



I/O SOLUTION PRODUCTS 2016-2017

- 1 Signal Conditioners
- 2 Limit Alarms
- 3 Indicators
- 4 Tower Lights
- 5 Power Transducers
- 6 Remote I/O
- 7 Multiplex Transmission System
- 8 Recorders
- 9 Web Data Loggers
- 10 PID Control Components
- 11 Temperature Controllers
- 12 Electric Actuators
- 13 Lightning Surge Protectors

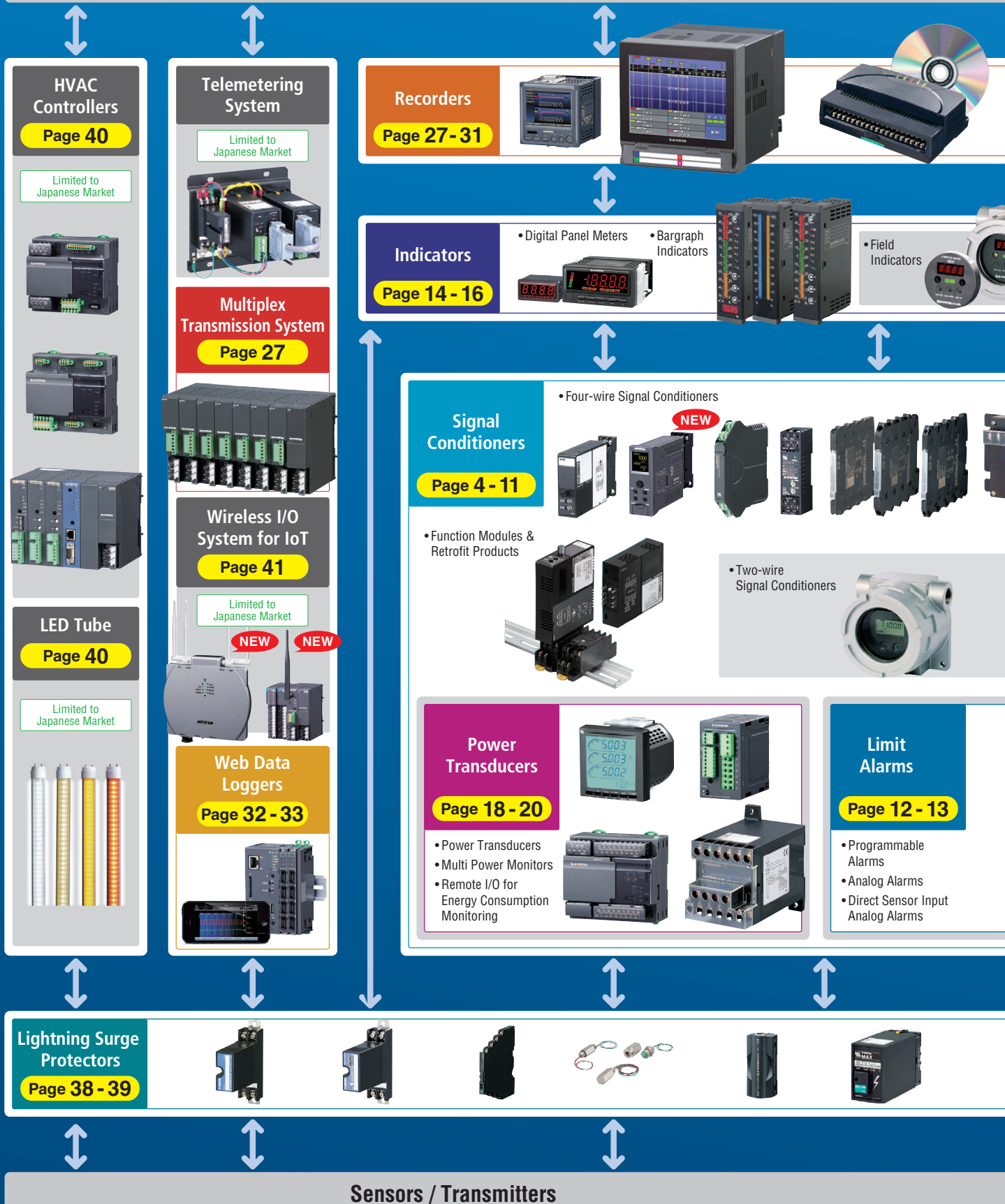


Visit
M-System
website!

M-SYSTEM

CATEGORY INDEX

PC / DCS / PLC



M-System does not provide mobile terminals (smart phones, tablets) or mobile network operator services.

SCADA Software



Limited to Japanese Market



Tower Lights

Page 17




PID Control Components

Page 34-35



Temperature Controllers

Page 35




Manual Loading Stations

Page 11



Electric Actuators

Page 36-37



Pneumatic Transducers

Page 10




Valve Positioners

Page 11



Position Sensors

Page 11






Remote I/O

Page 21 - 26

- Mixed Signal Remote I/O
- All-in-One Style Remote I/O
- Compact Remote I/O for FA Control Equipment

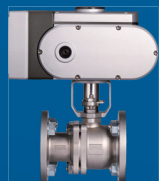





CC-Link EtherNet/IP DeviceNet
 MECHATROLINK EtherCAT
 FLEX NETWORK Modbus/TCP
 HLS Highspeed System Modbus
 TLink FL-net LONWORKS



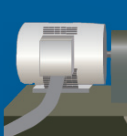
Electric Control Valves



Pneumatic Control Valves



Motors



Final Control Elements



SIGNAL CONDITIONERS



Signal Conditioners

4-wire Signal Conditioners

2-wire Signal Conditioners

Function Modules & Retrofit Products

Limit Alarms

Indicators

Tower Lights

Power Transducers

Remote I/O

Multiplex Transmission System

Recorders

Web Data Loggers

PID Control Components

Temperature Controllers

Electric Actuators

Lightning Surge Protectors

Focused New Products for Japan

Signal Conditioners Selection Guide 1

Signal Conditioners Selection Guide 2

M-System Company

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**

M-System signal conditioners are available with wide combinations of process signal I/O, power input and mounting configuration. Additionally, M-System offers 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)

ISOLATOR APPLICATIONS 1

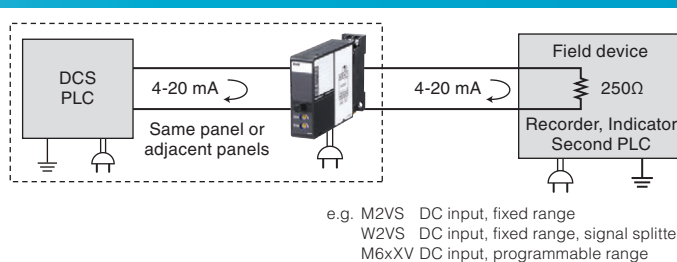
Isolator is installed between a transmitter (i.e. sensor) and a receiver to galvanically isolate DC signals.

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.

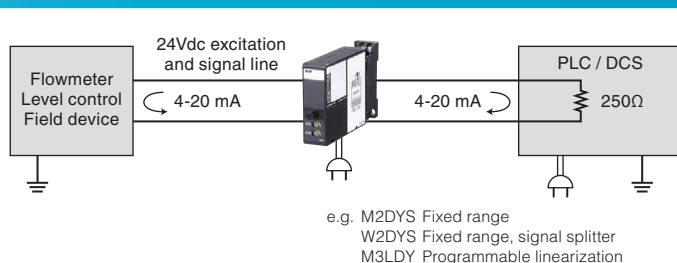
Four-wire isolator : 4-20 mA (passive) input / 4-20 mA output / Line powered



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

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



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

4-wire Signal Conditioners

M2/W2 Series

Compact Plug-in Socket Mounted Signal Conditioners

- Wide selection of input/output ranges and functions
- W2 Series provide a second isolated output of independent range
- DIN rail or surface mounting
- 2000 Vac isolation
- Base socket included with the modules



M2E Series NEW

Compact Signal Conditioners with OEL Display

- Bright, high-contrast OEL (Organic Electroluminescent) display
- Programming parameters and selections are shown in text scrolling on the display: intuitive, easy programming just like operating a cell phone
- Field selectable I/O range
- PC configuration is also available



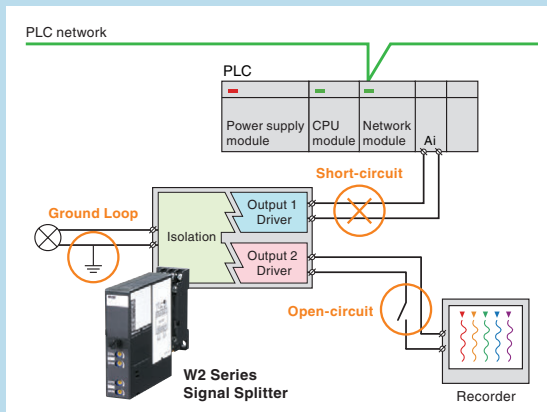
M5/W5 Series

Terminal Block Type Compact Signal Conditioners

- Only 41 mm (1.61 in) deep, terminal block style modules can be installed anywhere, even behind the panel cover.
- W5 Series provide a second isolated output of independent range
- DIN rail mounting
- 2000 Vac isolation



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.

Signal Conditioners
4-wire Signal Conditioners
2-wire Signal Conditioners
Function Modules & Retrofit Products
Limit Alarms
Indicators
Tower Lights
Power Transducers
Remote I/O
Multiplex Transmission System
Recorders
Web Data Loggers
PID Control Components
Temperature Controllers
Electric Actuators
Lightning Surge Protectors
Focused New Products for Japan
Signal Conditioners Selection Guide 1
Signal Conditioners Selection Guide 2
M-System Company

4-wire Signal Conditioners

Signal Conditioners

4-wire Signal Conditioners

2-wire Signal Conditioners

Function Modules & Retrofit Products

Limit Alarms

Indicators

Tower Lights

Power Transducers

Remote I/O

Multiplex Transmission System

Recorders

Web Data Loggers

PID Control Components

Temperature Controllers

Electric Actuators

Lightning Surge Protectors

Focused New Products for Japan

Signal Conditioners Selection Guide 1

Signal Conditioners Selection Guide 2

M-System Company

M3L Series

PC Programming or "One-Step Cal" Configuration without PC

- Enhanced PC configurator software
- Easy and precise "One-Step Cal" field configuration without needing a PC
- Universal I/O specifications ideal for spare parts stock reduction programs
- DIN rail mounting
- 1500 Vac isolation



Enhanced PC Configurator Software



"One-Step Cal" Field Calibration

Precise input and output ranges can be set with the front control buttons step by step with a help of flashing LED patterns to confirm each step of setup actions.

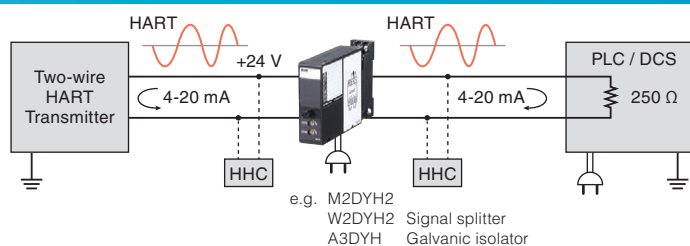
M3S Series Space-saving Signal Conditioners

- Space-saving 12 mm (0.47 in) wide modules with separable terminal blocks
- Universal AC/DC power input available



ISOLATOR APPLICATIONS 2

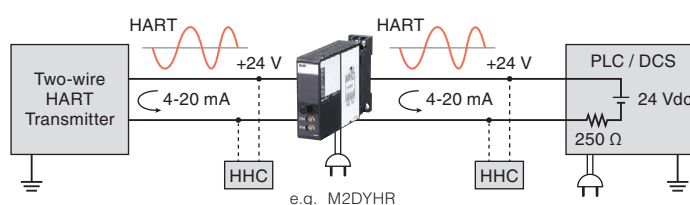
Four-wire isolator / current loop supply : 4-20 mA (active) input / 4-20 mA output (source) / Line powered



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, from any termination point of the loop at both sides of the isolator.

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

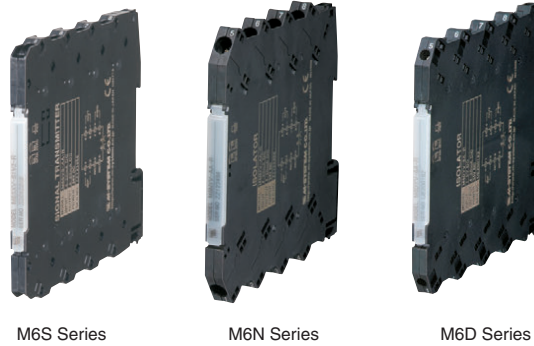


- Remote field signal monitored by control system
- Water/wastewater treatment
- Petrochemical, tank farms, large manufacturing sites

M6 Series

Ultra-Slim Signal Conditioners

- Only 5.9 mm (0.23 in) wide ultra-slim design for M6D/M6S series
- Selectable connection styles: Tension-clamp, screw terminal or euro terminal
- Low power consumption, high load drive capability
- Backplane base available to save individual power input wiring
- 2000 Vac isolation



Signal Conditioners
4-wire Signal Conditioners
2-wire Signal Conditioners
Function Modules & Retrofit Products
Limit Alarms
Indicators
Tower Lights
Power Transducers
Remote I/O
Multiplex Transmission System
Recorders
Web Data Loggers
PID Control Components
Temperature Controllers
Electric Actuators
Lightning Surge Protectors

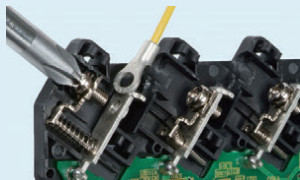
M6S Series : Tension Clamp Style

5.9 mm (0.23 in) wide module.
No special tool or skill is required when wiring.



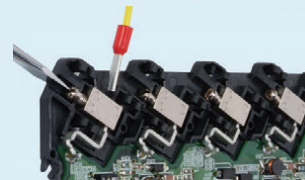
M6N Series : Screw Terminal Style

7.5 mm (0.30 in) wide module.
Self-up screws prevent falling off a terminal.



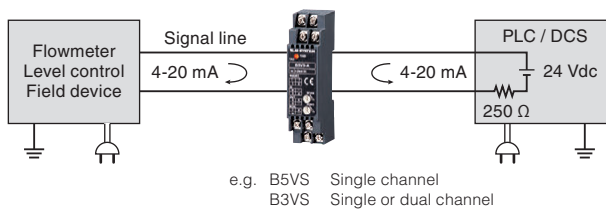
M6D Series : Euro Terminal Style

5.9 mm (0.23 in) wide module.
Suitable for solid wires, pin terminals.



ISOLATOR APPLICATIONS 3

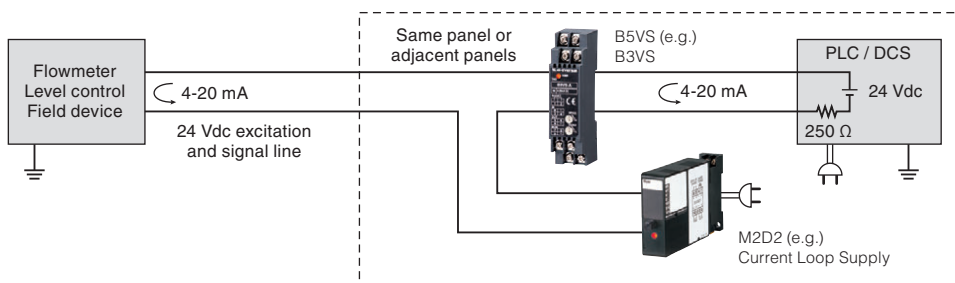
Two-wire isolator : 4-20 mA input / 4-20 mA output (loop powered)



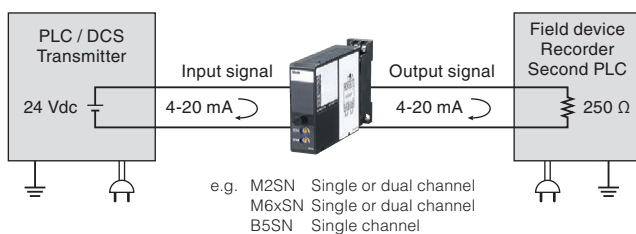
Basic isolator designed to interface a PLC and DCS system that provides a 24 Vdc power supply with a 4-20 mA input.

