

Specifications

For detailed specs, see the general specifications (data acquisition module/power supply module/module base:
GS 04L55B01-01EN, expansion unit/expansion modules: GS 04L53B00-01EN, I/O modules: GS 04L53B01-01EN).



GM10 Data Acquisition Module

No. of I/O channels:	GM10-1: 100 max. GM10-2: 500 max. (or 420 with AI only)
Scan interval:	100/200/500 ms/1/2/5 s * Some intervals not available depending on system configuration and modules.
Internal memory (flash memory):	GM10-1: 500 MB GM10-2: 1.2 GB
External storage media:	SD memory card (SD/SDHC), up to 1–32 GB (1 GB incl.) Format: FAT32 or FAT16
Data types:	Event, display, alarm summary, manual sample, settings, and report (optional code /MT)
Data format:	Binary or text
Alarms:	Number: Max. 4 alarms per measurement channel Types: high limit, low limit, difference high limit, difference low limit, rate of change increase, rate of change decrease, delay high, delay low
Event actions:	Specified actions can be performed when certain events occur. Number: 50 Events: alarms, remote control input, etc.; Actions: record stop/start, alarm ACK, etc. Timers: 12 Match time timers: 12
Batch function:	Manage data by batch name. Enter text fields and batch comments in data files.
Calibration correction mode:	Off, linearizer approximation, linearizer bias
Security functions:	Key lock and login functions.
Insulation resistance:	Between RS-422/485/Ethernet terminals and internal circuitry: 20 MΩ or greater (at 500 VDC)
● Ethernet	
Electrical/mechanical specifications:	IEEE 802.3 compliant (Ethernet frame type: DIX specification)
Implemented protocols:	TCP, UDP, IP, ICMP, ARP, DHCP, HTTP, FTP, SMTP, SNMP, Modbus, dedicated protocol, SSL, DARWIN-compatible communication
● USB communication	
Standards conformity:	USB 2.0 compliant (recognized as a serial port by the PC)
Connector format/no. of ports:	mini B/1
Implemented protocol:	Dedicated protocol
● RS-422/485 (optional code /C3)	
Media:	EIA RS-422/485 compliant
Implemented protocol:	Dedicated protocol, Modbus/RTU, or DARWIN compatible communication
● Bluetooth (optional code /C8)	
Standards conformity:	Bluetooth® Ver 2.1+EDR compliant
Supported profiles:	SPP (serial port profile)
Communication range:	Approx. 10 m (depending on operating environment) (Class2)
Implemented protocol:	Dedicated protocol
● Ethernet/IP communications (optional code /E1)	
Can join Ethernet/IP networks as an adapter (server).	
Max. connections:	20 (or 10 max. at TCP/IP level)
Supported protocols:	EIP/PCCC, EIP/native
Messaging:	Explicit (UCMM Class 3) +I/O (Class 1)
Objects:	Assembly, PCCC, Data Table
● WT communication (optional code /E2)	
Models supported:	WT1800, WT500, WT300
Supported communication:	Ethernet
Max. connected units:	16
Communication interval:	500 ms/1 s/2 s/5 s/10 s/20 s/30 s
Acquirable data types:	Voltage, current, power, power factor, phase, watt hours, harmonics, and others.
Max. data assignments:	300
● OPC-UA Server (optional code /E3)	
Communication:	
Type:	OPC-UA Server
Encoding:	UA Binary
Protocol:	OPC UA TCP
Maximum number of connections:	3 sessions
Profile:	Micro Embedded Device Server
Data acquisition:	Measurement channel, computation channel, communication channel value and alarm status
Data writing:	Measurement channel (DO channel only), communication channel
Port number:	4840 (changeable: 1 to 65535)
Number of items:	300 max. (MonitoredItem/Session)
Fastest period:	100 ms
● SLMP Communication (Mitsubishi PLC) (optional code /E4)	
Number of connection destination servers:	16 max.
Read cycle:	100 ms, 200 ms, 500 ms, 1 s, 2 s, 5 s, 10 s, 20 s, 30 s, 1 min

