MG CO., LTD.
Make Greener automation

2026-03
EC-Z702
Rev. 0

Signal Conditioners Series



A wide range of signal conditioners is available, from sensor inputs to limit alarms.

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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W5-UNIT Series PAGE 17


M2 Series PAGE 18


W2 Series PAGE 26


M50X-UNIT Series PAGE 28


M6 Series PAGE 32


M60 Series PAGE 36


M1E Series PAGE 40


M80 Series PAGE 42


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Other Signal Conditioners PAGE 48


Two-wire Signal Conditioners PAGE 50


Limit Alarms PAGE 60

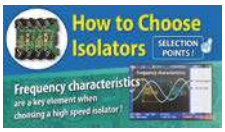
SIGNAL CONDITIONERS

Converting measured signals to desired signals.



Videos introducing signal conditioners

How to choose DC signal isolators



12 min

Simulation experiments demonstrate effectiveness of isolators!



14 min

How I/P Transducers Work



12 min

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



7.5 min

Check out the videos at YouTube or our website.

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



Super-mini Terminal Block
M5-UNIT Series

PAGE 14



Terminal Block, Dual Output
W5-UNIT Series

PAGE 17



Compact, Plug-in
M2 Series

PAGE 18



Space-saving, Dual Output
W2 Series

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Super-mini Terminal Block
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Ultra-slim
M6 Series

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Base-free Interconnecting, Ultra-slim
M60 Series

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Compact, Plug-in, OEL Display
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Hybrid IC Isolation Amplifier
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Other Series



Dual Output, Super-mini
M8 Series



Plug-in, Front Configurable
MX-UNIT Series



Plug-in
M-UNIT Series



Dual Output , Plug-in
W-UNIT Series



Plug-in
K-UNIT Series



Space-saving
M3-UNIT Series



Super-space-saving
M3S-UNIT Series



Space-saving, Plug-in
F-UNIT Series



Space-saving, Plug-in
H-UNIT Series



I/P Transducer
P-UNIT Series



High-density
10-RACK Series



Card-rack
11-RACK Series



Dual Channel Input/Output Isolator
15-RACK Series



Rack-mounted, for DCS
18-RACK/ 18K-RACK Series



DCS Input/Output Relay Card
38-RACK Series



Rack-mounted
M-RACK Series



Dual Output, Rack-mounted
W-RACK Series



Space-saving, Rack-mounted
H-RACK Series

Visit our website for details.

Selecting a signal conditioner by configuration method



Main applicable products

M5-UNIT ..... Page 14
W5-UNIT ..... Page 17
M2 Series ..... Page 18
W2 Series ..... Page 26
M50X-UNIT ..... Page 28
M6 Series ..... Page 32
M60 Series ..... Page 36
M1E Series ..... Page 40
M80 Series ..... Page 42
M8 Series
M-UNIT
Others

The signal conditioners in most series are factory-configured unless provided with a special marking.

Factory-configured type

We will manufacture and ship your order according to the specifications you provide when you order.

If you have already determined your desired specifications or if no changes to specifications are required, please specify a factory-configured signal conditioner. We will ask you for your specifications when you order and manufacture your signal conditioner based on those specifications.



M1E Series



M2 Series



M-UNIT Series



Main applicable products

M5-UNIT ..... Page 14
M2 Series ..... Page 18
W2 Series ..... Page 26
M50X-UNIT ..... Page 28
M6 Series ..... Page 32
M60 Series ..... Page 36
M1E Series ..... Page 40
M-UNIT
M3S-UNIT
Others

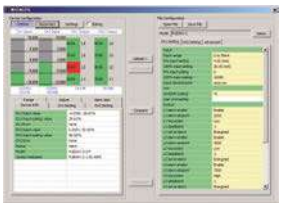
- Universal input
- DC mV, V, mA
- Thermocouple
- RTD
- Potentiometer
- Self-synch
- Pulse to analog
- Pulse accumulator
- Encoder
- Analog to pulse
- DC/2-phase pulse
- Pulse duration receiver
- Pulse scaler
- Frequency scaler
- Pulse adder
- Math function module
- Linearizer
- Filter/lag transmitter
- Multi power transducer

PC or field programmable

This signal conditioner can be configured using a PC or hand-held programmer.

The specifications of this signal conditioner can be configured using the Programming Unit (Model: PU-2x) or PC.
In addition to configuring input/output range and calibration settings, various other settings such as linearization, filtering, and simulated output can also be adjusted.

- Parameters can be uploaded to a PC or saved as a file.
- Parameters can also be downloaded to other signal conditioners.



PC setting display
(M1E Series)

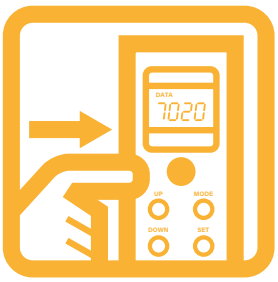
Field-programmable



Programming Unit
(Model: PU-2x)

PC programmable





Main applicable products

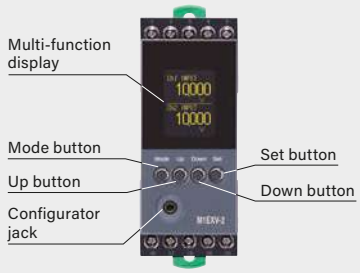
M2 Series ..... Page 18
M1E Series ..... Page 40
MX-UNIT
M-UNIT
Others

- DC mV, V, mA
- Thermocouple
- RTD
- Self-synch
- Strain gauge
- Pulse to analog
- Analog to pulse
- Pulse scaler
- Pulse divider
- Ratio/Bias
- Parameter generator
- Analog backup station
- Computer backup station
- A/D converter
- D/A converter
- Potentiometer
- Current transformer

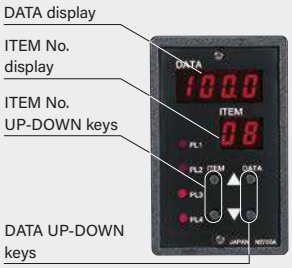
Front panel configurable

The specifications of this signal conditioner can be configured using buttons and switches on the front panel.

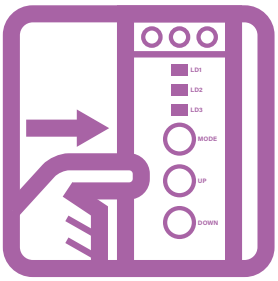
Specifications can be changed using the rotary switches, DIP switches, and UP/DOWN keys on the front panel.
The displays of signal conditioners such as the M1E Series, M2E Series, and MX-UNIT Series display engineering unit values, so settings are easy to configure.



M1E Series



MX-UNIT Series



Main applicable products

M2 Series ..... Page 18
M3-UNIT
Others

- Universal input
- DC mV, V, mA
- Thermocouple
- RTD
- Potentiometer
- Strain gauge
- Current loop supply
- Pulse to analog

"ONE-STEP CAL" programming

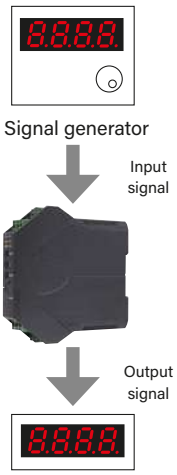
With this signal conditioner, settings can be changed and calibration performed without using a PC.

This signal conditioner can be configured using only a signal generator and display, without the need for a PC or special setting device.
For example, to configure the input settings, simply select the input type and range using the DIP switches. "One-step cal" can also be performed by inputting either a zero or span value via the signal generator and pressing the corresponding button on the front of the signal conditioner, thereby storing that value as a zero or span.
This simple and efficient configuration method can perform configuration and calibration simultaneously by pressing just a single button.

1. Select the input type and range using the DIP switches.
2. Connect the signal generator and measuring instrument.
3. Press the button at the zero or span point of the simulated input.
4. Press the button at the zero or span point of the simulated output.

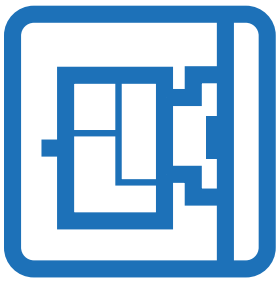


This simultaneously performs configuration and calibration.



Selecting a signal conditioner by housing

M5-UNIT
W5-UNIT
M2 Series
W2 Series
M50X-UNIT
M6 Series
M60 Series
M1E Series
M80 Series
20 Series
Other Signal Conditioners
Two-wire Signal Conditioners
Limit Alarms



Plug-in type

This type features a plug-in structure in which the base socket is separate from the body.

The base socket can be separated from the signal conditioner body, so wiring can be completed before installation. This eliminates the need to disconnect wiring during periodic maintenance or repairs.

Applicable series

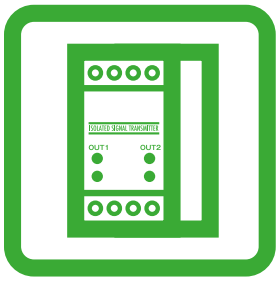
M2 Series ..... Page 18
W2 Series ..... Page 26
M1E Series ..... Page 40
MX-UNIT
M-UNIT
W-UNIT
K-UNIT
F-UNIT
H-UNIT
P-UNIT



Compact, Plug-in
M2 Series



Plug-in,
Front Configurable
M-UNIT Series



Terminal block type

This type features a low-profile terminal block structure.

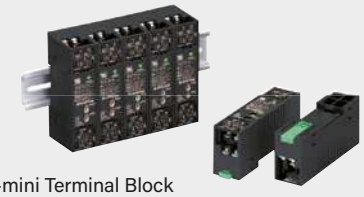
This compact, space-saving signal conditioner comes in the shape of a terminal block.
Thanks to its low profile, it can be installed on low-profile instrument panels without modification.

Applicable series

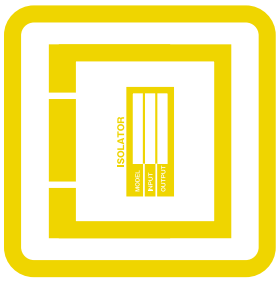
M5-UNIT ..... Page 14
W5-UNIT ..... Page 17
M50X-UNIT ..... Page 28



Super-mini Terminal Block
M50X-UNIT Series



Super-mini Terminal Block
M5-UNIT Series



Slim card type

This slim card type is suitable for high-density mounting.

Its thin profile allows for tight grouping and high-density mounting, so it is suitable for applications requiring large numbers of I/O points.
The M6 Series also includes a dedicated base that is convenient for tight installation.

Applicable series

M6 Series ..... Page 32
M60 Series ..... Page 36
M3S-UNIT



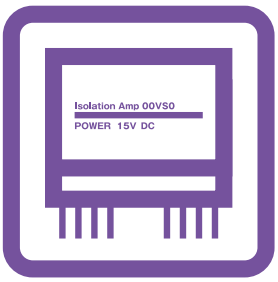
Base-free Interconnecting,
Ultra-slim
M60 Series



Ultra-slim
M6 Series



Super-space-saving
M3S-UNIT Series



Hybrid IC type

This is a modular type for embedding in PCBs.

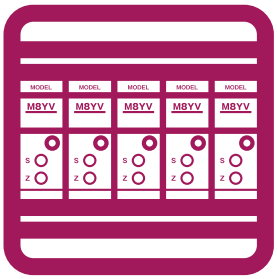
These modular signal conditioners can be directly mounted on PCBs. This enhances development efficiency by eliminating the need for in-house development of complex analog circuits during digital circuit design.



Hybrid IC Isolation Amplifier 20 Series

Applicable series

20 Series ..... Page 44



Rack-mounted type

This is a rack-mounted type capable of high-density mounting on 19-inch racks, etc.

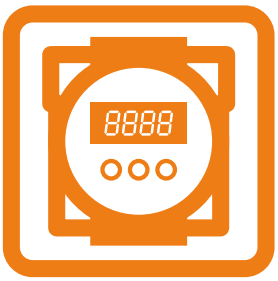
These signal conditioners are suitable for EIA standard 19-inch racks used in control and instrument panels. Power can be supplied to all signal conditioners collectively, and the connectors also allow batch signal connections. PLC and DCS from other manufacturers are also supported.



Dual Output, Super-mini M8 Series

Applicable series

M80 Series ..... Page 42
M8 Series
10-RACK
11-RACK
15-RACK
18-RACK
18K-RACK
38-RACK
M-RACK
W-RACK
H-RACK



Field-mounted type

These signal conditioners can be installed in an outdoor housing or thermowell.

These compact, two-wire signal conditioners can be used in explosion-proof areas or sites lacking power supply equipment. Their special shape makes it possible to accommodate them in an outdoor enclosure or thermowell. They also include various functions such as a digital display and function indicator.



Two-wire Universal Temperature Transmitter 27HU-B (with display)



Head-mounted, Two-wire 26-UNIT Series

Applicable series

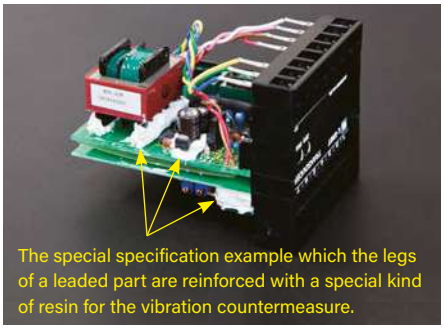
27-UNIT ..... Page 54
26-UNIT ..... Page 58
B6-UNIT ..... Page 56
6B-UNIT

Special Specifications

No additional charges

We strive toward complete offerings with special specification products.

We offer an enormous selection of signal conditioners and remote I/Os, power monitors, paperless recorders, panel meters, surge suppressors and valve actuators, and even that may not be enough for your particular needs. But do not give up easily. Just ask us.
We continue to work toward full product offerings with special specifications without additional charge, starting with major product series. In addition, we put our effort to make them into standard selections so that they are more easily accessible to you and everyone else in the future.



The special specification example which the legs of a leaded part are reinforced with a special kind of resin for the vibration countermeasure.

Various special specifications (request examples from customers)

The range does not match with that of the standard specification

We want to set the ranges of input signal and output signal to the ones not included in the existing code.

We want to combine with the special sensor

We want to combine with special sensor or thermistor not included in the standard.

Different power supply voltage

We want to use the power supply compatible with the special CVCF (constant voltage and constant frequency unit).
We want to match a marine power supply.

We want an external volume

We want to attach the volume to adjust the bias of the ratio conditioner onto the control panel surface.

▪ For details, contact us through the hotline.

Technical inquiries are also quickly responded

Inquiries are answered promptly.

The Design Department needs to conduct a technical examination to see whether the special specifications you have inquired about can be manufactured.
We respond to you with a technical review as soon as possible.

Special specifications will be standardized

The special specifications you ordered will be standardized in sequence.

We will standardize the special specification items, beginning with the ones most requested. Once they are standardized, you will no longer need troublesome meetings or specification check when you place an order.

Optional Specifications

How to designate optional specifications

Optional specifications are available to meet various requirements, including coating designation.
If you want to specify an option, write "/ Q" at the end of the order code.
Then enter the optional specifications separately from the order code.

Order code (example)

Model: M2VS-①②-③④ /Q

INPUT
OUTPUT
POWER INPUT
OPTIONS

Optional Specifications

blank: none
/Q : Option other than the above

Optional specifications code (example)

Optional Specifications /C01/V01

SPECIFICATIONS OF OPTION: Q (multiple selections)
COATING
/C01: Silicone coating
/C02: Polyurethane coating
/C03: Rubber coating
/C04: Polyolefin coating
ADJUSTMENT
/V01: Multi-turn fine adjustment
TERMINAL SCREW MATERIAL
/S01: Stainless steel

- The presence or absence of optional specifications and the supported content differ depending on the model. For details, see the datasheet.

COATING

· Specifications and coating materials may change without notice.

Silicone coating (/C01)

Product Name : Pelgan Z Spray or 1-2577
Manufacture : Dow Toray Co., Ltd. (Pelgan Z Spray) The Dow Chemical Company (1-2577)
Feature : Improvement in moisture prevention, insulation property, and nonflammability

· Pelgan Z Spray and 1-2577 are of the same specifications distributed by Dow Corning Toray Co., Ltd. inside Japan.



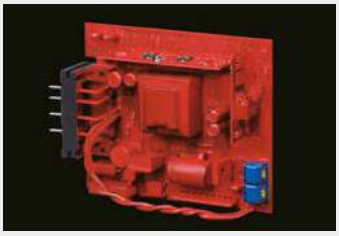
Polyurethane coating (/C02)

Product Name : HumiSeal
Model Designation : 1A27NS
Manufacture : Chase Corp.
Feature : Improvement in moisture prevention, insulation property, and nonflammability



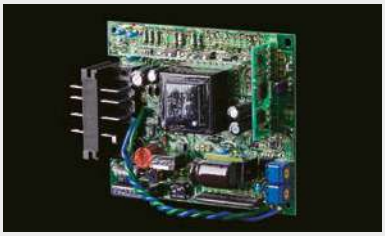
Rubber coating (/C03)

Product Name : Plasti Dip Spray Red
Manufacture : Plasti Dip International Inc.
Feature : Improvement in corrosion prevention and insulation property



Polyolefin coating (/C04)

Product Name : HumiSeal
Model Designation : 1B59LU
Manufacture : Chase Corp.
Feature : Improvement in moisture prevention, insulation property, and nonflammability



TRIMMER

Multi-turn trimmer for fine adjustment (/V01)

While the standard potentuometer rotates 260°, the multi-turn potentiometer is suitable for finer adjustments.



Multi-turn trimmer for fine adjustment



Standard trimmer

- The trimmer used may change without notice.

TERMINAL SCREW MATERIAL

Stainless steel (/S01)

Stainless steel has excellent environmental resistance, including resistance to corrosive gases, compared with nickel-plated iron used for normal terminal screws.



Stainless steel screws



Nickel-plated iron screws

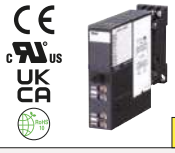
- The screws used may change without notice.

Matrix Table

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

	Super-mini Terminal Block M5-UNIT Series	Terminal Block, Dual Output W5-UNIT Series	Compact, Plug-in M2 Series	
			Standard type	OEL display type
External view	 PAGE 14	 PAGE 17	 PAGE 18	 PAGE 18
Construction	Terminal block	Terminal block	Plug-in	
Connection	M3.5 screw terminal	Input: M3.5 screw terminal Output & power: M3 screw terminal	M3 screw terminal	
Isolation*	Three ways	Four ways	Three ways	
Dielectric strength	DC powered: 2000 V AC AC powered: 1500 V AC	2000 V AC (input to output 1 or output 2 to power to ground)	2000V AC	
Fixed range	Specified when ordering	Specified when ordering	Specified when ordering	---
Range selectability	PC	DIP switch	PC, One-step cal	PC, Front display setting
Dual output	---	✓	✓	---
Dual channel	---	---	---	
Power input	AC/DC	AC/DC	AC/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)	
Mounting	DIN rail	DIN rail	Surface or DIN rail	
Dimensions mm [inch]	W 25 [0.98] H 97 [3.82] D 41 [1.61]	W 45 [1.77] H 97 [3.82] D 41 [1.61]	W 23 [0.91], 29.5 [1.16] H 76 [2.99] D 124 [4.88]	W 29.5 [1.16] H 83 [3.27] D 124 [4.88]
Model	**M5-UNIT model**	**W5-UNIT model**	**M2 Series model**	**M2E Series model**
Isolator	M5YV, M5SN	---	M2YV, M2SN	---
Universal input	M5XU	---	M2XU, M2XUM	---
DC mV, voltage & current	M5XV, M5VS, M5MV, M5VF, M5VF2, M5VSH, M5YV	W5VS, W5FV	M2LV, M2XV2, M2WVS, M2VS, M2VT, M2VF, M2VF2, M2VF3, M2VV, M2FV	M2EXV
High-power current or voltage	---	---	---	---
Thermocouple	M5TS, M5XTR	W5TS	M2XT2, M2TS, M2TT	M2EXT
RTD	M5RS, M5XTR	W5RS	M2LR, M2XR2, M2RS, M2RS1, M2RT, M2RR	M2EXR
Potentiometer	M5MS	W5MS	M2LPM, M2XM2, M2MS	M2EXM
Current loop supply	M5D, M5DY, M5DYH2	W5DY	M2D, M2D2, M2DYS, M2DY, M2DL, M2DNY, M2DYH, M2DYH2, M2DYHR, M2DU	M2EXDY
Self-synch	---	---	---	M2EXS
Strain gauge	---	W5LCS	M2LCS	---
AC voltage & current	M5TG, M5AC	---	M2TG, M2AC	---
Voltage transformer	M5PT	---	M2PA, M2PE	---
Current transformer	M5CT, M5CTC	---	M2CA, M2CE, M2CEC	---
Multi power transducer	M5XWT, M5XWTU	---	---	---
Pulse to analog	M5PA, M5XPA	W5PA	M2XPA3, M2SP	---
Encoder	M5XRP	---	M2XRP2	---
Analog to pulse	---	---	M2AP	---
Pulse isolator	M5PP	---	M2PP	---
Pulse scaler, divider	---	---	M2PRU, M2PDU	---
P/I transducer	---	---	M2PV	---
I/P transducer	---	---	---	---
Limit alarm	---	---	M2AVS, M2SED, M2AS, M2AS1	M2EAXV, M2EAXT, M2EAXR, M2EAXM, M2EAXDY, M2EAXS
A/D & D/A transducer	---	---	---	---
Math function module	M5XADS, M5XSBS, M5XMLS	---	M2ADS, M2SBS, M2MLS, M2DIS	---
Ratio/Bias	M5XREB, M5XRTS	---	M2REB, M2RTS	---
Function module	M5XF, M5XFLS, M5XDIS, M5XUDS	---	M2XF2, M2FL, M2FLS, M2LMS, M2UDS, M2UDS2	---
Ramp buffer	M5XCRS	---	M2CDS, M2CRS	---
Track/hold	M5XAMS, M5XPHS	---	M2AMS2, M2AMS, M2PHS2, M2PHS	---
High/Low selector	M5XSES	---	M2SES2, M2SES	---
Parameter generator	M5XMST	---	M2MST	---
Valve positioner	---	---	---	---
Manual loading station	---	---	---	---
Others	---	---	M2MNV	---

* Some models are not insulated. ** Some models not supported.

