

Twice as Nice!

Dual channel & display: 1 Unit



Data logging during control eliminates excess wiring.

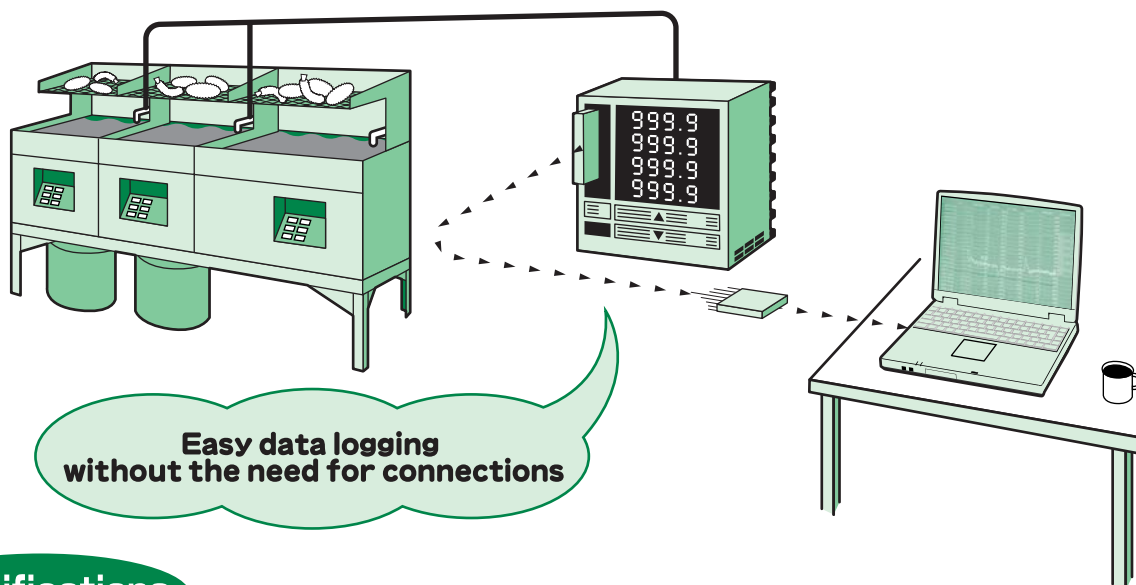
2 different inputs are usable for 2 channels.
CF card included.

Features

- Easy data logging with a CF card
- Multi-input
- 2ch independent controls, 2ch independent displays (Isolated between channels)
- Standard 2-point alarm output equipped
- Data format for use in commercially available spreadsheet applications

Applications

- Sterilizing equipment
- Packaging machines, Filling & packaging machines
- Environment testing, Laboratory equipment
- A wide range of plants where data logging is required
- Data logging for temperature control, monitoring and alarm units



Specifications

Model

LCD-13A-2□/M, □□			
Control output (OUT)	R		Relay contact
	S		Non-contact voltage (for SSR drive)
	A		DC current
Input	M		Multi-input
Option	I P		Dust-proof/Drip-proof (IP 66)
			Water-proof cover
	T C		Terminal cover
	P24		Insulated power output

Designate the specification from the □ columns.

When adding options, punctuate them with a comma.

- For the supply voltage, only 100 to 240V AC is available.
- When reading CF card on a computer, CF card reader is required. (Please use a commercially available card reader.)
- For DC current input, 50 Ω shunt resistor (Model: RES-S01-050, sold separately) must be installed.