Communicable internal data:	Special relay (SM), special register (SD), input (X), output (Y), internal relay (M), latch relay (L), annunciator (F), edge relay (V), link relay (B), data register (D), link register (W), timer contact (TS), timer coil (TC), current timer value (TN), integration timer contact (SS), integration timer coil (SC), current integration timer value (SN), counter contact (CS), counter coil (CC), current counter value (CN), special link relay (SB), special link register (SW), direct access input (DX), direct access output (DY), index register (Z), file register (R, ZR), extended data register (D), extended link register (W) Device code is indicated in parentheses.
● MATH (with Report function, optional code /MT)	
No. of MATH channels:	GM10-1: 100, GM10-2: 200
MATH types:	Basic math, statistics, special operators, conditional statements, and others.
● Communication channels (optional code /MC)	
No. of communication channels:	GM10-1: 300 (C001–C300) GM10-2: 500 (C001–C500)
● Log scale (optional code /LG)	
Input types:	LOG input, pseudo log (input that supports pseudo log), LOG linear (linear input within the log decade)
Scalable range:	LOG input: 1.00E-15 to 1.00E+15 (max. 15 decades), [scale low limit] < [scale high limit] Pseudo log input/LOG linear: 1.00E-15 to 1.00E+15 (max. 15 decades), the mantissa of the scale low and high limits are assumed to be the same.
● Multi-batch Function (optional code /BT)	
Number of multi batches:	GM10-1: 6 max., GM10-2: 12 max.
● Aerospace Heat Treatment (optional code /AH)	
Number of manageable schedules:	GM10-1: 6 max., GM10-2: 12 max.
Calibration correction mode:	Off, linearizer approximation, linearizer bias, correction coefficient
Number of set points:	2 to 12

GM90PS Power Supply Module

Rated supply voltage:	100–240 VAC, 12–28 VDC (GM90PS-1N2W0)
Operating supply voltage:	90–132 VAC, 180–264 VAC, 10–32 VDC (GM90PS-1N2W0)
Power frequency (AC power supply):	50 Hz±2%, 60 Hz±2%
Insulation resistance:	Between power terminal and earth: 20 MΩ or more (at 500 VDC)
Withstand voltage:	Between power terminal and earth: 3000 VAC (50/60 Hz), 1 minute 1000 VAC (50/60 Hz) for 1 minute (GM90PS-1N2W0)

GX90XA Analog Input Module

Universal input (-U2), low withstand voltage relay (-L1), electromagnetic relay (-T1)	
Inputs:	10
Input types:	Universal: DC voltage, standard signal, thermocouple, RTD, DI (voltage contact), DC current (with external shunt resistor connected) Low withstand voltage relay, electromagnetic relay: DC voltage, standard signal, thermocouple, DI (voltage, contact), DC current (with external shunt resistor connected)
Integral time:	Universal: 1.67 ms/16.7 ms/20 ms/36.7 ms/100 ms Low withstand voltage relay, electromagnetic relay: 16.7 ms/20 ms/36.7 ms/100 ms
Input calculation:	Linear scaling, square root, differential calculations
Input range/accuracy:	Refer to the Measurement range and accuracy table.
Input resistance:	10 MΩ or more for thermocouple/DC voltage (1 V range or lower) Approx. 1 MΩ for DC voltage (2 V range or higher)/standard signal
Input external resistance:	2 kΩ or lower for thermocouple/DC voltage
Effect of signal source resistance:	±10 μV/1 kΩ or lower for thermocouple/DC voltage (1 V range or lower) ±0.15%/1 kΩ or lower for DC voltage (2 V range or higher)/standard signal
Allowable wiring resistance:	Max. 10 Ω/1 wire or less (lead resistance between 3 wires is equal) for RTD input
Effect of wiring resistance:	±0.1°C/10 Ω (lead resistance between 3 wires is equal) for RTD input
Reference junction compensation accuracy:	Measurement of 0°C or higher, input terminal temp. balanced Type K, E, J, T, N, XK GOST: ±0.5°C (23°C±2°C), ±0.7°C (0 to 50°C), ±1.0°C (-20 to 60°C) Type R, S, W, L, U, W97Re3-W75Re25, platinum 2, NiNiMo, W/WRe26, N(AWG14): ±1.0°C (23°C±2°C), ±1.4°C (0 to 50°C), ±2.0 (-20 to 60°C) Type KpvsAu7Fe: ±1.0 K (23°C±2°C), ±1.4 K (0 to 50°C), ±2.0 K (-20 to 60°C) Type B, PR20-40: RJC fixed at 0°C * Parentheses () = ambient temperature.
Allowable input voltage:	±60V DC for DC voltage (2 V range or higher)/standard signal ±10 V DC for other conditions.
Noise rejection ratio:	Normal mode: 50/60 Hz no rejection (integral time 1.67 ms), 40 dB or more (integral time 16.67 ms or more) Common mode: 80 dB or more (integral time 1.67 ms), 120 dB or more (integral time 16.67 ms or more)
Max. common mode voltage:	30 VACrms (50/60Hz), or 60 VDC (however, max. common mode noise voltage of measurement input is 250 VACrms)
Max. voltage between measurement input channels:	Universal, electromagnetic relay: 30 VACrms (50/60Hz), or 60 VDC (however, max. common mode noise voltage between measurement input channels is 250 VACrms) Low withstand voltage relay: 30 VACrms (50/60Hz), or 60 VDC (however, max. common mode noise voltage between measurement input channels is 60 VACrms)
Effects of ambient temperature:	Applies when integral time is 16.67 ms or higher, ±(0.05% of rdg + 0.05% of range) or less fluctuation per 10°C change Note, KpvsAu7Fe, PR20-40: ±(0.05% of rdg + 0.1% of range) or less Cu10Ω system: ±(0.2% of range + 0.1°C) or less Excluding guaranteed reference junction accuracy

