PRODUCT CATALOG

ELECTRONIC OVERLOAD/ LEAKAGE DETECTION METER RELAY

LLC-110/ LLC-110L

ELECTRONIC OVERLOAD/ LEAKAGE DETECTION METER RELAY

LLC-110/ LLC-110L

OUTLINE

* Most suitable for overload monitor and leakage electric current of the constant voltage circuit.Overload current alarm output and leakage alarm output can be extracted.

LLC-110/110L
110*110*105mm (600g)

FEATURES

* Current (R,S,T), leakage current, voltage (RS, ST, TR) can be measured with 1 unit.
* Operating value setting of overload detection is possible.
* Setting for sensibility current value and operation time of leakage detection is possible.

TYPE AND SPECIFICATION CODE

Specification Code

Type — A (3) (4) (5) (6) — (7) (8) (9)

LLC-110
No Backlight
LLC-110L
With Backlight

3) Input Circuit

2	1Φ 3W
3	3Φ 3W
Z	Except Above

4) Input Range

	1Φ 3W
J	150-300, 5A, ZCT
K	150-300, 1A, ZCT
Z	Except Above
	3Φ 3W
J	150V, 5A, ZCT
K	150V, 1A, ZCT
L	300V, 5A, ZCT
M	300V, 1A, ZCT
Z	Except Above

5) Auxiliary Power

1	AC85 - 253V DC80 - 143V For both use
2	DC20 - 56V
Z	Except Above

6) External Operation Input

0	None
1	Display Change
2	Reset
3	Display Change + Reset
Z	Except Above

7) Analog Output *(1)

0	No Analog
1	4 - 20mA
2	0 - 1mA
3	1 - 5V
4	0 - 5V
5	0 - 10V
Z	Analog output Except Above

8) Pulse Output

0	None
1	1 output a contact (Photo MOS relay) *(2)
Z	Except Above

9) Alarm Output

1	1 output a contact leakage (relay)
2	2 output a contact for each (relay) *(1), *(2)
Z	Except Above

Note:
*(1) Meter relay with analog output of leakage current can be manufactured. Alarm output = 1 output of leakage only.
*(2) Meter relay with pulse (Wh) output can be manufactured with following combination.
Pulse (Wh) output + alarm (leakage 1 output) + external operation input (reset)
Pulse (Wh) output + alarm (leakage 1 output)

ELECTRONIC OVERLOAD/ LEAKAGE DETECTION METER RELAY

LLC-110/ LLC-110L

Equipment Specification

Connecting system	Input, auxiliary power part M4 screw
	Output, display change input part M3 screw
LCD	Main monitor : Character height 11mm 4 digits
	Sub monitor (L): Character height 6mm 4 digits
	Sub monitor (R): Character height 6mm 4 digits
	Bar graph: 30 dots
Display update time	Approx. 1 sec. (Bar graph: Approx. 0.25sec.)
Measurement	Three phase current, leakage current, three phase voltage, overload detection, leakage detection
Operating temperature/ humidity range	-10 to +55°C, 30 to 85% RH (No condensation)
Storage temperature range	-25 to +70°C
Material	ABS (V-0) Exterior color: Black (Munsell N1.5)
Mass	600g
Size	Refer to outline drawing (Compatible with wide angle indicator)

Auxiliary Power Specification

Power consumption (With backlight)	AC85 - 253V 50/60Hz	10VA
	DC80 - 143V	5W
	DC20 - 56V	6W
Power consumption (No backlight)	AC85 - 253V 50/60Hz	8VA
	DC80 - 143V	4W
	DC20 - 56V	5W
Rush current (For backlight & No backlight both use)	AC110V	5.3A or less (Approx. 1.6ms)
	AC220V	10.5A or less (Approx. 1.6ms)
	DC110V	3.7A or less (Approx. 1.6ms)
	DC24V	5.0A or less (Approx. 2.0ms)
	DC48V	9.9A or less (Approx. 2.0ms)

ELECTRONIC OVERLOAD/ LEAKAGE DETECTION METER RELAY

LLC-110/ LLC-110L

Input Specification

Input power consumption VA	Voltage circuit rated value: 110V (FS: 150V)		0.25VA or less
	Voltage circuit rated value: 220V (FS: 300V)		0.5VA or less
	Current circuit: 5A, 1A		0.1VA or less
External operation (Display change)	Input specification	Indication reshuffling input: Indication reshuffling is possible by adding a voltage signal, function same as a DISPLAY switch. Reset input: The max. and min., reset of the warning output are possible by adding a voltage signal. Rating same as the auxiliar power , impress smallest pulse width 300ms continuation.	
	Power consumption	AC, DC100/110V	0.4VA, 0.4W
		AC200V/220V	1.4VA
		DC24V	0.3W
		DC48V	1.2W
	Contact capacity	AC, DC100/110V	3mA
		AC200V/220V	6mA
		DC24V	10mA
		DC48V	20mA
Reset input	Power consumption	AC, DC100/110V	0.4VA, 0.4W
		AC200V/220V	1.4VA
		DC24V	0.3W
		DC48V	1.2W
	Contact capacity	AC, DC100/110V	3mA
		AC200V/220V	6mA
		DC24V	10mA
		DC48V	20mA