Rated range (Multi-input)

Input type		Input range	
Thermocouple	K	−200 to 1370 °C	−320 to 2500 °F
	J	−199.9 to 400.0 °C	−199.9 to 750.0 °F
	R	−200 to 1000 °C	−320 to 1800 °F
	S	0 to 1760 °C	0 to 3200 °F
	B	0 to 1760 °C	0 to 3200 °F
	E	0 to 1820 °C	0 to 3300 °F
	T	−200 to 800 °C	−320 to 1500 °F
	N	−199.9 to 400.0 °C	−199.9 to 750.0 °F
	PL-II	−200 to 1300 °C	−320 to 2300 °F
	C (W/Re5-26)	0 to 1390 °C	0 to 2500 °F
RTD	Pt100	0 to 2315 °C	0 to 4200 °F
	JPt100	−200 to 850 °C	−300 to 1500 °F
		−199.9 to 850.0 °C	−199.9 to 999.9 °F
DC current	4~20mA DC	−200 to 500 °C	−300 to 900 °F
	0~20mA DC		
DC voltage	0 to 1V DC	−1999 to 9999, −199.9 to 999.9	
	0 to 10V DC	−19.99 to 99.99, −1.999 to 9.999	
	1 to 5V DC		
	0 to 5V DC		

- For the DC current and voltage input, scaling and decimal point place change are possible.

- For DC current input, 50 Ω shunt resistor (sold separately) must be installed.

Standard specifications

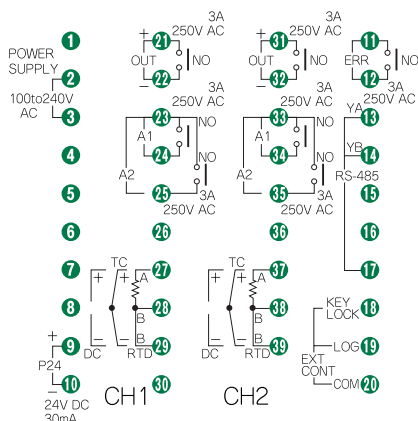
Display	PV: [Red 4-digit, Character size: 10.0 x 5.6mm(H x W)], SV: [Green 4-digit, Character size: 10.0 x 5.6mm(H x W)]
Input	Thermocouple -- K, J, R, S, B, E, T, N, PL-II, C (W/Re5-26) External resistance: 100 Ω or less, However, for B input, 40 Ω or less
	RTD ----- Pt100, JPt100, 3-wire system (Allowable input lead wire resistance : 10 Ω or less per wire)
	DC current ----- 0 to 20mA DC, 4 to 20mA DC Input impedance: 50 Ω [50 Ω shunt resistor (Model: RES-S01-050, sold separately) must be installed between input terminals.]
	DC voltage ----- 0 to 1V DC Input impedance: 1M Ω or more Allowable input current: 50mA or less (When 50 Ω shunt resistor is used) Allowable input voltage: 5V DC or less, Allowable signal source resistance: 2k Ω or less 0 to 5V DC, 1 to 10V DC Input impedance: 100k Ω or more, Allowable input voltage: 15V DC or less, Allowable signal source resistance: 100 Ω or less
Accuracy (Setting · Indication)	Thermocouple ----- Within ±0.3% of each input span ±1 digit, or within ±2°C (4°F), whichever is greater However, R, S input, range 0 to 200°C (0 to 400°F): Within ±6°C (12°F) B input, range 0 to 300°C (0 to 600°F): Accuracy is not guaranteed.
	K, J, E, T, N input, 0°C (32°F) or less: Within ±0.4% of each input span ±1 digit, or within ±4°C (8°F), whichever is greater
	RTD ----- Within ±0.2% of each input span ±1 digit DC current, voltage ----- Within ±0.3% of each input span ±1 digit

