

S1DXM-A/M Timers

UL File No.: E122222 C-UL File No.: E122222

FEATURES

1. Multiple functions built in The operation mode and time range can be switched by using the MODE and RANGE switches on the front panel.

MULTI-RANGE ANALOG TIMER

2. Part number consolidation

1) The lineup consists of 64 easy-tochoose models.

2) An operation mode fixed type (S1DXM-A) and 4-operation mode

switching type (S1DXM-M) are available. 3. Cadmium-free contacts used

To eliminate environmentally harmful chemical substances, relays with cadmium-free contacts are used.

4. Economically priced

1) Prices set to lower costs.

2) Further cost reduction when used with

HJ Relay terminal socket.

5. CE marking supported

UL and C-UL approved.

PRODUCT TYPES

1. S1DXM-A multi-range timer No MODE switch, Operation mode (fixed): Power ON-delay

Operating valtage	Time range	Timed-out 2 Form C	Timed-out 4 Form C
Operating voltage	Time range	Part number	Part number
	0.05 s to 10 min	S1DXM-A2C10M-DC12V	S1DXM-A4C10M-DC12V
12V DC	0.2 s to 30 min	S1DXM-A2C30M-DC12V	S1DXM-A4C30M-DC12V
120 DC	0.5 s to 60 min	S1DXM-A2C60M-DC12V	S1DXM-A4C60M-DC12V
	0.05 min to 10 hr	S1DXM-A2C10H-DC12V	S1DXM-A4C10H-DC12V
	0.05 s to 10 min	S1DXM-A2C10M-DC24V	S1DXM-A4C10M-DC24V
24V DC	0.2 s to 30 min	S1DXM-A2C30M-DC24V	S1DXM-A4C30M-DC24V
24V DC	0.5 s to 60 min	S1DXM-A2C60M-DC24V	S1DXM-A4C60M-DC24V
	0.05 min to 10 hr	S1DXM-A2C10H-DC24V	S1DXM-A4C10H-DC24V
	0.05 s to 10 min	S1DXM-A2C10M-AC24V	S1DXM-A4C10M-AC24V
24V AC	0.2 s to 30 min	S1DXM-A2C30M-AC24V	S1DXM-A4C30M-AC24V
24V AC	0.5 s to 60 min	S1DXM-A2C60M-AC24V	S1DXM-A4C60M-AC24V
	0.05 min to 10 hr	S1DXM-A2C10H-AC24V	S1DXM-A4C10H-AC24V
	0.05 s to 10 min	S1DXM-A2C10M-AC120V	S1DXM-A4C10M-AC120V
100 to 120V AC	0.2 s to 30 min	S1DXM-A2C30M-AC120V	S1DXM-A4C30M-AC120V
100 10 120V AC	0.5 s to 60 min	S1DXM-A2C60M-AC120V	S1DXM-A4C60M-AC120V
	0.05 min to 10 hr	S1DXM-A2C10H-AC120V	S1DXM-A4C10H-AC120V
	0.05 s to 10 min	S1DXM-A2C10M-AC220V	S1DXM-A4C10M-AC220V
200 to 220V AC	0.2 s to 30 min	S1DXM-A2C30M-AC220V	S1DXM-A4C30M-AC220V
200 10 220V AC	0.5 s to 60 min	S1DXM-A2C60M-AC220V	S1DXM-A4C60M-AC220V
	0.05 min to 10 hr	S1DXM-A2C10H-AC220V	S1DXM-A4C10H-AC220V
	0.05 s to 10 min	S1DXM-A2C10M-AC240V	S1DXM-A4C10M-AC240V
220 to 240V AC	0.2 s to 30 min	S1DXM-A2C30M-AC240V	S1DXM-A4C30M-AC240V
	0.5 s to 60 min	S1DXM-A2C60M-AC240V	S1DXM-A4C60M-AC240V
	0.05 min to 10 hr	S1DXM-A2C10H-AC240V	S1DXM-A4C10H-AC240V



Panasonic

ideas for life



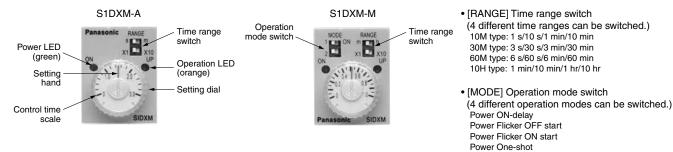
S1DXM-A/M

2. S1DXM-M multi-range timer

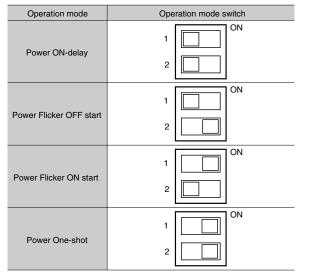
With MODE switch, Operation mode (switchable): Power ON-delay, Power Flicker ON start, Power Flicker OFF start, Power One-shot

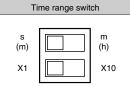
, i	()		,
Oneveting	Time reaso	Timed-out 2 Form C	Timed-out 4 Form C
Operating voltage	Time range	Part number	Part number
	0.05 s to 10 min	S1DXM-M2C10M-DC12V	S1DXM-M4C10M-DC12V
12V DC	0.2 s to 30 min	S1DXM-M2C30M-DC12V	S1DXM-M4C30M-DC12V
	0.5 s to 60 min	S1DXM-M2C60M-DC12V	S1DXM-M4C60M-DC12V
	0.05 min to 10 hr	S1DXM-M2C10H-DC12V	S1DXM-M4C10H-DC12V
	0.05 s to 10 min	S1DXM-M2C10M-DC24V	S1DXM-M4C10M-DC24V
24V DC	0.2 s to 30 min	S1DXM-M2C30M-DC24V	S1DXM-M4C30M-DC24V
24V DC	0.5 s to 60 min	S1DXM-M2C60M-DC24V	S1DXM-M4C60M-DC24V
	0.05 min to 10 hr	S1DXM-M2C10H-DC24V	S1DXM-M4C10H-DC24V
	0.05 s to 10 min	S1DXM-M2C10M-AC24V	S1DXM-M4C10M-AC24V
24V AC	0.2 s to 30 min	S1DXM-M2C30M-AC24V	S1DXM-M4C30M-AC24V
24V AG	0.5 s to 60 min	S1DXM-M2C60M-AC24V	S1DXM-M4C60M-AC24V
	0.05 min to 10 hr	S1DXM-M2C10H-AC24V	S1DXM-M4C10H-AC24V
	0.05 s to 10 min	S1DXM-M2C10M-AC120V	S1DXM-M4C10M-AC120V
100 to 120V AC	0.2 s to 30 min	S1DXM-M2C30M-AC120V	S1DXM-M4C30M-AC120V
100 10 120V AC	0.5 s to 60 min	S1DXM-M2C60M-AC120V	S1DXM-M4C60M-AC120V
	0.05 min to 10 hr	S1DXM-M2C10H-AC120V	S1DXM-M4C10H-AC120V
	0.05 s to 10 min	S1DXM-M2C10M-AC220V	S1DXM-M4C10M-AC220V
200 to 220V AC	0.2 s to 30 min	S1DXM-M2C30M-AC220V	S1DXM-M4C30M-AC220V
200 10 220V AC	0.5 s to 60 min	S1DXM-M2C60M-AC220V	S1DXM-M4C60M-AC220V
	0.05 min to 10 hr	S1DXM-M2C10H-AC220V	S1DXM-M4C10H-AC220V
	0.05 s to 10 min	S1DXM-M2C10M-AC240V	S1DXM-M4C10M-AC240V
220 to 240V AC	0.2 s to 30 min	S1DXM-M2C30M-AC240V	S1DXM-M4C30M-AC240V
220 10 240V AC	0.5 s to 60 min	S1DXM-M2C60M-AC240V	S1DXM-M4C60M-AC240V
	0.05 min to 10 hr	S1DXM-M2C10H-AC240V	S1DXM-M4C10H-AC240V

PART NAMES



OPERATION MODE AND TIME RANGE SETTING





The time setting can be switched among 4 ranges each for 4 types for an interval between 0.05 seconds and 10 hours.

Notes: 1. The product is factory shipped with all settings on the OFF side (left). 2. Do not operate the switches with a sharp-edged object such as a knife blade.

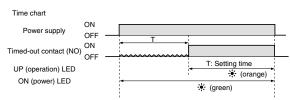
- The power must be turned off when setting the time range or operation mode. Operating the switches with the power on is a cause of breakdown and malfunction.
- 4. Use a force of under 5 N to operate the DIP switches when setting the time range and operation mode.

OPERATION MODE

1. S1DXM-A multi-range timer

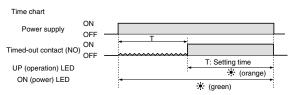
Power ON-delay operation

• When power is turned on, the output contact operates after the set time. The output contact remains on until the power is turned off.



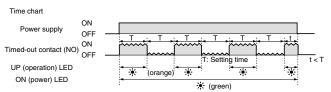
2. S1DXM-M multi-range timer Power ON-delay operation [MODE] switch 1: OFF, switch 2: OFF

• When power is turned on, the output contact operates after the set time. The output contact remains on until the power is turned off.



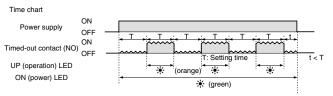
Power Flicker ON start operation [MODE] switch 1: ON, switch 2: OFF

• When power is turned on, the output contact operates repeatedly at the set time. The output contact outputs at the same time power turns on.



Power Flicker OFF start operation [MODE] switch 1: OFF, switch 2: ON

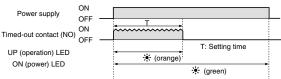
• When the power is turned on, the output contacts repeatedly operate at the set time. The output contact begins from the off state.



Power One-shot operation [MODE] switch 1: ON, switch 2: ON

When power is turned on, the output contact performs the on operation at the same time power turns on, only for the set time.

Time chart



TIME RANGE SETTING

Type Time scale		scale	Time unit		Min. scale	Max. scale	Setting range				
	10M type			s	m	0.05	1	0.05 to 1s	0.5 to 10s	0.05 to 1m	0.5 to 10m
S1DXM-A	30M type		X10	s	m	0.2	3	0.2 to 3s	2 to 30s	0.2 to 3m	2 to 30m
60M type 10H type	X1 X10	XIU	s	m	0.5	6	0.5 to 6s	5 to 60s	0.5 to 6m	5 to 60m	
	10H type			m	h	0.05	1	0.05 to 1m	0.5 to 10m	0.05 to 1h	0.5 to 10h
	10M type			s	m	0.05	1	0.05 to 1s	0.5 to 10s	0.05 to 1m	0.5 to 10m
S1DXM-M	30M type	X1	X10	s	m	0.2	3	0.2 to 3s	2 to 30s	0.2 to 3m	2 to 30m
STDAM-M	60M type		×10	s	m	0.5	6	0.5 to 6s	5 to 60s	0.5 to 6m	5 to 60m
	10H type			m	h	0.05	1	0.05 to 1m	0.5 to 10m	0.05 to 1h	0.5 to 10h

Note: The time setting range is the combination of the time scale (X1 or X10) on the dial and the time unit (s, m, or h). Example: When dial reads 1, time scale is X1 and time units is seconds, then it is 1 second.

ORDERING INFORMATION

	Ex. S1DXM- A	2C 30M — DC24V	
Operation mode	Control output arrangement	Time range	Operating voltage*
A M	2C: Timed-out 2 Form C 4C: Timed-out 4 Form C	10M: 0.05 s to 10 min 30M: 0.2 s to 30 min 60M: 0.5 s to 60 min 10H: 0.05 min to 10 hr	DC12V: 12 V DC DC24V: 24 V DC AC24V: 24 V AC AC120V: 100 to 120 V AC AC220V: 200 to 220 V AC AC240V: 220 to 240 V AC

* For other operating voltage types, please consult us.

S1DXM-A/M **SPECIFICATIONS**

	Item				Specifi	cations			
	Rated operation	ng voltage	24VAC	100 to 120VAC	200 to 220VAC	220 to 240VAC	12VDC	24VDC	
	Rated frequer	юу	50/60Hz common —						
	Rated power		Max. 3 VA (at 24 VAC)	Max. 3 VA (at 100 VAC)	Max. 3 VA (at 200 VAC)	Max. 3 VA (at 220 VAC)	Max. 2 W (at 12 VDC)	Max. 2 W (at 24 VDC)	
	consumption	During time delay	Approx. 3mA	Approx. 3mA	Approx. 3mA	Approx. 3mA	Approx. 5mA	Approx. 3mA	
		After time delay	Approx. 80mA	Approx. 20mA	Approx. 13mA	Approx. 13mA	Approx. 70mA	Approx. 40m	
Rating	Deteril control			Time	d -out 2 Form C: 7A	250V AC (resistive	load)		
	Rated control	сарасну		Time	d -out 4 Form C: 5A	250V AC (resistive	load)		
	Operation mo	de		(Power display: ON	Power on delay l/green; Operation c		t is on): UP/orange)	
					S1D) N-delay/Power Flick I/green; Operation c	ker OFF start/Powe			
		e fluctuation & e change error	Max. ±1 %	, (power off time ch	nange at the range of	of 0.1 s to 1 h), 1 s	range: Max. ±1 % a	nd 10 ms*2	
Time accuracy*1	Voltage error		Max. ± 1 % (at the operating voltage changes between –20 to +10%), 1 s range: Max. ± 1 % and 10 ms*2						
	Temperature e	error	Max. ±5% (at 20°C ambient temp. at the range of -10 to +50°C +14 to +122°F)						
	Setting error		Max. ±10%, 1 s range: Max. ±10% and 20 ms						
	Contact arrangement		Timed-out 2 Form C, Timed-out 4 Form C						
Contact	Contact resistance (Initial value)		Max. 100mΩ (at 1A, 6V DC)						
	Contact material		Timed-out 2 Form C type: Silver alloy, Au plating						
			Timed-out 4 Form C type: Silver alloy, Au plating						
Life	Mechanical (c	onstant)	Min. 10 ⁷						
LIIC	Electrical (constant)		2×10 ⁵ (at rated control capacity)						
	Vibration	Functional	10 to 55Hz: 1 cycle/min double amplitude of 0.25mm (10min on 3 axes)						
Mechanical	resistance	Destructive	10 to 55Hz: 1 cycle/min double amplitude of 0.375mm (1h on 3 axes)						
Mechanica	Shock	Functional	Min. 98m/s ² (4 times on 3 axes)						
	resistance	Destructive	Min. 980m/s ² (5 times on 3 axes)						
	Allowable ope	rating voltage range			80 to 110% of rate	d operating voltage			
	Reset time		Max. 0.1s						
	Insulation resi	stance (Initial value)	Between live and dead metal parts, between input and output, between contact sets, between contacts Min. 100 M Ω (at 500 V DC megger)						
Electrical	Breakdown voltage (Initial value)		Between live and dead metal parts: 2,000 Vrms for 1 min Between input and output: 2,000 Vrms for 1 min Between contact sets: 2,000 Vrms for 1 min Between contacts: 1,000 Vrms for 1 min						
	Max. tempera	ture rise			70°C	158°F			
	Ambient temp	erature			-10 to 50°C	+14 to 122°F			
	Ambient humi	dity			35 to 85% RH (I	non-condensing)			
Operating	Air pressure				860 to 1	060 hPa			
conditions	Ripple rate			DC type only, tra	insmission wave rec	tification (ripple rat	e: approx. 48%)*3		
	Mass (Weight)			Appro		,		
	Protective construction		IEC standard: IP40 (IP50 when using ADX18008 protective cover)						

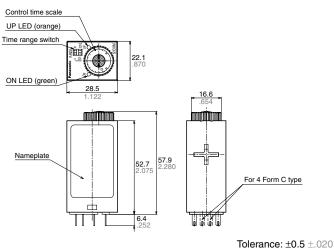
Notes: *1. Unspecified measuring conditions are rated operating voltage (in case of DC type, ripple rate of 5% or less), ambient temp. 20°C 68°F, and power off time 1 second. *2. Power one-shot 1 s range: +2% and 10 ms *3. When using with a transmission wave rectification, vibration resistance and shock resistance properties worsen compared to when using a stabilized power supply.

S1DXM-A/M

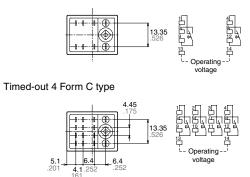
mm inch

DIMENSIONS

1. S1DXM-A

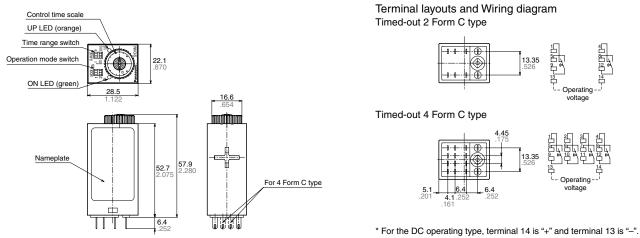


Terminal layouts and Wiring diagram Timed-out 2 Form C type



* For the DC operating type, terminal 14 is "+" and terminal 13 is "-".

2. S1DXM-M



Tolerance: ±0.5 ±.020

APPLIC	APPLICABLE STANDARD							
Safety standard	EN61812-1	Pollution Degree 2/Overvoltage Category II (2 Form C type); Pollution Degree 1/Overvoltage Category II (4 Form C type)						
EMC	(EMI)EN61000-6-4 Radiation interference electric field strength Noise terminal voltage (EMS)EN61000-6-2 Static discharge immunity RF electromagnetic field immunity EFT/B immunity Surge immunity Conductivity noise immunity Power frequency magnetic field immunity Voltage dip/Instantaneous stop/Voltage fluctuation immunity	EN55011 Group1 ClassA EN55011 Group1 ClassA EN61000-4-2 4 kV contact 8 kV air EN61000-4-3 10 V/m AM modulation (80 MHz to 1 GHz) 10 V/m pulse modulation (895 MHz to 905 MHz) EN61000-4-4 2 kV (power supply line) 1 kV (signal line) EN61000-4-5 1 kV (power line) EN61000-4-6 10 V/m AM modulation (0.15 MHz to 80 MHz) EN61000-4-8 30 A/m (50 Hz) EN61000-4-11 10 ms, 30% (rated voltage) 100 ms, 60% (rated voltage) 5,000 ms, 95% (rated voltage)						

Precautions during usage

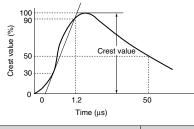
1. Reset periods

After unscheduled operations have been completed, or if the timer operation power supply has been turned off at any time during operation, a reset period of at least 0.1 seconds should be allowed before resuming operation.

2. External surge protection

External surge protection may be required if the following values are exceeded. Otherwise, the internal circuit will be damaged. The typical surge absorption elements include a varistor, a capacitor, and a diode. If a surge absorption element is used, use an oscilloscope to see whether or not the foreign surge exceeding the specified value appears.

• Single-pole, full-wave voltage for surge waveform [±(1.2 \times 50) μs]



Operation voltage	Surge voltage
100 to 120V AC, 200 to 220V AC	4,000V
12V DC, 24V DC	1,000V

Since the main body cover and knob are made of polycarbonate resin, prevent contact with organic solvents such as methyl alcohol, benzine and thinner, or strong alkali materials such as ammonia and caustic soda.

3. Terminal wiring

Make sure that terminals are wired carefully and correctly, referring to the terminal layout and wiring diagrams. Particularly, since the DC type has polarity, do not operate it with reverse polarity.

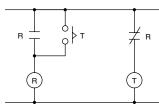
4. Assembly

1) When installing, use a terminal socket or socket intended for the HC/HJ relay. For adjacent installations, be sure to first verify the installation conditions of the terminal sockets or sockets you will be using.

2) Use the separately-sold dedicated socket leaf holding clip to secure terminal sockets and sockets to the timer unit. The conditions of use for dedicated socket leaf holding clip will differ depending on the terminal socket or socket you will be using. Therefore, please test under actual conditions before putting into operation. 3) If terminals are to be soldered directly, please hand solder with a 30 to 60 W solder iron with a tip temperature of 300°C for no more than 3 seconds.
Automatic soldering should be avoided.
4) A flux-tight construction is not used with this timer, so be careful that flux or cleaning fluid does not get inside the case.

5) To assure that characteristics are maintained, do not remove the case. 5. Long Continuous Current Flow

Long continuous current flow through the timer cause generation of heat internally, which degrade the electronic parts. Use the timer in combination with a relay and avoid long continuous current flow through the timer. (Refer to the circuit diagram below when using a safety circuit for continuous operation.)



6. Phase synchronization using AC load

If the turning on of the timer output relay is synchronized to the AC power supply phase, there may be times when the service life is shortened because of electrical factors, or when a locking phenomenon (defective relay return) occurs because of contact point welding or a shift in the contact relay. Check the operation using the actual timer.

7. Acquisition of CE marking

Please abide by the conditions below when using in applications that comply with EN61812-1.

 Overvoltage category II, pollution level 2 (2 Form C type) Overvoltage category II, pollution level 1 (4 Form C type)

2) The load connected to the output contact should have basic insulation. This timer is protected with basic insulation and can be double-insulated to meet EN/IEC requirements by using basic insulation on the load. 3) Please use a power supply that is protected by an overcurrent protection device which complies with the EN/IEC standard (example: 250 V 1 A fuse, etc.). 4) You must use a terminal socket or socket for the installation. Do not touch the terminals or other parts of the timer when it is powered. When installing or uninstalling, make sure that no voltage is being applied to any of the terminals.

5) Do not use this timer as a safety circuit. For example when using a timer in a heater circuit, etc., provide a protection circuit on the machine side.

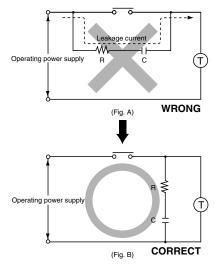
8. Others

1) When setting the time, the dial should be kept within the range indicated on the dial face. The "0" marking on the dial indicates the minimum time during which the control time can be varied (it does not indicate 0 seconds).

2) Do not rotate the knob past the stopper.

3) Turn off the power before changing the DIP switch settings. Changing the DIP switch with the power on can cause breakdown.

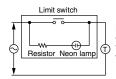
4) When connecting the operating power supply, make sure that no leakage current enters the timer. For example, when performing contact protection, if set up like that of fig. A, leaking current will pass through C and R, enter the timer, and cause incorrect operation. The fig. B shows the correct setup.



When a contact switch having an operation indicating lamp (lamp equipped limit switch, etc.) is used to apply power to the timer, a resistor having a value equal to or greater than the value below shall be connected in series with the lamp.

100 to 120V AC operating type: Min. $33k\Omega$

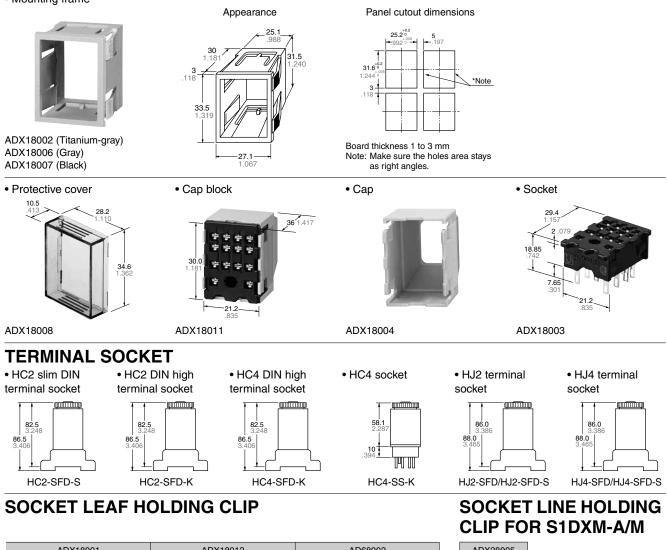
200 to 220V AC operating type: Min. $82k\Omega$

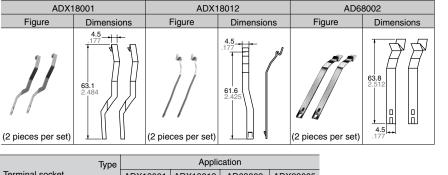


Example of limit switches with lamp. VL with lamp, Vertical type with lamp, ML with lamp.

ACCESSORY Note: Accessories are the same as those for the S1DX timer.

• Mounting frame

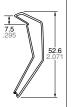




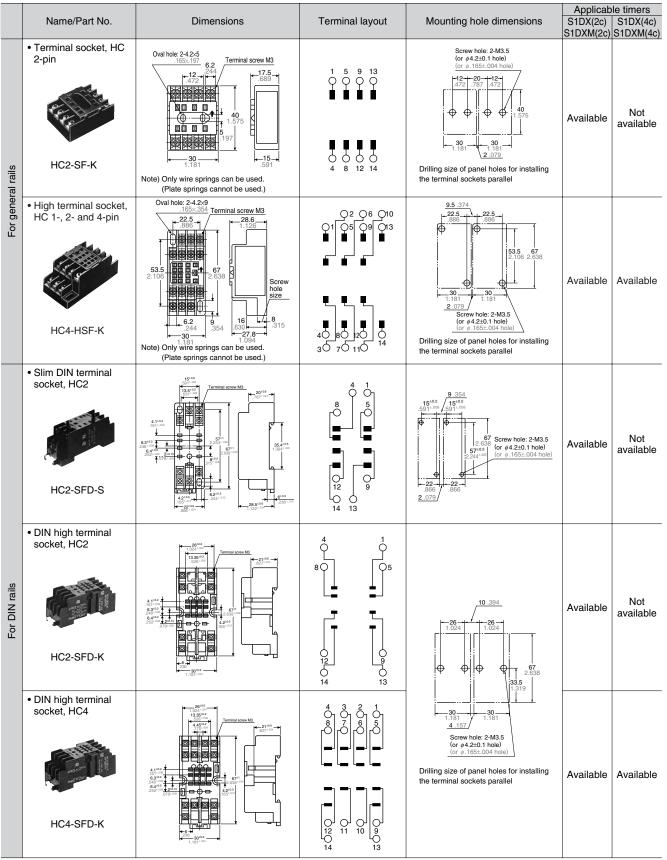
	ADX18001			
Terminal socket		ADX18012	AD68002	ADX28005
HC2-SFD-S	—	-	0	0
HC2-SFD-K	0		Δ	0
HC4-SFD-K	0		Δ	0
HJ2-SFD	—	0	_	—
HJ2-SFD-S	_	0	_	—
HJ4-SFD	_	Δ	_	_
HJ4-SFD-S	—	Δ	—	—
	HC2-SFD-K HC4-SFD-K HJ2-SFD HJ2-SFD-S HJ4-SFD HJ4-SFD-S	HC2-SFD-K O HC4-SFD-K O HJ2-SFD HJ2-SFD-S HJ4-SFD-S HJ4-SFD-S	HC2-SFD-K Ο — HC4-SFD-K Ο — HJ2-SFD — Ο HJ2-SFD-S — Ο HJ4-SFD — Δ	HC2-SFD-K Ο Δ HC4-SFD-K Ο Δ HJ2-SFD Ο HJ2-SFD-S Ο HJ4-SFD Δ

Note: The triangles indicate that removal will be slightly difficult when installed laterally in succession.

ADX28005 Dimensions



HC relay terminal sockets



HJ relay terminal sockets

				Applicat	ole timers
Name/Part No.	Dimensions	Terminal layout	Mounting hole dimensions	S1DX(2c) S1DXM(2c)	S1DX(4c) S1DXM(4c)
• HJ2 terminal socket HJ2-SFD	2:M4 2:5 165:5 mounting holes		15 ^{:02} .591:08 59:03 2.323:012	Available	Not available
 HJ2 terminal socket (Finger protect type) Image: Applied type <l< td=""><td>2-M4.2:5,165x5 mounting holes</td><td></td><td>2-M3 .118 or M4 .157 or 4.5 .177 dia. hole</td><td>Available</td><td>Not available</td></l<>	2-M4.2:5,165x5 mounting holes		2-M3 .118 or M4 .157 or 4.5 .177 dia. hole	Available	Not available
• HJ4 terminal socket	2-M4.2x5.165x5 mounting holes		22 ¹⁰² .866 ⁰⁰⁶ .59 ¹⁰³ 2.323 ⁻⁰¹²	Available	Available
• HJ4 terminal socket (Finger protect type)	2-M4.2×5.165×5 mounting holes		2-M3 .118 or M4 .157 or 4.5 .177 dia. hole	Available	Available

Sockets

Name/Order No.	Dimensions	Mounting hole dimensions	S1DX(2c)	le timers S1DX(4c) S1DXM(4c)
• Socket, HC 2-pin	• The difference between the HC2 and HC4 sockets is only the number of the pins. Their appearances and sizes are the same.	 The thickness of applicable chassis plates ranges from 1.0 to 2.0 mm. To install the socket easily, insert the socket top surface into the drilled holes and press the two points on the fastening plate indicated by arrows as shown in the fig. below. 	Available	Not available
HC2-SS-K	2.3 .091 16.55 1655 1655 1.001 1.001 1.004			
• Socket, HC 4-pin	General tolerance: ±0.5			
		25.8 1.016	Available	Available
HC4-SS-K		The interval size between the sockets which are parallel installed.		
Sockets for PC board	.835	Dimensional tolerance of machining: ±0.1 ±.004		

Sockets for PC board

HC2 – Socket for PC board: AP3825K

HC4 – Socket for PC board: AP3845K