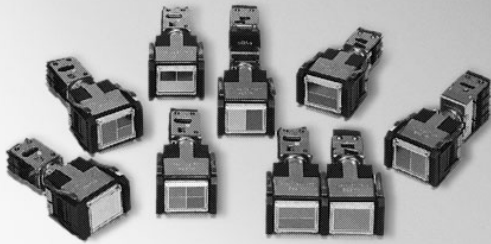


## LED-Lit Push-Button Switches and Indicators

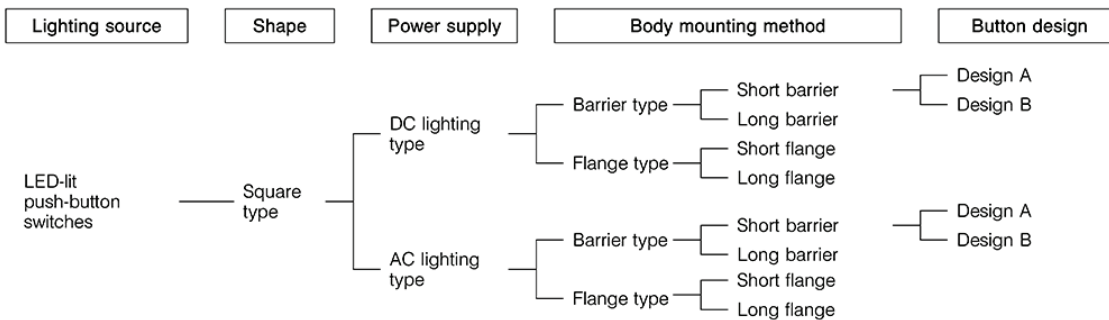
# SERIES 2


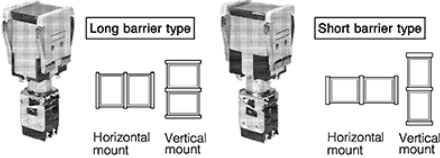
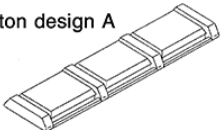

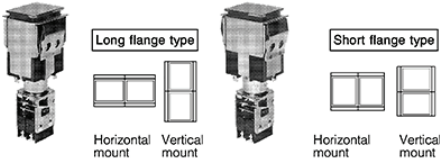
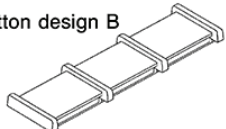
LED-lit (DC and 24Vac) switches and indicators.



- You can build the product best suited to your specifications by combining standard parts
- Selection of LED lamps or high-intensity LED lamps as the light source
- LED-lighting systems are available for DC and AC
- Two button design types are available (LED-lighting system only)

### SERIES 2 PRODUCT LINE-UP







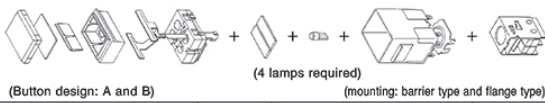

Push-button switch or Indicator	Features	Mounting method	Button design
<b>Square, barrier type</b> 	<ul style="list-style-type: none"> <li>- Lamp replacement is easy. (lamp tool-free type)</li> <li>- Erroneous operation of adjacent button prevented by barrier</li> <li>- Colorful barrier mounting</li> </ul>		<b>Button design A</b>  <ul style="list-style-type: none"> <li>- Button periphery is tapered.</li> <li>- Special barrier and bezel are used.</li> </ul>
<b>Square, flange type</b> 	<ul style="list-style-type: none"> <li>- Lamp replacement is easy. (lamp tool-free type)</li> <li>- Can be individually mounted and removed in a gang-mounting panel</li> </ul>		<b>Button design B</b>  <ul style="list-style-type: none"> <li>- Periphery of flat buttons has a collar.</li> <li>- Special barrier is used.</li> </ul>

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
 Sunmulon brand : S2T-LCA24A

# LIST OF MODELS

## • LED-lit Push-button Switches (DC Lighting Type)

Shape of indicator surface	Terminal shape		Individual Model No. Note 1, Note 3, Note 4					Body mounting method (must be procured in case of barrier type)	Panel cutout dimensions	
			(1) Push-button unit	(2) Color plate	(3) LED lamp	(4) Body	(5) Switch	(4)' Mounting barrier Note 4	External dimensions	
 Single-section LED-lighting	Soldered		 Button design: A and B (4 lamps required) (mounting: barrier type and flange type)						See page G-060.  See page G-056 G-057 G-058.	
	Catalog listing	Lamp voltage	5V	2T-L <sup>(C)</sup> <sub>(F)</sub> A05□	2V-L1□ (1 p'ce)	YS4□	2 <sup>(F)</sup> <sub>(F)</sub> -L□AB	2D□□-J		2B□
			12V	2T-L <sup>(C)</sup> <sub>(F)</sub> A12□		YS8□				
			24V	2T-L <sup>(C)</sup> <sub>(F)</sub> A24□		or YS8AH				
Reference page for description		See page G-050.			See page G-051.		See page G-054.			
 Lateral split 2-section LED-lighting	Soldered		 (Button design: A and B) (4 lamps required) (mounting: barrier type and flange type)						See page G-060.  See page G-056 G-057 G-058.	
	Catalog listing	Lamp voltage	5V	2T-L <sup>(C)</sup> <sub>(F)</sub> B05□	2V-L2□ (2 p'ces)	YS4□	2 <sup>(F)</sup> <sub>(F)</sub> -L□BC	2D□□-J		2B□
			12V	2T-L <sup>(C)</sup> <sub>(F)</sub> B12□		YS8□				
			24V	2T-L <sup>(C)</sup> <sub>(F)</sub> B24□		or YS8AH				
Reference page for description		See page G-050.			See page G-051.		See page G-054.			




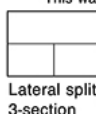
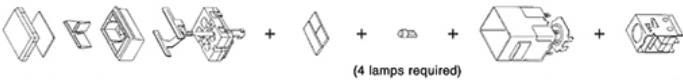

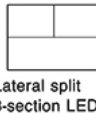



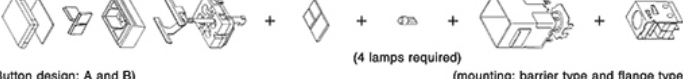


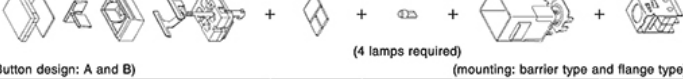

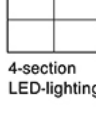
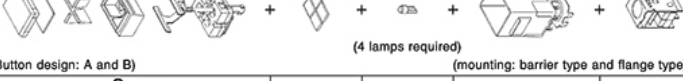

Note 1: Models sold as individual model Nos. are delivered in a bulk state with the push-button unit, color plate, LED lamp, body, and switch packaged individually.

Note 2: Barriers, bezels, etc. must be procured separately as they are not provided on both set model Nos. and models sold as individual model Nos. In particular, a mounting barrier is required in the case of switches whose body mounting method is short barrier or long barrier.

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
 Sunmulon brand : S2T-LCA24A

● LED-lit Push-button Switches (DC Lighting Type) (continued)

Shape of indicator surface	Terminal shape	Individual Model No. Note 3, Note 4					Body mounting method (must be procured in case of barrier type)	Panel cutout dimensions	External dimensions				
		(1) Push-button unit	(2) Color plate	(3) LED lamp	(4) Body	(5) Switch							
 This way up Longitudinal split LED-lighting	Soldered	 (Button design: A and B) (4 lamps required) (mounting: barrier type and flange type)						See page G-060.	See page G-056 G-057 G-058.				
		Catalog listing	Lamp voltage	5V	2T-L(F)C05□	2V-L3□ (2 p'ces)				YS4□ YS8□ or YS8AH	2(F)-L□BC	2D□□-J	2B□
				12V	2T-L(F)C12□								
				24V	2T-L(F)C24□								
Reference page for description		See page G-050.			See page G-051.		See page G-054.						
 This way up Lateral split 3-section LED-lighting	Soldered	 (Button design: A and B) (4 lamps required) (mounting: barrier type and flange type)						See page G-060.	See page G-056 G-057 G-058.				
		Catalog listing	Lamp voltage	5V	2T-L(F)D05□	2V-L2□ (1 p'ce) 2V-L4□ (2 p'ces)				YS4□ YS8□ or YS8AH	2(F)-L□CE	2D□□-J	2B□
				12V	2T-L(F)D12□								
				24V	2T-L(F)D24□								
Reference page for description		See page G-050.			See page G-051.		See page G-054.						
 This way up Lateral split 3-section LED-lit	Soldered	 (Button design: A and B) (4 lamps required) (mounting: barrier type and flange type)						See page G-060.	See page G-056 G-057 G-058.				
		Catalog listing	Lamp voltage	5V	2T-L(F)E05□	2V-L2□ (1 p'ce) 2V-L4□ (2 p'ce)				YS4□ YS8□ or YS8AH	2(F)-L□CE	2D□□-J	2B□
				12V	2T-L(F)E12□								
				24V	2T-L(F)E24□								
Reference page for description		See page G-050.			See page G-051.		See page G-054.						
 This way up Longitudinal 3-section LED-lit	Soldered	 (Button design: A and B) (4 lamps required) (mounting: barrier type and flange type)						See page G-060.	See page G-056 G-057 G-058.				
		Catalog listing	Lamp voltage	5V	2T-L(F)F05□	2V-L3□ (1 p'ce) 2V-L4□ (2 p'ces)				YS4□ YS8□ or YS8AH	2(F)-L□CE	2D□□-J	2B□
				12V	2T-L(F)F12□								
				24V	2T-L(F)F24□								
Reference page for description		See page G-050.			See page G-051.		See page G-054.						
 This way up Longitudinal 3-section LED-lit	Soldered	 (Button design: A and B) (4 lamps required) (mounting: barrier type and flange type)						See page G-060.	See page G-056 G-057 G-058.				
		Catalog listing	Lamp voltage	5V	2T-L(F)G05□	2V-L3□ (1 p'ce) 2V-L4□ (2 p'ces)				YS4□ YS8□ or YS8AH	2(F)-L□CE	2D□□-J	2B□
				12V	2T-L(F)G12□								
				24V	2T-L(F)G24□								
Reference page for description		See page G-050.			See page G-051.		See page G-054.						
 This way up 4-section LED-lighting	Soldered	 (Button design: A and B) (4 lamps required) (mounting: barrier type and flange type)						See page G-060.	See page G-056 G-057 G-058.				
		Catalog listing	Lamp voltage	5V	2T-L(F)H05□	2V-L4□ (4 p'ces)				YS4□ YS8□ or YS8AH	2(F)-L□CE	2D□□-J	2B□
				12V	2T-L(F)H12□								
				24V	2T-L(F)H24□								
Reference page for description		See page G-050.			See page G-051.		See page G-054.						




Note 3: Models sold as individual model Nos. are delivered in a bulk state with push-button unit, color plate LED lamp, body and switch packaged individually.

Note 4: Barriers, bezels, etc. must be procured separately as they are not provided on models sold as individual model Nos. In particular, a mounting barrier is required in the case of switches whose body mounting method is short barrier or long barrier.

