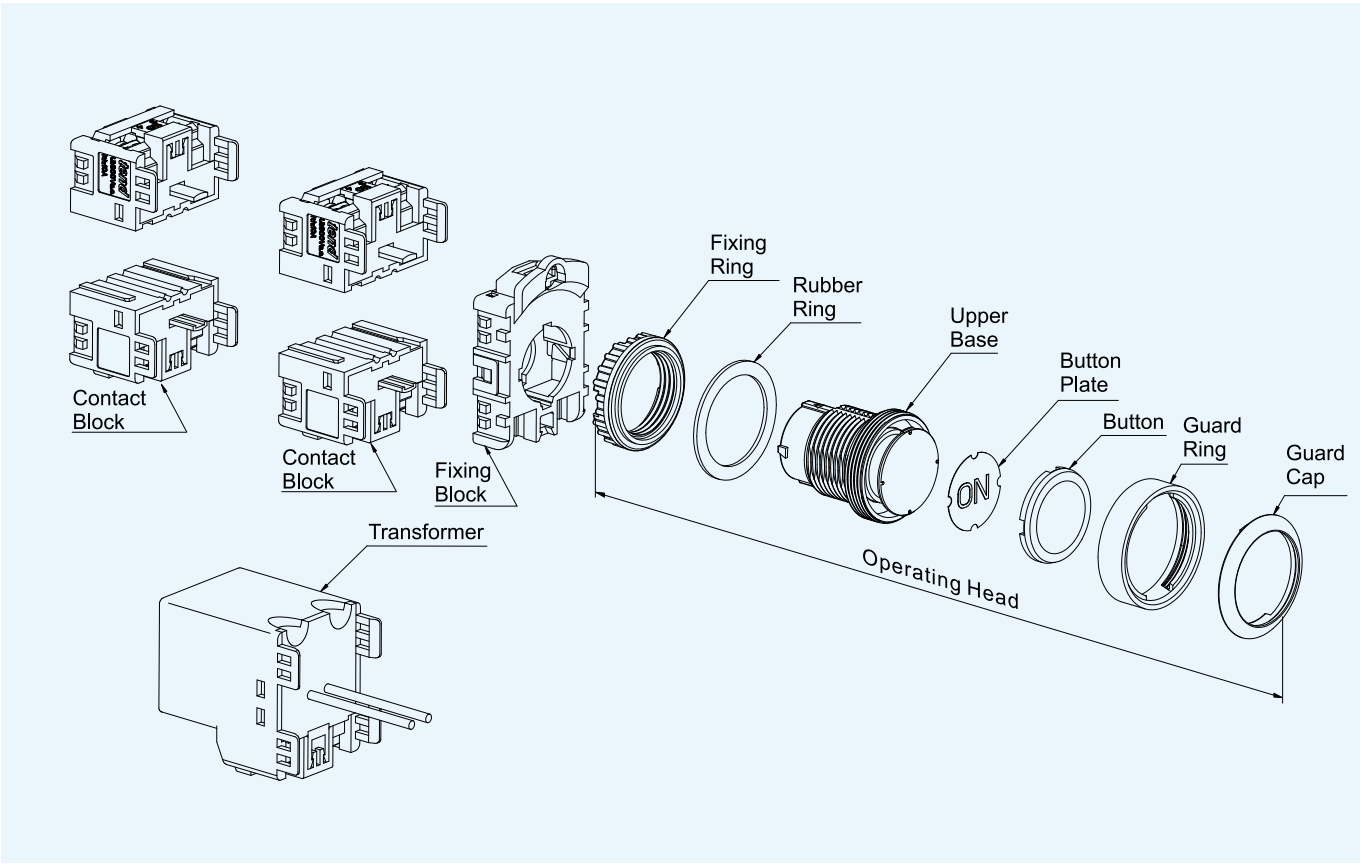


tend TN2 Ø22/Ø25/Ø30 SERIES CONTROL COMPONENTS **TN2**

- The operating head and contact block of TN2 series are detachable. The protection structure for this series is IP65(ICE144) for waterproof, oil ting and bust proof in harsh environment except twin-touch push button and illuminated push button switches are IP40.
- Available in both UL and non-UL type.

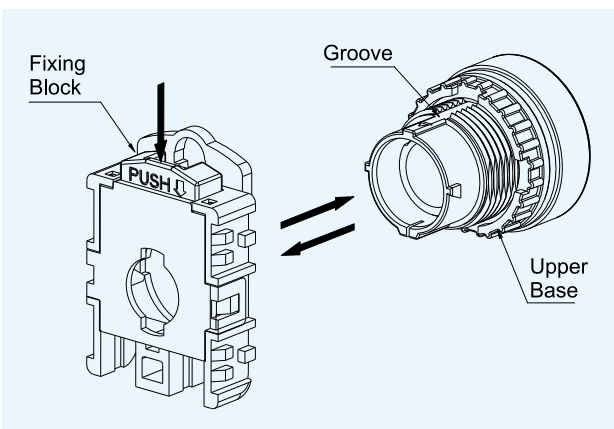
■ CONFIGURATION OF SWITCHES



■ FEATURES

TN2 series switches are detachable in 3 sub-assembly. It consists of upper base, fixing block and contact block.

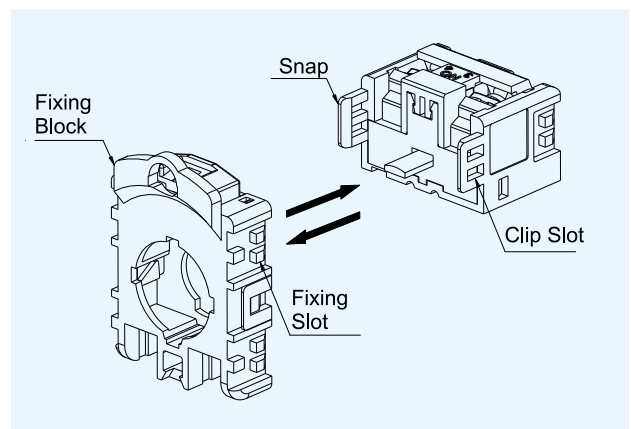
- Assembly and disassembly of fixing block with upper base



Assembly: Align the hole on top of fixing block with groove on the upper base and push them together.

Disassembly: Place downward by hand or use flat screwdriver to push down the orange button thru the hole on top of fixing block

- Assembly and disassembly of fixing block with contact block

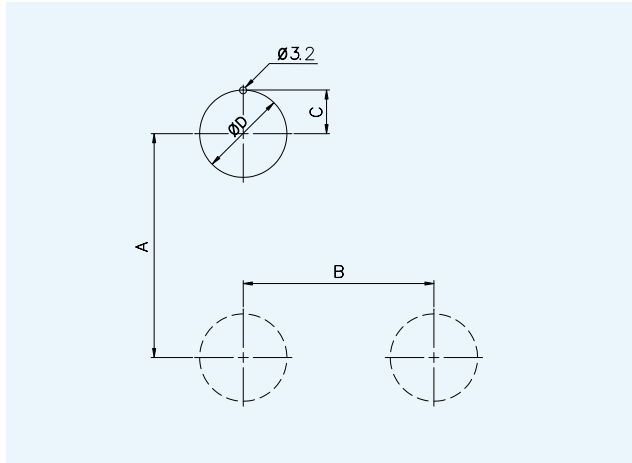


Assembly: Align the fixing slot on the fixing block to clip slot on contact block.

Disassembly: Use flat screwdriver toward fixing slot to lift up clip and snap for disassembly.

PANEL CUT-OUT

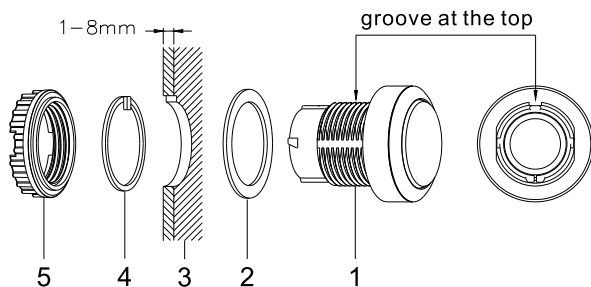
Ø22/Ø25/Ø30 Series



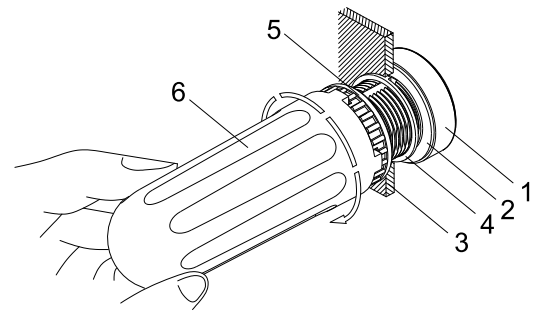
DIMENSIONS (mm)

