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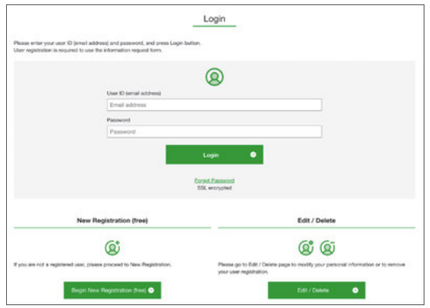


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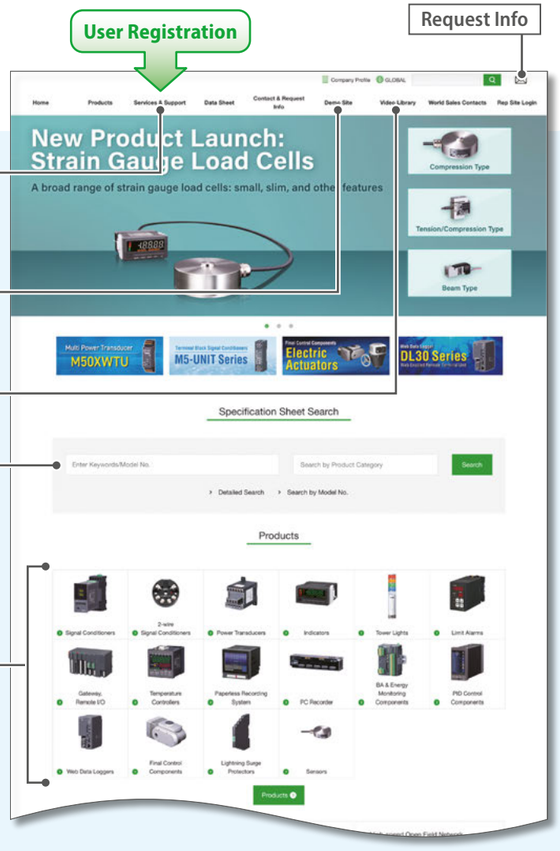


### Services & Support

You can access all downloadable materials including setup tools (software), drivers and device profiles, catalogs and videos.

### Demo Site

Browse trend and data monitor windows of data logging systems using DL30, DL8 and other products.

### Video Library

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### Specifications & Manuals

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Website

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2 Two-wire Signal Conditioners
3 Power Monitoring Components
4 Indicators & Tower Lights
5 Remote I/O
6 Paperless Recorders & PC Recorder
7 Process & Temperature Controllers
8 IoT Components
9 Final Control Components
10 Lightning Surge Protectors
11 Sensors

EC-Z750-D Rev.0
November 2024
500749

**MG CO., LTD.**
**www.mgco.jp**
Make Greener automation

# CATEGORY INDEX

PC / DCS / PLC

SCADA Software
Limited to Japanese Market

Control Room

Field

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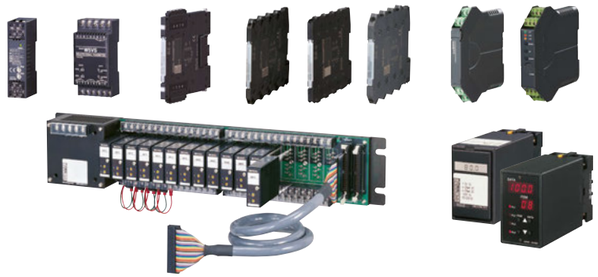
• Isolation Amplifiers



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CC-Link CC-Link IE Field CC-Link IE TSN
DeviceNet EtherNet/IP EtherCAT
PROFINET Modbus Modbus/TCP
LONWORKS MECHATROLINK HLS
FL-net TLink
OPC UA

• Wireless I/O System
For Limited Markets

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**Sensors / Transmitters**

Mobile terminals (smartphones, tablets) or mobile network operator services are not our products.

# FOUR-WIRE SIGNAL CONDITIONERS

A signal conditioner is used to condition and convert a field sensor signal suitable for processing with the PLC/DCS in a wide variety of process plants and factories. Typical applications are:

- **Signal conversion**
- **Signal isolation to stop ground loops**
- **Signal boosting to increase load drive capability**

Our signal conditioners are available with wide combinations of process signal I/O, power input and mounting configuration. Additionally, we offer the broadest line of signal splitters available.

### Choose by Housing and Terminal Access Styles
- Plug-in base socket mounted
- Terminal block style
- Euro terminal block style
- Ultra-slim housing
- Installation base mounted
- Rack mounted
- Field enclosure mounted
- Sensor head mounted
- PCB mounted
- Connector output

### Choose by I/O Signal Types
- Universal input
- DC mV, V, mA
- Two-wire transmitter
- Temperature
- Potentiometer
- Strain gauge
- CT & VT
- Frequency and pulse
- Pneumatic
- AC power
- And others

### Choose by Functions
- Isolation / Amplification
- Conversion / Transmission
- Signal splitting
- Limit alarm
- Filtering
- Math / Process function
- Linearization

### Choose by Power Supply
- AC line powered (4-wire)
- DC line powered (4-wire)
- Output loop powered (2-wire)
- Input loop powered (self powered)

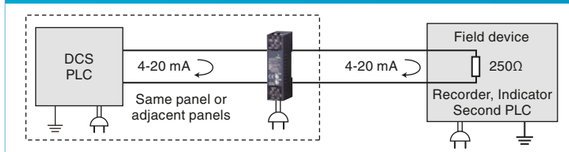
Simulation experiments demonstrate effectiveness of isolators

How to choose DC signal isolators

## ISOLATOR APPLICATIONS 1

Isolator is installed between a transmitter (i.e. sensor) and a receiver to galvanically isolate DC signals.
Breaking the path between a field instrument and a control room device minimizes various influences coming from the field site to the control room.
In addition, each instrument separated by galvanic isolation can choose its own ground point independently from other ones, avoiding the 'ground loop' problem.
Lastly, the isolator can provide impedance conversion to beat loop impedance constraints, and signal level conversion (e.g. from 10-50 mA to 4-20 mA) function.

### 4-wire isolator : 4-20 mA (passive) input / 4-20 mA output / Line powered

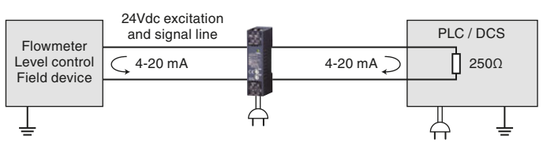



e.g. M5VS DC input, fixed range
W5VS DC input, fixed range, signal splitter
M6xXV DC input, programmable range

Designed primarily for front-ending PLC/DCS systems which are mounted within the same panel or adjacent to it.
The isolator module is powered from terminals separate from signal lines.

- Test and measurement applications
- Manufacturing cells
- Monitoring systems located in-line with the manufacturing process

### 4-wire isolator / current loop supply : 4-20 mA (active) input / 4-20 mA output / Line powered




e.g. M5DY Fixed range
W5DY Fixed range, signal splitter
M3LDY Programmable linearization

Basic isolator designed to interface a PLC and DCS system with a field instrument.
The isolator module supplies 24 Vdc power to the field device and provides a linearized output signal if necessary.

- Remote field signal monitored by control system
- Water/wastewater treatment
- Petrochemical, tank farms, large manufacturing sites

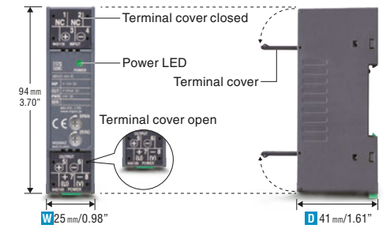


## Low-profile Signal Conditioners
### M5 / M5X / W5 Series

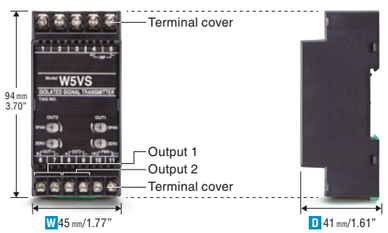
- Only 41 mm (1.61 in) deep, terminal block style modules can be installed anywhere, even behind the panel cover.
- M5X Series PC programmable types have a convenient loop test output function.
- W5 Series provides a second isolated output of independent range.

Compact, terminal block style housing

**M5 Series**

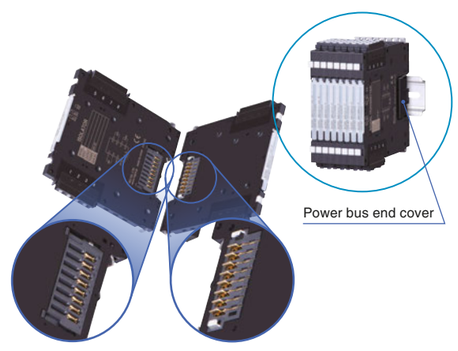



**W5 Series**



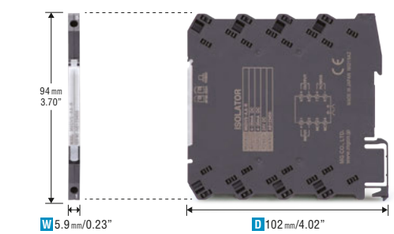

## Ultra-slim Signal Conditioners
### M6 / M60 Series

- M6 Series is available with three connection styles: Tension-clamp (M6S), screw terminal (M6N) or euro terminal (M6D).
- M60 Series is available with separable tension-clamp terminal block or mini-clamp (e-CON) connector.
- Low power consumption, high load drive capability

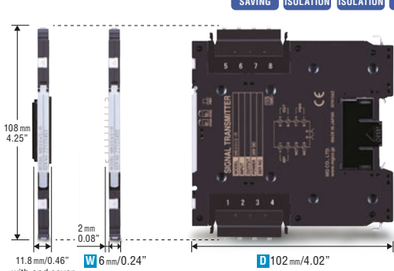



Highly reliable power bus connection: hooks and grooves sliding into each other (M60 Series)

**M6D Series**



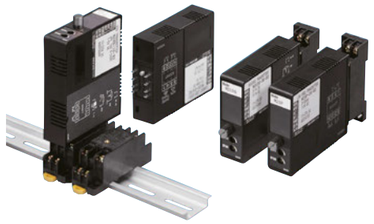

**M60 Series**



# Compact Plug-in Signal Conditioners

## M2 / M2E / W2 Series

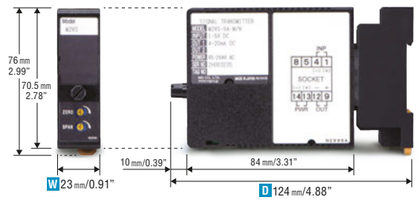
- M2/W2 Series (Mini-M and Mini-MW) features a wide selection of input/output ranges and functions.
- M2E Series with bright, high-contrast OEL (Organic Electroluminescence) display for setup and process monitor
- W2 Series provides a second isolated output of independent range.
- PC programmable types have a convenient loop test output function.
- Base socket included with the modules



Plug-in socket mounted

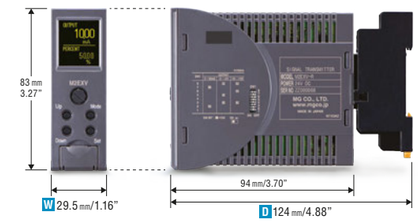
### M2 Series

PLUG-IN | 3-PORT ISOLATION | AC or DC POWER




### M2E Series

PLUG-IN | 3-PORT ISOLATION | AC or DC POWER

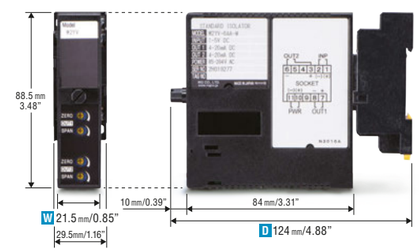



**M2E SERIES: High-contrast OEL display makes loop checking easy for commissioning and maintenance**

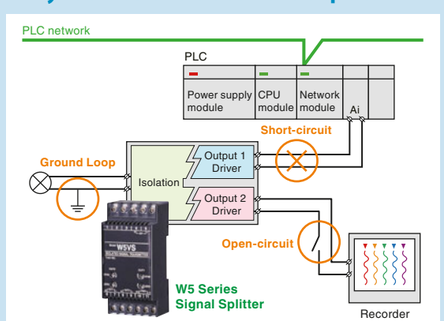

Multi display | Single display | Programming mode

### W2 Series

PLUG-IN | 4-PORT ISOLATION | AC or DC POWER




## Why Isolate the Second Output?




### Channel-to-channel Isolation Enhances the Overall System Reliability

Whenever you want to add another device such as a recorder to a sensor signal loop connected to PLC's analog input module, a signal splitter that can output two isolated signals is recommended.

The loop's load capacity may allow to connect one more load in series to (4-20 mA current signal) or in parallel to (1-5 V voltage signal) an existing receiving instrument. However, in such a configuration, short-circuit, open-circuit or ground loop at one part of the loop could affect the entire system.

Galvanically separating each part of the loop is beneficial to contain any damage to the limited section in case of an accident, thus to making troubleshooting easier, minimizing the system downtime.



