

# D1AA Series

## Small Display Unit for Vivid Display (W11×H22mm) and Various 61 Characters and Symbols

### ■ Features

- Displays 61 types of characters and signs (0 to 9, A to Z, decimal point, 24 symbols)
- Selectable input logic (PNP/NPN), data input type (parallel/serial)
- 16-segment in red/green
- Wide range of input signal level  
: Low: 0-1.2VDC, High: 4.5-24VDC
- 12-24VDC power supply
- Multi-stage connection available



### ■ Specifications

Model	D1AA-RN	D1AA-GN <sup>※1</sup>
Display method	16-segment LED display (red)	16-segment LED display (green)
Power supply	12-24VDC <sup>≡</sup>	
Allowable voltage range	90 to 110% of rated voltage	
Current consumption	Max. 32mA	
Display character	61 characters (0 to 9, A to Z, decimal point, 24 symbols)	
Character size	W11×H22mm	
Input	•Parallel: Parallel 6-bit data, latch, decimal point •Serial: Serial 6-bit or 7-bit data, clock, latch, decimal point (for 6-bit input)	
Input level	High: 4.5-24VDC <sup>≡</sup> , Low: 0-1.2VDC <sup>≡</sup>	
Max. Clock	Max. 3kHz	
Input resistance	20kΩ	
Output	Data output (serial input)	
Input logic	Selectable positive (PNP) or negative (NPN) (by inner soldering)	
Noise immunity	±300V the square wave noise (pulse width: 1μs) by the noise simulator	
Environment	Ambient temperature	0 to 60°C, storage: -10 to 85°C
	Ambient humidity	35 to 85%RH
Accessory	Connector	
Unit weight	Approx. 22g (including right/left caps)	

※1: It is option.

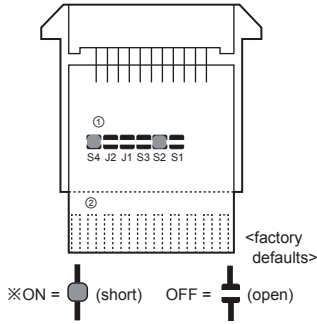
※Max. Clock is for 1:1 of duty ratio (ON, OFF ratio).

※Environment resistance is rated at no freezing of condensation.

# 16-Segment Display Unit

## Unit Description

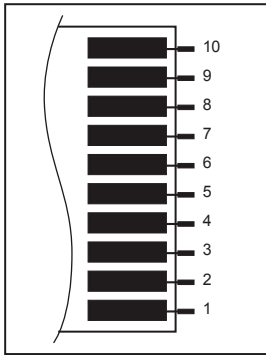
### ① Function set switches



Switch	ON	OFF	Function
S1	—	—	Unused
S2	Parallel	Serial	Input
S3	7-bit	6-bit	Serial input
J1	Use	Unused	Serial data output <sup>*1</sup>
J2	—	—	Always set as OFF.
S4	Negative (NPN)	Positive (PNP)	Input logic

\*1: For Serial input, set this as ON. For Parallel input, set this as OFF.