Series		Ø22	Ø25	Ø30
A	All types except Twin-touch & Joystick	50min.		
	Twin-Touch	60min.		
	Joystick	90min.		
B	Light push button & selector	31	31	35
	With name plate	41min.		
	Mushroom, Push-Lock, Long & Lever Selector, Twin-touch	39min.		
	Joystick	90min.		
C	All types	11.2	12.7	15.2
D	All types	22.4	25.4	30.4

MOUNTING METHOD



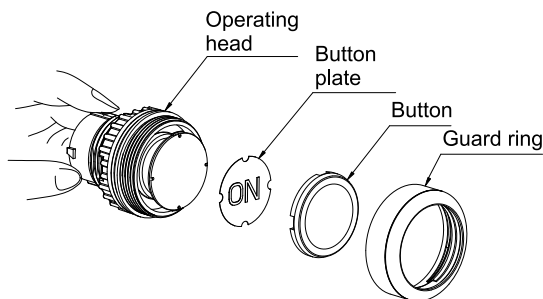
1	2	3	4	5	6
Operating head	Rubber ring	Panel	Stop ring	Fixing ring	Fixing tool



- Install the operating head and rubber ring through the front panel and tighten fixing ring with fixing tool

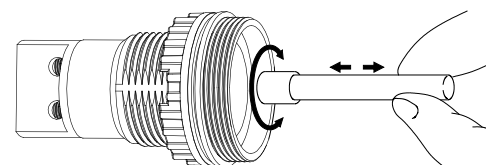
INDICATION OF LETTERS AND SYMBOLS

Transparent printing paper (types:seeTA86)

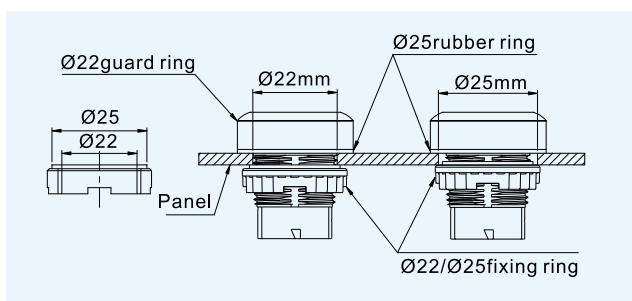


METHOD TO REPLACE LAMP

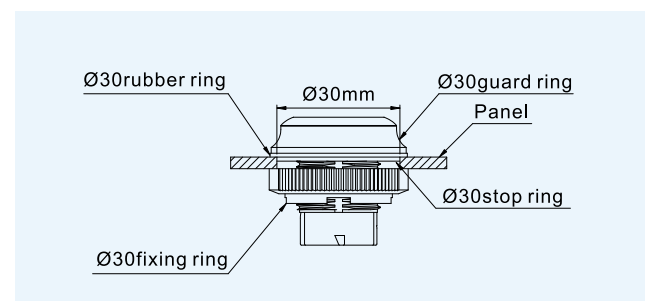
Disassembly fixing block from operating read and turn the lamp



Ø22MM/Ø25MM SERIES ARE THE SAME DIMENSIONS WITH COMMON FIXING RING.



● THE ASSEMBLY METHOD FOR Ø30 SERIES



TYPES OF FIXING BLOCK

There are three different types of fixing blocks.

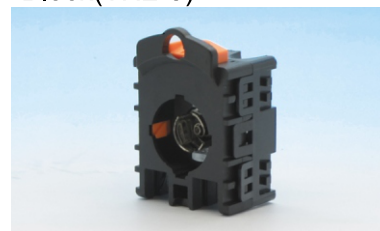
Standard Fixing Block(TN2-1)



Direct Fixing Block(TN2-2)



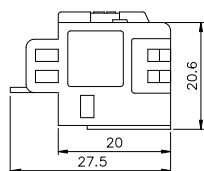
Transformer type Fixing Block(TN2-3)



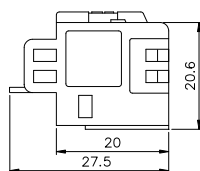
TYPES OF CONTACT BLOCK AND EXTENTION OF CONTACT BLOCK

There are 1a(1NO) 、1b(1NC) and 1c(1NO 、1NC).

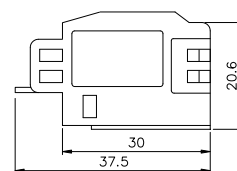
TN2-A(1a)



TN2-B(1b)



TN2-C(1c)

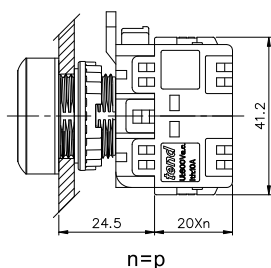


CONTACT BLOCKS CAN HAVE THE FOLLOWING 3 STYLES. IT DEPENDS ON THE FIXING BLOCKS

1. Stand contact block: standard fixing block with contact block. It can be extended to 4c (or 8a or 8b) used in non-illuminated products.
2. Direct contact block: direct fixing block with contact block. It can be extended to 4c(or 8a or 8b) used in illuminated products.
3. Transformer type contact block: transformer type fixing block with contact block. It can be extended to 2c (or 4a or 4b) used in transformer in illuminated products.

DIMENSIONS OF STAND CONTACT BLOCK

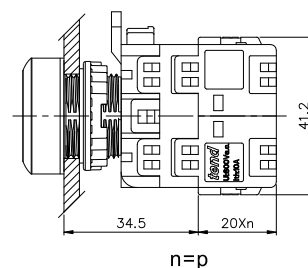
TN2-1a~TN2-8a
TN2-1b~TN2-8b



n=p

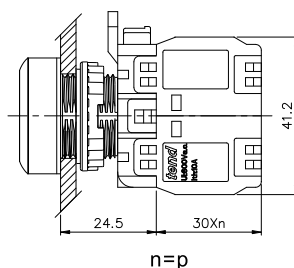
DIMENSIONS OF DIRECT CONTACT CONTACT BLOCK

TN2-I1a~TN2-I8a
Tn2-I1b~TN2-I8b



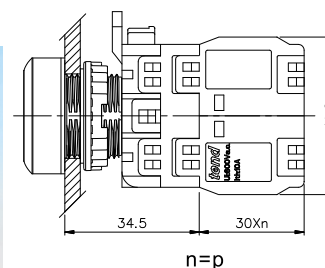
n=p

TN2-1c~TN2-4c



n=p

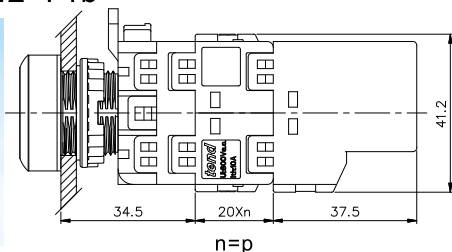
Tn2-I1c~TN2-I4c



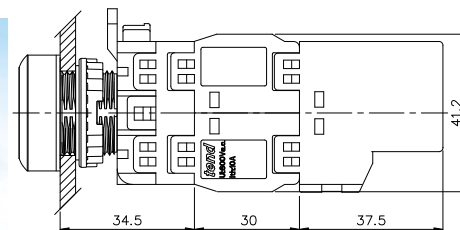
n=p

DIMENSIONS OF TRANSFORMER TYPE OF CONTACT BLOCK

TN2-T1a~TN2-T4a.TN2-T1ab
TN2-T1b~TN2-T4b



TN2-T2c



CONTACT RATING

AC	AC11	AC24V	AC110V	AC220V	AC380V	AC440V	DC	DC11	DC24V	DC110V	DC220V	DC380V
	Inductive load	10A	6A	4A	2.5A	2A		Inductive load	1.5A	0.5A	0.2A	0.1A
	Resistive load	10A	10A	6A	5A	4A		DC14 Resistive load	10A	2A	0.6A	0.2A

CHARACTERISTICS

Operating frequency	Mechanically	Push button(momentary) 60 cycles / min., Others 30 cycles / min.
	Electrically	30 cycles / min
Service life	mechanically	Push button(momentary)3,000,000 operations., Others 300,000 operations.
	Electrically	Push button(momentary)500,000 operations., Others 200,000 operations.
Shock	Durability	Tans former series 600m/s ² ., others 1000m/s ²
	Malfunction	Push button(momentary)1000m/s ² ., others 250m/s ²
Vibration	Malfunction	10~55Hz double amplitude 1.5mm
Contact resistance	50mΩ max. (Initial value)	
Insulation resistance	100MΩ min.(500VDC)	
Dielectric strength	2500VAC,50/60 HZ for 1minute	
Ambient temperature	-20°C~+60°C	
Humidity	45~85%RH	

STANDARD CONTACT BLOCKS

Type	TN2-1A	TN2-1B	TN2-1C	TN2-2A	TN2-2B	TN2-2C
Contact	1a	1b	1a1b	2a	2b	2a2b
Contact Arrangement						

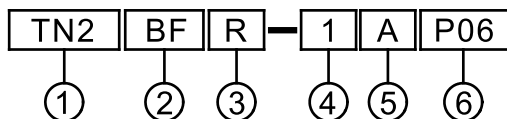
Type	TN2-3A	TN2-3B	TN2-3C	TN2-4A	TN2-4B	TN2-4C
Contact	3a	3b	3a3b	4a	4b	4a4b
Contact Arrangement						

tend PUSH BUTTON SWITCH(TN2 Ø22/Ø25/Ø30)

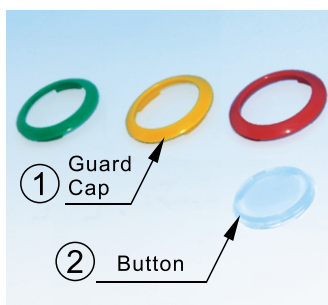
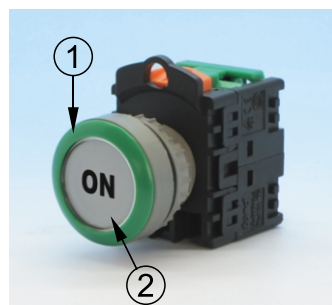
TN2

The contact block of this series is standard see page TA69,70 for contact arrangement and dimensions. Twin touch type can only used with AB contact.

