

# Panasonic

## AUTOMATIC TIME SWITCH



Smart Time Management  
for **Smarter Business**



Please contact .....

# Panasonic®

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Eco Solutions Company

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# Managing Electrical Equipment Is Important to Your Business

Lighting, air conditioning, and Factory Automation. It's safe to say that today's businesses simply do not operate without electricity. Lowering electricity and management costs are essential to virtually every form of business. And Panasonic offers some innovative methods of cutting these costs with efficient time management for electrical facilities.

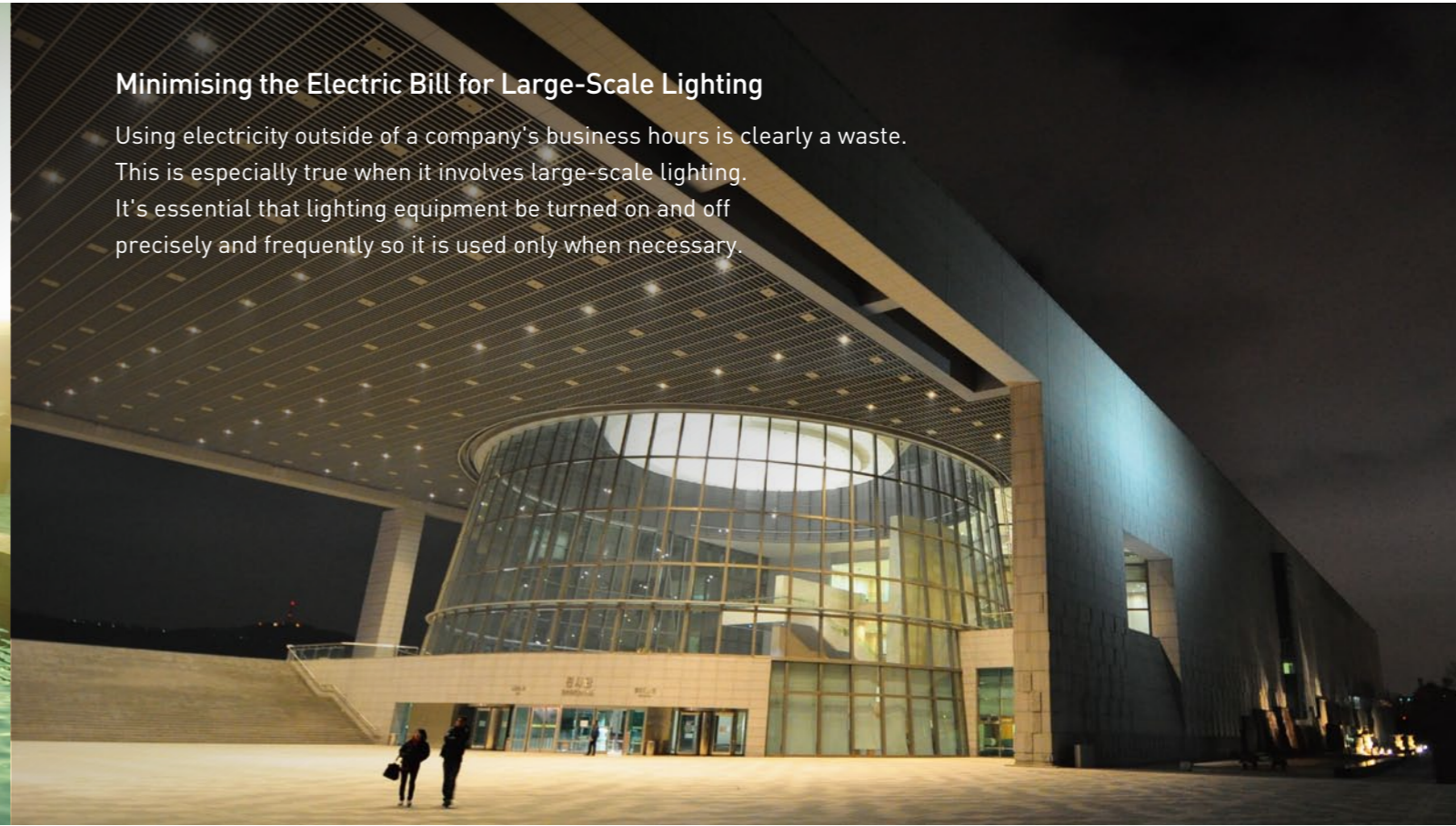
## Operating Fountains Only When Someone Is There to Enjoy Them

Fountains are wonderful ways to soothe people's spirits, but that only happens when people are there to see them. Operating them during the time periods when many people pass by, and turning them off when nobody is around, such as at night, reduces the amount of water used and slashes operating costs.



