

7 Segment display unit large(W32×H57mm) and high bright LED

■ Features

- Selectable decimal(0 to 9) or hexa-decimal(0 to 9, A to F) indication code
- Selectable positive or negative input logic
- Selectable serial or parallel data input method
- Power source : 12-24VDC
- Wide range on signal input voltage level (Low: Max. 0-1.2VDC, High : 4.5-24VDC)
- Able to connect as multi-stages
- Easy to read large, high brightness LED
- Zero blank function built-in



■ Applications

- Display for PLC
- Display for computer
- Various display

⚠ Please read "Caution for your safety" in operation manual before using.

■ Specifications

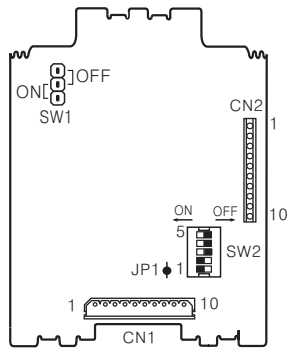
Model	D1SC-N
Display method	Red(7 Segment LED display)
Power supply	12-24VDC ±10%
Allowable voltage range	90 to 110% of rated voltage
Current consumption	Max. 70mA
Character size	W32 × H57mm
Display character	• Decimal number : 0 to 9, decimal point • Hexa decimal number : 0 to 9, A to F, decimal point
Input	<ul style="list-style-type: none"> • Parallel : Parallel 4bit binary data, latch, zero blank, decimal point • Serial : Serial 4bit or 5bit(Decimal point), clock, zero blank, latch, decimal point(When not selecting serial DOT)
Input resistance	12kΩ
Input level	High : 4.5-24VDC, Low : 0-1.2VDC
Max. response frequency	Max. 3kHz(Except for STATIC input type)
Output	Data out [Serial DATA input case], zero blank out
Input logic	Selectable positive(PNP) or negative(NPN) by inner switch(SW1)
Noise strength	The square wave noise by simulator(pulse width:1 μs, display time:1ns, polarity:±, 100times/every sec.) <ul style="list-style-type: none"> • Between power terminals : ±300V • Between input terminals : ±300V
Ambient temperature	0 to 60°C (at non-freezing status)
Storage temperature	-10 to 85°C (at non-freezing status)
Ambient humidity	35 to 85%RH
Unit weight	Approx. 100g

※The max. response frequency is when the duty ratio is 1:1.

- (A) Photo electric sensor
- (B) Fiber optic sensor
- (C) Door/Area sensor
- (D) Proximity sensor
- (E) Pressure sensor
- (F) Rotary encoder
- (G) Connector/Socket
- (H) Temp. controller
- (I) SSR/Power controller
- (J) Counter
- (K) Timer
- (L) Panel meter
- (M) Tacho/Speed/Pulse meter
- (N) Display unit
- (O) Sensor controller
- (P) Switching power supply
- (Q) Stepping motor & Driver & Controller
- (R) Graphic/Logic panel
- (S) Field network device
- (T) Production stoppage models & replacement

D1SC-N

Terminal layout and function



(Rear terminal layout)

◎JP1 : Selection of minus(-) indication

JPI	Indication	(ON)	(OFF)
ON	7 Segment		
OFF	Minus		

※ "JP1⇔ON": Factory specification.

◎Operation function by terminal No. (CN1, CN2)

Terminal No. (CN1 or CN2)	Input Code	Parallel input		Serial input	
		Code	Function	Code	Function
1	VCC		12-24VDC	VCC	12-24VDC
2	A	} Data input	2 ⁰	NC	Don't connect anything
3	B		2 ¹	CK	Clock input
4	C		2 ²	DI	Data input
5	D		2 ³	DO	Data output
6	BI		Zero blank input	BI	Zero blank input
7	BO		Zero blank output	BO	Zero blank output
8	LE		Latch input	LE	Latch input
9	DP		Decimal point input	DP	Decimal point input
10	GND		GND	GND	GND