MODEL DESIGNATION



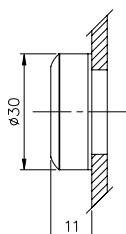
It must use transparent button to have marking printing on buttons. The colours can be distinguished by using different colour guard ring.



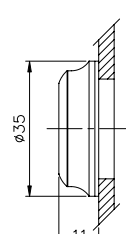
Designation	Signal	Description
1.Mounting Hole	TN2 TN3	Ø22mm/Ø25mm Ø30mm
2.Type	BF BL BM BA BK BP BT	Flat Long head Mushroom head Long head(alternate) Push-lock Push-pull Twin-touch
3.Lens Color	R G Y W BL B	Red Green Yellow White Blue (only available with lettering) Black
4.No. of Contacts Fitted	1 2 3 4	1 2 3 4
5.Type of contact Block Fitted	A B C AB	1a 1b 1a1b 1a+1b
6.Lettering	00 P01~P43 M01~M22	NO Lettering See TA86 TPP See TA86 TPM

OPERATING HEADS DIMENSIONS

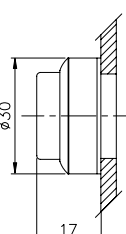
TN2BF



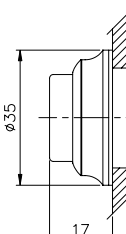
TN3BF



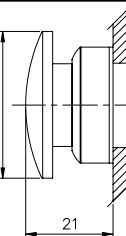
TN2BL



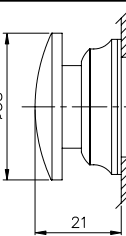
TN3BL



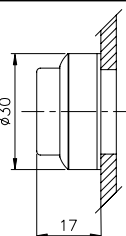
TN2BM



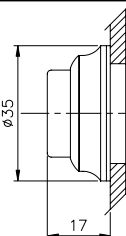
TN3BM



TN2BA



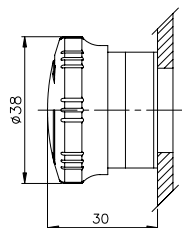
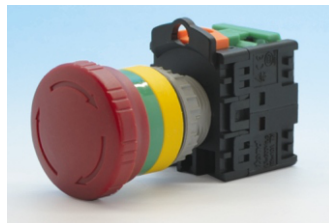
TN3BA



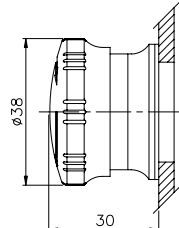
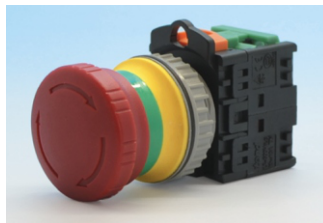
tend PUSH BUTTON SWITCH(TN2 Ø22/Ø25/Ø30)

TN2

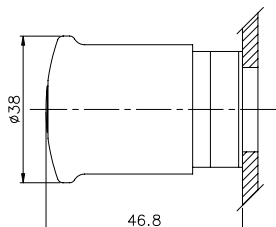
TN2BK



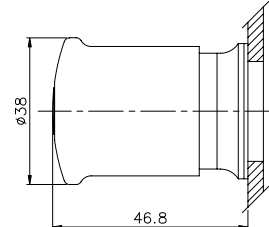
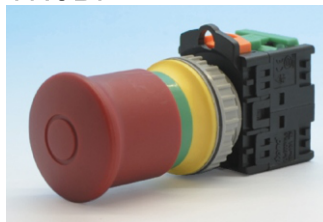
TN3BK



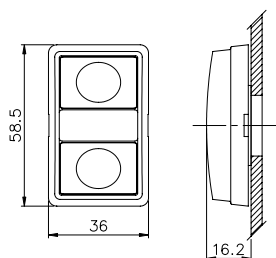
TN2BP



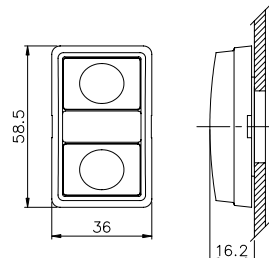
TN3BP



TN2BT



TN3BT



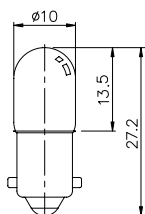
BULB TYPE AND CHARACTERISTICS

BA9S-11*28mm-1.2 W max

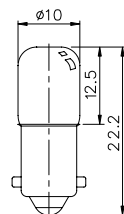
Lamp	Signal	Rated Voltage	Signal	Operating voltage	Rated current	Color code	Signal	Designation
Incandescent	I	6V AC/DC	6	6V AC/DC	150mA	None	None	I-6
		12V AC/DC	12	12V AC/DC	100mA			
		18V AC/DC	18	18V AC/DC	66mA			
		24V AC/DC	24	24V AC/DC	50mA			
		30V AC/DC	30	30V AC/DC	40mA			
Neon Bulb	N	110V AC	110	110V AC	1.3mA	Red Green Blue	R G BL	N-110 R
		220V AC	220	220V AC	2.2mA			
		380V AC	380	380V AC	1.15mA			
		440V AC	440	440V AC	1.4mA			
LED Bulb	L	6V AC/DC	6	6V AC/DC	9~13mA	Red Blue Green White Orange	R BL G W O	L-24 R
		12V AC/DC	12	12V AC/DC	9~13mA			
		24V AC/DC	24	24V AC/DC	8~13mA			
		30V AC/DC	30	30V AC/DC	8~13mA			
		110V AC	110	110V AC	3~5mA			
		220V AC	220	220V AC	3~5mA			

DIMENSIONS OF BULB

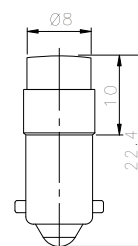
● Incandescent



● Neon Bulb



● LED Bulb

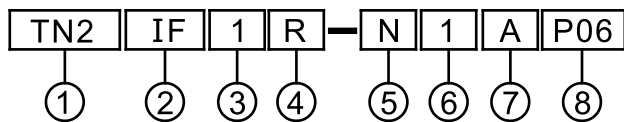


tend ILLUMINATED PUSH BUTTON (TN2 Ø22/Ø25/Ø30 DIRECT POWER)

TN2

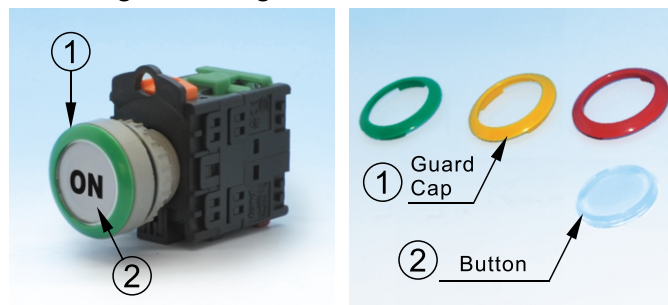
The contact block for this series is direct contact block. Twin touch can only used with AB contact.

MODEL DESIGNATION



Designation	Signal	Description
1. Mounting Hole	TN2	Ø22mm/Ø25mm
	TN3	Ø30mm
2.Type	IF	Flat head
	IL	Long head
	IM	Mushroom head
	IA	Long head (alternate)
	IT	Push-lock
	IT	Twin-touch ▲

It must use transparent button to have marking printing on buttons. The colours can be distinguished by using different colour guard ring.

