

7 Segment Display Unit

7 Segment Display unit large(W31.9×H56.9mm) and High bright LED


■ Features

- Selectable Decimal(0 ~ 9) or Hexa-decimal (0 ~ 9, A ~ 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 : 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.

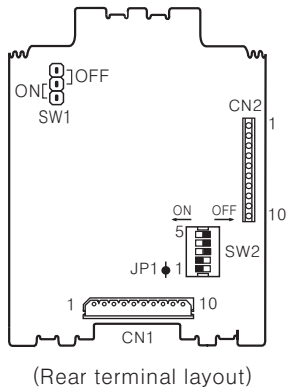
■ Specifications

Model	D1SC-N
Indication	Red(7 Segment LED Display)
Power supply	12-24VDC
Allowable voltage range	90 ~ 110% of rated voltage
Current consumption	Max. 70mA
Max. clock speed	Max. 3kHz [When duty rate is 1:1 (ON:OFF)]
Input	<ul style="list-style-type: none">• Parallel : Parallel 4Bit Binary Data, Zero Blank, Latch, Decimal point• Serial : Serial 4Bit or 5Bit (Decimal point), Clock, Zero Blank, Latch, Decimal point (When not select Serial DOT)
Input logic	Selectable positive or negative logic by slide switch
Input impedance	12kΩ
Input level	High : 4.5-24VDC, Low : Max. 0-1.2VDC
Insulation resistance	Min. 100MΩ (at 500VDC)
Noise strength	The square wave noise by simulator (pulse width:1μs) ±300V between power terminals ±300V between input terminals
Ambient temperature	0 ~ +60°C (at non-freezing status)
Storage temperature	-10 ~ +85°C (at non-freezing status)
Ambient humidity	35~85%RH
Weight	Approx. 100g

※The Max. clock speed is when the duty rate is 1:1.

D1SC-N

Terminal diagram and function



◎JP1: Selection of minus(-) indication

ON	7 Segment	(ON) (OFF)
OFF	Minus	

*JP1 Factory default setting : ON

◎Operation function by terminal CN1 and CN2

Terminal No.	Parallel input		Serial input	
	Code	Function	Code	Function
1	VCC	12-24VDC	VCC	12-24VDC
2	A	Data input	NC	Don't connect anything
3	B		CK	Clock input
4	C		DI	Data input
5	D		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	0V	GND	0V

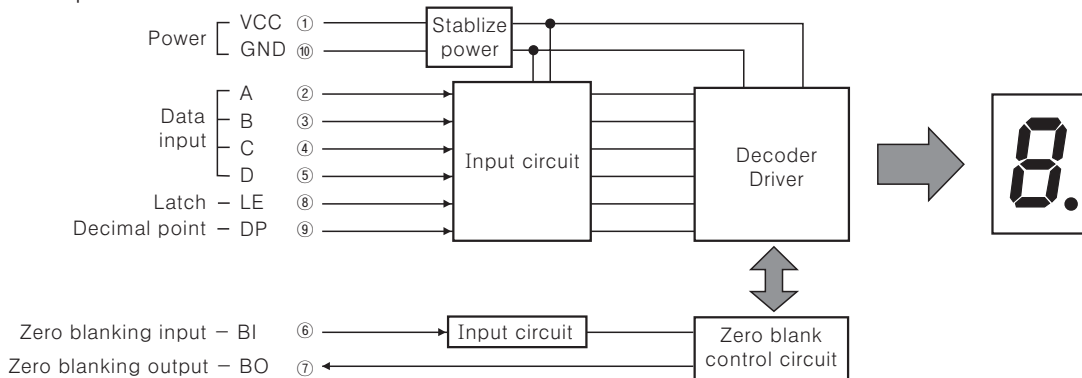
◎SW1, SW2(DIP SW) mode selection

SW NO	Function	
SW1	* ON	Negative logic
	OFF	Positive logic
SW2	* ON	Progressing by 10(Decimal)
	OFF	Progressing by 16(Hexa decimal)
	* ON	Parallel
	OFF	Serial
	ON	Serial DOT (Have)
	* OFF	Serial DOT (None)
	ON	Serial Data OUT (Have)
	* OFF	Serial Data OUT (None)
	ON	Blank OUT (Have)
	* OFF	Blank OUT (None)

