SMARTDAC®

Data Acquisition & Control

www.smartdacplus.com
Your business environment is complex and rapidly changing. You need smart and powerful systems that can adapt to your process. SMARTDAC+ is a fresh approach to data acquisition and control, with smart and simple touch operation as a design priority. Measure, display and archive process data with greater levels of clarity, intelligence and accessibility.

The SMARTDAC+ concept started with the GX/GP, an integrated I/O and recording system with a familiar touch operator interface. Building upon the SMARTDAC+, product family is the highly adaptable, scalable and easy to operate GM data logger.

Now that’s SMART.

Precise, Reliable & Adaptable

Decades of Yokogawa’s innovative measuring technology has resulted in a flexible data logger that offers both reliability and ease of use.

Scalability
- Up to 420 ch per system
- Plug and lock modules

Ease of Use
- Web-based configuration
- Live Web-based data viewing

Mobile Connectivity
- Bluetooth
- Mobile Application

Reliability
- Secure data storage
- High accuracy measurement
- Automatic backfill function
  (GA10 Data Logging Software)

Noise Tolerance
- Electromagnetic relay module
Adaptable

Enables a scalable data acquisition system

**Smart Architecture**

Provides a smooth, familiar user experience

**Smart User Interface**

Offers a seamless data transfer environment

**Smart Functionality**
Smart Architecture

Enables a scalable data acquisition system

- **Increase channels by adding additional block modules**
  - YOKOGAWA proprietary block architecture (patent pending)
  - Expand one, or multiple module at a time
  - Unique design houses modules in linked module bases
  - Module base ensures linkage (slide locks and mounting screws also available)
  - Modules can be inserted and removed from the front panel for easy maintenance

- **Comes standard with support for up to 100 ch of measurement (single-unit configuration)**
  - Up to 10 I/O modules can be linked to a single data acquisition module (GM10)

- **Installs anywhere**
  - For the desktop, DIN rails, or wall-mounting.
  - No special attachments required.

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**Names of data acquisition module parts**

- 7 segment LED (x2)
  - Displays operation mode, system number, and other information
- USER key
  - Executes specified actions
- SD memory card slot
- Ethernet port
  - A 10Base-T/100Base-TX port.
- USB port
  - USB2.0 compliant port for hardware settings and the GA10, or customer created communication programs
- SD memory card slot
- Status display
  - Displays system status
- START/STOP key
  - Starts/stops recording and computation
- USB port
  - USB2.0 compliant port for hardware settings and the GA10, or customer created communication programs
- Serial communications port
  - (Optional code, /C3)

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**2 ways of linking:**

- Slide lock and screw
- Slide lock
- Screw
- Power switch
  - Inlet. For screw terminals, acts as a power terminal and protective ground terminal.

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**Link**

- Input/output Module
- Module Base
- Data Acquisition Module
- Power Supply Module

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**Desktop**

- Mounted on DIN rails
- Wall-mounted

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**Up to 10 modules linked**
Select from a wide range of I/O modules

Select modules according to your application. Noise-resistant, magnetic relay types also available. All modules have removable terminal blocks for easy wiring. The same modules used in the SMARTDAC+ series.

SMARTDAC+ series

**Analog input module scan interval and measurement type**

<table>
<thead>
<tr>
<th>Type</th>
<th>Channels</th>
<th>Scan interval (shortest)</th>
<th>Scanner</th>
<th>TC</th>
<th>RTD</th>
<th>DCV</th>
<th>DI</th>
<th>mA</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal (-U2)</td>
<td>10</td>
<td>100ms</td>
<td>SSR</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Universal</td>
</tr>
<tr>
<td>Low withstand voltage relay (-L3)</td>
<td>10</td>
<td>100ms</td>
<td>SSR</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Mid-price</td>
</tr>
<tr>
<td>Electromagnetic relay (-T1)</td>
<td>10</td>
<td>1s</td>
<td>Relay</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Noise-resistance</td>
</tr>
<tr>
<td>DC current input (-C1)</td>
<td>10</td>
<td>100ms</td>
<td>SSR</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>mA only</td>
<td>mA only</td>
</tr>
</tbody>
</table>

