

• ema Catalogue

01 series Φ 16mm control switch

02 series Φ 22/25/30mm control switch

05 series multi-layer LED light tower

Linking your system

More information please visit us: www.ema-electronic.com

ema

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Cata.NO.:C125909CN-A

ema

Switches and Light Tower

Catalogue 2010/2011

ema

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- 01 series Φ 16mm control switch
- 02 series Φ 22/25/30mm control switch
- 05 series multi-layer LED light tower



CCC CQC S D N FI
UL US CE RoHS SGS
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RoHS



Laws and rules regarding to the use of chemical raw materials has been gradually regulated in Europe, America, and China since July in 2006. EU(European Union) announced RoHS directive which restricts six kind of harmful substance, lead, mercury, cadmium, chromium , PBB, and PBDE to be applied to any electric and electronic machinery. Products are banned to be sold in those areas if violating the regulations. This directive aims to protect human's health and to recycle the discard motors and electronics equipments handling. Enterprises only focused on environ-ment of producing in the past; however, nowadays many pay attention to the rules of environment security because of the importance of environmental protection consciousness from many countries. With the trend of global green concept, every series of ema meets RoHS directive.

IP Ranking

The first number Prevention of any solid matter			The second number Prevention of water		
IP	Request		IP	Request	
0	No protection		0	No protection	
1	Protection against penetration of solid bodies with dimensions of more than 50mm.		1	Vertical water droplets. No harmful ingress.	
2	Protection against penetration of solid bodies with dimensions of more than 12mm.		2	Showering at 150. No harmful ingress.	
3	Protection against penetration of solid bodies with dimensions of more than 2,5mm.		3	Showering at 600. No harmful ingress.	
4	Protection against penetration of solid bodies with dimensions of more than 1mm.		4	Splashing from any direction. No harmful ingress.	
5	Protection against dust (no harmful deposit)		5	Water jets from any direction 12.5l/min. No harmful ingress.	
6	Total protection against dust(no penetration)		6	Large volumes of water 100l/min.No ingress.	
			7	Immersion up to 1metre deep.No ingress	
			8	Submersion at specified depths exceeding 1 metre. No ingress.	

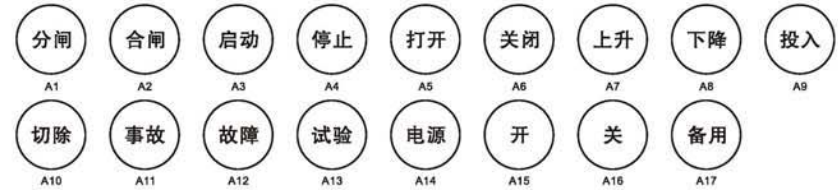
Certifications



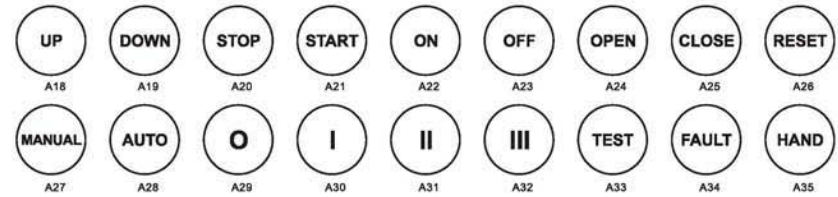
As a reliable partner for our customer, ema test our major products precisely for the safety and obtain related international compliances such as UL, ULC, Semko, Demko, Nemko, Femko, CQC/CCC, and CE as the best guarantee for our products. At the same time, we also acquire the certifications from international quality control system including SGS UKAS and CQC ISO9001:2000, and systemize our quality control method. To follow RoHS directive of EU and the green concept, all products meet RoHS compliance.

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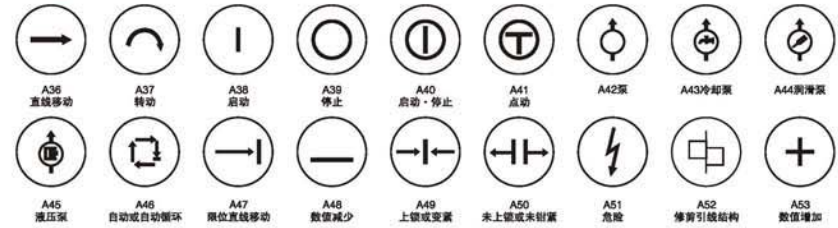
Chinese symbol



Standard symbol



ISO symbol





02 series 22/25/30mm control switches

The illuminated items are equipped with BA9s lamp. Customers could perceive most the delicate and precise design, if they perform together with LED lamps. Generally speaking, the lifetime of incandescent lamps is less than 1,000 hours, discharged lamps less than 3,000 hours, but LED lamps could last for at least 5,000 hours. Based on that, the whole appearance appeal to customer's attention and maintenance costs are also highly saved. Besides, high-bright LED lamps are also provided to enhance the brightness when used in 110VAC and 220VAC power conditions.