Insulation resistance:	Between input terminals and internal circuitry: 20 MΩ or greater (at 500 VDC)
Withstand voltage:	Universal, electromagnetic relay: Between input terminals and internal circuitry: 3000 VAC, 1 minute Between analog input channels: 1000 VAC, 1 minute (excluding b terminal) Low withstand voltage relay: Between input terminals and internal circuitry: 1500 VAC, 1 minute Between analog input channels: 400 VAC, 1 minute

DC current (mA) input (-C1)

Inputs:	10
Input types:	DC current (20 mA), standard current signal (4–20 mA)
Integral time:	1.67 ms/16.7 ms/20 ms/36.7 ms/100 ms
Input calculation:	Linear scaling, square root, differential calculations
Input range:	Refer to the Measurement range and accuracy tables.
Input resistance:	250 Ω
Allowable input voltage:	±10 VDC
Allowable input current:	24 mA *50/60 Hz, peak value including the signal portion
Noise rejection ratio:	Normal mode: 50/60 Hz no rejection (integral time 1.67 ms), 40 dB or more (integral time 16.67 ms or more) Common mode: 80 db or more (integral time 1.67 ms), 120 dB or more (integral time 16.67 ms or more)
Max. common mode voltage:	30 VACrms (50/60Hz) or 60 VDC (however, max. common mode noise voltage of measurement input is 250 VACrms)
Max. voltage between measurement input channels:	30 VACrms (50/60Hz) or 60 VDC (however, max. common mode noise voltage between measurement input channels is 250 VACrms)
Effects of ambient temperature:	Applies when integral time is 16.67 ms or more, ±(0.075% of rdg + 0.05% of range) or less fluctuation per 10°C change
Insulation resistance:	Between input terminals and internal circuitry: 20 MΩ or greater (at 500 VDC)
Withstand voltage:	Between input terminals and internal circuitry: 1500 VAC, 1 minute Between analog input channels: 1000 VAC, 1 minute

GX90XD Digital Input Module

Inputs:	16
Input format:	Open collector or non-voltage contact
Range types	DI, pulse (250Hz (The chattering filter: OFF), 125Hz (The chattering filter: ON), min. pulse width: 2 ms, requires the MATH (optional code /MT)).
ON/OFF detection:	Open collector: Voltage of 0.5 VDC or less when ON, leakage current of 0.5 mA or less when OFF Non-voltage contact: Contact resistance of 200 Ω or less when ON, 50 kΩ or more when OFF
Input calculation:	Linear scaling, differential calculations
Contact rating:	12 VDC, 20 mA or more
Input resistance:	Approx. 1 kΩ
No. of common:	2 (1 common per 8 channels)
Allowable input voltage:	10 V
Insulation resistance:	Between input terminals and internal circuitry: 20 MΩ or greater (at 500 VDC)
Withstand voltage:	Between input terminals and internal circuitry: 1500 VAC, 1 minute

