MG CO., LTD.
Make Greener automation

2025-09
EC-Z705
Rev. 0

Power Monitoring Components

Accurate calculation, display, and output of power quantities — High-performance power transducers and multi power monitors with outstanding cost efficiency

This symbol identifies those products which contain less than the maximum levels of the 10 restricted substances specified by the RoHS Directive.

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Matrix Table

Specifications typical for each series are compared in the table. Details may differ depending on models.

POWER TRANSDUCER

	M4 screw terminal LT-UNIT Series	Space-saving 14-UNIT Series	Box type L-UNIT Series	Plug-in K-UNIT Series	Rack-mounted 17-RACK Sereis
External view	 PAGE 6				
Construction	Box type, front terminal	Box type, front terminal	Box type, front terminal	Plug-in	Rack-mounted, front terminal
Connection	M4 screw	M3.5 screw	M3.5 screw	M3.5 screw	M3.5 screw M3.5 screw/connector (rack)
I/O withstand voltage	2000 V AC	2000 V AC	2000 V AC	2000 V AC	2000 V AC
Auxiliary power supply	AC / DC	AC / DC	AC / DC	AC / DC	AC / DC
Self-powered option	✓	✓	✓	✓	---
Operating temperature	-10 to +55°C 14 to 131°F	-10 to +55°C 14 to 131°F	-10 to +55°C 14 to 131°F	-10 to +55°C 14 to 131°F	-5 to +55°C 23 to 131°F
Mounting	Wall or DIN rail	Wall or DIN rail	Wall or DIN rail	Wall or DIN rail	Rack
Dimensions mm [inch]	W 39 [1.54], 72 [2.83] H 111 [4.37] D 14 [0.55]	W 50 [1.97] H 80 [3.15] D 123 [4.84]	W 75 [2.95] H 75 [2.95] D 112 [4.41]	W 50 [1.97], 72 [2.83] H 80 [3.15] D 123 [4.84], 132 [5.20], 139 [5.47]	W 24 [0.94] H 110 [4.33] D 110 [4.33]
IEC 60688	✓	---	---	---	---
Function	**LT-UNIT Series**	**14-UNIT Series**	**L-UNIT Series**	**K-UNIT Series**	**17-RACK Series**
AC VOLTAGE					
Average sensing	---	14PA, 14PNA, 14PNAF	LPNA, LDPA, LEPA	KP, KPNA	---
Approximate RMS sensing	---	14PK, 14PNK	LDPK	KPK	---
RMS sensing	LTPE	14PE, 14PNE	LPE, LPNE, LDPE	KPE, KPNE	17PE
2-ch, average sensing	---	---	L2PA, L2PNA	---	---
2-ch, RMS sensing	---	---	L2PE, L2PNE	---	---
3-ch, approximate RMS sensing	---	---	L3PK	---	---
AC CURRENT					
Clamp-on sensor input	LTCEC	14CEC	---	KCEC	---
Average sensing	---	14CA, 14CNA, 14CNAF	LCNA, LDCA, LECA	KC, KCNA	---
Approximate RMS sensing	---	14CK, 14CNK	LDCK	KCK	---
RMS sensing	LTCE, LTCNE	14CE, 14CNE	LCE, LCNE, LDCE	KCE, KCNE	17CE
2-ch, average sensing	---	---	L2CA, L2CNA	---	---
2-ch, RMS sensing	---	---	L2CE, L2CNE	---	---
3-ch, approximate RMS sensing	---	---	L3CK	---	---
AC VOLTAGE/CURRENT					
Average sensing	---	---	LPCA	---	---
RMS sensing	---	---	LPCE	---	---
WATT, VAR, POWER FACTOR, PHASE ANGLE, FREQUENCY, BIDIRECTIONAL CURRENT, VOLTAGE PHASE ANGLE					
Watt	LTWT, LTWTN	14WTN	LWT, LWTN	KEWT, KEWTN, KUWT, KUWTN, KUWE, KUWEN	17WT
Var	LTRP, LTRPN	14RPN	LRP, LRPN	KERP, KERPN, KURE, KUREN	17RP
Power factor (balanced)	LTPF, LTPFN	14PF, 14PFN	LPF, LPFN	KEPF, KEPFN	17PF
Power factor (unbalanced)	LTPFU, LTPFUN	14PFU, 14PFUN	LPFU, LPFUN	KEPFU, KEPFUN	---
Phase angle (balanced)	LTPA, LTPAN	14PHA, 14PHAN	LPA, LPAN	KEPA, KEPAN	17PA
Phase angle (unbalanced)	LTPAU, LTPAUN	14PHAU, 14PHAUN	LPAU, LPAUN	KEPAU, KEPAUN	---
Frequency	LTHZ, LTHZN	14HZ, 14HZN	LHZ, LHZN	KEHZ, KEHZN	17HZ
Bidirectional current	---	---	LCY	---	---
Voltage phase angle	---	---	LPD	---	---
LEAKAGE CURRENT					
Zero-phase current transformer (ZCT)	---	---	---	KCEZ	---
SENSOR INPUT					
Loop powered isolator	---	---	LDSN		---
DC signal	---	14VS	---		17VS, 17VK
Thermocouple	---	14TS	---		17TS, 17TK
RTD	---	14RS	---		17RS, 17RK
Potentiometer	---	14MS	---		17MS, 17MK
Current loop supply	---	14D, 14DY	---		---
AC signal	---	14TG, 14AC	---		17TG, 17AC

Visit our website for K-UNIT Series Signal Conditioners

POWER TRANSDUCERS IN OTHER SIGNAL CONDITIONER SERIES

PAGE 28

MULTI POWER TRANSDUCER

	Multi Power Transducer M50EXWTU	Multi Power Transducer M50XWTU	Multi Power Transducer M50XWTU-U	Multi Power Transducer M5XWTU	Multi Power Transducer M5XWT
External view	 PAGE 8	 PAGE 8	 PAGE 8	 PAGE 9	 PAGE 9
Construction	Super-mini terminal block	Super-mini terminal block	Super-mini terminal block	Super-mini terminal block	Super-mini terminal block
Connection	Tension clamp terminal	Tension clamp terminal	Tension clamp terminal	M3.5 screw terminal	M3.5 screw terminal
I/O isolation	2000 V AC	2000 V AC	2000 V AC	2000 V AC	2000 V AC
Power input	AC / DC (universal)	AC / DC (universal)	AC	Self-powered	Self-powered
Operating temperature	-20 to +65°C -4 to +149°F	-20 to +65°C -4 to +149°F	-20 to +55°C -4 to +131°F	-20 to +65°C -4 to +149°F	-20 to +65°C -4 to +149°F
Mounting	DIN rail	DIN rail	DIN rail	DIN rail	DIN rail
Dimensions mm [inch]	W 22.5 [0.89] H 115 [4.53] D 55 [2.17]	W 28 [1.10] H 105 [4.13] D 41 [1.61]	W 28 [1.10] H 105 [4.13] D 41 [1.61]	W 25 [0.98] H 97 [3.82] D 41 [1.61]	W 25 [0.98] H 97 [3.82] D 41 [1.61]
System	Single-phase/2-wire, 3-wire Three-phase/3-wire, 4-wire	Single-phase/2-wire, 3-wire Three-phase/3-wire, 4-wire	Single-phase/2-wire, 3-wire Three-phase/3-wire, 4-wire	Single-phase/2-wire, 3-wire Three-phase/3-wire	Single-phase/2-wire, 3-wire Three-phase/3-wire
Network	Modbus	Modbus	Modbus	Modbus	Modbus

MULTI POWER MONITOR

	Multi Power Monitor 53U	Multi Power Monitor 54U/54UC/54UL	Multi Power Monitor 54U2 Limited to Japanese market	Multi Power Monitor with 4 alarm outputs 54A Limited to Japanese market
External view	 96 mm sq IP50 PAGE 12	 110 mm sq IP50 PAGE 16	 110 mm sq IP50	 110 mm sq IP50
Construction	96-mm-square size, panel flush mounted	110-mm-square size, panel flush mounted	110-mm-square size, panel flush mounted	110-mm-square size, panel flush mounted
Connection	Connector type terminal block (voltage input/output/power) Screw terminal block (current input)	M4 screw terminal (input) M3 screw terminal (output/power)	M4 screw terminal (input/power) M3 screw terminal (output)	M4 screw terminal (input/power) M3 screw terminal (alarm output)
Mounting	Panel flush mounting	Panel flush mounting	Panel flush mounting	Panel flush mounting
Dimensions mm [inch]	W 96 [3.78] H 96 [3.78] D 115 [4.53]	W 110 [4.33] H 110 [4.33] D 125 [4.92], 140 [5.51]	W 110 [4.33] H 110 [4.33] D 115 [4.53]	W 110 [4.33] H 110 [4.33] D 115 [4.53]
Degree of protection	IP50 (front panel)	IP50 (front panel)	IP52 (front panel)	IP52 (front panel)
System	Single-phase/2-wire, 3-wire Three-phase/3-wire, 4-wire	Single-phase/2-wire, 3-wire Three-phase/3-wire, 4-wire	Single-phase/2-wire, 3-wire Three-phase/3-wire, 4-wire	Single-phase/2-wire, 3-wire Three-phase/3-wire
Network	Modbus	Modbus, CC-Link, LONWORKS	Modbus, CC-Link, BACnet MS/TP	---

Matrix Table

Specifications typical for each series are compared in the table. Details may differ depending on models.

MULTI POWER TRANSDUCER

	Multi Power Transducer LSMT4	Multi Power Transducer L53U
External view	 PAGE 17	 PAGE 13
Connection	M4 screw terminal (input/power) M3.5 screw terminal (output)	Connector type terminal block (voltage input/output/power) Screw terminal block (current input)
Mounting	Wall or DIN rail	DIN rail
Dimensions mm [inch]	W 125 [4.92] H 140 [5.51] D 116 [4.57]	W 60 [2.36] H 105 [4.13] D 120 [4.72]
System	Single-phase/2-wire, 3-wire Three-phase/3-wire, 4-wire	Single-phase/2-wire, 3-wire Three-phase/3-wire, 4-wire
Output, external interface	Ao x 10 Po x 2 (energy count)	Modbus Do x 2 (max), Di x 1 (max) Ao x 4 (max)

REMOTE I/O FOR AC POWER MONITORING

	R9 Series Multi-point Remote I/O Multi Power Monitoring Unit R9xWTU	R7 Series Compact, All-in-one Remote I/O Multi Power Monitoring Unit R7xWTU
External view		 PAGE 22
Connection	M3.5 screw terminal (power/voltage input) M3 screw terminal (current input)	M3 separable screw terminal
Mounting	Wall or DIN rail	DIN rail
Dimensions mm [inch]	W 125 [4.92] H 140 [5.51] D 80 [3.15]	W 115 [4.53], 180 [7.09]*1 H 53 [2.09] D 54 [2.13]
System	Single-phase/2-wire, 3-wire Three-phase/3-wire	Single-phase/2-wire, 3-wire Three-phase/3-wire, 4-wire
Number of systems	8 systems (max. 16 systems with an extension module)	1 system + Di/Pi x 4 (internal power 5 V) or 2 systems
Input	400 V AC / CLSE	240 V AC / CLSE
Network	CC-Link, LONWORKS, Modbus, Modbus/TCP	CC-Link, LONWORKS, Modbus, Modbus/TCP

*1. Applicable to the R7EWTU

· Extension modules are available for the R9xWTU and R7xWTU. Refer to the data sheet for individual models for details.