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

With the excitation supply to the field device



Two-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

Focused New Products for Japan
Signal Conditioners Selection Guide 1
Signal Conditioners Selection Guide 2
M-System Company

2-wire Signal Conditioners

Signal Conditioners

4-wire Signal Conditioners

2-wire Signal Conditioners

Function Modules & Retrofit Products

Limit Alarms

Indicators

Tower Lights

Power Transducers

Remote I/O

Multiplex Transmission System

Recorders

Web Data Loggers

PID Control Components

Temperature Controllers

Electric Actuators

Lightning Surge Protectors

Focused New Products for Japan

Signal Conditioners Selection Guide 1

Signal Conditioners Selection Guide 2

M-System Company

Field-mount HART Temperature Transmitter

B6U / B6U-B

- Plug-in two-line LCD display
- HART programmable
- User's own temperature calibration tables can be used
- AMS software version 6.0 or higher
- IP66 / IP67 field enclosure; Stainless steel optional
- ATEX / FM approval



B6U



B6U-B



Head-mount, HART Programmable

27HU / 27HU-B

- HART programmable
- User's temperature table and Callendar-Van Dusen approximation formula
- 4-digit LED indicator optional
- IP66 / IP67 field enclosure; Stainless steel optional
- ATEX / FM approval



DIN Rail Mount, HART & PROFIBUS

B3HU / B3HU2 / B3PU

- 18 mm (0.71 in) wide, space-saving
- AMS software version 6.0 or higher
- SIMATIC PDM
- ATEX / FM approval (B3HU)
- HART 7 (B3HU2)



Head-mount, PC Programmable

27 Series

- PC Programmable
- Function monitor LED optional for RTD and potentiometer input
- ATEX / FM approval



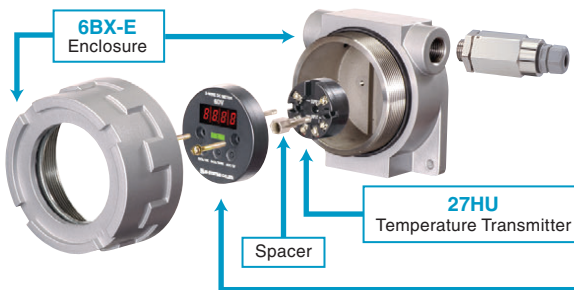
Head-mount, Fixed Range Type

26 Series

- Linearization, sensor burnout detection, cold junction compensation (T/C input) standard
- Optional 25 msec. response time selectable (26TS1, 26RS)
- ATEX approval (26REX)



FIELD-MOUNT ACCESSORIES



MD6 Series Surge Protectors

Directly mountable to the cable conduit of two-wire transmitters and other field devices in an outdoor enclosure



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

- No external power source required
- Scaling and linearization via the front controls
- Mountable on top of head-mount transmitter, installed together in an outdoor enclosure



DIP Switch Configurable

B3 Series

- 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



Terminal Block Type

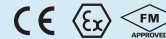
B5 Series

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



A3DYH Galvanic Isolator

- Isolated intrinsically safe associated apparatus – No need of grounding
- Isolates and relays HART signal bidirectionally

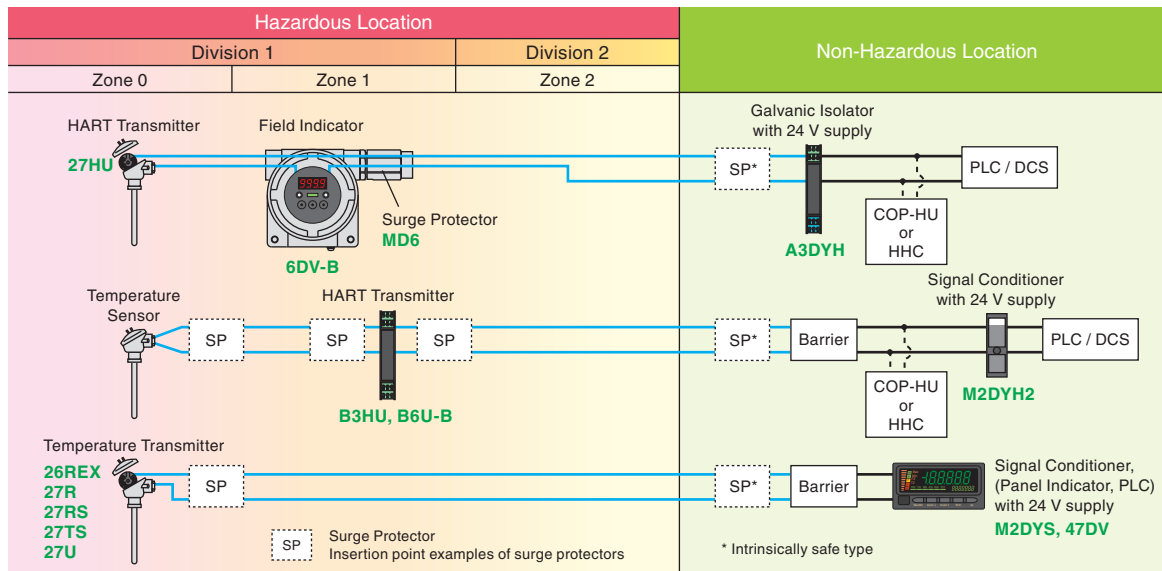


Combination Examples for Hazardous Location Products

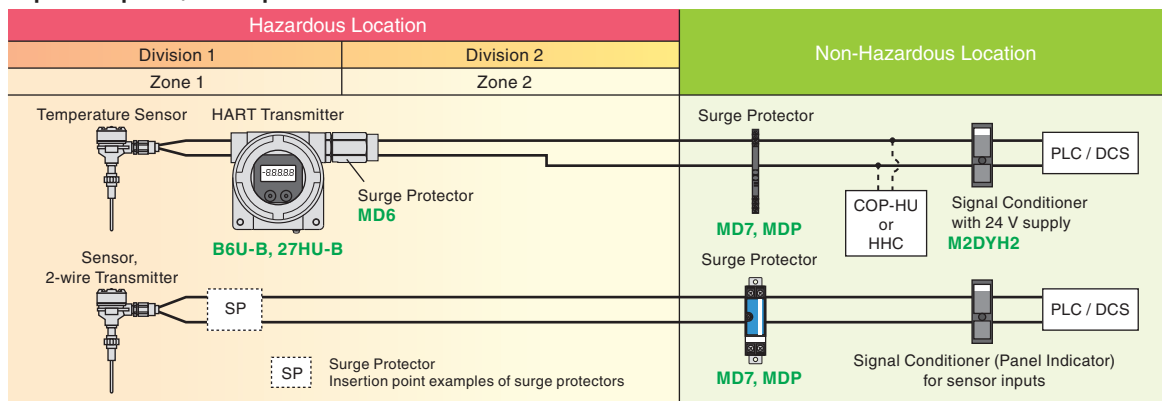
HAZARDOUS LOCATION PRODUCTS GUIDE

Model selections are only examples. For an actual installation of particular products, refer to the respective data sheets to confirm technical feasibilities.

Intrinsically Safe



Explosion-proof / Flameproof



- Signal Conditioners
 - 4-wire Signal Conditioners
 - 2-wire Signal Conditioners
- Function Modules & Retrofit Products
 - Limit Alarms
 - Indicators
 - Tower Lights
 - Power Transducers
 - Remote I/O
 - Multiplex Transmission System
 - Recorders
 - Web Data Loggers
 - PID Control Components
 - Temperature Controllers
 - Electric Actuators
 - Lightning Surge Protectors
- Focused New Products for Japan
 - Signal Conditioners Selection Guide 1
 - Signal Conditioners Selection Guide 2
 - M-System Company

Function Modules & Retrofit Products

Signal Conditioners

4-wire Signal Conditioners

2-wire Signal Conditioners

Function Modules & Retrofit Products

Limit Alarms

Indicators

Tower Lights

Power Transducers

Remote I/O

Multiplex Transmission System

Recorders

Web Data Loggers

PID Control Components

Temperature Controllers

Electric Actuators

Lightning Surge Protectors

Focused New Products for Japan

Signal Conditioners Selection Guide 1

Signal Conditioners Selection Guide 2

M-System Company

Function Modules

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



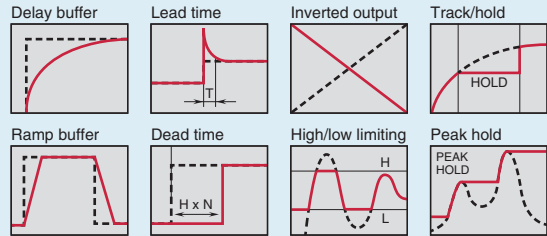
M2 Series



M6 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



Self-Synch Transmitter

MXS

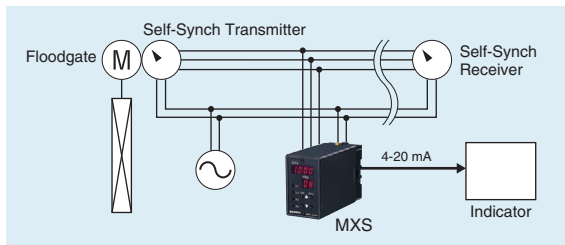
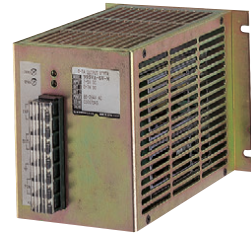
- Converting position signals from a self-synchronizing motor into a DC signal proportional to the rotating shaft position
- Position indication using self-synch, tank gauge, sounding level meter



High Current Output Transmitters

VA / SVA / 99SVA

- 200 mA, 1 A output to drive actuators used in turbines, speed governors, hydraulic machinery
- Retrofitting 10-50 mA loop



Potentiometer Output

CVR1

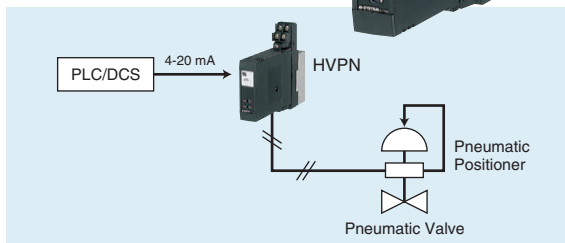
- Remote setting for dampers, inverters, motors and other devices with potentiometer settings
- DC voltage/current input
- 135 Ω, 1k Ω and other outputs



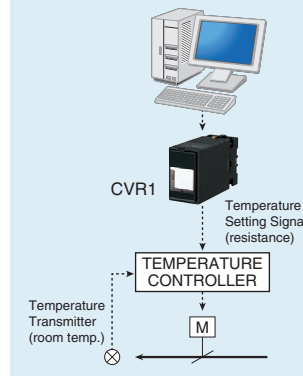
I/P Transducer

HVP / HVPN

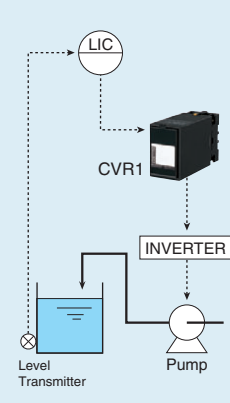
- Semiconductor pressure sensor in the feedback circuit
- Max. air capacity 60 Nl/minute



Damper Operation for Air Conditioning

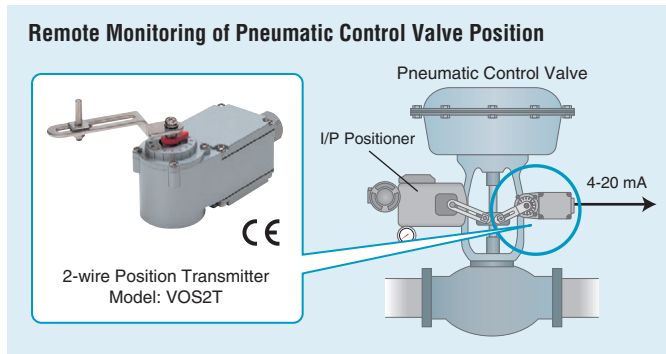


Motor Speed Setting



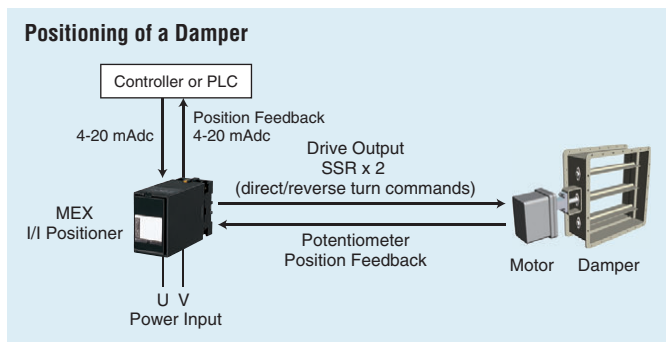
VOS2T / VOS2T-R Two-wire Position Transmitters

- ▮ Detecting mechanical position of pneumatic and electric actuators to send a proportional 4-20 mA signal
- ▮ Linear motion type ($\pm 22.5^\circ$) or rotary motion type ($\pm 45^\circ$)
- ▮ Brushless design for long lasting reliability
- ▮ Lightweight & compact
- ▮ IP 66



MEX Series I/I Positioners

- ▮ Positioning of valve and damper can be controlled with a direct/reverse turn motor
- ▮ Remote 4-20 mA positioning input, SSR or 24 Vac dry contact switch output
- ▮ Adjustable deadband, timer, electronic limits and other additional functions depending upon models
- ▮ Modbus and LONWORKS for position setting available



Manual Loading Stations

- ▮ Holding control signals in case of computer or DCS failure
- ▮ ON/OFF signal input or analog signal input
- ▮ Manual control with an external Up/Down contact signal or with the front manual loader
- ▮ Ramp rate adjustable



CB2/AB2



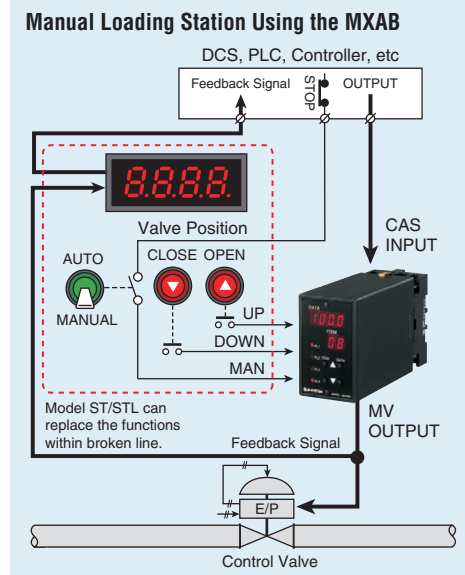
MXCB/MXAB Programmable type



ABF3 Built-in manual loader



ABS3 Parameter Generator



Signal Conditioners
4-wire Signal Conditioners
2-wire Signal Conditioners
Function Modules & Retrofit Products
Limit Alarms
Indicators
Tower Lights
Power Transducers
Remote I/O
Multiplex Transmission System
Recorders
Web Data Loggers
PID Control Components
Temperature Controllers
Electric Actuators
Lightning Surge Protectors

Focused New Products for Japan
Signal Conditioners Selection Guide 1
Signal Conditioners Selection Guide 2
M-System Company

LIMIT ALARMS



Signal Conditioners

Limit Alarms

Programmable Alarms

Analog Alarms

Direct Sensor Input Analog Alarms

Indicators

Tower Lights

Power Transducers

Remote I/O

Multiplex Transmission System

Recorders

Web Data Loggers

PID Control Components

Temperature Controllers

Electric Actuators

Lightning Surge Protectors

Focused New Products for Japan

Signal Conditioners Selection Guide 1

Signal Conditioners Selection Guide 2

M-System Company

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

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

M-System 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 Alarms

AS4 Series Dual/Quad Alarms with LED Display

- 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
- Dual SPDT or quad NO or NC output
- Process monitor



M7E Series Compact Dual/Quad Alarms with LCD Display

- Multi-line LCD display showing parameters and selections in text: intuitive, easy programming just like operating a cell phone
- Field selectable input range
- Dual SPDT or quad NO or NC output
- PC configuration is also available



M2E Series *
with OEL Display

* M2E Series is under development as of April 2016.



Compact Size 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 Alarms

Simple Dial Setting

KSE

- Fixed range input
- Single or dual SPDT output



Compact Analog Alarms

M2 Series

- Fixed range DC mV, V & mA input
- Single (NO/NC, DPDT) or dual output (SPDT)
- Easy thumbwheel switch adjustment
- M2AVS uses potentiometer adjustments with a help of 0-1 V monitor output



Thumbwheel Switch Setting

ASD1 / KSED

- Fixed range input
- Single or dual SPDT output
- ASD1 is selectable with deadband



Direct Sensor Input Analog Alarms

AL-UNIT Series

- Rotary switch adjustments (0-99%, 1% increments)
- Dual SPDT output



AE-UNIT Series

- Thumbwheel switch adjustments (0-99%, 1% increments)
- Dual SPDT output
- Extra DC transmitter output



A-UNIT Series

- Potentiometer adjustments
- Dynamic deadband
- Dual SPDT output



M-PAC Series

- Front potentiometer or remote dial/DC voltage setpoint control selectable
- Single trip, latching or dual trip relay outputs
- Transmitter output and other options



FUNCTION	AL-UNIT	AE-UNIT	A-UNIT	M-PAC
DC input	Y	Y	Y	Y
Thermocouple input	Y	Y	Y	Y
RTD input	Y	Y	Y	Y
Potentiometer input	Y	Y	Y	Y
2-wire transmitter input (with excitation)	Y	Y	Y	Y
Frequency input	Y	Y	Y	Y
Tachogenerator input	Y	Y	Y	---
AC current/voltage input	Y	Y	Y	Y
PT input	Y	Y	Y	---
CT input	Y	Y	Y	---

Signal Conditioners

Limit Alarms

Programmable Alarms

Analog Alarms

Direct Sensor Input Analog Alarms

Indicators

Tower Lights

Power Transducers

Remote I/O

Multiplex Transmission System

Recorders

Web Data Loggers

PID Control Components

Temperature Controllers

Electric Actuators

Lightning Surge Protectors

Focused New Products for Japan

Signal Conditioners Selection Guide 1

Signal Conditioners Selection Guide 2

M-System Company

INDICATORS



A panel installed meter, digital or bargraph, provides not only process signal indication but also a combination of signal conditioning, limit alarm and control functions. Basic and extended applications are:

- ✓ **Signal indication by LED or LCD display**
- ✓ **Signal conversion by transmitter output**
- ✓ **Alarm and emergency shutdown by relay outputs**
- ✓ **ON/OFF control by relay outputs**

A field indicator is used for local indication for operators' convenience while signals from sensors and transmitters installed throughout a large installation of tanks and pipelines are typically transmitted to a control/monitoring station via 4-20 mA current line. The loop powered indicator is simple to install and wire, and reliable and durable in an explosive/corrosive environment.

