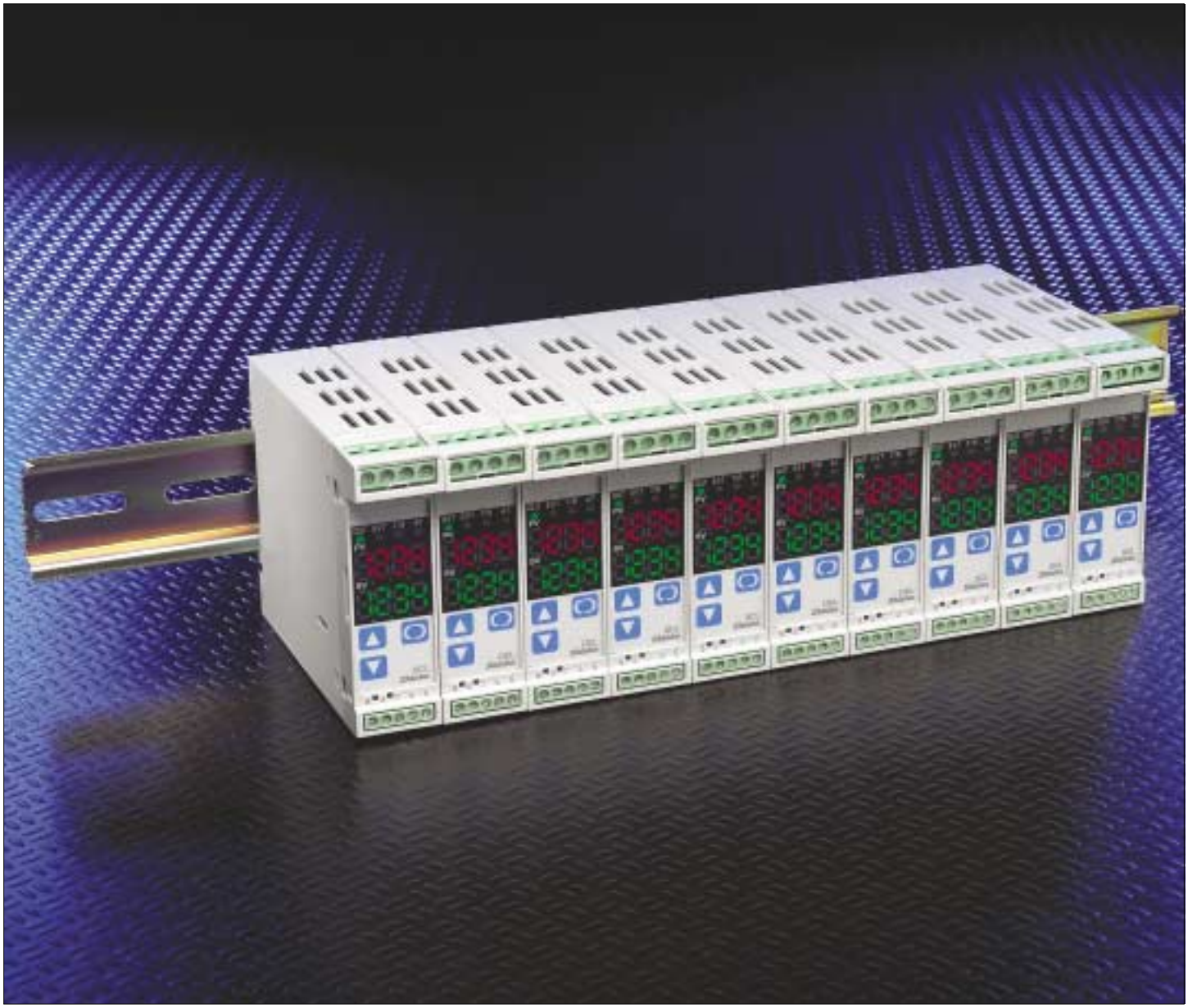
DIN Rail Indicating Controller

DCL Series



Multi-purpose design allows the DCL to be used as a controller, transmitter or alarm unit.