REMOTE I/O FOR AC POWER MONITORING

	R8 Series Slice Type, Scalable Remote I/O		R3 Series Multi-channel, Scalable Remote I/O			
	Multi Power Input Module	AC Power Input Module	Multi Power Input Module	AC Power Input Module		
	Clamp-on current sensor use R8-WTU	AC current input R8-CT4E	Clamp-on current sensor use R3-WTU	AC voltage input R3-PT4 ZCT input R3-CZ4	CT input R3-CT4	AC current input, clamp-on current sensor use R3-CT4x, R3-CT8x
External view	 PAGE 18	 PAGE 18	 PAGE 20	 PAGE 20	 PAGE 20	 PAGE 20
Connection	Tension clamp terminal block (input)	e-CON connector (input)	Connector type terminal block (input)	M3.5 screw terminal (input)		M3 separable screw terminal (input)
Mounting	DIN rail		Installation base (Model: R3-BSx)			
Dimensions mm [inch]	W 24 [0.94] H 115 [4.53] D 72 [2.83]	W 12 [0.47] H 115 [4.53] D 59 [2.32]	W 27.5 [1.08] H 130 [5.12] D 109 [4.29]	W 27.5 [1.08] H 130 [5.12] D 109 [4.29]		
System	Single-phase/2-wire, Single-phase/3-wire, Three-phase/3-wire, Three-phase/4-wire	---	Single-phase/2-wire, Single-phase/3-wire, Three-phase/3-wire, Three-phase/4-wire	---	---	---
Number of systems	1 through 4 systems	---	1 or 2 systems	---	---	---
Network	CC-Link, Modbus, DeviceNet, EtherCAT, EtherNet/IP		CC-Link, CC-Link IE Field, DeviceNet, PROFIBUS, Modbus, Modbus/TCP, EtherNet/IP, EtherCAT, LONWORKS, MECHATROLINK-III, T-Link, FL-net			

REMOTE I/O FOR AC POWER MONITORING

	R7 Series Compact, All-in-one Remote I/O	R10 Series Plug-in Remote I/O
	AC current input R7x-CT4E	AC current input R10M-CT4E
External view	 PAGE 22	
Connection	M3 separable screw terminal (I/O) Connector*2	Connector mating with the installation base
Mounting	DIN rail	Installation Base (Model: R10-BS)
Dimensions mm [inch]	W 115 [4.53] H 53 [2.09] D 54 [2.13]	W 36 [1.42] H 99 [3.90] D 125 [4.92] (main module + base)
Network	CC-Link, DeviceNet, Modbus, Modbus/TCP	Modbus

*2. Applicable to DeviceNet and Modbus/TCP
・Extension modules are available for the R7x-CT4E. Refer to the data sheet for individual models for details.

Videos introducing power monitoring components

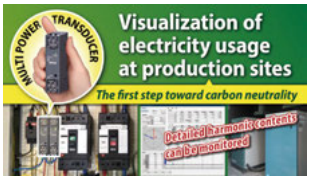
Check out the videos at YouTube or our website.

https://www.mgco.jp/video_e/

Multi power transducer with an OEL display for energy measurement to calculate CFP

1.5 min

Multi power transducer visualizing electricity usage at production sites contributes to the goal of carbon neutrality



7.5 min

M4 Screw Terminal

LT-UNIT Series

FRONT TERMINAL

Space-saving transducers offering high performance with no loss of quality

Compliance/approval depends upon models.

- AC voltage up to 550 V
- Compliant with IEC 60688 and JIS C1111
- Sturdy M4 screw terminals

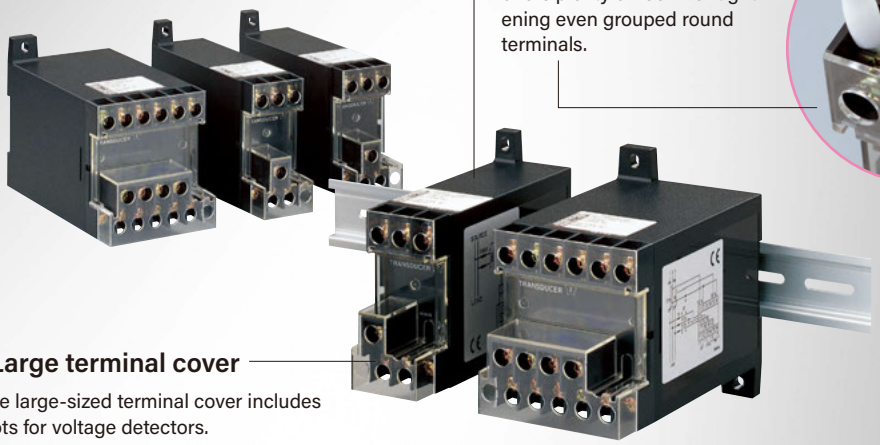
Compliant with IEC 60688 and JIS C1111

The IEC 60688 and JIS C1111 industrial standards define how electrical measuring transducers should convert alternating current into analog or digital signals.
LT-UNIT Series power transducers were developed in compliance with both of these standards for reliable usability.

IEC: International Electrotechnical Commission

Spacious terminal blocks

The M4 screw terminal block offers plenty of room for tightening even grouped round terminals.



Large terminal cover

The large-sized terminal cover includes slots for voltage detectors.

COMMON SPECIFICATIONS

Specifications depend upon models. Be sure to review the latest data sheet.

Construction	Box type, front terminal
Connection	M4 screw terminals (torque 1.2 N·m)
Screw terminal	Chrome-plated steel
Housing material	Flame-resistant resin (black)
Isolation	Voltage input to current input to output (to auxiliary power)
Mounting	Wall or DIN rail
Dielectric strength	2000 V AC @1 minute (voltage input to current input to output (to auxiliary power) to ground)
Impulse withstand voltage	1.2 / 50 μsec., ±5 kV (input to output or ground)
IEC standard	Compliant with IEC 60688

VOLTAGE / CURRENT

PRODUCT	MODEL	DRAWING
AC VOLTAGE TRANSDUCER (RMS sensing)	LTPE	A
AC CURRENT TRANSDUCER (RMS sensing)	LTCE	A
AC CURRENT TRANSDUCER (self-powered, RMS sensing)	LTCNE	A
AC CURRENT TRANSDUCER (clamp-on current sensor; RMS sensing)	LTCEC	B

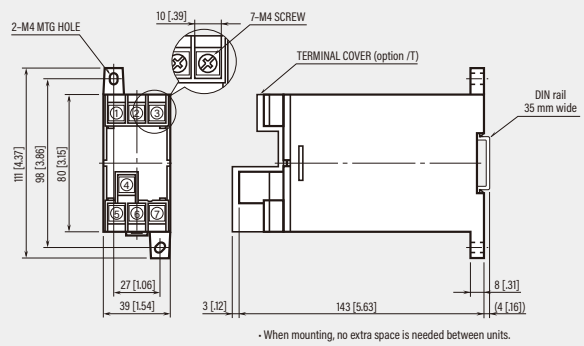
WATT / VAR / POWER FACTOR / PHASE ANGLE / FREQUENCY

PRODUCT	MODEL	DRAWING
WATT TRANSDUCER	LTWT	B
WATT TRANSDUCER (self-powered)	LTWTN	B
VAR TRANSDUCER	LTRP	B
VAR TRANSDUCER (self-powered)	LTRPN	B
POWER FACTOR TRANSDUCER	LTPF	B
POWER FACTOR TRANSDUCER (self-powered)	LTPFN	B
POWER FACTOR TRANSDUCER (for unbalanced load)	LTPFU	B
POWER FACTOR TRANSDUCER (for unbalanced load; self-powered)	LTPFUN	B
PHASE ANGLE TRANSDUCER	LTPA	B
PHASE ANGLE TRANSDUCER (self-powered)	LTPAN	B
PHASE ANGLE TRANSDUCER (for unbalanced load)	LTPAU	B
PHASE ANGLE TRANSDUCER (for unbalanced load; self-powered)	LTPAUN	B
FREQUENCY TRANSDUCER	LTHZ	A
FREQUENCY TRANSDUCER (self-powered)	LTHZN	A

EXTERNAL DIMENSIONS unit: mm [inch]

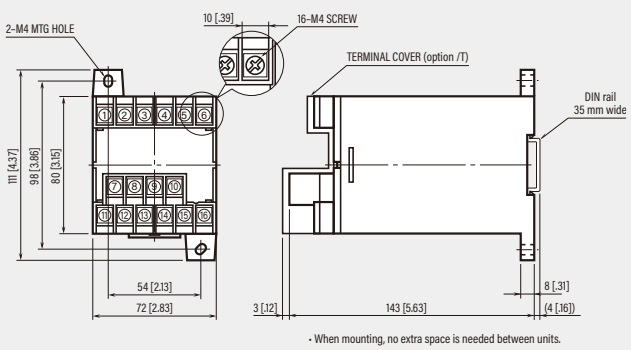
Dimensions may be slightly different depending upon models.

A



• When mounting, no extra space is needed between units.

B



• When mounting, no extra space is needed between units.

unit: mm [inch]

Super-mini Terminal Block

Multi Power Transducer

Compact module can be squeezed into a tight space inside existing distribution boards*1

M50E/M50X-UNIT Series: 480 V AC input*2, supports three-phase/4-wire system

- CO_2 emissions (energy conversion value) can be calculated.
- Universally adaptable features including CE marking and three-phase/4-wire configuration
- 480 V AC input*1
- Modbus communication
- Modbus plus two energy count pulse outputs
- M50EXWTU equipped with OEL display

CO_2 emissions can be calculated (energy conversion value)

M50E-UNIT Equipped with OEL display

Multi Power Transducer
Model: M50EXWTU

Multi Power Transducer
Model: M50XWTU

Model: M50XWTU-U

*1. Except the M50XWTU-U. The M50XWTU-U cannot be mounted or retrofitted to switchboards, distribution boards, or control panels that are installed and in operating in a facility.

*2. M50XWTU-U: 240 V AC

PRODUCT	MODEL	UL
MULTI POWER TRANSDUCER (PC programmable)	M50EXWTU	--
MULTI POWER TRANSDUCER (PC programmable)	M50XWTU	--
MULTI POWER TRANSDUCER (PC programmable) NEW	M50XWTU-U	✓

ACCESSORY

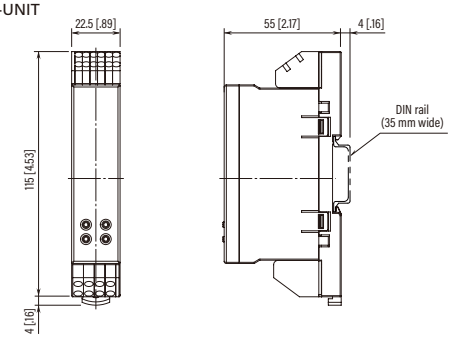
PRODUCT	MODEL	UL
PC CONFIGURATOR CABLE (USB - miniature jack, isolated)	COP-US	--
PC CONFIGURATOR CABLE	MCN-CON	--

· Clamp-on Current Sensors (Model: CLSE, or CLSE-U for M50XWTU) are sold separately. See Page 26.
· PC Configurator Software (Model: PMCFG) is downloadable from our website.

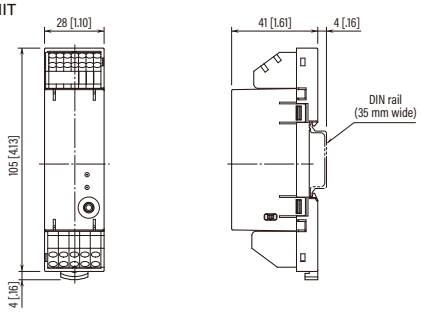
EXTERNAL DIMENSIONS unit: mm [inch]

Dimensions may be slightly different depending upon models.

▪ M50E-UNIT



▪ M50X-UNIT



As calls for becoming carbon neutral increase, visualization of CO_2 emissions intensity has become essential.
Multi Power Transducers, thanks to their compact package, can fit into a tight space of both new and existing panels or manufacturing equipment.
They realize easily a detailed energy consumption monitoring via Modbus communication.

M5X-UNIT Series: 240 V AC input, self-powered

- **290 measured variables (M5XWTU, three-phase/3-wire system) or 104 measured variables except harmonic contents (M5XWT, three-phase/3-wire system)**
- **240 V AC input**
- **Modbus communication**
- **M50XWTU output options: Modbus communication, analog output, or energy count pulse/alarm output.**

Multi Power Transducer
Model: **M5XWTU**

Multi Power Transducer
Model: **M5XWT**

PRODUCT	MODEL
MULTI POWER TRANSDUCER (PC programmable, self-powered, supporting harmonic distortion)	M5XWTU
MULTI POWER TRANSDUCER (PC programmable, self-powered)	M5XWT

ACCESSORY

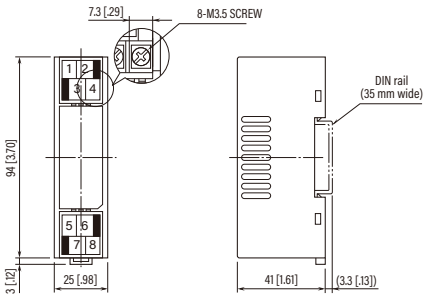
PRODUCT	MODEL
PC CONFIGURATOR CABLE (USB - miniature jack, isolated)	COP-US
PC CONFIGURATOR CABLE	MCN-CON

· Clamp-on Current Sensors (Model: CLSE) are sold separately. See Page 26.
· PC Configurator Software (Model: PMCFG) is downloadable from our website.

