

SD72 Series Display Units

4-digit, 7-segment LED decimal display units DIN36 by 72mm size

- Suitable for PLC (programmable logic controller) display units.
- Zero suppression function is provided.
- Easy maintenance
- Available in positive and negative input logic types.
- Character size: 14.3H × 8.0W mm



Models

Series	Display Type	Input Logic	Part No.	
			Red LED Display	Green LED Display
SD72	4 digits and - sign	Negative	SD72-S53C2B-R	SD72-S53C2B-G
		Positive	SD72-S54C2B-R	SD72-S54C2B-G

Note: Two Mounting Clips (SLD-K01), one Strain Relief (SD72-ST2), and two Leaf Springs for vertical mounting are supplied with each display unit.

Accessories (Optional)

Name	Part No.	Ordering Part No.	Package Quantity	
Strain Relief (on square display)	SD72-ST2	SD72-ST2	1	
Cross-Shaped Joint	SLD-F30	SLD-F30PN05	5	
I-Shaped Joint	SLD-L72	SLD-L72PN05	5	
Connector	Type A	SD72-JE1A□	SD72-JE1A□	1
	Type B	SD72-JE1B□	SD72-JE1B□	1
	Type C	SD72-JE1C□	SD72-JE1C□	1

Note: Specify a cable length code in place of □ in the Part No. as shown below.

Cable Length Code

Code	0.5	1	2	3	4	5
Cable Length (mm)	500	1,000	2,000	3,000	4,000	5,000

Note 1: Select a cable with sufficient length.

Note 2: Since the connector for the display unit is supplied with strain relief, the actual cable length is approx. 10 mm shorter than the normal length.

Note 3: Input connector types

SD72-JE1A□: Flat cable connector for direct mounting on PC board

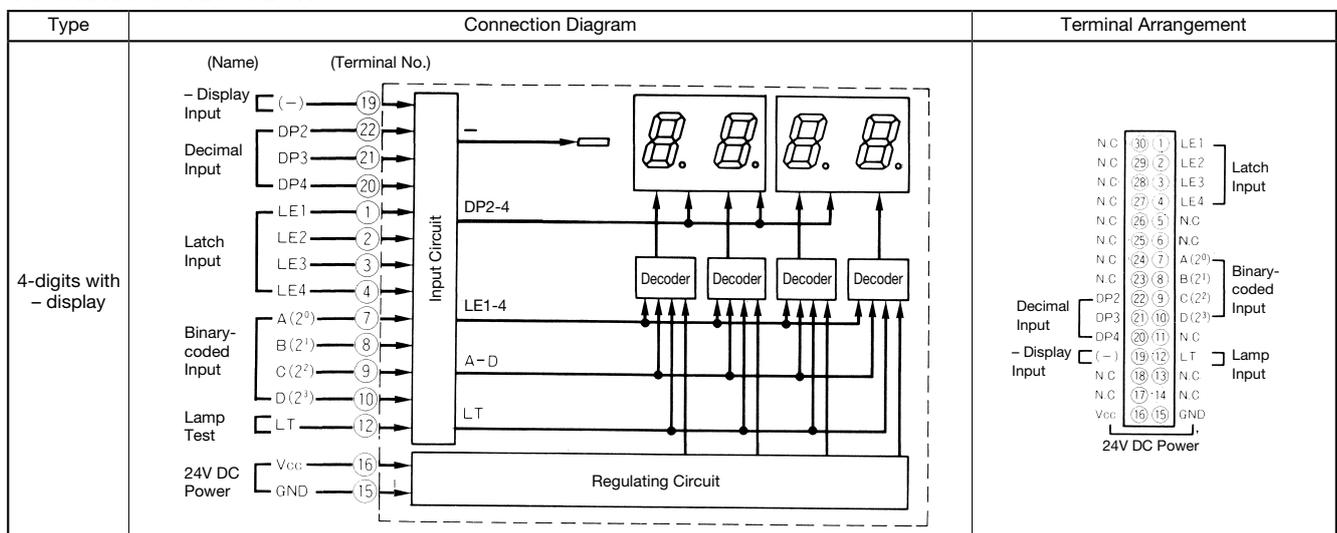
SD72-JE1B□: Flat cable connector conforming to MIL Standard

SD72-JE1C□: None (soldering, etc.)