Input sampling period	0.25 seconds										
Control output (OUT)	Relay contact ----- 1a, Control capacity: 3A 250V AC (resistive load) 1A 250V AC (inductive load $\cos \phi = 0.4$) Electric life: 100,000 cycles Non-contact voltage --- $12^{+5}_{-5}\%$ V DC Max. 40mA DC (short circuit protected) DC current ----- 4 to 20mA DC Load resistance: Max. 550 Ω										
Control action	The following actions can be selected by keypad operation (Default value: PID) PID (with auto-tuning function), PI, PD (with auto-reset function), P (with auto-reset function), ON/OFF OUT proportional band (P) --- 0 to 1000°C (0 to 2000°F) (ON/OFF action when set to 0) For the input with a decimal point, 0.0 to 999.9°C (0.0 to 999.9°F) (ON/OFF action when set to 0.0) For DC current, voltage: 0.0 to 100.0% (ON/OFF action when set to 0.0) Integral time (I) ----- 0 to 1000 seconds (Off when set to 0) Derivative time (D) ----- 0 to 300 seconds (Off when set to 0) OUT proportional cycle ----- 1 to 120 seconds (Not available for DC current output type) ARW ----- 0 to 100% Hysteresis ----- For thermocouple and RTD, 0.1 to 100.0°C (°F) For DC current, voltage, 1 to 1000 (The placement of the decimal point follows the selection) Output limit ----- 0 to 100% (For DC current output type, —5 to 105%)										
Alarm 1 (A1), Alarm 2 (A2)	The alarm action can be selected by keypad operation. - No alarm action - High limit alarm (Deviation setting) Setting range: —(Input span) to input span - Low limit alarm (Deviation setting) Setting range: —(Input span) to input span - High/Low limits alarm (Deviation setting) Setting range: 0 to input span - High/Low limit range alarm (Deviation setting) Setting range: 0 to input span - Process high alarm Setting range: Input range low limit value to input range high limit value - Process low alarm Setting range: Input range low limit value to input range high limit value - High limit alarm with standby (Deviation setting) Setting range: —(Input span) to input span - Low limit alarm with standby (Deviation setting) Setting range: —(Input span) to input span - High/Low limits alarm with standby (Deviation setting) Setting range: 0 to input span When the input has a decimal point, the negative low limit value is —199.9, the positive high limit value is 999.9. For the DC current, voltage input, input span is the same as the scaling span. For the DC current, voltage input, input range low (or high) limit value is the same as the scaling low (or high) limit value. Setting accuracy ---- The same as the indication accuracy Action ----- ON/OFF action Hysteresis ----- For thermocouple, RTD, 0.1 to 100.0°C (°F) For DC current, voltage, 1 to 1000 (The placement of the decimal point follows the selection) Output ----- Relay contact 1a, Control capacity: 3A 250V AC (resistive load), Electric life: 100,000 cycles										
Safety lock function	Prevents the CF card from being taken out during logging. Safety lock switch flashes while accessing the CF card, and lights during logging.										
ERR output	If errors occur during data logging, if CF card is faulty, if the controller battery has worn out, or if the LOG key is pressed without setting time, ERR output is turned on and the error type is indicated on the CH1 PV display. Action ----- ON/OFF action Output ----- Relay contact 1a, Control capacity: 3A 250V AC (resistive load), Electric life: 100,000 cycles										
Clock function	Time indication ----- 24-hour clock (00:00 to 24:00) indication Error ----- Within ± 60 seconds/Month (When ambient temperature is 25°C) Clock power failure guarantee --- Backs up with lithium battery. (The battery life lasts more than 10 years at 20°C ambient temperature)										