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
Sunmulon brand : S2T-LCA24A










● LED-lit Push-button Switches (DC Lighting Type) (continued)

Shape of indicator surface	Terminal shape	Individual Model No. Note 3, Note 4					Body mounting method (must be procured in case of barrier type)	Panel cutout dimensions	External dimensions			
		(1) Push-button unit	(2) Color plate	(3) LED lamp	(4) Body	(5) Switch				(4)' Mounting barrier Note 4		
 2-color single-section LED-lighting	Soldered	 (Button design: A and B) (mounting: barrier type and flange type) (4 lamps required)						See page G-060.	See page G-056. G-057 G-058.			
		Catalog listing	5V	2T-L <sup>(C)</sup> K05□	2V-L1W	YS4□				2 <sup>(C)</sup> (F)-L□CE	2D□□-J	2B□
		Lamp voltage	12V	2T-L <sup>(C)</sup> K12□		YS8□				2 <sup>(C)</sup> (F)-L□DE		
		24V	2T-L <sup>(C)</sup> P24□	YS8AH								
Reference page for description	See page G-050.					See page G-051.	See page G-054.					

Note 3: Models sold as individual model Nos. are delivered in a bulk state with push-button unit, color plate, LED lamp, body and switch packaged individually.

Note 4: Barriers, bezels, etc. must be procured separately as they are not provided on models sold as individual model Nos. In particular, a mounting barrier is required in the case of switches whose body mounting method is short barrier or long barrier.

● LED-lit Push-button Switches (24Vac lighting type)

Shape of indicator surface Note 1	Terminal shape	Individual Model No. only Note 3, Note 4				Body mounting method (must be procured in case of barrier type)	Panel cutout dimensions	External dimensions		
		(1) Push-button unit/body	(2) Color plate	(3) LED lamp	(4) Switch				(3)' Mounting barrier Note 4	
 Single-section LED-lighting	Soldered	 (Button design: A and B) (mounting: barrier type and flange type) (4 lamps required)					See page G-060.	See page G-056. G-057 G-058.		
		Catalog listing	2 <sup>(C)</sup> (F)-L□A24□-AC	2V-L1□	YA4□(-R)				2D□□-J	2B□
		Reference page for description	See page G-052:G-053.						See page G-054.	
 Lateral split LED-lit	Soldered	 (Button design: A and B) (mounting: barrier type and flange type) (4 lamps required)					See page G-060.	See page G-056. G-057 G-058.		
		Catalog listing	2 <sup>(C)</sup> (F)-L□B24□-AC	2V-L2□ (2 p'ces)	YA4□(-R)				2D□□-J	2B□
		Reference page for description	See page G-052:G-053.						See page G-054.	
 Longitudinal split LED-lit	Soldered	 (Button design: A and B) (mounting: barrier type and flange type) (4 lamps required)					See page G-060.	See page G-056. G-057 G-058.		
		Catalog listing	2 <sup>(C)</sup> (F)-L□C24□-AC	2V-L3□ (2 p'ces)	YA4□(-R)				2D□□-J	2B□
		Reference page for description	See page G-052:G-053.						See page G-054.	

Note 1: Contact your agent separately for details when 3-section and 4-section LED lit types are required with 24Vac lighting type **SERIES 2**.

Note 3: Models sold as individual model Nos. are delivered in a bulk state with push-button unit, color plate, LED lamp, body and switch packaged individually.

Note 4: Barriers, bezels, etc. must be procured separately as they are not provided on models sold as individual model Nos. In particular, a mounting barrier is required in the case of switches whose body mounting method is short barrier or long barrier.

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
 Summulon brand : S2T-LCA24A

## PERFORMANCE

Item		When <b>SSM</b> ultra miniature switch is fitted	When <b>V-3000</b> miniature switches is fitted
Allowable operating frequency	Mechanical	Momentary operation Max. 120 operations/minute, Alternating operation Max. 60 operations/minute	
	Electrical	Max. 20 operations/minute	
Insulating resistance		Min. 100MΩ (by 500Vdc megger)	
Dielectric strength		Between non-continuous terminals: 600Vac for 1 minute Between different poles: 2,000Vac for 1 minute Between each terminal and ground: 2,000Vac for 1 minute	Between non-continuous terminals: 1,000Vac for 1 minute Between different poles: 2,000Vac for 1 minute Between each terminal and ground: 2,000Vac for 1 minute
Vibration resistance	Malfunction	1 to 55Hz, 0.1mm peak-to-peak amplitude, constant vibration 16.7Hz, 3mm peak-to-peak amplitude	
Impact resistance	Malfunction	100m/s <sup>2</sup>	300m/s <sup>2</sup>
Mechanical Life		Min. 100,000 operations (standard model) Min. 500,000 operations (momentary low force model)	Min. 1 million operations
Electrical Life (resistive load)	Silver contact	Min. 100,000 operations 250Vac-2A Min. 40,000 operations 250Vac-5A	Min. 125,000 operations 250Vac-10A
	Gold contact	Min. 100,000 operations 50Vdc-0.5A Min. 40,000 operations 30Vdc-1A	—
Initial contact resistance (voltage drop method)	Silver contact	Max. 50mΩ 6 to 8Vdc-1A	Max. 50mΩ 6 to 8Vdc-1A
	Gold contact	Max. 100mΩ 6 to 8Vdc- 0.1A	—
Terminal strength (tensile direction)		Soldered terminal: 64N for 1 minute	Screw tightening terminal/ soldered terminal: 102N for 1 minutes screw terminal tightening torque: 0.6Nm for 1 minute
Stroke		Approx. 3mm	
Operating ambient temperatures		-20 to +40°C	
Operating ambient humidity		Max. 85%RH	
Storage ambient temperature		-25 to +65°C	

## RATING

### 1. Contact rating

#### 1.1.1 SSM miniature switch for standard load (silver contact)

Rated energizing current (A)		5			
Rated voltage (V)		250Vac, 125Vdc			
AC	Operating voltage (V)	24	48	125	250
	Resistive load (A)	5	5	5	5
	Inductive load* (A)	3	3	3	3
	Electric motor load (N.C.-A)	1.5	1.5	1.5	1
	Electric motor load (N.O.-A)	0.7	0.7	0.7	0.5
DC	Operating voltage (V)	8	14	30	125
	Resistive load (A)	5	5	5	0.4
	Inductive load# (A)	3	3	3	0.05

Note 1: Steady current values are indicated for above values.

Note 2: \*: Inductive load value at power-factor of 0.6

Note 3: #: Inductive load value at time constant of 7ms

#### 1.1.2 SSM miniature switch for standard load (gold contact)

		SSM			
Rated energizing current (A)		0.1			
Rated voltage (V)		250Vac, 30Vdc			
Operating voltage (V)		5	12	24	125
AC resistive load (A)		0.1	0.1	0.1	0.1
DC resistive load (A)		0.1	0.1	0.1	0.1

Note 1: Steady current values are indicated for above values.

Note 2: The lower limit of use is 5V-5mA.

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
Sunmulon brand : S2T-LCA24A

## 1.2 V-3000 miniature switches for standard load (silver contact)

Rated energizing current		(A)	10			
Rated voltage		(V)	250Vac, 250Vdc			
AC	Operating voltage	(V)	24	48	125	250
	Resistive load	(A)	10	10	10	10
	Inductive load*	(A)	6	6	6	6
	Electric motor load	(N.C.-A)	3	3	3	2
	Electric motor load	(N.O.-A)	1.5	1.5	1.5	1
DC	Operating voltage	(V)	8	30	125	250
	Resistive load	(A)	10	6	0.5	0.25
	Inductive load#	(A)	6	4	0.1	0.05

Note 1: Steady current values are indicated for above values.

Note 2: \*: Inductive load value at power-factor of 0.6

Note 3: #: Inductive load value at time constant of 7ms

## 2. LED lamp rating

### 2.1 LED lamps for LED-lit SERIES 2

Item	Catalog listing	Rating								Unit		
		For 5Vdc systems		For 12Vdc, 24Vdc systems				For 24Vac systems				
		Standard ball		Standard ball		High-intensity ball		Standard ball				
		YS4□		YS8□		YS8AH		YA4□/YA4□-R				
Symbol	Standard value	Measurement conditions	Standard value	Measurement conditions	Standard value	Measurement conditions	Standard value	Measurement conditions				
Max. absolute rating	Forward DC current	I <sub>F</sub>	50	—	25	—	20	—	33	—	mA	
	Reverse DC voltage	V <sub>R</sub>	8	—	16	—	16	—	V <sub>F</sub> Max.	—	V	
	Allowable loss	P <sub>D</sub>	200				190		150		mW	
	Operating temperature	Topr	-20 to +80						-20 to +85		°C	
	Storage temperature	Tstg	-30 to +100								°C	
	Operating humidity	—	85								%RH Max.	
Electrical/optical characteristics	Forward DC voltage	V <sub>F</sub>	4.50	I <sub>F</sub> =30mA	9.00	I <sub>F</sub> =15mA	8.70	I <sub>F</sub> =15mA	4.3 (Red) 4.5 (amber/green)	I <sub>F</sub> =23mA	V Max.	
	Reverse DC current	I <sub>R</sub>	100	V <sub>R</sub> =8V	100	V <sub>R</sub> =16V	100	V <sub>R</sub> =16V	—	—	μA Max.	
	Luminosity	I <sub>v</sub>	Red	5.5	I <sub>F</sub> =30mA	5.5	I <sub>F</sub> =15mA	—	I <sub>F</sub> =15mA	6	I <sub>F</sub> =23mA	mcd (standard)
			Green	30		30		—		20		
			Amber	18		18		—		10		
			White	21		21		—		—		
			Red/ Green	—		—		75		—		
	Peak light-emitting wavelength	λ <sub>p</sub>	Red	700	I <sub>F</sub> =30mA	700	I <sub>F</sub> =15mA	—	I <sub>F</sub> =15mA	630	I <sub>F</sub> =23mA	nm
			Green	565		565		—		565		
			Amber	585		585		—		585		
White			585/565	585/565		—		—				
Red/ Green			—	—		660/565		—				
Power voltage	V <sub>s</sub>	5±5%		12±5% or 24±5%				24±5%		V		
Lamp base shape	—	T1-3/4 Wedge base								—		

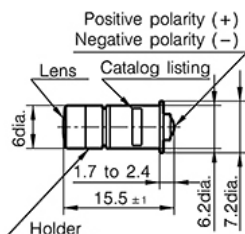
\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
Sunmulon brand : S2T-LCA24A

## 2.2 Layout of chips in LED lamp

Voltage	Catalog listing	Polarity	Lens color	Product indication	Internal circuit	Base shape
5Vdc	<b>YS4A</b> <b>YS4G</b> <b>YS4R</b> <b>YS4W</b>	— — — —	Light yellow Green Pink Achromatic transparent	YS4		T-1 3/4 wedge base
12Vdc, 24Vdc	<b>YS8A</b> <b>YS8G</b> <b>YS8R</b> <b>YS8W</b> <b>YS8AH</b>	— — — — —	Light yellow Green Pink Achromatic transparent Achromatic transparent	YS8 S8H		
24Vac	<b>YA4A</b> <b>YA4G</b> <b>YA4R</b>	— — —	Light yellow Green Pink	YA4		
24Vac induction dark lighting countermeasure	<b>YA4A-R</b> <b>YA4G-R</b> <b>YA4R-R</b>	— — —	Light yellow Green Pink	YA4		
12Vdc	<b>YF12AA</b>	Positive	Achromatic transparent	F12□A		SX6S/ 8 × 5.4 midget flange
	<b>YF12AK</b>	Reverse	Achromatic transparent	F12□K		
24Vdc	<b>YF24AA</b> <b>YF24GA</b> <b>YF24RA</b>	Positive	Achromatic transparent Light green Pink	F24□A		
	<b>YF24AK</b> <b>YF24GK</b> <b>YF24RK</b>	Reverse	Achromatic transparent Light green Pink	F24□K		

### YF□□ Series



## 3. Hold-in coil characteristics

Insulating resistance	Min. 100MΩ (by 500V megger)
Dielectric strength	1,000Vac for 1 minute
Terminal strength	2kg
Operating temperature range	−20 to +40°C
Operating humidity range	Max. 85%RH

Catalog listing	Rated voltage	Resistive value	Power
<b>2P2-J</b>	28Vdc	280Ω REF.	2.8W REF.
<b>2P3-J</b>	48Vdc	1,010Ω REF.	2.3W REF.