Output Specification

Analog output: 1 circuit	
Rated value	4-20mA: 550Ω or less, 0-1mA: 10kΩ or less 1-5V: 600Ω or more, 0-5V: 600Ω or more 0-10V: 2kΩ or more
Response time	1 sec. or less. Time to be within ±1 % of final constant value
Output ripple	Less 1% p-p against output span
Alarm output Output element: Overload alarm, leakage alarm	
Output system	Non-voltage 1a contact
Contact capacity	AC250V 8A, DC125V 0.3A (Resistance load) AC250V 2A, DC125V 0.1A (Inductive load)
Pulse output: Output element: watt-hour	
Output system	Photo MOS - FET relay 1a contact
Contact capacity	AC, DC125V 70mA (Resistance load, Inductive load)
Pulse width	250ms ±10% In the case of the output pulse cycle at the ratings electric power becomes the speed of two pulses/ second or more according to ranges setting (the voltage measurement range, the current measurement range, and output pulse unit range), the output pulse width becomes 100 to 130ms. Output pulse cycle = rated power [kW]/ output pulse unit [kWh/ pulse]/ 3600 sec. Refer to Page 11 for output pulse unit setting.
Output ON resistance	10Ω or less

ELECTRONIC OVERLOAD/ LEAKAGE DETECTION METER RELAY

LLC-110/ LLC-110L

PERFORMANCE

Item	Measuring element	Measuring range/ Display specification		Allowance *(3)		Note
				Display	Output	
Digital display	Current	AC5.00A - 8.00kA (60 range)		±1.0%	—	R-S-T phase change *(4)
	Leakage current	Leakage max. current, leakage current AC0.05A - 0.8A (5 range)		±10%	±10%	% against rated sensitivity current value 0 display when input is 5mA or less
	Voltage	AC150V - 600V (5 range)		±1.0%	—	RS-ST-TR line change *(5)
Watt-hour	Power integrating (only power receiving). Only pulse output.			—	Power factor 1: ±2.0% power factor 0.5: ±2.5%	Ordinary watt-hour meter performance conformity, Refer to common specification (Page11) for setting range of pulse output unit (kWh/ pulse)
Bar graph display	Bar graph display of main monitor elements. Sub-monitor elements can be displayed by setting.					
Display setting potential element	Main monitor	Current, leakage current, voltage, overload characteristics (setting value), overload operating value (setting value)				
	Sub-monitor (L)	Current, leakage current, leakage max. current, leakage sensitivity current value (setting value), voltage				
	Sub-monitor (R)	Current, leakage current, leakage operation time (setting value), voltage				
	Bar graph	Current, leakage current, leakage max. current, voltage				
Alarm output contact	Overload detection *(6)	Operation characteristics	Cold start characteristics: Detection within 2 - 30sec. through 600% current of setting current. Hot start characteristics: Detection within 2 hours through 125% current of setting current. : Detection within 4 min. through 200% current of setting current.			
		Setting range	2.5A - 6A (0.1A step), with function exclusion setting index display setting in primary current			
		Detection characteristics	Detection speed change in 5 steps (A-E)			
		Reset system	Automatic or manual (setting)			
		Output contact	Non-voltage a contact R phase or T phase detection			
		Test function	Trip function test of overload detection is possible in test mode.			
	Leakage detection	Function	Leakage current measured value ≧ rated sensitivity current value: Alarm display, output			
		Setting accuracy	-50% to 0% (% against sensitivity current value)			
		Rated sensitivity current value	0.05A/ 0.1A/ 0.2A/ 0.4A /0.8A			
		Operation time	0.1 sec. (high-speed type), 0.3sec./ 0.5sec./ 1sec./ 2sec. (time delay type), function exclusion			
		Reset system	Automatic or manual (setting)			
		Output contact	Non-voltage a contact			
		Test function	Test function check of leakage current detection is possible in test mode.			
Option	Reset input (overload detection, leakage max. current measured value, leakage detection), display change input, leakage current analog output, watt-hour pulse output					

Note:

*(3) Due to the measurement system of the meter, the accuracy will decrease if the meter directly measures the output of cycle control inverters, phase-angle-control SCR inverters and PWM control inverters.

*(4) Single phase 3 wire: RN-TN-RT

*(5) Single phase 3 wire: R-T-N

*(6) When with leakage current analog output: Display only and overload detection output is not possible.

ELECTRONIC OVERLOAD/ LEAKAGE DETECTION METER RELAY

LLC-110/ LLC-110L

MEASURING RANGE

A) Voltage Measuring Range

150V	(110V)
150.0V	(110V)
300V	(220V, VT220/110V)
300.0V	(220V, VT220/110V)
600V	(VT440V/110V)

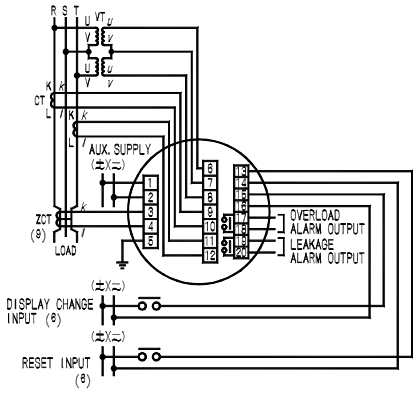
For single phase 3 wire: only 150V, 150.0V.

