High performance industrial-grade data acquisition systems with wide-ranging application support
High-speed, high-withstand-voltage, high-reliability multi-channel data acquisition system

**MX100**
PC-Based Real Time Data Acquisition System

**MW100**
Web-enabled Data Acquisition/Data Logging System

- Designed to perform under severe measurement conditions
- **High-speed, multi-channel measurement**
  (Ideal for test lab and process applications)
- **High withstand voltage rating**
  (600 VACrms (50/60Hz) continuous)
- **High noise immunity**
  (4 channel isolated A/D circuitry)
- **Multi-interval function**
  (Measure and record at different intervals)

**Scalable architecture to match your size requirements**
(1 to 6 slots/unit, max. 1200 ch for 20 units)

Low power consumption saves energy resources

Bulletin 04M10A01-01E
Web-Enabled Data Acquisition/Data Logging System

**MX100 PC-Based Real Time Data Acquisition System**

**Single Unit Data Logging**
- High speed
  - 24 ch/10 ms
  - 60 ch/200 ms
- Modbus/RTU (Modbus module connected)
- 1 unit connection
- High withstand voltage
  - 3700 Vrms (1 minute)
  - Data backup (standard)
- 2GB

**Multi Unit Data Logging**
- Max. 1200 ch/system
- (connect 60 ch/20 units)

**Multi Interval Data Logging**
- Data acquisition intervals set independently by measurement group

**Waveform Pattern Output & Data Logging**
- Enables setting of up to 4 waveform output patterns, waveform data output, and measured data logging on a single unit
- Assign waveform output from analog and PWM output modules to transmission output channels for multi-channel output

**Get Your System Set Up Quickly, from Desktop Measurement to Large-Scale Data Logging**
- With its modular configuration that offers flexible scalability, the MX100 platform enables you to construct the optimal data logging system for your measuring environment with the freedom of high reliability, and facilities monitoring.
- Comes with DHCP (automatic IP address assignment) and SNTP (time correction function) for connections with Modbus-compatible instruments (requires the /M1 MATH option on the client side)

**Use measuring and networking technology to share a broad range of data from the field and access multiple facilities simultaneously with a Web browser to check on the status of equipment.**

**Stand-alone data logging**
- MW100 archives data to CF media
- Use a web browser for real-time data monitoring and configuration

**Combined Web Browser Monitoring and Data Logging of Plant and Equipment Data**
- With its modular configuration that offers flexible scalability, the MX100 platform enables you to construct the optimal data logging system for your measuring environment with the freedom of high speed Ethernet, minimal wiring, and lack of constraints with regard to wiring distance.
- With expanded high and low operating temperatures, the MX100 can support a wide range of applications regardless of where it is installed.
- The main unit has a Start/Stop key for data acquisition making it useful as a portable, stand-alone type data logger.

**MX100 Guide Line**
- On-Demand, Remote Measuring System
  - Web browser monitoring & setting changes
  - Requirement: Internet Explorer or later, and JAVA VM/JAVA Script

**MX100 Guide Line**
- Multi-User & Multi-Access
  - Use a Web browser to URL of the MW100, access the MW100 at the site, and browse any data, any time.
  - Any number of MW100s within a plant or installed on equipment to see real-time site conditions and equipment operating statuses.
  - With separate waveform observation by measurement group, you can easily find correlations in waveform changes and identify trends, improving efficiency of analysis of phenomena.

**MX100 Guide Line**
- **Long Duration Memory & File Transmission**
  - CompacFlash: CF 2 GB (60 ch/100 ms: approximately 10 days, 60 ch/1 s: approximately 3 months)

**MX100 Guide Line**
- **Wide Operating Temperature Range**
  - -20°C to +60°C
  - 12 to 28 V DC power supply

**MX100 Guide Line**
- **Environmental**
  - **Measurement**
    - Max. 60 ch/unit (widely-distributed system)
    - Max. 1200 ch/system (connect 60 ch/20 units)
    - Data acquisition intervals set independently by measurement group
    - Data logging to PC hard disk

**MX Logger**
- User customized monitors
  - Create dedicated monitors with a Web editor

**MX Standard**
- Windows software
  - Monitoring & setting
  - Data logging to PC hard disk

**MX Standard**
- EtherNet/IP, Modbus/TCP, Modbus/RTU

**EtherNet/IP**
- Advanced Signal monitor
  - User defined monitors
  - Create customized monitors with a Web editor

**MX Standard**
- Analog output
  - PWM output

**MX Standard**
- Waveform pattern output
  - Measured data
  - DUT

**MX Standard**
- Multi-functional, multi-unit connections
  - MX Standard
  - Multi-User & Multi-Access

**MW100**
- Stand-alone data logging
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**MW100**
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  - MX Standard
  - Multi-User & Multi-Access
**High speed, high withstand voltage 10 ch multiplexer!**

