

OUTLINE

Model EC5800R 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 standardly. PID, gapped PID, heat/cool control or servo PID are available as control functions. As described above, the EC5800R 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)
- High-speed control cycle of 50ms
- Scaling Range of -19999 to 19999
- Multi- Output (Selective)
- 4 Alarm Output
- RS-232C, RS-422A (RS-485) Communication Interface
- Easy Replace from EC5800A

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: 50ms
Scaling: -19999 to 19999 with mV, V & mA ranges
Set point: Front panel (local) or remote (optional)
Set point bias: $\pm 20\%$ 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: $\pm 100^\circ\text{C}$ with TC & RTD input ranges
Set point ramping: 0.01 ~ 650.0 unit/min. Unit $^\circ\text{C}$ 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: $\pm (0 \sim 0.500)$, 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/600 Ω or 0 ~ 5mA/2k Ω



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 range, deviation alarm, $\pm 100\%$ 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 side contact are common.
Status Output: AUTO/MAN, RUN/STOP, Watchdog timer & Reach at set point (available on set point ramping)
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)

디지털지시조절기

DIGITAL INDICATING CONTROLLER

Interface: 300 ~ 9600 bps, ZE7101A0111 and ZE7101B0409 allow direct connection of RS-232C and RS-422A (RS-485) to the controller respectively

Power Supply: Voltage rating at 100 to 240 VAC, 50/60Hz

Power consumption: Approx. 6VA/100VAC, 10VA/200VAC

Mass: Approx. 500g

Operating temperature range: -10 ~ 55°C

PERFORMANCE

Accuracy: ± (0.1% + 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

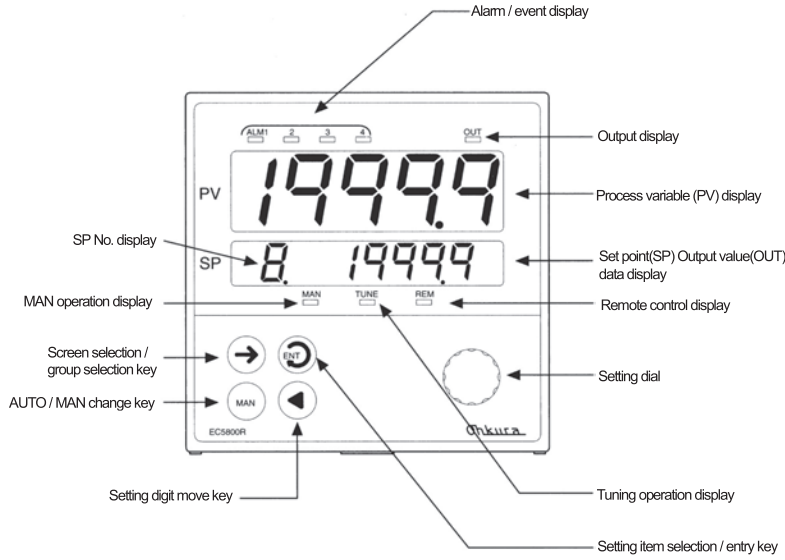
INPUT	CODE	ACCURACY	REMARKS
B	b *1		*1
R	r1 *2		0 ~ 400°C ± 4%
R	r2 *2		400 ~ 800°C ± (0.15% + 1 digit)
S	S *2		
K	k1		*2
K	k2	± (0.1% + 1 digit),	0 ~ 200°C ± (0.15% + 1 digit)
K	k3	± (0.15% + 1 digit),	
E	E	with in -200 to 0°C	*3
J	J1		-270 ~ 200°C ± (1% + 1 digit)
J	J2		
T	t *3		
WRe5-26	C		
N	n		*4
PLII	PL		0 ~ 20K ± (0.5% + 1 digit)
U	U		20 ~ 50K ± (0.3% + 1 digit)
L	L		*5
Au-Fe	AUFE *4	± (0.2% + 1 digit)	0 ~ 300°C ± (1.5% + 1 digit)
PR40-20	Pr *5		300 ~ 800°C ± (0.8% + 1 digit)
Pt100	Pt0 JPt0	± (0.1% + 1 digit)	
JPt100	Pt1 JPt1		
	Pt2 JPt2	± (0.15% + 1 digit)	