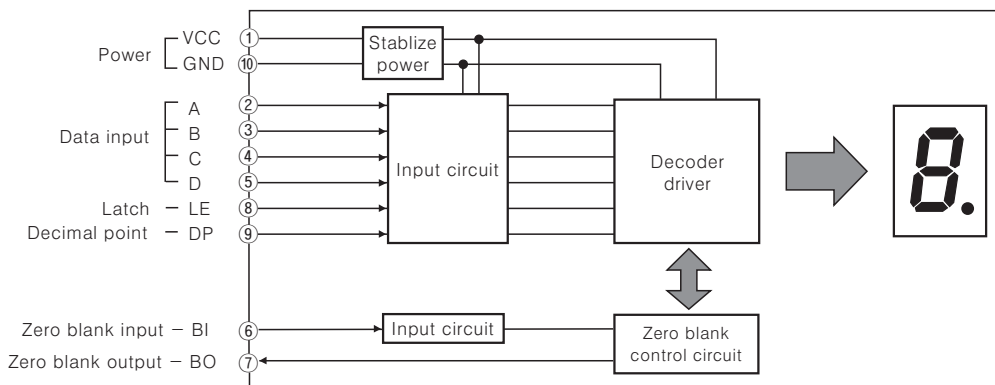
◎SW1, 2 : Mode selection (DIP SW)

Switch	Function		
SW1	ON*	Negative logic	
	OFF	Positive logic	
SW2	1	ON*	Progressing by 10 (Decimal)
		OFF	Progressing by 16 (Hexa decimal)
	2	ON*	Parallel
		OFF	Serial
3	ON	Serial DOT (Have)	
	OFF*	Serial DOT (Non)	
4	ON	Serial Data OUT (Have)	
	OFF*	Serial Data OUT (Non)	
5	ON	Zero blank OUT (Have)	
	OFF*	Zero blank OUT (Non)	

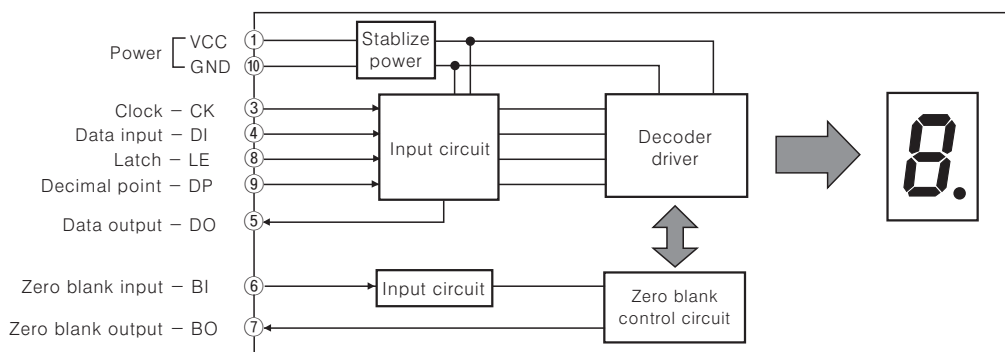
"*": Factory specification.

Block diagram

◎Parallel input



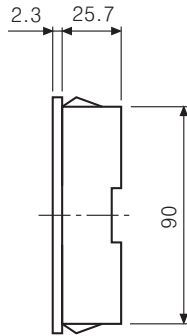
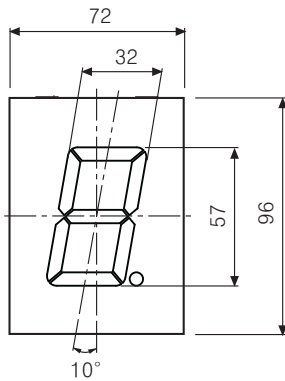
◎Serial input



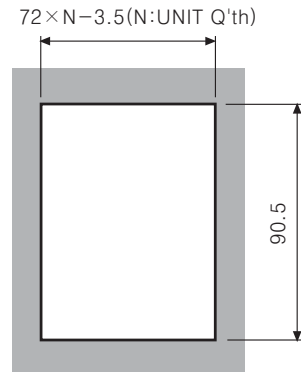
※② pin is not used.