## M3L Series

### "One-Step Cal" Configuration without PC

- Enhanced PC configurator software is also available.
- Universal I/O specifications ideal for spare parts stock reduction programs

## M3S Series

### 12-mm Wide, Thin-profile Module

- Space-saving modules with separable terminal blocks
- Universal AC/DC power input available

## M8 Series

### Direct Connection to PLC/DCS Plus Field Output

- Super-mini, plug-in modules
- 4-, 8- or 16-position installation base
- 4-20 mA output module available for control

## 20 Series Isolation Amplifiers

### Customized Hybrid IC

- Greatly saves development lead time for analog isolation circuitry
- Standardized product lineup as a second source of major suppliers
- RoHS compliant
- Two-port or three-port isolation
- ±5 V, ±10 V input/output and other ranges
- Frequency characteristics options
- Withstand voltage up to 5000 Vac

**STANDARDIZED MODEL EXAMPLES**

**20VS5-201**
Linearity ±0.005% TYP
G=1 (±0.01% MAX)

**20VS5-202**
Linearity ±0.01% TYP
G=1 (±0.015% MAX)

**20VS8-202**
SIP or DIP
3000 Vac isolation

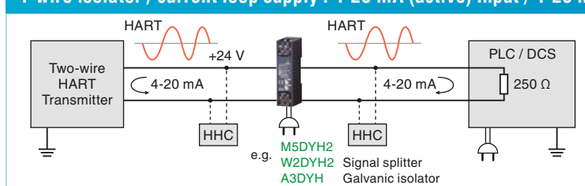
**20VS8-210**
Frequency characteristics
Approx. 20 kHz

Simulation experiments demonstrate effectiveness of isolators

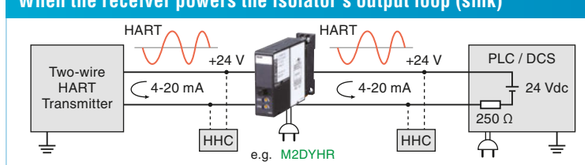
How to choose DC signal isolators

## ISOLATOR APPLICATIONS 2

### 4-wire isolator / current loop supply : 4-20 mA (active) input / 4-20 mA output (source) / Line powered




### When the receiver powers the isolator's output loop (sink)




Designed to interface a PLC and DCS system with a field HART transmitter. The isolator module supplies 24 Vdc power to the field device. It also allows the HART signal to pass when a technician needs to access the transmitter's process and diagnostic information via the HART signal using a HART hand-held communicator (HHC), from any termination point of the loop at both sides of the isolator.

- Remote field signal monitored by control system
- Water/wastewater treatment
- Petrochemical, tank farms, large manufacturing sites

# Function Modules & Retrofit Products

## Unique Functions for Stable Process Operations

- Math functions
- Process functions
- Filters
- Unique functions to ensure stable process operations and to solve problems in system upgrading

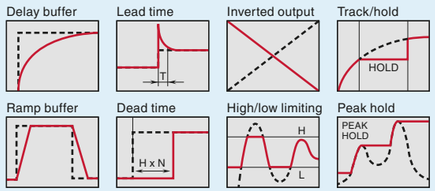

M5 Series


M6 Series


M2 Series

- Temp/pressure compensation
- Addition / Subtraction
- Multiplication / Division
- Ratio / Bias
- Delay buffer / Ramp buffer
- Moving average
- Lead time / Dead time
- Linearization
- Square root extraction
- Palmer-Borlus flume / Parshall flume
- Triangular/v-notch/rectangular weir
- Inverted output
- High / Low limiting
- Track / Hold
- Peak / Valley hold
- High / Low selecting
- Channel switching
- Parameter generator

### I/O CHARACTERISTICS EXAMPLES




# Strain Gauge Transmitters

### Tank / silo / hopper weighing system


The MXLC, in conjunction with multiple high-capacity strain gauge load cells, provides an effective tank weighing system, with easy field configuration and local display capabilities.

## "One-Step Cal" Configuration without PC

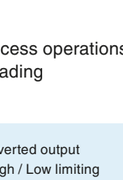
**M3LLC**

- DIP switch or PC configurable
- <10 msec. response
- Auto tare feature controlled by PLC or DCS
- Manual on-site calibration

## Dual Isolated Outputs

**W5LCS**

- Low profile: depth 41 mm (1.21 in.)
- Providing a second isolated output of independent range

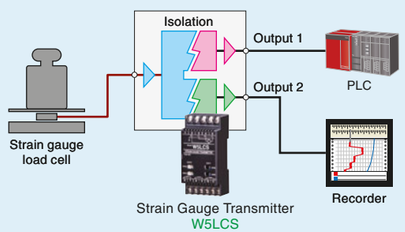


## Fast Response Remote Sensing

**LCF**

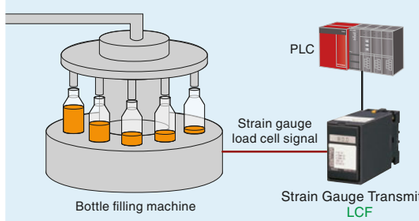
- Six-wire bridge
- <300 microsec. response (2 kHz, -3 dB)

### Adding an extra output for a PLC




An extra isolated output signal for a PLC can be safely added to an existing signal loop by using the W5LCS.

### High speed weight measurement for filling machines




To control a bottle filling machine that runs in high speed, liquid weight in each bottle must be measured with speed and accuracy. The LCF converts minute load cell signal changes with speed and accuracy.



A limit alarm is used to provide one or more relay/contact outputs when a monitored process signal goes out of preset high or low limits. Typical applications are:

- **Trouble warning (annunciators)**
- **Emergency shutdown**
- **ON/OFF control**

Our limit alarms are available with wide combinations of process signal I/O and power input, featuring also various setpoint access means.

Programmable alarms feature enhanced programmable functions such as failsafe operation, deadband, delay time, latching relay and others, while analog alarms feature basic but easy setting.

# Programmable Limit Alarms

## Quad/Octad Alarm with OEL Display

**M1EA Series**

- Multi-line display showing parameters and selection in text: intuitive, easy programming
- 4-point SPDT or 8-point NO or NC contact (single-channel type)
- 2-point SPDT or 4-point NO or NC contact (dual-channel type)
- PC configuration is also available.

## Dual/Quad Alarm with OEL Display

**M2EA Series**

- Multi-line display showing parameters and selection in text: intuitive, easy programming
- 2-point SPDT or 4-point NO or NC contact
- PC configuration is also available.

## Dual/Quad Alarm with LED Display

**AS4 Series**

- Simple configuration via the front Up/Down buttons with a help of two displays, by calling parameters' ID numbers (ITEM) and choosing values (DATA)
- Direct sensor input: DC, temperature, potentiometer, strain gauge and CT
- Field selectable sensor type and range
- 2-point SPDT or 4-point NO or NC output

### Products' weight test results


Products' weight test may be conducted using a quad limit alarm. Alarm setpoints can be changed at the front end of PLC, without needing to modify the PLC's ladder programs.

## Panel Surface Mount

**KS2V2 / KS2TR2**

- 1/16 DIN size (48 mm square) panel cutout
- 1-5 Vdc input (KS2V2) or temperature (T/C or RTD) input (KS2TR2)
- Dual SPDT output

# Analog Limit Alarms

## Simple Setting, Direct Sensor Inputs

- Various setting methods are available: dial setting, thumbwheel switch setting, rotary switch setting, potentiometer setting.
- Direct sensor input type and extra DC transmitter output (AE-UNIT)

**Sensor inputs**:
• DC mV, V, mA • Thermocouple • RTD • Potentiometer
• Two-wire transmitter (4-20 mA active input)
• Frequency • Tachogenerator
• AC current/voltage • PT • CT


M2SED


M2AVS


AE-UNIT Series

# Four-wire Signal Conditioners Selection Guide

Only typical signal conditioner modules and specs are mentioned in this table.
Please visit our web site to confirm availability and specs of specific models.

| |  | |  |  | |
|---|---|---|---|---|---|
| **SERIES** | **M5** | | **W5** | **M2 / M2E** | |
| Enclosure / Mounting type | 41 mm-deep low-profile housing, DIN rail mount | | | Plug-in base socket, DIN rail or surface mount | |
| Connection | M3.5 screw terminal | | M3.5/M3 screw terminal | M3 screw terminal | |
| Dual output | --- | | Yes | (M2WVS) | |
| Power input | AC/DC | | | AC/DC | |
| Isolation | 2000V AC (M5/AC powered type: 1500V AC) | | | 2000V AC | |
| Operating temperature | -5 to +55°C (23 to 131°F) (M5X: -20 to +65°C (-4 to +149°F)) | | | -5 to +55°C (23 to 131°F) | |
| Standards & Approval | CE (DC powered type) | | CE (DC powered type) | M2: CE / UKCA / UL / C-UL M2E: CE | |
| Range Availability | Fixed range | PC configurable | Fixed range (except W5FV) | Fixed range | PC configurable (M2) Front display setting (M2E) |
| **Isolators & Sensor Inputs** | | | | | |
| Input loop powered isolator | M5SN | | | M2SN | |
| Isolator | M5YV | | | | |
| Output isolator | | | | | |
| Universal input | | M5XU | | | M2XU, M2XUM |
| DC mV, voltage & current | M5VS, M5MV | M5XV | W5VS, W5FV | M2VS, M2WVS | M2FV, M2XV2, M2EXV |
| DC mV, voltage & current (fast response) | M5VF, M5VF2 | | | M2VF, M2VF2, M2VF3 | |
| Universal temperature input | | M5XTR | | | |
| Thermocouple | M5TS | (M5XTR) | W5TS | M2TS | M2XT2, M2EXT |
| RTD | M5RS | (M5XTR) | W5RS | M2RS, M2RS1 | M2XR2, M2EXR |
| Potentiometer | M5MS | | W5MS | M2MS | M2XM2, M2EXM |
| Current loop supply | M5D, M5DY | | W5DY | M2D, M2D2, M2DYS | |
| Current loop supply, SQR | | | | M2DL, M2DNY | |
| Current loop supply, HART | M5DYH2 | | | M2DYH2, M2DYHR | |
| Strain gauge | | | W5LCS | M2LCS | |
| AC voltage & current | M5TG, M5AC* | | | M2TG, M2AC | |
| **Power Transducers** | | | | | |
| Voltage transformer | M5PT | | | M2PA, M2PE | |
| Current transformer | M5CT | | | M2CA, M2CE | |
| Clamp-on current sensor | M5CTC | | | M2CEC | |
| Multi power transducer | | M5XWT, M5XWTU | | | |
| **Frequency I/O** | | | | | |
| Pulse to analog | M5PA | M5XPA | W5PA | M2SP | M2XPA3 |
| Encoder | | M5XRP | | | M2XRP2 |
| Analog to pulse | M5AP* | | | M2AP | |
| Pulse isolator | M5PP, M5YPD* | | | M2PP | |
| Pulse scaler, divider | M5PRU* | | | M2PRU, M2PDU | |
| **Pneumatic Transducers** | | | | | |
| 19.6-98.1 kPa | | | | M2PV | |
| **Function Modules** | | | | | |
| Multi function | | | | | |
| Four arithmetic functions | | M5XADS, M5XSBS, M5XMLS, M5XDIS | | M2ADS, M2SBS, M2MLS, M2DIS | |
| Ratio/bias | | M5XREB, M5XRTS | | M2REB, M2RTS | |
| Linearizer | | M5XF | | | M2XF2 |
| Square root extractor | | M5XFLS | | M2FL, M2FLS | (M2XF2) |
| Limiter | | | | M2LMS | |
| Inverted output | | M5XUDS | | M2UDS2, M2UDS | |
| Delay buffer | | | | M2CDS | |
| Ramp buffer | | M5XCRS | | M2CRS | |
| Track/hold | | M5XAMS | | M2AMS2, M2AMS | |
| Peak/valley hold | | M5XPHS | | M2PHS2, M2PHS | |
| High/low selector | | M5XSES | | M2SES2, M2SES | |
| Analog switching module | | | | M2MNV | |
| Parameter generator | | M5XMST | | M2MST | |

*Under development as of November 2024

|  | |  | |  | | |
|---|---|---|---|---|---|---|
| **W2** | | **M6 / M60** | | **M3 / M3S / A3** | | **SERIES** |
| Plug-in base socket, DIN rail or surface mount | | Ultra-slim housing, DIN rail mount | | 18 mm- or 12 mm-wide housing, DIN rail mount | | Enclosure / Mounting type |
| M3 screw terminal | | Tension clamp, M3 screw terminal, euro type terminal, mini-clamp (e-CON) connector | | Euro type connector terminal | | Connection |
| Yes | | (M6xWVS, M60xWVS) | | (M3SWVS) | | Dual output |
| AC/DC | | DC (M6xYV, M6xXU, M6xVS: AD/DC) | | AC/DC | | Power input |
| 2000V AC | | M6 Series: 2000V AC M60 Series: 1500V AC | | 2000V AC | | Isolation |
| -5 to +55°C (23 to 131°F) | | -20 to +55°C (-4 to +131°F) | | M3: -20 to +65°C (-4 to +149°F) M3S: -10 to +55°C (14 to 131°F) | | Operating temperature |
| CE / UKCA / UL / C-UL | | M6: CE / UL / C-UL M60: CE | | M3: CE / UL / C-UL, M3S: CE A3DYH: CE / ATEX / FM | | Standards & Approval |
| Fixed range | PC configurable | Fixed range | PC configurable (M6) DIP SW setting (M60) | Fixed range | One-step cal (M3L) PC configurable (M3X) | Range Availability |
| **Isolators & Sensor Inputs** | | | | | | |
| | | M6xSN | | | | Input loop powered isolator |
| | | M6xYV, M60xYV | | M3SYV | | Isolator |
| | | | | | | Output isolator |
| | | | M6xXU | | M3LU2, M3LU | Universal input |
| W2VS | | M6xVS, M6xWVS | M6xXV, M60xVS, M60xWVS | M3SVS, M3SWVS | M3LV, M3SXV | DC mV, voltage & current |
| W2VF | | M6xVF | | | | DC mV, voltage & current (fast response) |
| | | | | | | Universal temperature input |
| W2TS | W2XT | | M6xXT | | M3LT, M3SXT | Thermocouple |
| W2RS, W2RS1 | W2XR | | M6xXR | M3SRS | M3LR, M3SXR | RTD |
| W2MS | W2XM | | M6xXM | M3SMS | M3LM, M3SXM | Potentiometer |
| W2DYS | | M6xDY | | M3DY, M3SDY | M3LDY | Current loop supply |
| W2DNY | | | | | (M3LDY) | Current loop supply, SQR |
| W2DYH2 | | | | A3DYH (IS) | | Current loop supply, HART |
| | | | | | M3LLC | Strain gauge |
| W2TG, W2AC | | | | | | AC voltage & current |
| **Power Transducers** | | | | | | |
| W2PA, W2PE | | | | | | Voltage transformer |
| W2CA, W2CE | | | | | | Current transformer |
| | | M6xCTC | | | | Clamp-on current sensor |
| | | | | | | Multi power transducer |
| **Frequency I/O** | | | | | | |
| W2SP | | M6xPA | | | M3LPA2 | Pulse to analog |
| | | | | | | Encoder |
| W2AP | | | M6xXAP | | | Analog to pulse |
| W2PP | | M6xPP | | | | Pulse isolator |
| | | | | | | Pulse scaler |
| **Pneumatic Transducers** | | | | | | |
| W2PV | | | | | | 19.6-98.1 kPa |
| **Function Modules** | | | | | | |
| | | | M6xXF1, M6xXF2 | | | Multi function |
| | | | M6xXF2 | | | Four arithmetic functions |
| | | | | | | Ratio/bias |
| | W2XF | | (M6xXF1) | | | Linearizer |
| | (W2XF2) | | (M6xXF1) | | | Square root extractor |
| | | | (M6xXF1) | | | Limiter |
| | | | (M6xXF1) | | | Inverted output |
| | | | (M6xXF1) | | | Delay buffer |
| | | | (M6xXF1) | | | Ramp buffer |
| | | | M6xXF3 | | | Track/hold |
| | | | M6xXF3 | | | Peak/valley hold |
| | | | (M6xXF2) | | | High/low selector |
| | | | | | | Analog switching module |
| W2MST | | | (M6xXF1) | | | Parameter generator |