02 series 22/25/30mm control switches

22mm economic indicators	28-29
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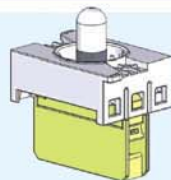
Feature

- 22、25 and 30mm mounting holes, fulfill your intentions of choice and replacement.
- Whole series slim, delicate and light, up to the requirement of protection IP40 and IP65.
- Lower and flush housing actuators, highly increase the fine appearance of your panel.
- Flexible and module assembly, effectively decrease the cost of stock.
- Friendly handling and module design, save your treasure time while installation.
- High quality elegant and sophisticated design, add the extra value and esthetic feeling into applications.
- Professional selection of engineering materials, overcome the harshest of your environment.
- Contact sliding mechanism, avoid the pollution of contacts and increase switching reliability.
- Approved by safety standards UL、ULc、CCC and CE, provide you with fully safety assured products.
- This series meet RoHS directive and satisfy customers' green demands.



Technical Specifications

- Safety standard** CE/EN60947.5.1, CCC/GB14048.5-2001, UL 508
- Rated capacity** $U_i=600VAC$, $I_{th}=10A$
- Contact rating** AC15:250VAC/6A DC13:250VDC/0.6A
- Contact resistance** MAX. 50mΩ
- Dielectric strength** 2500VAC 50Hz, 1min
- Insulation resistance** >100M Ω at 500VDC
- Vibration resistance** 10g@40~500Hz
- Lamp lifetime** Incandescent lamp: ≤1,000 hrs LED lamp: ≥5,000 hrs
- Mechanical lifetime**
 - pushbutton switches: momentary > 3,000,000 maintained > 500,000
 - selector switches: momentary > 500,000 maintained > 500,000
 - keylock switches: Momentary > 500,000 maintained > 500,000
 - emergency stop switches: momentary > 3,000,000
- Electrical lifetime** Contact block: AC15 250VAC/6A > 1,000,000 DC13 250VDC/0.6A > 1,000,000
- Storage temperature** -40°C~ +80°C
- Operating temperature** -25°C~ +55°C



Apparent Dimensions

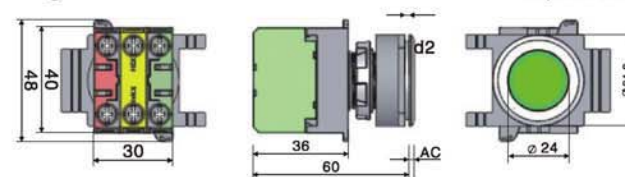
Standard mounting

d1: panel thickness 1~6 units:mm



Flush mounting

d1: panel thickness 1~5 units:mm



AC Value

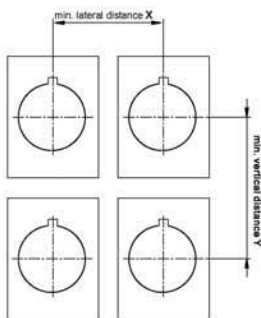
Actuator Type	Description	AC Value	Actuator Type	Description	AC Value
E2I0/H2I0	E2/H2 indicators full lens	11	-	-	-
E2I1/H2I1	E2/H2 indicators flat lens	11	E3I1/H3I1	E3/H3 flush indicators flat lens	2
E2I2/H2I2	E2/H2 indicators raised lens	15	E3I2/H3I2	E3/H3 flush indicators raised lens	6
E2P1/H2P1	E2/H2 pushbutton flat head /button*	11	E3P1/H3P1	E3/H3 flush pushbutton flat head /button*	2
E2P2/H2P2	E2/H2 pushbutton raised head /button*	15	E3P2/H3P2	E3/H3 flush pushbutton raised head /button*	6
E2P3/H2P3	E2/H2 pushbutton sunken head /button*	15	-	-	-
E2P4/H2P4	E2/H2 pushbutton mushroom head /button*	26.6/24.3	E3P4/H3P4	E3/H3 flush pushbutton mushroom head /button*	17.6/15.3
E2P5/H2P5	E2/H2 pushbutton high bezel head /button*	15	-	-	-
E2R1/H2R1	E2/H2 emergency stop	26.6	E3R1/H3R1	E3/H3 flush emergency stop	17.6
E2S-K/H2S-K	E2/H2 knob selector	24.5	E3S-K/H3S-K	E3/H3 flush knob selector	15.5
E2S-L/H2S-L	E2/H2 lever selector	24.5	E3S-L/H3S-L	E3/H3 flush lever selector	15.5
E2K/H2K	E2/H2 keylock	34	E3K/H3K	E3/H3 flush keylock	24
E2B/H2B	E2/H2 buzzers	10.5	E3B/H3B	E3/H3 buzzers	2

* note: "head" means non-illuminated cap and "button" illuminated one

Cut-out Dimensions

Cut-out Category	Cautions	Hole Dimension
A: 22 mm hole with locating groove	1. Only for standard mounting items 2. Suitable for the batch installation 3. Recommended venting size: 22.5mm	
B: 22mm round hole	1. Only for standard mounting 2. Need to remove the locating lug of the housing by flat screwdriver 3. Recommended venting size: 22.5mm	
C: 25mm round hole	1. Only for standard mounting 2. Not need to remove the locating lug of the housing 3. Recommended venting size: 25.5mm	
D: 30mm round hole	1. Only for flush mounting 2. Flush mounting, use [recession frame] to assist position 3. Recommended venting size: 30.5mm	

