

Series

61

Comprehensive, intuitive and versatile.

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Series 61

Comprehensive, intuitive and versatile.

EAO, the expert partner for Human Machine Interfaces (HMIs), offers the modular and recognised Series 61, a versatile and modular switch range for complex industrial applications.

Its modular and flexible design enables swift integration into any control system. Fitted with IP65 protection (E-Stop compact with IP69K), this intuitive series is ideal for complex industrial applications. The Series 61 is also approved for international use and is recognised worldwide.

Whether for applications with high temperature variations or mechanically demanding environments – the versatile Series 61 is always the first choice. With its modular construction and full selection of functions, you will find the right solution for any industrial application.

The modern design fits diverse applications and reflects the high quality of the series. The Series 61 also satisfies all functional requirements, for square, rectangular, round, flush or raised construction – it works seamlessly with practically any conceivable HMI function with 16 mm or 22.3 mm mounting cut-outs.

Make use of optionally engraved, hot-stamped or film labelling and enhance the already considerable visual appeal of the Series 61 even further.

Depending on the requirements, you can choose from screw, plug-in and solder terminals or connect to a circuit board using a PCB adaptor. Choose from a snap-action, or slow make switching element.

Certified under CE, UL, CSA, ENEC, GOST, VDE and RoHS among others, the tried-and-tested Series 61 is licensed and recognised for international use. Thanks to IP65 front protection (E-Stop compact with IP69K), the buttons also work absolutely reliably even in challenging environments.

Typical applications

- Machinery
- Measurement and control engineering
- Process engineering (air conditioning systems and heating technology)
- Public transportation
- Laboratory instruments

Functions of Series 61

- Pushbutton
- Illuminated pushbutton
- Indicator
- Selector switch
- Keylock switch
- Emergency stop switch
- Emergency stop switch compact
- Stop switch
- Buzzer
- Mushroom-head pushbutton
- Potentiometer

Materials

- Lens
 - Raised mounted plastic, in accordance with UL 94 HB
 - Flush mounted plastic, in accordance with UL 94 V0, or anodised aluminium
- Front bezel
 - Plastic, in accordance with UL 94 V0, or anodised aluminium
- Front ring
 - Anodised aluminium
- Contact material
 - Silver or gold-plated silver contacts
- Switching element
 - Plastic, in accordance with UL 94 V0
- Actuator housing
 - Plastic, in accordance with UL 94 V0, self-extinguishing

Mechanical characteristics

- Mechanical life
 - in accordance with DIN IEC 60512-5-6 and EN IEC 60947-5-1
 - Pushbutton with maintained action: 1 million cycles of operation
 - Pushbutton with pulse function: 2 million cycles of operation
 - Keylock switches: 50 000 cycles of operation
 - Selector switches: 100 000 cycles of operation

Advantages.

- Wide, modular series
- Modern design
- Range of switching elements and ease of mounting
- Custom marking possible
- Internationally recognised and approved series

Ambient conditions

- Temperature
 - Storage temperature -40°C to $+85^{\circ}\text{C}$
 - Operating temperature -25°C to $+55^{\circ}\text{C}$
- Resistance to shock (semi-sinusoidal)
 - max. 100m/s^2 , pulse width 11 ms, 3-axis, in accordance with EN IEC 60068-2-27
- Resistance to vibration (sinusoidal)
 - max. 100m/s^2 from 10 Hz to 500 Hz, in accordance with EN IEC 60068-2-6
- Environmental resistance
 - Hot and damp, cyclical 96 hours, $+25^{\circ}\text{C}/97\%$, $+55^{\circ}\text{C}/93\%$ relative humidity, in accordance with EN IEC 60068-2-30
 - Hot and damp, constant 56 days, $+40^{\circ}\text{C}/93\%$ relative humidity, in accordance with EN IEC 60068-2-78
 - Sudden temperature change, 100 cycles, -40°C to $+80^{\circ}\text{C}$, in accordance with EN IEC 60068-2-14

Degree of protection

- IP65 front protection, in accordance EN IEC 60529
- IP40 rear protection

Standards and directives

- Approvals
 - CB (IEC 61058)
 - CB (IEC 60947)
 - CSA
 - ENEC (EN 61058)
 - CCA-NTR (EN 60947)
 - CCA-CENELEC (IEC 60947-5-1)
 - CQC11-462124-2009
 - DNV
 - EAC
 - UL
 - NFF
- Declaration of Conformity
 - CE

Function	Series					
	14	45	61	71	82	84
Pushbutton	■	■	■	■	■	■
Double pushbutton		■				
Illuminated pushbutton	■	■	■	■	■	■
Indicator	■	■	■	■	■	■
Selector switch	■	■	■	■		
Illuminated selector switch		■	■	■		
Keylock switch	■	■	■	■		
ID keylock switch		■				
Emergency stop switch		■	■			■
Stop switch		■	■			
Buzzer	■		■			
Mushroom-head pushbutton	■	■	■	■		■
Palm switch		■				
Potentiometer		■	■			

Highlights.



