

NEW

G **GREEN**
SERIES

US1000

Digital Indicating Controller

Easy to use!

High Reliability!

Reduced cost!



APPROVED
CLI, DIV2,
GR ABCD;T4
CLI, ZN2, GPIIC

Easy-to-see Front Panel



PV Display (5digit)

SV & MV Display (5digit) with MV indicator lamp

PV Bar Display (30seg.) with over/under scale segment

Light Loader Interface

MV Bar Display 10seg.with over/under scale segment

MV (Decrease, Fast, Increase) keys

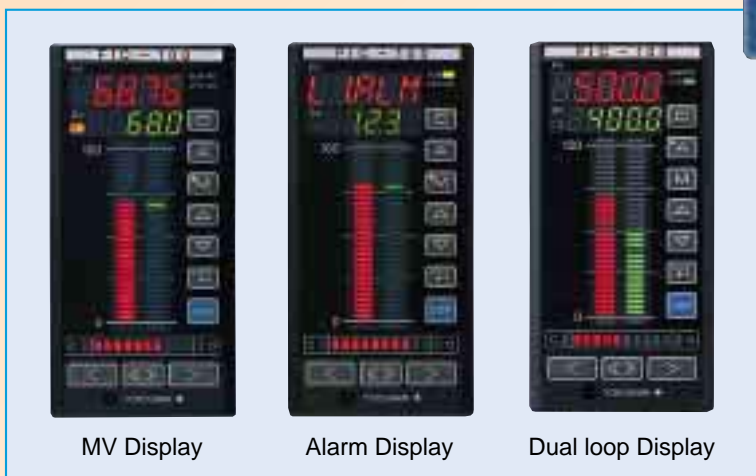
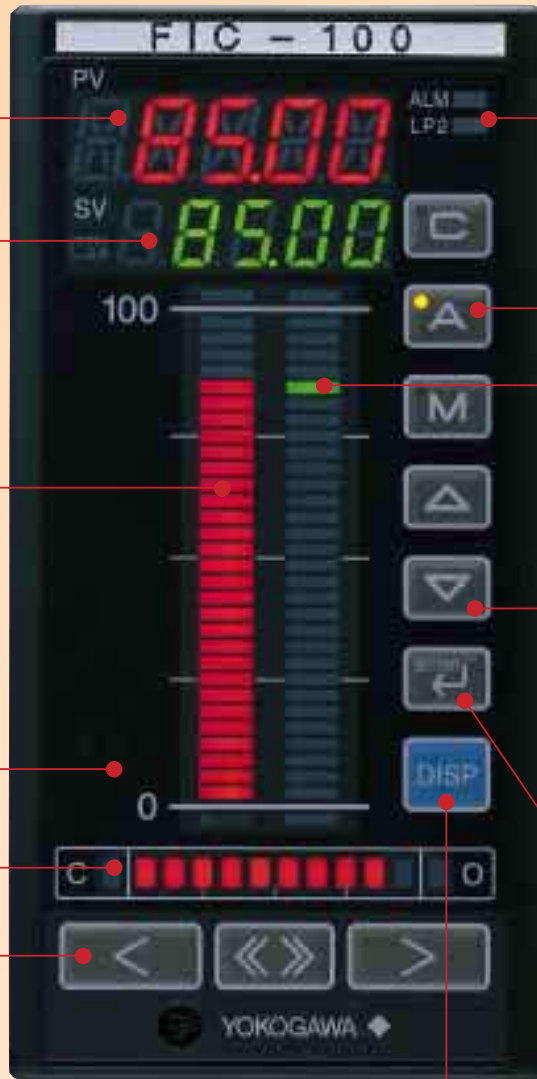
(actual size)

