ISO 9001
KEMA
CERT. No. 60033
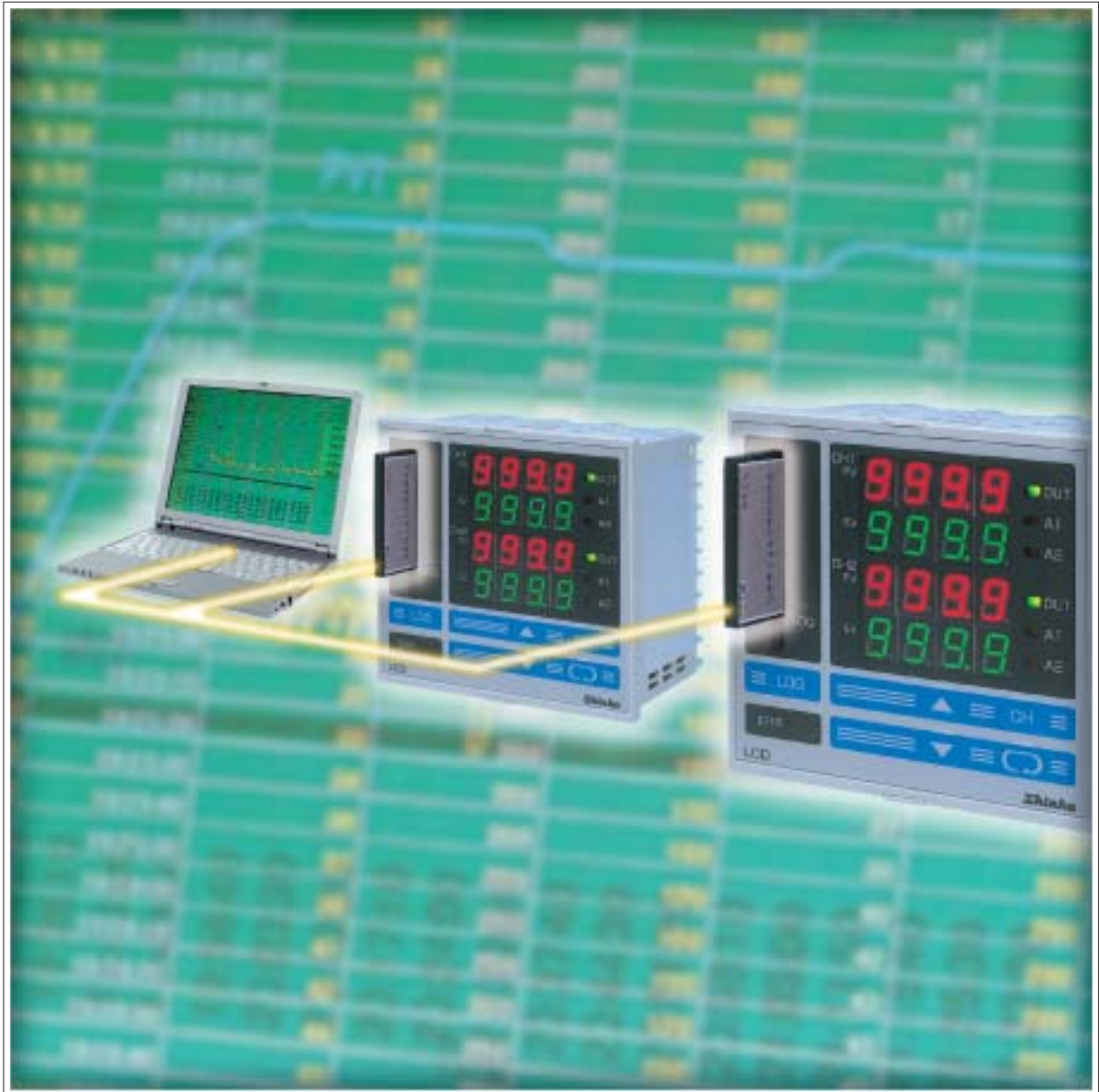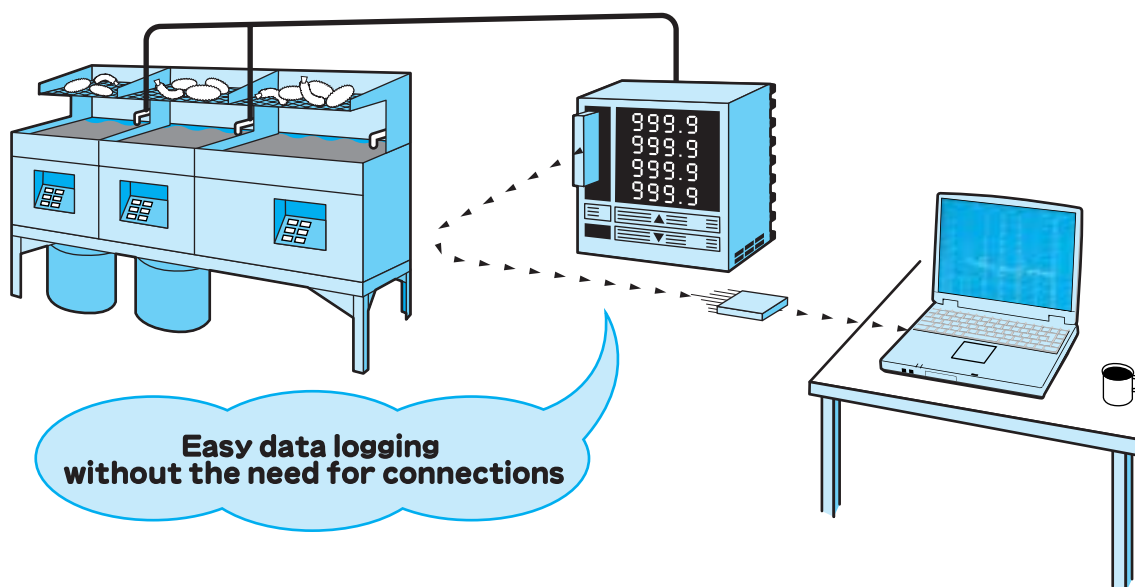DUTCH COUNCIL
FOR ACCREDITATION