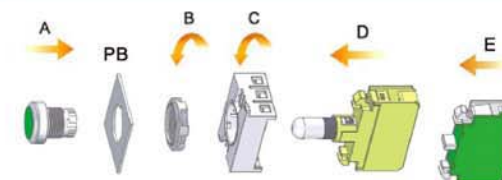
Cut-out Arrangements



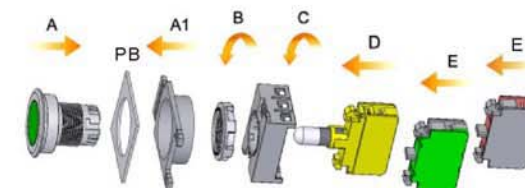
Actuator Type	min. lateral distance X(mm)	min. vertical distance Y(mm)
E2P4 to E2P4 E3P4 to E3P4 (mushroom to mushroom)	45	50
E2S-L to E2S-L two positions 90° E3S-L to E3S-L two positions 90° (lever to lever)	52	50
the others	45	50

Installation Procedure

■ Standard Mounting



■ Flush Mounting



※ Note: PB (Panel Board)

Handling Instruction

Sequence	Cautions
A :Put the actuator into cut-out hole A1:Flush mounting items need to add the recession frame onto the panel from the back	1. Refer to the dimensions of mounting hole (see page 6) to avoid forcing the actuator in damage 2. Every actuator comes with a rubber parking to be put between the actuator and the panel for the sake of anti-rotation 3. For flush mounting items, choose the accessory [recession frame] see page 18) to assist position
B :Screw the nut right to settle actuator onto the panel	1. Do not force too much and the tightening torque must not exceed 3 Nm 2. Choose the [anti-twisting ring] 02Z-100 (see page 17) to enhance the anti-rotation torque while needed
C :Put in junction frame and rotate right to wedge in the actuator	Notice the directions of pulling wires while installed and arranged, it should point to the direction of right-hand rotation not to the left to avoid pulling the junction frame left
D :Install lamp holder into junction frame	Install lamp holder first while set-up illuminated items
E :Install contact block into junction frame	Notice the sequence of the contact block, while 3-position selector or keylock switches are installed

Dismounting Instructions

Sequence	Cautions
1. Remove the contact block and lamp holder	1. Place the flat screwdriver under the edge of junction frame, push up to release the switch block and lamp holder 2. If contact block and lamp holder coexist, please remove the contact block first
2. Turn left to dismantle junction frame	-
3. Turn left to release screw nut and then take out the actuator from the cut - out hole	-



- Concise design, simple construction, reliable working and long duration
- Long lifetime and brightness LED lamp embedded in E2C0 economic indicator light.
- Light and delicate design, up to the requirement of protection IP40
- The material of lightshade features with anti-abrasion and anti-shock
- Five different colors of indicator light can be selected
- Voltage of 24VDC, 110VAC, 220 VAC are available


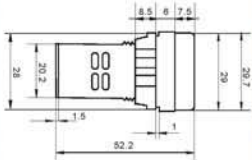







Coding Principle

Economic indicator light: E2C0W

E	2	C	0	W	3	L
---	---	---	---	---	---	---

Part No.	Code Description
E	Protection classification: E=IP40 standard
2	Mouncting size: 2=22mm standard mounting
C0	Type of indicator light: economic indicator light
W	Cap color: R=red Y=yellow G=green B=blue W=white
3	Type of light: 3=24VDC 4=110VAC 5=220VAC
L	light source: L=LED

E2C0 indicators	Drawing	Color	Built-in LED Part No.
			E2C0W◇L
			E2C0R◇L
			E2C0Y◇L
			E2C0G◇L
			E2C0B◇L

Remarks :1. ◇Lamp Voltage: 3=24VDC, 4=110VAC, 5=220VAC





- Elegant and sophisticated design, add the extra value and esthetic feeling into applications
- Professional selection of engineering materials, overcome the harshest of your environment
- Friendly handling and module design, save your treasure time while installation
- Flexible and module assembly, effectively decrease the cost of stock
- Whole series slim; delicate and light, up to the requirement of protection IP40 and IP65
- Lower and flush mounting actuators, highly increase the fine appearance of your panel
- 22、 25 and 30mm mounting holes, fulfill your intentions of choice and replacement



Coding Principle

Indicators E2/E3I | E 2 I 0 W 3 L Y

Part No.	Code Description
E	Classification : E=IP40 Standard H=IP65 Rubber-sealed
2	Mounting size : 2=22mm, 25mm Standard mounting 3= 30mm Flush mounting
I0	Cap style : I0=Full lens, I1=Flat lens, I2=Raised lens
W	Cap color : R=Red, Y=Yellow, G=Green, B=Blue, W=White
3	Operating voltage : 1=6VDC, 2=12VDC, 3=24VDC, 4=110VAC, 5=220VAC
L	Light source : D=Incandescent lamp, A=Discharged lamp, L=LED lamp, Omission=Without lamp
Y	Extra code : If the color of lamps and lens are different, please add this code to tell the color of lamp.
Remarks	E3I0 full lens style is not available

Model	Drawing	Color	Built-in LED Part No.	Built-in Incand Part No.
E210 Full Lens			E210W◇L	E210W◇D
			E210R◇L	E210R◇D
			E210Y◇L	E210Y◇D
			E210G◇L	E210G◇D
			E210B◇L	E210B◇D
E211 Flat Lens			E211W◇L	E211W◇D
			E211R◇L	E211R◇D
			E211Y◇L	E211Y◇D
			E211G◇L	E211G◇D
			E211B◇L	E211B◇D
E212 Raised Lens			E212W◇L	E212W◇D
			E212R◇L	E212R◇D
			E212Y◇L	E212Y◇D
			E212G◇L	E212G◇D
			E212B◇L	E212B◇D
E311 Flush Flat Lens			E311W◇L	E311W◇D
			E311R◇L	E311R◇D
			E311Y◇L	E311Y◇D
			E311G◇L	E311G◇D
			E311B◇L	E311B◇D
E312 Flush Raised Lens			E312W◇L	E312W◇D
			E312R◇L	E312R◇D
			E312Y◇L	E312Y◇D
			E312G◇L	E312G◇D
			E312B◇L	E312B◇D