B) Current Measuring Range

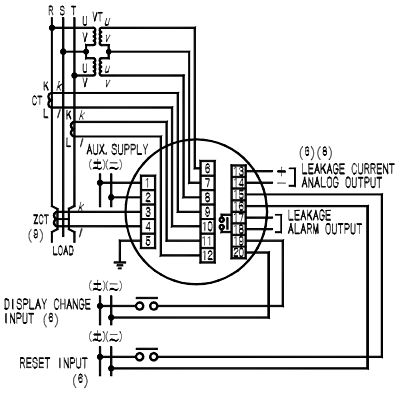
5.00A	25.00A	120A	750A	3000A
6.00A	25.0A	150.0A	800A	3.00kA
7.50A	30.00A	150A	1000A	4000A
8.00A	30.0A	200.0A	1.00kA	4.00kA
10.00A	40.0A	200A	1200A	5000A
10.0A	50.0A	250.0A	1.20kA	5.00kA
12.00A	60.0A	250A	1500A	6000A
12.0A	75.0A	300.0A	1.50kA	6.00kA
15.00A	80.0A	300A	2000A	7500A
15.0A	100.0A	400A	2.00kA	7.50kA
20.00A	100A	500A	2500A	8000A
20.0A	120.0A	600A	2.50kA	8.00kA

Connection Diagram (10)

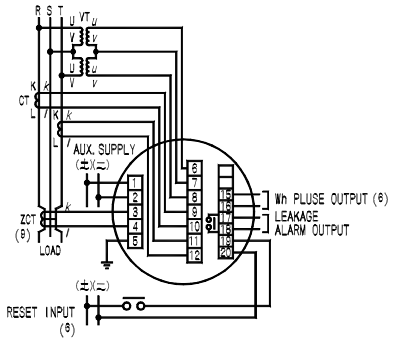
Three phase 3 wire, Single phase 3 wire (7)



Three phase 3 wire, Single phase 3 wire (7)(8)
(with leakage current analog output)



Three phase 3 wire, Single phase 3 wire (7)
(with Wh pulse)



Note:

(6) Wh pulse output, leakage current analog output, reset input and display change input: option

(7) In case of single phase 3 wire: S phase(no.7) becomes N phase.

(8) In case that leakage current analog output is equipped, there is no overload alarm output.

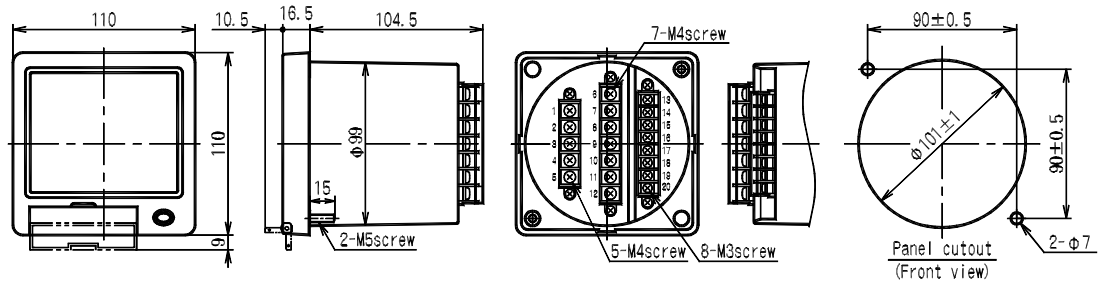
(9) Do not perform earth ground on secondary ZCT. Make wiring from the secondary ZCT to LLC-110 as short as possible. In case that ZCT secondary wiring comes near to large current circuit, use shielded cable.

(10) When used in 110V or 220V direct, VT is not necessary.