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
Sunmulon brand : S2T-LCA24A

# SPECIFICATIONS

## • LED-lit push-button switches (DC lighting type)

Components		LED-lighting method	Single section	Lateral split 2-section	Longitudinal split 2-section	Lateral split 3-section	Longitudinal split 3-section	4-section	2-color single-section	
<p>• Button indicator [common to soldered terminal and wire-wrap terminal types]</p> <p>Button design</p> <p>Cap A type B type</p> <p>Legend plate</p> <p>Color plate</p> <p>LED lamp</p> <p>Base (w/ partition plate)</p> <p>Lamp holder</p>	Push-button switch	2T-LCA□□□	2T-LCB□□□	2T-LCC□□□	2T-LCV24□	2T-LCX24□	2T-LCZ24□	2T-LCP24□		
		Indicator	2T-LFA□□□	2T-LFB□□□	2T-LFC□□□	2T-LFV24□	2T-LFX24□	2T-LFZ24□	2T-LFP24□	
	Shape of LED-lit indicator surface	Lamp holder individual model No. Note 1				This way up	This way up			
						2T-LCW24□	2T-LCY24□			
						2T-LCE□□□				
						2T-LFW24□	2T-LFY24□			
	Color plate	Catalog listing	2V-L1□	2V-L2□	2V-L3□	2V-L2□	2V-L3□	2V-L4□	2V-L1W	
		Color	Red (R), Yellow (Y), Green (G), Milky white (W), Orange (D)							
	LED lamp	Catalog listing	YS4R	YS4G	YS4A	YS4W	YS8R	YS8G	YS8A	YS8W
		Lamp terminal voltage	5Vdc				12Vdc or 24Vdc			
Base, lamp holder	Lit color	Red	Green	Amber	Yellow/green mixed (white)	Red	Green	Amber	Yellow/green mixed (white)	
									Red/green mixed High-intensity (amber)	
Main materials		Base: w/ LED-lit partition plate matched to indicator surface split shape Lamp holder: built-in LED lamp (4) socket and current limiting resistor								
Main materials		Cap: A type - polycarbonate, B type - cellulose resin, legend plate - heat-resistant acrylic resin Color plate: heat-resistant acrylic resin, base: PBT resin, lamp holder: PBT resin								
<p>• Soldered terminal type</p> <p>Switch body (housing) 2C-L□□□</p> <p>Indicator body (housing) 2F-L□□□</p>	LED-lighting method	Single section	Lateral split	Longitudinal split	Lateral split 3-section	Longitudinal split 3-section	4-section	2-color single-section		
	Shape of LED-lit indicator surface				This way up	This way up				
						This way up	This way up			
	Push-button switch Note 3	24V system	2C-L□AA	2C-L□BD		2C-L□DE				
		12/5V system	2C-L□AB	2C-L□BC		2C-L□CE				
	Indicator	24V system	2F-L□AA	2F-L□BD		2F-L□DE				
		12/5V system	2F-L□AB	2F-L□BC		2F-L□CE				
Mounting method		Short barrier, long barrier, long flange, short flange								
Terminal voltage		Rated voltage (24Vdc, 12Vdc or 5Vdc) ±5%								
Main materials		Housing: stainless steel plate, Terminals: Phenol resin								
<p>• Switch unit 2D-□□□□□</p>	Operation mechanism	Polarity	SSM ultra miniature standard switches			V-3000 miniature switches				
			Silver contact catalog listing	Gold contact catalog listing	Operation force	Silver contact catalog listing	Operation force			
	Momentary	1 × SPDT	2D-11SGA	-		10.8N	2D70-J	9.4N		
		2 × SPDT	2D-12SGA	2D-42SGA			2D72-J	11.8N		
		4 × SPDT	2D-14SGA	2D-44SGA		15.7N	-	-		
	Low force momentary	2 × SPDT	2D-12LGA	2D-42LGA		5.4N	-	-		
		4 × SPDT	2D-14LGA	2D-44LGA		8.9N	-	-		
Alternate	2 × SPDT	2D-22SGA	2D-52SGA		8.4N	-	-			
	4 × SPDT	2D-24SGA	2D-54SGA		14.7N	-	-			
Main materials		Bracket: stainless steel plate, switch: basic switch (SSM: Phenol, PBT resin, V-3000: Melamine)								

Note 1: Of the 3-section LED lit and 4-section LED lit model Nos., the upper row indicates 24Vdc systems, and the lower row indicates 5Vdc systems.

Note 2: For details on combinations and indication colors of LED lamp colors and color plates, see page G-066.

Note 3: The hold-in coil (catalog listing 2P□-J) can be used in push-button switches.


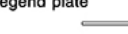
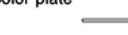


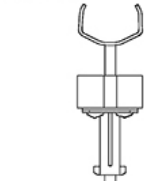
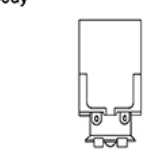
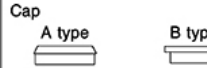
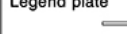
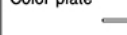


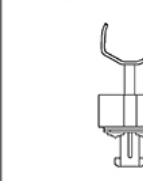
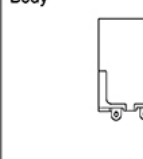



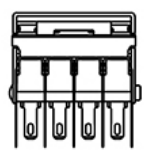
Note 4: Maximum values are indicated for the operation force.

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
Sunmulon brand : S2T-LCA24A



● LED-lit push-button switches (24Vac lighting and soldered terminal type)

Components		LED-lighting method		Single section	Lateral split 2-section	Longitudinal split 2-section	
<p><b>Push-button switch</b></p> <p>Cap A type      B type</p>  <p>Legend plate</p>  <p>Color plate</p>  <p>Base (w/ partition plate)</p>  <p>LED lamp</p>  <p>Lamp holder</p>  <p>Body</p> 	<p><b>Indicator</b></p> <p>Cap A type      B type</p>  <p>Legend plate</p>  <p>Color plate</p>  <p>Base (w/ partition plate)</p>  <p>LED lamp</p>  <p>Lamp holder</p>  <p>Body</p> 	Body (including lamp holder)	Push-button switch	2C-L□A24□-AC	2C-L□B24□-AC	2C-L□C24□-AC	
		Indicator	Indicator	2F-L□A24□-AC	2F-L□B24□-AC	2F-L□C24□-AC	
		Shape of LED-lit indicator surface					
		Color plate	Catalog listing	2V-L1□	2V-L2□ (2 pieces)	2V-L3□ (2 pieces)	
			Color	Red (R), Yellow (Y), Green (G), Milky white (W), Orange (D)			
		LED lamp	Standard catalog listing	YA4R	YA4G	YA4A	
			Induction countermeasure product catalog listing	YA4R-R	YA4G-R	YA4A-R	
			Color	Red	Green	Amber	
		Lamp terminal voltage	24Vac ± 5%				
		Base, lamp holder		Base: w/ LED-lit partition plate matched to indicator surface split shape Lamp holder: built-in LED lamp (4) socket and current limiting resistor			
Main materials		Cap: A type - polycarbonate, B type - cellulose resin Legend plate: heat-resistant acrylic resin Color plate: heat-resistant acrylic resin Base: PBT resin Lamp holder: PBT resin					
<p>• Switch unit 2D-□□□□□</p> 	Operation mechanism	Polarity	SSM ultra miniature standard switches			V-3000 miniature switches	
			Silver contact catalog listing	Gold contact catalog listing	Operation force	Silver contact catalog listing	Operation force
	Momentary	1 × SPDT	2D-11SGA	—	10.8N	2D70-J	9.4N
		2 × SPDT	2D-12SGA	2D-42SGA		2D72-J	11.8N
		4 × SPDT	2D-14SGA	2D-44SGA	15.7N	—	—
	Low force momentary	2 × SPDT	2D-12LGA	2D-42LGA	5.4N	—	—
		4 × SPDT	2D-14LGA	2D-44LGA	8.9N	—	—
	Alternate	2 × SPDT	2D-22SGA	2D-52SGA	8.4N	—	—
		4 × SPDT	2D-24SGA	2D-54SGA	14.7N	—	—
	Main materials		Bracket: stainless steel plate, switch: basic switch (SSM: Phenol, PBT resin, V-3000: Melamine)				

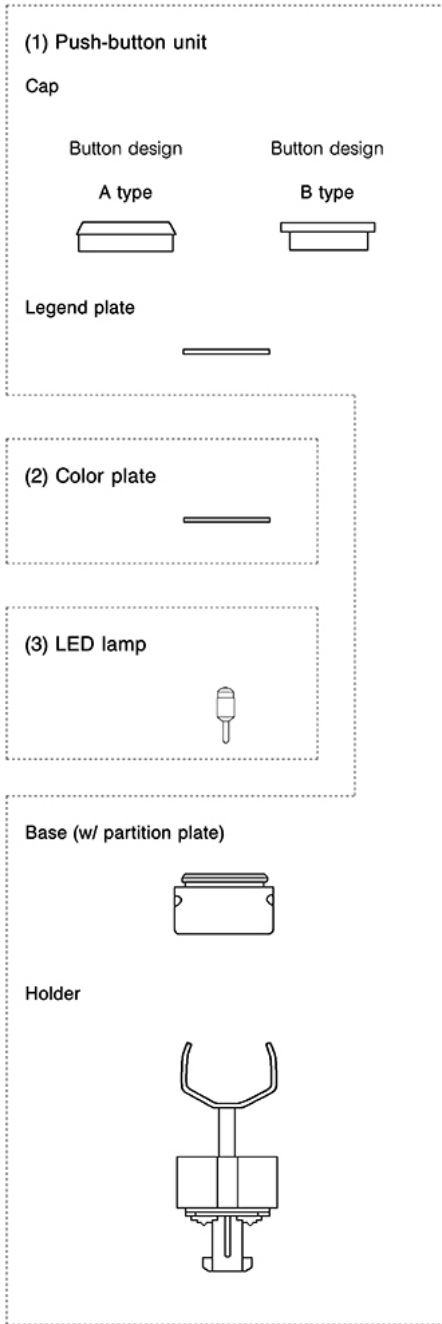
Note: Maximum values are indicated for the operation force.