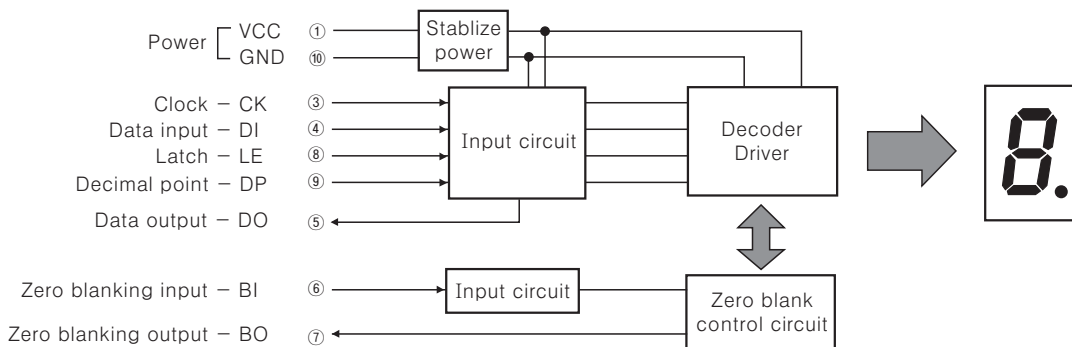
"*" : Factory default setting

Block diagram

◎Parallel input



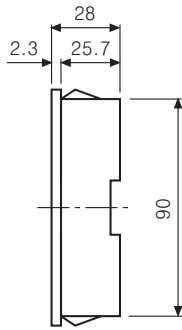
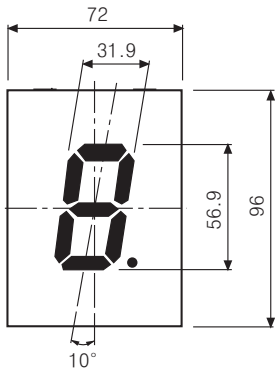
◎Serial input



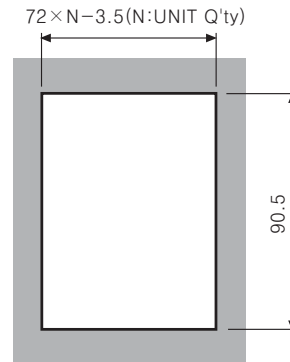
*② pin is not used.

7 Segment Display Unit

■ Dimensions



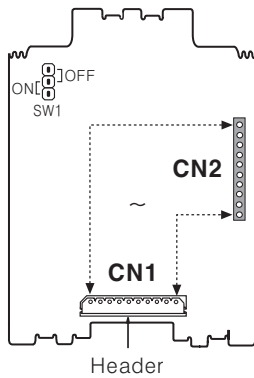
● Panel cut-out



※Applicable panel thickness : 2 ~ 4mm

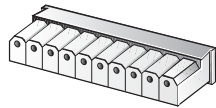
Unit : mm

◎ Accessories

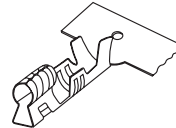


■ Connector specification (CN1)

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



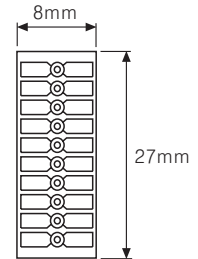
Housing(5264-10)