### Actual values support high precision measurement

<table>
<thead>
<tr>
<th>Input type</th>
<th>Measuring accuracy* (typical value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCV 20mV</td>
<td>±(0.01 % of reading + 5 µV)</td>
</tr>
<tr>
<td>6V (1-5 V)</td>
<td>±(0.01 % of reading + 2 mV)</td>
</tr>
<tr>
<td>Type TC</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>±0.1 °C</td>
</tr>
<tr>
<td>(T -200 to 500 °C)</td>
<td>±(0.10% of reading + 0.2 °C)</td>
</tr>
<tr>
<td>T</td>
<td>±0.2 °C</td>
</tr>
<tr>
<td>(T -200 to 0.0 °C)</td>
<td>±(0.10% of reading + 0.2 °C)</td>
</tr>
<tr>
<td>RTD Pt100</td>
<td>±(0.02% of reading + 0.2 °C)</td>
</tr>
<tr>
<td>(Pt100 high resolution)</td>
<td>±(0.02% of reading + 0.16 °C)</td>
</tr>
</tbody>
</table>

### Support measurement of up to 420 ch (actual input) by expanding channels across multiple units (multi-unit configuration)

Expand up to 420 ch by using the GX90EX expansion module. (GM10-2)
On the GM10-2 large capacity type, up to 1000 ch are available for recording when including MATH and communication channels.
Connect units with Ethernet cables for dispersed installations.

**Input/output terminals are removable. Cuts down on rewiring time.**

<table>
<thead>
<tr>
<th>Model</th>
<th>Name</th>
<th>Measurement/Application</th>
<th>Channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>GX100XA-10-U2</td>
<td>Analog input module</td>
<td>DC voltage, thermocouple, RTD, contact (semiconductor relay scanner type)</td>
<td>10</td>
</tr>
<tr>
<td>GX100XA-10-L1</td>
<td>Analog input module</td>
<td>DC voltage, thermocouple, contact (low withstand voltage)</td>
<td>10</td>
</tr>
<tr>
<td>GX100XA-10-T1</td>
<td>Analog input module</td>
<td>DC voltage, thermocouple, contact (electromagnetic relay scanner type)</td>
<td>10</td>
</tr>
<tr>
<td>GX100X1-10-C1</td>
<td>Analog input module</td>
<td>DC current (mA)</td>
<td>10</td>
</tr>
<tr>
<td>GX100XD</td>
<td>Digital input module</td>
<td>Remote control input, operation recording, or pulse input</td>
<td>16</td>
</tr>
<tr>
<td>GX100YD</td>
<td>Digital output module</td>
<td>Alarm output</td>
<td>6</td>
</tr>
<tr>
<td>GX100WD</td>
<td>Digital input/output module</td>
<td>Remote control input, operation recording or pulse input/</td>
<td>DI:8/DO:6</td>
</tr>
</tbody>
</table>

**Internal memory and max. I/O channels**

<table>
<thead>
<tr>
<th>Type</th>
<th>Internal memory</th>
<th>Max. input/output channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>GM10-1</td>
<td>500MB</td>
<td>0 to 100</td>
</tr>
<tr>
<td>GM10-2</td>
<td>1.2GB</td>
<td>0 to 420</td>
</tr>
</tbody>
</table>

**Input type Measuring accuracy* (typical value)**

- **DCV**: 20mV ±(0.01 % of reading + 5 µV)
- **6V (1-5 V)**: ±(0.01 % of reading + 2 mV)
- **K (T -200 to 500 °C)**: ±(0.10% of reading + 0.2 °C)
- **T (T -200 to 0.0 °C)**: ±(0.10% of reading + 0.2 °C)
- **RTD Pt100**: ±(0.02% of reading + 0.2 °C)
- **(Pt100 high resolution)**: ±(0.02% of reading + 0.16 °C)

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

**Actual values support high precision measurement**

The measuring accuracies noted in the general specifications on page 11 have a margin of error that takes into account the product’s components and the equipment used for adjustment and testing. However, the actual values calculated from the accuracy testing data upon shipment of the instrument from the factory are listed to the left.