GX90YD Digital Output Module

Outputs:	6
Output format:	Relay contact (c contact)
Rated load voltage:	30 VDC or 250 VAC or less
Max. load current:	3 A (DC)/3 A (AC), resistive load, each
Min. load voltage/current:	5 VDC/10 mA
No. of common:	6 (all outputs independent)
Insulation resistance:	Between output terminals and internal circuitry: 20 MΩ or greater (at 500 VDC)
Withstand voltage:	Between output terminals and internal circuitry: 3000 VAC, 1 minute

GX90WD Digital Input/output Module

● Digital input (DI) section

Inputs:	8
Input format:	Open collector or non-voltage contact
Range types:	DI, pulse (250Hz (The chattering filter: OFF), 125Hz (The chattering filter: ON), min. pulse width: 2 ms, requires the MATH (optional code /MT)).
ON/OFF detection:	Open collector: Voltage of 0.5 VDC or less when ON, leakage current of 0.5 mA or less when OFF Non-voltage contact: Contact resistance of 200 Ω or less when ON, 50 kΩ or more when OFF
Input calculation:	Linear scaling, differential calculations
Contact rating:	12 VDC, 20 mA or more
Input resistance:	Approx. 2.4 kΩ
No. of common:	1 (1 common per 8 channels)
Allowable input voltage:	10 V
Insulation resistance:	Between input terminals and internal circuitry: 20 MΩ or greater (at 500 VDC)
Withstand voltage:	Between input terminals and internal circuitry: 1500 VAC, 1 minute

● Digital output (DO) section

Outputs:	6
Output format:	Relay contact (c contact)

Rated load voltage:	150 VAC or less when connected to the main circuit (first-order power supply) 250 VAC or less when connected to a circuit derived from the main circuit (second-order power supply), or 30 VDC or less
Max. load current:	2 A (DC)/2 A (AC), resistive load, each
Min. load voltage/current:	5 VDC/10 mA
No. of common:	6 (all outputs independent)
Insulation resistance:	Between output terminals and internal circuitry: 20 MΩ or greater (at 500 VDC)
Withstand voltage:	Between output terminals and internal circuitry: 2700 VAC, 1 minute

GX90XP Pulse Input Module

Number of inputs:	10
Measurement interval:	100 ms (shortest)
Input type:	Contact (open collector, voltage-free contact), level (5 V logic)
Input range:	Up to 20 kHz 30 Hz when the chattering filter is in use (On)
Minimum detection pulse width:	25 μs 15 ms when the chattering filter is in use (On)
Measurement accuracy:	Count ± 1 pulse During integration, the following accuracies are added. Upon MATH start: +1 measuring period Upon MATH stop: -1 measuring period * Integration requires the math function (optional code /MT).
Chattering filter:	Removes chattering up to 5 ms (can be turned on/off on each channel)
Hysteresis width:	Approx. 0.2 V
Contact, transistor rating:	Contact: 15 V DC or higher and 30 mA or higher rating. Minimum applicable load current 1 mA or less. Transistor: With the following ratings: Vce>15 VDC, Ic>30 mA
Maximum input voltage:	±10 V DC
Insulation resistance:	Between input terminals and internal circuitry: 20 MΩ or greater at 500 V DC
Withstand voltage:	Between input terminals and internal circuitry: 1500 V AC for 1 minute

GX90EX Expansion Module

Connects via dedicated communication between main unit and subunits, and between subunits.

Communication speed:	10Base-T/100Base-TX (Auto)
Ports:	2
Connection cable:	STP cable, CAT5 or later
Connection between modules:	Cascade connection (no ring connection)
Communication range:	100 m

SMARTDAC+ GM common specifications

● Standards supported

CSA:	CSA22.2 No61010-1, installation category II, pollution degree 2 CSA 22.2 No.61010-2-030-12
UL:	UL61010-1, UL61010-2-030 (CSA NRTL/C)
CE:	EMC directive: EN61326-1 Class A Table 2 EN61000-3-2 EN61000-3-3 EN55011 Class A Group 1 EN61010-1, EN61010-2-030 Installation category II, pollution degree 2, measurement category II R&TTE directive (optional code /C8): HEALTH&SAFETY EN61010-1 EN61010-2-030 Installation category II, pollution degree 2, measurement category II EN62311 EMC EN301 489-1 EN301 489-7 EN61326-1 SPECTRUM EN300 328

EMC Regulatory Arrangement in Australia and New Zealand (RCM):

EN55011 Class A Group 1

Wireless communication standards of Australia and New Zealand (RCM) (optional code /C8):

AS/NZS4268, AS/NZS2772.2

KC marking: Electromagnetic wave interference prevention standard, electromagnetic wave protection standard compliance

Environmental performance: WEEE directive support

Wireless (Bluetooth): Supports radio wave regulations of Japan, America, Canada, Europe (EU), Australia, New Zealand, China, and Korea.