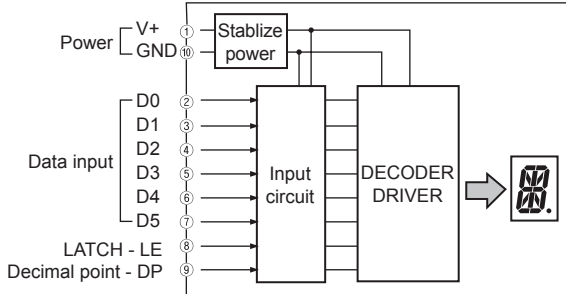
### ② Input/Output terminals



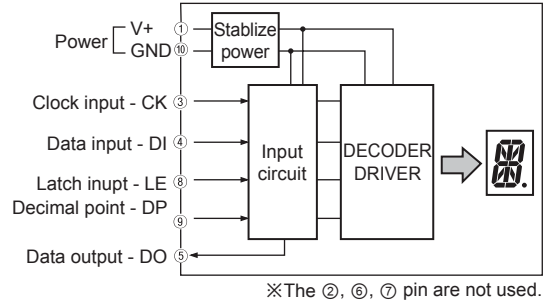
Terminal	Input		Serial input	
	Code	Function	Code	Function
1	VCC	12-24VDC	VCC	12-24VDC
2	D0	Data input	N·C	Do not connect anything.
3	D1		CK	Clock input
4	D2		DI	Data input
5	D3		DO	Data output
6	D4		N·C	Do not connect anything.
7	D5		N·C	
8	LE	Latch input	LE	Latch input
9	DP	Decimal point input	DP	Decimal point input
10	GND	0V	GND	0V

## Block Diagram

### ③ Parallel input

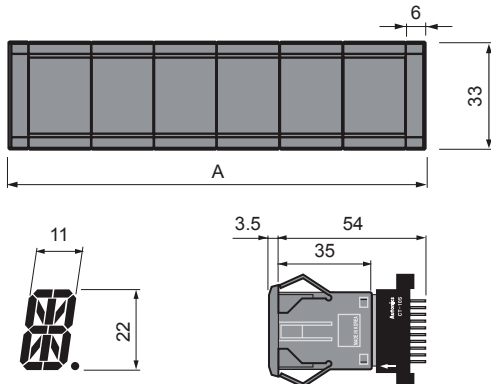


### ④ Serial input



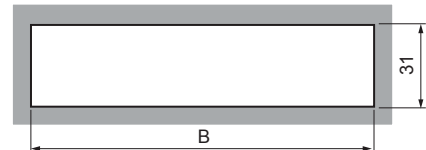
\*The ②, ⑥, ⑦ pin are not used.

## Dimensions



### ● Panel cut-out

(unit: mm)



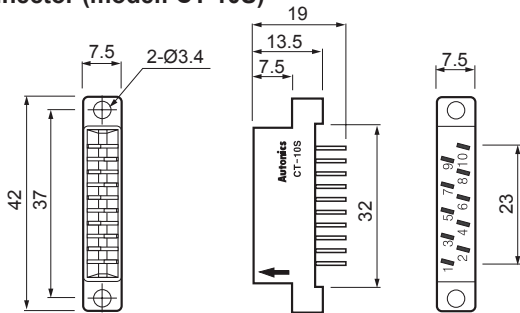
### ● Panel cut-out chart

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

# D1AA Series

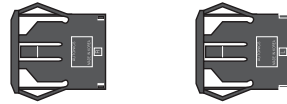
## ○ Accessory

- Connector (model: CT-10S)



## ○ Sold separately

- CAP



- D1AA-RN: DAR(L)-R (right/left 1 set)
- D1AA-GN: DAR(L)-BL (right/left 1 set)
- ※ Cap is optional (1 set).

## ■ Input Data Chart

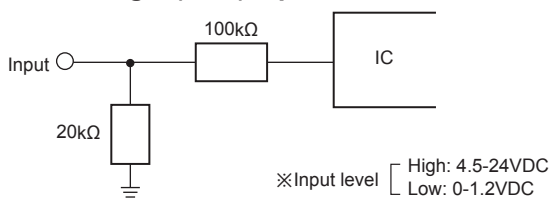
※In case of positive logic (PNP).

