Co-innovating tomorrow™

YOKOGAWA

SMARTDAC+

Data Acquisition & Control

Multi-loop and setpoint program control

Bulletin 04L51B01-31EN

SMARTDAC+®

SMART CONTROL

Multi-loop control and centralized monitoring

Reliable, proven PID controller

2 loop control on each module

- Reliable PID algorithms developed with UTAdvanced
- Comes with "Super" overshoot control function
- Supports cascade control and 2-input switching control
- Fully integrated into GX/GP/GM

Network Controller

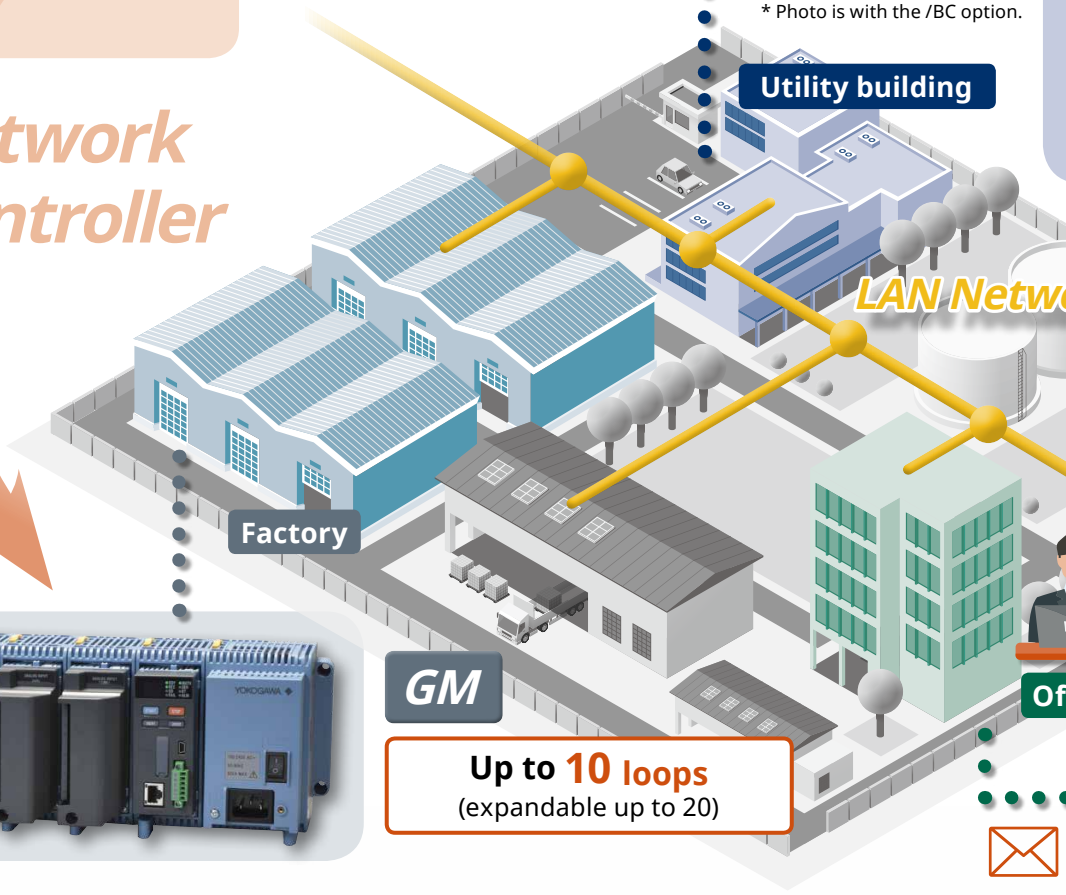
GX10

Up to **6** loops

GX20

Up to **16** loops
(expandable up to 20)

* Photo is with the /BC option.



GM

Up to **10** loops
(expandable up to 20)

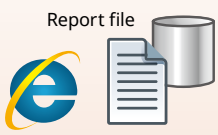
Now, with SMARTDAC+®...

