



MX100



MW100



GM



The contents of this Technical Information are subject to change without notice.

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Using This Document

This document describes the replacing DAQMASTER with SMARTDAC+.

■ Notice

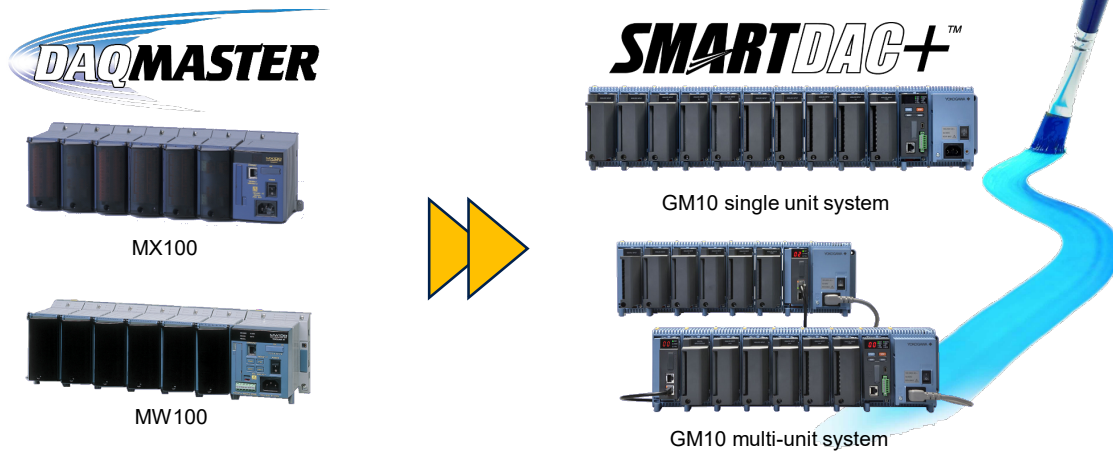
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Introduction

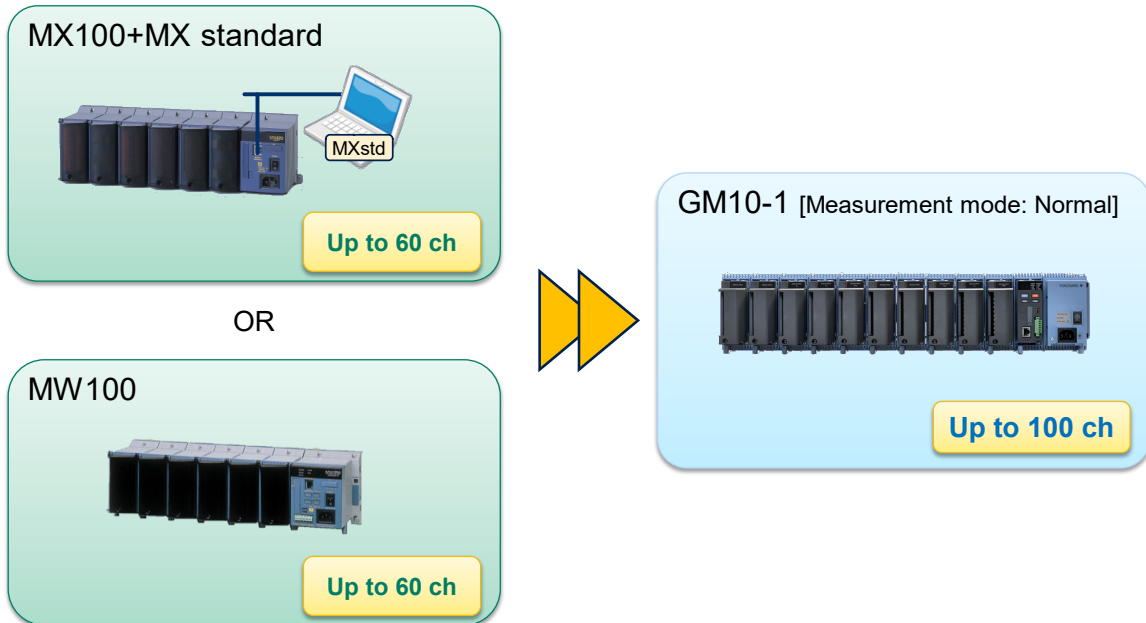
- Replacing the DAQMASTER
 - ◆ You can replace your existing DAQMASTER series instruments with SMARTDAC+ according to your applications and future needs.
 - ◆ This document provides a variety of replacement support information including model selection, benefits of the new models, and precautions when switching out units.