**Support measurement of up to 420 ch (actual input) by expanding channels across multiple units (multi-unit configuration)**

When the data logger is installed offsite (away from the DUT), you can place the sub unit at the site and monitor data without the need for long-distance wiring of thermocouples and other sensors.

**Reduce wiring with distributed installation**

When the data logger is installed offsite (away from the DUT), you can place the sub unit at the site and monitor data without the need for long-distance wiring of thermocouples and other sensors.

**Input/output terminals are removable. Cuts down on rewiring time.**

**Actual values support high precision measurement**

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</tr>
<tr>
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<td>±(0.01 % of reading + 2 mV)</td>
</tr>
<tr>
<td>TC K</td>
<td>±0.1 °C</td>
</tr>
<tr>
<td>(T -200 to 500 °C)</td>
<td>±(0.10% of reading + 0.2 °C)</td>
</tr>
<tr>
<td>T</td>
<td>±0.2 °C</td>
</tr>
<tr>
<td>(T -200 to 0.0 °C)</td>
<td>±(0.10% of reading + 0.2 °C)</td>
</tr>
<tr>
<td>RTD Pt100</td>
<td>±(0.02% of reading + 0.2 °C)</td>
</tr>
<tr>
<td>(Pt100 high resolution)</td>
<td>±(0.02% of reading + 0.16 °C)</td>
</tr>
</tbody>
</table>
Easy access from a Web browser

Through a Web browser you can monitor the GM in real time and change settings. You can easily build a seamless, low-cost remote monitoring system with no additional software.

Real time monitoring screen

Enter settings online with a web browser

The setting screen lets you copy AI channel settings and other information to Excel for editing. You can reimport the data into the setting screen after editing.

Trend, digital, and other real-time displays

With the scroll bar, you can seamlessly scroll between past and current trends.
Dedicated software (free download) is available for loading waveforms and GM settings

Universal viewer
Data files saved on the GM can be viewed and printed. You can perform statistical computation over an area and export to ASCII, Excel, or other formats.

Offline setting software
Save settings or transfer them to the GM. Connections can also be made easily via USB or Bluetooth.

Monitoring and settings can also be done on a tablet
Supports Bluetooth (optional code /C8) You can enter settings or monitor from a tablet without ever bringing a PC to the site. Dedicated applications will be available for free download. For more information, visit our website.

GA10 data logging software (sold separately)
Dedicated software available for powerful system configuration possibilities. Acquires data from multiple instruments including SMARTDAC+ GM
- Max. 100 devices
- 100 ms high-speed acquisition
- Max. 2000 channels (tags)

High reliability
- Auto reconnection when communications are lost, protection of data les up to the moment of power failure
- Data supplementing function (Backfill function)

Multilogging
Multilogging function enables multiple asynchronous data acquisition jobs.

Server OS support
Enables construction of highly reliable systems that hold up under continuous operation

Safe to use in a wide range of temperatures
With operating temperatures of -20°C–60°C, it supports a wide range of applications without concern about the installation environment.

Results: Manage data from multiple equipment in one place!
Smart Functionality

Offers a seamless data transfer environment

Data acquisition on power measuring instruments (optional codes /E2 and /MC)

Acquire precise digital data on the GM by digital communication connectivity to a power measuring instrument (WT series power analyzers) and record it along with the GM’s measured data. Since it records a device’s power consumption, temperature, and other phenomena at the same time, the GM is ideal for performance evaluation testing.

![Diagram of data acquisition](image)

Models that can be connected
Yokogawa Meters & Instruments Corp. WT300/WT500/WT1800
Max. no. of connections
16

Comes with communication functions that are compatible with the DARWIN data acquisition unit

The GM supports DARWIN communication commands. Use your current DARWIN communication programs as-is on the GM. It’s easy to switch from an existing DARWIN unit.

* See your dealer or nearest Yokogawa representative for details.

![Diagram of communication functions](image)

CENTUM/STARDOM communication package
CENTUM: LFS2432, DARWIN/DAQSTATION Communication package (for ALE111 [Ethernet])
STARDOM: NT365AJ DARWIN connection package

Variety of convenient networking functions

Supports a wide range of networking functions
- Automatic network setup via DHCP
- SNTP based time synchronization
- Email transmission

![Diagram of networking functions](image)

Increased network security with SSL communication

Safely sends and receives customer data.

