General Specifications

GS 04L53B00-01EN

GX60
I/O Base Unit (Expandable I/O)
GX90EX
Expansion Module

SMARTDAC+

■ OVERVIEW

GX60 I/O Base Unit (Expandable I/O)

The GX60 provides a function to expand an I/O module for recording and controlling, when it is connected to the expansion module that is connected to the GX10/GX20/GP10/GP20 using a LAN cable via a private communication network.

- One GX60 can connect up to six I/O modules.
- Up to six units can be additionally connected to the GX/GP.
- The communication distance between the GX/GP and GX60 or between GX60s can be extended by up to 100 m using a LAN cable.

GX90EX Expansion Module

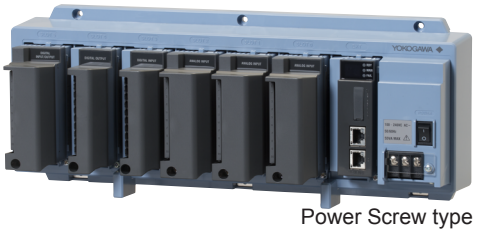
The expansion module is connected to the GX10/ GX20/GP10/GP20, GX60, GM main unit, and GM sub unit.

[If GX90EX expansion module is connected to the GX/ GP or I/O base unit]

- The expansion module, which is supported by the GX/GP and GX60, enables a connection between GX/GP and GX60 or a communication between GX60s.
- A distributed arrangement with the data time synchronization secured is provided by connecting Expansion modules connected to the GX/GP main unit and GX60 using a LAN cable.
- Data is transferred to the high-order GX/GP via the expansion module.

[If GX90EX expansion module is connected to the GM main unit/sub unit]

- The expansion module, which is supported by the GM main unit and sub unit, enables a connection between GM main unit and sub unit or a communication between sub units.
- A distributed arrangement with the data time synchronization secured is provided by connecting Expansion modules connected to the GM main unit and sub unit using a LAN cable.
- Data is transferred to the high-order GM10 via the expansion module.



Power Screw type

GX60 Power inlet type

GX90EX

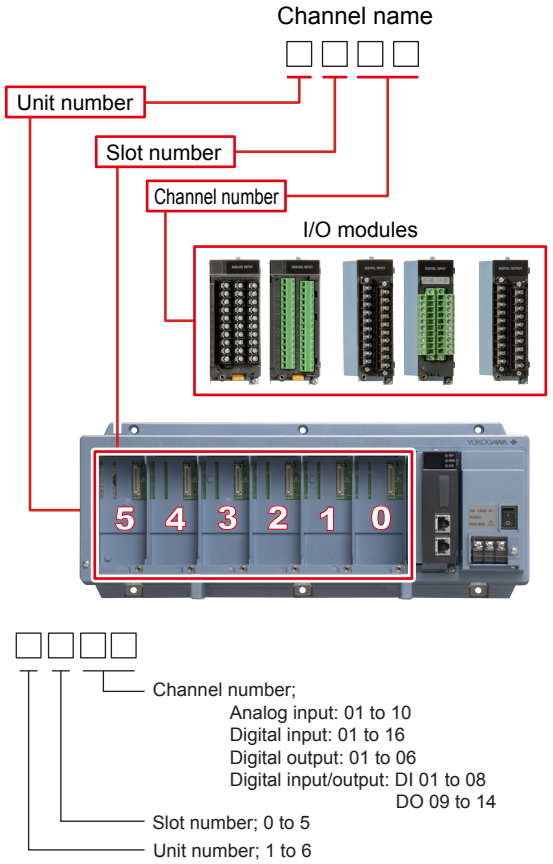
■ GX60 SPECIFICATIONS

Module Connection

- I/O module: Max. 6 modules (Slots 0 to 5)
  Restrictions:
  - Up to 10 GX90YD digital output modules and GX90WD digital input/output modules can be installed together in the GX/GP and GX60.
  - One GX90WD digital input/output module can be installed in the GX/GP and in each GX60.
- Expansion module: 1 module (Slot ("EXT") for connection with Expansion module)

Names of Channels

- The module installed in the GX60 has a channel name that consists of the unit number, slot number, and channel number.