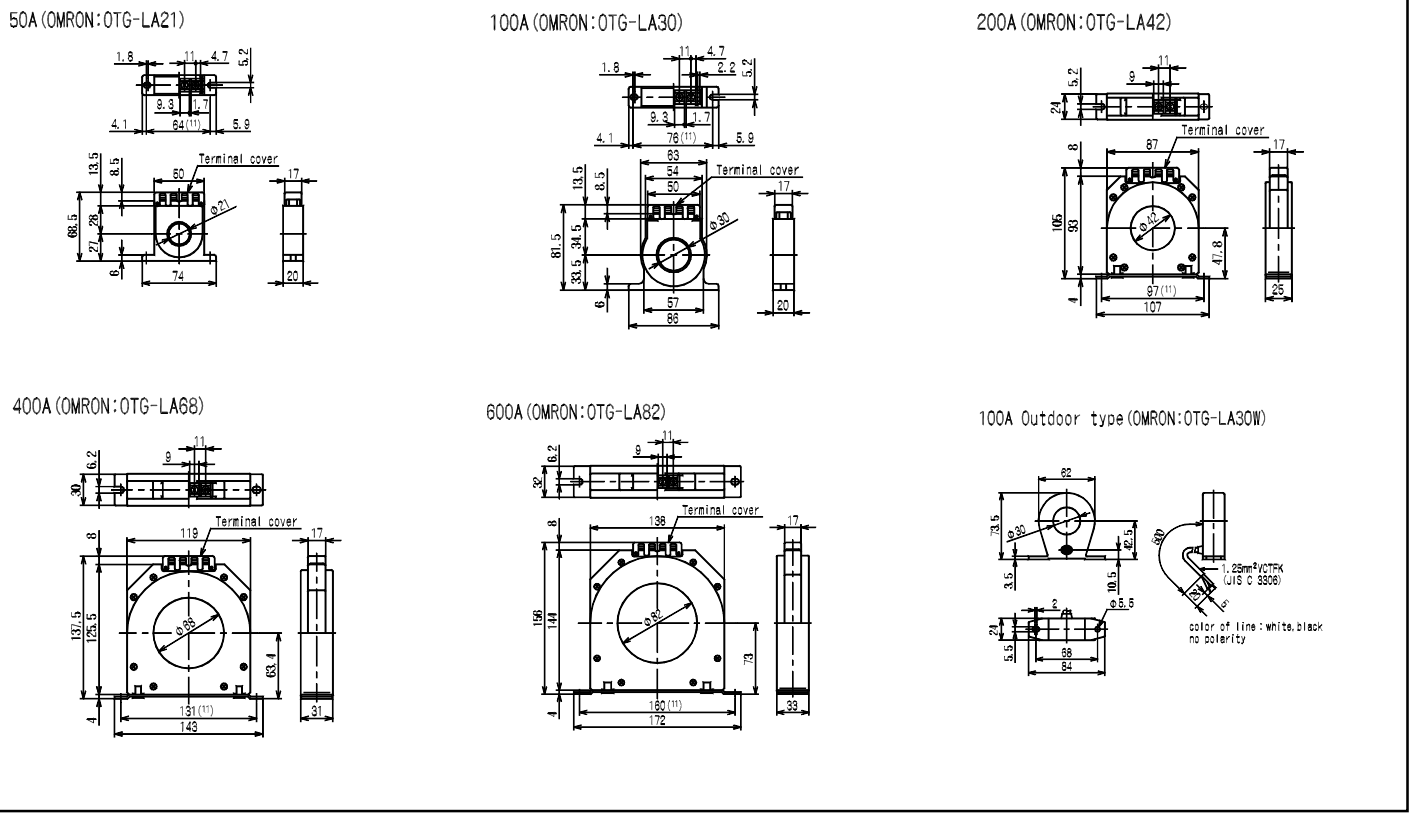
ELECTRONIC OVERLOAD/ LEAKAGE DETECTION METER RELAY

LLC-110/ LLC-110L

Outline Drawing (unit: mm)



