Aims “Low Cost” Series Intelligence Controllers

Operation Instruction

1 Main technical specification

1 Basic error：≤ ± 0.5% Full Scale ±1 Digit.
2 Cold junction compensating deviation： ≤ ± 2.0℃
3 Sampling period：0.5s
4 Control cycle 2～120S
5 Alarm output the drop in level：0.5 or 5 Depending if Digital Point is used.
6 Relay output contact capacity: AC220V/5A (resistance load) or AC250V/0.3A (inductive load)
7 Pulse output: ≥3V, ≥50μs pulse width for zero crossing or trigger contact pulse
8 Solid state relay signal output: current ≥ 15mA, voltage ≥ 9V.
9 Continuous PID 0～10mA (load 500 ± 200Ω)
4～20mA (load 250 ± 100Ω)
0～5V (load ≥ 100kΩ)
1～5V (load ≥ 100kΩ)

10 Power: 85V～250V AC 50/60Hz

11 Working environment, 0～50.0 Deg. C, Relative Humidity ≤ 85% RH

2 Product code

LC - □ □ □ □ □
(1) (2) (3) (4) (5)

(1) Controller Dimensions

	Overall size	Installation cutout
A:	96mm x 96mm x 110mm	92mm x 92mm
D:	72mm x 72mm x 110mm	68mm x 68mm
E:	48mm x 96mm x 110mm	44mm x 92mm
F:	96mm x 48mm x 110mm	92mm x 44mm
G:	48mm x 48mm x 110mm	44mm x 44mm
S:	80mm x 160mm x 120mm	76mm x 156mm

(2) Alarm Code

0 no alarms
1 or 2 alarms (Optional alarm mode, please refer to the parameter "ALP")
3 two alarms (Optional alarm mode, please refer to the parameter "ALP")
5 Audible Alarm

(3) Input signal

Input signal, selectable (Please see Section 15 in Code Settings "**Sn**" and select required input reference number.)

(4) Output (A)

Output signal, selectable (Please see Section 16 in Code Settings "**OP-A**" and select required output reference number.)

(5) Output (B)

Output signal, selectable (Please see Section 17 in Code Settings "**OP-B**" and select required output reference number.)

Parameter Code Details

Section	Code	Name	Remarks	Setting range	Ex-Factory
0	**SP**	Appointed data	Lower display on front panel. Please refer to **"5.2、The SP setting"**	Determined by P-SL P-SH	50
1	**AL-1**	Alarm 1	Please refer to **ALP** Corresponds to "ALM1" indicator light	Determined by P-SL, P-SH when the upper and lower limit alarm, other alarm range is 0～50.0	200
2	**AL-2**	Alarm 2	Please refer to **ALP** Corresponds to "ALM2" indicator light		100
3	**Pb**	Zero offset	Used for sensor error trim	±20.0	0.0
4	**P**	Proportional band	When P=0, output is ON/OFF control	1～9999	100
5	**I**	Integral time		0～3000S	500
6	**d**	Derivative time		0～2000S	100S
7	**t**	Cycle time		2～120	20S
8	**FILT**	Filter	Input sampling update time (damping)	0～99	20
9	**Hy**	Hysteresis	Dead band in ON/OFF control mode	0.1～50.0	0.5 or 1.0
10	**dp**	Decimal position	For thermocouple and thermal resistance input, decimal point selection is 0～1; For current and voltage input, decimal point selection 0～3	0～3	0 or 1 or According to request
11	**outH**	Output high limit	Set low and high output limit. Not in manual or ON/OFF control	outL～200	According to request
12	**outL**	Output low limit		0～outH	According to request
13	**AT**	Auto tuning	0: Off 1: On	0～1	0
14	**LocK**	Electronics lock	0-all the parameters accessible 1-only the SP can be accessed	0～50	0

15	**Sn**	Input specification	Reference Number Input Type 1 Cu50(Cu50)–50.0～150.0 2 Pt100(Pt 1) –199.9～200.0 3 Pt100 (Pt2)–199.9～600.0 4 K(K) -30.0～1300 5 E(E) -30.0～700.0 6 J (J)-30.0～900.0 7 T(t) -199.9～400.0 8 S(S) -30～1600 9 R(r) -30.0～1700.0 10 WR25(r25) -30.0～2300 11 N(n) -30.0～1200.0 12 F2(F2) 13 0～50mV(0_50) 14 10～50mV(A_50) 15 0～5V(0_5u) 16 1～5V(1_5u)	1～16	
16	**OP-A**	Main control output type	Reference Number Output Type 0 no output 1 relay output 2 solid relay output 3 phase over zero trigger adjustment 4 phase trigger adjustment 5 0～10mA 6 4～20mA 7 valve control	0～7	
17	**OP-B**	Auxiliary control output type	Reference Number Output Type 0 no output 1 RS232 or RS485 2 contact the micro-printer 3 0～10mA 4 4～20mA	0～4	
18	**ALP**	Alarm output definition	Alarm Output Definition 0 No Alarm 1 Upper Limit Alarm 2 Lower Limit Alarm 3 AL-1 Upper Alarm, AL-2 Lower Alarm 4 High deviation alarm (Al-1 Only) 5 Low deviation alarm (Al-1 Only) 6 Al-1 Hi, Al-2 Lo, Deviation 7 Al-1 Hi – Lo Deviation 8 Al-1 Hi – Lo Deviation (Inverted) 9 AL-1 high, AL-2 High alarm 10 AL-1 Low, AL-2 Low alarm	0～10	
19	**COOL**	Output Control Action	'0':Reverse control(heat) '1':Direct control(cooling)	0～1	0

