디지털지시조절계 DIGITAL INDICATING CONTROLLER

OUTLINE

Model EC5500R Digital Indicating Controller has a large-sized display excellent in visibility. Since it is a light guide system, it is clear also outdoors. And dial setting is fulfilled easy operation. In addition, self-tuning is equipped as a standardly. PID, gapped PID, heat/cool control or servo PID are available as control functions. As described above, the EC5500R 1/4DIN controller is applicable to a broad use.

FEATURES

- Extra-Large digital display
- Auto-Tuning, Self-Tuning provided as standard
- Full Multi-Input (Thermocouple, RTD, voltage or current)
- Scaling Range of -1999 to 9999
- Multi- Output (Selective)
- 4 Alarm Output
- RS-232C,RS- 422A (RS-485) Communication Interface
- Easy Replace from EC5500S

SPECIFICATIONS

Input range: Full multi-range, refer to Range table
Display: 7-segment LED, process variable(PV) / green, set point(SP)& output/ orange
Sampling Rate:250ms
Scaling: -1999 to 9999 with mV, V & mA ranges
Set point: Front panel (local) or remote (optional)
Set point bias: ± 20% available with remote set point
Set point tracking: Remote to local
Set point limiter: 0~100% with TC & RTD input ranges
Multi set point: Up to 8 set points
Sensor correction: ± 100°C with TC & RTD input ranges
Set point ramping: 0.01 ~ 650.0 unit/min. Unit °C or %
Control: PID, gapped PID, PD, 3-position (dual output) or ON/OFF
Proportional band: 0.1~999.9%
Integral (reset): 0.01 ~99.99 min.
Derivative :(rate): 0~20.00 min.
Manual reset: 0~100%, PD control mode only
Dead band: ± (0~0.500), heat/cool control mode
Hysteresis: 0.00~20.00% ,ON/OFF control mode
PID adjustment: Independent on each set point
Programmed PID: 8 PID parameters can be selected automatically to optional remote set point
PID tuning: Selectable Auto tuning or Self tuning
Output: Selectable output from among
Relay; a-contact, 250VAC, 3A resistive load
SSR Drive; 15VDC, 20mA max.
Current; 4~20mA/600Ω or 0~5mA/2kΩ

Servo drive output: Option
Dual output: Any combination from among relay, SSR drive and current output
Auto/Manual: Balance less bump less transfer
Output limiter: 0~100%
Direct/Reverse: Selectable, reverse in Dual output model
Cycle time: 1~120 sec., relay and SSR drive output
RUN/STOP: Controller enable/disabled
Preset manual: 0~100%, available when controller disabled
Alarm: 4 set point process variable or deviation alarm
Alarm set point: Process variable alarm, 0~100% of rang deviation alarm, ± 100% of range
Hysteresis: 0~100% adjustable within the range
Alarm on delay timer: 0~600 sec.
Nos. of output relays: 4 relays, driven from among each alarm and controller status(2 relays are optional)
Relay rating: a-contact, 250VAC 0.5A, resistive load, One s contact are common.
Status Output: AUTO/MAN, RUN/STOP, Watchdog timer & Reach at set point (available on set point rampir
Digital input: 4 input for set point selection, PID parameter selection, AUTO/MAN switching, Remote /Local switching, or RUN/STOP switching, Non-voltage contact input 15VDC 1mA
Memory backup: Non-volatile RAM(Fe-RAM)

OUTLINE

Interface: 300~9600 bps, ZE7101A0110 and ZE7101B0408 allow direct connection of RS-232C and RS-422A (RS-485)to the controller respectively
Power Supply: Voltage rating at 100 to 240VAC,50/60Hz
Power consumption: Approx. 6VA/100VAC, 10VA/200VAC
Mass: Approx. 500g
Operating temperature range: -10 ~ 55°C

PERFORMANCE

Accuracy: ± (0.25% +1 digit) max., refer to Range Accuracy Table
Source impedance effects: Approx. 0.13μV/Ω at TC & mV ranges, RTD lead wire 5Ω max.
Input impedance: Approx.250Ω/4-20mA, Approx.500kΩ/Volt input
CMRR: 140dB min.
NMRR: 60dB min.