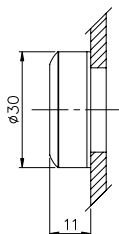


Designation	Signal	Description
3. Voltage	1	110VAC (Neon .LED Bulb)
	2	220VAC (Neon .LED Bulb)
	3	380VAC (Neon Bulb)
	4	440VAC (Neon Bulb)
	5	6VAC/DC (Incandescent, LED Bulb)
	6	18VAC/DC (Incandescent)
	7	24VAC/DC (Incandescent, LED Bulb)
	8	30VAC/DC (Incandescent, LED Bulb)
	9	12VAC/DC (Incandescent, LED Bulb)
4. Lens Color	R	Red
	G	Green
	O	Orange
	W	White
	BL	Blue
	C	Transparent(First-eight vote)
5.Lamp	I	Incandescent
	N	Neon bulb
	L	LED bulb
6.No. Of Contacts Fitted	1	1
	2	2
	3	3
	4	4
7.Type of contact block fitted	A	1a
	B	1b
	C	1a1b
	AB	1a+1b
8.Lettering	00	No lettering
	P01~P43 M01~M22	See TA 86 TPP See TA 86 TPM

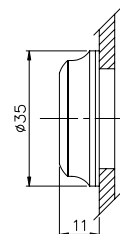
▲ Only used with ab contact

OPERATING HEAD DIMENSIONS

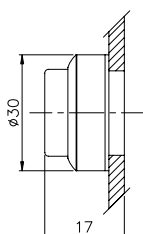
TN2IF



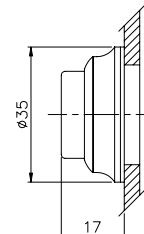
TN3IF



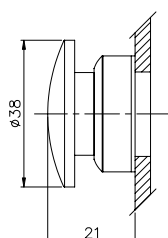
TN2IL



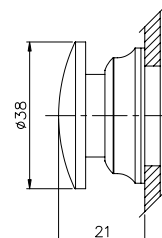
TN3IL



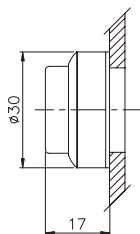
TN2IM



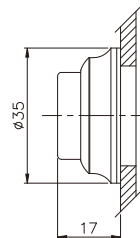
TN3IM



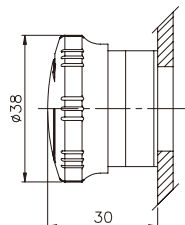
TN2IA



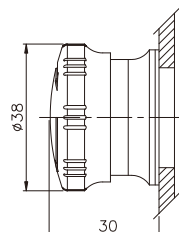
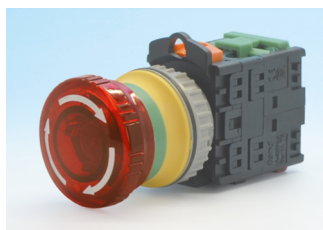
TN3IA



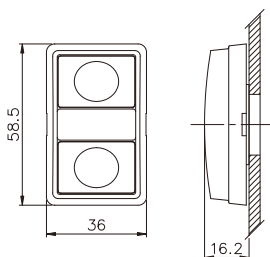
TN2IK



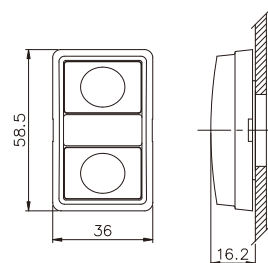
TN3IK



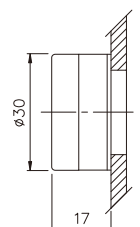
TN2IT



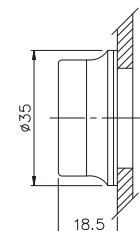
TN3IT



TN2IC



TN3IC



ILLUMINATED PUSH BUTTON(DIRECT POWER)CONTACT BLOCKS

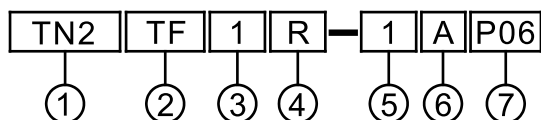
Type	TN2-I1A	TN2-I1B	TN2-I1C	TN2-I2A	TN2-I2B	TN2-I2C
Contact	1a	1b	1a1b	2a	2b	2a2b
Contact Arrangement						
Type	TN2-I3A	TN2-I3B	TN2-I3C	TN2-I4A	TN2-I4B	TN2-I4C
Contact	3a	3b	3a3b	4a	4b	4a4b
Contact Arrangement						

tend ILLUMINATED PUSH BUTTON (Tn2 Ø22/Ø25/Ø30 WITH TRANSFORMER)

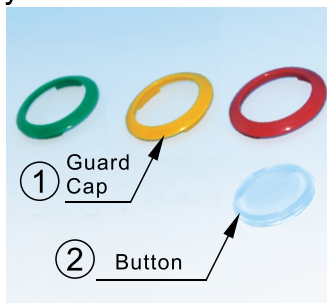
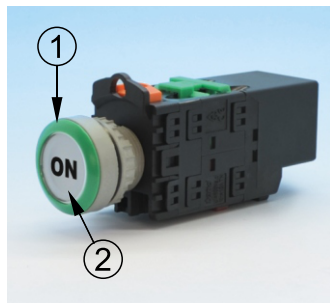
TN2

This series of switches come with built in transformer. The secondary voltage of 5V is used with a 6V incandescent lamp. SeeTA72. Twin touch type can only used with AB contact. Cannot use 1C contact.

MODEL DESIGNATION



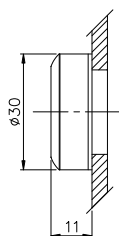
It must use transparent button to have marking printing on buttons. The colours can be distinguished by using different colour guard ring. Limit the crew cut and convex heads sincerely.



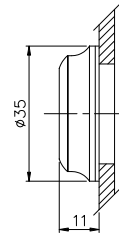
Designation	Signal	Description
1. Mounting hole	TN2 TN3	Ø22mm/Ø25mm Ø30mm
2.Type	TF TL TM TA TK TT	Flat Head Long Head Mushroom Head Long Head (alternate) Push-Lock Twin-Touch
3. Voltage	1 2 3 4	110VAC 220VAC 380VAC 440VAC
4. Lens Color	R G O W BL	Red Green Orange White Blue
5.NO. of Contacts Fitted	1 2	1 2
6.Type of Contact Block Fitted	A B C AB	1a 1b 1a1b(僅限2C,1C不可裝配) 1a+1b
7.Lettering	00 P01~P43 M01~M22	No lettering See TA 86 TPP See TA 86 TPM

OPERATING HEADS DIMENSIONS

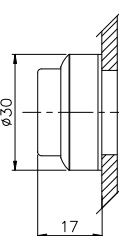
TN2TF



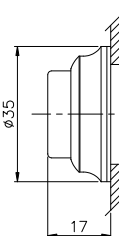
TN3TF



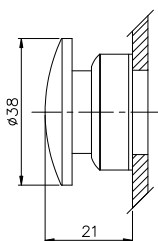
TN2TL



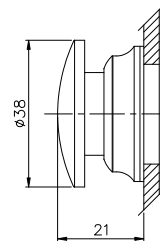
TN3TL



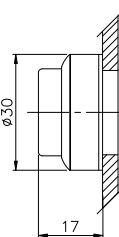
TN2TM



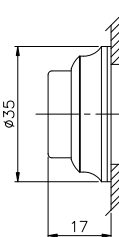
TN3TM



TN2TA



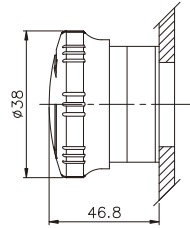
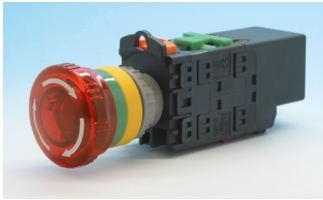
TN3TA



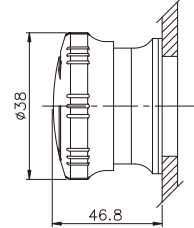
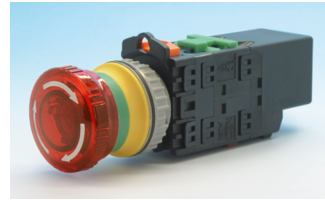
tend ILLUMINATED PUSH BUTTON (Tn2 Ø22/Ø25/Ø30 WITH TRANSFORMER)

TN2

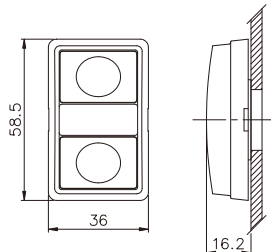
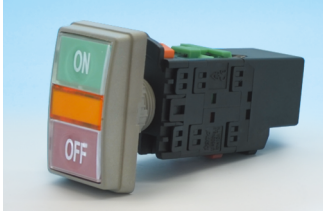
TN2TK