Safety and EMC Standards

- CSA: CSA22.2 No.61010-1, installation category II *1, pollution degree 2 *2
- UL: UL61010-1 (CSA NRTL/C)
- CE:
  EMC directive
  EN61326-1 compliance, Class A Table 2
  EN61000-3-2 compliance
  EN61000-3-3 compliance
  EN55011 Class A Group 1
  Low voltage directive
  EN61010-1
  Installation category II *1
  Pollution degree 2 *2
- EMC Regulatory Arrangement in Australia and New Zealand (RCM): EN55011 compliance, Class A Group 1
- KC marking: Electromagnetic wave interference prevention standard, electromagnetic wave protection standard compliance

*1 Installation category (overvoltage category) II:
Describes a number which defines a transient overvoltage condition.
Implies the regulation for impulse withstand voltage.
"II" applies to electrical equipment which is supplied from the fixed installation like a distribution board.

*2 Pollution degree 2:
Describes the degree to which a solid, liquid, or gas which deteriorates dielectric strength or surface resistivity is adhering.
"2" applies to normal indoor atmosphere.
Normally, only non-conductive pollution occurs.

- WEEE Directive: Compliant

Construction

- Front panel (terminal): Water and dust-proof, Complies with IEC529-IP20
- Material: Polycarbonate, aluminum alloy
- Color;
  Front: Charcoal grey light (CC28)
  Bezel: Smoke blue (CC53)
- Dimensions: 412.5 mm(W) x 164.7 mm(H) x 127.8 mm(D)
- Weight: Approx. 3.2 kg (installing 6 modules)

Power Supply

- Rated supply voltage: 100 to 240 VAC
- Allowable power supply voltage range: 90 to 132, 180 to 264 VAC
- Rated power supply frequency: 50/60 Hz
- Power consumption:

Supply voltage	Normal operation *	Maximum
100 V AC	20 VA	40 VA
240 V AC	30 VA	55 VA

* When using 6 analog input modules.

- Allowable interruption time: Less than 1 cycle of the power supply frequency

Isolation

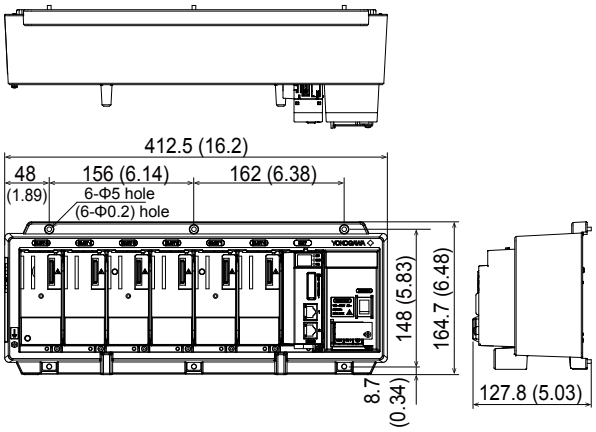
- Insulation resistance: Between each insulation terminals, and earth: 20 MΩ or greater at 500 VDC
- Withstand voltage:
  Between the power terminal and earth: 3000 V AC at 50/60 Hz for one minute
  Between the input/output modules and earth: Depends on the specification of I/O module.
- Grounding: Be sure to set a low grounding resistance.
- Isolation:

Power terminal	Input and output module terminal	
	Input and output module internal circuit	
	Earth (PE) terminal	Internal circuit

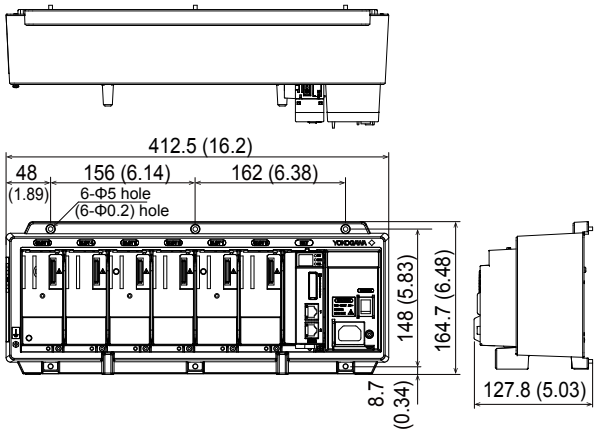
The circuits divided by lines are insulated mutually.