7 SEGMENT DISPLAY UNIT

■ Dimensions

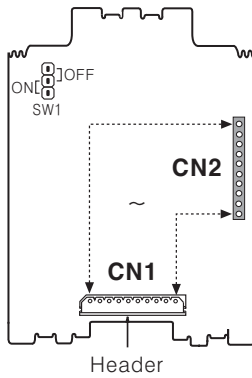


● Panel cut-out



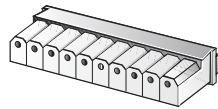
*Applicable panel thickness : 2 to 4mm (Unit:mm)

◎ Accessories

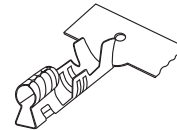


■ CN1 : Connector specification

- Connector maker: Korea Morex.
 - Housing : 5264-10
 - Header : 5264-10A (Straight)
 - Terminal : 5263 (PBT)
- Using cable specification
 - AWG#22 to 28 (Cable diameter : ϕ 1.9mm Max.)
 - Shedding length of wire cover : 2.4 to 2.9mm



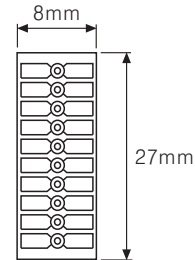
Housing [5264-10]



Terminal [5263(PBT)]

■ CN2 : Connector for multi-stage

- This connector must be used with connection PCB
- CN1 and CN2 must be connected as below drawing.



Multi-stage connector

■ Input data chart

Indication				Negative input			Positive input		
Minus		7 Segment		D	C	B	A	BI	LATCH
Hexa decimal	Decimal	Hexa decimal	Decimal						
Blank	Blank	0	0	H	H	H	H	L	H
Blank	Blank	1	1	H	H	H	L	X	H
-	-	2	2	H	H	L	H	X	H
-	-	3	3	H	H	L	L	X	H
-	-	4	4	H	L	H	H	X	H
-	-	5	5	H	L	H	L	X	H
-	-	6	6	H	L	L	H	X	H
Blank	Blank	7	7	H	L	L	L	X	H
-	-	8	8	L	H	H	H	X	H
-	-	9	9	L	H	H	L	X	H
-	Blank	A	Blank	L	H	L	H	X	H
-	Blank	b	Blank	L	H	L	L	X	H
Blank	Blank	c	Blank	L	L	H	H	X	H
-	Blank	d	Blank	L	L	H	L	X	H
-	Blank	e	Blank	L	L	L	H	X	H
-	Blank	f	Blank	L	L	L	L	X	H
HOLD		HOLD		X	X	X	X	X	L
				X	X	X	X	X	H

Positive input

*When BI terminal connect GND, "0" will be displayed. When BI terminal is open, it will be blank (not display).

*"X" : Either high or low level can be input.

*In case of indicating minus(-), JP1 must be OFF.

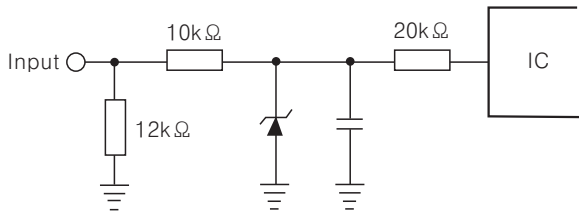
*Blank : If input signal as input DATA, it does not display.

- (A) Photo electric sensor
- (B) Fiber optic sensor
- (C) Door/Area sensor
- (D) Proximity sensor
- (E) Pressure sensor
- (F) Rotary encoder
- (G) Connector/Socket
- (H) Temp. controller
- (I) SSR/Power controller
- (J) Counter
- (K) Timer
- (L) Panel meter
- (M) Tacho/Speed/Pulse meter
- (N) Display unit
- (O) Sensor controller
- (P) Switching power supply
- (Q) Stepping motor & Driver & Controller
- (R) Graphic/Logic panel
- (S) Field network device
- (T) Production stoppage models & replacement