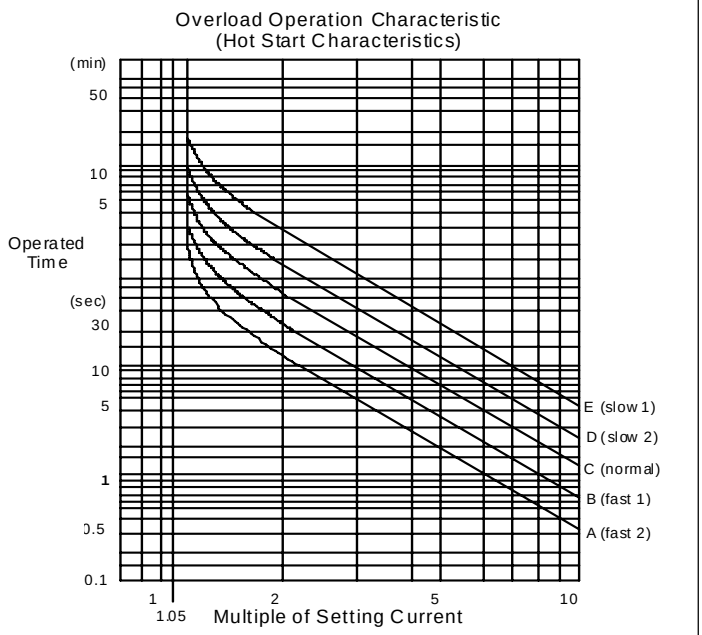
ZCT Outline Drawing

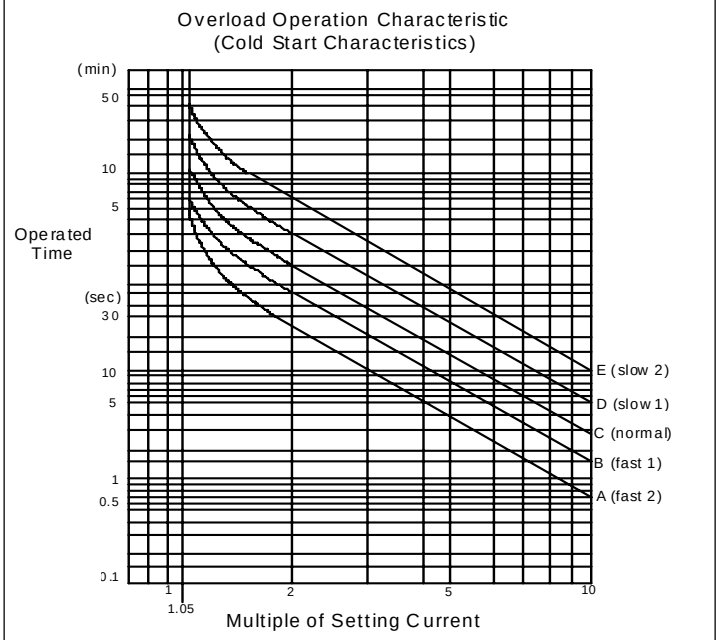


ELECTRONIC OVERLOAD/ LEAKAGE DETECTION METER RELAY

LLC-110/ LLC-110L

OVERLOAD OPERATION CHARACTERISTICS





ITEM TO SPECIFY WHEN PURCHASE

* Specify for product type, specification and units require.
* Example of specify: Refer to page 1 for specification code.

Type			Specification Code								
LLC-110	L	—	A	3	J	1	2	—	0	1	1
No Backlight With Backlight	Blank L		Hard Model	Input Circuit	Input Range	Auxiliary Power	External Operation Input		Analog Output	Pulse Output	Alarm Output

1. Change from initial setting can be accepted with compensation. Specify the items to change.
   Refer to page 14 - initialization value.
2. Have a consultation with us for specification which is not in specification code.

ELECTRONIC OVERLOAD/ LEAKAGE DETECTION METER RELAY

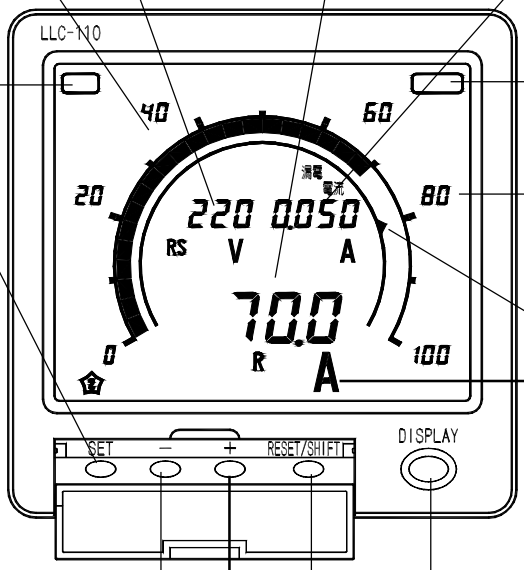
LLC-110/ LLC-110L

NAME AND THE FUNCTION OF EACH PART

Bar graph display
Indicate main monitor measurement value. Measurement value for the sub-monitor is possible by setting. Bar graph will display at below the setting digital.

Digital display
3 elements can be measured and monitored concurrently.

Sub-monitor (L) **Main monitor** **Sub-monitor (R)**



Light of **LEAKAGE** will ON when leakage current is detection.

Light of **OVERLOAD** will ON when overload is detection.

SET
This switch is used to select the setting mode. Display mode will be change to setting mode when continuously press ON more then 3 sec. This switch is used to set value in the setting mode.

Scale number
Set automatically by measuring range setting.

Upper limit setting index
Upper limit setting value is indicated. When the bar-graph is voltage, flicker setting value is indicated.

-
This switch is used to confirm overload detection setting value, leakage detection setting value, voltage flicker value. This switch also used to carry down set value in setting mode. If not operated for 10 sec. operated mode will return back to display mode.

Unit display
Set automatically by measuremant range setting.

DISPLAY
This switch is used for change over the current, voltage phase (lines). After 1 action setting, mode display will return back to display mode. If not operated for 10 min. display pattern will return back to setting being completed display pattern. This function can be replaced by ⊕ switch for setting.

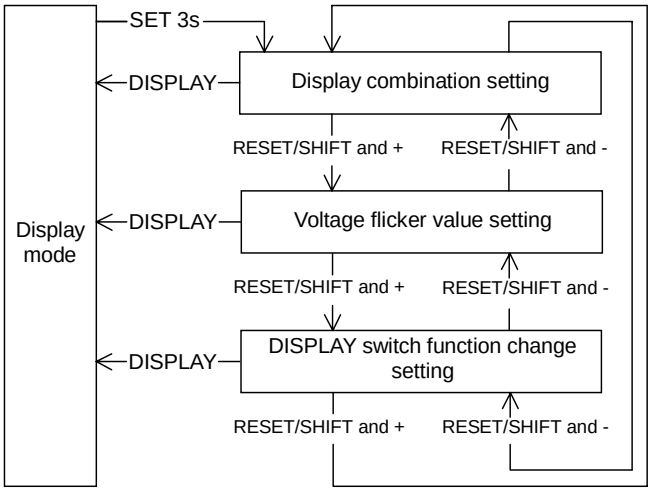
+
This switch is used for change main monitor measuring elements. Current (R) → Current (S) → Current (T) → Leakage current → Voltage (RS) → Voltage (ST) → Voltage (TR) → measurement change by this order. This function can be replaced by DISPLAY switch for setting and also can used for carry up a set value in setting mode. If not operated for 10 min. display mode will return back to settig being completed display pattern.