External Dimensions

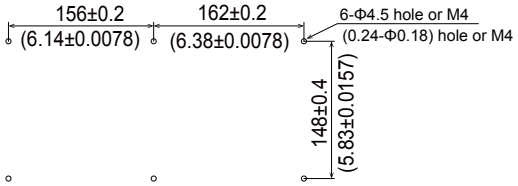
Power screw terminal type



Power inlet type



Dimensions of fixing hole



Unit: mm (approx. inch)
Unless otherwise specified, tolerance is ±3% (however, tolerance is ±0.3 mm when below 10 mm).

Normal Operating Conditions

- Power supply voltage: 100 to 240 V AC ±10 %
- Power supply frequency: 50/60 Hz ±2 %
- Ambient temperature: 0 to 50 °C
- Ambient humidity: 20 to 80 %RH (at 5 to 40°C) (no condensation)
- Magnetic field: 400 A/m or less (DC and 50/60 Hz)
- 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 (IEC-60068-2-27):
  Non-energization, 500 m/s^2 or less, approximate 10 ms, 6 directions (±X, ±Y, ±Z)
- Mounting position: Can be inclined up to 30 degrees backward. Left and right horizontal when installing the panel mount and wall mount.
- Altitude: 2000 m or less
- Installation location: Indoors
- Warm-up time: At least 30 minutes after power on

Transport and Storage Conditions

- Ambient temperature: –25 to 60°C
- Ambient humidity: 5 to 95 %RH (no condensation)
- Vibration: 10 to 60 Hz, 4.9 m/s^2 maximum
- Shock: 392 m/s^2 maximum (in packaged condition)

Effects of Operating Conditions

- Power supply variation: Shall satisfy the accuracy specification in the range of 90 to 132 VAC or 180 to 250 VAC (frequency: 50/60 Hz). Power supply frequency fluctuation: Shall satisfy the accuracy specification in the range of rated supply frequency +/-2 Hz (power-supply voltage: 100 VAC).

■ GX90EX SPECIFICATIONS

Communication Functions

Communication between GX/GP and GX60, between GX60s, between GM main unit and sub unit, between GM sub units via dedicated communication network.

- Baud rate: 10Base-T/100Base-TX (Auto) *1
- Number of ports: 2
- Connection cable: STP cable, CAT5 or greater
- Inter-module connection: Cascade connection (Ring connection is disabled.)
- Maximum communication distance: 100 m
- Connector: RJ-45

*1 Can be fixed to 10Base-T by DIP switch settings.

Display Functions

- System status LED indicators:
  RDY (green): Lights up when the CPU is running normally.
  MASTER (green): Turns on in master mode and off in slave mode.
  FAIL (red): Lights up when a system error occurs.
- 7-segment LED indicator: Indicates a unit number or operation error.
- Ethernet status indicator LED: LINK ACT (green), SPEED (orange)

Address Setting Functions

Switch settings:

Switch No.	Descriptions
1	For unit number setting
2	
3	
4	
5	-
6	-
7	10 Mpbs/100 Mbps switching
8	MASTER/SLAVE switching

Master / Slave Functions

Can be set to master mode (when installed in the GX/GP or GM main unit), or slave mode (when installed in the GX60 or GM sub unit) using the DIP switches.

10 Mbps Fixed Mode

Can be set to the 10 Mbps fixed mode using the DIP switches.

Mounting

Can be mounted in the GX/GP, GX60, GM main unit, and GM sub unit.