Upper 2-bit data (PNP type) in positive logic								Lower 4-bit data (PNP type) in positive logic			
D5	D4	D5	D4	D5	D4	D5	D4	D3	D2	D1	D0
L	L	L	H	H	L	H	H				
Blank		P		Blank		0		L	L	L	L
A		Q		Blank		1		L	L	L	H
B		R		"		2		L	L	H	L
C		S		⊗		3		L	L	H	H
D		T		\$		4		L	H	L	L
E		U		%		5		L	H	L	H
F		V		Blank		6		L	H	H	L
G		W		'		7		L	H	H	H
H		X		:		8		H	L	L	L
I		Y		:		9		H	L	L	H
J		Z		*		⊗		H	L	H	L
K		[		+		⊗		H	L	H	H
L		\		⊗		⊗		H	H	L	L
M		]		-		⊗		H	H	L	H
N		^		⊗		⊗		H	H	H	L
O		⊗		⊗		⊗		H	H	H	H

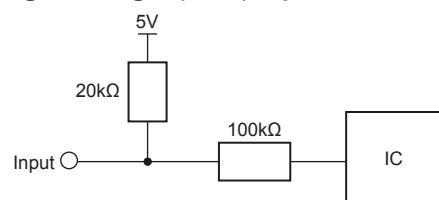
※Blank: Even though data is input as signal, it does not display.

## ■ Input Circuit

### ○ Positive logic (PNP) input



### ○ Negative logic (NPN) input

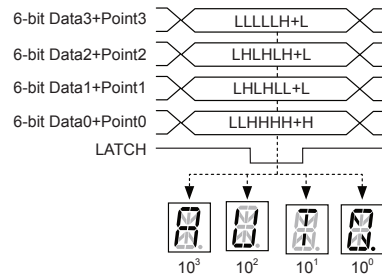
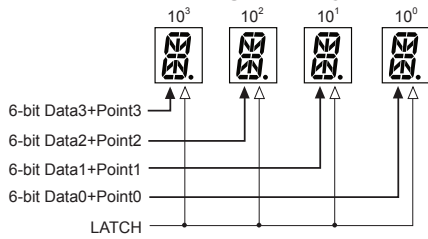


# 16-Segment Display Unit

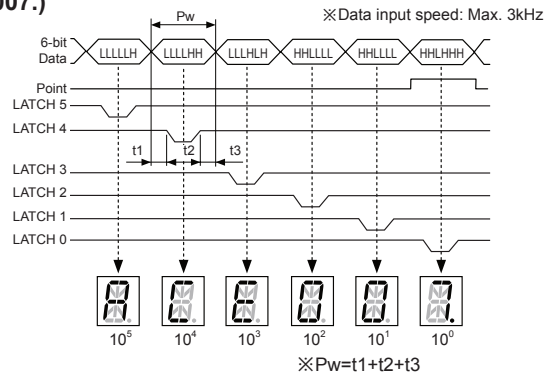
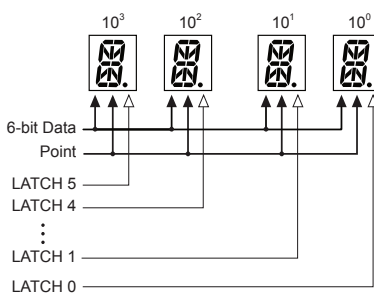
## ■ Data Input Method

### ○ Parallel input

#### ● 6-bit static parallel input (e.g.: displays Auto.)



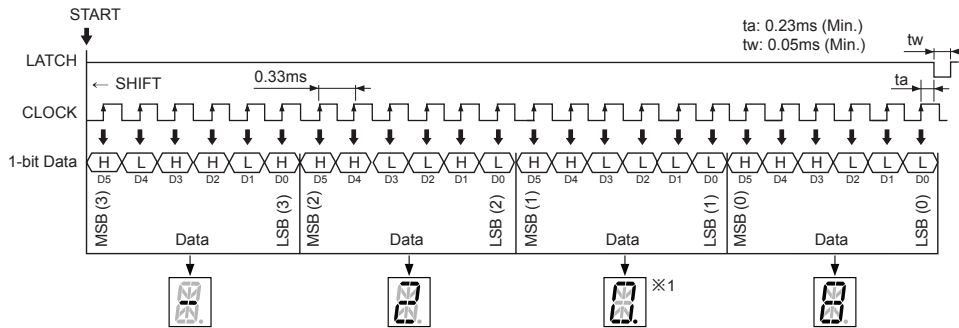
#### ● 6-bit dynamic parallel input (e.g.: displays ACE007.)