1 Replacement

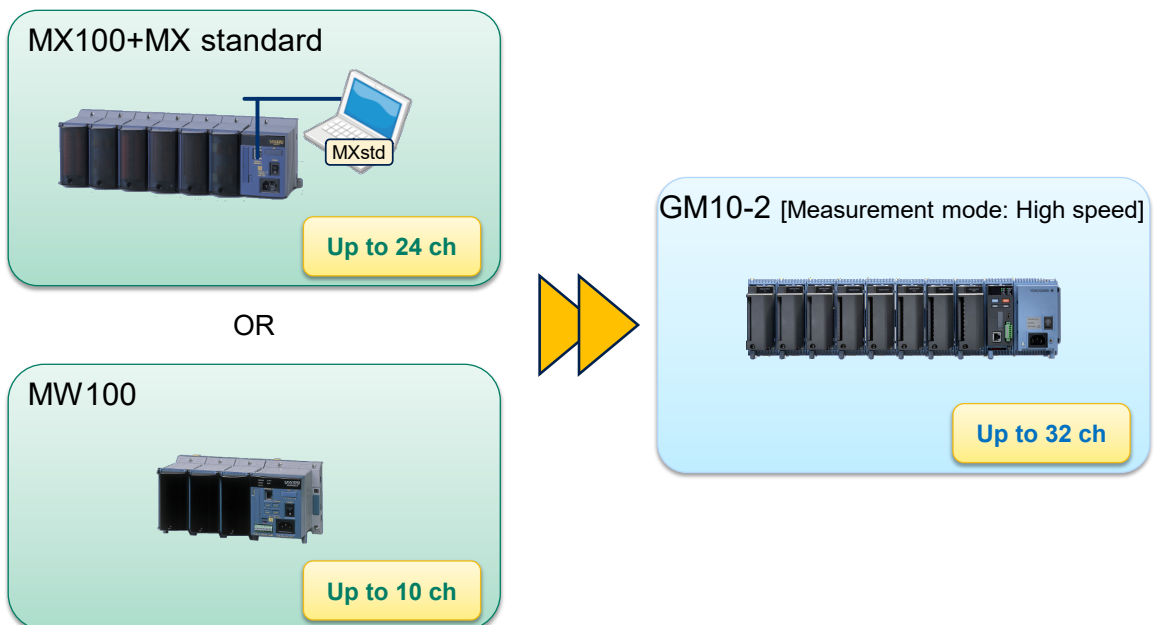
1-1 Replacement (1)

- When using a medium speed module (scan interval of ≥ 100 ms)