EXTERNAL DIMENSIONS unit: mm [inch]

Dimensions may be slightly different depending upon models.

▪ M5X-UNIT



▪ When mounting, no extra space is needed between units.

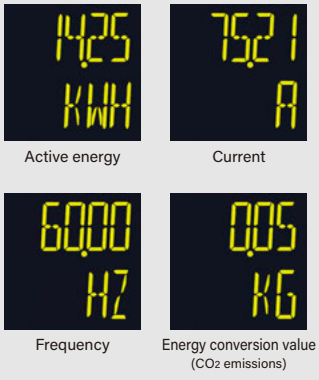
M50E-UNIT: OEL display clearly displays information

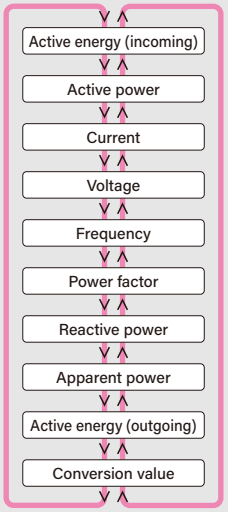
The OEL display allows you to check the measured values of voltage, current, power, energy, CO_2 emissions (energy conversion value), and relative harmonic content of each element, as well as various setting values.
The display turns off if a set time elapses without any button operation. Just press any button while the display is off to return to the state before the display was turned off. You can also set the display to always be on.

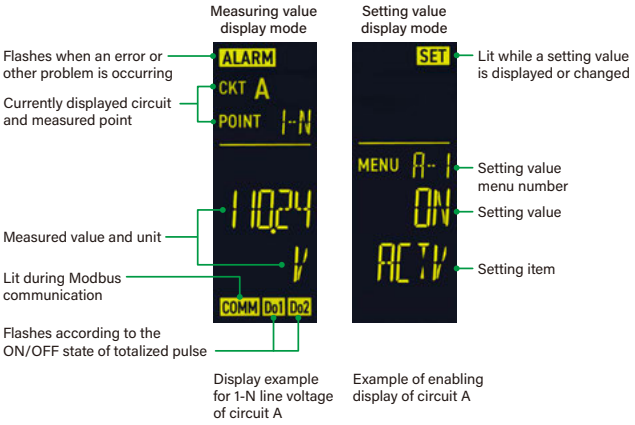
Switching measured value display

Pressing ∨ ∧ button switches the measured value display in order.

Display examples



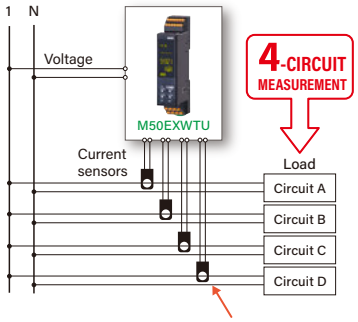




Single module can measure up to 4 circuits! Space-saving and economical.

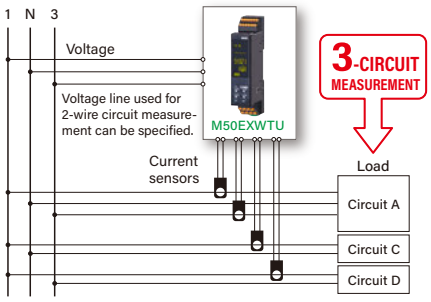
M50E-UNIT and M50X-UNIT can connect max. 4-circuit inputs for single-phase/2-wire system, max. 2-circuit inputs for single- or three-phase/3-wire system by single module.

4 x single-phase/2-wire circuits

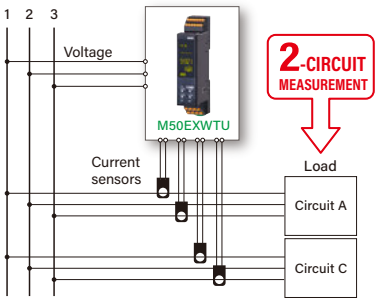


Clamp-on Current Sensor **CLSE**

1 x single-phase/3-wire + 2 x single-phase 2-wire circuits



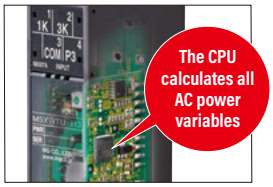
2 x three-phase/3-wire circuits



• Please see data sheet for more connection/application examples.

The built-in CPU calculates the AC power variables instantaneously.

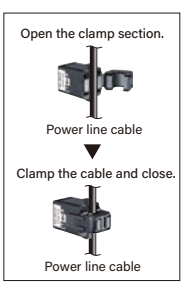
The built-in CPU calculates instantaneously up to 290*1 variables for three-phase/3-wire system, including momentary values such as current, voltage, power, average values, maximum and minimum values, total harmonic distortion, and the 2nd to 31st harmonic contents, before updating the measured data in the memory every 500 milliseconds (approximate cycle).

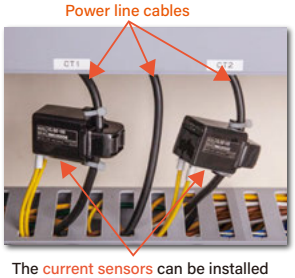


*1. 104 variables for M5XWT (three-phase/3-wire), excluding harmonic contents

Clamp-on current sensors can be retrofitted with no power line modification.

The current inputs are connected in one touch by using Clamp-on Current Sensors (Model: CLSE), needing no live cable modification. Furthermore, the M5X-UNIT use the voltage input to drive its internal circuits, needing no auxiliary power supply connection.

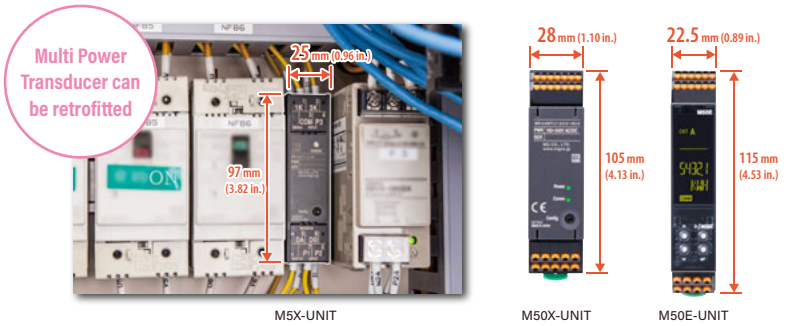




The current sensors can be installed without modifying existing power lines.

Compact size

Multi Power Transducers, featuring the 41 mm (1.61 in.) deep (55 mm or 2.17 in. for M50E-UNIT), terminal block style housing, are suitable for installation in a tight space of breaker boxes or wall-mounted panels. *2

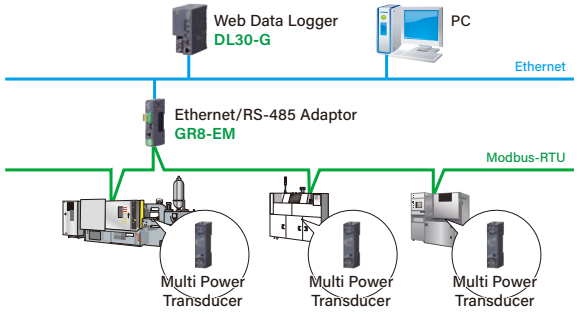


*2. Except the M50XWTU-U.
The M50XWTU-U cannot be mounted or retrofitted to switchboards, distribution boards, or control panels that are installed and in operating in a facility.

You can start a single- or multi-point power monitoring system with the Modbus.

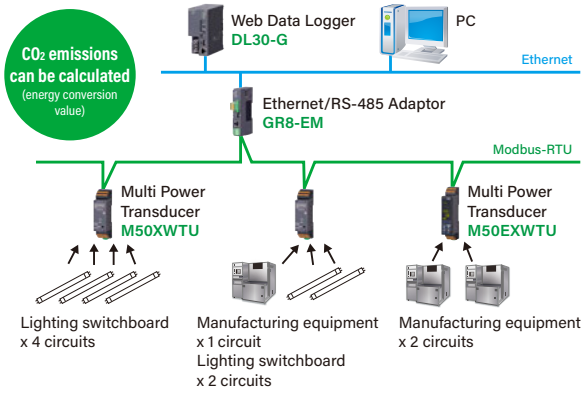
Precise power management is essential to achieving carbon neutrality. You can install the Multi Power Transducers in a small space, even on existing equipment.
You can start with a small budget and gradually increase the number of measurement points, extending to overall management.
For example, using Web Data Logger (Model: DL30-G) may be ideal as it enables Modbus communication at a reasonable cost.

System configuration example



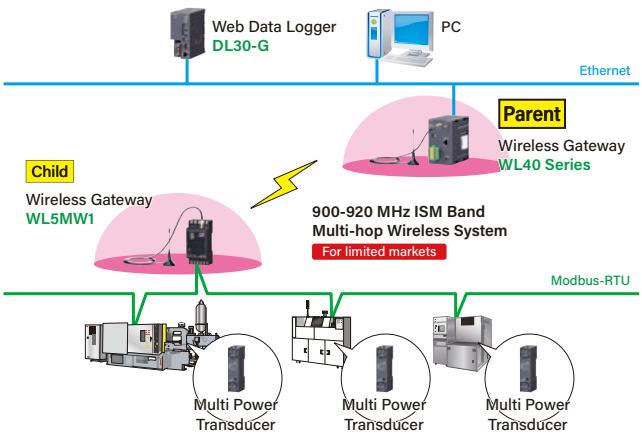
System configuration example

(M50X-UNIT, M50E-UNIT)



System configuration example, wireless system

The Wireless Gateway allows the wireless transmission of the Modbus communication of the Multi Power Transducers.



Multi Power Monitor

53-UNIT Series

Single type module is usable for all of single-phase/2-wire and 3-wire, three-phase/3-wire and 4-wire systems

53U Multi Power Monitor: 1/4 DIN size, panel flush mounting

1/4 DIN
96 mm sq

PANEL MOUNT

IP50

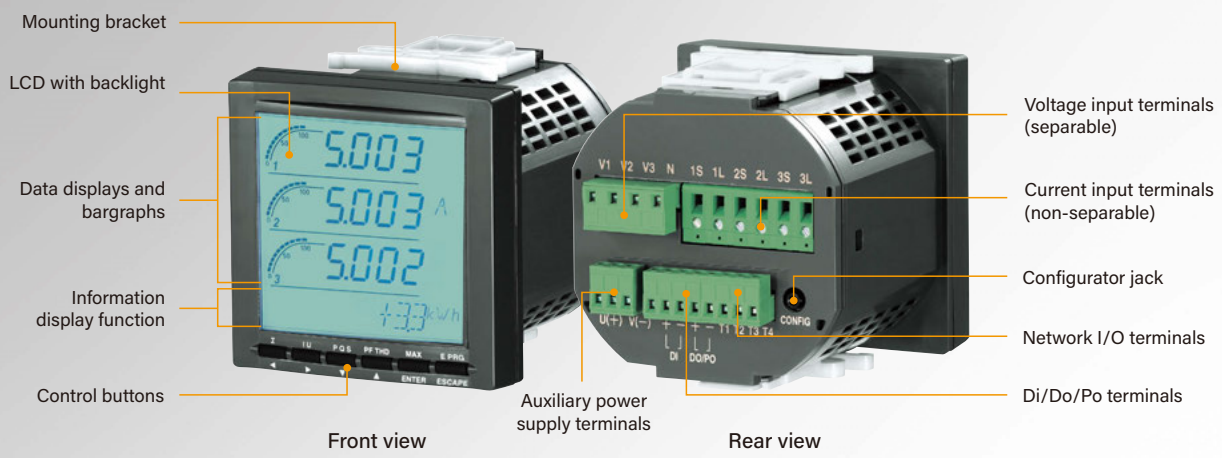
RoHS 10

Economical multi power monitor

The economical multi power monitor offers a wide variety of output combination options.
Harmonic content measurements are even possible up to the 31st order, and all settings can be configured from a PC.

External interface options

A wide variety of external interface options include Modbus, analog output up to 4 points, energy count pulse output and alarm output.
Simulated output is also available.



