Digital Indicating Controller
LT23A SERIES

PERFORMANCE SPECIFICATION CHINO

Easy to use small size controller at reasonable price
CE RoHS compliance

LT 23A series is a 48×48mm digital indicating controller with indicating accuracy of ±0.5% and the control cycle of approximately 0.5 seconds.
There are two type of mounting methods, terminal block type and socket type.
3 types of auto tuning functions and overshoot suppression functions are provided and highly safe control is achieved.
Combination of internal computing function and enriched input and output option support various usage scenarios.
Special loader software provides ease of setting operations and data acquisition.

■FEATURES

●Compact design
Short depth of instrument (case 60mm) saves the space of instrument and control board.

●Enriched input types
Thermocouple group, resistance thermometer group, DC voltage / DC group can be selected. Input types can be changed within each group.

●Outstanding controllability
Control system can be selected from two-position control, PID control and self-tuning.
It has overshoot suppression function and high functionality PID.

●3 type of auto tuning
Can be selected from normal, rapid-response, safe tuning on the control target.

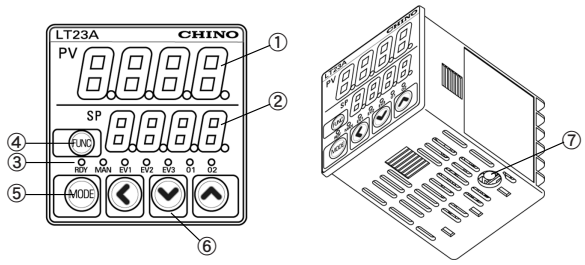
●Various input / output signal (optional) are available
Current transformer input 2 points, event output 3 points (Max), remote signal input 2 points, communication interface (RS485).

●Terminal block type and socket type are available

●Conformance to international safety standards
Conformance to CE marking, RoHS

●Loader software is available
Various parameter settings and data acquisition can be done easily using loader software (sold separately) .

■PARTS NAMES OF FUNCTIONS



①Upper display :	Displays PV values (preset temperature,etc) or settings items.
②Lower display :	Displays SP values (set temperature,etc) and other parameter values.
③Status display lamp	RDY : Lights when READY (Control stop) MAN : Lights when MANUAL (manual mode) EV1 to EV3 : Lights when event outputs are ON. O1 to O2 : Lights when the control output is ON.
④[FUNC] key :	The operations which has been set beforehand can be done by pushing the key for 1s or more. The function is disabled at factory default.
⑤[MODE] key :	Switches the display.
⑥<,∨,∧ Key :	Used for incrementing numeric values and performing arithmetic shift operation.
⑦Recorder connector :	Connects to a personal computer by using USB loader cable.

■MODELS

LT23A□□□□□□□□□

	Measuring input	Control output		I/O option	Terminal type	Power	Extra	Specifications	
LT23A								48mmX48mm front size	
	1							Thermocouple input	
	2							RTD input	
	8							DC voltage/current input	
								Control output 1	Control output 2
	*2	1	0					ON-OFF pulse	—
		5	0					SSR drive pulse output	—
	*1	5	3					SSR drive pulse output	Current output
	*1	5	5					SSR drive pulse output	SSR drive pulse output
		3	0					Current output	—
	*1	3	3					Current output	Current output
				00				—	
				01				Event output 3 points	
				*1,*3 02				Event output 3 points, CT input 2 points,External signal input 2 points	
				*1,*3 03				Event output 3 points,CT input 2 points, Communication interface RS485	
				*5 04				Event output 2 points (independent contact)	
				*1,*3,*5 05				Event output 2 points (independent contact), CT input 2 points,External signal input 2 points	
				*1,*3,*5 06				Event output 2 points (independent contact), CT input 2points,Communication interface RS485	
					0			Terminal block type	
				*4	S			Socket type	
						A		100-240 V AC	
						D		24V AC/DC	
							00	No additional treatment	
							Y0	Complying with the traceability certification	

*1: Cannot be selected for the socket type *2: Only 1a contact applicable for the socket type
*3: Current transformer is sold separately *4: Socket is sold separately
*5: Cannot be selected for 24V AC/DC power supply
Note) For ON-OFF pulse 2 control outputs, even output (option) will be used as control outputs.
There is 3 points (common) and 2 points (independent contact) so please select depending on the usage.