	Space-saving, Dual Output W2 Series	Super-mini Terminal Block M50X-UNIT Series	Ultra-slim M6 Series	Base-free Interconnecting, Ultra-slim M60 Series	Compact, Plug-in, OEL display M1E Series
					OEL display type
	 PAGE 26	 PAGE 28	 PAGE 32	 PAGE 36	 PAGE 40
	Plug-in	Terminal block	Ultra-slim	Ultra-slim	Plug-in
	M3 screw terminal	Tension clamp terminal	Tension clamp terminal, M3 screw terminal, Euro terminal	Tension clamp terminal, e-CON connector	M2.6 screw terminal
	Four ways	Five ways	Three / Four ways	Three / Four ways	Five ways (2 channels)
	2000V AC	2000V AC	2000V AC	1500V AC	1500V AC
	Specified when ordering	Specified when ordering	Specified when ordering	Specified when ordering	---
	PC	PC	PC	DIP switch, PC	PC, Front display setting
	✓	✓	**	✓	✓ (Multi-output model)
	---	---	---	---	✓ (4 channels)
	AC/DC	AC/DC*1	AC/DC	DC	AC/DC
	-5 to +55°C (23 to 131°F)	-20 to +65°C (-4 to 149°F)*1	-20 to +55°C (-4 to +131°F)	-20 to +55°C (-4 to +131°F)	-5 to +55°C (23 to 131°F)
	Surface or DIN rail	DIN rail	DIN rail, Multi-channnel Installation Base (Surface)	DIN rail	Surface or DIN rail
	W 29.5 [1.16] H 88.5 [3.49] D 124 [4.88]	W 28 [1.10] H 105 [4.13] D 41 [1.61]	W 5.9 [0.23], 7.5 [0.30] H 94 [3.70], 102 [4.02] D 102 [4.02]	W 8 [0.31] H 108 [4.25] D 102 [4.02]	W 36 [1.42] H 99 [3.90]*2 D 125 [4.92]*2
	W2 Series model	M50X-UNIT model	M6 Series model	M60S Series model	M1E Series model
	W2YV	---	M6xYV, M6xSN	M60SYV, M60EYV	---
	---	---	M6xXU	---	---
	W2VS, W2VS2, W2VF	---	M6xXV, M6xVS, M6xVF, M6xWVS	M60SVS, M60SWVS, M60EVS, M60EWVS	M1EXV-2 (2 channels), M1EXV-1 (multi-output), M1EXV-4 (4 channels)
	---	---	---	---	---
	W2XT, W2TS	---	M6xXT	M60SXT	M1EXT-2 (2 channels)
	W2XR, W2RS, W2RS1	---	M6xXR	M60SXR	M1EXR-2 (2 channels)
	W2XM, W2MS	---	M6xXM	---	M1EXM-2 (2 channels)
	W2DYS, W2DY, W2DNY, W2DYH, W2DYH2	---	M6xDY	---	---
	---	---	---	---	M1EXS-2 (2 channels)
	---	---	---	---	---
	W2TG, W2AC	---	---	---	---
	W2PA, W2PE	---	---	---	---
	W2CA, W2CE	---	M6xCTC	---	---
	---	M50XWTU, M50XWTU-U	---	---	---
	W2SP	---	M6xPA	---	---
	---	---	---	---	---
	W2AP	---	M6xXAP	---	---
	W2PP, W2YPD	---	M6xPP	---	---
	---	---	---	---	---
	W2PV	---	---	---	---
	---	---	---	---	---
	---	---	M6xXAS, M6xXAT, M6xXAR	---	M1EAXV-1 (multi-output) M1EAXV-2 (2 channels)
	---	---	---	---	---
	---	---	M6xXF2	---	---
	---	---	---	---	---
	W2XF, W2VABS	---	M6xXF1	---	---
	---	---	M6xXF1	---	---
	---	---	M6xXF3	---	---
	---	---	M6xXF2	---	---
	W2MST	---	---	---	---
	---	---	---	---	---
	---	---	---	---	---
	---	---	---	---	---

*1. M50XWTU-U: 240 V AC, -20 to +55°C (-4 to +131°F)

*2. With the base (Model: M1E-BS2) installed

Matrix Table

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

	Super-mini M80 Series	Hybrid IC Isolation Amplifier 20 Series	Dual Output, Super-mini M8 Series	Plug-in, Front Configurable MX-UNIT Series	
External view	 PAGE 42	 PAGE 44			
Construction	Plug-in to dedicated base	Hybrid IC	Plug-in to multi-channnel installation base	Plug-in	
Connection	M3.5 screw terminal, Connector (at base)	Soldering to the printed wiring board	M3.5 screw terminal, DCS connector of each company (at base)	M3.5 screw terminal	
Isolation*	Three ways		Four ways	Three ways	
Dielectric strength	1000 V AC	Depend upon models; see page 44.	1500 V AC (input to output 1 to output 2 to power to ground)	2000V AC	
Fixed range	Specified when ordering		Specified when ordering	---	
Range selectability	---		PC	Display + Front key	
Dual output	---		✓	---	
Dual channel	---		---	---	
Power input	DC		AC/DC	AC/DC	
Operating temperature	-5 to +55°C (23 to 131°F)		0 to 55°C (32 to 131°F)	-5 to +55°C (23 to 131°F)	
Mounting	Dedicated base (DIN rail, surface)		Multi-channnel Installation base (surface)	Surface or DIN rail	
Dimensions mm [inch]	W 14 [0.55] H 39.2 [1.54] D 50.5 [1.99]		W 17.5 [0.69] H 48 [1.89] D 75 [2.95]	W 50 [1.97] H 80 [3.15] D 123 [4.84], 132 [5.20]	
Model	**M80 Series model**	**20 Series model**	**M8 Series model**	**MX-UNIT model**	
Isolator	M80YV, M80YS		M8YV, M8YV1, M8YS2, M8YS, M8YS1, M8YC, M8YC1, M8YCH	---	
Universal input	---		---	---	
DC mV, voltage & current	---		M8XV2, M8XV3, M8VS, M8VS1	MXV, MXF	
High-power current or voltage	---		---	---	
Thermocouple	M80TS		M8XT2, M8XT3, M8TS, M8TS1	MXT	
RTD	M80RS		M8XR2, M8XR3, M8RS, M8RS1	MXR	
Potentiometer	M80MS		M8XM2, M8XM3, M8MS, M8MS1	---	
Current loop supply	M80DY		M8DY, M8DY1, M8DYH	---	
Self-synch	---		---	MXS	
Strain gauge	---	See page 44.	M8LCS	MXLC, MXLCF	
AC voltage & current	---		---	---	
Voltage transformer	---		M8PT	---	
Current transformer	---		M8CT, M8CT1, M8CTC	---	
Multi power transducer	---		---	---	
Pulse to analog	---		M8PA, M8PA1	MXPA	
Encoder	---		---	---	
Analog to pulse	---		M8AP, M8AP1	MXAP	
Pulse isolator	---		M8PP, M8PP1	---	
Pulse scaler, divider	---		---	---	
P/I transducer	---		---	---	
I/P transducer	---		---	---	
Limit alarm	---		M8SED, M8SED1	---	
A/D & D/A transducer	---		---	---	
Math function module	---		---	---	
Ratio/Bias	---		---	MXF	
Function module	---		---	MXF	
Ramp buffer	---		M8CD, M8CD1	---	
Track/hold	---		---	---	
High/Low selector	---		---	---	
Parameter generator	---		---	MXMS	
Valve positioner	---		---	---	
Manual loading station	---		---	MXAB, MXCB	
Others	---		---	---	

* Some models are not insulated. ** Some models not supported.

	Plug-in M-UNIT Series	Dual Output, Plug-in W-UNIT Series	Plug-in K-UNIT Series
			
	Plug-in	Plug-in	Plug-in
	M3.5 screw terminal	M3.5 screw terminal	M3.5 screw terminal
	Three ways	Four ways	Three / Four ways
	2000V AC	2000 V AC (input to output 1 or output 2 to power to ground)	2000V AC
	Specified when ordering	Specified when ordering	Specified when ordering
	PC, Programming unit	PC, Programming unit	---
	---	✓	**
	---	---	---
	AC/DC	AC/DC	AC/DC
	-5 to +60°C (23 to 140°F)	-5 to +55°C (23 to 131°F)	-5 to +55°C (23 to 131°F)
	Surface or DIN rail	Surface or DIN rail	Surface or DIN rail
	W 50 [1.97] H 80 [3.15] D 127 [5], 136 [5.35] (Except for some models)	W 50 [1.97] H 80 [3.15] D 136 [5.35]	W 50 [1.97] H 80 [3.15] (Except for some models) D 123 [4.84], 132 [5.20]
	M-UNIT model	**W-UNIT model**	**K-UNIT model**
	YV, SN	WYV	KYV, KWYV, KSN
	JUA	---	---
	JV, SV, SVF, SVFH, CV, OT2, OR2, SVB	WJV, WVS, WVS2, WVF	KVS, KWVS, KSF, KV
	VA, SVA, 99SVA	---	---
	JT, TCS, OTT2, OTR2	WJT, WTS	KTS, KWTS
	JR, RB, RBS, DR, DRS, CVRTD	WJR, WRS, WRS2	KR, KRS, KWRS
	JM, PM, PMS, PM2W, PMT, CVR1	WJM, WMS, WMS2	KM, KMS, KWMS
	DS, DS-48, DS-824, JDL, YVD, YVDU, FND, FNDS	WDY, WDNY	KD, KDY, KWDY, KWDNY, KWLD
	JS	WJS	---
	LC, LCS, LC2, LCS2, LCF, MTL	---	KG, KGS
	TG, AC	WTG, WAC	KTG, KAC
	PT, PTPH, PTAF	WPT	---
	CTH, CTC, CTCS, CTS2, CT, CTPH, CTAF	WCT	---
	MUWT, MEWT, MEWTF, MERP, MEPF, MEPA, HZ	WEWT, WERP, WEPF, WEPA, WHZ	---
	JPA, JPA2, MPAU, JPQ2, MWK, EP, SP, SP-ME, JTY2	WJPAD2, WJPA, WSP	KEP, KSP, KSP-ME, KPAU
	JRP2, JRQ2, RPPD, JARP2	WRPP, WRPPB	---
	AP, APU, JAPD2, JARP2, MTD	---	KAP, KAPU
	PP, PPD, YPD, RPPD, MNS	WYPD	KMT, KYPD, KWYPD
	JPR2, PRU, JFR2, PDU, JPS3	---	KPRU
	PV, PVT	---	---
	VP	---	---
	AS4V, AS4T, AS4R, AS4M, AS4CT, AS4LC, MSEF, AS, ASW, ASW2, ASL, ASWL, ASWL2, AYAV, AYDV, ASD1, ASD, MASD, L4AS	---	KS2V2, KS2V3, KS2TR2, KSED, KASD, KSE-x1, KSE-x2, KS, KSL
	AD3V, AD2LC, DA3	---	KAD3V, KDA3
	JF, JFK, ADS, SBS, MLS, MM, DIS	WJF, WJFK, WADS, WSBS	KADS, KWADS, KSBS, KWSBS, KMLS, KMM, KDIS
	MRTD, REB, REBS, RT, RTS	---	KB, KBS, KRTB, KRTBS
	JFX, JFX1, FN, FNS, LM, LMS, UD, UDS, MLG, MZS	WJFX	KX, KN, KNS, KL, KLS, KU, KUS
	JFT, JFTS, CD, CDS, CR, CRS	WJFT	KF, KFS, KCR, KCRS
	AM, AMS, PH, PHS	---	KA, KAS, KH, KHS
	SE, SES, JFKM, MNV	---	---
	MS	---	---
	ABM2, MP, MEX-B, MEX-C, MEX-D, MEX-E, MEX-F, MEX-K1, MEX-M1, MEX-P, MEXM, MEXL	---	KMP
	JB2, AB2, ABF3, CB2, ABS3	---	---
	MDC, MLV, MFS, MFS2, PNS, PNT	---	---

M5-UNIT
W5-UNIT
M2 Series
W2 Series
M50X-UNIT
M6 Series
M60 Series
M1E Series
M80 Series
20 Series
Other Signal Conditioners
Two-wire Signal Conditioners
Limit Alarms

Super-mini Terminal Block

M5-UNIT Series

TERMINAL BLOCK | THREE-PORT ISOLATION | AC POWER DC POWER

The M5 Series offers low-profile terminal block style. All models can be freely mounted onto thin panels.

CE RoHS 10

- Compliance/approval depends upon models.

Super-mini terminal block signal conditioners

These super-mini signal conditioners can be installed anywhere.

Depth: 41 mm (1.61 in.)

M5 models can be installed on boards with a shallow depth.

Excellent cost efficiency

Provides excellent cost performance.

Reliable 3-port isolation

3-port isolation is employed between the input, output, and power supply.

Wide power supply ranges *1

Supporting 100 - 240 V AC and 24 V DC

*1. CE marking is not available depending on the model.

Loop test output

Simulated signals can be output even without an input signal, allowing for operation testing (PC programmable only).

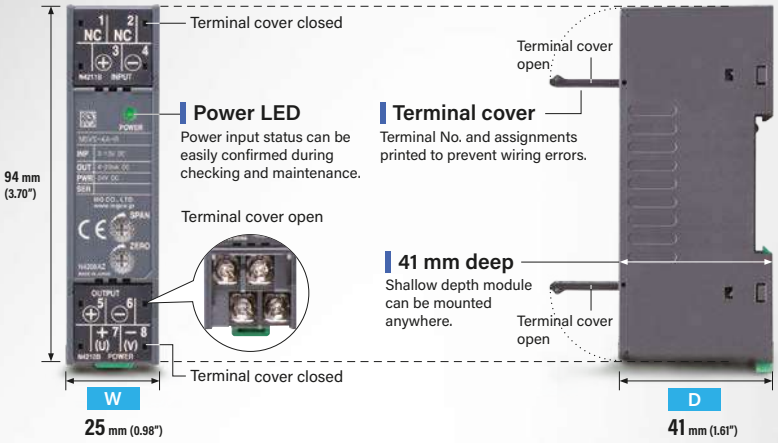
New multi power transducer model

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

See Pages 30-31

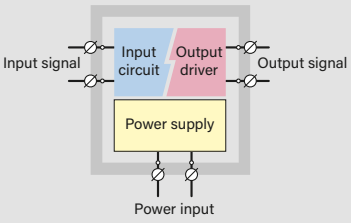


Compact and economical, almost all models can be delivered quickly.



Isolation and power supply

Three-port isolation
Dielectric strength: 2000 V AC @ 1 min.
(with DC power supply)
Dielectric strength: 1500 V AC @ 1 min.
(with AC power supply)



AC power supply: 85-264 V AC
DC power supply: 24 V DC

Specifications may vary depending on the model. For details, see the datasheet.

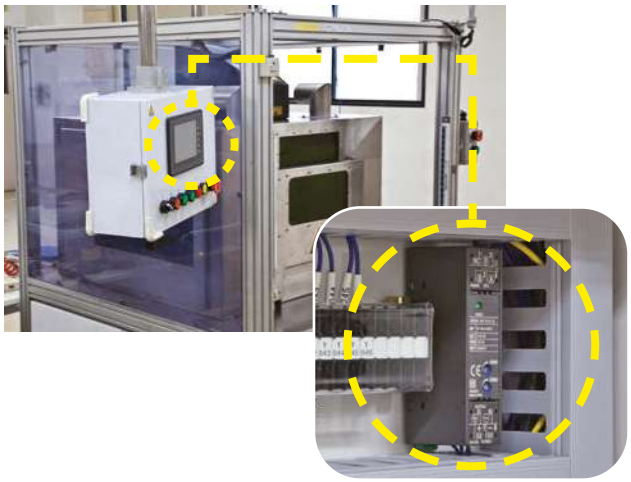
Main Specifications

Construction:	Low-profile terminal block
Connection:	M3.5 screw terminals
Input:	See list of models
Output:	See the datasheet
Mounting:	DIN rail mounting

The unit can be accommodated in a breaker box.



It is possible to install the unit even in a small gap on the side panel of a small device or a switch box.



Origin of the super-mini terminal block signal conditioner



Multiple terminals are installed to form a panel terminal block.

The M5-UNIT Series of super-mini terminal block signal conditioners features input terminals on the top and output terminals and power terminals on the bottom. When lined up, they resemble a terminal block in a control panel, hence the name.
The low-profile and easy-to-handle characteristics of their super-mini block shape allow them to be used in the small gaps of control panels.

Versatile and economical M5-UNIT Series signal transmitter

PC programmable signal conditioners

With PC programmable signal conditioners, parameters such as input and output ranges can be freely modified using a program run on a Windows PC.



PC programmable
Signal Transmitter
Model: M5XV



PC Configurator cable *2

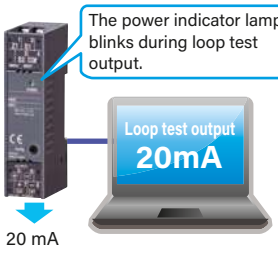
Configurator Software
M5CFG
You can download the M5CFG Configurator Software from our website.



This feature is useful when configuring multiple settings with similar specifications or for saving settings.

*2. An optional configurator connection cable (Model: COP-US) is required.

Loop test output



The loop test output function is used to output the desired signal even when no input signal is connected. This function eliminates the need for simulated input signals and simplifies the necessary loop test after wiring.

Besides the loop test output function, other useful functions are provided as standard.

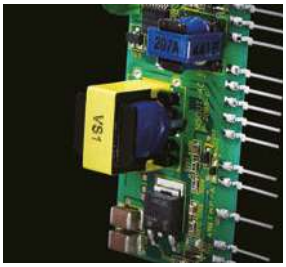
- Trend graph display
- Compare function
- Arithmetic function (linearizer, time-constant filter, and output limit operations)

Economical DC input signal transmitter

One of the most important concepts employed by the M5-UNIT Series is cost efficiency. The circuitry of the signal transmitter that serves as the base of the M5-UNIT Series was designed with cost efficiency as the top priority.



Signal Transmitter
Model: M5VS



Electronic circuit specially designed for the M5 Series

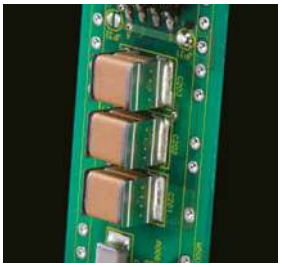
The M5VS circuit is an efficient electronic circuit designed to operate with the minimum number of parts without compromising performance and quality.

Signal transmitter suitable for minute signal input

It amplifies minute signals from various sensors, such as 0–100 µA DC and 0–10 mV DC, and converts them into standard instrumentation signals. It is also highly cost efficient thanks to its use of high-quality, low-cost electronic circuits originally developed for the M5VS.



Narrow span input
Signal Transmitter
Model: M5MV



Ceramic capacitors

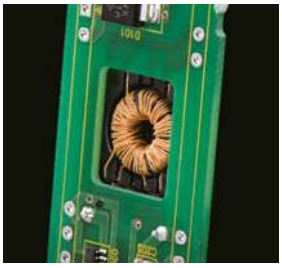
The M5MV is a signal transmitter incorporating an electric circuit based on the electric circuit design of the M5VS so that the input section can handle minute signals. Also, as with the M5VS, the AC power supply does not use aluminum electrolytic capacitors.

Signal transmitter with ultra-fast 30 µs response speed.

This signal transmitter is suitable for converting signals from charge–discharge testers and engine testers. Even at ultra-high speeds, it is capable of high conversion accuracy (±0.1%) and ultra-low temperature drift temperature characteristics (150 ppm/°C).



High speed response 30 µsec.
Signal Transmitter
Model: **M5VF2**



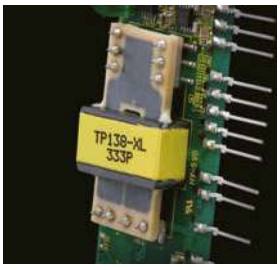
Toroidal transformer
A toroidal transformer with a donut-shaped core is an indispensable part of an efficient and high-speed response.

Signal transmitter with high dielectric strength that withstands 2000 V AC

Despite being compact in size, this signal transmitter features a withstand voltage of 2000 V AC for 1 minute (between the input, output, power supply, and ground).



High dielectric strength
Signal Transmitter
Model: **M5VSH**



Seat transformer
With the ultra-slim sheet transformer made from a printed circuit board, the M5VSH has achieved a dielectric strength of 2000 V AC without taking up much space.

ISOLATOR & SENSOR INPUT

PRODUCT	MODEL
ISOLATOR	M5YV
INPUT LOOP POWERED ISOLATOR	M5SN
SIGNAL TRANSMITTER (PC programmable)	M5XV
SIGNAL TRANSMITTER	M5VS
SIGNAL TRANSMITTER (narrow span input)	M5MV
SIGNAL TRANSMITTER (high speed response)	M5VF
SIGNAL TRANSMITTER (high speed response 30 µsec.)	M5VF2
SIGNAL TRANSMITTER (high dielectric strength)	M5VSH
VOLTAGE DIVIDER	M5VV
THERMOCOUPLE TRANSMITTER	M5TS
RTD TRANSMITTER	M5RS
POTENTIOMETER TRANSMITTER	M5MS
CURRENT LOOP SUPPLY (non-isolated)	M5D
CURRENT LOOP SUPPLY	M5DY
UNIVERSAL TEMPERATURE TRANSMITTER (PC programmable)	M5XTR
UNIVERSAL TRANSMITTER (PC programmable)	M5XU
CURRENT LOOP SUPPLY (applicable to HART signal, opencircuit detection selectable)	M5DYH2
TACHOGENERATOR TRANSMITTER	M5TG
AC TRANSMITTER	M5AC

POWER TRANSDUCER

PRODUCT	MODEL
PT TRANSMITTER	M5PT
CT TRANSMITTER	M5CT
CT TRANSMITTER (clamp-on current sensor)	M5CTC
MULTI POWER TRANSDUCER (self-powered, PC programmable)	M5XWT
MULTI POWER TRANSDUCER (self-powered, PC programmable, support harmonic distortion)	M5XWTU

FREQUENCY I/O

PRODUCT	MODEL
FREQUENCY TRANSMITTER	M5PA
PULSE ISOLATOR	M5PP
FREQUENCY TRANSMITTER (PC programmable)	M5XPA
ENCODER SPEED TRANSMITTER (PC programmable)	M5XRP

FUNCTION MODULE

PRODUCT	MODEL
ADDER (PC programmable)	M5XADS
SUBTRACTOR (PC programmable)	M5XSBS
MULTIPLIER (PC programmable)	M5XMLS
DIVIDER (PC programmable)	M5XDIS
RATIO/BIAS TRANSMITTER (output bias; PC programmable)	M5XREB
RATIO/BIAS TRANSMITTER (input bias; PC programmable)	M5XRTS
LINEARIZER (PC programmable)	M5XF
SQUARE ROOT EXTRACTOR (PC programmable)	M5XFLS
INVERTED OUTPUT TRANSMITTER (PC programmable)	M5XUDS
RAMP BUFFER (PC programmable)	M5XCRS
TRACK/HOLD (PC programmable)	M5XAMS
PEAK HOLD (PC programmable)	M5XPHS
HIGH/LOW SELECTOR (PC programmable)	M5XSES
PARAMETER GENERATOR (PC programmable)	M5XMST

Terminal Block, Dual Output

W5-UNIT Series

TERMINAL BLOCK | FOUR-PORT ISOLATION | AC POWER DC POWER

The W5 Series offers low-profile signal splitters with isolated dual outputs.

CE RoHS 10

▪ Compliance/approval depends upon models.

Signal splitters with isolated dual outputs

Four-port isolation between the input, output 1, output 2, and power supply.

Terminal block signal conditioners

Multiple terminals are installed to form a panel terminal block.

Depth: 41 mm (1.61 in.)

W5 models can be installed on boards with a shallow depth.

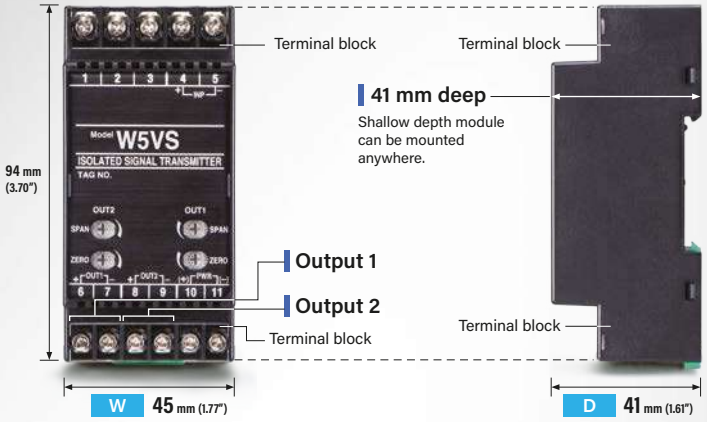
Power supply for AC (100 - 240 V) is also available.

Supporting 100 - 240 V AC, 24 V DC, 11 - 27 V DC, 110 V DC.*1

*1. CE marking is not available depending on the model.

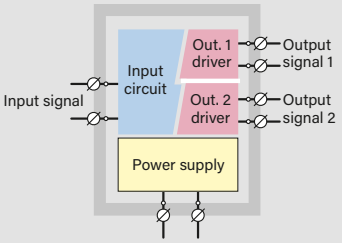


Compact and economical, almost all models can be delivered quickly.



Isolation and power supply

Four-port isolation
Dielectric strength: 2000 V AC @ 1 min.
(Between input, output 1, output 2, power supply, and ground)
Dielectric strength: 1500 V AC @ 1 min.
(Between output 1 and output 2)



AC power supply: 85-264 V AC
DC power supply: 24 V DC, 11-27 V DC, and 110 V DC

Specifications may vary depending on the model. For details, see the datasheet.

Main Specifications

Structure:	Low-profile terminal block
Connection:	M3.5 screw terminals (Input) M3 screw terminals (Output and power supply)
Input:	See list of models
Output:	See the datasheet
Installation:	DIN rail mounting

ISOLATOR & SENSOR INPUT

PRODUCT	MODEL
SIGNAL TRANSMITTER	W5VS
SIGNAL TRANSMITTER (field-configurable)	W5FV
THERMOCOUPLE TRANSMITTER	W5TS
RTD TRANSMITTER	W5RS
POTENTIOMETER TRANSMITTER	W5MS
CURRENT LOOP SUPPLY	W5DY
STRAIN GAUGE TRANSMITTER	W5LCS

FREQUENCY I/O

PRODUCT	MODEL
FREQUENCY TRANSMITTER	W5PA

M5-UNIT
W5-UNIT
M2 Series
W2 Series
M50X-UNIT
M6 Series
M60 Series
M1E Series
M80 Series
20 Series
Other Signal Conditioners
Two-wire Signal Conditioners
Limit Alarms

Compact, Plug-in

M2 Series

PLUG-IN | THREE-PORT ISOLATION | AC POWER DC POWER

A wide range of compact signal conditioners that comply with CE marking and UL standards.

- Compliance/approval depends upon models.