D1SC-N

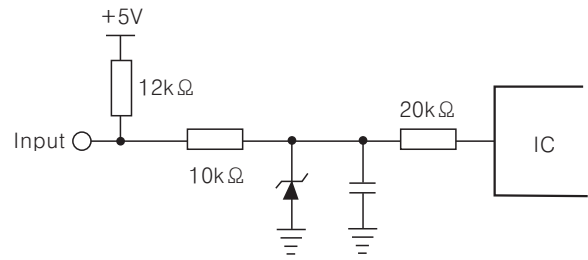
Input circuit

○Positive logic (SW1 : OFF)



※Input level ⇨ High : 4.5–24VDC, Low : 0–1.2VDC

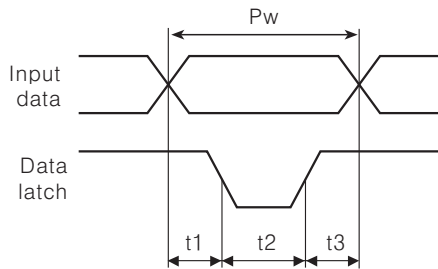
○Negative logic (SW1 : ON)



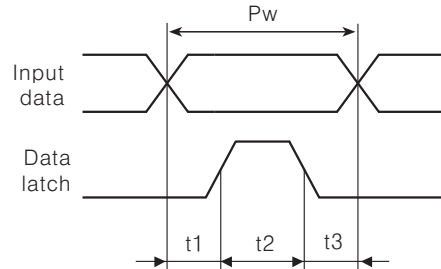
Input timing

○Parallel input

●Positive logic (SW1 : OFF, SW2-② : ON)



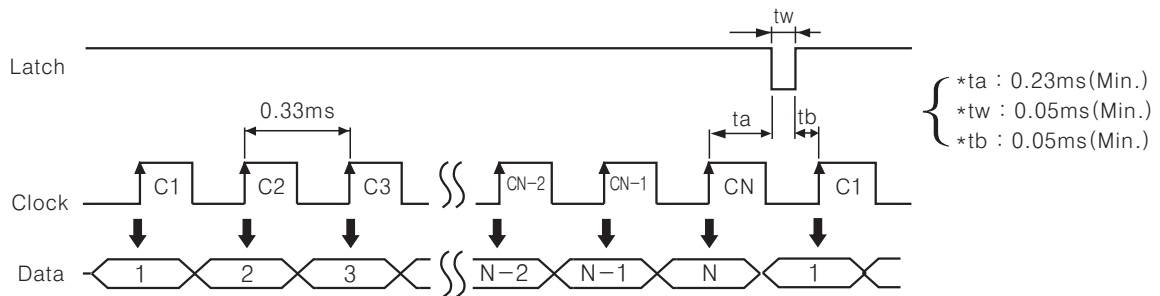
●Negative logic (SW1 : ON, SW2-② : ON)



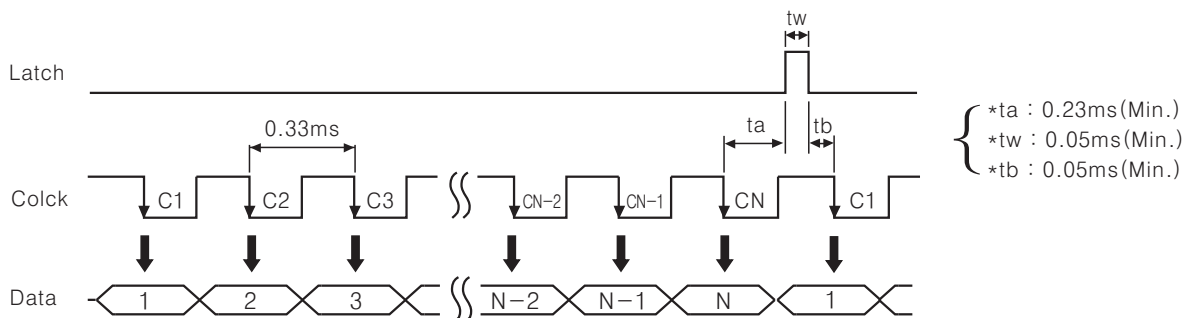
$$Pw = t1 + t2 + t3 \begin{cases} Pw : 0.33\text{ms (Min.)} \\ t1 : 0.05\text{ms (Min.)} \rightarrow \text{Data latch} \\ t2 : 0.23\text{ms (Min.)} \rightarrow \text{Data shift} \\ t3 : 0.05\text{ms (Min.)} \rightarrow \text{Data latch} \end{cases}$$