# TWO-WIRE SIGNAL CONDITIONERS

## DIN Rail-mount Signal Conditioners

### B5 Series

Low-profile Terminal Block Style

- Only 41 mm (1.61 in) deep, terminal block style modules can be installed anywhere, even behind the panel cover.
- Power LED
- 2000 Vac isolation between input and output

### B3 Series

DIP Switch Configurable

- Input type and range selectable with the internal DIP switches and fine calibration using the front potentiometers
- Wide supply voltage range 12-45 Vdc
- 1500 Vac isolation between input and output

## Field-mount Signal Conditioners

### 27 / 26 Series

DIN Type B Head-mount Transmitters

- 27 Series: HART or PC programmable type available
- 26 Series: Fixed range

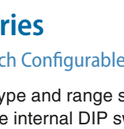
27 Series

26 Series

### B6U / B6U-B

Universal HART Temperature Transmitters

- Plug-in two-line LCD display
- HART programmable
- User's own temperature calibration tables can be used.
- IP66 / IP67 field enclosure; Stainless steel optional

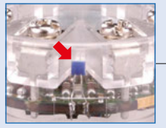


B6U

B6U-B

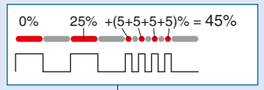
IP66/IP67

**High Accuracy**



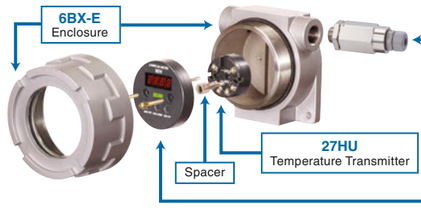
Pt100 CJC sensor placed between the input terminals (27HU, 27U, 27TS)

**Function Monitor LED**




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

## FIELD-MOUNT ACCESSORIES




**MD6 Series Surge Protectors**

**6DV / 6DV-B**
**4-digit Loop Powered Indicator**

6DV

6DV-B

## Two-wire Signal Conditioners Selection Guide

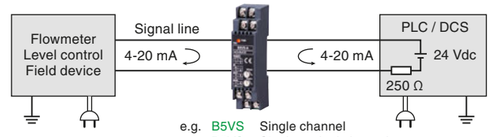
| SERIES | B5 | B3 | B6 / 27 | 27 | 26 |
|---|---|---|---|---|---|
| Enclosure / Mounting type | 41 mm-deep low-profile housing, DIN rail mount | 18 mm-wide housing, DIN rail mount | Field mount enclosure | DIN type B head mount | |
| Connection | M3.5 screw terminal | Euro type connector terminal | M3.5/M3 screw terminal | M3 screw terminal | Euro type terminal block |
| Power input | Output loop powered | | | | |
| Isolation | 2000V AC | 2000V AC | 1500V AC | | |
| Operating temperature | -40 to +80°C (-40 to +176°F) | -40 to +85°C (-40 to +185°F) | -40 to +85°C (-40 to +185°F) | | |
| Standards & Approval | CE | CE / UL / C-UL / ATEX / FM | CE / ATEX / FM | CE / ATEX / FM | CE |
| Input loop powered isolator | B5SN | | | | |
| DC mV, voltage & current | B5VS | B3VS/1, B3VS/2, B3FV | | | |
| Thermocouple | B5TS | B3FT | | 27TS | 26TS1 |
| RTD | B5RS | B3FR | | 27R, 27RS | 26R1, 26RS |
| Potentiometer | B5MS | | | 27PM | |
| Pulse | | B3FP | | | |
| Universal input | | | | 27U | |
| Universal input, HART, IS | | B3HU, B3HU2 | B6U, B6U-B, 27HU-B | 27HU | |
| Universal input, PROFIBUS | | B3PA | | | |

Simulation experiments demonstrate effectiveness of isolators

How to choose DC signal isolators

## ISOLATOR APPLICATIONS 3

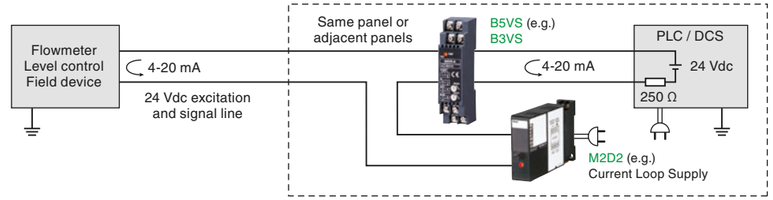
### 2-wire isolator : 4-20 mA input / 4-20 mA output (loop powered)



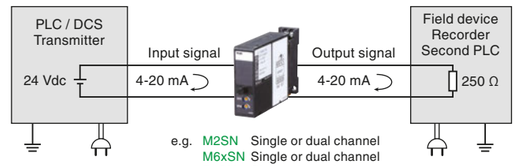

Basic isolator designed to interface a PLC and DCS system that provides a 24 Vdc power supply with a 4-20 mA input.

- Remote field signal monitored by control system
- Water/wastewater treatment
- Petrochemical, tank farms, large manufacturing sites

### With the excitation supply to the field device




### 2-wire isolator : 4-20 mA input (loop powered) / 4-20 mA output




Mainly used to retrofit existing 4-20 mA process loops that need to add another instrument to the loop while maintaining isolation.

- Chart recorder or another PLC
- Backup monitoring system

## Low-profile Multi Power Transducers

### M50EXWTU / M50XWTU

- Low-profile, terminal block style modules can be installed even in shallow breaker boxes or on wall-mounted panels.
- Clamp-on current sensor input up to 600 A
- Single-phase 2-wire and 3-wire, three-phase 3-wire and 4-wire systems
- Up to 31st harmonic distortion measurement
- Modbus plus two contact outputs (energy count pulse)

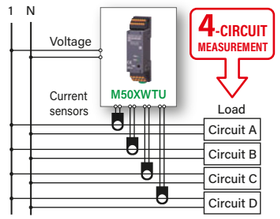
M50EXWTU
with OEL display

M50XWTU

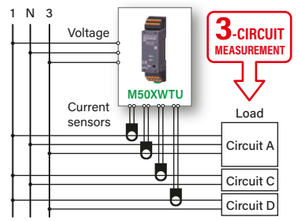
CE Modbus CE Modbus

**Single Module can Measure up to 4 Circuits!**
**Space-saving and Economical.**

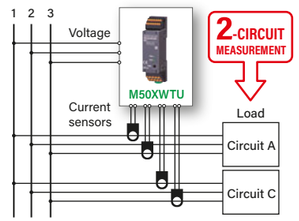
- 4 x Single-phase/2-wire circuits



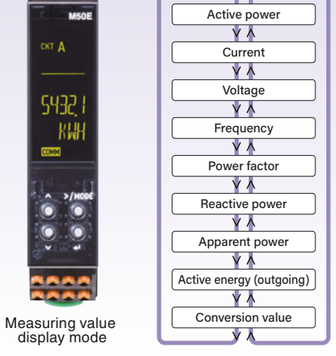

- 1 x Single-phase/3-wire + 2 x Single-phase/2-wire circuits




- 2 x Three-phase/3-wire circuits

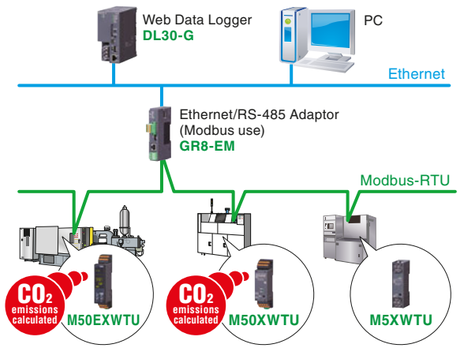



**M50EXWTU: High-contrast OEL display**




Measuring value display mode

**Detailed Monitoring of Energy Usage to Calculate Carbon Footprint of Products**



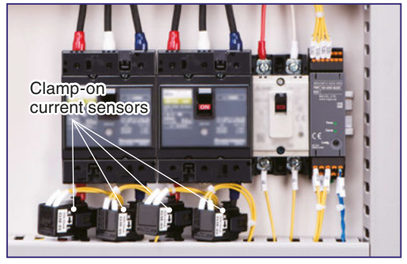

### M5X Series Multi Power Transducers

- Only 41 mm (1.61 in) deep, terminal block style modules
- Clamp-on current sensor input up to 600 A
- Up to 31st harmonic distortion measurement (M5XWTU)
- Analog or pulse output option (M5XWTU)
- Basic model M5XWT without harmonic distortion measurement

M5XWT(U)

Modbus

**Low-profile Transducer can be Retrofitted.**




## 53U / 54U Series Multi Power Monitors

- Single-phase 2-wire and 3-wire, three-phase 3-wire and 4-wire systems
- Various network communication and Ao/Do combinations selectable
- Up to 31st harmonic distortion
- Software lock
- IP50 front panel (53U, 54U)

L53U: DIN rail mounted

CE Modbus

IP50

53U: 1/4 DIN (96-mm sq.) panel size

CE cULus Modbus

IP50

54U: 110-mm sq. panel size

CC-Link Modbus LONWORKS

### R3 Series Remote I/O

- 4-point totalized pulse input module for pulse pickups
- Other heavy current system input modules: AC voltage/current, zero-phase current, wattage
- Temperature, DC and other sensor signal inputs are also available.

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

### R7 Series Remote I/O

- Clamp-on current sensor use: easy installation
- 2-system input

CC-Link Modbus Modbus/TCP LONWORKS

### R9 Series Remote I/O

- Clamp-on current sensor use: easy installation
- Up to 8-system input
- Time stamped data logging in SD card

CC-Link Modbus Modbus/TCP LONWORKS

### LSMT4 Multi Power Transducer

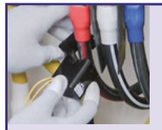
- Measuring AC current, voltage, active/ reactive/apparent power and power factor
- 10 x DC voltage/mA outputs plus 2 x Do

CE

### LT-UNIT Series Power Transducers

- True RMS sensing
- M4 screw terminals
- Max. 550 Vac input
- Conforming to IEC 60688

CE



**CLSE SERIES:**
**Easy-to-Install, Spring-loaded Clamp-on Current Sensor**

5 A
50 A
100 A
200 A
400 A
600 A

CE

# Digital Panel Meters

## Bright, Colorful LED

### 47L Series

- 1/8 DIN size (96 x 48 mm)
- Red, Orange, Green, Bluegreen, Blue and White LED selectable
- 4 or 4 1/2 digit display
- Alarm and/or transmitter output optional
- IP66 front panel
- Separable terminal block

CE IP66


## High Performance LCD Display

### 47D Series

- 1/8 DIN size (96 x 48 mm)
- 5 1/2 digit display plus small 20 segment bargraph
- Main display color can be changed from green to red in alarm.
- Alarm and/or transmitter output optional
- 12 V or 24 Vdc sensor excitation
- RS-485 Modbus-RTU interface optional
- IP66 front panel
- Separable terminal block

IP66


## Large 0.8" High LED Display

### 40 Series

- 1/8 DIN size (96 x 48 mm)
- 3 1/2 or 4 digit display
- Display hold function

CE

## 1/32 DIN Size Meters

### 43 Series

- 1/32 DIN size (48 x 24 mm)
- Easy-to-wire tension clamp connecting
- 24 Vdc powered or loop powered (no external power supply required)
- 43E Series with alarm output

CE cULus

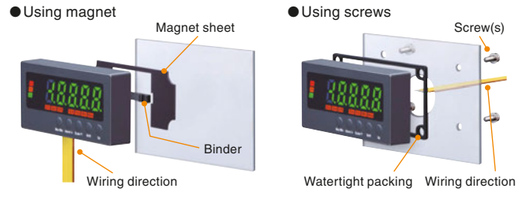
## Ultra-slim Housing with Flat Rear Surface

### 47NL Series

- 1/8 DIN size (96 x 48 mm)
- Large 16 mm-high, 4 or 4 1/2 digit display: Bright and colorful
- Mountable on standard 30 mm round panel cutout
- Tension-clamp or screw terminal block for electrical connection
- IP66 (except for magnet mounting)
- Moving average function to suppress display flickering
- High/low alarm trips