PRODUCT	MODEL	UL
MULTI POWER MONITOR (4 digital displays)	53U	✓

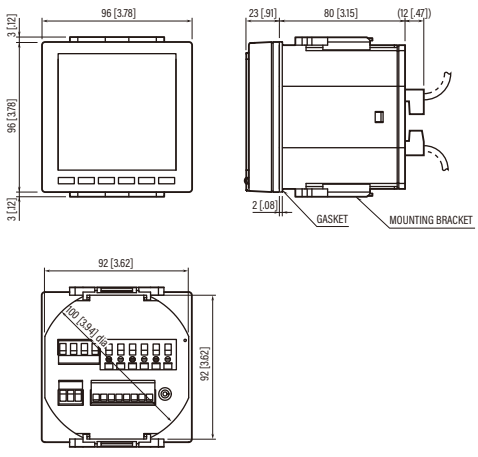
ACCESSORY

PRODUCT	MODEL	UL
PC CONFIGURATOR CABLE (USB - miniature jack, isolated)	COP-US	--
PC CONFIGURATOR CABLE	MCN-CON	--

· PC Configurator Software (Model: PMCFG) is downloadable from our website.

EXTERNAL DIMENSIONS unit: mm [inch]

Dimensions may be slightly different depending upon models.



L53U Multi Power Transducer

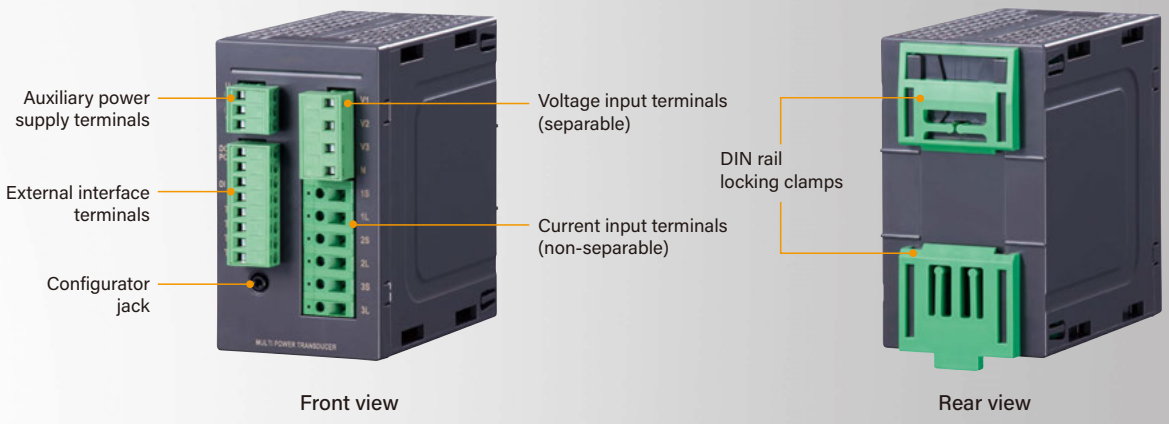
FRONT TERMINAL

The same basic functions as the 53U

This multi power transducer offers the same cost-effective performance, only without the display of the 53U multi power monitor.
The compact design can be mounted directly on a DIN rail, and the settings can be configured from a PC.

Convenient analog output loop test function

The analog output value can be changed as desired via the monitoring window in the PC Configurator Software (Model: PMCFG) even without an input signal connection.
This is useful for performing loop checks during system startup.
(This function is available in Ver. 2.00 and later software applications.)



Front view　　Rear view

PRODUCT	MODEL
MULTI POWER TRANSDUCER	L53U

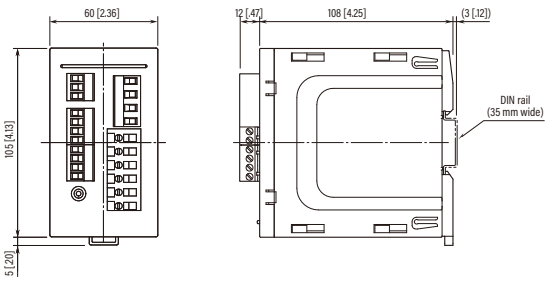
ACCESSORY

PRODUCT	MODEL
PC CONFIGURATOR CABLE (USB - miniature jack, isolated)	COP-US
PC CONFIGURATOR CABLE	MCN-CON

· PC Configurator Software (Model: PMCFG) is downloadable from our website.

EXTERNAL DIMENSIONS unit: mm [inch]

Dimensions may be slightly different depending upon models.



53-UNIT Series Specifications

		53U	L53U
General specifications			
Construction		96-mm square (1/4 DIN size) panel flush mounted	Box type, front terminal
Degree of protection	Panel	IP50	---
	Terminal block, housing	IP30	---
Connection	Voltage input	Connector type terminal block	
	Current input	Screw terminal block	
	Output, power	Connector type terminal block	
Configuration		Single phase/2-wire and 3-wire, 3-phase/3-wire balanced/unbalanced load, 3-phase/4-wire balanced/unbalanced load	
Housing material		Flame-resistant resin (gray)	
Isolation		Voltage input to current input to contact input to Modbus or configurator jack or analog output to contact output*1 to power	Voltage input to current input to discrete input to discrete output to Modbus or configurator jack or analog output to auxiliary power
Measured variables	Voltage	1-N, 2-N, 3-N, 1-2, 2-3, 3-1	
	Current, demand current	1, 2, 3, N	
	Active/reactive/apparent power power factor	1, 2, 3, ∑	
	Frequency	Measured by current or voltage	
	Phase angle between voltages	1-2, 2-3, 3-1	
	Active energy	Incoming / outgoing / peak / off-peak	
	Reactive energy	Incoming / outgoing / lag / lead / peak / off-peak	
	Apparent energy	Peak / off-peak	
	Demand	Active power, reactive power, apparent power	
	Harmonic contents	∑, 2nd to 31st Voltage: 1-N, 2-N, 3-N, 1-2, 2-3, 3-1 Current: 1, 2, 3, N	
	Other	Peak time, off-peak time, maximum and minimum values	
	Each demand history	1 to 4	
Display	Display device	LCD with LED backlight (LED OFF timer available)	---
	Signed	4 digits, 3 lines	---
	Energy	9 digits, 1 line	---
	Bargraph	3 points	---
Input specifications			
Frequency		50 / 60 Hz (45 – 65 Hz)	
Voltage input	Rated voltage	Line-to-line (delta voltage): 480 V Line-neutral (phase voltage): 277 V (single-phase / 2-wire and 3-wire)	
	Consumption VA	≤ U_{LN}^2 / 300 kΩ / phase	
	Overload capacity	200 % of rating for 10 sec., 120% continuous	
	Selectable primary voltage range	50 – 400 000 V	
Current input	Rated current	1 A or 5 A	
	Consumption VA	VA: ≤ I^2 · 0.01 Ω / phase	
	Overload capacity	4000 % of rating for 1 sec., 2000% for 4 sec., 120% continuous	
	Selectable primary current range	1 – 20 000 A	
	Selectable primary power range	---	2G VA max.
Contact input	Input signal	24 V DC or 110 V DC (input resistance 6 kΩ) Usable to reset energy count or to update average (demand) value.	
		Contact status can be monitored on the Modbus.	
Output specifications			
Contact output	Output type	Open collector	
	Measurands applicable to alarm	Voltage, current, current intervals, neutral current, frequency, energy, energy intervals	
	Measurands applicable to count	Energy; Pulse rate selectable within 0.1 – 10 000.0 kWh/p, kvarh/p, kVAh/p	
Communication		Modbus	
Current output	Load resistance	4 – 20 mA DC : 270 Ω or less *2	
Voltage output	Load resistance	1 – 5 V DC : 5000 Ω or more *2	
Installation			
Auxiliary power supply	Universal	Operational range 85 – 264 V AC	
		47 – 66 Hz, Power consumption < 8 VA	47 – 66 Hz, Power consumption < 10 VA
		Operational range 99 – 264 V DC	
		Ripple 10 %p-p max, Power consumption < 4 W	Ripple 10 %p-p max, Power consumption < 3 W
	AC	Operational range 85 – 264 V AC	---
		47 – 66 Hz, Power consumption < 8 VA	---
	DC	---	Operational range 19 – 29 V DC
		---	Ripple 10 %p-p max, Power consumption < 3 W
Operating temperature		-10 to +55°C (14 to 131°F)	
Operating humidity		90 % RH max. (non-condensing)	30 to 90 %RH (non-condensing)
Mounting		Panel flush mounting	DIN rail
Size		W 96×H 96×D 115 mm (3.78″×3.78″×4.53″)	W 60×H 105×D 120 mm (2.36″×4.13″×4.72″)
Weight		300 g (0.66 lb)	300 g (0.66 lb)

		53U	L53U
Performance			
Accuracy (at 23°C ±10°C or 73.4°F ±18°F, 45 – 65 Hz)	Voltage, current	±0.3 % (±0.2 % for Option /H) *3	
	Power	±0.5 % *3	
	Power factor	±0.5 %	
	Frequency	±0.1 % *3	
	Energy	±1 % (±0.5 % for Option /H) *4	
	Harmonic contents	±1 % *3	
	Analog output	Accuracy of assigned measurand or ±0.2 %, whichever is greater.	
Response time		≤ 2 sec. (0 – 99 %), ≤ 3 sec. for frequency and harmonic contents	
Data update period		Harmonic contents and frequency: ≤ 1.1 sec., Other: ≤ 600 msec.	
Insulation resistance		≥ 100 MΩ with 500 V DC	
Dielectric strength		4000 V AC @1 minute (voltage input or current input or contact input or contact output or Modbus or configurator jack or analog output to power)	
		2500 V AC @1 minute (voltage input to current input to contact input to contact output to Modbus or configurator jack or analog output)	
		2000 V AC @1 minute (circuits to housing)	---
	Between each contact output	2000 V AC @1 minute *1	---

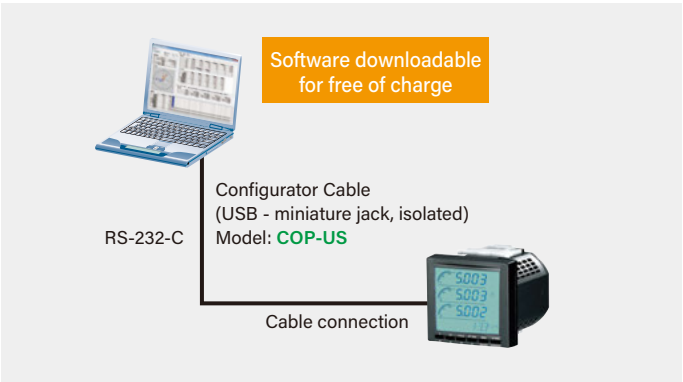
Note) The numbers 1, 2 and 3 mean the phase R, S and T respectively.
*1. Except for External Interface code 8
*2. Measurands converted into analog output: Voltage, Current, Active / reactive / apparent power, Power factor, Frequency, Harmonic contents
*3. Percentage of the spans: 480 V for voltage; 1 A or 5 A for current; and 4155 W (5 A) or 831 W (1 A) for active power
The described accuracy levels are ensured at the input 1 % or more for phase 2 current with 3-phase/3-wire unbalanced load, for neutral current with 3-phase/4-wire unbalanced load, and neutral current with 1-phase/3-wire.
*4. Accuracy level: Active energy class 0.5S according to IEC 62053-22 (Reactive energy class 2 according to IEC 62053-23)

PC communication for quick setup

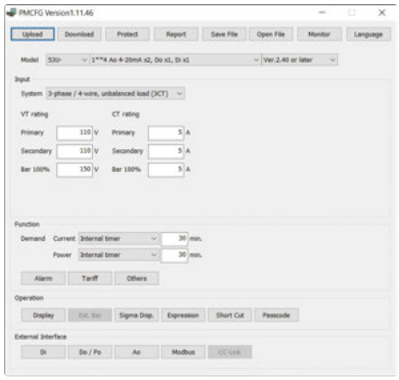
The PC Configurator Software (Model: PMCFG) for multi power monitors allows users to download configuration parameters and upload measured and set values from a PC.
In addition to enabling use of a wide PC screen for tedious configuration of settings and for editing work, the software also makes it easy to standardize and record settings.
The current measurements and calculated values can also be monitored via PC.
The 54U/54UC/54UL can also be configured via infrared light without having to touch the rear terminals by using the infrared communication adapter for the configurator (sold separately).
The PC Configurator Software for Multi Power Monitors (Model: PMCFG) is downloadable for free from our website.