L C D - 1 3 A

Records and saves 2-channel data on a CF card!

Shinko

Features

- Easy data logging with a CF card
- Multi-input
- 2-ch independent controls, 2-ch 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 controlling, monitoring and alarm units

Easy data logging without the need for connections

Specifications

■Model name

L C D — 1 3 A - 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

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, 50Ω shunt resistor (Model name: RES-S01-050, sold separately) must be installed.

■Rated range (Multi-input)

Input type		Input range	
Thermo-couple	K	−200 to 1370 ℃ −199.9 to 400.0℃	−320 to 2500 ˚F −199.9 to 750.0 ˚F
	J	−200 to 1000 ℃	−320 to 1800 ˚F
	R	0 to 1760 ℃	0 to 3200 ˚F
	S	0 to 1760 ℃	0 to 3200 ˚F
	B	0 to 1820 ℃	0 to 3300 ˚F
	E	−200 to 800 ℃	−320 to 1500 ˚F
	T	−199.9 to 400.0℃	−199.9 to 750.0 ˚F
	N	−200 to 1300 ℃	−320 to 2300 ˚F
	PL-Ⅱ	0 to 1390 ℃	0 to 2500 ˚F
	C（W/Re5-26）	0 to 2315 ℃	0 to 4200 ˚F
RTD	Pt100	−200 to 850 ℃ −199.9 to 850.0℃	−300 to 1500 ˚F −199.9 to 999.9 ˚F
	JPt100	−200 to 500 ℃ −199.9 to 500.0℃	−300 to 900 ˚F −199.9 to 900.0 ˚F
DC current	4～20mA DC 0～20mA DC		
DC voltage	0 to 1V DC 0 to 10V DC 1 to 5V DC 0 to 5V DC	−1999 to 9999, −199.9 to 999.9 −19.99 to 99.99, −1.999 to 9.999	