External memory storage	Media ----- CF card (Type I) Maximum capacity: 512MB (When logging all items with sampling period 5 seconds, 1.7 to 2.0MB of the CF card can be used every 24 hours)  If any other CF cards (commercially available) are used, the data reliability is not guaranteed. Format ----- FAT16 Writing method -- Writing in a new file (Opens a new file every time logging starts, and saves data in it.) Other ----- When logging data reaches 65,000 lines, the file is closed and saves the data in a new file. Date logging cycle: Select a cycle from a choice of: 1sec., 2sec., 5sec., 10sec., 15sec., 20sec., 30sec., 1min., 2min., 5min., 10min., 15min., 20min., 30min., 60min. (Default value: 10sec.)  Note - If CF card is taken out from the LCD-13A while LOG indicator is lit, CF card will break. Be sure to pull out the CF card after confirming that the LOG indicator is unlit. - If a defective CF card is inserted, or if the CF card is taken out during data logging, the reset function to prevent malfunction is initiated, and the instrument reverts to the warm-up status. - A maximum of 170 files can be saved in the CF card. If the number of files exceeds 170, the error message is indicated on the CH1 PV display regardless of CF card remaining memory capacity.										
External operation input	Logging Start/Stop function ----- Logging Start or Stop can be switched by external contact. Between terminals 19 and 20 Open: Logging stops. Between terminals 19 and 20 Closed: Logging starts. Circuit current when closed: 6mA Front keypad operation Lock/Unlock -- The front keypad operation Lock/Unlock can be switched by external contact. Between terminals 18 and 20 Open: The LCD-13A front keypad operation is possible. Between terminals 18 and 20 Closed: The LCD-13A front keypad operation is not possible. Circuit current when closed: 6mA										
Communication function	Reading and setting of SV and each set value, reading of PV and action status and function change can be carried out from an external computer. Communication interface: EIA RS-485 Communication method: Half-duplex communication, Synchronization method: Start-stop synchronization Communication speed: 9600, 19200bps (Selectable by keypad) (Default: 9600bps) Parity: Even, Stop bit: 1 Communication protocol: Shinko protocol, Error detection: Parity check, checksum Data format: <table border="1"> <thead> <tr> <th>Communication protocol</th><th>Shinko protocol</th></tr> </thead> <tbody> <tr> <td>Start bit</td><td>1</td></tr> <tr> <td>Data bit</td><td>7</td></tr> <tr> <td>Parity</td><td>Even parity</td></tr> <tr> <td>Stop bit</td><td>1</td></tr> </tbody> </table>	Communication protocol	Shinko protocol	Start bit	1	Data bit	7	Parity	Even parity	Stop bit	1
Communication protocol	Shinko protocol										
Start bit	1										
Data bit	7										
Parity	Even parity										
Stop bit	1										
Supply voltage	100 to 240V AC 50/60Hz Allowable voltage fluctuation range: 85 to 264V AC										
Power consumption	Approx. 12VA										
Insulation resistance	10M Ω or more, at 500V DC										
Dielectric strength	Between input terminal and power terminal, Between output terminal and power terminal --- 1.5kV AC for 1 minute										
Environment	Ambient temperature: 0 to 50°C (32 to 122°F) Ambient humidity: 35 to 85%RH (Non-condensing)										
Case (Material • Color)	Material: Flame-resistant resin Color: Light gray										
Mounting	Screw type mounting brackets (Mountable control panel thickness: 1 to 8mm)										
Setting	Sheet key input										
External dimensions	W96×H96×D100mm (When the IP option is added, W115.6×H131.7×D100mm)										
Weight	Approx. 550g										
Attached functions	Sensor correction, Set value lock, Power failure countermeasure, Self-diagnosis, Automatic cold junction temperature compensation (for thermocouple only), Burnout, Input burnout, Warm-up indication.										
Accessories	CF card (256MB): 1, Mounting brackets: 1 set										

