M6 Series Ultra-Slim Signal Conditioners

Ultra-slim Signal Conditioners

Ultra-slim housings of only 5.9 mm (0.23 in.) wide (M6D and M6S series models)

Selectable Connection Styles

Tension-clamp, screw terminal, or Euro terminal style

Extra Performance for Ultra-slim Construction

The ultra-slim M6 Series has achieved 2000 V AC isolation with marginal dielectric strength. Despite its ultra-slim housing, the allowable load resistance is 550Ω for 4-20 mA DC output. It has an energy-saving design that does not bother users with heat generation even if M6 Series units are closely mounted in the case of high-density installation.

Power supply for AC (100-240 V) is also available (*6).

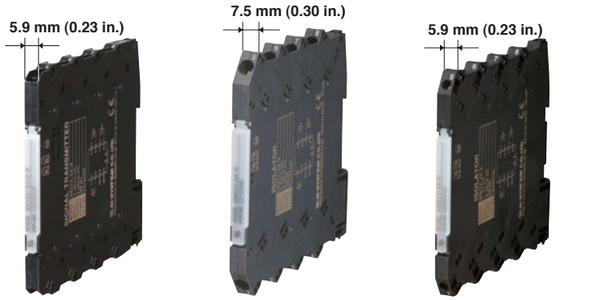
Supporting 24 V DC, 100 - 240 V AC .
(Only the M6xYV, M6xXU, M6xVS models accept AC power supply.)

(*6) UL approval is not available depending on the model.

Loop test output (PC-programmable model only)

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.

5.9 mm (0.23 in.) | 7.5 mm (0.30 in.) | 5.9 mm (0.23 in.)



Tension-Clamp M6S Series CE

Screw terminal M6N Series CE

Euro terminal M6D Series CE

Scan the target 2D code for a list of M6 series models.

CUSTOMER FIRST

Service Policies

All of our products and services are provided outside Japan through authorized distributors. We are trying to enhance the customer satisfaction with following 5 service policies.
As to the terms and conditions of a specific service, consult us for details.

1 Continued Products Availability

- We have basic policy of never to discontinue our products without providing compatible replacements.
- We always strive to procure all the electronic parts for our products. When a certain electronic part is no longer available, we will make best effort to provide a product compatibly replaceable with the existing product as long as there is substantial demand for such product.

2 Fast and Precise Delivery

- The standard manufacturing lead time for most of our products is 5 days.
- Quick Service Center is available for 24-48 hours shipment.
- Once a delivery time is promised, the customer can of course count on us to deliver them precisely on time.

3 Special Specifications Service with no extra charge

- Special specification products can be supplied without additional charge for major product series, except for those requiring excessive labor or materials.
- We are putting our effort into expansion of the scope of Special Specifications Service to all of our products. Special Specification Service will be available to more product series in the future.

For detailed terms and conditions applicable to each specific product, consult us.

4 Special Repair Service

- During the service period of 36 months from the date of shipment, we will provide free repair service for a damage or malfunction caused by a user's mistake when we determine at our discretion that cause of the damage or malfunction falls into the "Service Coverage" set out as conditions of this service. Such free repair service will be limited to one repair per cause of the damage or malfunction.

For detailed terms and conditions applicable to this service, consult us.

5 Factory Setting Service with no extra charge

- Configuration setting for programmable products is free of charge upon the customer's request for once when ordering, except for those requiring special engineering (e.g. multi-function PID controllers).

For detailed terms and conditions applicable to each specific product, consult us.

Website | Request Info

MG CO., LTD.
(formerly M-System Co., Ltd.)
www.mgco.jp

Your local representative:

500694

Terminal Block Signal Conditioners

2024-01
EC-Z224
Rev. 3

Signal Conditioners
M5-UNIT / W5-UNIT Series

SUPER-MINI TERMINAL BLOCK SIGNAL CONDITIONERS
PC-programmable
Model : M5X-UNIT Series

Power supply for AC (85-264 V) is also available. (*1)

(*1) CE/UKCA marking is not available depending on the model.