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												
Zero Blank	Zero Blank	Zero Blank	Zero Blank	H	H	H	H	H	H	L	L	L	L	H	L
Blank	Blank	0	0	H	H	H	H	L	H	L	L	L	L	L	L
Blank	Blank	1	1	H	H	H	L	X	H	L	L	L	H	X	L
-	-	2	2	H	H	L	H	X	H	L	L	H	L	X	L
-	-	3	3	H	H	L	L	X	H	L	L	H	H	X	L
-	-	4	4	H	L	H	H	X	H	L	H	L	L	X	L
-	-	5	5	H	L	H	L	X	H	L	H	L	H	X	L
-	-	6	6	H	L	L	H	X	H	L	H	H	L	X	L
Blank	Blank	7	7	H	L	L	L	X	H	L	H	H	H	X	L
-	-	8	8	L	H	H	H	X	H	H	H	L	L	X	L
-	-	9	9	L	H	H	L	X	H	H	H	L	H	X	L
-	Blank	A	Blank	L	H	L	H	X	H	H	H	H	L	X	L
-	Blank	b	Blank	L	H	L	L	X	H	H	H	H	H	X	L
Blank	Blank	c	Blank	L	L	H	H	X	H	H	H	L	L	X	L
-	Blank	d	Blank	L	L	H	L	X	H	H	H	L	H	X	L
-	Blank	e	Blank	L	L	L	H	X	H	H	H	H	L	X	L
-	Blank	F	Blank	L	L	L	L	X	H	H	H	H	H	X	L
HOLD		HOLD		X	X	X	X	X	L	X	X	X	X	X	H

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

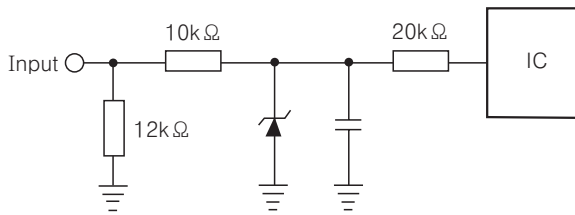
※ In case of indicating minus(-), JP1 must be OFF.

※ - : Minus indication

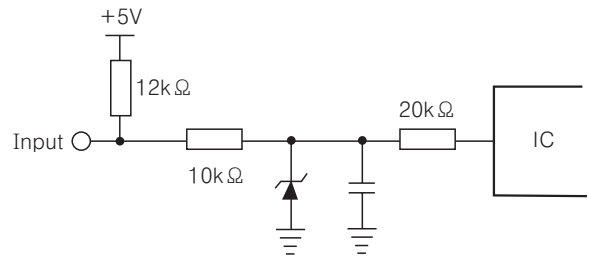
D1SC-N

Input circuit

○Positive logic (SW1 : OFF)



○Negative logic (SW1 : ON)

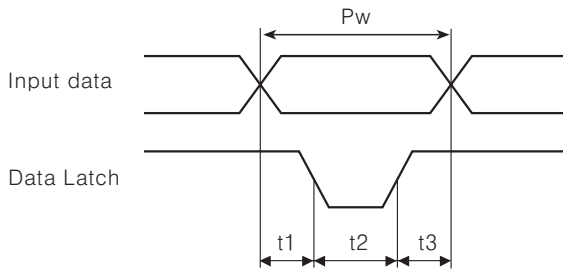


※Input level ⇨ High : 4.5-24VDC, Low: 0-1.2VDC

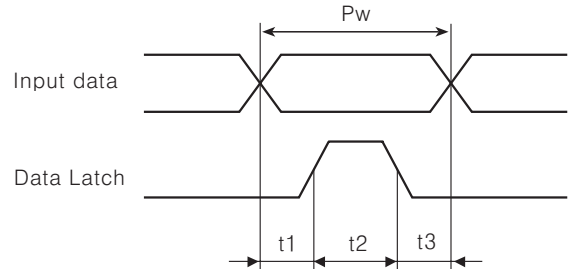
Input timing

○Parallel input

●Positive logic (SW1: OFF, SW2-②: ON)



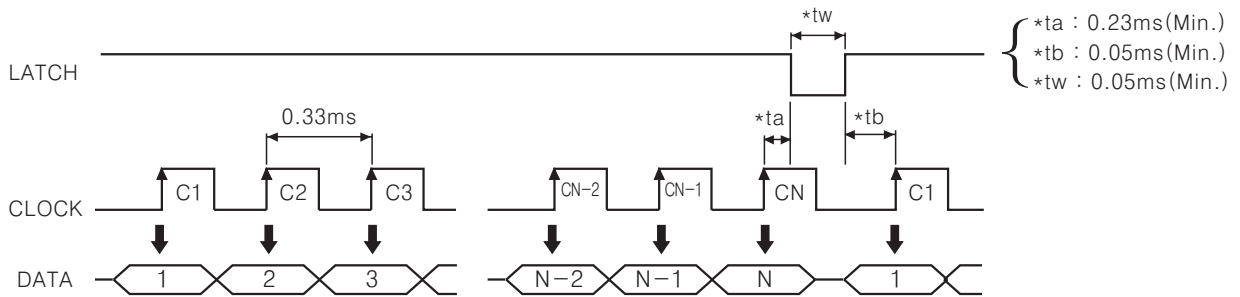
●Negative logic (SW1: ON, SW2-②: ON)