ALM: Alarm indicator Lamp
LP2 : Loop2 status indicator

Operation mode
CAS, AUTO, MAN indicator lamp

SV Bar Display (30seg.) with over/under scale segment

SV setting
(Increase,Decrease) keys



MV Display

Alarm Display

Dual loop Display



Control mode selection



Set up mode selection

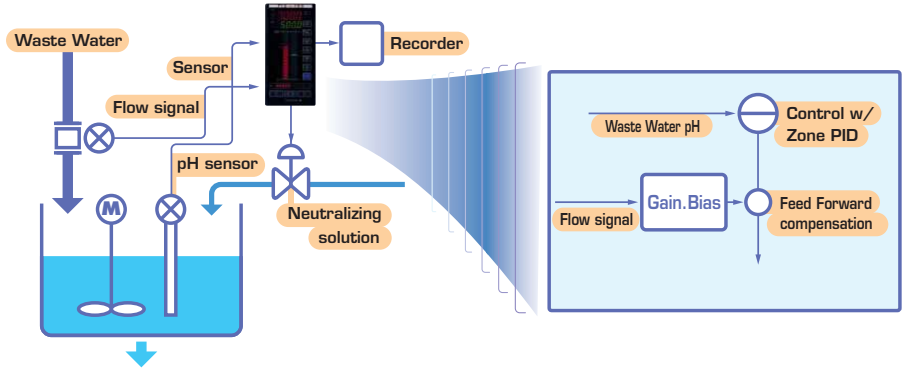
Cover a wide range of applications!



Solution 1

Single loop control with Feed forward Signal

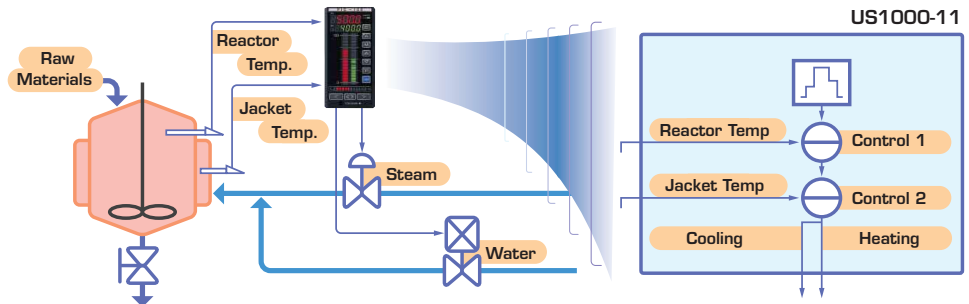
- Easy to minimize the deviation of tank pH, by measuring the waste water flow and compensation.
- F.F. compensation
 - Gain, Bias
 - First order lag



Solution 2

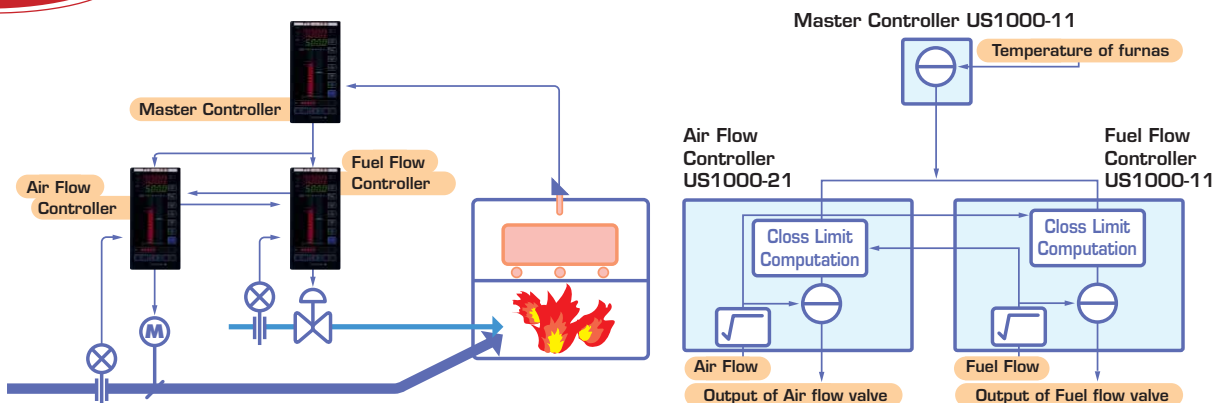
Cascade Control

- Performs cascade loop heat and cool control with a single controller.
- Two temperature PVs can be input.
- US1000 can display both loops simultaneously.
 - Left Bar : Primary loop
 - Right Bar : Secondary loop