☑ Simply choose a module and enter parameters

- No programming
- No screen building

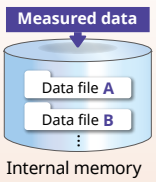
☑ Seamless network functionality with secure format

- Email, web, FTP, SNTP...
- Create reports automatically (optional)



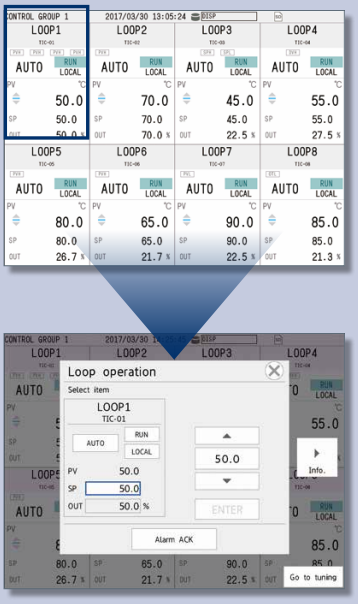
☑ High integrity dat

- No data loss from pow
- Records control data, and alarm history
- Future proof add add



* When measured data fills t the unit begins writing to t

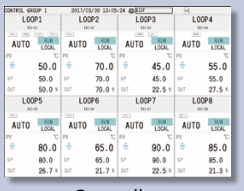
Simple touch panel operation



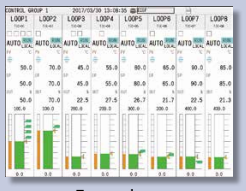
Touch to change loop operations

Control operation and monitor screens

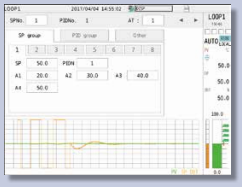
A wealth of easy-to-read monitoring and operation screens



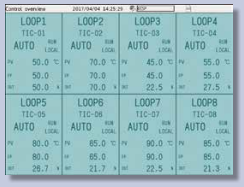
Controller



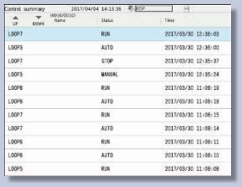
Face plate



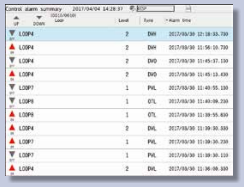
Tuning



Overview



Control operation summary



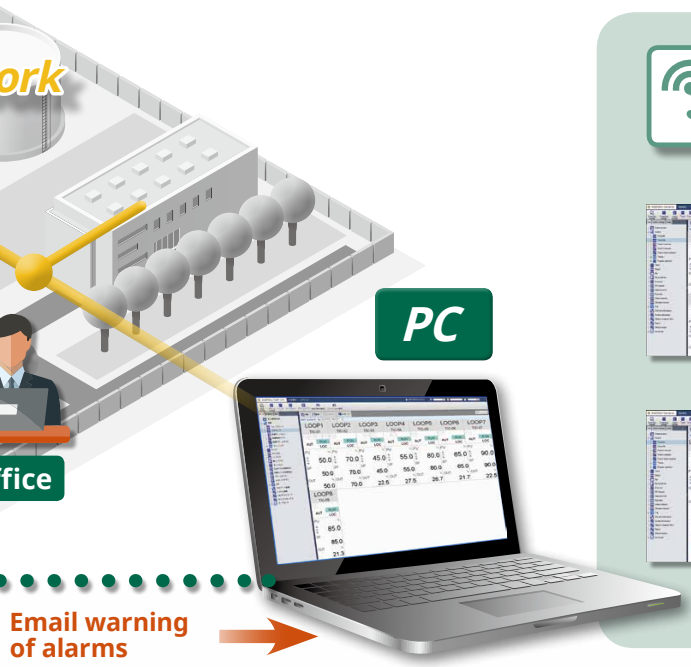
Control alarm summary

Program pattern control option

99 patterns times 99 segments

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

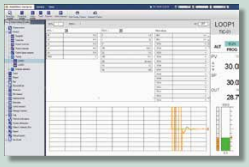
Program pattern display



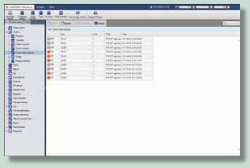
Browser-based remote operation and monitoring

Perform remote operation using built in web server

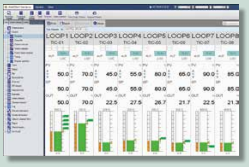
Controller



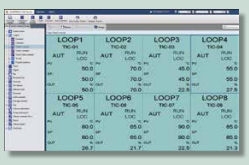
Tuning



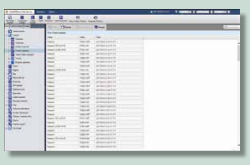
Control alarm summary



Face plate



Overview

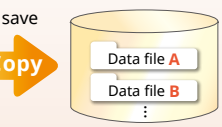


Control operation summary

a storage

wer failure
operation summary

itional modules as required

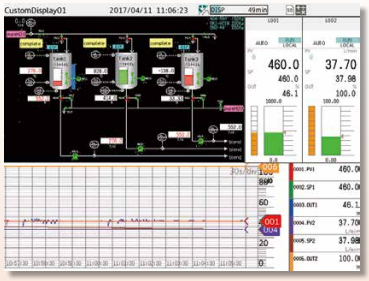


External memory (SD card)

he internal memory,
he external media.