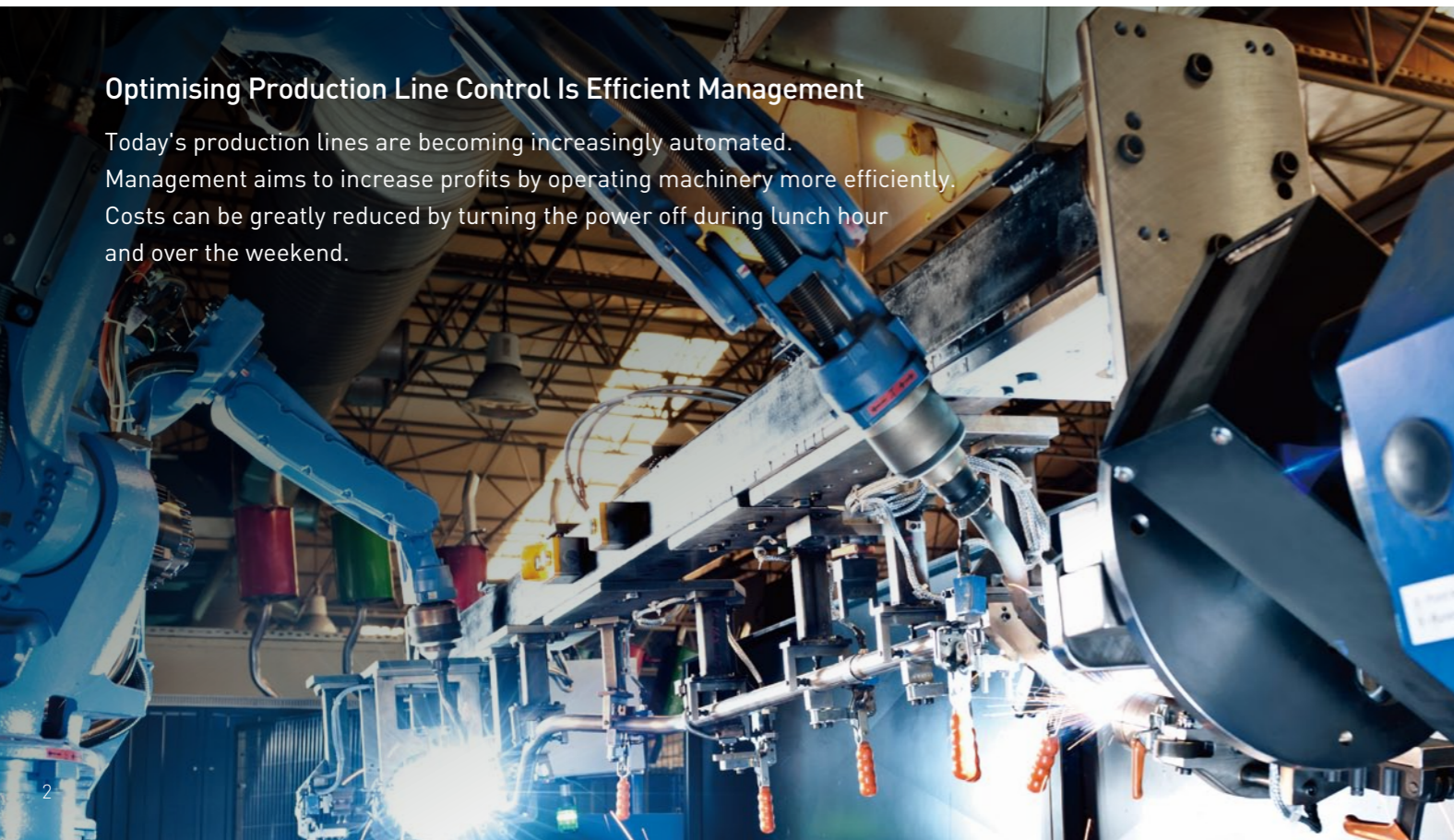
## Minimising the Electric Bill for Large-Scale Lighting

Using electricity outside of a company's business hours is clearly a waste. This is especially true when it involves large-scale lighting. It's essential that lighting equipment be turned on and off precisely and frequently so it is used only when necessary.



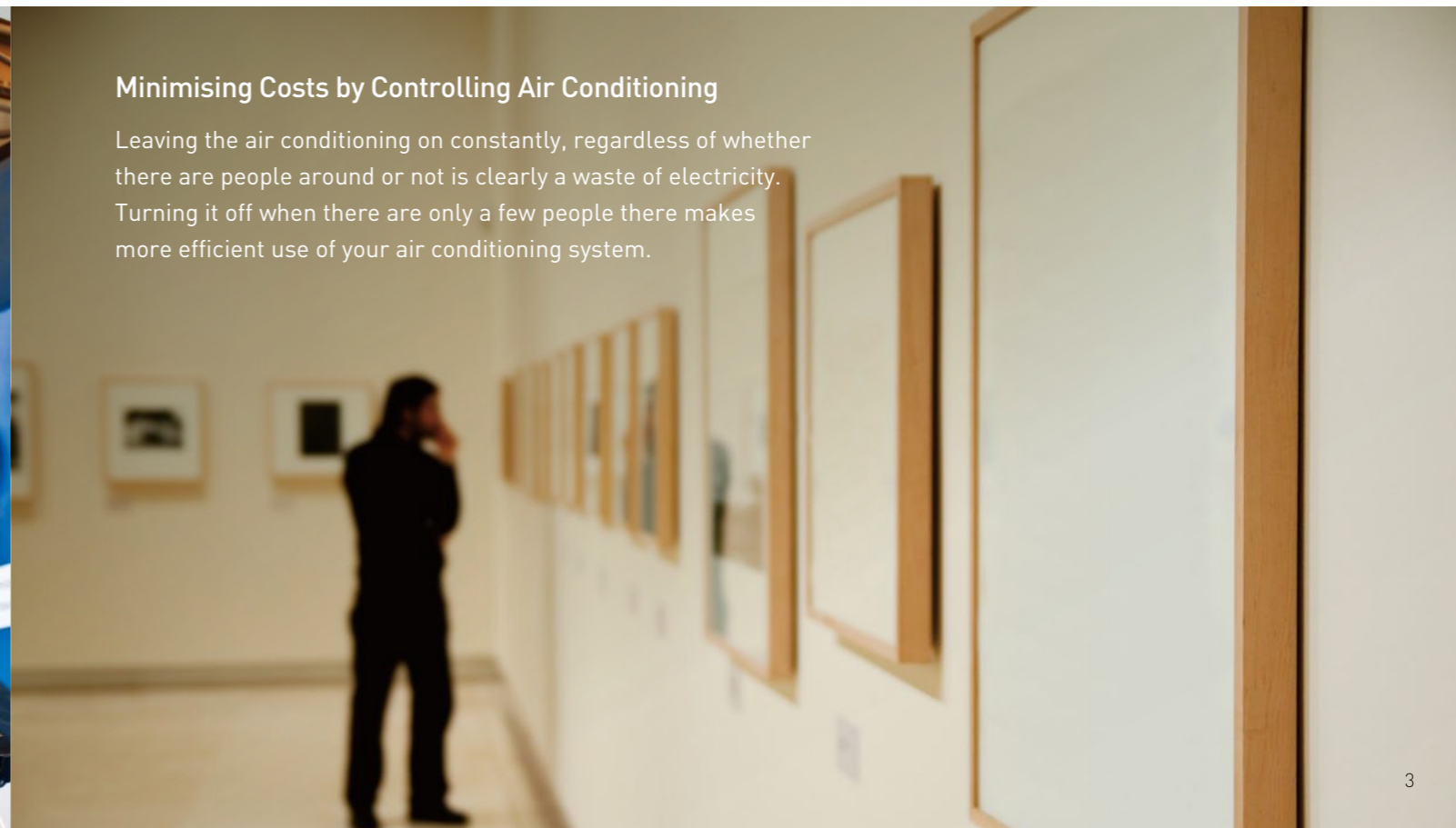
## Optimising Production Line Control Is Efficient Management

Today's production lines are becoming increasingly automated. Management aims to increase profits by operating machinery more efficiently. Costs can be greatly reduced by turning the power off during lunch hour and over the weekend.