Illuminated pushbutton

Series 61

EAO is the leading pioneer in the field of illuminated pushbuttons. Its universal switch actuators and indicators have been in use under challenging conditions all over the world since 1947. They are to be found everywhere in switching applications that depend on reliable and positive feedback.

The modular and modern design satisfies functional requirements of all kinds, and enables easy integration of all functions of the Series 61 into any type of control system.

- Optional plastic or metal lens
- Flush or raised construction
- Compact design for 16 mm and 22.5 mm mounting cut-outs
- Illumination, optionally with symbol
- Customised labelling possible
- Range of switching elements and ease of mounting
- Internationally recognised and approved Series
- IP65 protection



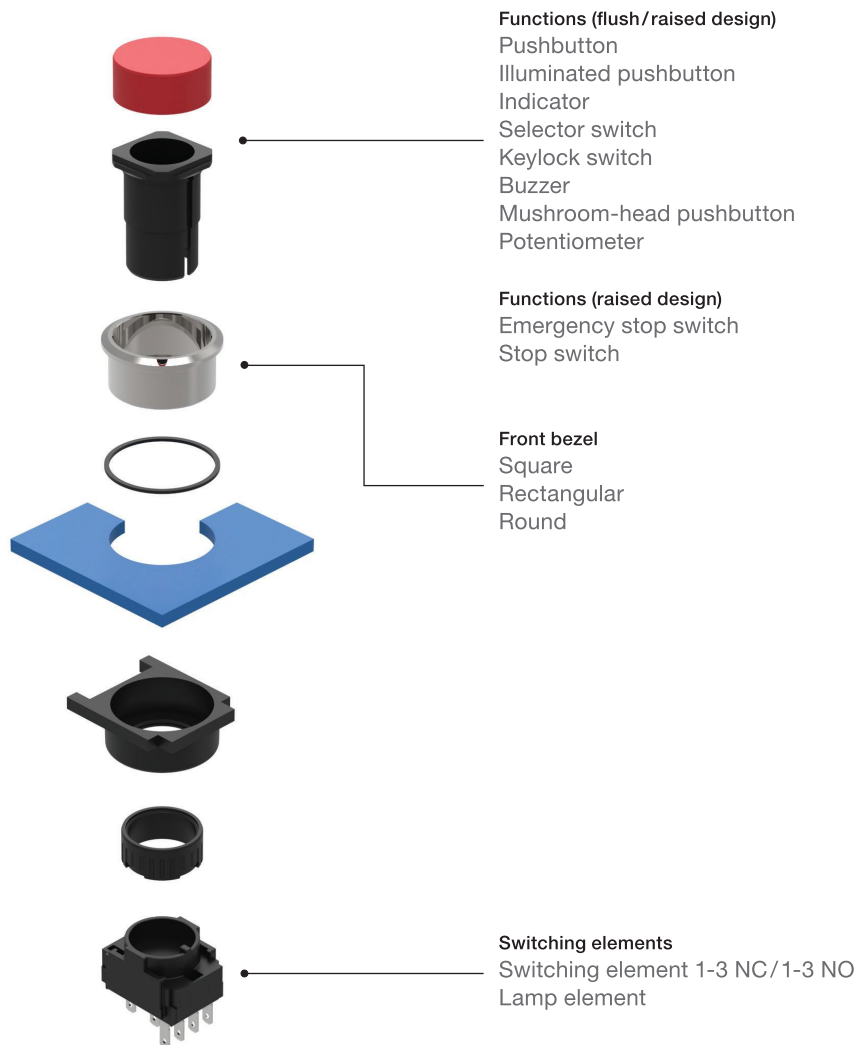
Emergency stop switch compact

Series 61

EAO, the expert partner for innovative, intuitive and reliable Human Machine Interfaces (HMIs), offers critical safety controls which are uniquely compact, robust and reliable. The UL-certified Series 61 compact emergency stop switch is especially suited for handheld control units.

