



## ECS - INDUSTRIAL CONTROL SWITCH PUSHBUTTON (MUSHROOM TYPE)

### 1. FEATURES

- Detachable contact block for easy installation and removal. It can meet variety of needs and improve work efficiency.
- IP65 waterproof type. It is designed for liquid and oil prevention and enables to be used in different environment.
- In accordance with the standards of UL, cUL, CE, CCC, and TUV.

### 2. SPECIFICATIONS

#### 2-1. ELECTRICAL

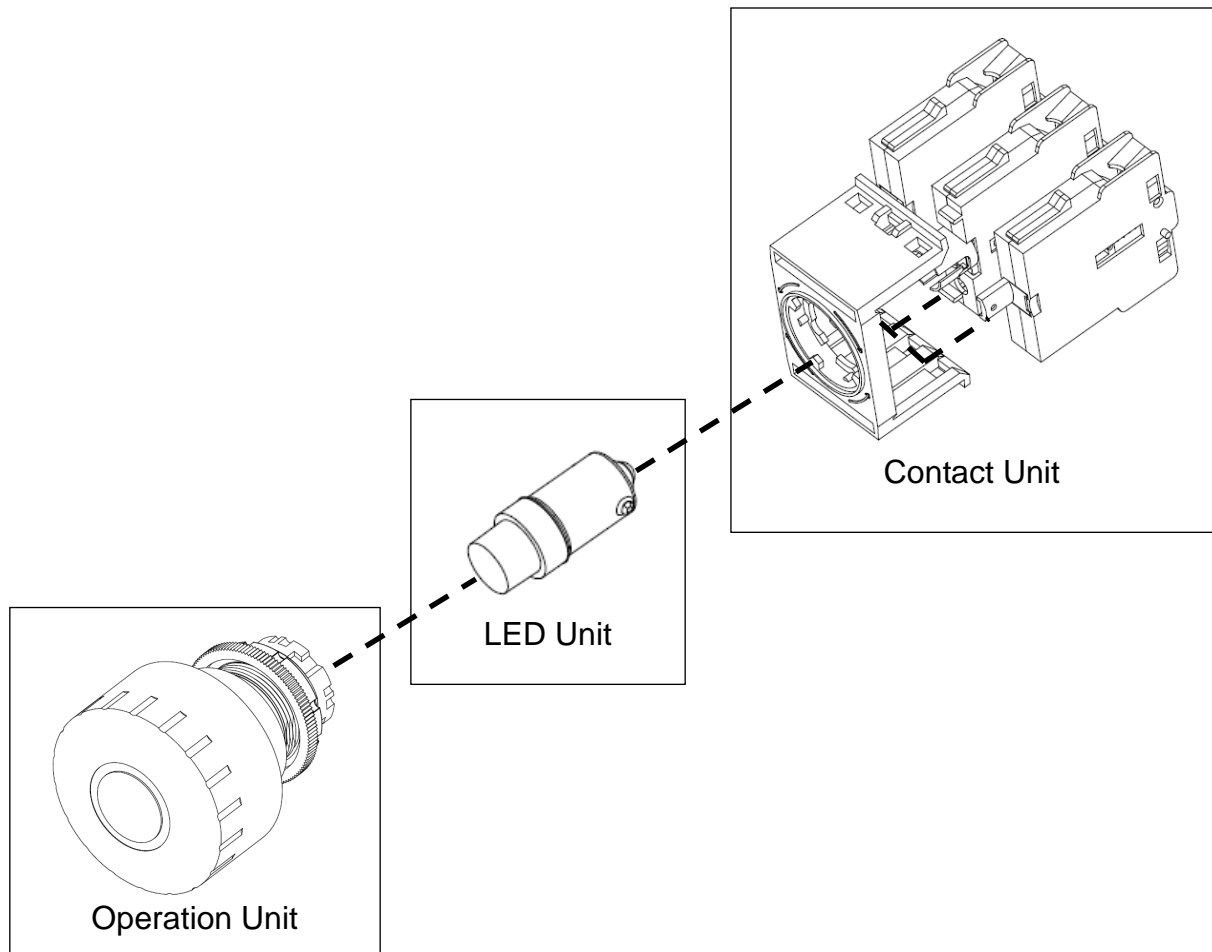
2-1-1. Rated thermal current	10A
2-1-2. Rated insulation voltage	650V
2-1-3. Utilization category	AC-15(A600) or Ue 240V / Ie 3A Ue 380V / Ie 1.9A
2-1-4. Minimum switching capacity [ref.]	DC-13(P600) or Ue 250V / Ie 0.55A
2-1-5. Dielectric strength	3V DC/AC, 5mA
2-1-6. Insulation resistance	2500V AC, 1 min.
2-1-7. Contact resistance	100MΩ min. at 500V DC
	50mΩ max. (initial)