Specifications

Power Voltage	24V DC ±10%
Power Consumption (Approx.)	2.6W
Operating Temperature	-10 to +55°C (no freezing)
Operating Humidity	35 to 85% RH (no condensation)
Data Input	L: 0 to 2V H: 12 to 30V
Display Character	7-segment LED display (red or green) Decimal display unit: 0 to 9, decimal point, -
Character Height	14.3 mm
Input	Binary-coded, Latch, DP, and - inputs
Input Logic	Positive or negative
No. of Digits	4 with - sign
Weight (Approx.)	Display unit: 130g Two mounting clips: 12g

Terminal Connection

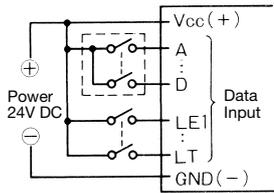


SD72 Series Display Units

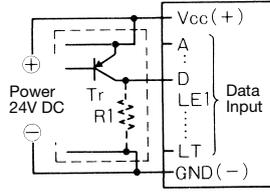
External Wiring

Positive Logic

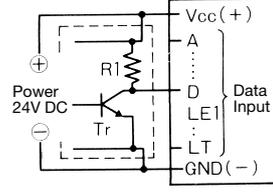
[Contact Input (Digital Switch)]



[Transistor Input]



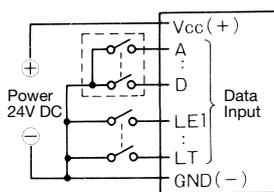
When Tr is on, output goes to H.



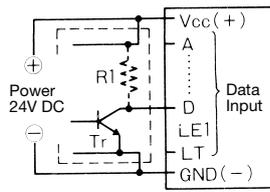
When Tr is off, output goes to H.

Negative Logic

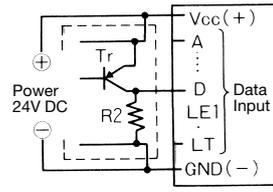
[Contact Input (Digital Switch)]



[Transistor Input]



When Tr is on, output goes to L.



When Tr is off, output goes to L.

Note: When connecting a pull-up or pull-down resistor to the external circuit, R1 and R2 should be 2.2 to 10 kΩ and 2.2 to 3.3 kΩ, respectively.

Function Table

Data Input (H, L: Voltage Level)													LED Display	
Positive Logic Type						Negative Logic Type								
D	C	B	A	Latch	DP	LT	D	C	B	A	Latch	DP		LT
L	L	L	L	L	L	L	H	H	H	H	H	H	H	0 or blank*
L	L	L	L	L	L	H	H	H	H	H	H	L	H	0.
L	L	L	H	L	L	L	H	H	H	L	H	H	H	1
L	L	H	L	L	L	L	H	H	L	H	H	H	H	2
L	L	H	H	L	L	L	H	H	L	L	H	H	H	3
L	H	L	L	L	L	L	H	L	H	H	H	H	H	4
L	H	L	H	L	L	L	H	L	H	L	H	H	H	5
L	H	H	L	L	L	L	H	L	L	H	H	H	H	6
L	H	H	H	L	L	L	H	L	L	L	H	H	H	7
H	L	L	L	L	L	L	L	H	H	H	H	H	H	8
H	L	L	H	L	L	L	L	H	H	L	H	H	H	9
H	L	H	L	L	L	L	L	H	L	H	H	H	H	blank
H	L	H	H	L	L	L	L	H	L	L	H	H	H	blank
H	H	L	L	L	L	L	L	L	H	H	H	H	H	blank
H	H	L	H	L	L	L	L	L	H	L	H	H	H	blank
H	H	H	L	L	L	L	L	L	L	H	H	H	H	blank
H	H	H	H	L	L	L	L	L	L	L	H	H	H	blank
x	x	x	x	H	L	L	x	x	x	x	L	H	H	maintain
x	x	x	x	x	x	H	x	x	x	x	x	x	L	all ON

Note: x indicates the display is not affected by voltage level of H or L.
* Leading zeros are suppressed while zeros in lower digits are displayed.

Input Functions

A, B, C, and D (binary code) Input

Decimal data input corresponding to each code of 1, 2, 4 or 8.

Latch Input

When the Latch Input is set to level H for the positive logic type or level L for the negative logic type, the display at the time is maintained. (DP, -, and LT inputs are independent.)