- Remarks : 1. ◇ Lamp Voltage: 1=6VDC, 2=12VDC, 3=24VDC, 4=110VAC, 5=220VAC
 2. Incandescent lamps powered by 110VAC, 220VAC are not available. Discharged lamps powered by 110VAC, 220VAC are available only.
 3. Please change "E" to "H" for protection rating IP65.
 4. Please add "M" in the last of order no. if you would like to change the black plastic front ring to the metal ring.

01 Series 16mm Control Switches
02 series 22/25/30mm Control Switches
05 series Multi-Layer Light Tower
Drawing



- Elegant and sophisticated design, add the extra value and esthetic feeling into applications
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- Friendly handling and module design, save your treasure time while installation
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- Whole series slim; delicate and light, up to the requirement of protection IP40 and IP65
- Lower and flush mounting actuators, highly increase the fine appearance of your panel
- 22、 25 and 30mm mounting holes, fulfill your intentions of choice and replacement



Coding Principle

Pushbutton Switches E2P/E3P E 2 P 1 W 1 A 3 L Y . A

Part No.	Code Description
E	Classification : E=IP40 Standard H=IP65 Rubber-sealed
2	Mounting size : 2=22mm, 25mm Standard mounting 3= 30mm Flush mounting
P1	Cap style : Non-illumination P1=Flat head, P2=Raised head, P3=Sunken head P4=Mushroom head, P5=High bezel head Illumination P1=Flat button, P2=Raised button, P3=Sunken button P4=Mushroom button, P5=High bezel button
W	Cap color : R=Red, Y=Yellow, G=Green, B=Blue, W=wWhite, K=Black
1A	Contact mode : 1A=1NO 1B=1NC 2A=2NO 2B=2NC AB=1NO+1NC
3	Operating voltage : 1=6VDC, 2=12VDC, 3=24VDC, 4=110VAC, 5=220VAC
L	Light source : D=Incandescent lamp, A=Discharged lamp, L=LED lamp, Omission=Without lamp
Y	Extra code : If the colors of lamp and lens are different, please add this code to tell the color of lamp.
.A	Function mode : A=Maintained, Omission=Momentary


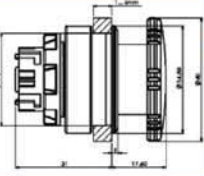

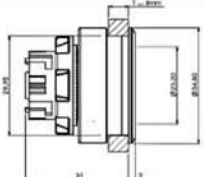
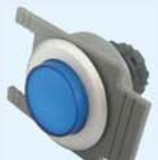
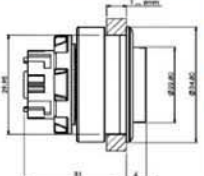

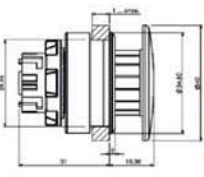
E2P1 Flat Head	Drawing	Color	Momentary Part No.	Maintained Part No.
		○	E2P1W□□	-
		●	E2P1R□□	-
		●	E2P1Y□□	-
		●	E2P1G□□	-
		●	E2P1B□□	-
		●	E2P1K□□	-
E2P2 Raised Head	Drawing	Color	Momentary Part No.	Maintained Part No.
		○	E2P2W□□	-
		●	E2P2R□□	-
		●	E2P2Y□□	-
		●	E2P2G□□	-
		●	E2P2B□□	-
		●	E2P2K□□	-
E2P3 Sunken Head	Drawing	Color	Momentary Part No.	Maintained Part No.
		○	E2P3W□□	-
		●	E2P3R□□	-
		●	E2P3Y□□	-
		●	E2P3G□□	-
		●	E2P3B□□	-
		●	E2P3K□□	-
E2P4 Mushroom Head	Drawing	Color	Momentary Part No.	Maintained Part No.
		●	E2P4R□□	E2P4R□□.A
		●	E2P4Y□□	E2P4Y□□.A
		●	E2P4G□□	E2P4G□□.A
		-	-	-
		-	-	-
		-	-	-

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E2P5 High Bezel Head	Drawing	Color	Momentary Part No.	Maintained Part No.
		○	E2P5W□□	-
		●	E2P5R□□	-
		●	E2P5Y□□	-
		●	E2P5G□□	-
		●	E2P5B□□	-
		●	E2P5K□□	-
E2P1 Flat Button	Drawing	Color	Momentary Part No.	Maintained Part No.
		○	E2P1W□□◇L	E2P1W□□◇L.A
		●	E2P1R□□◇L	E2P1R□□◇L.A
		●	E2P1Y□□◇L	E2P1Y□□◇L.A
		●	E2P1G□□◇L	E2P1G□□◇L.A
		●	E2P1B□□◇L	E2P1B□□◇L.A
E2P2 Raised Button	Drawing	Color	Momentary Part No.	Maintained Part No.
		○	E2P2W□□◇L	E2P2W□□◇L.A
		●	E2P2R□□◇L	E2P2R□□◇L.A
		●	E2P2Y□□◇L	E2P2Y□□◇L.A
		●	E2P2G□□◇L	E2P2G□□◇L.A
		●	E2P2B□□◇L	E2P2B□□◇L.A
E2P3 Sunken Button	Drawing	Color	Momentary Part No.	Maintained Part No.
		○	E2P3W□□◇L	E2P3W□□◇L.A
		●	E2P3R□□◇L	E2P3R□□◇L.A
		●	E2P3Y□□◇L	E2P3Y□□◇L.A
		●	E2P3G□□◇L	E2P3G□□◇L.A
		●	E2P3B□□◇L	E2P3B□□◇L.A
E2P4 Mushroom Button	Drawing	Color	Momentary Part No.	Maintained Part No.
		○	E2P4W□□◇L	E2P4W□□◇L.A
		●	E2P4R□□◇L	E2P4R□□◇L.A
		●	E2P4Y□□◇L	E2P4Y□□◇L.A
		●	E2P4G□□◇L	E2P4G□□◇L.A
		●	E2P4B□□◇L	E2P4B□□◇L.A