RESET/SHIFT
Max. leakage current and output of overload/ leakage detection can reset by press ON more than 1 sec. continuously. This switch also used to shift an item in the setting mode

SETTING

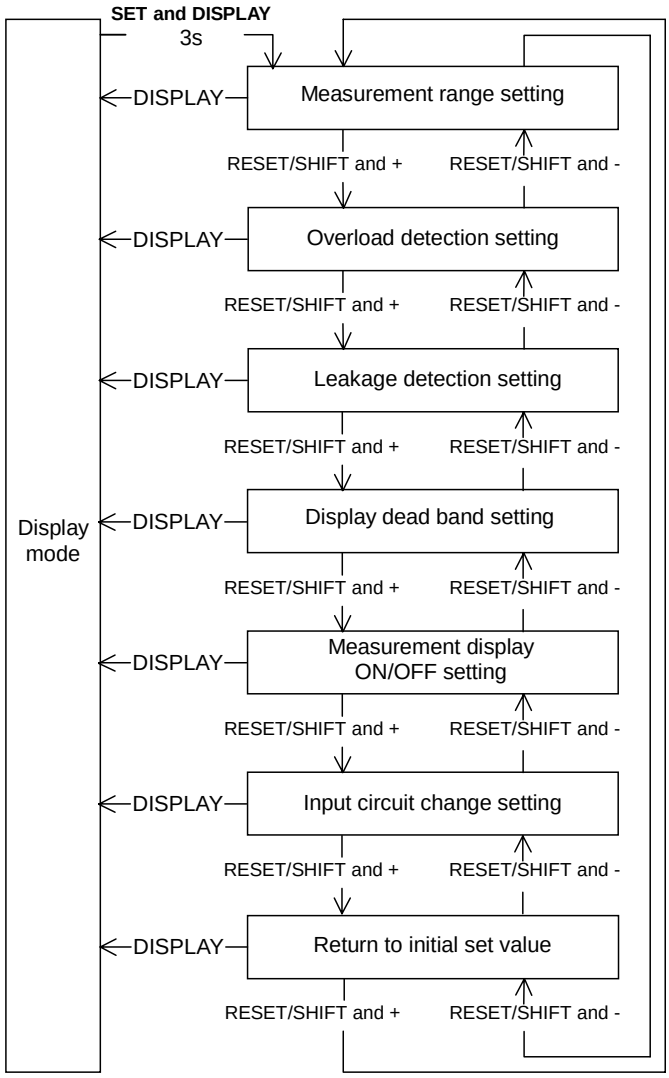
Refer to attached user's manual for setting method details.

SETTING-1



Refer to page 13 for display combination (pattern).

SETTING-2



ELECTRONIC OVERLOAD/ LEAKAGE DETECTION METER RELAY

LLC-110/ LLC-110L

LC-110 SERIES COMMON SPECIFICATION

Approved Standard/ Pulse Output/ Intensity

Item		Electronic multi meter	Electronic harmonics meter relay	Electronic demand multi meter	Electronic max./ min. multi meter	Electronic overload/ leakage detection meter relay	Electronic three phase current meter	Electronic three phase voltage meter	Electronic DC receiving meter	Electronic DC input meter
Type	No backlight	QLC-110	HLC-110	DLC-110	MLC-110	LLC-110	ALC-110	VLC-110	XLC-110	TLC-110
	With backlight	QLC-110L	HLC-110L	DLC-110L	MLC-110L	LLC-110L	ALC-110L	VLC-110L	XLC-110L	TLC-110L
Approved standard		JIS C 1102 -1, -2, -3, -4, -5, -7 JIS C 1111 JIS C 1216 JIS C 1263 Performance conformed EIA standard RS-485	JIS C 1102 -1, -2, -7 JIS C 1111 Performance conformed	JIS C 1102 -1, -2, -3, -5, -7 JIS C 1111 JIS C 1216 Performance conformed EIA standard RS-485	JIS C 1102 -1, -2, -7 JIS C 1111 Performance conformed EIA standard RS-485	JIS C 1102 -1, -2, -7 JIS C 1111 JIS C 8325 JIS C 8374 JIS C 1216 Performance conformed	Discontinued Model (since December 31,2011).		JIS C 1102 -1, -2, -7, -9 JIS C 1111 JIS C 1010-1 Performance conformed EIA standard RS-485	JIS C 1102 -1, -2, -7, -8, -9 JIS C 1111 JIS C 1010-1 Performance conformed EIA standard RS-485
Pulse output	Output element	Watt-hour OR var-hour	-	Watt-hour	-	Watt-hour	-	-	-	-
	Outout pulse constant	*Output system: Photo MOS - FET relay 1 a contact. Contact capacity: AC, DC125V 70mA (resistance load, inductive load) Output ON resistance: 10Ω or less.								
		*Pulse width: 250ms ±10% (There is a case of 100 - 130ms by range setting.) When the output pulse cycle at the rated electric power becomes the speed of 2 pulses or more per second by setting voltage measurement range, current measurement range, and output pulse unit, the output pulse width becomes 100 - 130ms. *Output pulse cycle = Rated electric power [kW] / output pulse unit [kWh / pulse] / 3600 [sec.] For example: when voltage measurement range: 9000V (6600V / 110V), current range: 80.0A (80A / 5A), output pulse unit: 0.1 kWh / pulse rated electric power = 1kW × (6600 / 110V) × (80 / 5A) = 960 [kW] output pulse cycle = 960 [kW] / 0.1 [kWh / pulse] / 3600 [sec.] = 2.667 pulse / sec. pulse width becomes 100 - 130ms.								
		*Output pulse unit can be set in following range. Output pulse unit is not changed by changing measuring range.								
		Three phase 3 wire / Three phase 4 wire: Full load power (kW, kvar) = $\sqrt{3}$ × rated voltage (V) × rated current (A) × 10^{-3}								
		Single phase 3 wire : Full load power (kW, kvar) = 2 × rated voltage (V) × rated current (A) × 10^{-3}								
		Single phase : Full load power (kW, kvar) = Rated voltage (V) × rated current (A) × 10^{-3}								

