ECS - INDUSTRIAL CONTROL SWITCH PUSHBUTTON

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.
- RoHS Compliant
- Halogen Free series available

2. SPECIFICATIONS

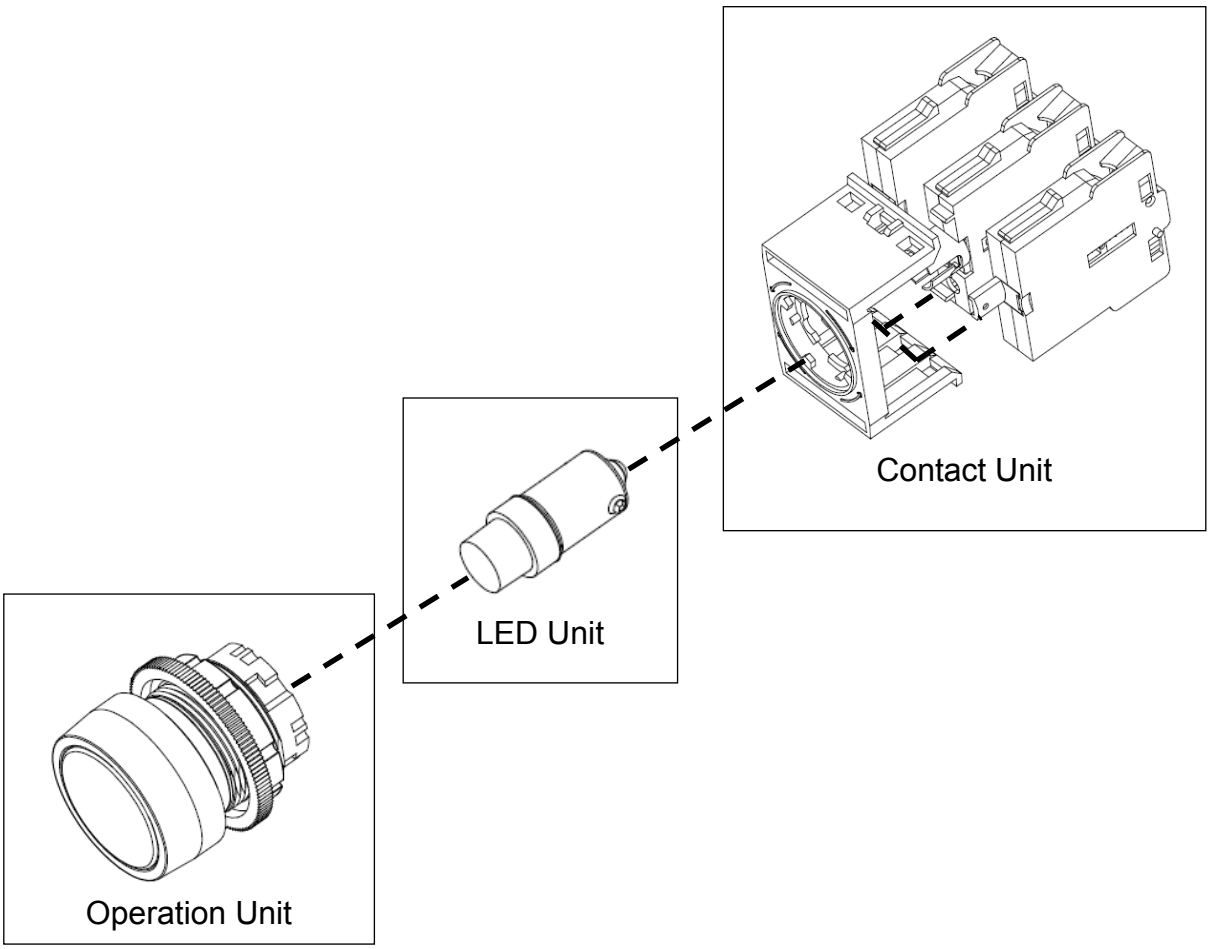
2.1. ELECTRICAL

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 DC-13(P600) or Ue 250V / Ie 0.55A
2-1-4. Minimum switching capacity [ref.]	3V DC/AC, 5mA
2-1-5. Dielectric strength	2500V AC, 1 min.
2-1-6. Insulation resistance	100MΩ min. at 500V DC
2-1-7. Contact resistance	50mΩ max. (initial)