Main functions

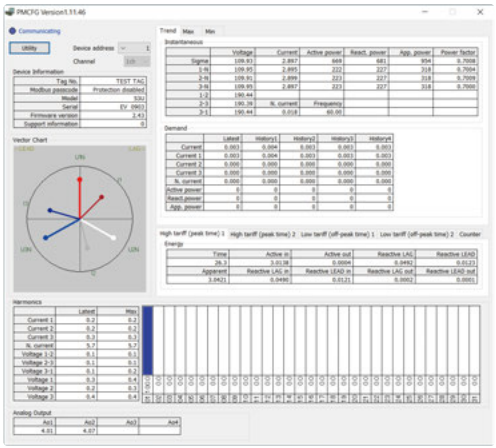
- Editing, writing and reading device parameters
- Parameter file management
- Comparing currently edited parameters with those saved in the device
- Analog output loop test (L53U Ver. 2.00 or later)



• Setting window



• Monitoring window



Multi Power Monitor

54-UNIT Series

JIS 110 mm sq

PANEL MOUNT

A wide range of output functions as well as support for Modbus, CC-Link and LONWORKS

IP50

RoHS 10

54-UNIT Multi Power Monitor: 110 × 110 mm size, panel flush mounting

PRODUCT	MODEL
MULTI POWER MONITOR (4 digital displays)	54U
MULTI POWER MONITOR (4 digital displays, CC-Link)	54UC
MULTI POWER MONITOR (4 digital displays, LONWORKS)	54UL*1

*1. Due to the discontinuation of Echelon's Neuron chips used in LONWORKS systems, we plan to discontinue sales of our LONWORKS products at the end of March 2026.

ACCESSORY

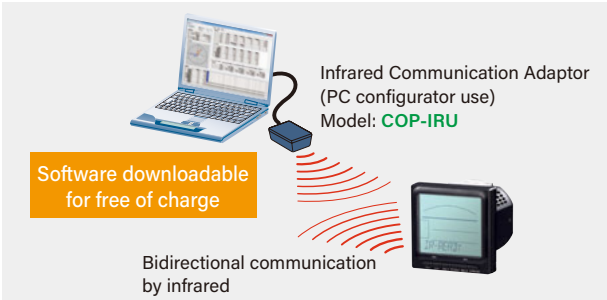
PRODUCT	MODEL
INFRARED COMMUNICATION ADAPTOR (PC Configurator use)	COP-IRU

· PC Configurator Software for 54U/54UC/54UL (Model: PMCFG) is downloadable from our website.

Supported network protocols

Modbus CC-Link LONWORKS

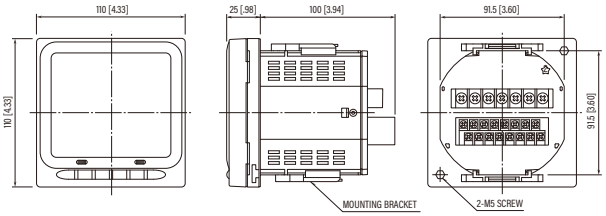
Configurable via infrared communication from a PC



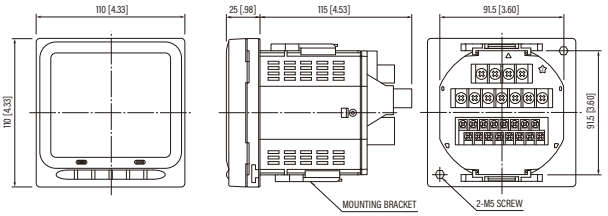
EXTERNAL DIMENSIONS unit: mm [inch]

Dimensions may be slightly different depending upon models.

▪ **54U/54UC/54UL** (single-phase/2-wire, 3-wire, three-phase/3-wire)



▪ **54U/54UC/54UL** (single-phase/2-wire, 3-wire, three-phase/3-wire, 4-wire)



Multi Power Transducer

LS-UNIT Series

FRONT TERMINAL

Convenient batch management in power receiving panels and those requiring multi-variable measurement

LSMT4 Multi Power Transducer

Full range of AC power measurement equipment

Simply connecting one AC power system circuit enables bidirectional current calculation, four-quadrant calculation, and measurement of various AC quantities, including harmonics.
The LS-UNIT Series is also compliant with JIS C1111 requirements.

Wide variety of output specifications

The LSMT4 provides 10 analog outputs and two energy and counter value pulse outputs.
A loop test function is also available.

Compatible with DC power supplies

The LS-UNIT Series supports 24 V DC and 48 V DC power supplies.

PRODUCT	MODEL
MULTI POWER TRANSDUCER	LSMT4

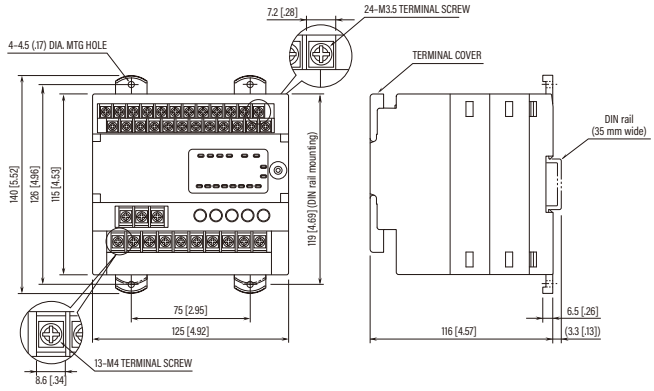
ACCESSORY

PRODUCT	MODEL
PC CONFIGURATOR CABLE (USB - miniature jack, isolated)	COP-US
PC CONFIGURATOR CABLE	MCN-CON

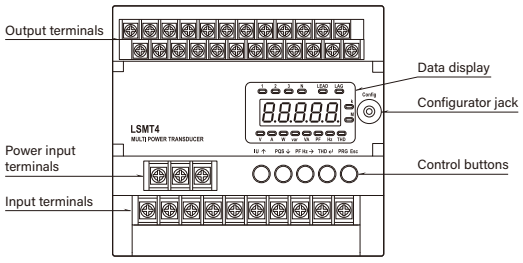
· PC Configurator Software for LSMT4 (Model: LSCFG) is downloadable from our website.

EXTERNAL DIMENSIONS unit: mm [inch]

Dimensions may be slightly different depending upon models.



FRONT PANEL



Slice Type, Scalable Remote I/O

R8 Series

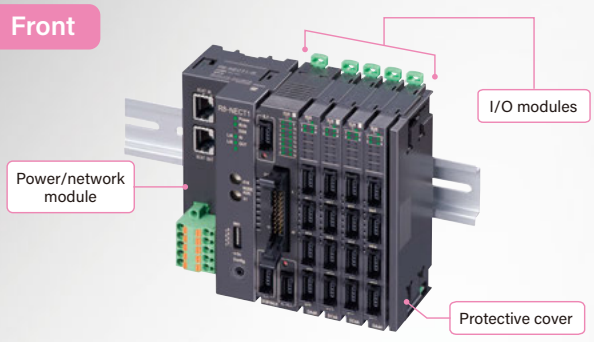
LARGE NUMBER I/O | SCALABLE | 24 V DC POWER SUPPLY

Remote I/O designed for customer needs

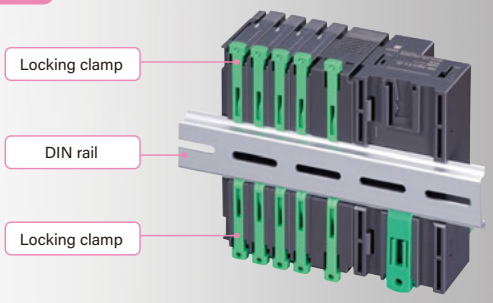
Compliance/approval depends upon models.

- This remote I/O, featuring slice constructions, can be freely configured with the necessary ultra-slim type I/O modules, and does not require a backplane base.
- The R8-WTU accepts direct 480 V inputs and is usable for all of single-phase/2-wire and 3-wire, three-phase/3-wire and 4-wire systems.
- Max. 4-circuit inputs for single-phase/2-wire system, max. 2-circuit inputs for single- or three-phase/3-wire system (R8-WTU)
- The one-touch clamp-type sensor can be easily installed on existing equipment.

Front



Rear

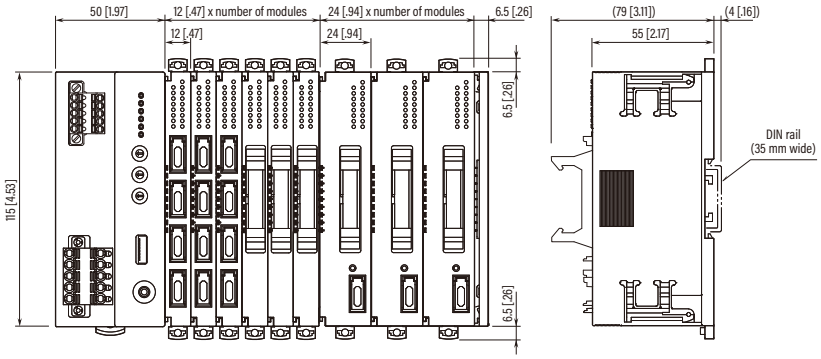


Supported network protocols

CC-Link DeviceNet Modbus EtherCAT EtherNet/IP

EXTERNAL DIMENSIONS unit: mm [inch]

Dimensions may be slightly different depending upon models.



POWER/NETWORK MODULE

PRODUCT	MODEL	UL
POWER/NETWORK MODULE (DeviceNet)	R8-ND1	--
POWER/NETWORK MODULE (DeviceNet, automatic area size optimization)	R8-ND2	--
POWER/NETWORK MODULE (Modbus)	R8-NM1	--
POWER/NETWORK MODULE (EtherCAT)	R8-NECT1	--
POWER/NETWORK MODULE (EtherNet/IP)	R8-NEIP1	--
POWER/NETWORK MODULE (CC-Link Ver.2.00; for 64-point analog signals)	R8-NC3	✓
POWER/NETWORK MODULE (CC-Link Ver.2.00; 1 - 4 configurable required nodes, for 64-point analog signals)	R8-NC3A	--

AC POWER INPUT MODULE

PRODUCT	MODEL	UL
AC CURRENT INPUT MODULE (RMS sensing, clamp-on current sensor, non-isolated, 4 points)	R8-CT4E	--
MULTI POWER INPUT MODULE (clamp-on current sensor type CLSE use)	R8-WTU	--

ACCESSORY

PRODUCT	MODEL
PC CONFIGURATOR CABLE (USB - miniature jack, isolated)	COP-US
PC CONFIGURATOR CABLE	MCN-CON

- Clamp-on Current Sensors (Model: CLSE) are sold separately. See Page 26.
- R8 Configurator Software (Model: RCFG), ESI files and EDS files are downloadable from our website.

Multi-channel, Scalable Remote I/O

R3 Series

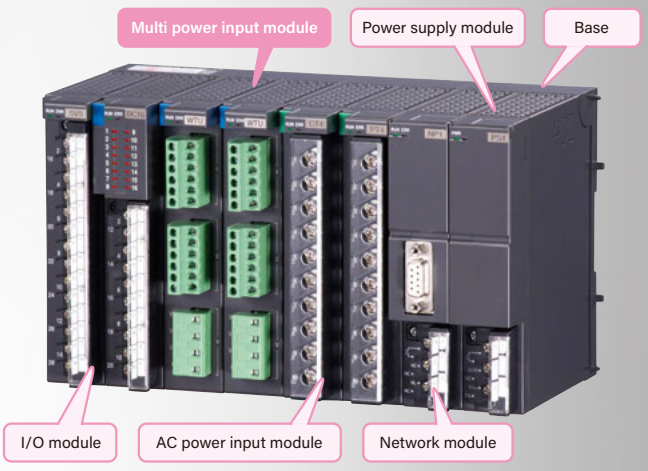
LARGE NUMBER I/O | SCALABLE | AC POWER DC POWER | DUAL POWER | DUAL NETWORK

Usable with various modules in combination with the AC power module, including pulse and temperature input modules

- Wide variety of network modules for support of various open networks
- Suitable for AC power monitoring, including power, current transformer, and potential transformer inputs
- Usable with modules that support clamp-on AC current sensors with no installation work required
- Measurement even without a current transformer (instrumentation transformer) when used with a clamp-on AC current sensor
- Redundancy for network and power supply
- Connector type (R3Y) and tension clamp terminal block type (R3S) I/O modules available
- Usable with various module combinations for efficient, economical I/O configuration

CE RoHS 10

Compliance/approval depends upon models.