OPTION

Analog retransmission: 0 ~ 20mA or 4 ~ 20 mA selectable for process variable, set point or output, accuracy ± 0.25%, resolution 0.05% max., load 600Ω max.
Isolated remote set point: 1 ~ 5 VDC or 0 ~ 5VDC, Approx. 500kΩ input impedance
ARCNET ® : Token passing LAN, 2.5Mbps, 20 nodes/network, 255 nodes max.

RANGE & ACCURACY TABLE

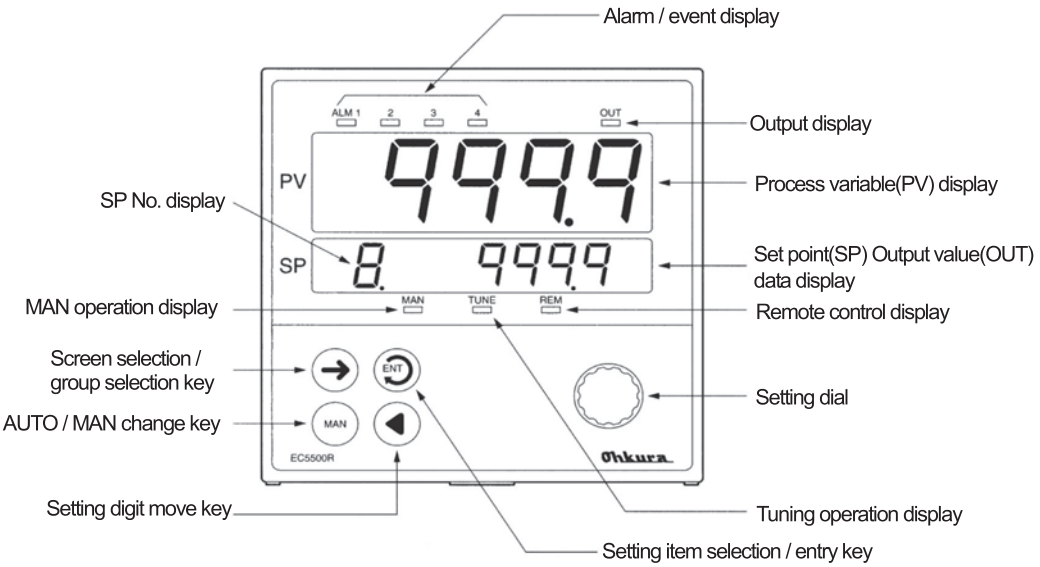
INPUT	CODE		ACCURACY	REMARKS
B	b	*1		*1
R	r1	*2		0 ~ 400°C ± 5%
R	r2	*2		400 ~ 800°C ± (0.35% + 1digit)
S	S	*2		
K	k1			*2
K	k2		± (0.25% + 1digit),	0 ~ 200 °C ± (0.35% + 1digit)
K	k3		± (0.3% + 1digit),	
E	E		with in -200 to 0°C	*3
J	J1			0 ~ 20K ± (0.8% + 1digit)
J	J2			20 ~ 50K ± (0.5% + 1digit)
T	t			*4
WRe_{5-26}	C			0 ~ 300°C ± (2% + 1digit)
N	n			300 ~ 800°C ± (0.8% + 1digit)
PLII	PL			
U	U			
L	L			
Au-Fe	AUFE	*3	± (0.5% +1digit)	
PR_{40-20}	Pr	*4		
Pt100	Pt0	JPt0	± (0.25% +1digit)	
JPt100	Pt1	JPt1		
	Pt2	JPt2	± (0.35% +1digit)	

Reference-junction compensation error:
± 1°C (15 ~ 35°C)
± 1.5°C (0 ~ 15°C, 35 ~ 55°C)
± 2°C (-10 ~ 0°C)

