

The model EC5500S, 5300S is a 16-bit micro-processor based single loop digital controller with flexible functions.

### FEATURES

- MULTIPLE OUTPUT
- AUTO-TUNING STANDARD
- 0.1sec. CONTROL EVALUATION CYCLE
- SCALING RANGE OF - 1999 TO 9999
- EXTENDED MULTI-RANGE
- 4 ALARM OUTPUTS
- RS232C OR 422A OPTIONAL INTERFACE
- OPTIONAL SELF-TUNING CONTROL MODULE

### SPECIFICATIONS

**Input range** : Subject to models, refer to range table  
**Display** : 7 segment LED, Process variable/green, setpoint & output/range  
**Display update** : 100msec.  
**Scaling** : -1999 to 9999 with mV, V & mA ranges  
**Setpoint** : Front panel(local) or remote(option)  
**Setpoint bias** :  $\pm 20\%$  available with remote setpoint  
**Setpoint tracking** : Remote to local  
**Setpoint limiter** : 0-100% with TC & RTD Input ranges  
**Multisetpoint** : Up to 8 setpoints  
**Sensor correction** :  $\pm 30^\circ\text{C}$  with TC & RTD input ranges  
**Setpoint transfer ramping** : 0.01 to 450.00 unit/min.  
**Unit** :  $^\circ\text{C}$  or %  
**Control** : PID, PD, 3-position(dual output) or ON/OFF  
**Proportional band** : 0.1-999.9%  
**Integral(reset)** : 0.01-99.99min.  
**Derivative(rate)** : 0-20.00min.  
**Manual reset** : 0-100.0%. PD control mode only  
**Dead band(differential gap)** :  $\pm (0-0.500)$ , 2 output model  
**Hysteresis** : 0.00-20.00%(ON/OFF control mode)  
**PID adjustment** : independent on each setpoint  
**Programmed PID** : 8 PID parameters programmed with optional remote setpoint  
**Autotuning** : Standard  
**Output** : Selectable output from among  
**Relay** : From-C, 250Vac, 3A resistive  
**SSR Drive** : 15Vdc, 20mA max.  
**Current** : 4-20mA/600 $\Omega$  or 0-5mA/2k $\Omega$



**Servo drive output** : Option

**Dual output** : Any combinations from among relay, SSR drive and current output

**Auto/Manual** : Balanceless bumpless transfer

**Output limiter** : 0.001% No.1 output only

**Direct/Reverse** : Selectable, reverse in 2 output model

**Cycle time** : 1-120 sec., relay and SSR drive output

**Control evaluation cycle** : 100msec.

**RUN/STOP** : Controller enabled/disabled

**Preset manual** : 0.0-100.0%, available with controller disabled

**Alarm** : 4 setpoint process or deviation alarm

**Alarm setpoint** : Process alarm. 0-100% of range, deviation alarm,  $\pm 100\%$  of range

**Hysteresis** : 0-100% adjustable within the range

**Alarm on delay timer** : 0-600sec.

**Nos of output relays** : 4relays, available link between each alarm and controller status

**Relay rating** : From-A, 250VAC 0.5A, resistive, common contact connection

**Status output** : AUTO/MAN, RUN/STOP, Watchdog timer & Reach at setpoint(available on setpoint ramping)

**Discrete inputs** : 4 inputs for setpoint selection, PID parameter selection, AUTO/MANUAL switching, Remote/Local switching, or RUN/STOP switching, optocoupler driven 15VDC 1mA

**Memory backup** : Non-volatile RAM



Interface : TTL 300-9600bps, ZE7101A01 and ZE7101A02 allow direct connection of RS-232C and RS-422A to the controller respectively

Power input : 85-264Vac, 45-65Hz

Power consumption : Approx. 5VA/100VAC, 8VA/200VAC

Net weight : Approx. 500g

Operation temperature range : -10 to 55°C

**PERFORMANCE**

Accuracy : ±(0.25%+1LSB) max.

Reference junction :

±1°C/B, R, S, AuFe & PR40-20, ±0.5°C/K, E, J, T, N, WRe5-26, PLII, U & L

Reference Junction compensation :

±1°C with B, R, S, Au-Fe & PR40-20, ±0.5°C with K, E, J, T, N, WRe5-26, PLII, U & L

Source Impedance effects :

Approx. 0.13µV/Ω at TC & m/ranges, RTD lead wire 5Ω max.

CMRR : 140dB min.

NMRR : 60dB min.