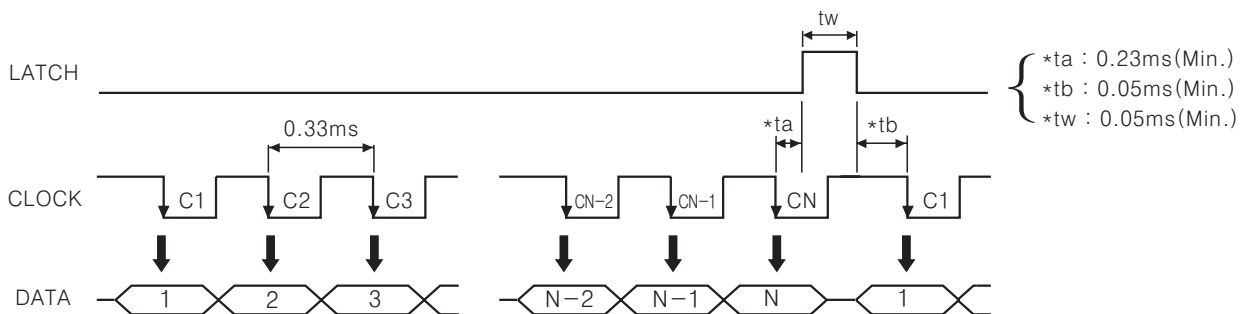
$$Pw = t1 + t2 + t3 \left\{ \begin{array}{l} Pw : 0.33\text{ms (Min.)} \\ t1 : 0.05\text{ms (Min.)} \rightarrow \text{Data Latch} \\ t2 : 0.23\text{ms (Min.)} \rightarrow \text{Data Shift} \\ t3 : 0.05\text{ms (Min.)} \rightarrow \text{Data Latch} \end{array} \right.$$

○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

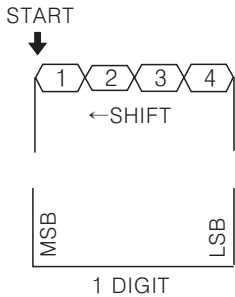


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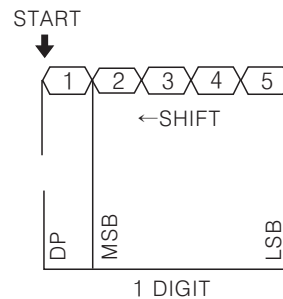
Input time

Single input method

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

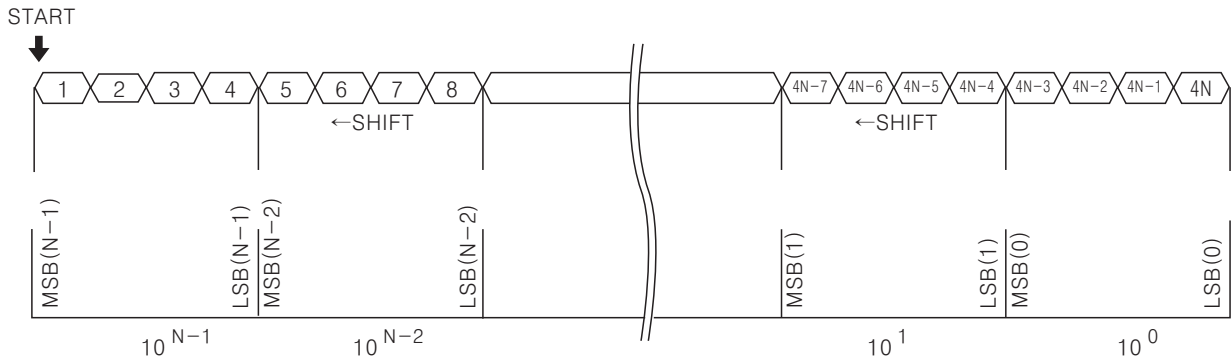


- 5Bit Data input(SW2-②:OFF, SW2-③:ON, SW2-④:ON, SW2-⑤:ON)

