



Four-wire Signal Conditioners



Two-wire Signal Conditioners



Power Transducers



Panel Indicators



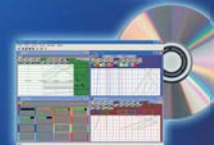
Limit Alarms



Remote I/O



Paperless Recorder



PC Recorder



Lightning Surge Protectors



Electronic Actuators

2010 - 2011

M-System Product Guide



ISO 9001 / ISO 14001 Certified



No matter what combination of process signal I/O, power input and mounting configuration you need, M-System can meet your requirements when others can't. Just what you would expect from the world's largest supplier of high-performance interface solutions.

The Search Has Ended!

More Than 75000 Combinations!

M-System offers more than 3000 signal conditioner and remote I/O modules as standard, with more than 75000 I/O, power and mounting configuration combinations. **Special input and output types are also available.** In fact, more than 20000 special specifications have been requested and offered to our customers worldwide until now.

If one signal conditioner is not enough for the customer's application, we can often offer you a solution by combining signal conditioners to do the same job.

M-System delivers more than 500000 I/O modules, including 300000 modules of signal conditioners, every year —

Just ask us.



M-System Can, When Others Can't.

M-System Has Not Discontinued its Products Without Compatible Replacements.

M-System does not easily stop manufacturing products once released in the market, unless we are able to supply other products of equal or better quality to replace with, because we believe it is a very important responsibility as a leading manufacturer in the world to continue to serve people who maintain the performance of process control systems.

Find specifications and instruction manuals no matter how old the product, downloadable at our online DATA LIBRARY, updated weekly.



Count On Us for Fast & Precise Delivery Time

The standard manufacturing lead time for most M-System's signal conditioners is 5 days. But more than quarter of the total shipment are delivered in shorter lead time, and Quick Service Center expedites more than 500 orders every month on the same day or the next day after ordered.

Do not worry too much about the standard delivery. Just let us know 'When' you need a signal conditioner. Once a delivery date is promised, you can of course count on us to deliver the products precisely on time.



Meeting with Modern Industrial Trends

M-System offers an enormous selection of I/O products including signal conditioners, distributed network I/O, paperless recorders, panel meters, surge suppressors and valve actuators. Not only that, we are continuously working on meeting modern industrial trends for open network I/O devices including Modbus, Ethernet, DeviceNet, PROFIBUS, CC-Link, LONWORKS and MECHATROLINK. Working with open-architecture networks, these products easily communicate to today's most popular HMI software packages and DCS/PLCs.

Major product offerings of M-System are certified by various industrial standards such as CE (EMC, LVD), UL & C-UL, ATEX and FM.



Need for EMC Countermeasures

Advances in technologies have led to higher-density electronic circuits, higher-frequency signals, and lower circuit voltages in most electronic devices, making them more susceptible to the effects of weak EMI.

EMC countermeasures combining EMI and EMS components provide the basic means of dealing with electro-magnetic radiation. These countermeasures must be incorporated from the product design and development stage.

Increasingly strict standards defining the levels of EMI that are permissible from a safety standpoint have also served to focus attention on the importance of EMC countermeasures.

Many equipment manufactures rely upon public testing facilities to verify the compliance of their products with Europe's mandatory CE marking program.

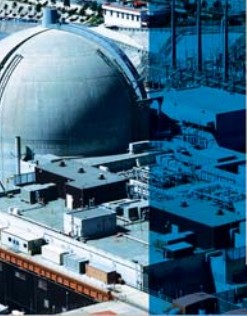
M-System has its own RF anechoic chamber and shielded room facilities, Kyoto Techno Center, in order to speed the development of new products.



M-System Kyoto Techno Center



RF Anechoic Chamber









Signal Conditioners Selection Guide

Only typical models and specs are mentioned in this table. Please consult M-System Online Data Library to confirm availability and specs of specific models.



SERIES			M2	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		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	
		Configurable	M2XV2, M2LV, M2FV			W5FV
		Dual isolated output		W2VS		W5VS
	Thermocouple	Fixed range	M2TS	W2TS	M5TS	W5TS
		Configurable	M2XT2			
	RTD	Fixed range	M2RS	W2RS	M5RS	W5RS
		Configurable	M2XR2, M2LR	W2XR		
	Potentiometer	Fixed range	M2MS	W2MS	M5MS	W5MS
		Configurable	M2XM2, M2LPM	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	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 14			
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 19			



						
M3 / B3 / A3	M3S	M6	B6 / 27	27	26	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 / SIL / ATEX / FM	CE / SIL / ATEX / FM	CE / ATEX	Standards & Approval
M3LU		M6xXU				Universal input
	M3SYV, M3SVS	M6xYV, M6xVS				DC mV, Voltage & Current
		M6xVF				
M3LV	M3SXV	M6xXV				
	M3SWVS	M6xWVS				Thermocouple
M3LT	M3SXT	M6xXT				RTD
	M3SRS					
M3LR	M3SXR	M6xXR				Potentiometer
	M3SMS					Strain gauge
M3LM	M3SXM	M6xXM				
M3LLC						AC voltage & current
		M6xCTC				
M3DY	M3SDY	M6xDY				Current loop supply (2-wire transmitter excitation supply)
M3LDY						
A3DYH (IS)						Pulse to analog
		M6xPA				
M3LPA2						Analog to pulse
						Pulse scaling
						Pulse isolation
		M6xPP				Pneumatic input
▶ See Page 14						Function modules
		M6xSN-1				Input loop powered isolator
		M6xSN-2				
B3VS/1						Output loop powered isolator
B3VS/2						
B3VS						DC mV, Voltage & Current
B3FV						
					26TS1	Thermocouple
B3FT				27TS		
				27TS		RTD
					26R1, 26RS 26REX	
B3FR				27R, 27RS 27R, 27RS		
						Potentiometer
				27PM		Pulse to analog
B3FP						
				27U		Universal input
B3HU			B6U, B6U-B, 27HU-B	27HU		
B3PU						Limit alarms

▶ See Page 19

Compact Plug-in Socket Mounted Signal Conditioners

M2/W2
SERIES

- Wide selection of input/output ranges and functions
- DIN rail or panel mounting
- 2000 Vac isolation
- Base socket included with the modules
- CE marking and UL Nonincendive approval



M2 Series
CE C UL US



W2 Series
CE C UL US

M-System's M2 (Mini-M) Series Signal Conditioners are designed to accept a largest range of process signal inputs and provide a standard and non-standard DC output.

The W2 (Mini-MW) Series Signal Splitters provide a second isolated output of independent range, which gives you the flexibility to add sophisticated distributed control or MIS monitoring to a local loop, without a worry about mismatched impedance, or the threat of one problem system's output signal impacting the other.

Both M2 and W2 Series use a compact size, plug-in socket base for quick installation or replacement of module without disturbing wiring.

Most of these products are for use in the UL and cUL Class I, Division 2, Groups A, B, C, D applications. The combination of CE mark, UL recognition and rugged environmental electrical specifications ensure excellent reliability and stability in harsh industrial environments.



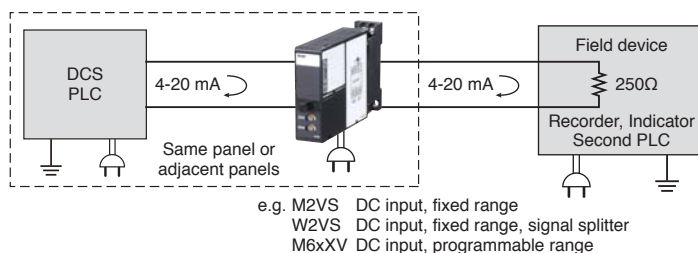
ISOLATOR APPLICATIONS - 1

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.

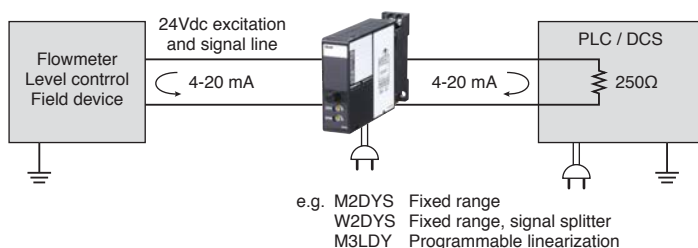
■ Four-wire isolator : 4-20 mA (passive) input / 4-20 mA output / Line powered



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

Low Profile, Compact Signal Conditioners



- Only 41 mm (1.61 in) deep, terminal block style modules
- DIN rail mounting
- 2000 Vac isolation

M-System's M5 Series Signal Conditioners are designed to accept a wide range of process signal inputs and provide a standard and non-standard DC output.

The B5 Series Transmitters are for use with two-wire loops.

The W5 Series Signal Splitters provide a second isolated output of independent range, which gives you the flexibility to add sophisticated distributed control or MIS monitoring to a local loop, without a worry about mismatched impedance, or the threat of one problem system's output signal impacting the other.

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



CE M5 Series



CE B5 Series

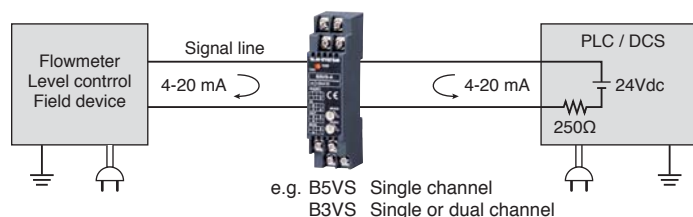


CE W5 Series



ISOLATOR APPLICATIONS - 2

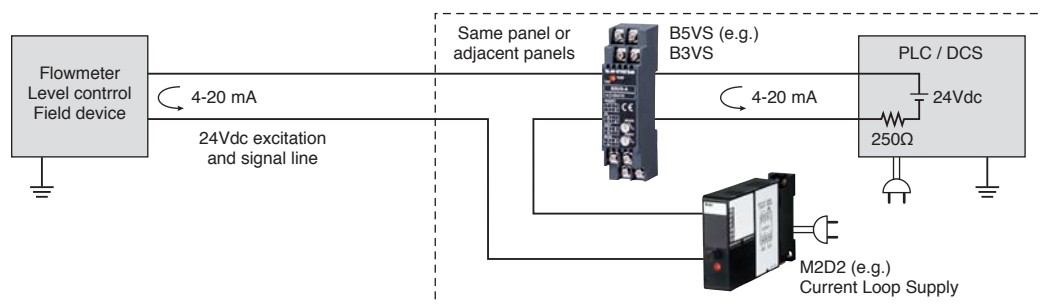
■ Two-wire isolator : 4-20 mA input / 4-20 mA output (loop powered)



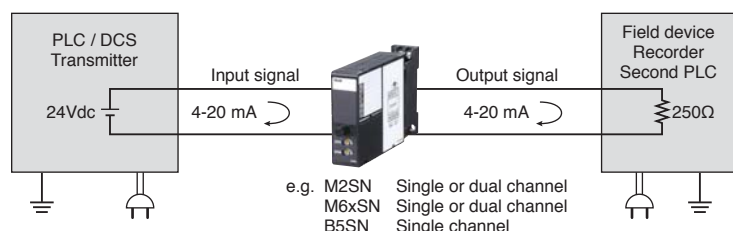
Basic isolator designed to interface a PLC and DCS system that provides a 24 Vdc power supply with a 4-20 mA input.

- 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

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

M3L
SERIES

- Enhanced PC configurator software
- Easy and precise "One-Step Cal" field configuration without needing a PC
- DIN rail mounting
- 1500 Vac isolation
- CE marking and UL approval



M-System's M3L Series is a DIN rail mounted, universal input transmitter with 1500 Vac isolation.