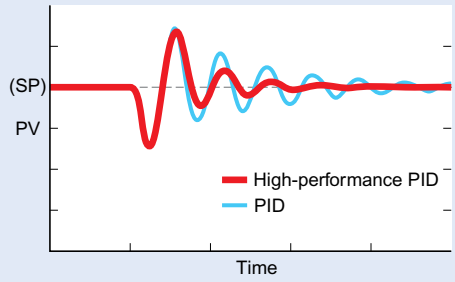
48x48mm compact body

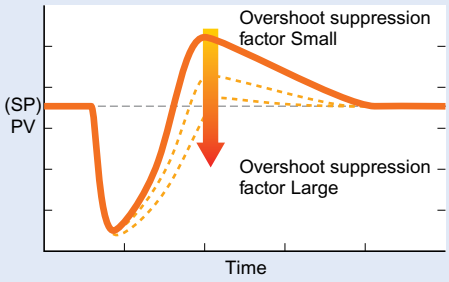
Compact body of 48x48mm and 60mm in depth.
There is not only panel mounting type but also socket type, so it can correspond to multiple types of installations such as panel mounting type and DIN rail mounting type.

IP66 protection structure of dust and water proof

Front of LT23A employs IP66 protection structure of dust-proof and water-proof.

Advanced controllability





Easy-to-read display

On the display, measuring value (PV) is indicated in green and setting value (SP) is indicated in orange LEDs

Frequently used operation can be assigned to the FUNC key

By assigning frequently used operation such as RUN/READY to the FUNC key, only one press of a button enables switching the functions.

Easy-to-read display

Measuring input
*Group selection by the model
Thermocouple 12 types
RTD 2 types
DC Voltage / Current 6 types

Current transformer input (option)
2 points

External signal input (option)
2 points

Loader connector
Support loader software 1 port

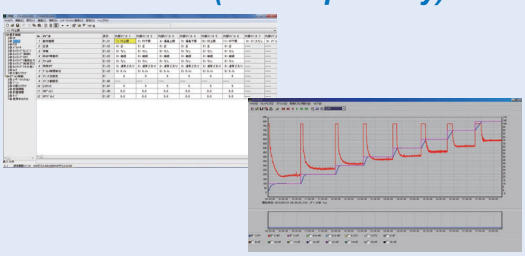
Control output (select at model)
ON-OFF pulse outputs

Event output (option)
3 points
2 points (independent contact)

Communication (option)
RS485 1 port

*Various parameter settings are available from PC by using dedicated loader software. However, it requires exclusive loader cable (sold separately).

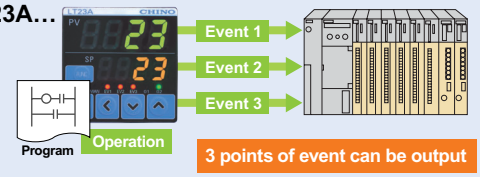
Loader software (sold separately)



Various parameter settings and data acquisition are available by connecting this controller to the PC which the loader software is installed.

Internal event can be output as external contact output by logical operation

On LT23A...



3 points of event can be output

Result of the logical operation which performed on selected five points of various internal events is able to be assigned to the three points of external digital outputs. It can simplify process of event outputs which logical operation was conventionally performed on receiver side.

SPECIFICATIONS

●Input specifications

Input signal: Group selection by the models (Thermocouple, Resistance Thermometer, DC voltage/current)
Range type: Refer to a measuring range table
Input sampling cycle: 500ms
Accuracy rating: ±0.5%FS±1digit

●Control specifications

Output type:
- ON-OFF pulse output type: 1c 250V AC, 30V DC 3A (resistance load)
- Current output type: 0 to 20 A DC, 4 to 20 mA DC (It can be changed by the setting)
- SSR drive pulse output type: 19V DC±15%, Internal resistance 82Ω, Allowable current Max. 24mA DC

●General specifications

Operation temperature: 0 to 50℃
Power supply voltage range:
- AC power supply model 100 to 240 V AC, 50/60Hz
- DC power supply model 24 V AC, 50/60Hz/24V to 48V DC

Power consumption:
- AC power supply model 12 VA or/and lower
- DC power supply model 7 VA or/and lower (24V AC) 5W or/and lower (24V DC)

Safety standards: CE marking compliant product
Structure: IP66 (front part)
Weight: Terminal block type: 150g
Socket type: 200g (including socket)