#### 2-2. MECHANICAL AND ENVIRONMENTAL

2-2-1. Operating temperature	-25°C ~ +70°C (without icing or condensation)
	-25°C ~ +55°C (for illuminated type)
2-2-2. Storage temperature	-40°C ~ +85°C
2-2-3. Humidity	45% ~ 85% RH
2-2-4. Degree of protection	IP65 (from the front of the panel)
2-2-5. Degree of contamination	3 (IEC 60947-5-1)
2-2-6. Vibration resistance	10-55Hz single amplitude 0.5mm
2-2-7. Shock resistance	100 m/s <sup>2</sup> (10G)(malfunction) 1000 m/s <sup>2</sup> (100G)(destruction)
2-2-8. Mechanical Life	1,000,000 operations
	frequency 3600 operations/hr
2-2-9. Electrical Life	500,000 operations
	frequency 1800 operations/hr
2-2-10. Operation Force(from 1a1b)[ref.]	25N
2-2-11. Operation travel	over 4 mm
2-2-12. Connection type	M3.5 screw connection
2-2-13. Direct opening action	Direct opening mechanism of NC contact to open the circuit⊖

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### 3. CONSTRUCTION

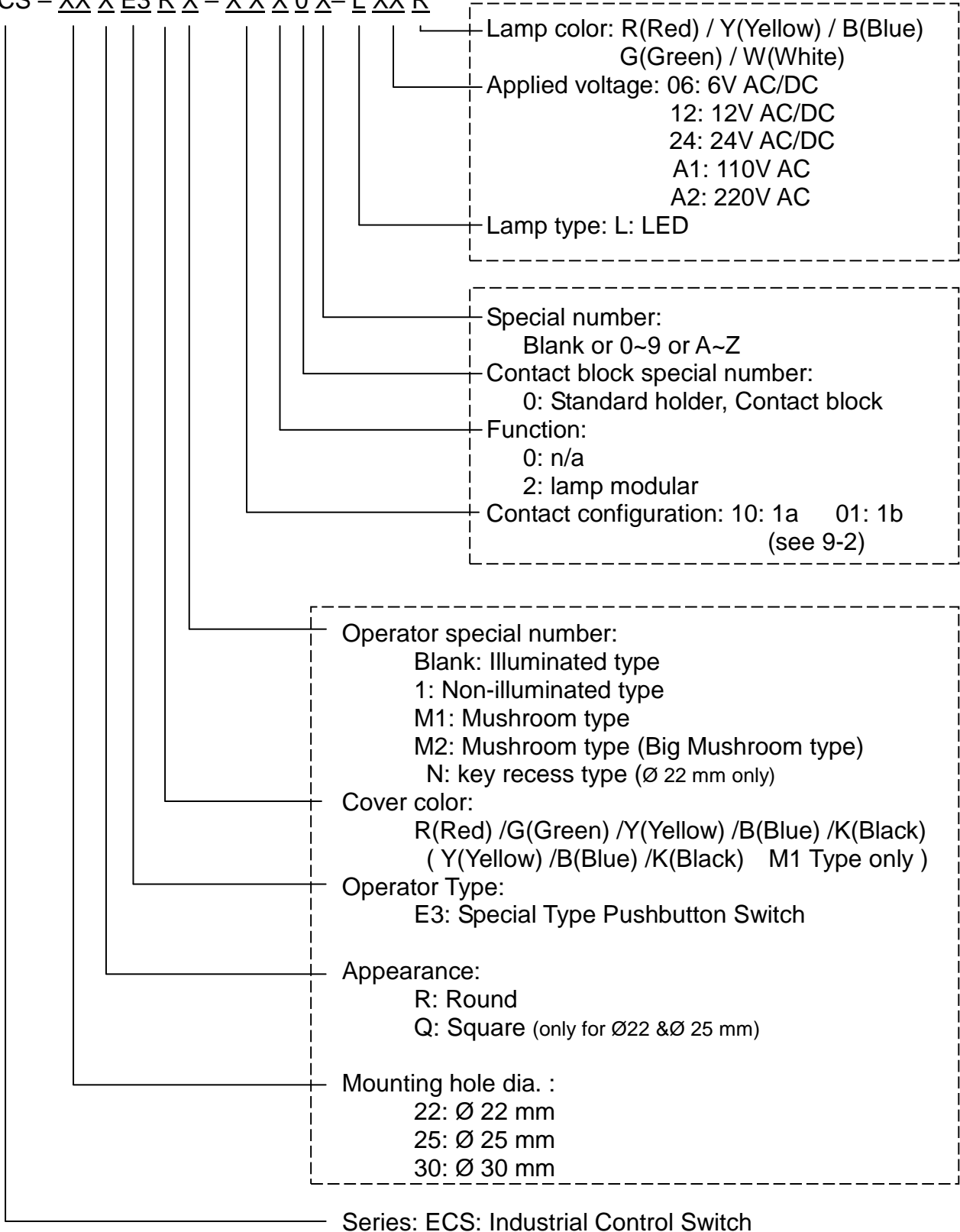


- Operation unit, LED unit, and contact unit (contact blocks) can be sold separately.