2-2. MECHANICAL AND ENVIRONMENTAL

2-2-1. Operating temperature	-25℃ ~ +70℃ (without icing or condensation) -25℃ ~ +55℃ (for illuminated type)
2-2-2. Storage temperature	-40℃ ~ +85℃
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^2(10G)(malfunction) 1000 m/s^2(100G)(destruction)
2-2-8. Mechanical Life	5,000,000 operations(for momentary type) frequency 3600 operations/hr 500,000 operations(for maintained type) frequency 1800 operations/hr
2-2-9. Electrical Life	500,000 operations frequency 1800 operations/hr
2-2-10. Operation Force(from 1a1b)[ref.]	35N (for momentary type) 25N (for maintained type)
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⊖

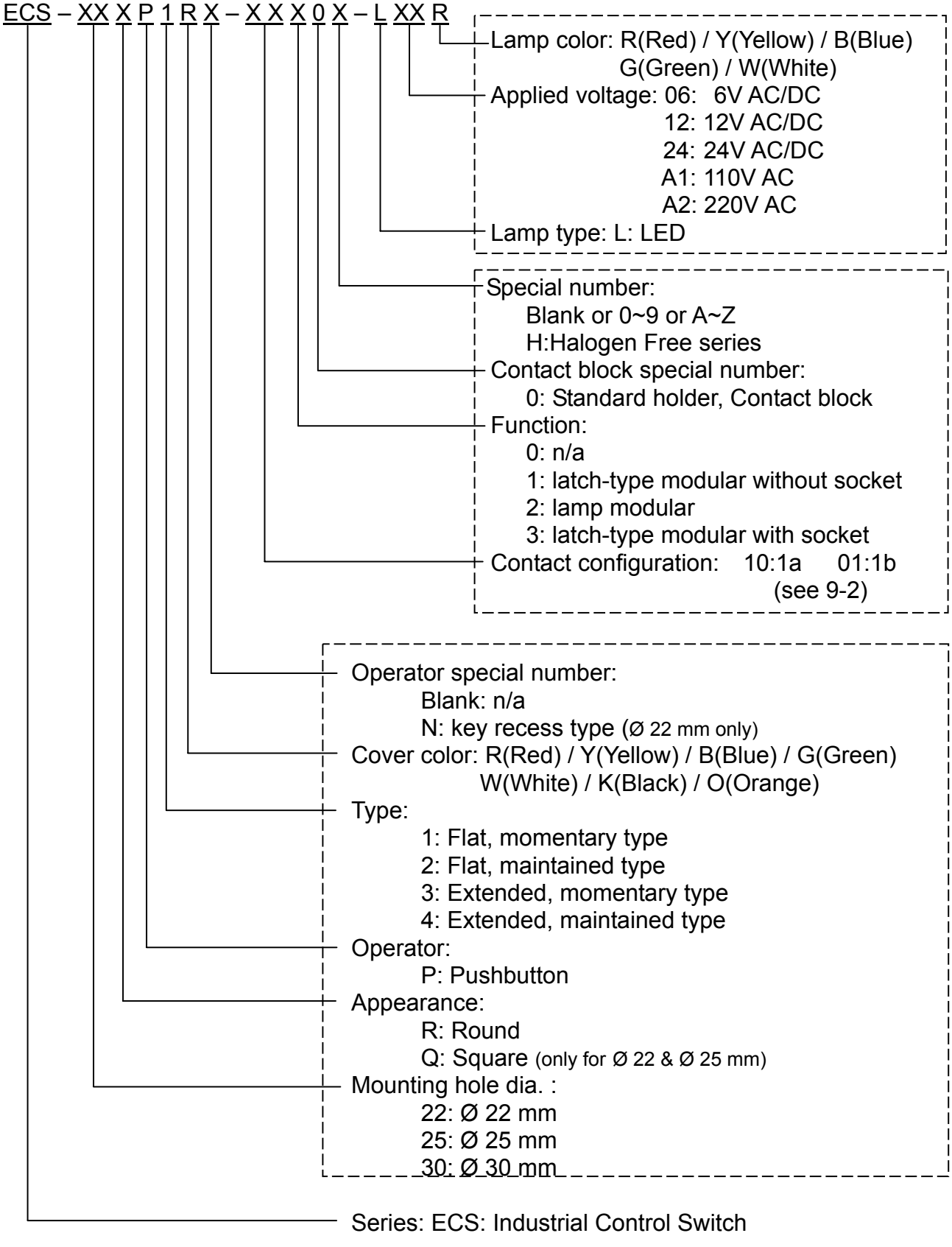
3. CONSTRUCTION



- 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.