CE IP66


### Mounting of Tension-clamp Terminal Block Type






# Digital Panel Meters Selection Guide

| APPLICATION | 47NL | 47L | 47D | 40 | 43 |
|---|---|---|---|---|---|
| DC input, input loop powered | 47NLN, 47NLNT | --- | --- | 40DN | 43AL1 |
| DC input | 47NLV, 47NLVT | 47LYV, 47LV | 47DV | 40LV, 40DV1 | 43DV2, 43EV |
| Thermocouple input | --- | 47LT | 47DT | 40DT | --- |
| RTD input | 47NLR, 47NLRT | 47LR | 47DR | 40DR | --- |
| Potentiometer input | --- | 47LM | 47DM | --- | --- |
| 2-wire transmitter input (with excitation) | 47NLDY, 47NLDYT | --- | --- | --- | 43EDY |
| Strain gauge input | --- | 47LLC, 47LLC2* | --- | --- | --- |
| AC current / voltage input | --- | 47LAC | 47DAC | --- | --- |
| PT input | --- | 47LPT | --- | 40DPT | --- |
| CT input | --- | 47LCT | --- | 40DCT | --- |
| Frequency input (AC line voltage) | --- | 47LHZ | --- | --- | --- |
| Frequency input | --- | 47LPA | --- | --- | --- |
| Pulse input totalizer (6 digits) | --- | 47LPQ | --- | --- | --- |

*Under development as of November 2024

# Bargraph Indicators

## 48N Series Bargraph Indicators

- 9/64 DIN size (36 x 144 mm)
- 101-segment, 3 mm wide LED
- Red, amber, green and blue colors
- Alarm and/or transmitter output optional
- Vertical or horizontal mounting
- Custom scale with no extra cost
- IP65 front panel
- Separable terminal block

CE UKCA IP65

**48NV / 48NV1**
• Single or dual bars

**48NAV**
• Single bar
• Dual/quad alarm

**48NDV**
• Single bar
• Dual/quad alarm
• 4-digit digital display

## 48SV2 Bargraph Indicator

- 18 x 72 mm size
- 51-segment LED
- Red, amber, green and blue colors
- Vertical or horizontal mounting
- Custom scale with no extra cost
- Zero & span adjustments at the front panel
- Separable terminal block optional

CE

**48SV2**

| APPLICATION | 48NV | 48NA | 48ND |
|---|---|---|---|
| DC input, single channel | 48NV-1<br>48NV1-1 | 48NAV | 48NDV |
| DC input, dual channel | 48NV-2<br>48NV1-2 | --- | --- |
| DC input, transmitter output | --- | 48NAVA | 48NDVA |
| 4-20 mA input, excitation supply | --- | 48NAVD | 48NDVD |
| Thermocouple input | --- | 48NAT | 48NDVT |
| RTD input | --- | 48NAR | 48NDR |
| Potentiometer input | --- | 48NAM | 48NDM |

# Field Indicators

## 6DV / 6DV-B Loop Powered Field Indicator

- 4-20 mA input loop powered
- No external power source required
- Scaling & linearization selectable via the front control buttons
- IP66 / IP67 field enclosure, aluminium or stainless steel
- ATEX Zone 0, FM Class I, II, III, Division 1 approvals

CE Ex FM APPROVED

6DV

6DV-B

IP66/IP67

## W100 Weighing Indicator

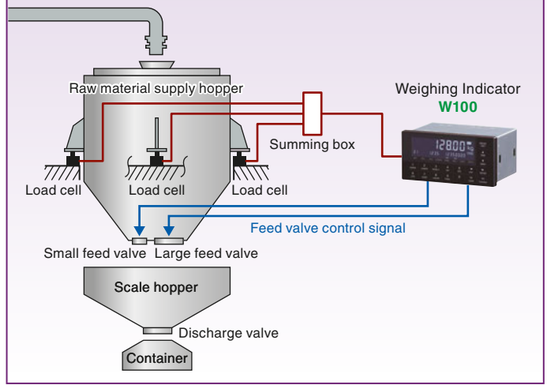
### Automatic Quantitative Feeding Control

IP65

The W100 repeats precise and stable measurement of liquid or powder to perform a quantitative feeding control while displaying accurate weight values.

- 72 x 144 mm size
- Highly visible LCD with white characters
- Weighing functions: feeding and discharging
- Control functions: simple comparison or sequence control
- Weighing stability functions: digital low pass filter, moving average, stability detection, stable state filter
- Max. 32 preset values (CODE) can be registered.
- 12-point discrete outputs and 12-point discrete inputs
- IP65 front panel
- Modbus communication

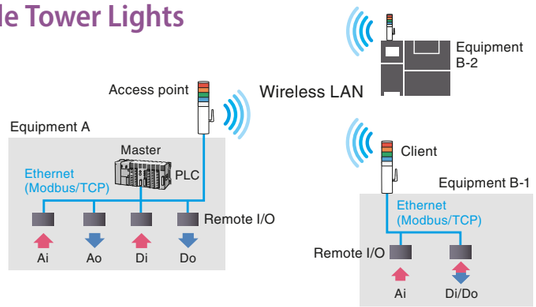
**Example of Discharge-weighing System Configuration**




## IT Series Tower Lights

### Wireless & Open Network Capable Tower Lights

- Energy saving, maintenance free LED lights
- Bright and even illumination
- Direct Modbus/TCP and CC-Link control saves wiring and cost.
- Wireless LAN access point and infrastructure mode (IEEE 802.11b/g/n, 2.4 GHz) certified for use in the EU countries
- Licence-free 900 MHz ISM band, FCC Part 15 compliant wireless module certified for use in the US




| | WIRELESS LAN | | 900 MHz ISM BAND | | OPEN NETWORK | | DISCRETE INPUT | | |
|---|---|---|---|---|---|---|---|---|---|
| | For EU countries | | FCC Part 15 compliant | | | | | | |
| |  IP65 | |  IP65 | |  IP65 | |  IP65 | | |
| LED DIAMETER | Bridge | Access point | Parent | Child | Modbus/TCP | CC-Link | Tall | Short | Pole mounting |
| 40 mm | IT40SW1 | IT40SW2 | IT40SW5F | IT40SW6F | IT40SRE | IT40SRC | IT40SA1 | IT40SA2 | IT40SA3 |
| 50 mm | IT50SW1 | IT50SW2 | IT50SW5F | IT50SW6F | IT50SRE | IT50SRC | IT50SA1 | IT50SA2 | IT50SA3 |
| 60 mm | IT60SW1 | IT60SW2 | IT60SW5F | IT60SW6F | IT60SRE | IT60SRC | IT60SA1 | IT60SA2 | IT60SA3 |







The flexibility and scalability of our Remote I/O supports future system upgrades with full isolation between power-communication-I/O and between analog channels. Economical non-isolated analog modules are also selectable.

Applications include: signal concentrator, data collection in flow and level monitoring, injection molding monitoring and control, test stands and prototyping, glass furnace temperature control, pharmaceutical processes, semiconductor manufacturing equipment, assembly line discrete ON/OFF, and IoT equipment.

**Remote I/O**

**Scalable I/O**
with free combination of I/O, network and power supply

**All-in-One I/O**
with I/O, network and power supply in single package

### LARGE NUMBER OF I/O POINTS

Multi-channel, Scalable Remote I/O
**R3 Series**


Hot Swappable Modules

Compact, Scalable Remote I/O
**R30 Series**

Compact size

Slice Type, Scalable Remote I/O
**R8/R80 Series**


Flexible Configuration without Base

### SMALL NUMBER OF I/O POINTS

Ultra-Slim, Scalable Remote I/O
**R6 Series**


Only 78 mm wide with 8 I/O modules

### LARGE NUMBER OF I/O POINTS

Compact, Multi-point Remote I/O
**R1 Series**


12-point Universal Input Module

### SMALL NUMBER OF I/O POINTS

Expandable, Compact Remote I/O
**R7 Series**


Attached with Discrete I/O Extension Module

Plug-in Remote I/O
**R10 Series**

Base Socket Mounted Module

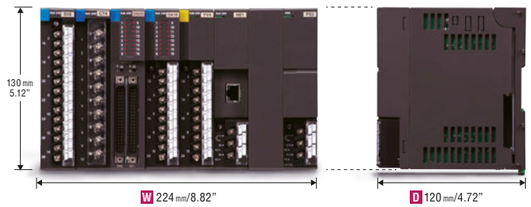
# Multi-channel, Scalable Remote I/O

## R3 Series

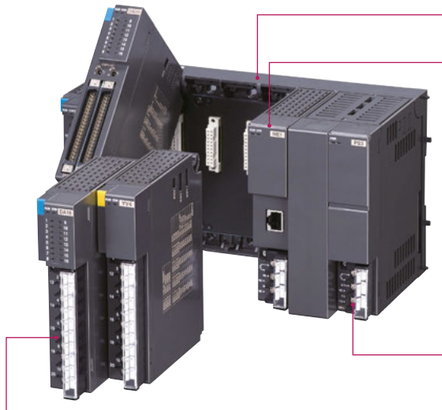
- Wide selection of I/O modules including DC, AC, temperature, strain gauge, pulse trains, AC power, etc.
- 4 isolated to 16 non-isolated analog inputs per module
- Max. 64 discrete I/O per module
- Selections of AC power, CT and VT modules suitable for energy monitoring applications
- Dual redundant communication networks and power supplies

**R3 Series**

CE BACKPLANE AC or DC POWER DUAL NETWORK DUAL POWER




## Free Combinations of Network and I/O Modules on Backplane Base



Backplane Base

Network Module

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

Power Supply Module

### I/O Module

- DC input module . . . . . 24 models
- Sensor input module . . . . . 20 models
- AC power input module . . . . . 16 models
- Analog output module . . . . . 7 models
- Pulse I/O module . . . . . 13 models
- Alarm module . . . . . 7 models
- Discrete I/O module . . . . . 29 models
- BCD I/O module . . . . . 2 models
- Function module for air conditioning . . . . . 2 models
- Temperature control module . . . . . 1 model

### Three Types of I/O Connections

**R3 Series**
M3 screws
M3.5 screws

**R3S Series**
Tension-clamp terminal

**R3Y Series**
FCN connector



## Dual Communication Networks and Power Supplies

**Redundant Networks (example)**

Modbus
Modbus

Redundancy by two network modules

**Redundant Power Supplies (example)**

Redundancy by two power supply modules

**Two Network Protocols (example)**

CC-Link
Modbus

Communication with two masters

**Two Power Sources (example)**


Redundancy by two separate power sources

# Compact, Scalable Remote I/O

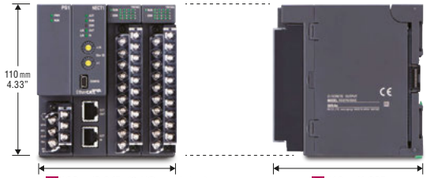
## R30 Series

- Ethernet based network protocols
- High-speed internal bus
- 2 or 4 fully-isolated analog I/O per module
- 16 discrete I/O per module
- R3 Series I/O modules can be added by using special connecting base.

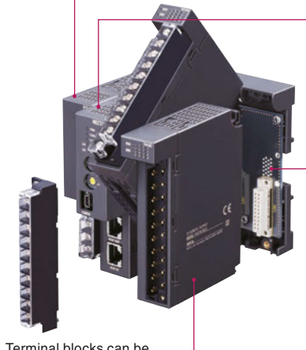
R30 Series + R3 Series I/O modules

**R30 Series**

CE BACKPLANE DC POWER




## Free Combinations of Network and I/O Modules on Backplane Base

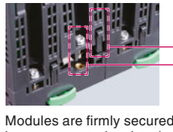


Power Supply Module

Network Module

CC-Link IE Field CC-Link IE TSN EtherCAT Modbus/TCP OPC UA

Backplane Base

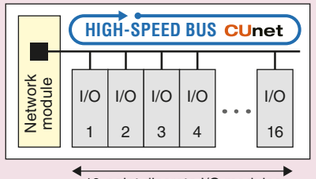



Modules are firmly secured to the base by screws even in a harsh environment with heavy vibration.

Terminal blocks can be removed/attached with wires on.

I/O Module

**Internal Bus Communication Cycle**
**1 millisecond per 256 points**

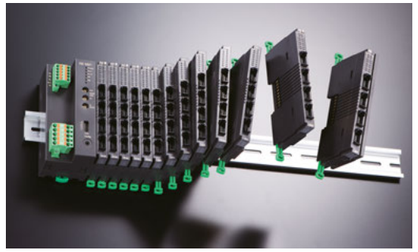



16-point discrete I/O modules
(16 x 16 = 256 points)

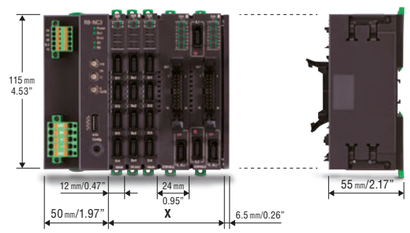
# Slice Type, Scalable Remote I/O

## R8 / R80 Series

- Slice type modules can be freely added by necessary number of I/O points, saving installation space to the minimum.
- Only 55 mm (2.17 in) deep modules (except connector)
- Interlock and other special function modules requested for semiconductor manufacturing equipment



### R8 Series

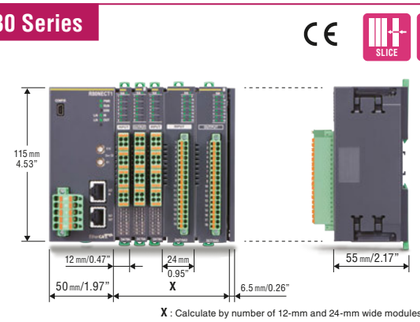



X : Calculate by number of 12-mm and 24-mm wide modules (max. 16)

### R8 Series Networks

CC-Link DeviceNet Modbus EtherCAT EtherNet/IP

### R80 Series

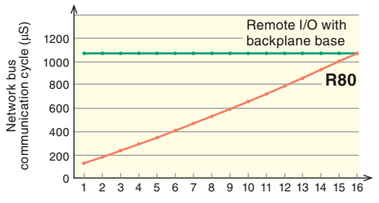



X : Calculate by number of 12-mm and 24-mm wide modules (max. 16)

### R80 Series Networks

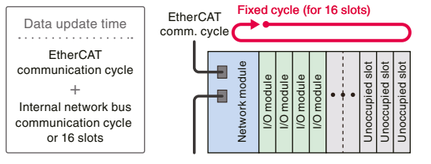
CC-Link IE TSN DeviceNet EtherNet/IP EtherCAT

## R80 Series Realizes High-speed Internal Bus Communication

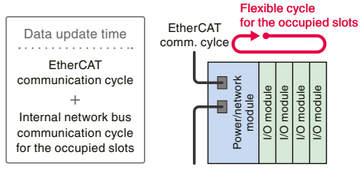



4 analog inputs per module

**Bus communication cycle: backplane base**

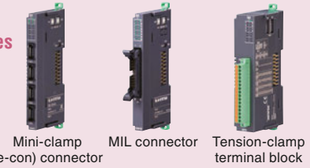



**Bus communication cycle: slice type I/O**




### I/O Connection Types

R80 Series
Tension-clamp terminal block



R8 Series

Mini-clamp (e-con) connector | MIL connector | Tension-clamp terminal block

# Expandable, Compact Remote I/O

## R7 Series

- Palm-top size compact module can handle 4 analog input, 2 analog output or 16 discrete signals.
- 8 or 16 discrete input/output module can be attached to the base module.