![Diagram of SSL communication](image)

FTP-based file transfer

The FTP client/server functions allow you to easily share and manage data from a centralized file server.

![Diagram of FTP file transfer](image)

Models that can be connected
Yokogawa Meters & Instruments Corp. WT300/WT500/WT1800
Max. no. of connections
16

User original programs
(includes DARWIN communication commands)

Ethernet or RS-422/485

8
**EtherNet/IP Function**

GM supports EtherNet/IP server functions. You can access GM from PLCs or other devices and load measurement/MATH channels or write to communication input channels*.  
* Communication channel function (optional code, /MC) is required.

**Modbus/TCP and Modbus/RTU Communications**

GM supports Modbus TCP/IP client and server modes for Ethernet communications and Modbus RTU master and slave modes for optional serial communications.

**Be confident that recorded data is saved**

Supports long-duration and multichannel recording. Measured data is always stored to internal memory, and data is transferred to external storage media at regular intervals. Redundancy can be achieved by sending data to a server with the FTP client function. Securely saves measured data even in the event of a sudden power loss.

**Report template function (optional code /MT)**

This function automatically creates spreadsheets in PDF or Excel format.

**Supports 21 CFR Part 11**

(pending; with added specs)

GM supports the USA FDA’s Title 21 CFR Part 11 regulation.

---

### Approximate sample time

<table>
<thead>
<tr>
<th>Number of recording channels</th>
<th>Total sample time</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>Approx. 21 days</td>
</tr>
<tr>
<td>100</td>
<td>Approx. 23 days</td>
</tr>
<tr>
<td>300</td>
<td>Approx. 7 days</td>
</tr>
</tbody>
</table>

With an internal memory of 1.2 GB and recording interval of 1 sec.

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**Measured data file type**

You can save measured data to editable text files, or to binary files for added security.

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Spreadsheets are created according to the template loaded on the main unit. Templates are available for Excel and PDF. PDF spreadsheet templates are created with a free report template builder program.

Automatically generated spreadsheets (PDF or Excel) are saved to external storage medium (SD card) at regular intervals. You can also transfer them via FTP.
GM10 Data Acquisition Module

- **No. of I/O channels:**
  - GM10-1: 10 max.
  - GM10-2: 500 max. (for 420 with AI only)

- **Scan interval:**
  - 100 ms/200 ms/1.25 s

- **Internal memory (flash memory):**
  - GM10-1: 500 MB
  - GM10-2: 1.2 GB

- **External storage media:**
  - SD memory card (SD/SDHC), up to 1.2 GB (1 GB incl.)

- **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, low

- **Event actions:**
  - Specified actions can be performed when certain events occur.

- **Number of communication objects:**
  - 20 (or 10 max. at TCP/IP level)

- **Insulation resistance:**
  - Between output terminals and internal circuitry: 20 MΩ or greater (at 500 VDC)
  - Between input terminals and internal circuitry: 20 MΩ or greater (at 500 VDC)

- **Electrical/mechanical specifications:**
  - KV101: 50 Hz, -5°C to 40°C, 90 VAC/220/380 VAC, 1000±50 kΩ

- **Universal:**
  - DC voltage, standard signal, thermocouple, RTD, DI (voltage contact), IO (non-voltage contact),...
Measurement range and accuracy

**Input**

<table>
<thead>
<tr>
<th>Type</th>
<th>Range</th>
<th>DCV integration time: 16.7ms or more</th>
<th>DCV integration time: 1.87ms</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCV</td>
<td>20mV</td>
<td>±0.05 % of rdg +1.5°C</td>
<td>±0.01 % of rdg +0.5°C</td>
</tr>
<tr>
<td></td>
<td>60mV</td>
<td>±0.05 % of rdg +1.5°C</td>
<td>±0.1 % of rdg +0.5mV</td>
</tr>
<tr>
<td></td>
<td>200mV</td>
<td>±0.1 % of rdg +1.5mV</td>
<td>±0.1 % of rdg +0.5mV</td>
</tr>
<tr>
<td></td>
<td>1V</td>
<td>±0.15 % of rdg +1.5°C</td>
<td>±0.1 % of rdg +0.5mV</td>
</tr>
<tr>
<td></td>
<td>2V</td>
<td>±0.2 % of rdg +1.5°C</td>
<td>±0.1 % of rdg +0.5mV</td>
</tr>
<tr>
<td></td>
<td>5V</td>
<td>±0.25 % of rdg +1.5°C</td>
<td>±0.1 % of rdg +0.5mV</td>
</tr>
<tr>
<td></td>
<td>20V</td>
<td>±0.35 % of rdg +1.5°C</td>
<td>±0.1 % of rdg +0.5mV</td>
</tr>
</tbody>
</table>