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:  
Yamatake-Honeywell brand : 2T-LCA24A  
Sunmulon brand : S2T-LCA24A

# LED-lit SERIES 2 (DC Lighting Type) LED

## INDIVIDUAL MODEL No.

- Indicator, operator



### (1) Push-button unit

Model selection guide I II III IV Example: 2T-LCA05A

I	II	III	IV	Description
Basic model No.	Shape of LED-lit surface	Terminal voltage	Button design	
2T-LC				LED-lit push-button switch
2T-LF				LED-lit indicator (without switch)
	A			Single-section 5/12/24Vdc
	B			Lateral split 2-section 5/12/24Vdc
	C			Longitudinal split 2-section 5/12/24Vdc
	V		This way up	Lateral split 3-section 24Vdc
	D			Lateral split 3-section 5/12Vdc
	W		This way up	Lateral split 3-section 24Vdc
	E			Lateral split 3-section 5/12Vdc
	X		This way up	Longitudinal split 3-section 24Vdc
	F			Longitudinal split 3-section 5/12Vdc
	Y		This way up	Longitudinal split 3-section 24Vdc
	Z			4-section 24Vdc
	H			4-section 5/12Vdc
	P			2-color, single-section 24Vdc
	K			2-color, single-section 5/12Vdc
	05			5Vdc
	12			12Vdc
	24			24Vdc
	A			A type
	B			B type

### (2) Color plate Model selection guide I II Example: 2V-L1R

I	II	Description
Basic model No.	Color	
2V-L1		Single . 5 colors can be selected. section' (1 plate required per push-button unit) 2 colors, . Only milky white can be selected. single section' (1 plate required per push-button unit)
2V-L2		Lateral split, 5 colors for each of two plates can be selected. 2-section' (2 plates required per push-button unit)
2V-L3		Longitudinal . 5 colors for each of two plates can be selected. split 2-section' (2 plates required per push-button unit)
2V-L4		4 section: 5 colors for each of 4 sections can be selected. (4 plates required per push-button unit)
2V-L2		Lateral split 3-. 2V-L2: 5 colors can be selected. section (large)' (1 plate required per push-button unit)
2V-L4		Lateral split 3-. 2V-L4: 5 colors for each of two plates can be section (small)' selected. (2 plates required per push-button unit)
2V-L3		Longitudinal split, 2V-L3: 5 colors can be selected. 3-section (large)' (1 plate required per push-button unit)
2V-L4		Longitudinal split, 2V-L4: 5 colors for each of two plates can be 3-section (small)' selected. (2 plates required per push-button unit)
	W	Milky white
	R	Red
	G	Green
	Y	Yellow
	D	Orange

### (3) LED lamp Model selection guide I II Example: YS4R

I	II	Description
Basic model No.	LED color	
YS4		Terminal voltage 5Vdc (4 lamps required per push-button unit)
YS8		Terminal voltage 12/24Vdc (4 lamps required per push-button unit)
	W	White (amber x 3 + green x 1 mixed color)
	R	Red
	G	Green
	A	Amber
	AH	High-intensity orange (red x 1 + green x 3 mixed colors) Can be selected only for YS8.

### Note: How to Choose Colors

Desired Button Color	Color when out	Milky white				
	Color when lit	Light amber	Light yellow	Light orange (High-intensity)	Light yellowish green	Pink
Part color to be selected	Color plate color	W: milky white				
	LED lamp color	A: Amber	W: mixed color	AH: orange (High-intensity)	G: green	R: red

Desired Button Color	Color when out	Yellow		Orange		Green		Red		
	Color when lit	Lemon yellow	Yellow	Reddish yellow (High-intensity)	Orange	Orange (High-intensity)	Green	Green (High-intensity)	Red	Red (High-intensity)
Part color to be selected	Color plate color	Y: yellow	Y: yellow	Y: yellow	D: orange	D: orange	G: green	G: green	R: red	R: red
	LED lamp color	G: green	W: mixed color	AH: orange (High-intensity)	A: amber	AH: orange (High-intensity)	G: green	AH: orange (High-intensity)	R: red	AH: orange (High-intensity)

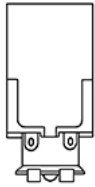
\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
Sunmulon brand : S2T-LCA24A

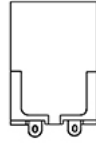
# LED-lit SERIES 2 (DC Lighting Type)

● Soldered terminal type

Switch body  
2C-L□□□



Indicator body  
2F-L□□□



(4) Body (housing) Model selection guide **I** **II** **III** Example: 2C-L1AA

I	II	III	Description
Basic model No.	Mounting method	Shape of illuminating surface/terminal voltage	
2C-L			LED-lit push-button switch
2F-L			LED-lit indicator
	1		Short barrier type
	2		Long barrier type
	3		Long flange type
	4		Short flange type
		AA	Single section, for 24Vdc
		AB	Single section, for 5/12Vdc
		BD	Longitudinal split 2-section, lateral split 2-section, for 24Vdc
		BC	Longitudinal split 2-section, lateral split 2-section, for 5/12Vdc
		DE	Longitudinal split 3-section, lateral split 3-section, 4-section, 2-color single-section, for 24Vdc
		CE	Longitudinal split 3-section, lateral split 3-section, 4-section, 2-color single-section, for 5/12Vdc

(5) Switches

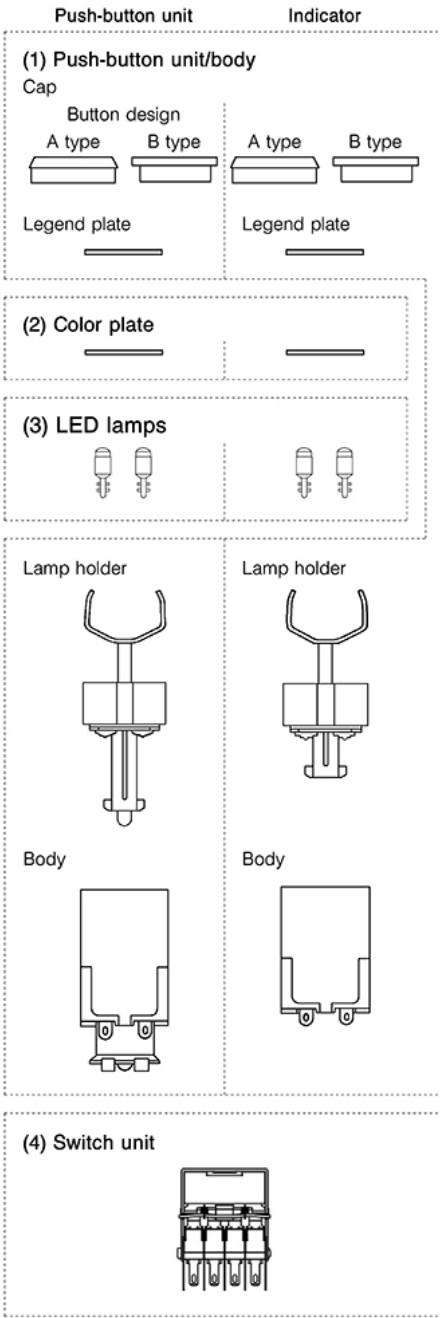
SSM ultra miniature switch unit	Catalog listing	Operation mechanism	Polarity	Contact material	Terminal shape		
<p><b>Momentary type</b></p> <p>1 - pole      2 - pole      4 - pole</p> <p><b>Alternate type/momentary, alternate type</b></p> <p>2 - pole      4 - pole</p>	2D-11SGA	Momentary	1 × SPDT	Silver	Soldered and tab terminal combined		
	2D-12SGA	Momentary	2 × SPDT	Silver			
	2D-14SGA	Momentary	4 × SPDT	Silver			
	2D-41SGA	Momentary	1 × SPDT	Gold			
	2D-42SGA	Momentary	2 × SPDT	Gold			
	2D-44SGA	Momentary	4 × SPDT	Gold			
	2D-12LGA	Low force momentary	2 × SPDT	Silver			
	2D-14LGA	Low force momentary	4 × SPDT	Silver			
	2D-42LGA	Low force momentary	2 × SPDT	Gold			
	2D-44LGA	Low force momentary	4 × SPDT	Gold			
	2D-22SGA	Alternate	2 × SPDT	Silver			
	2D-24SGA	Alternate	4 × SPDT	Silver			
	2D-52SGA	Alternate	2 × SPDT	Gold			
	2D-54SGA	Alternate	4 × SPDT	Gold			
	2D-32SGA	Momentary Alternate	2 × SPDT	Silver			
	2D-34SGA	Momentary Alternate	4 × SPDT	Silver			
	<b>V-3000 miniature switch unit</b>	Catalog listing	Operation mechanism	Polarity		Contact material	Terminal shape
	<p><b>Momentary type/screw terminal</b></p> <p>1 - pole      2 - pole</p>	2D70-J	Momentary	1 × SPDT		Silver	Screw
2D72-J		Momentary	2 × SPDT	Silver	Screw		

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
Sunmulon brand : S2T-LCA24A

# LED-lit SERIES 2 (24Vac Lighting Type)

## INDIVIDUAL MODEL No.



(1) Push-button unit/body I II III IV V Example: 2C-L1A24A-AC

I	II	III	IV	V	Description
Basic model No.	Mounting method	Shape of LED-lit surface	LED voltage	Button design	
2C-L					LED-lit push-button switch
2F-L					LED-lit indicator
	1				Short barrier type
	2				Long barrier type
	3				Long flange type
	4				Short flange type
		A			Single section
		B			Lateral split 2-section
		C			Longitudinal split 2-section
			24		24Vac
				A-AC	Button design "A", AC lighting type
				B-AC	Button design "B", AC lighting type

(2) Color plate I II Example: 2V-L1R

I	II	Description		
Basic model No.	Color			
2V-L1			Single section	5 colors can be selected. (1 plate required per push-button switch)
2V-L2			Lateral split 2-section	5 colors for each of two plates can be selected. (2 plates required per push-button switch)
2V-L3			Longitudinal split 2-section	5 colors for each of two plates can be selected. (2 plates required per push-button switch)
	W		Milky white	
	R		Red	
	G		Green	
	Y		Yellow	
	D		Orange	

(3) LED lamp I II III Example: YA4R

I	II	III	Description
Basic model No.	Color	Lamp type	
YA4			AC lighting type <b>SERIES 2</b> special LED lamp
	R		Red
	G		Green
	A		Amber
		Blank	Standard lamp
		-R	Dark lit countermeasure type lamp