Ideal for Spare Parts Stock Reduction Programs, the M3L Series supports two methods for configuring the transmitter module. The module's DIP switches/control buttons simplify in-field configuration without using a PC. When identical multiple configurations are required, save yourself some time downloading the setting from PC software.

M3L Series is your safe bet when you are not sure of your final I/O signals.

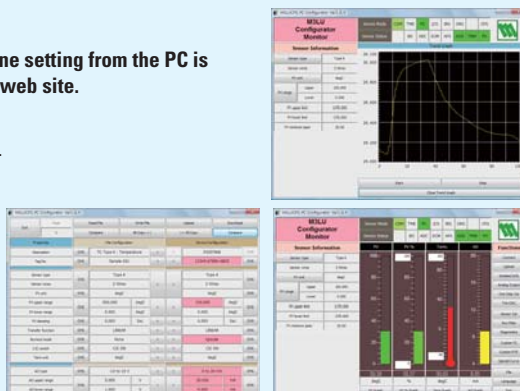
Typical applications include eliminating ground loops in temperature measurement applications and providing an isolated interface to data acquisition and control systems.

Enhanced PC Configurator Software

When you need to apply the same setting to multiple transmitters, downloading one setting from the PC is convenient. The PC Configurator software is available to download at M-System web site.

M3 PC Configurator is packed with advanced features such as:

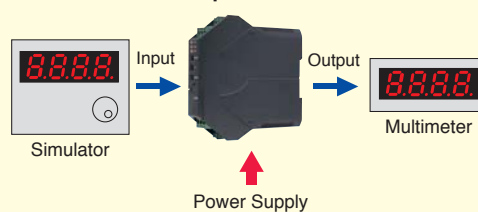
- Parameter setting is easily configured with a help of bargraphs on the screen.
- Trend graph monitoring is also possible.
- Fixed analog output can be set and provided for simulation when conducting a loop test.
- 128-point linearization and custom thermocouple/RTD tables
- Fine calibration
- Save configuration files
- Input filter
- Diagnostics



"One-Step Cal" Configuration

Even when you do not have a PC at your disposal, a simulator and a multimeter can help you program I/O ranges. The internal DIP switches are used to configure input and output type. Once the module is configured, precise ranges can be set with the front control buttons using a simulator connected to the input terminals and a multimeter connected to the output terminals as a reference. The front LED's colors and flashing patterns help you easily identify the transmitter's status and confirm the setup actions in each step of Calibration Modes.

Connect the M3L module to a simulator and a multimeter and to a power source.



Thin Profile Signal Conditioners M3S Series

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



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
- 2000 Vac isolation
- CE marking and UL Nonincendive approval



M6S Series

M6N Series

M6D Series

M-System's high performance signal conditioners are now packed in ultra-slim housings of only 5.9 mm (0.23 in) at the front face. As many as sixteen M6D/M6S modules can be mounted tightly side by side in a space of 9.5 centimeters (3.75 inches). Even though the power consumption of these modules is suppressed to the extreme low level, they can drive at the maximum of 550 Ω load with 4-20 mA DC output.

Each module is provided with a green power indicator LED to help you diagnose its status. In order to save you from individual power input wiring, the Installation Base holding eight modules can be expanded up to six bases for the maximum of 48 modules supported by a common power supply.

Three connection styles are available: Tension-clamp, screw terminal and euro terminal.

A wide selection of functions are available: fixed range and PC programmable transmitters, DC signal splitters, limit alarms, PC programmable function modules and input loop powered isolators.

Most of these products are for use in the UL and cUL Class I, Division 2, Groups A, B, C, D applications.

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.

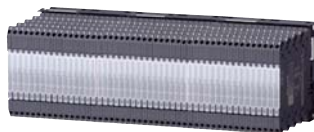
Suitable for solid wires, pin terminals.



Ultra-High Density Mounting

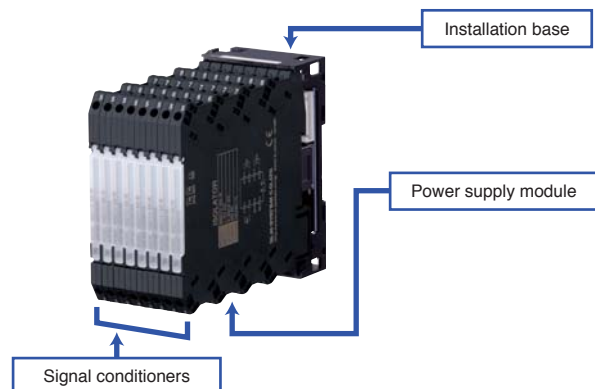


16 modules in a 9.5 cm (3.75 in) wide space (M6S/M6D)



Less than 30 cm (12 in) with 48 modules (M6S/M6D)

Power Supply through the Backplane Bus



Two-wire Temperature Transmitters

B6/27
B3
SERIES

Field Mount, HART Programmable

B6U / B6U-B

- Plug-in two-line LCD display
- HART programmable
- AMS software version 6.0 or higher
- Stainless steel enclosure optional
- ATEX / FM approval



B6U-B



B6U

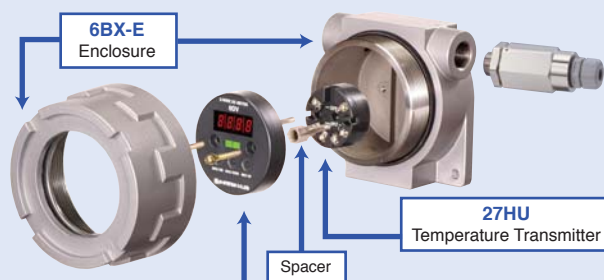
M-System's Model B6U and B6U-B accept a wide variety of inputs including thermocouples and RTDs as well as mV, resistance and potentiometer sensor types. The universal two-wire transmitters reduce component costs while meeting the requirements of hazardous applications. They provide signal isolation to output a proportional 4-20 mA signal.

Both models have the HART capability which allows users a flexibility to program the modules either via hand-held communicator or via PC. Input sensor type, temperature range and other parameters including HART properties are programmable. Additionally, user's own temperature calibration tables can be used. This feature makes the B6U and B6U-B the most universal temperature transmitters.

Optional highly legible LCD display indicates input signal in engineering unit and the transmitter status. The module is also used to configure the transmitter and can be removed when not used.

The B6U designed for intrinsic safety and the B6U-B including the explosion-proof (flameproof) enclosure (NEMA 4X, IP 66 / 67) are most suitable for use in an explosive atmosphere in chemical and petrochemical industries. A pipe mounting bracket is optional for the B6U-B for easy installation.

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



Head-mount, HART

27HU / 27HU-B

- HART programmable
- User's temperature table and Callendar-Van Dusen approximation formula
- 4-digit LED indicator optional
- Stainless steel enclosure optional
- ATEX / FM approval
- Classified SIL 2



27HU



DIN Rail Mount, HART & PROFIBUS

B3HU / B3PU

- 18 mm (0.71 in) wide thin profile module
- AMS software version 6.0 or higher
- SIMATIC PDM
- ATEX / FM approval (B3HU)



B3HU



Head-mount, PC Programmable

27 Series

- PC Programmable
- Function monitor LED optional for RTD input
- ATEX / FM approval
- Classified SIL 2



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)

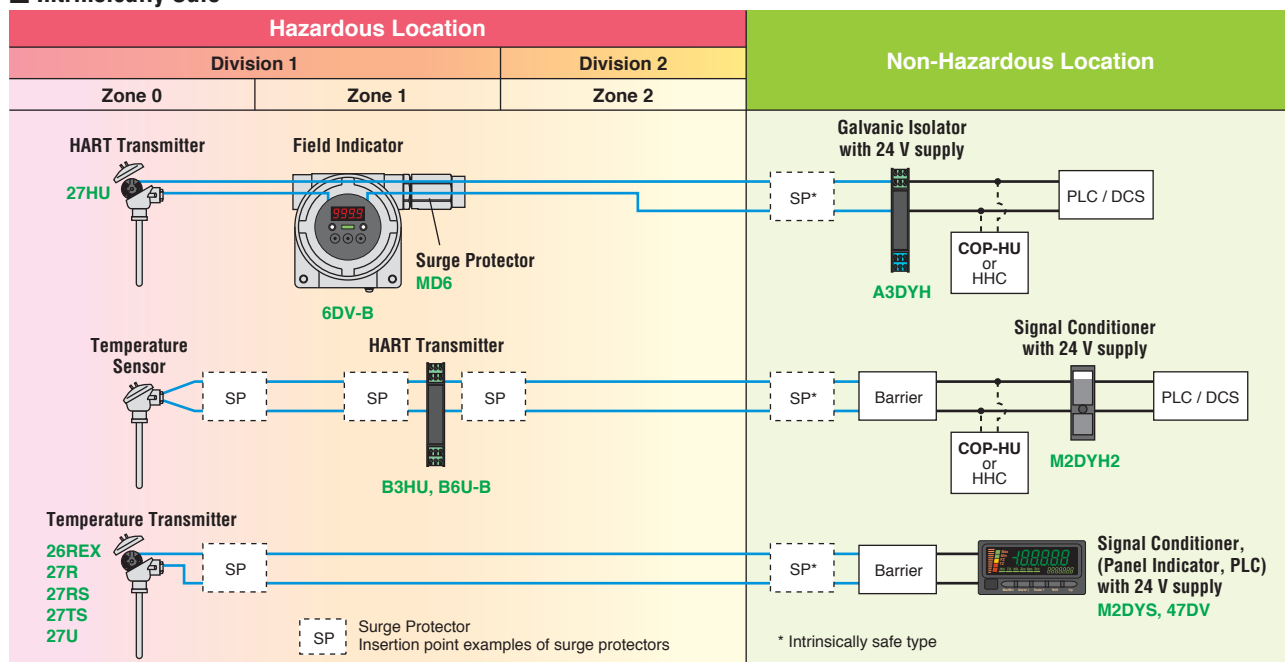


HAZARDOUS LOCATION PRODUCTS GUIDE

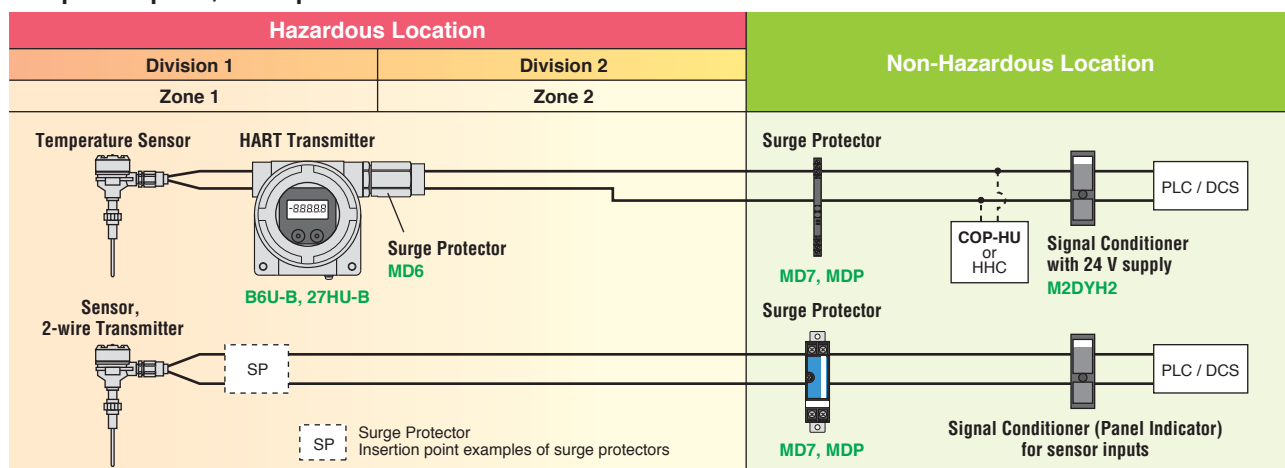
Combination Examples for Hazardous Location Products

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**



DIP Switch Configurable Two-wire Transmitters

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
- Eliminates noise and prevents ground loops with 1500 Vac isolation between input and output
- CE marking and UL approval



M-System's B3 Series are DIN rail mounted, field-configurable two-wire transmitters with 1500 Vac isolation between input and output.

