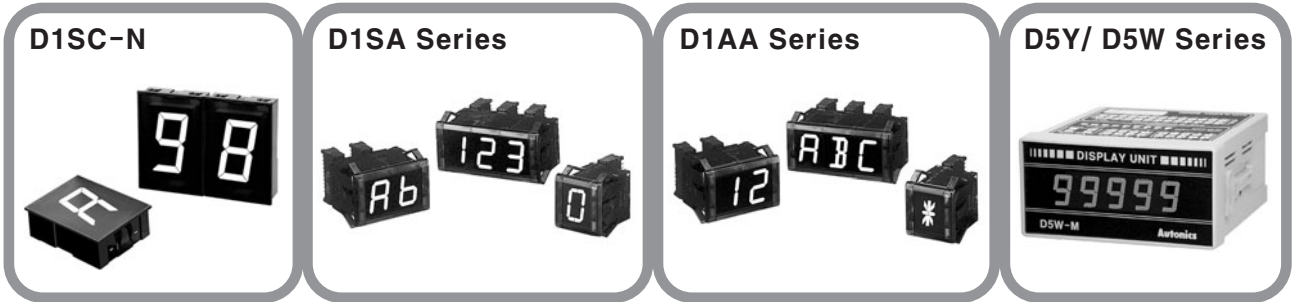


(N) Display Unit

Product overview	N-1
D1SC-N(7 Segment)	N-2
D1SA Series(Small type, 7 Segment)	N-9
D1AA Series(Smaill type, 16 Segment)	N-17
D5Y/D5W Series(Panel mounting type, 5 digit display)	N-25

(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



Product Overview

Model	D1SC-N	D1SA-RN	D1SA-GN	D1AA-RN	D1AA-GN
Appearances & Dimensions	 [W72×H96×L25.7mm]	 [W20×N+12×H33×L54mm]	 [W20×N+12×H33×L54mm]		
Character size	W32×H57mm	W11×H22mm			
Power supply	12–24VDC				
Allowable voltage range	90 to 110% of rated voltage				
Current consumption	Max. 70mA	12VDC : Max. 35mA, 24VDC : Max. 24mA		12VDC : Max. 32mA, 24VDC : Max. 25mA	
Display method	Red (7 Segment)	Red (7 Segment)	Green (7 Segment)	Red (16 Segment)	Green (16 Segment)
Display character	●Decimal number : 0 to 9, Decimal point ●Hexa decimal number : 0 to 9, A to F, Decimal point			0–9, A to Z, Decimal point, 24 kinds of symbols	
Max. response frequency	Max. 3kHz(Except for STATIC input type)				
Input	BCD Code 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)			BCD Code Parallel : Parallel 6bit binary data, latch, decimal point Serial : Serial 6bit or 7bit (Decimal point), clock, latch, decimal point (When not selecting serial DOT)	
Output	Data out [Serial DATA input case], zero blank out				
Input logic	Selectable positive (PNP) or negative (NPN) by inner switch(SW1)	Selectable positive (PNP) or negative (NPN) by inner soldering			
Input level	High : 4.5–24VDC, Low : 0–1.2VDC				
Input resistance	12kΩ	20kΩ			
Reference	N-2 to 8	N-9 to 16		N-17 to 24	

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

Model	D5Y-M	D5W-M	D5W-MX
Appearances & Dimensions	 [W72×H36×L91mm]	 [W96×H48×L99.5mm]	
Character size	W8×H14.1mm		
Power supply	12-24VDC		110/220VAC 50/60Hz (Option)
Allowable voltage range	90 to 110% of rated voltage		
Current consumption	1.1W		2VA
Display method	Red (7 Segment LED Display)		
Display character	0~9, Decimal, - Symbol (When it is serial input)		
Max. response frequency	Max. 5kHz (Except for STATIC input type)		
Input method	BCD Code : Static, dynamic, serial (4 / 5 / 16 / 20 / 25 bit)		
Input logic	Select positive (PNP) or negative (NPN)		
Input level	High : 5-24VDC, Low : 0-1.2VDC		
Input resistance	22kΩ		
Reference	N-25 to 32		

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

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	• 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.) • Between power terminals : ±300V • Between input terminals : ±300V
Ambient temperature	0 to 60℃ (at non-freezing status)
Storage temperature	–10 to 85℃ (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

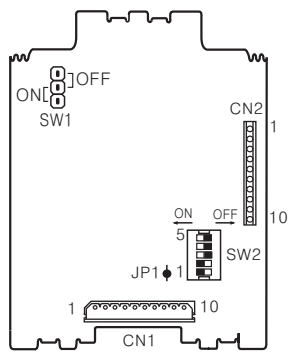
(Q) Stepping motor & Driver & Controller

(R) Graphic/ Logic panel

(S) Field network device

(T) Production stoppage models & replacement

Terminal layout and function



(Rear terminal layout)

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.

JP1 : Selection of minus(−) indication

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

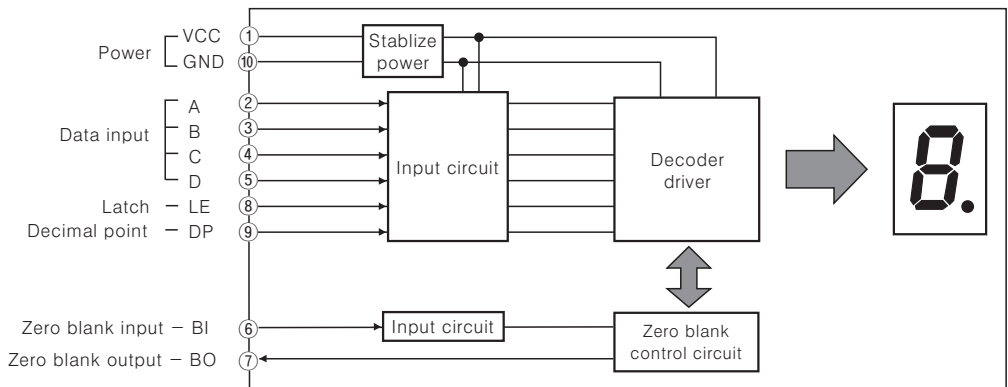
※ "JP1⇨ON": Factory specification.

Operation function by terminal No. (CN1, CN2)

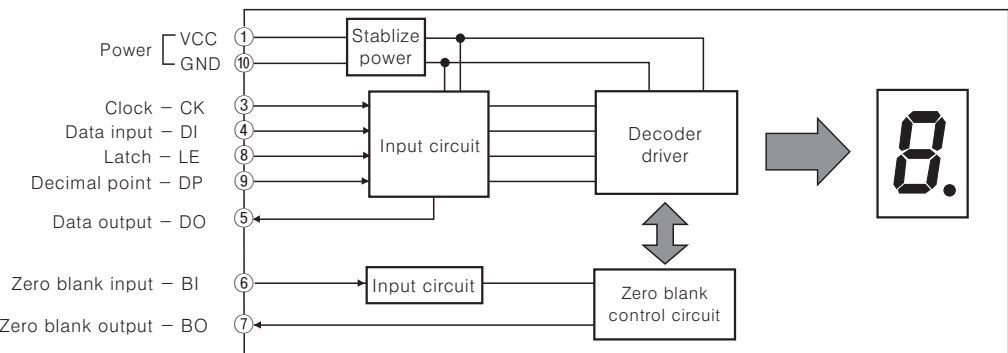
Input Terminal No.(CN1 or CN2)	Parallel input		Serial input	
	Code	Function	Code	Function
1	VCC	12–24VDC	VCC	12–24VDC
2	A	2 ⁰	NC	Don't connect anything
3	B	2 ¹	CK	Clock input
4	C	2 ²	DI	Data input
5	D	2 ³	DO	Data output
6	BI	Zero blank input	BI	Zero blank input
7	BO	Zero blank output	BO	Zero blank output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

Block diagram

Parallel input



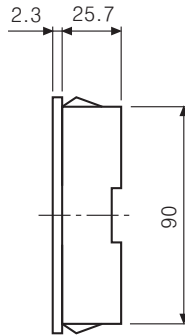
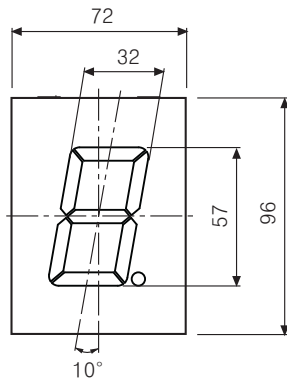
Serial input



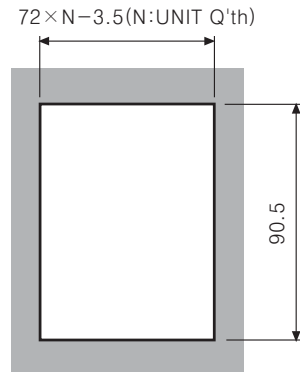
※ ② pin is not used.

7 SEGMENT DISPLAY UNIT

■ Dimensions

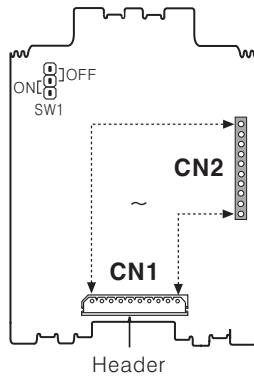


● Panel cut-out



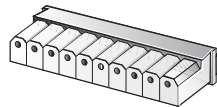
※ Applicable panel thickness : 2 to 4mm (Unit:mm)

◎ Accessories

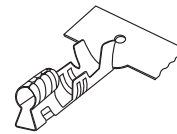


■ CN1 : Connector specification

- 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



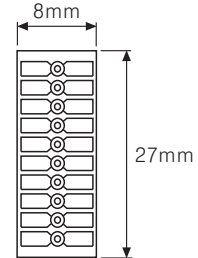
Housing[5264-10]



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						D C B A BI LATCH					
Hexa decimal	Decimal	Hexa decimal	Decimal	D	C	B	A	BI	LATCH	D	C	B	A	BI	LATCH
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	L	L	L	X	L
-	-	9	9	L	H	H	L	X	H	H	L	L	H	X	L
-	Blank	A	Blank	L	H	L	H	X	H	H	L	H	L	X	L
-	Blank	b	Blank	L	H	L	L	X	H	H	L	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

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.

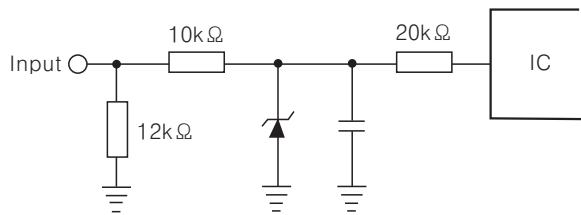
※ In case of indicating minus(-), JP1 must be OFF.

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

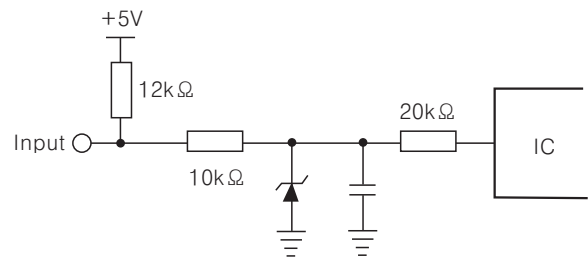
(A)	Photo electric sensor
(B)	Fiber optic sensor
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Input circuit

⊙Positive logic(SW1 : OFF)



⊙Negative logic(SW1 : ON)

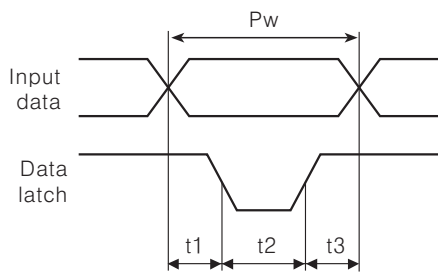


※Input level ⇨ High : 4.5–24VDC, Low: 0–1.2VDC

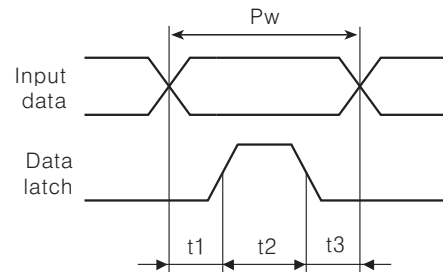
Input timing

⊙Parallel input

●Positive logic(SW1 : OFF, SW2–②: ON)



●Negative logic(SW1 : ON, SW2–②: ON)

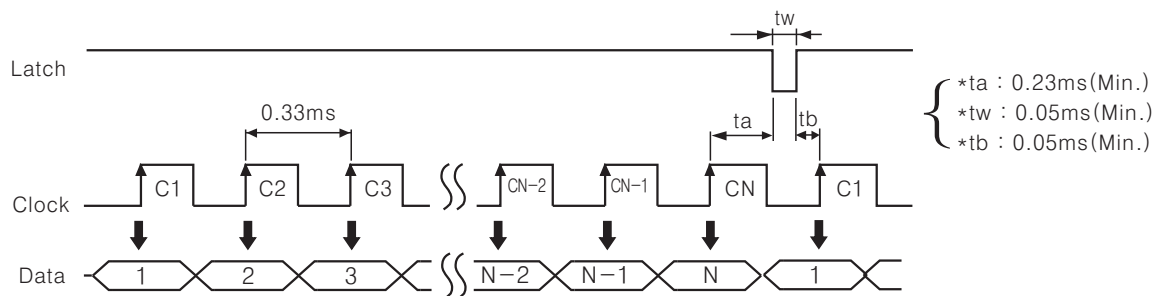


$$Pw = t1 + t2 + t3$$

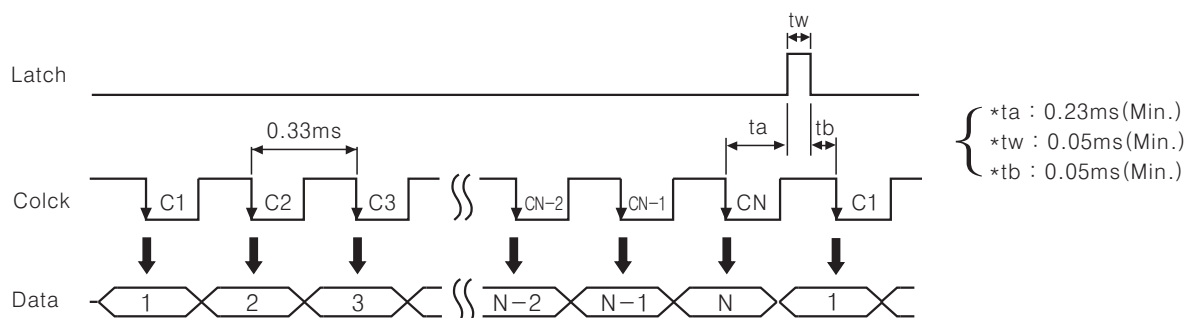
$Pw : 0.33\text{ms}(\text{Min.})$
 $t1 : 0.05\text{ms}(\text{Min.}) \rightarrow \text{Data latch}$
 $t2 : 0.23\text{ms}(\text{Min.}) \rightarrow \text{Data shift}$
 $t3 : 0.05\text{ms}(\text{Min.}) \rightarrow \text{Data latch}$