4. PART NUMBERING SYSTEM

ECS – XX X P 1 R X – X X X 0 X – L XX R



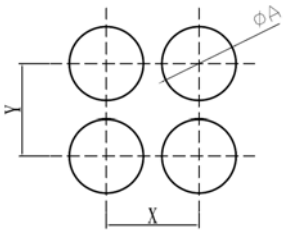
5. INSTALLATION

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



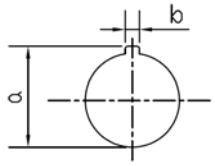
Unit: mm

	22R / 25R	22Q / 25Q	30R
A	22.3/25.3 $^{+0.4}_{-0}$	22.3/25.3 $^{+0.4}_{-0}$	30.5 $^{+0.5}_{-0}$

Unit: mm

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

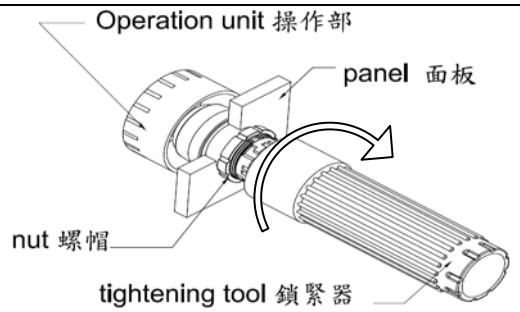
- Key recess cutout (Ø 22mm only)



Unit: mm

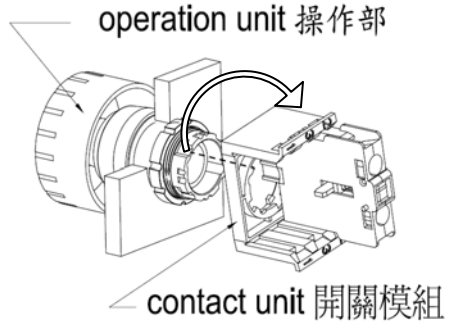
Mounting Hole(Ø)	a	b
22	24.1 $^{+0.5}_{-0}$	3.2 $^{+0.2}_{-0}$

- Panel installation



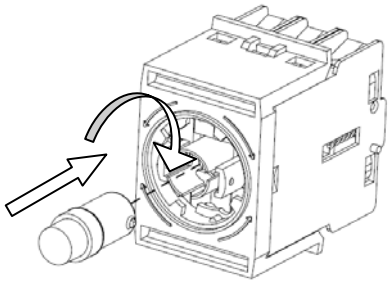
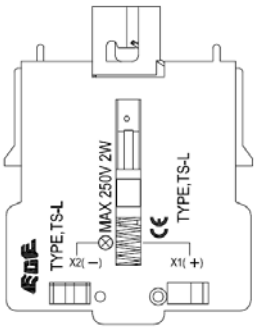
1. Place the operation unit through panel mounting hole.
2. Install the nut by using tightening tool.
3. Make sure the operation unit fix on the panel firmly.

5-3. Operation unit and contact unit installation



1. Fix the operation unit on the panel.
2. Connect the operation unit with snap-fit joint part of contact unit.
3. Rotate contact unit to fix firmly as shown in the left figure.

5-4. LED lamp installation

	1. Aim LED lamp to the lamp holder and press down to the bottom. 2. Rotate the LED lamp to make sure the lamp is firmly installed. 3. While installation and removal, please hold the metal part of LED lamp to avoid damaging LED lamp.
	1. When using DC LED lamp, please connect the positive pole (+) to X1 terminal as shown in left figure. 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.

6. PACKAGING

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

6-2. Label information

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

7. DIMENSIONS

7-1. See attached drawings

8. OPTIONS

8-1. Key recess type operation unit is available (∅22mm 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.