Options

Dust-proof/Drip-proof [IP]	Water-proof cover If this option is added, IP66 is applied to the front face of the LCD-13A.
Terminal cover [TC]	Electric shock protection terminal cover. If it is possible that an operator will touch the back of the controller while the power is turned on, make sure to add this option and make use of a terminal cover.
Insulated power output [P24]	Output voltage: 24V $\pm$ 3V DC (when load current is 30mA) Ripple voltage: Within 200mV DC (when load current is 30mA) Maximum load current: 30mA DC

Terminal arrangement



POWER SUPPLY

Power supply terminals

[P24] Insulated power output (P24 option)

[OUT] Control output terminals

[A1] Alarm 1 output terminals

[A2] Alarm 2 output terminals

[TC] Thermocouple input terminals

[RTD] RTD input terminals

[DC] DC current/voltage input terminals

[ERR] Error output terminals when data logging or the CF card is abnormal, or when battery is dead

[RS-485] Serial communication(RS-485)

[EXT CONT] External operation input terminals (External operation input: Logging Start/Stop, Front keypad operation Lock/Unlock)

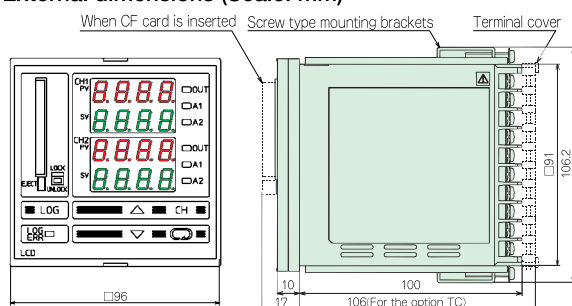
[KEY LOCK] Front keypad operation Lock/Unlock

[LOG] Logging Start/Stop

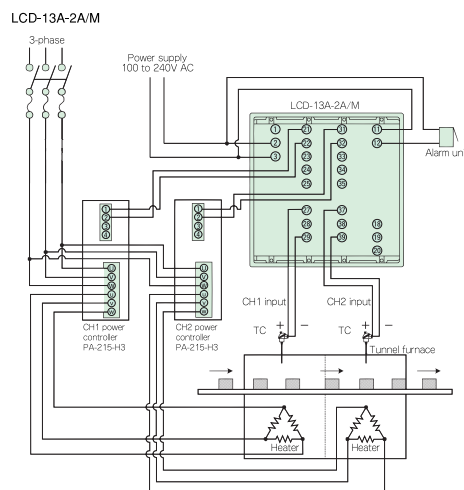


• This controller has no built-in power switch, circuit breaker or fuse. It is necessary to install them near the controller.

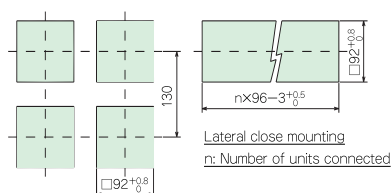
External dimensions (Scale: mm)



Wiring example

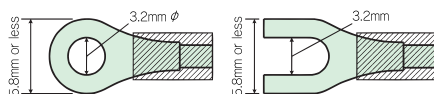


Panel cutout (Scale: mm)

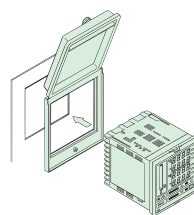


Solderless terminal

Use a solderless terminal with an insulation sleeve in which the M3 screw fits.
The torque should be 0.63N·m.



Water-proof cover [IP option] mounting



Fitting the water-proof cover to the panel cutout, mount it between the panel and the face of the LCD-13A.

At this time, lateral close mounting is not available.



SAFETY
PRECAUTIONS

- To ensure safe and correct use, thoroughly read and understand the manual before using this instrument.
- This instrument is intended to be used for industrial machinery, machine tools and measuring equipment. Verify correct usage after consulting purpose of use with our agency or main office. (Never use this instrument for medical purposes with which human lives are involved.)
- External protection devices such as protection equipment against excessive temperature rise, etc. must be installed, as malfunction of this product could result in serious damage to the system or injury to personnel. Also proper periodic maintenance is required.
- This instrument must be used under the conditions and environment described in the manual. Shinko Technos Co., Ltd. does not accept liability for any injury, loss of life or damage occurring due to the instrument being used under conditions not otherwise stated in the manual.

Caution with respect to Export Trade Control Ordinance

To avoid this instrument from being used as a component in, or as being utilized in the manufacture of weapons of mass destruction (i.e. military applications, military equipment, etc.), please investigate the end users and the final use of this instrument. In the case of resale, ensure that this instrument is not illegally exported.

• This catalog is as of March 2009 and its contents are subject to change without notice. • If you have any inquiries, please consult us or our agency.