⊙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

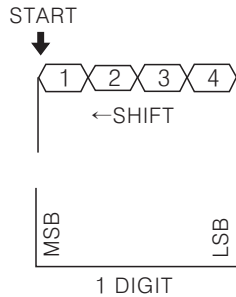


7 SEGMENT DISPLAY UNIT

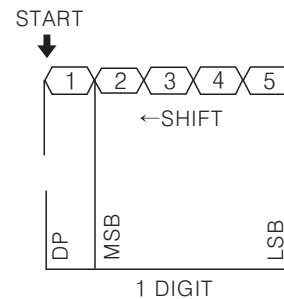
■ Data input method for serial

◎ Single input method

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

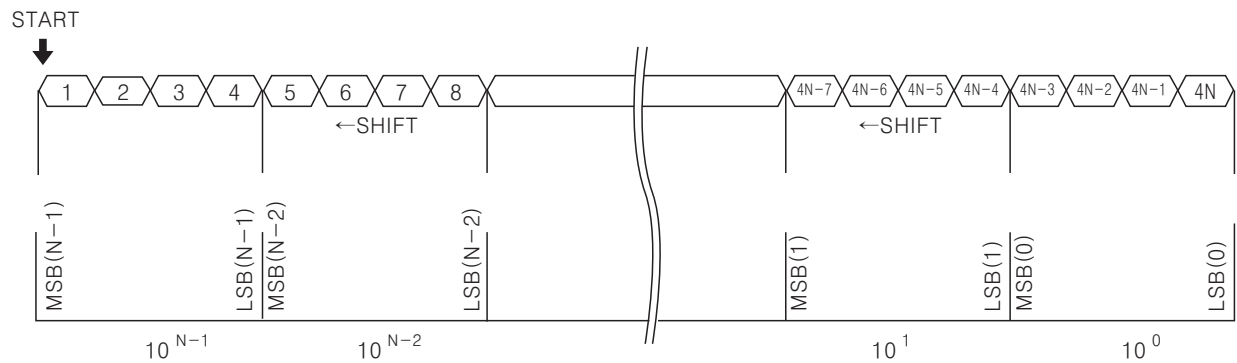


- 5Bit Data input (SW2-②:OFF, SW2-③:ON, SW2-④:ON, SW2-⑤:ON)

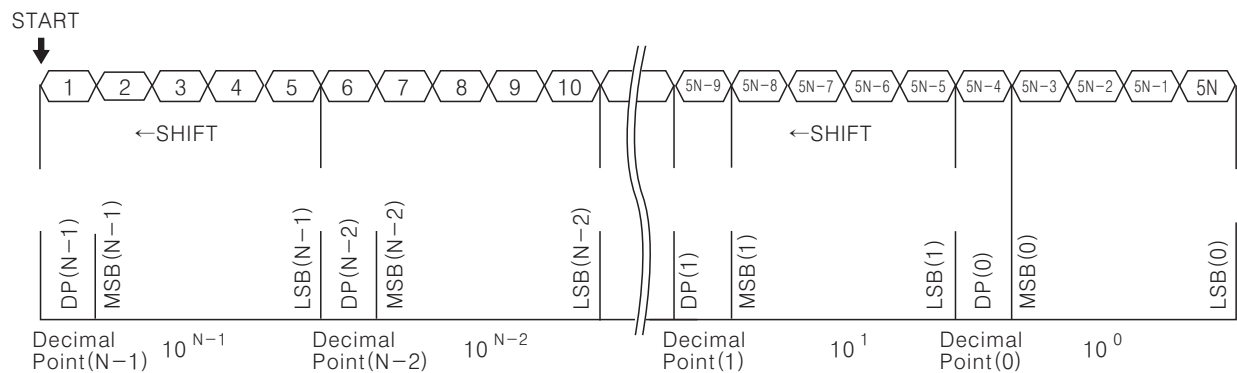


◎ Multi-stage connection input method

- 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

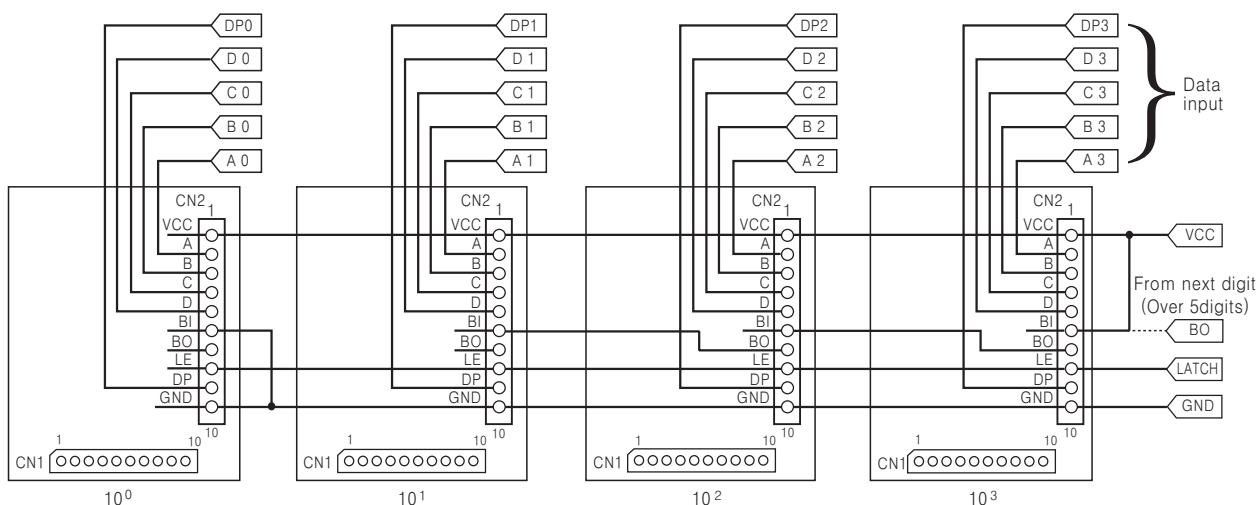


(A)	Photo electric sensor
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Multi-stage connection method

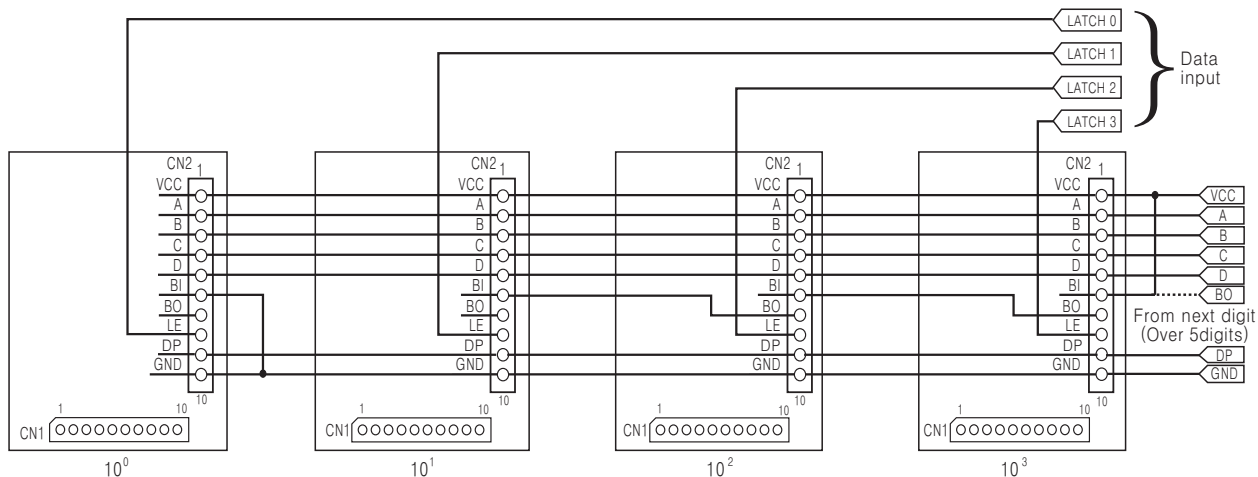
Parallel input : 4digit

- 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.

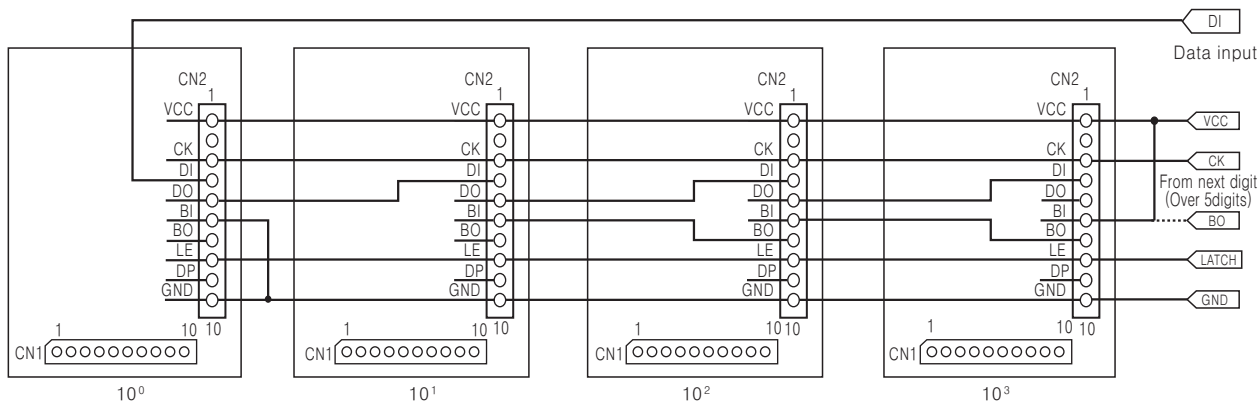
- Dynamic connection(Zero blanking method) · · · These diagrams are to wire at rear layout of the unit.



※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.



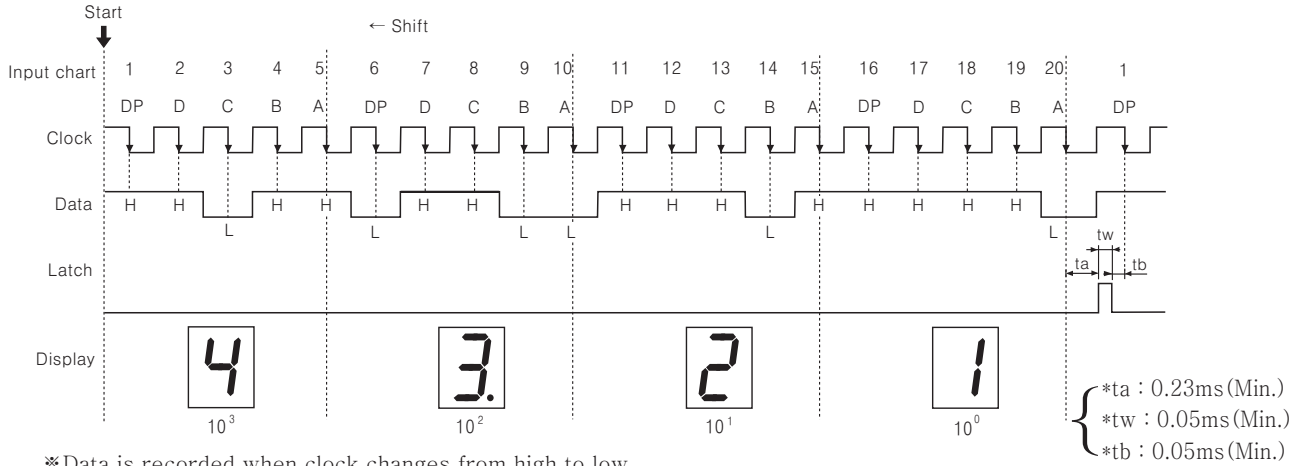
※CN1 terminal can use instead of CN2, because CN2 corresponds to CN1.

7 SEGMENT DISPLAY UNIT

Multi-stage connection method

Serial connection example

- Input mode : Negative logic of serial decimal with DOT
 - SW1: ON, SW2(①: ON, ②: OFF, ③: ON, ④: ON, ⑤: ON), JP1: ON
- Display value : 43.21 data input



*Data is recorded when clock changes from high to low.

*In negative logic, data is read while latch signal is hold at high, but data is hold when it change to low.

Indicating decimal point for serial data

DP indication for 4bit serial data input

- Positive logic input : DP input terminal which is going to indicate DP connects with VCC.
- Negative logic input : DP input terminal which is going to indicate DP connects with GND.

DP indication for 5bit serial data input

Please input DP data with serial data. (DP data is highest-rank bit among 5bit)

Zero blank method?

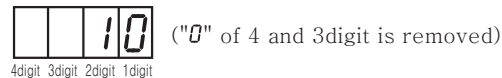
It is to remove "0" indication which is no meaning.

EX) When indication value is "10" in 4digit LED

① Zero blanking function is not applied



② Zero blanking function is applied



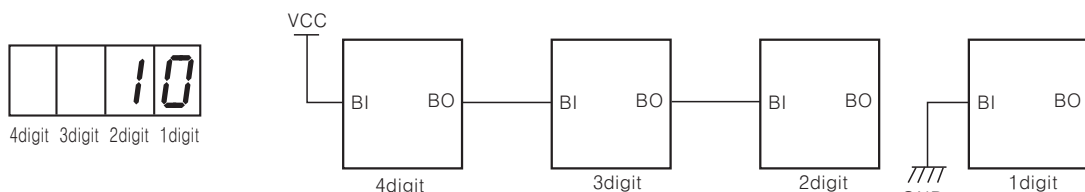
*If indication data is "101", meaningful tens place 0 will be displayed.

Examples of zero blank function for multi-stage

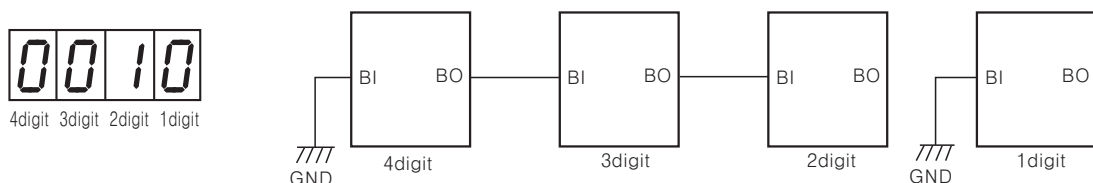
For applying zero blank function, turn on 5 of SW2 on each PCB then connect as below.

Be sure that 1 digit which displays "0" is turned off 5 of SW2.

1) Zero blanking function is applied : In case of indicating "10"



2) Zero blanking function is not applied : In case of indicating "10"



(A) Photo electric sensor

(B) Fiber optic sensor

(C) Door/Area sensor

(D) Proximity sensor

(E) Pressure sensor

(F) Rotary encoder

(G) Connector/Socket

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(R) Graphic/Logic panel

(S) Field network device

(T) Production stoppage models & replacement

Bright LED(W11×H22mm) and 12–24VDC power supply Data input method selection and change function(Serial or Parallel method) Input logic selection and change function(Positive/Negative logic)

■ Features

- Selectable decimal(0 to 9) or hexa-decimal(0 to 9, A to F) indication code
- Input logic selection and change function
: Positive / Negative logic input
- Data input selection and change function
: Parallel or Serial method
- 12–24VDC power supply
- Wide range of input signal level
(Low : 0–1.2VDC, High : 4.5–24VDC)
- Multi stage connection available
- Clear display by 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

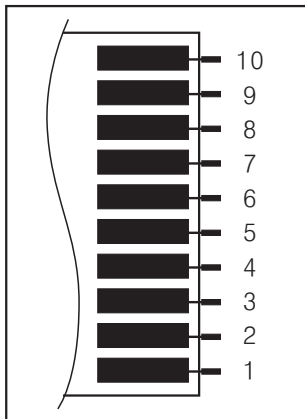
Model	D1SA-RN	※ D1SA-GN
Display method	Red(7 Segment)	Green(7 Segment)
Power supply	12–24VDC ±10%	
Current consumption	12VDC : Max. 32mA, 24VDC : Max. 25mA	
Display character	• Decimal number : 0 to 9, decimal point • Hexa decimal number : 0 to 9, A to F, decimal point	
Character size	W11×H22mm	
Input	• 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 level	High : 4.5–24VDC, Low : 0–1.2VDC	
Max. response frequency	Max. 3kHz	
Input resistance	20kΩ	
Output	Data out [Serial DATA input case], zero blank out	
Input logic	Selectable and changeable positive(PNP) or negative(NPN) (By inner soldering)	
Noise strength	The square wave noise by simulator(pulse width:1 μs, display time:1ns, polarity:±, 100times/every sec.) • Between power terminals : ±300V • Between input terminals : ±300V	
Ambient temperature	0 to 60℃ (at non-freezing status)	
Storage temperature	–10 to 85℃ (at non-freezing status)	
Ambient humidity	35 to 85%RH	
Unit weight	Approx. 22g(Include right/left cap)	

※Green LED type is optional.