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
- IP 66 front panel
- Separable terminal block



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
- IP 66 front panel
- Separable terminal block



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



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)



Loop Powered Type: No external power supply required



40DN



43AL1



47NLN/47NLNT

- Signal Conditioners
- Limit Alarms
- Indicators**
- Digital Panel Meters
- Ultra-slim Digital Panel Meters
- Bargraph Indicators
- Field Indicators
- Tower Lights
- Power Transducers
- Remote I/O
- Multiplex Transmission System
- Recorders
- Web Data Loggers
- PID Control Components
- Temperature Controllers
- Electric Actuators
- Lightning Surge Protectors
- Focused New Products for Japan
- Signal Conditioners Selection Guide 1
- Signal Conditioners Selection Guide 2
- M-System Company

Ultra-slim Digital Panel Meters

Flat Rear Surface Stuck to the Panel with a Magnet **NEW**

47NL Series

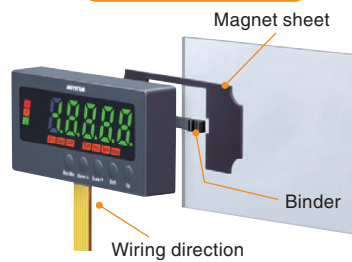
- 96 x 48 mm
- 4 or 4 1/2 digit display
- Large 16 mm-high LED display: Bright and colorful
- Mountable on standard 30 mm round panel cutout
- IP 66 (except for magnet mounting)
- Moving average function to suppress display flickering
- High/low alarm trips
- Short-depth flat type



TENSION-CLAMP TERMINAL BLOCK TYPE



MAGNET MOUNTING



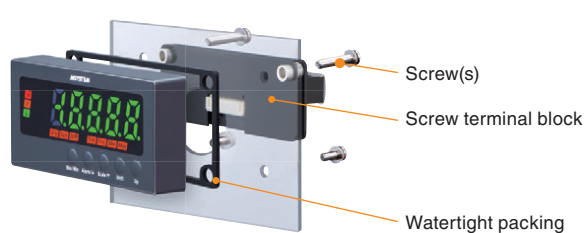
SCREW MOUNTING



SCREW TERMINAL BLOCK TYPE



SCREW MOUNTING



FUNCTION	47L	47D	40	43	47NL
DC input, input loop powered	---	---	Y	Y	Y
DC input	Y	Y	Y	Y	Y
Thermocouple input	Y	Y	Y	---	---
RTD input	Y	Y	Y	---	Y
Potentiometer input	Y	Y	---	---	---
2-wire transmitter input (with excitation)	---	---	---	---	Y
Strain gauge input	Y	---	---	---	---
AC current / voltage input	Y	Y	---	---	---
PT input	Y	---	Y	---	---
CT input	Y	---	Y	---	---
Frequency input (AC line voltage)	Y	---	---	---	---
Frequency input	Y	---	---	---	---
Pulse input totalizer (6 digits)	Y	---	---	---	---

Signal Conditioners

Limit Alarms

Indicators

Digital Panel Meters

Ultra-slim Digital Panel Meters

Bargraph Indicators

Field Indicators

Tower Lights

Power Transducers

Remote I/O

Multiplex Transmission System

Recorders

Web Data Loggers

PID Control Components

Temperature Controllers

Electric Actuators

Lightning Surge Protectors

Focused New Products for Japan

Signal Conditioners Selection Guide 1

Signal Conditioners Selection Guide 2

M-System Company

Bargraph Indicators

- Signal Conditioners
- Limit Alarms
- Indicators**
- Digital Panel Meters
- Ultra-slim Digital Panel Meters
- Bargraph Indicators
- Field Indicators
- Tower Lights
- Power Transducers
- Remote I/O
- Multiplex Transmission System
- Recorders
- Web Data Loggers
- PID Control Components
- Temperature Controllers
- Electric Actuators
- Lightning Surge Protectors

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
- IP 65 front panel
- Separable terminal block



48NV
• Single or dual bars



48NA Series
• Single bar
• Dual/quad alarm



48ND Series
• Single bar
• Dual/quad alarm
• 4-digit digital display

48SV2 Series Bargraph Indicators

NEW

- 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



48SV2

FUNCTION	48NV	48NA	48ND
DC input, single channel	Y	Y	Y
DC input, dual channel	Y	---	---
DC input, transmitter output	---	Y	Y
4-20 mA input, excitation supply	---	Y	Y
Thermocouple input	---	Y	Y
RTD input	---	Y	Y
Potentiometer input	---	Y	Y

Field Indicators

- Focused New Products for Japan
- Signal Conditioners Selection Guide 1
- Signal Conditioners Selection Guide 2
- M-System Company

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



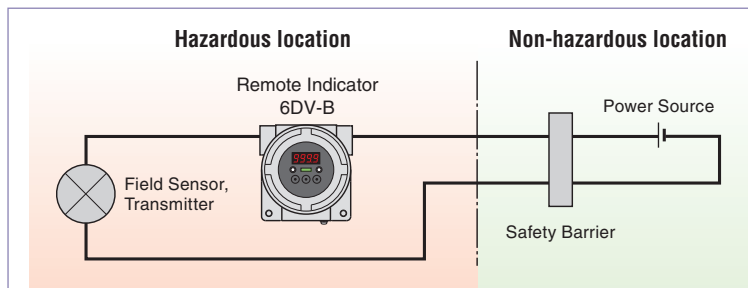
6DV



6DV-B



TWO-WIRE LOOP APPLICATION EXAMPLE



The indicator is powered from a two-wire current loop (4-20 mA), requiring no external power source.
The maximum voltage drop caused by inserting the 6DV into the loop is only 4.0 V at 20 mA.
It is ideal for use as a remote indicator added to a current loop between a field sensor / transmitter and a monitoring / control room, without worrying about needing a power source or about loaded impedance on the loop.

TOWER LIGHTS



IT Series Open Network Capable Tower Lights

- Energy saving, maintenance free LED lights
- 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)
- Bright and even illumination thanks to M-System's original reflection system
- Number and color of LED modules can be freely combined
- Rugged IP 65 construction is ideal for harsh industrial applications

Modbus/TCP CC-Link



WLAN access point type

Signal Conditioners

Limit Alarms

Indicators

Tower Lights

Power Transducers

Remote I/O

Multiplex Transmission System

Recorders

Web Data Loggers

PID Control Components

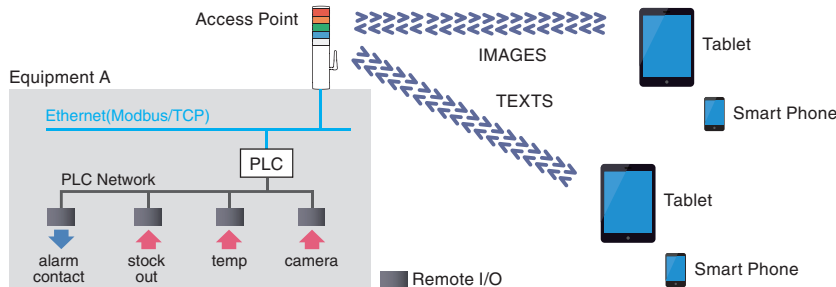
Temperature Controllers

Electric Actuators

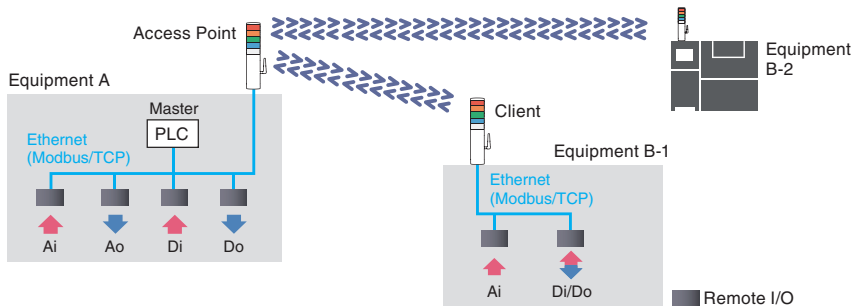
Lightning Surge Protectors

TOWER LIGHT APPLICATIONS

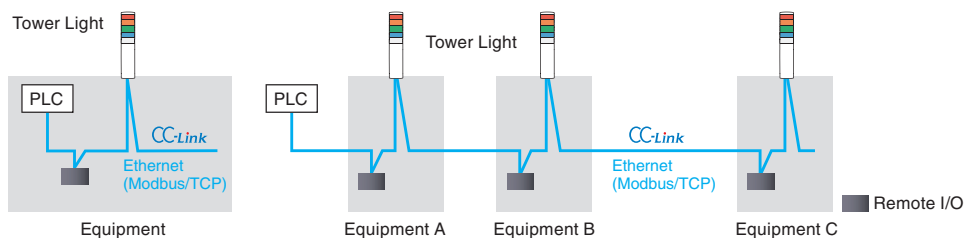
Remote monitoring and control of an equipment using mobile interface



No hardwiring between multiple sets of equipment to monitor and control by a single master PLC



The network capable tower lights can save a great part of parallel wiring between sensors, PLC and lights.



Focused New Products for Japan

Signal Conditioners Selection Guide 1

Signal Conditioners Selection Guide 2

M-System Company

POWER TRANSDUCERS



Transducers for electrical measurement are an essential part of any monitoring, measuring, or controlling system where electrical quantities are involved. For example, a power transducer monitors both AC current and voltage to measure/ calculate true electrical power delivered to a load and converts it to a DC voltage or current signal proportional to the measured power.

Multi power monitors are capable of open network interface such as Modbus-RTU, Modbus TCP/IP, CC-Link and LONWORKS, which are commonly used for modern energy measurement and management systems to achieve energy saving.

Power Transducers

LT-UNIT Series

- True RMS sensing
- M4 screw terminal
- Max. 550 Vac input
- Conforming to IEC 60688
- DIN rail or surface mounting



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
- Parameters are freely programmable with the front control buttons or by PC
- DIN rail mounted



L-UNIT Series

- Average or RMS sensing
- Economical dual channel type available
- DIN rail or surface mounting



K-UNIT Series

- Average or RMS sensing
- Plug-in socket mounted
- DIN rail or surface mounting



FUNCTION	LT-UNIT	L-UNIT	K-UNIT
VT transducer (RMS sensing)	Y	Y	Y
VT transducer (average sensing, RMS calibrated)	---	Y	Y
CT transducer (RMS sensing)	Y	Y	Y
CT transducer (average sensing, RMS calibrated)	---	Y	Y
VT/CT transducer (RMS sensing)	---	Y	---
VT/CT transducer (average sensing, RMS calibrated)	---	Y	---
Watt transducer	Y	Y	Y
Var transducer	Y	Y	Y
Power factor transducer	Y	Y	Y
Phase angle transducer	Y	Y	Y
Frequency transducer	Y	Y	Y

Multi Power Monitors

53U / 54U Series

Multi Power Monitor and Transducer

- Single-phase 2-wire and 3-wire, three-phase 3-wire and 4-wire systems
- IP 52 front panel (53U, 54U)
- Various network communication and Ao/Do combinations selectable
- Up to 31st harmonic distortion measurement
- Software lock



L53U

DIN rail mounted

- Modbus + Di/Do
- Ao x 2 points + Di/Do
- Ao x 4 points

Modbus

53U

96-mm square panel size

- Modbus + Di/Do
- Ao x 2 points + Di/Do
- Ao x 4 points
- Do x 4 points

Modbus

54U / 54UC / 54UL

110-mm square panel size

- Ao x 4 points
- Di/Do

Modbus CC-Link LONWORKS

Signal Conditioners

Limit Alarms

Indicators

Tower Lights

Power Transducers

Power Transducers

Multi Power Monitors

Remote I/O for Energy Consumption Monitoring

Remote I/O

Multiplex Transmission System

Recorders

Web Data Loggers

PID Control Components

Temperature Controllers

Electric Actuators

Lightning Surge Protectors

Focused New Products for Japan

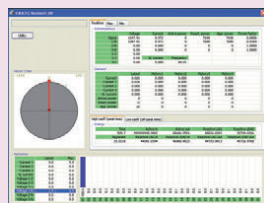
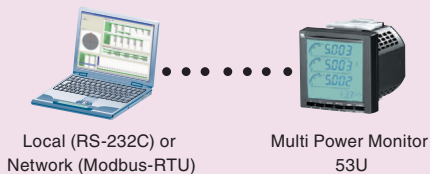
Signal Conditioners Selection Guide 1

Signal Conditioners Selection Guide 2

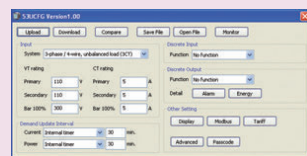
M-System Company

User-Friendly PC Software Setting

Save yourself much time using the free PC Configurator software to create, save and download your own parameter settings.



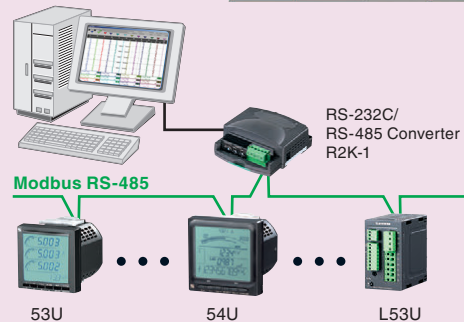
Monitoring window for real-time, instantaneous values, max/min values, energy and harmonic distortions



Configuration window for quick and easy viewing/setting of basic parameters

Monitoring and Storing Measured / Computed Values on the PC

The PC Recorder Light MSR128LU dedicated for the 53U / 54U / L53U is free for downloading from our web site.

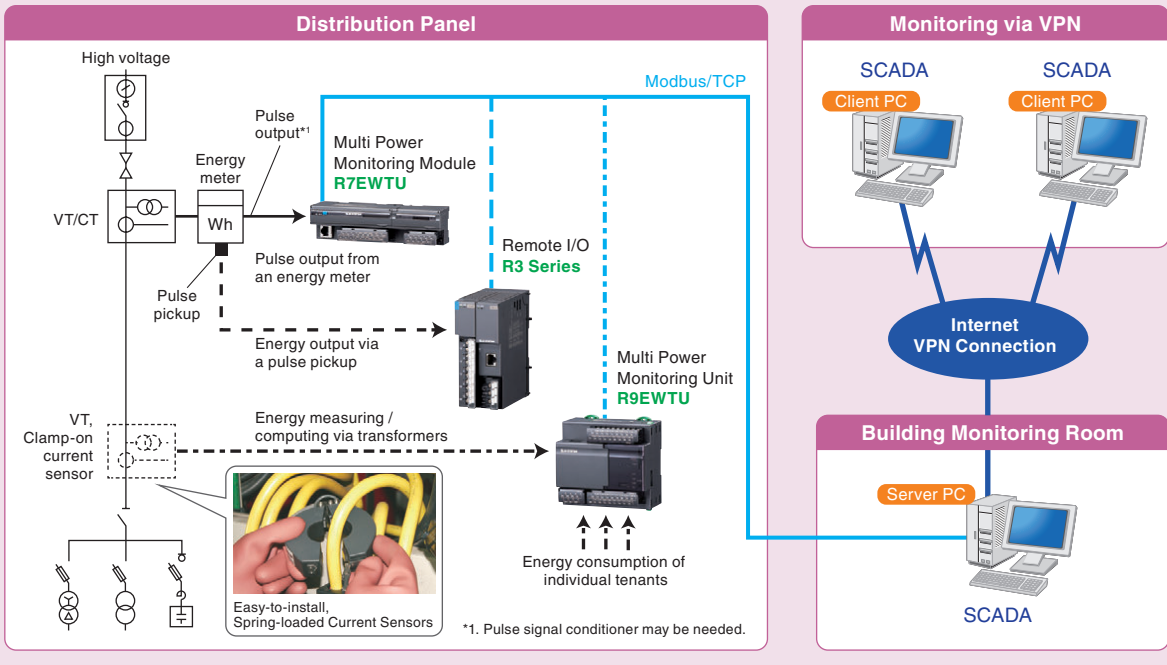


Remote I/O for Energy Consumption Monitoring

Start Your Energy Saving Program with a Minimum Time & Cost

- Data from power distribution panels scattered throughout a building/industrial installation can be monitored using local area Ethernet data network.
- Minimum down time by using clamp-on current sensors
- Three energy sensing ways selectable for easy application: energy computation via VT/CT, pulse output from energy meters, and pulse pickup at energy meters
- Integration of utility and process monitoring (e.g. flow, temperature, discrete signal) by mixing other sensor input modules on the R3 base

Three Energy Sensing Ways: System Configuration Example with a Commercial Building



R7MWTU / R7EWTU / R7CWTU / R7LWTU

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

Modbus LONWORKS
CC-Link Modbus/TCP



R9MWTU / R9EWTU / R9CWTU / R9LWTU

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

Modbus LONWORKS
CC-Link Modbus/TCP



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

Modbus LONWORKS
CC-Link Modbus/TCP
DeviceNet PROFIBUS



- Signal Conditioners
- Limit Alarms
- Indicators
- Tower Lights
- Power Transducers
- Power Transducers
- Multi Power Monitors
- Remote I/O for Energy Consumption Monitoring
- Remote I/O
- Multiplex Transmission System
- Recorders
- Web Data Loggers
- PID Control Components
- Temperature Controllers
- Electric Actuators
- Lightning Surge Protectors
- Focused New Products for Japan
- Signal Conditioners Selection Guide 1
- Signal Conditioners Selection Guide 2
- M-System Company

REMOTE I/O



Remote I/O supports DCS/PLC systems by expanding I/O flexibility in addition to providing all full channel-to-channel isolation. It communicates directly to the PLC and DCS via industry standard open-protocol networks.

Remote I/O can be also used as stand-alone distributed I/O communicating with popular HMI software. It can be located remotely in the field, or within an instrumentation cabinet such as test stands.

The flexibility and scalability of M-System's 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, paint booth environment reporting, pharmaceutical processes, and assembly line discrete ON/OFF.