- Please see [4.Part numbering system] for operation unit part number. For other accessories (LED lamp, contact block, etc.), please refer to accessory part in catalog.

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4. PART NUMBERING SYSTEM

ECS - XX X E3 R X - X X X 0 X - L XX R



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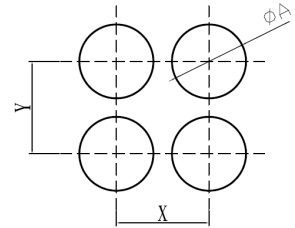
## 5. INSTALLATION

### 5-1. Panel thickness

- The panel thickness must be 1 to 7 mm.
- Take into consideration about the thickness of accessories (such as name plate, switch guard, etc.) while using.

### 5-2. Panel cutout

- Cutout diameter and distance



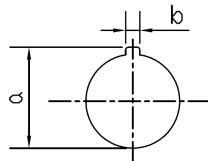
Unit: mm

	22R / 25R	22Q / 25Q	30R
A	22.3/25.3 <sup>+0.4</sup> <sub>-0</sub>	22.3/25.3 <sup>+0.4</sup> <sub>-0</sub>	30.5 <sup>+0.5</sup> <sub>-0</sub>

Unit: mm

	22R / 25R	22Q / 25Q	30R	Long Lever Selector Switch Emergency Stop Switch
X	30	32	50	50
Y	50	50	65	50

- Key recess cutout (∅22mm only)



Unit: mm


Mounting Hole(∅)	a	b
22	24.1 <sup>+0.5</sup> <sub>-0</sub>	3.2 <sup>+0.2</sup> <sub>-0</sub>