The input type and range are easily programmable with internal DIP switches and front potentiometers, not needing any special computer knowledge to program.

For example, after setting the internal switches for selecting an overall range, gain and offset, using a DC input simulator as a reference, the B3FV could be adjusted to 0 to 10 V range by simply applying desired minimum and maximum input levels and turning the respective front potentiometer.

Typical applications include eliminating ground loops in temperature, flow and level measurement applications and providing an isolated interface to data acquisition and control systems.

For the most basic isolation applications, the model B3VS/2 dual channel isolator is an economical solution. It houses two transmitters in the series' standard housing, accepting and providing independently isolated 4-20 mA signals.

PANEL-MOUNT ACCESSORIES

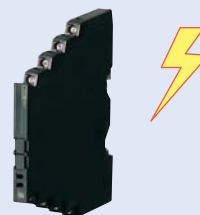
M6SSN / M6NSN / M6DSN Input Loop Powered Isolator

- No external power source required
- Dual channels in an ultra slim housing



MD7 Series Surge Protectors

- Only 7 mm wide ultra-slim design
- Excellent protection with multi-stage SPD



A3DYH Galvanic Isolator

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



MDC5 / MDC6 / MDC7 DC Power Supply

- 100-240 Vac input, regulated 24 Vdc output
- 60 W, 120 W or 240 W
- Maintenance forecast monitor function



Interfacing with More Field Signals

MX Series Field Configurable Pulse Transmitters

- Configurable via the front Up/Down buttons with a help of two displays
- Sensor excitation, linearization, averaging non-uniform pulses (MXPA)
- Pulse totalizing function with manual/auto reset (MXAP)



FUNCTION	MODEL
Frequency to DC transmitter	MXPA
DC to Frequency converter	MXAP

JX Series High Performance Pulse Transmitters

- Programming by a hand-held programmer or by PC software
- Programmable I/O type and range
- Built-in excitation



FUNCTION	MODEL
Frequency to DC transmitter	JPA2
Pulse accumulator	JPQ2
Encoder speed transmitter	JRP2
Encoder position transmitter	JRQ2
DC to 2-phase pulse converter	JARP
DC to Frequency converter	JAPD
Pulse scaler	JPR2
Two-input pulse adder	JPS3
Frequency scaler	JFR2
Pulse duration receiver	JTY2

See also models M3LPA2, M2XPA3, M2XRP2

High Performance Pulse Isolators

- Reducing noise interference
- Converting pulse device type (e.g. dry contact to 5 V pulse)
- Built-in excitation



FUNCTION	MODEL
Pulse isolator	YPD, KYPD
Pulse splitter	WYPD, KWYPD
Rotary encoder pulse isolator	RPPD

Pneumatic Transducers

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



FUNCTION	MODEL
Pressure to current, output loop powered	BPV
Current to pressure, input loop powered	HVPN

See also models M2PV, W2PV

BCD Transducers

- Handling BCD, binary, two's complement signals
- 16-bit converter
- Display can be scaled in convenient engineering unit



FUNCTION	MODEL
Analog to digital	AD3V
Digital to analog	DA3

High Current Output Transmitters

- Driving actuators used in turbines, speed governors, hydraulic machinery
- Retrofitting 10-50 mA loop



99SVA

FUNCTION	MODEL
10-50 mA output	VA
200 mA output	SVA
1 A output	99SVA
30 V output (or 4-20 mA output with 1500 Ω load)	SVB

Potentiometer Output

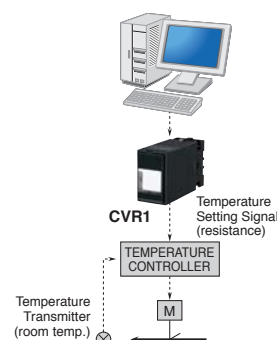
- Remote setting for dampers, inverters, motors and other devices with potentiometer settings
- DC voltage/current input
- 135 to 100k Ω output



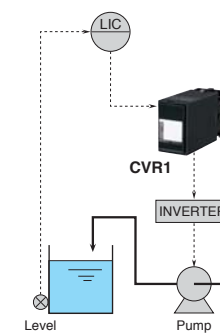
FUNCTION	MODEL
DC to potentiometer converter	CVR1

APPLICATION EXAMPLES

Damper Operation for Air Conditioning



Motor Speed Setting



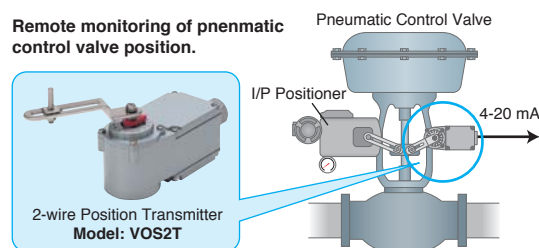
Two-wire Position Transmitter

- Detecting mechanical position of pneumatic and electric actuators to send a proportional 4-20 mA signal
- Lightweight & compact, IP 66

FUNCTION	MODEL
Linear motion type, $\pm 22.5^\circ$	VOS2T
Rotary motion type, $\pm 45^\circ$	VOS2T-R

TYPICAL APPLICATION

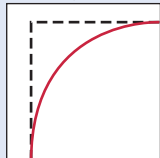
Remote monitoring of pneumatic control valve position.



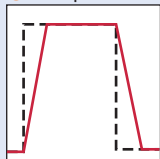
Function Modules

I/O CHARACTERISTICS

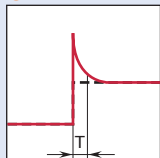
1 Delay buffer



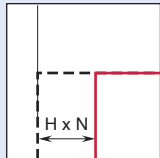
2 Ramp buffer



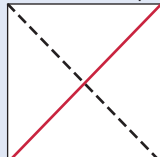
3 Lead time



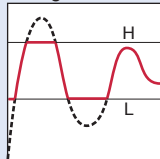
4 Dead time



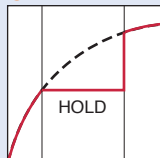
5 Inverted output



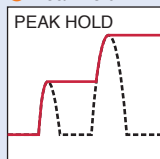
6 High/low limiting



7 Track/hold



8 Peak hold



SERIES	M2	M6S	M6N	M6D
Enclosure/Mounting Type	Plug-in base socket, DIN rail or surface mount	Ultra-slim housing, DIN rail mount		
Electric Wiring	M3 screw	Tension clamp	M3 screw	Euro terminal
I/O Range, Function Parameters	Specified when ordering	PC programmable		
Power Input	AC/DC	DC		
Isolation	2000V AC	2000V AC		
Operating Temperature	-5 to +55°C (23 to 131°F)	-20 to +55°C (-4 to +131°F)		
Standards & Approval	CE / UL / C-UL	CE / UL / C-UL		
FUNCTION	M2	M6S	M6N	M6D
Temperature/pressure compensation		M6SXF2	M6NXF2	M6DXF2
Addition $X_0 = X_1 + X_2$	M2ADS	M6SXF2	M6NXF2	M6DXF2
Subtraction $X_0 = X_1 - X_2$	M2SBS	M6SXF2	M6NXF2	M6DXF2
Multiplication $X_0 = X_1 \times X_2$	M2MLS	M6SXF2	M6NXF2	M6DXF2
Division $X_0 = X_1 \div X_2$	M2DIS	M6SXF2	M6NXF2	M6DXF2
Ratio function $X_0 = KX_1 + B$	M2REB			
Ratio function $X_0 = K(X_1 + B)$	M2RTS			
Delay buffer ①	M2CDS	M6SXF1	M6NXF1	M6DXF1
Ramp buffer ②	M2CRS	M6SXF1	M6NXF1	M6DXF1
Moving average		M6SXF1	M6NXF1	M6DXF1
Lead time / Dead time ③④		M6SXF1	M6NXF1	M6DXF1
Linearization	M2XF2 (PC programmable)	M6SXF1	M6NXF1	M6DXF1
Square root extraction	M2FLS	M6SXF1	M6NXF1	M6DXF1
Palmer-Bowlus flume, Parshall flume, triangular/v-notch/rectangular weir		M6SXF1	M6NXF1	M6DXF1
Inverted output ⑤	M2UDS, M2UDS2	M6SXF1	M6NXF1	M6DXF1
High/low limiting ⑥	M2LMS	M6SXF1	M6NXF1	M6DXF1
Track/hold ⑦	M2AMS, M2AMS2	M6SXF3	M6NXF3	M6DXF3
Peak hold ⑧	M2PHS, M2PHS2	M6SXF3	M6NXF3	M6DXF3
High/low selecting	M2SES, M2SES2	M6SXF2	M6NXF2	M6DXF2
Switching two channels	M2MNV			
Parameter generator	M2MST			

Manual Loading Stations

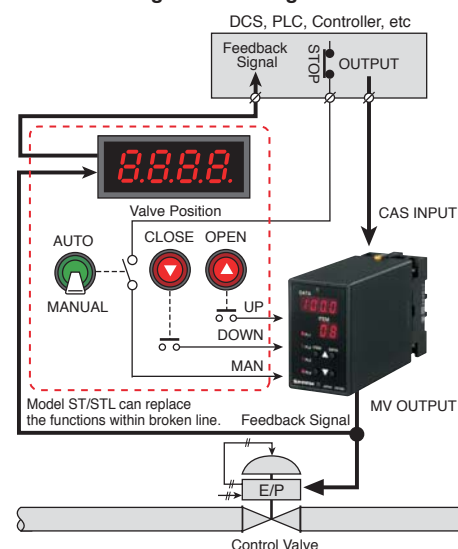


- Holding control signals in case of computer or DCS failure
- Manual control with an external Up/Down contact signal or with the front manual loader
- Ramp rate adjustable

FUNCTION	MODEL
ON/OFF signal input	CB2
ON/OFF signal input, programmable output	MXCB
Analog signal input	AB2
Analog signal input, programmable output	MXAB
Analog signal input, front manual loader	ABF3

APPLICATION EXAMPLE

Manual Loading Station Using the MXAB



- True RMS sensing
- Surface or DIN rail mounting
- M4 screw terminal
- Conform to IEC 60688
- Optional terminal cover
- Additional pulse rate output for totalizing counter (watt transducer)



FUNCTION	MODEL
AC current input, self-powered	LTCNE
AC current input	LTCE
AC current input, clamp-on current sensor	LTCEC
AC voltage input	LTPE
Watt transducer	LTWT
Watt transducer, self-powered	LTWTN
Var transducer	LTRP
Var transducer, self-powered	LTRPN
Power factor transducer	LTPF, LTPFU
Power factor transducer, self-powered	LTPFN, LTPFUN
Phase angle transducer	LTPA, LTPAU
Phase angle transducer, self-powered	LTPAN, LTPAUN
Frequency transducer	LTZH
Frequency transducer, self-powered	LTZHN