CC-Link DeviceNet Modbus Modbus/TCP LONWORKS
MECHATROLINK T-Link FLEX NETWORK HLS Hi-speed Link System

### R7 Series


# Compact Remote I/O for FA Control Equipment

## R7 Series

- Compact, terminal block style, all-in-one modules
- 16-point, 32-point or 64-point DI, DO or I/O-mixed modules; analog I/O types are also available.
- Various I/O terminal styles are selectable.


**CC-Link**

| SERIES | EXTERNAL VIEW | I/O TERMINAL STYLE | I/O VARIATIONS, NUMBER OF CHANNELS | | | |
|---|---|---|---|---|---|---|
| R7F4DC |  | Mini-clamp connector (e-CON) | DI16 | DO16 | DI 8 DO8 | |
| |  | Tension clamp terminal | | | | |
| |  | One-touch connector | | | | |
| R7F4HC |  | FCN connector | DI32 | DO32 | DI 16 DO16 | |

**CC-Link IE Field**

| SERIES | EXTERNAL VIEW | I/O TERMINAL STYLE | I/O VARIATIONS, NUMBER OF CHANNELS | | | |
|---|---|---|---|---|---|---|
| R7I4DCIE |  | M3 screw terminall | | | | AI Load cell input |

## DeviceNet

| SERIES | EXTERNAL VIEW | I/O TERMINAL STYLE | I/O VARIATIONS, NUMBER OF CHANNELS | | | |
|---|---|---|---|---|---|---|
| R7F4DD |  | Tension clamp terminal | DI16 | DO16 | DI 8 DO8 | |
| |  | Mini-clamp connector (e-CON) | | | | |
| R7F4HD |  | MIL connector | DI32 | DO32 | DI 16 DO16 | |

## EtherNet/IP

| SERIES | EXTERNAL VIEW | I/O TERMINAL STYLE | I/O VARIATIONS, NUMBER OF CHANNELS | | | |
|---|---|---|---|---|---|---|
| R7F4HEIP |  | Tension clamp terminal | DI16 | DO16 | DI 8 DO8 | |
| R7G4HEIP |  | M3 screw terminal | DI16 | DO16 | | |

## EtherCAT

| SERIES | EXTERNAL VIEW | I/O TERMINAL STYLE | I/O VARIATIONS, NUMBER OF CHANNELS | | | |
|---|---|---|---|---|---|---|
| R7I4DECT |  | Mini-clamp connector (e-CON) | DI32 | DO32 | DI 16 DO16 | AI AO |

## Modbus

| SERIES | EXTERNAL VIEW | I/O TERMINAL STYLE | I/O VARIATIONS, NUMBER OF CHANNELS | | | |
|---|---|---|---|---|---|---|
| R7K4FM |  | M3 screw terminal | DI32 | | | |
| R7G4FM |  | M3 screw terminal | DI16 | | | |

## Modbus/TCP

| SERIES | EXTERNAL VIEW | I/O TERMINAL STYLE | I/O VARIATIONS, NUMBER OF CHANNELS | | | |
|---|---|---|---|---|---|---|
| R7K4FE |  | M3 screw terminal | | DO16 | | |

## MECHATROLINK-III

| SERIES | EXTERNAL VIEW | I/O TERMINAL STYLE | I/O VARIATIONS, NUMBER OF CHANNELS | | | |
|---|---|---|---|---|---|---|
| R7K4FML3 |  | M3 screw terminal | DI32 | DO32 | DI 16 DO16 | |
| R7K4JML3 |  | Tension clamp terminal | | | DI 32 DO32 | |
| R7G4FML3 |  | M3 screw terminal or Mini-clamp connector (e-CON) | DI16 | DO16 | | |
| R7F4HML3 |  | MIL connector | | | DI 16 DO16 | |
| R7I4DML3 |  | Mini-clamp connector (e-CON) | DI32 | DO32 | DI 16 DO16 | |
| R7G4HML3 |  | M3 screw terminal | | | | AI AO Load cell input and Ai/Ao |
| R7K4GML3 |  | Tension clamp terminal | | | DI 16 DO16 | |

## MECHATROLINK-I, -II

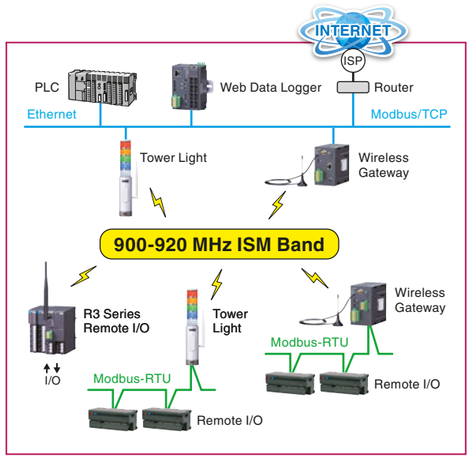
| SERIES | EXTERNAL VIEW | I/O TERMINAL STYLE | I/O VARIATIONS, NUMBER OF CHANNELS | | | |
|---|---|---|---|---|---|---|
| R7K4FML |  | M3 screw terminal | DI32 | DO32 | DI 16 DO16 | |
| R7K4DML |  | Mini-clamp connector (e-CON) | DI32 | | DI 16 DO16 | |
| R7G4HML |  | M3 screw terminal | | | | AI AO |

## HLS

| SERIES | EXTERNAL VIEW | I/O TERMINAL STYLE | I/O VARIATIONS, NUMBER OF CHANNELS | | | |
|---|---|---|---|---|---|---|
| R7F4DH |  | Mini-clamp connector (e-CON), MIL connector, Tension clamp terminal | DI16 | DO16 | DI 8 DO8 or DI 16 DO16 (MIL connector) | |
| R7K4DH |  | Mini-clamp connector (e-CON) | | | DI 16 DO16 | |
| R7G4HH |  | M3 screw terminal | | | | AI AO |

# Wireless I/O System for IoT

- Convenient wireless converters/gateways to collect field sensor data
- Remote monitoring using your mobile terminals via the internet

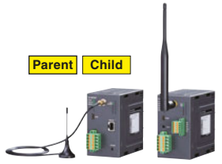



## 900-920 MHz ISM Band Wireless System

- Modbus-RTU transparent
- License-free
- Multi-hop technology relaying signals over long distance

### Wireless Gateway
WL40 Series

USA THAILAND KOREA VIETNAM TAIWAN




### Remote I/O R3 Series Modbus Interface Module
R3-NMW1F


USA

### Tower Light
ITxxSW5F
ITxxSW6F

xx : 40, 50, 60

USA


### WLAN Tower Light
ITxxSW1
ITxxSW2

xx : 40, 50, 60

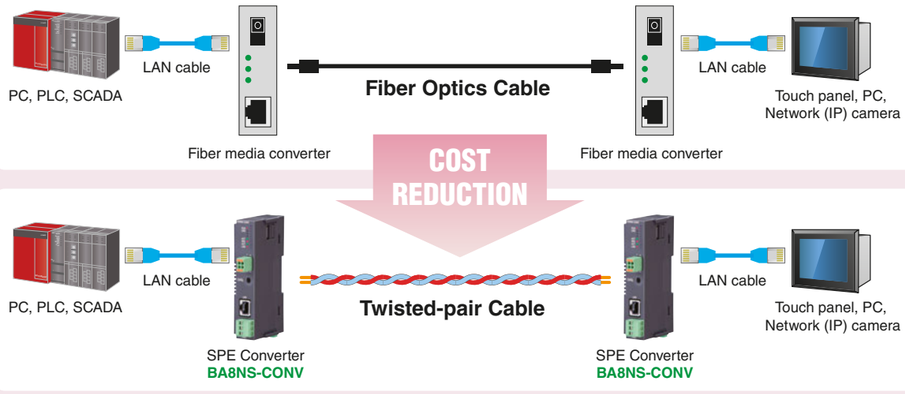
EU CE

Use of wireless products is restricted by national radio regulations of individual countries. Please consult us for the details of certified products.

## BA8NS-CONV Single Pair Ethernet (SPE) Converter
### LAN Cables can be Substituted by Twisted-pair Cables

- Transmitting max. 1000 meters (*1) (0.62 mile) in 10 Mbps data rate
- Existing spare twisted-pair cable may be used.

If you want to transmit Ethernet signals over 100 meters (109 yards), fiber optics cables are usually used.
By using a pair of SPE Converters, expensive fiber optics cables and fiber media converters including installation work costs can be saved.




(*1) Standard defined value. Transmission distance depends upon cable categories and environment.

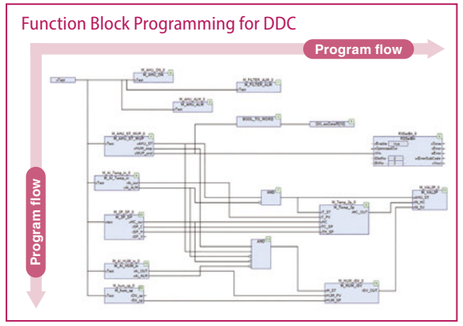
# Components for Building Automation

The central HVAC (Heating, Ventilation and Air Conditioning) control system is an air-conditioning system, in which a heat source system, including boilers, chillers, and conveying pumps concentrated in one place, produces and sends chilled water, hot water, or steam to the heat exchangers, e.g. air handling units (AHUs) and fan coil units (FCUs) on each floor, thus performing the cooling or heating of the entire building.

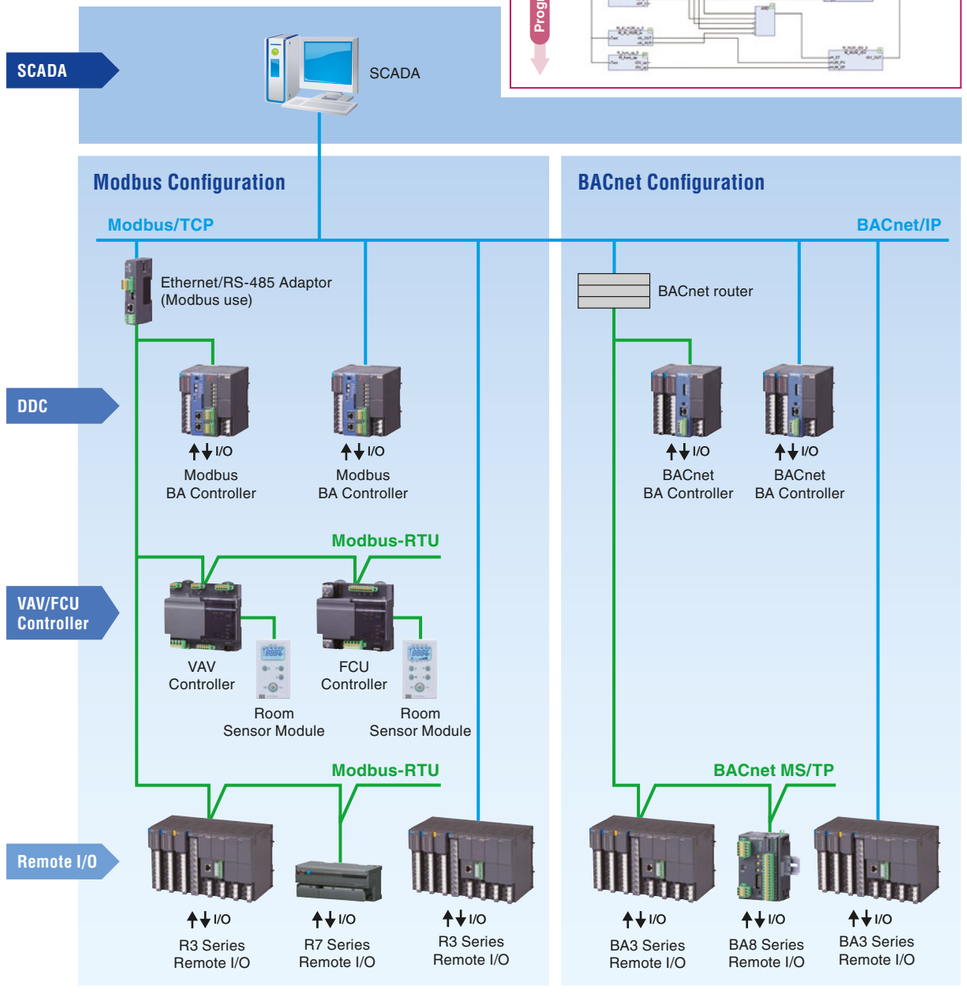
We developed Direct Digital Controller (DDC) and remote I/O modules specialized for building automation.