Signal Conditioners

Limit Alarms

Indicators

Tower Lights

Power Transducers

Remote I/O

Mixed Signal Remote I/O

All-in-One Style Remote I/O

Compact Remote I/O for FA Control Equipment

Multiplex Transmission System

Recorders

Web Data Loggers

PID Control Components

Temperature Controllers

Electric Actuators

Lightning Surge Protectors

Focused New Products for Japan

Signal Conditioners Selection Guide 1

Signal Conditioners Selection Guide 2

M-System Company

Mixed Signal I/O
with free combination of I/O, network and power supply

Remote I/O

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

LARGE NUMBER OF I/O POINTS

Multi-channel, Mixed Signal Remote I/O

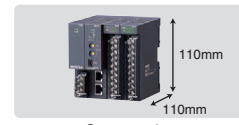
R3 Series



Hot Swappable Modules

Compact, Mixed Signal Remote I/O

R30 Series



Compact size

Slice Type, Mixed Signal Remote I/O

R8 Series



Flexible Configuration without Base

SMALL NUMBER OF I/O POINTS

Compact, Mixed Signal Remote I/O

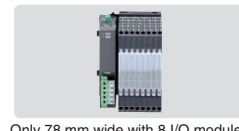
R5 Series



Easy Access to Field Terminals

Ultra-Slim, Mixed Signal 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

Mixed Signal Remote I/O

- Signal Conditioners
- Limit Alarms
- Indicators
- Tower Lights
- Power Transducers
- Remote I/O**
- Mixed Signal Remote I/O
- All-in-One Style Remote I/O
- Compact Remote I/O for FA Control Equipment
- Multiplex Transmission System
- Recorders
- Web Data Loggers
- PID Control Components
- Temperature Controllers
- Electric Actuators
- Lightning Surge Protectors


R3 Series

Multi-channel, Mixed Signal Remote I/O


- 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
- 1500 Vac isolation




CC-Link **DeviceNet** **PROFIBUS** **Modbus** **Modbus/TCP**
EtherNet/IP **LONWORKS** **MECHATROLINK** **T-Link** **FL-net**



M3 screw terminal block is used for I/O modules. The removable terminal block is convenient for maintenance.



Network Module and Power Supply Module can be in one housing.



One I/O module plus one Network Module with power supply is the minimum unit: Space-saving and economical solution.

- Focused New Products for Japan
- Signal Conditioners Selection Guide 1
- Signal Conditioners Selection Guide 2
- M-System Company

R30 Series Compact, Mixed Signal Remote I/O NEW

- Compact size
- High speed bus
- R3 I/O modules can be added by using a special connecting base
- CC-Link/IE network module is planned



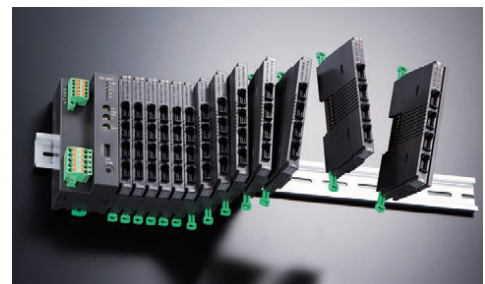
EtherCAT **Modbus/TCP**

R8 Series Slice Type, Mixed Signal Remote I/O

- 'Slice type' modules can be freely added by necessary number of I/O points, saving installation space to the minimum
- Only 55 mm deep modules (except connector)
- Easy I/O terminal access via e-CON (mini-clamp) connector or MIL connector

Modbus **EtherCAT** **CC-Link** **DeviceNet**

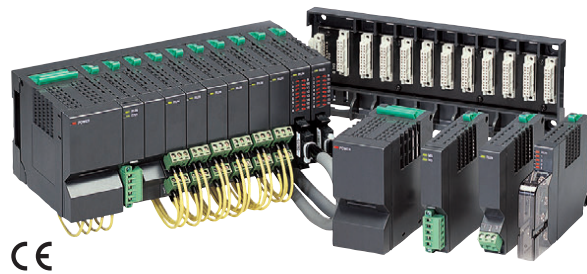
CE



R5 Series

Compact, Mixed Signal Remote I/O

- 2 fully-isolated analog I/O per module
- Re-transmitted output modules suitable for extra field monitoring
- Dual redundant communication networks and power supplies
- 1500 Vac isolation



CC-Link DeviceNet PROFIBUS Modbus Modbus/TCP T-Link

The slanted I/O terminals are easily accessible with high-density wiring.

Input → Network
← 4-20 mA Re-Transmitted Output

Re-transmitted 4 to 20 mA output is optional for local monitoring or recording.

↑ Mains 120/240 Vac
↑ UPS 24 Vdc

Add another power module for a backup power source.

R6 Series

Ultra-Slim, Mixed Signal Remote I/O

- Only 78 mm (3.07 in) wide with the minimum system of 8 modules
- Extension by 8 module units — Max. 31 I/O modules
- 2 fully-isolated analog I/O per module
- 4-point discrete I/O per module
- Low power consumption
- 1500 Vac isolation



CC-Link DeviceNet PROFIBUS Modbus Modbus/TCP T-Link

Three Terminal Connection Styles Selectable

Tension-Clamp R6S Series

Screw Terminal R6N Series

Euro Terminal R6D Series

- Signal Conditioners
- Limit Alarms
- Indicators
- Tower Lights
- Power Transducers
- Remote I/O
 - Mixed Signal Remote I/O
 - All-in-One Style Remote I/O
 - Compact Remote I/O for FA Control Equipment
- Multiplex Transmission System
- Recorders
- Web Data Loggers
- PID Control Components
- Temperature Controllers
- Electric Actuators
- Lightning Surge Protectors
- Focused New Products for Japan
- Signal Conditioners Selection Guide 1
- Signal Conditioners Selection Guide 2
- M-System Company

I/O Selection Guide

FUNCTION	R3 Series	R30 Series	R5 Series	R6 Series	R8 Series
Analog Input Module (Isolated)					
Signal Conditioners	Universal input	4 ch	2 / 4 ch	---	---
	DC voltage input	4 / 8 ch	2 / 4 ch	1 / 2 ch	2 ch
Limit Alarms	DC voltage input (non-isolated)	16 ch	---	---	4 / 16 ch
	DC current input	4 / 8 ch	2 / 4 ch	1 / 2 ch	2 ch
Indicators	DC current input (non-isolated)	16 ch	---	---	4 / 16 ch
Tower Lights	Thermocouple input	4 / 8 ch	4 ch	1 / 2 ch	---
	RTD input	4 / 8 ch	4 ch	1 / 2 ch	---
Power Transducers	RTD input (non-isolated)	---	---	---	4 ch
	Potentiometer input	4 / 8 ch	4 ch	1 / 2 ch	---
	4-20mA input with excitation	4 ch	---	1 / 2 ch	1 ch
Remote I/O	4-20mA input with excitation (non-isolated)	8 ch	---	---	4 ch
	Strain gauge input	2 ch	---	---	---
Mixed Signal Remote I/O	CT input	4 ch	---	1 / 2 ch	---
All-in-One Style Remote I/O	Zero-phase current input	4 ch	---	---	---
	AC current input (clamp-on current sensor)	4 / 8 ch	---	1 / 2 ch	---
Compact Remote I/O for FA Control Equipment	AC voltage input	4 ch	---	1 / 2 ch	---
	AC power input	4 circuits	---	---	---
Multiplex Transmission System	AC power input (clamp-on current sensor)	4 circuits	---	---	---
	Multi power input	1 system	---	---	---
Recorders	Multi power input (clamp-on current sensor)	1 / 2 systems	---	---	---
Temperature Control Module					
Web Data Loggers	Temperature Control	2 loops	---	---	2 loops
Analog Output Module (isolated)					
PID Control Components	DC voltage output	4 / 8 ch	4 ch	1 / 2 ch	2 ch
Temperature Controllers	DC voltage output (non-isolated)	---	---	---	4 ch
	DC current output	4 ch	---	1 / 2 ch	2 ch
Pulse I/O Module					
Electric Actuators	Totalized pulse input	Pi 4 / 8 / 16	---	Pi 2	Pi 4
Lightning Surge Protectors	High speed pulse input	Pi 4	---	---	---
	Encoder input	Pi 2	---	---	---
	Pulse output	Po 16	---	Po 2	---
Analog Input Module with Transmitter Output (isolated)					
	DC voltage input	---	---	1 ch	---
	DC current input	---	---	1 ch	---
Focused New Products for Japan	Thermocouple input	---	---	1 ch	---
	RTD input	---	---	1 ch	---
Signal Conditioners Selection Guide 1	Potentiometer input	---	---	1 ch	---
	4-20mA input with excitation	---	---	1 ch	---
Signal Conditioners Selection Guide 2	Alarm Module (isolated)				
	DC voltage input	4 / 8 ch	---	---	---
	DC current input	4 / 8 ch	---	---	---
	Thermocouple input	4 ch	---	---	---
	RTD input	4 ch	---	---	---
M-System Company	4-20mA input with excitation	4 ch	---	---	---
Discrete I/O Module					
	Discrete input	Di 16	Di 16	Di 4 / 16	Di 4
	Discrete input with excitation supply	Di 16 / 32 / 64	---	---	---
	AC contact input	Di 16	---	---	---
	Discrete input / output	Di 8, Do 8	---	---	---
	Relay contact output	Do 16	---	Do 4	---
	Open collector output (NPN)	Do 16 / 32 / 64	Do 16	Do 16	Do 4
	Open collector output (PNP)	Do 16 / 32 / 64	Do 16	---	Do 4
	Triac output	Do 16	---	---	---
	One-shot pulse output	Do 16	---	---	---
	Remote control relay control	Do 8	---	---	---
	Photo MOSFET relay	Do 8	---	---	Do 4
BCD Code I/O Module					
	BCD code input / output	7-digit BCD	---	---	---

All-in-One Style Remote I/O

R7 Series

Expandable, Compact Remote I/O

- 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.
- 1500 Vac isolation



FUNCTION		R7M	R7E	R7D	R7C	R7L
Basic Module		Modbus	Modbus/TCP	DeviceNet	CC-Link	LonWorks
Discrete input	Di 16	Y	Y	Y	Y	Y
Transistor output	Do 16	Y	Y	Y	Y	Y
Relay contact output	Do 8	Y	---	Y	Y	---
Discrete I/O	Di 8 + Do 8	Y	---	---	---	Y
DC voltage/current input	4 ch	Y	Y	Y	Y	Y
Thermocouple input	4 ch	Y	Y	Y	Y	Y
RTD input	4 ch	Y	Y	Y	Y	Y
Thermistor input	4 ch	---	---	---	Y	---
Potentiometer input	4 ch	Y	Y	Y	Y	---
AC current input	4 ch	Y	Y	Y	Y	---
DC voltage output	2 ch	Y	Y	Y	Y	Y
DC current output	2 ch	Y	Y	Y	Y	Y
Totalized pulse input	8 ch	Y	---	Y	Y	---
Remote control relay control output	4/8 ch	Y	---	---	Y	Y
Extension Module						
Discrete input	Di 8/16	Y	Y	Y	Y	Y
Transistor output	Do 8/16	Y	Y	Y	Y	Y
Relay contact output	Do 8	Y	---	---	Y	---

R1 Series Compact, Multi-point Remote I/O

- Economical all-in-one module for Modbus, CC-Link and DeviceNet
- Trigger contact input and alarm contact output

FUNCTION		Modbus
Universal input	12 ch	Y
Thermocouple & DC input	8/16 ch	Y
RTD & potentiometer input	8 ch	Y
Totalized counter input & contact I/O	Pi 4+Di 8+Do 8	Y
Contact input	32 ch	Y
Contact output	32 ch	Y



Signal Conditioners

Limit Alarms

Indicators

Tower Lights

Power Transducers

Remote I/O

Mixed Signal Remote I/O

All-in-One Style Remote I/O

Compact Remote I/O for FA Control Equipment

Multiplex Transmission System

Recorders

Web Data Loggers

PID Control Components

Temperature Controllers

Electric Actuators

Lightning Surge Protectors

Focused New Products for Japan

Signal Conditioners Selection Guide 1

Signal Conditioners Selection Guide 2

M-System Company

Compact Remote I/O for FA Control Equipment

R7 Series Compact Remote I/O for MECHATROLINK-I, -II, -III



- Motion and I/O networks can be on single MECHATROLINK line to save wires and cost
- High speed AD conversion and isolation of sensor signals
- Compact, terminal block style, all-in-one modules



R7ML



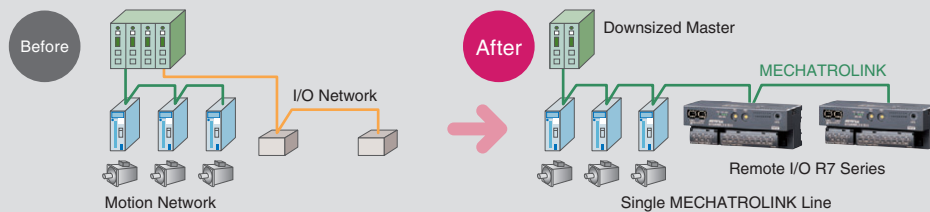
R7K4FML



R7G4HML3

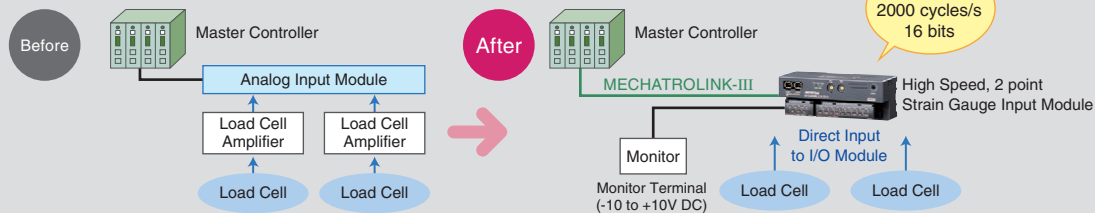


I/O network signals introduced into MECHATROLINK network



Motion and I/O networks can be on single MECHATROLINK line to dramatically save wires and cost; needless to say the cost of I/O network master module.

High speed AD conversion of tension/pressure/weight measurement



R7 Series Compact Remote I/O for HLS



- Remote I/O modules for HLS (Hi-speed Link System) proposed by StepTechnica Co., Ltd.
- Compact, terminal block style, all-in-one modules
- Four connection styles are selectable to fit with various sensors and devices: e-CON (mini-clamp) connector, MIL connector, spring cage (tension-clamp) terminal and screw terminal



R7HL



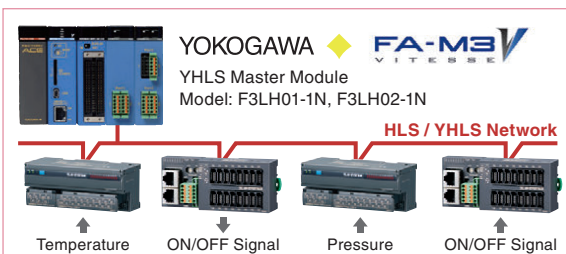
R7F4DH



R7K4DH



APPLICATION EXAMPLE WITH YOKOGAWA FA-M3 YHLS MASTER MODULE



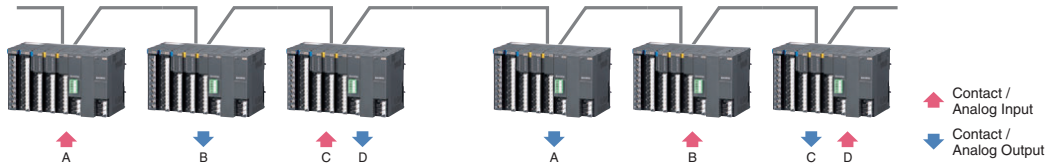
- Chip shooter machines
- Semiconductor manufacturing equipment
- Injection molding machines
- Large printers
- LCD panel manufacturing equipment/carrier devices
- Automatic carrier robots
- Welding machines
- Electrical discharge machines
- Warehouse management systems

YHLS (Yokogawa Hi-speed Link System) adopts a HLS-compliant open protocol, enhanced to allow easy monitoring of transmission line quality during development and operation of IT machine systems.

YHLS and HLS network devices are compatible.

MULTIPLEX TRANSMISSION SYSTEM

PEER-TO-PEER COMMUNICATION WITHOUT NEEDING A MASTER



D3 Series

- Max. 10 km transmission via twisted-pair cable
- No software programming required
- Interfacing field signals to the host PLC via Modbus-RTU or Modbus TCP/IP
- Free combination of I/O signals



DLA1

- Simple setting by matching the station address of paired modules
- No total system failure thanks to the masterless configuration
- All-in-one unit packaging I/O, power and network interface modules



Signal Conditioners

Limit Alarms

Indicators

Tower Lights

Power Transducers

Remote I/O

Multiplex Transmission System

Recorders

Web Data Loggers

PID Control Components

Temperature Controllers

Electric Actuators

Lightning Surge Protectors

RECORDERS

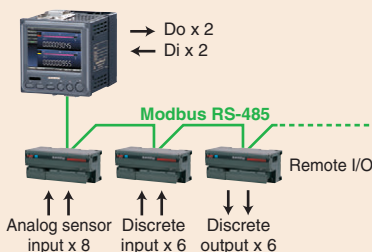
71VR1 Compact Paperless Recorder

- 3.5 inch TFT color LCD display
- 1/4 DIN size (96 x 96 mm) panel mount compact recorder
- Max. 8-point each of analog and discrete inputs are stored, displayed and alerted.
- Max. 8-point discrete outputs can be assigned to alarm trips.
- Direct field inputs at the built-in terminals and optional remote inputs via Modbus-RTU
- Data can be transferred to PC via the front IR port
- IP 65 front panel

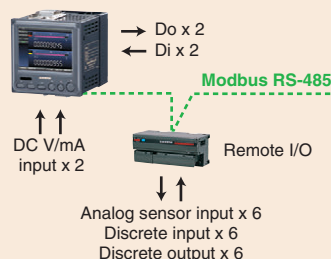


CE

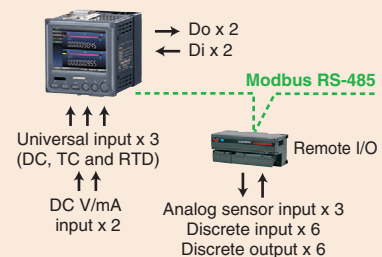
Remote I/O Type 71VR1-E001



DC Input Type 71VR1-E101



Universal Input Type 71VR1-E501



Focused New Products for Japan

Signal Conditioners Selection Guide 1

Signal Conditioners Selection Guide 2

M-System Company

73VR Series Paperless Recorder

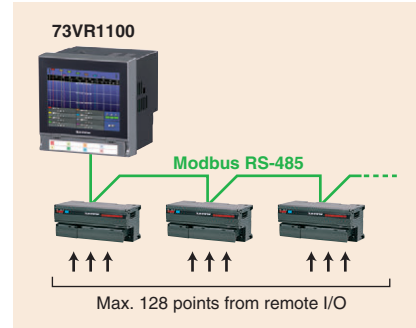
- Touch panel operated 5.5 inch TFT color LCD display
- 144 mm square DIN standard panel size
- Data can be transferred in real time to the host PC via Ethernet, viewed and stored on the MSR128 PC Recorder program.
- IP 65 front panel



Remote I/O Acquisition: 73VR1100



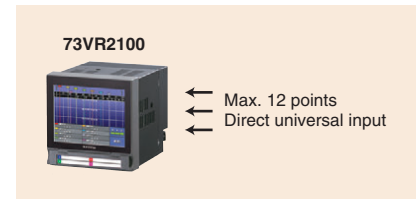
- Recording up to 128-point data transmitted from independent I/O located remotely in the field, or inside an instrumentation or control cabinet.
- Instead of using expensive sensor cables, reduce wiring runs by using field networks.
- I/O separated 73VR1100 provides an installation flexibility, fitting in the tight space of a control panel or machinery chassis.