Clamp-on Current Sensor CLSE

- Easy-to-install, spring-loaded current sensor
- Primary up to 600 A / 480 V
- Over-voltage clamp element for safety in open circuit
- Wide frequency band
- Screw terminal connection



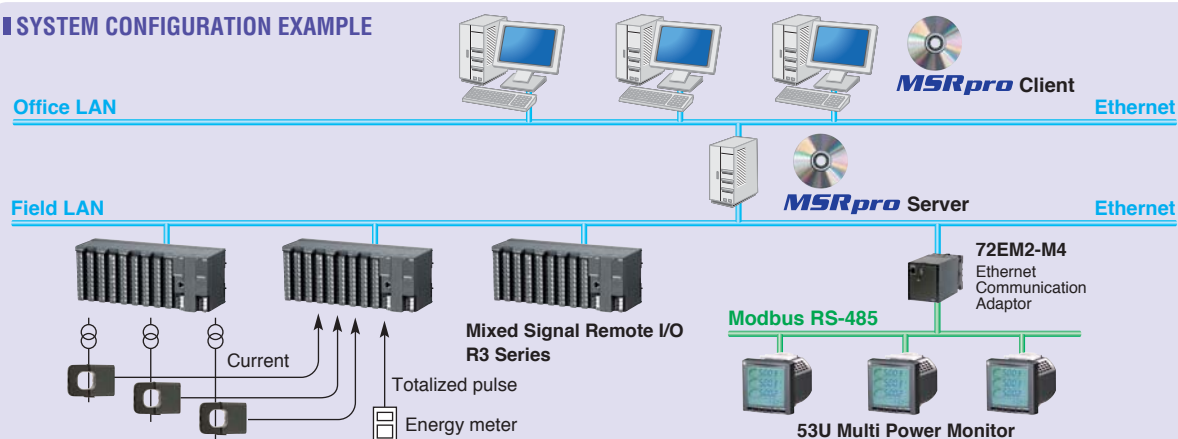
Remote I/O Modules for Energy Consumption Monitoring

- Data from power distribution panels scattered throughout a building or a field site can be monitored using the local area Ethernet data network.
- Can handle CT, VT, ZCT, active power, totalizing pulse and all computed energy parameters.
- Integrating utility and process monitoring (e.g. flow, temperature, discrete signals)

FUNCTION	MODEL
AC current input, 4 points	R3-CT4x
AC current input, 8 points	R3-CT8x
Zero-phase current input, 4 points	R3-CZ4
AC voltage input, 4 points	R3-PT4x
AC voltage input, 8 points	R3-PT8x
AC power input, 4 circuits	R3-WT4x
Pulse totalizing input, 4 points	R3-PA4x
Multi power input, 1 or 2 circuits	R3-WTU

▶ See P. 23 for all R3 Series modules

■ SYSTEM CONFIGURATION EXAMPLE



Multi Power Monitors / Transducers

Multi Power Monitor 53U / L53U

- Single-phase/2-wire and 3-wire, three-phase/3-wire, 4-wire systems
- Three line measured value/bargraph indicators plus energy count/info display
- IP 50 front panel
- Modbus, Ao, Do options
- Model L53U without display is for DIN rail mounting



M-System's model 53U is a 96-mm-square Multi LCD Power Monitor mounted on a panel surface.

One model can be used for single-phase/2-wire and 3-wire, three-phase/3-wire and 4-wire systems. Users can freely choose and program major variables in heavy-current power systems, such like AC voltage/current, active/reactive power, power factor, AC frequency deviation, apparent power, active/reactive energy and up-to-the-31st harmonic distortions.

Measured variables also include the maximum/minimum/average values, in total of 500 types. Up to 1800 patterns of display combinations are available.

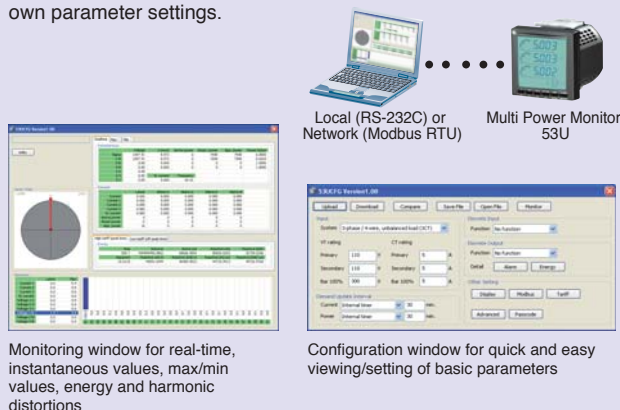
All measured variables can be transmitted to the host PC via RS-485/Modbus RTU. Conversion factors, system configuration, interval times are programmable using the front keys, or the PC Configurator Software locally or remotely. Measured values, counter values, display mode, setting data are stored in the non-volatile memory at the power off.

An open collector output can be used for energy count pulse or limit alarm trip. Pulse rate for energy count can be specified. The contact output can be simulated for testing the connected device.

External open collector input is typically used to reset energy count memory. The signal can be also monitored at the host system via Modbus, so that the host can start/stop monitoring according to ON/OFF status of a load (e.g. motor running or not).

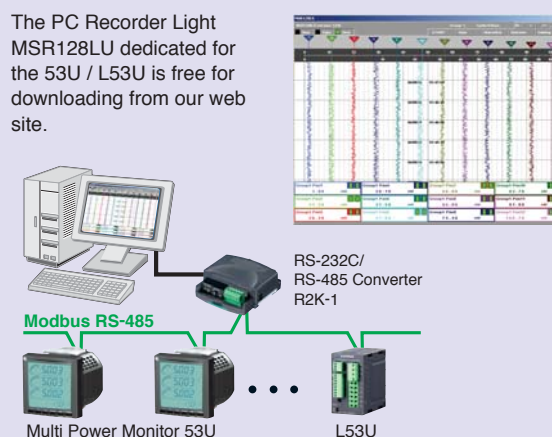
User-Friendly PC Software Setting

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



Monitoring and Storing Measured/Computed Values on the PC

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



Screw Terminal Type 54U / 54UC

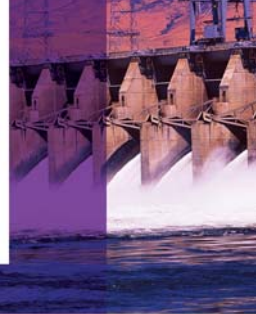
- 110-mm-square panel flush mounted
- Two line measured value indicators, energy count/info display plus 60-segment bargraph
- Modbus or CC-Link, Ao, Do options
- Infrared interface to connect with PC Configurator



Multi Power Transducer LSMT4

- Measures AC current, voltage, active/reactive/apparent power and power factor
- 10 DC voltage/mA outputs plus 2 Do
- Parameters are freely programmable with the front control buttons or by PC
- DIN rail mounted





Bargraph Indicators 48N Series

- 9/64 DIN size
- 101-segment, 3 mm wide LED
- Red, amber, green and blue colors
- Custom scale with no extra cost
- IP 65 front panel
- Separable terminal block



SERIES	48NV	48NA	48ND
Bargraph	101-segment LED, 100 mm (3.96 in) long, 3 mm (.12 in) wide		
Bar color	Red, Amber, Green, Blue		
Digital meter	---	---	4 digits, Red LED
Alarm output	---	2 or 4 points	2 or 4 points
Mounting direction	Vertical / Horizontal		Vertical
Degree of protection	IP 65 front panel		
Standards & Approval	CE		
FUNCTION	48NV	48NA	48ND
DC input, single channel	48NV-1	48NAV	48NDV
DC input, dual channel	48NV-2		
DC input, analog output		48NAVA	48NDVA
4-20 mA input, excitation supply		48NAVD	48NDVD
Thermocouple input		48NAT	48NDT
RTD input		48NAR	48NDR
Potentiometer input		48NAM	48NDM

Digital Panel Meters 47 Series

- 1/8 DIN size
- IP 66 front panel
- Separable terminal block
- Bright and colorfull display (red, orange, green, bluegreen, blue, white) (47L Series)



Six LED Colors – 47L Series



SERIES	47D	47L
Display	5 1/2 digit LCD	4- or 4 1/2 digit LED
Color	Red, Green	Red, Orange, Green, Bluegreen, Blue, White
Alarm output	Optional, 2 or 4 points	
DC output	Optional, programmable range	Optional
Excitation supply output	12 V or 24 V	---
Network interface	Optional, RS-485/Modbus RTU	---
Degree of protection	IP 66 front panel	
Standards & Approval	---	CE
FUNCTION	47D	47L
DC input, indication only		47LYV
DC input	47DV	47LV
Thermocouple input	47DT	47LT
RTD input	47DR	47LR
Potentiometer input	47DM	47LM
Strain gauge input		47LLC
AC input		47LAC
VT input		47LPT
CT input		47LCT
Frequency input (AC line voltage)		47LHZ
Frequency input		47LPA
Pulse input totalizer, 6 digits LED		47LPQ

Panel Indicators / Field Indicators

Digital Panel Meters 40 Series

- 1/8 DIN size
- Large 0.8" (20.3 mm) high red LED
- DC volt/ammeter or Process meter
- Hold function
- Low cost



MODEL	40LV	40DV
Display type	0.8" (20.3 mm) high red LED	
Display digit	3 1/2 digits	4 digits
Display range	±1999	±9999
Scaling	----	±9999
Standards & Approval	CE	----

Small Size Panel Meter 43DV2 / 43AL1

- 1/32 DIN size
- Easy-to-wire tension clamp connection
- Process scaling
- No external power supply needed for the 43AL1



MODEL	43DV2	43AL1
Display type	10.2 mm high red LED	
Display digit	4 digits	
Scale range	-1999 to 9999	
Input	DC mV / V / mA	4-20 mAdc
Power input	24 Vdc	Input loop powered
Standards & Approval	CE	

Loop Powered Field Indicator 6DV / 6DV-B

- 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



M-System's model 6DV is a 4-digit, 8-mm-high (0.3 in.), 7-segment red LED display. The bright LED, together with the backlighted unit indicator, provides an excellent legibility in a wide range of environments. The model 6DV-B is housed in an aluminium enclosure. Stainless steel housing is optional.

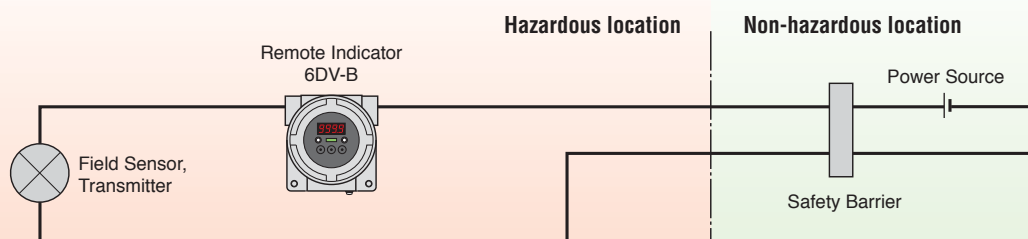
The indicator is powered from a two-wire current loop (4 to 20 mA), requiring no external power source. The maximum voltage drop caused by inserting the 6DV into the loop is only 4.0 V at 20 mA. It is ideal for use as a remote indicator added to a current loop between a field sensor/transmitter and a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

The front three control buttons are used to program the LED module. The display range is programmable from -1999 to 9999 and the decimal point is also selectable. Other programmable functions include input signal calibration, offset setting and linearization. Standard process linearization functions are pre-programmed, and a 21-point table is also programmable for any special user's needs.