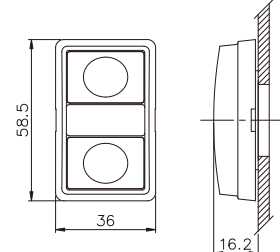
TN3TK



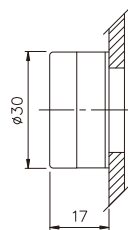
TN2TT



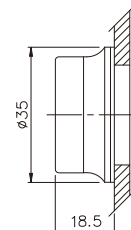
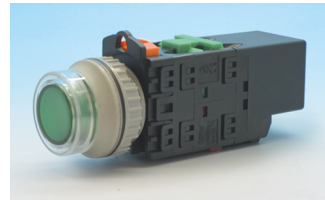
TN3TT



TN2TC



TN3TC



ILLUMINATED PUSH BUTTON CONTACT BLOCKS (WITH TRANSFORMER)DIMENSIONS

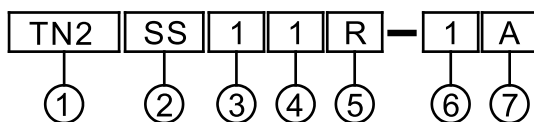
Type	TN2-T1A	TN2-T1B	TN2-T1AB	TN2-T2A	TN2-T2B	TN2-T2C
Contact	1a	1b	1a+1b	2a	2b	2a2b
Contact Arrangement						

tend SELECTOR SWITCH(TN2 Ø22/Ø25/Ø30)

TN2

The contact block of this series of switches standard see page TA69 3for assembly dimension .2positions contact block arrange, 1c contact arrangement for 2 positions is 1a1b, aa contact block arrangement for 3positions is 1a+1a(2a)

MODEL DESIGNATION



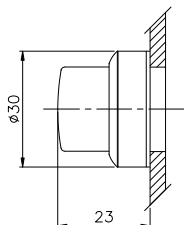
Designation	Signal	Description
1. Mounting hole	TN2 TN3	Ø22mm/Ø25mm Ø30mm
2.Type	SS SH KS	Knob operator Lever operator Key operator
3. Positions	1	90° X2 3-poerator
	2	90° 2-poerator
	3	90° 2-poerator spring return from right
	4	45° X2 3-poerator
	5	45° X2 3-poerator spring return from right
	6	45° X2 3-poerator spring return from left
	7	45° X2 3-poerator 2-way spring return

Designation	Signal	Description
4.Key Withdrawable	1	0 - 1 key with-drawable
	2	0 key with-drawable
	3	2-poerator 1 key with-drawable
	4	0 - 1 - 2 key with-drawable
	5	3-poerator 0 key with-drawable
	6	0 - 1 - 2 key with-drawable
	7	3-poerator 0 key with-drawable
5.Lens Color	R G B	Red Green Black
6.NO. of Contacts Fitted	1 2 3 4	1 2 3 4
7.Type of Contact Block Fitted		2-poerator 3-poerator
	A	1a
	B	1b
	C	1a1b
	AB	1a+1b
	AA	1a + 1a(2a)

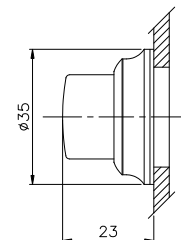
3-Position is limited to use AA contact block.

OPERATING HEADS DIMENSIONS

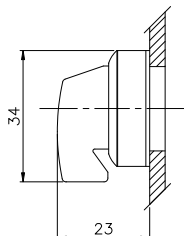
TN2SS



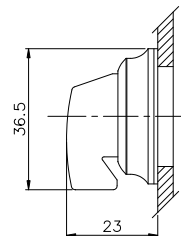
TN3SS



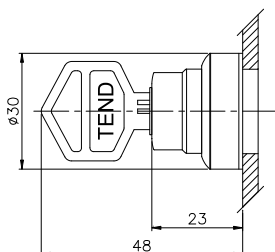
TN2SH



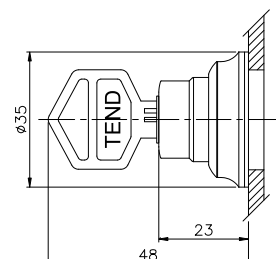
TN3SH



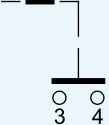
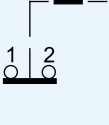
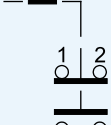
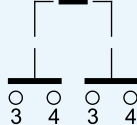
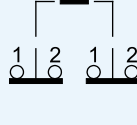
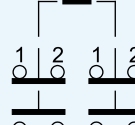
TN2KS



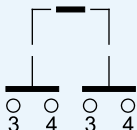
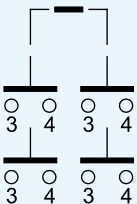
TN3KS



SELECTOR SWITCH 2-POSITION CONTACT ARRANGEMENT

Type	TN2-1A	TN2-1B	TN2-1C	TN2-2A	TN2-2B	TN2-2C																																																						
Contact	1a	1b	1a1b	2a	2b	2a2b																																																						
Contact Arrangement																																																												
	<table><tr><td>Contact</td><td>0</td><td>1</td></tr><tr><td>3-4</td><td></td><td>X</td></tr></table>	Contact	0	1	3-4		X	<table><tr><td>Contact</td><td>0</td><td>1</td></tr><tr><td>1-2</td><td>X</td><td></td></tr></table>	Contact	0	1	1-2	X		<table><tr><td>Contact</td><td>0</td><td>1</td></tr><tr><td>1-2</td><td>X</td><td></td></tr><tr><td>3-4</td><td></td><td>X</td></tr></table>	Contact	0	1	1-2	X		3-4		X	<table><tr><td>Contact</td><td>0</td><td>1</td></tr><tr><td>3-4</td><td></td><td>X</td></tr><tr><td>3-4</td><td></td><td>X</td></tr></table>	Contact	0	1	3-4		X	3-4		X	<table><tr><td>Contact</td><td>0</td><td>1</td></tr><tr><td>1-2</td><td>X</td><td></td></tr><tr><td>1-2</td><td>X</td><td></td></tr></table>	Contact	0	1	1-2	X		1-2	X		<table><tr><td>Contact</td><td>0</td><td>1</td></tr><tr><td>1-2</td><td>X</td><td></td></tr><tr><td>3-4</td><td>X</td><td></td></tr><tr><td>1-2</td><td></td><td>X</td></tr><tr><td>3-4</td><td></td><td>X</td></tr></table>	Contact	0	1	1-2	X		3-4	X		1-2		X	3-4		X
	Contact	0	1																																																									
3-4		X																																																										
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3-4	X																																																											
1-2		X																																																										
3-4		X																																																										

SELECTOR SWITCH 3-POSITION CONTACT ARRANGEMENT

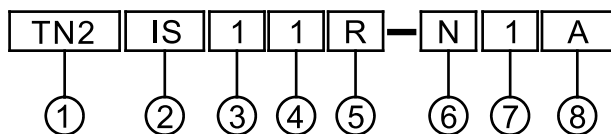
Type	TN2-1AA	TN2-2AA																																
Contact	1a 0 1a	2a 0 2a																																
Contact Arrangement	 <table border="1" data-bbox="607 1872 810 2004"><thead><tr><th>Contact</th><th>1</th><th>0</th><th>2</th></tr></thead><tbody><tr><td>3-4</td><td>X</td><td></td><td></td></tr><tr><td>3-4</td><td></td><td></td><td>X</td></tr></tbody></table>	Contact	1	0	2	3-4	X			3-4			X	 <table border="1" data-bbox="1205 1872 1406 2004"><thead><tr><th>Contact</th><th>1</th><th>0</th><th>2</th></tr></thead><tbody><tr><td>3-4</td><td>X</td><td></td><td></td></tr><tr><td>3-4</td><td>X</td><td></td><td></td></tr><tr><td>3-4</td><td></td><td></td><td>X</td></tr><tr><td>3-4</td><td></td><td></td><td>X</td></tr></tbody></table>	Contact	1	0	2	3-4	X			3-4	X			3-4			X	3-4			X
	Contact	1	0	2																														
3-4	X																																	
3-4			X																															
Contact	1	0	2																															
3-4	X																																	
3-4	X																																	
3-4			X																															
3-4			X																															

tend ILLUMINATED PUSH BUTTON (TN2 Ø22/Ø25/Ø30)

TN2

The contact block used in this type of switch is a direct type .see page TA69 for assembly dimension. The type and specification of bulb used are the same as those for direct type illuminated push button switch. See TA72 Position contact block arrangement AA contact block arrangement for 2 positions is 1a1b. 1c contact block arrangement for 3 positions is 1a+1a(2a)

