

FCL-100 Series



*High performance,
Easy viewing, Compact unit !*

Shinko

FCL-130 type

FCL-130 / , , , ,				FCL-130 (225 x 121 x 29.5mm)
Temperature Alarm	0			No temperature alarm
Output	B			Relay output
	U			Mini-terminal voltage output
	A			Current output (Up to 20mA/2V)
Input		E		Thermocouple multi input, or Thermocouple K type only (Input code needs to be designated.)
Option		TC		Terminal cover
		BK		Color Black
Range designation			0 to 100.0	Needs to be designated when using Thermocouple K type only. (Range is independent of any operation.)
			0.0 to 100.00	
			0 to 50+	
			0.0 to 50.0+	

- FCL-130 type has no temperature alarm output (temperature alarm action)
- FCL-130 type has two kinds of input: "Thermocouple multi input" and "Thermocouple K only input". In the case using "Thermocouple K only input", the range must be designated when ordering.
- There are only 2 options that can be added to FCL-130 type: Terminal cover [TC] and Color Black [BK].
- When ordering, select the 4 character characters from the table above for (no using code, if necessary) besides entering the rated scale (Thermocouple K only) by using a comma.

FCL-13A type

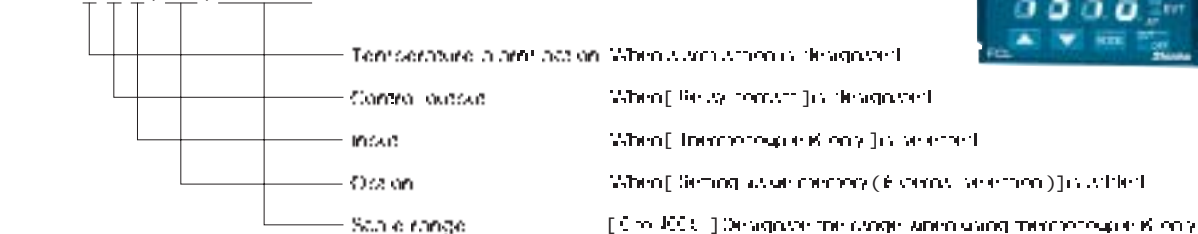
FCL-13A / , , , ,				FCL-13A (225 x 121 x 29.5mm)		
Temperature Alarm	A			Temperature alarm with buzzer (Buzzer volume is adjustable by any operation)		
Output	B			Relay output		
	U			Mini-terminal voltage output		
	A			Current output (Up to 20mA/2V)		
Input		W		Watt output		
		E		Thermocouple K type only		
Option		TC		Sens. terminal cover	BK [Bz]	
		WT(5A)		Heater current alarm	Rated current 5A	Open to entry (30mm industry : 20V/250mA/1K Max.)
		WT(10A)			Rated current 10A	
		WT(20A)			Rated current 20A	
		WT(50A)			Rated current 50A	
		SM		Setting value memory (6 items, 16-bit)		
		TC		Terminal cover		
	BK		Color Black			
Range designation			0 to 100.0	Needs to be designated when using Thermocouple K type only. (Range is independent of any operation.)		
			0.0 to 100.00			
			0 to 50+			
			0.0 to 50.0+			

- FCL-13A type has two kinds of input: "Multi range" and "Thermocouple K only". In the latter, the range must be designated when ordering.
- Set a comma on [0], Heater current alarm [W], and Setting value memory (external selection) [SM], they cannot be added simultaneously. (Only 1 of them can be added.)
- In the case of Thermocouple K only input, range designation is needed when ordering.
- When ordering, select the 4 character characters from the table above for (no using code, if necessary) besides entering the rated scale (Thermocouple K only) by using a comma.



Example (When ordering)

FCL-13A R-E , SM , 0 to 100.0



Rated scale

In the case of multi-range input

	input type	Scale	
	Thermocouple	K	0 to 10.00
	.	0 to 100.00	0 to 1000.0+
	E	0 to 500.0	0 to 1000.0+
	U	0 to 1000.0	0 to 2000.0+
	PL / P	0 to 100.0	0 to 2000.0+
RTD	PT100	200 m ~ 50.0	200 m ~ 200.0+
	PT100	100.0 m ~ 50.00	100.0 m ~ 200.0+
	JP100	200 m ~ 50.0	200 m ~ 500.0+
	JP100	100.0 m ~ 50.00	100.0 m ~ 500.0+