- Panel installation

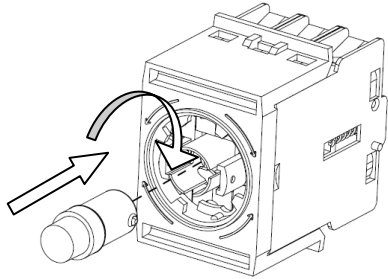
	<ol style="list-style-type: none"> <li>1. Place the operation unit through panel mounting hole.</li> <li>2. Install the nut by using tightening tool.</li> <li>3. Make sure the operation unit fix on the panel firmly.</li> </ol>
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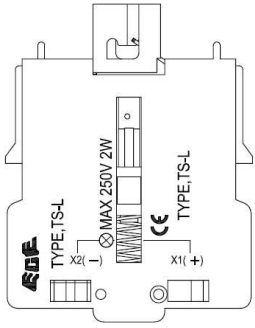
### 5-3. Operation unit and contact unit installation

	<ol style="list-style-type: none"> <li>1. Fix the operation unit on the panel.</li> <li>2. Connect the operation unit with snap-fit joint part of contact unit.</li> <li>3. Rotate contact unit to fix firmly as shown in the left figure.</li> </ol>
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#### 5-4. LED lamp installation

	<ol style="list-style-type: none"> <li>1. Aim LED lamp to the lamp holder and press down to the bottom.</li> <li>2. Rotate the LED lamp to make sure the lamp is firmly installed.</li> <li>3. While installation and removal, please hold the metal part of LED lamp to avoid damaging LED lamp.</li> </ol>
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	<ol style="list-style-type: none"> <li>1. When using DC LED lamp, please connect the positive pole (+) to X1 terminal as shown in left figure.</li> <li>2. The LED lamp may be erroneously lightened by a leaking current from the circuit. The malfunction can be prevented by connecting a shunt resistor in parallel with the LED lamp.</li> </ol>
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#### 6. PACKAGING

6-1. ECS product is packed without assembly (packed by set), 10 sets per box.

##### 6-2. Label information

- |                   |                         |
|-------------------|-------------------------|
| (1) part number   | (6) QC inspection stamp |
| (2) Lot number    | (7) Company mark        |
| (3) Quantity      | (8) Company name        |
| (4) Tester number | (9) Notice              |
| (5) Date code     |                         |

#### 7. DIMENSIONS

7-1. See attached drawings

#### 8. OPTIONS


8-1. Key recess type operation unit is available (Ø22mm only)

8-2. Ø22mm and Ø25mm type have the same structure. Different thickness of O-rings can be ordered separately to fit into Ø22mm and Ø25mm hole in the panel.

##### 8-3. LED Specification

LED Type	BA9S-T8
Durability(reference)	Approx. 50,000 Hrs.
Voltage	Printed on the LED

8-4. For other accessories (name plate, control box, and etc.), please refer to accessory part in the catalog.

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9. REMARK

9-1. Safety Certification

Safety Standard	Certification
UL-508	UL / cUL , file NO. E155181
CSA C22.2 NO.14	
EN60947-5-1	R50363071
EN60947-5-5 (Emergency Stop Switch)	R50362996
CCC GB14048.5	CQC2016010305912684

9-2. Contact Configuration

Code	Contact blocks		without function block	with function block
	NO	NC		
10	1	0	●	●
01	0	1	●	●
11	1	1	●	●
20	2	0	●	●
02	0	2	●	●
12	1	2	●	●
21	2	1	●	●
30	3	0	●	●
03	0	3	●	●
31	3	1	●	●
13	1	3	●	●
22	2	2	●	●
40	4	0	●	●
04	0	4	●	●
41	4	1	●	/
14	1	4	●	
23	2	3	●	
32	3	2	●	
50	5	0	●	
05	0	5	●	