MODEL DESIGNATION



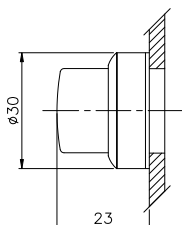
Designation	Signal	Description
1. Mounting Hole	TN2 TN3	Ø22mm/Ø25mm Ø30mm
2.Type	IS IH	Knob operator Lever operator
3. Positions	1	 90°X2 3-position
	2	 90° 2-position
	3	 90° 2-position spring return from right
	4	 45°X2 3-position
	5	 45°X2 3-position spring return from right
	6	 45°X2 3-position spring return from left
	7	 45°X2 3-position 2-way spring return

Designation	Signal	Description	
4.Voltage	1	110VAC (Neon .LED Bulb)	
	2	220VAC (Neon .LED Bulb)	
	3	380VAC (Neon Bulb)	
	4	440VAC (Neon Bulb)	
	5	6VAC/DC (Incandescent. LED Bulb)	
	6	18VAC/DC (Incandescent)	
	7	24VAC/DC (Incandescent. LED Bulb)	
	8	30VAC/DC (Incandescent. LED Bulb)	
	9	12VAC/DC (Incandescent. LED Bulb)	
5.Lens Color	R	Red	
	G	Green	
	O	Orange	
	W	White	
	BL	Black	
6.Lamp	I	Incandescent	
	N	Neon bulb	
	L	Led bulb	
6.NO. of Contacts Fitted	1	1	
	2	2	
	3	3	
	4	4	
7.Type of Contact Block Fitted	A B C AB AA	2-position	3-position
		1a	——
		1b	——
		1a1b	——
		1a+1b	——
		——	1a + 1a(2a)

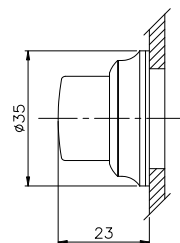
3-Position is limited to use AA contact block.

OPERATING HEADS DIMENSIONS

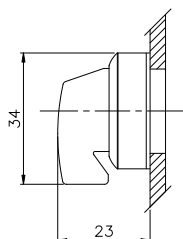
TN2IS



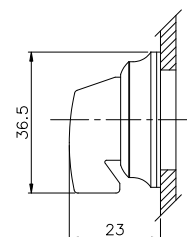
TN3IS



TN2IH



TN3IH

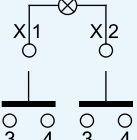
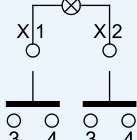


tend ILLUMINATED SELECTOR SWITCH (TN2 Ø22/Ø25/Ø30) TN2

ILLUMINATED SELECTOR SWITCH (DIRECT POWER) 2-POSITION CONTACT ARRANGEMENT

Type	TN2-I1A	TN2-I1B	TN2-I1C	TN2-I2A	TN2-I2B	TN2-I2C																																													
Contact	1a	1b	1a1b	2a	2b	2a2b																																													
Contact Arrangement																																																			
	<table><tr><td>Contact</td><td>0</td><td>1</td></tr><tr><td>3-4</td><td></td><td>X</td></tr></table>	Contact	0	1	3-4		X	<table><tr><td>Contact</td><td>0</td><td>1</td></tr><tr><td>1-2</td><td>X</td><td></td></tr></table>	Contact	0	1	1-2	X		<table><tr><td>Contact</td><td>0</td><td>1</td></tr><tr><td>1-2</td><td>X</td><td></td></tr><tr><td>3-4</td><td></td><td>X</td></tr></table>	Contact	0	1	1-2	X		3-4		X	<table><tr><td>Contact</td><td>0</td><td>1</td></tr><tr><td>3-4</td><td></td><td>X</td></tr></table>	Contact	0	1	3-4		X	<table><tr><td>Contact</td><td>0</td><td>1</td></tr><tr><td>1-2</td><td>X</td><td></td></tr><tr><td>3-4</td><td></td><td>X</td></tr></table>	Contact	0	1	1-2	X		3-4		X	<table><tr><td>Contact</td><td>0</td><td>1</td></tr><tr><td>1-2</td><td>X</td><td></td></tr><tr><td>3-4</td><td></td><td>X</td></tr></table>	Contact	0	1	1-2	X		3-4		X
	Contact	0	1																																																
3-4		X																																																	
Contact	0	1																																																	
1-2	X																																																		
Contact	0	1																																																	
1-2	X																																																		
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Contact	0	1																																																	
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3-4		X																																																	
Contact	0	1																																																	
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3-4		X																																																	

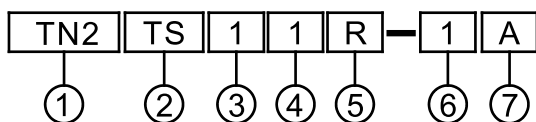
ILLUMINATED SELECTOR SWITCH (DIRECT POWER) 3-POSITION CONTACT ARRANGEMENT

Type	TN2-I1AA	TN2-I2AA																																
Contact	1a 0 1a	2a 0 2a																																
Contact Arrangement	<table><tr><th>Contact</th><th>1</th><th>0</th><th>2</th></tr><tr><td>3-4</td><td>X</td><td></td><td></td></tr><tr><td>3-4</td><td></td><td></td><td>X</td></tr></table>	Contact	1	0	2	3-4	X			3-4			X	<table><tr><th>Contact</th><th>1</th><th>0</th><th>2</th></tr><tr><td>3-4</td><td>X</td><td></td><td></td></tr><tr><td>3-4</td><td>X</td><td></td><td></td></tr><tr><td>3-4</td><td></td><td></td><td>X</td></tr><tr><td>3-4</td><td></td><td></td><td>X</td></tr></table>	Contact	1	0	2	3-4	X			3-4	X			3-4			X	3-4			X
	Contact	1	0	2																														
3-4	X																																	
3-4			X																															
Contact	1	0	2																															
3-4	X																																	
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3-4			X																															
3-4			X																															

tend ILLUMINATED SELECTOR SWITCH (TN2 Ø22/Ø25/Ø30) TN2

The contact block of this series of switches is the transformer type contact block. See pageTA72, for assembly dimension. This series of switches come with transformers at secondary voltage of 5V and (6V) incandescent used.seeTA70. 2 positions contact block arrangement, 1c contact block arrangement for 2 positions is 1a1b,aa contact block contact block arrangement for 3 positions is 1a+1a(2A)

MODEL DESIGNATION



Designation	Signal	Description
1. Mounting hole	TN2 TN3	Ø22mm/Ø25mm Ø30mm
2.Type	TS TH	Knob operator Lever operator
3. Positions	1	90°X2 3-position
	2	90° 2-position
	3	90° 2-position spring return from right
	4	45°X2 3-position
	5	45°X2 3-position spring return from right
	6	45°X2 3-position spring return from left
	7	45°X2 3-position 2-way spring return

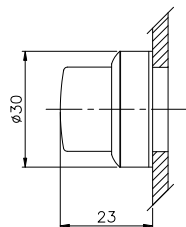
Designation	Signal	Description	
4. Voltage	1	110VAC	
	2	220VAC	
	3	380VAC	
	4	440VAC	
5. Lens Color	R	Red	
	G	Green	
	O	Orange	
	W	White	
	BL	Blue	
6.NO. of Contacts Fitted	1	1	
	2	2	
7.Type of Contact Block Fitted	A B C AB AA	2-position	3-position
		1a	_____
		1b	_____
		1a1b	_____
		1a+1b	_____
		_____	1a + 1a(2a)

3-Position is limited to use AA contact block.

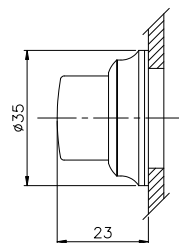
tend ILLUMINATED SELECTOR SWITCH (TN2 Ø22/Ø25/Ø30 (WITH TRANSFORMER) TN2

OPERATING HEADS DIMENSIONS

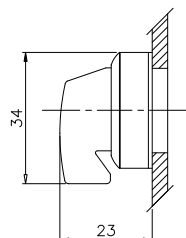
TN2TS



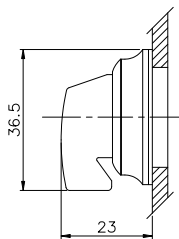
TN3TS



TN2TH



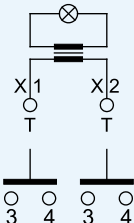
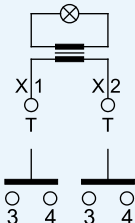
TN3TH



