

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

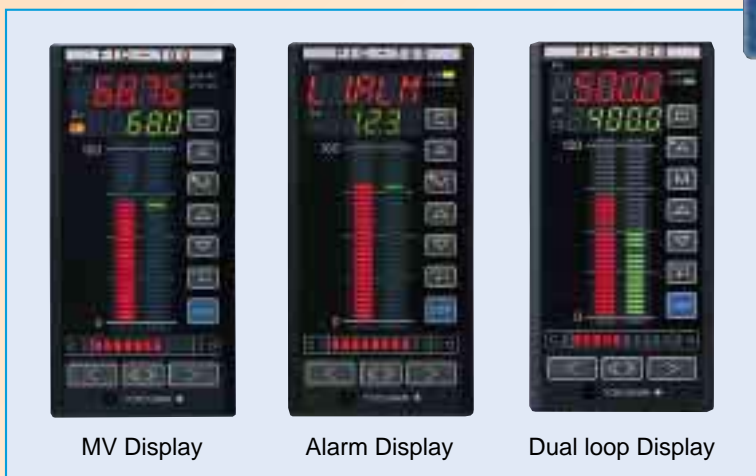
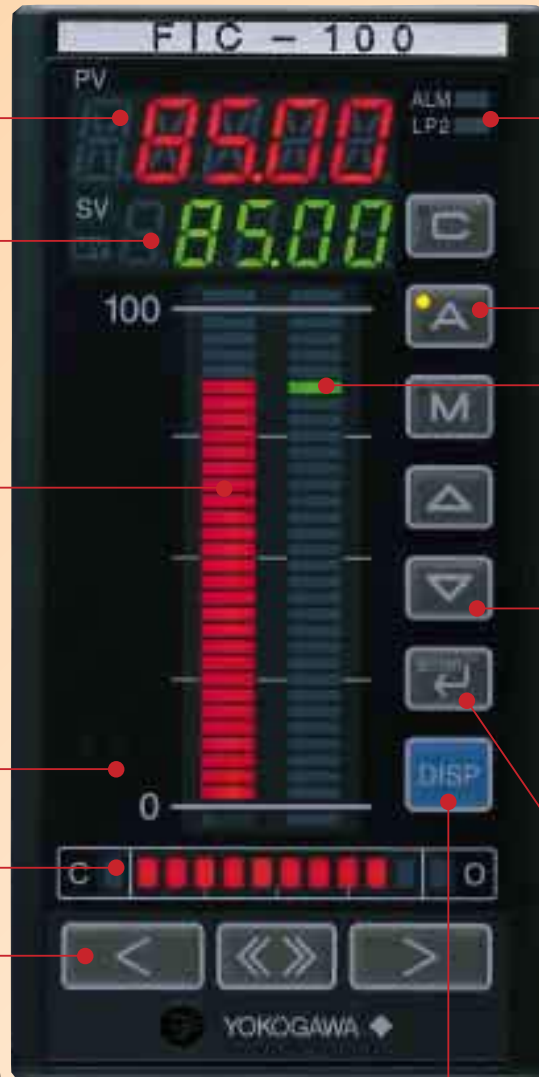
(actual size)

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



Control mode selection



Set up mode selection

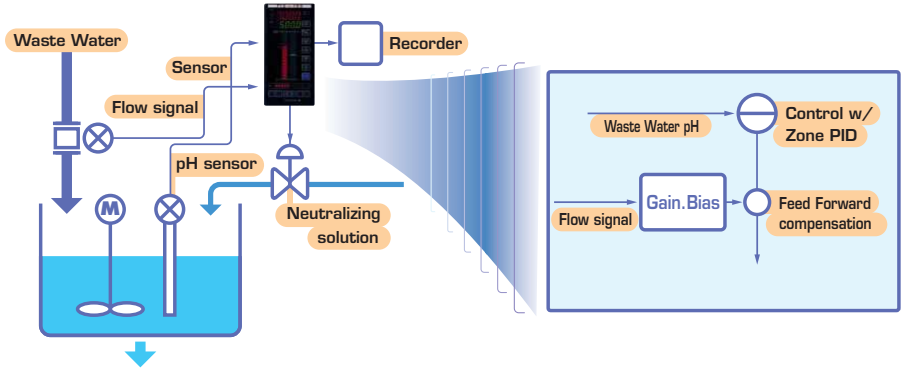
Cover a wide range of applications!