## Minimising Costs by Controlling Air Conditioning

Leaving the air conditioning on constantly, regardless of whether there are people around or not is clearly a waste of electricity. Turning it off when there are only a few people there makes more efficient use of your air conditioning system.



# What's an Automatic Time Switch?

An automatic time switch automatically controls the use of electricity according to time. It's a device that lowers both electrical and labour costs.

## Automatically Turns the Power On and Off

The Time Switch combines a clock with a switch to automatically turn power on or off at preset times. It is generally built into a lightboard or distribution panel, and controls electricity on a 24-hour or weekly basis. It makes it possible to replace conventional manual control with automated, reliable ON/OFF time management.



## Eliminating Electrical Waste Is Also Ecological

Because the power is reliably turned on and off according to a preset time schedule, the amount that was wasted by extended use is saved, and electric bills are effectively lowered.

## Cutting Labour Costs Is Also Efficient

Since the job of turning the power on and off is done automatically instead of manually, you can assign your valuable human resources to more important jobs. Human error is also eliminated, so power management is more reliable.

## Simply Set the Time for ON/OFF Control

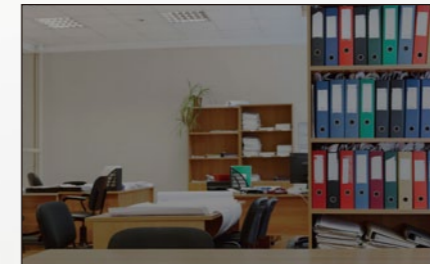
Time management consists of simply setting the times to turn the power on and off. A wide range of uses are possible across various operations, such as lighting, air conditioning, water supply, and livestock feeding.

### Example: Managing electricity in the office



**From 8:30 AM to 12:00 AM**

Turn the power on at the start of the workday. Lighting and air conditioning are turned on to provide a smooth start to office work.



**From 0:00 PM to 1:00 PM**

Lunchtime. Lighting and air conditioning are turned off while people leave the office for lunch. No power is wasted.



**From 1:00 PM to 6:00 PM**

Lighting and air conditioning are turned on precisely when lunchtime ends. Then the power is automatically turned off when the workday finishes. Again, no power is wasted.



Settable in 15-minute units\*

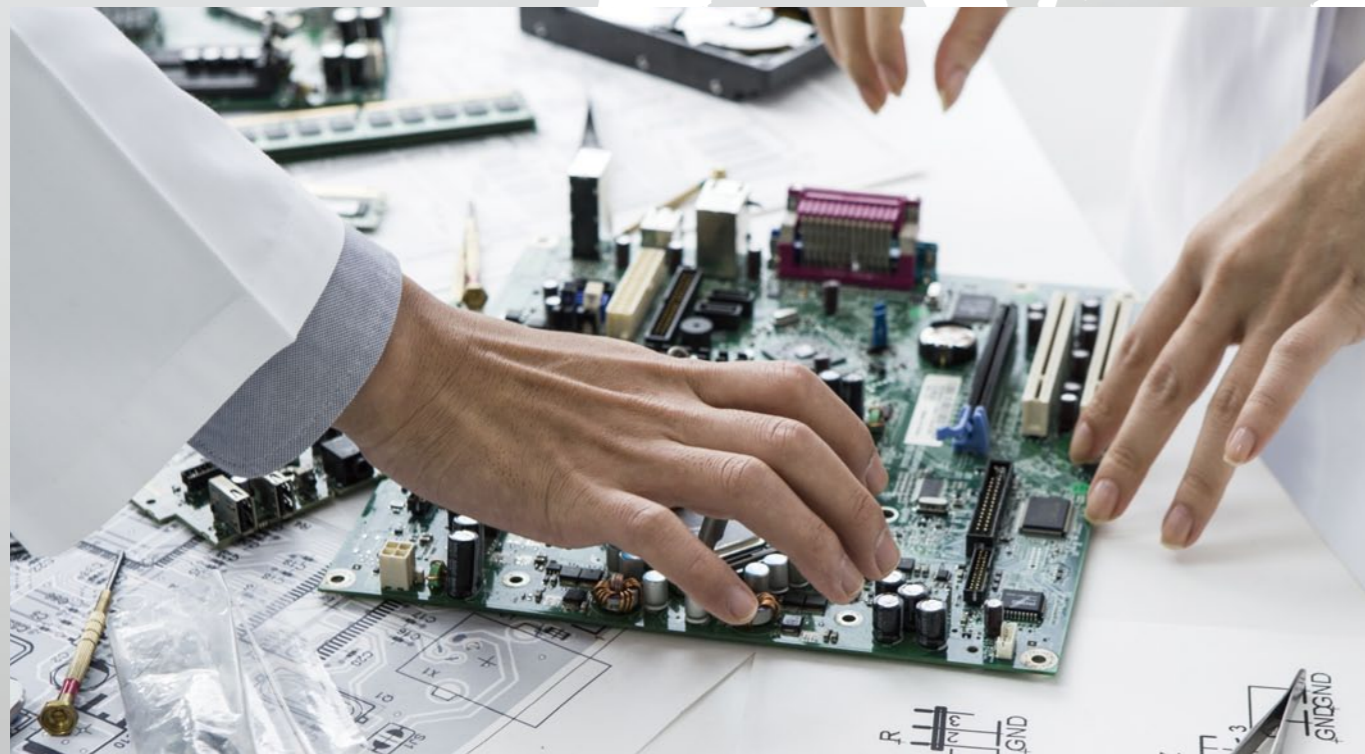
\*See the product specifications starting on page 14 for applicable models.