RANGE TABLE

INPUT	CODE	RANGE
B	b	0 ~ 1820°C
R	r1	0 ~ 1760°C
R	r2	0 ~ 1200°C
S	S	0 ~ 1760°C
K	k1	-200 ~ 1370°C
K	k2	0.0 ~ 600.0°C
K	k3	-199.9 ~ 300.0°C
E	E	-199.9 ~ 700.0°C
J	J1	-199.9 ~ 900.0°C
J	J2	-199.9 ~ 400.0°C
T	t	-199.9 ~ 400.0°C
W Re5-26	C	0 ~ 2320°C
N	n	0 ~ 1300°C
PR40-20	Pr	0 ~ 1880°C
PLII	PL	0 ~ 1390°C
U	U	-199.9 ~ 400.0°C
L	L	-199.9 ~ 900.0°C
Au-Fe	AUFE	0.0 ~ 300.0K
mV	10	0.0 ~ ± 10.0mV
mV	20	0.0 ~ 20.0mV
mV	50	0.0 ~ 50.0mV
V	1-5	1.0 ~ 5.0V
V	0-5	0.0 ~ 5.0V
V	0-10	0.0 ~ 10.0V
mA	mA	4.0 ~ 20.0mA
Pt100	Pt0	-199.9 ~ 850.0°C
Pt100	Pt1	-199.9 ~ 300.0°C
Pt100	Pt2	-150.0 ~ 150.0°C
JPt100	JPt0	-199.9 ~ 650.0°C
JPt100	JPt1	-199.9 ~ 300.0°C
JPt100	JPt2	-150.0 ~ 150.0°C

PART NAMES & FUNCTIONS



MODEL CODE NUMBER

EC550 ① □ R ② □ ③ □ ④ □ ⑤ □ ⑥ □

①1st output (*)

1	Relay
2	SSR drive
3	——
4	——
5	4 ~ 20mA
6	0 ~ 5mA
7	——
8	Multi (Relay, SSR drive, 4 ~ 20mA)

②Event relay output

0	2 points
1	4 points

③Built-in option

0	None
2	Isolated REM SP
5	AO (mA)
6	AO (mA), Isolated REM SP

④Expanded option(*)

0	None
1	ARCNET®
2	Servo drive
3	ARCNET®, Servo drive

⑤2nd output(*)

0	None
1	Relay
2	SSR drive
3	——
4	——
5	4 ~ 20mA
6	0 ~ 5mA

⑥Special

0	None
Z	Special

*Designating 1st output,2nd output and servo drive

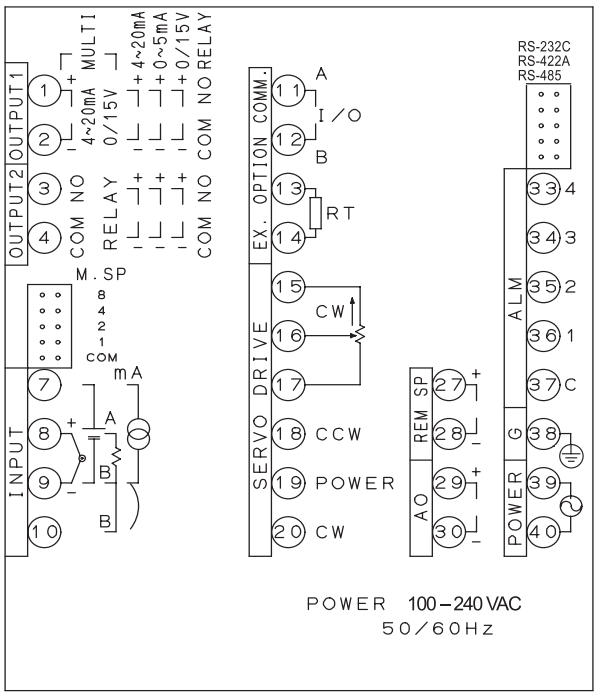
Output type	1st output	2nd output
Single output multi	8	0
Single output 0 ~ 5mA	6	0
Dual output	One of 1, 2, 5 and 6	One of 1, 2, 5 and 6
Servo drive	8	0

DEFAULT SETTINGS

Default setting at the shipment from the factory.