9.REMARK

9-1. Safety Certification

Safery Standard	Certification
UL-508	UL / cUL , file NO. E155181
CSA C22.2 NO.14	
EN60947-5-1 EN60947-5-5 (Emergency Stop Switch)	R50363071 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	●	

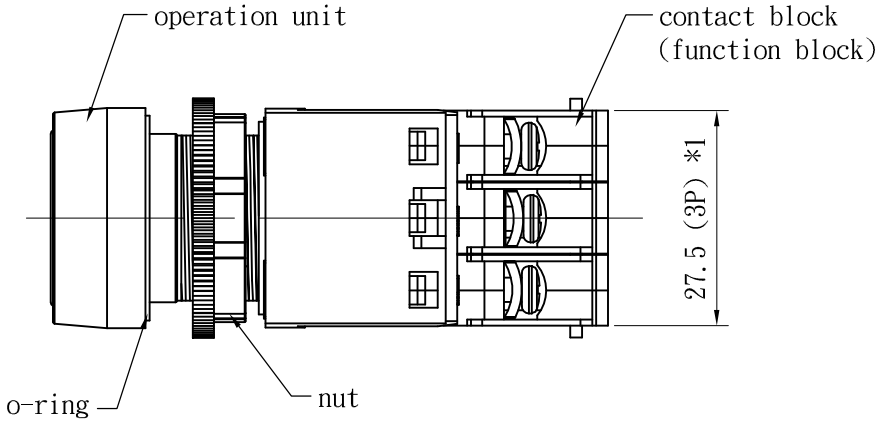
Remark:

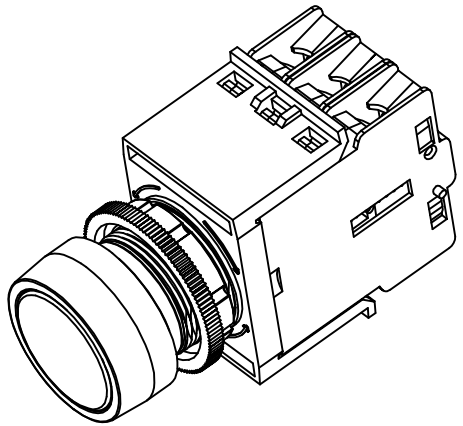
- The colors of contact block are the followings: 1 NO: green, 1 NC: red
- Maximum 5 contact blocks for every contact unit.