# Panasonic Advantages

Panasonic, with almost 100 years of expertise forged in the Electrical Construction Material field with its Wiring Devices series, has also established a name for itself in the Time Control Devices market during the past 50 years with its Automatic Time Switch.

## Thorough Quality Control

In addition to advanced functions, Panasonic focuses its manufacturing efforts on providing high durability and performance for many years of reliable use, and selects materials with full consideration of the global environment. Certification by third-party institutions and compliance with a wide range of international standards attest to these efforts. This approach is also used with Panasonic's Automatic Time Switches, to allow our customers worldwide to experience a new level of comfort and safety for the control of electric equipment.



## Meeting IEC Standards

Panasonic's product design has been recognised and certified by many international organisations worldwide, such as the IEC (International Electrotechnical Commission), the top reference for electrical and electronic safety standards. Our Automatic Time Switch has successfully passed and complies with the IEC730-2-7 directives to provide safer and more comfortable use of our line-up to our customers.



## Products Compliant with the RoHS Directive

Panasonic's manufacturing processes are based on management standards for chemical substances by complying with the EU RoHS directive in order to provide all of our customers safer products with less impact on the environment.



## Unique Features Designed to Meet Precise Needs

Detailed consideration is given to users in the form of functions that are helpful in ordinary usage, and designs that simplify maintenance.

### Easy Operation Check



A power lamp is located on the front panel, so the user can see at a glance whether the unit is operating or not, thus helping to provide safe use.

### Easy Battery Replacement



With conventional time switches, the unit must be removed from its installation location, such as in a distribution panel, to replace the batteries. Panasonic's Time Switch lets you easily replace the batteries from the front panel. This makes maintenance considerably easier.

### Preventing Entry of Ants and Other Small Insects



Time Switches are sometimes subject to the entry of ants and other small insects, which can cause malfunctions. Panasonic Time Switches have an airtight construction that prevents this problem for long, trouble-free use.

## Example 1 Factories

Time Switches are at work in a wide variety of applications, including production lines, air conditioning systems, and lighting equipment.

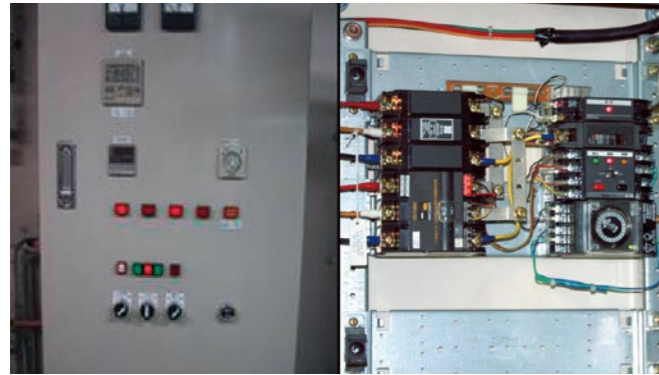


## Example 2 Public Infrastructure

The number of people in towns and cities varies depending on the time of day. Time Switches enable waste-free management of lighting and other equipment.

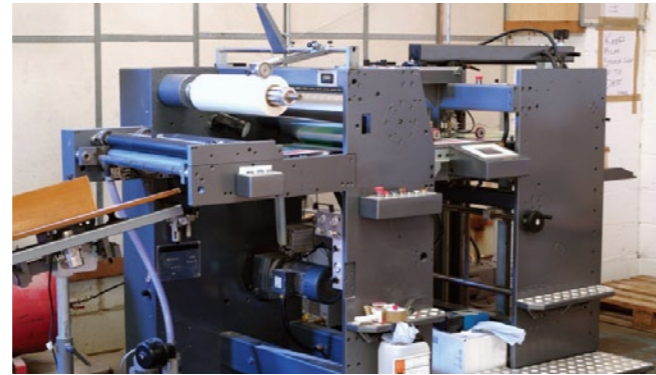


### Switchboards/Control Panels



Machinery can be precisely and automatically operated to match various needs. DIN rail types fit easily into switchboards and control panels, making them both safe and neat.

### Activation of Plant Facilities



Preliminary operations for moulding machines and solder baths can be controlled, eliminating the need for early morning shifts and cutting operating losses.

### Lighting and Ads for Train Stations and Bus Stops



Lighting and illuminated advertisements in train stations and bus stops can be turned on and off to match the hour.

### Illumination



Streets and plazas can be illuminated precisely at the time that people come to enjoy them.

### Ventilation fan



Fans can be automatically operated in preset cycles.

### Outdoor Lighting



Ideal for road and landscape lighting. Used with magnetic contactors, numerous lighting systems can be controlled with a signal Time Switch.

### ATM Services



Power, lighting and air conditioning can be automatically operated to match the hours of ATM services, preventing the possibility of forgetting to turn them on or off.

### Parking Lot Lighting



Night-time lighting can be automatically operated without the need for a caretaker.

### Ozone Generators



Sterilisation by ozone and ultraviolet rays can be automatically conducted several times per day.

### Moulding Material Dryers



Drying operations can be performed at any desired time, day or night.

### Pool Pumps (Water Purification)



Circulation pumps and backwashing filters for pools and bathhouses can be operated to match the time when the greatest number of people use them.

### Water Fountains



The pumps for fountains in plazas and parks can be operated at preset times.

### Example 3 Offices, Residences and Commercial Facilities

Time Switches can be used to save electricity during the times when lighting and air conditioning are not needed, like at lunchtime and late at night.

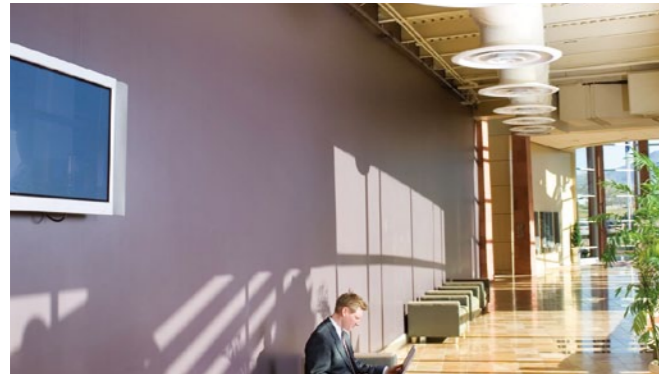


### Example 4 Agriculture and Livestock

Time Switches can be used to automatically supply food and water at appropriate times each day, to increase working efficiency.



