



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.
- RoHS Compliant
- Halogen Free series available

2. SPECIFICATIONS

2-1. ELECTRICAL

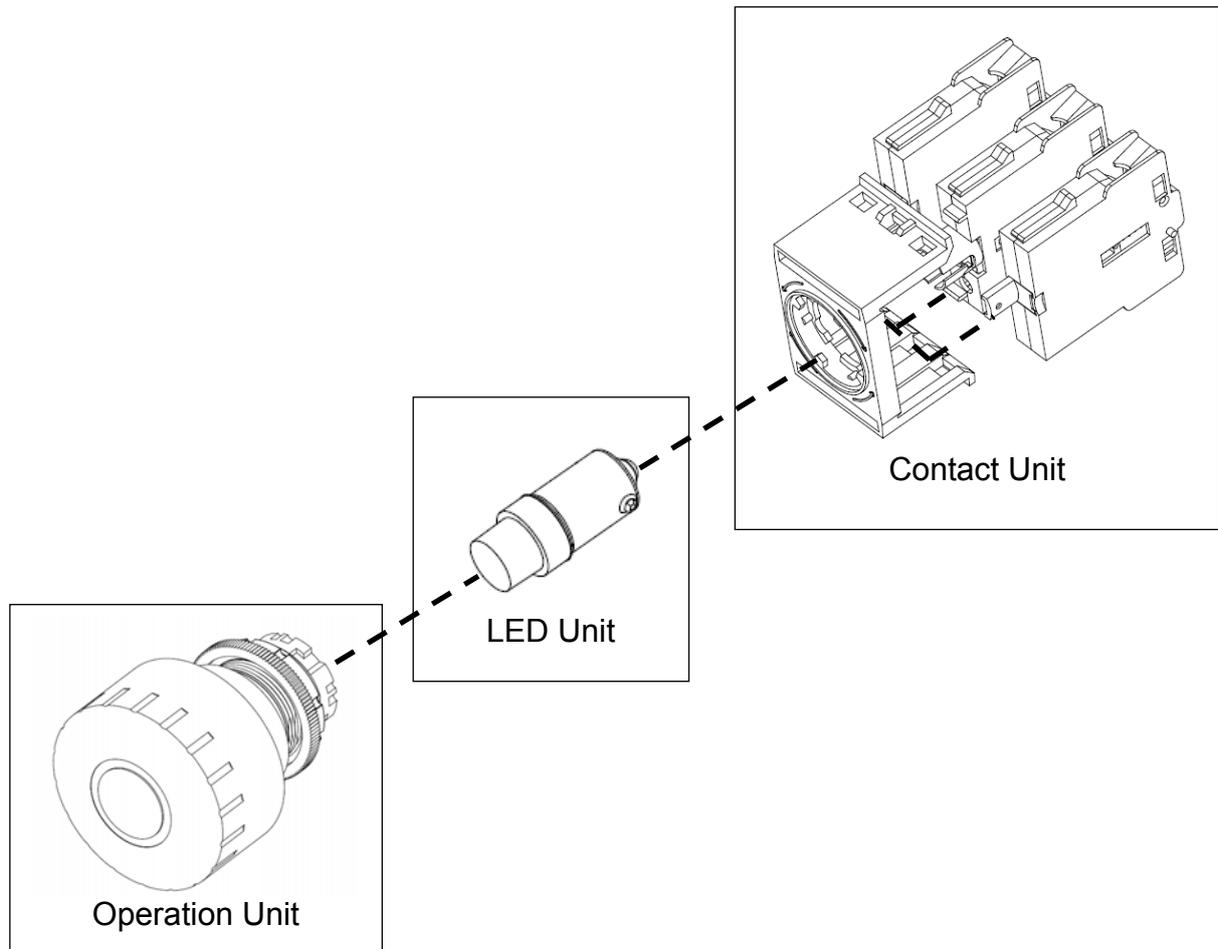
2-1-1. Rated thermal current	10A
2-1-2. Rated insulation voltage	650V
2-1-3. Utilization category	AC-15(A600) or Ue 240V / Ie 3A Ue 380V / Ie 1.9A DC-13(P600) or Ue 250V / Ie 0.55A
2-1-4. Minimum switching capacity [ref.]	3V DC/AC, 5mA
2-1-5. Dielectric strength	2500V AC, 1 min.
2-1-6. Insulation resistance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

2-2. MECHANICAL AND ENVIRONMENTAL

2-2-1. Operating temperature	-25°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 ² (10G)(malfunction) 1000 m/s ² (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 ⊕

ECE	EXCEL CELL ELECTRONIC CO., LTD.	NO.	A31231		
		SPECIFICATION	Edition	6	Page

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

Lamp color: R(Red) / Y(Yellow) / B(Blue)
G(Green) / W(White)

Applied voltage: 06: 6V AC/DC
12: 12V AC/DC
24: 24V AC/DC
A1: 110V AC
A2: 220V AC

Lamp type: L: LED

Special number:

Blank or 0~9 or A~Z
H:Halogen Free series

Contact block special number:
0: Standard holder, Contact block

Function:
0: n/a
2: lamp modular

Contact configuration: 10: 1a 01: 1b
(see 9-2)