**OPTIONS**

Analog retransmission :

0-20mA or 4-20mA selectable for process variable, setpoint or output, accuracy ±0.2% resolution 0.05% max., load 400Ω max.

Isolated remote setpoint :

1-5Vdc, 500kΩ Input impedance

Self-tuning : Continuous loop tuning

RS485 interface : 1 Mbps

**RANGE TABLE AND ACCURACY**

INPUT	CODE	ACCURACY	REMARKS
B	<i>b</i> *1		*1
R	<i>r1</i> *2		0-400°C ±5%
A	<i>r2</i> *2		400 · 800°C ±(0.35% + 1digit)
S	<i>s</i> *2		*2
K	<i>ϰ1</i> *2		0 · 200°C ±(0.35% + 1digit)
K	<i>ϰ2</i>	±(0.25% + 1digit),	*3
K	<i>ϰ3</i>	±( 0.3% + 1digit),	*4
E	<i>E1</i>	within-200-0°C	
E	<i>E2</i>		*4
E	<i>E3</i> *3		-270 · -200°C ±(1.5% + 1digit)
E	<i>J1</i> *3		*5
J	<i>J2</i>		0 · 20K°C ±(0.8% + 1digit)
J	<i>J3</i>		20 · 50K°C ±(0.86% + 1digit)
J	<i>ϰ1</i> *4		*6
T	<i>t2</i>		0 · 300°C ±(2% + 1digit)
T	<i>t2</i>		300-800°C ±(0.9% + 1digit)
WRe5-26	<i>C</i>		
N	<i>n</i>		
PL1	<i>P1</i>		
PL1	<i>P2</i>		
U	<i>U</i>		
L	<i>L</i>		
AuFe	<i>R</i> *5	±( 0.5% + 1digit)	
PR40-20	<i>Pr</i> *6		
Pt100 JPt100	<i>P 10 JP 10</i>	±(0.25% + 1digit)	
	<i>P 11 JP 11</i>		
	<i>P 12 JP 12</i>		
	<i>P 13 JP 13</i>		
	<i>P 14 JP 14</i>	±(0.35% + 1digit)	

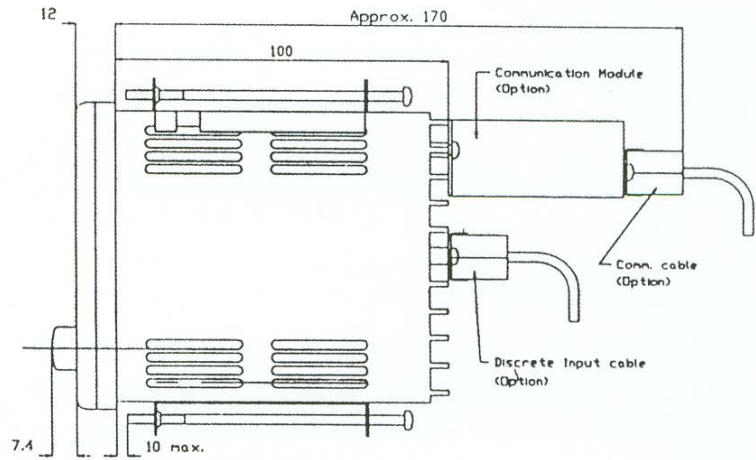
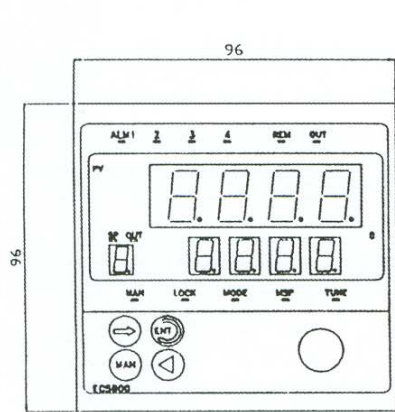
**RANGE TABLE AND ACCURACY**