Note: How to Choose Colors

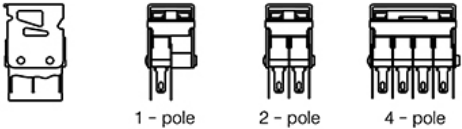
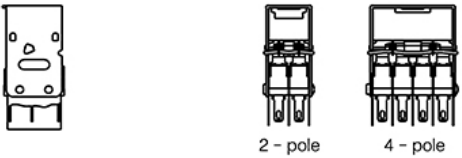
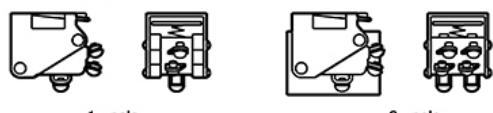
Desired Button Color	Color when out	Milky white			Yellow	Orange	Green	Red
	Color when lit	Light amber	Light yellowish green	Pink	Lemon yellow	Orange	Green	Red
	Color plate color	W: milky white	W: milky white	W: milky white	Y: yellow	D: orange	G: green	R: red
Part color to be selected	LED lamp color	A: amber or A-R: amber (dark lit countermeasure)	G: green or G-R: green (dark lit countermeasure)	R: red or R-R: red (dark lit countermeasure)	G: green or G-R: green (dark lit countermeasure)	A: amber or A-R: amber (dark lit countermeasure)	G: green or G-R: green (dark lit countermeasure)	R: red or R-R: red (dark lit countermeasure)

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
Sunmulon brand : S2T-LCA24A

# LED-lit SERIES 2 (24Vac Lighting Type)

## (4) Switch unit (continued)

SSM ultra miniature switch unit		Catalog listing	Operation mechanism	Polarity	Contact material	Terminal shape
<p><b>Momentary type</b></p>  <p>1 - pole      2 - pole      4 - pole</p> <p><b>Alternate type/momentary, alternate type</b></p>  <p>2 - pole      4 - pole</p>		<b>2D-11SGA</b>	Momentary	1 × SPDT	Silver	Soldered and tab terminal combined
		<b>2D-12SGA</b>	Momentary	2 × SPDT	Silver	
		<b>2D-14SGA</b>	Momentary	4 × SPDT	Silver	
		<b>2D-41SGA</b>	Momentary	1 × SPDT	Gold	
		<b>2D-42SGA</b>	Momentary	2 × SPDT	Gold	
		<b>2D-44SGA</b>	Momentary	4 × SPDT	Gold	
		<b>2D-12LGA</b>	Low force momentary	2 × SPDT	Silver	
		<b>2D-14LGA</b>	Low force momentary	4 × SPDT	Silver	
		<b>2D-42LGA</b>	Low force momentary	2 × SPDT	Gold	
		<b>2D-44LGA</b>	Low force momentary	4 × SPDT	Gold	
		<b>2D-22SGA</b>	Alternate	2 × SPDT	Silver	
		<b>2D-24SGA</b>	Alternate	4 × SPDT	Silver	
		<b>2D-52SGA</b>	Alternate	2 × SPDT	Gold	
		<b>2D-54SGA</b>	Alternate	4 × SPDT	Gold	
		<b>2D-32SGA</b>	Momentary Alternate	2 × SPDT	Silver	
		<b>2D-34SGA</b>	Momentary Alternate	4 × SPDT	Silver	
V-3000 miniature switch unit		Catalog listing	Operation mechanism	Polarity	Contact material	Terminal shape
<p><b>Momentary type/screw terminal</b></p>  <p>1 - pole      2 - pole</p>		<b>2D70-J</b>	Momentary	1 × SPDT	Silver	Screw
		<b>2D72-J</b>	Momentary	2 × SPDT	Silver	Screw

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
**Sunmulon brand** : **S2T-LCA24A**


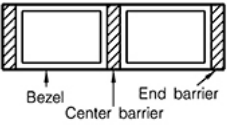

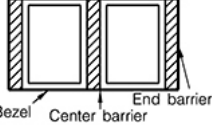
## ACCESSORIES (sold separately)

- Barrier/bezel
- Mounting barrier/bezel


The mounting barrier is used for barrier type units, and, as its name implies, it has a function for mounting push-button switches/indicators onto panels. Two types, short barrier and long barrier, are available as shown in the figures below

depending on the mounting direction.

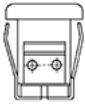
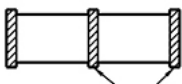

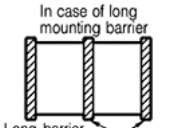
The exclusive bezel is required for button design A, and not required for button design B.

Mounting barrier for button design A		Model selection guide <span style="border: 1px solid black; padding: 0 2px;">I</span> <span style="border: 1px solid black; padding: 0 2px;">II</span> <span style="border: 1px solid black; padding: 0 2px;">III</span> <span style="border: 1px solid black; padding: 0 2px;">IV</span> Example: <b>2B-S1CK</b>						
Short mounting barrier <b>2B-S</b>	Long mounting barrier <b>2B-L</b>	I	II	III	IV	Description	Required number of barriers	
		Basic model No.	Panel plate thickness	Mountings	Color		Single mounting	Gang mounting
 «Panel appearance» In case of short mounting barrier  Bezel      Center barrier      End barrier	 In case of long mounting barrier  Bezel      Center barrier      End barrier	2B-S				Short mounting barrier exclusively for button design A		
		2B-L				Long mounting barrier exclusively for button design A		
			1			t=1.6 to 4.8mm		
			2			t=4.8 to 7.9mm		
				C			Center barrier	0
		E			End barrier	2	2	
					K	Black		

Bezel exclusively for button design A		Model selection guide <span style="border: 1px solid black; padding: 0 2px;">I</span> <span style="border: 1px solid black; padding: 0 2px;">II</span> Example: <b>2B-BEK</b>		
Bezel <b>2B-BEK</b>		I	II	Description
		Basic model No.	Color	
		2B-BE		Bezel exclusively for button design A: common to short and long barriers
			K	Black

Bezel exclusively for button design B mounting barrier		Catalog listing						
Short mounting barrier	Long mounting barrier	Short mounting barrier		Long mounting barrier		Color	Number of required barriers (common to end and center barriers)	
		Panel plate thickness (mm)	Panel plate thickness (mm)	Panel plate thickness (mm)	Panel plate thickness (mm)		Single mounting	Gang mounting
 «Panel appearance» In case of short mounting barrier  Short barrier	 In case of long mounting barrier  Long barrier (common to end and center barrier)	1.6 to 4.8	4.8 to 7.9	1.6 to 4.8	4.8 to 7.9	Black	2	n+1
		2B3-J	–	2B4-J	–			
				2B7-J	–	2B8-J	–	Black

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
 Sunmulon brand : S2T-LCA24A

● Switch guard

For short barrier	For long barrier	For both long barrier and short barrier	Catalog listing		
2H50-J	2H51-J	2H20-J	Catalog listing	Button design	Description
			2H50-J	A	For short barrier
			2H51-J	A	For long barrier
			2H20-J	B	For both short barrier and long barrier

Nota: Be sure to use a bezel with 2H50-J and 2H51-J.

● Hold-in coil

Exclusively for soldered terminal	Catalog listing				
2P1 to 3-J	Catalog listing	Rated voltage	Resistive value (Ref.)	Current (Ref.)	Remarks
	2P2-J	28Vdc	280Ω	2.8W	Can be used only on soldered terminal type. Terminal can be rotated 90° in two different directions.
	2P3-J	48Vdc	1,010Ω	2.3W	

● Button replacement parts and auxiliary parts

Button design A cap	Button design B cap	Transparent legend plate	Catalog listing	
2V50-J	2V10-J	2V9-J	Catalog listing	Description
			2V50-J	Button design "A" cap
			2V10-J	Button design "B" cap
			2V9-J	Transparent legend plate common to button designs "A" and "B"
Partition plate			2V51-J	Partition plate for LED-lit, lateral split 2-section type
			2V52-J	Partition plate for LED-lit, longitudinal split 2-section type
			2V53-J	Length of about half that of 2V51-J
			2V54-J	Length of about half that of 2V52-J
Base			2V55-J	LED-lit button exclusive base
			2V56-J	Used for improving brightness when incandescent lamp LED-lit SERIES 2 is used as an LED lamp.

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
 Sunmulon brand : S2T-LCA24A

## EXTERNAL DIMENSIONS

● Soldered terminal (LED lighting body)

(unit: mm)

Housing (body)	Switch housing (short barrier type) 2C-L1□□□	Indicator housing (short barrier type) 2F-L1□□□

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
Sunmulon brand : S2T-LCA24A



● Soldered terminal type (switch unit)

(unit: mm)

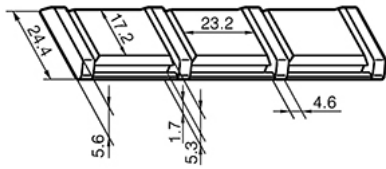
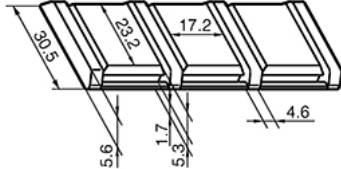
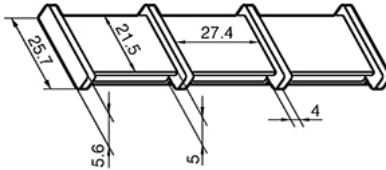
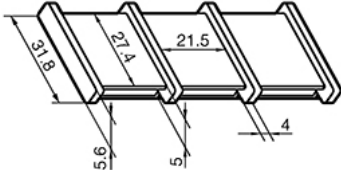
Switch unit	<b>Momentary type</b>	
	<b>Alternate type/momentary, alternate type</b>	
<b>V-3000 built-in, momentary type, 1-pole 2D70-J</b>		<b>V-3000 built-in, momentary type, 2-pole 2D72-J</b>

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

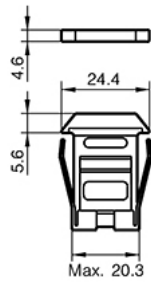

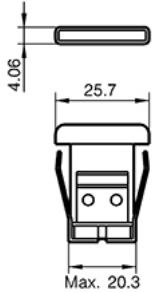

Yamatake-Honeywell brand : 2T-LCA24A  
 Sunmulon brand : S2T-LCA24A

● Button

(unit: mm)

Design A type	For short barrier	For long barrier
		
Design B type	For short barrier	For long barrier
		

● Barrier

Mounting barrier	For design A type		For design B type	
	Short barrier	Long barrier	Short barrier	Long barrier
				

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A

Sunmulon brand : S2T-LCA24A

● Auxiliary and spare parts

(unit: mm)

<p><b>Hold-in coil, 2P2-J, 2P3-J</b></p>	<p><b>Cap for button design A 2V50-J</b></p>
	<p><b>Cap for button design B 2V10-J</b></p>
	<p><b>Transparent legend plate (common to button design A and B) 2V9-J</b></p>

● Switch guard

<p><b>Design A</b></p>	<p><b>For short barrier 2H50-J</b></p>	<p><b>For long barrier 2H51-J</b></p>
<p><b>Design B</b></p>	<p><b>Common to short and long barriers 2H20-J</b></p>	<p><b>Remarks</b></p> <p>Note 1: Open guard upwards to operate the button. Guard/cap material: transparent plastic</p> <p>Note 2: The switch guard can also be used in gang mounting.</p>

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

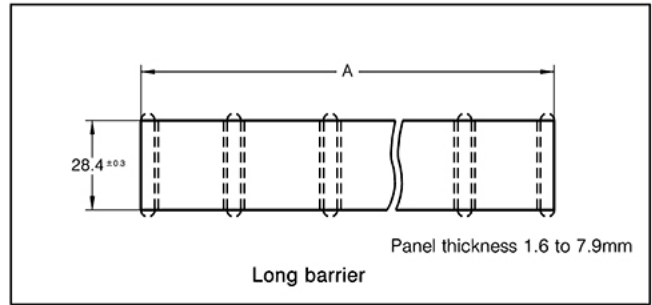
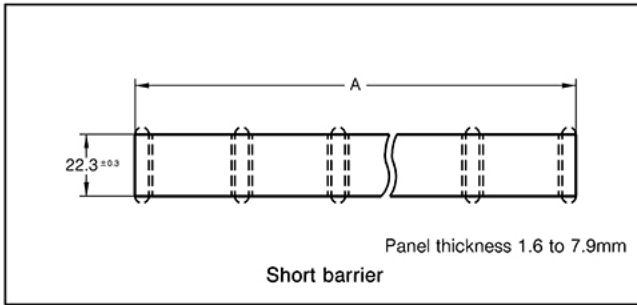
Yamatake-Honeywell brand : 2T-LCA24A  
Sunmulon brand : S2T-LCA24A

## PANEL CUTOUT DIMENSIONS

● Panel cutout dimensions are common to DC lighting type LED-lit **SERIES 2**, and to AC lighting type LED-lit **SERIES 2**.

