

NEW

G **GREEN**
SERIES

US1000

Digital Indicating Controller

Easy to use!

High Reliability!

Reduced cost!



Under Preparation to CE Marking Self Declaration.
Under Application for Approval to FM (Nonincendive).
Under Application for Certification to CSA (Non-incendive).



For global environmental safety,
this pamphlet is made of nonpulp paper
(100% product of Kenafu-Hibiscus family).

Yokogawa M&C Corporation

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

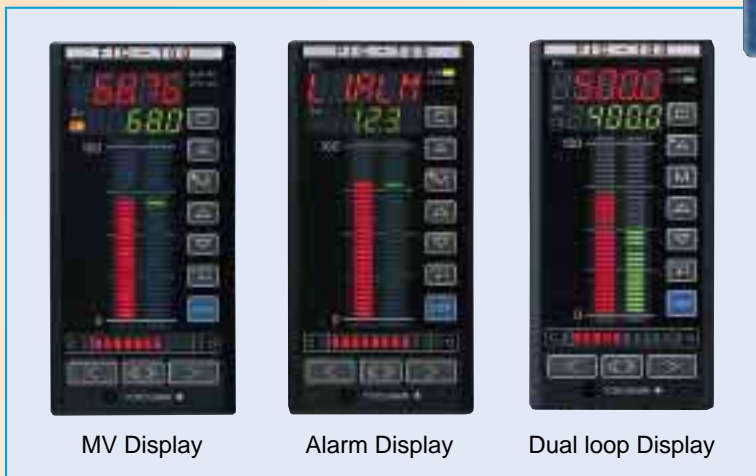
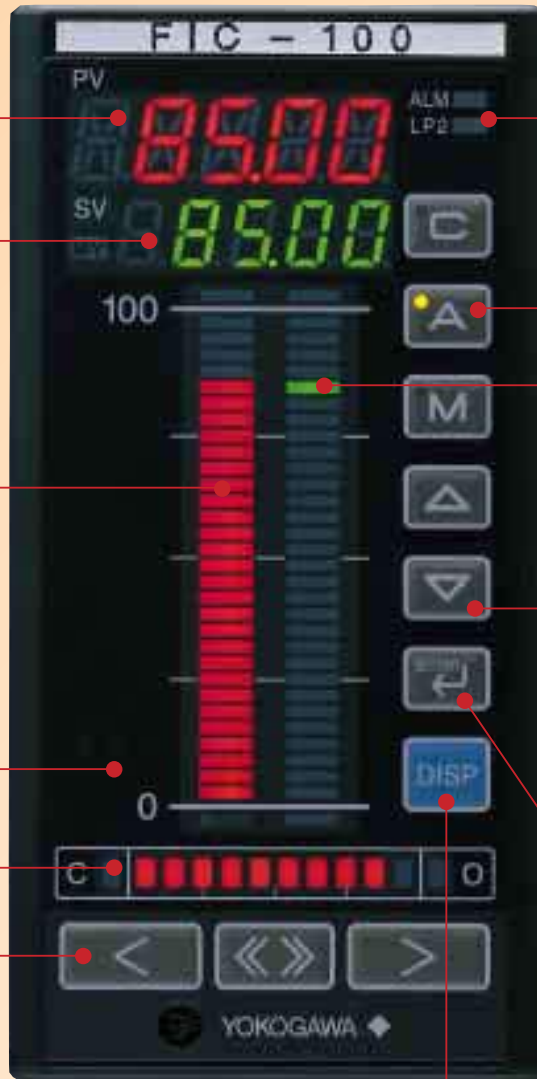
(actual size)

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

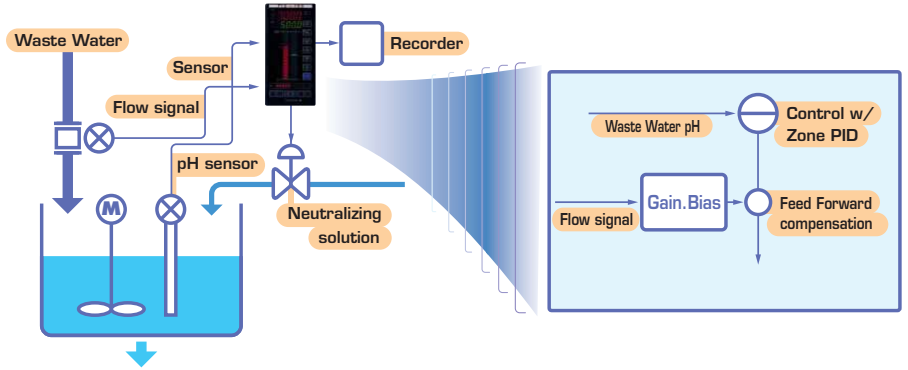
Cover a wide range of applications!