All types with isolated terminals

Provided with zero span adjustment

Supports special specifications

Test Report Free of Charge! (*2)

(*2) If you need a test report, please contact your local distributor. They will send it to you free of charge (pdf version only. Not available for all models).

Loop test output
Model : M5X-UNIT Series

Standard Type | Dual Output Type

M5-UNIT Series
SUPER-MINI TERMINAL BLOCK SIGNAL CONDITIONERS

W5-UNIT Series
TERMINAL BLOCK DUAL OUTPUT SIGNAL CONDITIONERS

Scan the target 2D code for a list of functions and specifications of M5 or W5 Series models.

Contributing to total cost reduction by saving space, energy, and wiring efforts

M6 Series
ULTRA-SLIM SIGNAL CONDITIONERS

Page 8

MG CO., LTD.
(formerly M-System Co., Ltd.)
www.mgco.jp

Make Greener automation

SUPER-MINI TERMINAL BLOCK SIGNAL CONDITIONERS

Low Profile

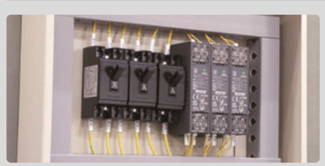
M5-UNIT Series

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

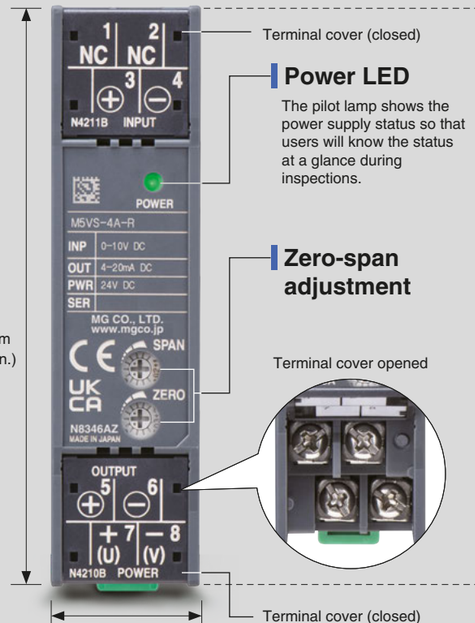
Power supply for AC (85-264 V) is also available.(*1)

Supporting 85-264 V AC, 24 V DC.
(*1) CE/UKCA marking is not available depending on the model.

The unit can be accommodated in a breaker box.



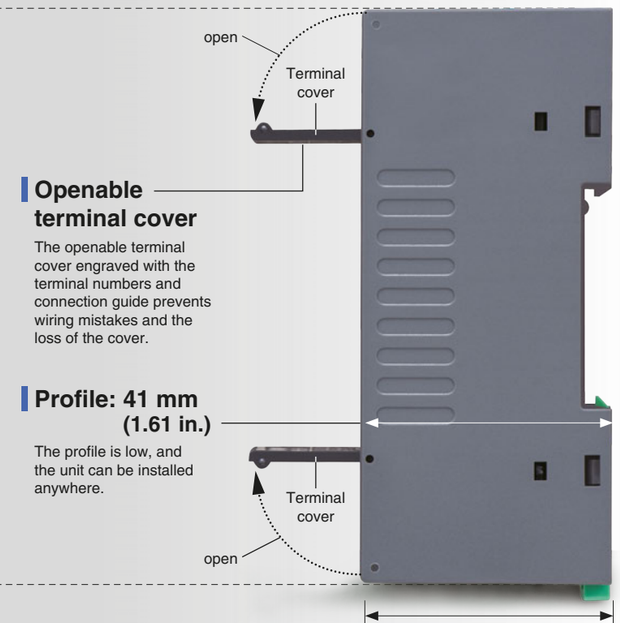
M5 Series can be installed on thin panels where breakers and other low-profile devices are installed.



Power LED

The pilot lamp shows the power supply status so that users will know the status at a glance during inspections.

Zero-span adjustment



Openable terminal cover

The openable terminal cover engraved with the terminal numbers and connection guide prevents wiring mistakes and the loss of the cover.