**Some products are only available in Japanese market. Please consult us for further information.**

### Function Block Programming for DDC

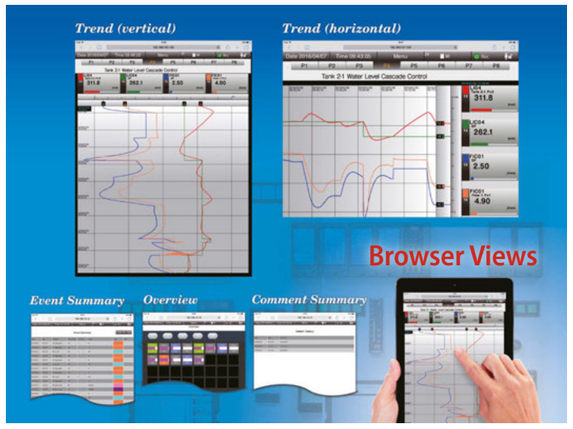



## Open Network for Air-Conditioning Control System



## TR30-G Tablet Recorder
## Web-enabled DAQ System

- Compact package
- No need of dedicated application software other than a web browser
- Flexible built-in I/O modules plus extended Modbus slave I/O
- Large main memory plus auxiliary SD card
- Regular and event e-mailing
- FTP server and client
- Modbus/TCP master and slave
- SNTP client
- User's original browser view


Model TR30-G is a web-based data acquisition system enabling users to view and access stored data via an internet browser. Freed from a dedicated display screen, accessibility and portability of the data is greatly enhanced.

The maximum usable I/O points are:

- 64 analog inputs (16-bit data)
- 64 discrete inputs
- 64 discrete outputs
- 32 pulse inputs (32-bit data)
- 32 function inputs

At the maximum of 120 channels can be plotted on the charts and stored at the storing cycle of 1 minute.

The fastest storing cycle is 5 milliseconds for 16 channels, 100 milliseconds for 32 channels.

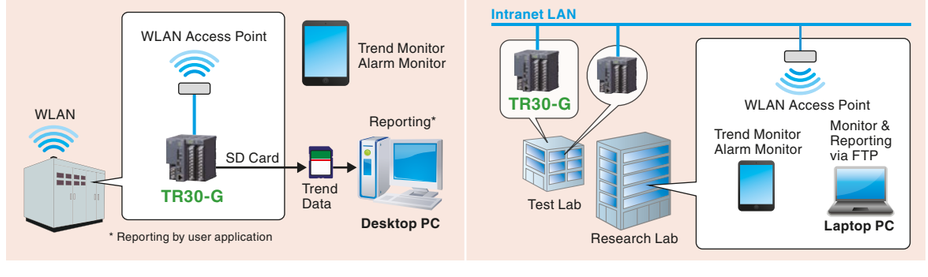
### Freedom from dedicated display screen — Enhanced data accessibility and portability

#### PLANT FIELD MAINTENANCE

Operators can bring in tablets and smart phones to access trend data while freely walking around the site. Data can be transferred to PC via FTP or via SD card.

#### TEST AND RESEARCH

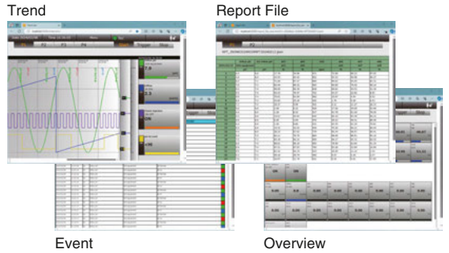
Researchers can access data logged at a test lab in a remote building while working in their own office.




## PC Recorder

### Paperless Recorder that is as Easy to Use as a Digital Multimeter

- USB Type-C bus powered: no external power supply needed
- Event-triggered recording
- Enhanced screens on a web browser: Trend View plus Overview, Event View and Report File Display





## 73VR Series Paperless Recorder

- Touch panel operated 5.5 inch TFT color LCD display
- 144 mm square DIN standard panel size
- Data can be transferred in real time to the host PC via Ethernet, viewed and stored on the MSR128 PC Recorder program.

IP65

| FUNCTION | MODEL | CE | MAX. INPUT | FEATURES |
|---|---|---|---|---|
| Remote I/O acquisition | 73VR1100 | CE | 128 points | Installation flexibility, fitting in the tight space of a control panel or machinery chassis |
| Built-in universal input | 73VR2100 | CE | 12 points | Universal input: independent input type and range selectable per channel |
| Selectable I/O modules | 73VR3100 | --- | 64 points | Compatible with various open networks to communicate with major PLC |

## Compact Paperless Recorder

### 71VR1 Series

- 1/4 DIN size (96 x 96 mm) panel mount compact recorder
- 3.5 inch TFT color LCD display
- Direct field inputs at the built-in terminals and optional remote inputs via Modbus RTU

CE IP65

| FUNCTION | MODEL | BUILT-IN Ai | REMOTE Ai | Di / Do |
|---|---|---|---|---|
| Remote I/O | 71VR1-E001 | --- | Ai x 8 | Di x 2<br>Do x 2<br>(built-in)<br>Di x 6<br>Do x 6<br>(remote) |
| DC input | 71VR1-E101 | DC x 2 | Ai x 6 | |
| Universal input | 71VR1-E501 | Universal x 3<br>DC x 2 | Ai x 3 | |

## Ultra-compact Paperless Recorder

### VR4896E-G2


CE IP55

- 1/8 DIN size (48 x 96 mm) panel mount ultra-compact recorder
- 100 milliseconds sampling intervals
- 2 x DC voltage inputs; 1 x Di for trigger input, 1 x Do for alarm output

## SC100/SC200 Series Multi-Function PID Controller

- Two loops of PID control
- 2 x universal inputs, 4 x analog inputs, 5 x contact or pulse inputs, 1 x high speed pulse input
- DCS in instrument format: 2 PID blocks, 48 computation blocks and 12 sequential control blocks; Expansion model with doubled computation blocks are also available.
- Auto tuning function
- Ideal for replacing existing instruments
- High reliability for demanding process use — Built-in manual loader with enhanced security features
- Host communication via Modbus Ethernet TCP/IP or RS-485 RTU
- Peer-to-peer communication via NestBus to expand number of I/Os

CE
IP55

| FUNCTION | MODEL |
|---|---|
| Basic version | SC100 |
| Modbus/Nestbus extension | SC200<br>SC200W |
| Basic version with manual loader | SC110 |
| Modbus/Nestbus extension with manual loader | SC210<br>SC210W |
| Pulse width output | SC200D |

## Highly Visible Color Graphic LCD Intuitive Touch Panel Operation

### OPERATION VIEWS

### ENGINEERING VIEWS

## TC10 Series Temperature Controller

- Universal input configurable to T/C, RTD, DC current or voltage independently
- Discrete input for remote trigger (TC10NM, TC10EM)
- Clamp-on current sensor input to detect wire breakdown or overload
- Modbus-RTU slave

**TC10CM**
• 1/16 DIN size
• One PID loop
CE IP66

**TC10NM**
• 1/8 DIN size
• One PID loop
CE IP65

**TC10EM**
• 1/4 DIN size
• Two PID loops
CE IP65

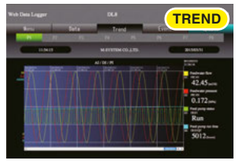
## DL8 Series Web Enabled Remote Terminal Unit

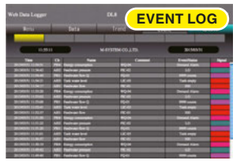
### Use Internet and Your Smartphone to Build Up Remote Monitoring System

- Simple remote monitoring via the internet without needing to build up a complex PC based system
- Pre-installed user-friendly browser views for remote data access through smartphones or tablets
- Event and regular reporting by e-mails
- Local data stored in an SD card memory
- Various network protocols are usable: TCP/IP, HTTP/HTTPS server, FTP/FTPS client and server, SMTP client, Modbus/TCP master and slave.
- R8 Series remote I/O modules available to accept a wide variety of field signals

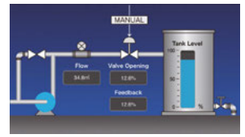
CE

### Web Browser Views Designed for Mobiles

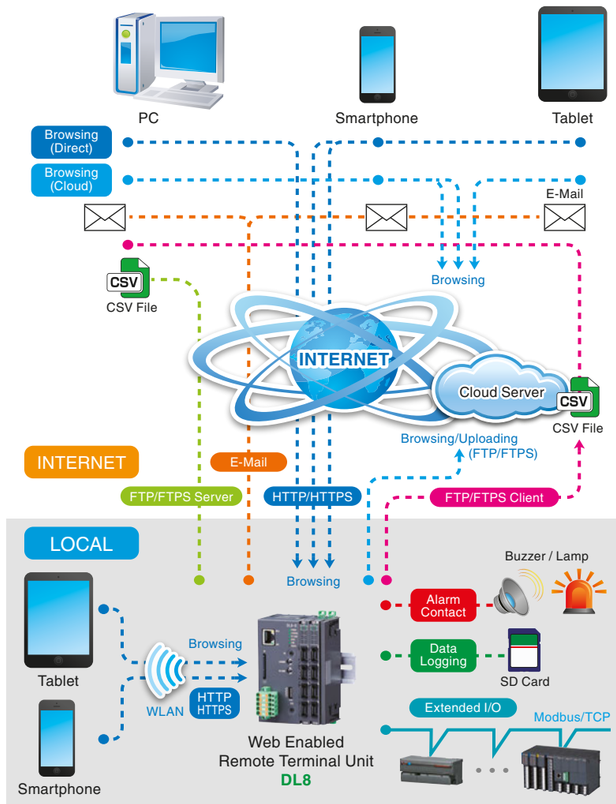


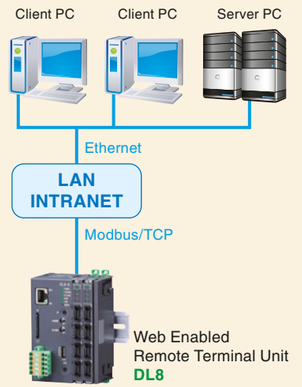




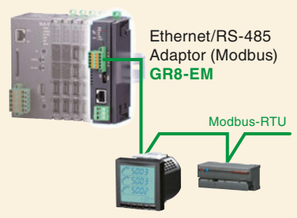

### Enhanced Functions with Flexible Configurations




### LAN / INTRANET SYSTEM CONFIGURATION




### MODBUS-RTU EXTENSION VIA GATEWAY MODULE

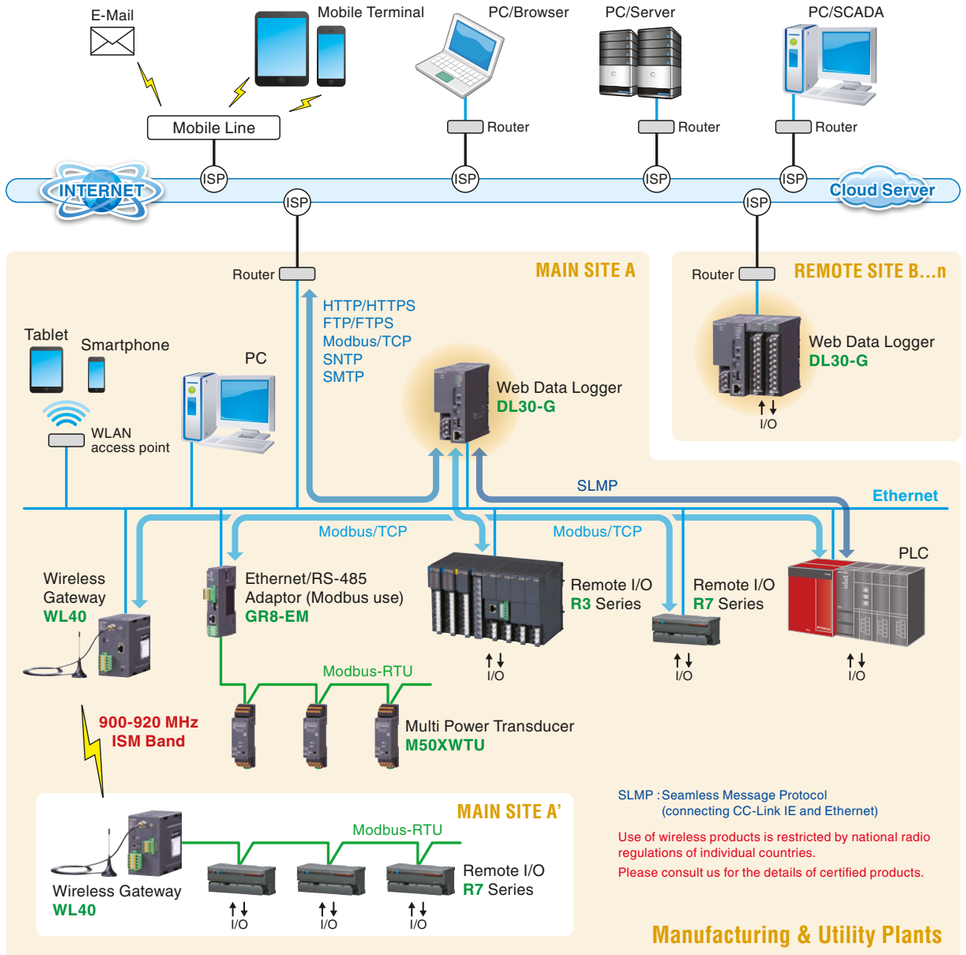


# DL30-G Web Data Logger

## Edge Computing Remote Terminal Unit for IoT Era

- Max. 128-point data logging in CSV format
- Large main memory capable of storing data for over 10 years; plus auxiliary SD card memory
- Event and regular reporting by e-mails
- Pre-installed user-friendly browser views for remote data access through smartphones or tablets
- Various network protocols are usable: TCP/IP, HTTP/HTTPS server, FTP/FTPS client and server, Modbus/TCP master and slave, SMTP client, SNTP client, SLMP master.
- Analog/digital function registers available for arithmetic processing of I/O measurement values
- R30 Series remote I/O modules available to accept a wide variety of field signals

## Communication Control for Logging, Monitoring and Reporting




## Extensive Functions with Convenient Web Browser Views: No Application Software is Required

### Main Memory Capable of Storing Data for Over 10 Years

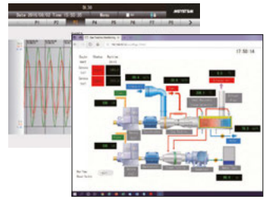
The DL30-G can save at the maximum of 128 points of analog/discrete signal data and events in its large main memory. Files are regularly copied to the SD card as backup.
Various arithmetic functions can be applied to I/O measurement values and the results are saved locally.
Data can be uploaded to a host device via FTP (or FTPS).