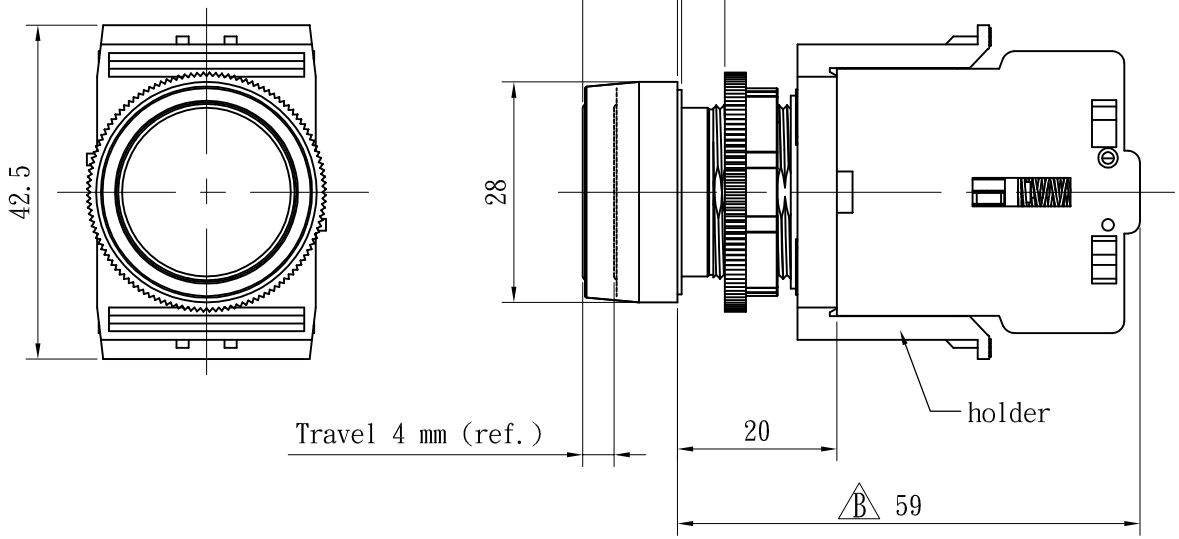
9-3. CAUTION

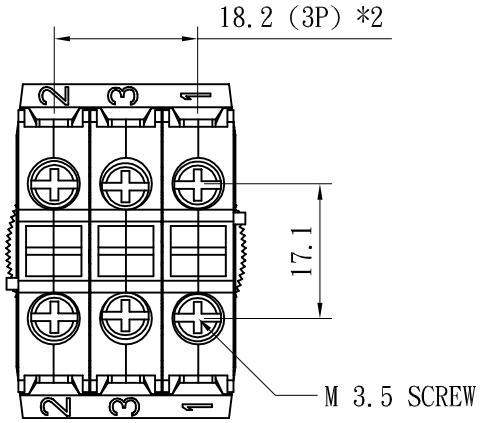
- To prevent injury, this device must be disconnected from all power sources prior to wiring and other initiating work.
- Use tightening tool when installing the operation unit in the panel cutout. Do not use pliers and do not tighten excessively, otherwise the operation unit may be damaged.
- Make sure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

ECS-22RP1X-XXX0









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

NO.	DETAILS	ALTERED BY	DATE
B	Marking position changes	Alice	2018/01/25

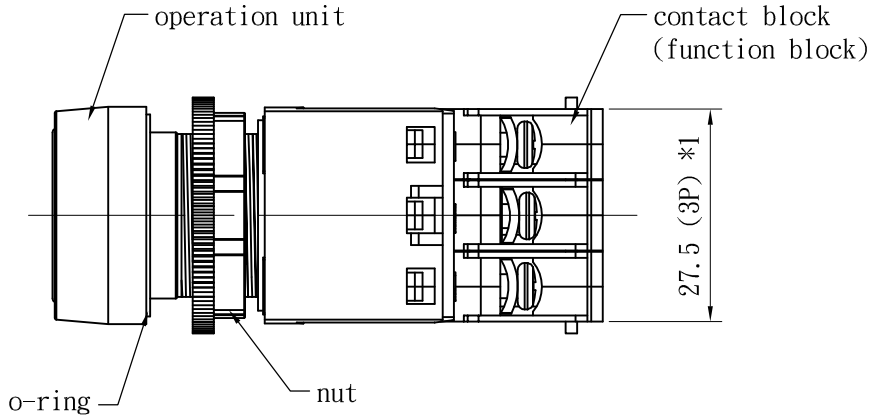
NORMAL TOLERANCE	
RANGE	TOLERANCE
0-1	±0.1
1-4	±0.3
4-16	±0.5
16-63	±0.8
63-250	±1.0

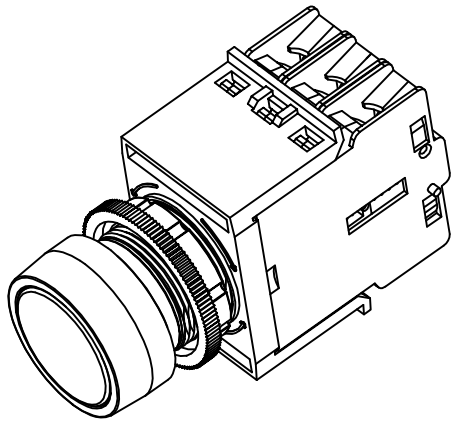
EXCEL CELL ELECTRONIC CO., LTD.