Built-in Universal Input: 73VR2100

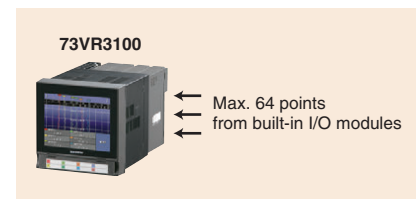


- DC current/voltage, thermocouple and RTD inputs from 2 to 12 points
- Independent input type and range selectable for each channel
- 100 msec. storing rate up to 6 points

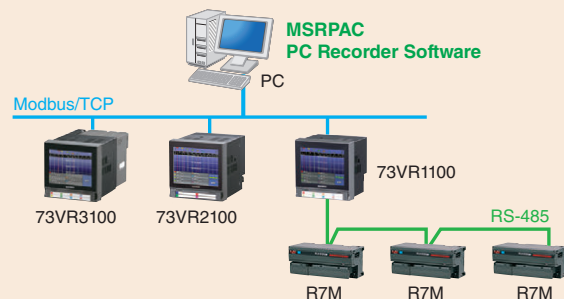


Selectable I/O Modules: 73VR3100

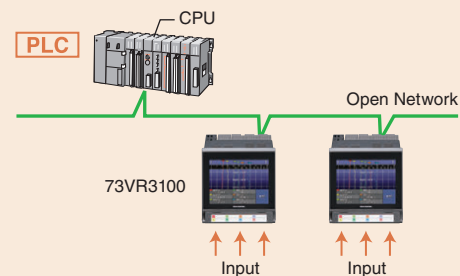
- Up to four R3 Series I/O modules (max. 64 points) can be selected and mounted at the rear of the recorder.
- Compatible with various open networks to communicate with major PLC: the 73VR3100 used as remote I/O with local display and recorder, integrated in a PLC control system
- 20 msec. storing rate with the combination of 8 analog and 8 discrete inputs



Expanded System via Ethernet



PLC Remote I/O with Local Display / Recording



- Signal Conditioners
- Limit Alarms
- Indicators
- Tower Lights
- Power Transducers
- Remote I/O
- Multiplex Transmission System

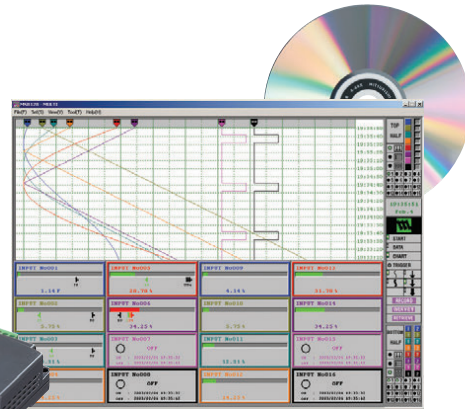
Recorders

- Web Data Loggers
- PID Control Components
- Temperature Controllers
- Electric Actuators
- Lightning Surge Protectors

- Focused New Products for Japan
- Signal Conditioners Selection Guide 1
- Signal Conditioners Selection Guide 2
- M-System Company

Remote Data Acquisition Hardware and Software PC Recorder

- Data collected by PC Recorder Software: PC Recorder Light, MSR128 and MSRpro
- Modbus-RTU or Modbus TCP/IP (Ethernet) network
- Full featured PC Recorder Software MSR128 for monitoring up to 128 channels simultaneously
- High speed sampling 50 ms / 8 ch with the basic software PC Recorder Light
- Complete lines of M-System's remote I/O products are available to accept a wide variety of field signal

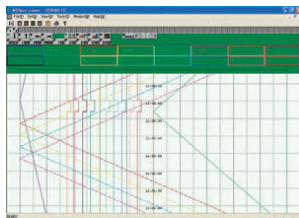
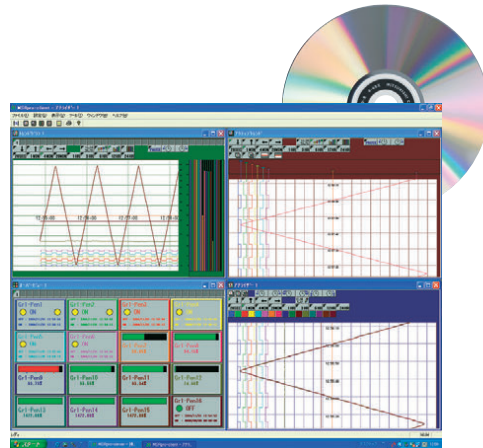


MSR128 Full Featured PC Recorder Software

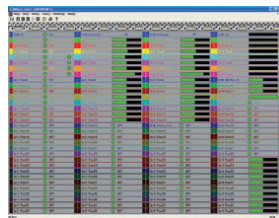
MSRpro Client/Server System High Performance PC Recorder

MSRpro

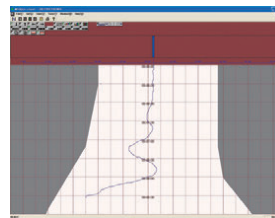
- Max. 2048 points
- High speed 100 msec. mode up to 256 points
- Active trend view to compare in real time past and present data overlapped on each other
- Arithmetic and logic functions, including the ones performed between channels
- Alarm history and data search functions



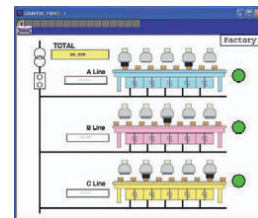
Trend View



Overview

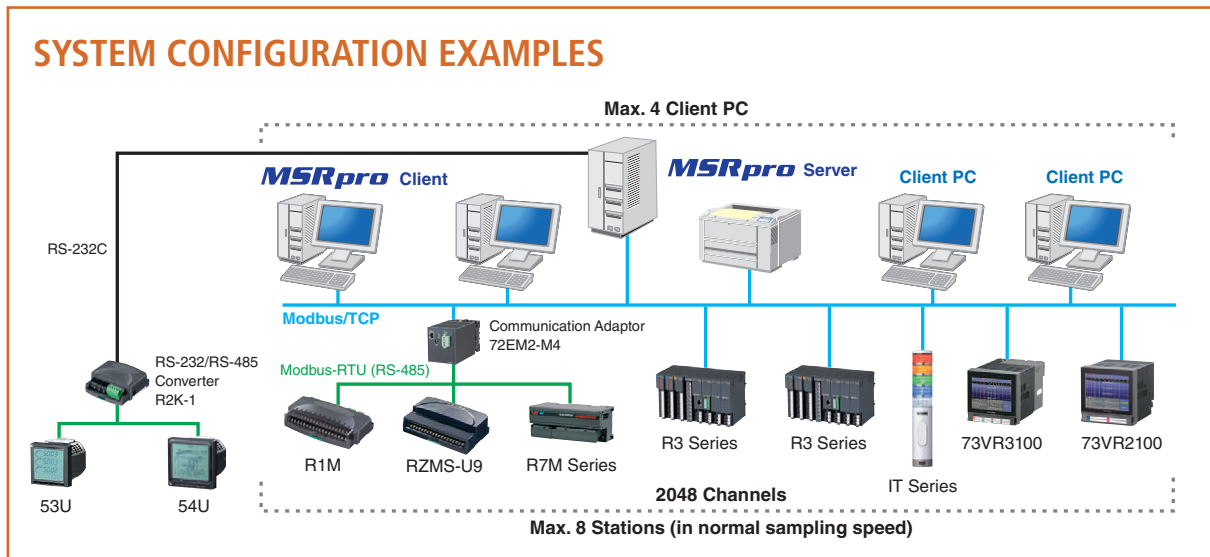


Active Trend



Graphic

SYSTEM CONFIGURATION EXAMPLES



- Signal Conditioners
- Limit Alarms
- Indicators
- Tower Lights
- Power Transducers
- Remote I/O
- Multiplex Transmission System

Recorders

- Web Data Loggers
- PID Control Components
- Temperature Controllers
- Electric Actuators
- Lightning Surge Protectors

- Focused New Products for Japan
- Signal Conditioners Selection Guide 1

- Signal Conditioners Selection Guide 2

M-System Company

Recorders

TR30-G Tablet Recorder Web-enabled DAQ System NEW

- 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
- SNMP client
- User's original browser view



110mm
(4.33")

98mm
(3.86")



M-System's 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.

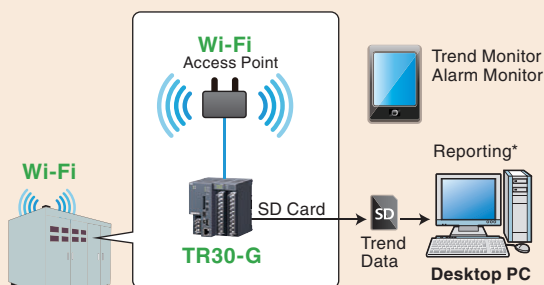
In addition, users can receive free benefit of ever-evolving state-of-the-art user interface and apps provided by tablet

terminals: i.g. ultra-high resolution screen, intuitive touch panel operations, entering comments by dictation or hand-writing, capturing a screen shot and e-mailing, etc.

At the maximum of 64 analog inputs (16-bit data), 64 discrete inputs, 64 discrete outputs, 32 pulse inputs (32-bit data) plus 32 function inputs (mathematical, logic, filter, etc.) are usable. 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.

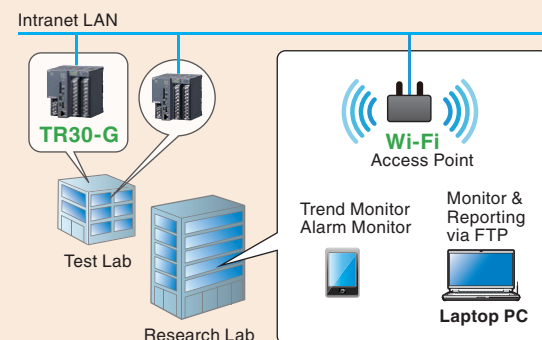
APPLICATION EXAMPLES

Plant Field Maintenance



* Reporting by user application

Test and Research

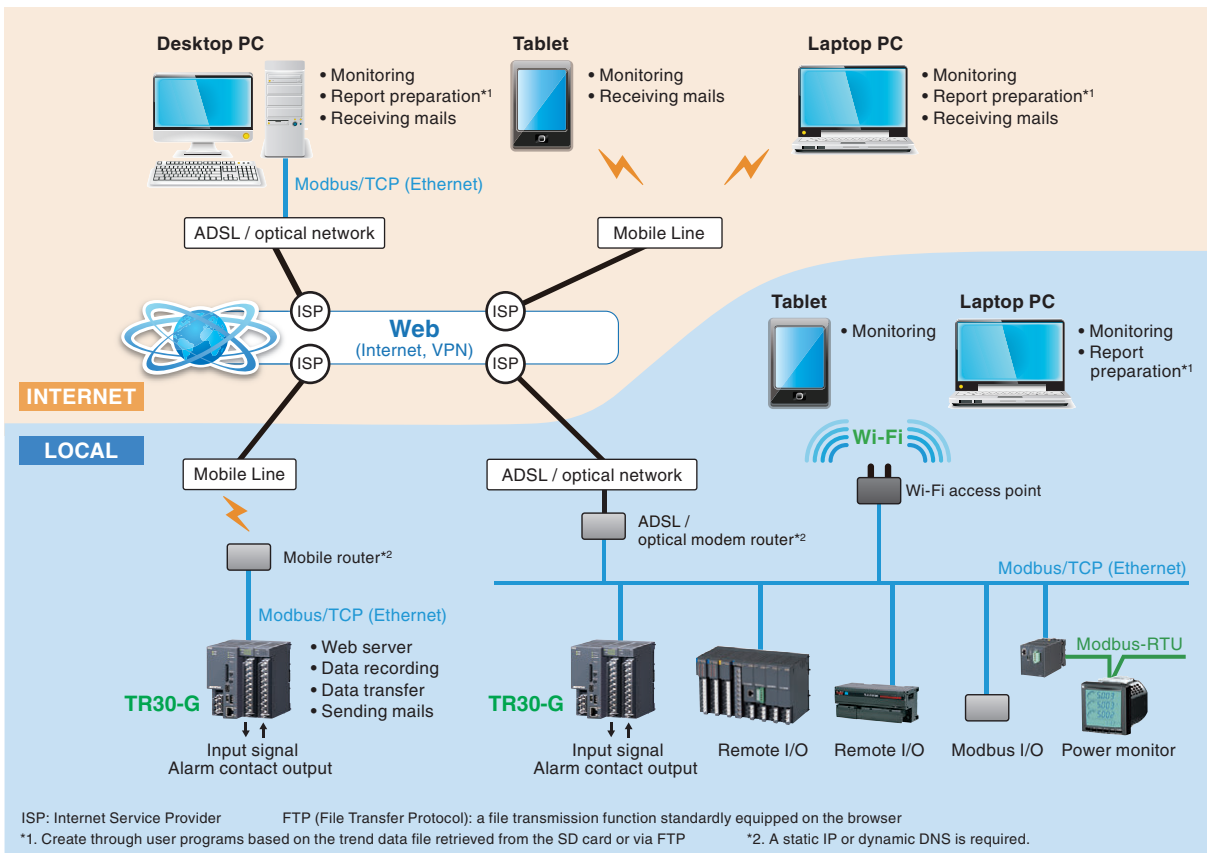


Browser Views



- Signal Conditioners
- Limit Alarms
- Indicators
- Tower Lights
- Power Transducers
- Remote I/O
- Multiplex Transmission System
- Recorders
- Web Data Loggers
- PID Control Components
- Temperature Controllers
- Electric Actuators
- Lightning Surge Protectors

System Configuration



- Focused New Products for Japan
- Signal Conditioners Selection Guide 1
- Signal Conditioners Selection Guide 2
- M-System Company

WEB DATA LOGGERS



DL8 Series

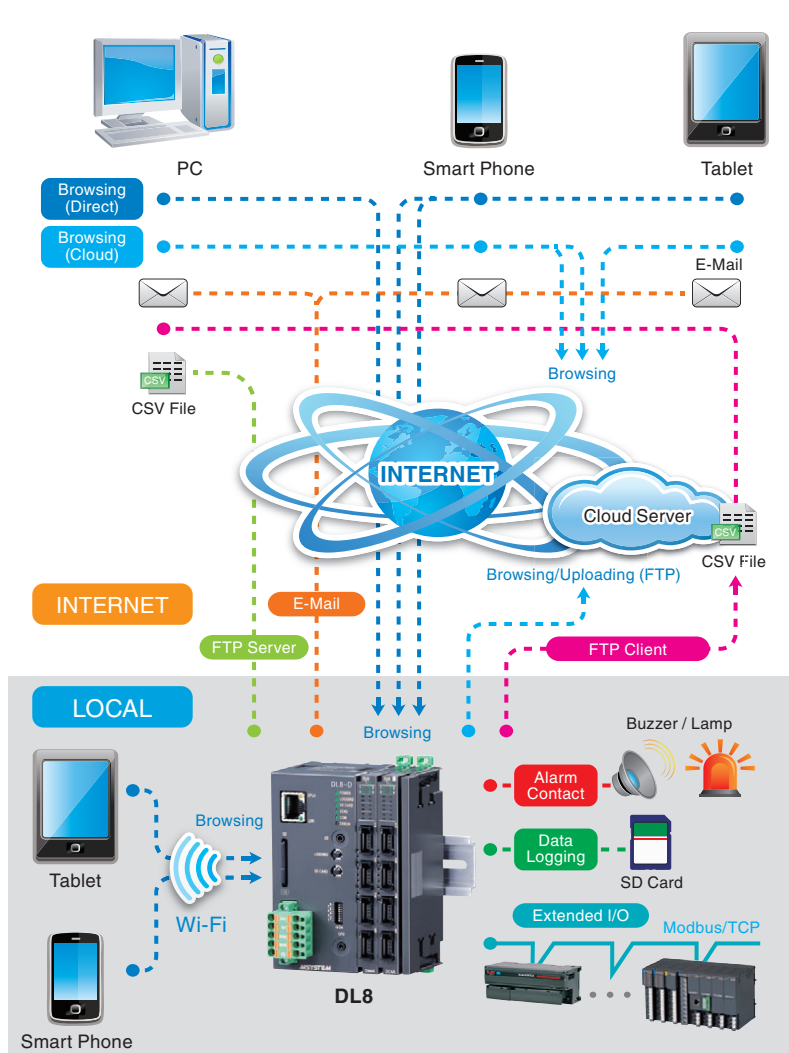
Web Enabled Remote Terminal Unit

Use Internet and Your Own Smart Phone To Build Up Remote Monitoring System

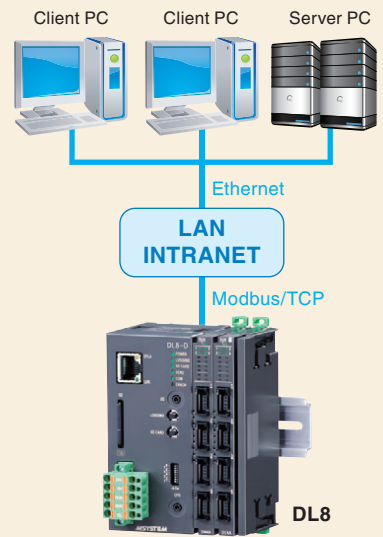
- Simple remote monitoring via internet without needing to build up a complex PC based system
- Pre-installed user-friendly browser view for remote data access through smart phones or tablets
- Reporting by e-mails
- Local data stored in an SD card memory
- Various network protocols are usable: TCP/IP,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