Supported network protocols

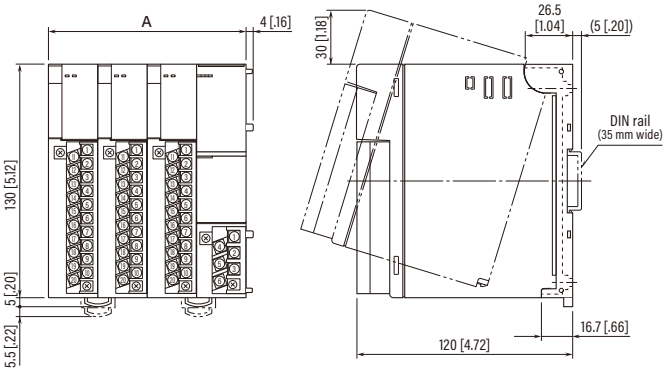
CC-Link
CC-Link IE Field
DeviceNet
PROFIBUS
Modbus
Modbus/TCP
LONWORKS
EtherNet/IP
MECHATROLINK
MECHATROLINK-III
EtherCAT
T-Link
FL-net

Module configurations

The R3 Series Multi-channel, Scalable Remote I/O offers a wide variety of modules in addition to those introduced here, including pulse I/O modules, analog I/O modules, alarm modules, discrete I/O modules, BCD code I/O modules, specialized I/O modules for air conditioning, and temperature control modules. Check our website for more information.

EXTERNAL DIMENSIONS unit: mm [inch]

Dimensions may be slightly different depending upon models.



Model \ Size	A
R3-BS02 [2 slots]	56 [2.20]
R3-BS04 [4 slots]	112 [4.41]
R3-BS06 [6 slots]	168 [6.61]
R3-BS08 [8 slots]	224 [8.82]
R3-BS10 [10 slots]	280 [11.02]
R3-BS12 [12 slots]	336 [13.23]
R3-BS14 [14 slots]	392 [15.43]
R3-BS16 [16 slots]	448 [17.64]

INSTALLATION BASE

PRODUCT	MODEL
INSTALLATION BASE	R3-BS02
	R3-BS02P
	R3-BS04
	R3-BS06
	R3-BS08
	R3-BS10
	R3-BS12
	R3-BS14
	R3-BS16
INSTALLATION BASE (free I/O address)	R3-BSW04
	R3-BSW06
	R3-BSW08
	R3-BSW10
	R3-BSW12
	R3-BSW14
	R3-BSW16

POWER SUPPLY MODULE

PRODUCT	MODEL
POWER SUPPLY MODULE (single slot, continuous output current 750 mA)	R3-PS1
POWER SUPPLY MODULE (double slot, continuous output current 2.0 A)	R3-PS3

NETWORK MODULE

PRODUCT	MODEL
CC-Link INTERFACE MODULE (CC-Link Ver.1.10; for 16-point analog signals)	R3-NC1
CC-Link INTERFACE MODULE (CC-Link Ver.1.10; for 32-point analog signals)	R3-NC2
CC-Link INTERFACE MODULE (CC-Link Ver. 2)	R3-NC3
NETWORK INTERFACE MODULE (CC-Link IE Field network)	R3-NCIE1
DeviceNet INTERFACE MODULE (for 16-point analog signals)	R3-ND1
DeviceNet INTERFACE MODULE (for 32-point analog signals)	R3-ND2
DeviceNet INTERFACE MODULE (for 64-point analog signals)	R3-ND3
ETHERNET INTERFACE MODULE (Modbus/TCP)	R3-NE1
NETWORK INTERFACE MODULE (EtherCAT)	R3-NECT1
EtherNet/IP INTERFACE MODULE	R3-NEIP2
T-Link INTERFACE MODULE (Fuji Electric T-Link use)	R3-NF1
T-Link INTERFACE MODULE (Fuji Electric T-Link interface module equivalent)	R3-NF2
T-Link INTERFACE MODULE (Fuji Electric T-Link capsule equivalent)	R3-NF3
FL-net INTERFACE MODULE (OPCN-2, Ver.2.0 supported)	R3-NFL1
MODBUS INTERFACE MODULE	R3-NM1
MODBUS INTERFACE MODULE (for temperature control module)	R3-NM3
MODBUS INTERFACE MODULE (for 115.2 kbps)	R3-NM4
MECHATROLINK INTERFACE MODULE (MECHATROLINK-III)	R3-NML3
PROFIBUS-DP INTERFACE MODULE	R3-NP1
LonWorks INTERFACE MODULE (analog I/O 16 points, discrete I/O 48 points)	R3-NL1*1
LonWorks INTERFACE MODULE (I/O 56 points)	R3-NL2*1

*1. Due to the discontinuation of Echelon's Neuron chips used in LonWorks systems, we plan to discontinue sales of our LonWorks products at the end of March 2026.

NETWORK MODULE (GATEWAY)

PRODUCT	MODEL
CC-Link INTERFACE MODULE (CC-Link Ver.1.10/Ver.2.00)	R3-GC1
DeviceNet INTERFACE MODULE (for 64-point analog signals)	R3-GD1
INTERFACE I/O MODULE (Modbus/TCP)	R3-GE1
FL-net INTERFACE MODULE (OPCN-2, Ver.2.0 supported)	R3-GFL1
MODBUS INTERFACE MODULE	R3-GM1
INTERFACE I/O MODULE (for SLMP Client)	R3-GSLMP1

AC POWER INPUT MODULE

PRODUCT	MODEL
CT INPUT MODULE (4 points, isolated, true RMS sensing)	R3-CT4
AC CURRENT INPUT MODULE (4 points, isolated, clamp-on current sensor type CLSA use)	R3-CT4A
AC CURRENT INPUT MODULE (4 points, isolated, clamp-on current sensor type CLSB use)	R3-CT4B
AC CURRENT INPUT MODULE (4 points, isolated, clamp-on current sensor type CLSB-R5 use)	R3-CT4C
AC CURRENT INPUT MODULE (8 points, isolated, clamp-on current sensor type CLSA use)	R3-CT8A
AC CURRENT INPUT MODULE (8 points, isolated, clamp-on current sensor type CLSB use)	R3-CT8B
AC CURRENT INPUT MODULE (8 points, isolated, clamp-on current sensor type CLSB-R5 use)	R3-CT8C
AC VOLTAGE INPUT MODULE (4 points, isolated, true RMS sensing)	R3-PT4
ZERO-PHASE CURRENT INPUT MODULE (4 points, isolated, with noise filter)	R3-CZ4
MULTI POWER INPUT MODULE (clamp-on current sensor type CLSE use)	R3-WTU

ACCESSORY

PRODUCT	MODEL
PC CONFIGURATOR CABLE (USB - miniature jack, isolated)	COP-US
PC CONFIGURATOR CABLE	MCN-CON

- Clamp-on Current Sensors (Model: CLSE) are sold separately. See Page 26.
- R3 Configurator Software (Model: R3CON), EDS files, GSD files and XIF files (Device Interface Files) are downloadable from our website.

Compact, All-in-one Remote I/O

R7 Series

SMALL NUMBER I/O | ALL-IN-ONE | 24 V DC POWER SUPPLY

All-in-one remote I/O with input/output, network, and power input modules in a compact housing

Compliance/approval depends upon models.

- Ultra-compact smallest-in-series remote I/O with integrated all-in-one design
- Measurement even without a current transformer (instrumentation transformer) when used with a clamp-on AC current sensor
- One-touch clamp-on AC current sensor for easy installation in existing equipment
- Wide input range of 5 to 600 A
- Non-volatile memory for storing measured values, accumulated values, and setting data even when powered off
- One-touch extension module connectivity
- Compatible with major industrial networks

Supported network protocols

CC-Link
DeviceNet
Modbus
LONWORKS
Modbus/TCP

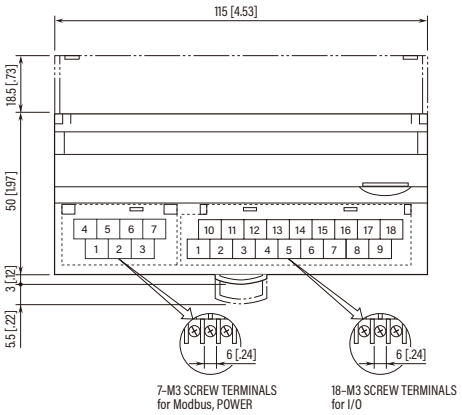
Compact, all-in-one construction

The R7 Series remote I/O with integrated input/output is suitable for a limited number of signals. This all-in-one remote I/O can be used easily and safely, with input/output, network, and power input modules in a compact, palm-sized housing.

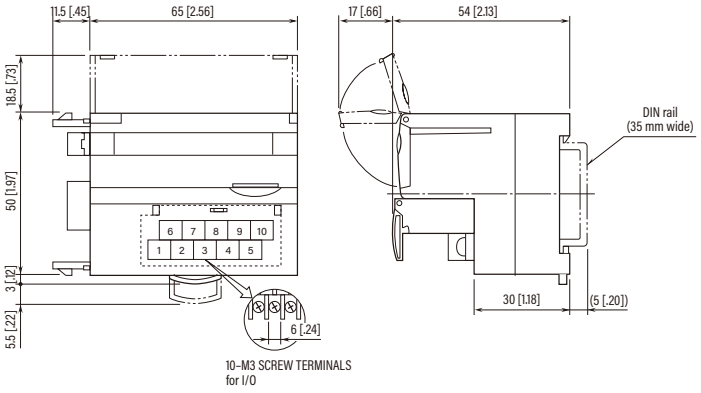
EXTERNAL DIMENSIONS unit: mm [inch]

Dimensions may be slightly different depending upon models.

▪ Base module



▪ Extension module (8 points)



Extension module can be added in one-touch connection

- Extension modules can be easily connected to the base module with just a touch, allowing for a wide variety of combinations to suit any application.
- The Multi Power Monitoring Module can be used as a high-performance unit with two system inputs and eight contact inputs.
  Extension modules can be connected to Multi Power Monitoring Modules for LonWorks (R7LWTU) and Modbus (R7MWTU). No extension module is available for those for CC-Link (R7CWTU) and Modbus/TCP (Ethernet) (R7EWTU).

MULTI POWER MONITORING MODULE

PRODUCT	MODEL
MULTI POWER MONITORING MODULE (CC-Link Ver. 1.10, clamp-on current sensor CLSE)	R7CWTU
MULTI POWER MONITORING MODULE (Modbus, clamp-on current sensor CLSE)	R7MWTU
MULTI POWER MONITORING MODULE (Ethernet Modbus/TCP, clamp-on current sensor CLSE)	R7EWTU
MULTI POWER MONITORING MODULE (LonWorks, clamp-on current sensor CLSE)	R7LWTU*1

EXTENSION MODULE FOR R7MWTU, R7LWTU

PRODUCT	MODEL
EXTENSION MODULE (Modbus, 8 points)	R7MWTU-EA8
EXTENSION MODULE (LonWorks, 8 points)	R7LWTU-EA8*1

*1. Due to the discontinuation of Echelon's Neuron chips used in LonWorks systems, we plan to discontinue sales of our LonWorks products at the end of March 2026.

BASE MODULE FOR AC INPUT

PRODUCT	MODEL	UL
AC CURRENT INPUT MODULE (CC-Link Ver. 1.10, 4 points, clamp-on current sensor CLSE use)	R7C-CT4E	--
AC CURRENT INPUT MODULE (DeviceNet, 4 points, clamp-on current sensor CLSE use)	R7D-CT4E	--
AC CURRENT INPUT MODULE (Modbus, 4 points, clamp-on current sensor CLSE use)	R7M-CT4E	--
AC CURRENT INPUT MODULE (Ethernet Modbus/TCP, 4 points, clamp-on current sensor CLSE use)	R7E-CT4E	--

EXTENSION MODULE FOR R7 SERIES

PRODUCT	MODEL	UL
DISCRETE INPUT MODULE (8 points)	R7C-EA8	--
	R7x-EA8	
DISCRETE INPUT MODULE (16 points)	R7C-EA16	✓
	R7x-EA16	
NPN TRANSISTOR OUTPUT MODULE (8 points)	R7C-EC8A	--
	R7x-EC8A	
NPN TRANSISTOR OUTPUT MODULE (16 points)	R7C-EC16A	✓
	R7x-EC16A	
PNP TRANSISTOR OUTPUT MODULE (8 points)	R7C-EC8B	--
	R7x-EC8B	
PNP TRANSISTOR OUTPUT MODULE (16 points)	R7C-EC16B	✓
	R7x-EC16B	
RELAY CONTACT OUTPUT MODULE (8 points)	R7C-EC8C	--
	R7M-EC8C	

· R7x = R7D, R7M or R7E
· UL approval is not available with Modbus/TCP (Ethernet) extension module.