The 6DV designed for intrinsic safety and the 6DV-B including the explosion-proof (flameproof) enclosure (NEMA 4X, IP66 / 67) are most suitable for use in an explosive atmosphere in chemical and petrochemical industries. A pipe mounting bracket is optional for the 6DV-B for easy installation.

TWO-WIRE LOOP APPLICATION EXAMPLE

The 6DV-B can be inserted in a two-wire loop as a remote indicator without needing an extra power source.



Limit Alarms

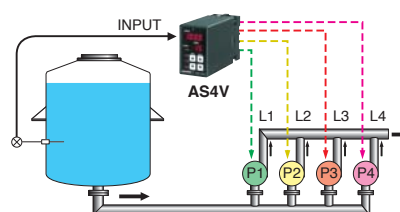
The AS4 Series limit alarms are provided with two displays on the front face: 4-digit DATA display and 2-digit ITEM display. Using Up/Down buttons, configuration is simple by calling parameters' ID numbers (ITEM) and choosing values (DATA). The M7E Series limit alarms are provided with a multi-line LCD display, which shows the parameters and selections in text to guide you through the programming procedure: intuitive, easy programming just like operating your mobile phone. You won't need to consult the instruction manual. These displays indicate process values once commissioned at the field site, and the software's "programmable" mode can be locked out in order to prevent unwanted changes in the setting.

APPLICATION EXAMPLE

Staging Four Pumps Smoothly

The Quad Alarm AS4V can be used to control the level of liquid in a tank by staging four pumps connected in parallel. Using multiple small pumps is an economical solution without needing an expensive equipment for complicated speed control of a single big and expensive pump.

In addition, setting deadband for each control setpoint eliminates unwanted pump cycling ON and OFF sporadically around the setpoint, even when the water level changes continuously.



High Performance Dual/Quad Alarms

- Configurable via the front Up/Down buttons with a help of two displays
- Field selectable sensor input and dual SPDT or quad NO or NC output



FUNCTION	MODEL
DC mV, V & mA input	AS4V
Thermocouple input	AS4T
RTD input	AS4R
Potentiometer input	AS4M
Strain gauge input	AS4LC*
CT input, 1 A or 5 A	AS4CT*

*No UL/C-UL approval

High Performance Dual/Quad Alarms with LCD display

- Local LCD display shows process values
- Intuitive, easy programming just like operating a cell phone
- Dual SPDT or quad NO or NC output



FUNCTION	MODEL
DC mV, V & mA input	M7EASV
4-20 mA input, 24 Vdc supply	M7EASDY

Ultra-Slim Single Alarms

- Tension clamp, screw terminal and euro terminal styles selectable
- Single SPDT output
- PC programmable I/O



FUNCTION	MODEL
DC mV, V & mA input	M6SXAS/M6NXAS/M6DXAS
Thermocouple input	M6SXAT/M6NXAT/M6DXAT
RTD input	NEW M6SXAR/M6NXAR/M6DXAR

Wide Setpoint Range

- Fixed range input
- SPDT output
- Wide setpoint range -14 to +113.5%



FUNCTION	MODEL
DC mV, V & mA input	MSEF

Analog Alarms with Simple Setting

- Fixed range input
- Single or dual SPDT output



FUNCTION	MODEL
DC input, dial adjustment	KSE*
DC input, thumbwheel adjustment	ASD1
DC input, thumbwheel adjustment	KSED

*No UL/C-UL approval

Compact Analog Alarm with Potentiometer Adj.

- Fixed range input
- Dual NO output
- Potentiometer adjustment with a help of 0 to 1 V monitor output



FUNCTION	MODEL
DC mV, V & mA input	M2AVS

Compact Analog Alarm with Thumbwheel Switch Adj.

- Fixed range input
- Dual SPDT output or DPDT output



FUNCTION	MODEL
DC input, dual SPDT output	M2SED
DC input, single DPDT output	M2AS*
DC input, single SPDT output	M2AS1*

*No UL/C-UL approval

Hot Swappable, Fully Isolated Remote I/O

M-System's Remote I/O is designed to support DCS/PLC systems by expanding their I/O flexibility and capabilities in addition to providing all full channel-to-channel isolation. The Remote I/O communicates directly to the PLC and DCS via industry standard open-protocol networks.

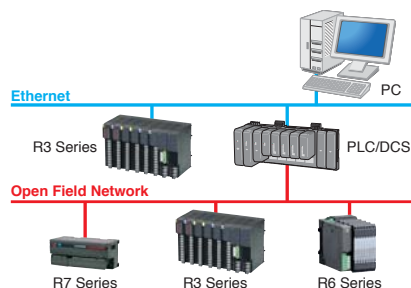
M-System's Remote I/O also can be used as stand-alone distributed I/O communicating with popular HMI software.

The Remote I/O 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. Isolated analog I/O modules provide high-performance signal conversion/conditioning and complete three-way plus channel-to-channel isolation. This ensures you a highly dependable system.

Applications include: signal concentrator, data collection in flow and level monitoring, metalization sputtering machine monitoring and control, injection molding monitoring and control, test stands and prototyping, glass furnace temperature control, assembly line discrete ON/OFF, paint booth environment reporting, pharmaceutical processes.

Remote I/O Replacement for PLC and DCS



Ultra-Slim, Mixed Signal Remote I/O R6 Series

- 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

Three Terminal Connection Styles Selectable



Tension-Clamp R6S Series



Screw Terminal R6N Series



Euro Terminal R6D Series

CE



78 mm or 3.07 in. for R6D / R6S
91 mm or 3.59 in. for R6N



Expandable, Compact Remote I/O R7 Series

- Palm-top size compact module can handle 4 analog input, 2 analog output or 16 discrete signals.
- 8 or 16 discrete input/output module can be attached to the base module.
- 1500 Vac isolation

CE cULus



Extension Module

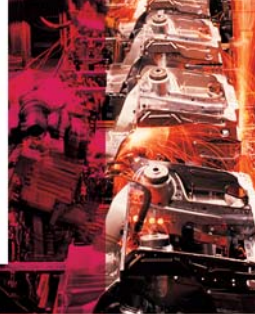


- 8 or 16 discrete input/output module can be attached to the base module.
- Analog and discrete signals can be mixed by combining a discrete I/O extension with an analog I/O module.

1500 Vac Isolation for Analog Modules



- Fully isolated between I/O, network and power input.
- Channel-to-channel isolation is also provided.



Multi-channel, Mixed Signal Remote I/O R3 Series

- Wide selection of I/O modules including DC, AC, temperature, strain gauge, pulse trains, AC power, etc.
- 4 isolated to 16 non-isolated analog inputs per module
- Max. 64 discrete I/O per module
- Selections of AC power, CT and VT modules suitable for energy monitoring applications
- Dual redundant communication networks and power supplies
- 1500 Vac isolation



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



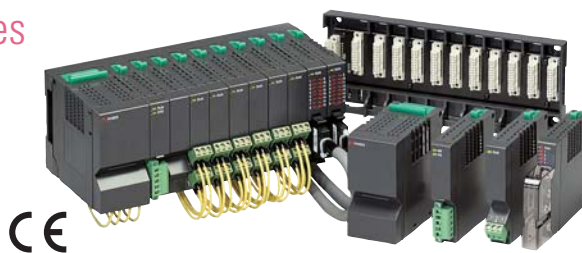
Network Module and Power Supply Module can be in one housing.



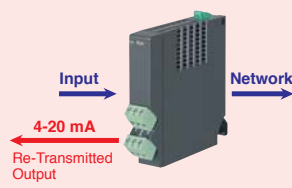
One I/O module plus one Network Module with power supply is the minimum unit: Space-saving and economical solution.

Compact, Mixed Signal Remote I/O R5 Series

- 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



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



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



Add another power module for a backup power source.

Compact, Multi-point Remote I/O R1 Series

- Economical all-in-one module for Modbus, CC-Link and DeviceNet
- 8-point (isolated) or 16-point (non-isolated) DC/TC input module
- 8-point RTD/Pot input module
- 4-point totalized counter input, 8 contact I/O module
- 12-point universal input module
- 32-point discrete I/O modules
- Trigger contact input and alarm contact output



Great Flexibility in Number and Type of I/O Signals

R6 Series

FUNCTION	MODEL	
8 I/O Slot Base x=S, N or D		
Base (8 I/O slots+ Network Module (18mm wide))	R6x-BS8A	
Base (8 I/O slots+ Network Module (36.5mm wide))	R6x-BS8B	
Base (8 I/O slots for extension)	R6x-BS8P	
Power Module		
DC Power Supply Module	R6x-PF1	
AC Power Supply Module	Future Plan	
Network Module		
Modbus	32 ch.	R6-NM1
	64 ch.	R6-NM2
Modbus/TCP (Ethernet)	32 ch.	R6-NE1
	64 ch.	R6-NE2
DeviceNet	64 ch.	R6-ND1
PROFIBUS-DP NEW	16 ch.	R6-NP1
CC-Link	Ver. 1; Analog 16 ch.	R6-NC1
	Ver. 2; Analog 64 ch.	R6-NC3
T-Link		R6-NF1

FUNCTION	CH	MODEL
Analog Input Module (isolated) x=S, N or D		
DC Voltage Input	2	R6x-SV2
DC Current Input	2	R6x-SS2
Thermocouple Input	2	R6x-TS2
RTD Input	2	R6x-RS2
4-20mA Input with Excitation	1	R6x-DS1

Analog Output Module (isolated)		
DC Voltage Output	2	R6x-YV2
DC Current Output	2	R6x-YS2

Discrete Input Module		
Discrete Input	Di 4	R6x-DA4

Discrete Output Module		
NPN Transistor Output	Do 4	R6x-DC4A
PNP Transistor Output	Do 4	R6x-DC4B

R7 Series

FUNCTION	MODEL							
	Modbus	Ethernet	DeviceNet	CC-Link	LONWORKS	MECHATROLINK	FLEX NETWORK	HLS High-speed Link System
Basic Module NEW								
Discrete Input, 16 points	R7M-DA16	R7E-DA16	R7D-DA16	R7C-DA16	R7L-DA16*1	R7ML-DA16	R7FN-DA16	R7HL-DA16
NPN Transistor Output, 16 points	R7M-DC16A	R7E-DC16A	R7D-DC16A	R7C-DC16A	R7L-DC16A*2	R7ML-DC16A	R7FN-DC16A	R7HL-DC16A
PNP Transistor Output, 16 points	R7M-DC16B	R7E-DC16B	R7D-DC16B	R7C-DC16B	R7L-DC16B*2	R7ML-DC16B	R7FN-DC16B	R7HL-DC16B
Relay Contact Output, 8 points	R7M-DC8C	---	R7D-DC8C	R7C-DC8C	---	---	R7FN-DC8C	R7HL-DAC16A
Discrete Input & NPN Transistor Output, 8 points each	---	---	---	---	R7L-DAC16*3	---	R7FN-DAC16A	R7HL-DAC16B
Discrete Input & PNP Transistor Output, 8 points each	---	---	---	---	---	---	R7FN-DAC16B	R7HL-DC8C
DC Voltage/Current Input, 4 points	R7M-SV4	R7E-SV4	R7D-SV4	R7C-SV4	R7L-SV4	R7ML-SV4	---	R7HL-SV4
DC Voltage/Current Input, 4 points (high speed, non-isolated)	---	---	---	---	---	---	---	R7HL-SVF4
Thermocouple Input, 4 points	R7M-TS4	R7E-TS4	R7D-TS4	R7C-TS4	R7L-TS4	R7ML-TS4	---	R7HL-TS4
RTD Input, 4 points	R7M-RS4	R7E-RS4	R7D-RS4	R7C-RS4	R7L-RS4	R7ML-RS4	---	R7HL-RS4
Potentiometer Input, 4 points	R7M-MS4	R7E-MS4	R7D-MS4	R7C-MS4	---	---	---	---
AC Current Input, 4 points	R7M-CT4E	R7E-CT4E	R7D-CT4E	R7C-CT4E	---	---	---	---
DC Voltage Output, 2 points	R7M-YV2	R7E-YV2	R7D-YV2(A)	R7C-YV2	R7L-YV2	R7ML-YV2	---	R7HL-YV2
DC Current Output, 2 points	R7M-YS2	R7E-YS2	R7D-YS2(A)	R7C-YS2	R7L-YS2	R7ML-YS2	---	R7HL-YS2
Remote Control Relay Control Output, 8 points	---	---	---	---	R7L-RR8	---	---	---