E2P5 High Bezel Button	Drawing	Color	Momentary Part No.	Maintained Part No.
		○	E2P5W□□◇L	E2P5W□□◇L.A
		●	E2P5R□□◇L	E2P5R□□◇L.A
		●	E2P5Y□□◇L	E2P5Y□□◇L.A
		●	E2P5G□□◇L	E2P5G□□◇L.A
		●	E2P5B□□◇L	E2P5B□□◇L.A
E3P1 Flush Flat Head	Drawing	Color	Momentary Part No.	Maintained Part No.
		○	E3P1W□□	-
		●	E3P1R□□	-
		●	E3P1Y□□	-
		●	E3P1G□□	-
		●	E3P1B□□	-
		●	E3P1K□□	-
E3P2 Flush Raised Head	Drawing	Color	Momentary Part No.	Maintained Part No.
		○	E3P2W□□	-
		●	E3P2R□□	-
		●	E3P2Y□□	-
		●	E3P2G□□	-
		●	E3P2B□□	-
		●	E3P2K□□	-

- Remarks :
- Contact Mode: 1A=1NO, 1B=1NC, 2A=2NO, 2B=2NC, AB=1NO+1NC
 - ◇Lamp Voltage: 1= 6VDC, 2= 12VDC, 3= 24VDC, 4= 110VAC, 5= 220VAC
L=LED lamp, D=Incandescent lamps, Omission=Without lamp
 - Highlight-background◇L in columns of "maintained part no." = This two codes could be omitted, and that stands for the part no. of the maintained pushbutton switches without lamp.
 - Pushbutton without lamp could be attached the 3rdcontact. Please add extra A or B code following the contact mode to present the mode of the 3rdcontact, A means 1 normally open and B1 normally close.
 - Please change "E" to "H" for protection rating IP65.
 - Please add *M in the last of order no. if you would like to change the black plastic front ring to the metal ring.

E3P4 Flush Mushroom Head	Drawing	Color	Momentary Part No.	Maintained Part No.
		●	E3P4R□□	E3P4R□□.A
		●	E3P4Y□□	E3P4Y□□.A
		●	E3P4G□□	E3P4G□□.A
		-	-	-
		-	-	-
E3P1 Flush Flat Button	Drawing	Color	Momentary Part No.	Maintained Part No.
		○	E3P1W□□◇L	E3P1W□□◇L.A
		●	E3P1R□□◇L	E3P1R□□◇L.A
		●	E3P1Y□□◇L	E3P1Y□□◇L.A
		●	E3P1G□□◇L	E3P1G□□◇L.A
		●	E3P1B□□◇L	E3P1B□□◇L.A
E3P2 Flush Raised Button	Drawing	Color	Momentary Part No.	Maintained Part No.
		○	E3P2W□□◇L	E3P2W□□◇L.A
		●	E3P2R□□◇L	E3P2R□□◇L.A
		●	E3P2Y□□◇L	E3P2Y□□◇L.A
		●	E3P2G□□◇L	E3P2G□□◇L.A
		●	E3P2B□□◇L	E3P2B□□◇L.A
E3P4 Flush Mushroom Button	Drawing	Color	Momentary Part No.	Maintained Part No.
		○	E3P4W□□◇L	E3P4W□□◇L.A
		●	E3P4R□□◇L	E3P4R□□◇L.A
		●	E3P4Y□□◇L	E3P4Y□□◇L.A
		●	E3P4G□□◇L	E3P4G□□◇L.A
		●	E3P4B□□◇L	E3P4B□□◇L.A

- Remarks:
- Contact Mode: 1A=1NO, 1B=1NC, 2A=2NO, 2B=2NC, AB=1NO+1NC
 - ◇Lamp Voltage: 1= 6VDC, 2= 12VDC, 3= 24VDC, 4= 110VAC, 5= 220VAC
L=LED lamp, D=Incandescent lamps, Omission=Without lamp
 - Highlight-background◇L in columns of "maintained part no." = This two codes could be omitted, and that stands for the part no. of the maintained pushbutton switches without lamp.
 - Pushbutton without lamp could be attached the 3rdcontact. Please add extra A or B code following the contact mode to present the mode of the 3rdcontact, A means 1 normally open and B1 normally close.
 - Please change "E" to "H" for protection rating IP65.
 - Please add *M in the last of order no. if you would like to change the black plastic front ring to the metal ring.



