SDC40B

DigitroniK
Digital Indicating Controller

The SDC40B is a single loop digital indicating controller used for controlling temperature, pressure, flow rate, liquid level, pH value, and many other industrial process variables.

A compact instrument with PID control and various auxiliary functions, the SDC40B offers advanced instrumentation with a high level of cost performance. PC software allows the user to design any combination of functions.

Specifications

General	**Memory backup**	User setting, semiconductor nonvolatile memory, Model/LSP/control output/hold computation: RAM backed up by super capacitor (stored for 24 hrs)
	Power	100 to 240Vac, 50/60Hz, 24Vdc
	Power consumption	30VA max.
	Ambient temperature	0 to 50°C
	Ambient humidity	10 to 90% RH (no condensation allowed)
	Mass	Approx. 750g
Analog input	**Input type 1**	Multirange: thermocouple, RTD and DC voltage/current
	Input type 2	4–20mA or 1–5Vdc
	Input type 3	1–5Vdc
	Sampling cycle	0.1 to 0.5s
	Accuracy	±0.1% FS
Digital input	**No. of inputs**	12
	Connectable outputs	Dry relay contact and open collector
	Sampling cycle	0.1 to 0.5s
Computation processing block	**Processing**	Approx. 80 computational expressions can be assigned to a total of 50 units. Each expression can operate up to max of 4 inputs.
	Computation cycle setting	0.1 to 0.5s
	Output change rate limit	0.0 to 100.0% per computation cycle
	No. of PID groups	8
	PID auto-tuning	Automatic setting of PID value by limit cycle method and neural/fuzzy/smart method
Output processing block	**Analog output**	M/M driving relay contact, or 4–20mAdc
	Digital output	SPST/SPDT relay contacts, or open collector
Indication & setting	**Indicators**	No. 1 (5-digit, 7-segment, green), No.2 (5-digit, 7-segment, orange) No. 3 (2-digit, 7-segment, orange), and Bar LED (analog/digital monitoring, green)
Communications		RS-485, RS-232C

Selection Guide

I II III IV V VI VII Example: **C40B2G4AS061D0**

Segment	Model No. selection				Description
I	Basic No.	C40B	↓	↓	Digital indicating controller
II	Control output	2G	○	–	Position proportional PID (M/M drive relay contact)
		5G	–	○	Continuous proportional (4–20mAdc)
III	Inputs	4	○	○	Thermocouple, RTD, DC voltage/current
IV	Power supply	AS	○	○	100 to 240Vac 50/60Hz
		DS	○	○	24Vdc
V	Option 1	06	○	–	1 auxiliary output, 12 digital inputs, 8 digital outputs (3 relays and 5 open collectors)
		09	–	○	Same as above except 2 auxiliary outputs
VI	Communications	1	○	○	None
		2	○	○	RS-485
		3	○	○	RS-232C
VII	Option 2	00	○	○	None
		T0	○	○	Tropicalization
		K0	○	○	Antisulfidization
		D0	○	○	With test data
		B0	○	○	Tropicalization + test data
		L0	○	○	Antisulfidization + test data
		Y0	○	○	With traceability certification

• A circle (○) denotes availability.

Accessories (sold separately)

Model No.	Description
SLP-C4AJ20	Smart Loader Package
81446083-001	Hard dustproof cover
80446087-001	Soft dustproof cover
81446084-001	Terminal cover

Input Types and Ranges

■ Input 1:

• Thermocouple

Range code	Input type	Range (°C)
0	K (CA)	0.0 to 1200.0
1		0.0 to 800.0
2		0.0 to 400.0
3		-200.0 to +1200.0
4		-200.0 to +300.0
5		-200.0 to +200.0
6	E (RC)	0.0 to 800.0
7	J (IC)	0.0 to 800.0
8	T (CC)	-200.0 to +300.0
9	B (PR30-6)	0.0 to 1800.0

Range code	Input type	Range (°C)
10	R (PR13)	0.0 to 1600.0
11	S (PR10)	0.0 to 1600.0
12	W (WRe5-26)	0.0 to 2300.0
13		0.0 to 1400.0
14	PR40-20	0.0 to 1900.0
15	Ni-Ni·Mo	0.0 to 1300.0
16	N	0.0 to 1300.0
17	PL II	0.0 to 1300.0
18	DIN U	-200.0 to +400.0
19	DIN L	-200.0 to +800.0

• °F display is selectable.