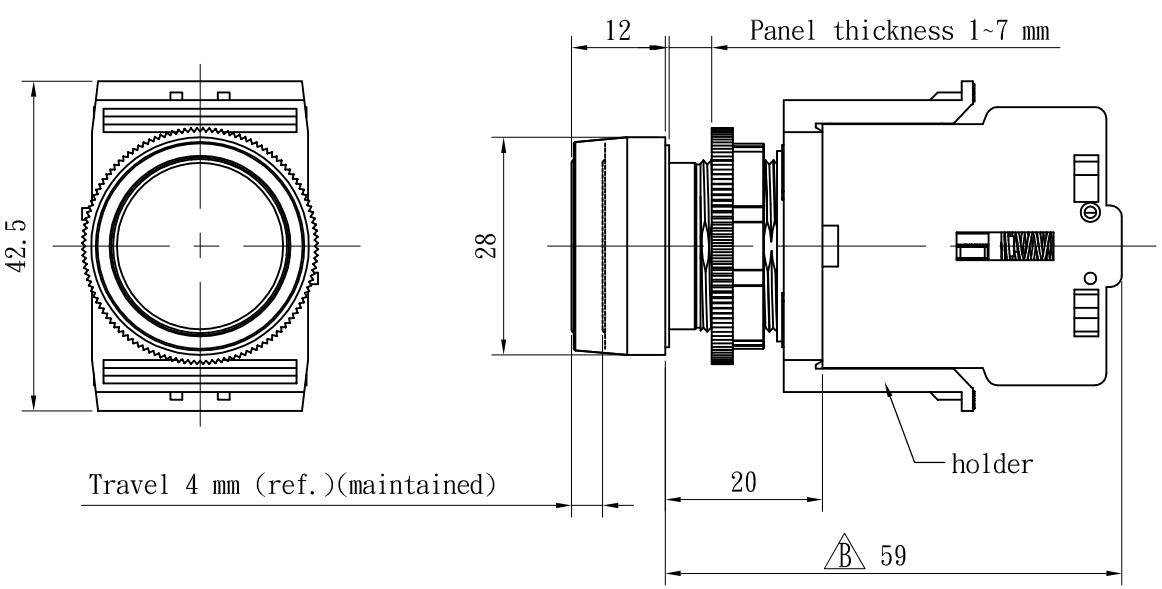
CHECK	DESIGN	DRAWN
Marcus Li	Alice Lin	Alice Lin

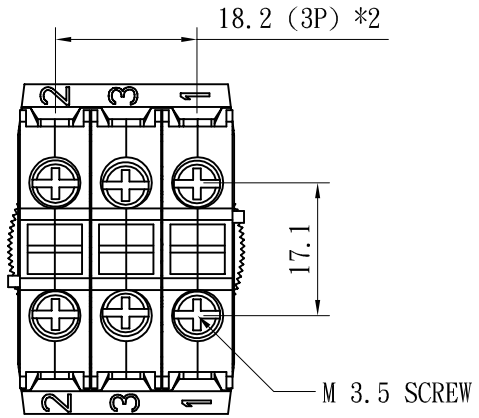
PART NUMBER	ECS-22RP1X-XXX0		
UNIT	MM (INCH)	PART NAME	ECS
SCALE	1:1	TYPE	Pushbutton
SIZE	A4	FILE NAME	76922RPXXB.DWG
PROJECTION		EDITION	B