○Serial input

●Positive logic (SW1 : OFF, SW2-② : OFF, SW2-④ · ⑤ : ON) : Clock max. 3kHz



●Negative logic (SW1 : ON, SW2-② : OFF, SW2-④ · ⑤ : ON) : Clock max. 3kHz

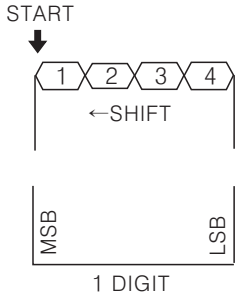


7 SEGMENT DISPLAY UNIT

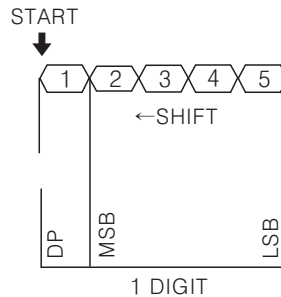
■ Data input method for serial

◎ Single input method

- 4Bit Data input (SW2-②:OFF, SW2-③:OFF, SW2-④:ON, SW2-⑤:ON)

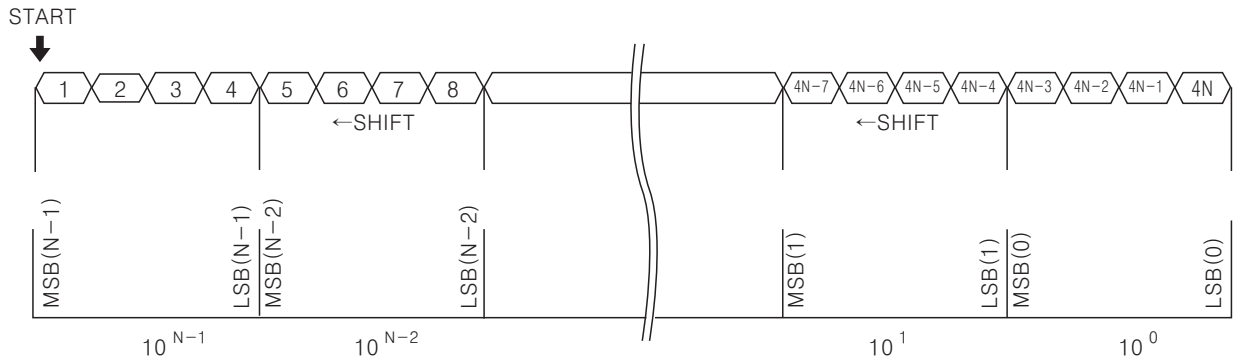


- 5Bit Data input (SW2-②:OFF, SW2-③:ON, SW2-④:ON, SW2-⑤:ON)