・For the DC current and voltage input, scaling and decimal point place change are possible.
・For DC current input, 50Ω 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: 100Ω or less, However, for B input, 40Ω or less RTD --------------- Pt100, JPt100, 3-wire system (Allowable input lead wire resistance : 10Ω or less per wire) DC current ------ 0 to 20mA DC, 4 to 20mA DC Input impedance: 50Ω [50Ω shunt resistor (Model name: RES-S01-050, sold separately) must be installed between input terminals.] Allowable input current: 50mA or less (When 50Ω shunt resistor is used) DC voltage ------ 0 to 1V DC Input impedance: 1MΩ or greater Allowable input voltage: 5V DC or less, Allowable signal source resistance: 2kΩ or less 0 to 5V DC, 1 to 5V DC, 0 to10V DC Input impedance: 100kΩ or greater, Allowable input voltage: 15V DC or less, Allowable signal source resistance: 100Ω or less

Accuracy (Setting・Indication)	Thermocouple ------------- Within ±0.3% of each input span ±1 digit, or within ±2℃(4°F), whichever is greater 　　　　　　　　　However, R, S input, range 0 to 200℃(0 to 400°F): Within ±6℃(12°F) 　　　　　　　　　B input, range 0 to 300℃ (0 to 600°F): Accuracy is not guaranteed. 　　　　　　　　　K, J, E, T, N input, 0℃(32°F) or less: Within ±0.4% of each input span ±1 digit, 　　　　　　　　　　　　　　　　　　　　　　or within ±4℃(8°F), whichever is greater RTD -------------------------- Within ±0.2% of each input span ±1 digit DC current, DC 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 φ =0.4), 　　　　　　　　　　Electric life: 100,000 times Non-contact voltage --- 12$^{+2}_{-0}$ V DC　　Max. 40mA DC (short-circuit protected) DC current ----------------- 4 to 20mA DC　Load resistance: Max. 550Ω
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℃(0 to 2000°F)(ON/OFF action when set to 0) 　　　　　　　　　　　　　　For the input with a decimal point, 0.0 to 999.9℃(0.0 to 999.9°F)(ON/OFF action when set to 0.0) 　　　　　　　　　　　　　　For DC current, DC 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℃(°F) 　　　　　　　　　　　　　　For DC current, DC 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℃(°F) 　　　　　　　　　　For DC current, DC 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 times
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 times
Clock function	Time indication ----------------------- 24-hour clock (00:00 to 24:00) indication Error ------------------------------------ Within ±60 seconds/Month (When ambient temperature is 25℃) Clock power failure guarantee --- Backs up with lithium battery. (The battery life lasts more than 10 years at 20℃ ambient temperature)
External memory storage	Media -------------- CF card (Type I) Maximum capacity: 256MB ［CF card made exclusively by Renesas Technology Corp.］(Hitachi) 　　　　　　　　Operations do not fall under guarantee when using CF cards other than those produced by Renesas Technology Corp. 　　　　　　　　(When logging all items with sampling period 5 seconds, 1.7 to 2.0MB of the CF card can be used every 24 hours) Format ------------- FAT16 Writing method -- Writing in a new file (Opens a new file every time logging starts, and saves data in it.) Others ------------- 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: 5s, 10s, 15s, 20s, 30s, 1min., 2min., 5min., 10min., 15min., 20min., 30min., 60min. 　　　　　　　　(Default value: 10 seconds) ⚠ 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. 　　　　　　　　　　　　　　　　　Terminals between 19 and 20 Open: Logging stops. 　　　　　　　　　　　　　　　　　Terminals between 19 and 20 Closed: Logging starts. 　　　　　　　　　　　　　　　　　Circuit current when closed: 6mA Front keypad operation Lock/Unlock -- The front keypad operation can be used by external contact depending on the situation. 　　　　　　　　　　　　　　　　　Terminals between 18 and 20 Open: The LCD-13A front keypad operation is possible. 　　　　　　　　　　　　　　　　　Terminals between 18 and 20 Closed: The LCD-13A front keypad operation is not possible. 　　　　　　　　　　　　　　　　　Circuit current when closed: 6mA
Supply voltage	100 to 240V AC 50/60Hz　　　Allowable voltage fluctuation range: 85 to 264V AC
Power consumption	Approx. 12VA
Isolation resistance	500V DC　10MΩ or greater
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℃　Ambient humidity: 35 to 85%RH (Non-condensing)
Case (Material・Color)	Material: Flame resistant resin　Color: Light gray
Mounting method	Screw type mounting bracket is used (Mountable control panel thickness: Within 1 to 15mm)
Setting method	Sheet key input
External dimensions	W96×H96×D100mm (When the option IP is added, W115.6×H131.7×D100mm)
Weight	Approx. 550g
Attached function	Sensor correction, Setting value lock, Power failure countermeasure, Self-diagnosis, Automatic cold junction temperature compensation (for thermocouple only), Burnout, Input burnout, Warm-up indication.
Accessories	One CF card (32MB, CF card made by Renesas Technology Corp.)