**SmartDAC+ GM Common Specifications**

- **Standards supported**
  - CSA
  - EN61010-1
  - Installation category II, pollution degree 2
  - UL (UL61010-2-030 and UL61010-1-050)

- **EMC directive**
  - EN61326-1
  - Class A
  - installs EN61326-1-2-1 as Class A
  - CE
  - Class 1

- **Low voltage directives**
  - EN61010-1
  - EN61010-2-030
  - EN61010-2-031

- **R&TTE directive**
  - EN61326-1
  - Class A

- **Health & Safety**
  - Installation: Category II
  - Pollution: Degree 2
  - Measurement: Category II

- **Wireless communication standards**
  - Standards supported
    - UL
    - CE
    - EN55011 Class A Group 1

- **Wireless communication standards**
  - Standards supported
    - UL
    - CE
    - CSA
    - R&TTE directive
    - EN61326-1
    - Class A
  - Other: -200.0 to 260.0°C

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

- **Environmental performance**
  - General operating conditions
    - Ambient temperature: -20 to 60°C
    - Power supply frequency: 50/60 Hz ±1%
    - Warm-up period: 30 minutes or more
    - No vibrations or other hindrances to performance.

- **Shock**
  - When ON, 98 m/s² or less, 11.3 times in 6 directions (x, y, z)
    - (excluding GX90YD and GX90WD)

- **Vibration**
  - When OFF, 500 m/s² or less, 10.6 times in 6 directions (x, y, z)
    - (excluding GX90YD and GX90WD)

- **Magnetic field**
  - 420 Am or less (DC and 50/60 Hz)

**Input**

<table>
<thead>
<tr>
<th>Type</th>
<th>Range</th>
<th>DCV integration time: 16.7ms or more</th>
<th>DCV integration time: 1.87ms</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCV</td>
<td>0.005 to 20.000mA</td>
<td>±0.3 % of rdg +5 μA</td>
<td>±0.3 % of rdg +5 μA</td>
</tr>
<tr>
<td></td>
<td>0.005 to 3.000mA</td>
<td>±0.6 % of rdg +5 μA</td>
<td>±0.3 % of rdg +5 μA</td>
</tr>
<tr>
<td></td>
<td>0.1 to 5.000μA</td>
<td>±0.9 % of rdg +5 μA</td>
<td>±0.3 % of rdg +5 μA</td>
</tr>
</tbody>
</table>

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

- EN60511 Class A Group 1
- Wireless communication standards (optional code /C8):
  - Standards supported
    - UL
    - CE
    - EN55011 Class A Group 1
    - Wireless:
      - Supports radio wave regulations of Japan, America, Canada, Europe (EU), Australia, New Zealand, and Korea.
    - Bluetooth:
      - Zeeland, China, and Korea.

**Environmental performance**

- General operating conditions
  - Ambient temperature: -20 to 60°C
  - Power supply frequency: 50/60 Hz ±1%
  - Warm-up period: 30 minutes or more
  - No vibrations or other hindrances to performance.