ECS-22RP2X-XXX0









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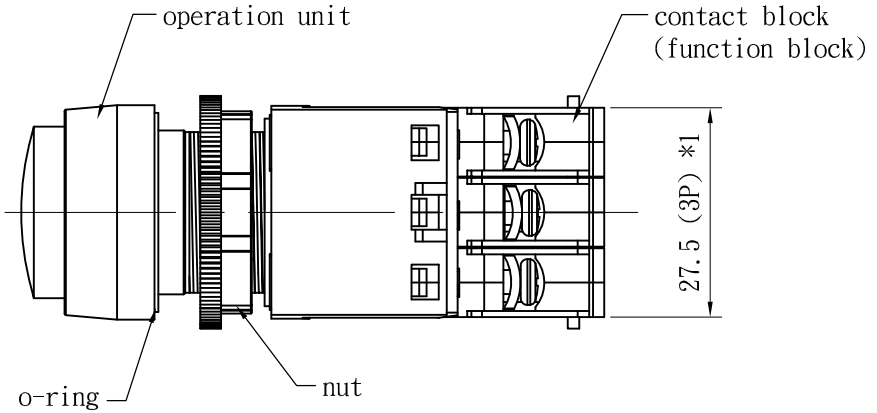
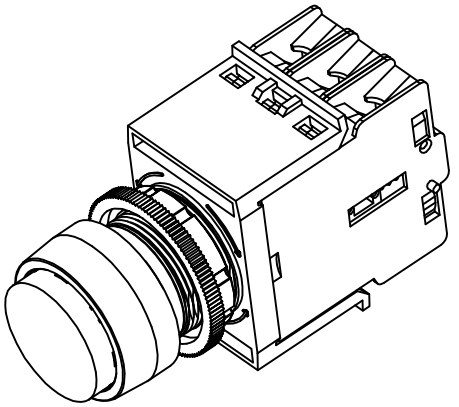
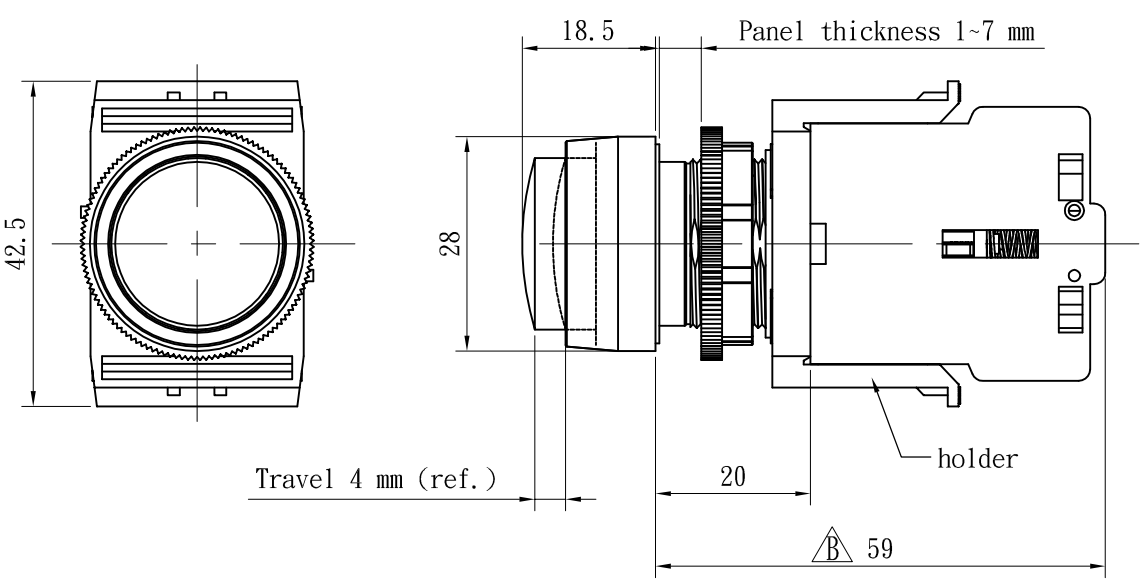
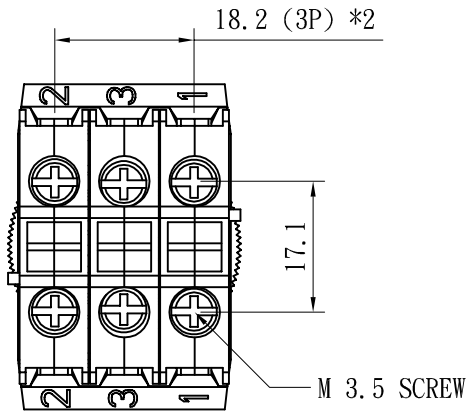
						SIZE	A4	TYPE	Pushbutton
						PROJECTION		FILE NAME	76922RPXXB.DWG
								EDITION	B