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

7 Segment Display Unit

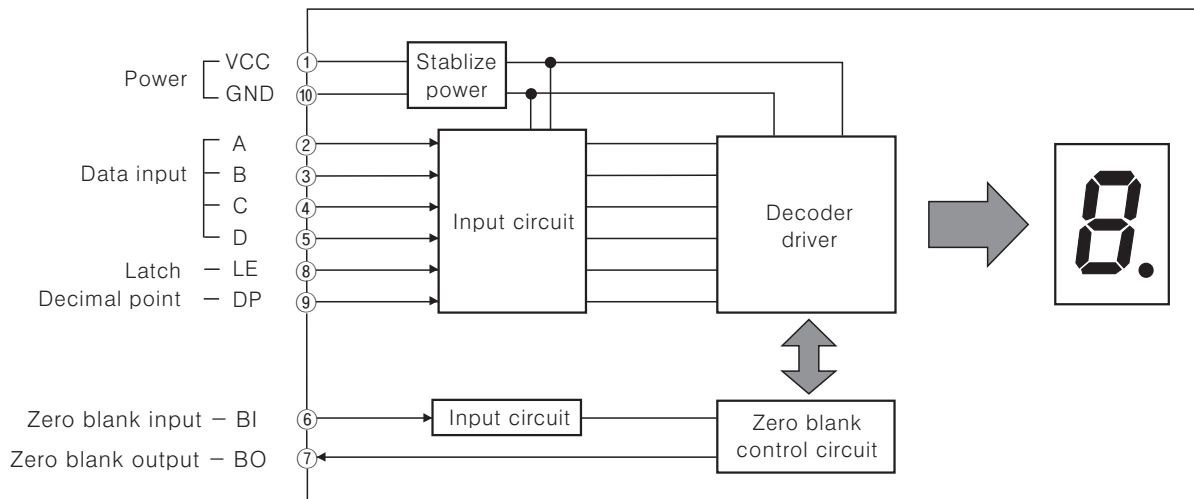
Terminal layout



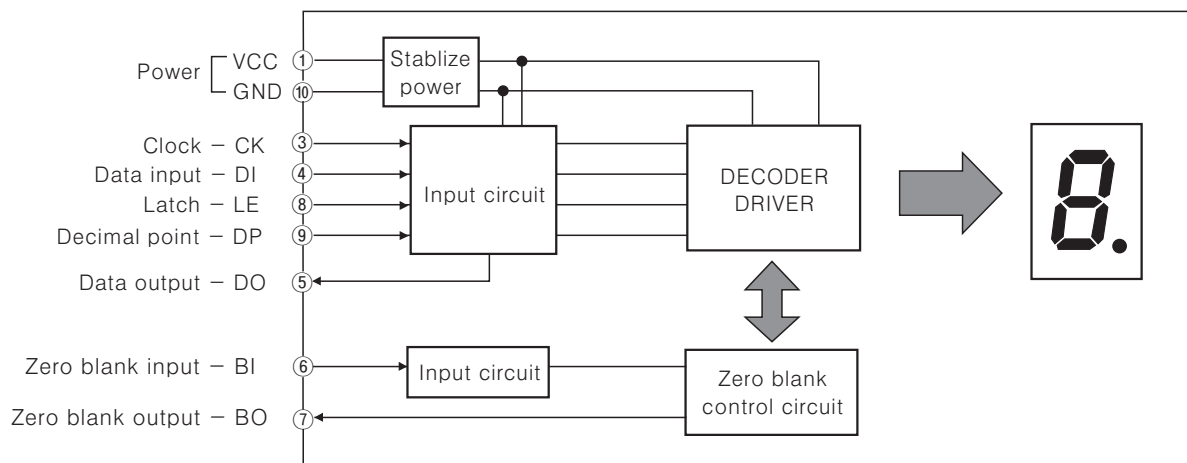
Terminal No.	Parallel input		Serial input	
	Code	Function	Code	Function
1	VCC	12–24VDC	VCC	12–24VDC
2	A	2^0 2^1 2^2 2^3 } Data input	NC	Don't connect anything
3	B		CK	Clock input
4	C		DI	Data input
5	D		DO	Data output
6	BI	Zero blank input	BI	Zero blank input
7	BO	Zero blank output	BO	Zero blank output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

Block diagram

©Parallel input



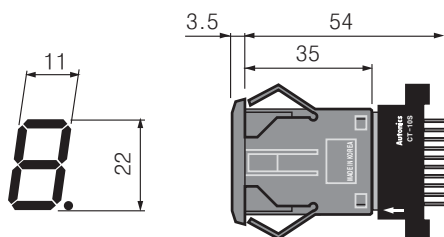
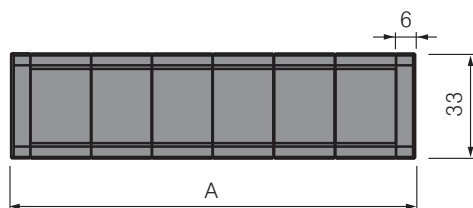
©Serial input



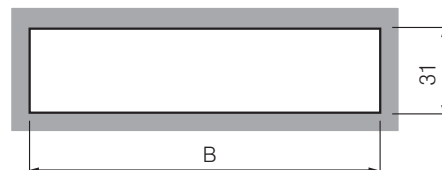
※② pin is not used.

- (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

■ Dimensions



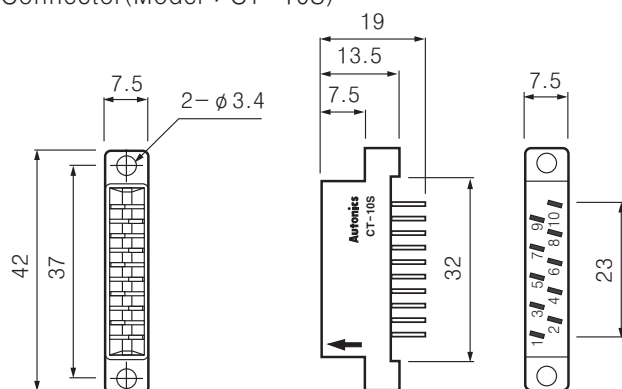
● Panel cut-out



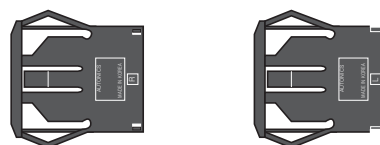
● Panel cut-out chart (Unit:mm)

Digit (N)	Dimension A (20×N+12)	Dimension B (20×N+10)
1	32	30±0.1
2	52	50±0.1
3	72	70±0.1
4	92	90±0.1
5	112	110±0.1
6	132	130±0.1
7	152	150±0.1
8	172	170±0.1

● Connector (Model : CT-10S)



● Cap



- Red FND : DAR(L) – R (Left/Right 1set)
- Green FND : DAR(L) – BL (Left/Right 1set)
- ※ Cap is optional (1set).

(Unit : mm)

■ Operation specification

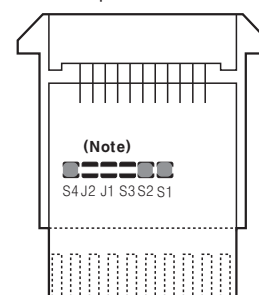
Selection of switch Operation	S1	S2	S3	S4	J1	J2	Bit digit
	ON=Decimal OFF=Hexa decimal	ON=Parallel OFF=Serial	ON=Serial with DOT OFF=Serial without DOT	Negative logic : S4=ON Positive logic : S4=OFF	Serial data out	Zero blank out	
Parallel decimal negative logic	ON	ON	OFF	S4=ON	※1 OFF	ON	—
Parallel decimal positive logic	ON	ON	OFF	S4=OFF	※1 OFF	ON	—
Parallel hexa decimal negative logic	OFF	ON	OFF	S4=ON	※1 OFF	ON	—
Parallel hexa decimal positive logic	OFF	ON	OFF	S4=OFF	※1 OFF	ON	—
Serial decimal without DOT negative logic	ON	OFF	OFF	S4=ON	ON	ON	4bit
Serial decimal without DOT positive logic	ON	OFF	OFF	S4=OFF	ON	ON	4bit
Serial decimal with DOT negative logic	ON	OFF	ON	S4=ON	ON	ON	※2 5bit
Serial decimal with DOT positive logic	ON	OFF	ON	S4=OFF	ON	ON	※2 5bit
Serial hexa decimal without DOT negative logic	OFF	OFF	OFF	S4=ON	ON	ON	4bit
Serial hexa decimal without DOT positive logic	OFF	OFF	OFF	S4=OFF	ON	ON	4bit
Serial hexa decimal with DOT negative logic	OFF	OFF	ON	S4=ON	ON	ON	※2 5bit
Serial hexa decimal with DOT positive logic	OFF	OFF	ON	S4=OFF	ON	ON	※2 5bit

(※1) J1 must be OFF in parallel operation

(※2) 1bit will be added, if DOT used in serial operation.

※Note : Please use it according to operation specification, otherwise product might be damaged.

◎ Function selection switch position



※ ON = (Short) OFF = (Open)

※ (Note) J2 must be ON when using zero blank function.

☞ Factory default : Parallel decimal negative logic (S1: ON, S2: ON, S3: OFF, S4: ON, J1: OFF, J2: OFF)

7 Segment Display Unit

Input data chart

Indication		Negative input						Positive input					
Hexa decimal	Decimal	D	C	B	A	BI	LATCH	D	C	B	A	BI	LATCH
Zero bank	Zero blank	H	H	H	H	H	H	L	L	L	L	H	L
0	0	H	H	H	H	L	H	L	L	L	L	L	L
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
7	7	H	L	L	L	X	H	L	H	H	H	X	L
8	8	L	H	H	H	X	H	H	L	L	L	X	L
9	9	L	H	H	L	X	H	H	L	L	H	X	L
A	Blank	L	H	L	H	X	H	H	L	H	L	X	L
b	Blank	L	H	L	L	X	H	H	L	H	H	X	L
c	Blank	L	L	H	H	X	H	H	H	L	L	X	L
d	Blank	L	L	H	L	X	H	H	H	L	H	X	L
e	Blank	L	L	L	H	X	H	H	H	H	L	X	L
f	Blank	L	L	L	L	X	H	H	H	H	H	X	L
HOLD		X	X	X	X	X	L	X	X	X	X	X	H

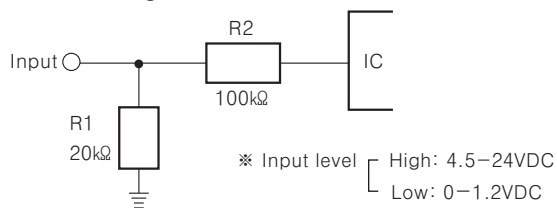
※ "X" : Either high or low level can be input.

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

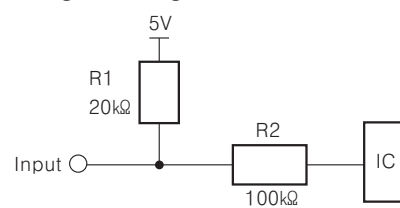
※ It connect BI terminal to VCC(High level), zero blanking will be run and connect GND(Low level) terminal, "0" will be displayed.

Input circuit

◎Positive logic



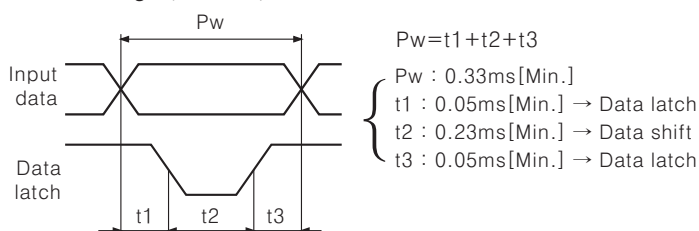
◎Negative logic



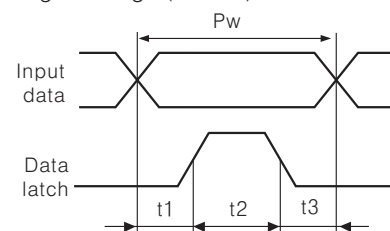
Input timing

◎Parallel input

●Positive logic(S4:OFF)



●Negative logic(S4:ON)



(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

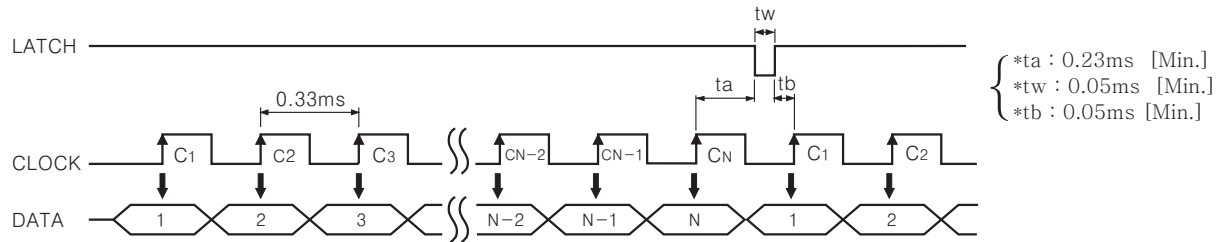
(S) Field network device

(T) Production stoppage models & replacement

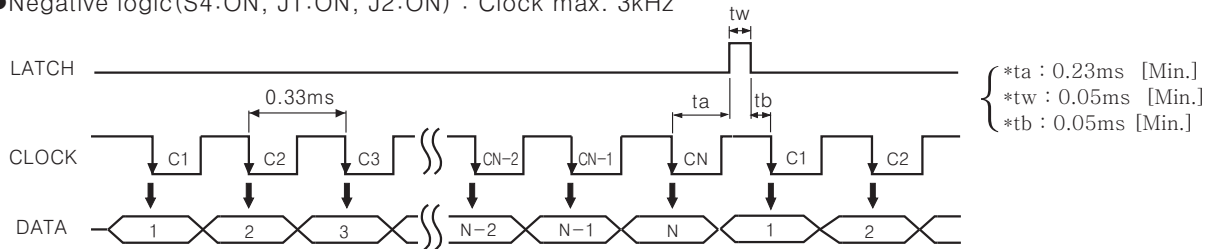
Input timing

Serial input

- Positive logic(S4:OFF, J1:ON, J2:ON) : Clock max. 3kHz



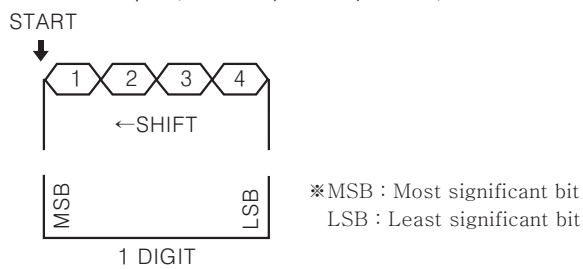
- Negative logic(S4:ON, J1:ON, J2:ON) : Clock max. 3kHz



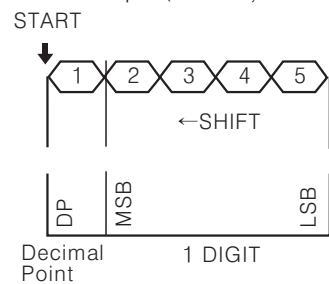
Data input method for serial

Single input method

- 4Bit Data input(S3:OFF, J1:ON, J2:ON)

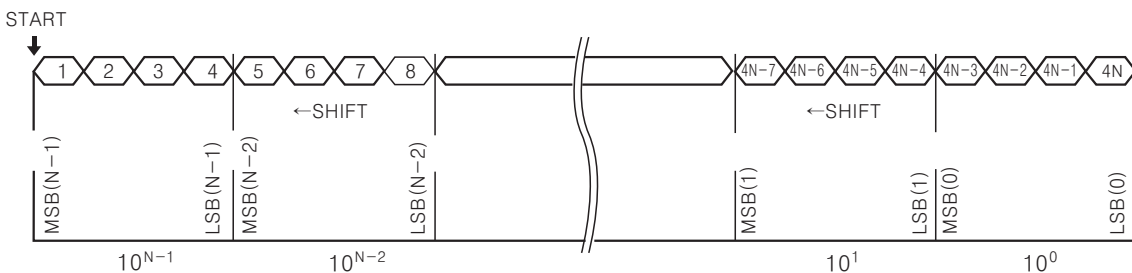


- 5Bit Data input(S3:ON, J1:ON, J2:ON)