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Coding Principle

Selector Switches E2S/E3S E 2 S 1 K 1 A 3 L Y . V

Part No.	Code Description
E	Classification : E=IP40 Standard H=IP65 Rubber-sealed
2	Mounting size : 2=22mm, 25mm Standard mounting 3= 30mm Flush mounting
S1	Handling type : S1=2 Positions, momentary 45° ; S2=2 Positions, maintained 90° S3=3 Positions, left maintained 45° right maintained 45° S4=3 Positions, left momentary 45° right momentary 45° S5=3 Positions, left maintained 45° right momentary 45°
K	Handle type : K=Short handle (knob), L=Long handle (lever)
1A	Contact mode : 1A=1NO, 1B=1NC, 2A=2NO, 2B=2NC AB=Left 1NO+Right 1NC, BA=Left 1NC+Right 1NO
3	Operating voltage : 1=6VDC,2=12VDC,3=24VDC,4=110VAC,5=220VAC
L	Light source : D=Incandescent lamp, A=Discharged lamp, L=LED lamp, Omission=Without lamp
Y	Lamp color : While LED lamp installed, please add this code to identify the color of LED R=Red, Y=Yellow G=Green, B=Blue, W=White
.V	Handle shape : V=V shape, Omission= L shape(only for S2 handling type)

E2S-K Knob Selector	Drawing	Handling Type	Part No.
		45° M 2 positions, momentary 45°	E2S1K□□
		90° A 2 positions, maintained 90°	E2S2K□□
		90° V 2 positions, maintained 90° _V shape	E2S2K□□.V
		A 45° 45° A 3 positions, left main.right main. 45°	E2S3K□□
		M 45° 45° M 3 positions, left mome.right mome.45°	E2S4K□□
A 45° 45° M 3 positions, left main.right mome. 45°	E2S5K□□		
E2S-K Knob Selector	Drawing	Handling Type	Part No.
		45° M 2 positions, momentary 45°	E2S1K□□◇L△
		90° A 2 positions, maintained 90°	E2S2K□□◇L△
		90° V 2 positions, maintained 90° _V shape	E2S2K□□◇L△.V
		A 45° 45° A 3 positions, left main.right main. 45°	E2S3K□□◇L△
		M 45° 45° M 3 positions, left mome.right mome.45°	E2S4K□□◇L△
A 45° 45° M 3 positions, left main.right mome. 45°	E2S5K□□◇L△		
E3S-K FlushKnob Selector	Drawing	Handling Type	Part No.
		45° M 2 positions, momentary 45°	E3S1K□□
		90° A 2 positions, maintained 90°	E3S2K□□
		90° V 2 positions, maintained 90° _V shape	E3S2K□□.V
		A 45° 45° A 3 positions, left main.right main. 45°	E3S3K□□
		M 45° 45° M 3 positions, left mome.right mome.45°	E3S4K□□
A 45° 45° M 3 positions, left main.right mome. 45°	E3S5K□□		
E3S-K FlushKnob Selector	Drawing	Handling Type	Part No.
		45° M 2 positions, momentary 45°	E3S1K□□◇L△
		90° A 2 positions, maintained 90°	E3S2K□□◇L△
		90° V 2 positions, maintained 90° _V shape	E3S2K□□◇L△.V
		A 45° 45° A 3 positions, left main.right main. 45°	E3S3K□□◇L△
		M 45° 45° M 3 positions, left mome.right mome.45°	E3S4K□□◇L△
A 45° 45° M 3 positions, left main.right mome. 45°	E3S5K□□◇L△		

01 Series
16mm Control
Switches

02 series
22/25/30mm
Control Switches

05 series
Multi-Layer
Light Tower

Drawing

E2S-L Lever Selector	Drawing	Handling Type	Part No.
		 2 positions, momentary 45°	E2S1L□□
		 2 positions, maintained 90°	E2S2L□□
		 2 positions, maintained 90° _V shape	E2S2L□□.V
		 3 positions, left main.right main. 45°	E2S3L□□
		 3 positions, left mome.right mome.45°	E2S4L□□
		 3 positions, left main.right mome. 45°	E2S5L□□
E2S-L Lever Selector	Drawing	Handling Type	Part No.
		 2 positions, momentary 45°	E2S1L□□◇L△
		 2 positions, maintained 90°	E2S2L□□◇L△
		 2 positions, maintained 90° _V shape	E2S2L□□◇L△.V
		 3 positions, left main.right main. 45°	E2S3L□□◇L△
		 3 positions, left mome.right mome.45°	E2S4L□□◇L△
		 3 positions, left main.right mome. 45°	E2S5L□□◇L△
E3S-L Flush Lever Selector	Drawing	Handling Type	Part No.
		 2 positions, momentary 45°	E3S1L□□
		 2 positions, maintained 90°	E3S2L□□
		 2 positions, maintained 90° _V shape	E3S2L□□.V
		 3 positions, left main.right main. 45°	E3S3L□□
		 3 positions, left mome.right mome.45°	E3S4L□□
		 3 positions, left main.right mome. 45°	E3S5L□□
E3S-L Flush Lever Selector	Drawing	Handling Type	Part No.
		 2 positions, momentary 45°	E3S1L□□◇L△
		 2 positions, maintained 90°	E3S2L□□◇L△
		 2 positions, maintained 90° _V shape	E3S2L□□◇L△.V
		 3 positions, left main.right main. 45°	E3S3L□□◇L△
		 3 positions, left mome.right mome.45°	E3S4L□□◇L△
		 3 positions, left main.right mome. 45°	E3S5L□□◇L△