Solution 1

Single loop control with Feed forward Signal

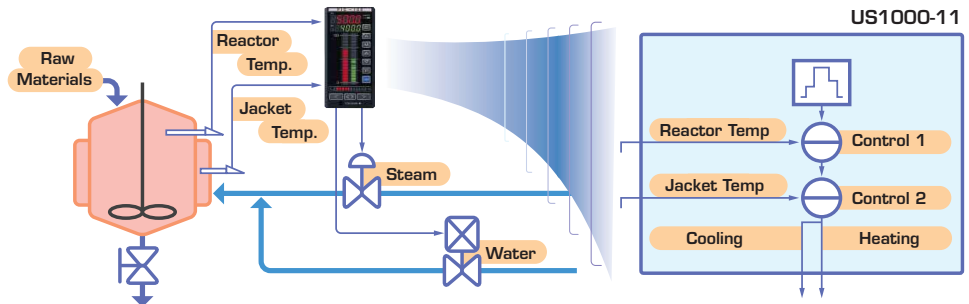
- Easy to minimize the deviation of tank pH, by measuring the waste water flow and compensation.
- F.F. compensation
 - Gain, Bias
 - First order lag



Solution 2

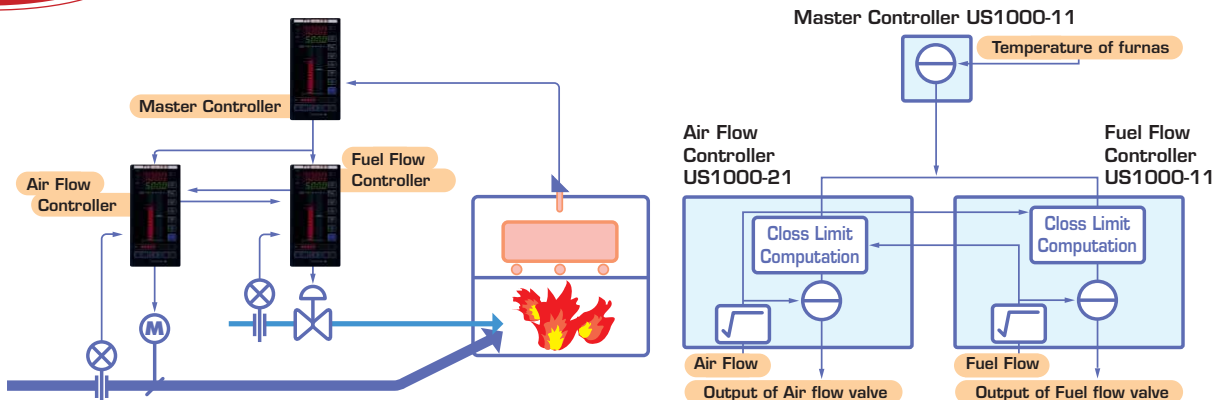
Cascade Control

- 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



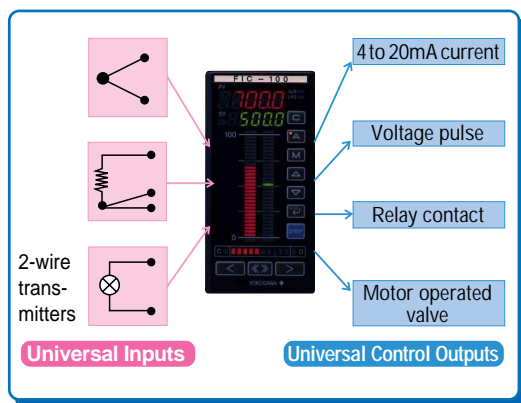
Reduce the Total instrumentation cost!