In the case of Thermocouple multi-range input

	input type	Scale	
	Thermocouple	K	0 to 10.00
	.	0 to 100.00	0 to 1000.0+
	E	0 to 500.00	0 to 1000.0+
	U	0 to 1000.00	0 to 2000.0+
	PL / P	0 to 100.00	0 to 2000.0+

In the case of Thermocouple K only

	input type	Scale	
	Thermocouple	K	0 to 100.00
		0.0 to 100.00	0.0 to 50.0+

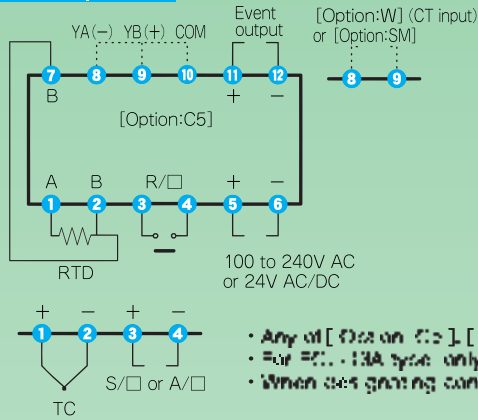
Specification

Display	RV-3V	Red Light	Φ(1)×L(20)mm
rear	Type - Thermocouple - RTD Scale Resolution - Thermocouple, RTD - With thermal probe	RT, R, N, Pt, T, E (External resistance: 100Ω or less) Pt100, Pt1000 3-wire system (Resistance per wire: 10Ω or less) Refer to the Red Light Scale.	
Accuracy (See calibration)	Thermocouple RTD	Within ±0.2% of full scale ±1 digit or ±2 (1+) and never is greater Within ±0.2% of full scale ±1 digit or ±3 (2+) and never is greater	
rear wiring period	0.2s (minimum)		
Zero Action	R0 (With zero holding function)	Preparation time (P) Detection time (C) Destructive time (D) Preparation cycle Alarm	0 to maximum of rated value or 0.0 to maximum of rated value 0 to 300s (5% when set to 0) 0 to 300s (5% when set to 0) 1 to 120s (Not available for 0RT output) Automatic
	R0 (With zero reset function)	Preparation time (P) Detection time (C) Preparation cycle	0 to maximum of rated value or 0.0 to maximum of rated value 0 to 300s (5% when set to 0) 1 to 120s (Not available for 0RT output)
	ON/OFF Action	Hysteresis	0.1 to 100.0s (1+)
Output	- Relay contact - Non contact voltage - Current	1 to 250V AC 10A (Resistance level) 250V AC 1A (Inductive load level: 0.1) 1 to 24V DC 1A (maximum) 45mA (Line current permitted) 1 to 250V AC 1 level resistance: 1A (maximum) 500Ω	(To be specified)
	Temperature Alarm	Output alarm is selectable by any operation - No alarm - High limit alarm (Detection timing) - Low limit alarm (Detection timing) - High - low limit alarm (Detection timing) - High - low limit range alarm (Detection timing) - Process high alarm - Process low alarm Start by function Alarm action (Reset timer) Setting accuracy Alarm Hysteresis Output Output capacity	Selectable by any operation Selectable (Setting range: 0 to 999%) Thermocouple: Within ±0.2% of full scale ±1 digit or ±2 (1+) and never is greater RTD: Within ±0.2% of full scale ±1 digit or ±3 (2+) and never is greater ON/OFF Action 0.1 to 100.0s (1+) Open to error 24V DC 0.1A (maximum)
Loop drive alarm	When manipulating value is in its maximum or minimum, the alarm will run the time the process variable does not change more than the setting span within the setting time. (With 0RT/100 type, this function is not applied.) - Alarm (Reset function, Setting number and alarm number) Setting range Loop drive alarm time Loop drive alarm span Output Output capacity	0 to 300min 0 to 300 or 0.0 to 100s (1+) Open to error 24V DC 0.1A (maximum)	
Supply voltage	- 100 to 240V AC 50 / 60Hz - 24V AC 50 / 60Hz A variable voltage function: 10 to 24V AC, 20 to 24V AC, 0RT		(To be specified)
Power consumption	Approx. 50W		
Isolation resistance	10MΩ or greater at 500 V DC When output is turned output or non contact voltage output, isolation test between terminal zero terminal and output terminal must not be carried out.		
Dielectric strength	1.5kV AC for 1min between input terminal and ground 1.5kV AC for 1min between input terminal and power terminal 1.5kV AC for 1min between power terminal and ground 1.5kV AC for 1min between output terminal and ground 1.5kV AC for 1min between output terminal and power terminal		
Ambient temperature Ambient humidity	0 to 50°C 10 to 85%RH (Non condensing)		
Over flow	Flow detection delay: 0.2s (minimum)		
Mounting method	Panel, Back panel mounting (Panel: Max. thickness: 1 to 10mm)		
Setting system	Menu type (step by step)		
Weight	Approx. 100g		
Applied function	Power failure measurement, Self diagnosis, Automatic hold function (temperature (only thermocouple)), input barrier		