- Remarks:
- Handling type: M= Momentary, A= Maintained ; mome.= Momentary, main.= Maintained
 - Contact mode: 1A=1NO, 1B=1NC, AB=1NO+1NC, 2A=2NO, 2B=2NC
Note that the sequence of contact blocks should be consistent with the handling type, in this situation, AB means left A contact and right B,BA means left B contact and right A.
 - ◇ Lamp Voltage:1=6VDC, 2=12VDC, 3=24VDC, 4=110VAC, 5=220VAC
L=LEDlamp,D= Incandescent lamps,A=Discharged lamps(Incandescent lamps powered by 110VAC,220VAC are not available. Discharged lamps powered by 110 VAC, 220VAC are available only. Omission=without lamp.
 - △ Light source color : R=Red, Y=Yellow, G=Green, B=Blue, W=White.
 - Pushbutton without lamp could be attached the 3rdcontact. Please add extra A or B code following the contact mode to present the mode of the 3rdcontact, A means 1 normally open and B1 normally close.
 - Please change "E" to "H" for protection rating IP65.
 - Please add *M in the last of order no. if you would like to change the black plastic front ring to the metal ring.



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Coding Principle

Pushbutton Switches E2P/E3P

E 2 R 1 R 1 B

Part No.	Code Description
E	Classification : E=IP40 Standard H=IP65 Rubber-sealed
2	Mounting size : 2=22mm, 25mm Standard mounting 3= 30mm Standard mounting
R1	Reset mode : R1=Rotate to reset
R	Cap color : R=Red
1B	Contact mode : 1A=1NO, 1B=1NC, 2A=2NO, 2B=2NC, AB=1NO+1NC

E2R1 Emergency Stop Switches	Drawing	Color	Reset Mode	Part No.
			rotate to reset	E2R1R□□
E3R1 Emergency Stop Switches	Drawing	Color	Reset Mode	Part No.
			rotate to reset	E3R1R□□

- Remarks:
1. □□Contact Mode: 1A=1NO, 1B=1NC, 2A=2NO, 2B=2NC, AB=1NO+1NC
 2. Pushbutton without lamp could be attached the 3rdcontact. Please add extra A or B code following the contact mode to present the mode of the 3rdcontact, A means 1 normally open and B1 normally close.
 3. Please change "E" to "H" for protection rating IP65.
 4. Please add *M in the last of order no. if you would like to change the yellow plastic front ring to the metal ring.



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Coding Principle

Keylock Switches E2K/E3K

E	2	K	1	W	1	A	.	V
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Part No.	Code Description
E	Classification : E=IP40 Standard H=IP65 Rubber-sealed
2	Mounting size : 2=22mm, 25mm Standard mounting 3= 30mm Flush mounting
K1	Handling type : K1=2 Positions, momentary 45°; K2=2 Positions, maintained 90° K7=3 Positions, left momentary 45° right maintained 90° K8=3 Positions, left maintained 90° right maintained 90°
W	Key pull : I=One inlet, V=Two inlets, W=Three inlets
1A	Contact mode : 1A=1NO, 1B=1NC, 2A=2NO, 2B=2NC AB=Left 1NO+Right 1NC, BA=Left 1NC+Right 1NO
.V	Handle shape : V= V shape, omission= L shape(only for S2 handling type)

E2K keylock	Drawing	Handling Type	Part No.
		45° M 2 positions, momentary 45°, one inlet	E2K1□□
		90° A 2 positions, maintained 90°, one inlet	E2K2□□
		90° A 2 positions, maintained 90°, two inlets	E2K2V□□
		90° V 2 positions, maintained 90°, one inlet_V shape	E2K2□□.V
		90° V 2 positions, maintained 90°, two inlets_V shape	E2K2V□□.V
		90° M 3 positions, left mome.45° right main. 90°, one inlet	E2K7□□
		90° M 3 positions, left mome.45° right main. 90°, two inlets	E2K7V□□
		90° M 3 positions, left main.45° right main. 90°, two inlet	E2K8□□
		45° M 2 positions, momentary 45°, one inlet	E3K1□□
		90° A 2 positions, maintained 90°, one inlet	E3K2□□
		90° A 2 positions, maintained 90°, two inlets	E3K2V□□
		90° V 2 positions, maintained 90°, one inlet_V shape	E3K2□□.V
		90° V 2 positions, maintained 90°, two inlets_V shape	E3K2V□□.V
		90° M 3 positions, left mome.45° right main. 90°, one inlet	E3K7□□
		90° M 3 positions, left mome.45° right main. 90°, two inlets	E3K7V□□
		90° M 3 positions, left main.45° right main. 90°, two inlet	E3K8□□
		90° M 3 positions, left main.45° right main. 90°, two inlets	E3K8V□□
		90° M 3 positions, left main.45° right main. 90°, three inlets	E3K8W□□

- Remarks :
1. Handling type: M= Momentary, A= Maintained; mome.= Momentary, main.= Maintained
 2. □□Contact mode: 1A=1NO, 1B=1NC, AB=1NO+1NC, 2A=2NO, 2B=2NC
Note that the sequence of contact blocks should be consistent with the handling type, in this situation, AB means left A contact and right B, BA means left B contact and right A.
 3. (I,V,W) key-pull type: I= One inlet, V= Two inlets, W= Three inlets
 4. Pushbutton without lamp could be attached the 3rdcontact. Please add extra A or B code following the contact mode to present the mode of the 3rdcontact, A means 1 normally open and B1 normally close.
 5. Please change "E" to "H" for protection rating IP65.
 6. Please add *M in the last of order no. if you would like to change the black plastic front ring to the metal ring.