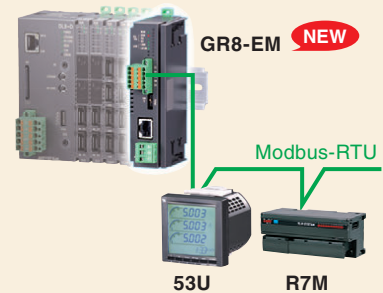
Enhanced Functions with Flexible Configurations



LAN / INTRANET SYSTEM CONFIGURATION



GR8-EM ETHERNET ADAPTOR for Modbus-RTU extension



- Signal Conditioners
- Limit Alarms
- Indicators
- Tower Lights
- Power Transducers
- Remote I/O
- Multiplex Transmission System
- Recorders
- Web Data Loggers**
- PID Control Components
- Temperature Controllers
- Electric Actuators
- Lightning Surge Protectors

- Focused New Products for Japan
- Signal Conditioners Selection Guide 1
- Signal Conditioners Selection Guide 2
- M-System Company

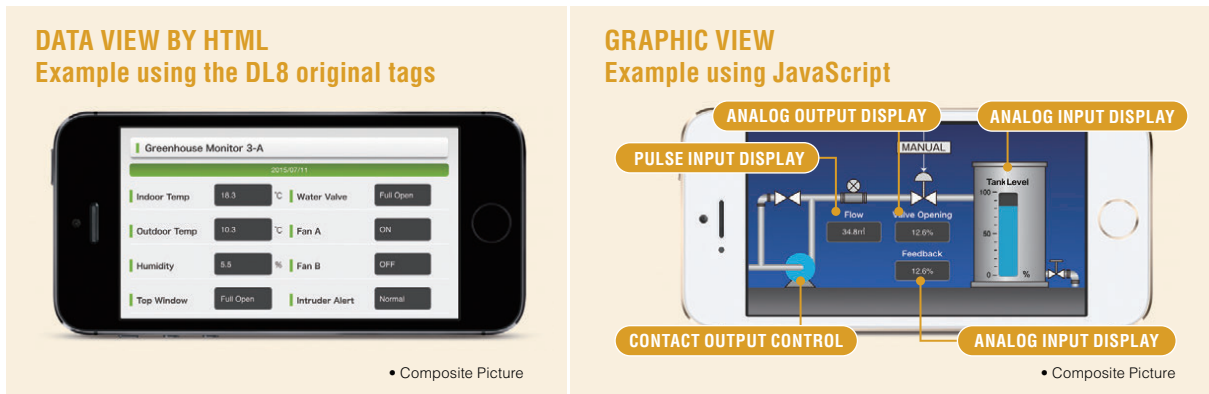
Web Browsed Views Designed for Mobiles



- Signal Conditioners
- Limit Alarms
- Indicators
- Tower Lights
- Power Transducers
- Remote I/O
- Multiplex Transmission System
- Recorders

Customized Web Browser Views

DL8-D OPTION **NEW**

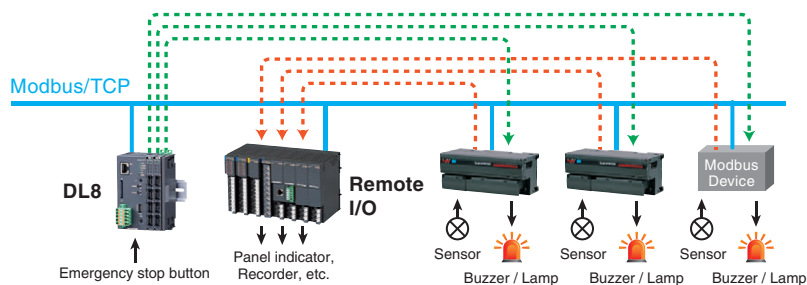


- Web Data Loggers
- PID Control Components
- Temperature Controllers
- Electric Actuators
- Lightning Surge Protectors

I/O Mapping by Modbus/TCP Master Function

DL8-D OPTION **NEW**

- Peer-to-peer connection between Modbus/TCP slaves
- Di/Do and Ai/Ao signal marshaling is easily set up on the DL8
- Remote multiplex transmission on IP network



• Do/Ao assigned for I/O mapping cannot be controlled via Modbus/TCP or web browser view.

EASY SETUP

Simply choose input and output on the list.

CH	Ai/CH name	
AO01	Feedwater flow IND	AO11 Feedwater flow
AO02	Feedwater pressure IND	Disable
AO03	Tank water level IND	Disable
AO04	Tank water temperature I...	Disable
AO05		Disable
AO06		Disable
AO07		Disable
AO08		Disable
AO09		Disable
AO10		Disable
AO11		Disable
AO12		Disable
AO13		Disable
AO14		Disable
AO15		Disable
AO16		Disable
AO17		Disable

- Focused New Products for Japan
- Signal Conditioners Selection Guide 1
- Signal Conditioners Selection Guide 2
- M-System Company

TYPICAL APPLICATIONS

- Event alert
- Remote monitoring and operation
- Labor-saving maintenance
- Material refilling schedule management
- Predictive and preventive maintenance



PID CONTROL COMPONENTS

- Signal Conditioners
- Limit Alarms
- Indicators
- Tower Lights
- Power Transducers
- Remote I/O
- Multiplex Transmission System
- Recorders
- Web Data Loggers
- PID Control Components**
- Temperature Controllers
- Electric Actuators
- Lightning Surge Protectors

SC100/SC200 Series Multi-Function PID Controller

Highly Visible Color Graphic LCD Intuitive Touch Panel Operation

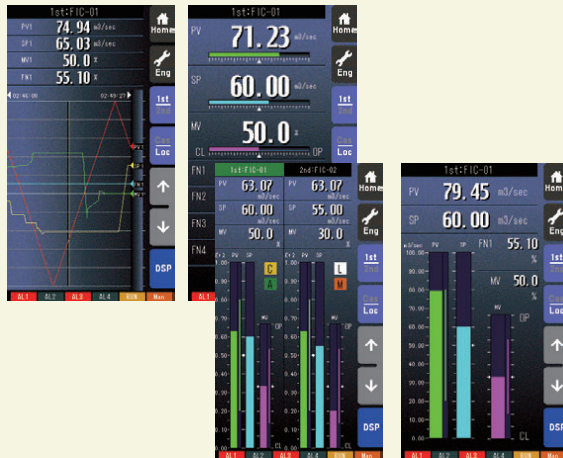
- Two loops of PID control
- 2 x universal inputs, 4 x analog inputs, 5 x contact or pulse inputs, 1 x high speed pulse input
- DCS in instrument format
- Auto tuning function
- Ideal for replacing existing instruments
- High reliability for demanding process use – Built-in manual loader with enhanced 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
- IP 55 front panel



FUNCTION	MODEL
Basic version	SC100
Modbus/NestBus extension version	SC200
Basic version with manual loader	SC110
Modbus/NestBus extension version with manual loader	SC210

Operation and Engineering Views

OPERATION VIEWS



ENGINEERING VIEWS

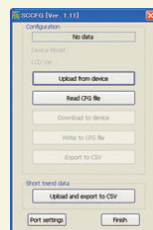


- Focused New Products for Japan
- Signal Conditioners Selection Guide 1
- Signal Conditioners Selection Guide 2
- M-System Company

Powerful Engineering Tools

PC Configuration Software SCCFG

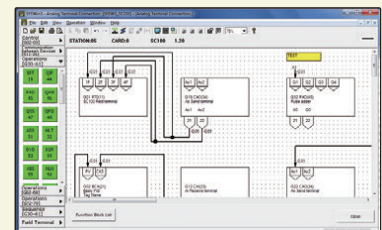
Used to configure display setting.



SCCFG

Loop Configuration Builder Software SFEW3E

Used to program advanced computation and sequential control function block setting.

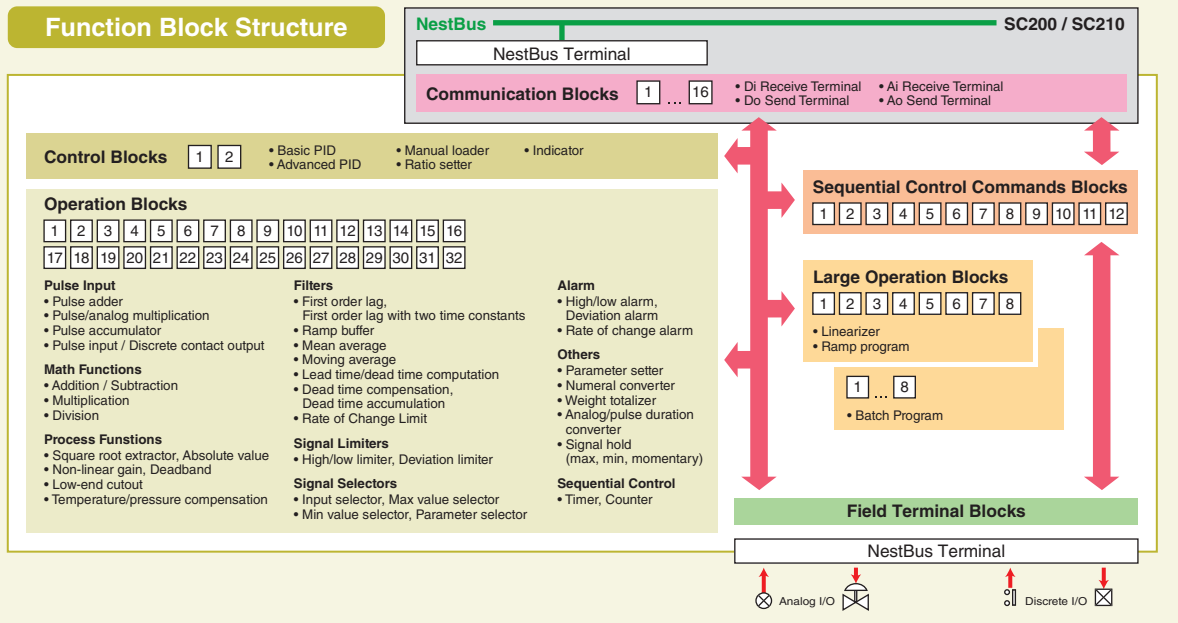


SFEW3E

DCS IN INSTRUMENT FORMAT – Advanced Computation and Sequential Control Functions

The control and computation functions are achieved by combining a wide variety of basic to advanced function blocks, which are normally found only in DCS systems, 2 PID blocks, 48 computation blocks and 12 sequential control blocks (1068 commands) are available for all versions of the SC Series, applicable to a wide range of application fields.

Function Block Structure



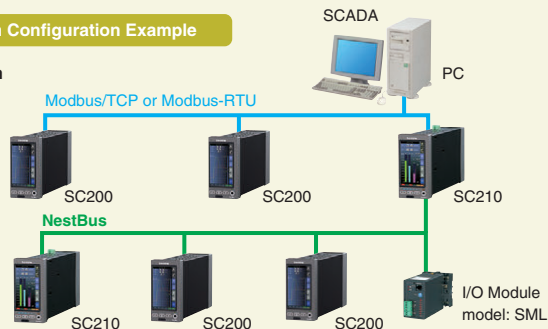
EXCELLENT EXPANDABILITY – Peer-to-peer and Host Communication

The SC200/SC210 has Modbus (Ethernet TCP/IP or RS-485 RTU) which enables easy connection to logging or SCADA systems on a host PC for supervising and controlling the local I/O data.

In addition, the RS-485 'NestBus' enables peer-to-peer communication with other controllers and I/O devices for flexibility of I/O points.

Expanded System Configuration Example

• Host Communication



• Peer-to-peer

TEMPERATURE CONTROLLERS

TC10 Series

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



TC10NM
1/8 DIN size
One PID loop



TC10EM
1/4 DIN size
Two PID loops

- Signal Conditioners
- Limit Alarms
- Indicators
- Tower Lights
- Power Transducers
- Remote I/O
- Multiplex Transmission System
- Recorders
- Web Data Loggers
- PID Control Components
- Temperature Controllers
- Electric Actuators
- Lightning Surge Protectors

- Focused New Products for Japan
- Signal Conditioners Selection Guide 1
- Signal Conditioners Selection Guide 2
- M-System Company

ELECTRIC ACTUATORS

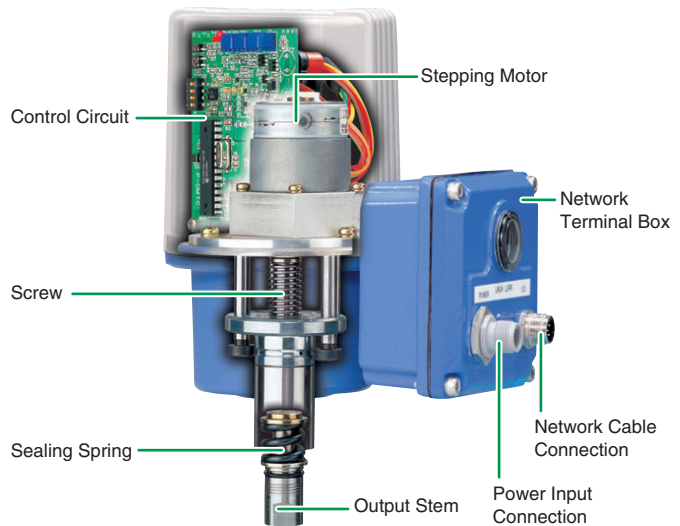


- Signal Conditioners
- Limit Alarms
- Indicators
- Tower Lights
- Power Transducers
- Remote I/O
- Multiplex Transmission System
- Recorders
- Web Data Loggers
- PID Control Components
- Temperature Controllers
- Electric Actuators**
- Lightning Surge Protectors

MSP / MRP Series

Open Network Capable Linear / Rotary Motion Actuator

- High resolution positioning for superior control
- Built-in feedback positioner and electric limiter
- Brushless stepping motor assures long-life operation
- 1/1000 resolution
- Optional network interface with CC-Link, DeviceNet



Transparent image of MSP5D

APPLICATIONS

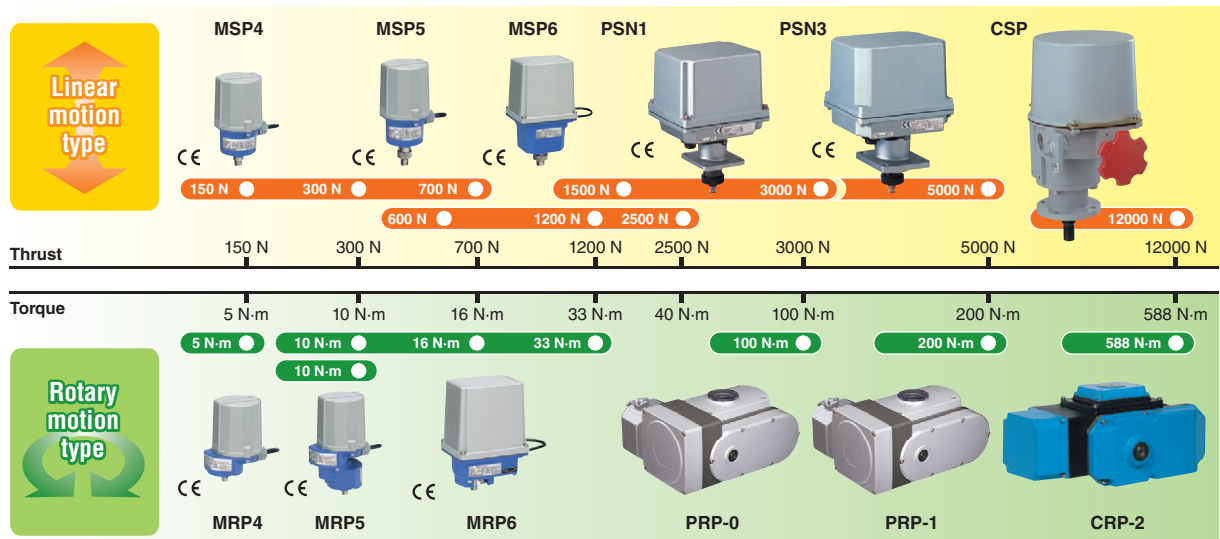
- Pilot plants
- Fuel valve control
- HVAC damper positioning
- Tank valve control in blending machines
- Pharmaceutical, wastewater flow control
- Paper profiling control



Air conditioning system

- Focused New Products for Japan
- Signal Conditioners Selection Guide 1
- Signal Conditioners Selection Guide 2
- M-System Company