#### Air Conditioning



Air conditioning can be set to match business hours, to provide comfortable work spaces. This also prevents the possibility of forgetting to turn it off.

#### Office Lighting



Lighting can also be turned on and off to match business hours. This prevents the possibility of forgetting to turn it off during lunchtime and at night, and lowers the electric bill.

#### Feeders



Predetermined amounts of food can be automatically supplied at predetermined times each day, to reduce manual labour.

#### Oxygen Supply



By alternately operating two pumps, a stable amount of oxygen can be supplied to fish farms.

#### Sign Lighting



Signs and neon lighting can be turned on at precisely the time that the store opens.

#### Automatic Doors and Electric Locks



Entrance locks can be managed without the need for a custodian.

#### Lighting Flower Plantations



By controlling the duration of lighting, plant growth can be managed more efficiently.

#### Sprinklers



Predetermined amounts of water can be sprinkled at predetermined times each day.

#### Shared Spaces in Condominiums



Shared lighting for the entrance hall and stairways can be automatically turned on and off. This also prevents the possibility of forgetting to turn them on or off.

#### Freezers (Defrosting Heaters)



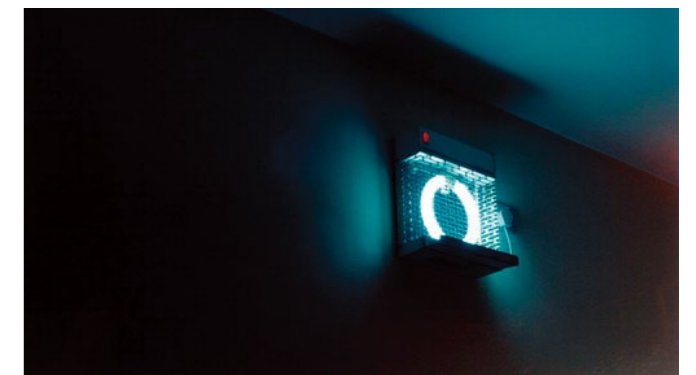
The defrosting heaters inside freezers for perishable meats and vegetables, or for frozen foods such as ice cream, can be automatically turned on and off for precise control.

#### Greenhouse Heating



Boilers or heaters can be automatically operated during cold seasons to keep greenhouse interiors warm for stable plant growth.


#### Electrified Exterminators






Exterminators can be operated during the times that harmful insects proliferate.


# Types of Time Switches


**Surface mounting**  
For various uses

**NEW**  
  
TB35N, 36N, 38N, 39N series

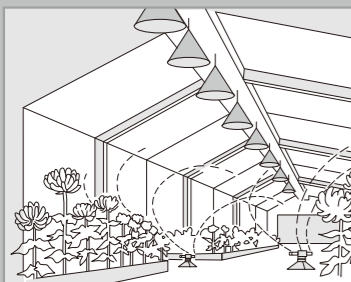
**NEW** **NEW**  
   
Steel box type TB35N, 38N series    Plastic box type TB43N series

**NEW**  
  
TB17N, 11N series

  
TB21 series



(Example of application)  
Light culture, watering, ventilation



**DIN rail mounting**  
For distribution panels, etc.

**NEW**  
  
TB35N, 36N, 38N, 39N series

  
TB559, 556, 564, 563 series

  
TB62 series

  
TB21 series



(Example of application)  
Shop's sign board



**DIN 72 panel mounting**  
For control panels, etc.

  
TB37 series  
TB45 series











  
TB27 series



(Example of application)  
Production equipment



# Line-up

Mounting	Applicable Environment	Type	Voltage	Frequency (Hz)	Power Reserve (Hours)	Battery Type	Circuit Configuration	Switch	Standard	Appearance	Series	Item No.	Note	Page		
Surface & DIN rail mount	Indoors	Daily	220-240	50	—	—	Voltage contact output	a-contact	CE		TB35N	TB35809NE5	With 50/60-Hz select switch	14		
				60	—	—						TB35809NE6				
				50	—	—	No voltage contact output	c-contact				TB36N			TB36809NE5	
				50-60	300	Ni-MH (rechargeable battery)	No voltage contact output	a-contact				TB38N			TB38809NE7	
						No voltage contact output	c-contact				TB39N	TB39809NE7				
Surface mount (Steel case)	Indoors	Daily	220-240	50	—	—	Voltage contact output	a-contact	CE		TB35N	TB358NE5	Steel case With 50/60-Hz select switch	14		
				60	—	—						TB358NE6				
				50-60	300	Ni-MH (rechargeable battery)	No voltage contact output	a-contact				TB38N	TB388NE7		Steel case	
Surface mount (Weatherproof)	Indoors/Outdoors	Daily	220-240	50-60	300	Ni-MH (rechargeable battery)	No voltage contact output	a-contact	CE		TB43N	TB438NE7	IP53 (Weatherproof type) Plastic case	15		
Surface mount	Indoors	Daily	220-240	50	—	—	Voltage contact output	a-contact	CE		TB17N	TB178NE5	50Hz Only	15		
				60	—	—						TB178NE6	60Hz Only			
				50-60	300	Ni-MH (rechargeable battery)	No voltage contact output	a-contact				TB11N	TB118NE7			
Surface mount	Indoors	Daily	220	50-60	5 years	Li	Voltage contact output	a-contact	—		TB21	TB2118E7		16		
		Weekly										TB2128E7				
DIN rail mount (DIN module)	Indoors	Daily	230	50	—	—	No voltage contact output	c-contact	CE/TÜV		TB559	TB5590185N	50Hz Only	17		
			220-240	50-60	300	Ni-MH (rechargeable battery)						TB556	TB5560187N			
		230	50	—	—	No voltage contact output	c-contact	CE/TÜV					TB564		TB5640185N	50Hz Only
		220-240	50-60	300	Ni-MH (rechargeable battery)										TB563	TB5630187N
DIN rail mount (DIN module)	Indoors	Weekly	220-240	50-60	6 years	Li	No voltage contact output	c-contact	CE		TB62	TB621018(A)7*	1 Circuit	17		
												TB622018(A)7*	2 Circuits			
DIN 72 panel mount	Indoors	Daily	220	50/60	—	—	No voltage contact output	a-contact	—		TB37	TB37801	With 50/60-Hz select switch	18		
				240	—	—						TB37901				
				100-240	50-60	180	Ni-MH (rechargeable battery)	TB45				TB45018				
		Daily	220	50-60	5 years	Li	No voltage contact output	c-contact				—		TB27	TB271018E7	
Weekly	TB272018E7															

\*The TB621018A7, TB622018A7 don't have an automatic summer time function for the Asian market. The TB6210187, TB6220187 have an automatic summer time function for the European market.