Shinko
North America Ltd.
www.shinkona.com

Distributed by:

CYRONIX
INSTRUMENTATION & CONTROLS

12 Upjohn Road Unit 9
Don Mills, Ontario M3B-2V9
Tel: 416-444-6614
Fax: 416-444-0353
Toll Free: 1-888-Cyronix

Standard Features

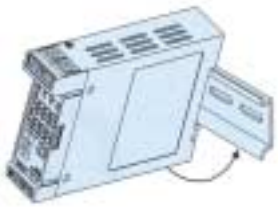
• Space Saving Size



Easy to mount even in a small machine because the width is just 22.5mm, height 7.5mm and depth 100mm.

• Easy Mounting And Detaching

Hook this instrument on the DIN rail and mount it. Maintenance is very easy. As it is fixed to the DIN rail, it is vibration proof.
When detaching it pull down the hook at the lower part of the main body using flat bladed screwdriver then pull up this instrument.



• Dual Use

This instrument is easily switched between controller or transmitter by simple key operation. When using as a transmitter, the signal or thermocouple input, RTD input or DC input is converted to a 4 to 20mA DC signal output. The input scale is easily changed.
(This function is limited only A/• type)

• Expandable

It is possible to measure and control from 1 point to a maximum of 31 points using serial communication (RS-485). It is very easy to connect between DCL-33A's, between communication converter and DCL-33A using CDM and CPP communication cables (sold separately).

• Large LED Display

PV Red 4 digits 7.5 x 4.1mm (H x W)
SV Green 4 digits 7.5 x 4.1 mm (H x W)

• Safety Approvals

UL, cUL and CE Safety Approvals.

• Programmable Alarm

Units feature standard single alarm output.

• Low Cost

Most advanced price/performance package available.

• True Multi-Input

Units feature full multi-input capability:
1 RTD type, 10 thermocouple types, mA, and V inputs

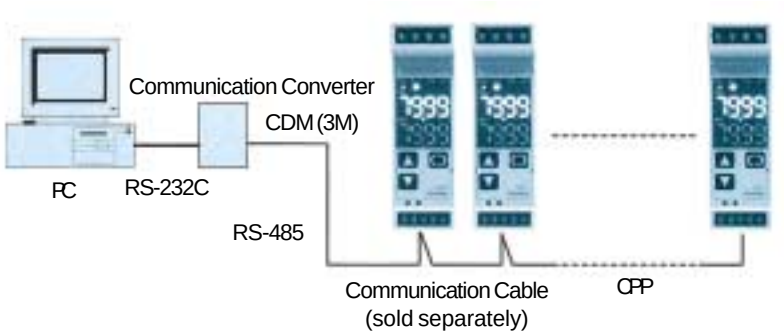
• PID Autotune

Units feature full function third generation PID autotune.

System Configuration (example)

When connecting plural DCL-33A's to monitor:

It is very easy to control and monitor a maximum of 31 points by connecting PC communication with converter. (If the communication specification of PC is RS-485, communication converter is not required.)



When DCL-33A is used as a transmitter:

Various process signals are converted into the insolated 4 to 20mADC in the DCL-33A inner assembly, then 4 to 20mA is outputted. It is possible to monitor multipoint process values by connecting multipoint indicating recorder.
(When DCL-33A is DC current output type, it can be used as a transmitter)

When DCL-33A and a programmable controller are used together:

It is very easy to control and monitor a maximum of 31 points by connecting PC communication If DCL-33A (with option C5) and Shinko programmable controller (with Option: SVTC) as a program setter are combined, it can be used as a multipoint programmable controller (a maximum of 31 units). (Setting value digital transmission is possible.)