01 Series 16mm Control Switches
 02 series 22/25/30mm Control Switches
 05 series Multi-Layer Light Tower
 Drawing



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Coding Principle

Buzzers E2B	E	2	B	1	.	0	6
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Part No.	Code Description
E	Classification : E=IP40 Standard H=IP65 Rubber-sealed
2	Mounting size : 2=22mm, 25mm Standard mounting 3= 30mm Flush mounting
B1	Tone mode : B1=Continuous, B2=Intermittent
.06	Operating voltage : 06=6VDC, 12=12VDC, 24=24VDC, 11=110VAC, 22=220VAC

E2B DC Buzzer	Drawing	Voltage	Continuous Part No.	Intermittent Part No.
		6VDC	E2B1.06	E2B2.06
		12VDC	E2B1.12	E2B2.12
		24VDC	E2B1.24	E2B2.24
		-	-	-
		-	-	-
E2B AC Buzzer	Drawing	Voltage	Continuous Part No.	Intermittent Part No.
		110VAC	E2B1.11	E2B2.11
		220VAC	E2B1.22	E2B2.22
		-	-	-
		-	-	-
		-	-	-
E3B DC Buzzer	Drawing	Voltage	Continuous Part No.	Intermittent Part No.
		6VDC	E3B1.06	E3B2.06
		12VDC	E3B1.12	E3B2.12
		24VDC	E3B1.24	E3B2.24
		-	-	-
		-	-	-
E3B AC Buzzer	Drawing	Voltage	Continuous Part No.	Intermittent Part No.
		110VAC	E3B1.11	E3B2.11
		220VAC	E3B1.22	E3B2.22
		-	-	-
		-	-	-
		-	-	-

Remarks:1. Sound maximum 100dB at a distance 70 cm.
 2. A buzzer by flush mounting is only offered a metal cover.
 3. Please change "E" to "H" for protection rating Ip65.

Accessories

Order No.	Contact Block	Description	Drawing
2SWA		A= 1 normally open, green .3 / .4	
2SWB		B= 1 normally close, red .1 / .2	
Order No.	Lamp Holder	Description	Drawing
2LH		X1(+)-X2(-) Make the right connection, while polarized LED lamps installed.	
Order No.	BA9s Lamp	Description	Drawing
L.BA9s-L06.R(Y/G/B/W)		LED Lamp Red(Yellow/Green/Blue/White), 6VDC	 LED Light
L.BA9s-L12.R(Y/G/B/W)		LED Lamp Red(Yellow/Green/Blue/White), 12VDC	
L.BA9s-L24.R(Y/G/B/W)		LED Lamp Red(Yellow/Green/Blue/White), 24VDC	
L.BA9s-L11.R(Y/G/B/W)		LED Lamp Red(Yellow/Green/Blue/White), 110 VAC	
L.BA9s-L22.R(Y/G/B/W)		LED Lamp Red(Yellow/Green/Blue/White), 220 VAC	
L.BA9s-D06(12/24)		Incandescent lamp, 6VDC (12/24)	
L.BA9s-A11.R(G)		Helium neon lamp Red(Green), 110VAC	 氦氛灯
L.BA9s-A22.R(G)		Helium neon lamp Red(Green), 220VAC	
Order No.	Anti-twisting Ring	Description	Drawing
02Z-100		Only for standard mounting to increase anti-twisting torque while working.	
Order No.	Protective Cap	Description	Drawing
02Z-200.F		F=Suitable to flat head/button pushbutton	
02Z-200.P		P=Suitable to raised head/button pushbutton	

02Z-200.M		M=Suitable to flush flat head/button pushbutton	
Order No.	Metallic Front Ring	Description	Drawing
02Z-300.L		L=Low ring (suitable to standard mounting spec.)	
02Z-300.H		H=High ring (suitable to standard mounting spec.)	
02Z-300.F		F=Flat ring (suitable to flush mounting spec.)	
Order No.	Blind Plug	Description	Drawing
02Z-400.22		22= Suitable to 22mm mounting hole	 Drawing
02Z-400.25		25=Suitable to 25mm mounting hole	
02Z-400.30		30=Suitable to 30mm mounting hole	
Order No.	Emergency Protective Cover	Description	Drawing
02Z-500.R		For standard mounting/flush mounting emergency stop switches	
Order No.	Emergency Protective High-length Cover	Description	Drawing
02Z-502.R		For standard mounting/Flush mounting emergency stop switches.	
Order No.	Plate	Description	Drawing
02Z-600.22		Suitable to 22mm mounting hole	
Order No.	Emergency stop ring	Description	Drawing
1.02Z-900.0(N) 2.02Z-900.1(N)		External diameter: 45mm, "N" represents that 3M pasteur is not attached.	
Order No.	Emergency stop ring	Description	Drawing
1.02Z-901.0(N) 2.02Z-901.1(N)		External diameter: 60mm, "N" represents that 3M pasteur is not attached.	
Order No.	Nut Fixer	Description	Drawing
02Z-T01		Fixing torque ranges from 2 to 3 Nm, maximum torque not exceeding 3 Nm.	

01 Series 16mm Control Switches
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Drawing