• Resistance temperature detector (RTD)

Range code	Input type	Range (°C)
32	JIS '89 Pt100 (IEC Pt100Ω)	-200.0 to +500.0
33		-200.0 to +200.0
34		-100.0 to +150.0
35		-50.0 to +200.0
36		-60.00 to +300.0
37		-40.00 to +40.00
38		0.0 to 500.0
39		0.0 to 300.0
40		0.00 to 100.00

Range code	Input type	Range (°C)
48	JIS '89 JPt100	-200.0 to +500.0
49		-200.0 to +200.0
50		-100.0 to +150.0
51		-50.0 to +200.0
52		-60.00 to +40.00
53		-40.00 to +60.00
54		0.0 to 500.0
55		0.0 to 300.0
56		0.00 to 100.00

• °F display is selectable.

• DC current/voltage

Range code	Input type	Range (programmable)
64	4 to 20mA	-19999 to +26000
65	0 to 20mA	
66	0 to 10mV	
67	-10 to +10mV	
68	0 to 100mV	

Range code	Input type	Range (programmable)
69	0 to 1V	-19999 to +26000
70	-1 to +1V	
71	1 to 5V	
72	0 to 5V	
73	0 to 10V	

■ Input 2:

• DC current/voltage

Range code	Input type	Range (programmable)
0	4 to 20mA	-19999 to +26000

Range code	Input type	Range (programmable)
1	1 to 5V	-19999 to +26000

■ Input 3:

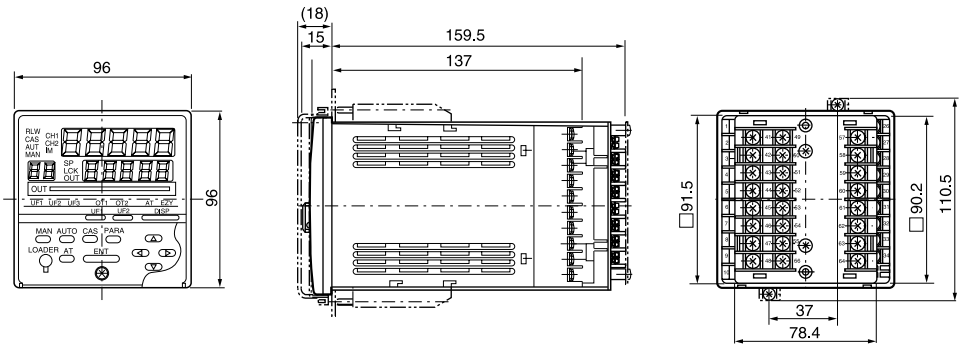
• DC voltage

Input type	Range (programmable)
1 to 5V	-19999 to +26000

Dimensions

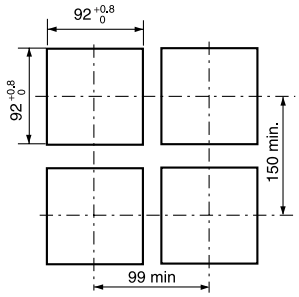
(Unit: mm)

• SDC40B

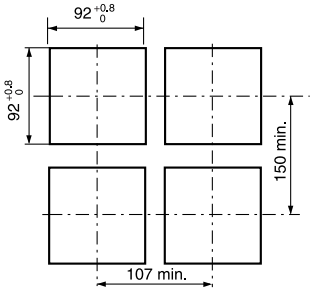


• Panel cutout

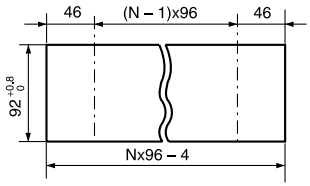
Individual standard mounting or with soft dustproof cover



Individual mounting with hard dustproof cover



Side-by-side mounting



(N : number of units installed)

Functional structure

- Input . . . . . Analog inputs: 3
  Digital inputs: 12
- Output . . . . . Analog output: 3 (5G), 2 (2G)
  Digital output: 8
- Number of computational expressions: Approx. 80
- Number of computational units: 50
- Variable parameters . . %: 40, time: 10
  Flag: 20, Index: 10
- Fixed parameters . . . Unlimited number
- Number of PID units: . . Up to 2 units
- Number of PID parameter groups: 8
- Engineering unit parameters: 8 per PID, a total of 16
- Linearization tables: . . 3 tables (connectable), 16 points per table
- PTB (%→%) tables: . . 4 tables with 16 points per table that can be used as linearization tables
- TTB (%→time) tables: . 4 tables with 16 points per table

■ Block diagram of functions