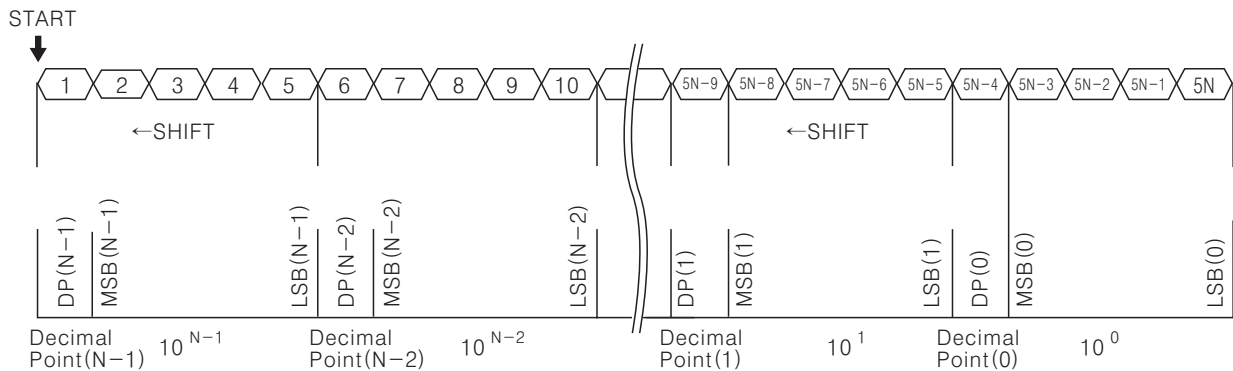


◎ Multi-stage connection input method

- 4Bit Data input (SW2-②:OFF, SW2-③:OFF, SW2-④:ON, SW2-⑤:ON)



- 5Bit Data input (SW2-②:OFF, SW2-③:ON, SW2-④:ON, SW2-⑤:ON)



● Arrangement



10^{N-1}



10^{N-2}



10^1



10^0

(A) Photo electric sensor

(B) Fiber optic sensor

(C) Door/Area sensor

(D) Proximity sensor

(E) Pressure sensor

(F) Rotary encoder

(G) Connector/Socket

(H) Temp. controller

(I) SSR/Power controller

(J) Counter

(K) Timer

(L) Panel meter

(M) Tacho/Speed/Pulse meter

(N) Display unit

(O) Sensor controller

(P) Switching power supply

(Q) Stepping motor & Driver & Controller

(R) Graphic/Logic panel

(S) Field network device

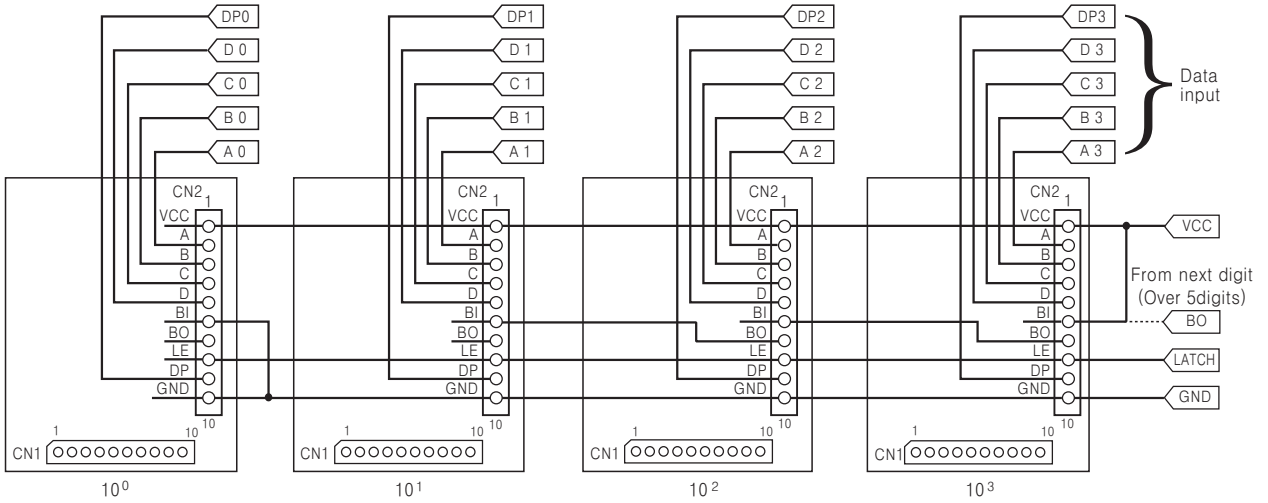
(T) Production stoppage models & replacement