OEL display type

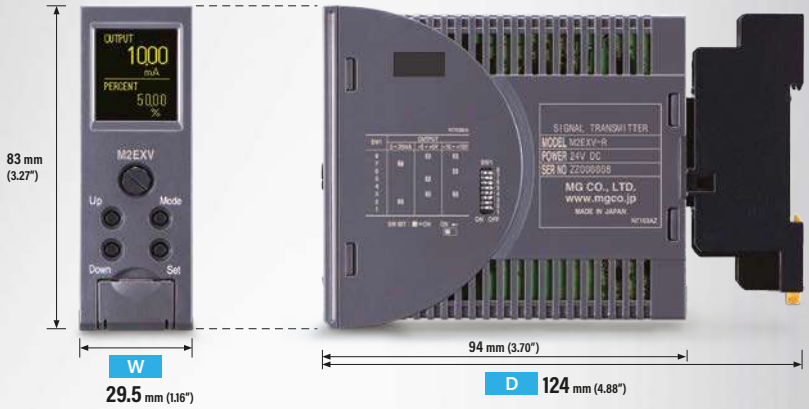
M2E Series

Multi-function display

Display settings can be easily configured on the OEL display. Settings can also be configured via PC.

Loop test output

Simulated signals can be output even without an input signal for operation testing.



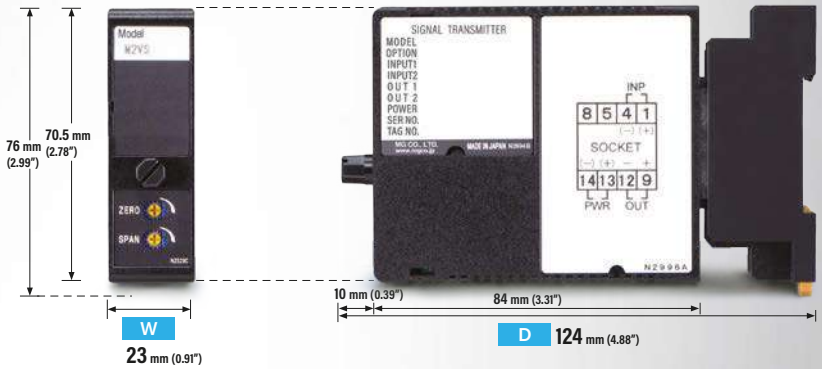
Standard type

Compact, plug-in socket mounted

These compact, plug-in signal conditioners can be inspected and replaced without having to disconnect any wiring.

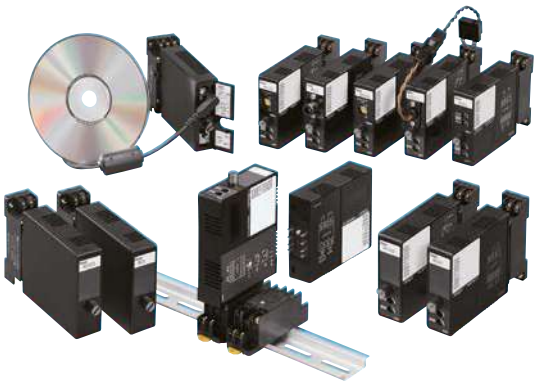
Loop test output

Simulated signals can be output even without an input signal, allowing for operation testing (PC programmable only).



Main Specifications

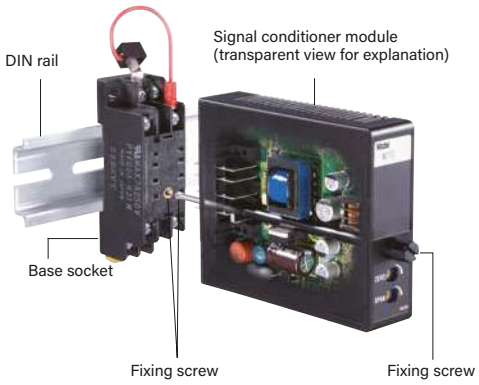
Construction: Plug-in
Connection: M3 screw terminals (torque 0.8 N·m)
Input: See list of models
Output: See the datasheet
Mounting: Surface or DIN rail



The Compact M2 Series Plug-in Signal Conditioners have the most complete range of models. Many of the models in this wide range can be delivered quickly and are approved by various certification agencies.
Thanks to thorough part control, many models in this signal conditioner series do not exceed the regulation values for specific hazardous substances restricted by the RoHS Directive, so they can be used with peace of mind.

Compact, plug-in socket mounted

Standard type



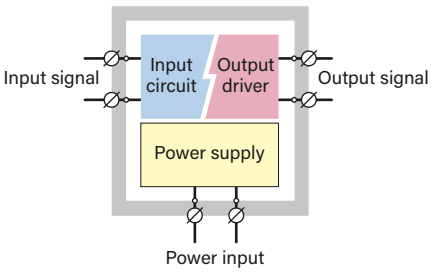
OEL display type



The space-saving plug-in structure allows for inspection and replacement without having to disconnect any wiring. The base socket and signal conditioner body are securely fastened with mounting screws, so there is no risk of loosening or detachment.

Isolation and power supply

Three-port isolation
Dielectric strength: 2000 V AC @ 1 min.

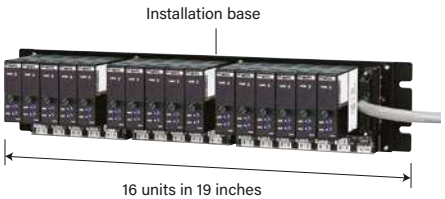


AC power supply: 85-264 V AC
100 – 240 V AC
DC power supply: 24 V DC
11 – 27 V DC,
110 V DC

Specifications may vary depending on the model.
For details, see the datasheet.

High-density mounting (standard type)

Models in the Compact M2 Series Plug-in Signal Conditioners feature a slim, space-saving structure that is only 23 mm wide. Sixteen units can easily be accommodated in a 19-inch rack, and use of the dedicated installation base makes installation even more convenient.



M2E Series with OEL display



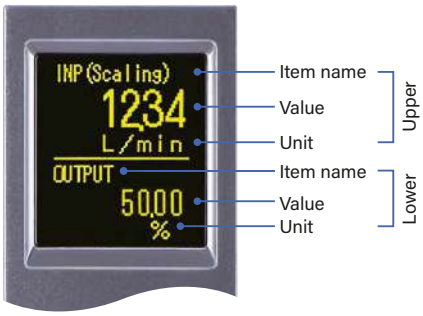
Measured and engineering unit values are displayed clearly and vividly.

Ideal for loop checks and maintenance when instant visibility is required.

With its high brightness and contrast, the OEL display provides excellent visibility and is ideal for tasks where mistakes must be avoided, such as loop checks and signal checks during maintenance.
The display can be configured to remain on continuously or to turn on when a button is touched.



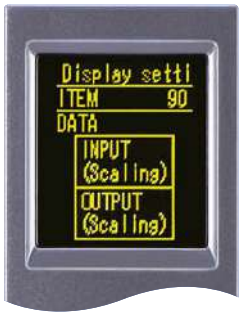
Multi-function display



Measured value display

Multiple values are displayed in two rows.

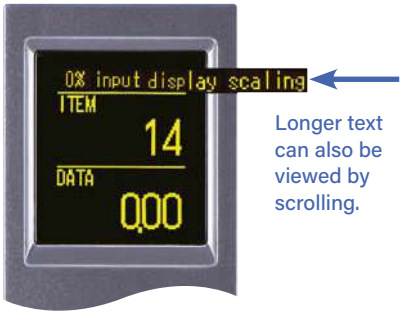
Both the upper and lower rows can display up to six digits. Displayed contents can be freely assigned to inputs or outputs, while measured values, engineering unit values, scaled values, percentage values, and units can be configured individually.



Monitor/setting display

Display settings can also be configured easily.

Just switch to display setting mode and select the content to display for the upper and lower rows.

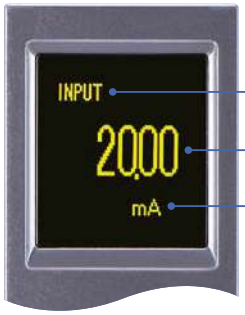


Longer text can also be viewed by scrolling.

Setting display

No need to refer to the instruction manual.

Although it is normally necessary to check the corresponding number of a setting in the instruction manual, with the M2E Series, settings are displayed using text, eliminating the need to look up numbers.



Single display

Single display

If you only need to display one item or want to display it in large text, you can select single display.

Settings can also be configured via PC.



Configurator Software
M2ECFG *1
You can download the M2ECFG Configurator Software from our website.



PC Configurator cable *2

This feature is useful when configuring multiple settings with similar specifications or for saving settings.

*1. Model M2EACFG is the alarm output type.
*2. An optional configurator connection cable (Model: COP-US) is required.

Signal conditioners configurable via PC

Specifications will be configured as requested free-of-charge when shipped from the factory.



21 models

PC programmable

With these signal conditioners, specifications can be configured using a PC. This allows for use in a wider range of applications, as setting ranges are larger and more tailored specifications can be configured. Some models, such as those in the M2E Series, allow for settings to be configured just using the buttons on the front panel and without using a PC.

PRODUCT	MODEL	UL
OEL display SIGNAL TRANSMITTER (PC programmable)	M2EXV	--
OEL display THERMOCOUPLE TRANSMITTER (PC programmable)	M2EXT	--
OEL display RTD TRANSMITTER (PC programmable)	M2EXR	--
OEL display POTENTIOMETER TRANSMITTER (PC programmable)	M2EXM	--
OEL display CURRENT LOOP SUPPLY (PC programmable)	M2EXDY	--
OEL display SELF-SYNCH TRANSMITTER (PC programmable)	M2EXS	--
OEL display DC ALARM (PC programmable, dual or quad alarm trip)	M2EAXV	--
OEL display THERMOCOUPLE ALARM (PC programmable, dual or quad alarm trip)	M2EAXT	--
OEL display RTD ALARM (PC programmable, dual or quad alarm trip)	M2EAXR	--
OEL display POTENTIOMETER ALARM (PC programmable, dual or quad alarm trip)	M2EAXM	--

PRODUCT	MODEL	UL
OEL display TWO-WIRE TRANSMITTER ALARM (PC programmable, dual or quad alarm trip)	M2EAXDY	--
OEL display SELF-SYNCH ALARM (PC programmable, dual or quad alarm trip)	M2EAXS	--
UNIVERSAL TRANSMITTER (PC programmable)	M2XU	✓
UNIVERSAL TRANSMITTER (PC programmable; Modbus-RTU communication)	M2XUM	--
SIGNAL TRANSMITTER (PC programmable)	M2XV2	✓
THERMOCOUPLE TRANSMITTER (PC programmable)	M2XT2	✓
RTD TRANSMITTER (PC programmable)	M2XR2	✓
POTENTIOMETER TRANSMITTER (PC programmable)	M2XM2	✓
FREQUENCY TRANSMITTER (PC programmable)	M2XPA3	✓
ENCODER SPEED TRANSMITTER (PC programmable; built-in excitation)	M2XRP2	✓
LINEARIZER (PC programmable)	M2XF2	✓



3 models

"ONE-STEP CAL" programming

With just a signal generator and receiver display, specifications can be changed without using a PC or dedicated programmer, so they can be used in any location or environment.

PRODUCT	MODEL	UL
SIGNAL TRANSMITTER	M2LV	--
RTD TRANSMITTER (field- and PC-configurable)	M2LR	--

PRODUCT	MODEL	UL
POTENTIOMETER TRANSMITTER (field- and PC-configurable)	M2LPM	--



12 models

Front panel configurable

Specifications can be changed using the buttons and switches located on the front, which is convenient when making relatively frequent specification changes.

PRODUCT	MODEL	UL
STRAIN GAUGE TRANSMITTER	M2LCS	✓
PULSE SCALER (field-configurable)	M2PRU	✓
DC ALARM	M2AVS	--
DC ALARM (thumbwheel switch adjustment)	M2SED	✓
DC ALARM (thumbwheel switch adjustment; DPDT output)	M2AS	--
DC ALARM (thumbwheel switch adjustment; single SPDT output)	M2AS1	--

PRODUCT	MODEL	UL
POTENTIOMETER TRANSMITTER (field- and PC-configurable)	M2REB	✓
RATIO/BIAS TRANSMITTER (output bias)	M2RTS	✓
LIMITER	M2LMS	✓
DELAY BUFFER	M2CDS	✓
RAMP BUFFER	M2CRS	✓
PARAMETER GENERATOR	M2MST	--

See pages 4-5 for details on configuration methods.

Other types are available that allow specifications to be changed using DIP switches located on the side.

Unique signal conditioners

Universal Transmitter



Select from among five types of inputs, including DC current, voltage, thermocouple, RTD and potentiometer. Models with Modbus outputs are also available.

UNIVERSAL TRANSMITTER
(PC programmable) M2XU

UNIVERSAL TRANSMITTER
(PC programmable; Modbus-RTU communication) M2XUM

CT Transmitter



This converts AC signals to standard instrumentation signals. Small base sockets are prone to contact welding caused by factors such as motor inrush currents, so these models are designed so that input signals bypass the base socket.

CT TRANSMITTER
(average sensing, RMS calibrated) M2CA

CT TRANSMITTER
(RMS sensing) M2CE

Signal Transmitter, ultra-high speed response 30 µsec.



This transmitter has three characteristics essential for charge-discharge testers: high conversion accuracy, ultra-low temperature drift, and ultra-fast response.

SIGNAL TRANSMITTER
(high-accuracy, ultra-high speed response 30 µsec.) M2VF3

P/I Transducer



This converts air pressure signals ranging from 19.6 to 98.1 kPa to standard instrumentation signals.

P/I TRANSDUCER M2PV

Voltage Divider



This divides high voltages that can normally not be used into voltage levels acceptable for general use. The division ratio for standard products is 1/1000.

VOLTAGE DIVIDER M2VV

Encoder Speed Transmitter



This converts forward and reverse pulse inputs from a two-phase incremental rotary encoder into forward and reverse speed signals.

ENCODER SPEED TRANSMITTER
(PC programmable; built-in excitation) M2XRP2

Resistance/Resistance Converter



This transmitter takes resistance values from an RTD and outputs values that are n times the input. This is useful in situations such as connecting a new PID controller to an old sensor.

RESISTANCE/RESISTANCE CONVERTER M2RR

Analog Switching Module



Two analog signals can be selected or one analog voltage signal switched in two directions.

ANALOG SWITCHING MODULE M2MNV

Current Repeater (applicable to HART signal)



This insulated current loop supply powers a two-wire transmitter capable of HART communication without interrupting communication.
It also features a repeater function that shapes HART communication signal waveforms.

CURRENT REPEATER
(applicable to HART signal, opencircuit detection selectable) M2DYHR

Ratio/Bias Transmitter



This ratio/bias transmitter allows the ratio and bias to be numerically set while viewing the display.
No tools, such as a digital multimeter, are required, and settings can be configured accurately even in dark locations.

RATIO/BIAS TRANSMITTER
(output bias) M2REB

RATIO/BIAS TRANSMITTER
(input bias) M2RTS

ISOLATOR & SENSOR INPUT

PRODUCT	MODEL	UL
ISOLATOR	M2YV	--
INPUT LOOP POWERED ISOLATOR	M2SN	✓
UNIVERSAL TRANSMITTER (PC programmable)	M2XU	✓
UNIVERSAL TRANSMITTER (PC programmable; Modbus-RTU communication)	M2XUM	--
SIGNAL TRANSMITTER (field- and PC-configurable)	M2LV	--
SIGNAL TRANSMITTER (PC programmable)	M2XV2	✓
OEL display SIGNAL TRANSMITTER (PC programmable)	M2EXV	--
SIGNAL TRANSMITTER (two isolated outputs)	M2WVS	--
SIGNAL TRANSMITTER	M2VS	✓
SIGNAL TRANSMITTER (photovoltaic system, instrument shelter)	M2VT	--
SIGNAL TRANSMITTER (field-configurable)	M2FV	--
SIGNAL TRANSMITTER (high speed response)	M2VF	✓
SIGNAL TRANSMITTER (ultra-high speed response 30 µsec.)	M2VF2	✓
SIGNAL TRANSMITTER (high-accuracy, ultra-high speed response 30 µsec.)	M2VF3	--
VOLTAGE DIVIDER	M2VV	--
THERMOCOUPLE TRANSMITTER (PC programmable)	M2XT2	✓
OEL display THERMOCOUPLE TRANSMITTER (PC programmable)	M2EXT	--
THERMOCOUPLE TRANSMITTER	M2TS	✓
THERMOCOUPLE TRANSMITTER (photovoltaic system, instrument shelter)	M2TT	--
RTD TRANSMITTER (field- and PC-configurable)	M2LR	--
RTD TRANSMITTER (PC programmable)	M2XR2	✓
OEL display RTD TRANSMITTER (PC programmable)	M2EXR	--
RTD TRANSMITTER	M2RS	✓
RTD TRANSMITTER (1 mA sensing current)	M2RS1	--
RTD TRANSMITTER (photovoltaic system, instrument shelter)	M2RT	--
RESISTANCE/RESISTANCE CONVERTER	M2RR	--
POTENTIOMETER TRANSMITTER (field- and PC-configurable)	M2LPM	--
POTENTIOMETER TRANSMITTER (PC programmable)	M2XM2	✓
OEL display POTENTIOMETER TRANSMITTER (PC programmable)	M2EXM	--
POTENTIOMETER TRANSMITTER	M2MS	✓
CURRENT LOOP SUPPLY (non-isolated)	M2D	✓
CURRENT LOOP SUPPLY (non-isolated, with indicator LED)	M2D2	✓
CURRENT LOOP SUPPLY (isolated, isolator usable)	M2DYS	✓
CURRENT LOOP SUPPLY	M2DY	✓
OEL display CURRENT LOOP SUPPLY (PC programmable)	M2EXDY	--
CURRENT LOOP SUPPLY (applicable to HART signal, opencircuit detection selectable)	M2DYH2	--
CURRENT LOOP SUPPLY (applicable to HART signal)	M2DYH	--
CURRENT REPEATER (applicable to HART signal, opencircuit detection selectable)	M2DYHR	--
CURRENT LOOP SUPPLY (with square root extractor; non-isolated)	M2DL	✓
CURRENT LOOP SUPPLY (with square root extraction, square root extractor)	M2DNY	✓
CURRENT LOOP SUPPLY (10 – 50 mA loop)	M2DU	--
OEL display SELF-SYNCH TRANSMITTER (PC programmable)	M2EXS	--
STRAIN GAUGE TRANSMITTER	M2LCS	✓
TACHOGENERATOR TRANSMITTER	M2TG	✓
AC TRANSMITTER	M2AC	✓

POWER TRANSDUCER

PRODUCT	MODEL	UL
PT TRANSMITTER (average sensing, RMS calibrated)	M2PA	✓
PT TRANSMITTER (RMS sensing)	M2PE	✓
CT TRANSMITTER (average sensing, RMS calibrated)	M2CA	✓
CT TRANSMITTER (RMS sensing)	M2CE	✓
AC CURRENT TRANSMITTER (clamp-on current sensor)	M2CEC	--

FREQUENCY I/O

PRODUCT	MODEL	UL
FREQUENCY TRANSMITTER (PC programmable)	M2XPA3	✓
LOW FREQUENCY TRANSMITTER (50 Hz minimum)	M2SP	✓
ENCODER SPEED TRANSMITTER (PC programmable; built-in excitation)	M2XRP2	✓
DC/FREQUENCY CONVERTER	M2AP	✓
PULSE ISOLATOR	M2PP	✓
PULSE SCALER (field-configurable)	M2PRU	✓
PULSE DIVIDER	M2PDU	--

LIMIT ALARM

PRODUCT	MODEL	UL
DC ALARM	M2AVS	--
DC ALARM (thumbwheel switch adjustment)	M2SED	✓
DC ALARM (thumbwheel switch adjustment; DPDT output)	M2AS	--
DC ALARM (thumbwheel switch adjustment; single SPDT output)	M2AS1	--
OEL display DC ALARM (PC programmable, dual or quad alarm trip)	M2EAXV	--
OEL display THERMOCOUPLE ALARM (PC programmable, dual or quad alarm trip)	M2EAXT	--
OEL display RTD ALARM (PC programmable, dual or quad alarm trip)	M2EAXR	--
OEL display POTENTIOMETER ALARM (PC programmable, dual or quad alarm trip)	M2EAXM	--
OEL display TWO-WIRE TRANSMITTER ALARM (PC programmable, dual or quad alarm trip)	M2EAXDY	--
OEL display SELF-SYNCH ALARM (PC programmable, dual or quad alarm trip)	M2EAXS	--

PNEUMATIC TRANSDUCER

PRODUCT	MODEL	UL
P/I TRANSDUCER	M2PV	✓

FUNCTION MODULE

PRODUCT	MODEL	UL
ADDER	M2ADS	✓
SUBTRACTOR	M2SBS	✓
MULTIPLIER	M2MLS	✓
DIVIDER	M2DIS	✓
RATIO/BIAS TRANSMITTER (output bias)	M2REB	✓
RATIO/BIAS TRANSMITTER (input bias)	M2RTS	✓
LINEARIZER (PC programmable)	M2XF2	✓
SQUARE ROOT EXTRACTOR (non-isolated)	M2FL	✓
SQUARE ROOT EXTRACTOR (isolated)	M2FLS	✓
LIMITER	M2LMS	✓
INVERTED OUTPUT TRANSMITTER (with simple loop test output)	M2UDS2	--
INVERTED OUTPUT TRANSMITTER	M2UDS	✓
DELAY BUFFER	M2CDS	✓
RAMP BUFFER	M2CRS	✓
TRACK/HOLD (with simple loop test output)	M2AMS2	--
TRACK/HOLD	M2AMS	✓
PEAK HOLD (with simple loop test output)	M2PHS2	--
PEAK HOLD	M2PHS	✓
HIGH/LOW SELECTOR (with simple loop test output)	M2SES2	--
HIGH/LOW SELECTOR	M2SES	✓
ANALOG SWITCHING MODULE	M2MNV	--
PARAMETER GENERATOR	M2MST	--

INSTALLATION BASE

PRODUCT	MODEL	UL
INSTALLATION BAS E (8 positions; Fujitsu FCN type I/O connector)	M2BS-8U1	--
INSTALLATION BASE (16 positions; Omron I/O connector)	M2BS-8U2	✓
INSTALLATION BASE (16 positions; screw terminal block)	M2BS-16U0	✓
INSTALLATION BASE (16 positions; Fujitsu FCN type I/O connector)	M2BS-16U1	--
INSTALLATION BASE (16 positions; Omron I/O connector)	M2BS-16U2	✓
INSTALLATION BASE	M2BS2	--
COMMUNICATION CONTROLLER (CC-Link)	M2BC	--
COMMUNICATION CONTROLLER (DeviceNet)	M2BD	✓

ACCESSORY

PRODUCT	MODEL	UL
SOCKET COVER, M2BS USE	P-M2	--
EXTENDER MODULE	M2BW	--
BLANK FILLER MODULE	M2DM	--

Other plug-in signal conditioner series

Space-saving, Plug-in
F-UNIT Series

These space-saving, plug-in signal conditioners support both 24 V DC and AC power supplies.



Plug-in type that is just 26 mm wide and supports AC power supplies

The palm-sized, plug-in structure enables inspection and replacement without having to disconnect any wiring.

Comprehensive lineup

Most types of major signal conditioners are available.

Loop test output

Simulated signals can be output even without an input signal, allowing for operation testing (PC programmable only).

Space-saving, Plug-in
H-UNIT Series

These space-saving plug-in signal conditioners are for use with a 24 V DC power supply.



Plug-in type that is just 26 mm wide

The palm-sized, plug-in structure enables inspection and replacement without having to disconnect any wiring.

Comprehensive lineup

Most types of major signal conditioners are available.

Pneumatic signal conditioner

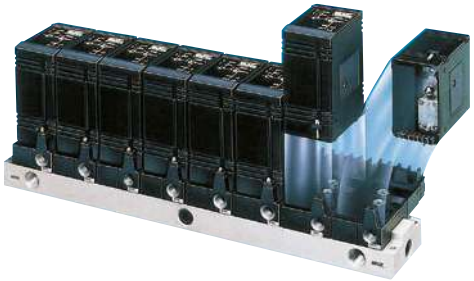
P/I and I/P transducers are also available.

Loop test output

Simulated signals can be output even without an input signal, allowing for operation testing (PC programmable only).

I/P Transducer
P-UNIT Series

These unique I/P transducers are capable of direct sensor input.



Output in P/I and I/P

Directly input various sensor signals and simultaneously output pneumatic pressure signals and isolated DC signals.

Mounting block

Collective air supply is possible by installing to a mounting block (air header).

Maximum air delivery: 60 Nl/minute (2.1 SCFM).

Visit our website for details.