Profile: 41 mm (1.61 in.)

The profile is low, and the unit can be installed anywhere.

Main Specifications

Structure: Low-profile terminal block
Connections: M3.5 screw terminals
Input: See List of Models
Output: See the datasheet
Installation: DIN rail mounting

Terminal block structure

Three-port isolation

AC DC POWERED

CE UKCA

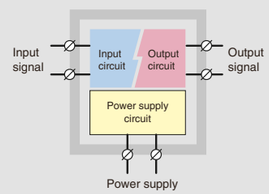
Depending on the model.

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.

TERMINAL BLOCK DUAL OUTPUT SIGNAL CONDITIONERS

Low Profile Signal Splitters

W5-UNIT Series

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

Signal splitters with isolated dual outputs

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

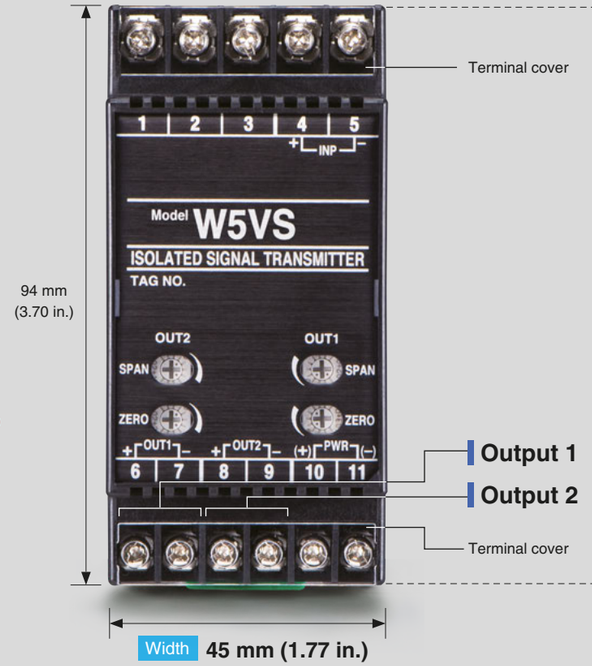
Profile : 41 mm (1.61 in.)

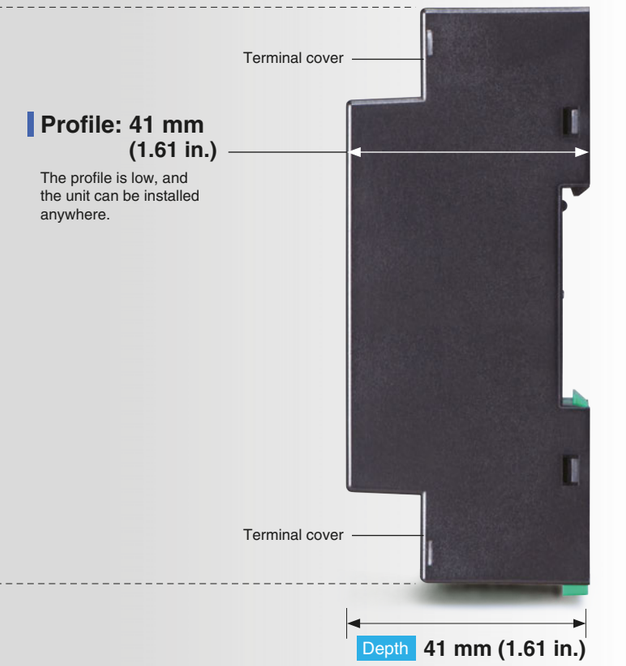
W5 models can be installed on boards with a shallow depth.

Power supply for AC (85-264 V) is also available.(*1)

Supporting 85-264 V AC, 24 V DC,
11-27 V DC, 110 V DC.

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





Profile: 41 mm (1.61 in.)

The profile is low, and the unit can be installed anywhere.

Main Specifications

Structure: Low-profile terminal block
Connections: 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

Terminal block structure

Four-port isolation

AC DC POWERED

CE

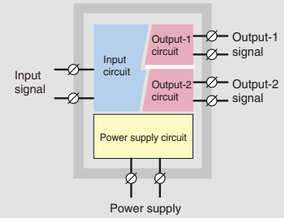
Depending on the model.