■ 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.

■ Terminal arrangement
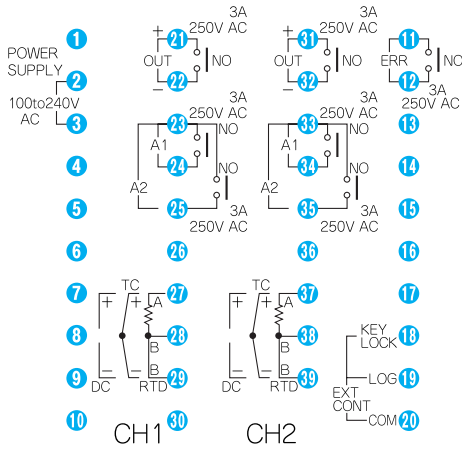
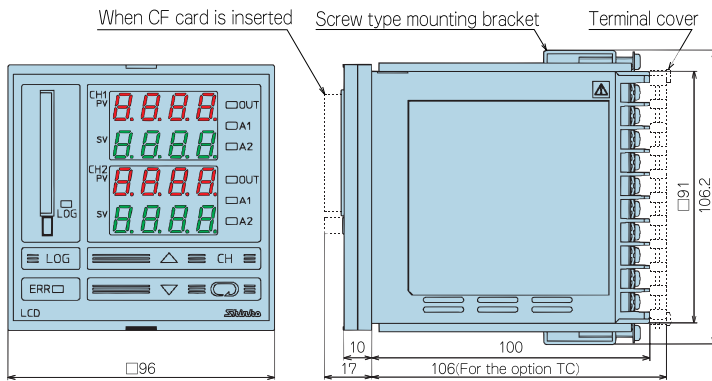|	
P O W E R S U P P L Y	Power supply terminals
O U T	Control output terminals
A 1	Alarm 1 output terminals
A 2	Alarm 2 output terminals
E X T C O N T	External operation input terminals (External operation input: Logging Start/Stop, Front keypad operation Lock/Unlock)
E R R	Error output terminals when data logging or the CF card is abnormal, or when battery is dead
T C	Thermocouple input terminals
R T D	RTD input terminals
D C	DC current/DC voltage input terminals

⚠ · This controller has no built-in power switch, circuit breaker or fuse. It is necessary to install them near the controller.
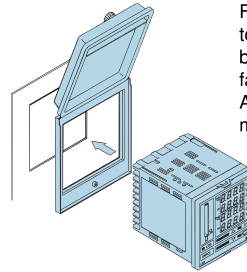
■ External dimensions

■ Panel cutout

Lateral close mounting
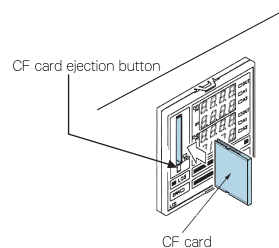n: Number of units connected

■ Water-proof cover [Option IP] 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.

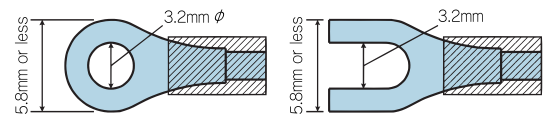## ■ Wiring example

LCD-13A-2A/M

■ CF card insertion

When inserting the CF card into the LCD-13A, do not confuse the CF card direction. To take out the CF card, press the CF card ejection button.

■ Solderless terminal

Use a solderless terminal with an isolation sleeve that fits to the M3 screw as shown below. The tightening torque should be 0.6N・m to1.0N・m.

· This catalog is as of April 2004, and specifications are subject to change without notice.
· If you have any inquiries, please consult us or our agency.