M5-UNIT
W5-UNIT
M2 Series
W2 Series
M50X-UNIT
M6 Series
M60 Series
M1E Series
M80 Series
20 Series
Other Signal Conditioners
Two-wire Signal Conditioners
Limit Alarms

M5-UNIT
W5-UNIT
M2 Series
W2 Series
M50X-UNIT
M6 Series
M60 Series
M1E Series
M80 Series
20 Series
Other Signal Conditioners
Two-wire Signal Conditioners
Limit Alarms

Space-saving, Dual Output

W2 Series

PLUG-IN | FOUR-PORT ISOLATION | AC POWER DC POWER

These compact, plug-in dual output signal conditioners comply with CE marking and UL standards.

- Compliance/approval depends upon models.

Space-saving, dual output type

Four-port isolation (input to output 1 to output 2 to power), withstand voltage 2000 V AC.

Compliant to international standards

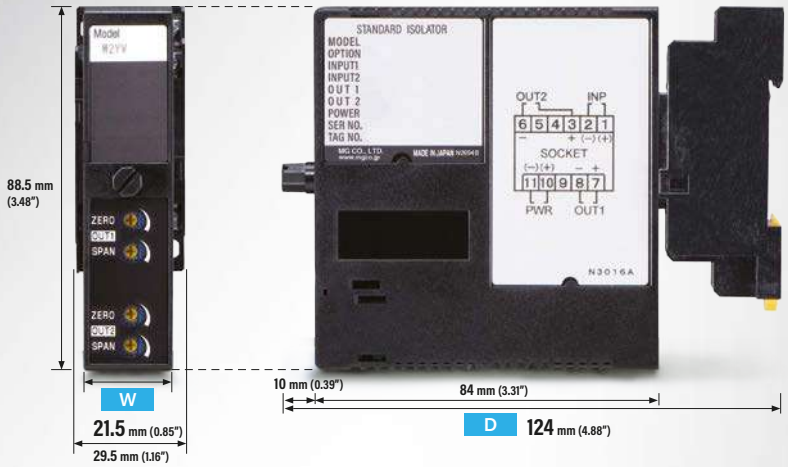
CE marking and UL/C-UL approval (selected models).

Wide power supply ranges

Supporting 100-240 V, 24 V DC and 110 V DC.

Loop test output

Simulated signals can be output even without an input signal, allowing for operation testing (PC programmable only).



High-density mounting

At only 29.5 mm wide, these signal conditioners can be mounted with high density, despite being dual output.
Placing the M2 Series and W2 Series side by side will cause them to appear mismatched. That's why we added a single-output type to the W2 Series.



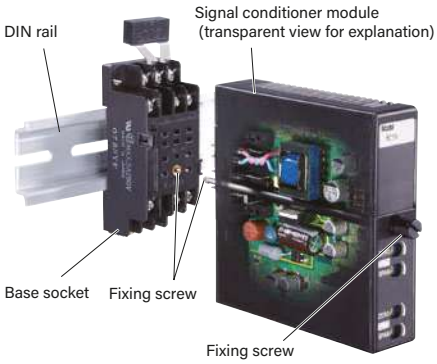
Main Specifications

Construction:	Plug-in
Connection:	M3 screw terminals
Input:	See list of models
Output:	See the datasheet
Mounting:	Surface or DIN rail



The W2 Series has 4-port isolation (input to output 1 to output 2 to power). The lineup is comprehensive, with many models comply with international standards.

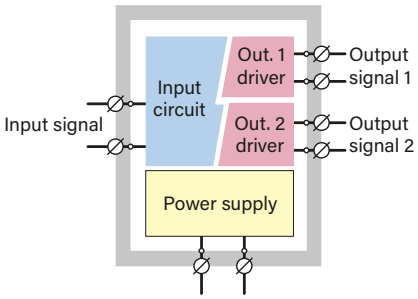
Space-saving, plug-in base mounted



These compact, plug-in signal conditioners can be inspected and replaced without having to disconnect any wiring.

Isolation and power supply

Four-port isolation
Dielectric strength: 2000 V AC @ 1 min.



AC power supply: 85 – 264 V AC
100 – 240 V AC
DC power supply: 24 V DC
11 – 27 V DC,
110 V DC

Specifications may vary depending on the model.
For details, see the datasheet.

ISOLATOR & SENSOR INPUT

PRODUCT	MODEL	UL
ISOLATOR	W2YV	--
SIGNAL TRANSMITTER	W2VS	✓
SIGNAL TRANSMITTER NEW	W2VS2	--
SIGNAL TRANSMITTER (high speed response)	W2VF	✓
THERMOCOUPLE TRANSMITTER (PC programmable)	W2XT	--
THERMOCOUPLE TRANSMITTER	W2TS	✓
RTD TRANSMITTER (PC programmable)	W2XR	--
RTD TRANSMITTER	W2RS	✓
RTD TRANSMITTER (1 mA sensing current)	W2RS1	--
POTENTIOMETER TRANSMITTER (PC programmable)	W2XM	--
POTENTIOMETER TRANSMITTER	W2MS	✓
CURRENT LOOP SUPPLY (isolated, isolator usable)	W2DYS	✓
CURRENT LOOP SUPPLY	W2DY	--
CURRENT LOOP SUPPLY (with square root extractor)	W2DNY	✓
CURRENT LOOP SUPPLY (applicable to HART signal)	W2DYH	--
CURRENT LOOP SUPPLY (applicable to HART signal, opencircuit detection selectable)	W2DYH2	--
TACHOGENERATOR TRANSMITTER	W2TG	✓
AC TRANSMITTER	W2AC	✓

POWER TRANSDUCER

PRODUCT	MODEL	UL
PT TRANSMITTER (average sensing, RMS calibrated)	W2PA	✓
PT TRANSMITTER (RMS sensing)	W2PE	✓
CT TRANSMITTER (average sensing, RMS calibrated)	W2CA	✓
CT TRANSMITTER (RMS sensing)	W2CE	✓

FREQUENCY I/O

PRODUCT	MODEL	UL
LOW FREQUENCY TRANSMITTER (50 Hz minimum)	W2SP	✓
DC/FREQUENCY CONVERTER	W2AP	✓
PULSE ISOLATOR	W2PP	--
RS-422 PULSE ISOLATOR NEW	W2YPD	--

PNEUMATIC TRANSDUCER

PRODUCT	MODEL	UL
P/I TRANSDUCER	W2PV	✓

FUNCTION MODULE

PRODUCT	MODEL	UL
LINEARIZER (PC programmable)	W2XF	--
ABSOLUTE VALUE OUTPUT TRANSMITTER	W2VABS	--
2-OUTPUT PARAMETER GENERATOR	W2MST	--

Super-mini Terminal Block

M50X-UNIT Series

TERMINAL BLOCK | FIVE-PORT ISOLATION | AC POWER DC POWER

This series consists of low-profile terminal block signal conditioners. They feature a tension clamp terminal block with numerous terminals that can measure multiple circuits simultaneously with a single unit.

• Compliance/approval depends upon models.

Super-mini terminal block

41 mm (1.61 in) deep

M50X models can be installed on boards with a shallow depth.*1

Tension clamp terminal block

Multiple circuits can be measured simultaneously with a single unit.

Modbus communication as standard

Five-port isolation

Five-port isolation between input to Modbus to output 1 to output 2 to power

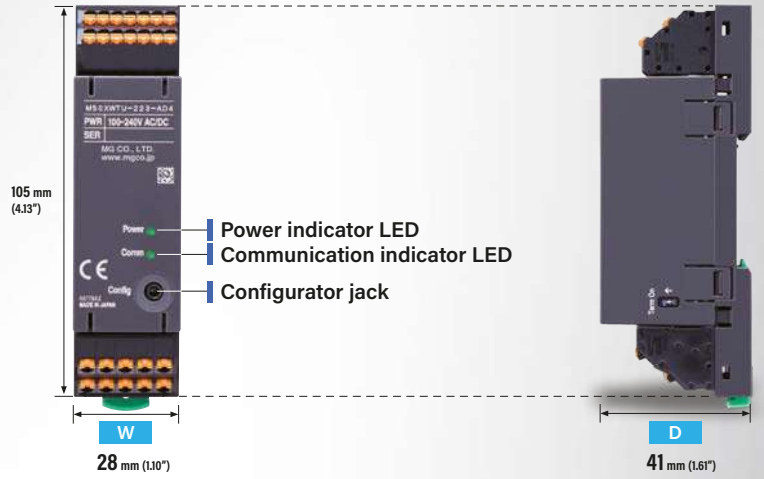
Loop test output

Simulated signals can be output even without an input signal, allowing for operation testing.

New multi power transducer model

The built-in CPU calculates the AC power variables instantaneously

*1. Except for the M50XWTU-U. The equipment cannot be mounted or retrofitted to switchboards, distribution boards, or control panels that are installed and in operation in a facility. Please read the instruction manuals for the M50XWTU-U.



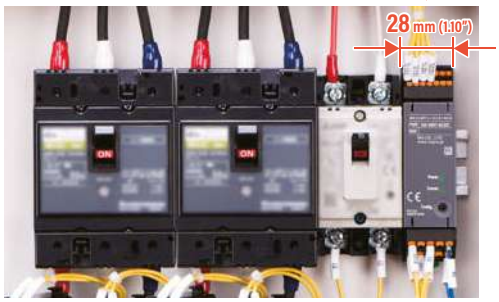
Main Specifications

Construction:	Low-profile terminal block
Connection:	Tension clamp terminals
Input:	See list of models
Output:	See the datasheet
Mounting:	Surface or DIN rail

Compact size

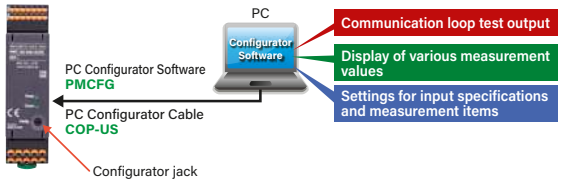
Multi Power Transducers, featuring the 41 mm (1.61 in.) deep terminal block style housing, are suitable for installation in a tight space of breaker boxes or wall-mounted panels.*1

Retrofitted in a tight space of existing panels



PC programmable signal conditioners

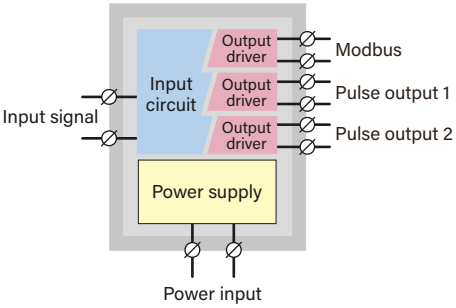
With PC programmable signal conditioners, parameters such as input and output ranges can be freely modified using a program run on a Windows PC. Loop test output mode in the PC Configurator Software can be used to simulate any output value without actually connecting to the active input circuits, which is useful for system commissioning.



PMCFG is downloadable for free from our website.

Isolation and power supply

Five-port isolation
Dielectric strength: 2000 V AC @ 1 min.

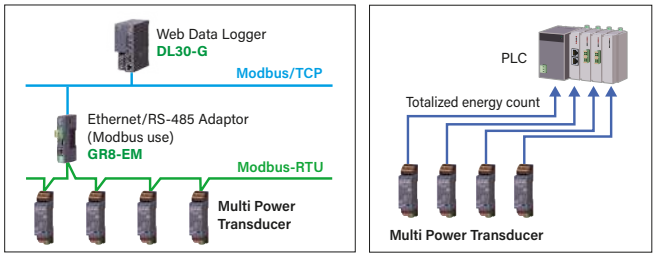


M50XWTU: 100 – 240 V AC / 100 – 240 V DC (universal)
M50XWTU-U: 100 – 240 V AC

Specifications may vary depending on the model.
For details, see the datasheet.

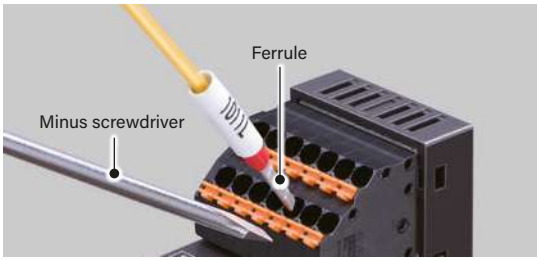
Modbus communication

Modbus communication functionality comes standard. Additional measurement points can be added by simply daisy-chaining the twisted pair wiring.



Tension clamp terminal block

Wiring to the Tension clamp terminal block is quick and easy. Ferrules, solid or stranded wires of up to 1.5 mm2 can be used.



POWER TRANSDUCER

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

Multi Power Transducers

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.



Multi Power Transducer
Model: **M50XWTU**

Multi Power Transducer
Model: **M50XWTU-U**

- CO_2 emissions (energy conversion value) can be calculated.
- Universally adaptable features including CE marking, 480 V AC input, and three-phase/4-wire configuration.
- Measures multiple AC power variables including voltage, current, power, CO_2 emissions (energy conversion value), and harmonic contents
- Max. 480 V AC direct input (max. 240 V AC for M50XWTU-U)
- Modbus communication
- Modbus plus two energy count pulse outputs



Multi Power Transducer
Model: **M50EXWTU**

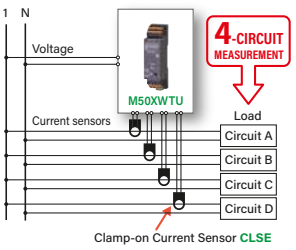
- Clear OEL display
- CO_2 emissions (energy conversion value) can be calculated.
- Universally adaptable features including CE marking, 480 V AC input, and three-phase/4-wire configuration.
- Measures multiple AC power variables including voltage, current, power, CO_2 emissions (energy conversion value), and harmonic contents
- Max. 480 V AC direct input
- Modbus communication
- Modbus plus two energy count pulse outputs

Max. 4-circuit inputs by single module for M50XWTU and M50EXWTU

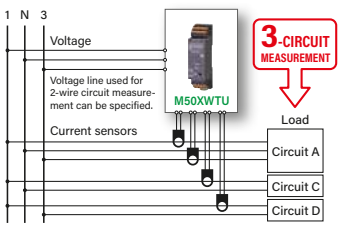
Max. 4-circuit inputs for single-phase/2-wire system, max. 2-circuit inputs for single- or three-phase/3-wire system by single module

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

4 x single-phase/2-wire circuits



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





Multi Power Transducer
Model: **M5XWTU**

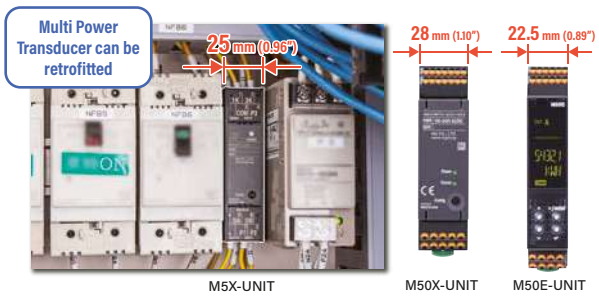
- 290 measured variables (three-phase/3-wire system)
- Max. 240 V AC direct input
- Modbus communication
- You can choose one of the following output options: Modbus communication, analog output, or energy count pulse/alarm output.

Multi Power Transducer
Model: **M5XWT**

- 104 measured variables except harmonic contents (three-phase/3-wire system)
- Max. 240 V AC direct input
- Modbus communication
- Modbus communication output

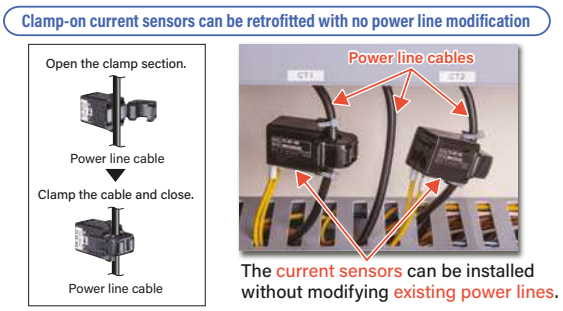
Compact size

Multi power transducers, featuring the 41 mm (1.61 in.) deep (55 mm or 2.17 in. for M50EXWTU), terminal block style housing, are suitable for installation in a tight space of breaker boxes or wall-mounted panels.*1



Easy installation with clamp-on current sensors

The current inputs are connected in one touch by using Clamp-on Current Sensors (Model: CLSE)*2 needing no live cable modification. Furthermore, the M5XWTU and M5XWT use the voltage input to drive their internal circuits, needing no auxiliary power supply connection.



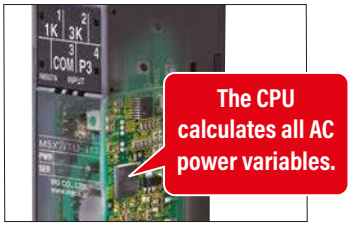
*1. Except for the M50XWTU-U. The equipment cannot be mounted or retrofitted to switchboards, distribution boards, or control panels that are installed and in operation in a facility. Please read the instruction manuals for the M50XWTU-U.

*2. For the M50XWTU-U, use the clamp-on current sensor dedicated to the product (Model: CLSE-U).

The built-in CPU calculates the AC power variables instantaneously

The built-in CPU calculates instantaneously up to 290*3 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).

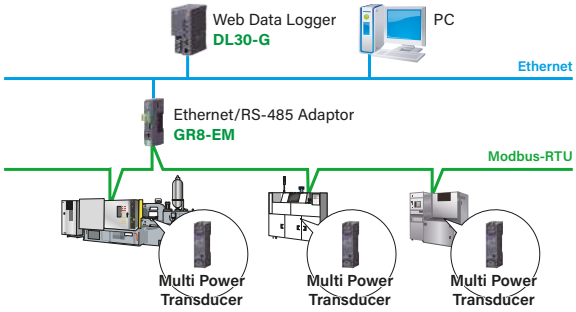
*3. 104 variables for M5XWT (three-phase/3-wire), excluding harmonic contents.



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

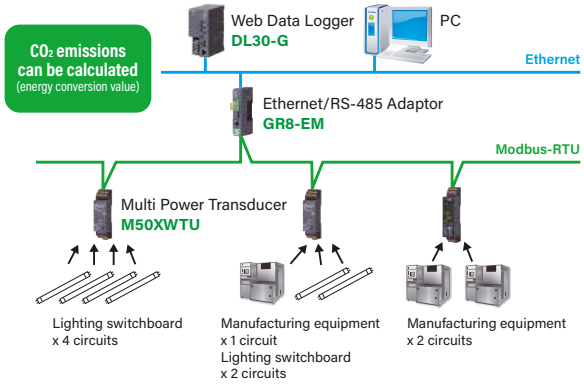
Precise power management is essential to achieving carbon neutrality. You can install the Multi Power Transducers in a small space, even on existing equipment.
You can start with a small budget and gradually increase the number of measurement points, extending to overall management. For example, using 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)

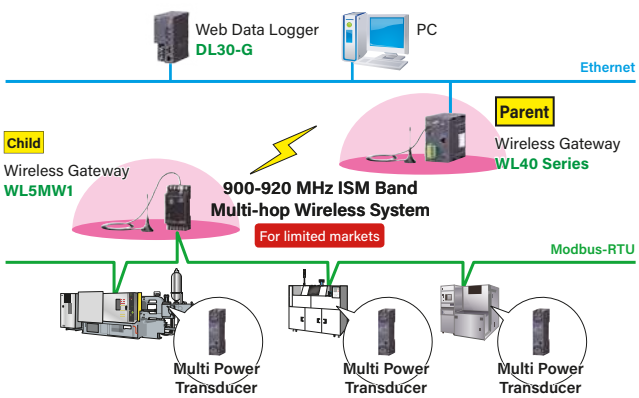


System configuration example, wireless system

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

Features of 900-920 MHz band

- Frequencies on the 900-920 MHz bands are highly diffractive and obstacle resistant.
- A network is constructed with an exceptionally reliable multi-hop system.
- Communication is available for a line-of-sight distance of up to 1 km.
- No license application is required.
- No communication wiring work is required.



M5-UNIT
W5-UNIT
M2 Series
W2 Series
M50X-UNIT
M6 Series
M60 Series
M1E Series
M80 Series
20 Series
Other Signal Conditioners
Two-wire Signal Conditioners
Limit Alarms

Ultra-slim

M6 Series

SPACE SAVING | THREE-PORT ISOLATION | AC POWER DC POWER

Space-saving, energy-saving, and wire-saving for lower overall costs.

CE cULus RoHS 10

- Compliance/approval depends upon models.

Ultra-slim signal conditioners

These ultra-slim signal conditioners are only 5.9 mm (0.23 in.) wide (M6D and M6S only).

Selectable terminal block types

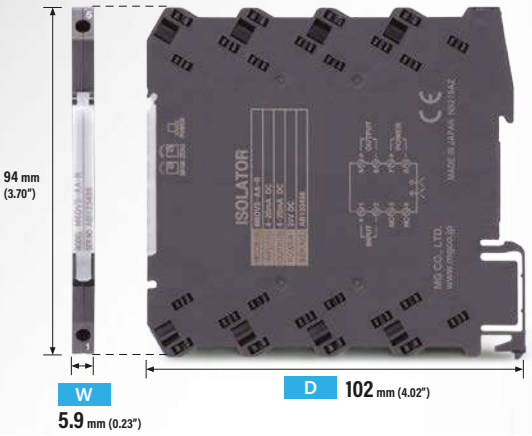
Tension clamp terminal, screw terminal or euro terminal types are selectable.

Slim design with robust performance

Despite its slim design, it achieves an excellent isolation withstand voltage of 2000 V AC.

The allowable load resistance for the 4 – 20 mA DC output is 550 Ω, making it powerful despite its slim design.

The energy-saving design eliminates concerns about heat generation, even when installed tightly together in high-density mounting.



Wide power supply ranges

Supporting 24 V DC and 100 - 240 V AC

Loop test output

Simulated signals can be output even without an input signal, allowing for operation testing (PC programmable only).

Installation base and power supply module

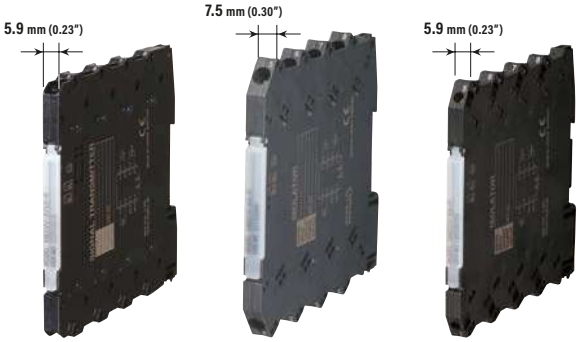
By using a power supply module and an installation base, power can be collectively supplied to all units, thereby streamlining wiring work.



Installation base

Main Specifications

Construction:	Ultra-slim
Connection:	Tension clamp terminal, M3 screw terminal, Euro terminal
Input:	See list of models
Output:	See the datasheet
Mounting:	DIN rail, Multi-channel Installation Base (Surface)



Tension clamp terminal connection type **M6S Series**

Screw terminal connection type **M6N Series**

Euro terminal connection type **M6D Series**

Three series are available with different types of terminals.

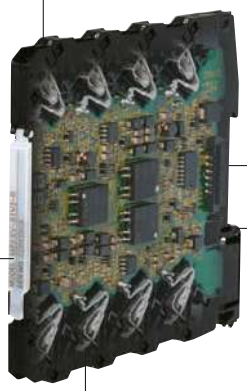
Ultra-slim structure

Slant-shaped wiring port

For ease of wiring, the terminal block has a slanted structure in which tools, such as a screwdriver, are inserted diagonally from the front, and wiring is inserted diagonally from the back.

Front cover

The front cover is openable. It is a transparent cover, and you can check the power indicator lamp even when the cover is closed.



Signal conditioner
(transparent view for explanation)

Rear connector

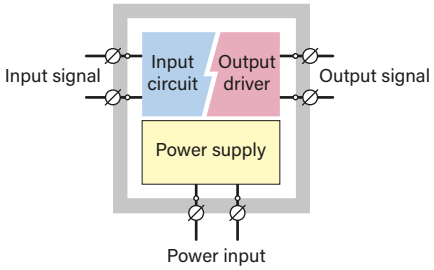
The multi-channel installation base allows power to be supplied from the rear connector (DC power only).

DIN rail mounting hook

Used when mounting onto a DIN rail or the multi-channel installation base.

Isolation and power supply

Three-port isolation
Dielectric strength: 2000 V AC @ 1 min.



AC power supply: 100 – 240 V AC
DC power supply: 24 V DC

Specifications may vary depending on the model.
For details, see the datasheet.

Ultra-slim model operating with AC power supply

- Thickness of the transformer has been drastically reduced by adopting reinforced insulation material, while the excellent dielectric strength is maintained.
- Bears CE marking.