● Normal operating conditions

Ambient temperature:	-20 to 60°C If less, -20 to 50°C · When using the GX90YD, GX90WD, and GX90XA-T1 (electromagnetic relay type) · With the GM10/C8 (Bluetooth option)
Ambient humidity:	20 to 85% RH (no condensation)
Vibration:	5 ≤ f < 8.4 Hz amplitude 3.5 mm (peak) 8.4 ≤ f ≤ 160 Hz acceleration 9.8 m/s ² (or less)
Shock:	When ON, 98 m/s ² or less, 11 ms, 3 times in 6 directions (±X, ±Y, ±Z), (excluding GX90YD and GX90WD) When OFF, 500 m/s ² or less, approx. 10 ms, 3 times in 6 directions (±X, ±Y, ±Z)
Magnetic field:	400 A/m or less (DC and 50/60 Hz)

Measurement range and accuracy*1

Input	Type	Range	Measurement accuracy	
			A/D integration time: 16.7ms or more*2	A/D integration time: 1.67ms*3
DCV	20mV	-20.000 to 20.000 mV	±(0.05 % of rdg +12 µV)	±(0.1 % of rdg +40 µV)
	60mV	-60.00 to 60.00 mV	±(0.05 % of rdg +0.03 mV)	±(0.1 % of rdg +0.15 mV)
	200mV	-200.00 to 200.00 mV	±(0.05 % of rdg +0.03 mV)	±(0.1 % of rdg +0.4 mV)
	1V	-1.0000 to 1.0000 V	±(0.05 % of rdg +1.2 mV)	±(0.1 % of rdg +4 mV)
	2V	-2.0000 to 2.0000 V	±(0.05 % of rdg +1.2 mV)	±(0.1 % of rdg +4 mV)
	6V	-6.000 to 6.000 V	±(0.05 % of rdg +3 mV)	±(0.1 % of rdg +15 mV)
	20V	-20.000 to 20.000 V	±(0.05 % of rdg +3 mV)	±(0.1 % of rdg +40 mV)
Standard signal	0.4-2V	0.3200 to 2.0800 V	±(0.05 % of rdg +1.2 mV)	±(0.1 % of rdg +4 mV)
	1-5V	0.800 to 5.200 V	±(0.05 % of rdg +3 mV)	±(0.1 % of rdg +15 mV)
DC current	0-20mA	0.000 to 20.000mA		
DC current (standard signal)	4-20mA	3.200 to 20.800mA	±(0.3 % of rdg +5 µA)	±(0.3 % of rdg +90 µA)
TC (Excluding RJC accuracy)	R	0.0 to 1760.0°C	±(0.15 % of rdg +1.0°C) however, R, S; 0.0 to 800.0°C: ±2.2°C	±(0.2 % of rdg +6.0°C) However, R, S; 0.0 to 800.0°C: ±7.6°C
	S	0.0 to 1760.0°C		
	B	0.0 to 1820.0°C	B; 400.0 to 800.0°C: ±3.0°C Accuracy at less than 400.0°C not guaranteed	B; 400.0 to 800.0°C: ±11.0°C Accuracy at less than 400.0°C not guaranteed
	K	-270.0 to 1370.0°C	±(0.15 % of rdg +0.7°C)	±(0.2 % of rdg +5.0°C)
		-200.0 to 500.0°C	However, -200.0 to 0.0°C: ±(0.35 % of rdg +0.7°C) Accuracy at less than -200.0°C not guaranteed	However, -200.0 to 0.0°C: ±(3 % of rdg +5.0°C) Accuracy at less than -200.0°C not guaranteed
	E	-270.0 to 800.0°C	±(0.15 % of rdg +0.5°C)	±(0.2 % of rdg +4.0°C)
	J	-270.0 to 800.0°C	However, -200.0 to 0.0°C: ±(0.35 % of rdg +0.5°C)	However, -200.0 to 0.0°C: ±(2 % of rdg +4.0°C)
		-200.0 to 1100.0°C	Accuracy at less than -200.0°C not guaranteed	Accuracy at less than -200.0°C not guaranteed
	T	-270.0 to 400.0°C	±(0.15 % of rdg +0.5°C)	±(0.2 % of rdg +2.5°C)
	N	-270.0 to 400.0°C	However, -200.0 to 0.0°C: ±(0.35 % of rdg +0.5°C)	However, -200.0 to 0.0°C: ±(2 % of rdg +2.5°C)
		-270.0 to 1300.0°C	Accuracy at less than -200.0°C not guaranteed	Accuracy at less than -200.0°C not guaranteed
	W	0.0 to 2315.0°C	±(0.15 % of rdg +1.5°C)	±(0.3 % of rdg +14.0°C) However, 1000.0°C or more: ±(0.8 % of rdg +9.0 °C)