ECS-22RP3X-XXX0









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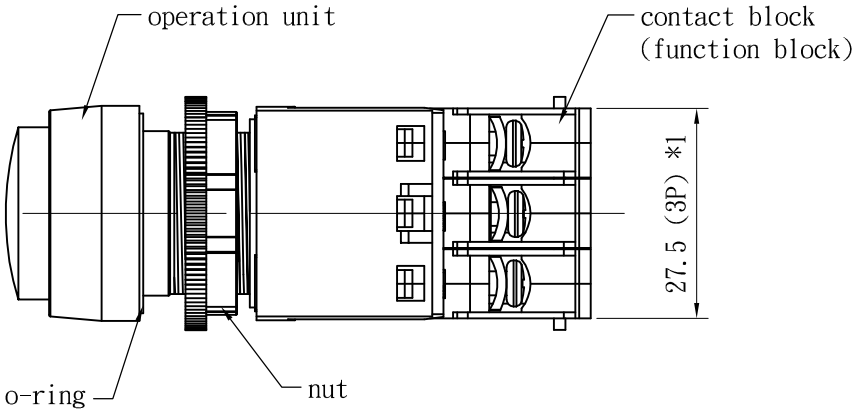
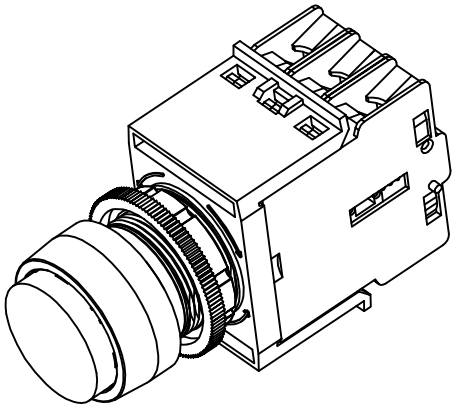
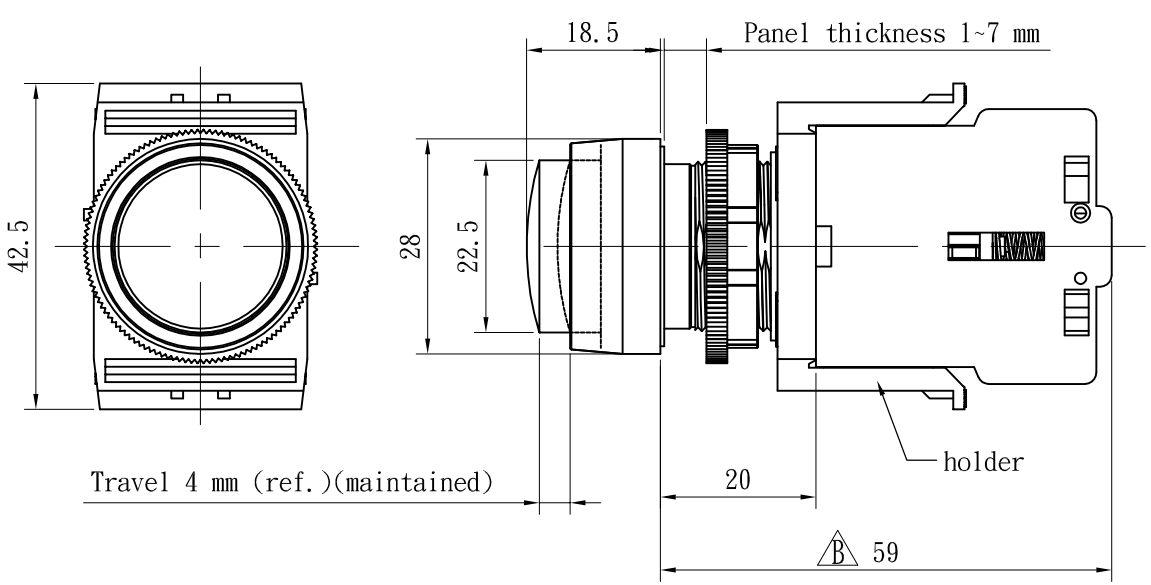
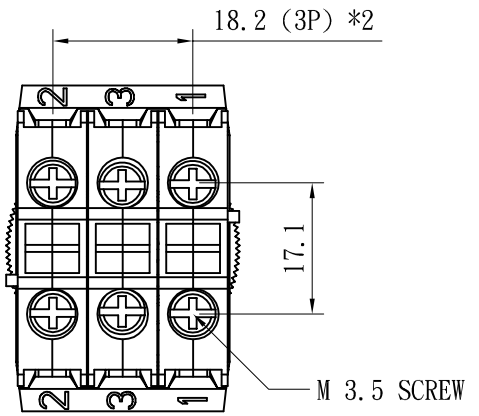
						SIZE	A4	TYPE	Pushbutton
						PROJECTION		FILE NAME	76922RPXXB.DWG
								EDITION	B

ECS-22RP4X-XXX0









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