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

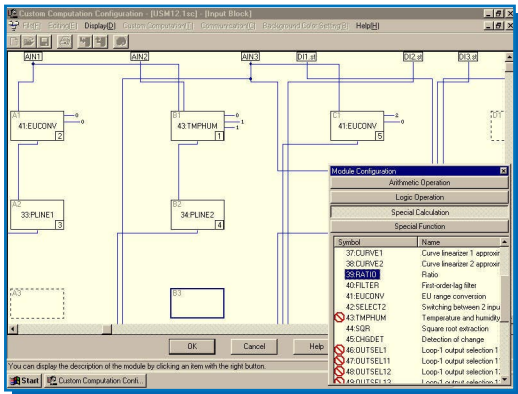
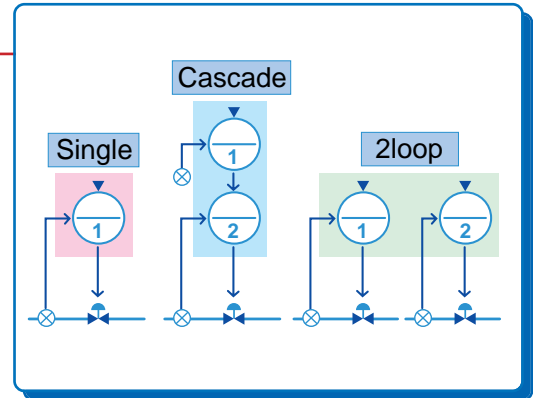


Suitable for wide ranges of process control!

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!

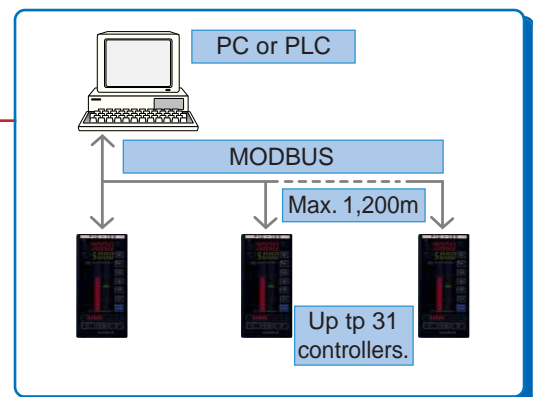
Create a Custom Computation Function

- 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	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 Ambient humidity	0 to 50°C (40°C or less for close side-by-side mounting) 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)

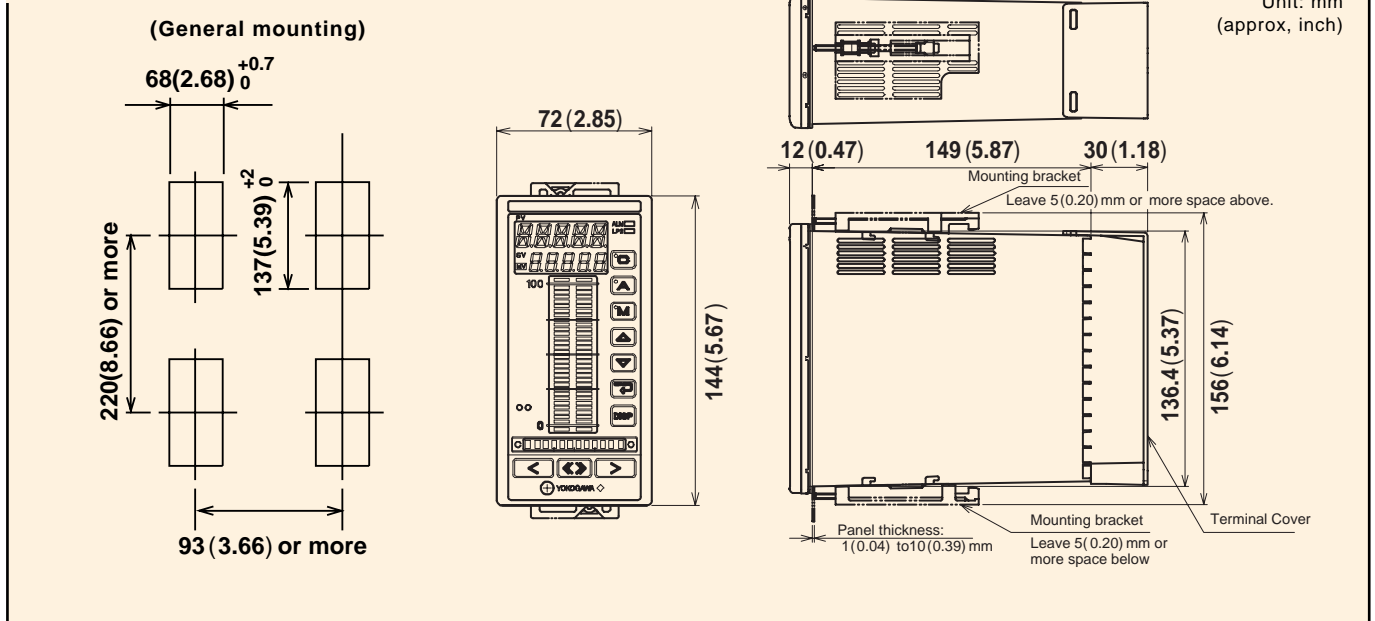
Model	Suffix codes	Option codes	Description
LL1200			PC-based Custom Computation Building Tool*
	-J10 -E10		Japanese (For IBM PC/AT compatible) English (For IBM PC/AT compatible)