- Very low back panel depth (21.2 mm)
- High front protection IP69K and IP67
- Robust mono-block design with mechanically decoupled triggering
- Optional illumination
- Up to three switching elements

Product structure of Series 61.



Switching systems.

Snap-action switching systems

A self-cleaning, double-break snap-action switching system with a contact opening distance of 2 x 0.5 mm (switch with small contact opening distance as per EN IEC 61058-1).

The switching elements are optionally available with the following switching functions: one to three normally-open (NO) or normally-closed (NC) contacts, or any combination of NO/NC contacts with connectors for illumination. The number of switching implements cannot exceed three. The specially installed switching elements for the three actuator switch sleeves have a maximum of 2 NC or 2 NO, or a combination thereof. The number of switching implements cannot exceed two.

Slow-make switching system

Double-break slow-make switching system, contact opening distance 2 x 1.5 mm, with 2 x 2 contact points per switching implement. Normally-closed switching implements in the slow-make switching elements meet the requirements of switches with positive opening action as per EN IEC 60947-5-12.17.

The slow-make switching elements are optionally available with the following switching functions: 1 NO or 2 NO, 1 NC or 2 NC, 1 NO + 1 NC. A normally-open or normally-closed contact is fitted with connectors for illumination.

Switching capacity

Snap-action switching systems	Silver contacts		Gold-plated silver contacts	
	Voltage	Current	Voltage	Current
Maximum	125 VAC	2.5 A	125 VAC	2.5 A
	250 VAC	2 A	250 VAC	2 A
	250 VDC	0.15 A	250 VDC	0.15 A
Minimum	20 VAC/DC	100 mA	5 VAC/DC	10 mA

Slow-make switching systems	Silver contacts		Gold-plated silver contacts	
	Voltage	Current	Voltage	Current
Maximum	125 VAC	3 A	50 VAC	0.5 A
	250 VAC	2 A	50 VDC	0.1 A
	250 VDC	0.2 A	-	-
Minimum	20 VAC/DC	100 mA	10 VAC/DC	2 mA

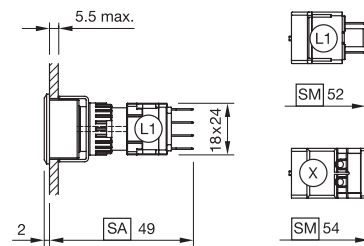
Switch rating AC, service category AC-15, as per EN IEC 60947-5-1

Switch rating DC, service category DC-13, as per EN IEC 60947-5-1

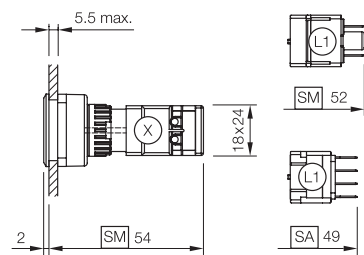
Dimensions and mounting cut-outs.

Dimensions

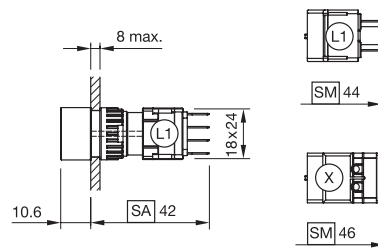
Flush design (square/rectangular)



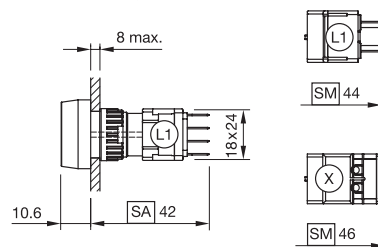
Flush design (round)



Raised design (square/rectangular)

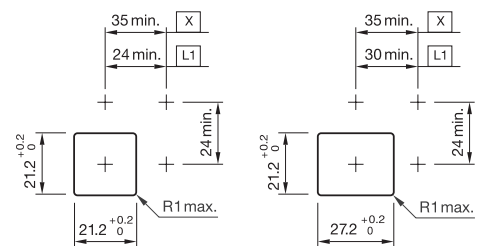


Raised design (round)