DP and - Display Inputs

When these inputs are set to level H for the positive logic type or level L for the negative logic type, the decimal point or - sign turns on.

LT Input (Lamp Test Input)

When the LT input is set to level H for the positive logic type or level L for the negative logic type, the entire display turns on. As the latched data is maintained internally, the data is displayed when the LT input is turned off.

Zero Suppression Function

Display characters can be read easily as unnecessary zeros are not displayed. Zeros in the upper digits than the digit in which decimal point is turning on are not displayed. "0" in the lower digits are displayed. Zero suppression function does not apply to the lowest digit. If all data of 1st to 4th data are "0", the display is as shown in "Display Example 3."

(Example)

	4th Data	3rd Data	2nd Data	1st Data	Display Example 1	Display Example 2	Display Example 3
	0	0	9	0	□□90	0	0
	0	0	9	0	□□90	0	□□□0
	0	0	9	0	□□90	0	□□□0
	0	0	9	0	□□90	0	□□□0

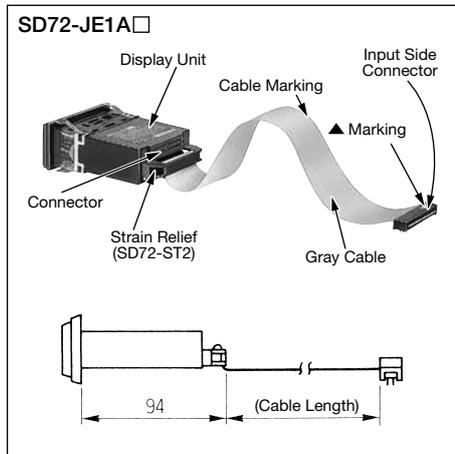
□: blank

Connectors

Three types of connectors are available for display units. The connector on the display unit has a strain relief to prevent connector removal if the cable is pulled.

See Installing the Strain Relief on page 573.

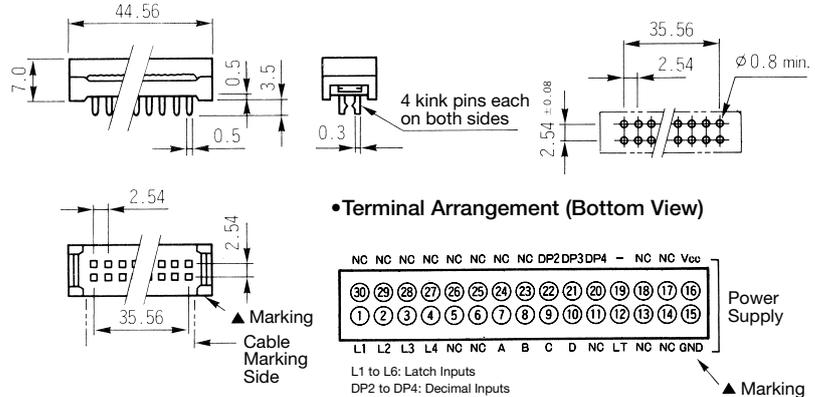
For Direct Connection to PC Board



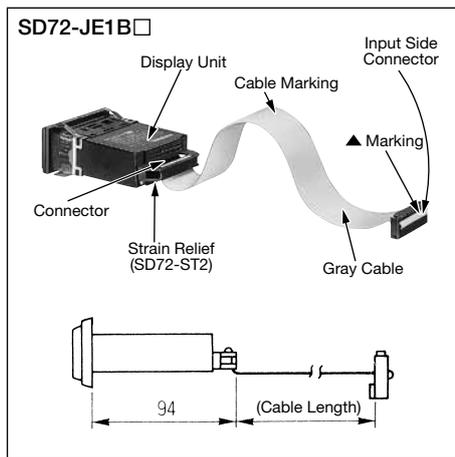
[Input Side Connector]

Flat cable connector for direct connection to PC board.