GROUP	INPUT	CODE	RANGE
I	B	<i>b</i>	0 · 1820°C
	R	<i>r1</i>	0 · 1760°C
	R	<i>r2</i>	0 · 1200°C
	S	<i>s</i>	0 · 1760°C
	K	<i>ϰ1</i>	-200 · 1370°C
	K	<i>ϰ2</i>	0 · 600°C
	K	<i>ϰ3</i>	-200 · 300°C
	E	<i>E1</i>	0 · 700°C
	E	<i>E2</i>	-270 · 300°C
	E	<i>E3</i>	-270 · 150°C
	J	<i>J1</i>	-200 · 900°C
	J	<i>J2</i>	-200 · 400°C
	J	<i>J3</i>	-200 · 400°C
	T	<i>t1</i>	-100 · 200°C
	T	<i>t2</i>	-270 · 400°C
	T	<i>t2</i>	-200 · 200°C
	WRe5-26	<i>n</i>	0 · 2320°C
	N	<i>Pr</i>	0 · 1880°C
	PR40-20	<i>P1</i>	0 · 1390°C
	PL11	<i>P2</i>	0 · 600°C
	PL11	<i>10</i>	0.0 · ±10.0mV
	mV	<i>20</i>	0.0 · 20.0mV
	mV	<i>50</i>	0.0 · 50.0mV
	mV	<i>1-5</i>	1.0 · 5.0V
	V	<i>0-5</i>	0.0 · 5.0V
V	<i>nR</i>	4.0 · 20.0mA	
II	Pt100	<i>Pt 10</i>	-200 · 650°C
	Pt100	<i>Pt 1</i>	-200 · 400°C
	Pt100	<i>Pt 2</i>	-200 · 300.0°C
	Pt100	<i>Pt 3</i>	-200 · 200.0°C
	Pt100	<i>Pt 4</i>	-100.0 · 100.0°C
	JPt100	<i>JPt 1</i>	-200 · 630°C
	JPt100	<i>JPt 2</i>	-200 · 400°C
	JPt100	<i>JPt 3</i>	-200 · 300.0°C
	JPt100	<i>JPt 3</i>	-200 · 200.0°C
	JPt100	<i>JPt 4</i>	-100.0 · 100.0°C
III	K	<i>ϰ1</i>	-200 · 1370°C
	K	<i>ϰ2</i>	0 · 600°C
	K	<i>ϰ3</i>	-200 · 300°C
	E	<i>E1</i>	0 · 700°C
	E	<i>E2</i>	-270 · 300°C
	E	<i>E3</i>	-270 · 150°C
	J	<i>J1</i>	-200 · 900°C
	J	<i>J2</i>	-200 · 400°C
	J	<i>J3</i>	-100 · 200°C
	T	<i>t1</i>	-270 · 400°C
	T	<i>t2</i>	-200 · 200°C
	Au-Fe	<i>R</i>	0 · 300°C K
	N	<i>n</i>	0 · 1300°C
	U	<i>U</i>	-200 · 400°C
	L	<i>L</i>	-200 · 900°C
	mV(*1)	<i>10</i>	0.0 · ±10.0mV
	mV(*1)	<i>20</i>	0.0 · 20.0mV
	mV(*1)	<i>50</i>	0.0 · 50.0mV
V(*1)	<i>1-5</i>	1.0 · 5.0V	
V(*1)	<i>0-5</i>	0.0 · 5.0V	
mA(*1)	<i>nR</i>	4.0 · ±20.0mV	

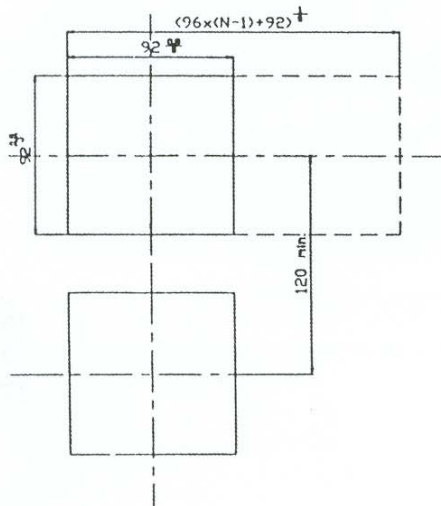
Note : Marked by (\*1)above allows square root scaling.