	L	-200.0 to 900.0°C	±(0.15 % of rdg +0.5°C) Less than 0.0°C: ±(0.5 % of rdg +0.5°C)	±(0.2 % of rdg +4.0°C) Less than 0.0°C: ±(3 % of rdg +4.0°C)
	U	-200.0 to 400.0°C	±(0.15 % of rdg +0.5°C) Less than 0.0°C: ±(0.7 % of rdg +0.5°C)	±(0.2 % of rdg +2.5°C) Less than 0.0°C: ±(3 % of rdg +2.5°C)
	W97Re3- W75Re25	0.0 to 2320.0°C	±(0.2 % of rdg +2.5°C)	±18.0°C 2000.0°C or more: ±0.9 % of rdg
	KpvsAu7Fe	0.0 to 300.0 K	±(0.15 % of rdg +2.0 K)	±(0.2 % of rdg +7.0 K)
	Platinel2	0.0 to 1395.0°C	±(0.25 % of rdg +2.3°C)	±(0.25 % of rdg +8.0°C)
	PR20-40	0.0 to 1900.0°C	±(0.7 % of rdg +0.4°C) Accuracy at less than 800.0°C not guaranteed	±20.0°C Accuracy at less than 800.0°C not guaranteed
	NiNiMo	0.0 to 1310.0°C	±(0.25 % of rdg +0.7°C)	±(0.5 % of rdg +5.0°C)
	W/WRe26	0.0 to 2320.0°C	±(0.2 % of rdg +2.0°C) Accuracy at less than 300.0°C not guaranteed	±(0.4 % of rdg +12.0°C) Accuracy at less than 300.0°C not guaranteed
N(AWG14)	0.0 to 1300.0°C	±(0.2 % of rdg +1.3°C)	±(0.5 % of rdg +7.0°C)	
XK GOST	-200.0 to 600.0°C	±(0.25 % of rdg +0.8°C)	±(0.5 % of rdg +4.0°C)	
RTD	Pt100	-200.0 to 850.0°C		
		-150.00 to 150.00°C	±(0.15 % of rdg +0.3°C)	±(0.3 % of rdg +1.5°C)
	JPt100	-200.0 to 550.0°C		
		-150.00 to 150.00°C		
	Cu10 GE	-200.0 to 300.0°C		
	Cu10 L&N	-200.0 to 300.0°C		
	Cu10 WEED	-200.0 to 300.0°C	±(0.2 % of rdg +2.0°C) Guaranteed measurement accuracy range	±(0.4 % of rdg +6.0°C) Guaranteed measurement accuracy range
	Cu10 BAILEY	-200.0 to 300.0°C		
	Cu10 (20°C) alpha=0.00392	-200.0 to 300.0°C	Cu10 GE: -70.0 to 170.0°C Cu10 L&N: -75.0 to 150.0°C Cu10 WEED: -200.0 to 260.0°C Other: -200.0 to 300.0°C	Cu10 GE: -70.0 to 170.0°C Cu10 L&N: -75.0 to 150.0°C Cu10 WEED: -200.0 to 260.0°C Other: -200.0 to 300.0°C
	Cu10 (20°C) alpha=0.00393	-200.0 to 300.0°C		
	Cu25 (0°C) alpha=0.00425	-200.0 to 300.0°C	±(0.3 % of rdg +0.8°C)	±(0.5 % of rdg +3.0°C)
	Cu53 (0°C) alpha=0.00426035	-50.0 to 150.0°C	±(0.15 % of rdg +0.8°C)	±(0.3 % of rdg +4.0°C)
	Cu100 (0°C) alpha=0.00425	-50.0 to 150.0°C	±(0.2 % of rdg +1.0°C)	±(0.4 % of rdg +5.0°C)
	J263B	0.0 to 300.0 K	±1.0 K Less than 40.0 K: ±3.0 K	±3.0 K Less than 40.0 K: ±9.0 K
	Ni100 (SAMA)	-200.0 to 250.0°C		
	Ni100 (DIN)	-60.0 to 180.0°C	±(0.15 % of rdg +0.4°C)	±(0.3 % of rdg +2.0°C)
	Ni120	-70.0 to 200.0°C		
	Pt25	-200.0 to 550.0°C	±(0.15 % of rdg +0.8°C)	±(0.3 % of rdg +4.0°C)
	Pt50	-200.0 to 550.0°C	±(0.3 % of rdg +0.6°C)	
	Pt200 WEED	-100.0 to 250.0°C	±(0.3 % of rdg +1.0°C)	±(0.6 % of rdg +3.0°C)
Cu10 GOST	-200.0 to 200.0°C	±(0.2 % of rdg +2.0°C)	±(0.4 % of rdg +6.0°C)	
Cu50 GOST	-200.0 to 200.0°C	±(0.15 % of rdg +0.6°C)	±(0.3 % of rdg +4.0°C)	
Cu100 GOST	-200.0 to 200.0°C	±(0.15 % of rdg +0.3°C)	±(0.3 % of rdg +1.5°C)	
Pt46 GOST	-200.0 to 550.0°C	±(0.3 % of rdg +0.8°C)	±(0.6 % of rdg +4.0°C)	
Pt100 GOST	-200.0 to 600.0°C	±(0.15 % of rdg +0.3°C)	±(0.3 % of rdg +2.0°C)	
DI	Level		Threshold level (Vth=2.4 V) accuracy ±0.1 V	
	Contact		1 kΩ or less: 1 (ON), 100 kΩ or more: 0 (OFF) (shunt capacitance 0.01 µF or less)	