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)



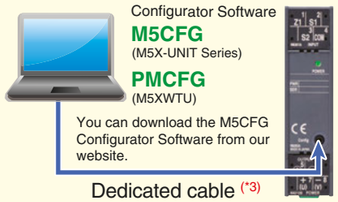
AC power supply: 85-264 V AC
DC power supply: 24 V DC, 11-27 V DC, and 110 V DC

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

Features of M5-UNIT Series

PC-programmable models are also available.

Model : M5X-UNIT Series



Configurator Software
M5CFG
(M5X-UNIT Series)
PMCFG
(M5XWTU)

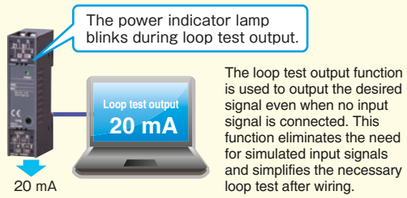
You can download the M5CFG Configurator Software from our website.

Dedicated cable (*3)

- You can set specifications using PCs. In addition to I/O range calibration, you can configure various settings, including linearization, filter. You can also output a simulated signal.
- You can upload parameters to PCs and save files on them.
- You can also download parameters to other signal conditioners.
- This function is useful when you want to make many settings for identical specifications or when you want to save the settings.

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

Loop test output

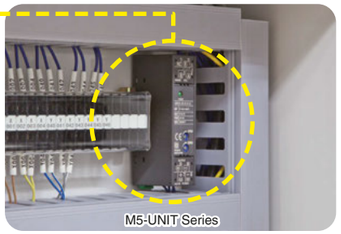


The loop test output function is used to output the desired signal even when no input signal is connected. This function eliminates the need for simulated input signals and simplifies the necessary loop test after wiring.

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)

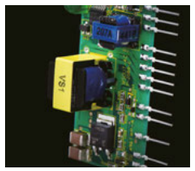
It is possible to install the unit even in a small gap on the side panel of a small device or a switch box.



The M5-UNIT Series offers a variety of economical DC input signal transmitters.

Economical DC input signal transmitter

SIGNAL TRANSMITTER
Model: **M5VS**

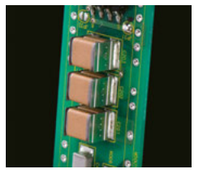


Electronic circuit specially designed for the M5 Series

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

SIGNAL TRANSMITTER
(narrow span input)
Model: **M5MV**

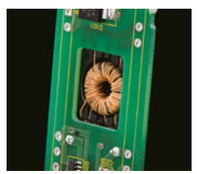


Ceramic capacitors

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 30µs response speed.

SIGNAL TRANSMITTER
(high speed response 30µs.)
Model: **M5VF2**

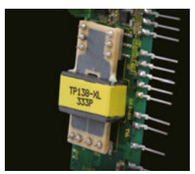


Toroidal transformer

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

SIGNAL TRANSMITTER
(high dielectric strength)
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.

Products Line up

M5-UNIT Series

Isolators & Sensor Inputs

Product name	Model	CE	UK CA
ISOLATOR	M5YV	✓	✓
INPUT LOOP POWERED ISOLATOR	M5SN	✓	✓
UNIVERSAL TRANSMITTER (PC programmable)	M5XU	✓	---
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 30µsec.)	M5VF2	---	---
SIGNAL TRANSMITTER (high dielectric strength)	M5VSH	---	---
VOLTAGE DIVIDER	M5VV	---	---
THERMOCOUPLE TRANSMITTER	M5TS	✓	✓
TC/RTD TRANSMITTER (PC programmable)	M5XTR	✓	---
RTD TRANSMITTER	M5RS	✓	✓
POTENTIOMETER TRANSMITTER	M5MS	✓	✓
CURRENT LOOP SUPPLY	M5D	✓	✓
CURRENT LOOP SUPPLY	M5DY	✓	✓
CURRENT LOOP SUPPLY (applicable to HART signal, opencircuit detection selectable) NEW	M5DYH2	✓	✓
TACHOGENERATOR TRANSMITTER NEW	M5TG	---	---
AC TRANSMITTER Scheduled to be released in Mar. 2024	M5AC	---	---