ILLUMINATED SELECTOR SWITCH (TRANSFORMER) 2-POSITION CONTACT ARRANGEMENT

Type	TN2-T1A	TN2-T1B	TN2-T1AB	TN2-T2A	TN2-T2B	TN2-T2C																																										
Contact	1a	1b	1a+1b	2a	2b	2a2b																																										
Contact Arrangement																																																
	<table><tr><td>Contact</td><td>0</td><td>1</td></tr><tr><td>3-4</td><td></td><td>X</td></tr></table>	Contact	0	1	3-4		X	<table><tr><td>Contact</td><td>0</td><td>1</td></tr><tr><td>1-2</td><td>X</td><td></td></tr></table>	Contact	0	1	1-2	X		<table><tr><td>Contact</td><td>1</td><td>1</td></tr><tr><td>1-2</td><td>X</td><td></td></tr><tr><td>3-4</td><td></td><td>X</td></tr></table>	Contact	1	1	1-2	X		3-4		X	<table><tr><td>Contact</td><td>0</td><td>1</td></tr><tr><td>3-4</td><td></td><td>X</td></tr></table>	Contact	0	1	3-4		X	<table><tr><td>Contact</td><td>0</td><td>1</td></tr><tr><td>1-2</td><td>X</td><td></td></tr></table>	Contact	0	1	1-2	X		<table><tr><td>Contact</td><td>0</td><td>1</td></tr><tr><td>1-2</td><td>X</td><td></td></tr><tr><td>3-4</td><td></td><td>X</td></tr></table>	Contact	0	1	1-2	X		3-4		X
	Contact	0	1																																													
3-4		X																																														
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3-4		X																																														

ILLUMINATED SELECTOR SWITCH (TRANSFORMER) 3-POSITION CONTACT ARRANGEMENT

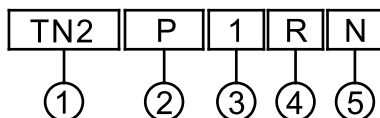
Type	TN2-T1AA	TN2-T2AA																																
Contact	1a 0 1a	2a 0 2a																																
Contact Arrangement	 <table border="1" data-bbox="617 1827 818 1960"><thead><tr><th>Contact</th><th>1</th><th>0</th><th>2</th></tr></thead><tbody><tr><td>3-4</td><td>X</td><td></td><td></td></tr><tr><td>3-4</td><td></td><td></td><td>X</td></tr></tbody></table>	Contact	1	0	2	3-4	X			3-4			X	 <table border="1" data-bbox="1213 1827 1414 1960"><thead><tr><th>Contact</th><th>1</th><th>0</th><th>2</th></tr></thead><tbody><tr><td>3-4</td><td>X</td><td></td><td></td></tr><tr><td>3-4</td><td>X</td><td></td><td></td></tr><tr><td>3-4</td><td></td><td></td><td>X</td></tr><tr><td>3-4</td><td></td><td></td><td>X</td></tr></tbody></table>	Contact	1	0	2	3-4	X			3-4	X			3-4			X	3-4			X
	Contact	1	0	2																														
	3-4	X																																
3-4			X																															
Contact	1	0	2																															
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3-4			X																															
3-4			X																															

tend PILOT LAMP (TN2 Ø22/Ø25/Ø30)

TN2

The bulbs used in this series of pilot lamp are same as those for direct type illuminated push switch. seeTA72

MODEL DESIGNATION

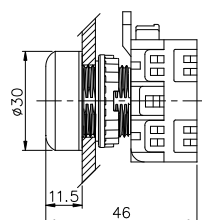


Designation	Signal	Description
1. Mounting hole	TN2	Ø22mm/Ø25mm
	TN3	Ø30mm
2.Type	P	Direct power
	L	Simple(screw terminal in the rear)
	N	Simple(screw terminal in the rear)
	D	Big LED

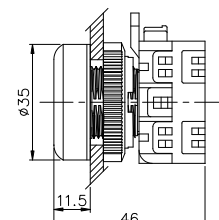
Designation	Signal	Description
3. Voltage	1	110VAC (Neon .LED Bulb)
	2	220VAC (Neon .LED Bulb)
	3	380VAC (Neon Bulb)
	4	440VAC (Neon Bulb)
	5	6VAC/DC (Incandescent, LED Bulb)
	6	18VAC/DC (Incandescent)
	7	24VAC/DC (Incandescent, LED Bulb)
	8	30VAC/DC (Incandescent, LED Bulb)
	9	12VAC/DC (Incandescent, LED Bulb)
4. Lens color	R	Red
	G	Green
	O	Orange
	W	White
	BL	Blue
5. Lamp	YG	Olive green
	I	Incandescent
	N	Neon bulb
	L	LED bulb

PILOT LAMP (DIRECT POWER)DIMENSIONS

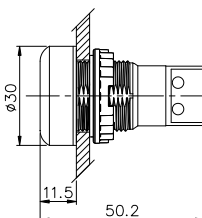
TN2P



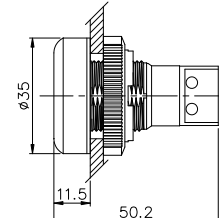
TN3P



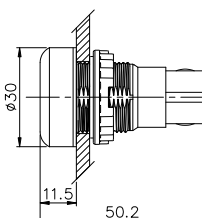
TN2L



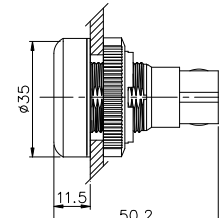
TN3L



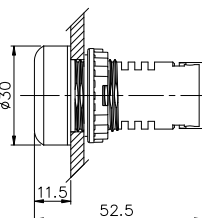
TN2N



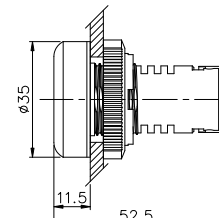
TN3N



TN2D

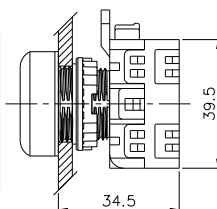
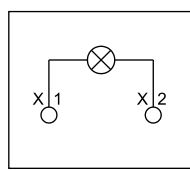


TN3D



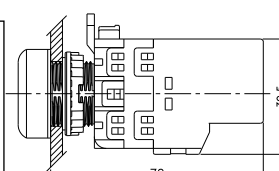
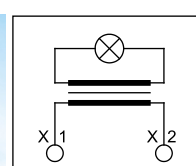
LAMP HOLDER BLOCKS (DIRECT POWER)

TNPS-1



LAMP HOLDER BLOCKS WITH TRANSFORMER

TNPS-2

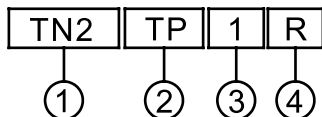


tend PLOT LAMP(TN2 Ø22/Ø25/Ø30)

TN2

This series of switches come with built in transformer.

MODEL DESIGNATION

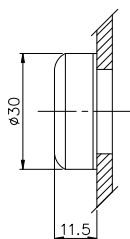


Designation	Signal	Description
1. Mounting hole	TN2 TN3	Ø22mm/Ø25mm Ø30mm
2.Type	TP	With transformer

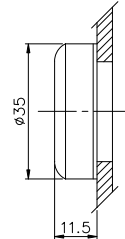
Designation	Signal	Description
3. Voltage	1	110V/5 VAC
	2	220V/5 VAC
	3	380V/5 VAC
	4	440V/5 VAC
4. Lens color	R	Red
	G	Green
	O	Orange
	W	White
	BL	Blue

PILOT LAMP DIMENSIONS

TN2TP



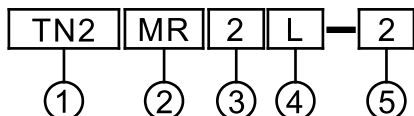
TN3TP



tend JOYSTICK (TN2 Ø22/Ø25/Ø30)

TN2

MODEL DESIGNATION

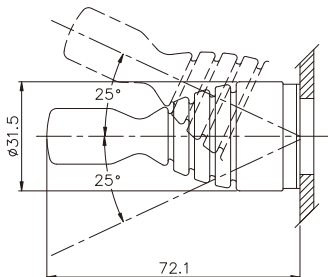
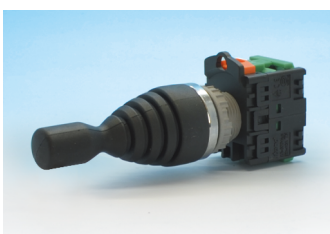


The contact block of the joystick will have printed marking U D L R for up, Down, left & right direction. The contact block is only for joystick and can not be used in any other type of switches

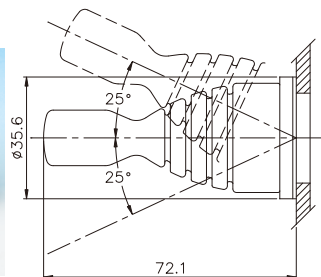
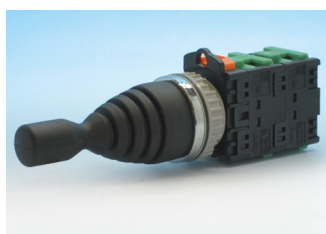
Designation	Signal	Description
1. Mounting hole	TN2 TN3	Ø22mm/Ø25mm Ø30mm
2.Type	MR	Joystick
3. Direct	2 4	Up & down 2 directions Up, down, left & right 4 Directions
4.Movement way	L R	Retain Return
5.No. Of contact block	2 4 8	1a at up & down each 2a at up & down or 1a up, down, left & right 2a at up, down, left & right