ACCESSORY

Item	Model
Attachment (for terminal block type)	LTA-P205
Manual	L2A-11-□
Gasket (for terminal block type)	LTA-P206

ACCESSORY (Sold separetely)

Item	Model
Hard cover	LTA-P202
Soft cover	LTA-P203
Terminal cover	LTA-P204
Current transformer	LTA-P207 (5.8mm hole dia.), LTA-P208 (12mm hole dia.)
Attachment (for terminal block type)	LTA-P205
Gasket (for terminal block type) 20 pieces	LTA-P206
Socket	LTA-P201
Plug coversion cable for LT23A	LTA-P209
Shunt resister 250Ω	RZ-EX250

OPTIONAL SOFTWARE

Item	Model
Loader software (cable included)	LTA-S001
Loader software	LTA-S002
Loader cable	LTA-S003

MEASURING RANGE

Input type		C01 Set value	Measuring range	Measuring accuracy	
Thermocouple	K	1	−200 to 1200℃	±0.5%FS±1digit Minus area is ±1.0%FS±1digit Range with decimal point is ±0.5%FS±2digit Minus area is ±1.0%FS±2digit	
		2	0 to 1200℃		
		3	0.0 to 800.0℃		
		4	0.0 to 600.0℃		
		5	0.0 to 400.0℃		
		6	−200.0 to 400.0℃		
	J	9	0.0 to 800.0℃		
		10	0.0 to 600.0℃		
		11	−200.0 to 400.0℃		
	E	13	0.0 to 600.0℃		
	T	14	−200.0 to 400.0℃		
	R	15	0 to 1600℃		
	S	16	0 to 1600℃		
	B	17	0 to 1800℃		Under 260℃:±5%FS,260-800℃:±1%FS
	N	18	0 to 1300℃		
	Platinel Ⅱ	19	0 to 1300℃		
	WRe5-26	20	0 to 1400℃		
		21	0 to 2300℃		
	DIN U	24	−200.0 to 400.0℃		
	DIN L	25	−100.0 to 800.0℃		
RTD	Pt100	41	−200 to 500℃	±0.5%FS±1digit	
	JPt100	42	−200 to 500℃		
	Pt100	43	−200 to 200℃		
	JPt100	44	−200 to 200℃		
	Pt100	45	−100 to 300℃		
	JPt100	46	−100 to 300℃		
	Pt100	51	−50.0 to 200.0℃		
	JPt100	52	−50.0 to 200.0℃		
	Pt100	53	−50.0 to 100.0℃		
	JPt100	54	−50.0 to 100.0℃		
	Pt100	63	0.0 to 200.0℃		
	JPt100	64	0.0 to 200.0℃		
	Pt100	67	0 to 500℃		
	JPt100	68	0 to 500℃		
DC voltage/current	0 to 1V	84	The scaling and decimal point position can be changed variably in a range of -1999 to +9999	±0.5%FS±1digit	
	1 to 5V	86			
	0 to 5V	87			
	0 to 10V	88			
	0 to 20mA	89			
	4 to 20mA	90			

✱Lower limit of indication value of B thermocouple is 20℃

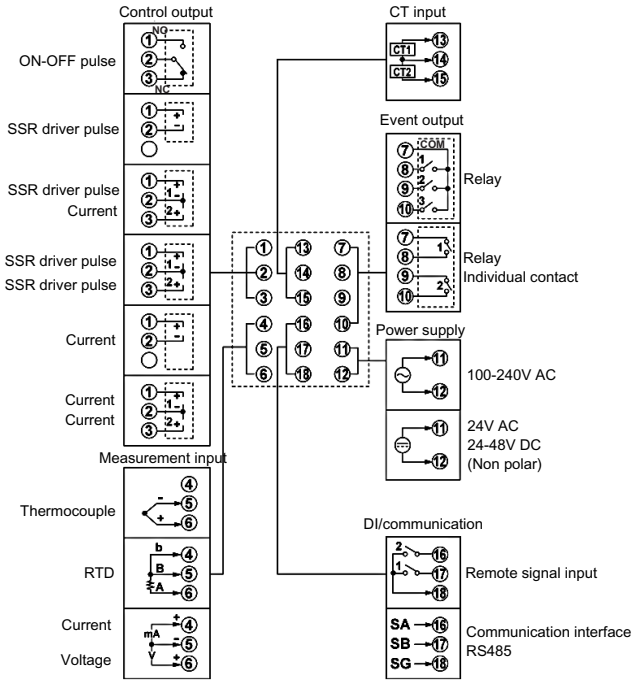
●Applicable standards

・Thermocouple
- K,J,E,T,R,S,B,N : JIS C 1602-1995
- Platinel Ⅱ : Engelhard Industries(ITS90)
- WRe5-26 : ASTEM E988-96(Reapproved 2002)
- DIN U,DIN L : DIN43710-1985