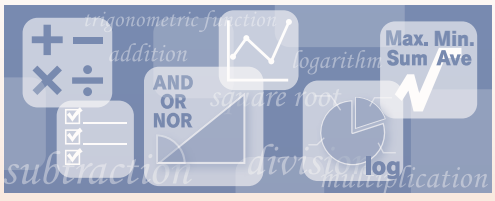
Custom display function Option

- 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



Specification

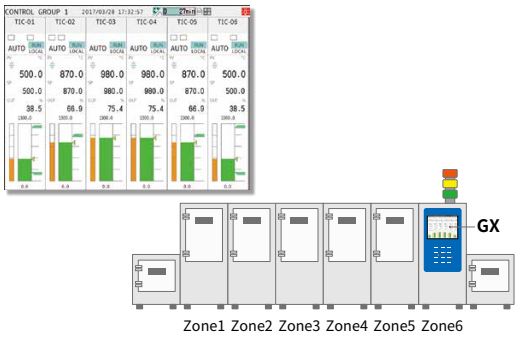
GX90UT PID Control Module	
Control functions	**Digital input (switching the SP, operation mode, etc.)**
• Loops: 2 • Alarms: 4 per loop • Overshoot control function: Included • Control intervals: 100 ms, 200 ms • PID parameter groups: 8 per loop	• Inputs: 8 • Innput type: Non-voltage contact or open collector • Contact rating: 12 VDC or more, 20 mA or more
Analog input (measured input)	**Digital output (of alarms, events, etc.)**
• Measured points: 2 • Measurement types: DC voltage (DCV)/standardized signal, TC/RTD, DI (LEVEL and non-voltage contact)/DC current (with external shunt resistance)	• Outputs: 8 • Output type: Open collector (sink type) • Output contact capacity: Max 24 VDC, 50 mA
Analog output (control output/transmission output/sensor power supply)	
• Outputs: 2 • Output types: ・Current, voltage pulse, or sensor power supply ・Current output: 4–20 mA or 0–20 mA, enables reverse deflection (load resistance 600 Ω or less) ・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

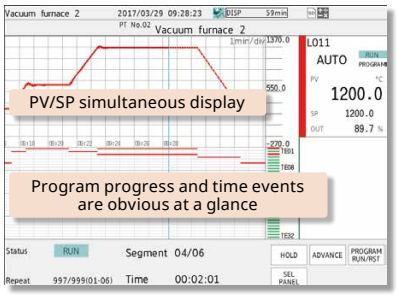
Continuous furnace control (multiloop)

Centralized loop management (up to 20 loops)
Modular construction for easy maintenance



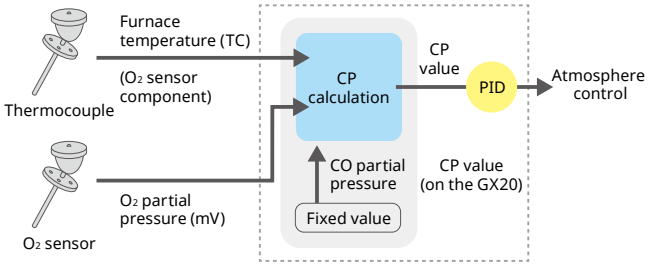
Vacuum furnace control (program control)

Monitor progress of program patterns
- Up to 99 patterns times 99 segments
- Up to 32 time events and 32 PV events



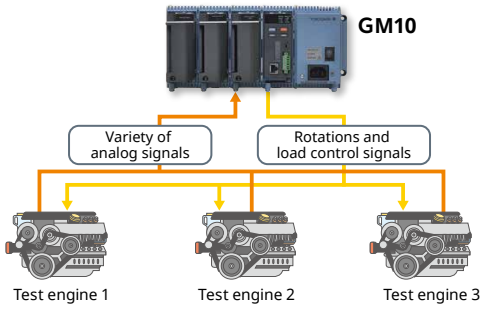
Carburizing furnace (CP calculation)

With a zirconia O_2 sensor and CO_2 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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AZ-S-2E
Printed in Japan, 705(AZ) [Ed:01/d]

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