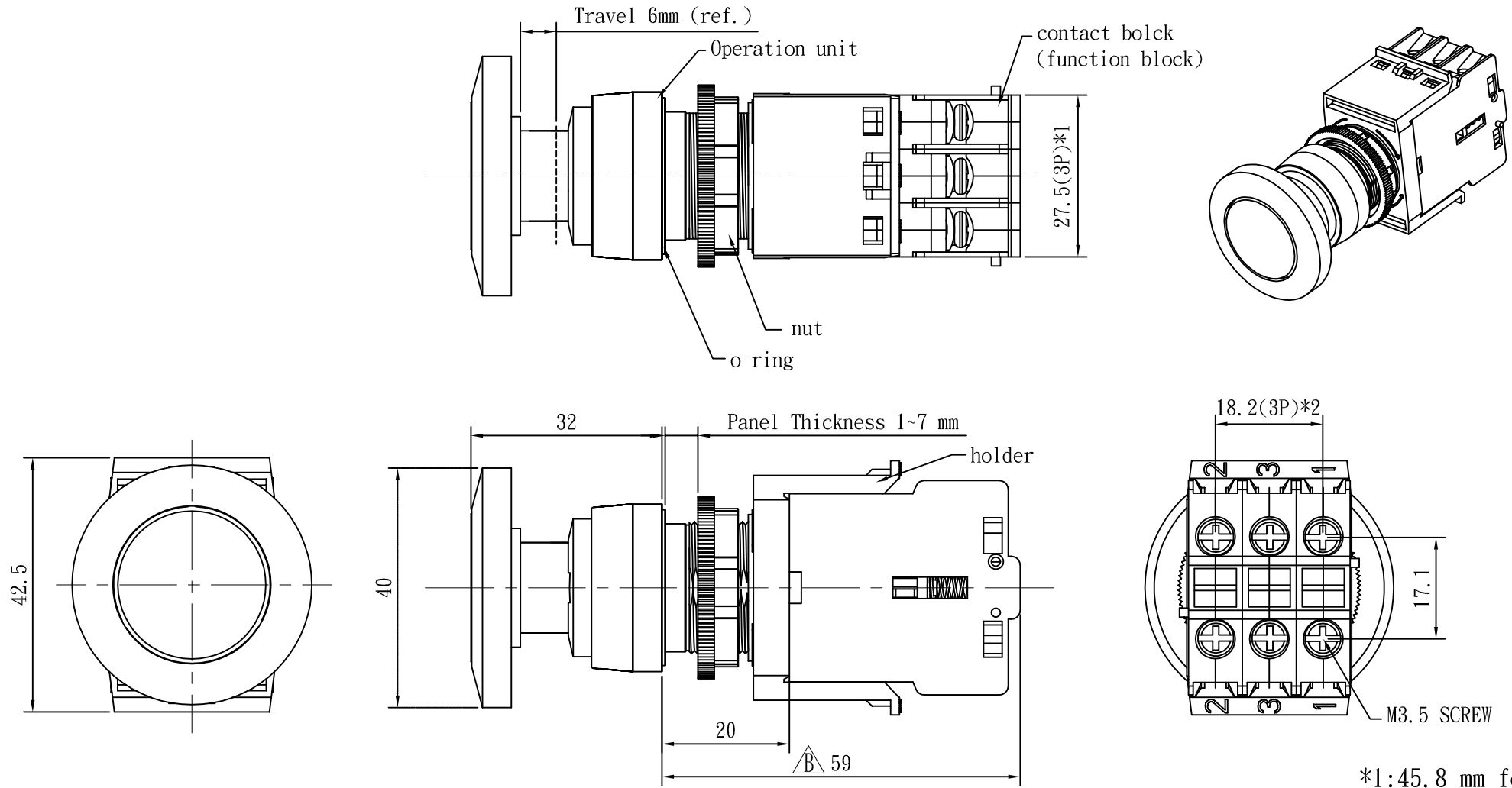
Remark:

- The colors of contact block are the followings: 1 NO: green, 1 NC: red
- Maximum 5 contact blocks for every contact unit.