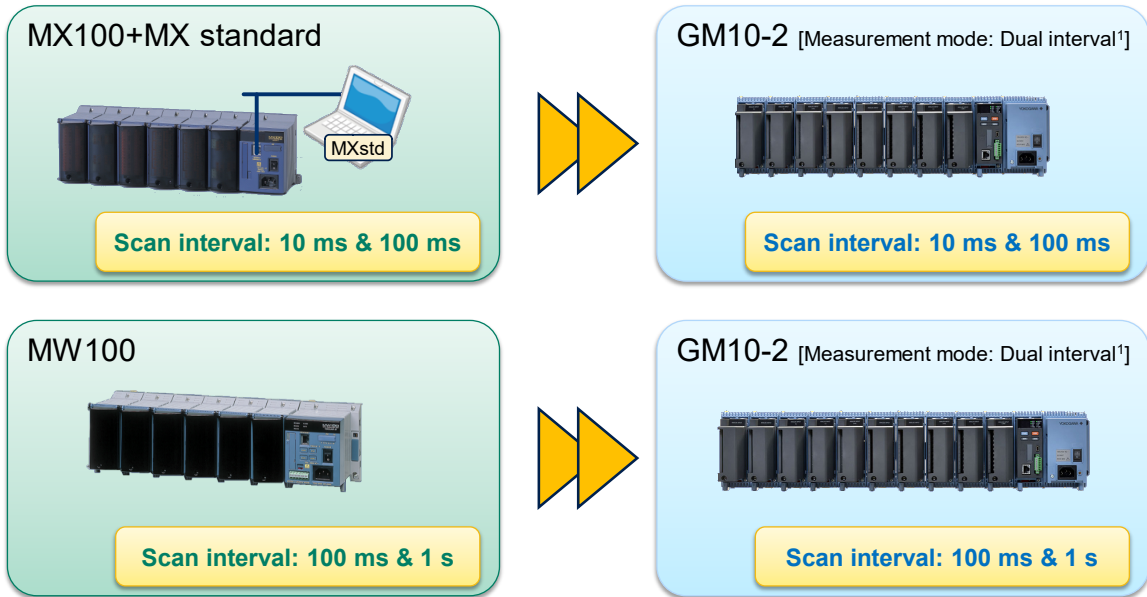
1-2 Replacement (2)

- When using a high speed module (scan interval of 10 ms)



1-3 Replacement (3)