*1 Reference operating conditions: 23+/-2°C, 55+/-10% RH, supply voltage 90-132, 180-264 VAC, supply frequency within 50/60 Hz ±1%, warmup 30 minutes or more, no vibrations or other hindrances to performance.

Please inquire for modules with increased guaranteed accuracy specifications. rdg: reading value

*2 10 channel mode with scan interval set to 500 ms or higher, or 2 channel mode

*3 10 channel mode with scan interval set to 100 ms or 200 ms

MODEL AND SUFFIX CODES

GM10 MODEL AND SUFFIX CODES

Model	Suffix code	Optional code	Description
GM10			Data Acquisition Module for SMARTDAC+ GM
Type	-1		Standard (Max. measurement channels: 100 ch)
	-2		Large memory (Max. measurement channels: 500 ch)
Area		E	General (temp. unit: Cel, Deg F)
—		0	Always 0
Optional features		/AH	Aerospace heat treatment
		/AS	Advanced security function
		/BT	Multi-batch function
		/C3	RS-422/485
		/C8	Bluetooth
		/E1	EtherNet/IP communication (PLC communication protocol)
		/E2	WT communication *1
		/E3	OPC-UA sever
		/E4	SLMP communication (Mitsubishi PLC)
		/MT	Mathematical function (with report function) *2 *3
	/MC	Communication channel function	
	/LG	Log scale	

*1: The Communication Channel function (optional code /MC) is required to specify WT communication (optional code /E2).

*2: Optional code /MT (MATH) required if using the GX90XD's or GX90WD's pulse input.

*3: Optional code /MT (MATH) required if using the GX90XP's pulse integration.