D1SC-N

Multi-stage connection method

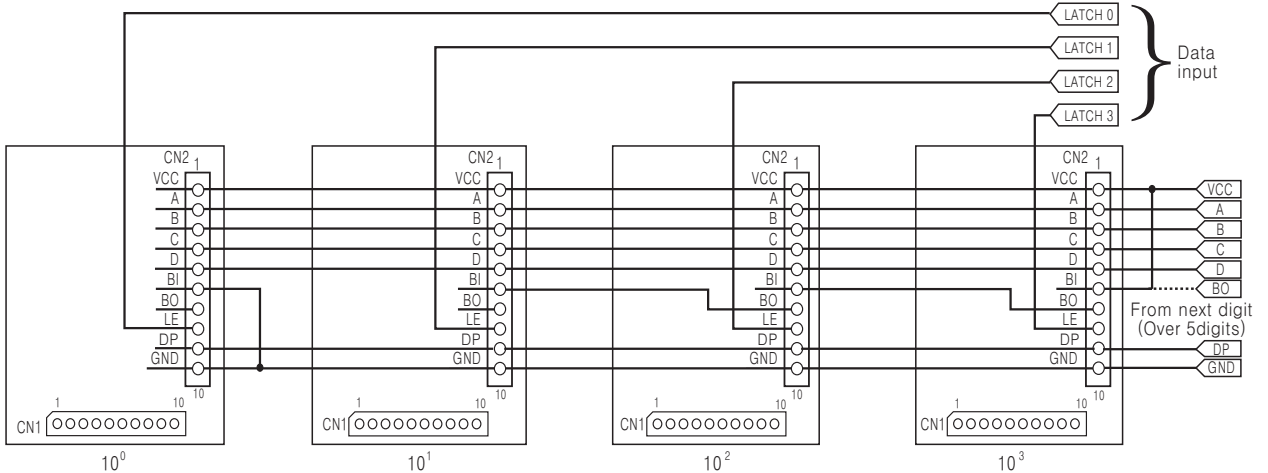
Parallel input : 4digit

- Static connection (Zero blanking method) . . . These diagrams are to wire at rear layout of the unit.



*CN1 terminal can use instead of CN2, because CN2 corresponds to CN1.

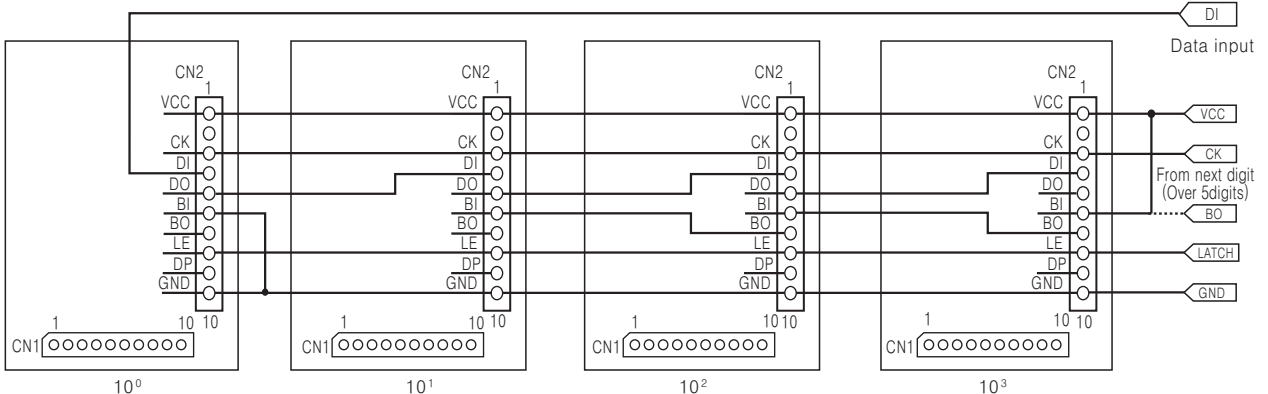
- Dynamic connection (Zero blanking method) . . . These diagrams are to wire at rear layout of the unit.



*CN1 terminal can use instead of CN2, because CN2 corresponds to CN1.

Serial input : 4digit

- Serial connection (Zero blanking method) . . . These diagrams are to wire at rear layout of the unit.



*CN1 terminal can use instead of CN2, because CN2 corresponds to CN1.