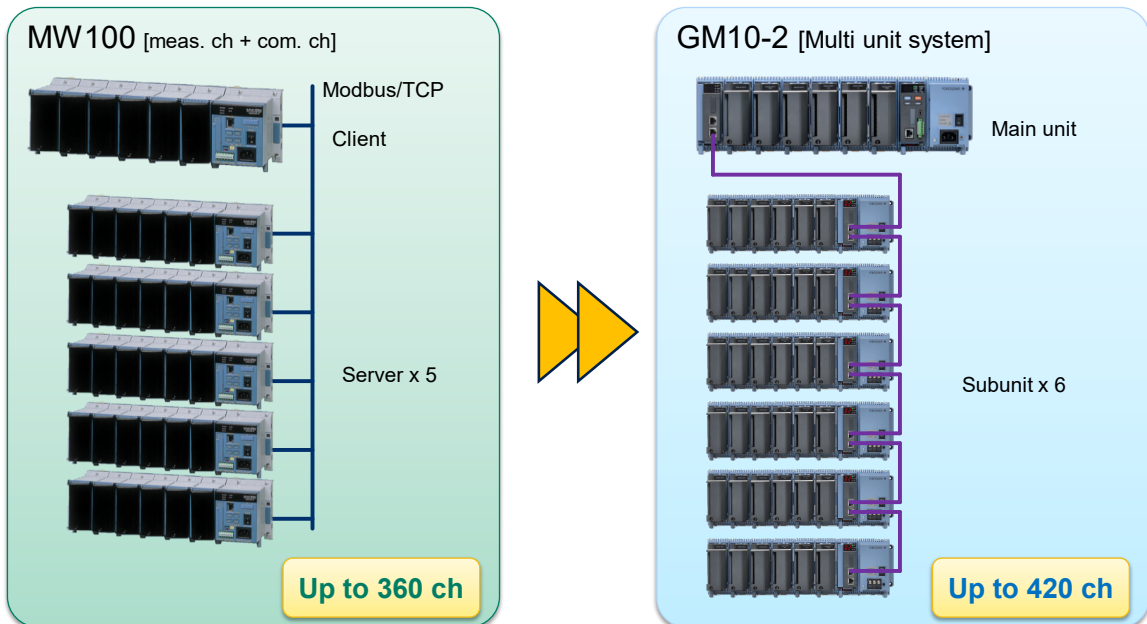
- When using multiple intervals



1: The GM10 can measure at up to 2 intervals at once

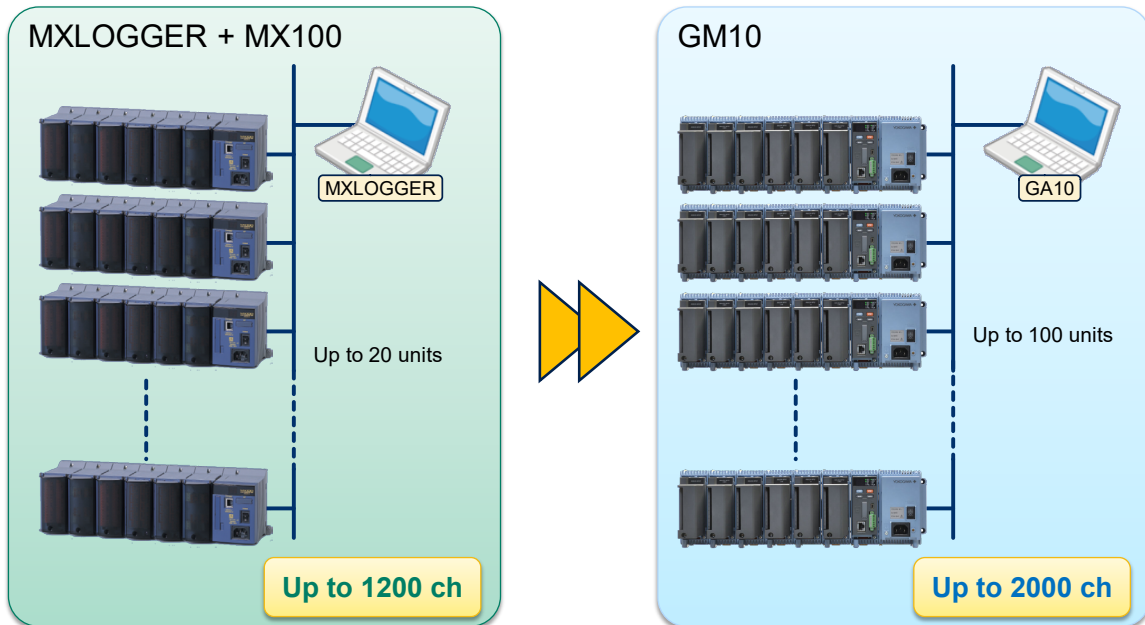
1-4 Replacement (4)

- When using multi-channel measurement



1-5 Replacement (5)

- When using data acquisition software



2 Module Compatibility

Type	DAQMASTER			SMARTDAC+	
	Model	Ch		Model	Ch
High speed 4 ch AI	MX110-UNV-H04	4		GX90XA-04-H0	4
Standard AI	MX110-UNV-M10	10		GX90XA-10-V1 ^{1, 2} GX90XA-10-U2 ^{1, 3}	10
30ch AI	MX110-VTD-L30	30		GX90XA-10-V1 ^{1, 2} GX90XA-10-U2 ^{1, 3} ×3	30
4-wire RTD	MX110-V4R-M06	6		GX90XA-06-R1 ⁴	6
Strain	MX112-□□□-M04	4		-	-
Pulse	MX114-PLS-M10	10		GX90XP-10-11	10
DI	MX115-□□□-H10	10		GX90XD-16-11 ⁵	16
AO	MX120-□□□-M08	8		GX90YA-04-C1 ^{6, 7} ×2	8
DO	MX125-MKC-M10	10 ⁸		GX90YD-06-11 ×2	12 ⁸

1: With high accuracy specifications (/S1 option), 2: High withstand voltage module, no RTD range, 3: Common mode voltage = 250 VACrms,
4: RTD/resistance range only, 5: 24 V logic not supported, 6: Current output only, 7: PWM output not supported, 8: MX125: A contact, GX90YD: C contact

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3 Structure

	DAQMASTER		SMARTDAC+
Main unit	MX100 MW100		GM10
Power supply module	(Built in to main unit)		GM90PS
Base plate	MX150-□ (□: 1-6)		GM90MB ¹