Options

Flow measurement [103]	Operates from the external temperature. Communication protocol Scale form Communication unit Communication speed Communication system Error detection	Various setting items (ranges) and the actual reading of the PCD-100 ASCII A maximum of 31 units per hour temperature 9600bps (2400 / 4800 / 9600bps) (variable by any operation) RS-485 (two-wire, synchronous) RS-485 (three-wire, half)
Water number alarm [107]	Monitors the water number with 0RT (number transmitter), and detects the water number. Range Setting accuracy Output capacity Alarm level	5A, 10A, 25A or 50A (specifiable) Within 1% of water number Open to error 24V DC 0.1A (maximum) 0.1 (For single phase: 1 phase)
Setting value memory (-with a 16-bit) [102]	When setting value 1 and 2 can be changed by external process. Control open for 1.5s when setting value 1, control closed for 1.5s when setting value 2	
Terminal cover [105]	Removes water penetration terminal cover. Be sure to use the terminal cover by affixing the option of operation (use through the hole of the frame) or while running the frame etc.	
Over flow [08]	Over flow (Flow pulse: 0.2s delay)	

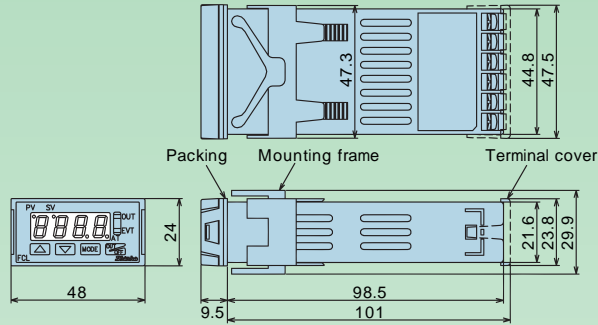
Terminal arrangement



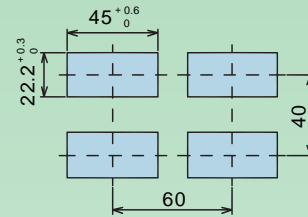
- H : Relay contact output
- S : Non-contact voltage output
- A : Current output
- C5 : Serial communication (RS-485)
- W : Heater without alarm
- SM : Setting value memory (E-termo function)
- F : Alarm output (Temperature alarm, load break alarm or Heater without alarm)

- Any of [Option: C5], [Option: W], and [Option: SM] cannot be added to FC1-133 type.
- For FC1-13A type, only one option out of [Option: C5], [Option: W] and [Option: SM] can be added.
- When the setting control output is current output type, [Option: W] cannot be added.

External dimensions

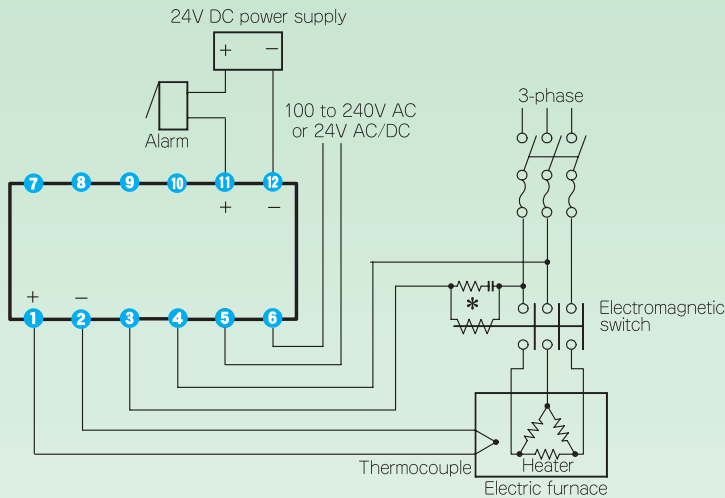


Panel cutout



Wiring example

FC1-13A R/E



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 July 2004. Specifications and external appearance are subject to change without prior notice.
- If you have any inquiries, please consult our agency or with us directly.

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