Newly developed
Ultra-slim type high-with-stand-voltage transformer

(transparent view for explanation)



AC power supply	100 – 240 V AC (Operational voltage range 90 – 264 V, 47 – 66 Hz)
Insulation resistance	≥ 100 MΩ with 500 V (input to output to power)
Dielectric strength	2000 V AC @1 minute (input to output to power to ground)

List of models accepting AC power supply

Isolator
M6xYV

Signal Transmitter
M6xVS

Universal Transmitter
(PC programmable)
M6xXU
- DC mV, V, mA input
- Thermocouple input
- RTD input
- Potentiometer input

Multi-channel installation base allowing high-density installation of up to 47 modules

- The multi-channel installation base allows the power supply to go to all signal conditioners at once.
- Power is supplied from the power modules, and up to 47 modules (using six multi-channel installation bases) can be connected.



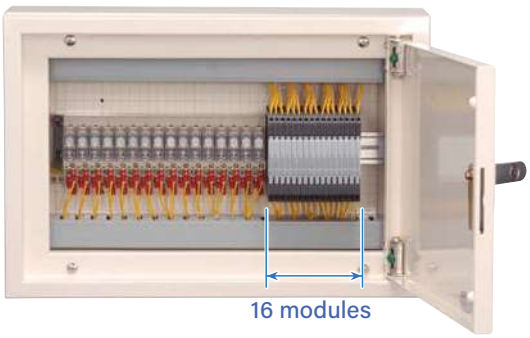
Signal conditioners



Installation Base
M6xBS
8 slots
8 slots (for extension)

Power Module
Power Supply Module M6xPS1
Power Supply Module (dual redundant) M6xPS2
Power Supply Module (for AC power use) M6-PSM

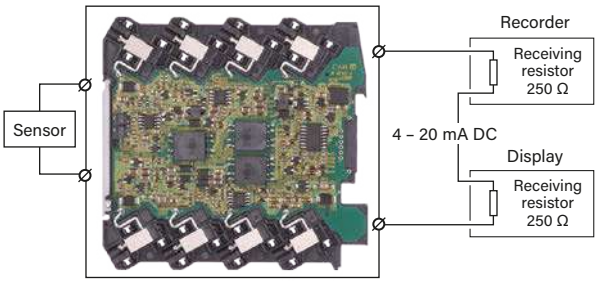
Control panel miniaturization with reduction of panels in number



Even if 16 modules*1 are installed side by side, a maximum width of 9.5 cm (3.75 in.) is required, and the total power consumption is only 7.2 W*2.

*1. For M6D and M6S models.
*2. For the M6xYV isolator.

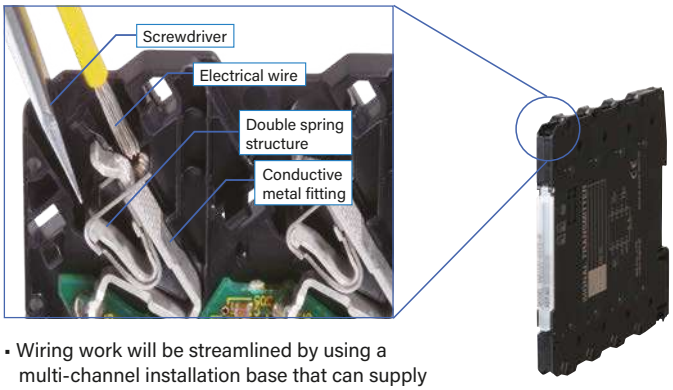
Marginal allowable load resistance of 550 Ω sensor



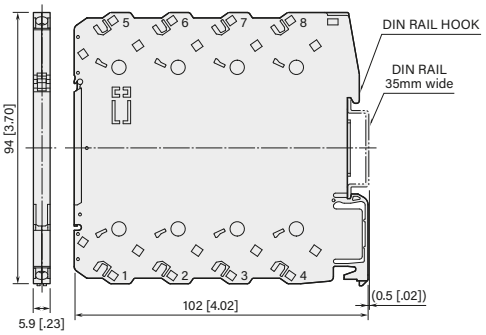
The M6 Series' powerful design allows current output with an allowable load of 550 Ω (at 4 - 20 mA DC).
Despite being ultra-slim, the M6 Series can provide an output with ease if two receiving loads (250 Ω each) are connected in series.

M6S Series Tension clamp terminal ultra-slim signal conditioners (5.9 mm wide)

- A terminal block of Tension clamp type that connects electric wires with powerful leaf springs.
- An exceptionally reliable double-spring structure.



- Wiring work will be streamlined by using a multi-channel installation base that can supply power collectively.

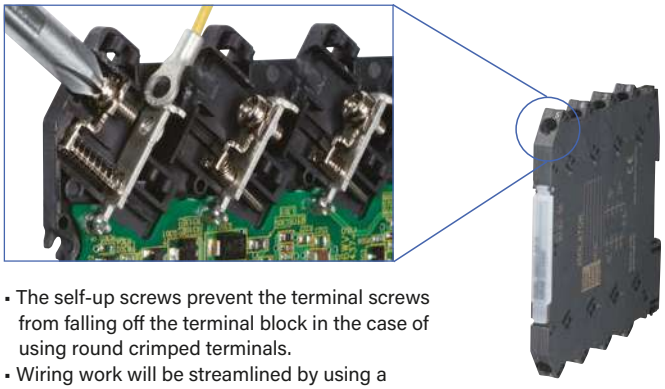


- When mounting, no extra space is needed between units.
- Use a minus screwdriver: tip width 3.8 mm max., tip thickness 0.5 to 0.6 mm

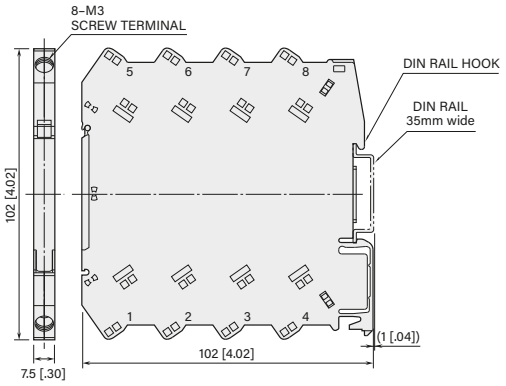
unit: mm [inch]

M6N Series screw terminal ultra-slim signal conditioners (7.5 mm wide)

- An ultra-slim terminal block of screw-type saves space.
- Incorporating self-up screws.



- The self-up screws prevent the terminal screws from falling off the terminal block in the case of using round crimped terminals.
- Wiring work will be streamlined by using a multi-channel installation base that can supply power collectively.

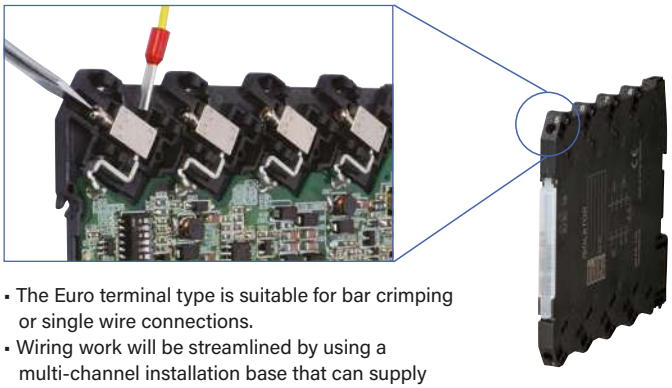


- When mounting, no extra space is needed between units.
- Screwdriver stem diameter: 6 mm [.24"] or less

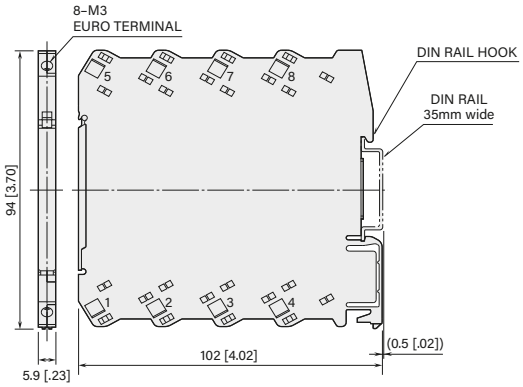
unit: mm [inch]

M6D Series Euro terminal ultra-slim signal conditioners (5.9 mm wide)

- Incorporating Euro terminals, which are common in Europe and the United States.



- The Euro terminal type is suitable for bar crimping or single wire connections.
- Wiring work will be streamlined by using a multi-channel installation base that can supply power collectively.



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

unit: mm [inch]

ISOLATOR & SENSOR INPUT

PRODUCT	MODEL	UL
ISOLATOR	M6SYV	✓
	M6NYV	
	M6DYV	
INPUT LOOP POWERED ISOLATOR	M6SSN	✓
	M6NSN	
	M6DSN	
UNIVERSAL TRANSMITTER (PC programmable)	M6SXU	--
	M6NXU	
	M6DXU	
SIGNAL TRANSMITTER (PC programmable)	M6SXV	✓
	M6NXV	--
	M6DXV	✓
SIGNAL TRANSMITTER	M6SVS	✓
	M6NVS	
	M6DVS	
SIGNAL TRANSMITTER (high-accuracy, ultra-high speed response 30 µsec.)	M6SVF	--
	M6NVF	
	M6DVF	
SIGNAL TRANSMITTER (two isolated outputs)	M6SWVS	✓
	M6NWVS	✓
	M6DWVS	--
THERMOCOUPLE TRANSMITTER (PC programmable)	M6SXT	✓
	M6NXT	
	M6DXT	
RTD TRANSMITTER (PC programmable)	M6SXR	✓
	M6NXR	
	M6DXR	
POTENTIOMETER TRANSMITTER (PC programmable)	M6SXM	✓
	M6NXM	
	M6DXM	
CURRENT LOOP SUPPLY	M6SDY	✓
	M6NDY	
	M6DDY	

POWER TRANSDUCER

PRODUCT	MODEL	UL
CT TRANSMITTER (clamp-on current sensor)	M6SCTC	--
	M6NCTC	
	M6DCTC	

FREQUENCY I/O

PRODUCT	MODEL	UL
FREQUENCY TRANSMITTER	M6SPA	✓
	M6NPA	✓
	M6DPA	--
DC/FREQUENCY CONVERTER (PC programmable)	M6SXAP	--
	M6NXAP	
	M6DXAP	
PULSE ISOLATOR	M6SPP	--
	M6NPP	
	M6DPP	

LIMIT ALARM

PRODUCT	MODEL	UL
DC ALARM (PC programmable)	M6SXAS	--
	M6NXAS	
	M6DXAS	
THERMOCOUPLE ALARM (PC programmable)	M6SXAT	--
	M6NXAT	
	M6DXAT	
RTD ALARM (PC programmable)	M6SXAR	--
	M6NXAR	
	M6DXAR	

FUNCTION MODULE

PRODUCT	MODEL	UL
FUNCTION MODULE (PC programmable)	M6SXF1	--
	M6NXF1	
	M6DXF1	
2-INPUT MATH FUNCTION MODULE (PC programmable)	M6SXF2	--
	M6NXF2	
	M6DXF2	
HOLD FUNCTION MODULE (PC programmable)	M6SXF3	--
	M6NXF3	
	M6DXF3	

INSTALLATION BASE/POWER MODULE

PRODUCT	MODEL	UL
INSTALLATION BASE	M6SBS	✓
	M6NBS	✓
	M6DBS	--
POWER SUPPLY MODULE	M6SPS1	✓
	M6NPS1	✓
	M6DPS1	--
POWER SUPPLY MODULE (dual redundant)	M6SPS2	--
	M6NPS2	
	M6DPS2	
POWER SUPPLY MODULE (for AC power use)	M6-PSM	--

ACCESSORY

PRODUCT	MODEL	UL
BLANK FILLER MODULE	M6SDM	--
	M6NDM	
	M6DDM	

M5-UNIT
W5-UNIT
M2 Series
W2 Series
M50X-UNIT
M6 Series
M60 Series
M1E Series
M80 Series
20 Series
Other Signal Conditioners
Two-wire Signal Conditioners
Limit Alarms

Base-free Interconnecting, Ultra-slim

M60 Series

SPACE SAVING | THREE-PORT ISOLATION | FOUR-PORT ISOLATION | DC POWER

These ultra-slim signal conditioners incorporate various innovations and technology despite being only 6 mm wide.

CE RoHS 10

- Compliance/approval depends upon models.

Ultra-slim signal conditioners

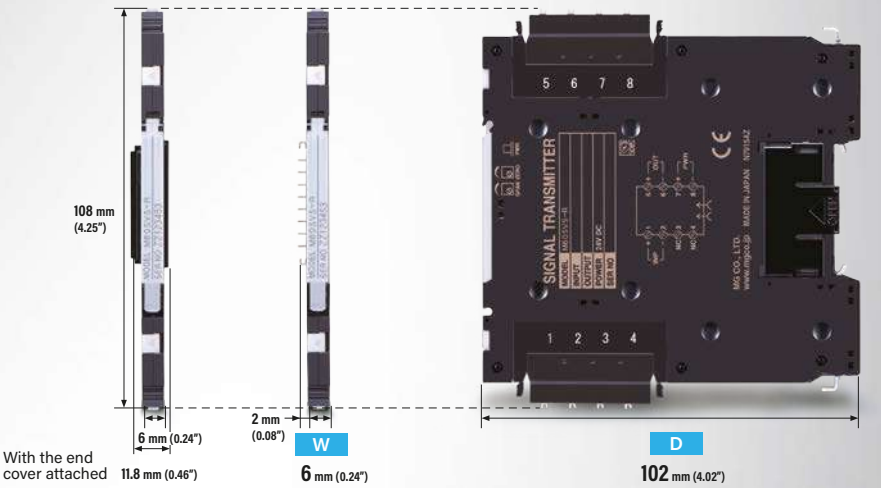
These ultra-slim building-block type signal conditioners are only 6 mm (0.24 in.) wide.

Selectable terminal block types

Two types are available: tension clamp terminals and e-CON connectors.

Power connector for interconnecting modules and collectively supplying power

Centralized power supply converters can be directly connected using the power bus connector, so power can be supplied collectively without an installation base, which saves time during wiring work.



Main Specifications

Construction:	Ultra-slim module
Connection:	Tension clamp terminal, e-CON connector
Input:	See list of models
Output:	See the datasheet
Mounting:	DIN rail



Tension clamp terminal connection type
M60S Series



e-CON connector connection type
M60E Series

Two series are available with different types of terminals.

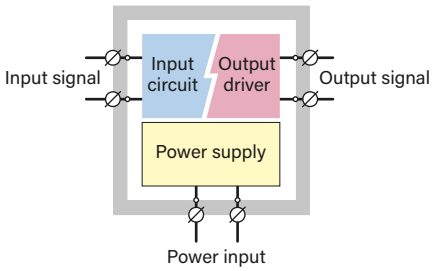
Space-saving type without an installation base



Since there is no installation base, there are no empty slots on the base, making for efficient use of space. High-density mounting can be achieved through tight installation.

Isolation and power supply

Three-port isolation
Dielectric strength: 1500 V AC @ 1 min.

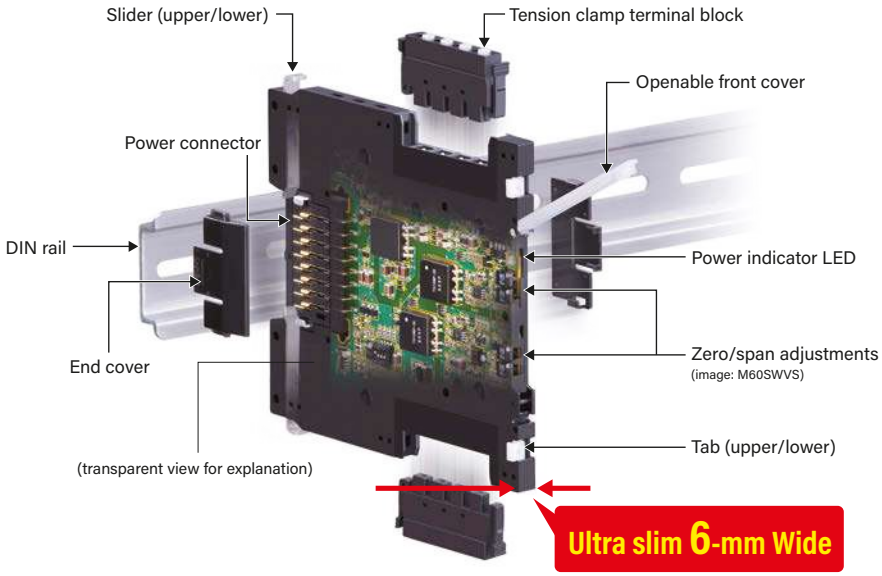


DC power supply: 24 V DC

M60SWVS and M60EWVS have 4-port isolation.
For details, see the datasheet.

Component identification

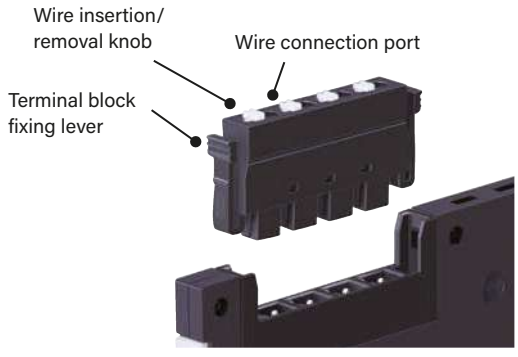
• The photo shows M60SWVS.



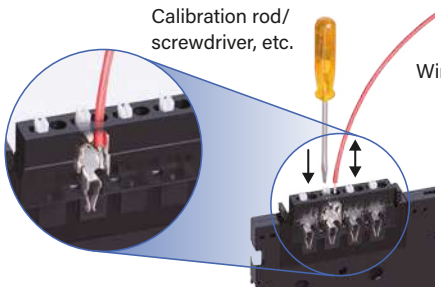
Tension clamp terminal block for streamlined wiring work

The M60S Series uses a tension clamp terminal block. With this structure, the wires remain connected even when the terminal block is removed, which is convenient for inspections or changing specifications. The strong plate springs ensure secure wire connections, allowing direct insertion and removal of wires without the need for ring terminals or other cumbersome wiring tools, streamlining wiring work.

Tension clamp terminal block structure



Wire insertion and removal

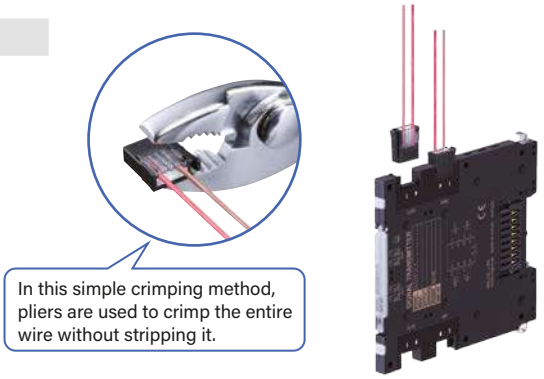


Wires can be inserted or removed by using a calibration rod or flat-head screwdriver to push down the white wire insertion/removal knobs. Even wires with hard tips, such as ferrules, can be inserted directly.

Introducing the M60E Series of e-CON connector types!

There is no need to strip wires, so connection work is significantly reduced.
Also, wires can be easily disconnected and reconnected when installing or removing devices.

e-CON connector type structure



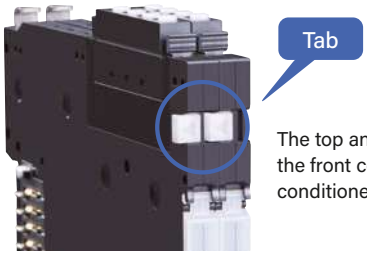
Centralized power supply via power bus connector and space-saving design without an installation base

Although an installation base is normally required to collectively supply power to multiple signal conditioners, with the M60 Series the signal conditioners are directly connected by the power bus connector, eliminating the need for an installation base. In this setup, power only needs to be connected to a single module which then automatically distributes it to the other connected signal conditioners.

High-density mounting on a DIL rail

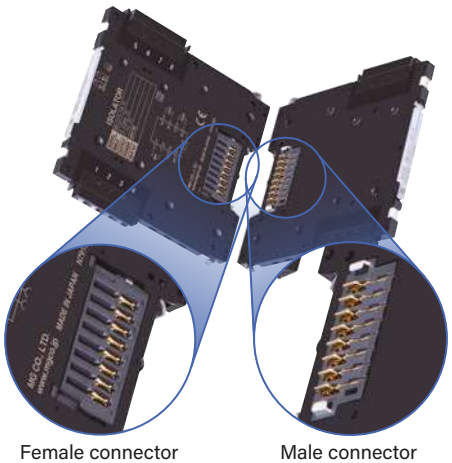


Tabs that prevent bulging on the left and right sides of the front



The top and bottom hooks on the front connect to the signal conditioner on the left.

Power bus connector that collectively supplies power without a backplane base



The hooks on the male connector slide into the grooves of the female connector to ensure a secure connection.

■ ISOLATOR & SENSOR INPUT Tension clamp terminal

PRODUCT	MODEL
ISOLATOR	M60SYV
SIGNAL TRANSMITTER (field-configurable)	M60SVS
SIGNAL TRANSMITTER (field-configurable, two isolated outputs)	M60SWVS

■ ISOLATOR & SENSOR INPUT e-CON connector

PRODUCT	MODEL
ISOLATOR	M60EYV
SIGNAL TRANSMITTER (field-configurable)	M60EVS
SIGNAL TRANSMITTER (field-configurable, two isolated outputs)	M60EWVS

Other space-saving signal conditioner series

Space-saving

M3-UNIT Series

"One-Step Cal" configuration requires just the press of a button!
This series of signal conditioners allows for configuration changes and calibration without a PC.



"One-Step Cal" Configuration without PC

This series of signal conditioners features "One-Step Cal" configuration, which makes both configuration and calibration quick and easy using the three buttons on the front-panel, provided a signal generator and display are available.

Loop test output

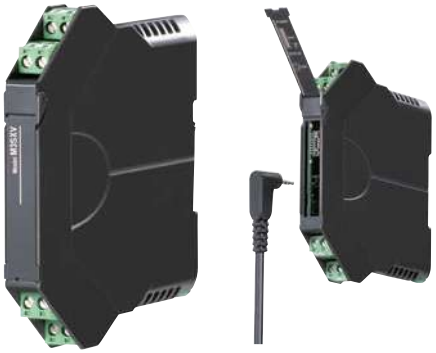
Simulated signals can be output even without an input signal, enabling operation testing (excluding M3DY).

• Compliance/approval depends upon models.

Super-space-saving

M3S-UNIT Series

Only 12 mm (0.47 in.) wide!
These ultra-slim signal conditioners can be installed anywhere.
An AC/DC universal power supply is available.



PC programmable

PC programmable signal conditioners are also available that enable input/output specifications to be changed using an onsite PC.

Loop test output

Simulated signals can be output even without an input signal, allowing for operation testing (PC programmable only).

Visit our website for details.

M5-UNIT
W5-UNIT
M2 Series
W2 Series
M50X-UNIT
M6 Series
M60 Series
M1E Series
M80 Series
20 Series
Other Signal Conditioners
Two-wire Signal Conditioners
Limit Alarms

Compact, Plug-in, OEL display

M1E Series

DIGITAL ADJUSTMENT | ENGINEERING UNIT VALUE | PLUG-IN | FIVE-PORT ISOLATION | AC POWER DC POWER

These compact plug-in signal conditioners are equipped with a highly visible OEL display.

CE RoHS 10

- Compliance/approval depends upon models.

They are available with varying numbers of inputs/outputs and channels.

This includes an isolated 2-channel type, 4-channel type, and 1-channel type (multi-output type).

Loop test output

Simulated signals can be output even without an input signal, allowing for operation testing.

An alarm output type is also now available.

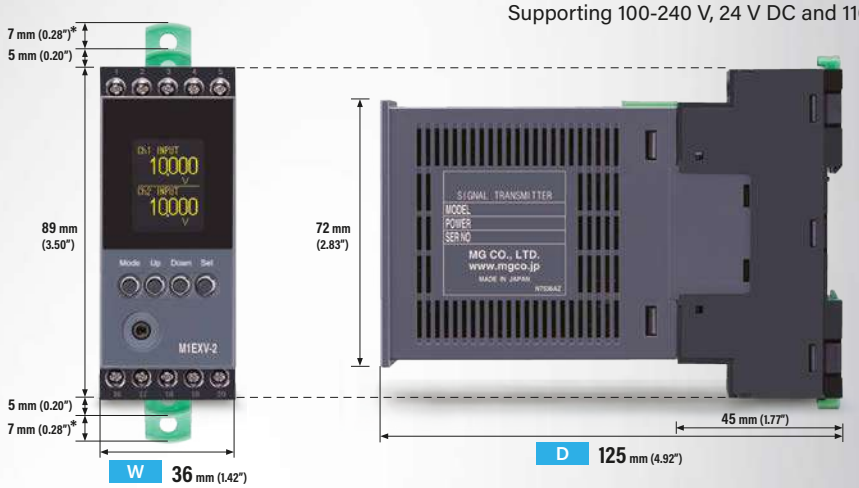
Our product lineup also includes alarm outputs for 2-channel types with 2 or 4 points and 1-channel types with 4 or 8 points. It comes with a convenient alarm test output.

