting value (%) is displayed



easured value	Saving period	Remarks
onsumption	5 min.	Save two days' measured values every 5 min.
	1 hour	Save 25 hours' hourly values which are converted from measured values saved every 5 min.
	1 day	Save 8 days' values measured between 00:00 and 24:00.
	1 month	Save 13 months' values measured for a month.
urrent, voltage and	1 day	Save 8 days' values measured between 00:00 and 24:00.
minimum values)		
e current num values)	-	Save the current maximum values of the moving average time.
		(The moving average current with a product ver.3.0.)
nt	5 min.	Save two days' measured values every 5 min.
consumption rate time	1 day	Save 8 days' values measured between 00:00 and 24:00.
rated power consumption power consumption	5 min.	Save two days' measured values every 5 min. Save only items selected in the setting.
nt inputs	5 min.	Overwrite save the measured value every 5 min.

tion of error	Display	Operation	Restoration method
lock time has not	E-E I	Indicates error at startup and "STOP" is turned ON. Measurement stops and operation disabled during error indication.	Time setting
error)	E-MI	Measurement stop, operation disabled	Hardware repair (*2)
(*1)	E-M2	Measurement stop, operation disabled	Hardware repair (*2)
failed (*1)	E-M3	Measurement stop, operation disabled	Hardware repair (*2)
e error (*1)	E-M4	Measurement stop, operation disabled	Hardware repair (*2)
ge input (*3)	E-5 I	Displays error and measurement value alternately and continues measurement.	Restore the input signal within to the rated range.
ent input (*3)	E-52	Displays error and measurement value alternately and continues measurement.	Restore the input signal within to the rated range.
t error (*3)	E-53	Displays error and measurement value alternately and continues measurement.	Restore the input signal (voltage) within to the rated range.
detection (*4)	E-54	Displays error and measurement value alternately and continues measurement.	Correct the input signal (voltage) wiring in phase sequence.

omenon	Description	Point to be checked
rent are measured er is not correctly	Has CT (Current Transformer) been correctly wired (not in reverse)?	If negative electric power is measured, it might be all the CTs have been mounted oppositely. On the other hand, if the measured value is nearly 0, it might be one of the CTs has been mounted oppositely.
	Is the voltage phase sequence correct?	If the voltage phase sequence is not correct, electric power cannot be measured correctly. Perform correct wiring.