Solution 3

Combustion Control Cross Limit method



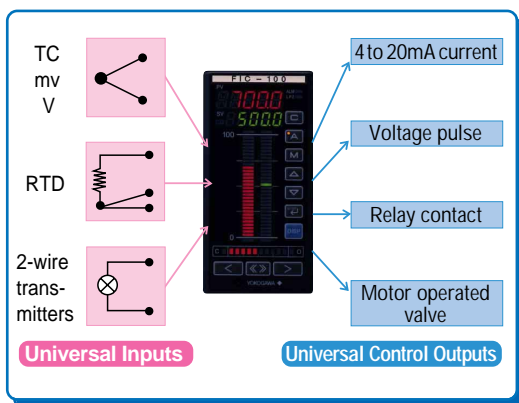
Reduce the Total instrumentation cost!

The US1000 Digital Indicating Controller has bright LED bar displays, and a variety of control and computation functions.

Operations and setting changes can be easily carried out using the front panel keys.

It's provides you

NOT ONLY ADVANCED CONTROL FUNCTIONS, BUT LOW COST!



Minimum Cost!

Universal Inputs and Outputs

■ Universal Inputs

- It is possible to connect many types of thermocouples RTDs and mV signal for universal input.
- US1000 has 25.5VDC power supply function to connect one or two 2-wire transmitters directly.

■ Universal Control Outputs

- It is possible to select 3 types of signals for control outputs.
- 4 to 20mA current Voltage pulse and Relay contact.

■ Input and Output types and ranges can be set by front key operation

■ Lowered inventory costs

Reliable Construction!

IP65 Dust and Water Protection

■ The front of US1000 has dust and water protection (in compliance with IP65).

Dust & Water protection are effective only for installing single unit.
IP code : IEC529 Degrees of protection provided by enclosures

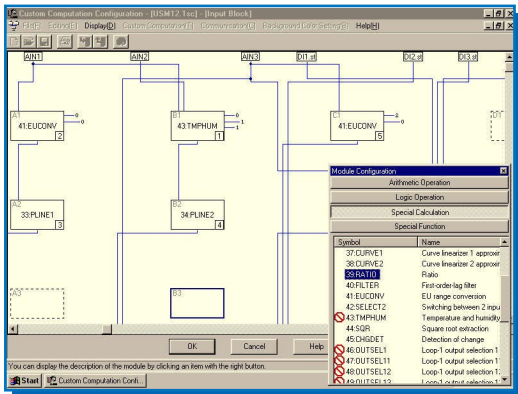
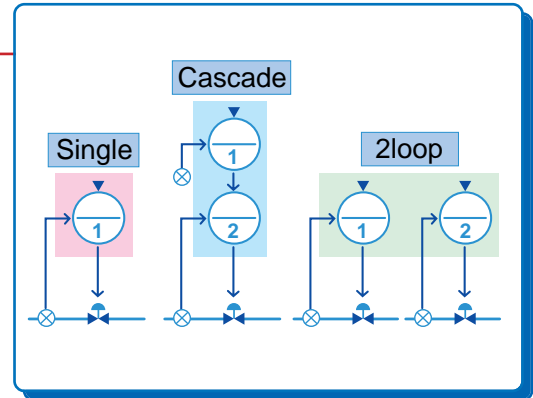


Suitable for wide ranges of process control!

Wide Application!

Control Computation and MV Signals

- **Control and MV signals**
 - Continuous PID** Current 4 to 20mA
Time proportional Pulse
 - ON/OFF control** Relay
 - Heat/Cool PID control** Combination of Current and Relay.
 - Position Proportional PID** Relay Dir. COM-Rev.
- **PID control Functions**
 - PID control
 - Zone PID (Non-linear PID)
 - PID with Output Tracking
 - PID with Feed Forward Signal



Easy Configuration!