※Data input speed: Max. 3kHz  
 ※Pw=t1+t2+t3  
 Pw: 0.33ms (Min.)  
 t1: 0.05ms (Min.) → Data LATCH  
 t2: 0.23ms (Min.) → Data move  
 t3: 0.05ms (Min.) → Data

### ○ Serial input

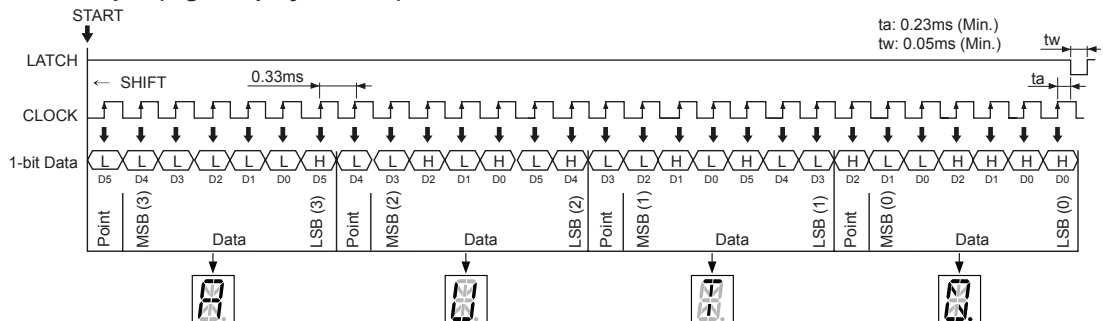
#### ● 6-bit serial input (e.g.: displays -20.8)



※Clock: Max. 3kHz  
 ※In case of positive logic (PNP), hexadecimal number

※1: For 6-bit Serial input, connect DP of rear input terminal to V+ to display decimal point.  
 In case of negative logic (NPN), connect DP to GND.

#### ● 7-bit serial input (e.g.: displays AUTO.)



ta: 0.23ms (Min.)  
 tw: 0.05ms (Min.)

SENSORS
CONTROLLERS
MOTION DEVICES
SOFTWARE
(J) Temperature Controllers
(K) SSRs
(L) Power Controllers
(M) Counters
(N) Timers
(O) Digital Panel Meters
(P) Indicators
(Q) Converters
(R) Digital Display Units
(S) Sensor Controllers
(T) Switching Mode Power Supplies
(U) Recorders
(V) HMIs
(W) Panel PC
(X) Field Network Devices