Multi-function display

Display settings can be easily configured on the OEL display. Settings can also be configured via PC.

Wide power supply ranges

Supporting 100-240 V, 24 V DC and 110 V DC.



Main Specifications

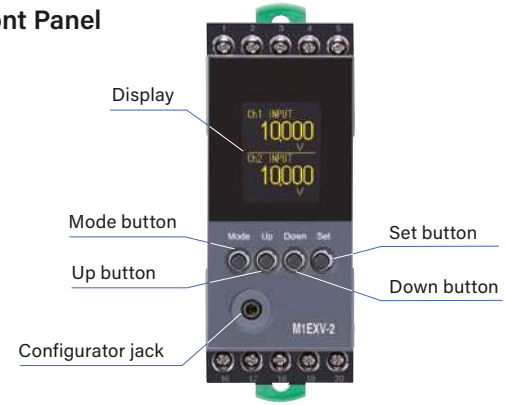
Construction:	Plug-in
Connection:	Connected to base with connector Base: M2.6 screw terminals (torque: 0.5 N·m)
Input:	See list of models
Output:	See the datasheet
Mounting:	Surface or DIN rail



We are proud to introduce our M1E Series featuring a highly visible OEL display. It includes functions such as input range scaling, loop testing, alarm testing, and linearization—the parameters of which can be configured using the front buttons and OEL display.
2-channel, 4-channel, and 1-channel (multi-output) types are available.

M1E Series — Capable of configuration on the OEL display

Front Panel



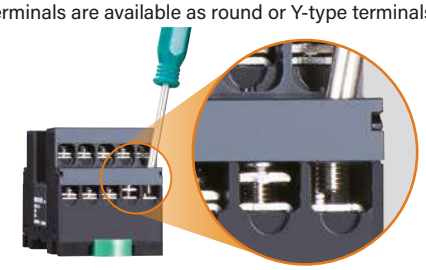
OEL display clearly displays information

The OEL display can be configured to be normally off and turned on by touching a button.



Terminal block with screw-loss prevention

The terminal block on the backplane base (M1E-BS) features a structure that stops screws from being separated from the unit even when loosened, preventing them from becoming lost.
This structure helps to streamline wiring work.
Crimp terminals are available as round or Y-type terminals.



Space-saving, plug-in base mounted

With a plug-in structure that facilitates installation and removal, the body can be mounted simply by pressing it into the base.
Removal can even be done one-handed and with a single touch by pressing the mounting lockslider located on top of the body.



M1E Series body



Base M1E-BS2

Settings can also be configured via PC.



M1E Configurator Software
M1ECFG *1
You can download the M1ECFG Configurator Software from our website.

PC Configurator cable *2



This feature is useful when configuring multiple settings with similar specifications or for saving settings.

*1. Model M1EACFG is the alarm output type.
*2. An optional configurator connection cable (Model: COP-US) is required.

ISOLATOR & SENSOR INPUT

PRODUCT	MODEL
OEL display SIGNAL TRANSMITTER (2 channels, PC programmable)	M1EXV-2
OEL display SIGNAL TRANSMITTER (4 channels, PC programmable)	M1EXV-4
OEL display SIGNAL TRANSMITTER (multi-output, PC programmable)	M1EXV-1
OEL display THERMOCOUPLE TRANSMITTER (2 channels, PC programmable)	M1EXT-2
OEL display THERMOCOUPLE TRANSMITTER (multi-output, PC programmable) under development	M1EXT-1
OEL display RTD TRANSMITTER (2 channels, PC programmable)	M1EXR-2
OEL display RTD TRANSMITTER (multi-output, PC programmable) under development	M1EXR-1
OEL display POTENTIOMETER TRANSMITTER (2 channels, PC programmable)	M1EXM-2
OEL display POTENTIOMETER TRANSMITTER (multi-output, PC programmable) under development	M1EXM-1
OEL display SELF-SYNCH TRANSMITTER (2 channels, PC programmable)	M1EXS-2

LIMIT ALARM

PRODUCT	MODEL
OEL display DC ALARM (2 channels, PC programmable, dual or quad alarm trip)	M1EAXV-2
OEL display DC ALARM (PC programmable, quad or octad alarm trip)	M1EAXV-1

· Base (Model: M1E-BS) does not come with the unit. Please order separately.

INSTALLATION BASE

PRODUCT	MODEL
INSTALLATION BASE	M1E-BS

ACCESSORY

PRODUCT	MODEL
PRECISION RESISTOR MODULE	REM3

Super-mini

M80 Series

RACK-MOUNT | PLUG-IN | THREE-PORT ISOLATION | DC POWER

These signal conditioners isolate eight analog signal channels for collective connection to a PLC via a connector.

CE RoHS 10

• Compliance/approval depends upon models.

Collective connection

Collective connection with a PLC is possible using a connector.

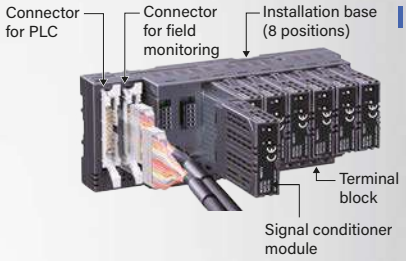
Signal connector for field monitoring

Signal connectors for field monitoring are available that output the same signals as those connected to the PLC.

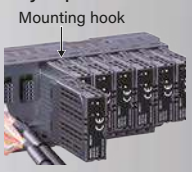
Power supply

24 V DC (supplied through the installation base)

Component identification and functions



Freely separable module

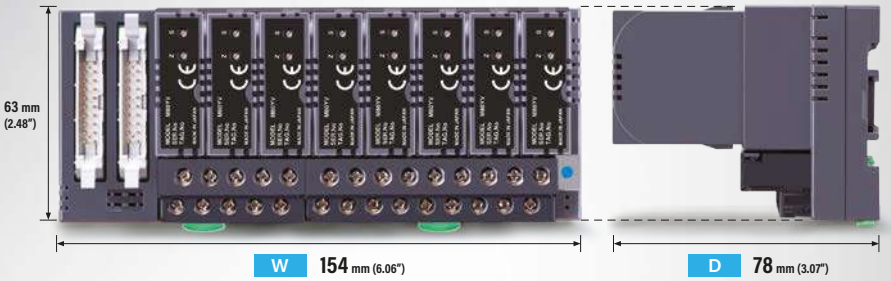


The module features a plug-in structure for easy replacement.

Captive terminal screws



The structure keeps screws captive to prevent their loss when removed from the base.



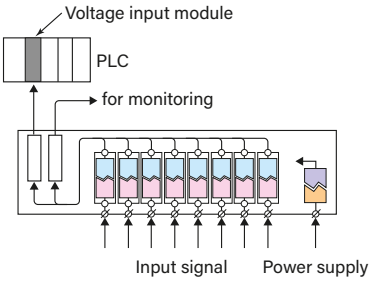
Main Specifications

Construction:	Plug-in
Connection:	M3.5 screw terminal, Connector (at base)
Input:	See list of models
Output:	See the datasheet
Mounting:	Dedicated base (DIN rail, Surface)

Conceptual connection diagram

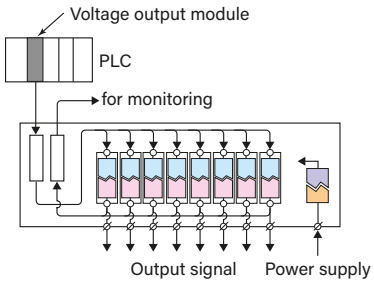
Installation base for input

Field DC signals can be isolated and connected to the PLC collectively using a connector.



Installation base for output

Output signals from the PLC can be converted to a voltage signal before being isolated and output.



ISOLATOR & SENSOR INPUT

PRODUCT	MODEL
SIGNAL CONVERTER	M80YV
OUTPUT ISOLATOR	M80YS
POTENTIOMETER TRANSMITTER	M80MS
THERMOCOUPLE CONVERTER	M80TS
RTD TRANSMITTER under development	M80RS
CURRENT LOOP SUPPLY	M80DY

INSTALLATION BASE

PRODUCT	MODEL
INSTALLATION BASE (8 positions)	M80BS-8

ACCESSORY

PRODUCT	MODEL
EXTENDER MODULE	M80BW
BLANK FILLER MODULE	M80DM
CONNECTOR TERMINAL BLOCK	CNT
CABLE (40-pin to 20-pin)	MCN201

M5-UNIT
W5-UNIT
M2 Series
W2 Series
M50X-UNIT
M6 Series
M60 Series
M1E Series
M80 Series
20 Series
Other Signal Conditioners
Two-wire Signal Conditioners
Limit Alarms

Hybrid IC Isolation Amplifier

20 Series

DIRECT PCB MOUNT

15 V DC POWER

Isolation amplifiers provide signal and power isolation for data acquisition components to protect them from noises present at remote devices.

CE RoHS 10

- Compliance/approval depends upon models.

Packaged with high-performance isolation circuitry

Various isolation circuits are packaged in an easy-to-use modular structure.

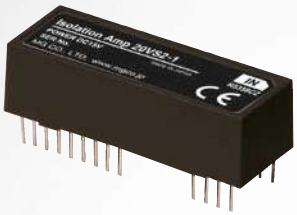
Greatly saves development lead time for analog isolation circuitry

With no need to develop complicated analog isolation circuits, time spent on development can be significantly reduced.
Isolation circuitry is available for various applications.
We're confident that we can provide your desired isolation circuitry.

RoHS-compliant construction that's safe for embedded applications

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

Featuring highly reliable ceramic capacitors





Main Specifications

Construction:	Hybrid IC
Input:	See the 20 Series withstand voltage and frequency characteristics chart
Output:	See the 20 Series withstand voltage and frequency characteristics chart
Mounting:	Soldering to the printed wiring board



We accept custom orders.

In response to customer requests, we now offer a wide variety of isolation circuits.
We are confident in our isolation technology. Please feel free to contact us.

An isolation amplifier is an electronic circuit that electrically isolates analog input signals from output signals.

Accurate signal measurement is possible by integrating an isolation amplifier into the input circuit or output circuit on a printed circuit board, such as a microcomputer control board, and galvanically isolating signals coming from the field side. An isolation amplifier provides significant benefits, including the suppression of noise, countermeasures against high ground potential, and signal splitting (responsibility demarcation) as well as the prevention of electric shocks.

Isolation Amplifier Glossary

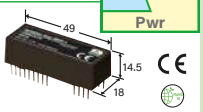
Zero drift	A drift is a phenomenon in which the operating point of the Isolation Amplifier in DC amplifying operation is shifted to cause erroneous output. A zero drift refers to an error output voltage appearing when the input voltage is zero, and the smaller it is, the higher the performance of the Isolation Amplifier is.
Span drift	A span drift is a phenomenon in which the output signal deviates from 100 % at the time of 100 % input, and the less it is, the higher the performance of the Isolation Amplifier is.
Temperature coefficient ppm/°C	A temperature coefficient is usually obtained from the maximum change of the output signal divided by the full span of the output signal when the ambient temperature is increased or decreased from the reference temperature within the operating temperature range and expressed in percentage per Celsius degree. In the case of the 20 Series Isolation Amplifier, which has high accuracy, the temperature coefficient is expressed in parts per million (ppm).
Linearity	The relationship of linearity between the input signal and output signal may slightly deviate from the ideal straight line in the case of measuring the output signal with the level of the input signal changed. Linearity refers to the extent of the deviation. The linearity of the 20 Series Isolation Amplifier is expressed by end-point detection linearity based on the deviation at 0 % I/O signals and that at 100 % I/O signals.
Conversion gain	A gain is a ratio of the input to the output. For example, if the gain is expressed as ×1±1 %, it means that output at 10 V will appear against input at 10 V with a dispersion of 1 % (±200 mV as 1 % of the span of 20 V) when the input and output range is ±10 V.
Input offset	The input offset is the output signal voltage deviated from 0 V when the input is short-circuited.
Input bias current	An input bias current flows into or flows out of the input terminals under the control of the first-stage operational amplifier.
Output impedance	Output impedance refers to the internal impedance of the output circuit viewed from the load side.
Frequency characteristics	For example,1 kHz -3 dB represents the attenuation of input from the initial value (DC input) when the input is a 1 kHz sinusoidal wave signal, and -3 dB means that the level of the signal will be 70.7 % of the original signal. $-3 = 20\log_{10}(Vout/Vin) = 20\log_{10} 0.707$

20 Series Withstand Voltage and Frequency Characteristics Chart

Dielectric strength: 2000 V AC

9 Narrow span, input isolation
20VS2-3 — In Out Pwr

❶ Approx. 2 Hz (narrow span input range), approx. 1 kHz (standard input range)
❷ ±0.05 %
❸ Narrow span: -10 – +100 mV DC
Standard: 0–5 V DC
❹ 0–10 V DC
❻ Input or ref. voltage to output or power supply



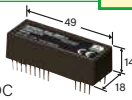
10 High accuracy, low cost, DIP type
20VS9-122D — In Out

❶ Approx. 18 Hz
❷ ±0.05 % (20VS9-122DJ)
±0.025 % (20VS9-122DK)
±0.012 % (20VS9-122DL)
❸ ±10 V
❹ ±10 V
❻ Input to output



11 Current output, output isolation
20VS2-4 — In Out Pwr

❶ Approx. 200 Hz
❷ ±0.05 % ❸ 0–5 V DC
❹ 0–20 mA DC, 0–10 V DC
❻ Output or ref. voltage to input or power supply



11 Top adjustment, current output, output isolation
20VS1D — In Out Pwr

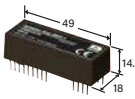
❶ Approx. 200 Hz
❷ ±0.05 % ❸ 1–5 V DC
❹ 4–20 mA DC
❻ Output or excitation to input or power supply



12 Input isolation
20VS2-1 — In Out Pwr

12 Output isolation
20VS2-2 — In Out Pwr

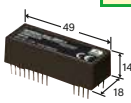
❶ Approx. 1 kHz
❷ ±0.05 %
❸ ±10 V DC
❹ ±10 V DC
❻ Input or ref. voltage source to output or power supply (20VS2-1), output or ref. voltage source to input or power supply (20VS2-2)



13 High speed response, input isolation
20VF-1 — In Out Pwr

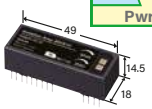
13 High speed response, output isolation
20VF-2 — In Out Pwr

❶ Approx. 5 kHz
❷ ±0.05 %
❸ ±10 V DC
❹ ±10 V DC
❻ Input or ref. voltage source to output or power supply (20VF-1), output or ref. voltage source to input or power supply (20VF-2)



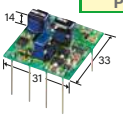
12 Top adjustment, input isolation
20VS1C — In Out Pwr

❶ Approx. 1 kHz
❷ ±0.05 %
❸ 0–10 V DC
❹ 0–10 V DC
❻ Input or excitation to output or power supply



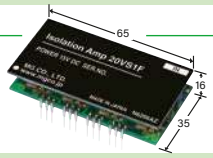
13 Three-port isolation
20VS7-1104 — In Out Pwr

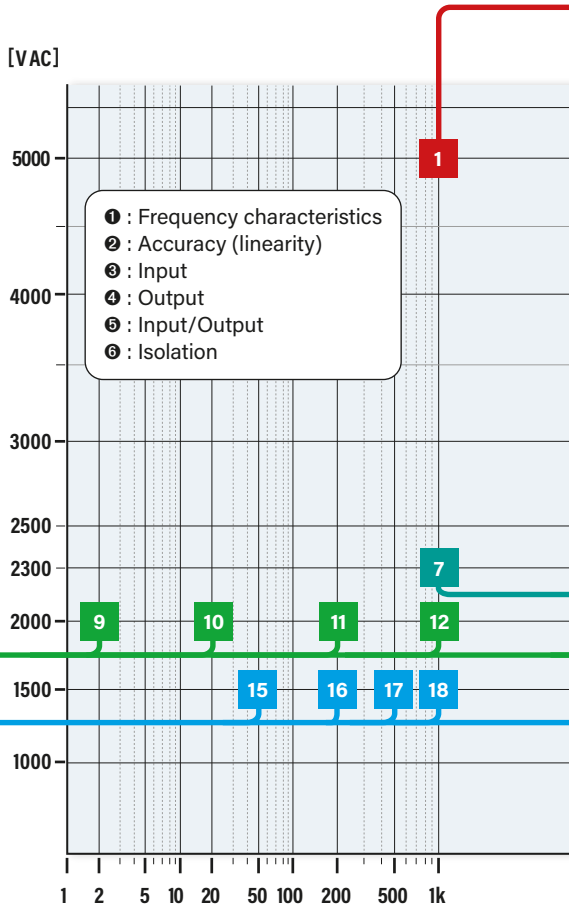
❶ Approx. 5 kHz
❷ ±0.05 %
❸ ±10 V DC
❹ ±10 V DC
❻ Input to output to power



14 4 channels, input isolation
20VS1F — In×4 Out Pwr

❶ Approx. 10 kHz
❷ ±0.05 %, G = 1
❺ ±10 V DC/±10 V DC
❻ Input to output or power input, between inputs





18 Current output, three-port isolation
20VS5-301 — In Out Pwr

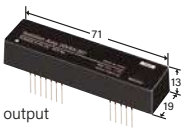
❶ Approx. 950 Hz
❷ ±0.05 % (at output 0–20 mA) @G = 1
❺ 0–5 V DC/0–20 mA DC
❻ Input or ref. voltage source to output to power supply



Dielectric strength: 1500 V AC

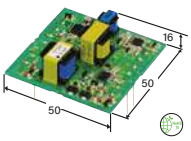
15 Current and voltage output, output isolation
20VS5-207 — In Out Pwr

❶ Approx. 50 Hz
❷ Current output: ±0.05 % TYP., ±0.1 % max., G = 1 at 0–20 mA output
Voltage output: ±0.02 % TYP., ±0.05 % max., G = 1 at -5 – +5 V output
❺ ±5 V DC/0–20 mA DC, ±5 V DC
❻ Input or power to output



16 Four-port isolation
20VS1E — In Out Pwr Pwr

❶ Approx. 200 Hz
❷ ±0.05 %, G = 1
❺ ±5V DC/±5 V DC
❻ Input or A output to output or B output to C output to power



17 Current output, output isolation
20VS5-170 — In Out Pwr

❶ Approx. 500 Hz
❷ ±0.05 % (at output 0–20 mA) @G = 1
❺ 0–5 V DC/0–20 mA DC
❻ Input or power to output



18 Three-port isolation
20VS3-U — In Out Pwr

❶ Approx. 1 kHz
❷ ±0.001 % TYP., G = 1 (±0.05 % max.)
❺ ±5V DC/±5 V DC
❻ Input or reference voltage source to output to power supply



18 Three-port isolation
20VS3-5W4W-U — In Out Pwr

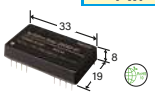
❶ Approx. 1 kHz
❷ ±0.001 % TYP., G = 2 (±0.05 % max.)
❺ ±5 V DC/±10 V DC
❻ Input or reference voltage source to output to power supply

18 Three-port isolation
20VS3-4W4W-U — In Out Pwr

❶ Approx. 1 kHz
❷ ±0.001 % TYP., G = 1 (G = -2 for inverting amplifier circuit) (±0.05 % max.)
❺ ±10 V DC/±10 V DC
❻ Input or reference voltage source to output to power supply

18 Three-port isolation
20VS2-01, 20VS2-02 — In Out Pwr

❶ Approx. 1 kHz
❷ ±0.001 % TYP., G = 1 (±0.05 % max.)
❺ ±5 V DC/±5 V DC (20VS2-01), 0–5 V DC/0–5 V DC (20VS2-02)
❻ Input to output to power



18 High accuracy, input isolation, external synchronous
20VS5-213 — In Out Pwr

❶ Approx. 1 kHz
❷ ±0.005 % TYP., G = 1 (±0.01 % max.)
❺ ±10 V DC/±10 V DC
❻ Input to output or power



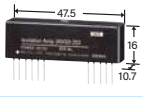
19 High accuracy, input isolation
20VS5-201 — In Out Pwr

❶ Approx. 3 kHz
❷ ±0.005 % TYP., G = 1 (±0.01 % max.)
❺ ±10 V DC/±10 V DC
❻ Input to output or power

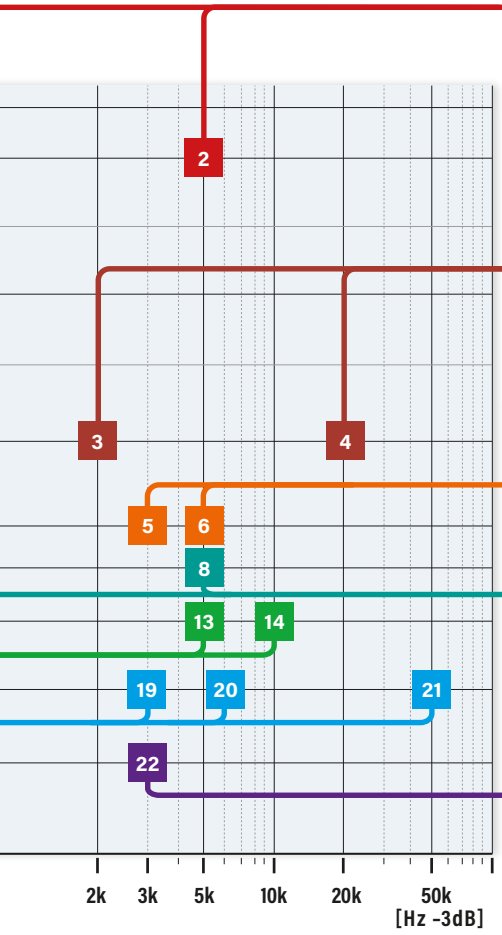


19 High accuracy, output isolation
20VS5-202 — In Out Pwr

❶ Approx. 3 kHz
❷ ±0.01 % TYP., G = 1 (±0.015 % max.)
❺ ±10 V DC/±10 V DC
❻ Output to input or power



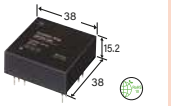
(unit: mm)



Dielectric strength: 5000 V AC

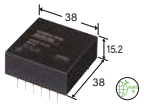
1 5 kV input isolation — 20VS4-384 — In Out Pwr

❶ Approx. 1 kHz
❷ ±0.05 %
❺ ±5 V DC/±5 V DC
❻ Input to output or power



2 High speed response, 5 kV input isolation — 20VS5-500 — In Out Pwr

❶ Approx. 5 kHz
❷ ±0.05 %
❺ ±5 V DC/±5 V DC
❻ Input to output or power



Dielectric strength: 3000 V AC

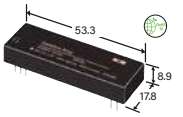
3 Input isolation, SIP type — 20VS8-202Y — In Out Pwr

❶ Approx. 2 kHz
❷ ±0.05 – ±0.012 %
❺ ±5 V DC/±5 V DC
❻ Input or reference voltage source to output or power supply



3 Input isolation, DIP type — 20VS8-202N — In Out Pwr

❶ Approx. 2 kHz
❷ ±0.05 – ±0.012 %
❺ ±5 V DC/±5 V DC
❻ Input or reference voltage source to output or power supply



4 High speed response, 3-port isolation — 20VS1A-4W4W — In Out Pwr

❶ Approx. 20 kHz
❷ ±0.025 – ±0.008 %
❺ ±10 V DC/±10 V DC
❻ Input to output to power



4 High speed response, 3-port isolation — 20VS8-210 — In Out Pwr

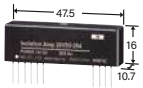
❶ Approx. 20 kHz
❷ ±0.025 – ±0.008 %
❺ ±10 V DC/±10 V DC
❻ Input to output to power



Dielectric strength: 2500 V AC

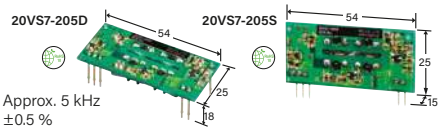
5 High-accuracy, input isolation — 20VS5-204 — In Out Pwr

❶ Approx. 3 kHz
❷ ±0.005 % TYP., G = 1 (±0.025 % max.)
❺ ±10 V DC/±10 V DC
❻ Input to output or power



6 General purpose input isolation — 20VS7-205D, 20VS7-205S — In Out Pwr

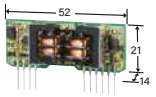
❶ Approx. 5 kHz
❷ ±0.5 %
❺ ±5 V DC/±5 V DC
❻ Input to output or power



Dielectric strength: 2300 V AC

7 Input isolation — 20VS1B — In Out Pwr

❶ Approx. 1 kHz
❷ ±0.05 %
❸ ±7.5 V DC
❹ ±7.5 V DC
❻ Input to output or power



8 Bi-directional amplifier — 20VS5-100 — In Out Out In Pwr

❶ Approx. 5 kHz
❷ ±0.2 %
❸ ±7 V DC @ 15 V power, ±5 V DC @ 11.5 V power
❹ ±7 V DC @ 15 V power, ±5 V DC @ 11.5 V power
❻ Input or reference voltage source to output or power



8 Output isolation — 20VS5-140 — In Out Pwr

❶ Approx. 5 kHz
❷ ±0.05 %
❸ ±7 V DC @ 15 V power, ±5 V DC @ 11.5 V power
❹ ±7 V DC @ 15 V power, ±5 V DC @ 11.5 V power
❻ Output to input or power



8 Input isolation — 20VS5-150 — In Out Pwr

❶ Approx. 5 kHz
❷ ±0.05 %
❸ ±7 V DC @ 15 V power, ±5 V DC @ 11.5 V power
❹ ±7 V DC @ 15 V power, ±5 V DC @ 11.5 V power
❺ Input to output or power



Dielectric strength: 1000 V AC

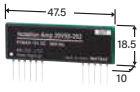
22 High-accuracy, input isolation — 20VS5-251 — In Out Pwr

❶ Approx. 3 kHz
❷ ±0.05 %, G = 1
❸ ±10 V DC
❹ ±10 V DC
❻ Input or reference voltage source to output or power supply



22 High-accuracy, output isolation — 20VS5-252 — In Out Pwr

❶ Approx. 3 kHz
❷ ±0.05 %, G = 1
❸ ±10 V DC
❹ ±10 V DC
❻ Output or reference voltage source to input or power supply



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19 High-accuracy, input isolation — 20VS5-G200 — In Out Pwr

❶ Approx. 3 kHz
❷ ±0.005 % TYP., G = 1 (±0.01 % max.)
❺ ±5 V DC/±5 V DC
❻ Input to output or power



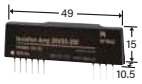
20 High accuracy, input isolation, external synchronous — 20VS5-210 — In Out Pwr

❶ Approx. 6 kHz
❷ ±0.005 % TYP., G = 1 (±0.01 % max.)
❺ ±5 V DC/±5 V DC
❻ Input or reference voltage source to output or power supply



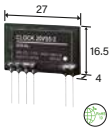
21 Ultra-high speed response, input isolation — 20VS5-200 — In Out Pwr

❶ Approx. 50 kHz
❷ ±0.5 % TYP., G = 1
❺ ±5 V DC/±5 V DC
❻ Input or reference voltage source to output or power supply



Clock Generator 20VS5-2

Supplying external clock and power to maximum 8 of external synchronous Isolation Amplifier e.g. 20VS5-210 or 20VS5-213.