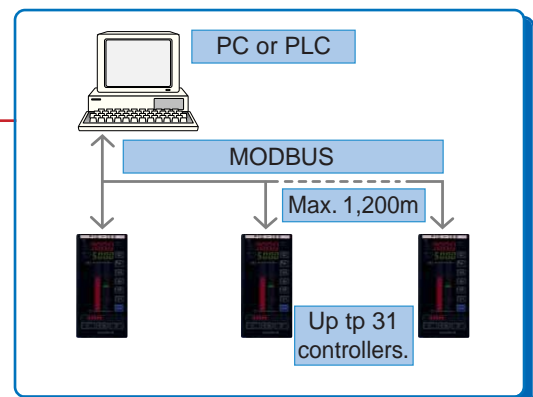
Create a Custom Computation Function

- Design how input and output computation is to be changed and what computation modules are to be connected.
- Create a custom computation function with Model LL1200 Windows-Based Custom Computation Building Tool.
- Write custom computation data to US1000 and confirm the functions.

Open Communication!

Communication with a PC or PLC

- **US1000** can communicate with a PC or PLC by MODBUS communication Protocol.
- **MODBUS**
 - RTU (Binary) mode, ASCII mode
 - MODBUS is very popular in US and European countries.
- **PC-Link**
 - Can be used with Yokogawa Green series controllers.



Model and I/O Signals

| Model | Suffix Codes | Description | Analog Input | | LPS | MV | | RET | Contact | | |
|--------|--------------|--|--------------|-----------------|-----|-------|------------------|-----|---------|----------------|----|
| | | | Universal | 1-5V or 0-10Vdc | | 24Vdc | Current or Pulse | | Relay | 1-5V or 0-5Vdc | IN |
| US1000 | -00 | Basic type | 1 | 1 | 1 | 1 | 0 | 1 | 2 | 3 | |
| | -11 | Enhanced type* | 2 | 1 | 2 | 2 | 2 | 1 | 7 | 7 | |
| | -21 | Enhanced model* with Position Propo. PID | 2 | 1+1** | 2 | 1 | 1 set | 1 | 7 | 7 | |
| Option | /A10 | RS485 communication | | | | | | | | | |

Note : * Enhanced type has Custom Computation Function.

** US1000-21 has one voltage input and one Slide wire input for Valve position feedback.

LPS : Loop power supply for transmitter.

RET : Retransmission Output for other controller or recorder.

Specifications

| | |
|---|--|
| Control functions | Single-loop control, Cascade control, Dual-loop control |
| Control Computational functions | Time proportional PID, continuous PID, ON/OFF control, heating/cooling, and position proportional PID computations, etc. |
| Other functions | Auto-tuning SUPER (An overshoot suppressing) function |
| Output Points | Current, Voltage, Replay, Loop power supply for transmitter |
| Signal Computation | Bias, Filter, PV tracking, Square root extraction, Ten-segment linearizer, etc. |
| Custom Computation | 58 Sorts |
| Alarm functions | 29 Sorts (high/low, deviation, etc.) |
| Control Period | 50,100ms 200,500ms (with custom computation) |
| Communication Functions | RS485 (Optional code:/A10) |
| Communication Protocol | PC-link communication, MODBUS |
| Communication distance, Number of connectable units | Maximum of 1200m, Maximum of 31 units |
| Terminal assignment | M3.5 screws |
| Power supply | 100V to 240VAC ±10%, 50/60Hz |
| Ambient Temperature | 0 to 50°C (40°C or less for close side-by-side mounting) |
| Ambient humidity | 5 to 95% (no condensation) |

Model and Specification codes

| Model | Suffix codes | Option codes | Description |
|--------|--------------|--------------|--|
| US1000 | -00 | | Basic type |
| | -11 | | Enhanced type (with custom computation) |
| | -21 | | Position proportional type (with custom computation) |
| | | /A10 | RS-485 communication |