Operator special number:

Blank: Illuminated type
1: Non-illuminated type
M1: Mushroom type
M2: Mushroom type (Big Mushroom type)
N: key recess type (Ø 22 mm only)

Cover color:

R(Red) /G(Green) /Y(Yellow) /B(Blue) /K(Black)
(Y(Yellow) /B(Blue) /K(Black) M1 Type only)

Operator Type:

E3: Special Type Pushbutton Switch

Appearance:

R: Round
Q: Square (only for Ø22 & Ø 25 mm)

Mounting hole dia. :

22: Ø 22 mm
25: Ø 25 mm
30: Ø 30 mm

Series: ECS: Industrial Control Switch

ECE	EXCEL CELL ELECTRONIC CO., LTD.	NO.	A31231		
		SPECIFICATION		Edition	6

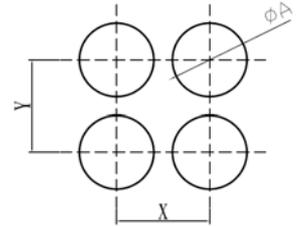
5. INSTALLATION

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



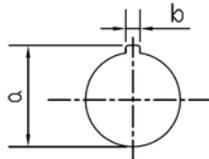
Unit: mm

	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 (∅22mm only)



Unit: mm

Mounting Hole(∅)	a	b
22	24.1 ^{+0.5} ₋₀	3.2 ^{+0.2} ₋₀

- Panel installation

	<ol style="list-style-type: none"> 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



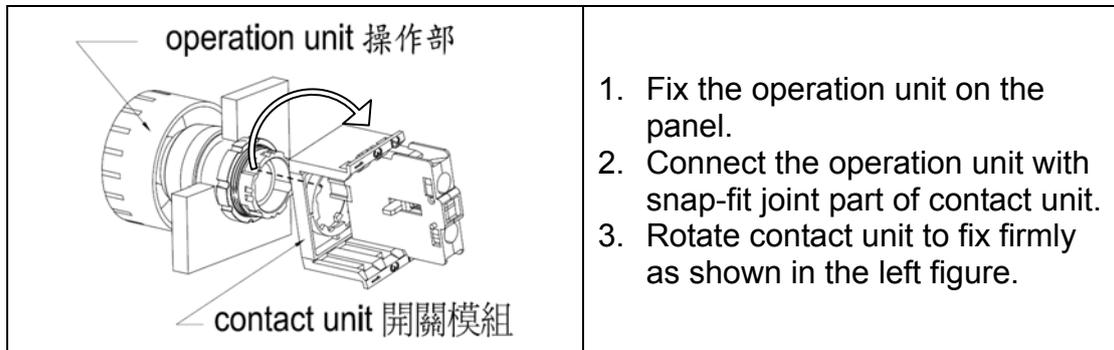
SPECIFICATION

Edition

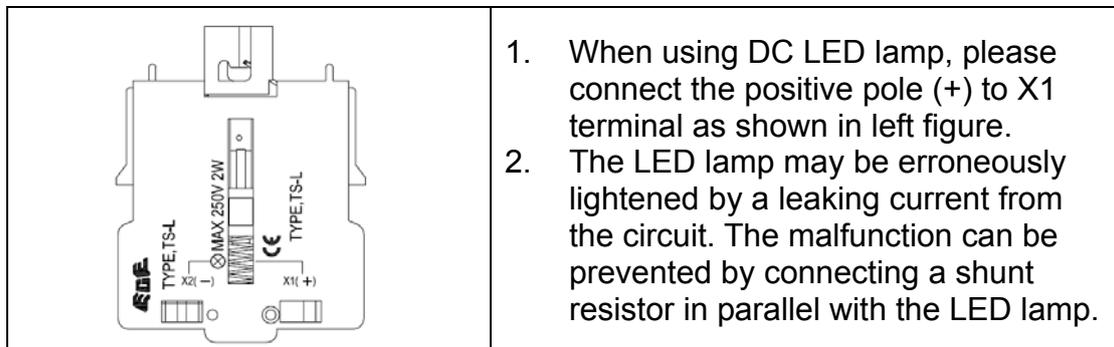
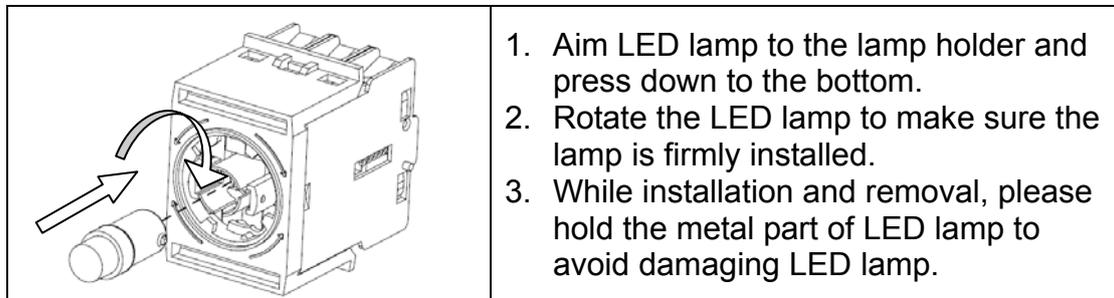
6