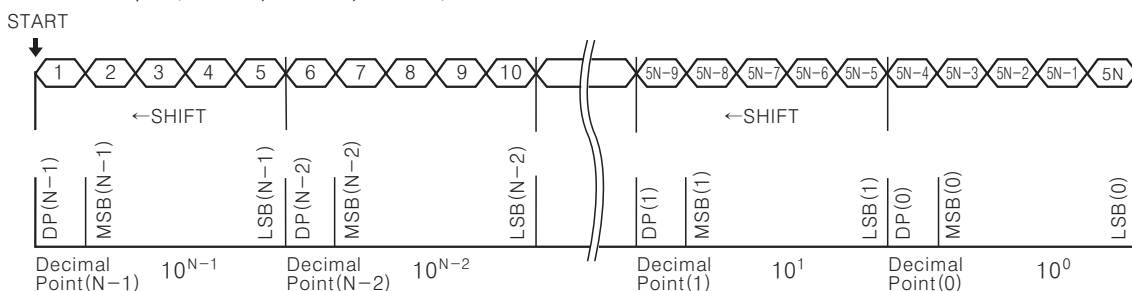


Multi-stage connection input method

- 4Bit Data input(S3:OFF, J1:ON, J2:ON)



- 5Bit Data input(S3:ON, J1:ON, J2:ON)



- Arrangement

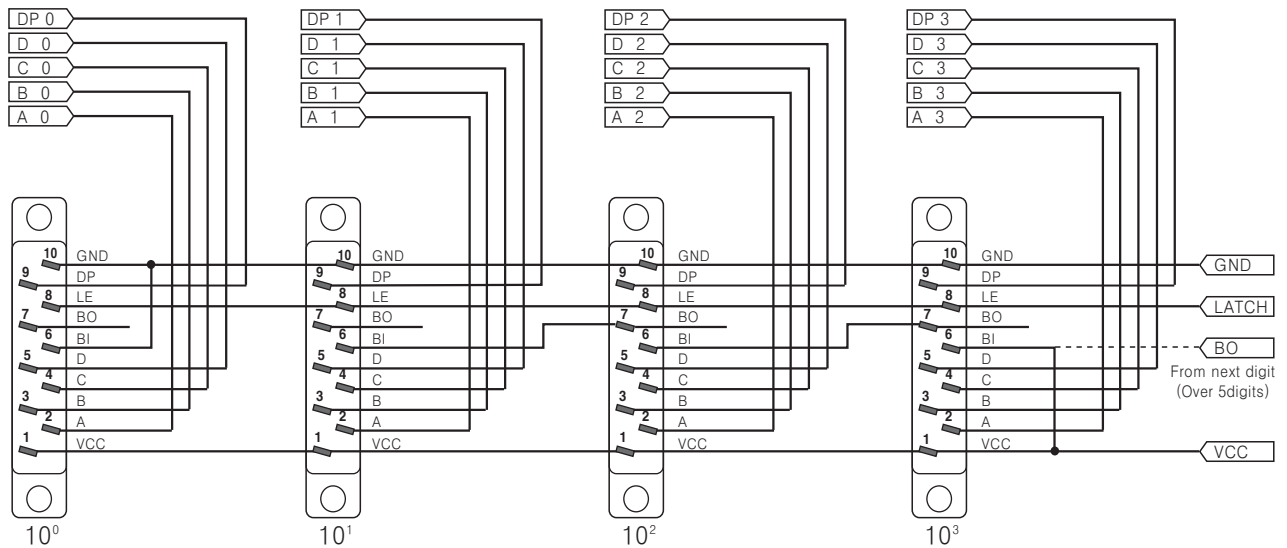


7 Segment Display Unit

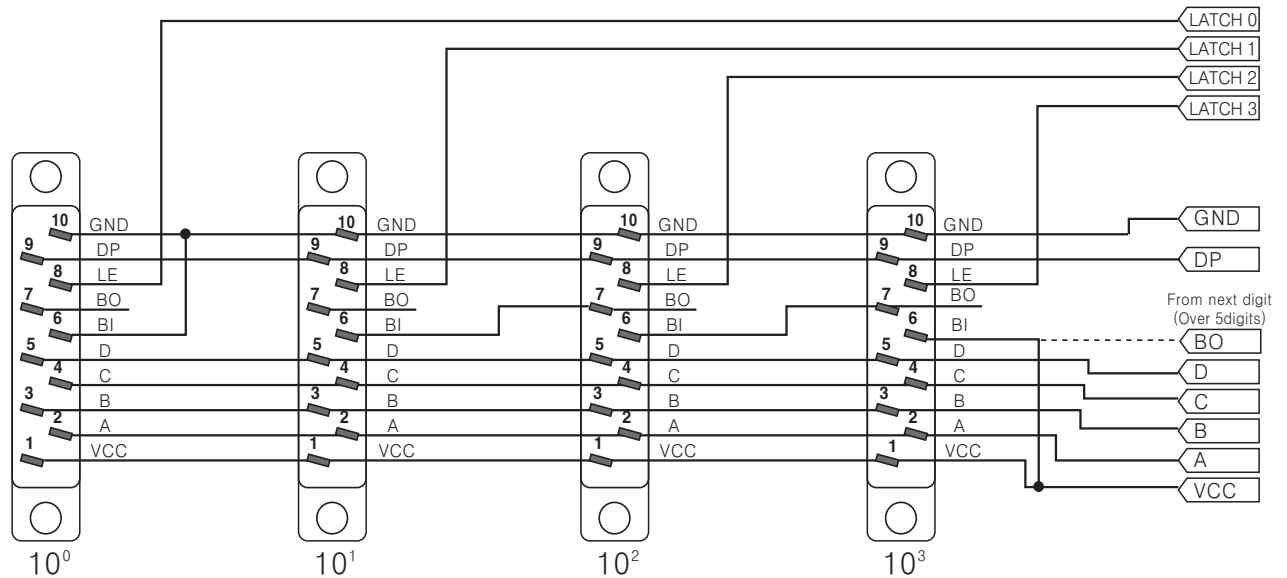
■ Multi-stage connection method

◎ Parallel input : 4digit

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

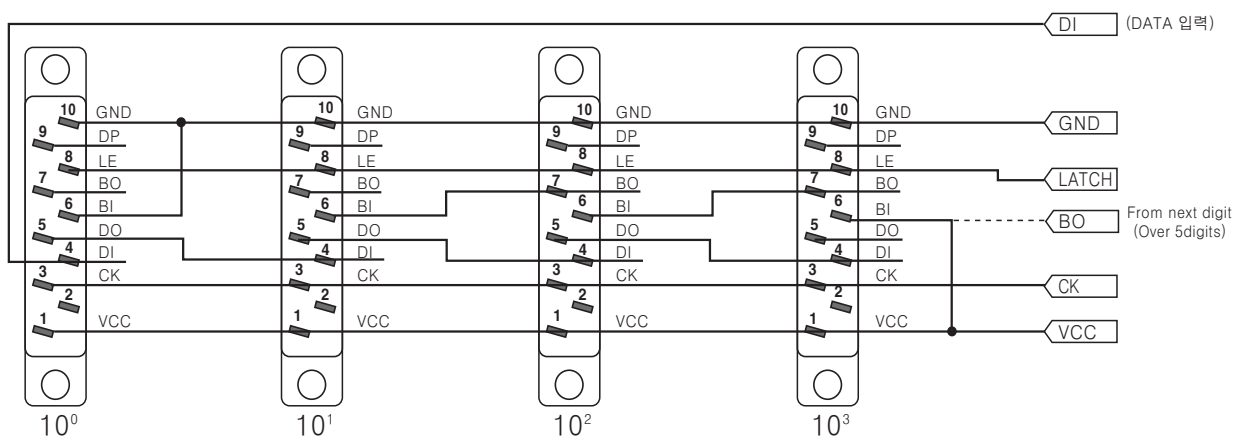


● Dynamic connection (Zero Blanking method) . . . These diagrams are to wire at rear layout of the unit.



◎ Serial input : 4digit

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

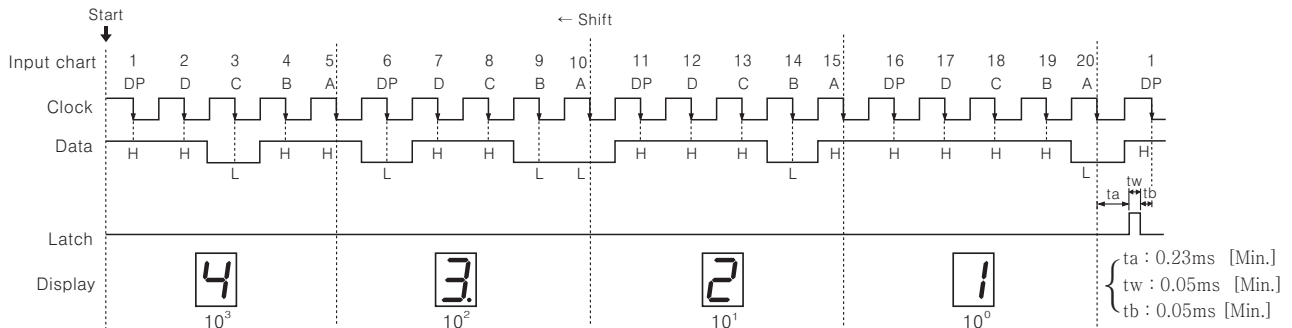


(A)	Photo electric sensor
(B)	Fiber optic sensor
(C)	Door/Area sensor
(D)	Proximity sensor
(E)	Pressure sensor
(F)	Rotary encoder
(G)	Connector/Socket
(H)	Temp. controller
(I)	SSR/Power controller
(J)	Counter
(K)	Timer
(L)	Panel meter
(M)	Tacho/Speed/Pulse meter
(N)	Display unit
(O)	Sensor controller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

Multi-stage connection method

Serial connection example

- Input mode : Negative logic of serial decimal with DOT
 - SW1: ON, SW2(①: ON, ②: OFF, ③: ON, ④: ON, ⑤: ON), JP1: ON
- Display value : 43.21 data input



※Data is recorded when clock changes from high to low.

※In negative logic, data is read while latch signal is hold at high, but data is hold when it change to low.

Indicating decimal point for serial data

DP indication for 4bit serial data input

- Positive logic input : DP input terminal which is going to indicate DP connects with VCC.
- Negative logic input : DP input terminal which is going to indicate DP connects with GND.

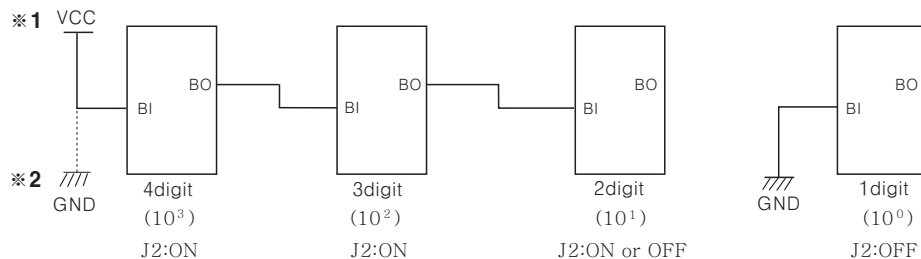
DP indication for 5bit serial data input

Please input DP data with serial data. (DP data is highest-rank bit among 5bit)

※In case of 5 bit serial data input, turn on S3 which is function selection switch, then transfer data.

Zero blank method?

This function is to delete "0" which is no meanless in mult connection.



※For applying zero blank function, turn on J2 switch on PCB at first. (Refer to N-11)

1) When do not use zero blank function(DATA is 10)

If connect BI terminal of MSB(10^3) to GND(※2), "0" will be displayed 3 digit and 4 digit. Ex) **0010**

2) When zero blank function(DATA is 10)

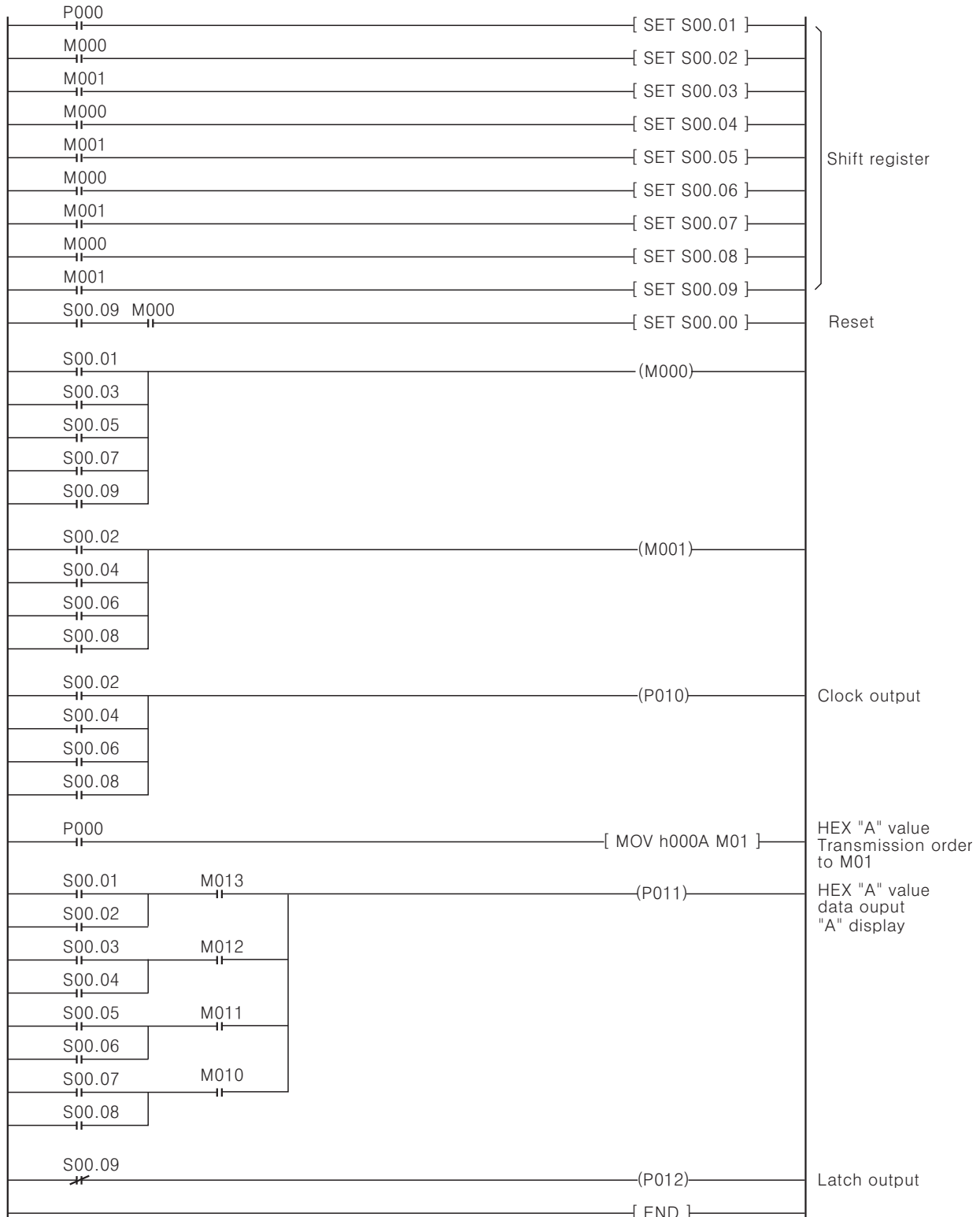
If connect BI terminal of MSB(10^3) to VCC(※1), "0" will be deleted in 3 digit and 4 digit. Ex) **10**

3) If connect BI terminal of LSB(10^0) to GND, "0" will be displayed not related to zero blank function.

7 Segment Display Unit

■ The application of PLC program(Serial input type-7 Segment)

- ① Display unit D1SA-□
- ② Data transmission type : Serial input
- ③ Connection type : See serial connection type when using more than 2EA
- ④ Display result : " A " display
- ⑤ P.L.C : LSIS(LS Industrial Systems), Master-K Series
- ⑥ When using serial type, use TR output card of PLC
- ⑦ Negative logic



※ Visit our web site(www.autonics.com) to download various applications of PLC program.