Input Range Table

Input Type		Scale	
Thermocouple	K	-200 to 1370ºC	-320 to 2500ºF
		-199.9 to 400.0ºC	-199.9 to 750.0ºF
	J	-200 to 1000ºC	-320 to 1800ºF
	R	0 to 1760ºC	0 to 3200ºF
	S	0 to 1760ºC	0 to 3200ºF
	B	0 to 1820ºC	0 to 3300ºF
	E	-200 to 850ºC	-320 to 1500ºF
	T	-199.9 to 400.0ºC	-199.9 to 750.0ºF
	N	-200 to 1390ºC	-320 to 2300ºF
	PL-II	0 to 1390ºC	0 to 2500ºF
	C (W/Re5-260	0 to 2315ºC	0 to 4200ºF
RTD	Pt100	-200 to 850ºC	-300 to 1500ºF
		-199.9 to 850.0ºC	-199.9 to 999.9ºF
DC	4 to 20mA DC 0 to 20mA DC 0 to 1V DC 0 to 5V DC 1 to 5V DC 0 to 10V DC	-1999.9 to 9999, -199.9 to 999.9 -19.99 to 99.99, -1.999 to 9.999	

• For DC current input a shunt resistor (sold separately) 50Ω is required.

All units feature a full 3 year warranty and lifetime technical support!

Shinko is an **ISO 9001** facility

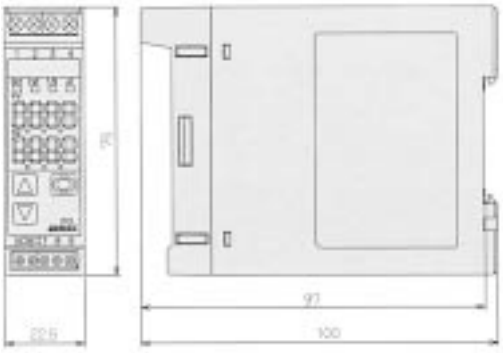
General Specifications

Display	PV ---- Red 4 digits, Character size: 7.5 x 4.1mm (H x W) SV ---- Green 4 digits, Character size: 7.5 x 4.1mm (H x W)
Input	Types • Thermocouple ---------- K, J, R, S, B, E, T, N, PL-II, C (W/Re5-26) External resistance: 100Ω or less (However, B input: External resistance 40Ω or less) • RTD ---------- Pt100, 3-wire system (Resistance per wire: 10Ω or less) • DC current - 0 to 20mADC, 4 to 20mADC, Input impedance: 50Ω (Connect shunt resistor 50Ω between input terminals.) Allowable input current: 50mA or less • DC voltage - 0 to 1V DC, Input impedance: 1MΩ or greater, Allowable input voltage: 5V or less Allowable signal source resistance: 2kΩ or less - 0 to 5VDC, 1 to 5VDC, 0 to 10VDC, Input impedance: 100kΩ or greater, Allowable input voltage: 15V or less Allowable signal source resistance: 2kΩ or less
Accuracy (Setting, Indication)	Thermocouple ---------- Within ±0.2% ±1 digit of each input span or ±2ºC (4ºF) whichever is greater However, R or S input and 0 to 200ºC (0 to 400ºF): Within ±6ºC (12ºF) B input and 0 to 300ºC (0 to 600ºF): Accuracy is not guaranteed. RTD ---------- Within ±0.1% ±1 digit of input span, or ±1ºC (2ºF) whichever is greater DC current and DC voltage --- Within ±0.2% ±1 digit of each input span
Input Sampling Rate	0.25 seconds
Control Action	• PID action (with auto-tuning function) • PI action • PD action (with manual reset function) • P action (with manual reset function) • ON/OFF action Proportional band (P) ---------- 0 to 110.0% Integral time (I) ---------- 0 to 1000 seconds (OFF when set to 0) Derivative time (D) ---------- 0 to 300 seconds (OFF when set to 0) Proportional cycle ---------- 1 to 120 seconds (Not available for DC output.) ARW ---------- 0 to 100% Manual reset ---------- ±Proportional band converted value Hysteresis -- Thermocouple input and RTD input: 0.1 to 100.0ºC (ºF) DC current input and DC voltage input: 1 to 1000 (Decimal point place can be changed by selection.) Output limit ---------- 0 to 100% (DC current output type: -5 to 105%)
Control Output (OUT)	Type must be designated. • Relay contact ------- 3A 250VAC (Resistive load), 1A 250VAC (Inductive load cos ∅=0.4), Electric life: 100.000 times • Non-contact voltage - 12 to 14VDC Max. 40mA (short circuit protected) • DC current ---------- 4 to 20mADC Load resistance: Max 550Ω Output accuracy: Within ±0.3% of output span (Within ±0.048mA) Resolution: 12000
Control Output (OUT)	**Alarm** Alarm action can be selected by key operation as either Energized/Deenergized. Setting accuracy -- The same as indicating accuracy Action ---------- ON/OFF action Hysteresis ---------- Thermocouple input and RTD input: 0.1 to 100.0ºC (ºF) DC current input, DC voltage input: 1 to 1000 (Decimal point place can be changed by selection) Output ---------- Open collector Control capacity: 24VDC 0.1A (Max.) **Loop Break Alarm** Detects Heater burnout, Sensor burnout and abnormality at operation end. Loop break alarm time ----------0 to 200 minutes Loop break alarm action span ---- Thermocouple input, RTD input: 0 to 150ºC (ºF), or 0.0 to 150.0ºC (ºF) DC current input and DC voltage input: 0 to 1500 Output ---------- Open collector Control capacity: 24VDC 0.1A (Max)
Supply Voltage	Voltage type must be specified: • 100 to 240VAC 50/60Hz or 24VAC/DC 50/60Hz Allowable voltage fluctuation: 85 to 264VAC, 20 to 28VAC/DC Power consumption approximately 6VA.
Mounting Method	DIN Rail mounting.
Setting Method	Sheet key input.
Material • Color	Material: Flame resistant resin. Color: Light Grey
Environment	Ambient temperature: -10 to 50ºC Ambient humidity 35 to 85%RH (No condensing)