Page

5



5-4. LED lamp installation



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

 EXCEL CELL ELECTRONIC CO., LTD.	NO.	A31231			
	SPECIFICATION		Edition	6	Page

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

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:

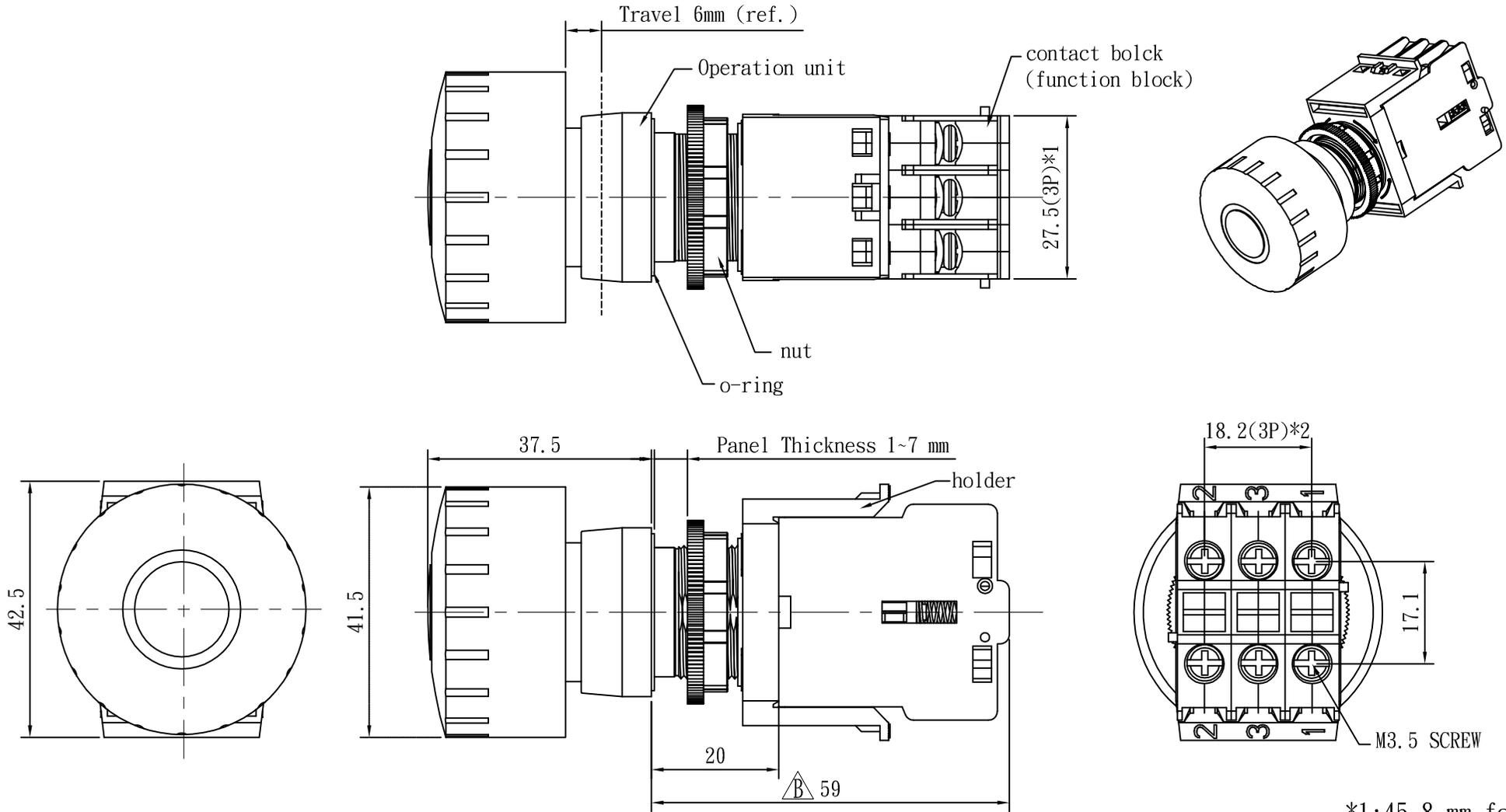
- The colors of contact block are the followings: 1 NO: green, 1 NC: red
- Maximum 5 contact blocks for every contact unit.

	EXCEL CELL ELECTRONIC CO., LTD.	NO.	A31231		
SPECIFICATION		Edition	6	Page	7

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-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	Li	1:1	TYPE	Pushbutton
				1-4	±0.3														
				4-16	±0.5														
				16-63	±0.8														
				63-250	±1.0														
△	Marking position changes	Alice	2018/01/25	X.	±5°	Alice	Lin	Alice	Li	A4	FILE NAME	76922REXXB.DWG							
NO.	DETAILS	ALTERED BY	DATE	X.X	±2.5°														
										PROJECTION		EDITION	B						