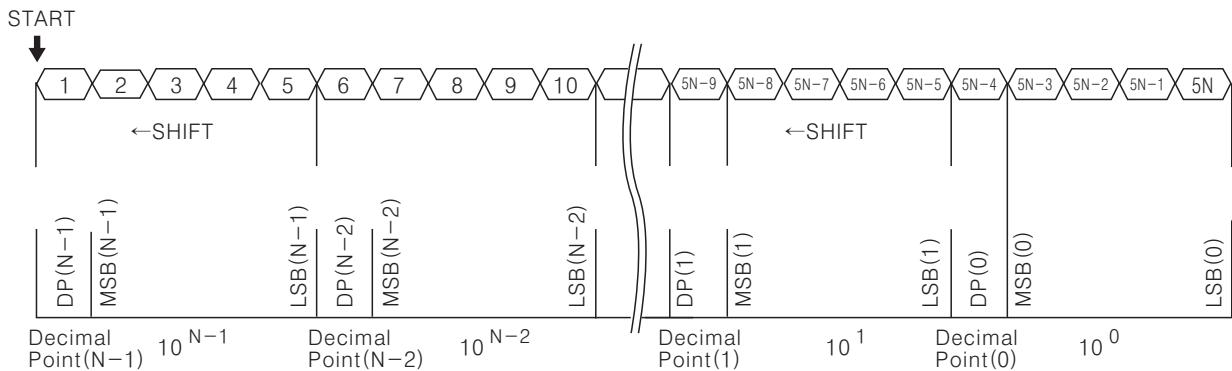


Multi-stage connection input method

- 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



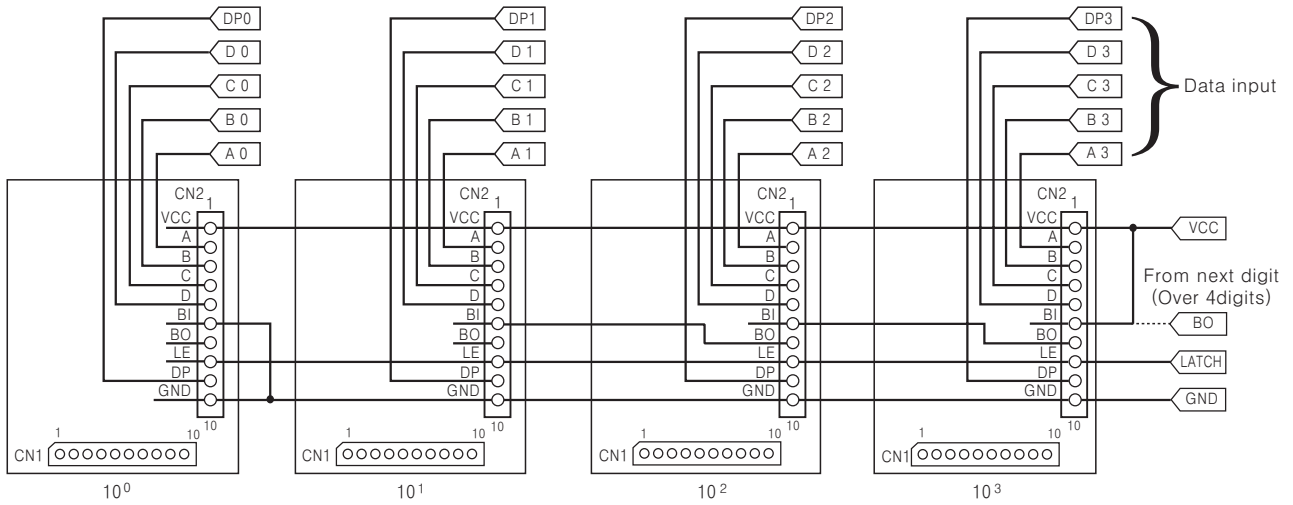
10^0

D1SC-N

Multi-stage connection method

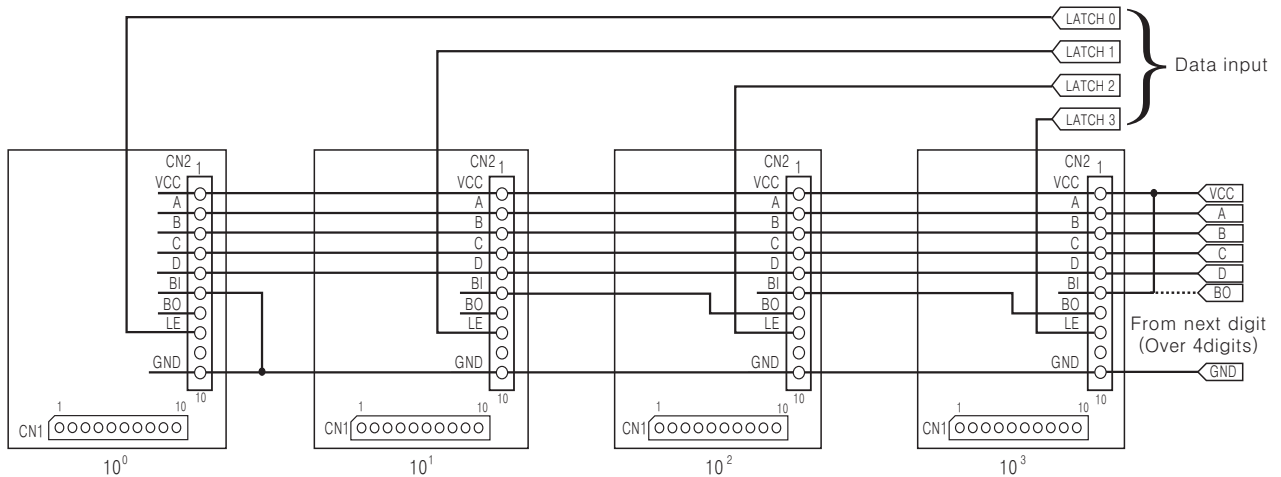
Parallel input (These diagrams are to wire at rear layout of the unit)

- Static connection (Zero Blanking method) : 4digit