Extension Module								
Discrete Input, 8 points	R7M-EA8	R7E-EA8	R7D-EA8	R7C-EA8	R7L-EA8	R7ML-EA8	---	---
Discrete Input, 16 points	R7M-EA16	R7E-EA16	R7D-EA16	R7C-EA16	R7L-EA16	R7ML-EA16	---	---
NPN Transistor Output, 8 points	R7M-EC8A	R7E-EC8A	R7D-EC8A	R7C-EC8A	R7L-EC8A	R7ML-EC8A	---	---
NPN Transistor Output, 16 points	R7M-EC16A	R7E-EC16A	R7D-EC16A	R7C-EC16A	R7L-EC16A	R7ML-EC16A	---	---
PNP Transistor Output, 8 points	R7M-EC8B	R7E-EC8B	R7D-EC8B	R7C-EC8B	R7L-EC8B	R7ML-EC8B	---	---
PNP Transistor Output, 16 points	R7M-EC16B	R7E-EC16B	R7D-EC16B	R7C-EC16B	R7L-EC16B	R7ML-EC16B	---	---

*1: Momentary or totalized pulse input

*2: One-shot output available

*3: Momentary or totalized pulse input, one-shot output available

R1 Series

FUNCTION	MODEL		
	Modbus	DeviceNet	CC-Link
Universal Input Module (12 points; isolated)	RZMS-U9	---	---
Thermocouple & DC Input Module (8 points; isolated)	R1MS-GH3	---	---
Thermocouple & DC Input Module (16 points)	R1M-GH	R1D-GH2	R1C-GH
RTD & Potentiometer Input Module (8 points)	R1M-J3	---	---
Contact I/O Module (4 totalized counter inputs, 8 contact inputs and outputs)	R1M-P4	---	---
Contact Input Module (32 points)	R1M-A1	---	---
Contact Output Module (32 points)	R1M-D1	---	---

HLS is the abbreviation for "High-speed Link System" of Step Technica Co., Ltd.



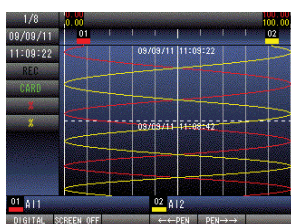
		R3 Series		R5 Series	
FUNCTION		CH	MODEL	CH	MODEL
Base					
Installation Base		R3-BS		R5-BS	
Installation Base (free I/O address)		R3-BSW		---	
Extender Power Module Base		---		R5-EX1	
Power Module					
Power Supply Module	750mA	R3-PS1		---	
	1.5A	---		R5-PS	
	2A	R3-PS3		---	
Network Module					
Modbus		R3-NM1		R5-NM1	
Modbus/TCP (Ethernet)		R3-NE1		R5-NE1	
DeviceNet	Analog 16 ch.	R3-ND1		R5-ND1	
	Analog 32 ch.	R3-ND2		R5-ND2	
	Analog 64 ch.	R3-ND3		---	
PROFIBUS	DPV1	R3-NP1		---	
	Analog 16 ch.	---		R5-NP1	
	Analog 32 ch.	---		R5-NP2	
CC-Link	Ver. 1; Analog 16 ch.	R3-NC1		R5-NC1	
	Ver. 1; Analog 32 ch.	R3-NC2		R5-NC2	
	Ver.2	R3-NC3		---	
LONWORKS		R3-NL1		---	
		R3-NL2		---	
T-Link		R3-NF1		R5-NF1	
FL-net		R3-NFL1 NEW		---	
Analog Input Module (isolated)					
Universal Input		4	R3-US4	---	---
		4	R3-SV4	1	R5(T)-SV1
		4 millivolt Input	R3-SV4A	2	R5(T)-SV2
		4 wide span voltage	R3-SV4B R3-SV4C	---	---
		8	R3(Y)-SV8	---	---
		8 millivolt Input	R3-SV8A	---	---
		8 wide span voltage	R3-SV8B R3-SV8C	---	---
		8 (non-isolated)	R3(Y)-SV8N	---	---
DC Voltage Input		16 (non-isolated)	R3(Y)-SV16N	---	---
		4	R3-SS4	1	R5(T)-SS1
		8	R3(Y)-SS8	2	R5(T)-SS2
		8 (non-isolated)	R3(Y)-SS8N	---	---
DC Current Input		16 (non-isolated)	R3-SS16N	---	---
		4	R3-RS4	1	R5(T)-RS1
		4	R3-RS4A	2	R5(T)-RS2
RTD Input		8	R3(Y)-RS8	1	R5-RSA1
		8	R3-RS8A	2	R5-RSA2
		4	R3-MS4	1	R5-MS1
Potentiometer Input		8	R3(Y)-MS8	2	R5-MS2
		4	R3-DS4	1	R5(T)-DS1
4-20mA Input with Excitation		4	R3-DS4A	2	R5(T)-DS2
		8 (non-isolated)	R3-DS8N	---	---
		2	R3-LC2	---	---
Strain Gauge Input		4	R3-CT4	1	R5T-CT1
CT Input		---	---	2	R5T-CT2
		4	R3-CZ4	---	---
Zero-phase Current Input		4	R3-CT4A	1	R5T-CTA1
		4	R3-CT4B	2	R5T-CTA2
		4	R3-CT4C	---	---
		8	R3-CT8A	1	R5T-CTB1
		8	R3-CT8B	2	R5T-CTB2
		8	R3-CT8C	---	---

		R3 Series		R5 Series	
FUNCTION		CH	MODEL	CH	MODEL
AC Voltage Input		4	R3-PT4	1	R5(T)-PT1
		---	---	2	R5(T)-PT2
AC Power Input	4 input circuits	R3-WT4	---	---	---
AC Power Input (clamp-on current sensor use)	4 input circuits	R3-WT4A	---	---	---
	4 input circuits	R3-WT4B	---	---	---
Multi Power Input	1 system	R3-WT1	---	---	---
Multi Power Input (clamp-on current sensor use)	1 system	R3-WT1A	---	---	---
	1 system	R3-WT1B	---	---	---
	1 or 2 system	R3-WTU	---	---	---
Analog Output Module (isolated)					
DC Voltage Output	4	R3-YV4	1	R5(T)-YV1	---
	8	R3(Y)-YV8	2	R5(T)-YV2	---
DC Current Output	4	R3(Y)-YS4	1	R5(T)-YS1	---
	---	---	2	R5(T)-YS2	---
Pulse I/O Module (isolated)					
Totalized Pulse Input	Pi 8	R3-PA8	Pi 2	R5(T)-PA2	---
	Pi 16	R3(Y)-PA16	---	---	---
High Speed Totalized Pulse Input	Pi 4	R3-PA4A	---	---	---
Low Speed Totalized Pulse Input	Pi 4	R3-PA4B	---	---	---
High Speed Pulse Input	Pi 4	R3-PA4	---	---	---
Encoder Input	Pi 2	R3-PA2	---	---	---
Pulse Output	Po 16	R3-PC16A	Po 2	R5(T)-PC2	---
Analog Input Module with Transmitter Output (isolated)					
DC Voltage Input	---	---	1	R5-SV1A	---
DC Current Input	---	---	1	R5-SS1A	---
Thermocouple Input	---	---	1	R5-TS1A	---
RTD Input	---	---	1	R5-RS1A	---
Potentiometer Input	---	---	1	R5-MS1A	---
4-20mA Input with Excitation	---	---	1	R5-DS1A	---
Alarm Module (isolated)					
DC Voltage Input	4	R3-AV4	---	---	---
	8	R3-AV8	---	---	---
DC Current Input	4	R3-AS4	---	---	---
	8	R3-AS8	---	---	---
Thermocouple Input	4	R3-AT4	---	---	---
RTD Input	4	R3-AR4	---	---	---
4-20mA Input with Excitation	4	R3-AD4	---	---	---
Discrete I/O Module					
Discrete Input	---	---	Di 4	R5(T)-DA4	---
	Di 16	R3(Y)-DA16	Di 16	R5-DA16	---
Discrete Input (with excitation supply)	Di 16	R3(Y)-DA16A	---	---	---
	Di 32	R3-DA32A	---	---	---
	Di 64	R3-DA64A	---	---	---
AC Contact Input	Di 16	R3-DA16B	---	---	---
Discrete Input / Output	Di 8, Do 8	R3-DAC16	---	---	---
Relay Contact Output	Do 16	R3(Y)-DC16	Do 4	R5(T)-DC4	---
	Do 16	R3-DC16A	Do 16	R5-DC16	---
	Do 32	R3-DC32A	---	---	---
Open Collector Output (NPN transistor)	Do 64	R3-DC64A	---	---	---
	Do 16	R3-DC16B	---	---	---
PNP Transistor Output	Do 16	R3-DC16C	---	---	---
One-shot Pulse Output (relay contact)	Do 16	R3-PD16	---	---	---
One-shot Pulse Output (NPN transistor)	Do 16	R3-PD16A	---	---	---
One-shot Pulse Output (triac)	Do 16	R3-PD16B	---	---	---
One-shot Pulse Output (PNP transistor)	Do 16	R3-PD16C	---	---	---
Remote Control Relay Control	Do 8	R3-RR8	---	---	---
BCD Code I/O Module					
BCD Code Input	7-digit BCD	R3-BA32A	---	---	---
BCD Code Output	7-digit BCD	R3-BC32A	---	---	---

R3Y: connector type R5T: screw terminal block type

Compact Paperless Recorder

- 1/4 DIN size (96 x 96 mm) panel mount compact recorder
- 3.5 inch TFT color LCD display
- Max. 8-point each of analog and discrete inputs are stored, displayed and alerted.
- Max. 8-point discrete outputs can be assigned for 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



ALARM HISTORY		
DATE/TIME	LOG	
09/09/11 10:08:38/500	01.000 ALARM1	
09/09/11 10:08:28/500	01.1 01.0000	
09/09/11 10:08:27/500	01.1 01.0000	
09/09/11 10:08:24/500	01.1 01.0000	
09/09/11 10:08:23/500	01.000 ALARM1	
09/09/11 10:08:22/500	01.000 ALARM1	
09/09/11 10:08:18/500	01.1 01.0000	
09/09/11 10:08:13/500	01.000 ALARM1	
09/09/11 10:08:09/500	01.1 01.0000	
09/09/11 10:08:07/500	01.1 01.0000	
09/09/11 10:08:05/500	01.000 ALARM1	
09/09/11 10:08:03/500	01.000 ALARM1	

FUNCTION	MODEL
Di x 2, Do x 2 and Modbus	71VR1-E001
Di x 2, Do x 2 and Modbus + DC mA/V input x 2	71VR1-E101
Di x 2, Do x 2 and Modbus + DC mA/V input x 2 + Universal input x 3	71VR1-E501

M-System's Model 71VR1 is a 1/4 DIN size (96 x 96 mm panel cutout), compact paperless recorder that can store and display the maximum of 8-point analog inputs and 8-point discrete inputs. The 3.5 inch TFT color LCD display can show two pen channels at once on a trend graph or digital/bargraph indicators.