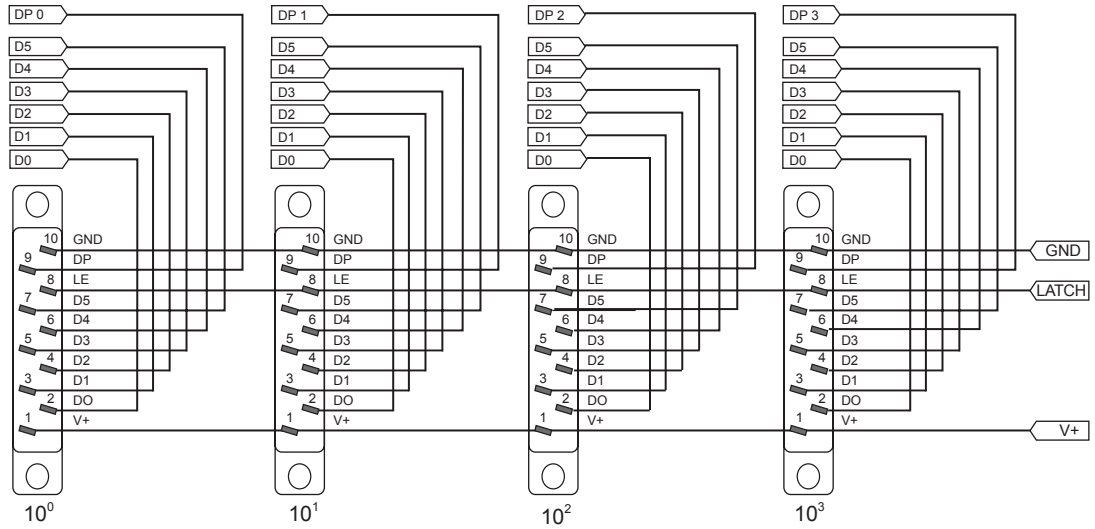
# D1AA Series

## Multi-Stage Connection Method

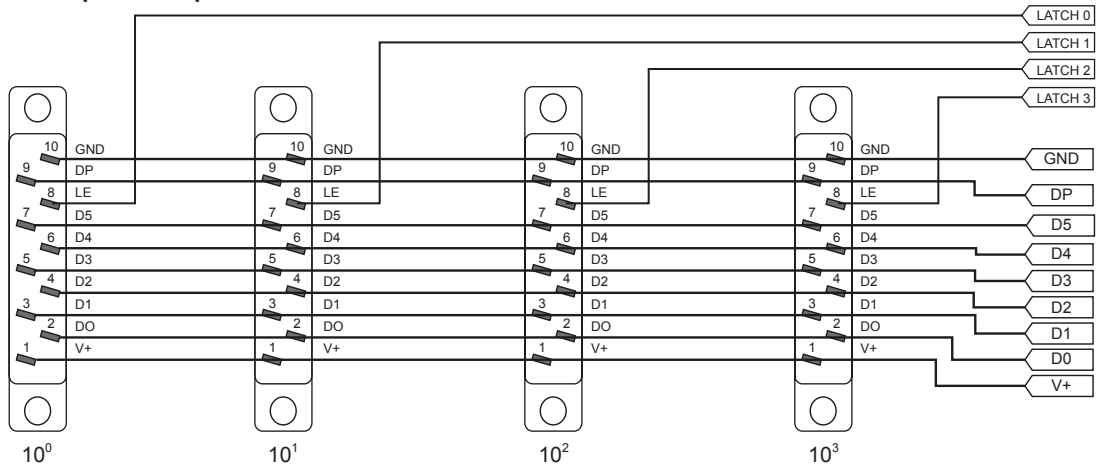
※Do wiring after removing the rear case of the product.