Reference-junction compensation error:

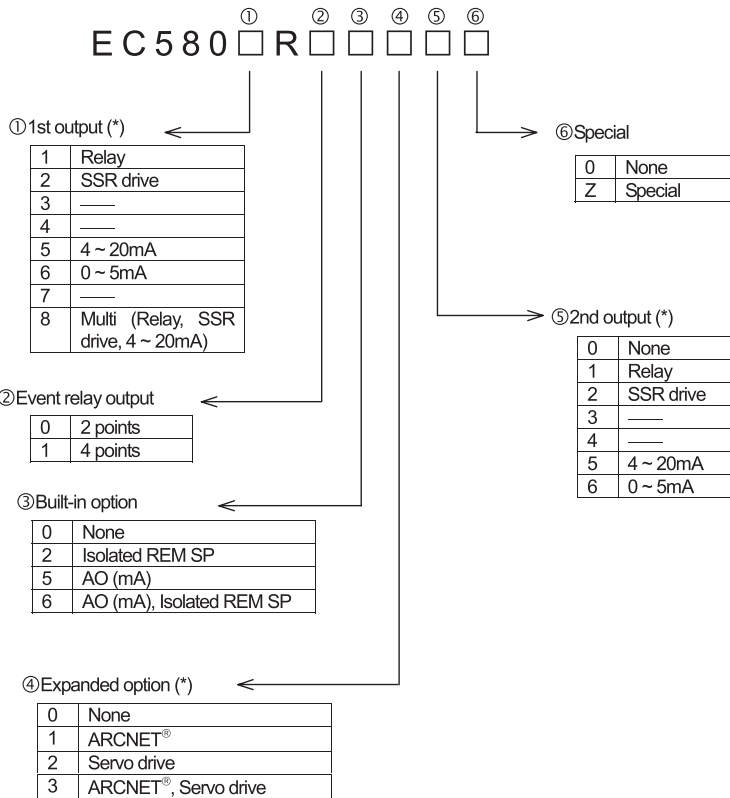
RANGE TABLE

INPUT	CODE	RANGE
B	b	0.0 ~ 1820.0°C
R	r1	0.0 ~ 1760.0°C
R	r2	0.0 ~ 1200.0°C
S	S	0.0 ~ 1760.0°C
K	k1	-200.0 ~ 1370.0°C
K	k2	0.0 ~ 600.0°C
K	k3	-200.0 ~ 700.0°C
E	E	-200.0 ~ 900.0°C
J	J1	-200.0 ~ 400.0°C
J	J2	-270.0 ~ 400.0°C
T	t	0.0 ~ 2320°C
W Re5-26	C	0.0 ~ 1300.0°C
N	n	0.0 ~ 1880.0°C
PR40-20	Pr	0.0 ~ 1390.0°C
PLII	PL	-200.0 ~ 400.0°C
U	U	0.0 ~ 300.0K
L	L	0.0 ~ ± 10.0mV
Au-Fe	AUFE	0.0 ~ 20.0mV
mV	10	0.0 ~ 50.0mV
mV	20	1.0 ~ 5.0V
mV	50	0.0 ~ 5.0V
V	1-5	0.0 ~ 10.0V
V	0-5	4.0 ~ 20.0mA
V	0-10	
mA	mA	
Pt100	Pt0	-200.0 ~ 850.0°C
Pt100	Pt1	-200.0 ~ 300.0°C
Pt100	Pt2	-150.00 ~ 150.00°C
JPt100	JPt0	-200.0 ~ 650.0°C
JPt100	JPt1	-200.0 ~ 300.0°C
JPt100	JPt2	-150.00 ~ 150.00°C

