SMARTDAC+
Data Acquisition & Control

Multi-loop and setpoint program control
SMART CONTROL

Multi-loop control and centralized monitoring

Reliable, proven PID controller

2 loop control on each module
- Reliable PID algorithms developed with UT Advanced
- Comes with “Super” overshoot control function
- Supports cascade control and 2-input switching control
- Fully integrated into GX/GP/GM

Network Controller

Now, with SMARTDAC+...

- Simply choose a module and enter parameters
  - No programming
  - No screen building

- Seamless network functionality with secure format
  - Email, web, FTP, SNTP...
  - Create reports automatically (optional)

- High integrity data storage
  - No data loss from power failure
  - Records control data, operation summary, and alarm history
  - Future proof add additional modules as required

Up to 10 loops (expandable up to 20)

Up to 6 loops

Up to 16 loops (expandable up to 20)

* Photo is with the /BC option.

* When measured data fills the internal memory, the unit begins writing to the external media.
**Simple touch panel operation**

Touch to change loop operations

**Control operation and monitor screens**

A wealth of easy-to-read monitoring and operation screens

- Setpoint profile per loop along a single time axis
- 32 time events, 32 PV events
- Total number of segments: 9801

**Program pattern control option**

99 patterns times 99 segments

- Controller
- Face plate
- Tuning
- Overview
- Control operation summary
- Control alarm summary

**Browser-based remote operation and monitoring**

Perform remote operation using built in web server

- Controller
- Tuning
- Control alarm summary
- Face plate
- Overview
- Control operation summary

**Data storage**

- Power failure
- Operation summary
- Additional modules as required

**Custom display function Option**

- Customize operator screens for optimal display functionality

**Variety of MATH functions Option**

- Ability to write mathematical functions to control inputs
- Enables PV, SP, and logic calculations
- Supports carbon potential control through CP calculation

**Email warning of alarms**

- Auto save
- Internal memory
- External memory (SD card)

- No data loss from power failure
- Records control data, operation summary and alarm history
- Future proof add additional modules as required

**Overview**

- Programming pattern display
- Controller face plate
- Tuning
- Control alarm summary
### Specification

**GX90UT PID Control Module**

<table>
<thead>
<tr>
<th>Control functions</th>
<th>Digital input (switching the SP, operation mode, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Loops: 2</td>
<td>• Input: 8</td>
</tr>
<tr>
<td>• Alarms: 4 per loop</td>
<td>• Input type: Non-voltage contact or open collector</td>
</tr>
<tr>
<td>• Overshoot control function: Included</td>
<td>• Contact rating: 12 VDC or more, 20 mA or more</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analog input (measured input)</th>
<th>Digital output (of alarms, events, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Measured points: 2</td>
<td>• Outputs: 8</td>
</tr>
<tr>
<td>• Measurement types: DC voltage (DCV)/standardized signal, TC/RTD, DI (LEVEL and non-voltage contact)/DC current (with external shunt resistance)</td>
<td>• Output type: Open collector (sink type)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analog output (control output/transmission output/sensor power supply)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Outputs: 2</td>
<td></td>
</tr>
<tr>
<td>• Output types:</td>
<td></td>
</tr>
<tr>
<td>• Current, voltage pulse, or sensor power supply</td>
<td></td>
</tr>
<tr>
<td>• Current output: 4–20 mA or 0–20 mA enables reverse deflection (load resistance 600 Ω or less)</td>
<td></td>
</tr>
</tbody>
</table>
| • Voltage pulse output: ON voltage = 12 VDC or more/ 
  load resistance 600 Ω or more, OFF voltage = 0.1 VDC or less. | |
| • Sensor power supply: Can be used as a 13.0–18.3 VDC power supply. | |

*When not used as a control output/sensor power supply, measured values, set points, and other values can be sent via analog retransmission.

For more details, please see the general specification for GX90UT PID control module (GS-04L51B01-31EN.)

### Application examples

#### Continuous furnace control (multiloop)
Centralized loop management (up to 20 loops)  
Modular construction for easy maintenance

#### Vacuum furnace control (program control)
Monitor progress of program patterns  
- Up to 99 patterns times 99 segments  
- Up to 32 time events and 32 PV events

#### Carburizing furnace (CP calculation)
With a zirconia O₂ sensor and CO₂ infrared analyzer you can calculate and control carbon potential (CP value).

#### Engine endurance test (pattern generator)
Program control can also be used as a pattern generator.  
Register up to 99 test patterns for efficient testing.  
Generates up to 20 analog signals simultaneously.

- Electronic component firing/drying furnace temperature control, and recording of managed data
- Storage temperature control and management of foodstuffs and pharmaceuticals, and temperature control of food sterilization processes
- Remote monitoring of wastewater treatment equipment in plants
- Other small scale process control and monitoring tasks involving heat treatment, and data recording

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