ACCESSORY

PRODUCT	MODEL	UL
PC CONFIGURATOR CABLE (USB - miniature jack, isolated)	COP-US	--
PC CONFIGURATOR CABLE	MCN-CON	--

· Clamp-on Current Sensors (Model: CLSE) are sold separately. See Page 26.
· PC Configurator Software for multi power monitoring module (Model: PMCFG) and R7 Series PC Configurator Software (Model: R7CON) are downloadable from our website.

Remote Graphic Panel for AC Power Monitoring

RGP30-W

Display-free indicator for AC power monitoring

- **Easy selection of the most suitable indicator for the application, from large commercial monitors and touch panels to smartphones, and more**
- **Connectivity to HDMI-compatible displays**
- **Report generation function (for daily, monthly, and yearly reports) with reports that can be saved to an SD card and downloaded as CSV files**
- **Graphic Panel Designing Software for RGP30 Series (RGP-Designer) software support for creating original windows**

PRODUCT	MODEL
REMOTE GRAPHIC PANEL (with HDMI output)	RGP30-N
REMOTE GRAPHIC PANEL (with HDMI output, standard with power monitor screens) NEW	RGP30-W

- Graphic Panel Designing Software for RGP30 Series (model: RGP-Designer) and Local Certification Authority Creator (model: LCA-RGP) are downloadable from our website.
- An SD card is required for the RGP30-W to store data. Use one of the designated model numbers in the data sheet, which is available commercially and from us.

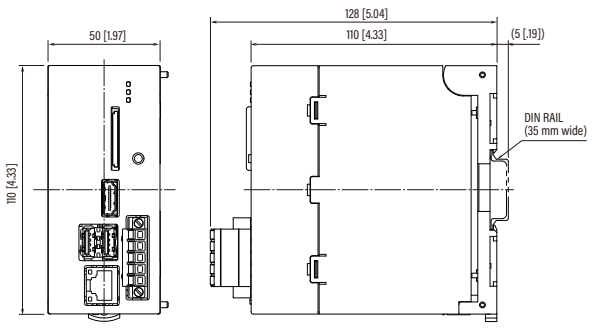
POWER MEASURING DEVICES

Function	No. of circuits	Model
Multi power monitoring module	2	R7EWTU, R7MWTU*1
	16	R9EWTU, R9MWTU*1
Multi power transducer *1	1	M5XWT, M5XWTU
	4	M50XWTU, M50EXWTU
Multi power monitor *1	1	53U, 54U
Multi power transducer *1	1	L53U

*1. Use Ethernet/RS-485 Adaptor (Model: GR8-EM) to convert Modbus-RTU into Modbus/TCP.

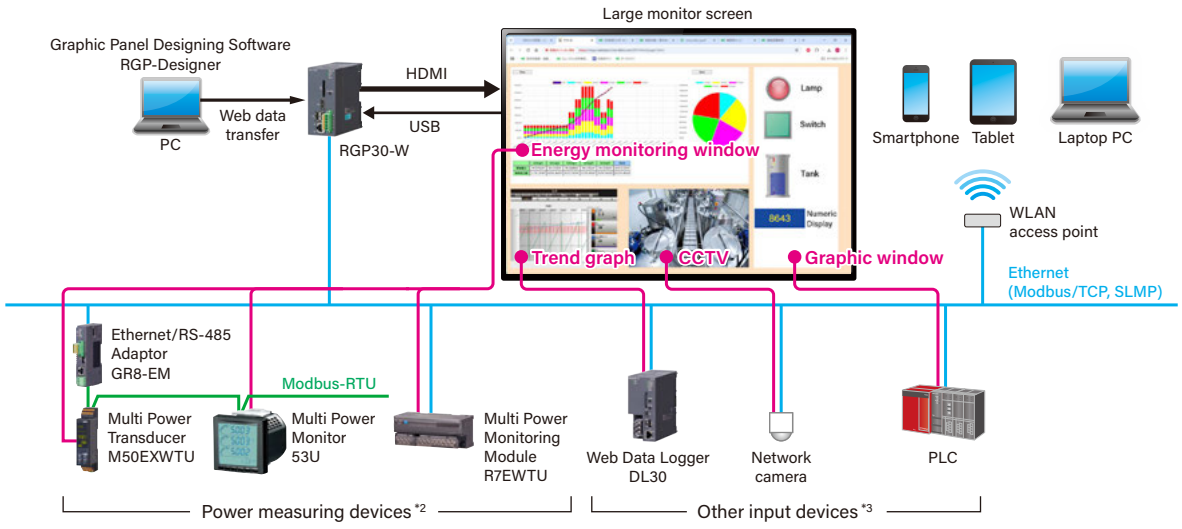
EXTERNAL DIMENSIONS unit: mm [inch]

Dimensions may be slightly different depending upon models.



Remote Graphic Panel for AC power monitoring

Remote Graphic Panel for power monitoring (Model: RGP30-W) is a display-free indicator featuring a simple web server function for displaying energy information on a display panel or other device. This device collects information from MG Co., Ltd. power measurement equipment and displays the data on power monitoring windows or edits the data for use in reports. The display supports HDMI connections to commercially available monitor panels in addition to smartphones and laptops via wireless LAN. In addition to the energy windows, the panel can also display windows of devices with web server functions such as Web Data Logger, signals from PLCs and remote I/O with graphic parts, and video from web monitoring cameras, as well as control camera operation.



*2. Please refer to the list of applicable products (Page 24) for details.

*3. Please refer to the data sheet of the RGP30 Remote Graphic Panel for details.

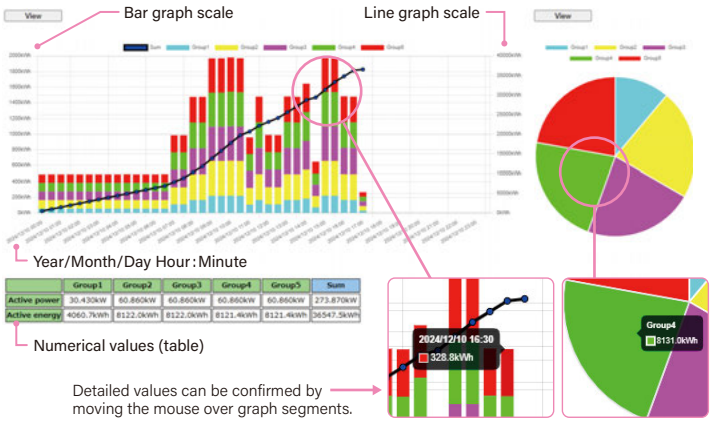
Simple, easy-to-understand energy monitoring windows

Data can be displayed by day, month, or year.

Energy window (daily data example)

Energies are color-coded by section and displayed in a bar graph and pie chart.
Bar graph data can be displayed as stacks with sections arranged vertically, or individually with sections arranged horizontally.
Energies for two days can be also displayed vertically for any selected calendar day in the comparison window.

Stacked bar graph



Bar graph	: Displays the active AC power per section per hour with groups separated by color.
Line graph	: Displays the daily active AC power per hour.
Pie chart	: Displays the daily active AC power ratio per section.
Numerical value (table)	: Lists the active AC power (kW) for the listed time and the daily active AC power (kWh) per section numerically.

Section window and circuit window

• Section window
The section window displays the real-time active power, reactive power, apparent power, voltage, current, power factor, and frequency for each circuit belonging to the relevant section. Specific circuits can also be selected for display on the circuit window.

	C5	C6
Active power	41.467kW	41.467kW
Reactive power	10.180kvar	10.180kvar
Apparent power	42.698kVA	42.698kVA
Voltage	63.61V	63.61V
Current	2.011A	2.011A
Power factor	0.9711	0.9711
Frequency	60.01Hz	60.01Hz

• Circuit window
The circuit window displays the real-time voltage, current, and power factor between phases/lines of the relevant circuit. The real-time harmonic distortion content of selected elements can also be displayed as a bar graph.

	1-N (1-2)	2-N (2-3)	3-N (3-1)	N
Line current	20.018A	20.018A	20.018A	
Phase voltage	63.68V	63.68V	63.68V	
(Line voltage)	110.18V	110.18V	110.18V	
Power factor	0.8118	0.8118	0.8118	

Report function for saving daily, monthly, and yearly reports to an SD card and downloaded

- Daily reports as well as monthly and yearly reports can be created.
- Energy data can be listed according to section.
- Report data can be saved as a CSV file to an SD card.
- Days to be displayed can be easily selected from the calendar dialog.
- Data from the currently viewed daily report can be saved as a CSV file using the browser's download function.

Clamp-on Current Sensor

CLSx Series

Simply clamp on to detect current signals —no power disconnection needed!

- No need to cut wiring, so installation can be done without interrupting power.
- No need for panel attachment, allowing for installation in existing equipment even without modification
- Built-in over-voltage clamp element for safe usability even in live-wire installations and open current transformer secondary side applications
- Measurements for up to 2000 A

■ CLSA Series ■ CLSB Series ■ CLSC Series ■ CLSD Series ■ CLSE Series

CLSA Series — Leadwire connection

Measuring range: ≤80 A to ≤500 A

Model	CLSA-08	CLSA-12	CLSA-30	CLSA-50
Wire dia.	ϕ10 max.	ϕ16 max.	ϕ24 max.	ϕ36 max.
Range	80 A max.	120 A max.	300 A max.	500 A max.

■ Related products: Special cable (supports CLSA-08, -12), 3 m (Model: CLSA-08C-30)

CLSB Series — Terminal block connection

Measuring range: ≤5 A to ≤600 A

Model	CLSB-R5	CLSB-05	CLSB-10	CLSB-20	CLSB-40	CLSB-60
Wire dia.	ϕ10 max.	ϕ10 max.	ϕ16 max.	ϕ24 max.	ϕ35 max.	ϕ35 max.
Range	5 A max.	50 A max.	100 A max.	200 A max.	400 A max.	600 A max.

■ Related products: Special cable, 3 m (Model: CLSA-08C-30)
Special cable for CLSA-08C (Model: CLS-CN)

CLSC Series — Leadwire connection, 1 A output

Measuring range: ≤100 A to ≤600 A

Model	CLSC-10	CLSC-25	CLSC-50	CLSC-60
Wire dia.	ϕ24 max.	ϕ24 max.	ϕ36 max.	ϕ36 max.
Range	100 A max.	250 A max.	500 A max.	600 A max.

CLSD Series — Leadwire connection, 1 A output

Measuring range: ≤150 A to ≤2000 A

Model	CLSD-A	CLSD-B	CLSD-C	CLSD-D
Wire dia.	ϕ24 max.	ϕ36 max.	ϕ60 max.	ϕ100 max.
Range	150 A or 200 A max.	300 A or 400 A max.	800 A or 1000 A max.	2000 A max.

CLSE Series — Terminal block connection

Measuring range: ≤5 A to ≤600 A

Model	CLSE-R5	CLSE-05	CLSE-10	CLSE-20	CLSE-40	CLSE-60
Wire dia.	ϕ10 max.	ϕ10 max.	ϕ16 max.	ϕ24 max.	ϕ36 max.	ϕ36 max.
Range	5 A max.	50 A max.	100 A max.	200 A max.	400 A max.	600 A max.

Model for M50XWTU-U	CLSE -U-R5	CLSE -U-05	CLSE -U-10	CLSE -U-20	CLSE -U-40	CLSE -U-60
Wire dia.	ϕ0.8 - 10	ϕ2.5 - 10	ϕ5 - 16	ϕ8 - 24	ϕ12.5 - 36	ϕ17 - 36
Range	5 A max.	50 A max.	100 A max.	200 A max.	400 A max.	600 A max.