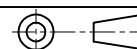

9-3. CAUTION

- To prevent injury, this device must be disconnected from all power sources prior to wiring and other initiating work.
- Use tightening tool when installing the operation unit in the panel cutout. Do not use pliers and do not tighten excessively, otherwise the operation unit may be damaged.
- Make sure contact blocks are firmly fixed on contact holder during assembly. It will avoid contact blocks separated from holder during operation.

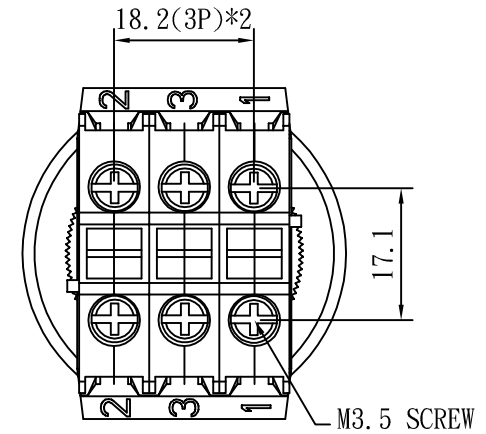
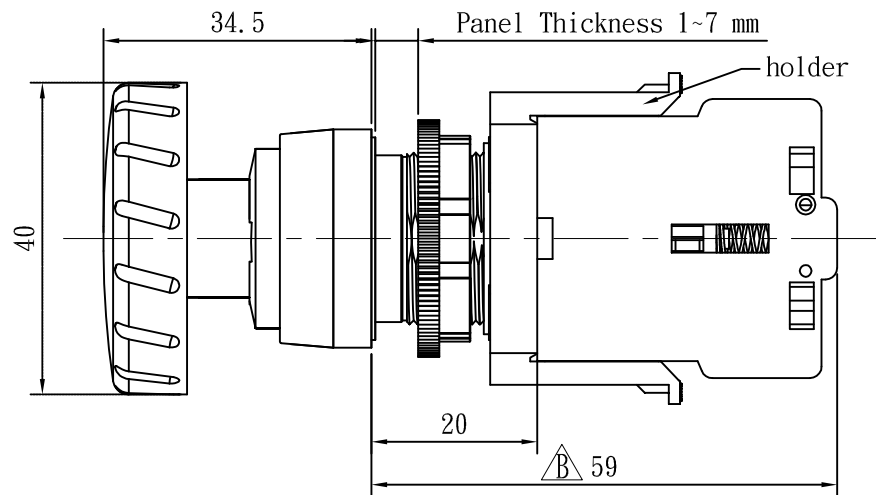
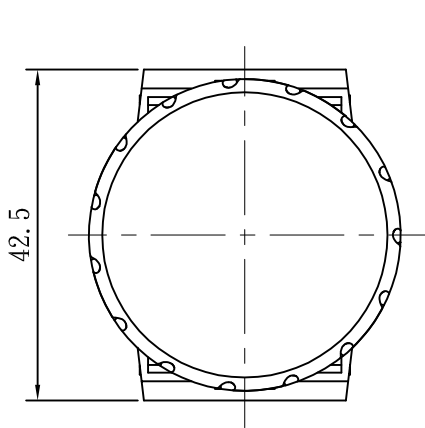
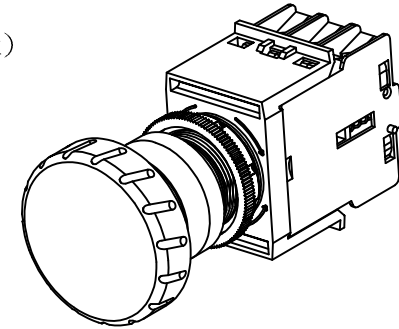
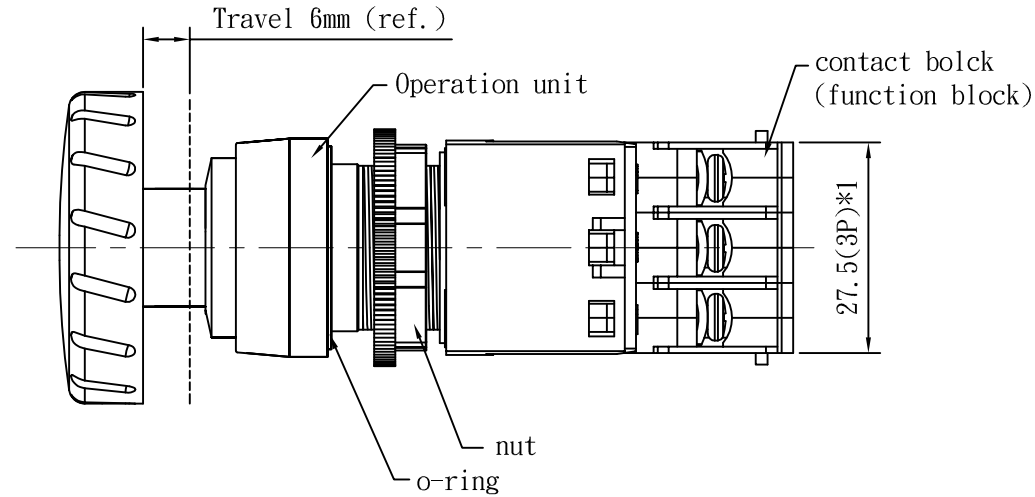
# ECS-22RE3XXX-XXX0