Field signals are connected to local terminals and polled remotely from Modbus RTU I/O devices. Three models are available depending on the number of local inputs.

Data sampling rate is selectable between 100 msec. and 10 seconds depending upon the type and number of local and remote inputs. In addition to manual and continuous recording mode, conditional recording triggered by AND/OR functions in combinations of analog/discrete signal values/states is available. This allows the user to record only necessary part of the data in order to save memory area.

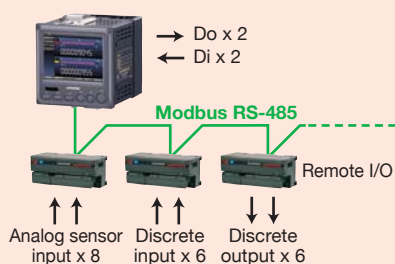
Each analog input signal is independently set with four (4) alarm thresholds. In addition to the built-in DO terminals, at the maximum of 8-point discrete outputs can be mapped on remote output devices to alert externally. Alarm events are recorded in an alarm history file, up to 200 events.

Data is stored in a memory card at the rear side of the recorder, and can be transferred to a PC and converted into CSV format files with this card or via the front IrDA port.

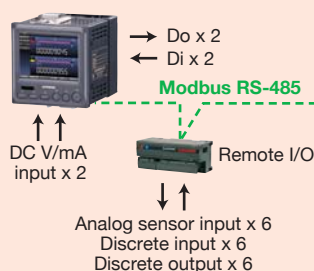
Thanks to its small panel size and shallow depth of only 10 centimeters (4 inches) needed behind the panel surface, the 71VR1 can be mounted on control panels built into industrial and commercial machineries. Imagine the 71VR1 mounted on a wave soldering machine. Single unit can monitor and record solder temperature, conveyor speed, starting/stopping of the machine, current consumption and their alarm history.

IP 65 front panel is also suitable for applications and installations where splashing water is present such as sanitary plants.

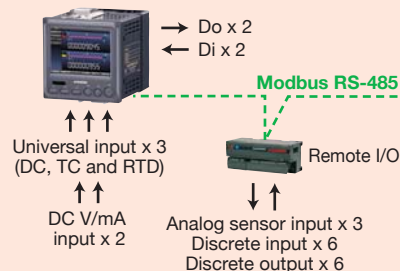
Remote I/O Type 71VR1-E001



DC Input Type 71VR1-E101



Universal Input Type 71VR1-E501



Paperless Recorder

M-System's 73VR Series are panel mount paperless recorders with a 5.5 inch TFT color LCD display. Fitting into DIN standard 144 mm square panel cutout, they can easily replace existing small-size paper recorders.

The 73VR features a widely scalable input capability with three different I/O interfaces: the 73VR2100 with built-in universal inputs up to 12 points, the 73VR3100 with selectable input modules mounted at the rear side, and the 73VR1100 with remote I/O modules networked via Modbus RTU. The 73VR3100 can also communicate directly to major PLC via DeviceNet, Modbus and PROFIBUS-DP.

Measured data are locally stored in a CF card but can be transferred in real time to the host PC via Ethernet, viewed and stored on the MSR128 PC Recorder program. The MSR128 and the dedicated 73VRWV Data Viewer can retrieve data stored in the card via Ethernet FTP without interrupting local data recording.

Thanks to the versatility of I/Os and the compatibility with the PC Recorder and PLC systems, a wide range of applications are conceivable: from a simple temperature monitoring for a furnace/refrigerator to multi-point data logging, power and utility monitoring/recording in a building/factory. The IP 65 front panel is also suitable for use in food plants/sanitary installations.

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



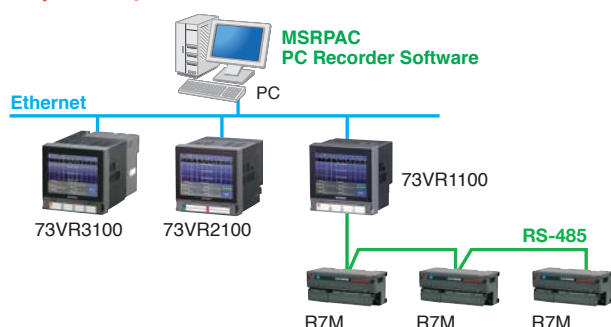
Selectable I/O Modules: 73VR3100

- 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

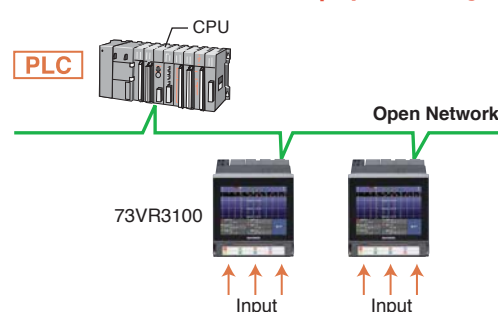


SYSTEM CONFIGURATION EXAMPLES

Expanded System via Ethernet



PLC Remote I/O with Local Display / Recording



Remote Data Acquisition Hardware and Software PC Recorder

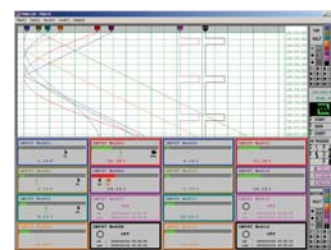
Log, Trend, Analyze and Profile Process Signals with Your PC

- 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



MSR128LS / MSR128LV
PC Recorder Light

M-System's PC Recorder Series provides a low cost industrial grade data acquisition system using free combinations of remote I/O hardware and monitoring/recording software. Field I/Os connect directly to the remote I/O modules and data is transmitted via Modbus RTU protocol over an RS-485 network. Ethernet network, Modbus TCP/IP protocol, is also usable either directly by Ethernet I/O modules or via a protocol converter by Modbus RTU I/O modules. Complete M-System's remote I/O lines including R1, R3, R5, R6, R7 Series, are available for PC Recorder applications. They can handle not only temperature, millivolt/voltage/current or discrete signals, but also other field sensors such as strain gauge and pulse generating pickups. Furthermore, a wide variety of power measuring modules for AC voltage/current, watt/var and energy inputs are ideal to monitor and analyze energy consumption trends in detail by production line to build up a new energy saving scheme.

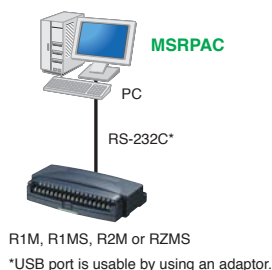


MSR128
Full Featured PC Recorder Software

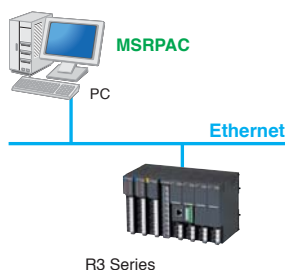
The R1M, R2M and RZMS/RZUS modules are shipped with the free MSRPAC software package which includes the MSR128 and the PC Recorder Light. These economical modules are ideal for small scale temperature scanning applications such for silos, furnaces, ovens in many industrial fields, greenhouses, hydroponics plants, machine test benches and weather monitors. By using the universal input module RZMS/RZUS, other types of sensors signals, e.g. vibration, can be monitored together for failure analysis applications.

SYSTEM CONFIGURATION EXAMPLES

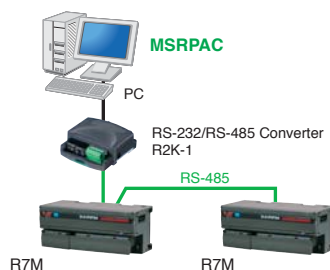
■ Minimum Configuration



■ Expanded System via Ethernet

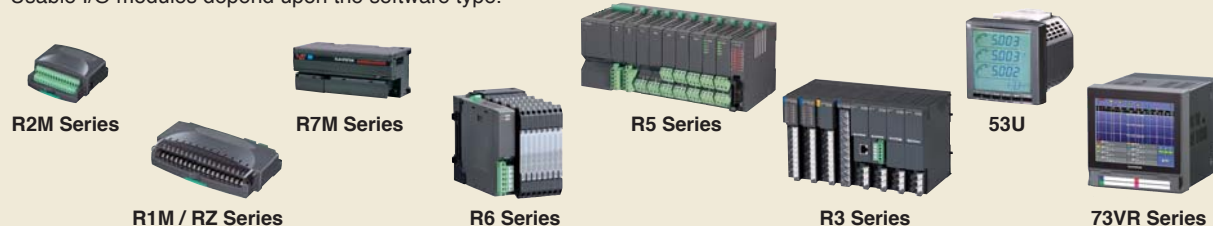


■ Expanded System via Modbus RTU



PC RECORDER HARDWARE — Complete M-System's Remote I/O Lines are Available for PC Recorder Applications

Usable I/O modules depend upon the software type.



MSRpro Client / Server System

MSRpro Client/Server System High Performance PC Recorder

- **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**

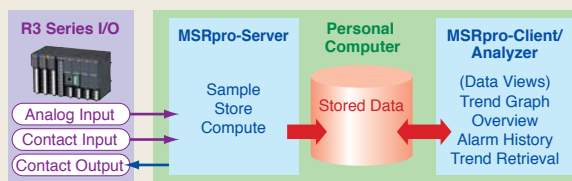
The MSRpro is a 'paperless pen-type' recording system for PC-based data acquisition and analysis. By communicating with I/O modules that have a LAN card communication interface, the MSRpro reads in input signals and stores them in a hard disk as digital data.

By sharing viewing and storing tasks by 'Client' and 'Server,' the MSRpro realizes the recording and operating functions of large number of input signals in high speed.

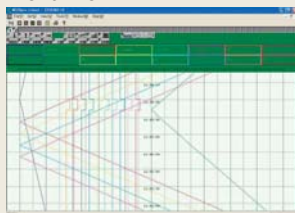
M-System's remote I/O modules, R3 Series, offer a wide variety of input signals including DC and AC signals, temperature, potentiometer, strain gauge and others.

The MSRpro is a suite of three programs :

- MSRpro-Server** Collects and stores input measurement data and executes arithmetic computation to it.
- MSRpro-Client / Analyzer** Used to view, analyze and print measurement data.
- MSRpro-BUILDER** Creates and modifies configurations for either program.