	Function	Initial value
Display / Input	Input range, scale	k1, -200 ~ 1370°C
	PV abnormal high limit value	1401°C
	PV abnormal low limit value	-231°C
	Key lock	OFF
	Sensor correction	0.0°C
	First order lag filter	0 seconds
	Number of moving average	8 times
Control	Control mode	PID control
	Direct / reverse action	Reverse action
	Preset output	OFF
	PV start	OFF
Alarm	Alarm1	Deviation High limit alarm :1570°C
	Alarm2	Deviation Low limit alarm :-1570°C
	Alarm3 (only display at standard)	Deviation absolute value alarm :1570°C
	Alarm4 (only display at standard)	Fail output
	Pause alarm	OFF
	Hysteresis width	0°C
	ON delay timer	0 seconds
Digital input	DI assignment	All points SP/PID change
	DI function	SP change
Communication	Communication select	Original
	Transmission speed	9600bps
	Address	0

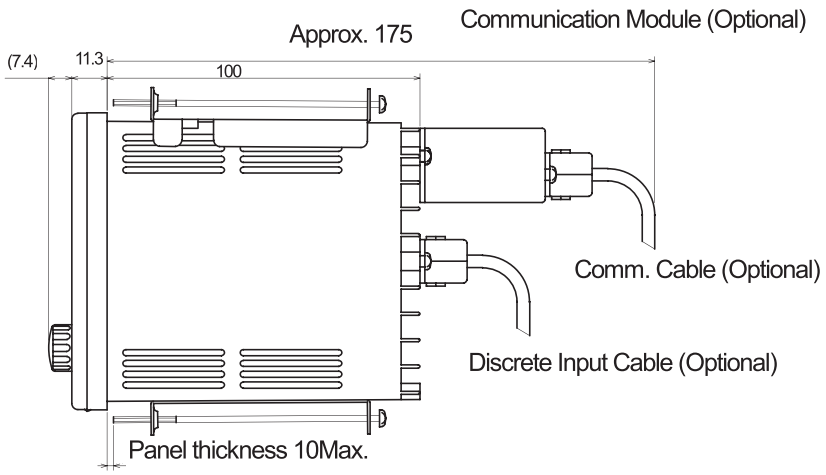
TERMINAL CONFIGURATION



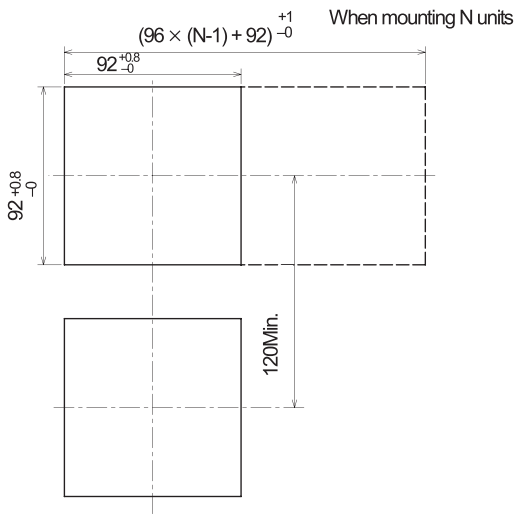
Some terminals do not function according as the model.