**Superior noise performance**

- High speed (up to 50 ms), high withstand voltage data acquisition
- Universal input: DC, I/T, RTD, contact
- Noise rejection: Each channel has an integrating A/D converter and digital filter for high-speed operation (max. 655 V/μs (500 Hz), continuous, 2700 VAC (1 minute))
- Removable terminals: Removable terminal block (772044) makes wiring easier

**High definition data acquisition module**

- High speed data acquisition: 10 ms to 50 ms, high withstand voltage data acquisition
- Universal input: DC, I/T, RTD, contact
- Noise rejection: Noise rejection is maintained even at high speeds in the digital home appliance
- Removable terminal plate: Makes wiring easier without affecting the circuit

**Digital home appliance high density LSI heat dissipation measurements**

- Data acquisition: Acquisition of high-speed (150 ms) strain gauge type sensor data
- Strain gauge sensors:
  - Built-in bridge resistance built in
  - Strain gauge connection: The strain gauge connection type on each channel with a DIP switch
- Removable terminal plate: Wiring made easier with removable terminal plate (772067)

**4-wire RTD high precision measurement/Resistance measurement**

- 4-wire RTD are not affected by wiring resistance
- Sensitivity on the sensor side is 4 wires RTD type

**Measure 4 wire RTD and resistance values in 100 ms**

- 6 ch/4 ch strain measurement module
- Data acquisition: Data acquisition at high speed (up to 100 ms), high withstand voltage
- Input types:
  - Resistance, 2-wire RTD, DC voltage, contact
- Resistance ranges:
  - High precision measurement module: 10 kΩ (max. 10 kΩ, 1 minute)
  - Removable terminal plate: Removable terminal plate (772044) makes wiring easier

**Highly precise measurement and durability testing**

- Automotive, rail, and aviation safety standards testing
  - Railcar/Trailer Durability Testing
  - In-vehicle fuel cell and durability testing
  - DC stack

**Civil engineering, construction, and building safety standards testing**

- Durability testing and maintenance of tunnel materials
  - Durability testing and maintenance of bridges

**Manufacturing system**

- Component and structural safety standards testing
  - Multi-channel data acquisition of 24 V logic signals in manufacturing systems
  - Multi-channel measurement of 24 V logic signals

**Multiple contact input signal module**

- High performance 10 ms/10 ch contact input module
- High speed data acquisition: Acquisition of high-speed contact signal data at up to 10 ms
- Digital input
  - High-voltage contact or open collector
  - OFF at 1 V or less and ON at 3 V or greater
- Built-in bridge resistance: Plate with 500 VAC terminals (773083)
  - Removable terminal plate: Wiring made easier with removable terminal plate
  - External M4 screw clamp terminals (773083/773082)
  - Removable terminal plate: Wiring made easier with removable terminal plate

**Automatic door durability testing**

- Door durability test

**Application support**

- Custom Measurement Capability for Wide Ranging Application Support

**Development task**

- Development task: Development task:

**Solution**

- Durability testing

- Removable terminal plate

- Noise rejection

- High definition data acquisition measurement module

- Built-in bridge resistance: 350 Ω

- Removable terminal plate

- Direct strain gauge input

- Acquire high-speed (100 ms) strain gauge type sensor data

**New energy facilities**

- Load cell
  - Strain gauge Strain gauge
  - Aircraft wing

**Aircraft wing durability test**

- Not affected by contact resistance

**Inverter circuit temperature measurements**

- Development task: Development task:

**Solution**

- Removable terminal plate

- Contact input module

- Screw terminal

- Multi-channel measurement of 24 V logic signals in manufacturing systems

- Contact signals

- Digital input

- 5 V logic

- 24 V logic input

- Current input

- Voltage input
**MW100** can now measure and scale pulse rate inputs from numerous field devices.

### Analog transmission output

- 8-channel transmission output
- Supports four types of patterns:
  - PWM pattern
  - Analog pattern
  - Analog transmission output
  - Pattern output

### Analog pattern output

- Flexible analog output can be used with various sensors.
- Provides synchronized or unsynchronized output of 4 waveform patterns.