1: Requires 1 per main unit and I/O module



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4 GM Features

Features	Benefits
High speed, high accuracy measurement	Fast, 1 ms interval provides high accuracy measurement.
Multichannel	Measures on up to 420 channels at 100 ms intervals (with the GM10-2 large memory model).
Block structure	Easily add modules or change configuration according to measuring conditions. Module base makes it easy to swap modules and improves maintainability.
Large internal memory	Measured data recorded and saved to internal memory. Enables long-duration data recording (standard model: 500 MB, large memory model: 1.2 GB).
No PC	Since measured data is saved to internal memory, no PC is needed for recording and saving. Monitor ¹ and edit settings ¹ from your tablet by using the Bluetooth function (option).
SD memory card	Uses an SD memory card as external media. Supports large memory (32 GB) for recording even large, high speed, multichannel data files.
Advanced web applications	Improved performance of browser-based real time monitoring. In addition to monitoring, also browser based instrument configuration.
Selectable power supply module	The power supply is modular, with 2 types available: 100–240 VAC and 12 VDC. You can switch power supply modules according to the measuring environment.
Variety of communication functions	Supports a variety of communication protocols including Modbus/TCP. Connects to a range of instruments for data exchange.

1: Only some setting items

5 GM System Configuration

■ Single unit

◆ Normal, dual interval



Up to 10 modules

Analog input: Up to 100 ch

◆ High speed

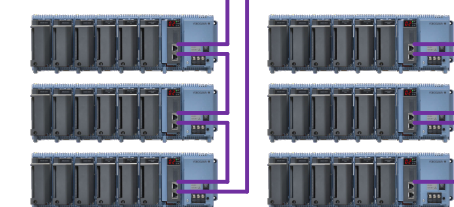


Up to 8 modules

High speed analog input: Up to 32 ch

■ Multi-unit

◆ Normal, dual interval



Usable in distributed installation

Up to 42 modules

Analog input: Up to 420 ch¹

1: Large memory (GM10-2)

6 Specifications

6-1 Specifications (1)

Item	SMARTDAC+		DAQMASTER	
	GM10		MX100	MW100
No. of analog input ch	Single unit: Up to 100 ch Multi-unit: Up to 420 ch ¹		Up to 60 ch	
No. of modules	Single unit: Up to 10 modules Multi-unit: Up to 42 modules ¹		Up to 6 modules	
Scan interval	1 msec (shortest)		10 msec (shortest)	
Dual interval Multi-interval	Measurement group 1: High speed, 1 msec ¹ Measurement group 2: High speed, 100 msec		No. of measurement groups: Up to 3 Set up to 3 scan intervals	
Withstand voltage ²	Between input and earth: 3700 VAC, for 1 minute Between input channels: 1000 VAC, for 1 minute			
Common mode voltage ²	600 VACrms/600 VDC, double insulation			
Between-channel common mode noise voltage	250 VACrms		120 VACrms	
Measurement accuracy	Same, by using the GX90XA/S1 (high precision spec, see GS for details)			
No. of alarms/type	4 levels/channel			
Alarm types	Upper/lower limit, difference upper/lower limit, rate of change upper/lower limit, delay		Upper/lower limit, difference upper/lower limit	Upper/lower limit, difference upper/lower limit, rate of change upper/lower limit, delay
Input terminal format	Clamp, M3 screw		Clamp (can be changed to screw terminal)	

1: For GM10-2 (large memory), 2: GM10 when using GX90XA-10-V1 (high withstand module)

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6-2 Specifications (2)

Item	SMARTDAC+		DAQMASTER	
	GM10		MX100	MW100
MATH	No. of ch	GM10-1 (standard): 100 ch ¹ GM10-2 (large memory): 200 ch ¹	60 ch	60 ch ¹
	Type	Basic math, statistics, special operators, conditional statements, etc.		
	Interval	High speed 1 msec	High speed 100 msec	
Report function ¹	Daily, weekly, monthly, batch		None	Hourly, daily, weekly, and monthly
No. of com. ch	GM10-1 (standard): 300 ch ¹ GM10-2 (large memory): 500 ch ¹		None	240 ch (MATH ch also available)
Com.	I/F	Ethernet, RS-485 ¹ , USB, Bluetooth ¹	Ethernet	Ethernet, RS-232 ¹ , RS-422/485 ¹
	Functions	FTP, E-Mail, DHCP, SNMP, HTTP, Modbus/TCP, Modbus-RTU, Ethernet/IP ¹ , SLMP ¹ , WT communication ¹	Dedicated com. only	FTP, E-Mail, DHCP, SNMP, HTTP, Modbus/TCP, Modbus-RTU
Built-in memory	GM10-1 (standard): 500 MB GM10-2 (large memory): 1.2 GB		None	
External memory	SD memory card (up to 32 GB)		CF card ² (up to 2 GB)	
Monitor/setting tool	Web browser, tablet application		Dedicated software	Web browser
Operating temp. range	-20–60°C ³		0–50°C	-20–60°C ³