Dimensions



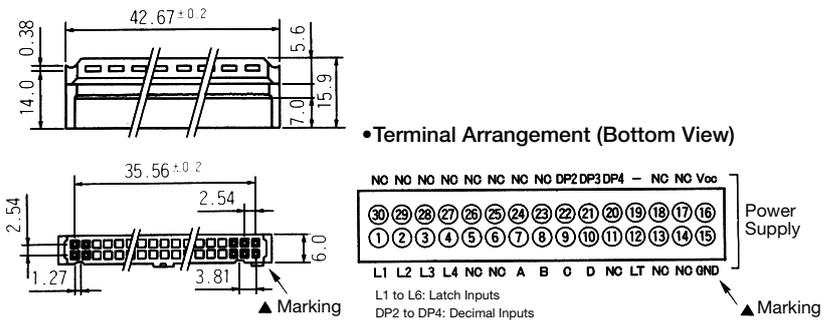
For Connection to Connector Header



[Input Side Connector]

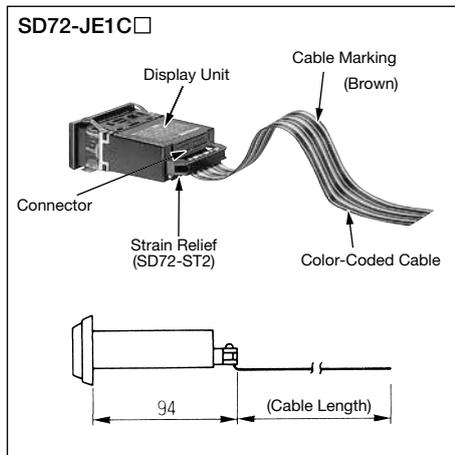
MIL type flat cable connector.
IDEC's JE1S-301 (with strain relief)

Dimensions



<Applicable Connector Header>
IDEC's JE1H-301 long latch, right angle type
IDEC's JE1H-302 long latch, straight type

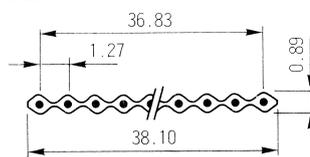
For Soldering Connection to PC Board or Others



[Input Side Connector]

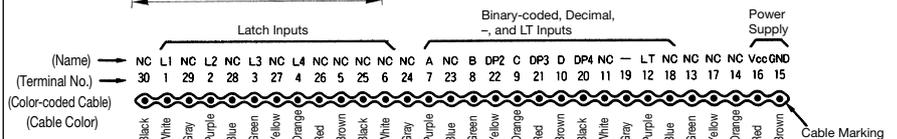
Not provided (soldering etc.)

Flat Cable



Material

Conductor	AWG28 (7 cores/0.127 mm) Tinned annealed copper wire
Insulator	Heat-resisting vinyl

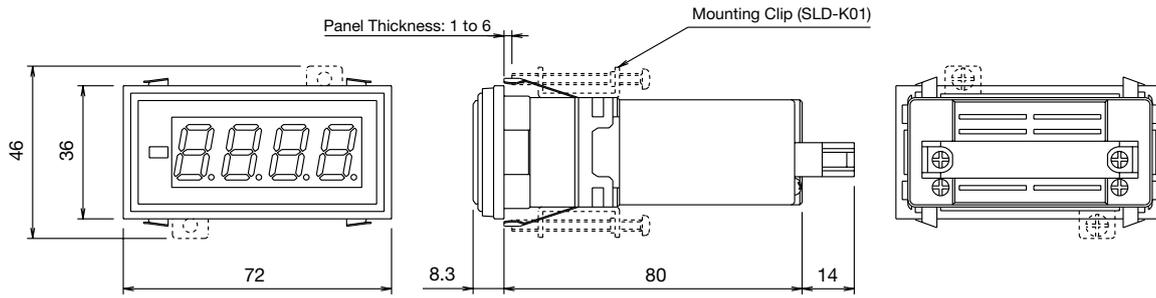


Note 1: Specify a cable length code (0.5: 500 mm, 1: 1000 mm, 2: 2000 mm, 3: 3000 mm, 4: 4000 mm, 5: 5000 mm) in place of □ in the Part No.
Note 2: As a strain relief is supplied with the connector on the display unit, the actual cable length reduces by 10 mm from the normal length.

SD72 Series Display Units

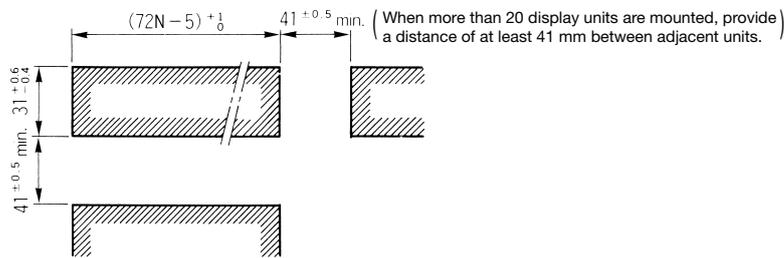
Dimensions & Panel Cut-out

SD72



(Panel Cut-Out) N: No. of Units

Single or Horizontal One-Row Mounting ($1 \leq N \leq 20$)



Note: Two Mounting Clips (SLD-K01) are supplied with each display unit. (Tightening torque: 0.35 N·m)
Two Leaf Springs for vertical mounting are also supplied.