### PWM pattern output

- Up to 4 waveform patterns can be output.
- Supports various patterns, including sine, square, and triangle waves.
- Enables output of 4 waveform patterns from the same output module.

### Analog transmission output

- Supports 4-channel transmission output.
- Provides synchronized or unsynchronized output of 4 waveform patterns.

### Pattern output

- Supports 100 ms output with 8 ch.
- Provides synchronized or unsynchronized output of 8 waveform patterns.

### Analog transmission output

- Supports 100 ms output with 8 ch.
- Provides synchronized or unsynchronized output of 8 waveform patterns.

**Test systems using analog output modules**

- Analog pattern output
- Analog pattern output
- Analog pattern output
- Analog pattern output

**Alarm relay outputs**

- 100 ms/10 ch contact output module
  - Relay contact output
  - Contact output can be used as an alarm relay output.
  - Form-A and Form-C contacts are available.

**Alarm monitoring system using contact output modules**

- Contact output can be used as an alarm relay output.
- Supports various contact types, including Form-A and Form-C.

**PWM pattern waveform analog output**

- Supports 4-channel output.
- Provides synchronized or unsynchronized output of 4 waveform patterns.

**Removable terminal plate**

- Supports various terminal configurations.
- Allows for easy removal of terminals for field wiring.

**Reduced cost per channel for high input capacity systems**

- Excellent measurement and cost performance.
- Supports multiple channels with high input capacity.

**DXAdvanced**

- Supports additional input channels.
- Enables easier field wiring.

**DXAdvanced 2**

- Supports additional input channels.
- Enables easier field wiring.

**DXAdvanced R2**

- Supports additional input channels.
- Enables easier field wiring.

**DXAdvanced M**

- Supports additional input channels.
- Enables easier field wiring.

**DXMaster**

- Supports additional input channels.
- Enables easier field wiring.

**DXMaster R**

- Supports additional input channels.
- Enables easier field wiring.

**DXMaster M**

- Supports additional input channels.
- Enables easier field wiring.

**DXMaster MM**

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**DXMaster M**

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**DXMaster MM**

- Supports additional input channels.
- Enables easier field wiring.
**Data Acquisition Software Package DAQWORX**

**MX LOGGER**

Data Logging Software for MX100 (dedicated)
- Incorporates a multitude of data logging and monitoring functions in a low cost and easy to use package

**Equip with software MATH functions**
- Comes with a diverse range of MATH functions suited to PC software, including arithmetic, logical operators, and statistical calculations.

**Concentration of PC-based Data Acquisition Technology**
- High speed (100 ms/1200 ch max) network data acquisition
- Enables highly precise network data acquisition as fast as 10 ms and up to 24 ch
- Multi-interval data acquisition possible with up to 3 measuring intervals on 3 groups
- W recording (data backup on the PC & MX100 CompactFlash)
- Automatically convert created data files to Excel, Lotus, or ASCII and save

**Easily edit analog and PWM output module patterns using drag and drop method**
- Arbitrarily edit up to 4 waveform output patterns
- Specify patterns for transmission output and output to multiple channels
- Adjust output level arbitrarily with variable volume
- Synchronized or unsynchronized output of 4 waveform patterns

**Add Observer**

Combine “Add Observer” Add-on Software with MXLOGGER to create your own, original monitor screens.
- Easy to operate Builder function lets you construct monitor screens with no technical expertise required
- Full set of objects (trend graphs, assorted meters, thermometers, numerical displays, controllers, diagrams, etc.)
- Connect up to 16 run-time monitors to the network to create a remote monitoring system

**Supports a wide range of recorders, data loggers, controllers, and measuring instruments**
- Data acquisition systems comprising diverse models can be set up without programming.
- Data acquisition and recording on up to 1600 channels at 1 second intervals (shortest)
- Real-time monitoring of up to 50 groups of 32 channels
- Data acquisition systems allowing connections with up to 32 units of differing models
- Saved data can be redisplayed, printed, converted to other formats, and appended with comments

**Data Acquisition units**
- UT/UP series Indicating Controllers
- JIXTA series Signal Conditioners

**Power Monitors**
- WT1600
- PR300

**DX series Industrial Recorders**
- PR300

**LabVIEW Drivers**

The driver software required to connect the MX100/MW100 with the LabVIEW measuring system software by National Instruments is available for download at our Web site: [http://www.yokogawa.com/ns/support/labview/](http://www.yokogawa.com/ns/support/labview/)

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