● Barrier type unit

(unit: mm)



Type	Dimensions Number of units	"A" dimensions											
		1	2	3	4	5	6	7	8	9	10	11	12
Short barrier (slot width 22.3)		36.1	68.0	99.9	131.8	163.6	195.5	227.4	259.3	291.1	323.0	354.9	386.7
Long barrier (slot width 28.4)		30.0	55.8	81.6	107.4	133.2	158.9	184.7	210.5	236.3	262.0	287.8	313.6

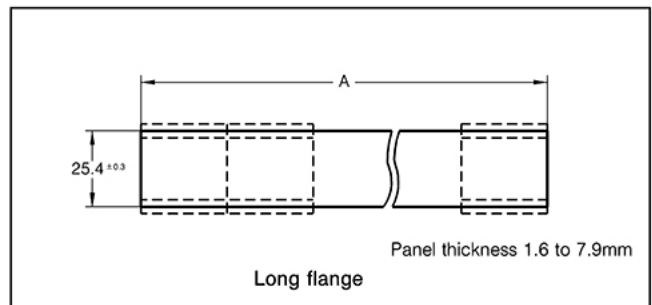
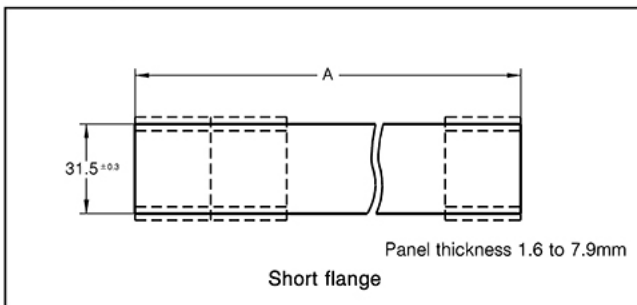
- The dimensional tolerance is  $\pm 0.3$ mm.

- In the case of a gang-mounting of 12 units or more, calculate as follows:

Short barrier type:  $31.86n + 4^{+0.3}_0$

Long barrier type:  $25.76n + 4^{+0.3}_0$

● Flange type unit



Type	Dimensions Number of units	"A" dimensions											
		1	2	3	4	5	6	7	8	9	10	11	12
Short flange (slot width 31.5)		21.9	43.6	65.3	87.0	108.7	130.4	152.1	173.9	195.5	217.3	238.9	260.7
Long flange (slot width 25.4)		28.0	55.8	83.6	111.4	139.2	167.0	194.8	222.6	250.4	278.2	306.0	333.8

- The dimensional tolerance is  $\pm 0.3$ mm. When using the space barrier on a flange type unit, add 4.2mm per space barrier to the above dimensions.

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A

Sunmulon brand : S2T-LCA24A

# LED-LIGHTING UNIT, LED LAMP TERMINAL LAYOUT DIAGRAMS

• LED terminal wiring diagrams for 24Vdc (standard/erroneous insertion prevention countermeasure parts)

Common to push-button switch and indicator

Split shape		Terminal wiring diagram (from front side)		Terminal layout diagram (from rear side)	
Single-section LED-lighting	Holder model No.			Housing model No.	
	2T-LCA24A				
	Code			Code	
	A			AA	
Lateral split 2-section	B				
Longitudinal split 2-section	C				
Lateral split 3-section	V				
Lateral split 3-section	W				
Longitudinal split 3-section	X				
Longitudinal split 3-section	Y				
4-section	Z				
2-color single-section LED-lit	P				

Note: Wire to only terminals shown in the terminal wiring diagrams on the left. Do not wire to other terminals. Doing so might damage the LED.

Note:  $\rightarrow$ : Indicates one LED lamp. LED lamp used: **YS8** Series.  
 The position of the resistors with respect to the LED and LED orientation are approximate.  
 The resistance value on the circuit is  $R_2=270\Omega$ ,  $R_3=1,400\Omega$  and  $R_4=1,050\Omega$   
 Jumper leads for 2-color single-section LED-lit type are not included in the product. Wire these jumper leads at use.

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:  
 Yamatake-Honeywell brand : 2T-LCA24A  
 Sunmulon brand : S2T-LCA24A

Split shape		Terminal wiring diagram (from front side)		Terminal layout diagram (from rear side)	
Single-section LED-lighting	Holder model No. 2T-L□□12□			Housing model No. 2-C-F 2(W-Y)-L□□□	
	Code A				Code AB
Lateral split 2-section	B			BC	
Longitudinal split 2-section	C				
Lateral split 3-section	D			CE	
Lateral split 3-section	E				
Longitudinal split 3-section	F			CE	
Longitudinal split 3-sections	G				
4-section	H			CE	
2-color single-section LED-lighting	K				

Note: Wire to only terminals shown in the terminal wiring diagrams on the left. Do not wire to other terminals. Doing so might damage the LED.

Note: →: Indicates one LED lamp. LED lamp used: **YS8** Series.  
 The position of the resistors with respect to the LED and LED orientation are approximate.  
 The resistance value on the circuit is  $R_2=270\Omega$ .  
 Jumper leads for 2-color single-section LED-lit type are not included in the product. Wire these jumper leads at use.

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:  
 Yamatake-Honeywell brand : 2T-LCA24A  
 Sunmulon brand : S2T-LCA24A

LED terminal wiring diagrams for 5Vdc

Common to push-button switch and indicator

Split shape		Terminal wiring diagram (from front side)		Terminal layout diagram (from rear side)	
Single-section LED-lighting	Holder model No. 2T-L□□05□ Code A			Housing model No. (C-F) 2(W-V)-L□□ (WC) Code AB	
Lateral split 2-section	B			BC	
Longitudinal split 2-section	C				
Lateral split 3-section	D				
Lateral split 3-section	E			CE	
Longitudinal split 3-section	F				
Longitudinal split 3-section	G				
4-section	H				
2-color single-section LED-lit	K				

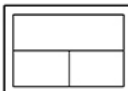
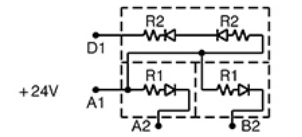
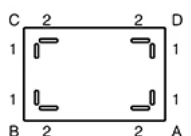
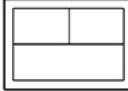
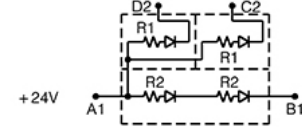

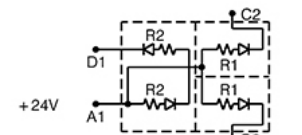

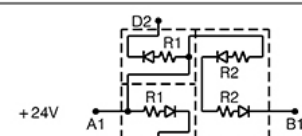
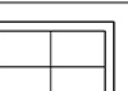
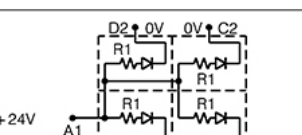

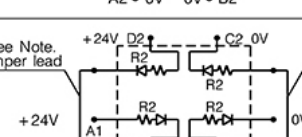
Note: Wire to only terminals shown in the terminal wiring diagrams on the left. Do not wire to other terminals. Doing so might damage the LED.

Note: →: Indicates one LED lamp. LED lamp used: **YS4** Series.  
 The position of the resistors with respect to the LED and LED orientation are approximate.  
 The resistance value on the circuit is  $R_1 = 30\Omega$ .  
 Jumper leads for 2-color single-section LED-lit type are not included in the product. Wire these jumper leads at use.

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:  
 Yamatake-Honeywell brand : 2T-LCA24A  
 Sunmulon brand : S2T-LCA24A

LED terminal wiring diagrams for 24Vdc (old type/custom order product)


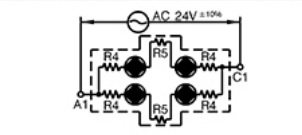
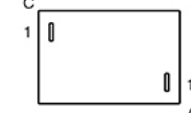

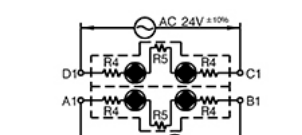

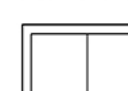
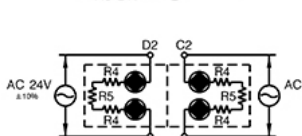
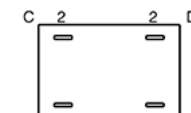
Common to push-button switch and indicator

Split shape	Terminal wiring diagram (from front side)	Terminal layout diagram (from rear side)
<b>Lateral split 3-section</b> This way up  Holder model No. 2T-LCA24□ Code D		 Note: Wire to only terminals shown in the terminal wiring diagrams on the left. Do not wire to other terminals. Doing so might damage the LED.
<b>Lateral split 3-section</b> This way up 		CE
<b>Longitudinal split 3-section</b> This way up 		
<b>Longitudinal split 3-section</b> This way up 		
<b>4-section</b> 		
<b>2-color single-section LED-lit</b> 		

Note: → : Indicates one LED lamp. LED lamp used: **YS8** Series.  
 The position of the resistors with respect to the LED and LED orientation are approximate.  
 The resistance value on the circuit is  $R_2=270\Omega$  and  $R_1=1,400\Omega$ .  
 Jumper leads for 2-color single-section LED-lit type are not included in the product. Wire these jumper leads at use.

• LED terminal wiring diagrams for 24Vac

Common to push-button switch and indicator

Split shape	Terminal wiring diagram (from front side)	Terminal layout diagram (from rear side)
<b>Single-section LED-lit</b> 		
<b>Lateral split 2-section</b> 		
<b>Longitudinal split 2-section</b> 		

Note: → : Indicates one LED lamp. LED lamp used: **YA4** Series.  
 The resistance value on the circuit is  $R_4=130\Omega$  and  $R_5=470\Omega$ .