Surface & DIN rail mount type

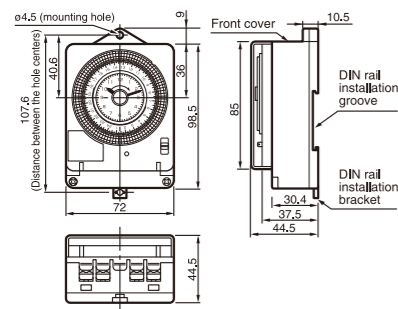
## TB35N, 36N, 38N, 39N series

- 24-hour program
- Surface and DIN rail mount
- 300-hour reserve battery (TB38N, 39N)
- Battery exchange from the front side.
- 96 operations per day
- Shortest switching time is 15 minutes.
- Easy to read and set, clock display.



NEW

■ Dimensions (unit: mm)



Applicable installation	Indoor use			
Program	Daily			
Series	TB35N series		TB36N series	TB38N series
Item No.	TB35809NE5	TB35809NE6	TB36809NE5	TB38809NE7
Operating voltage / frequency	220-240V AC 50Hz	220-240V AC 60Hz	220-240V AC 50Hz	220-240V AC 50-60Hz
Drive method	AC Motor		Quartz Motor	
Power reserve			300 hours	
Time accuracy	Same as AC frequency		±15 sec/month(at 25°C)	
Circuit configuration	Voltage contact output		No voltage contact output	No voltage contact output
Type of contact	Single pole, single through (1a Contact)	Single pole, double through (1c Contact)	Single pole, single through (1a Contact)	Single pole, double through (1c Contact)
Load capacity	Resistive load(cosφ=1) 250V AC 20A			
	Incandescent lamp load 250V AC 10A			
	Inductive load(cosφ ≥ 0.6) 250V AC 12A			
	Motor load(cosφ ≥ 0.6) 220V AC 1500W			
	Shortest switching time 15 minutes			
	Number of ON/OFF operations 96 operations			

Surface mount type

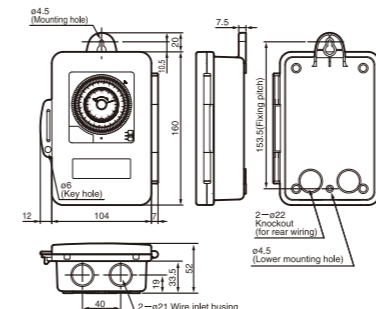
## TB43N series (Weatherproof)

- Weatherproof type (IP53)
- 24-hour program
- Surface mount
- 300-hour reserve battery
- Battery exchange from the front side.
- 96 operations per day
- Shortest switching time is 15 minutes.
- Easy to read and set, clock display.



NEW

■ Dimensions (unit: mm)



Applicable installation	Outdoor and Indoor use	
Program	Daily	
Series	TB43N series	
Item No.	TB438NE7	
Operating voltage / frequency	220-240V AC 50-60Hz	
Drive method	Quartz Motor	
Power reserve	300 hours	
Time accuracy	±15 sec/month(at 25°C)	
Circuit configuration	No voltage contact output	
Type of contact	Single pole, single through (1a Contact)	
Load capacity	Resistive load(cosφ=1) 250V AC 20A	
	Incandescent lamp load 250V AC 10A	
	Inductive load(cosφ ≥ 0.6) 250V AC 12A	
	Motor load(cosφ ≥ 0.6) 220V AC 1500W	
	Shortest switching time 15 minutes	
	Number of ON/OFF operations 96 operations	

Surface mount type

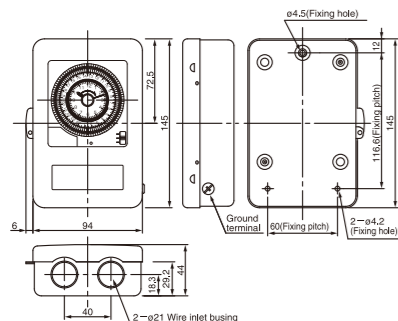
## TB35N, 38N series (Steel box type)

- Robust steel box
- 24-hour program
- Surface mount
- 300-hour reserve battery (TB38N)
- Battery exchange from the front side.
- 96 operations per day
- Shortest switching time is 15 minutes.
- Easy to read and set, clock display.



NEW

■ Dimensions (unit: mm)



Applicable installation	Indoor use	
Program	Daily	
Series	TB35N series	
Item No.	TB358NE5	TB358NE6
Operating voltage / frequency	220-240V AC 50Hz	220-240V AC 60Hz
Drive method	AC Motor	
Power reserve	300 hours	
Time accuracy	Same as AC frequency	
Circuit configuration	Voltage contact output	
Type of contact	Single pole, single through (1a Contact)	
Load capacity	Resistive load(cosφ=1) 250V AC 20A	
	Incandescent lamp load 250V AC 10A	
	Inductive load(cosφ ≥ 0.6) 250V AC 12A	
	Motor load(cosφ ≥ 0.6) 220V AC 1500W	
	Shortest switching time 15 minutes	
	Number of ON/OFF operations 96 operations	

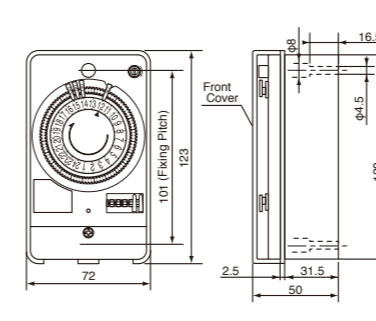
## TB17N, TB11N series

- 24-hour program
- ON/OFF operations are set with separated pins
- With a manual ON/OFF switch
- 300 hours reserve battery (TB11N)
- Battery exchange from the front side.