1: Option required, 2: /DS option required on MX100, 3: -20–50°C depending on module

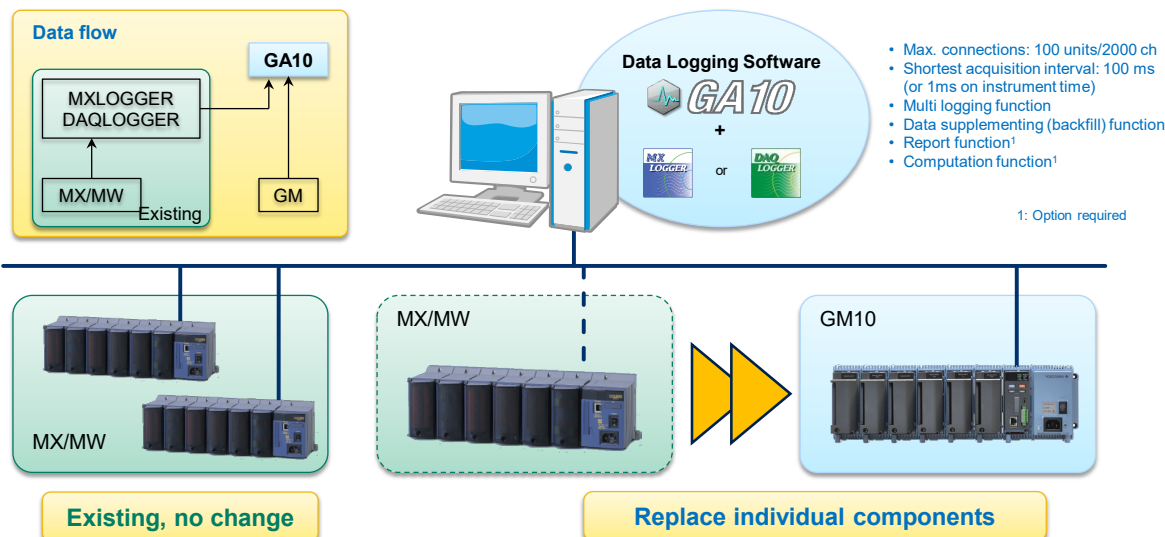
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7 Replacement in Stages

- When using data acquisition software
 - ◆ By installing GA10, you can replace parts of DAQMASTER with the GM while retaining your existing MXLOGGER/DAQLOGGER.



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8 Precautions

There are differences between SMARTDAC+ GM10 and DAQMASTER MX100/MW100.
Please be aware of these before making replacements.

Item	Precautions
Measurement range	Some ranges are not supported, even by supported I/O modules.
Measurement accuracy	You can measure with almost identical accuracy by using the GX90XA/S1 (high precision spec.). Note that the measurement accuracy may differ depending on the DUT.
Common mode voltage	For the high withstand voltage module (GX90XA-10-V1) only: 600 VACrms/600 VDC.
Terminal format/wiring	With the supported I/O modules, the terminal format and wiring are different. Note: M4 screw terminals are not available for the GM10.
Communication commands/API	Communication commands differ on the GM10 and MW100. Note: API for communication (equivalent to MX190) not available for the GM10.
Measurement groups	Up to 2 groups can be set on the GM10 (versus 3 on the MX100/MW100). Note: The scan interval that can be set for measurement group 2 is 100 ms or higher.
Serial communication	RS-485 is not available for the GM10, however, a USB port comes standard.

* For details, see the GS.

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