Panel Mounting

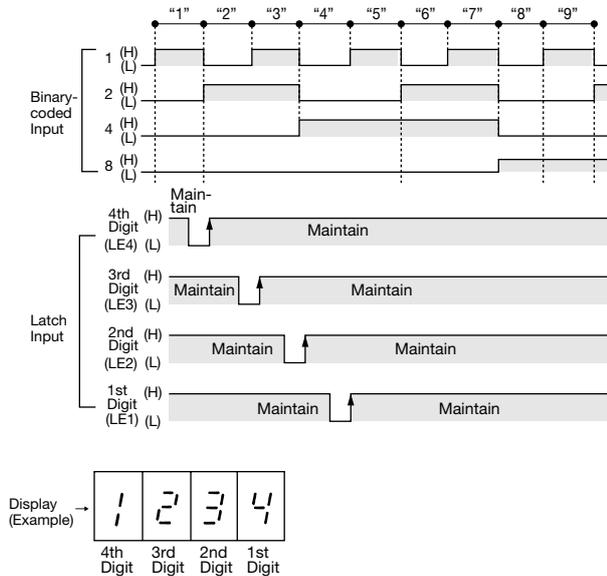
Mounting Style	Single	Horizontal One-Row
Appearance		<p style="text-align: right;">Maximum No. of Units: 20</p>
Mounting Method	Install two mounting clips (supplied) and tighten the screws.	Install two mounting clips (supplied) to each unit and tighten the screws.

Note: Mounting Clips require only light tightening ($0.34 \pm 0.04 \text{ N} \cdot \text{m}$).

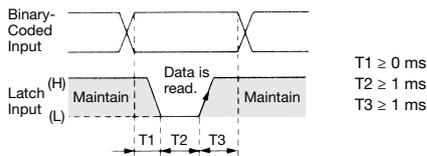
SD72 display units cannot be mounted together in an integrated form and in a vertical row because of heat generation.

Latch Input

Latch Operation



Latch Input Timing Chart



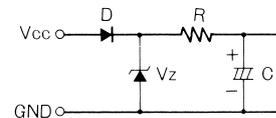
Note 1: The above chart represents positive logic type units. Negative logic type units have characteristics with (H) and (L) reversed.

Note 2: The rise and fall times of input pulses should be made as short as possible (0.1 ms maximum).

Note 3: If the data input is changed in the period of T2, the display will change.

Instructions

- When cleaning the surface of the filter and housing, use a soft cloth. Do not use thinner or acid to clean the surface.
- When the display unit is mounted in a panel cut-out, do not place a metal object or power line within 40 mm or shorter distance from the end of the connector terminals at the rear of the display unit.
- If the display units are subjected to voltage surges, install a surge suppressor in the power line.
- Use shielded cable or metal conduit for the input line. Run the input wiring as far away as possible from high-voltage and motor lines. Make the input line as short as possible.
- Use shielded cable or metal conduit for the input line. Run the input wiring as far away as possible from high-voltage and motor lines. Make the input line as short as possible.
- Avoid using the display unit in a place where excessive and frequent vibration or impact may occur.
- Avoid using the display unit in a place where it is exposed to corrosive gas, water or oil splashes, dust or direct sunlight, or in a place where organic solvents are used.
- The filter is made of acrylic.
- If the Latch input is on when the SD72 is powered up, the data input cannot be read correctly or wrong data may be maintained. Do not turn on the Latch input until at least 0.5 sec after the SD72 is powered up.
- The SD72 power circuit flows an inrush current of approximately 3A (for 10 ms maximum) when the power is turned on. Note this value when determining the size of the external power supply.
- The power supply input circuit is shown below.



V_z : 31V min. (peak voltage)

- When connecting a pull-up or pull-down resistor to the input terminals, ensure compatibility with the input resistor of the SD72 internal circuit.