▮ Power input: 15 V DC
▮ Clock output
Output voltage: 0–15 V DC ±5 % @ rated power
Frequency: 210 kHz ±5 % Duty cycle: 50 % ±5 %
Waveform: Square wave
Fan-out: 8 of 20VS5-210, 20VS5-213

▪ For details, see the datasheet.

Dual Output, Super-mini

M8 Series

These space-saving, plug-in signal conditioners support both 24 V DC and AC power supplies.



RACK-MOUNT | PLUG-IN | FOUR-PORT ISOLATION | AC POWER DC POWER

• Compliance/approval depends upon models.

Other rack-mounted signal conditioner series

High-density
10-RACK Series

These rack-mounted signal conditioners feature two isolated outputs and are extremely useful for new installations, as well as for when computerizing existing facilities.



Card-rack
11-RACK Series

These card-rack signal conditioners are designed to be highly reliable.



Dual Channel Input/Output Isolator
15-RACK Series

These field-side isolators accommodate two channels in a slim case.



Rack-mounted, for DCS
18-RACK Series

These signal conditioners can be directly connected to the I/O modules and connectors of DCSs from various manufacturers.



Rack-mounted, for DCS
18K-RACK Series

This series of signal conditioners connects signal lines from the field side with the terminal block located in the nest where the signal conditioner is housed.



DCS Input/Output Relay Card
38-RACK Series

This is a DCS relay for pre-processing DCS and PLC contact signals.



Rack-mounted
M-RACK Series

This series of rack-mounted signal conditioners boasts a wide range of models.



Dual Output, Rack-mounted
W-RACK Series

This series of signal conditioners connects signal lines from the field side with the terminal block located in the nest where the signal conditioner is housed.



Space-saving, Rack-mounted
H-RACK Series

This is a DCS relay for pre-processing DCS and PLC contact signals.



Visit our website for details.

Please contact MG Co., Ltd. if you are unable to find the signal conditioner you are looking for.

Plug-in, Front Configurable

MX-UNIT Series

These digitally configurable signal conditioners feature an indicator capable of configuring settings in engineering unit values using the buttons on the front panel.

PLUG-IN | °C kg m³ ENGINEERING UNIT VALUE | THREE-PORT ISOLATION | AC POWER DC POWER

- Compliance/approval depends upon models.



Plug-in

M-UNIT Series

You're sure to find the signal conditioner you need.

PLUG-IN | °C kg m³ ENGINEERING UNIT VALUE | THREE-PORT ISOLATION | AC POWER DC POWER

- Compliance/approval depends upon models.



Dual Output, Plug-in

W-UNIT Series

These dual-output signal conditioners are designed to be highly reliable with a long service life.

PLUG-IN | °C kg m³ ENGINEERING UNIT VALUE | FOUR-PORT ISOLATION | AC POWER DC POWER

- Compliance/approval depends upon models.



Plug-in

K-UNIT Series

This series of signal conditioners features a wide lineup of models designed for cost performance.

PLUG-IN | THREE-PORT ISOLATION | FOUR-PORT ISOLATION | AC POWER DC POWER

- Compliance/approval depends upon models.



TWO-WIRE SIGNAL CONDITIONERS

Signal conditioners of on-site installation type with no power source required.





Head-mounted
27-UNIT Series

PAGE 54



Field-mounted
B6-UNIT Series

IP66/IP67

PAGE 56



Head-mounted
26-UNIT Series

PAGE 58



Super-mini Terminal Block
B5-UNIT Series

PAGE 59

Other Series



Field-mounted
6B-UNIT Series

IP66/IP67



Space-saving
B3-UNIT Series



Field-mounted
6-UNIT Series



Super-mini
T-UNIT Series



Space-saving
B-UNIT Series



Space-saving, Rack-mounted
B-RACK Series

Visit our website for details.

Matrix Table

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

	Head-mounted 27-UNIT Series	Field-mounted B6-UNIT Series	Head-mounted 26-UNIT Series	Field-mounted 6B-UNIT Series	
External view	 PAGE 54	 PAGE 56	 PAGE 58	 IP66/IP67	
Construction	Sensor head-mounting	Outdoor enclosure (NEMA 4X, IP66/IP67 (excluding B6U))	Sensor head-mounting	Outdoor enclosure (NEMA 4X, IP66/IP67)	
Connection	M3 screw terminal	M3.5 screw terminal	Euro type terminal block	M3 screw terminal	
Isolation*	Input to output	Input to output to outdoor enclosure	Input to output	Input to output to outdoor enclosure	
Dielectric strength	1500V AC	1500V AC	1500V AC	500V AC	
Fixed range	---	---	Specified when ordering	Specified when ordering	
Range selectability	HART (PC)	HART (PC)	---	DIP switch	
Dual channel	---	---	---	---	
Operating temperature	-40 to +85°C (-40 to +185°F)	-40 to +85°C (-40 to +185°F)	-40 to +85°C (-40 to +185°F)	-5 to +70°C (23 to 158°F)	
Mounting	Head mount or field mount	Field mount	Head mount	Field mount	
Dimensions mm [inch]	44 [1.73] DIA. D 20.7 [0.81]	W 110 [4.33] H 118 [4.65] D 92 [3.62]	43.5 [1.71] DIA. D 25 [0.98]	W 110 [4.33] H 118 [4.65] D 92 [3.62]	
Model	**27-UNIT model**	**B6-UNIT model**	**26-UNIT model**	**6B-UNIT model**	
Input loop powered isolator	---	---	---	6BSN	
DC mV, voltage & current (field-selectable range)	---	---	---	6BVS	
DC mV, voltage & current	---	---	---	---	
Universal input (intrinsically safe/explosion-proof, HART (PC))	27HU-B	B6U-B	---	---	
Universal input (HART communication, intrinsically safe)	27U, 27HU	B6U	---	---	
Universal input (PROFIBUS-PA (PC))	---	---	---	---	
Thermocouple (intrinsically safe, PC programmable)	27TS	---	---	---	
Thermocouple (field-configurable)	---	---	---	6BTS1	
Thermocouple	---	---	26TS1	6BTS	
RTD (intrinsically safe, PC programmable)	27R, 27RS	---	---	---	
RTD (field-selectable temp. range)	---	---	---	6BR	
RTD	---	---	26R1, 26RS	---	
Potentiometer (PC programmable)	27PM	---	---	---	
Potentiometer	---	---	---	6BM	
Strain gauge	---	---	---	6BLC	
Pulse to analog (field-selectable freq. range)	---	---	---	6BPA	
Pulse to analog	---	---	---	---	
Square root extractor	---	---	---	6BFN	
AC transmitter	---	---	---	---	
Voltage transformer	---	---	---	---	
Current transformer	---	---	---	---	
P/I transducer	---	---	---	---	
Loop powered indicator (intrinsically safe/explosion-proof)	---	---	---	---	
Loop powered indicator (intrinsically safe)	---	---	---	---	

* Some models are not insulated.

	Super-mini Terminal Block B5-UNIT Series	Space-saving B3-UNIT Series	Field-mounted 6-UNIT Series	Super-mini T-UNIT Series	Space-saving B-UNIT Series	Space-saving, Rack-mounted B-RACK Series
	 PAGE 59					
	Terminal block	Small-sized front terminal structure	Hockey puck style	Stand-alone; terminal access at the front	Plug-in	Rack-mounted front terminal access
	M3.5 screw terminal	Euro type connector terminal	M3 screw terminal	Euro type terminal	M3.5 screw terminal	M3.5 screw terminal
	Input to output	Input to output	Input to output	Input to output	Input to output	Input to output
	2000V AC	2000V AC	500V AC	500V AC	500V AC	500V AC
	Specified when ordering	Specified when ordering	Specified when ordering	Specified when ordering	Specified when ordering	Specified when ordering
	---	DIP switch, HART (PC) , PROFIBUS-PA (PC)	DIP switch	---	---	---
	---	B3VS/2	---	---	---	---
	-40 to +80°C (-40 to +176°F)	-40 to +85°C (-40 to +185°F)	-5 to +70°C (23 to 158°F)	-5 to +60°C (23 to 140°F)	-5 to +55°C (23 to 131°F)	-5 to +55°C (23 to 131°F)
	DIN rail	DIN rail	Surface, DIN rail, Pipe	Surface, DIN rail	Surface, DIN rail	19-inch rack
	W 25 [0.98] H 97 [3.82] D 41 [1.61]	W 18 [0.701] H 106 [4.17] D 110.5 [4.35]	76 [2.99] DIA. H 52.5 [2.07] D 60.9 [2.4]	W 25 [0.98] H 60 [2.36] D 70 [2.76]	W 26 [1.02] H 93 [3.66] D 137 [5.39]	W 25 [0.98] H 99 [3.9] D 153 [6.02]
	B5-UNIT model	B3-UNIT model	6-UNIT model	T-UNIT model	B-UNIT model	B-RACK model
	B5SN	---	6SN	TSN	BSN	3SN
	---	B3FV	6VS	---	---	---
	B5VS	B3VS/1, B3VS/2	---	TV, TVS	BV, BVS	3V, 3VS
	---	---	---	---	---	---
	---	B3HU, B3HU2	---	---	---	---
	---	B3PU	---	---	---	---
	---	---	---	---	---	---
	---	B3FT	6TS1	---	---	---
	B5TS	---	6TS	---	BT, BTS	3T, 3TS
	---	---	---	---	---	---
	---	B3FR	6R	---	---	---
	B5RS	---	---	TR	BR	3R
	---	---	---	---	---	---
	B5MS	---	6M	TM	BM	3M
	---	---	6LC	---	BLC	---
	---	B3FP	6PA	---	---	---
	---	---	---	---	BSP	3SP
	---	---	6FN	---	---	---
	---	---	6AC	---	---	---
	---	---	6PT	---	BPT	3PT
	---	---	6CT	---	BCT	3CT
	---	---	---	TPV	BPV	3PV
	---	---	6DV-B, 6DVI-B	---	---	---
	---	---	6DV, 6DVI	---	---	---

Head-mounted

27-UNIT Series

HEAD MOUNT | I.S. INTRINSIC SAFETY | I/O ISOLATION

DIN type-B head-mount transmitters approved with intrinsic safety

CE SIL Ex FM APPROVED FM C US APPROVED RoHS 10

- Compliance/approval depends upon models.

HART COMMUNICATION PROTOCOL

Function indicator lamp that reads measured values (patented)

Equipped with a function indicator lamp that displays input values and equipment statuses via lighting patterns. (Models: 27R, 27RS, 27PM)

HART communication capability

Settings and calibrations can be performed as needed using a PC connected via the output terminal.

High accuracy

Designed to optimize cold-junction compensation accuracy. (Models: 27U, 27TS)

Loop test output

Simulated signals can be output even without an input signal, allowing for operation testing (PC programmable only).



Head-mounted

These 2-wire signal conditioners can be mounted to the thermowell head.



PRODUCT	MODEL
2-WIRE UNIVERSAL TEMPERATURE TRANSMITTER (PC programmable)	27U
2-WIRE UNIVERSAL TEMPERATURE TRANSMITTER (HART communication)	27HU
THERMOCOUPLE TRANSMITTER (PC programmable)	27TS
RTD TRANSMITTER (PC programmable; non-isolated)	27R
RTD TRANSMITTER (PC programmable)	27RS
POTENTIOMETER TRANSMITTER (PC programmable)	27PM

· Please contact us regarding SIL.

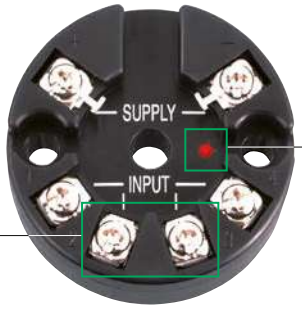
ACCESSORY & RELATED PRODUCT

PRODUCT	MODEL
DIN RAIL MOUNTING ADAPTER	A-34
BELL202 MODEM (USB interface)	COP-HU
CURRENT LOOP SUPPLY (applicable to HART signal, opencircuit detection selectable)	M2DYH2
CURRENT REPEATER (applicable to HART signal, opencircuit detection selectable)	M2DYHR
CURRENT LOOP SUPPLY (applicable to HART signal, opencircuit detection selectable)	W2DYH2
ENCODER SPEED TRANSMITTER (PC programmable)	M5DYH2
CURRENT LOOP SUPPLY (HART communication)	A3DYH

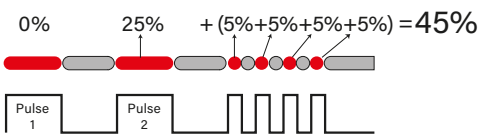
High Accuracy



Pt100 CJC sensor placed between the input terminals (27HU, 27U, 27TS)



Function Monitor LED



Flashing patterns of the light can tell you input signal level in 5% increments (27R, 27RS, 27PM)

The 27HU-B is an ultra-high-precision, two-wire transmitter with HART communication designed for explosion-proof applications.

Universal input

Universal input: DC mV, T/C, RTD and resistance

Ultra-low temperature drift option

Ultra-low temperature drift option (20 ppm/°C typ.)

LED indicator (option)

Loop powered digital display is optional.



FIELD MOUNT

Exd EXPLOSION PROOF

IP66/IP67

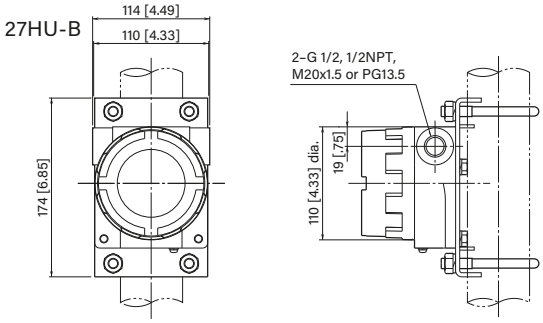


PRODUCT	MODEL
2-WIRE UNIVERSAL TEMPERATURE TRANSMITTER (HART communication, outdoor enclosure, explosion-proof)	27HU-B

· Please contact us regarding SIL.

EXTERNAL DIMENSIONS unit: mm [inch]

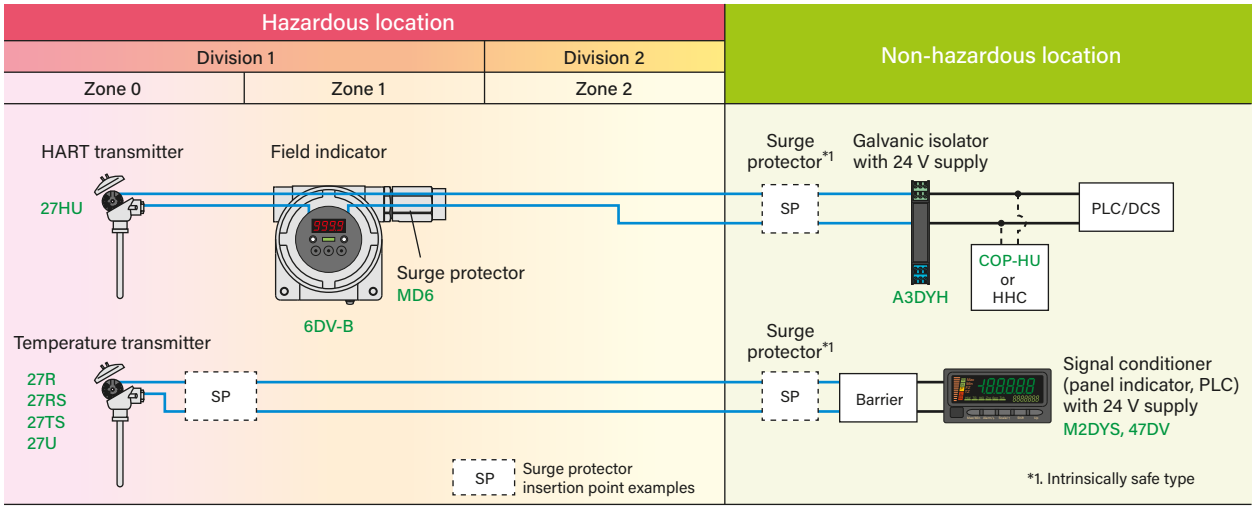
Dimensions may be slightly different depending upon models.



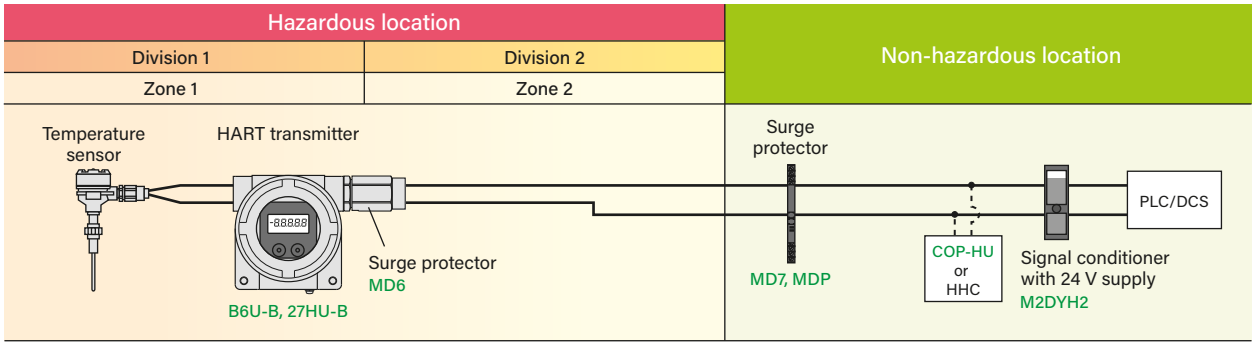
Configuration example for 27-UNIT and B6U-B in hazardous locations

Please confirm specifications before actually using the product.

■ Intrinsically safe



■ Explosion-proof / Flameproof



Field-mounted

B6-UNIT Series

Two-wire universal temperature transmitter with hazardous location approvals

Two-wire universal HART temperature transmitter (intrinsically safe)

HART communication

This is a high-precision, two-wire transmitter with HART communication.

Intrinsically safe

Intrinsically safe approval

Universal input

DC mV, V, T/C, RTD, resistance and potentiometer

Loop test output

Simulated signals can be output even without an input signal, allowing for operation testing.





PRODUCT	MODEL
2-WIRE UNIVERSAL TEMPERATURE TRANSMITTER (HART communication, intrinsically safe)	B6U

. Please contact us regarding SIL.

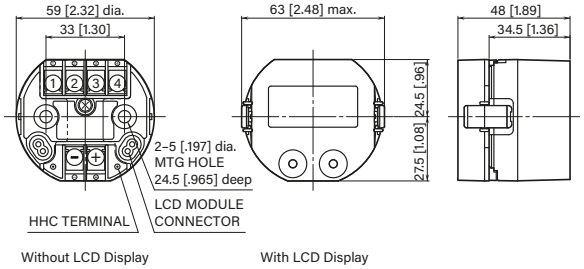
ACCESSORY & RELATED PRODUCT

PRODUCT	MODEL
LCD DISPLAY (for B6U use)	B6U-LCD
OUTDOOR ENCLOSURE	6BX-E
DIN RAIL MOUNTING ADAPTER	A-34
BELL202 MODEM (RS-232-C interface)	COP-H
BELL202 MODEM (USB interface)	COP-HU
CURRENT LOOP SUPPLY (applicable to HART signal, opencircuit detection selectable)	M2DYH2
CURRENT REPEATER (applicable to HART signal, opencircuit detection selectable)	M2DYHR
CURRENT LOOP SUPPLY (applicable to HART signal, opencircuit detection selectable)	W2DYH2
CURRENT LOOP SUPPLY (applicable to HART signal, opencircuit detection selectable)	M5DYH2
CURRENT LOOP SUPPLY (HART communication)	A3DYH

EXTERNAL DIMENSIONS unit: mm [inch]

Dimensions may be slightly different depending upon models.

B6U



HART COMMUNICATION PROTOCOL

Two-wire universal HART temperature transmitter (intrinsically safe/explosion-proof)

Explosion-proof

This two-wire universal temperature transmitter (Model: B6U) is housed in an explosion-proof aluminium enclosure.

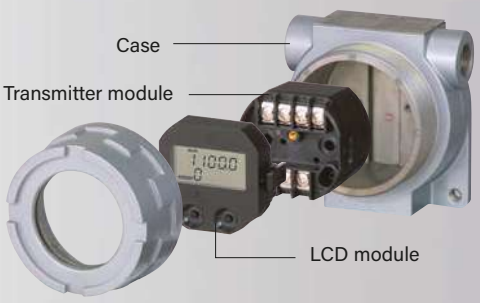
Stainless steel enclosure

A stainless steel enclosure for outdoor installation is also available.*2

FIELD MOUNT | I.S. INTRINSIC SAFETY | Exd EXPLOSION PROOF | I/O ISOLATION

CE SIL IECEx FM APPROVED *1 IP66/IP67 RoHS 10





See page 55 for examples of configuration in hazardous locations.

PRODUCT	MODEL
2-WIRE UNIVERSAL TEMPERATURE TRANSMITTER (HART communication, intrinsically safe/explosion-proof)	B6U-B

*1. KOSHA flameproof approval (Occupational Safety and Health Act): Only available for Model: B6U-B-41

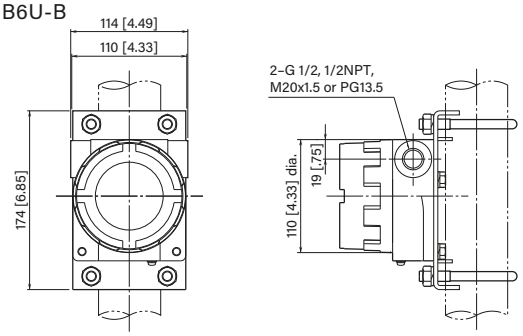
*2. Depending on the type of safety approval.