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:  
 Yamatake-Honeywell brand : 2T-LCA24A  
 Sunmulon brand : S2T-LCA24A



## DC LIGHTING TYPE LED-LIGHTING UNIT CURRENT LIMITING RESISTORS AND INTERNAL CIRCUITS (from unit front side)

Catalog listing	Shape of LED-lit surface	24Vdc	12Vdc	5Vdc	Resistive value ( $\Omega$ )
2T-L□A□□□					$R_1 = 270$ $R_2 = 30$
2T-L□B□□□					$R_1 = 270$ $R_2 = 30$
2T-L□C□□□					$R_1 = 270$ $R_2 = 30$
2T-L□V24□ (left figure) 2T-L□D□□□					$R_1 = 270$ $R_2 = 30$ $R_3 = 1,400$
2T-L□W24□ (left figure) 2T-L□E□□□					$R_1 = 270$ $R_2 = 30$ $R_3 = 1,400$
2T-L□X24□ (left figure) 2T-L□F□□□					$R_1 = 270$ $R_2 = 30$ $R_3 = 1,400$
2T-L□Y24□ (left figure) 2T-L□G□□□					$R_1 = 270$ $R_2 = 30$ $R_3 = 1,400$
2T-L□Z24□ (left figure) 2T-L□H□□□					$R_1 = 270$ $R_2 = 30$ $R_3 = 1,400$
2T-L□P24□ (left figure) 2T-L□K□□□					$R_1 = 270$ $R_2 = 30$ $R_4 = 1,050$
		2T-L□V to Z·P24□	2T-L□D to H·K24□		

Note: : Indicates one LED lamp. LED lamp used: **YS8** Series and **YS4** Series.  
The position of the resistors with respect to the LED and LED orientation are approximate.  
External jumper leads must be added on for 2-color single-section LED-lit units.

## AC LIGHTING TYPE LED-LIGHTING UNIT CURRENT LIMITING RESISTORS AND INTERNAL CIRCUITS (from unit front side)

Catalog listing	Shape of LED-lit surface	24Vac	Resistive value ( $\Omega$ )
2□-L□A□□□ -AC			$R_1 = 130$ $R_2 = 470$
2□-L□B□□□ -AC			$R_1 = 130$ $R_2 = 470$
2□-L□C□□□ -AC			$R_1 = 130$ $R_2 = 470$

Note: : Indicates one LED lamp. LED lamp used: **YS4** Series and **YA4□-R** Series.  
The position of the resistors with respect to the LED lamp is approximate.  
Resistors at are attached to the body (housing) side.

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
Sunmulon brand : S2T-LCA24A

## HOW TO SELECT COLOR PLATES AND LED LAMP COLORS

Desired button color		Catalog listing/color of part to be selected	
Color when lamp is out	Color when lamp is lit	Color plate (base) color	LED lamp color
Milky white	Light amber	W: milky white	<b>YS□A</b> : Amber
	Light yellow		<b>YS□W</b> : Amber and green mixed color
	Light orange (high intensity)		<b>YS8AH</b> : High intensity red/green mixed color
	Light amber		<b>YA4A(-R)</b> : Amber AC lighting type ("R" type is induction erroneous lighting countermeasure lamp.)
	Light orange (high intensity)		<b>YF□□A□</b> : High intensity red/green mixed color midget flange base
	Light yellowish green		<b>YS□G</b> : Green
	Light yellowish green		<b>YA4G(-R)</b> : Green AC lighting type ("R" type is induction erroneous lighting countermeasure lamp.)
	Pink		<b>YS□R</b> : Red
Yellow	Lemon yellow	Y: yellow	<b>YS□G</b> : Green
	Yellow		<b>YS□W</b> : Amber/green mixed color
	Reddish yellow (high intensity)		<b>YS8AH</b> : High intensity red/green mixed color
	Lemon yellow		<b>YA4G(-R)</b> : Green AC lighting type ("R" type is induction erroneous lighting countermeasure lamp.)
	Reddish yellow (high intensity)		<b>YF□□A□</b> : High intensity red/green mixed color midget flange base
Orange	Orange	D: orange	<b>YS□A</b> : Amber
	Orange (high intensity)		<b>YS8AH</b> : High intensity red/green mixed color
	Orange		<b>YA4A(-R)</b> : Amber AC lighting type ("R" type is induction erroneous lighting countermeasure lamp.)
	Orange (high intensity)		<b>YF□□A□</b> : High intensity red/green mixed color, midget flange base
Green	Green	G: green	<b>YS□G</b> : Green
	Green (high intensity)		<b>YS8AH</b> : High intensity red/green mixed color
	Green		<b>YA4G(-R)</b> : Green AC lighting type ("R" type is induction erroneous lighting countermeasure lamp.)
Red	Red	R: red	<b>YS□R</b> : Red
	Red (high intensity)		<b>YS8AH</b> : High intensity red/green mixed color

**Note:** The display color is referenced to a peripheral LED-lit intensity of 1,000lux. When the LED-lit intensity changes, the hue when lit also changes.  
 indicates models that are used for improving brightness when incandescent lamp LED-lit is used as an LED lamp.

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

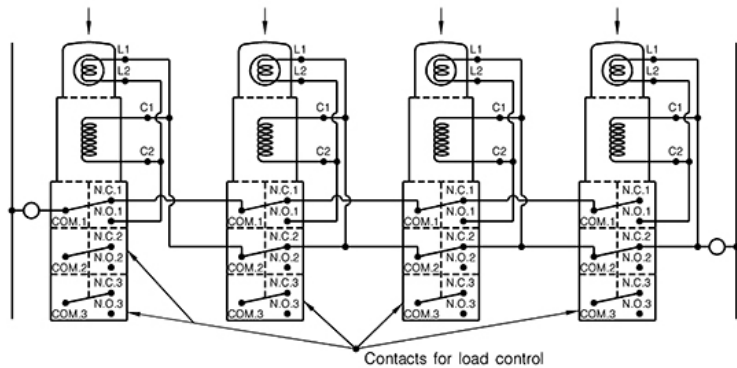
Yamatake-Honeywell brand : 2T-LCA24A  
**Sunmulon brand** : S2T-LCA24A

## HOLD-IN COIL AND UNIT (model No. 2P -J) APPLICATION CIRCUITS

The following applied circuits can be incorporated by fitting the hold-in coil unit into the **SERIES 2** operator/indicator (body).

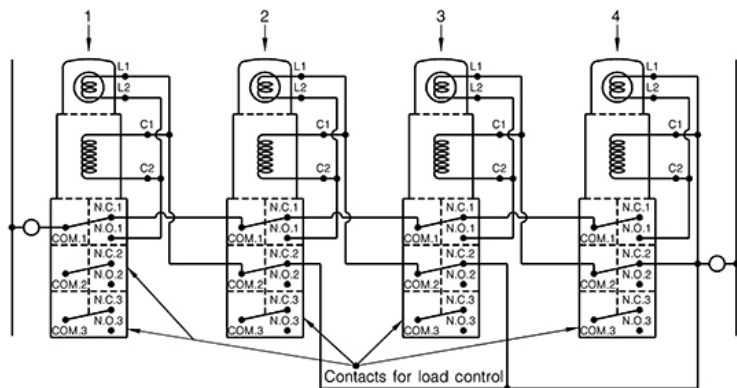
### • Random point selection circuit

- (1) The contact is held at the reversed position when any screen is pressed.
- (2) When any other point is pressed, the first pressed contact is returned to the free position, and the pressed-in contact is held.



### • Successive point selection circuit

- (1) The contact is held when the 1st screen is pressed.
- (2) When the 2nd screen is pressed, the 1st contact is canceled, and the 2nd contact is held. (Even if the screen is pressed with the order skipped, the previous unit is not canceled, and the pressed contact is not held.)
- (3) When the screen is pressed in order, any previous unit can be returned to.

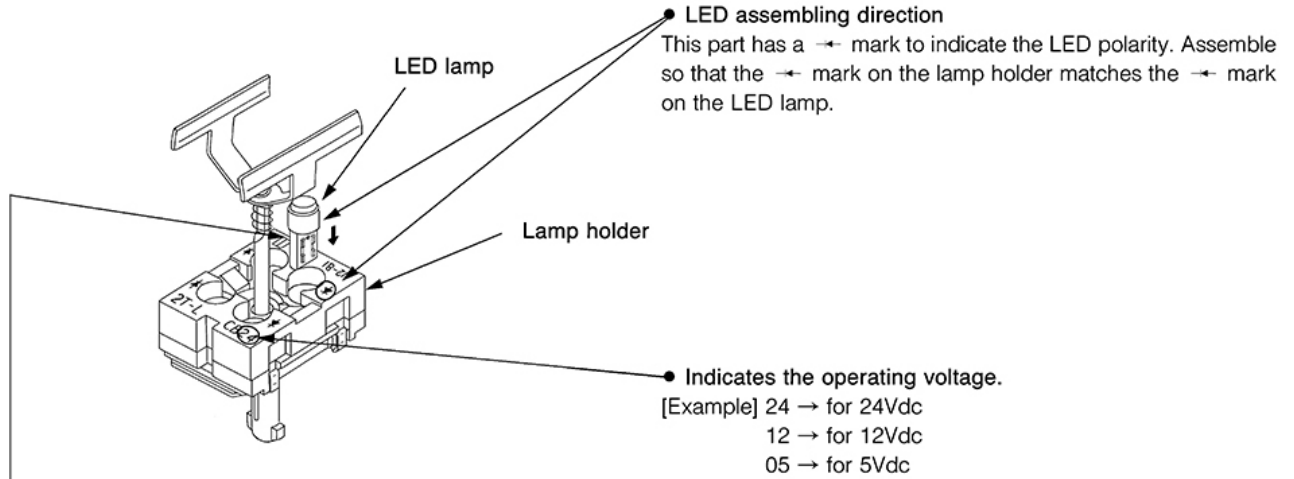


\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
 Sunmulon brand : S2T-LCA24A

## PRECAUTIONS UPON USE

- How to combine lamp holders and bodies
- DC lighting type

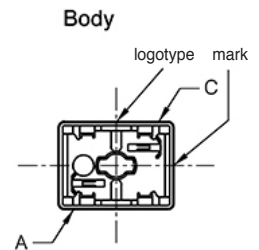


### Combining lamp holders and bodies

This part has a drawing (e.g. □) to indicate the section shape. Combine the lamp holder and body according to the following instruction.  
If the lamp holder and body are combined in the wrong way, abnormalities such as short circuits or excessive current to the LED may occur.

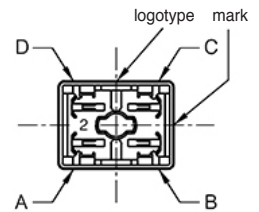
□ Single-section LED-lighting  
(excluding 2-color single-section LED-lighting)

Unmarked



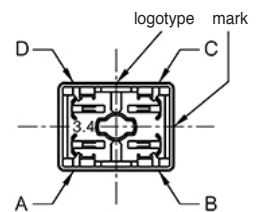
□ Lateral split 2-section  
□ Longitudinal split 2-section

2



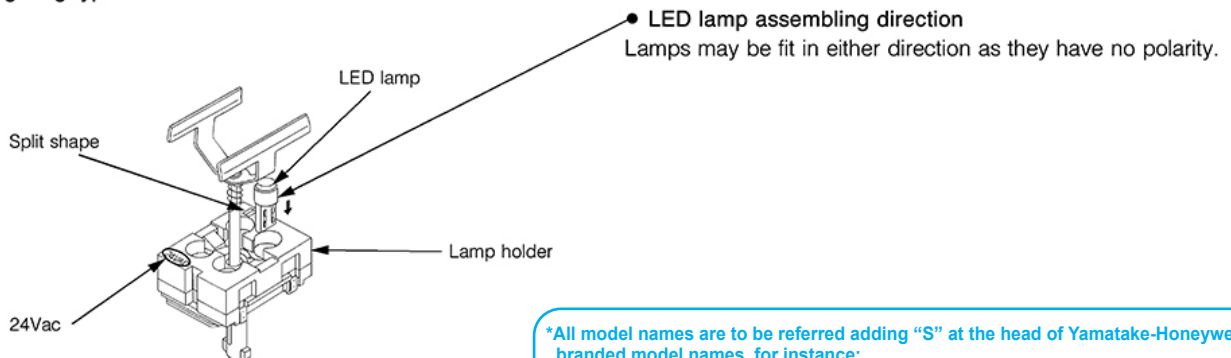
□ Lateral split 3-section  
□ Longitudinal split 3-section  
□ 4-section  
□ 2-color single-section LED-lighting (A, B)

3.4



**Note:** On 24Vdc system 3-section, 4-section, 2-color single-section LED-lit types, a countermeasure (protrusion on body side inner corner, and notch on opposite corner position on holder side) for preventing erroneous insertion is adopted to prevent insertion of holders for single-section and 2-section LED-lit types.