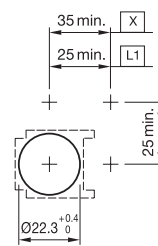


Mounting cut-outs

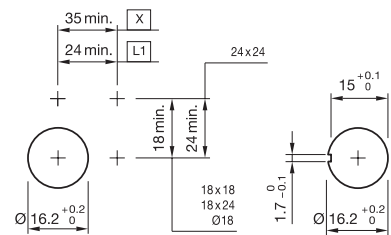
Flush design (square/rectangular)



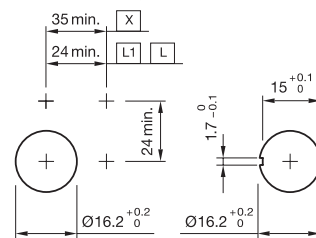
Flush design (round)



Raised design (square/rectangular)



Raised design (round)



Please find additional specifications in the product catalogue.

EAO Contact.

Your centre of excellence.

Headquarters

EAO Holding AG
Tannwaldstrasse 88
CH-4600 Olten
Telephone +41 62 286 92 00
info@eao.com

Manufacturing Companies

Switzerland
EAO AG
Tannwaldstrasse 88
CH-4600 Olten
Telephone +41 62 286 91 11
info@eao.com

EAO Systems AG
Tannwaldstrasse 88
CH-4600 Olten
Telephone +41 62 286 91 11
sales.esy@eao.com

China
EAO (Guangzhou) Ltd.
3/F, Block G4, South China
New Materials Innovation Park
31 Kefeng Road
Guangzhou Science City
CN-Guangzhou, PRC
Telephone +86 20 3229 0390
sales.ecn@eao.com

Germany
EAO Automotive GmbH & Co. KG
Richard-Wagner-Straße 3
DE-08209 Auerbach/Vogtland
Telephone +49 3744 8264 0
sales.esa@eao.com

North America
EAO Corporation
One Parrott Drive
Shelton
US-CT 06484
Telephone +1 203 951 4600
sales.eus@eao.com

Sales Companies

China
EAO (Guangzhou) Ltd.
3/F, Block G4, South China
New Materials Innovation Park
31 Kefeng Road
Guangzhou Science City
CN-Guangzhou, PRC
Telephone +86 20 3229 0390
sales.ecn@eao.com

EAO (Shanghai) Office
Rm.401, Lihpao Plaze,
NO.159 Shenwu Road,
Minhang District,
CN-Shanghai, 201106.
PRC
Telephone +86 21 6095 0717
sales.ecn@eao.com

France
EAO France SAS
Nextdoor – Bâtiment Silex
15 rue des Cuirassiers
CS 33821
FR-69487 Lyon Cedex O3
Telephone +33 9 74 18 93 41
sales.efr@eao.com

**Germany, Austria, Czech Republic,
Poland, Slovakia**
EAO GmbH
Langenberger Straße 570
DE-45277 Essen
Telephone +49 201 8587 0
sales.ede@eao.com

Hong Kong (Asia Pacific)
EAO (Far East) Ltd.
Unit A1, 1/F, Block A
Tin On Industrial Building
777 Cheung Sha Wan Road
Lai Chi Kok, Kln
HK-Hong Kong
Telephone +852 27 86 91 41
sales.ehk@eao.com

Italy
EAO Italia S.r.l.
Centro Direzionale Summit –
Palazzo D1
Via Brescia 28
IT-20063 Cernusco sul Naviglio (MI)
Telephone +39 029 247 0722
sales.eit@eao.com

Japan
EAO Japan Co. Ltd.
Net 1 Mita Bldg. 3F
3-1-4 Mita Minato-ku
JP-Tokyo 108-0073
Telephone +81 3 5444 5411
sales.ejp@eao.com

Netherlands, Belgium
EAO Benelux B.V.
Kamerlingh Onnesweg 46
NL-3316 GL Dordrecht
Telephone +31 78 653 17 00
sales.enl@eao.com

North America
EAO Corporation
One Parrott Drive
Shelton
US-CT 06484
Telephone +1 203 951 4600
sales.eus@eao.com

Switzerland
EAO Schweiz AG
Tannwaldstrasse 86
CH-4600 Olten
Telephone +41 62 286 95 00
sales.ech@eao.com

**United Kingdom, Denmark,
Finland, Ireland, Norway, Sweden**
EAO Ltd.
Highland House
Albert Drive
Burgess Hill
GB-West Sussex RH15 9TN
Telephone +44 1444 236 000
sales.euk@eao.com