PART NAMES & FUNCTIONS



MODEL CODE NUMBER



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

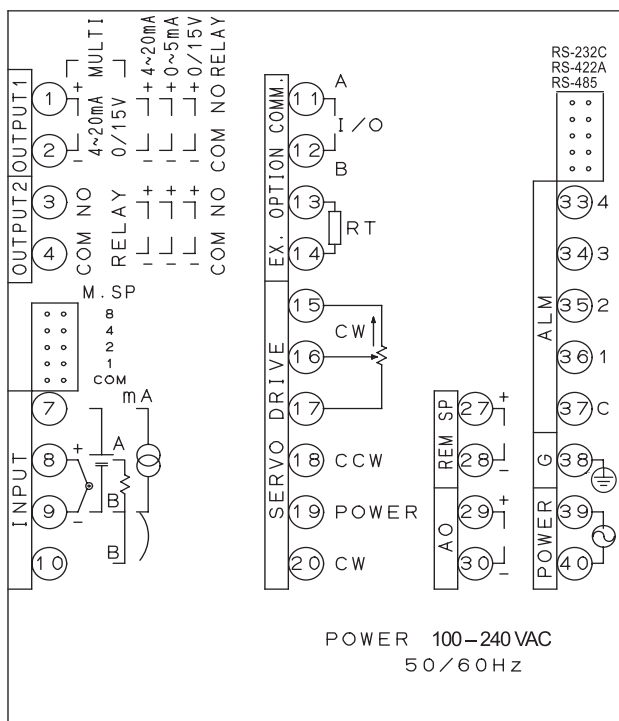
Output type	1st output	2nd output
Single output multi	8	0
Single output 0 ~ 5mA	6	0
Dual output	One of 1, 2, 5 and 6	One of 1, 2, 5 and 6
Servo drive	8	0

DEFAULT SETTINGS

Default setting at the shipment from the factory.

	Function	Initial value
Display / Input	Input range, scale	k1, -200.0 ~ 1370.0°C
	PV abnormal high limit value	1401.4°C
	PV abnormal low limit value	-231.4°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 : 1570.0°C
	Alarm2	Deviation Low limit alarm : -1570.0°C
	Alarm3 (only display at standard)	Deviation absolute value alarm : 1570.0°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

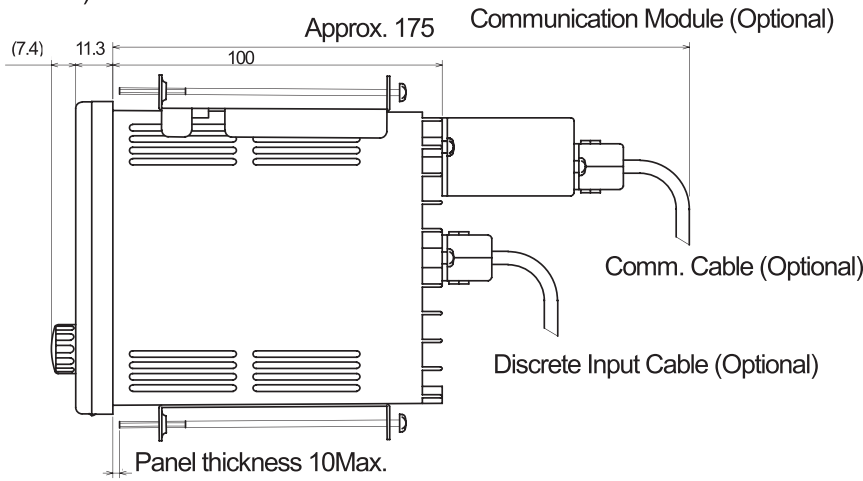
TERMINAL CONFIGURATION



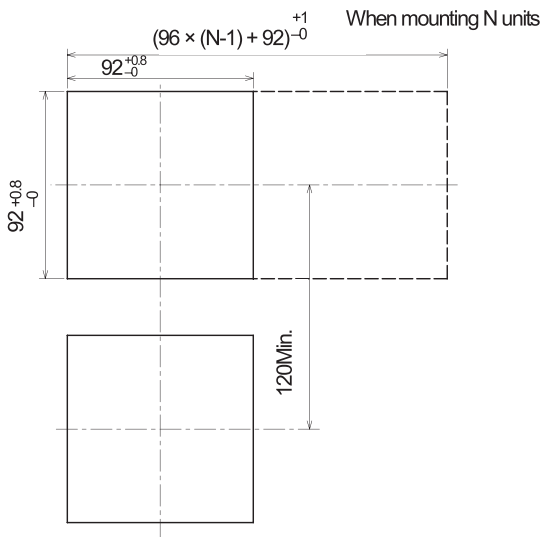
Some terminals do not function according as the model.