\*1: 45.8 mm for 5P  
 \*2: 36.4 mm for 5P

		NORMAL TOLERANCE		 EXCEL CELL ELECTRONIC CO., LTD.				PART NUMBER		ECS-22RE3XXX-XXX0			
		RANGE	TOLERANCE					UNIT		MM (INCH)		PART NAME	
		0-1	±0.1	CHECK	Marcus Li	DESIGN	Alice Lin	DRAWN	Alice Lin	SCALE	1:1	TYPE	Pushbutton
		1-4	±0.3							SIZE	A4	FILE NAME	76922REXXB.DWG
		4-16	±0.5							PROJECTION		EDITION	B
		16-63	±0.8										
		63-250	±1.0										
	Marking position changes	Alice	2018/01/25										
NO.	DETAILS	ALTERED BY	DATE										

# ECS-22RE3XM1-XXX0



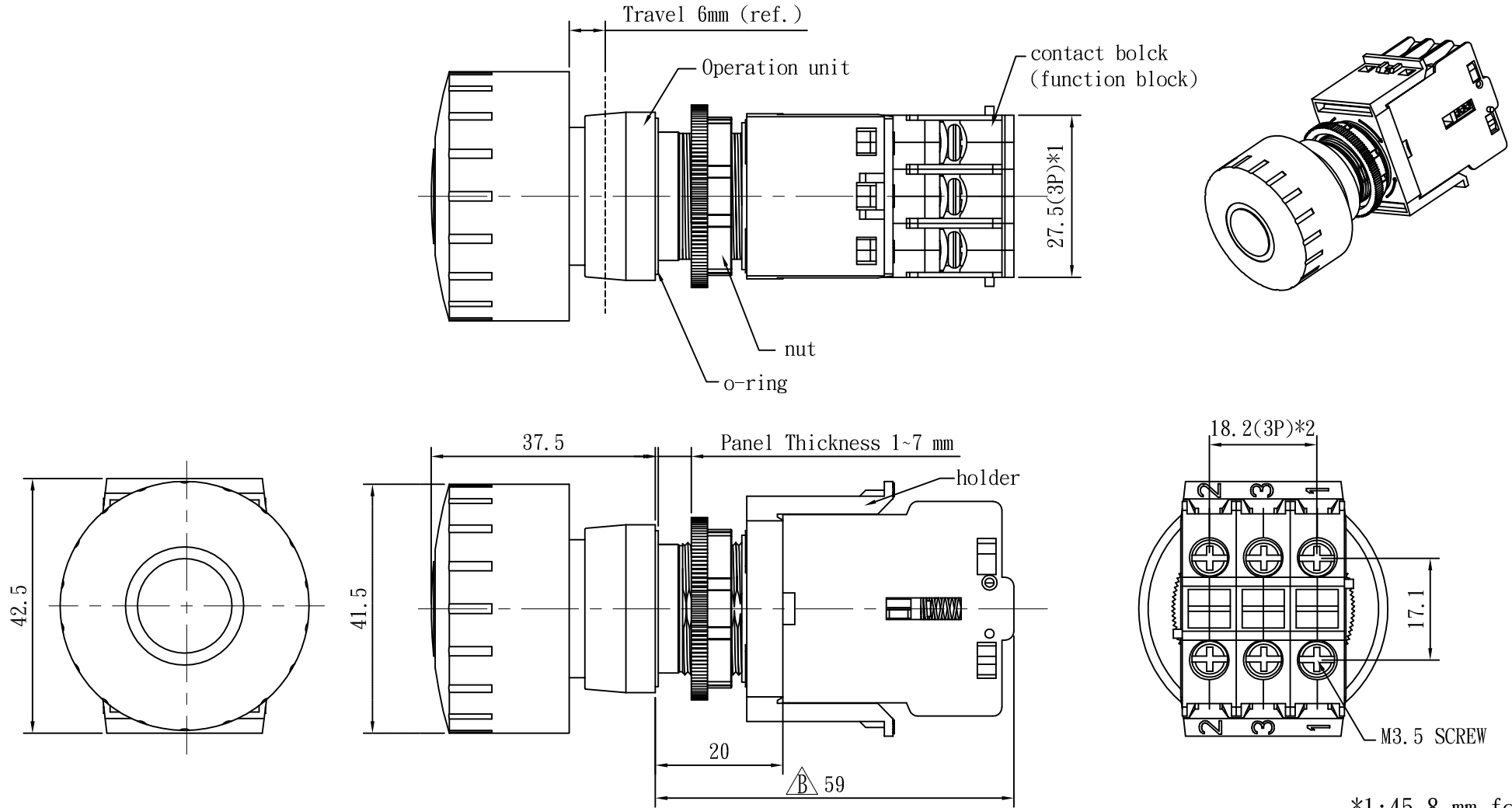
\*1:45.8 mm for 5P

\*2:36.4 mm for 5P

				NORMAL TOLERANCE		EXCEL CELL ELECTRONIC CO., LTD.				PART NUMBER	ECS-22RE3XM1-XXX0					
				RANGE	TOLERANCE	CHECK	DESIGN	DRAWN	Alice Lin	UNIT	MM (INCH)	PART NAME	ECS			
				0-1	±0.1					Alice Li	Alice Lin	Alice Lin	SCALE	1:1	TYPE	Pushbutton
				1-4	±0.3								SIZE	A4	FILE NAME	76922REXXB.DWG
				4-16	±0.5								PROJECTION		EDITION	B
				16-63	±0.8											
				63-250	±1.0											
	Marking position changes	Alice	2018/01/25	X.	±5°											
NO.	DETAILS	ALTERED BY	DATE	X.X	±2.5°											



# ECS-22RE3RM2-XXX0



\*1:45.8 mm for 5P  
 \*2:36.4 mm for 5P

				NORMAL TOLERANCE		EXCEL CELL ELECTRONIC CO., LTD.				PART NUMBER	ECS-22RE3RM2-XXX0																
				RANGE	TOLERANCE	CHECK	DESIGN	DRAWN	UNIT	MM ( INCH )	PART NAME	ECS															
				0-1	±0.1						Alice	Lin	Alice	Lin	1:1	TYPE	Pushbutton										
				1-4	±0.3											2018/01/25	DATE	ALTERED BY	Alice	A4	FILE NAME	76922REXXB.DWG					
				4-16	±0.5																Marking position changes	DETAILS	NO.		PROJECTION	EDITION	B
				16-63	±0.8																						
				63-250	±1.0																						
				X.	±5°																						
				X.X	±2.5°																						