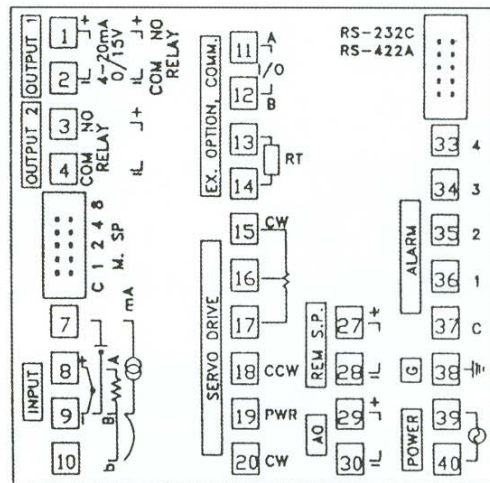
**DIMENSIONS (Unit:mm)**



**PANEL CUTOUT**

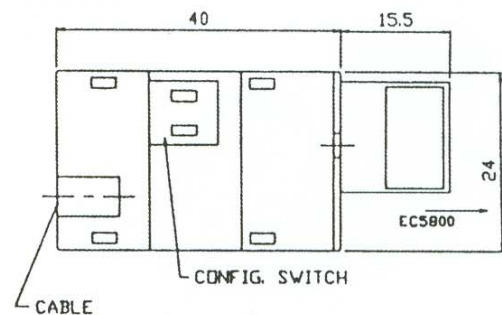
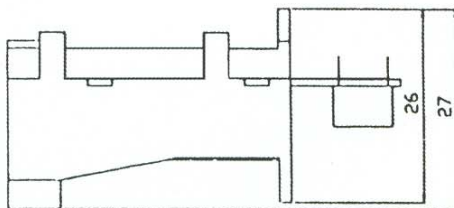


**TERMINAL ARRANGEMENT**



**COMMUNICATION MODULE**

- ZE7101A01 : RS232C Communication module, Cable HMSU2255B02, Length-2m with D-Sub connector
- ZE7101A02 : RS422A Communication module, Cable HMSU2691B01, Length-Variable to be specified



**MODEL CODE NUMBER**

MODEL	DESCRIPTION	
EC551	Direct thermocouple or millivolt input, Range group 1	
EC552	RTD Pt100Ω input, 3-wire, source impedance 5Ω max. at RTD lead wire, Range group II	
EC553	Direct thermocouple or millivolt input, Range group III(Process)	
CODE	NO.1 OUTPUT	
1S	Relay output, form C 250VAC, 3A resistive	
2S	SSR drive output, 15VDC, 20mA max.	
5S	4-20mA output, 600Ω max.	
6S	0-5mA output, 2kΩ max.	
8S	Selective output of Relay, SSR drive and 4-20mA, Unavailable dual output	
CODE	PANEL COLOR	
1	Black	
2		
CODE	BUILT-IN OPTION	
0	None	
1	Self tuning	
5	Retransmission plus Self tuning	
6	Retransmission, isolated Remote input plus Self tuning	
CODE	Mt2	EXTENDED OPTION(consult factory)
0		None
1		Extension IF LAN2.5 Mbps
2		Servo drive
3		Extension IF Servo drive
CODE	No.2 OUTPUT	
00	Single output model	
10	Relay	
20	SSR drive	
50	4-20mA	
60	0-5mA	

**MULTI-SETPOINT SELECTOR**

Part number : ZE3301

Output : Binary and decimal code Binary for EC5500S  
multisetpoint input Decimal for customer  
instrument

Output contact rating : 30VDC, 1A, 1VA max.

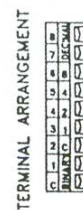
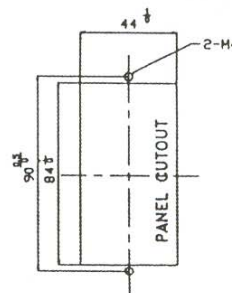
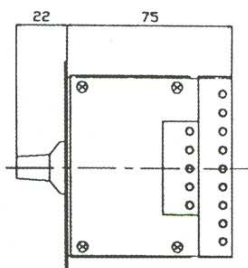
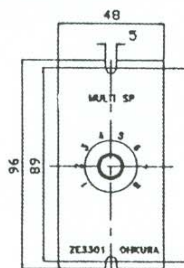
Contact resistance : 100μΩ max.

Torque : Approx. 0.6kg-cm

Left time : 200,000 steps at full load 500,000 steps  
at no load

Operation temperature : -0 to 55°C

Cable : HMSU2695A01, 1m, HMSU2695A02, 5m



Specifications subject to without notice.

**NEWINS**

공업용계측기 제조



지시계, 기록계, 콘버터, 조절계, 압력계, 온도계, 열전대, 발브

株式会社 뉴인스

서울사무소 : 서울특별시 강서구 염창동 274-8(코인빌딩 801)  
TEL : (02)2668-2233 FAX : (02)2668-5100

본사·공장 : 경기도 부천시 원미구 약대동 192 부천테크노파크 201동 305호  
TEL : (032)-234-0770 FAX : (032)234-0772

http://www.newins.co.kr E-mail:sales@newins.co.kr

대리점:

