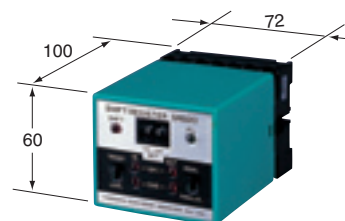




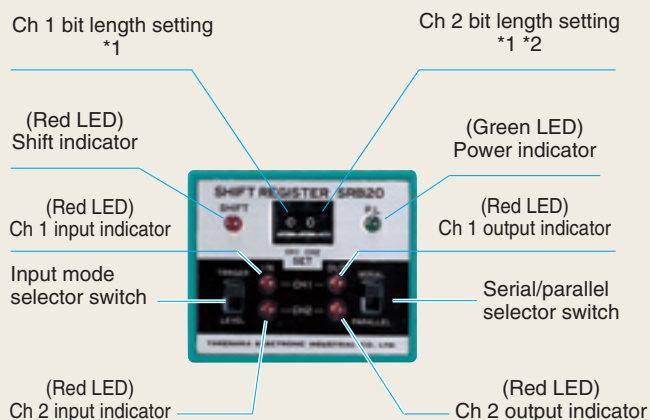
- 2-channel (10-bit x 2)
- Unaffected by power failure
- Parallel/serial mode selectable
- Sensor power supply integrated (12 VDC 100 mA)

## Type

Type	Model	Bit count	Operation mode	Output mode	Power supply
2-channel plug-in type	<b>SRB20</b>	20bit (10bit x 2)	ON-OFF operation	Relay	AC 100-120V 200-240V ±10% 50/60Hz



## Panel Description



\*1 10 bits with "0" setting  
\*2 (10 + n) bits for serial operation

### Digital switch setting

For parallel mode, the left and right sides are respectively for Ch 1 and Ch 2 and the setting range is between 1 and 0. "0" stands for 10 bits. For serial mode, the right side is the setting for 10 + n bits and "0" for n means 20 bits.

## Rating/Performance/Specification

Rating/performance	Type	Plug-in (2-channel)
	Model	SRB20
	Bit count	20bit (10bit x 2)
	Power supply	100-120V, 200-240VAC ±10% 50/60Hz
	Power consumption	3VA max.
	Input signal (common to all inputs)	Open collector: L level: ON; H level: OFF Voltage: L level: 0-2 V; H level: 6-30 V Contact: L level: ON; H level: OFF
	Data output	TRIGGER (T) mode: temporarily stored at H -> L (fall) LEVEL (L) mode: active at L level Minimum input pulse width: 25 ms
	Shift input	Shift at H -> L (fall) Minimum input pulse width: 25 ms
	Reset input	Reset at L level Minimum input pulse width: 25 ms
	Position of output	<ul style="list-style-type: none"> <li>• Parallel mode               <ul style="list-style-type: none"> <li>Ch 1 data input → Ch 1 output variable between 1-10 bits</li> <li>Ch 2 data input → Ch 2 output variable between 11-20 bits</li> </ul> </li> <li>• Serial mode               <ul style="list-style-type: none"> <li>Ch 1: data input → Ch 1: variable between 1-10 bits</li> <li>Ch 2: data input → Ch 2: variable between 1-10 bits</li> </ul> </li> </ul>
	Operation mode	ON-OFF operation
	Output mode	Relay output 1a, 2 channels Rating: 1 A (250 VAC) resistance load
	Power supply to sensor	12V DC 100mA
	Power failure compensation	Ni-Cd storage battery backup
	Power failure compensation time	80 hours after supplying power for 8 hours
Specification	Connection	Terminal block (with M3.5 screws)
	Case material	Polycarbonate
	Mass	440g max.
	Notes	See Panel Description for indicators, switches, etc.

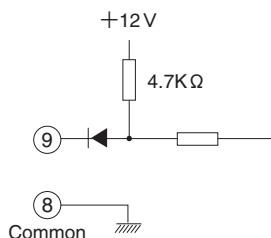
## Environmental Specification

Environment	Ambient temperature	-10 - +50 °C (non-freezing)
	Ambient humidity	35-85%RH (non-condensing)
	Protective structure	IP20
	Vibration	10-55 Hz / 1.5 mm amplitude / 1 hour each in 3 directions
	Dielectric withstanding	1500 VAC for 1 minute
	Insulation resistance	500 VDC, 20 MΩ or higher.

# SRB

## Input Circuit

- All inputs are activated by current supply. The input impedance is 4.7 kΩ.



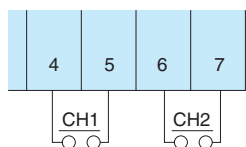
Contact signal	Open collector signal	Voltage signal
○ Both accepted	○ Accepted	○ Accepted; R is irrelevant
× Not accepted		△ Accepted only with R of 1 kΩ or lower

### Notes on use of contact input

- Use small-capacity contacts for input.
- Power switching with a contact in the same relay may cause faulty operation due to induction noise. Be sure to use a relay to input with an independent contact.

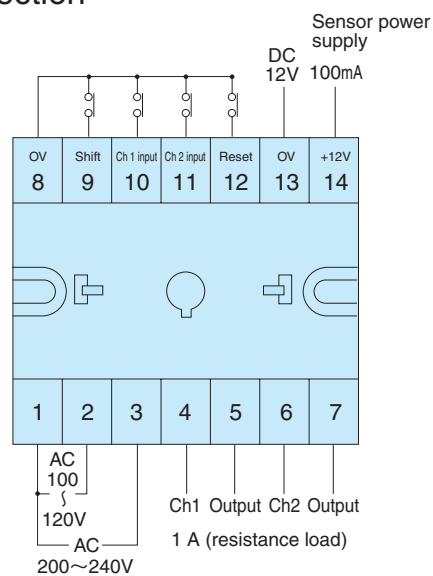
## Output Circuit

- Relay "a" (normally-open) contact output is available with each of Ch 1 and Ch 2.



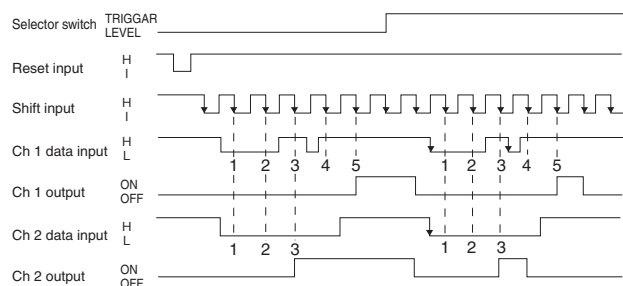
250 VAC 5 A (resistance load)

## Connection

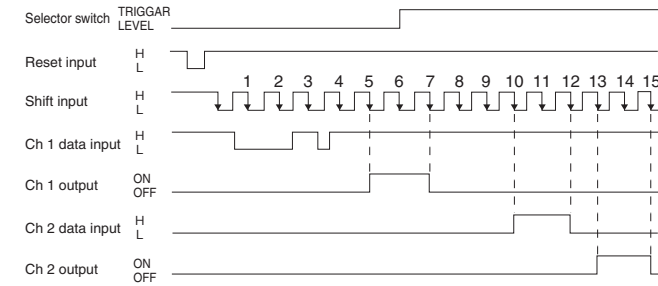


## Timing Chart

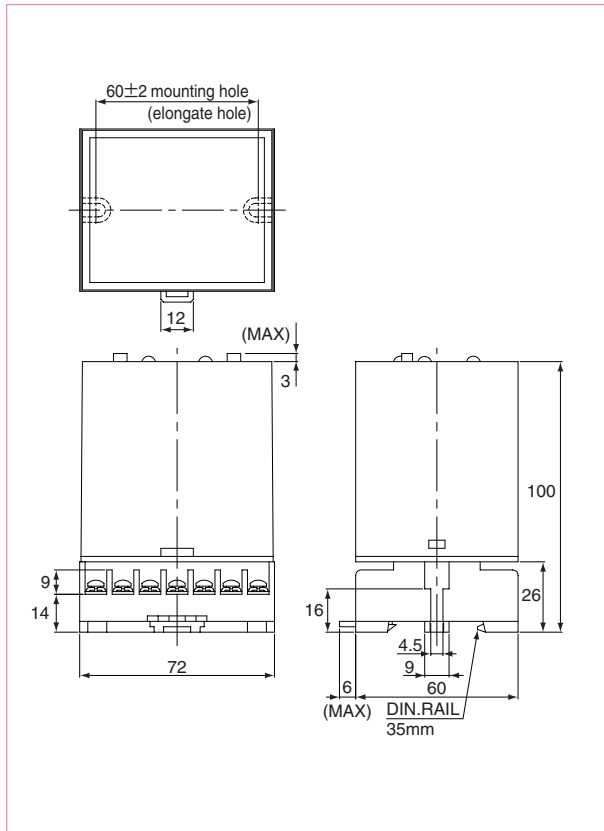
### Parallel mode



### Serial mode

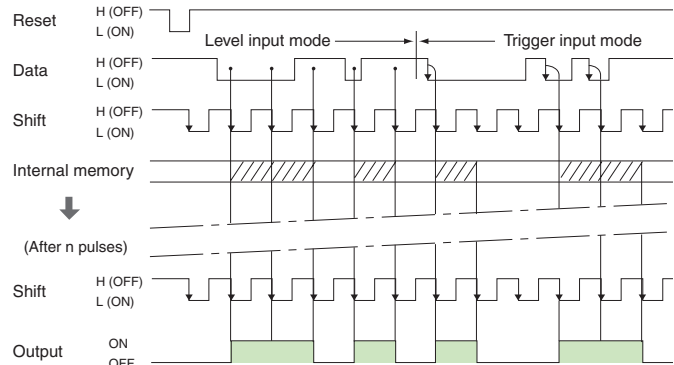


## ■ Dimensions (in mm)



## ■ Operation Mode

- Output is activated at the fall of a shift pulse and stays activated until the next fall. When continuous data signal is input, output stays activated.



## ■ Power Failure Compensation

For protection from possible power failure, a backup measure with Ni-Cd (nickel-cadmium) battery is provided. The battery is recharged while power is supplied and the battery holds the internal circuitry operation while the power supply is cut off.

### Power failure compensation time

For the battery capacity of 50 mA h, average charging current is 200  $\mu$ A and current consumption during compensation is 20  $\mu$ A or less, which means that the compensation time is more than ten times as much as the duration of power supply (up to about 3 months when fully charged).

If the battery is used after a long time of non-use, the battery capacity may not be achieved. The capacity is recovered by repetitive use. To ensure full compensation time, supply power continuously for about 24 hours before use.

### Life

100% of the capacity can be achieved for at least 500 cycles of recharging and discharging (power ON/OFF) for the battery capacity of 50 mA.

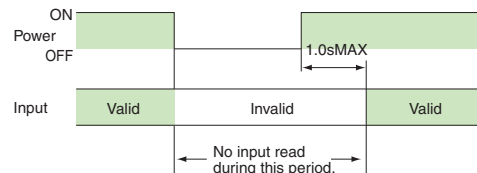
### Ambient temperature

The compensation time and life may vary to some extent depending on the ambient temperature. Repeated sudden temperature changes may cause battery liquid leakage. Use in a constant temperature environment as close to normal temperature as possible.

### Input/output at power-off

When power supply is cut off, the indicators and outputs are turned off until the power supply is restored. This means reading of signals from the inputs are also prohibited. Pressing the reset button does not reset the operation (changing digital switches leaves the internal setting undetermined).

Inputs remain prohibited for 1.5 seconds after the restoration of power. During this period, restore the states of the individual inputs prior to the power-off.



### Battery replacement

The battery is soldered onto the internal board. Send in any product requiring battery replacement to Takex.

The battery used in this product contains cadmium. Send in any used battery to Takex and do not throw away the battery.