*CN1 terminal can be used since CN1 and CN2 are corresponded to 1:1.

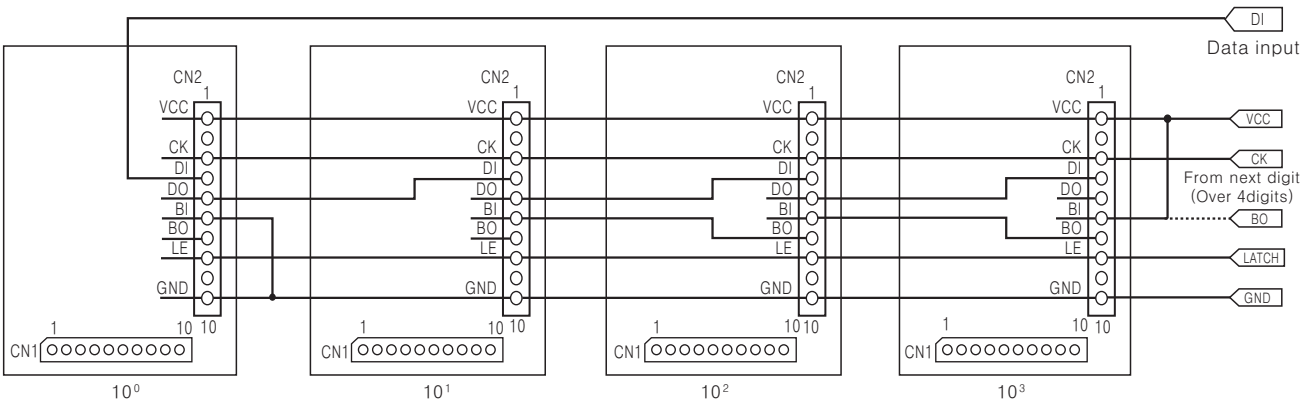
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Serial input (These diagrams are to wire at rear layout of the unit)

- Serial connection (Zero blanking method) : 4digit



*CN1 terminal can be used since CN1 and CN2 are corresponded to 1:1.