Solution 1

Single loop control with Feed forward Signal

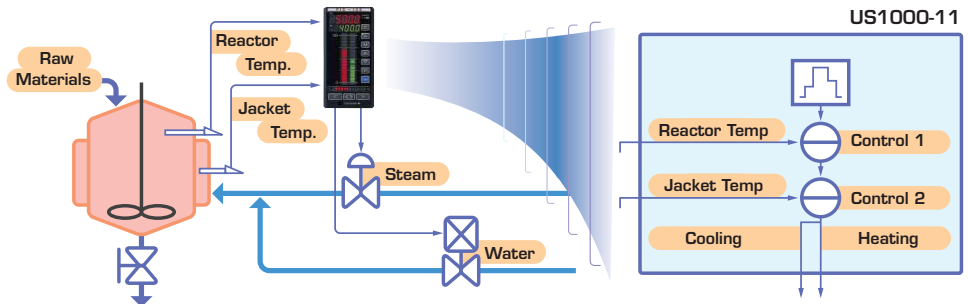
- Easy to minimize the deviation of tank pH, by measuring the waste water flow and compensation.
- F.F. compensation
 - Gain, Bias
 - First order lag



Solution 2

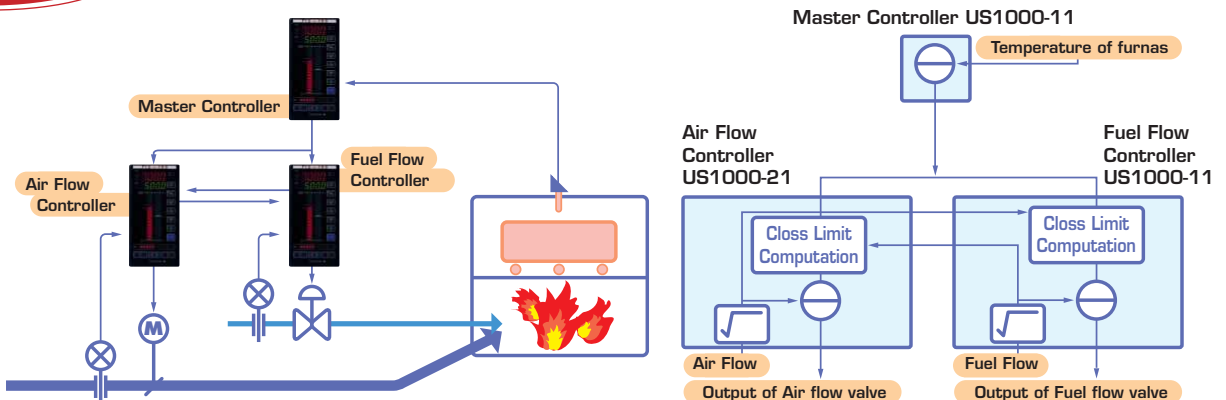
Cascade Control

- 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



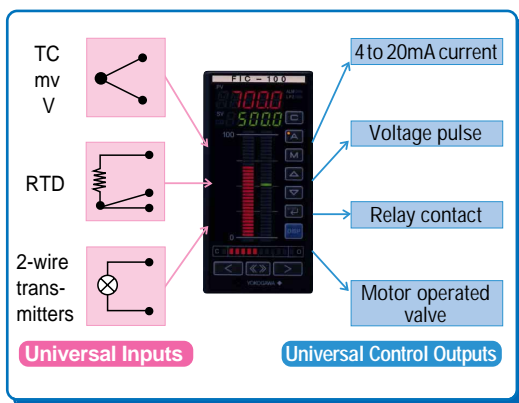
Reduce the Total instrumentation cost!

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

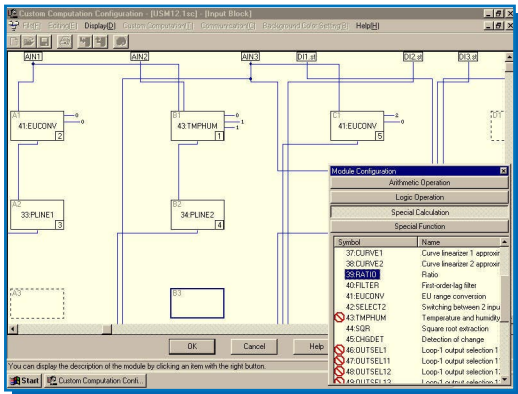
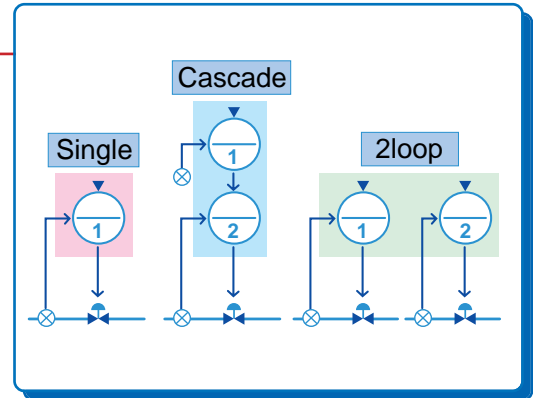


Suitable for wide ranges of process control!

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!