D1AA

Number, alphabet, symbol etc. displayable 60kinds of characters
Data input method selection and change function(Serial or Parallel method)
Input logic selection and change function(Positive/Negative logic)

■ Features

- Data input selection and change function
: Parallel or Serial method
- Displayable number, alphabet, symbol etc.
60kinds of characters
- Wide range of input signal level
: Low : 0–1.2VDC, High : 4.5–24VDC
- Input logic selection and change function
: Positive / Negative logic input
- 12–24VDC power supply
- Multi stage connection available
- Clear display by high brightness LED



■ Applications

- Display for PLC
- Display for computer
- Various display



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

■ Specifications

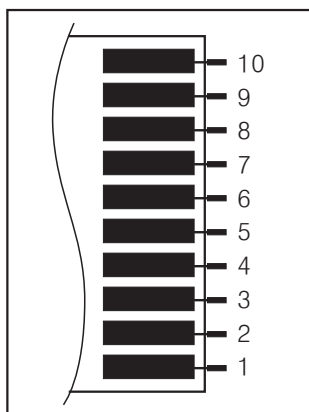
Model	D1AA-RN	※ D1AA-GN
Display method	Red(16 Segment)	Green(16 Segment)
Power supply	12–24VDC $\pm 10\%$	
Current consumption	12VDC : Max. 32mA, 24VDC : Max. 25mA	
Display character	0 to 9, A to Z, decimal point, symbol(24kinds)	
Character size	W11×H22mm	
Input	• Parallel : Parallel 6bit binary data, latch, decimal point • Serial : 6bit or 7bit(Decimal point) data, clock, latch, decimal point(When not selecting serial DOT)	
Input level	High : 4.5–24VDC, Low : 0–1.2VDC	
Max. response frequency	Max. 3kHz(Except for STATIC input type)	
Input resistance	20k Ω	
Output	Data out [Serial DATA input case]	
Input logic	Selectable and changeable positive(PNP) or negative(NPN) (By inner soldering)	
Noise strength	The square wave noise by simulator(pulse width:1 μ s, display time:1ns, polarity: $\pm$, 100times/every sec.) • 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. 22g(Include right/left cap)	

※Green LED type is optional.

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

16 Segment Display Unit

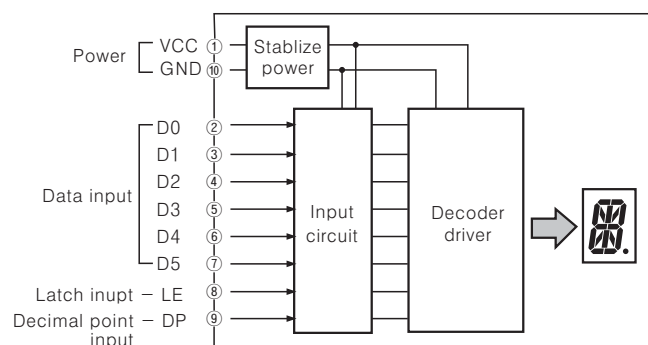
Terminal layout



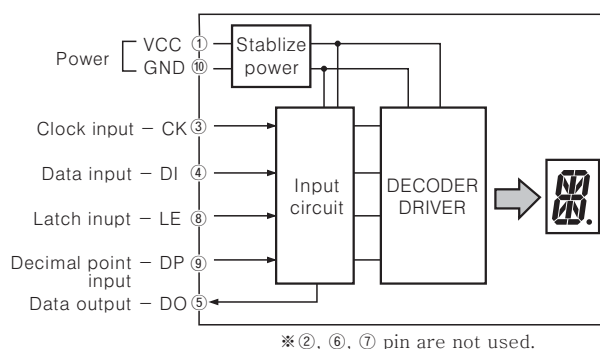
Input Terminal No.	Parallel input		Serial input	
	Code	Function	Code	Function
1	VCC	12-24VDC	VCC	12-24VDC
2	D0	Data input	NC	Don't connect anything
3	D1		CK	Clock input
4	D2		DI	Data input
5	D3		DO	Data output
6	D4		NC	Don't connect anything
7	D5		NC	
8	LE	Latch input	LE	Latch input
9	DP	Decimal point input	DP	Decimal point input
10	GND	0V	GND	0V

Block diagram

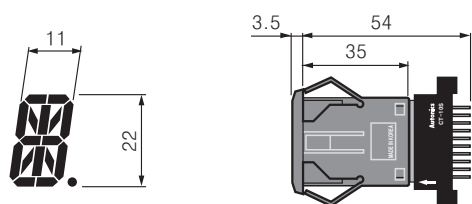
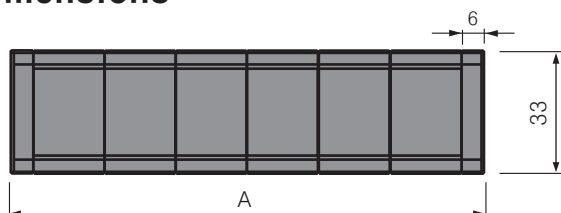
Parallel input



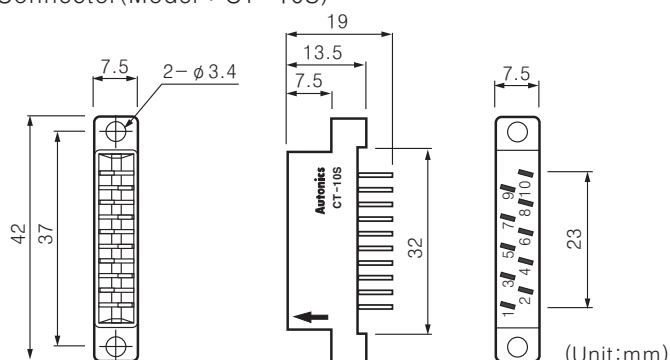
Serial input



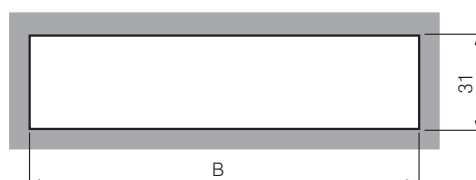
Dimensions



Connector (Model : CT-10S)



Panel cut-out

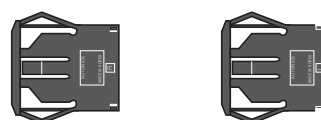


Panel cut-out chart

(Unit:mm)

Digit (N)	Dimension A (20×N+12)	Dimension B (20×N+10)
1	32	30±0.1
2	52	50±0.1
3	72	70±0.1
4	92	90±0.1
5	112	110±0.1
6	132	130±0.1
7	152	150±0.1
8	172	170±0.1

Cap



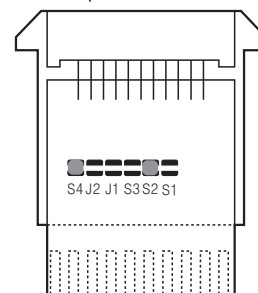
- Red FND : DAR(L) – R (Left/Right 1set)
- Green FND : DAR(L) – BL (Left/Right 1set)
- ※Cap is optional(1set).

(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

■ Operation specification

Selection of switch Operation	*1 S1	S2	S3	S4	*2 J1	*3 J2	Bit 1digit
		ON=Parallel OFF=Serial	ON=Serial with DOT OFF=Serial without DOT	Negative logic : S4=ON Positive logic : S4=OFF	Serial data out		
Parallel decimal negative logic	×	ON	OFF	S4=ON	OFF	OFF	—
Parallel decimal positive logic	×	ON	OFF	S4=OFF	OFF	OFF	—
Serial decimal without DOT negative logic	×	OFF	OFF	S4=ON	ON	OFF	6bit
Serial decimal without DOT positive logic	×	OFF	OFF	S4=OFF	ON	OFF	6bit
Serial decimal with DOT negative logic	×	OFF	ON	S4=ON	ON	OFF	*4 7bit
Serial decimal with DOT positive logic	×	OFF	ON	S4=OFF	ON	OFF	*4 7bit

◎Function selection switch position



* ON = (Short)

OFF = (Open)

(※1) There is no function for S1. It does not matter if it is ON or OFF.

(※2) J1 must be OFF in parallel operation.

(※3) J2 must be OFF always.

(※4) 1bit will be added, if DOT used in serial operation.

※Note : Please use it according to operation specification, otherwise product might be damaged.

⇒ Factory specification(Negative logic paralle) S1 : OFF, S2 : ON, S3 : OFF, S4 : ON, J1 : OFF, J2 : OFF

■ Input data chart

Upper 2bit data(PNP type) in positive logic				Lower 4bit data(PNP type) in positive logic					
D5	D4	D5	D4	D5	D4	D5	D4	Data input(H=High level, L=Low level)	
L	L	L	H	H	L	H	H		
0H	1H	2H	3H	Hexa decimal	D3	D2	D1	D0	
Blank	P	Blank	0	0H	L	L	L	L	
A	Q	Blank	1	1H	L	L	L	H	
B	R	"	2	2H	L	L	H	L	
C	S	⊗	3	3H	L	L	H	H	
D	T	\$	4	4H	L	H	L	L	
E	U	%	5	5H	L	H	L	H	
F	V	Blank	6	6H	L	H	H	L	
G	W	'	7	7H	L	H	H	H	
H	X	:	8	8H	H	L	L	L	
I	Y	:	9	9H	H	L	L	H	
J	Z	*	:	AH	H	L	H	L	
K	[	+	:	BH	H	L	H	H	
L	\	'	:	CH	H	H	L	L	
M	]	-	=	DH	H	H	L	H	
N	^	~	:	EH	H	H	H	L	
O	~	/	?	FH	H	H	H	H	

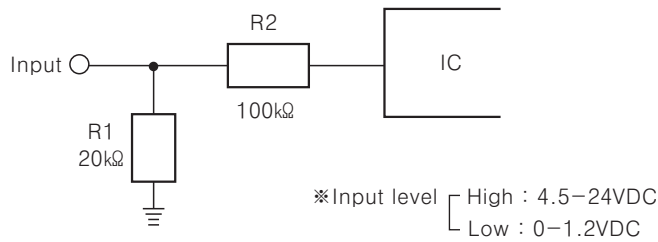
※Negative logic(NPN type) : Data input level of D5, D4, D3, D2, D1, D0 will be opposite stage.

※Blank : Even though data is input as signal, it does not display.

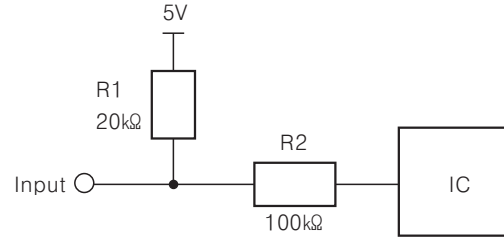
16 Segment Display Unit

Input circuit

Positive logic



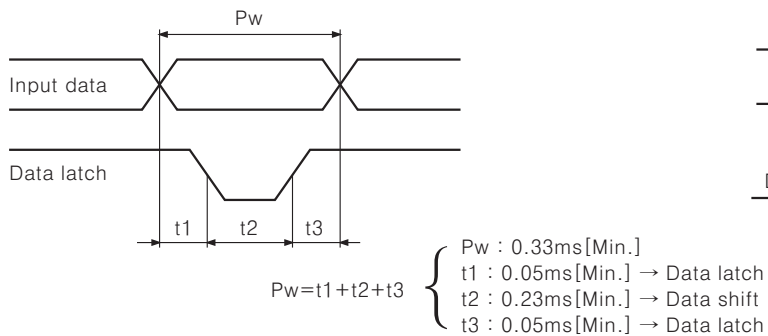
Negative logic



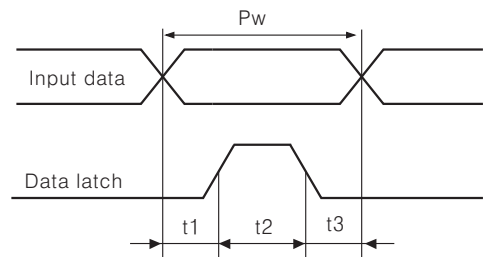
Input timing

Parallel input

Positive logic (S4: OFF)

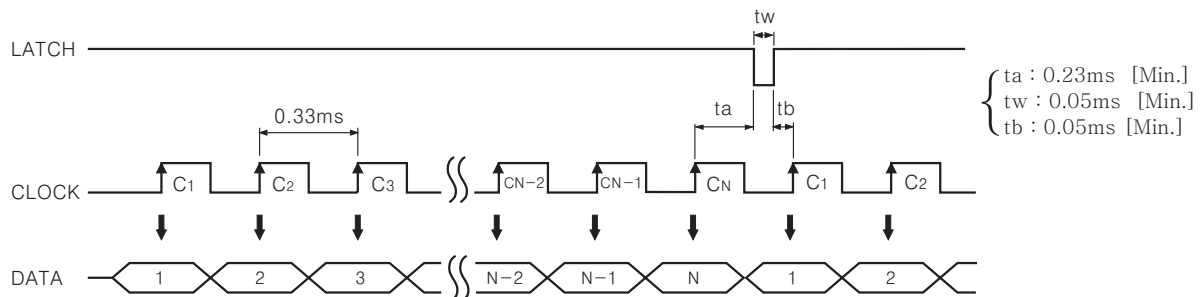


Negative logic (S4: ON)

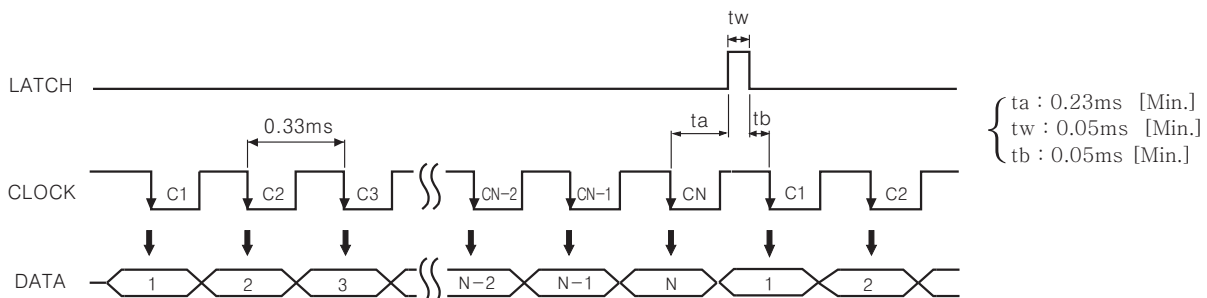


Serial input

Positive logic : Clock max. 3kHz (S4: OFF, J1: ON)



Negative logic : Clock max. 3kHz (S4: ON, J1: ON)



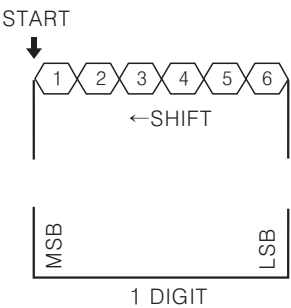
(A)	Photo electric sensor
(B)	Fiber optic sensor
(C)	Door/Area sensor
(D)	Proximity sensor
(E)	Pressure sensor
(F)	Rotary encoder
(G)	Connector/Socket
(H)	Temp. controller
(I)	SSR/Power controller
(J)	Counter
(K)	Timer
(L)	Panel meter
(M)	Tacho/Speed/Pulse meter
(N)	Display unit
(O)	Sensor controller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

D1AA

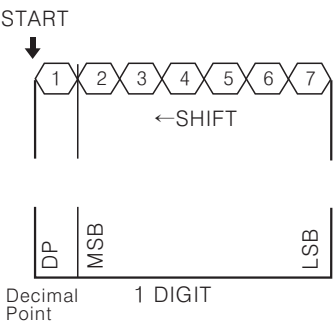
■ Data input method for serial

○ Single input method

● 6Bit Data input(S3:OFF, J1:ON))