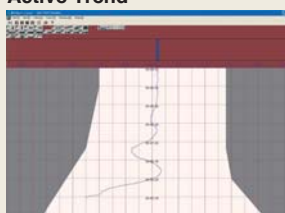
Trend View



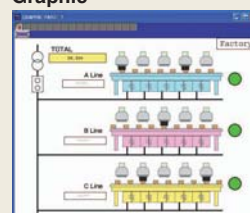
Overview



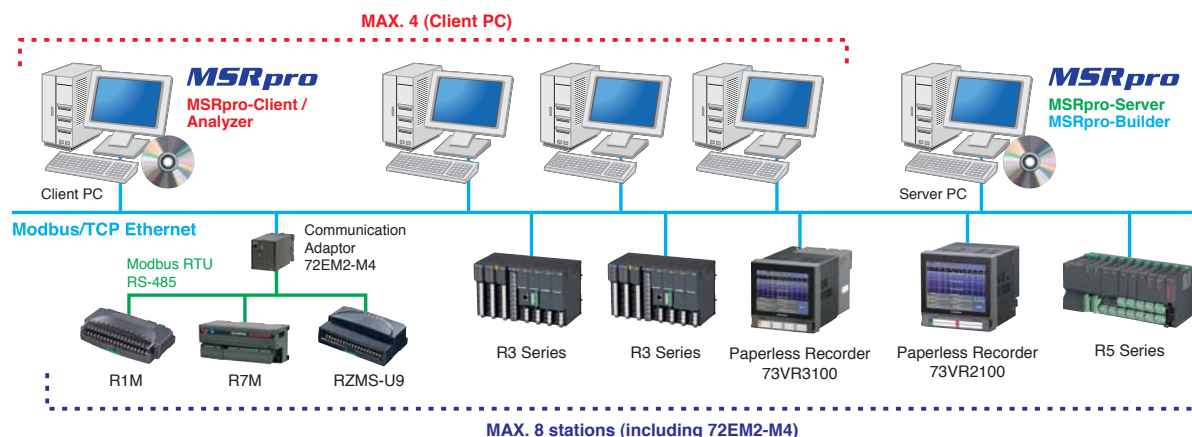
Active Trend



Graphic



SYSTEM CONFIGURATION EXAMPLE



Lightning Surge Protectors

M-RESTER
SERIES

M-System Lightning Surge Protectors absorb only the lightning surges with no interruption of the instrumentation signal.

- Protecting sensor, signal and power lines
- Excellent protection by multi-stage SPD
- Superior selection across a wide range of applications

- ✓ 4-20 mA & pulse signals
- ✓ Thermocouple
- ✓ RTD
- ✓ Potentiometer
- ✓ Strain gauge
- ✓ Frequency pickup
- ✓ RS-485 / RS-422
- ✓ Ethernet, DeviceNet, PROFIBUS, LONWORKS
- ✓ AC/DC power supply lines up to 30 amps
- ✓ Life monitor function



Every year lightning destroys many millions of dollars of sensitive electronic equipment. Millions more are lost through extended down time and the loss of production or mission-critical information. That's why companies around the world depends on in-line M-RESTER Lightning Surge Protectors to protect both signal and power wires.

Why choose M-System? M-System is a specialist of signal conditioning, developing a variety of electronic devices interfacing field sensors and control rooms since 1972. This gives us a great advantage in understanding and minimizing interference and maximizing protection by surge protectors on the instrumentation signal lines.

M-System's surge protectors are identified by specific sensors or devices to be protected, such as 4-20 mA loop, RTD, pulse transducers, DC power line. Specifications of each model is carefully chosen so to provide maximum protection.

To protect sensor and signal lines, the MDP and MD7 Series are available. They are multi-stage SPD, which, in addition to the discharge element at the first stage, provide an extra protection by a series resistance with diodes to limit current flow. The maximum discharge current capacity is as high as 20 kA for an impulse wave of 8/20 microseconds for the MD7 Series.

The MDP Series module is separable in two parts: the head element and the base socket. The head element can be removed and tested without disconnecting wires, and the base socket connects input/output signals when the head element is removed, providing rudimentary protection even during maintenance work.

The MD7 Series, only 7 mm wide ultra slim module, is designed for multi-point, ultra-high density installation. DIN rail mounting/grounding and slanted terminal block help installation and wiring work in such tight space. When the DIN rail is grounded at single point, surge protectors mounted on it are automatically connected to the earth. There is no need of cross-wiring individual modules. Independent set of shield terminals are provided, therefore it is possible to choose 'Floating' or 'Grounding' shield terminals to suit users' application needs. Floating mode is effective to prevent a ground loop.

To protect power lines, a wide variety of multi-stage SPD are available depending on the line's load current capacity. In addition, the model MAKF and the MAT2 one-port surge protectors can be connected in parallel between the power and the ground lines regardless of load current.



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.



APPLICATION	MODEL
4-20 mA loop, pulse signal, 24 V	MDP-24-1
4-20 mA loop, life monitor	MDPA-24
Thermocouple transmitter	MDP-TC
RTD transmitter	MDP-RB
Potentiometer & transmitter	MDP-PM
Strain gauge & transmitter	MDP-LC
Self-synch & transmitter	MDP-JS
Pulse sensor & transmitter	MDP-SP
AC / DC power supply, 1A	MDP-100 / MDP-200
DC power supply, 12/24 Vdc, 1A	MDP-D
RS-422 / RS-485	MDP-4R
PROFIBUS-PA, FOUNDATION Fieldbus	MDP-PA
LONWORKS (FTT-10A)	MDP-LWA

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.



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



Ultra-Slim MD7 Series

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



APPLICATION	MODEL
4-20 mA loop, pulse signal, 24 V	MD7ST
4-20 mA loop, life monitor	MD7AST*
2-wire transmitter loop	MD72W
2-wire transmitter loop, 2 channels	MD72WD
3-wire transmitter loop	MD73W
Thermocouple transmitter	MD7TC
RTD transmitter	MD7RB
Potentiometer & transmitter	MD7PM
Strain gauge & transmitter	MD7LC
Self-synch & transmitter	MD7JS*
Pulse signal, 2 channels	MD7PL
AC power supply, 3A	MD7AP*
DC power supply, 12/24 Vdc, 1.2A	MD7DP*
RS-422 / RS-485	MD74R
PROFIBUS-PA	MD7PA
FOUNDATION Fieldbus	MD7FB
LONWORKS (FTT-10A)	MD7LWA

*No ATEX approval

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



PoE / 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



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



Electronic Actuators

- High resolution positioning for superior valve control
- Brushless DC stepping motor assures long-life operation
- Built-in overload protection

M-System's Model PSN Series is a micro-processor based valve actuator employing a constant torque DC stepping motor. A wide variety of features are supplied with the unit for maximum application flexibility. The PSN incorporates a non-contact angle sensor that eliminates failures such as, dirty or corroded contacts that are common with mechanical contact feedback sensing. Field-programmable for full-open/closed positions, split ranges, deadband, opening/closing speed and restart limiting timers using hand-held programmer Model PU-2A.

The PSN includes built-in fuse for over-current protection, error detection for stuck valve and temperature sensing to prevent servo motor overheating. Alarm indication is provided for fault conditions. In cold climates, the PSN will apply a small current to warm the servo motor.

For failsafe operations, the PSN includes internal battery backup power. Additionally, discrete inputs on the unit can be used to force open or close the valve manually or from a remote PLC/DCS. In many instances, this can eliminate the need for a separate shutdown valve.







Applications include: chemical injecting/mixing, fuel valve control and other petrochemical, pharmaceutical, wastewater flow control, HVAC damper positioning and food machines.

The MSP and MRP Series linear and rotary actuators employ also a DC stepping motor with a high resolution feedback positioner and electronic limiters. In addition, the high reliability electronics can be combined with network communications to simplify installation and ensure long-life operation. The DeviceNet or CC-Link interface allows valves and dampers to be precisely controlled and their position monitored using the industry standard network interface. Networking multiple actuators greatly reduce the analog requirements of PLC and DCS systems in addition to the point-to-point wire installation costs, for example, in paper cross-direction profiling control in which dozens of actuators are used at once under single controller.









MSP5

LINEAR MOTION TYPE

						
MODEL	MSP4 C€	MSP5 C€	MSP6 C€	PSN1 C€	PSN3 C€	CSP
DeviceNet MODEL	MSP4D C€	MSP5D C€	MSP6D C€	—	—	—
CC-Link MODEL	MSP4C	MSP5C	MSP6C	—	—	—
Max. stroke (mm / inch)	15 / 0.59	20 / 0.79	40 / 1.57	40 / 1.57	60 / 2.36	75 / 2.95
Max. thrust (N / lbs)	700 / 157	700 / 157	2500 / 562	3000 / 674	5000 / 1124	12000 / 2697
Resolution	1/1000 or 0.015 mm		1/1000 or 0.02 mm	0.04 mm	0.06 mm	Hysteresis 1 mm or less
Motor	Stepping motor			Stepping motor		AC motor
Position detection	Potentiometer			Brushless angle sensor		Potentiometer
Failsafe operation	---			Optional		---

ROTARY MOTION TYPE

						
MODEL	MRP4 C€	MRP5 C€	MRP6 C€	CRP-0	CRP-1	CRP-2
DeviceNet MODEL	MRP4D C€	MRP5D C€	MRP6D C€	—	—	—
CC-Link MODEL	MRP4C	MRP5C	MRP6C	—	—	—
Max. angle	90°, 180°	90°	90°, 180°	90°		
Max. torque (N·m / ft·lbs)	5 / 3.69	10 / 7.38	33 / 24.3	68.6 / 50.6	196 / 144.7	588 / 434.0
Resolution	1/1000 or 0.09°			0.45°, 0.68°, 0.90°		
Motor	Stepping motor			AC motor		
Position detection	Potentiometer			Potentiometer		

Visit www.m-system.co.jp for more information about M-System products!

M-System's Global Home Page

www.m-system.co.jp



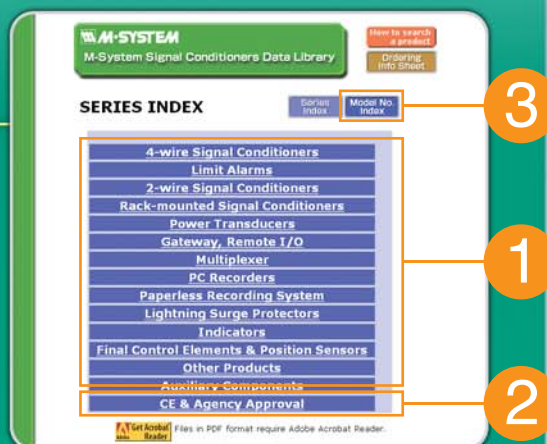
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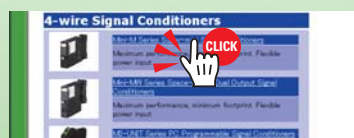
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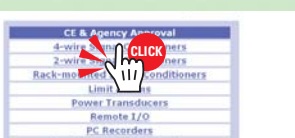
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Series Index lists the product categories or series names of signal conditioners and other products.



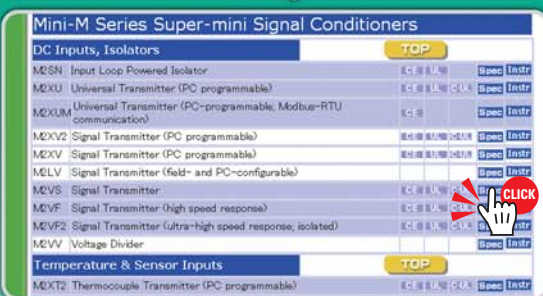
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For searching products with CE, UL/C-UL or hazardous location approvals.



3 Search By Model No.

If you already know Model No. of the product you need, use our Model No. index.



P4 Four-wire Signal Conditioners

P10 Two-wire Signal Conditioners

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P19 Limit Alarms

P20 Remote I/O

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P26 PC Recorder

P28 Lightning Surge Protectors

P30 Electronic Actuators



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Specifications are subject to change without notice. When ordering, use the latest data sheets available at M-System web site: www.m-system.co.jp.