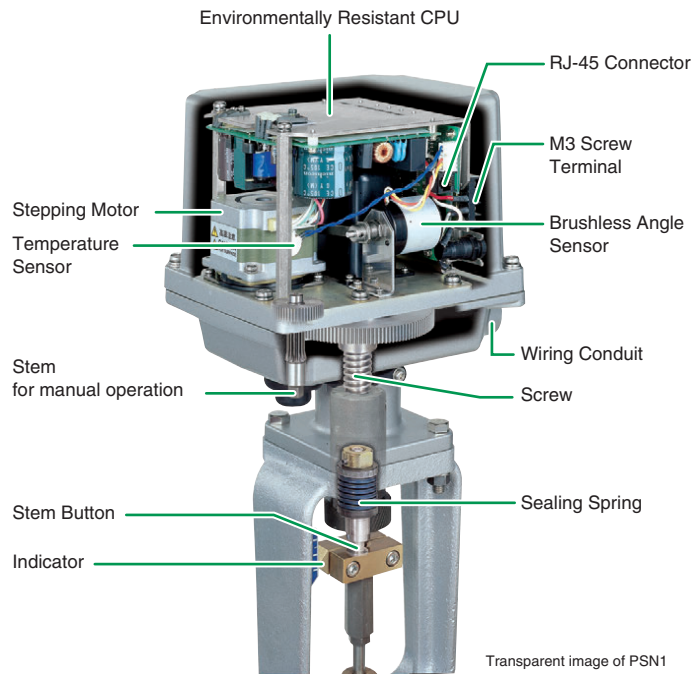
Linear and Rotary Actuators for Valve and Machinery Control



PSN / PRP Series

Linear / Rotary Motion Actuator

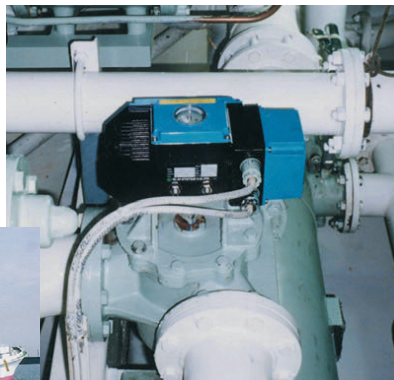
- Brushless angle sensor eliminates problems with mechanical potentiometer feedback sensing
- Opening/closing speed, split range and failsafe position programmable by hand-held programmer
- Internal temperature sensor to control heater in cold climate and to prevent motor from overheating
- Forced-open/-closed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



- Signal Conditioners
- Limit Alarms
- Indicators
- Tower Lights
- Power Transducers
- Remote I/O
- Multiplex Transmission System
- Recorders
- Web Data Loggers
- PID Control Components
- Temperature Controllers
- Electric Actuators**
- Lightning Surge Protectors

APPLICATIONS

- Chemical injection/mixing
- Pharmaceutical flow control
- Food processing machines
- Fuel valve control
- HVAC damper positioning



Engine coolant line control



PSN installed in a water treatment plant

- Focused New Products for Japan
- Signal Conditioners Selection Guide 1
- Signal Conditioners Selection Guide 2
- M-System Company

EA Series Rotary Motion Actuator

- Reversible AC motor
- Inching and proportional control
- High vibration resistance

For OEM



LIGHTNING SURGE PROTECTORS

M-Rester Series

M-System Surge Protectors Absorb Only the Lightning Surges With No Interruption of the Instrumentation Signal



- Protecting sensors, signal and power lines, communication networks
- Excellent protection by multi-stage SPD: extra protection by a series resistance with diodes to limit current flow in addition to the discharge element at the first stage
- Each model identified by specific sensors or devices to be protected; with carefully chosen specifications to provide maximum protection
- One-port surge protectors are also available for power line protection

Superior Selection Across a Broad Range of Sensor / Signal Types and Applications

- 4-20 mA & pulse signals
- Thermocouple
- RTD
- Potentiometer
- Strain gauge
- Frequency pickup
- RS-485 / RS-422
- Ethernet
- DeviceNet
- PROFIBUS
- LonWORKS
- Multi-stage SPD for AC/DC power supply lines up to 30 amps
- One-port SPD
- Class I and III
- Life monitor function for health testing
- Plug-in base wiring for easy maintenance
- Ultra-slim design for high density mounting
- Hazardous location approvals

Life Monitor & Surge Counter

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

- Protects 120 Vac / 240 Vac power supply lines for up to 5 amps load current
- Life monitor function helps you to decide when you should replace the surge protector, reducing maintenance and preventing downtime.
- Alarm contact output to alert externally the surge protector's health



One-Port SPD for Power Supply

MAKF / MAT2

- Connected in parallel between the power and ground lines regardless of load current
- Thermal breaker ensures degraded head element to be automatically separated from the power lines to prevent overheating.
- MAT2 applicable to three-phase power line in single module



- Signal Conditioners
- Limit Alarms
- Indicators
- Tower Lights
- Power Transducers
- Remote I/O
- Multiplex Transmission System
- Recorders
- Web Data Loggers
- PID Control Components
- Temperature Controllers
- Electric Actuators

Lightning Surge Protectors

Focused New Products for Japan

Signal Conditioners Selection Guide 1

Signal Conditioners Selection Guide 2

M-System Company

Plug-in Base Mounted

MDP Series

- Lightweight, easy-to-handle, plug-in construction
- Head element can be removed and tested without disconnecting wires.
- Base socket connects input/output signals when the head element is removed.



Ultra-Slim Housing

MD7 Series

- High density mounting with 7 mm wide modules
- Max. discharge current 20 kA (8/20 µsec.)
- Floating mode for the field to avoid ground loops
- DIN rail mounting / grounding



Battery Powered Health Testing

MDPA-24

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



APPLICATION	MDP SERIES	MD7 SERIES
4-20 mA loop, pulse signal, 24 V	Y	Y
4-20 mA loop, life monitor	Y	Y
2-wire transmitter loop, 1 channel or 2 channels	---	Y
3-wire transmitter loop	---	Y
Thermocouple transmitter	Y	Y
RTD transmitter	Y	Y
Potentiometer & transmitter	Y	Y
Strain gauge & transmitter	Y	Y
Self-synch & transmitter	Y	Y
Pulse sensor & transmitter	Y	Y
AC power supply	Y	Y
DC power supply, 12/24 Vdc	Y	Y
RS-422 / RS-485	Y	Y
PROFIBUS-PA	Y	Y
FOUNDATION Fieldbus	Y	Y
LonWorks (FTT-10A)	Y	Y

Field Transmitter Cable Conduit Mount

MD6N-24 / MD6T-24 / MD6P-24

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



8-port Pulse Signal Use

MDR2

- Protection for semiconductor switches of discrete outputs
- PNP or NPN connection
- Applicable to multi analog signals (non-isolated between channels)
- Space saving with multi-channel protectors
- LED monitor indicating degradation of voltage limiter, driven by discrete I/O signal without auxiliary power supply



PoE Plus / 1000BASE-T Ethernet Use

MDCAT

- Power-over-Ethernet compatible
- 1000BASE-T / 100BASE-TX / 10BASE-T
- Ideal to protect network devices powered from Ethernet such as webcams
- Conforms to IEC 61643-21, Categories C1, C2



- Signal Conditioners
- Limit Alarms
- Indicators
- Tower Lights
- Power Transducers
- Remote I/O
- Multiplex Transmission System
- Recorders
- Web Data Loggers
- PID Control Components
- Temperature Controllers
- Electric Actuators
- Lightning Surge Protectors

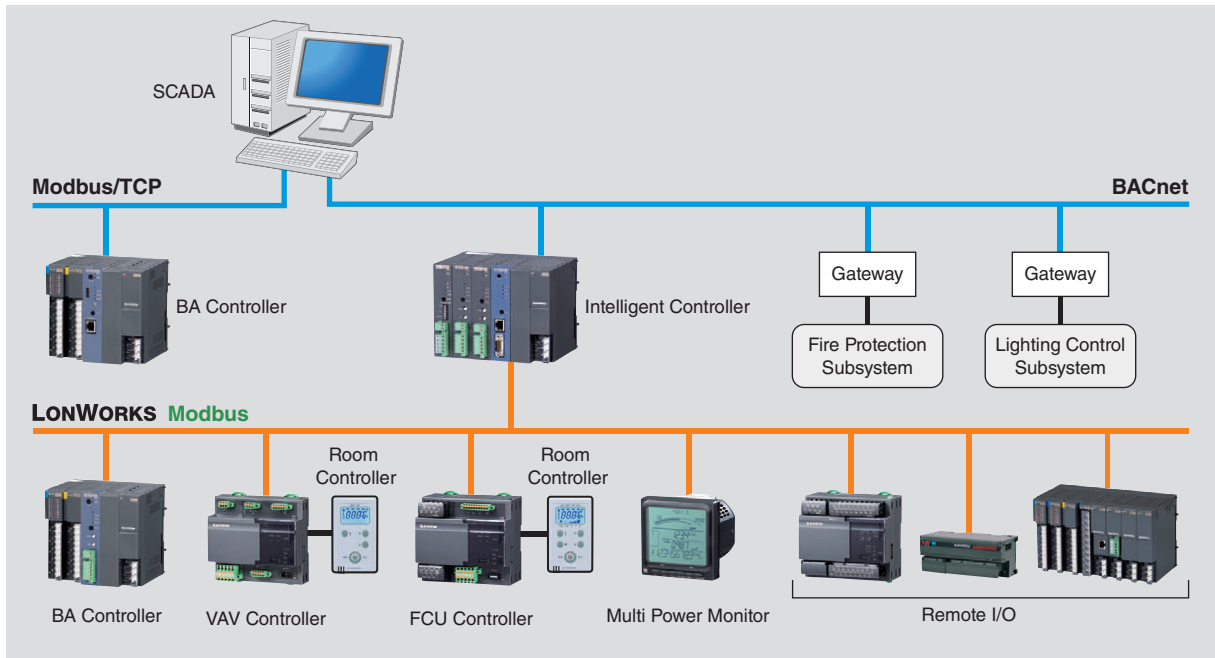
- Focused New Products for Japan
- Signal Conditioners Selection Guide 1
- Signal Conditioners Selection Guide 2
- M-System Company

FOCUSED NEW PRODUCTS FOR JAPAN

Products introduced in this section are only available in Japanese market or for limited release outside Japan.

HVAC Controllers for Energy-Efficient Building Managing System

- Open protocol network based
- Intelligent controller, network gateway (master) modules and economical I/O modules can be freely selected.
- DDC equipped with convenient control functions



Intelligent Controller
BA3-CB3



BA Controller
BA3-CL3 **LONWORKS**
BA3-CE10 **Modbus/TCP**



VAV Controller
BA9-VAV **LONWORKS**
BA9M-VAV **Modbus**

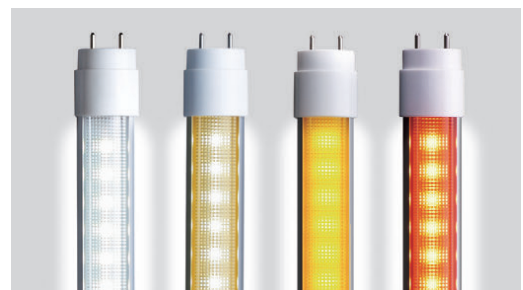


FCU Controller
BA9-FCU **LONWORKS**
BA9M-FCU **Modbus**



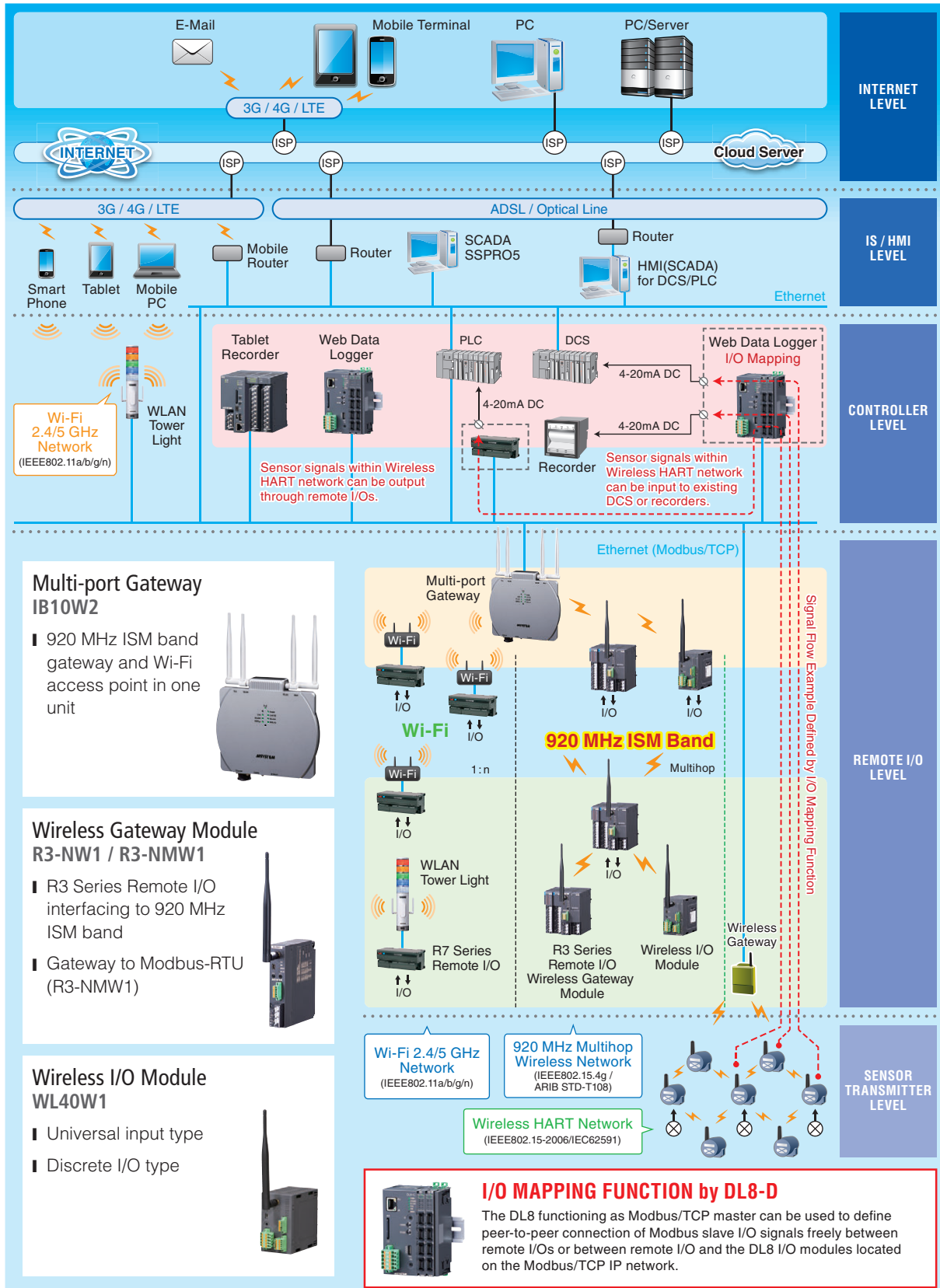
LED Tube for Replacing Fluorescent Lamps without Modification

- Direct replacement of existing lamps using the existing lamp holder
- Universally adaptable to glow tube starter, rapid start and inverter ballast types, single and dual-lamp lighting fixtures
- Energy-saving, long-life LED lamp
- Glass-free and mercury-free design for safe working condition and non-hazardous waste disposal



Wireless I/O System for IoT NEW

- Convenient wireless converter/gateways to collect field sensor data
- Remote monitoring using your mobile terminals via the internet
- Abnormality can be alerted via e-mails



- Signal Conditioners
- Limit Alarms
- Indicators
- Tower Lights
- Power Transducers
- Remote I/O
- Multiplex Transmission System
- Recorders
- Web Data Loggers
- PID Control Components
- Temperature Controllers
- Electric Actuators
- Lightning Surge Protectors

Focused New Products for Japan

Signal Conditioners Selection Guide 1

Signal Conditioners Selection Guide 2

M-System Company

Multi-port Gateway IB10W2

- 920 MHz ISM band gateway and Wi-Fi access point in one unit

Wireless Gateway Module R3-NW1 / R3-NMW1

- R3 Series Remote I/O interfacing to 920 MHz ISM band
- Gateway to Modbus-RTU (R3-NMW1)

Wireless I/O Module WL40W1

- Universal input type
- Discrete I/O type

I/O MAPPING FUNCTION by DL8-D







The DL8 functioning as Modbus/TCP master can be used to define peer-to-peer connection of Modbus slave I/O signals freely between remote I/Os or between remote I/O and the DL8 I/O modules located on the Modbus/TCP IP network.