NEW

■ Dimensions (unit: mm)



Applicable installation	Indoor use		
Program	Daily		
Series	TB17N series		TB11N series
Item No.	TB178NE5	TB178NE6	TB118NE7
Operating voltage / frequency	220-240V AC 50Hz	220-240V AC 60Hz	220-240V AC 50-60Hz
Drive method	AC Motor		Quartz Motor
Power reserve			300 hours
Time accuracy	Same as AC frequency		±15 sec/month(at 25°C)
Circuit configuration	Voltage contact output		
Type of contact	Single pole, single through (1a Contact)		
Load capacity	Resistive load(cosφ=1) 250V AC 15A		
	Incandescent lamp load 250V AC 15A		
	Inductive load(cosφ ≥ 0.6) 250V AC 12A		
	Motor load(cosφ ≥ 0.6) 220V AC 1500W		
	Shortest switching time 30 minutes		
	Number of ON/OFF operations Standard 6 operations (Max. 48 operations)		

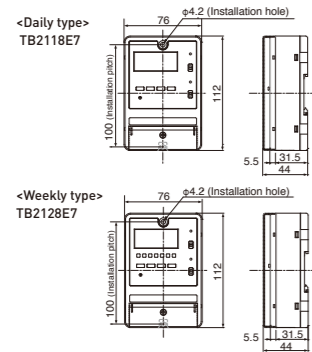


## TB21 series

- Easy setting with a mode change switch
- High capacity  
Resistive load : 30A, Inductive load (cosφ=0.6) : 12A
- 24-hour program (TB2118) / Weekly program (TB2128)
- Surface and DIN rail mount
- 5-year reserve battery



■ Dimensions (unit: mm)



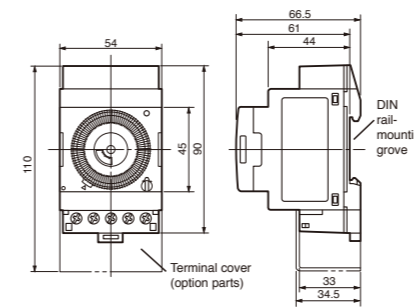
Applicable installation	Indoor use	
	Daily	Weekly
Program		
Series	TB21 series	
Item No.	TB2118E7	TB2128E7
Operating voltage / frequency	220V AC 50-60Hz	
Drive method	Electronic	
Power reserve	5 years	
Time accuracy	±15 sec/month (at 25°C)	
Circuit configuration	Voltage contact output	
Type of contact	Single pole, single through (1a Contact)	
Load Capacity	Resistive load(cosφ=1)	240V AC 30A
	Inductive load(cosφ=0.6)	240V AC 12A
	Shortest switching time	1 minute
Number of ON/OFF operations	4 operations(ON/OFF 2sets)	16 operations(ON/OFF 8sets)

## TB559, 556, 564, 563 series

- 24-hour program (TB559, TB556)
- Weekly program (TB564, TB563)
- 300-hour reserve battery (TB556, TB563)
- With robust metal setting pins
- DIN 3P module



■ Dimensions (unit: mm)



Applicable installation	Indoor use			
	Daily		Weekly	
Program				
Series	TB559 series	TB556 series	TB564 series	TB563 series
Item No.	TB5590185N	TB5560187N	TB5640185N	TB5630187N
Operating voltage / frequency	230V AC 50Hz	220-240V AC 50-60Hz	230V AC 50Hz	220-240V AC 50-60Hz
Drive method	AC motor	Quartz motor	AC motor	Quartz motor
Power reserve		300 hours(at 25°C)		300 hours(at 25°C)
Time accuracy	Same as AC frequency ±15 sec/month(at 25°C)		Same as AC frequency ±15 sec/month(at 25°C)	
Circuit configuration	No voltage contact output			
Type of contact	Single pole, double through (1c Contact)			
Load Capacity	Resistive load(cosφ=1)	250V AC 16A		
	Inductive load(cosφ=0.6)	250V AC 3A		
Shortest switching time	15 minutes		2 hours (*1)	
Number of ON/OFF operations	96 operations		84 operations	

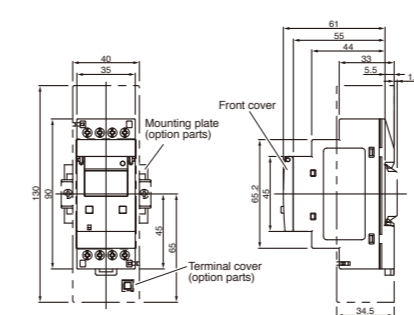
\*1. Operating time accuracy is ±30 minutes.

## TB62 series (Digital)

- Weekly type
- 6-year reserve battery
- With a manual ON/OFF button
- Possible to lock the manual button
- Holiday setting function
- Manual ±1 hour changeover function
- DIN 2P module



■ Dimensions (unit: mm)



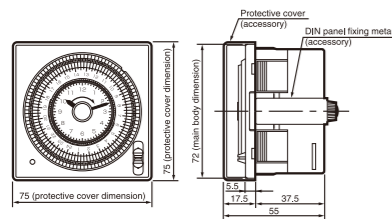
Applicable installation	Indoor use	
	Weekly	
Program		
Series	TB62 series	
Item No.	TB621018A7(1circuit)	TB622018A7(2circuits)
Operating voltage / frequency	220-240V AC 50-60Hz	
Drive method	Electronic	
Power reserve	6 years	
Time accuracy	±15 sec/month(at 25°C)	
Circuit configuration	No voltage contact output	
Type of contact	Single pole, double through (1c Contact)	
Load Capacity	Resistive load(cosφ=1)	250V AC 16A
	Inductive load(cosφ=0.6)	250V AC 8A
Shortest switching time	1 minute	
Number of ON/OFF operations	50 operations (ON/OFF 25 sets) / circuit	

## TB37, TB45 series

- 24-hour program
- 180-hour reserve battery (TB45)
- Battery exchange from the back side.
- 96 operations per day
- Shortest switching time is 15 minutes.
- With ON/AUTO/OFF manual switch
- Easy to read and set, clock display.