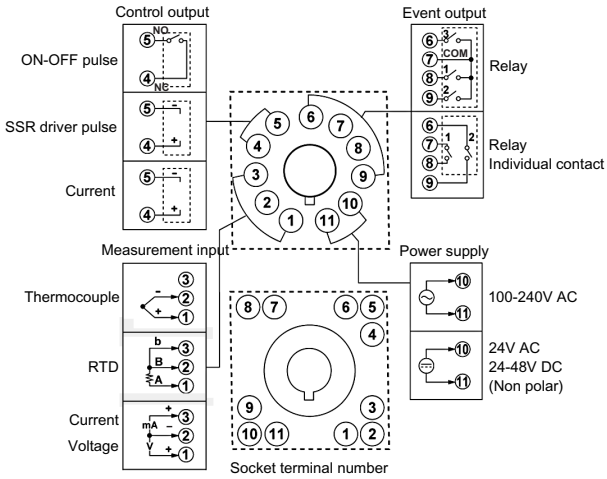
・Resistance thermometer
- Pt100 : JIS C 1604-1997
- JPt100 : JIS C 1604-1989

TERMINAL BOARD

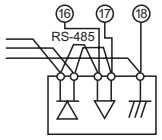
Terminal block type



Socket type



●RS485 communication connection



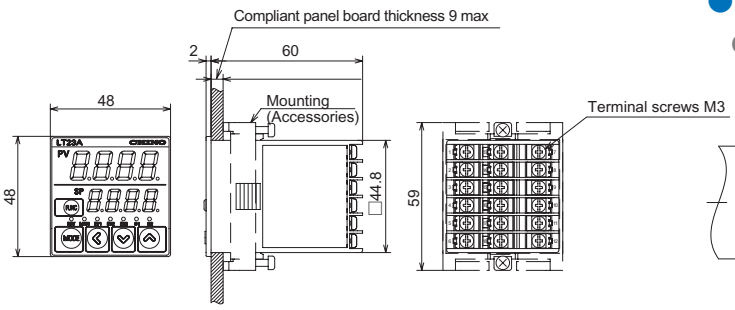
⚠ Cautions for handling

Do not connect the external resistor because this unit has a built in termination resistor.

Example: Method to connect with 5 line type instrument.

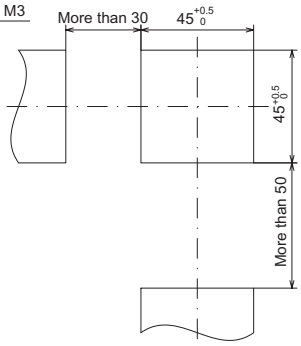
DIMENSIONS

Terminal block type

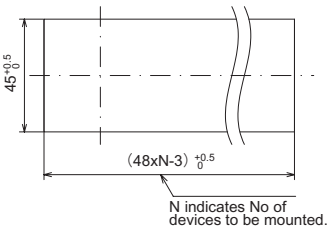


Panel cutout

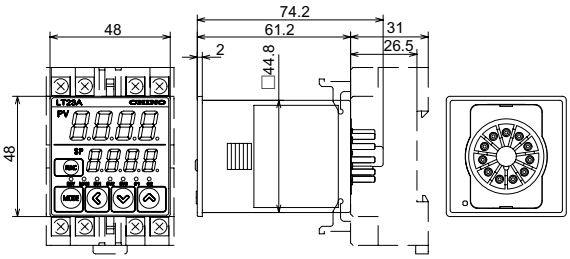
Separate installation



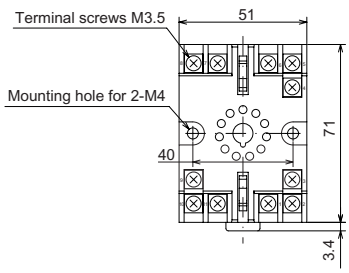
Closed installation



Socket type



Wiring terminal block



Unit : mm

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