### Parallel input: 4-digit

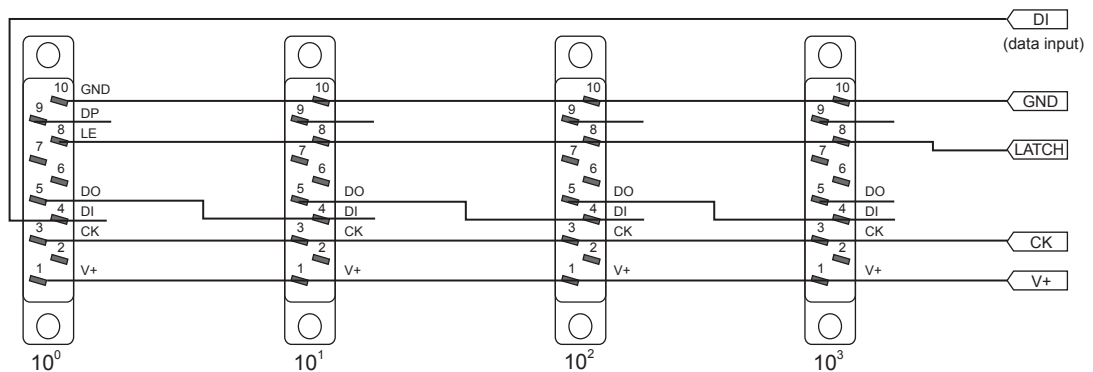
#### Static parallel input



#### Dynamic parallel input



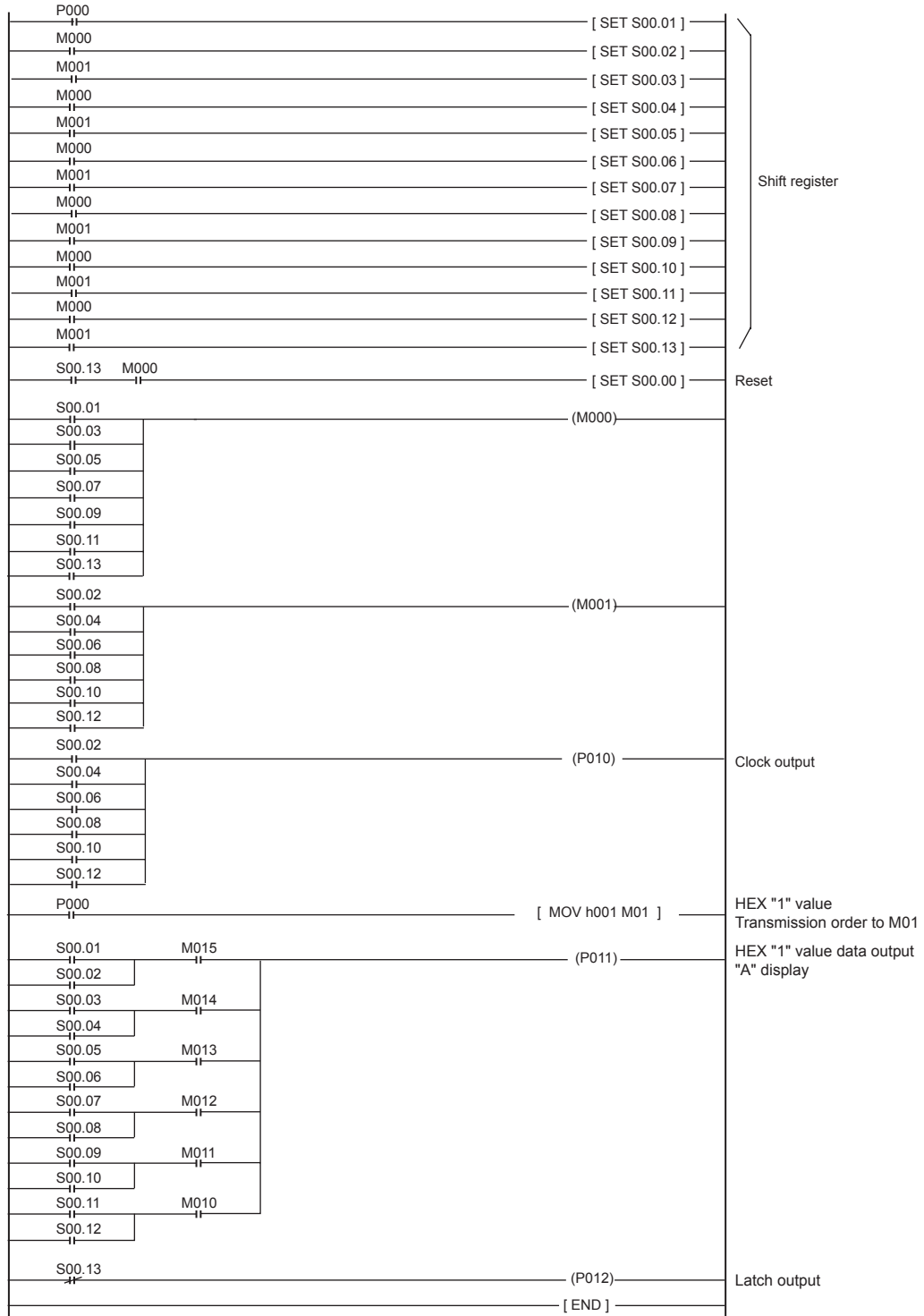
### Serial input: 4-digit



# 16-Segment Display Unit

## ■ The Application of PLC Program [Serial Input Type]

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



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