- Shock
  - When ON, 98 m/s² or less, 11.3 times in 6 directions (x, y, z)
    - (excluding GX90YD and GX90WD)

- Vibration
  - When OFF, 500 m/s² or less, 10.6 times in 6 directions (x, y, z)
    - (excluding GX90YD and GX90WD)

- Magnetic field
  - 420 Am or less (DC and 50/60 Hz)
### GX90XD MODEL AND SUFFIX CODES

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GM90XD</td>
<td>Digital Input Module</td>
<td></td>
</tr>
<tr>
<td>Number of channels</td>
<td>5E</td>
<td>16 channels</td>
</tr>
<tr>
<td>Type</td>
<td>11</td>
<td>Open collector/non-voltage, contact (shared common), Rated 5 VDC</td>
</tr>
<tr>
<td>Area</td>
<td>N</td>
<td>Always N</td>
</tr>
<tr>
<td>Terminal form</td>
<td>-3</td>
<td>Screw terminal (M3)</td>
</tr>
<tr>
<td>Area</td>
<td>N</td>
<td>General</td>
</tr>
</tbody>
</table>

### GX90YD MODEL AND SUFFIX CODES

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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GM90YD</td>
<td>Digital Output Module</td>
<td></td>
</tr>
<tr>
<td>Number of channels</td>
<td>5E</td>
<td>8 channels</td>
</tr>
<tr>
<td>Type</td>
<td>41</td>
<td>Open collector/non-voltage contact (shared common), Rated 5 VDC, Relay, SPDT (NO-C-NC)</td>
</tr>
<tr>
<td>Area</td>
<td>N</td>
<td>Always N</td>
</tr>
<tr>
<td>Terminal form</td>
<td>-3</td>
<td>Screw terminal (M3)</td>
</tr>
<tr>
<td>Area</td>
<td>N</td>
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### GX90WD MODEL AND SUFFIX CODES

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<tr>
<th>Model</th>
<th>Suffix code</th>
<th>Description</th>
</tr>
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<tr>
<td>GM90WD</td>
<td>Digital Input/Output Module</td>
<td></td>
</tr>
<tr>
<td>Number of channels</td>
<td>5E</td>
<td>8 channel DI, 6 channel DOs</td>
</tr>
<tr>
<td>Type</td>
<td>41</td>
<td>Open collector/non-voltage contact (shared common), Rated 5 VDC, Relay, SPDT (NO-C-NC)</td>
</tr>
<tr>
<td>Area</td>
<td>N</td>
<td>Always N</td>
</tr>
<tr>
<td>Terminal form</td>
<td>-3</td>
<td>Screw terminal (M3)</td>
</tr>
<tr>
<td>Area</td>
<td>N</td>
<td>General</td>
</tr>
</tbody>
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### GX90EX MODEL AND SUFFIX CODES

<table>
<thead>
<tr>
<th>Model</th>
<th>Suffix code</th>
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<tbody>
<tr>
<td>GM90EX</td>
<td>I/O Expansion Module</td>
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<tr>
<td>Port</td>
<td>-02</td>
<td>2 ports</td>
</tr>
<tr>
<td>Type</td>
<td>TP1</td>
<td>Twisted pair cable</td>
</tr>
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### Standard Accessories

<table>
<thead>
<tr>
<th>Product</th>
<th>Qty</th>
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<tbody>
<tr>
<td>GM906</td>
<td>1</td>
</tr>
<tr>
<td>GM908</td>
<td>1</td>
</tr>
<tr>
<td>GM909</td>
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### Optional Accessories (Sold Separately)

<table>
<thead>
<tr>
<th>Product</th>
<th>Part Number/Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO memory card (1G8)</td>
<td>79300</td>
</tr>
<tr>
<td>Shunt resistor for screw terminal (M3) (100 0 ± 0.1%)</td>
<td>X101-000-3</td>
</tr>
<tr>
<td>Shunt resistor for clamp terminal (100 0 ± 0.1%)</td>
<td>X101-050-3</td>
</tr>
<tr>
<td>Shunt resistor for clamp terminal (100 0 ± 0.1%)</td>
<td>438932</td>
</tr>
<tr>
<td>Shunt resistor for clamp terminal (100 0 ± 0.1%)</td>
<td>438930</td>
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</table>

### Application Software (Sold Separately)

<table>
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<tr>
<th>Model</th>
<th>Description</th>
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<tbody>
<tr>
<td>QA10</td>
<td>Data Logging Software</td>
</tr>
</tbody>
</table>

### Calibration certificate (sold separately)

- A calibration certificate for specific analog input modules.

### User’s Manual

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