JOYSTICK DIMENSIONS

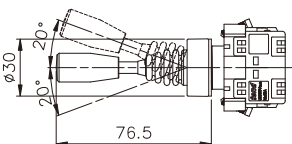
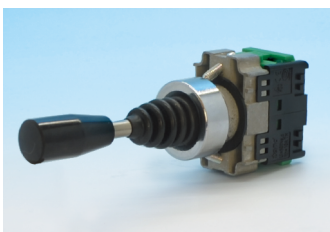
TN2MR2



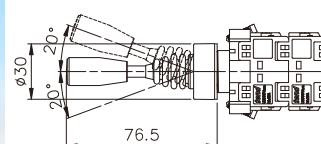
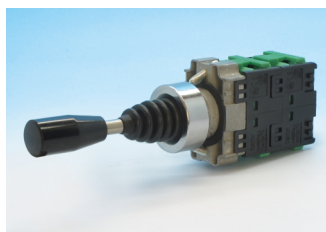
TN3MR4



TN2MZ2



TN2MZ4

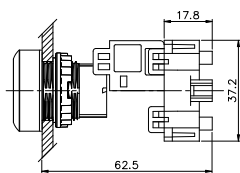
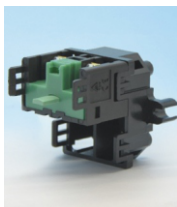


tend INSULATED ENCLOSURES(TN2 Ø22)

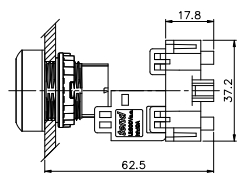
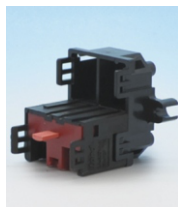
TN2

The mounting holes of this series of insulated enclosures are Ø22mm. single-hole insulated enclosure is available in yellow and gray. All the others are in gray. The contact blocks are of exclusive type, which is different from those of Ø22/Ø30 series control components. The dimension and type of the upper base are same as those of Ø22/Ø30 series control components.

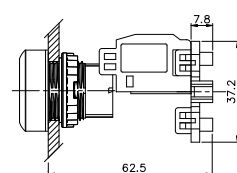
TN2-B1A



TN2-B1B



TN2-B1C



THE ASSEMBLY OF INSULATED ENCLOSURES AND SWITCH

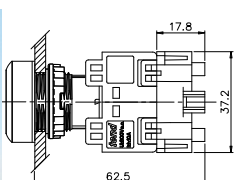
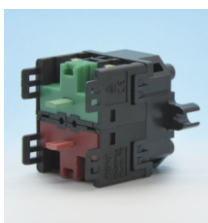
1. Take apart the upper cover and the lower base of the insulated enclosures.
2. Fix the contact block on the lower base, and the upper base on the upper cover.
3. Connect the upper cover with the lower base into one kit.

The protection structure for this series of insulated enclosures is IP65(IEC144)

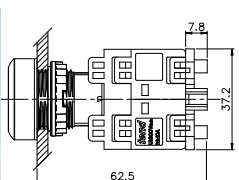
All the illuminated switches used in the insulated enclosures are direct type

STANDARD CONTACT BLOCK FOR INSULATED ENCLOSURES ILLUMINATED CONTACT BLOCK FOR INSULATED ENCLOSURES

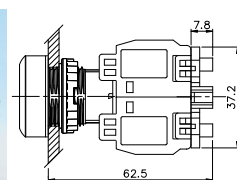
TN2-B1ab • TN2-B2a • TN2-B2b



TN2-B1ab • TN2-B2a • TN2-B2b



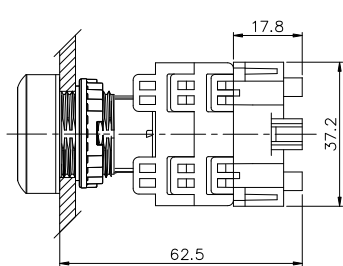
TN2-B2c



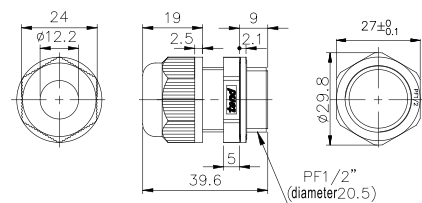
LAMP HOLDER BLOCKS(FOR INSULATED ENCLOSURES)

CABLE GLAND TPF-21

TNPS-3



(Diameter of cables: Ø6~Ø12 operating temperature: -40°C~100°C)



INSULATED ENCLOSURES DIMENSIONS TN2:Ø22mm TN3:Ø30mm

TN2-B1



TN2-B2



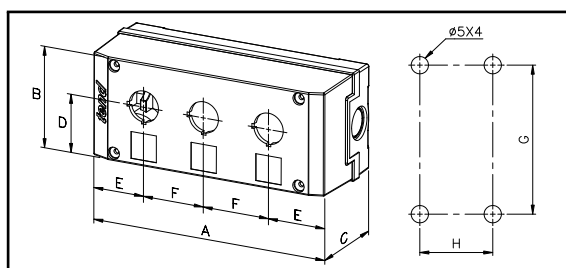
TN2-B3



TN2-B4



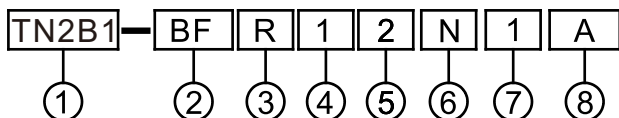
TN2-B5



Type	A	B	C	D	E	F	G	H
TN2-B1 TN3-B1	82	75	67.3	43.5	41	—	63	54
TN2-B2 TN3-B2	127	75	67.3	43.5	41	45	108	54
TN2-B3 TN3-B3	172	75	67.3	43.5	41	45	153	54
TN2-B4 TN3-B4	217	75	67.3	43.5	41	45	198	54
TN2-B5 TN3-B5	262	75	67.3	43.5	41	45	243	54

- The mounting hole of this series of insulated enclosure is 22. The illuminated push button and pilot lamp are all direct type.
- The insulated enclosures of mushroom-head and push-lock type push button are in yellow or gray. Others in gray.

ONE BUTTON MODEL DESIGNATION



Designation	Signal	Description
1. NO.ofButton	TN2B1	1 Button
2. Type	BF	Flat Head Push Button
	BL	Long Head Push Button
	BM	Mushroom Head push Button
	BK	Push-lock Push button
	IF	Flat Head Illuminated Push Button
	IL	Long Head Illuminated Push Button
	IM	Mushroom Head illuminated Push button
	IK	Push-lock Illuminated Push Button
	S2	Selector Switch(2 Positions)
	S3	Selector Switch(3 Positions)

Designation	Signal	Description
3. Lens Color	R	Red
	G	Green
	B	Black
4. Name Plate	1	OFF
	2	ON
	3	EM. STOP
	4	OFF-ON
	5	ON-OFF-ON
5. Voltage	1	110VAC (Neon .LED Bulb)
	2	220VAC (Neon .LED Bulb)
	3	380VAC (Neon Bulb)
	4	440VAC (Neon Bulb)
	5	6VAC/DC (Incandescent. LED Bulb)
	6	18VAC/DC (Incandescent)
	7	24VAC/DC (Incandescent. LED Bulb)
	8	30VAC/DC (Incandescent. LED Bulb)
	9	12VAC/DC (Incandescent. LED Bulb)
6. Bulb type	I	Incandescent
	N	Neon bulb
	L	LED bulb
7. NO. of Contacts Fitted	1	1
	2	2
8. Type of contact block fitted	A	1a
	B	1b
	C	1a1b(S3 Use 1a 0 1a)
	AB	1a+1b

TN2B1-BFR1
TN2B1-IFR1



TN2B1-BFG2
TN2B1-IFG2



TN2B1-BLR1
TN2B1-ILR1



TN2B1-BLG2
TN2B1-ILG2



TN2B1-BMR3
TN2B1-IMR3



TN2B1-BKR3
TN2B1-IKR3



TN2B1-S2B4



TN2B1-S3B5



2Button



Type	Nameplate	Buttons	Voltage	Bulb
TN2B2-BF	NO OFF	2 Flat Push Buttons		
TN2B2-IF2	NO OFF	2 Flat Head Illuminated Buttons	220 VAC	Neon
TN2B2-IF7	NO OFF	2 Flat head Illuminated Buttons	24 V	Incandescent

3Button



Type	Nameplate	Buttons	Bulb
TN2B3-BF	NO OFF ON	3 Flat Push Buttons	
TN2B3-IF	NO OFF ON	3 Flat Head Illuminated Buttons	
TN2B3-PF2	220V ON OFF	1 Pilot Lamp 2 Flat head Push Buttons	Neon
TN2B3-PF7	24V ON OFF	1 Pilot Lamp 2 Flat head Push Buttons	Incandescent