- AC lighting type



\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
Sunmulon brand : S2T-LCA24A

● Legend

The **SERIES 2** legend is performed by lettering, inscription, hot-stamping and film.

● Maximum number of letters in inscriptions

The maximum number letters of characters that can be inscribed in **SERIES 2** insert bases are as follows:

**Note 1:** The number of is calculated in the Modified Gothic typeface.  
 1-1. The standard character width (character other than the following and numbers) shall be 1.0.  
 1-2. M and W in the alphabet shall be 1.5, and D, H, N, O and Q shall be 1.33. Fractions shall be rounded up.

SERIES 2 Inscription Maximum Number of Characters																
Inscription area	Horizontal lettering								Vertical lettering							
	1		2		3		4		1		2		3		4	
Height of characters (mm)	Number of characters /line	Max. number of lines	Number of characters /line	Max. number of lines	Number of characters /line	Max. number of lines	Number of characters /line	Max. number of lines	Number of characters /line	Max. number of lines	Number of characters /line	Max. number of lines	Number of characters /line	Max. number of lines	Number of characters /line	Max. number of lines
2.8	9	3	4	3	9	1	4	1	6	5	3	5	6	2	3	2
3.5	7	3	3	3	7	1	3	1	5	4	2	4	5	2	2	2
5.0	5	2	2	2	5	1	2	1	3	3	1	3	3	1	1	1

Inscription area	Horizontal lettering				Vertical lettering			
	1	2	3	4	1	2	3	4
	Single section	Longitudinal split 2-section	Lateral split 2-section	3-section	4-section	Longitudinal split 2-section	3-section	4-section

● Assembling the hold-in coil (model No. 2P□-J)

This coil is inserted between the operator indicator (body) and the switch for use. If this switch is operated (pressed) after the coil is excited, the contact is held electrically in a reverse state obtained by the generated magnetic force, and the original state

is restored when coil excitation is canceled. The mounting direction of the hold-in coil can be rotated 90° so as to facilitate wiring.

● Handling of **SERIES 2**

Acrylic resin is used in formed parts (e.g. display screen). When wiping dirt off such parts, use a cloth moistened with neutral detergent. Avoid using paint thinner, acid or organic solvents. If flux flows or the mold is allowed to become deformed when soldering lead wires, the insulating resistance and dielectric strength may drop below specification.

Use the following as electrical leads for wiring the **SERIES 2**:  
 When wiring only one lead to one terminal: Twisted lead of 0.75mm<sup>2</sup> or less  
 When crossing over two leads to one terminal: Twisted lead of 0.5mm<sup>2</sup> or less

● The incandescent lamp-lit **SERIES 2** can be modified into an LED lamp.

The incandescent type **SERIES 2** currently in use can be modified into an LED lamp that has a longer life and that is maintenance-free. To do this, all you need do is to replace the incandescent type (model No. 327L) with the high-intensity type

LED lamp. The button, switch and wiring already in use need not be modified at all. Note, however, that the polarity must be checked when the lamp is replaced as the LED lamp has polarity.

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:  
 Yamatake-Honeywell brand : 2T-LCA24A  
 Sunmulon brand : S2T-LCA24A

Model No. of incandescent lamp in use	Replacement lamp catalog listing for LED transformation	Polarity	Lens color	Product indication	Circuit diagrams
<b>327L</b> (28V bulb) for 24Vdc	<b>YF24AA</b>	Positive	Achromatic transparent	F24□A	 R=1,000Ω
	<b>YF24GA</b>		Light green		
	<b>YF24RA</b>		Pink		
	<b>YF24AK</b>	Negative	Achromatic transparent	F24□K	 R=1,000Ω
	<b>YF24GK</b>		Light green		
	<b>YF24RK</b>		Pink		
<b>330L</b> (14V bulb) for 12Vdc	<b>YF12AA</b>	Positive	Achromatic transparent	F12□A	 R=240Ω
	<b>YF12AK</b>	Negative	Achromatic transparent	F12□K	 R=240Ω

### Cautions

#### (1) About LED lamp polarity

- Positive:  
Solder ball side of lamp is anode (plus).  
Base side of lamp is cathode (minus).
- Negative:  
Solder ball side of lamp is cathode (minus).  
Base side of lamp is anode (plus).

(2) When using 2-lamp unit for a incandescent lamp type single-section lighting type, the lamp can be modified into an LED by merely replacing the lamp. However, an even brighter LED can be obtained by adding the following parts. At this time, replace the base of the button currently in use with the following base/color plate, and use the legend plate and cap as they are.

- **2V56-J** (base)
  - **2V-L1**□ (color plate)
- ↓
- Color plate color:
- R**: red
  - Y**: yellow
  - G**: green
  - W**: milky white
  - D**: orange

**Note:** If the similar shape reflective base (model No. **2V55-J**) packaged with units for LED-lit types is used, the base will interfere with the LED lamp, and will cause defective switch operation and restoration.

#### Combination of button colors and LED lamps

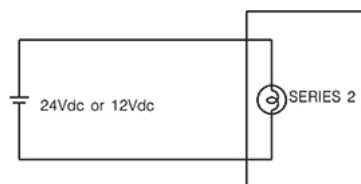
Button color		Catalog listing of combined LED lamp			
Color when out	Color when lit	Positive		Negative	
		For 12Vdc	For 24Vdc	For 12Vdc	For 24Vdc
Red	Red	<b>YF12AA</b>	<b>YF24AA</b>	<b>YF12AK</b>	<b>YF24AK - YF24RK</b>
Yellow	Yellow	<b>YF12AA</b>	<b>YF24AA</b>	<b>YF12AK</b>	<b>YF24AK</b>
Green	Green	<b>YF12AA</b>	<b>YF24AA</b>	<b>YF12AK</b>	<b>YF24AK - YF24GK</b>
Orange	Orange	<b>YF12AA</b>	<b>YF24AA</b>	<b>YF12AK</b>	<b>YF24AK</b>
Milky white	Amber	<b>YF12AA</b>	<b>YF24AA</b>	<b>YF12AK</b>	<b>YF24AK</b>
	Pink		<b>YF24RA</b>		<b>YF24RK</b>
	Green		<b>YF24GA</b>		<b>YF24GK</b>

When modifying a incandescent lamp into an LED lamp, the lamp can sometimes be modified merely by replacing the lamp as it is, and sometimes slight circuit modifications are required depending on the drive circuit of the incandescent lamp.

Refer to the following examples and take the appropriate action. The following diagrams show a circuit for a single incandescent lamp.

#### 1. Cases where lamp can be modified into an LED without any problem merely by replacing the lamp

(1) When driven by a 24Vdc or 12Vdc battery power supply:

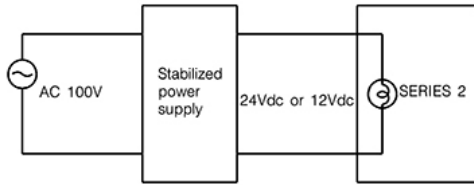


On a **SERIES 2** that is driven directly by a battery as shown in the figure on the left, merely replacing the incandescent lamp such as a **327L** with a high-intensity LED lamp such as a **YF24AA** poses no problems.

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
Sunmulon brand : S2T-LCA24A

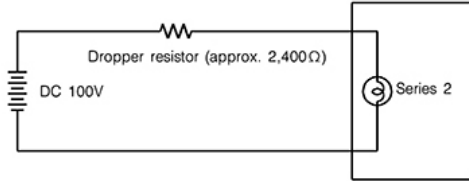
(2) When driven by 24Vdc or 12Vdc by a stabilized power supply:



On a **SERIES 2** that is driven directly by a stabilized power supply as shown in the figure on the left, merely replacing the incandescent lamp such as a **327L** with a high-intensity LED lamp such as a **YF24AA** poses no problems.

## 2. Cases when problems occur by simply replacing the lamp

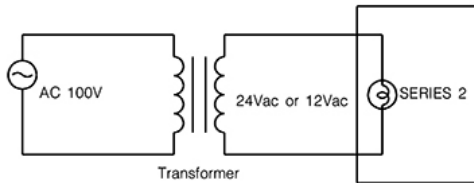
(1) When driven by a 100Vdc power supply via a dropper resistor:



On a **SERIES 2** that is driven via a dropper resistor as shown in the figure on the left, the current consumption of the incandescent lamp and the LED lamp differs. For this reason, when the lamp is simply replaced, excessive current flows to the LED lamp which will destroy the LED lamp.

Countermeasure: Change the resistance value of the dropper resistor to a value matched to the LED lamp.  
Approx. 2,400Ω → approx. 6,200Ω (per lamp, when a 24Vdc LED lamp is used)

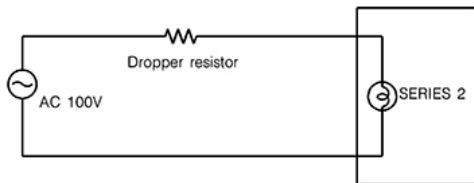
(2) When driven directly by 24Vac or 12Vac power supply:



On a **SERIES 2** driven directly by an AC power supply as shown in the figure on the left, LED lamp damage does not occur. However, flickering (conspicuous in the 50Hz area) synchronized to the power frequency occurs. The intensity of the indicator surface also drops in proportion to DC lighting.

Countermeasure: Insert a bridge in the power circuit to drive by full-wave rectification.

(3) When driven by a 100Vac power supply via a dropper resistor:



On a **SERIES 2** that is driven by 100Vac via a dropper resistor as shown in the figure on the left, the current consumption of the incandescent lamp and the LED lamp differ. For this reason, when the lamp is simply replaced, excessive current flows to the LED lamp which will destroy the LED lamp. The intensity of the indicator surface also drops in proportion to DC lighting.

Countermeasure: Change the resistance value of the dropper resistor to a value matched to the LED lamp, insert a bridge circuit, and drive by full-wave rectification.

\*All model names are to be referred adding "S" at the head of Yamatake-Honeywell branded model names, for instance:

Yamatake-Honeywell brand : 2T-LCA24A  
Sunmulon brand : S2T-LCA24A