■ Dimensions (unit: mm)



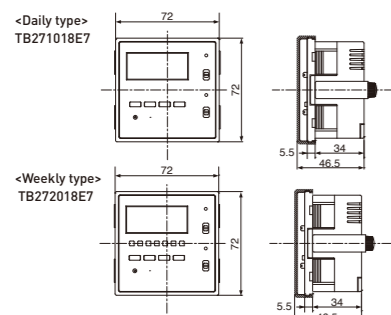
Applicable installation	Indoor use	
Program	Daily	
Series	TB37 series	TB45 series
Item No.	TB37801	TB37901
Operating voltage / frequency	220V AC 50/60Hz	240V AC 50/60Hz
Drive method	AC motor	Quartz motor
Power reserve		180 hours
Time accuracy	Same as AC frequency	±15 sec/month(at 25°C)
Circuit configuration	No voltage contact output Single pole, single through (1a Contact)	
Type of contact		
Load capacity		
Resistive load(cosφ=1)	250V AC 15A	
Incandescent lamp load	250V AC 10A	
Inductive load(cosφ ≥ 0.7)	250V AC 12A	
Motor load(cosφ ≥ 0.7)	220V AC 1500W	
Shortest switching time	15 minutes	
Number of ON/OFF operations	96 operations	

## TB27 series

- Easy setting with a mode change switch
- 24-hour program (TB271018) / Weekly program (TB272018)
- DIN 72 panel mounting
- 5-year reserve battery



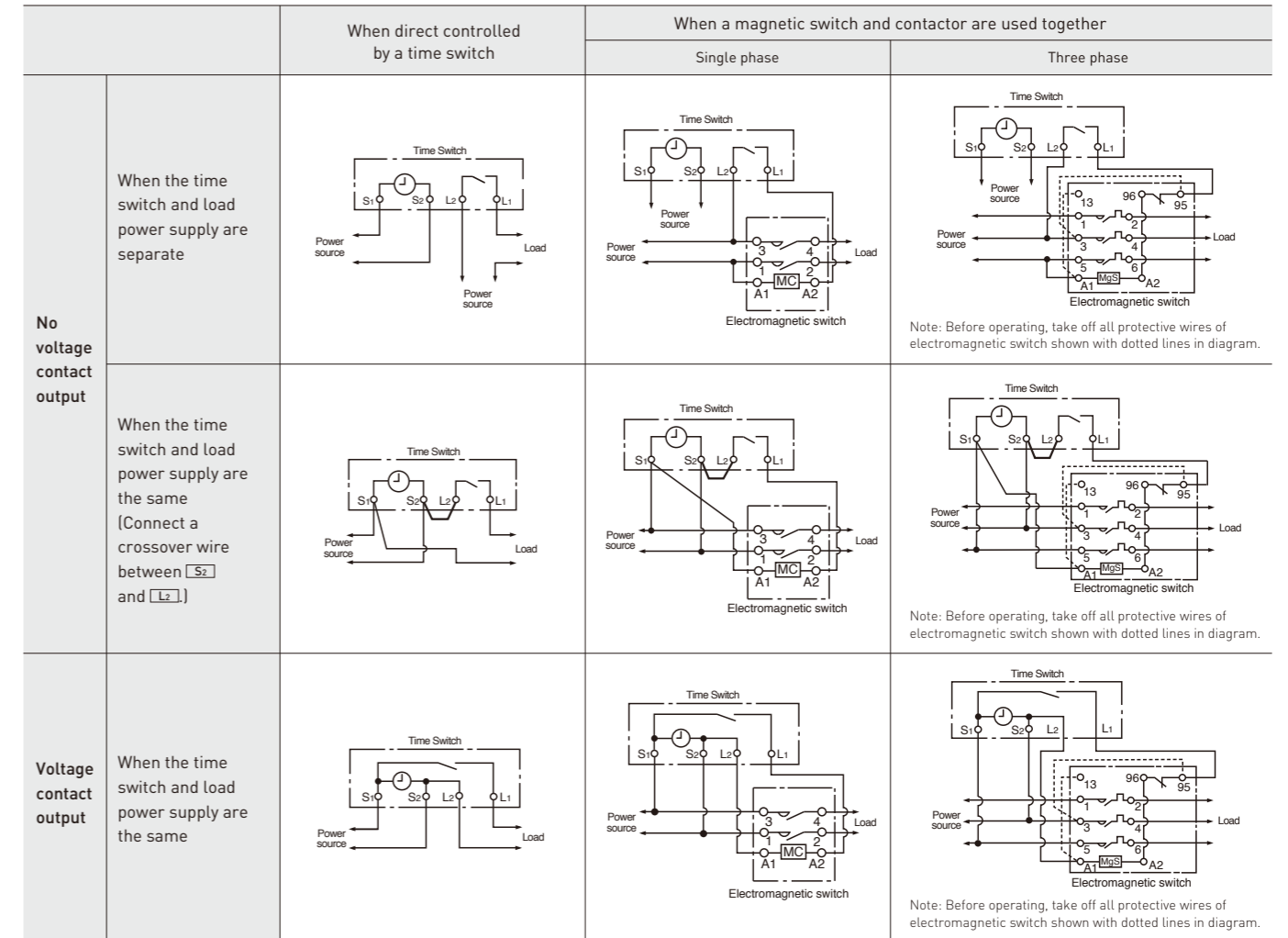
■ Dimensions (unit: mm)



Applicable installation	Indoor use	
Program	Daily	Weekly
Series	TB27 series	
Item No.	TB271018E7	TB272018E7
Operating voltage / frequency	220V AC 50-60Hz	
Drive method	Electronic	
Power reserve	5 years	
Time accuracy	±15 sec/month (at 25°C)	
Circuit configuration	No voltage contact output Single pole, double through (1c Contact)	
Type of contact		
Load capacity		
Resistive load(cosφ=1)	240V AC 16A	
Inductive load(cosφ=0.6)	240V AC 9A	
Shortest switching time	1 minute	
Number of ON/OFF operations	4 operations(ON/OFF 2sets)	16 operations(ON/OFF 8sets)

## Wiring Examples

### Single Pole, Single Through ( 1a Contact )



### Single Pole, Double Through ( 1c Contact )