### Web Server for Remote Monitoring

The DL30-G has a web server function equipped with various standard monitoring windows:

- Trend graph
- Data display
- Event log
- Spreadsheet report
- Download

Graphic windows can be created by describing HTML and JavaScript.



### Event/Regular E-mail Attached with Report Files

Events such as data abnormalities or machine status (Run-Stop) can be notified by e-mails.
Regular data reporting is also possible.
Notification calendar can be customized to suppress mailing on holidays.
Preformatted spreadsheet report files can be attached to mails.

### Extensive Communication Control

The DL30-G supports various network protocols including those as master/server station, enabling users to build a local stand-alone data logging and basic edge computing system without needing a host PC.

- HTTP/HTTPS server
- FTP/FTPS client and server
- Modbus/TCP master and slave
- SMTP client
- SNTP client (automatic time adjustment)
- SLMP master

# RGP30 Remote Graphic Panel

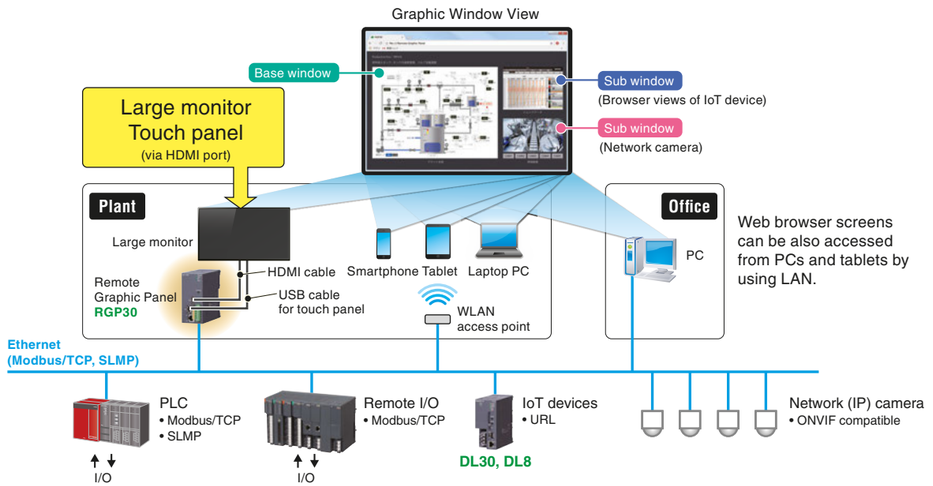
## Easy Visualization of Manufacturing Plant Operations

The RGP30 is “a graphic panel without dedicated display” which enables users to freely choose a display device suitable for their applications.

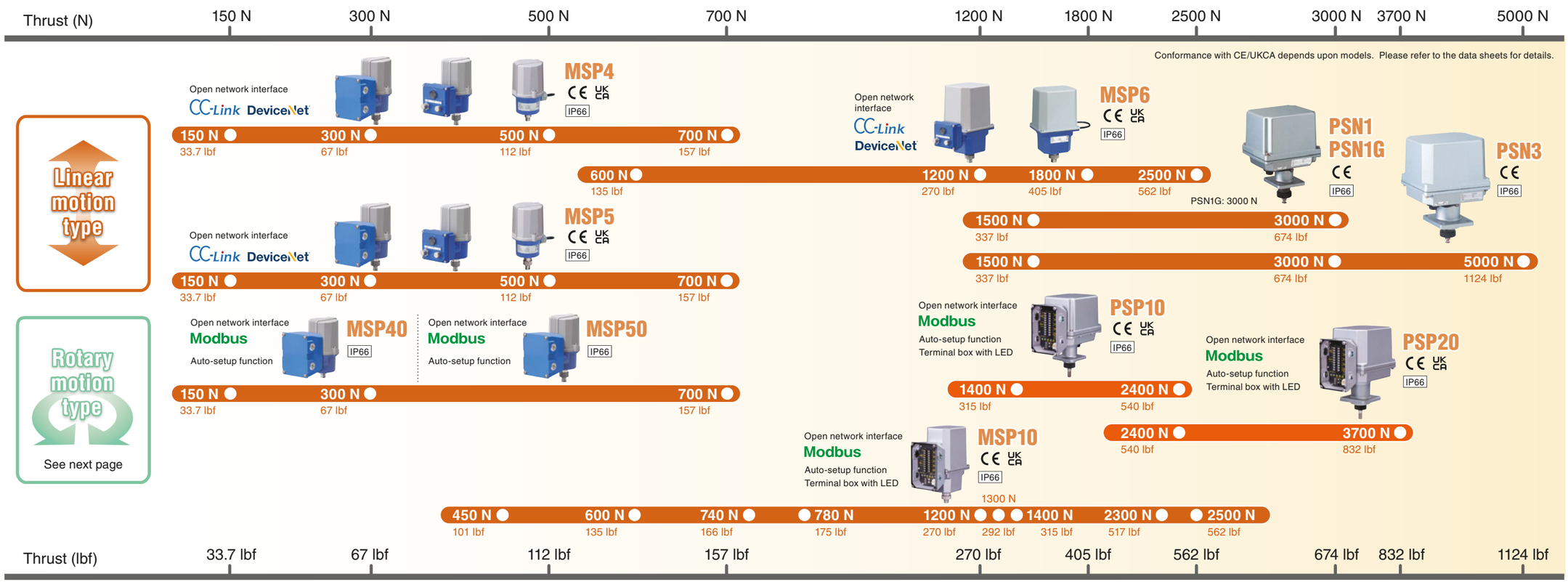
It generates web browser screens showing various kind of data imported from PLCs, remote I/Os, IoT devices and CCTV cameras.

The dedicated graphic designing tool, RGP-Designer, is used to build display panel designs with multiple inline windows and original graphics using graphical parts from the component library.

## Commercially Available Large Displays with Cost Performance Can be Connected through HDMI Port



## Linear and Rotary Motion Electric Actuators for Valves and Machinery






## MSP10 / PSP10 / PSP20 Linear Motion Electric Actuator

- Stepping motor drive
- High-speed operation control with 1/1000 resolution
- Auto-setup function makes the initial adjustment work simple and quick.
- 4-20 mA output plus Modbus-RTU communication for control and maintenance
- Thrust buffering by built-in coil spring at both ends of stroke
- Terminal box with transparent cover equipped with operating status indicator LEDs
- Operator access to the terminal box only

CE UK CA IP66

MSP10

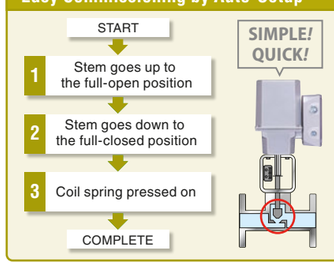
**Thrust, Stroke and Travel Time (examples)** Travel time is field-programmable.

| MSP10 | | | | | | | |
|---|---|---|---|---|---|---|---|
| STROKE | THRUST | | | | | | |
| | 450 N | 600 N | 740 N | 780 N | 1200 N | 1400 N | 2500 N |
| 10 mm (0.39”) | 2 s | 2.5 s | 3.3 s | 4.2 s | 4 s | 6 s | 7.4 s |
| 20 mm (0.79”) | 3.2 s | 4 s | 5.7 s | 7.4 s | 7 s | 8.4 s | 13.5 s |
| 40 mm (1.57”) | 5.2 s | 7 s | 10.4 s | 13.9 s | 13 s | 16.5 s | 25.5 s |

| PSP10 | | |
|---|---|---|
| STROKE | THRUST | |
| | 1400 N | 2400 N |
| 20 mm (0.79”) | 5.6 s | 5.6 s |
| 40 mm (1.57”) | 8.4 s | 8.4 s |

| PSP20 | | |
|---|---|---|
| STROKE | THRUST | |
| | 2400 N | 3700 N |
| 40 mm (1.57”) | 14 s | 14 s |
| 60 mm (2.36”) | 19 s | 19 s |

**Easy Commissioning by Auto-Setup**




## MSP Series

- Max. rated thrust: 2500 N (562 lbf)
- Max. stroke: 40 mm (1.57 in)

CE UK CA IP66

MSP5

- Compact size
- High resolution positioning for superior control
- Built-in feedback positioner and electric limiter
- Brushless stepping motor assures long life operation.
- Optional network interface with CC-Link, DeviceNet and Modbus

## PSN Series

- Max. rated thrust: 5000 N (1124 lbf)
- Max. stroke: 60 mm (2.36 in)

CE IP66

PSN1

- Brushless angle sensor eliminates problems with mechanical potentiometer feedback sensing
- Opening/closing speed, split range and failsafe position programmable by hand-held programmer
- Internal temperature sensor to control heater in cold climate and to prevent motor from overheating
- Forced-open/-closed contacts for remote or manual override

# Linear and Rotary Motion Electric Actuators for Valves and Machinery

Torque (N·m): 5 N·m | 10 N·m | 16 N·m | 24 N·m | 33 N·m | 70 N·m | 100 N·m | 200 N·m | 600 N·m

Torque (lbf·ft): 3.69 lbf·ft | 7.38 lbf·ft | 11.8 lbf·ft | 17.7 lbf·ft | 24.3 lbf·ft | 51.6 lbf·ft | 73.8 lbf·ft | 148 lbf·ft | 443 lbf·ft

Conformance with CE/UKCA depends upon models. Please refer to the data sheets for details.

**Rotary motion type**

**Linear motion type**

See previous page

## MRP4

IP66 CE UKCA

Open network interface

CC-Link DeviceNet

5 N·m
3.69 lbf·ft

## MRP5

IP66 CE UKCA

Open network interface

CC-Link DeviceNet

10 N·m
7.38 lbf·ft

## MRP6

IP66 CE UKCA

Open network interface

CC-Link DeviceNet

10 N·m (7.38 lbf·ft) | 16 N·m (11.8 lbf·ft) | 24 N·m (17.7 lbf·ft) | 33 N·m (24.3 lbf·ft)

## MRP10

IP66 CE UKCA

Open network interface

Modbus

Terminal box with LED

6 N·m (4.43 lbf·ft) | 16 N·m (11.8 lbf·ft) | 35 N·m (25.8 lbf·ft) | 50 N·m (36.9 lbf·ft)

## EAR70

Reversible AC motor type

IP66 CE

70 N·m
51.6 lbf·ft

## PRP-0

IP66 CE

100 N·m
73.8 lbf·ft

## PRP-1

IP66 CE

200 N·m
148 lbf·ft

## PRP-2

IP66 CE

600 N·m
443 lbf·ft

## MRP10 Rotary Motion Electric Actuator

- Max. rated torque: 50 N·m (36.9 lbf·ft)
- Max. turn: 90°

**Torque and Travel Time (examples)**

Travel time is field-programmable.

| MRP10 | |
|---|---|
| TORQUE | TRAVEL TIME 90° |
| 6 N·m (4.43 lbf·ft) | 2.5 s |
| 16 N·m (11.8 lbf·ft) | 3.5 s |
| 35 N·m (25.8 lbf·ft) | 7.5 s |
| 50 N·m (36.9 lbf·ft) | 9.5 s |

CE UKCA IP66

MRP10

- Stepping motor drive
- High-speed operation control with 1/1000 resolution
- 4-20 mA output plus Modbus-RTU communication for control and maintenance
- Terminal box with transparent cover equipped with operating status indicator LEDs
- Operator access to the terminal box only

## MRP Series

- Max. rated torque: 33 N·m (24·3 lbf·ft)
- Max. turn: 90°

CE UKCA IP66

MRP4

- Compact size
- High resolution positioning for superior control
- Brushless stepping motor assures long life operation.
- Optional network interface with CC-Link, DeviceNet and Modbus

## PRP-0 / PRP-1

### 1/1000 Resolution, Quarter Turn in 8.5 Sec.

- Max. rated torque: 200 N·m (148 lbf·ft)
- Max. turn: 90°

APPROVED TYPE APPR SCHEME

Lloyd's Register approved type available (ENV3)

CE IP66

PRP-0

## PRP-2

### Max. 600 N·m, Compact Size

- Max. rated torque: 600 N·m (443 lbf·ft)
- Max. turn: 90°

CE IP66

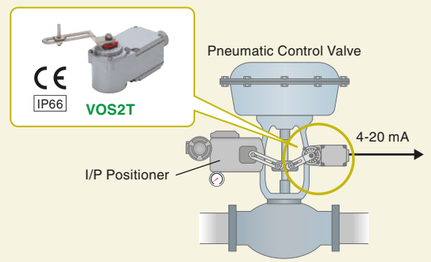
PRP-2

## Two-wire Position Transmitters

### VOS2T / VOS2T-R

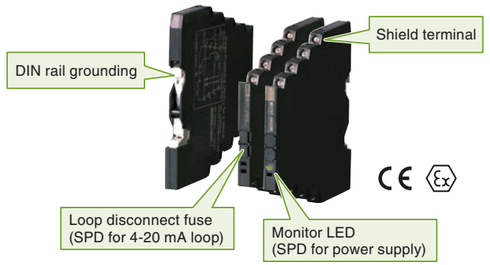
- Detecting mechanical position of pneumatic and electric actuators to send a proportional 4-20 mA signal
- Linear motion type (±22.5°) or rotary motion type (±45°)
- Brushless design for long lasting reliability
- Lightweight & compact

**Remote Monitoring of Pneumatic Control Valve Position**

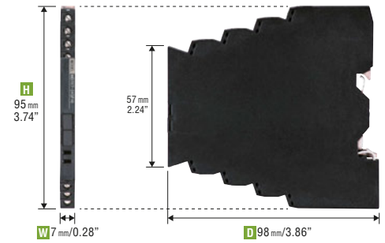


## MD7 Series Ultra-slim Lightning Surge Protectors

- High density mounting with 7 mm (0.28 in) wide modules
- Excellent protection by multi-stage SPD
- Max. discharge current 20 kA (8/20 μsec)
- Independent shield terminal (3 for signal, 1 for shield)
- Floating mode for the shield selectable to avoid ground loops
- Optional loop disconnect fuse for 4-20 mA signal line to separate the MD7 failed in shortcircuit mode, to protect other devices
- DIN rail mounting / grounding
- Conforms to IEC 61643-21, Categories C1, C2, D1




### MD7 Series




## MDP Series

Plug-in Base Mounted

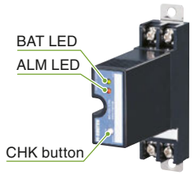
- Light-weight, easy-to-handle, plug-in construction
- Excellent protection by multi-stage SPD
- Head element can be removed and tested without disconnecting wires.
- Base socket connects input/output signals when the head element is removed.
- Wall or DIN rail mounting (with adapter A-33)

## Battery Powered Health Testing

MD7AST / MDPA-24

- Protects 4-20 mA & pulse signals
- Battery powered life monitoring function
- 'Check' button with indicators alerting panel inspectors of the surge protector's health

MD7AST



MDPA-24

**Life indicator LEDs show surge protector's life status.**

| BAT | ALM | Battery | Discharge element | Voltage limiter | Replacement |
|---|---|---|---|---|---|
| ☼ | ● | Normal | | | No need |
| ☼ | ☼ | Normal | Near end | Normal | Near |
| ● | ☼ | Normal | End of life | Degraded* | Immediately required |
| ● | ● | Discharged | Unable to judge | | |

☼ON ● OFF *With pulsating line signal or that containing ripples, the LED may flicker or blink when the voltage limiter is degraded.