- Mounting position:
  GX10/GP10: Slot 2
  GX20/GP20: Slot 9
  GX60: EXT slot
  GM main unit: Leftmost position
  GM sub unit: Next to the power supply module

Safety and EMC Standards

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- UL: UL61010-1 (CSA NRTL/C)
- CE:
  EMC directive
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Describes the degree to which a solid, liquid, or gas which deteriorates dielectric strength or surface resistivity is adhering.
"2" applies to normal indoor atmosphere.
Normally, only non-conductive pollution occurs.

- WEEE Directive: Compliant

Construction

- Front panel (terminal): Water and dust-proof, Complies with IEC529-IP20
- Material: Polycarbonate
- Color;
  Front: Charcoal grey light (CC28)
  Bezel: Smoke blue (CC53)
- Dimensions: 45 mm(W) x 100 mm(H) x 133 mm(D) (D: including terminal cover)
- Weight: Approx. 0.18 kg

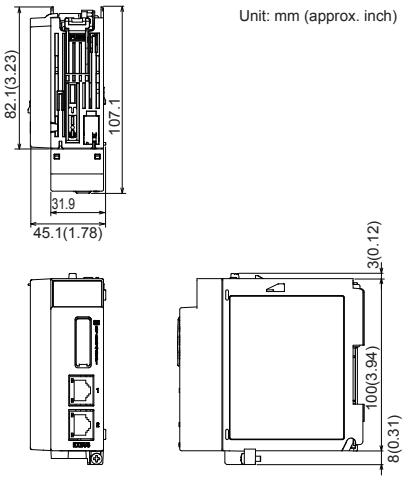
Power Supply

Suppy from GX/GP, GX60 expandable I/O, or GM90PS power supply module.

- Power consumption: 1.8W or less

External Dimensions

Unit: mm (approx. inch)



Normal Operating Conditions

For normal operating conditions of this module, please refer to the General Specifications of the device (GX/GP, I/O Base Unit, or GM) that this module is mounted.
GX Specifications: GS 04L51B01-01EN
GP Specifications; GS 04L52B01-01EN
I/O Base Unit (Expandable I/O): This General Specifications
GM Specifications: GS 04L55B01-01EN

Transport and Storage Conditions

- Ambient temperature: –25 to 70°C
- Ambient humidity: 5 to 95 %RH (no condensation)
- Vibration: 10 to 60 Hz, 4.9 m/s^2 maximum
- Shock: 392 m/s^2 maximum (in packaged condition)

Effects of Operating Conditions

None

■ MODEL AND SUFFIX CODES

MODEL and SUFFIX Code (GX60)

Model	Suffix Code				Description
GX60					I/O Base Unit
Type	**-EX**				I/O Expansion
Area		**N**			General
Power supply			**1**		100 V AC, 240 V AC
Power cord				**D**	Power cord UL/CSA standard
				F	Power cord VDE standard
				R	Power cord AS standard
				Q	Power cord BS standard
				H	Power cord GB standard
				N	Power cord NBR standard
				W	Screw terminal (M3)

* One GX90EX (I/O expansion module) is provided.

MODEL and SUFFIX Code (GX90EX)

Model	Suffix Code				Description
GX90EX					I/O Expansion Module
Port	**-02**				2 ports
Type		**-TP1**			Twisted Pair Cable
-			**N**		Always N
Area				**-N**	General

■ Optional Accessories (Sold Separately)

The dummy cover is for empty slots on GX/GP and GX60. The dummy cover is not attached to the GX60 when shipped from the factory. If you need the dummy cover, please purchase it separately.

Product	Part no.
Dummy cover	**B8740CZ**

Test certificate (QIC, sold separately)

When ordering the GX60, GX90EX gets its own QIC (one QIC per unit).

When ordering the expansion modules separately, each module gets its own QIC (one QIC per module).

User's Manual

Product user's manuals can be downloaded or viewed at the following URL. To view the user's manual, you need to use Adobe Reader 7 or later by Adobe Systems.

URL: www.smartdacplus.com/manual/en/

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