Power Transducers

Product name	Model	CE	UK CA
MULTI POWER TRANSDUCER (self-powered, PC programmable)	M5XWTU	---	---
MULTI POWER TRANSDUCER (self-powered, PC programmable)	M5XWT	---	---
PT TRANSMITTER	M5PT	---	---
CT TRANSMITTER	M5CT	✓	✓
CT TRANSMITTER (clamp-on current sensor)	M5CTC	---	---

Frequency I/O

Product name	Model	CE	UK CA
PULSE ISOLATOR NEW	M5PP	✓	✓
PULSE ISOLATOR Under development	M5YPD	---	---
FREQUENCY TRANSMITTER	M5PA	✓	✓
FREQUENCY TRANSMITTER (PC programmable) NEW	M5XPA	✓	---
ENCODER SPEED TRANSMITTER (PC programmable) NEW	M5XRP	✓	---
DC/FREQUENCY CONVERTER Scheduled to be released in Sep. 2024	M5AP	---	---
PULSE SCALER Under development	M5PRU	---	---

DC ALARM

Product name	Model	CE	UK CA
DC ALARM Under development	M5AVS	---	---
DC ALARM Under development	M5SED	---	---

Function Modules (PC programmable)

Product name	Model	CE	UK CA
ADDER	M5XADS	✓	---
SUBTRACTOR	M5XSBS	✓	---
MULTIPLIER	M5XMLS	✓	---
DIVIDER	M5XDIS	✓	---
RATIO/BIAS TRANSMITTER	M5XREB	✓	---
RATIO/BIAS TRANSMITTER	M5XRTS	✓	---
LINEARIZER	M5XF	✓	---
SQUARE ROOT EXTRACTOR	M5XFLS	✓	---
INVERTED OUTPUT TRANSMITTER	M5XUDS	✓	---
RAMP BUFFER	M5XCRS	✓	---
TRACK/HOLD	M5XAMS	✓	---
PEAK HOLD	M5XPHS	✓	---
HIGH/LOW SELECTOR	M5XSES	✓	---
PARAMETER GENERATOR NEW	M5XMST	✓	---

• M5-UNIT Series: CE/UKCA marking for DC power supply only.

W5-UNIT Series

Isolators & Sensor Inputs

Product name	Model	CE
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 name	Model	CE
FREQUENCY TRANSMITTER	W5PA	✓

2-wire Signal Conditioners

Super-mini 2-wire Terminal Block Signal Conditioners

B5-UNIT Series

Only 41 mm (1.61 in.) deep modules can be installed anywhere, even behind the panel cover.

Scan the target 2D code for a list of B5-UNIT Series models.

Product name	Model	CE
INPUT LOOP POWERED ISOLATOR	B5SN	✓
SIGNAL TRANSMITTER	B5VS	✓
THERMOCOUPLE TRANSMITTER	B5TS	✓
RTD TRANSMITTER	B5RS	✓
POTENTIOMETER TRANSMITTER	B5MS	✓

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 : M5VS-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
/VN: Sealed adjustment holes
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

You can choose from four types according to your needs.

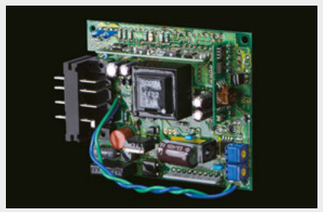
Silicone Coating (/C01)

Product Name : Pelgan Z Spray or 1-2577
Manufacture : Pelgan Z Spray Dow Corning Toray Co., Ltd.
1-2577 The Dow Chemical Company
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.