Options

Heater Burnout Alarm [W]	Watches the heater current with CT (current transformer), and detects the heater burnout. Heater rating must be specified either 5A, 10A, 20A or 50A. Setting range --------- Rated current 5A: 0.0 to 5.0A Rated current 10A: 0.0 to 10.0A Rated current 20A: 0.0 to 20.0A Rated current 50A: 0.0 to 50.0A Setting Accuracy --- Within ±5% heater rated current Output ---------- Open collector Control capacity: 24VDC 0.1A (Max) Output self holding - Not available Accessories -------- CT (Current Transformer)
Serial Communication [C5]	Operations such as changing each setting value, reading values and setting value of DCL-33A are carried out from external computer. Also it is possible to transmit the main setting value of the PCD-13A series digitally using PCD13A series (with option: SVTC) and DCL-33A (with option:C5). Communication interface ---------- Based on EIA RS-485 Character mode ---------- ASCII Number of connectable units -------- A maximum of 31 units per host computer. Data transfer rate ---------- 9600bps (2400/4800/19200bps Selectable by key operation)

External Dimensions



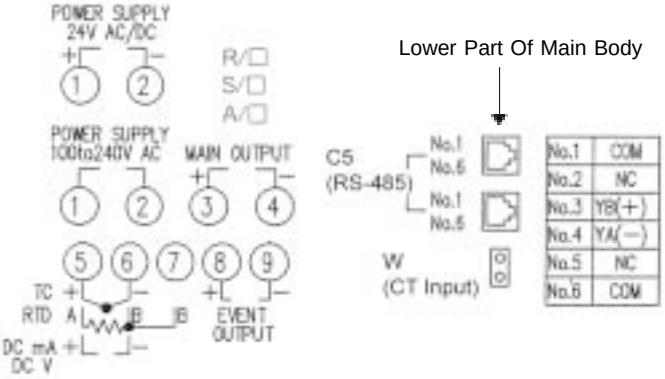


High Performance Temperature & Recording Instrumentation

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North America Ltd.
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Terminal Wiring



Model Number Configuration

DCL-33A- ___/M ___ ___

ALARM FUNCTION	CODE
Standard	A

CONTROL OUTPUT	CODE
Relay Contact	R
SSR Driver	S
4-20mA	A

INPUT	CODE
Multi-range T/C, RTD, mA, VDC	M

SUPPLY VOLTAGE	CODE
24V AC/DC	1
100 - 240VAC	-

OPTIONS*	CODE
RS-485	C5
Heater Break (5A)	W5A
(10A)	W10A
(20A)	W20A
(50A)	W50A

* W•: standard alarm and 4-20mA not available.