GM90PS MODEL AND SUFFIX CODES

Model	Suffix code	Description	
GM90PS		Power Supply Module for SMARTDAC+ GM	
Type	-1	Always -1	
Area		N	
Supply voltage		1	
		2	
Power supply connection		D	Power inlet with UL/CSA cable
		F	Power inlet with VDE cable
		H	Power inlet with GB cable
		N	Power inlet with NBR cable
		Q	Power inlet with BS cable
		R	Power inlet with AS cable
		W	Screw terminal (without power cable)
—		0	Always 0

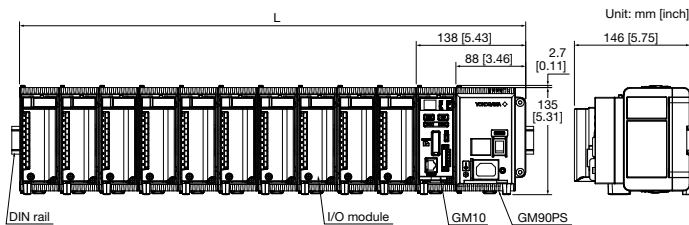
* Only W (Screw terminal (M4)) is available for the power supply connection.

GM90MB MODEL AND SUFFIX CODES

Model	Suffix code	Description	
GM90MB		Module Base for SMARTDAC+ GM	
—	-01	Always -01	
Area		N	
—		0	Always 0

GX90XA MODEL AND SUFFIX CODES

Model	Suffix code	Description	
GX90XA		Analog Input Module	
Number of channels	-10	10 channels	
Type	-C1	Current, scanner type (isolated between channels)	
	-L1	DCV/TC/DI, low withstand voltage scanner type (isolated between channels)	
	-U2	Universal, Solid state relay scanner type (3-wire RTD b-terminal common)	
	-T1	DCV/TC/DI, Electromagnetic relay scanner type (isolated between channels)	
—		N	
Terminal form		-3	Screw terminal (M3)
		-C	Clamp terminal
Area		N	General



Calibration certificate (sold separately)

A calibration certificate for specific analog input modules.

Test certificate (QIC, sold separately)

A QIC for specific data acquisition modules, power supply modules, module bases, or I/O modules.

GX90XD MODEL AND SUFFIX CODES

Model	Suffix code	Description	
GX90XD		Digital Input Module	
Number of channels	-16	16 channels	
Type		-11	
—		N	
Terminal form		-3	Screw terminal (M3)
		-C	Clamp terminal
Area		N	General

GX90YD MODEL AND SUFFIX CODES

Model	Suffix code	Description	
GX90YD		Digital Output Module	
Number of channels	-06	6 channels	
Type		-11	
—		N	
Terminal form		-3	Screw terminal (M3)
Area		N	General

GX90WD MODEL AND SUFFIX CODES

Model	Suffix code	Description	
GX90WD		Digital Input/Output Module	
Number of channels	-0806	8 channel Dis, 6 channel DOs	
Type		-01	
—		N	
Terminal form		-3	Screw terminal (M3)
Area		N	General

GX90XP MODEL AND SUFFIX CODES

Model	Suffix code	Description	
GX90XP		Pulse Input Module	
Number of channels	-10	10 channels	
Type		-11	
—		N	
Terminal form		-3	Screw terminal (M3)
		-C	Clamp terminal
Area		N	General

GX90EX MODEL AND SUFFIX CODES

Model	Suffix code	Description	
GX90EX		I/O Expansion Module	
Port		-02	
Type		-TP1	
—		N	
Area		-N	General

Standard Accessories

Model	Product	Qty
GM10	SD memory card (1GB)	1
	Connector cover	1
GM90PS	Power cable (depends on the suffix code of the power supply connection)	1
	Interconnect screw (M3)	4
GM90MB	Interconnect screw (M3)	4

Optional Accessories (Sold Separately)

Product	Part Number/Model
SD memory card (1GB)	773001
Shunt resistor for screw terminal (M3) (10 Ω ± 0.1%)	X010-010-3
Shunt resistor for screw terminal (M3) (100 Ω ± 0.1%)	X010-100-3
Shunt resistor for screw terminal (M3) (250 Ω ± 0.1%)	X010-250-3
Shunt resistor for clamp terminal (10 Ω ± 0.1%)	438922
Shunt resistor for clamp terminal (100 Ω ± 0.1%)	438921
Shunt resistor for clamp terminal (250 Ω ± 0.1%)	438920
Dummy cover	B8740CZ
Validation Documents (For /AS option)	773230

Application Software (Sold Separately)

Model	Description	OS
GA10	Data Logging Software	Windows Vista/7/8.1/10 Windows Server 2008/2012

User's Manual

Product user's manuals can be downloaded or viewed at the following URL. URL: www.smartdacplus.com/manual/en/