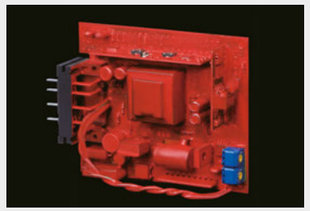
Polyurethane Coating (/C02)

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



Rubber Coating (/C03)

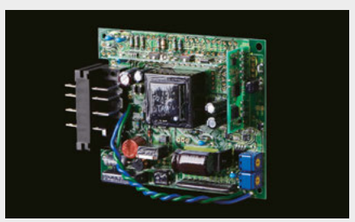
Product Name : Plasti Dip Spray Red
Manufacture : Plasti Dip International Inc.
Feature : Improvement in corrosion prevention and insulation property



• Specifications and coating materials may change without notice.

Polyolefin Coating (/C04)

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



Adjustment

You can choose the multi-turn type according to your needs.

Multi-turn fine adjustment (/V01)

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

Multi-turn potentiometer for fine adjustment

Standard potentiometer

• The trimmer used may change without notice.

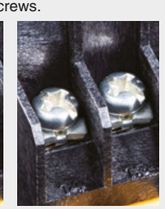
Terminal screw material

You can choose the stainless-steel type according to your needs.

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

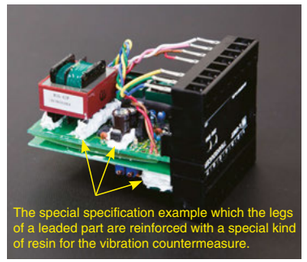
• The screws used may change without notice.

Special Specifications

0 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.

We also respond quickly to technical inquiries.

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 to you with a technical review as soon as possible.

We will standardize special specifications.

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.

Strong emphasis on quality assurance system

Kyoto Techno Center has the Reliability Testing Section of the Quality Assurance Dept. to conduct a type test of all products released from us. We conduct a type test to verify the quality on not only new products but also products of which we changed the design.

Evaluation test

Our Quality Assurance Dept. conducts a prototype evaluation before releasing a new product. We validate the products based on the various regulations / standards and the company standards mainly classified into four categories. In addition, we conduct an EMC(*4) test as a part of the evaluation test. Our anechoic chamber used for the EMC test is certified and registered by the official body (VCCI(*5)), and we conduct an official test instead of a simplified test.

Company standards	Number of standards
Standards on the functions	42
Standards on the performance	33
Standards on the reliability	48
Standards on the mechanism	9
Total	132

Anechoic chamber certified and registered by the official body (VCCI(*5))

A large shielded room of 6 m x 6 m where multiple tests can be conducted simultaneously

The EMC test required to acquire the CE marking has the following test items and all of them are conducted by our own facility at Kyoto Techno Center (Kizugawa-City, Kyoto).

EMC test required by the EMC directive

Reference standards	Base standards	Test	Test site
EN61000-6-2	EN61000-4-2	Electrostatic discharge immunity test	Shielded room
	EN61000-4-3	Radiated, radio-frequency, electromagnetic field immunity test	Anechoic chamber
	EN61000-4-4	Electrical fast transient/ burst immunity test	Shielded room
	EN61000-4-5	Surge immunity test	Shielded room
	EN61000-4-6	Immunity against conducted emission induced by radio-frequency fields	Shielded room
	EN61000-4-8	Power frequency magnetic field immunity test	Shielded room
	EN61000-4-11	Voltage dips, short interruptions and voltage variations immunity tests	Shielded room
EN61000-6-4	CISPR16-1-1 CISPR16-1-4 CISPR16-2-3	Radiated Emission	Anechoic chamber
	CISPR16-1-1 CISPR16-1-2 CISPR16-2-1	Conducted Emission (Power Port)	Shielded room
	CISPR32	Conducted Emission (Communication Port)	Shielded room

(*4) EMC (Electro Magnetic Compatibility): Tests to check the effect by applying an electromagnetic noise to a device and to measure the electromagnetic wave and conductive common mode noise emitted from the device.

(*5) VCCI (Voluntary Control Council for Interference by information technology equipment): Formerly known as Voluntary Control Council for Information Technology Equipment. An industry organization in Japan that discusses the regulations on the radio waves emitted from the information technology equipment