*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 M&C Corporation

World Wide Web. site at
http://www.yokogawa.co.jp/MCC/welcome_e.htm

NOTICE

- Before using the product, read the instruction manual carefully ensure proper and operation.

YOKOGAWA M&C CORPORATION
International Operations

Kojimachi-Tokyu Bldg. 3F
6-6 Koji-machi, Chiyoda-ku, Tokyo, 102-0083 Japan
Phone : 81-3-3239-0576 Facsimile : 81-3-3239-0585

YOKOGAWA CORPORATION OF AMERICA
2 Dart Road, Newnan, Ga. 30265-1094, U.S.A.
Phone : 1-770-253-7000 Facsimile : 1-770-251-2088

YOKOGAWA EUROPE B. V.
Radiumweg 30, 3812 RA, Amersfoort, THE NETHERLANDS
Phone : 31-33-464-1611 Facsimile : 31-33-464-1856
Telex : 79118 YEF NL

YOKOGAWA AMERICA DO SUL S. A.
Avenida Jura, 149-AlphaVila,
06455-010-Barueri, Sao Paulo, BRAZIL
Phone : 55-11-7295-1433 Facsimile : 55-11-7295-1329

YOKOGAWA ENGINEERING ASIA PTE. LTD.
11 Tampines Street 92, Singapore 528872, SINGAPORE
Phone : 65-783-9537 Facsimile : 65-786-6550
Telex : RS-26137 YASSIN

HANKUK YOKOGAWA ELECTRIC CO., LTD.
K. P. O. Box : 403, Chongohon-2dong, Pupyong-ku,
Inc hon, KOREA
Phone : 82-32-510-3304 Facsimile : 82-32-529-6301/6302

YOKOGAWA TAIWAN CORPORATION
Fu Chi Bldg. 6th Floor, 99Jon-ai Road,
2nd Section, Taipei, TAIWAN
Phone : 866-2-321-1113 Facsimile : 866-2-322-5593

YOKOGAWA AUSTRALIA PTY. LTD.
Private mail bag 24, Centre Court D3, 25-27
Paul Street North, North Ryde, N. S. W.
2113, AUSTRALIA
Phone : 61-2-9805-0699 Facsimile : 61-2-9888-1844

YOKOGAWA BLUE STAR LTD.
40/4 Lavelle Road, Bangalore 560 001, INDIA
Phone : 91-80-227-1513 Facsimile : 91-80-227-4270

LTD. YOKOGAWA ELECTRIC
Hotel International No. 2, Room 1047, Krasnopresnenskaja Nab.
12, Moscow 123610, RUSSIAN FEDERATION
Phone : 7-095-967-0350 Facsimile : 7-502-253-3509

Represented by :

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