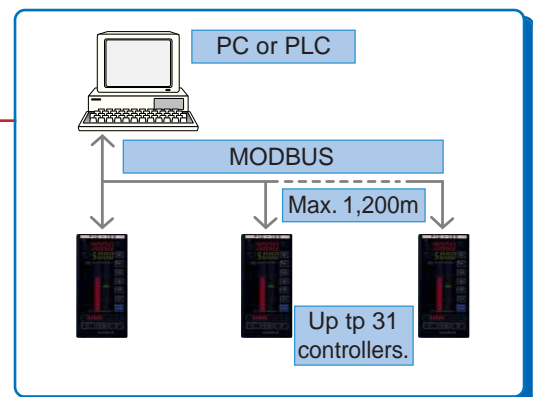
Create a Custom Computation Function

- 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	OUT	
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
	-J10 -E10		Japanese (For IBM PC/AT compatible) English (For IBM PC/AT compatible)

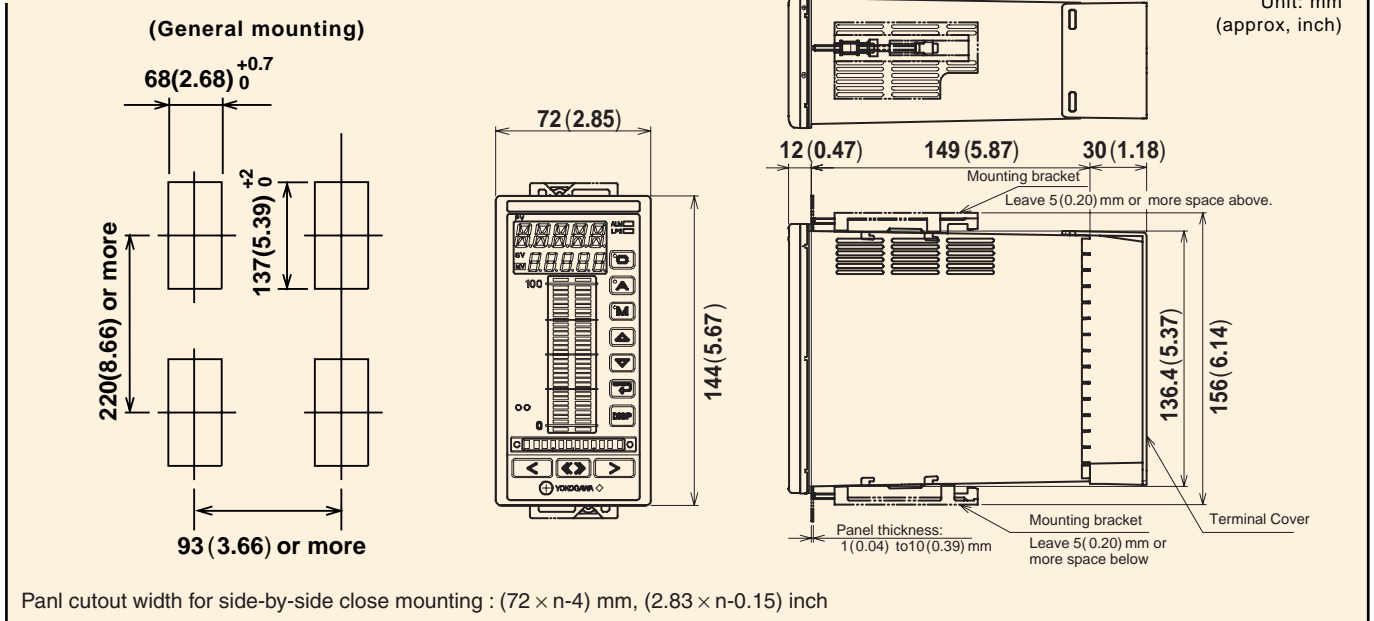
Model	Suffix codes	Option codes	Description
LL1200			PC-based Custom Computation Building Tool*
	-J10 -E10		Japanese (For IBM PC/AT compatible) English (For IBM PC/AT compatible)

*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



YOKOGAWA

YOKOGAWA ELECTRIC CORPORATION

Network Solutions Business Div./Phone: (81)-422-52-7179, Fax: (81)-422-52-6619

E-mail: ns@cs.jp.yokogawa.com

YOKOGAWA CORPORATION OF AMERICA

YOKOGAWA EUROPE B.V.

YOKOGAWA ENGINEERING ASIA PTE. LTD.

Phone: 800-888-6400, Fax: (1)-770-251-6427

Phone: (31)-33-4641806, Fax: (31)-33-4641807

Phone: (65)-62419933, Fax: (65)-62412606

Subject to change without notice.

[Ed : 04/c] Copyright ©1998

Printed in Japan, 606(KP)

NetSOL Online

Sign up for our free e-mail newsletter
www.yokogawa.com/ns/

RS-16E