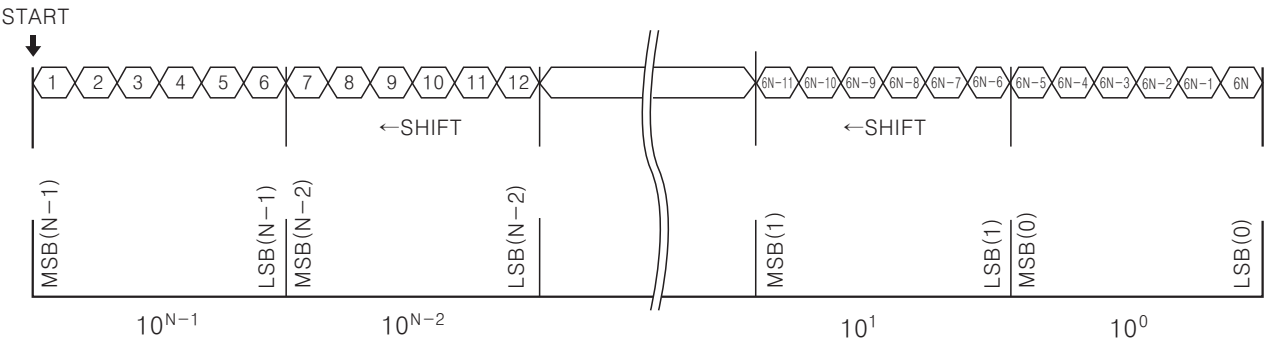


● 7Bit Data input(S3:ON, J1:ON)

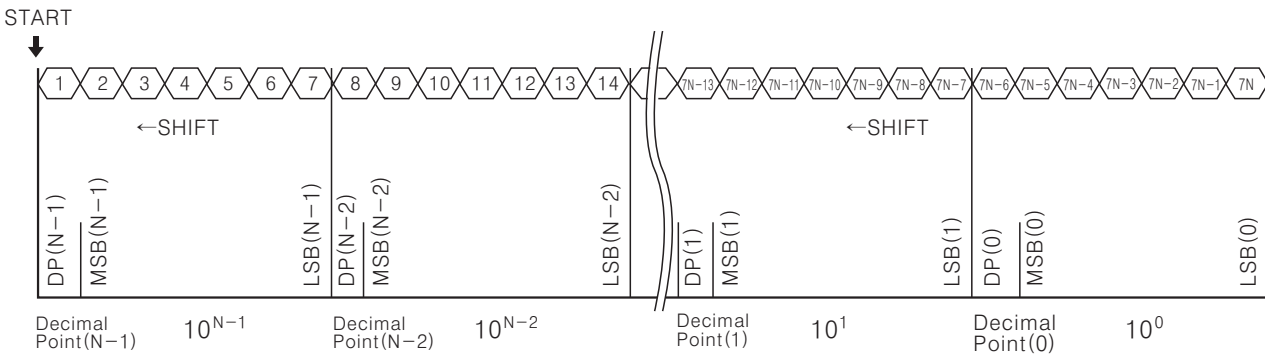


○ Multi-stage connection input method

● 6Bit Data input(S3:OFF, J1:ON)



● 7Bit Data input(S3:ON, J1:ON)



● Arrangement



.....

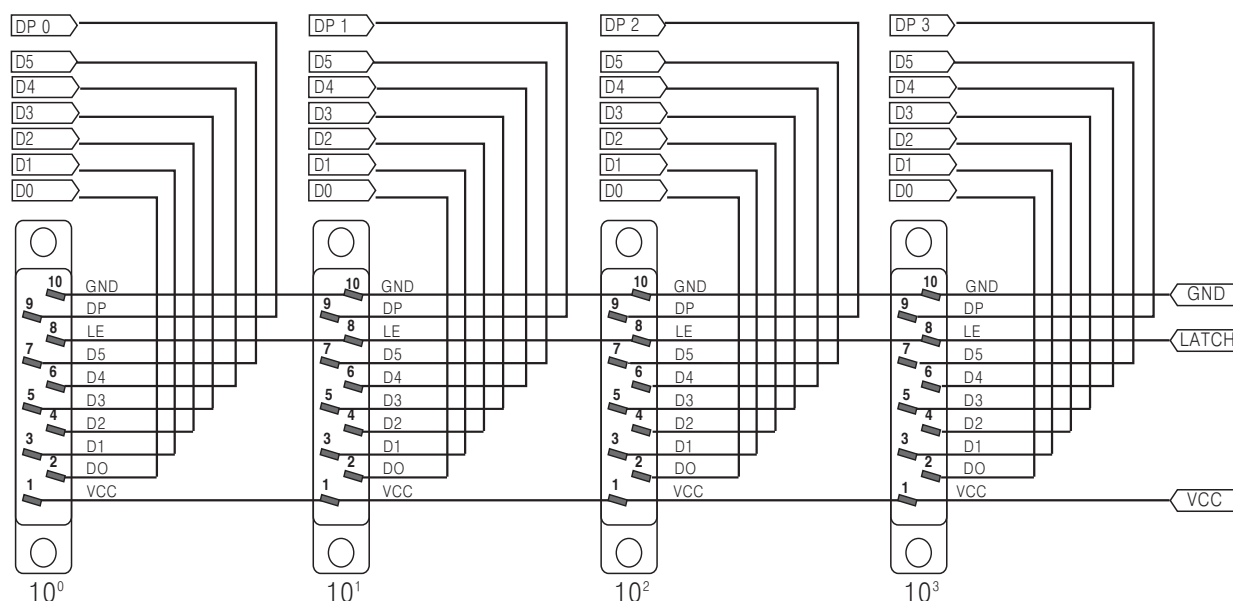


16 Segment Display Unit

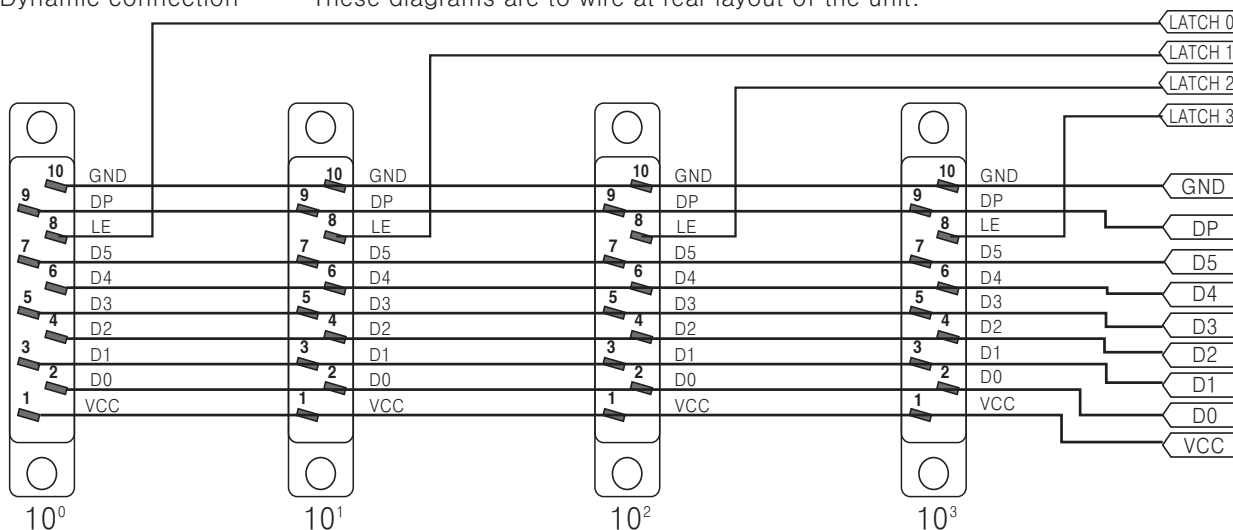
■ Multi-stage connection method

◎ Parallel input : 4digit

● Static connection . . . These diagrams are to wire at rear layout of the unit.

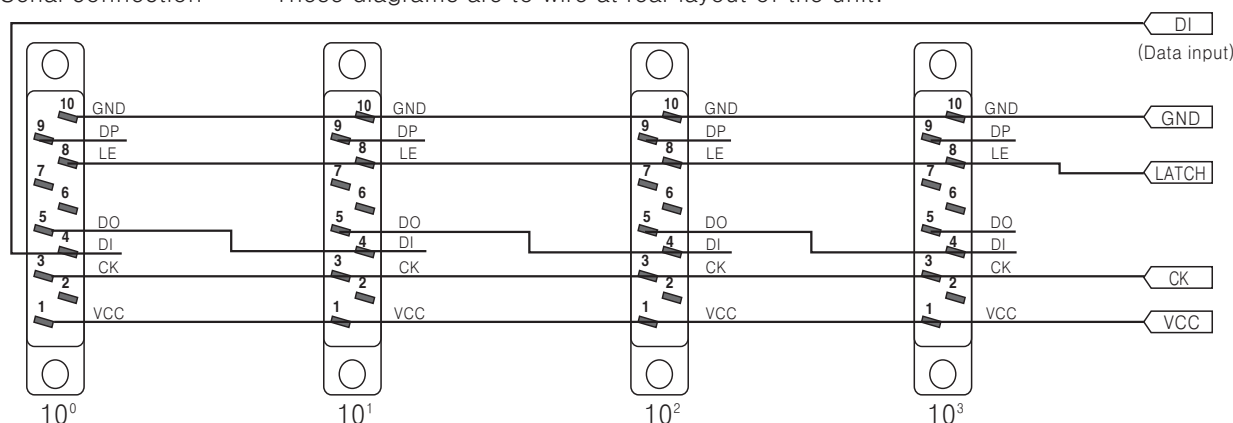


● Dynamic connection . . . These diagrams are to wire at rear layout of the unit.



◎ Serial input : 4digit

● Serial connection . . . These diagrams are to wire at rear layout of the unit.



※ DP display method in 6bit serial data input

- ▶ Positive logic : Connect DP terminal to VCC
- ▶ Negative logic : Connect DP terminal to GND

※ DP display method in 7bit serial data input

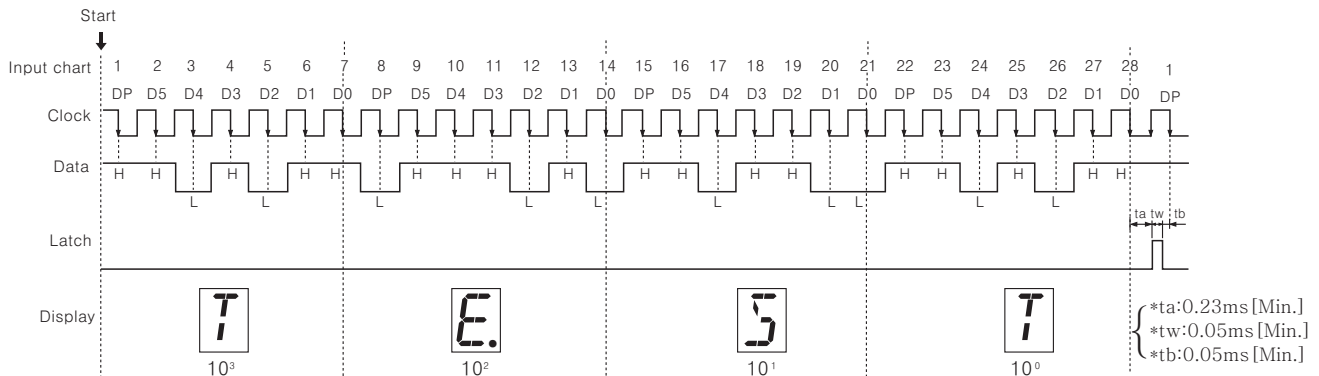
- ▶ Input DP data added to 7bit serial data (DP Data is MSB of 7bit)

(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
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(T)	Production stoppage models & replacement

Multi-stage connection method

Serial connection example

- ▶ Input mode : Negative logic of serial decimal with DOT- (S1: X, S2: OFF, S3: ON, S4: ON, J1: ON, J2: OFF)
- ▶ Display value : TE.ST



※Data is recorded when clock changes from high to low.

※In negative logic, data is read while latch signal is hold at high, but data is hold when it change to low.

Indicating decimal point for serial data

DP indication for 6bit serial data input

- 1) Positive logic input : DP input terminal which is going to indicate DP connects with VCC.
- 2) Negative logic input : DP input terminal which is going to indicate DP connects with GND.

DP indication for 7bit serial data input

Please input DP data with serial data. (DP data is highest-rank bit among 7bit)

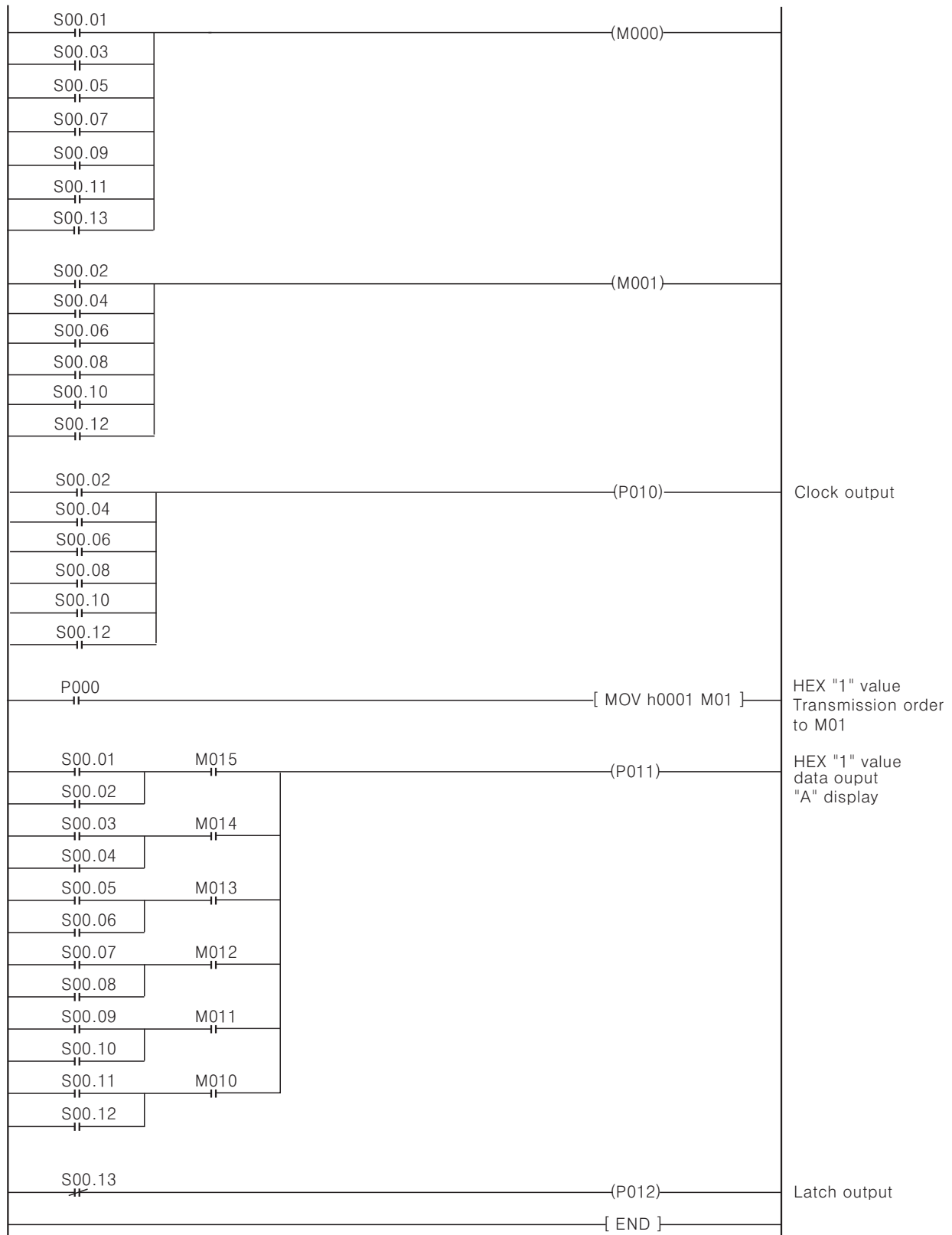
※In case of 7 bit serial data input, turn on S3 which is function selection switch, then transfer data.