■ Related products: Special cable, 3 m (Model: CLSA-08C-30)
Special cable for CLSA-08C (Model: CLS-CN)

Clamp-on pulse sensor — Detects pulse output from a watt-hour meter

CLSP

Indirectly detects pulse signals counted at a watt-hour meter and provides them to a PLC or a demand monitor equipment

Other Products

Space-saving Power Transducers
14-UNIT Series

A varied collection of devices—from sensor input signal conditioners to AC power transducers—all with 50 mm wide housings

Power Transducers
L-UNIT Series

A powerful series that incorporates clever, ingenious ideas, including 2-channel, 3-channel, and compact models

Rack-mounted Power Transducers
17-RACK Series

Rack-mounted AC power transducers for high-density installations

Plug-in Power Transducers
K-UNIT Series

A complete lineup of plug-in type AC power transducers

Plug-in Remote I/O
R10 Series

All new plug-in remote I/O

Multi-point Remote I/O for AC power monitoring/logging
R9 Series

Compact and economical AC power measurement remote I/O

JIS110 Square Panel Size
54U2/54A

A wide range of output functions as well as support for Modbus, CC-Link, and LonWorks

(54U2)

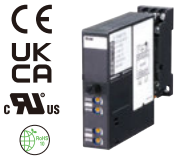
IP52

Limited to Japanese market

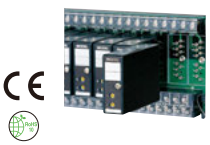
Power Transducers in other signal conditioner series

Matrix Table

Specifications typical for each series are compared in the table. Details may differ depending on models.

		Super-mini signal conditioners Mini-M Series	Space-saving dual output signal conditioners Mini-MW Series	Ultra-slim signal conditioners M6 Series	Terminal block signal conditioners with display M50E-UNIT Series	Terminal block signal conditioners M50X-UNIT Series
External view						
Construction		Plug-in	Plug-in	Ultra-slim terminal block	Super-min terminal block	Super-min terminal block
Connection		M3 screw	M3 screw	Tension clamp terminal, M3 screw or euro terminal	Tension clamp terminal	Tension clamp terminal
Isolation		3-port	4-port	3-port	5-port	5-port
I/O withstand voltage		2000 V AC	2000 V AC	2000 V AC	2000 V AC	2000 V AC
Range		Fixed	Fixed	Fixed	PC programmable	PC programmable
Dual output		---	✓	---	✓	✓
Power supply		AC / DC	AC / DC	DC	AC / DC (universal)	AC / DC (universal) *1
Operating temperature		-5 to +55°C 23 to 131°F	-5 to +55°C 23 to 131°F	-20 to +55°C -4 to +131°F	-20 to +65°C -4 to +149°F	-20 to +65°C -4 to +149°F *1
Mounting		Wall or DIN rail	Wall or DIN rail	DIN rail or wall-mounted installation base	DIN rail	DIN rail
Dimensions mm [inch]		W 23 [0.91] H 76 [2.99] D 124 [4.88]	W 29.5 [1.16] H 88.5 [3.48] D 124 [4.88]	W 5.9 [0.23], 7.5 [0.30] H 94 [3.70], 102 [4.02] D 102 [4.02]	W 22.5 [0.89] H 115 [4.53] D 55 [2.17]	W 28 [1.10] H 105 [4.13] D 41 [1.61]
Function		Mini-M Series	Mini-MW Series	M6 Serie	M50E-UNIT Serie	M50X-UNIT Serie
PT input	Average sensing, sine wave	M2PA	W2PA	---	---	---
	RMS sensing	M2PE	W2PE	---	---	---
PT input, high speed	Average sensing, sine wave	---	---	---	---	---
	RMS sensing	---	---	---	---	---
Wide bandwidth		---	---	---	---	---
CT input	Average sensing, sine wave	M2CA	W2CA	---	---	---
	RMS sensing	M2CE	W2CE	---	---	---
	Clamp-on current sensor input	M2CEC	---	M6SCTC M6NCTC M6DCTC	---	---
	Inverter use	---	---	---	---	---
CT input, high speed	Average sensing, sine wave	---	---	---	---	---
	RMS sensing	---	---	---	---	---
Watt		---	---	---	M50EXWTU (PC programmable) PAGE 8	M50XWTU/M50XWTU-U (PC programmable) PAGE 8
Watt, high speed		---	---	---	---	---
Var		---	---	---	---	---
Power factor		---	---	---	---	---
Phase angle		---	---	---	---	---
Frequency		---	---	---	---	---

*1. M50XWTU-U: AC power only, -20 to +55°C (-4 to +131°F)

	Terminal block signal conditioners M5-UNIT Series	Dual output super-mini signal conditioners Pico-M (M8) Series	Plug-in signal conditioners M-UNIT Series	Dual output plug-in signal conditioners W-UNIT Series	Space-saving plug-in signal conditioners F-UNIT Series	Space-saving plug-in signal conditioners H-UNIT Series
						
	Super-min terminal block	Plug-in	Plug-in	Plug-in	Plug-in	Plug-in
	M3.5 screw	M3.5 screw, connector on installation base	M3.5 screw	M3.5 screw	M3.5 screw	M3.5 screw
	3-port	4-port	3-port	4-port	3-port	3-port
	2000 V AC (DC powered) 1500 V AC (AC powered)	1500 V AC (input to output 1 or output 2 or power to ground	2000 V AC	2000V AC (input to output 1 to output 2 to power to ground)	2000 V AC	2000 V AC (input to output or power)
	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
	---	✓	---	✓	---	---
	AC / DC	DC	AC / DC	AC / DC	AC / DC	DC
	-5 to +55°C 23 to 131°F *2	0 to 55°C 32 to 131°F	-5 to +60°C 23 to 140°F	-5 to +55°C 23 to 131°F *3	-5 to +55°C 23 to 131°F	-5 to +55°C 23 to 131°F
	DIN rail	Installation base (wall-mounted)	Wall or DIN rail	Wall or DIN rail	Wall or DIN rail	Wall or DIN rail
	W 25 [0.98] H 97 [3.82] D 41 [1.61]	W 17.5 [0.69] H 48 [1.89] D 75 [2.95]	W 50 [1.97], 72 [2.83] H 80 [3.15] D 127 [5], 136 [5.35], 139 [5.47]	W 50 [1.97], 72 [2.83] H 80 [3.15] D 136 [5.35], 139 [5.47]	W 26 [1.02] H 100 [3.94] D 137 [5.39]	W 26 [1.02] H 93 [3.66] D 137 [5.39]
	M5-UNIT Series	Pico-M (M8) Series	M-UNIT Series	W-UNIT Series	F-UNIT Series	H-UNIT Series
	---	---	---	---	FPA	HPA
	M5PT	M8PT	PT	WPT	FPE	HPE
	---	---	PTAF	---	---	---
	---	---	PTPH (peak hold)	---	---	---
	---	---	CTCS (clamp-on current sensor)	---	---	---
			CTS2			
	---	---	---	---	FCA	HC
	M5CT	M8CT	CT	WCT	FCE	HCE
		M8CT1				
	M5CTC	M8CTC	CTC	---	---	---
	---	---	CTH	---	---	---
	---	---	CTAF	---	---	---
	---	---	CTPH (peak hold)	---	---	---
	M5XWTU/M5XWT (PC programmable) PAGE 9	---	MEWT	WEWT	---	---
			MUWT (totalizing pulse output)			
	---	---	MEWTF	---	---	---
	---	---	MERP	WERP	---	---
	---	---	MEPF	WEPF	---	---
	---	---	MEPA	WEPA	---	---
	---	---	HZ	WHZ	---	---

*2. M5XWT/M5XWTU: -20 to +65°C (-4 to +149°F)

*3. WHZ: -5 to +60°C (23 to 140°F)

Matrix Table

Specifications typical for each series are compared in the table. Details may differ depending on models.

		High-density signal conditioners 10-RACK Series	Card-rack signal conditioners 11-RACK Series	Dual channel input/output Isolators 15-RACK Series	Rack-mounted DCS signal conditioners 18-RACK Series
External view					
Construction		Rack-mounted; terminal access via screw terminals at the front and via card-edge connector at the rear	Card-rack; terminal access via screw terminals at the front	Rack-mounted; terminal access via screw terminals at the front and via card-edge connector at the rear	Rack-mounted; terminal access via screw terminals on the front and connector on the rear
Connection		Input: M3.5 screw Output: Card-edge connector and M3.5 screw	Input: M3.5 screw Output: M3.5 screw and connector (option)	Input: M3.5 screw Output: Card-edge connector and M3.5 screw	Input: M3.5 screw Output 1: Connector Output 2 *4: M3.5 screw and connector
Isolation		4-port *3	4-port	2-port + channel-to-channel	4-port
I/O withstand voltage		2000 V AC (input to output 1 or output 2 or power) *3	2000 V AC (input to output 1 or output 2 or power)	2000 V AC (input to output or power)	1500 V AC (input to output 1 or output 2 or power) *5
Range		Fixed	Fixed	Fixed	Fixed
Dual output		✓ *3	✓	(dual channel)	✓
Power supply		DC	AC / DC	DC	DC
Operating temperature		-5 to +55°C 23 to 131°F	-5 to +55°C 23 to 131°F	-5 to +55°C 23 to 131°F	-5 to +55°C 23 to 131°F
Mounting		Standard Rack	Standard Rack	Standard Rack	Standard Rack
Dimensions mm [inch]		W 25 [0.98] *3 H 99 [3.90] D 180 [7.09]	W 27 [1.06] H 148 [5.83] D 235 [9.25]	W 25 [0.98] H 99 [3.90] D 181 [7.13]	W 24 [0.94] H 110 [4.33] D 110 [4.33]
Function		10-RACK Series	11-RACK Series	15-RACK Series	18-RACK Series
PT input	Average sensing, sine wave	10PA	11PA	15PA	---
	RMS sensing	10PE	11PE	15PE	18PE
CT input	Average sensing, sine wave	10CA	11CA	15CA	---
	RMS sensing	10CE	11CE	15CE	18CE
Watt		10EWT	---	---	18WT
Var		10ERP	---	---	18RP
Power factor		10EPF	---	---	18PF
Phase angle		10EPA	---	---	18PA
Frequency		10EHZ	---	---	18HZ

*3. 10EWT, 10ERP, 10EPF, 10EPA and 10HZ: 3-port isolation, 2000 V AC (input to output or power), single output, W 50 mm (1.97")
*4. 18WT, 18RP, 18PF, 18PA: Connector only
*5: 18WT, 18RP, 18PF, 18PA and 18HZ: 2000 V AC (input to output 1 or output 2 or power)

	Rack-mounted signal conditioners M-RACK Series	Dual output rack-mounted signal conditioners W-RACK Series	Space-saving rack-mounted signal conditioners H-RACK Series	Field-mounted 2-wire signal conditioners 6-UNIT Series	Plug-in 2-wire signal conditioners B-UNIT Series	Rack-mounted 2-wire signal conditioners B-RACK Series
						
	Rack-mounted; terminal access via screw terminals at the front	Rack-mounted; terminal access via screw terminals at the front	Rack-mounted; terminal access via screw terminals at the front	Hockey-puck style	Plug-in	Rack-mounted; terminal access via screw terminals at the front
	M3.5 screw	M3.5 screw	M3.5 screw	M3 screw	M3.5 screw	M3.5 screw
	3-port	4-port	3-port	Input to output	Input to output	Input to output
	2000 V AC	2000 V AC (input to output 1 or output 2 to power to ground)	2000 V AC (input to output or power)	2000 V AC	2000 V AC	2000 V AC
	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
	---	✓	---	---	---	---
	AC / DC	AC / DC	DC	---	---	---
	-5 to +55°C 23 to 131°F	-5 to +55°C 23 to 131°F	-5 to +55°C 23 to 131°F	-5 to +55°C 23 to 131°F	-5 to +55°C 23 to 131°F	-5 to +55°C 23 to 131°F
	19-inch rack or DIN rail	19-inch rack or DIN rail	19-inch rack	Wall, DIN rail or 3-inch hub	Wall or DIN rail	19-inch rack
	W 50 [1.97] H 99 [3.90] D 155 [6.10]	W 50 [1.97] H 99 [3.90] D 179 [7.05]	W 25 [0.98] H 99 [3.90] D 153 [6.02]	76 [2.99] dia. H 52.5 [2.07] D 60.9 [2.40]	W 26 [1.02] H 93 [3.66] D 137 [5.39]	W 25 [0.98] H 99 [3.90] D 153 [6.02]
	M-RACK Series	W-RACK Series	H-RACK Series	6-UNIT Series	B-UNIT Series	B-RACK Series
	---	---	GPA	---	---	---
	7PE	VPT	GPE	6PT	BPT	3PT
	---	---	GCA	---	---	---
	7CE	VCT	GCE	6CT	BCT	3CT
	7EWT	---	---	---	---	---
	7ERP	---	---	---	---	---
	7EPF	---	---	---	---	---
	7EPA	---	---	---	---	---
	7EHZ	---	---	---	---	---

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