DIMENSIONS

(Unit: mm)



PANEL CUTOUT

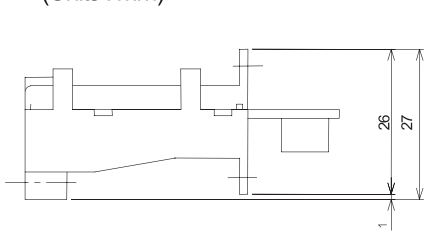


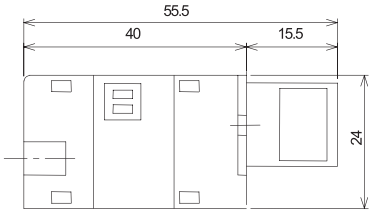
PERIPHERAL UNIT

●Communication module

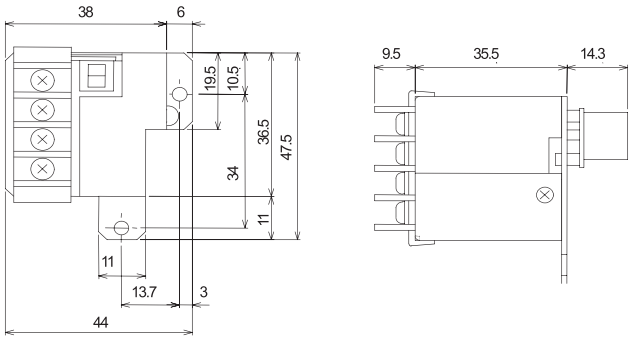
Item	Type	Model	Remarks
1	RS-232C	ZE7101A0110	
2	RS-422A/RS-485	ZE7101B0408	Terminal block type Up to 31 sets can be connected to Host

RS-232C Module
(Units : mm)





RS-422A/RS-485 Module
(Units : mm)



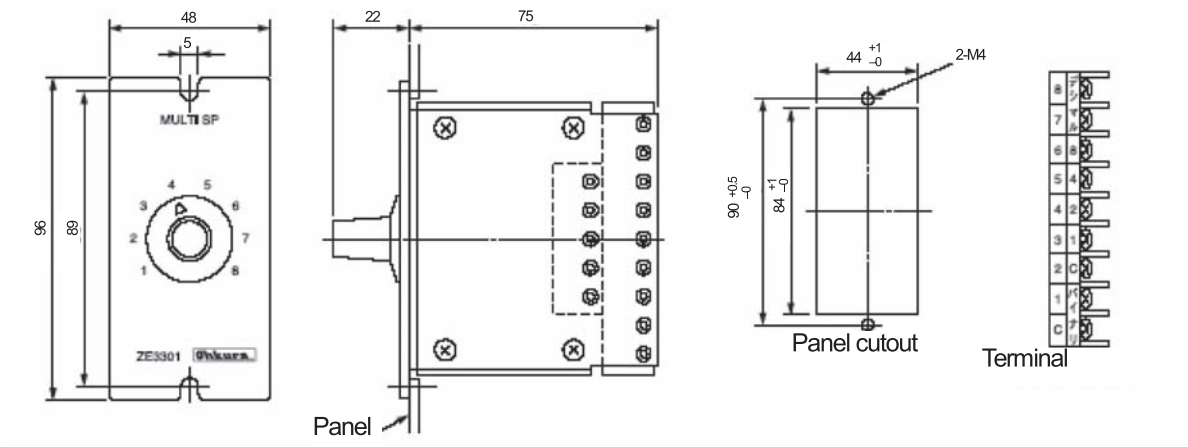
●Communication Cable

RS-232C : Model : HMSU2255B02 Cable for EC5500R use, Length 2m with D-Sub connector (male)
RS-422A : Model : WMSU0075A01
RS-485 : Model : WMSU0075A02

●Heater Monitoring Unit (Use for expanded option ARCNET®)
Model : ZE7201

●Multi-Set point Selector

Model : ZE3301
Output: Binary and decimal code
Binary for EC5500R multi set point input
Decimal for customer instrument
Output contact rating: 30VDC, 1A, 1VA max.
Cable: HMSU2695A01, 1m
HMSU2695A02, 5m



●External Resistor
Model : HMSU3081A02
Resistance : 250Ω ± 0.1%

*ARCNET® is the registered trademark of the U.S. DATA POINT.