Accessories: ● A pair of mounting brackets ● Tag, unit, and numeral labels
● Terminal cover ● Operation manual
● Function manual

| Model | Suffix codes | Option codes | Description |
|--------|--------------|--------------|---|
| LL1100 | | | PC-based Parameters Setting Tool |
| | -U10 | | Model for use with IBM PC/AT Compatible machine (Common to English and Japanese version) USB connection |

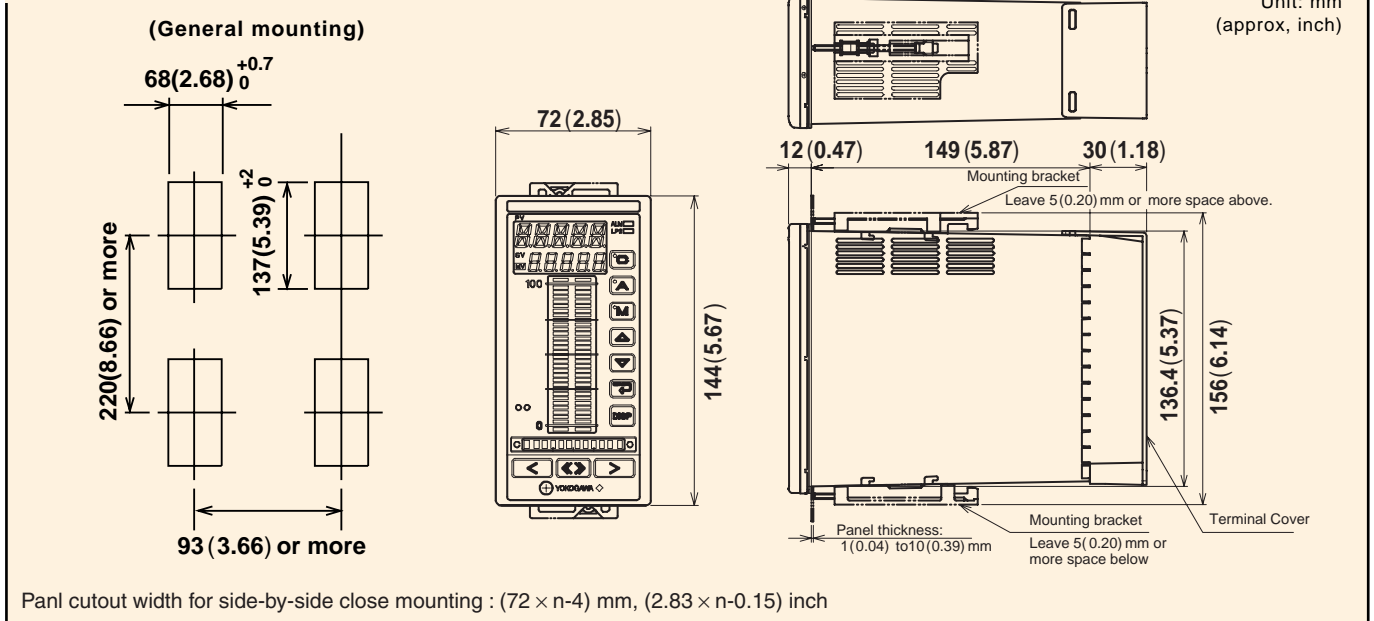
| Model | Suffix codes | Option codes | Description |
|--------|--------------|--------------|---|
| LL1200 | | | PC-based Custom Computation Building Tool* |
| | -U10 | | Model for use with IBM PC/AT Compatible machine (Common to English and Japanese version) USB connection |

*The LL1200 PC-Based Custom Computation Building Tool includes the same parameter setting function as the LL1100 PC-Based Parameters Setting Tool.

Items to be Specified at Ordering

•Model and suffix codes, option codes

Dimensions & Panel Cutout



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