. Please contact us regarding SIL.

EXTERNAL DIMENSIONS unit: mm [inch]

Dimensions may be slightly different depending upon models.

B6U-B



Intrinsically Safe Galvanic Isolators A3-UNIT Series

- Isolated intrinsically safe associated apparatus: no need of grounding
- Isolates and relays HART signals bidirectionally

PRODUCT	MODEL
CURRENT LOOP SUPPLY (HART communication)	A3DYH



Head-mounted

26-UNIT Series

These two-wire signal conditioners can be mounted to the thermowell head.

Temperature transmitter

RTD transmitter and thermocouple transmitter

Terminal block

Compact euro terminal block





COMMON SPECIFICATIONS

Specifications may vary depending on the model. For details, see the datasheet.

Construction	Sensor head-mounting
Connection	Euro type terminal
Housing material	Flame-resistant resin (black)
Isolation	Input to output
Mounting	Head-mounting (DIN type B head)
Supply voltage	12 – 32 V DC
Dielectric strength	1500 V AC @1 minute (input to output to ground)

PRODUCT	MODEL
THERMOCOUPLE TRANSMITTER (isolated)	26TS1
RTD TRANSMITTER (non-isolated)	26R1
RTD TRANSMITTER (isolated)	26RS

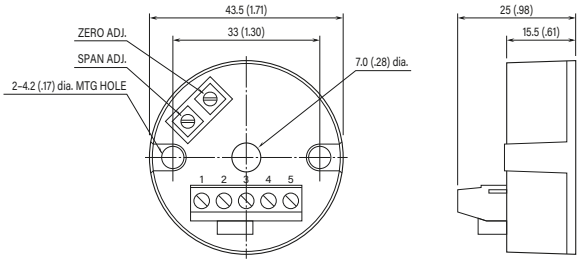
ACCESSORY & RELATED PRODUCT

PRODUCT	MODEL
DIN RAIL MOUNTING ADAPTER	A-34

EXTERNAL DIMENSIONS unit: mm [inch]

Dimensions may be slightly different depending upon models.

26-UNIT



Super-mini Terminal Block

B5-UNIT Series

TERMINAL BLOCK

I/O ISOLATION

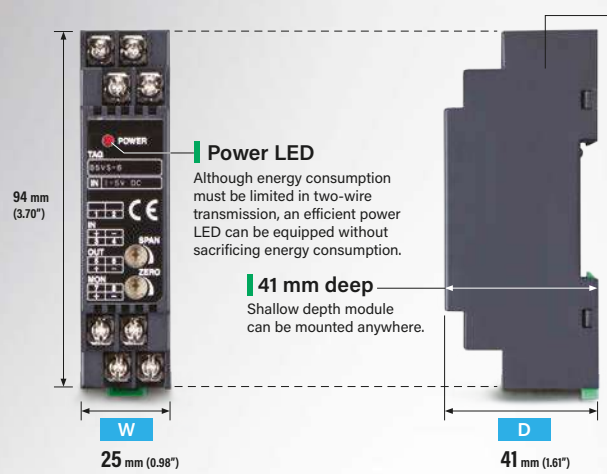
This series of two-wire terminal block signal conditioners is equipped with power indicator lamps that enable operational checks to be performed even in dimly lit panels.

Compact terminal block type

Only 41-mm deep, super-mini signal conditioners

Power indicator LED

Even in dimly lit areas, loop operation can be easily confirmed.



Minimal component count for size and cost efficiency

B5-UNIT Series super-mini two-wire terminal block signal conditioners are some of our smallest signal conditioners that can be mounted on DIN rails. Signal conditioners in this series have a minimal component count that was made possible by our experience in developing signal conditioners for various applications. The small component count also provides excellent cost efficiency.



Signal conditioner module (transparent view for explanation)

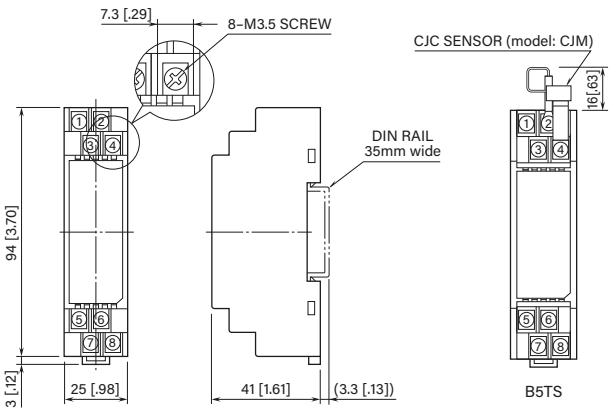
Main Specifications

Construction:	Low-profile terminal block
Connection:	M3.5 screw terminals
Input:	See list of models
Output:	See the datasheet
Mounting:	DIN rail mounting

PRODUCT	MODEL
INPUT LOOP POWERED ISOLATOR	B5SN
SIGNAL TRANSMITTER	B5VS
THERMOCOUPLE TRANSMITTER	B5TS
RTD TRANSMITTER	B5RS
POTENTIOMETER TRANSMITTER	B5MS

EXTERNAL DIMENSIONS unit: mm [inch]

Dimensions may be slightly different depending upon models.



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

LIMIT ALRMS

Monitoring measurement signals and outputting alarm contact signals.





Compact, Plug-in, OEL Display
M2EA Series

PAGE 64



Compact, Plug-in, OEL Display
M1EA Series

PAGE 65



Plug-in, Digital Setting
AS4 Series

PAGE 66

Other Series



Direct Sensor Input, with DC Output
AE-UNIT Series



Direct Sensor Input, Rotary Switch Adj.
AL-UNIT Series



Direct Sensor Input, Potentiometer Adj.
A-UNIT Series



Direct Sensor Input, Rack-mounted
A-RACK Series



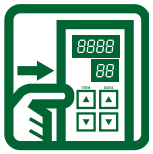
Card-rack, with DC Output
12-RACK Series



Various Limit Alarms

Visit our website for details.

Selecting a limit alarm by configuration method



Main applicable products

M2EA Series
Page 64
M1EA Series
Page 65
AS4 Series
Page 66
KS2V2
KS2V3
KS2TR2
MSEF
Others

Digital adjustment

The specifications of this highly functional model can be configured using the display on the front panel.

- Alarm setpoints can be set using engineering unit values.
- Measurement signals are displayed in engineering unit values.
- This multi-function type allows function changes to be made by selecting the corresponding item number, such as alarm setpoints, range scaling, failsafe action, and deadband.





Main applicable products

KSE-x1
KSE-x2
L4AS

Dial adjustment

This dial adjustment type can be set intuitively.

- Settings can be adjusted intuitively, such as small increases or decreases.
- Suitable for applications where alarm setpoints are changed frequently.





Main applicable products

M2EA Series
Page 64
M1EA Series
Page 65
M6xXAS
M6xXAT
M6xXAR
Others

PC programmable

Configure using a PC.

- Settings are configured using dedicated configurator software.
- Configuration is also possible on a PC screen for multifunctionality.
  - Parameters can be uploaded to a PC or saved as a file.
  - Parameters can also be downloaded to other signal conditioners.





Main applicable products

A-UNIT
M2AVS
AS
ASW
ASW2
KS
AYAV
AYDV
Others

Potentiometer adjustment

Fine setpoint adjustments with multi-turn potentiometers

- This multi-turn potentiometer enables fine adjustments using a calibration rod.*1
- Suitable for applications where alarm setpoints are not changed frequently.



*1. 270°-turn potentiometer for A-UNIT Series



Main applicable products

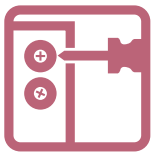
AE-UNIT
M2SED
M2AS
M2AS1
M8SED
M8SED1
ASD1
KSED
ASD
MASD
KASD
Others

Thumbwheel switch adjustment

Adjustments can be made in 1% increments while viewing the numbers.

- Easy-to-understand percentage adjustments.
- Alarm values can be set in 1 % increments.





Main applicable products

AL-UNIT
12-RACK
ASL
ASWL
ASWL2
KSL
Others

Rotary switch adjustment

A rotary switch type in which adjustments are made using a screwdriver.

- Easy-to-understand percentage adjustments.
- Alarm values can be set in 1 % increments.



Deadband adjustment

Prevents frequent ON/OFF switching.

If the measurement signal fluctuates around the alarm setpoint, the alarm may repeatedly turn on and off. By setting deadbands above and below the alarm setpoint, frequent ON/OFF switching can be prevented.



Potentiometer for deadband adjustment

Applicable products

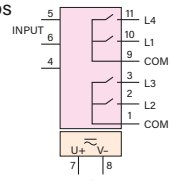
M2EA Series
Page 64
M1EA Series
Page 65
AS4 Series
Page 66
A-UNIT
AE-UNIT
M6xXAS
M6xXAT
M6xXAR
Others

Various limit alarms (limit alarms for applications other than Hi/Lo limits)

Quad alarm

HH / H / L / LL alarm trips





e.g. N.O. relay outputs

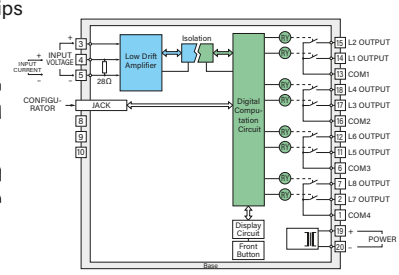
Applicable products

M2EA Series ..... Page 64
M1EA Series ..... Page 65
AS4 Series ..... Page 66

Octad alarm

Max. 8 point alarm trips





e.g. N.O. relay outputs

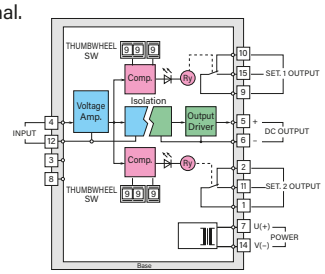
Applicable products

M1EA Series..... Page 65

Analog output

In addition to issuing Hi/Lo alarms, it also converts input signals into the specified analog signal.





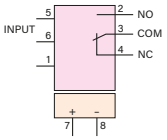
Applicable products

AE-UNIT
12-RACK

Single alarm

Hi or Lo alarm trip is selectable. *2

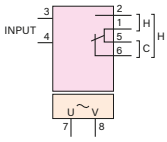




Applicable products

M6xXAS
M6xXAT
M6xXAR





Applicable products

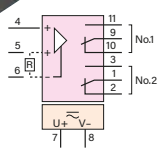
M2AS
M2AS1
KSE-x1

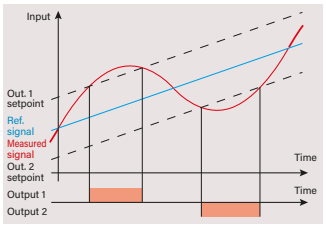
*2. KSE-x1: Hi alarm trip

Deviation alarm



Deviations between the reference signal and measurement signal can be monitored and 2-point alarms can be configured.



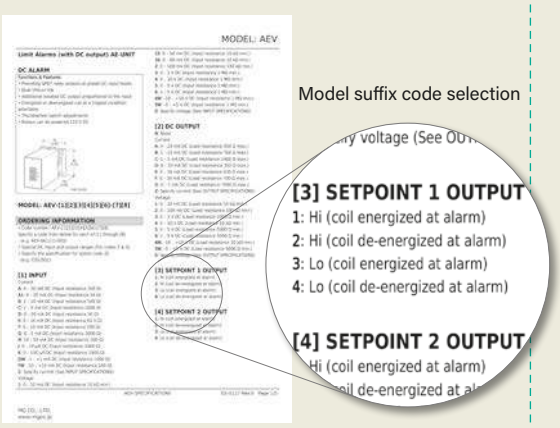


Applicable products

AYDV
7YDV

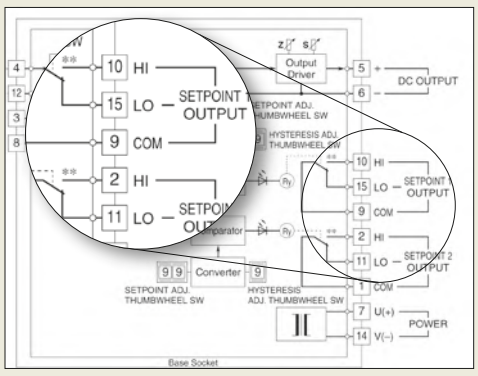
Selecting coil status at alarm (failsafe action)

Our limit alarms allow users to select their desired output contact relay coil status, so that appropriate failsafe actions can be implemented
For example, the alarm output can be selected from among the following model codes for the AE/UNIT Series DC Alarm (Model: AEV).



Model suffix code selection

When using a code 2 high limit alarm for the first alarm output, the output relay coil is energized during normal operation and de-energized during an alarm.
If a system abnormality or power outage interrupts power to the limit alarm, an alarm will be output even if the value is normal, allowing for detection of abnormalities in the system or limit alarm.



Schematic circuitry & connection diagram

Compact, Plug-in, OEL Display

M2EA Series

2P/4P ALARM OUT | 8888 DIGITAL ADJUSTMENT | °C kg m³ ENGINEERING UNIT VALUE | PLUG-IN | AC POWER DC POWER

Space-saving digital alarm equipped with a highly visible OEL display.

Space-saving, dual/quad limit alarm

This is a plug-in type dual/quad limit alarm with a space-saving width of 29.5 mm (1.16 in.) and an OEL display.

Multi-function display

Display settings can be easily configured on the OEL display. Settings can also be configured via PC.

Alarm test output

Alarm tests can be performed even without a simulated signal.

Display and setting values in engineering unit

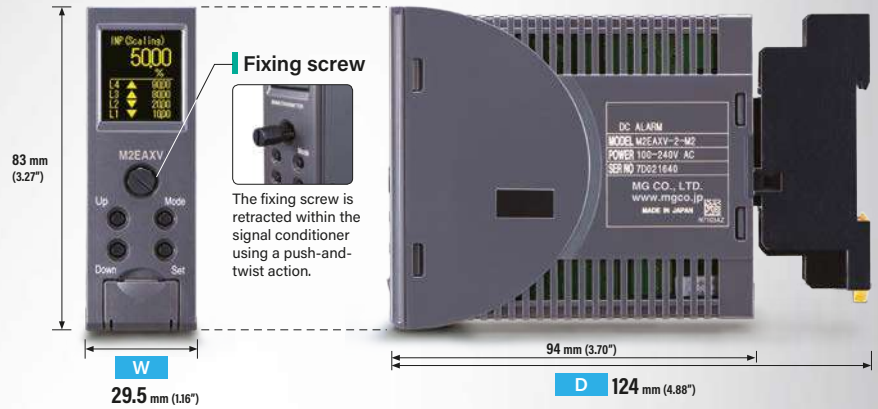
Both display and configuration can use engineering units. Settings can be configured onsite using the buttons on the front.

Multiple functions

The deadband can be changed.
It is equipped with an ON-delay timer.
The contact can be switched on or off when an alarm occurs.
Enclosed relays are used to prevent the intrusion of outside air.

Wide power supply range

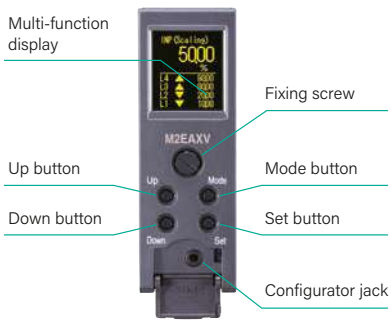
Supporting 100-240 V AC, 24 V DC/110 V DC.



M2EA LIMIT ALARM

PRODUCT	MODEL
OEL display DC ALARM (PC programmable, dual or quad alarm trip)	M2EAXV
OEL display THERMOCOUPLE ALARM (PC programmable, dual or quad alarm trip)	M2EAXT
OEL display RTD ALARM (PC programmable, dual or quad alarm trip)	M2EAXR
OEL display POTENTIOMETER ALARM (PC programmable, dual or quad alarm trip)	M2EAXM
OEL display TWO-WIRE TRANSMITTER ALARM (PC programmable, dual or quad alarm trip)	M2EAXDY
OEL display SELF-SYNCH ALARM (PC programmable, dual or quad alarm trip)	M2EAXS

FRONT PANEL



Specifications can be changed using the Up/Down/Mode/Set buttons on the front panel.
Values are displayed in engineering units, making configuration much easier.
Settings can also be configured via PC*1.

*1. An optional configurator connection cable (Model: COP-US) is required.

M5-UNIT
W5-UNIT
M2 Series
W2 Series
M50X-UNIT
M6 Series
M60 Series
M1E Series
M80 Series
20 Series
Other Signal Conditioners
Two-wire Signal Conditioners
Limit Alarms

Compact, Plug-in, OEL Display

M1EA Series

2P/4P ALARM OUT | 4P/8P ALARM OUT | 8888 DIGITAL ADJUSTMENT | °C kg m³ ENGINEERING UNIT VALUE | PLUG-IN | DC POWER

Digital alarm equipped with a highly visible OEL display. 2-channel and 1-channel (multi-output) types are available.

Compact, multi-output limit alarm

Both a 2-channel type dual/quad limit alarm (M1EAXV-2) and a 1-channel quad/octad limit alarm (M1EAXV-1) are available.

Multi-function display

Display settings can be easily configured on the OEL display. Settings can also be configured via PC*1.

*1. An optional configurator connection cable (Model: COP-US) is required.

Alarm test output

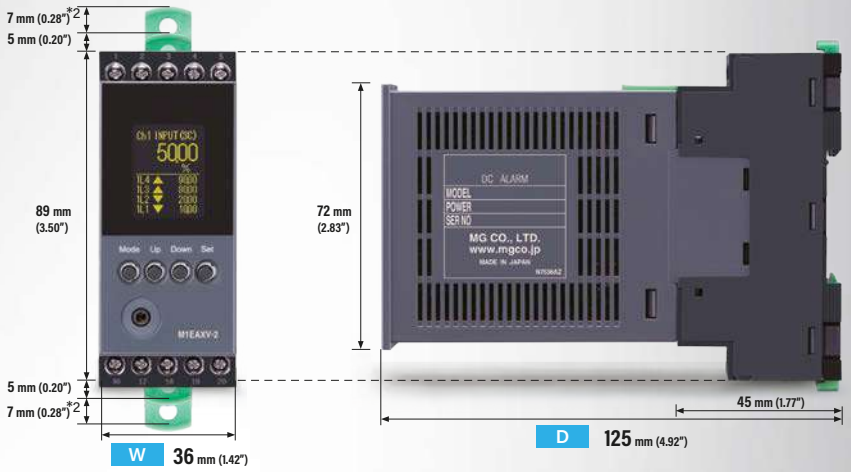
Alarm tests can be performed even without a simulated signal.

Display and setting values in engineering unit

Both display and configuration can use engineering units. Settings can be configured onsite using the buttons on the front.

Multiple functions

The deadband can be changed.
It is equipped with an ON-delay timer.
The contact can be switched on or off when an alarm occurs.
Enclosed relays are used to prevent the intrusion of outside air.



*2. When the mounting lockslider is pulled out

▪ A backplane base (Model: M1E-BS) is shown in the photo.

M1EA LIMIT ALARM

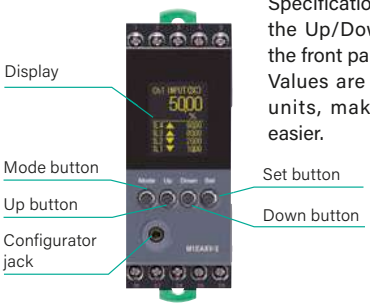
PRODUCT	MODEL
OEL display DC ALARM (2 channels, PC programmable, dual or quad alarm trip)	M1EAXV-2
OEL display DC ALARM (PC programmable, quad or octad alarm trip)	M1EAXV-1

· Base (Model: M1E-BS) does not come with the unit. Please order separately.

INSTALLATION BASE

PRODUCT	MODEL
INSTALLATION BASE	M1E-BS

FRONT PANEL



Specifications can be changed using the Up/Down/Mode/Set buttons on the front panel.
Values are displayed in engineering units, making configuration much easier.

SIMPLE CONFIGURATION



Alarm test output display

Regardless of the input signal value, each alarm output can be individually switched on and off *3.

*3. Changing the input signal during alarm test mode will not change the alarm output state.

Plug-In, Digital Setting

AS4 Series

2P/4P ALARM OUT | 8888 DIGITAL ADJUSTMENT | °C kg m³ ENGINEERING UNIT VALUE | PLUG-IN | AC POWER DC POWER

This digital limit alarm is packed with functions and can be configured easily.

- Compliance/approval depends upon models.

Dual/quad alarm

This is a plug-in type dual/quad limit alarm.

Display and setting values in engineering unit

Both display and configuration can use engineering units. Settings can be configured onsite using the keys on the front.

Multiple functions

The deadband can be changed. It is equipped with an ON-delay timer. The contact can be switched on or off when an alarm occurs. Enclosed relays are used to prevent the intrusion of outside air.

Wide power supply range

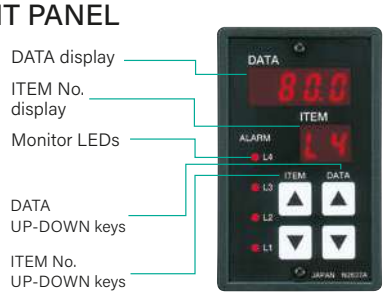
Supporting 100-240 V AC, 24 V DC/110 V DC.



AS4 SERIES LIMIT ALARM

PRODUCT	UL	MODEL
DC ALARM (dual or quad alarm trip; field-configurable)	✓	AS4V
THERMOCOUPLE ALARM (dual or quad alarm trip; field-configurable)	✓	AS4T
RTD ALARM (dual or quad alarm trip; field-configurable)	✓	AS4R
POTENTIOMETER ALARM (dual or quad alarm trip; field-configurable)	✓	AS4M
STRAIN GAUGE ALARM (dual or quad alarm trip; field-configurable)	--	AS4LC
CT ALARM (dual or quad alarm trip; field-configurable)	--	AS4CT

FRONT PANEL



All settings for the AS4 Series can be configured from the front panel. The bright LEDs make it possible to accurately configure settings even in dimly lit junction boxes. Settings can also be locked using softkeys to ensure safety.

SIMPLE CONFIGURATION

Configuration is extremely simple!



All AS4 Series settings can be configured with two actions: "Choose ITEM" and "Enter DATA". When an item number is displayed, the values associated with that number (such as set values or measured values) are also displayed. Values can be easily configured using the up/down keys. Input just using engineering unit values is possible.

Other Limit Alarms

Direct Sensor Input, with DC Output
AE-UNIT Series



Thumbwheel adjustment limit alarm plus DC transmitter output

Multiple functions

The contact can be switched on or off when an alarm occurs.
The deadband can be changed.
It is equipped with an ON-delay timer.
It is equipped with a Power-ON delay timer.

Hi/Lo limit alarm + analog output

Plug-in Hi/Lo limit alarm with DC transmitter output

Direct Sensor Input, Potentiometer Adj.
A-UNIT Series



This direct sensor input limit alarm can be adjusted using a potentiometer and features a deadband setting function.

Plug-in type Hi/Lo limit alarm

You can select whether to energize or de-energize the relay when an alarm occurs.
Deadband control is possible using just a single setpoint.
SPDT contacts are used for the output contact.
Enclosed relays are used to prevent the intrusion of outside air.

Direct Sensor Input, Rotary Switch Adj.
AL-UNIT Series



This direct sensor input limit alarm can be set in 1% increments using the rotary switches.

Plug-in type Hi/Lo limit alarm

Uses a rotary switch adjustment method (minimum digit: 1%).
You can select whether to energize or de-energize the relay when an alarm occurs.
Enclosed relays are used to prevent the intrusion of outside air.
SPDT contacts are used for the output contact.

Direct Sensor Input, Rack-mounted
A-RACK Series



Rack-mounted Hi/Lo limit alarm

You can select whether to energize or de-energize the relay when an alarm occurs.
Deadband control is possible using just a single setting.
SPDT contacts are used for the output contact.
Enclosed relays are used to prevent the intrusion of outside air.

Card-rack, with DC Output
12-RACK Series



Rack-mounted Hi/Lo limit alarm with DC output

Individual power supply types are available, including AC and DC power supplies.

Various Limit Alarms



Limit alarms are available for each signal conditioner series.

Visit our website for details.

Website

Request Info

MG CO., LTD.
Make Greener automation

Your local representative:

Specifications are subject to change without notice. When ordering, use the latest data sheets available at our web site: www.mgco.jp