The application of PLC program(Serial input type)

- ① Display unit : D1AA - □
- ② Data transmission type : Serial input
- ③ Connection type : See serial connection type when using more than 2EA
- ④ Display result : " A " display
- ⑤ P.L.C : LSIS (LS Industrial Systems), Master-K Series
- ⑥ When using serial type, use TR output card of PLC
- ⑦ Negative logic



16 Segment Display Unit



※Visit our web site (www.autonics.com) to download various applications of PLC program.

(A)	Photo electric sensor
(B)	Fiber optic sensor
(C)	Door/Area sensor
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(T)	Production stoppage models & replacement

D5Y/D5W Series

This model is upgraded from D4Y, D4W

■ Features

- Various input specification
: Static input, dynamic input, 4/5 bit serial input, 16/20/25 bit serial input method
- Decimal point, "-" symbol display type selection function
: Display type by serial input
Display type by external DP terminal and MINUS terminal
- Positive/Negative logic input selection function
- Display digit selection function
: 4digit(-9999 to 9999), 5digit(0 to 99999)
- Zero blank function selection function
- Selectable reversion function of latch signal



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

■ Ordering information

D	5	W	—	M	X	
Item	Digit	Size	Input	Power supply		Blank 12-24VDC
				※ X	110/220VAC 50/60Hz(Optional)	
				M	Multi-input mode	
				Y	DIN W72×H36mm	
				W	DIN W96×H48mm	
				5	99999(5 Digit)	
				D	Display Unit	

※AC Power of D5W model is optional.

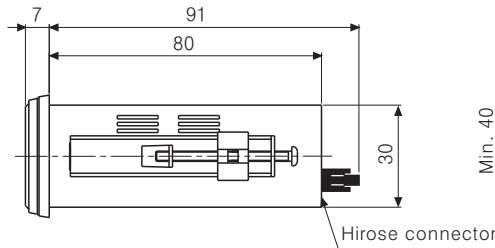
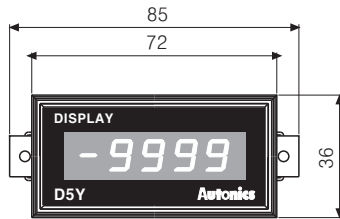
■ Specifications

Model		D5Y-M	D5W-M	D5W-MX
Power supply		12-24VDC	12-24VDC	110/220VAC 50/60Hz(Option)
Allowable voltage range		90 to 110% of rated voltage		
Current consumption		1.1W	2VA	
Display method		7Segment LED display		
Display digit		4digit(or 4 1/2 digit include symbol bit), 5digit		
Max. response frequency		100Hz to 5kHz(Except for STATIC input type)		
Input logic		Selectable positive(PNP) or negative(NPN)		
Input		BCD code : Static, dynamic, serial(4/5/16/20/25 bit)		
Zero blanking function		ON('0' No display), OFF('0' Display)		
Input level		High : 5-24VDC, Low : 0-1.2VDC		
Insulation resistance		100MΩ (at 500VDC megger)		
Dielectric strength		2000VAC 50/60Hz for 1 minute		
Noise strength		±1kV the square wave noise(pulse width : 1μs)by the noise simulator		
Vibra- tion	Mechanical	0.75mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 1 hour		
	Malfunction	10.5mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 10 minutes		
Shock	Mechanical	300m/s ² (Approx. 30G) in X, Y, Z directions for 3 times		
	Malfunction	100m/s ² (Approx. 10G) in X, Y, Z directions for 3 times		
Ambient temperature		-10 to 50℃ (at non-freezing status)		
Storage temperature		-25 to 65℃ (at non-freezing status)		
Ambient humidity		35 to 85%RH		
Unit weight		Approx. 75g	Approx. 165g	Approx. 267g

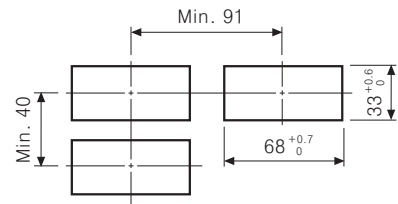
Display Unit Indication Type Only

■ Dimensions

● D5Y-M

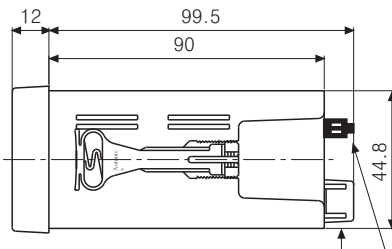
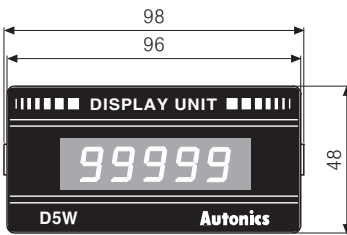


● Panel cut-out

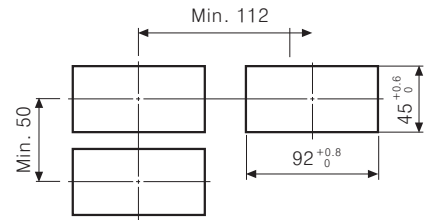


(Unit:mm)

● D5W-M



● Panel cut-out



(Unit:mm)

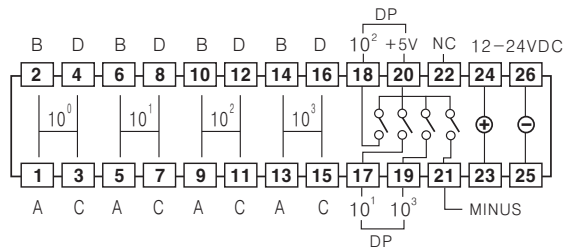
※ When it is AC power option, there is terminal block on product.

- ※ Hirose connector pin header model : HIF3BA-26PA-2.54DS
- ※ Contact Hirose Electric to purchase socket and wires of Hirose connector [Socket : HIF3BA-20D-2.54R]
- ※ "△" mark indicates No.1 pin of Hirose connector.

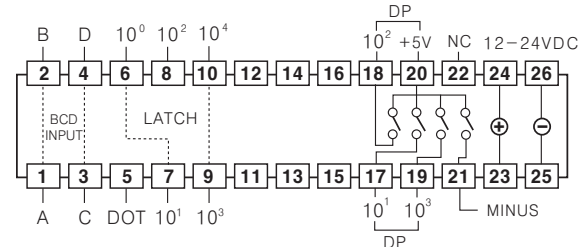


■ Connections

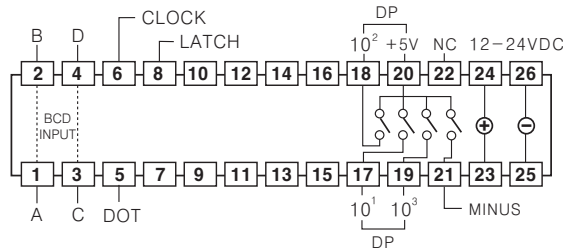
● Static input



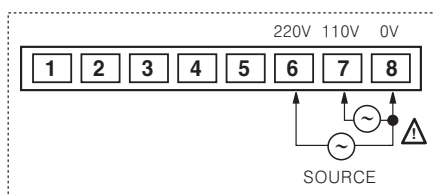
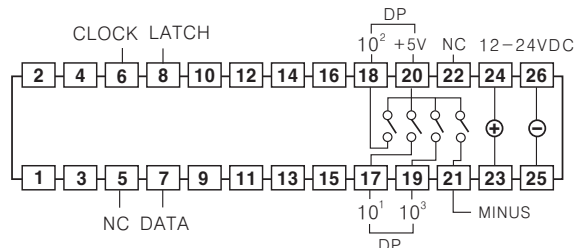
● Dynamic input



● 4/5Bit serial input



● Serial input



※ It is power terminal for AC power option of D5W type.

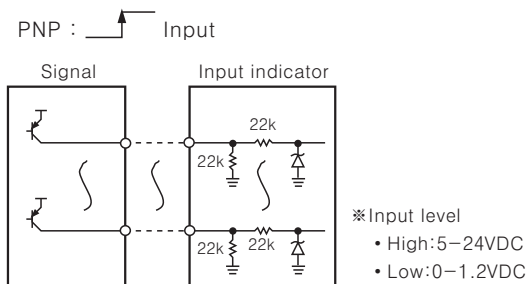
- ※ In case of static input, 5digits cannot be used because of external terminal
- ※ "-" signal cannot be indicated in 5digits type because the display range is from 0 to 99999. Therefore, the input signal of Pin 21 which is external minus unit input terminal is ignored.
- ※ The input of external DP (Pin No. 17, 18, 19) and minus signal terminal (Pin No. 20) regardless input logic.

(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
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(L)	Panel meter
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(N)	Display unit
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(P)	Switching power supply
(Q)	Stepping motor & Driver & Controller
(R)	Graphic/Logic panel
(S)	Field network device
(T)	Production stoppage models & replacement

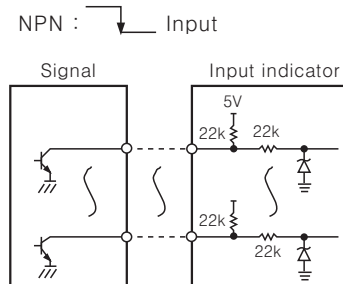
D5Y/D5W Series

Input circuit

Positive logic



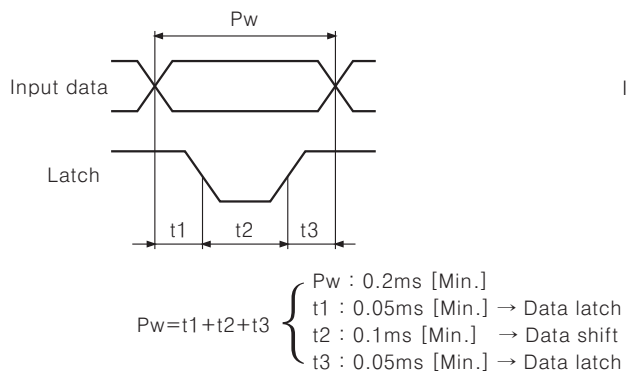
Negative logic



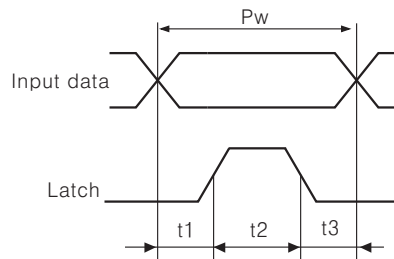
Input timing

Parallel input

Positive logic (PNP)

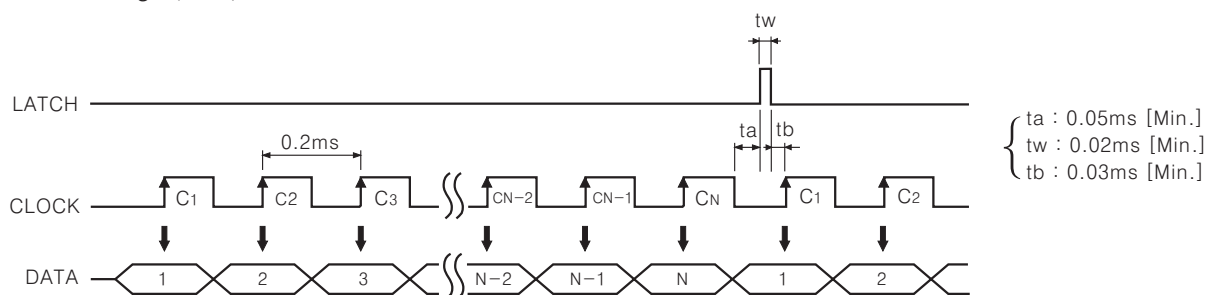


Negative logic (NPN)

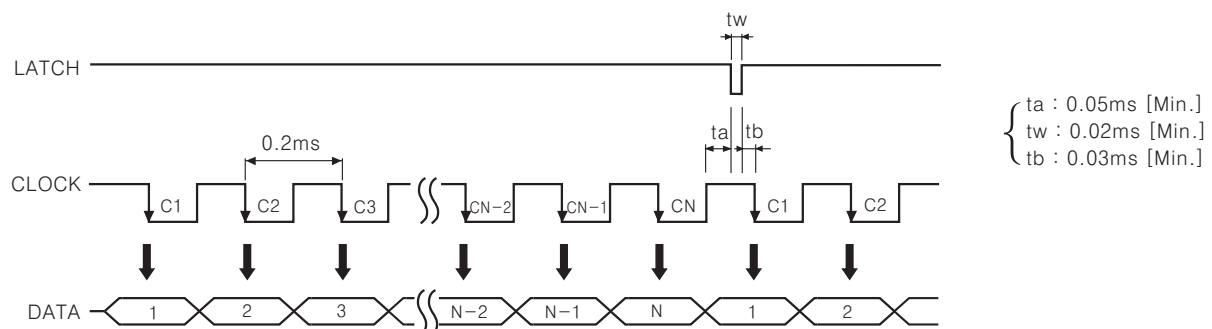


Serial input

Positive logic (PNP) : Clock max. 5kHz



Negative logic (NPN) : Clock max. 5kHz



Display Unit Indication Type Only

■ Input data chart

Display	Negative(NPN) input					Positive(PNP) input				
	A	B	C	D	LATCH	A	B	C	D	LATCH
0	H	H	H	H	L	L	L	L	L	H
1	L	H	H	H	L	H	L	L	L	H
2	H	L	H	H	L	L	H	L	L	H
3	L	L	H	H	L	H	H	L	L	H
4	H	H	L	H	L	L	L	H	L	H
5	L	H	L	H	L	H	L	H	L	H
6	H	L	L	H	L	L	H	H	L	H
7	L	L	L	H	L	H	H	H	L	H
8	H	H	H	L	L	L	L	L	H	H
9	L	H	H	L	L	H	L	L	H	H
HOLD	X	X	X	X	H	X	X	X	X	L

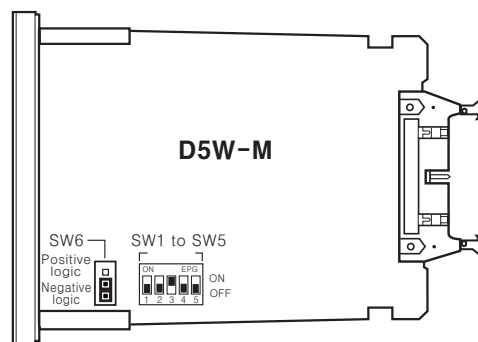
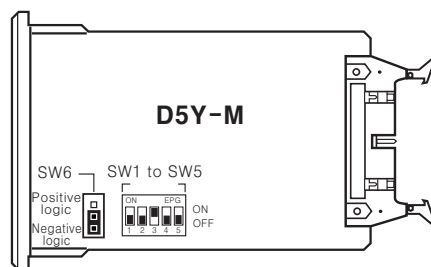
※Input level : High → 5–24VDC, Low → 0–1.2VDC

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

(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
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(J)	Counter
(K)	Timer
(L)	Panel meter
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(T)	Production stoppage models & replacement

D5Y/D5W Series

Inner selection switch



※Factory specification : SW1→OFF, SW2→OFF, SW3→ON, SW4→OFF, SW5→OFF, SW6→Negative logic

Input mode

SW1	SW2	
ON	ON	Static input
OFF	OFF	
SW1	SW2	
ON	ON	Dynamic input
OFF	OFF	
SW1	SW2	
ON	ON	4/5 Bit serial input
OFF	OFF	
SW1	SW2	
ON	ON	Serial input
OFF	OFF	

Zero blank function

SW3	ON	Using zero blank function
	OFF	
SW3	ON	Non-using zero blank function
	OFF	

※Zero blank function

It is to remove "0" indication which is no meaning.

EX)When indication value is "10" in 4digit LED

- Zero blanking function is applied :
- Zero blanking function is not applied :

Minus signal/DOT(Decimal point) input terminal

SW4	ON	Using DOT terminal(Pin No. 5)
	OFF	
SW4	ON	Using external DP(Pin No. 17, 18, 19, 20) terminal and minus(Pin No. 21) terminal
	OFF	

Display digit

SW5	ON	5digit (0 to 99999)
	OFF	
SW5	ON	4digit (-9999 to 9999)
	OFF	

※In case of static input, 5digits cannot be used because of external terminal.

Input logic

SW6	Positive logic	Negative logic	Positive(PNP) input
SW6	Positive logic	Negative logic	Negative(NPN) input

※If changing inner selecting switch when power is ON, it does not operate as a changed mode.