Full load power (kW, kvar)		Output pulse unit kWh (kvarh) / pulse				Multiplying factor
Below1		0.1	0.01	0.001	0.0001	0.01 *(1)
1 or more	Below 10	1	0.1	0.01	0.001	0.1
10 or more	Below 100	10	1	0.1	0.01	1
100 or more	Below 1000	100	10	1	0.1	10
1,000 or more	Below 10,000	1,000	100	10	1	100
10,000 or more	Below 100,000	10,000	1,000	100	10	1,000
100,000 or more	Below 1,000,000	100,000	10,000	1,000	100	10,000

(1) Applied to only DLC-110/110L. Even though multiplying factor is 0.01, multiplying factor display is 0.1 (integer digit: 4 digits display, expansion display: 4 digits after decimal point.)

LC-110 SERIES COMMON SPECIFICATION

Approved Standard/ Pulse Output/ Intensity

Strength	Overload capacity	(1) Voltage circuit: 2 times of rated voltage (10sec.) 1.2 times (continuity)	
		(2) Current circuit: 40 times of rated current (1sec.), 20 times (4sec.), 10 times (16sec.), 1.2 times (continuity)	
		(3) Auxiliary power: 1.5 times of rated voltage (10 sec.), 1.2 times (continuity), 1.5 times of rated voltage at DC100/ 110 (10 sec.), 1.3 times (continuity)	
		(4) DC input circuit (4 to 20mA): 10 times of rated current (5sec.), 1.2 times (continuity)	
	Insulation resistance	(1) Between electrical system and case (ground)	DC500V 50MΩ or more
		(2) Between input, output and auxiliary power	DC500V 50MΩ or more
		(3) Between analog output and pulse output	DC500V 50MΩ or more (QLC, DLC, LLC)
		(4) Between analog output and alarm output	DC500V 50MΩ or more (HLC, DLC, MLC, LLC)
		(5) Between communication output and pulse output	DC500V 50MΩ or more (QLC, DLC)
		(6) Between communication output and alarm output	DC500V 50MΩ or more (DLC,MLC)
		(7) Between pulse output and alarm output	DC500V 50MΩ or more (DLC,LLC)
		(8) Between alarm output 1 and alarm output 2	DC500V 50MΩ or more (HLC,LLC)
		(9) Between DC input (4 to 20mA), AC input and auxiliary power	DC500V 50MΩ or more (QLC with DC input)
		(10) Between DC input	DC500V 50MΩ or more (XLC,TLC)
		(11) Non-insulation by minus common between analog output.	(QLC, DLC, HLC, XLC, TLC, MLC)
	Withstand voltage	(1) Between electrical system and case (ground)	AC2000V 50/ 60 Hz 1 min.
		(2) Between input, output and auxiliary power	AC2000V 50/ 60 Hz 1 min.
		(3) Between analog output and pulse output	AC1500V 50/ 60 Hz 1 min. (QLC, DLC, LLC)
		(4) Between analog output and alarm output	AC1500V 50/ 60 Hz 1 min. (HLC, DLC, MLC, LLC)
		(5) Between communication output and pulse output	AC1500V 50/ 60 Hz 1 min. (QLC, DLC)
		(6) Between communication output and alarm output	AC1500V 50/ 60 Hz 1 min. (DLC, MLC)
		(7) Between pulse output and alarm output	AC1500V 50/ 60 Hz 1 min. (DLC, LLC)
		(8) Between alarm output 1 and alarm output 2	AC1500V 50/ 60 Hz 1 min. (HLC, LLC)
		(9) Between DC input (4 to 20mA), AC input and auxiliary power	AC2000V 50/ 60 Hz 1 min. (QLC with DC input)
		(10) Between DC input	AC2000V 50/ 60 Hz 1 min. (XLC, TLC)
		(11) Non-insulation by minus common between analog output.	(QLC, DLC, HLC, XLC, TLC, MLC)
	Lightning impulse withstand voltage	(1) Between electrical system (analog output or communication output excluded) and ground 6kV 1.2/ 50μs positive/ negative polarity 3 times for each (QLC, DLC)	
		(2) Between electrical system (DC input 4 to 20mA excluded) and ground 5kV 1.2/ 50μs positive/ negative polarity 3 times for each	
		(3) Between analog output or communication output and ground 5kV 1.2/ 50μs positive/ negative polarity 3 times for each (QLC,DLC)	
		(4) Between auxiliary power and ground 7kV 1.2/ 50μs positive/ negative polarity 3 times for each (LLC)	
	Noise capacity	(1) Oscillatory surge voltage 1 to 1.5MHz peak voltage: When attenuated oscillatory waveform (2.5 to 3kV) is applied repeatedly: Measured error: within 10% (power circuit, AC voltage circuit, AC current circuit, XLC, TLC: DC voltage/ current circuit) No communication error/ communication halt	
		(2) Square-wave impulse noise Noise (1μS, 100ns width) is repeatedly applied for 5 min. : Measured error is within 10%	
		AC voltage/ AC current circuit (normal/ common) 1.5 kV or more	Power circuit (normal/ common) 1.5 kV or more
		Pulse output (common) 1.0 kV or more	Alarm output (common) 1.0 kV or more
		Operation input (common) 1.0 kV or more	Analog output (Inductive) 1.0 kV or more
		Communication output (Inductive) 1.0kV or more	
		(3) Radio noise: When radion wave (150, 400, 900MHz) is applied (5W, 1m) intermittently: Measured error is within 10%	
		(4) Electrostatic noise: At the passage of electric current 8kV Measured error : within 10% At no passage of electric current 10kV: No damage (condenser charge system)	
		Note: There are some cases that some item can not be applied for particular model. Refer to type and specification code.	
	Vibration/ shock	Vibration: 1/ 2 peak-peak: 0.15mm 10 to 55Hz 1 octave/ min. 5 times sweep	
		Shock: 490m/s² 3 times for each direction.	