## MD7 / MDP Series Selection Guide


| APPLICATION | MD7 SERIES | MDP SERIES |
|---|---|---|
| 4-20 mA loop, pulse signal, 24 V | MD7ST-24 | MDP-24-1 |
| 4-20 mA loop, life monitor | MD7AST | MDPA-24 |
| 2-wire transmitter loop, 1- or 2-channels | MD72W MD72WD | --- |
| 3-wire transmitter loop | MD72W | --- |
| Thermocouple transmitter | MD7TC | MDP-TC |
| RTD transmitter | MD7RB | MDP-RB |
| Potentiometer & transmitter | MD7PM | MDP-PM |
| Strain gauge & transmitter | MD7LC | MDP-LC |
| Self-synch & transmitter | MD7JS | MDP-JS |
| Pulse sensor & transmitter | MD7PL | MDP-SP |
| DC power supply, 12/24 Vdc | MD7DP | MDP-D |
| AC power supply | MD7AP-100 MD7AP-200 | MDP-100 MDP-200 |
| RS-422 / RS-485 | MD74R | MDP-4R |
| PROFIBUS-PA | MD7PA | MDP-PA |
| FOUNDATION Fieldbus | MD7FB | MDP-PA |
| LONWORKS (FTT-10A) | MD7LWA | MDP-LWA |

## Field Transmitter Cable Conduit Mount

MD6N-24 / MD6T-24 / MD6P-24

- Protects 4-20 mA & pulse signals
- Directly mountable to the cable conduit of 2-wire transmitters and other field devices in an outdoor enclosure


CE Ex FM APPROVED IP66

## SPE Use (Single Pair Ethernet)

MDCAT-SPE / MDCAT-SPE-A

- Conforms with PoDL
- Shield wire can be floating or grounding by a shortcircuit bar.


MDCAT-SPE-A
Life Monitor

## CC-Link / CC-Link IE Field Use

MDW5-CC / MDCAT-NC

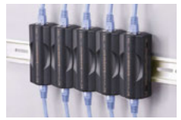
- Approved and recommended by CLPA


MDW5-CC


MDCAT-NC

## PoE Plus / 1000BASE-T Ethernet Use

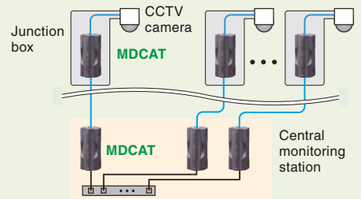
MDCAT / MDCAT-A



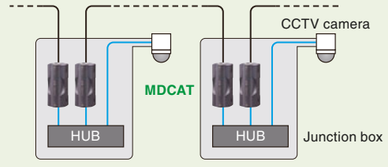
- Power-over-Ethernet compatible
- 1000BASE-T / 100BASE-TX / 10BASE-T
- Ideal to protect network devices powered over Ethernet such as webcams
- LAN cable shield wire can be floating or grounding by a shortcircuit bar.
- Conforms to IEC 61643-21, Categories C1, C2


MDCAT-A
Life Monitor

**Star Connection**




**Cascade Connection**




## Life Monitor & Surge Counter

MAA-100 / MAA-200 / MAAC-100 / MAAC-200

- Protects AC power supply lines
- Life monitor function
- Alarm contact output to alert externally the surge protector's health


MAAC

## One-port SPD for Power Supply

MAKF / MAT2 / MAT3

- Thermal breaker ensures degraded heat element to be automatically separated from the power lines to prevent overheating.
- MAT2 / MAT3 applicable to three-phase power lines in single module


MAKF


MAT2


MAT3

## Strain Gauge Load Cells

### One-Stop Solution Combining Load Cells and Interface Equipment

#### Compression Type

**LCC Series**


- 2.5 N through 500 kN
- Suitable for a variety of weight testing and measuring applications
- Application example: Forming press pressure measurement
- Customization available with 300 kN and 500 kN types


#### Tension and Compression Type

**LCCT Series**


- 1 N through 10 kN
- Female and male threaded types
- High accuracy type
- Application example: Materials testing machine

#### Beam Type

**LCB Series**


- 10 N through 100 N
- Ultra compact size
- Typically, a set of three to four beams is used for a weighing system.

#### Tension Type

**LCT Series**


- 20 kN through 200 kN
- Most suitable for traction and rope tension measurement

### Broad Range of Analog and Digital Interface Equipment

**Signal Conditioners & Limit Alarms** — Page 5-11

**Controllers & Indicators** — Page 16-18

**Remote I/O** — Page 20-21, 23-25

**Lightning Surge Protectors** — Page 38-39

### Clamp-on Current Sensors

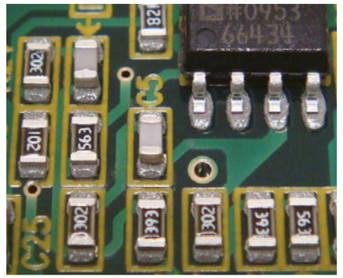
**CLS Series**

- No need of cutting power line cables
- Over-voltage clamp element for safety in open circuit
- Up to 2000 A measurement
- 1 A output types available





## About Us



# Customer First

## Service Policies

All products and services are provided outside Japan through our authorized distributors.

We are trying to enhance the customer satisfaction with the following five 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 each specific product, consult us.

### 5. Factory Setting Service with no extra charge

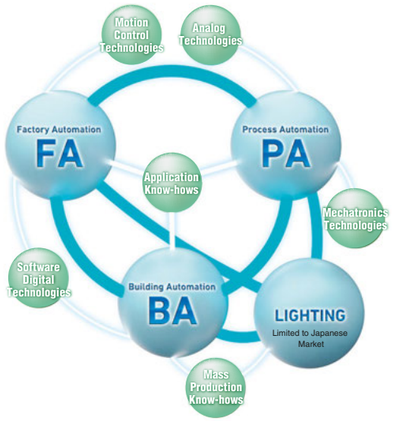
Configuration setting for programmable products is free of charge upon the customer's request for once when ordering, except for those requiring special engineering (e.g. multi-function PID controllers).

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

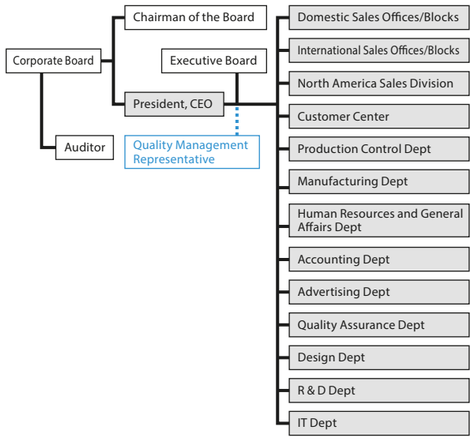
Four-wire Signal Conditioners
Two-wire Signal Conditioners
Power Monitoring Components
Indicators & Tower Lights
Remote I/O
Paperless Recorders & PC Recorder
Process & Temperature Controllers
IoT Components
Final Control Components
Lightning Surge Protectors
Sensors

About Us

# Corporate Profile




## ORGANIZATION




## COMPANY DATA

| | |
|---|---|
| Company Name | MG Co., Ltd. |
| Established | April 1972 |
| Headquarters | Osaka, Japan |
| President and CEO | Saburo Miyamichi |
| Company mission | Development, manufacturing and sales of signal conditioners & alarm trips, panel/field indicators, energy measurement & management devices, surge protectors, remote I/O, PID controllers, paperless recorders, electric actuators, and sensors |
| Annual turnover | JPY 10.840 billion (September 2024) |
| Employees | 283 |
| Domestic locations | Osaka (Headquarters, Customer Center), Osaka Research Center & Factory, Kyoto Techno Center, Kyoto Research Center & Factory, Kanto Branch Office, Chubu Branch Office, Kansai Branch Office, Sendai Sales Office, Kyushu Sales Office, Kanazawa Office |
| Overseas locations | Local companies in Shanghai (China), Guangzhou (China), Seoul (Korea) |

## HISTORY

| | |
|---|---|
| 2024 | P Strain gauge load cells<br>P Terminal block signal conditioners with OEL display M50E-UNIT<br>P USB bus powered PC Recorder<br>Company name changed to MG Co., Ltd.<br>Corporate headquarters/Customer Center moves to Chuo-ku, Osaka. |
| 2023 | P Terminal block signal conditioners M50X-UNIT<br>P Electric actuators with open network |
| 2022 | P Multi power transducer M5XWTU |
| 2021 | P Weighing indicator W100 Series |
| 2019 | P Slice type, scalable remote I/O R80 Series<br>P Base-free interconnecting ultra-slim signal conditioners M60S Series |
| 2018 | Guangzhou Office opens in Guangzhou, China. |
| 2017 | P Compact plug-in signal conditioners with OEL display M1E Series |
| 2016 | P Compact signal conditioners with OEL display M2E Series<br>P Web data logger DL30 Series |
| 2015 | P Ultra-slim digital panel meter 47NL Series |
| 2014 | P Web-enabled DAQ system Tablet Recorder TR30-G<br>P Compact, mixed signal remote I/O R30 Series |
| 2013 | P Web data logger DL8 Series<br>Kyoto Research Center & Factory opens in Kizugawa, Kyoto. |
| 2012 | P Tower light Series |
| 2011 | MG Korea Co., Ltd. founded in Seoul, Korea.<br>M-System China Co., Ltd. (currently MG China Co., Ltd.) founded in Shanghai, China. |
| 2010 | P Multi-function PID controller SC Series |
| 2008 | P Ultra-slim signal conditioners M6 Series<br>Kyoto Techno Center opens in Kizugawa, Kyoto. |
| 2007 | P Multi power monitor 53U<br>P Paperless recorder 73VR Series<br>Company enters the building automation market. |
| 2006 | P Compact remote I/O R7 Series<br>P Ultra-slim surge protectors MD7 Series |
| 2005 | Company certified with ISO 14001<br>Representative office opens in Shanghai, China. |
| 2004 | P Hot-swappable remote I/O R3 Series<br>Liaison office opens in Shanghai, China.<br>Company succeeded by new CEO Saburo Miyamichi, and Founder Shigeru Miyamichi appointed as Chairman. |
| 2003 | P 'One-Step Cal' programmable transmitters M3 Series |
| 2002 | P Terminal block signal conditioners M5-UNIT Series<br>P HART universal transmitter B6U-B with ATEX/FM approval |
| 2000 | P PC Recorder |
| 1997 | Company certified with ISO 9001 |
| 1995 | P Compact signal conditioners M2 Series |
| 1993 | P MsysNet Integrated Instrumentation System with super-distributed control concept |
| 1991 | Corporate headquarters/factory moves to Nishinari-ku, Osaka. |
| 1988 | P Programmable signal conditioners JX Series<br>P Signal splitters W-UNIT Series |
| 1986 | P Multiplex transmission system DATA-M Series |
| 1985 | P Electric actuators<br>Factory opens in Sumiyoshi-ku, Osaka. |
| 1973 | P Lightning surge protectors<br>P Unique plug-in signal conditioners M-UNIT Series |
| 1972 | M-System Co., Ltd. founded in Osaka, Japan by Shigeru Miyamichi |

P New products



Four-wire Signal Conditioners
Two-wire Signal Conditioners
Power Monitoring Components
Indicators & Tower Lights
Remote I/O
Paperless Recorders & PC Recorder
Process & Temperature Controllers
IoT Components
Final Control Components
Lightning Surge Protectors
Sensors
About Us

# Locations

## JAPAN

### Osaka Research Center & Factory

- Major manufacturing location since 1991
- Research, development and design center




### Kyoto Techno Center

**Type testing and evaluation facilities**

- VCCI (Japan) registered anechoic chamber
- 6 m² shielded room capable of conducting multiple tests at once

### Kyoto Research Center & Factory

- Second manufacturing location inspired by BCP revised after the Great East Japan Earthquake in 2011
- Showcase plant utilizing our BA controllers

### VEMS CO., LTD.

**Group company for EMS**

## GLOBAL SALES NETWORK