If the mode is changed when power is ON, please turn OFF and then turn ON the power.

Latch

SW7	ON	Reverse latch signal to set logic in SW6
SW7	OFF	Correspond latch signal to set logic in SW6

※BCD output and latch signal of low speed serial output, which are optional of pulse meter(MP5Y/W Series) and panel meter(MT4Y/W Series) is outputted to positive logic(NPN). If connecting D5Y/W, use it after setting SW6 to NPN and soldering(ON) the semi-contact(SW7) of inner PCB solder plate.

How to select decimal point

•DOT and symbol input is not serial input [SW4 = OFF]

Terminal 17-20 :
 18-20 :
 19-20 :
 21-20 :
 Open :

•DOT and symbol(-) input is serial input [SW4 = ON]

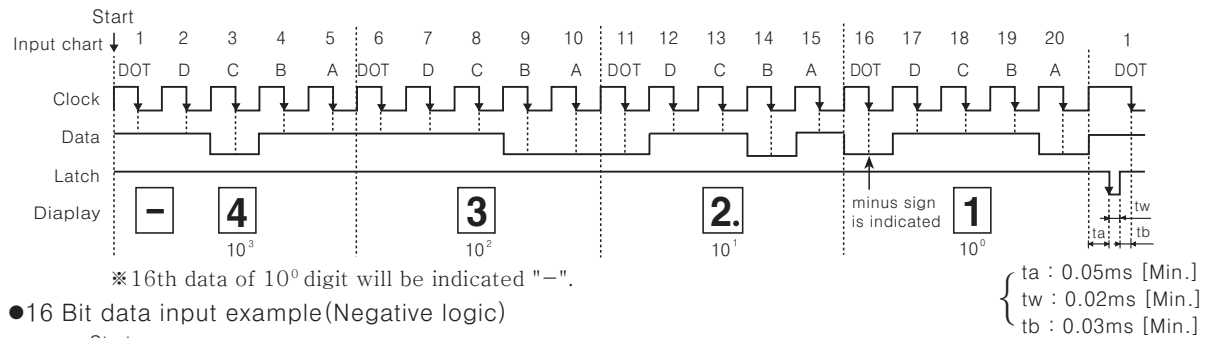
- ①When it is dynamic mode and 4/5 bit serial mode, 5 will be input. (Refer to time chart for 4digit)
- ②When it is serial input mode, 1 bit of serial data is used for DOT and symbol. (Refer to time chart for 4digit)

Display Unit Indication Type Only

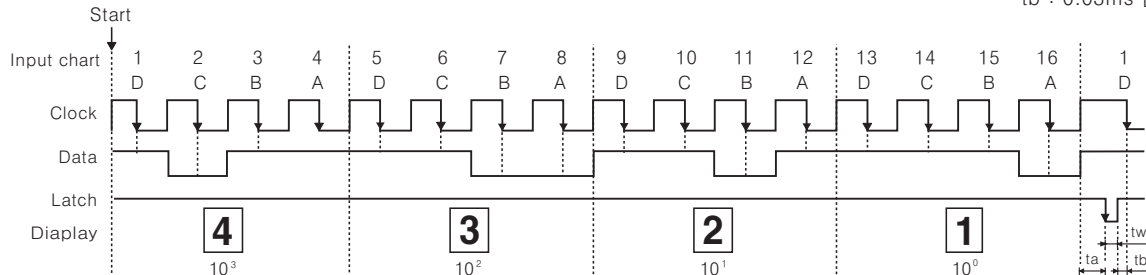
Time chart(4digit)

Serial input(Serial connection)

20 Bit data input example(Negative logic)



16 Bit data input example(Negative logic)

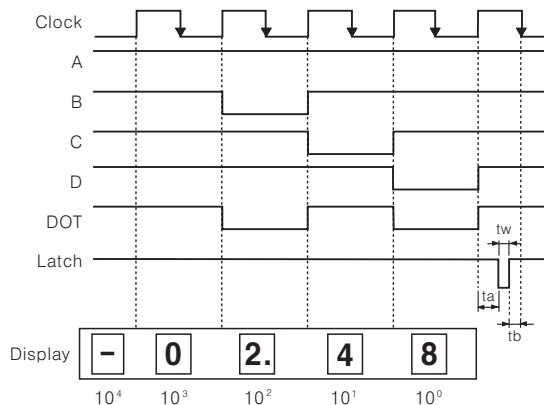


※Data will be fixed, when clock is changed from high to low, and latch pulse is changed from high to low.

※Hold time is the next latch pulse is changed from high to low.

4/5 Bit serial input(Serial connection)

Inner selection switch SW1→ON, SW2→ON, SW3→OFF, SW4→ON, SW5→OFF



※Left figure shows the waveform of negative logic input. In case of positive logic, it will be reversed.

※If dot data is inputted on 10^0 position, it displays "-" signal.

(Inner selection switch SW4 → ON)

※Concerning decimal point and "-" signal, it can be displayed using outer DP and minus terminal not a serial input.

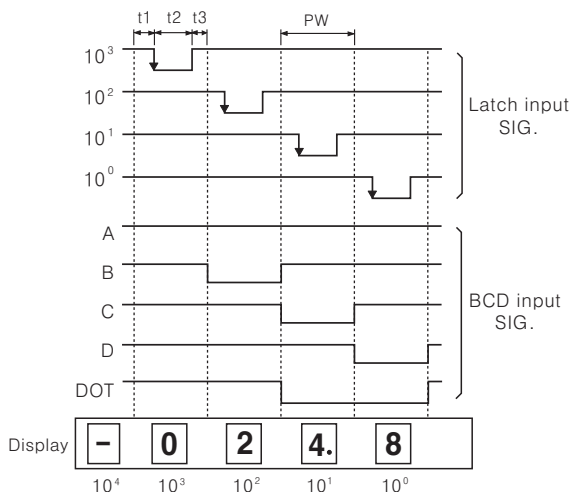
(Inner selection switch SW4 → OFF)

※The left application of display indicates non-using zero blank function. If using zero blank function, the "0" on 10^3 position is not displayed. (Inner selection switch SW3 → ON)

$$\begin{cases} ta = 0.05ms [Min.] \\ tw = 0.02ms [Min.] \\ tb = 0.03ms [Min.] \end{cases}$$

Dynamic input(Parallel connection)

Inner selection switch SW1 → ON, SW2 → OFF, SW3 → OFF, SW4 → ON, SW5 → OFF



Pw = 0.2ms [Min.]

t1 = 0.05ms [Min.]

t2 = 0.10ms [Min.]

t3 = 0.05ms [Min.]

※Left figure shows the waveform of negative logic input. In case of positive logic, it will be reversed.

※For 4 digit, external 10^4 LATCH input terminal is not available.

※If dot data is inputted on 10^0 position, it displays "-" signal.

(Inner selection switch SW4 → ON)

※Concerning decimal point and "-" signal, it can be displayed using outer DP and minus terminal not a serial input.

(Inner selection switch SW4 → OFF)

※Latch input should be later than BCD input, otherwise, it will display the previous data.

※The left application of display indicates non-using zero blank function. If using zero blank function, the "0" on 10^3 position is not displayed. (Inner selection switch SW3 → ON)

(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

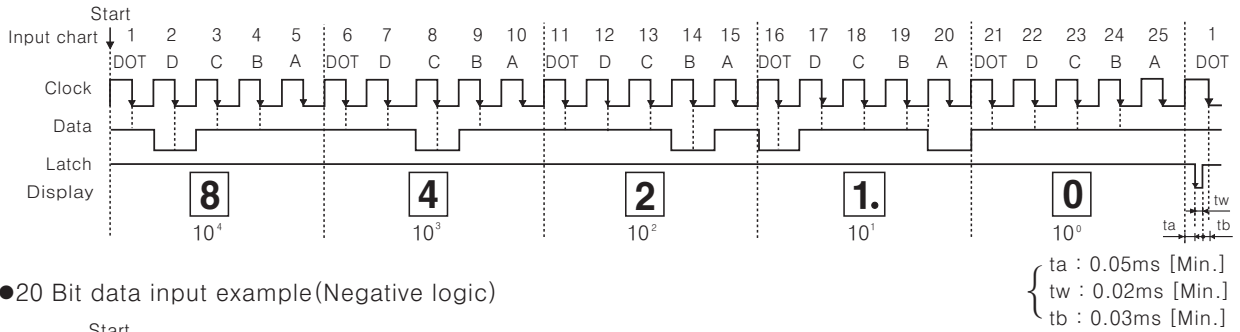
(T) Production stoppage models & replacement

D5Y/D5W Series

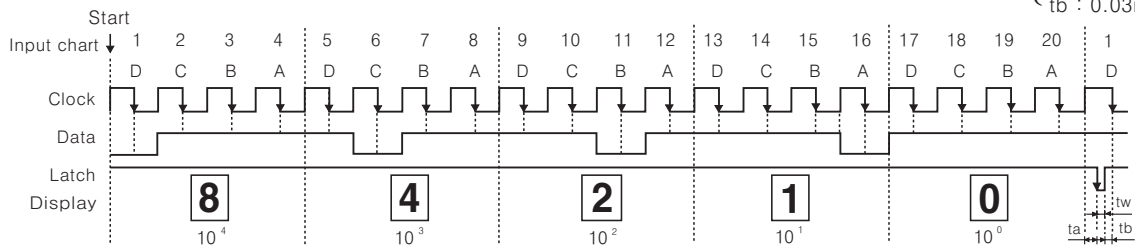
Time chart(4digit)

Serial input(Serial connection)

25 Bit data input example(Negative logic)



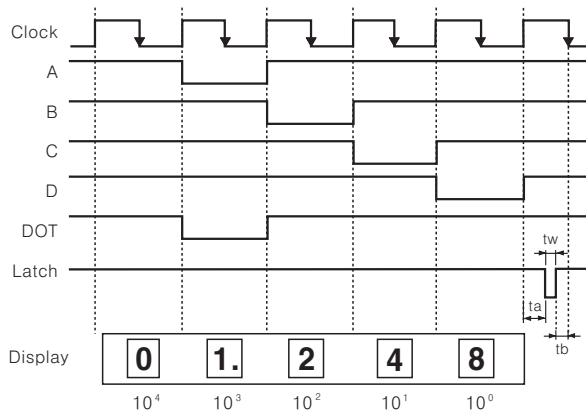
20 Bit data input example(Negative logic)



- ※ "-" signal cannot be indicated in 5digit type. [The input of DOT signal on 10⁰ position and minus terminal(Pin No. 21) is ignored.]
- ※ Data will be fixed, when clock is changed from high to low, and latch will hold input data when latch pulse is changed from high to low.
- ※ Hold time is the next latch pulse is changed from high to low.

4/5 Bit serial input(Serial connection)

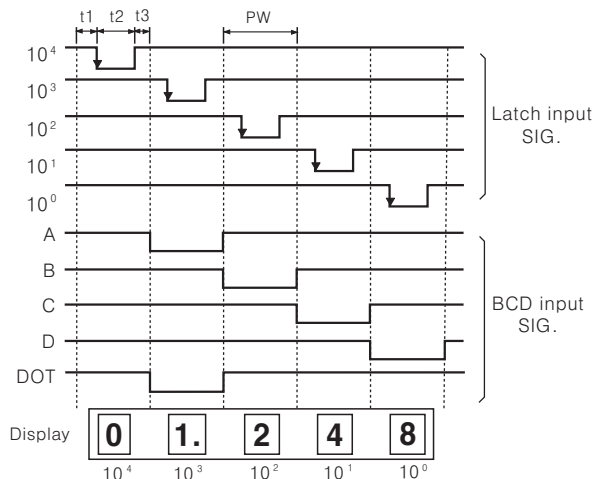
Inner selection switch SW1 → ON, SW2 → ON, SW3 → OFF, SW4 → ON, SW5 → ON.



- ※ Left figure shows the waveform of negative logic input. In case of positive logic, it will be reversed.
 - ※ It is impossible to display the "-" at 5digit line.
 - ※ The left application of display indicates non-using zero blank function. If using zero blank function, the "0" on 10⁴ position is not displayed.
- (Inner selection switch SW3 → ON)

Dynamic input(Parallel connection)

Inner selection switch SW1 → ON, SW2 → OFF, SW3 → OFF, SW4 → ON, SW5 → ON.



$$Pw = t1 + t2 + t3$$

$$Pw = 0.2ms \text{ [Min.]}$$

$$t1 = 0.05ms \text{ [Min.]}$$

$$t2 = 0.10ms \text{ [Min.]}$$

$$t3 = 0.05ms \text{ [Min.]}$$

- ※ Left figure shows the waveform of negative logic input. In case of positive logic, it will be reversed.
 - ※ It is impossible to display the "-" at 5digit line.
 - ※ Latch input should be later than BCD input, otherwise, it will display the previous data.
 - ※ The left application of display indicates non-using zero blank function. If using zero blank function, the "0" on 10⁴ position is not displayed.
- (Inner selection switch SW3 → ON)

Display Unit Indication Type Only

■ Proper usage

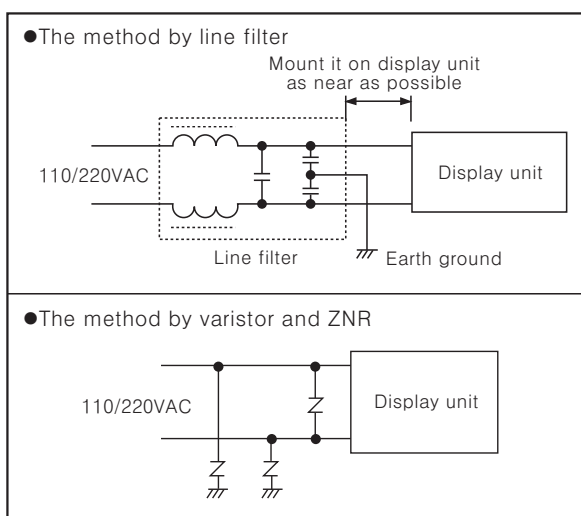
1. The way of custody

Avoid direct ray of light when keeping long time, and keep it under -25 to 65°C , 35 to 85%RH of relative humidity.

2. Noise

Concerning the product (D5W-MX type) using AC power, inflow of noise through a power line is a major circuit built-in small product.

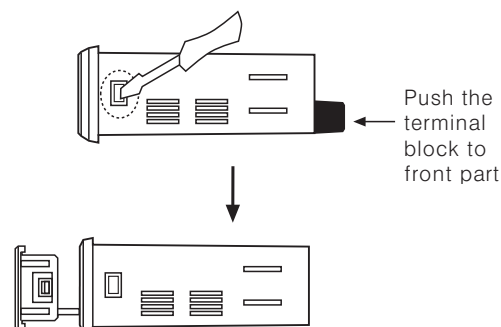
Therefore, use an absorbing circuit such as outer line filter and varistor when abnormal voltage is occurred in the same line by power relay, magnet S/W, using a high-frequency machine, high voltage of spark of lightning stroke.



- Input signal line should be short as much as possible. If the line is too long, it will affect noise.
- If the time of input signal is overlapped, it may occur faint light.
- Oil, soot or dust must not be flown into the product.
- A decimal point and "-" signal can be displayed with outer DP terminal and minus terminal when signal level is "High". (High level : 5V-24VDC)
- Because Hirose connector has both power line (12-24VDC) and data signal line, please connect the lines after checking connection figure.

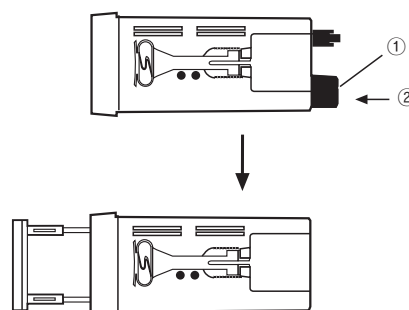
■ Case detachment

●D5Y-M



Widen the both inside of lock devices with a driver, and push the terminal block to the direction of front part.

●D5W-M / D5W-MX



Push the lock part on the side to the direction ①, and then push the terminal block to the direction ②.

※Be careful in order not to be wounded.

※Please turn off the power before detaching the case.

(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