ELECTRONIC OVERLOAD/ LEAKAGE DETECTION METER RELAY

LLC-110/ LLC-110L

DISPLAY COMBINATION (Pattern)

1) Three phase 3 wire

No.	Pattern NO.	Main monitor	Sub-monitor (L)	Sub-monitor (R)	Bar graph	Note
1	Pattern 1	A(R)	Leakage sensitivity current value	Leakage current	A(R)	Standard
2	Pattern 2	A(R)	Leakage current	V(RS)	A(R)	Specification
3	Pattern 3	A(R)	A(S)	A(T)	A(R)	
4	Pattern 4	Leakage current	Leakage sensitivity current value	Leakage operation time	Leakage max.current + leakage current	
5	Pattern 5	V(RS)	V(ST)	V(TR)	V(RS)	

2) Single phase 3 wire

No.	Pattern NO.	Main monitor	Sub-monitor (L)	Sub-monitor (R)	Bar graph	Note
1	Pattern 1	A(R)	Leakage sensitivity current value	Leakage current	A(R)	Standard
2	Pattern 2	A(R)	Leakage current	V(RN)	A(R)	Specification
3	Pattern 3	A(R)	A(T)	A(N)	A(R)	
4	Pattern 4	Leakage current	Leakage sensitivity current value	Leakage operation time	Leakage max. current + leakage current	
5	Pattern 5	V(RN)	V(TN)	V(RT)	V(RN)	

* Combination beyond above-mentioned pattern can be set by front switch.

INITIALIZATION VALUE

No.	Setting item		Three phase 3 wire		Single phase 3 wire
			110V input	220V input	
1	Display combination	Pattern	Pattern1		Pattern1
		Main monitor	A(R)		A(R)
		Sub-monitor (L)	Leakage sensitivity current value		Leakage sensitivity current value
		Sub-monitor (R)	Leakage current		Leakage current
		Bar graph	A(R)		A(R)
2	Voltage Flicker	Upper limit	484V (/121V)	242V	110.0V
		Lower limit	396V (/99V)	198V	90.0V
3	Current range		100.0A (100A/ 5A)		500A (500A/ 5A)
4	Voltage range		600V (440V/ 110V)	300V (220V Direct)	150.0V (100 - 200V)
5	Overload detection	Operation value	100.0A (secondary 5A)		500A (secondary 5A)
		Characteristics	C		C
		Reset system	Automatic reset		Automatic reset
6	Leakage detection	Sensitivity current value	0.1A		0.1A
		Operation time	1 sec.		1 sec.
		Reset system	Automatic reset		Automatic reset