SIGNAL CONDITIONERS SELECTION GUIDE 1

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



SERIES		M2 / M2E	W2	M5 / B5	W5	
Enclosure / Mounting Type		Plug-in base socket, DIN rail or surface mount		41 mm deep housing, DIN rail mount		
Range Availability		Specified when ordering or PC/One-step Cal programming (M2E: PC / Front display setting)		Specified when ordering or DIP switch programming (W5FV)		
Dual Output		-	Yes	-	Yes	
Power Input		AC/DC		AC/DC		
Isolation		2000V AC		2000V AC (except M5/AC powered type: 1500V AC)		
Operating Temperature		-5 to +55°C (23 to 131°F)		M5/W5: -5 to +55°C (23 to 131°F) B5: -40 to +80°C (-40 to +176°F)		
Standards & Approval		CE / UL / C-UL		CE		
Four-wire Signal Conditioners	Universal input	DC output	M2XU			
	DC mV, Voltage & Current	Fixed range	M2VS	W2VS	M5VS, M5MV	W5VS
		Fixed range, high speed response	M2VF, M2VF2, M2VF3	W2VF	M5VF, M5VF2	
		Configurable	M2XV2, M2LV, M2FV, M2EXV			W5FV
		Dual isolated output		W2VS		W5VS
	Thermocouple	Fixed range	M2TS	W2TS	M5TS	W5TS
		Configurable	M2XT2, M2EXT	W2XT		
	RTD	Fixed range	M2RS	W2RS	M5RS	W5RS
		Configurable	M2XR2, M2LR, M2EXR	W2XR		
	Potentiometer	Fixed range	M2MS	W2MS	M5MS	W5MS
		Configurable	M2XM2, M2LPM, M2EXM	W2XM		
	Strain gauge	Fixed range	M2LCS			W5LCS
		Configurable				
	AC voltage & current	AC voltage & current	M2AC, M2TG	W2AC, W2TG		
		Voltage transformer	M2PE, M2PA	W2PE, W2PA	M5PT	
		Current transformer	M2CE, M2CA, M2CEC	W2CE, W2CA	M5CT, M5CTC	
	Current loop supply (2-wire transmitter excitation supply)	Fixed range	M2D(2), M2DYS, M2DNY	W2DYS, W2DNY	M5DY	W5DY
		Configurable				
		HART compatible	M2DYH2, M2DYHR	W2DYH2		
	Pulse to analog	Fixed range	M2SP	W2SP	M5PA	W5PA
Configurable		M2XPA3				
Encoder input, configurable		M2XRP2				
Analog to pulse	Fixed range	M2AP	W2AP			
	Configurable					
Pulse scaling	Configurable	M2PRU				
Pulse isolation	Fixed range	M2PP	W2PP			
	Configurable					
Pneumatic input	19.6-98.1 kPa	M2PV	W2PV			
Function modules		» See Page 10				
Two-wire Signal Conditioners	Input loop powered isolator	1 channel	M2SN-1		B5SN	
		2 channels	M2SN-2			
	Output loop powered isolator	1 channel			B5VS	
		2 channels				
	DC mV, Voltage & Current	Fixed range			B5VS	
		Configurable				
	Thermocouple	Fixed range			B5TS	
		Configurable				
		Configurable, IS				
	RTD	Fixed range			B5RS	
		Fixed range, IS				
		Configurable				
		Configurable, IS				
	Potentiometer	Fixed range			B5MS	
Configurable						
Pulse to analog	Fixed range					
	Configurable					
Universal input	Configurable, IS					
	4-20 mA output, HART, IS					
	PROFIBUS					
Limit alarms		» See Page 12-13				

						SERIES
18 mm wide housing, DIN rail mount	12 mm wide housing, DIN rail mount	Ultra-slim housing, DIN rail mount	Field mount enclosure	DIN type B head mount		Enclosure / Mounting Type
Specified when ordering or PC/One-step Cal programming	Specified when ordering or PC programming	Specified when ordering or PC programming	HART (PC) programming	PC or HART programming	Specified when ordering	Range availability
–	–	Selected models	–	–	–	Dual Output
AC/DC	AC/DC	DC	Output loop powered	Output loop powered		Power Input
2000V AC (DC powered)	2000V AC	2000V AC	1500V AC	1500V AC		Isolation
M3: -25 to +65°C B3: -40 to +85°C	-10 to +55°C (14 to 131°F)	-20 to +55°C (-4 to +131°F)	-40 to +85°C (-40 to +185°F)	-40 to +85°C (-40 to +185°F)		Operating Temperature
CE / UL / C-UL / ATEX / FM	CE	CE / UL / C-UL	CE / ATEX / FM	CE / ATEX / FM	CE / ATEX	Standards & Approval
M3LU2		M6xXU				Universal input
	M3SYV, M3SVS	M6xYV, M6xVS				DC mV, Voltage & Current
		M6xVF				
M3LV	M3SXV M3SWVS	M6xXV M6xWVS				Thermocouple
M3LT	M3SXT M3SRS	M6xXT				RTD
M3LR	M3SXR M3SMS	M6xXR				Potentiometer
M3LM	M3SXM	M6xXM				Strain gauge
M3LLC						AC voltage & current
		M6xCTC				
M3DY	M3SDY	M6xDY				Current loop supply (2-wire transmitter excitation supply)
M3LDY A3DYH (IS)						
		M6xPA				Pulse to analog
M3LPA2						
						Analog to pulse
		M6xXAP				
						Pulse scaling
		M6xPP				
						Pulse isolation
» See Page 10						Pneumatic input
		M6xSN-1				Function modules
		M6xSN-2				
B3VS/1						Input loop powered isolator
B3VS/2						
B3VS						Output loop powered isolator
B3FV						
					26TS1	DC mV, Voltage & Current
B3FT				27TS 27TS		
					26R1, 26RS 26REX	Thermocouple
B3FR				27R, 27RS 27R, 27RS		RTD
				27PM		Potentiometer
B3FP						Pulse to analog
				27U		
B3HU, B3HU2			B6U, B6U-B, 27HU-B	27HU		Universal input
B3PU						
» See Page 12-13						Limit alarms

- Signal Conditioners
- Limit Alarms
- Indicators
- Tower Lights
- Power Transducers
- Remote I/O
- Multiplex Transmission System
- Recorders
- Web Data Loggers
- PID Control Components
- Temperature Controllers
- Electric Actuators
- Lightning Surge Protectors

- Focused New Products for Japan
- Signal Conditioners Selection Guide 1
- Signal Conditioners Selection Guide 2
- M-System Company

SIGNAL CONDITIONERS SELECTION GUIDE 2

These products which were released in the market decades ago are still maintained today as M-System products lineup to serve our customers maintaining the performance of existing process control systems.

Please visit M-System web site to confirm specs of specific models.

Plug-in Type Signal Conditioners

Pico-M Series

Dual Output Super-mini Signal Conditioners

- High-density mounting thanks to low heat generating design
- 4-way isolation
- 4-20 mA second output available



M-UNIT Series

Plug-in Signal Conditioners

- Broadest range of I/O signals and functions
- LCD display optional
- 2000 Vac isolation



W-UNIT Series

Plug-in Signal Splitters

- Two-independent output ranges can be specified
- 2000 Vac isolation



MX-UNIT Series

Front-Configurable Signal Conditioners

- Simple configuration via the front Up/Down buttons with a help of two displays, by calling parameters' ID numbers (ITEM) and choosing values (DATA)
- Field selectable sensor type and range



K-UNIT Series

Plug-in Signal Conditioners

- Low cost
- Wide selection of power transducers



F-UNIT Series

Space-saving Signal Conditioners

- AC or DC powered
- Zero and span adjustments behind the access cover



H-UNIT Series

Space-saving Signal Conditioners

- DC powered
- Pneumatic transducers available



Miniature Isolation Amplifiers 20 Series

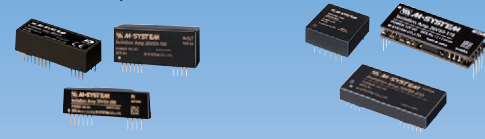
Isolation amplifiers provide signal and power isolation for data acquisition components to protect them from noises present at remote devices.

Also useful to:

- Amplify low-level signals in multi-channel applications
- Eliminate measurement errors by ground loops
- Reduce circuit costs

M-System offers a complete range of isolation amplifiers featuring:

- Input isolation (two-port)
- Output isolation (two-port)
- Three-port isolation
- Low-level mV signal input
- DC current output
- High isolation voltage
- Wide bandwidth
- Powered by external clock
- High gain



- Signal Conditioners
- Limit Alarms
- Indicators
- Tower Lights
- Power Transducers
- Remote I/O
- Recorders
- Web Data Loggers
- Multiplex Transmission System
- PID Control Components
- Temperature Controllers
- Electric Actuators
- Lightning Surge Protectors

- Focused New Products for Japan
- Signal Conditioners Selection Guide 1

- Signal Conditioners Selection Guide 2

- M-System Company



Two-wire Signal Conditioners

6-UNIT Series

Field-mounted Signal Conditioners

- Field-selectable input types via internal DIP switches
- Rugged metal housing provides increased noise and RFI protection
- Outdoor enclosure 6BX-E available



T-UNIT Series

Super-mini Signal Conditioners

- High-density mounting on wall / DIN rail
- Super-small pneumatic-to-current transducer available



B-UNIT Series

Space-saving Signal Conditioners

- Wide supply voltage range 12-60 Vdc

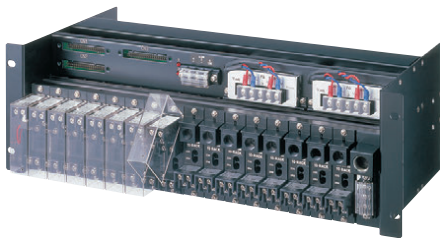


Rack-mounted Signal Conditioners

10-RACK Series

High-density Signal Conditioners

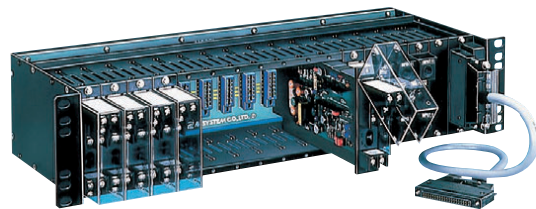
- Up to 16 units in 19-inch rack
- Direct interface to various DCS via connector



15-RACK Series

Dual Channel Isolators

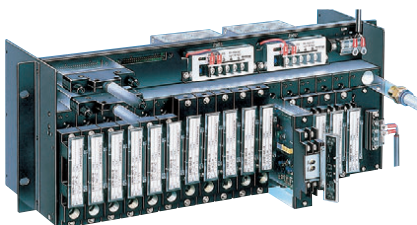
- Space-saving isolators for economical multi-channel input processing



18-RACK Series

DCS Signal Conditioners

- Up to 16 units in 19-inch rack
- Direct interface to various DCS via connector



38-RACK Series

Interposing Relays

- Complete packaging for interposing relays
- Simplifying designing, installation, wiring and testing



- Signal Conditioners
- Limit Alarms
- Indicators
- Tower Lights
- Power Transducers
- Remote I/O
- Recorders
- Web Data Loggers
- Multiplex Transmission System
- PID Control Components
- Temperature Controllers
- Electric Actuators
- Lightning Surge Protectors

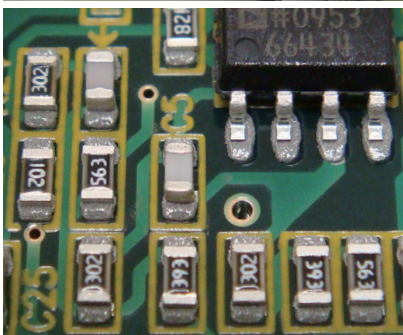
Focused New Products for Japan

Signal Conditioners Selection Guide 1

Signal Conditioners Selection Guide 2

M-System Company

M-SYSTEM COMPANY



We have not discontinued our products without compatible replacements.

We do not easily stop manufacturing products once released in the market, without trying to supply compatible products of equal or better performance to replace with, because we believe it is an important responsibility as the world's leading manufacturer to continue serving people who maintain the performance of process control systems. Visit M-System web site and find specifications and instruction manuals no matter how old the product, downloadable online.

We supply ready-to-install products in fast and precise delivery time.

The standard manufacturing lead time for most M-System products with customer's specified range is 5 days. But more than quarter of the total shipments are delivered in shorter lead time, and Quick Service Center expedites more than 600 orders every month on the same day or the next day after ordered.

So do not worry too much about the standard delivery. Just let us know 'When' you need one of our products. They are calibrated for your exact needs with no extra charge.

Once a delivery time is promised, you can of course count on us to deliver them precisely on time.

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.

We offer continued reassurance. Always Customers First.

Based on our "Customer Creed" policy, we go beyond normal manufacturers' obligations with our special repair service. If you suspect damage to a product by mistakes in handling, contact our Customer Center. We would be happy to check and repair it without charge. Consult M-System web site for detailed terms and conditions applicable to this service.

- Signal Conditioners
- Limit Alarms
- Indicators
- Tower Lights
- Power Transducers
- Remote I/O
- Recorders
- Web Data Loggers
- Multiplex Transmission System
- PID Control Components
- Temperature Controllers
- Electric Actuators
- Lightning Surge Protectors

Focused New Products for Japan

Signal Conditioners Selection Guide 1

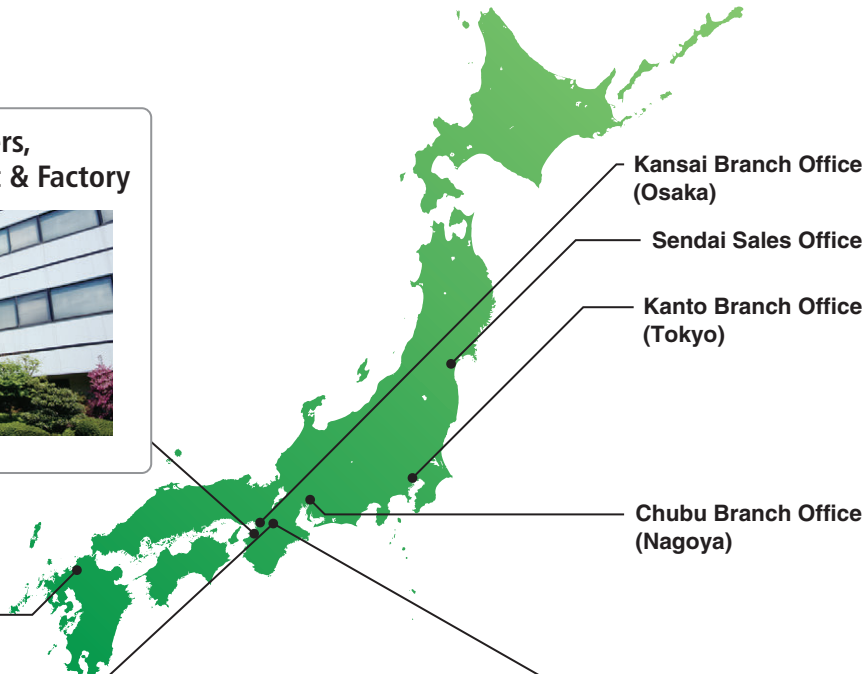
Signal Conditioners Selection Guide 2

M-System Company

Locations

JAPAN

Osaka Headquarters, International Department & Factory



Kyushu Sales Office

Kyoto Techno Center



Type testing and evaluation facilities

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

Kyoto Research Center & Factory



New factory expanded January 2016

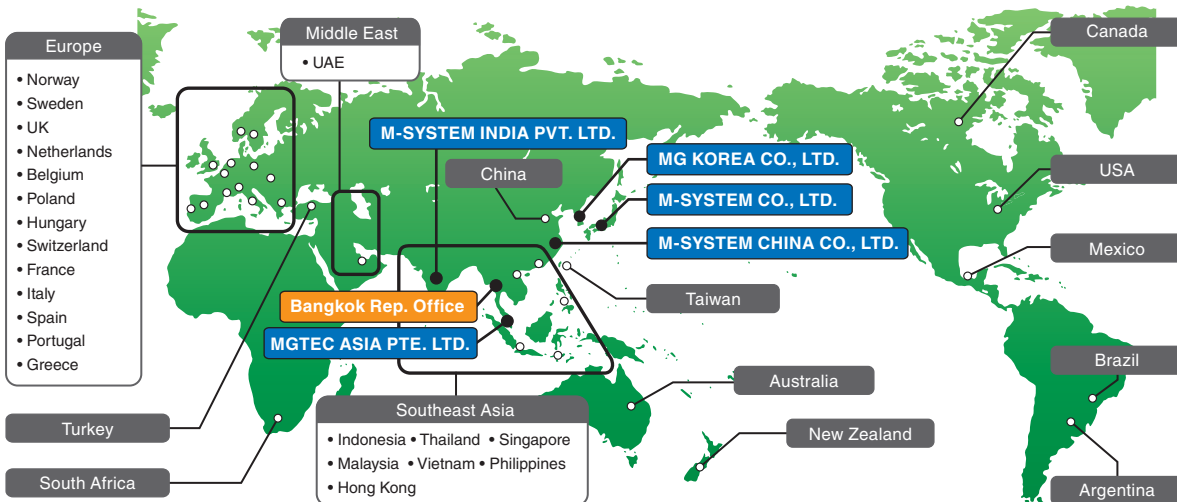
- Second manufacturing location inspired by BCP revised after East Japan Earthquake in 2011
- Showcase plant utilizing M-System's BA controllers

Signal Conditioners
Limit Alarms
Indicators
Tower Lights
Power Transducers
Remote I/O
Recorders
Web Data Loggers
Multiplex Transmission System
PID Control Components
Temperature Controllers
Electric Actuators
Lightning Surge Protectors

Focused New Products for Japan
Signal Conditioners Selection Guide 1
Signal Conditioners Selection Guide 2

M-System Company

GLOBAL SALES NETWORK



M-SYSTEM CO., LTD.

Headquarters, International Department & Factory

5-2-55, Minamitsumori, Nishinari-ku, Osaka
557-0063 JAPAN
Tel: +81-(0)6-6659-8201
Fax: +81-(0)6-6659-8510
E-mail: info@m-system.co.jp

M-SYSTEM CHINA CO., LTD.

Room03, 12/F Building II, No533,
Loushanguan Road, ChangNing District,
Shanghai 200051 P.R.China
Tel: +86-(0)21-6237-2015, 2016
Fax: +86-(0)21-6237-2017
E-mail: info-c@m-system.co.jp

MG KOREA CO., LTD.

9F, Yungseong Bldg., 230-1, Bangbae-ro,
Seocho-gu, Seoul, 137-060, Korea
Tel: +82-(0)2-548-8203
Fax: +82-(0)70-8282-8262
E-mail: mgkorea@m-system.co.jp

MGTEC ASIA PTE. LTD.

Penthouse Level
Suntec Tower Three
8 Temasek Boulevard
Singapore 038988
Tel: +65-6866-3202, 3207
Fax: +65-6866-3838

M-SYSTEM INDIA PVT. LTD.

No. 24, 2nd Street, Civil Aviation Colony, Nanganallur,
Chennai - 600061, Tamil Nadu, India
Tel: +91-44-2224 2210

M-SYSTEM

M-SYSTEM CO., LTD.

5-2-55, Minamitsumori, Nishinari-ku, Osaka 557-0063 JAPAN
Tel: +81-(0)6-6659-8201 Fax: +81-(0)6-6659-8510

URL www.m-system.com E-mail info@m-system.co.jp