20	**P-SH**	Display the high limit	Setting the upper and lower value of the process variable measuring range.	P-SL～9999	According to request
21	**P-SL**	Display the low limit		-1999～P-SH	According to request
22	**Addr**	Communication address		0～63	0
23	**baud**	Communication baud rate	1200； 2400；4800； 9600		9600

Setting Instructions

6.1 Parameter settings

Press the SET key for approx. 3 seconds to enter into the first setting area.

The controller will display the parameter code 1～23 in the upper display and the parameter data in the lower display.

Press the ▲, ▼ or ◀ key to adjust the parameter, then press the SET key to save.

If no key is pressed within 10 seconds then the controller will automatically save the data and revert back to normal mode.

The Lock is a software lock.

Lock = 0 then all the parameters can be accessed.

Lock = 1 then only the Set Point can be accessed.

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6.2 Set-point setting

Press the ▲ key for approx. 3 seconds.

6.3 Manual mode

Press the ◀ key for approx. 3 seconds to enter manual mode, **"H"** appears in lower display, at this point the output can be adjusted; press the ◀ for approx. 3 seconds again to return to auto operation.

6.4 Display Details

In normal operation the upper display shows process variable and the lower display shows set point, press the▼ key to display the output in the lower display, the first digit is (F) and the last 3 digits are the percentage output.

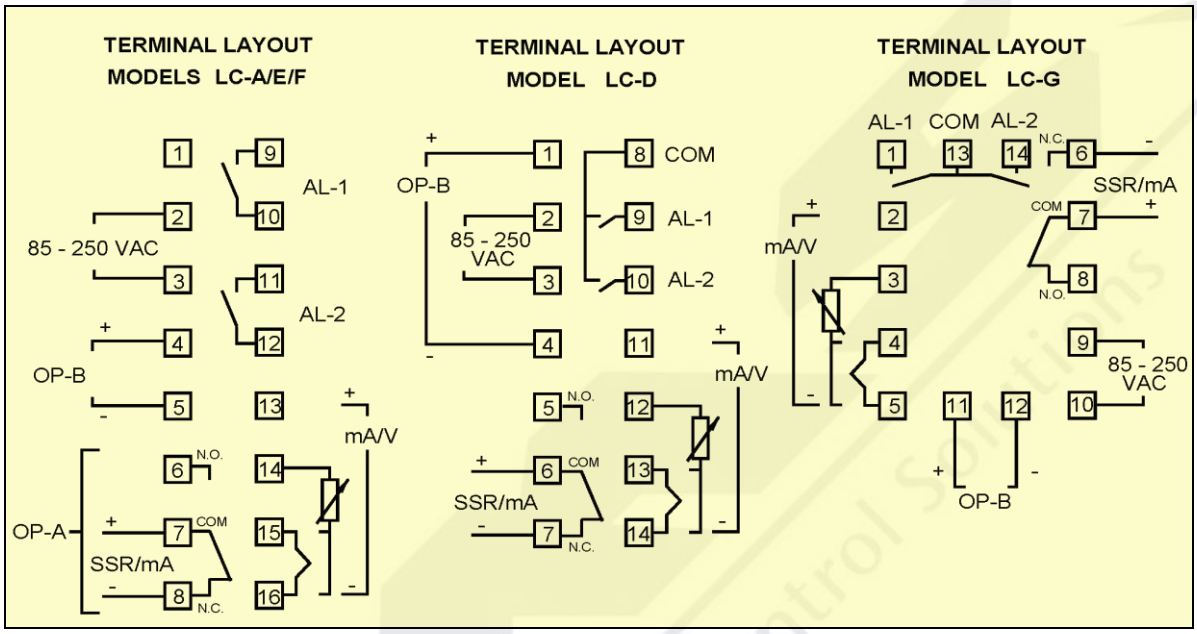
6.5 Auto tuning

Set AT=1, in Parameter Settings.

A-M light flashes, the instrument is in auto tune mode. When the A-M light goes off, auto tuning is complete.

LC- A/D/E/F/G Processor Controller Models

Rear Terminal Connections



The connections should be referenced to the connection diagram on the controller.

Please note for mv input and polarity use thermocouple terminals.