DIMENSIONS

(Unit: mm)



PANEL CUTOUT

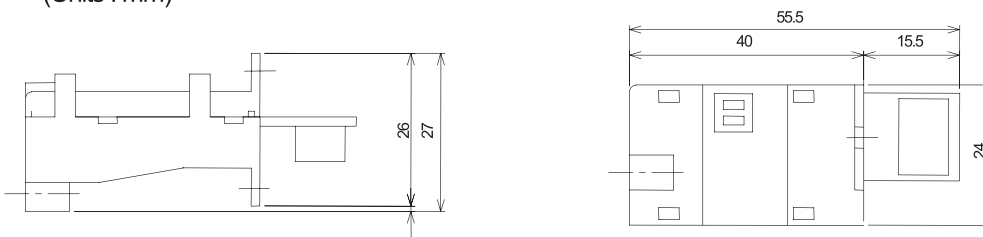


PERIPHERAL UNIT

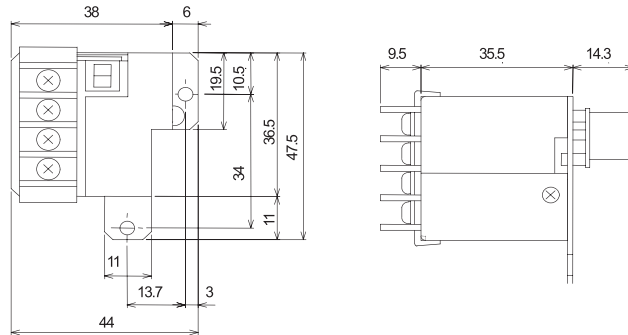
●Communication module

Item	Type	Model	Remarks
1	RS-232C	ZE7101A0111	
2	RS-422A/RS-485	ZE7101B0409	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 EC5800R 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

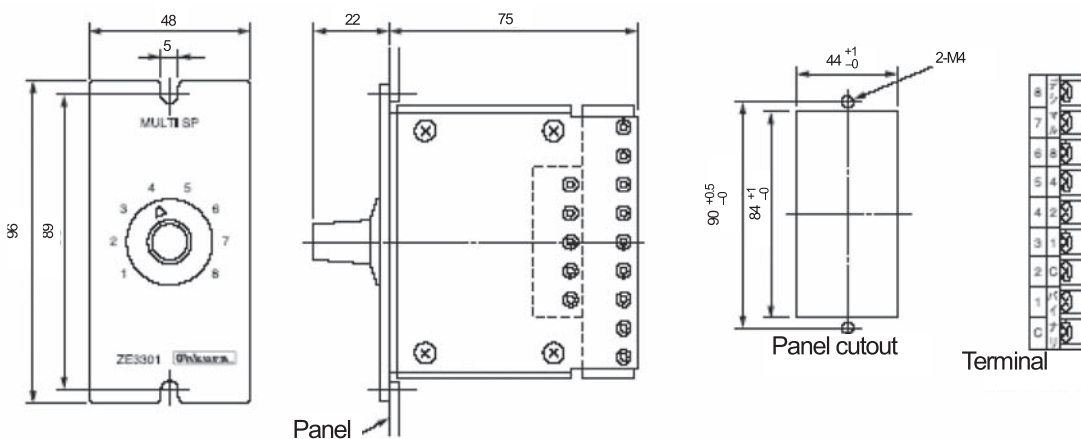
●Multi-Set point Selector

Model : ZE3301

Output: Binary and decimal code
 Binary for EC5800R 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.