

Series

# 82

*Robust and attractive.*

[www.eao.com/82](http://www.eao.com/82)



# Series 82

*Robust and attractive.*

With Series 82, EAO offers the optimal pushbutton for vandal-resistant, stylish HMI controls used in harsh industrial environments, public areas and access control.

EAO, the expert partner for Human Machine Interfaces (HMIs), offers its visually attractive Series 82 range of pushbuttons that are resistant to vandalism and sealed for use in harsh environments.

With their robust stainless steel, brass or anodised aluminium housings, these innovatively designed switches are protected according to IK10 impact resistance and IP65/IP67 sealing requirements, which makes them ideally suited for exposed public use and industrial applications.

The switches are available with momentary or maintained action, and with or without LED illumination. Choose from single or bi-colour LED's and central dot or modern ring illumination.

#### Typical applications

- Ticketing and vending machines
- Machinery and factory equipment
- Food and beverage
- Elevators and people movers
- Access control and security systems
- Audio and video equipment
- Medical equipment
- Heavy duty and special vehicles
- Buses and coaches
- Marine applications




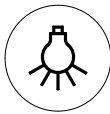

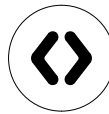
#### Laser Markings

Using a CO2 laser, it is possible to engrave practically any symbol or text in any language onto the flat lens stainless steel versions of Series 82 products. Laser markings provide an attractive high contrast dark grey legend that is durable and resistant to fading.

#### Standard symbols

Various standard symbols are available.

Here are a number of examples:

On/Off	Standby	Info
		
Light	Bell	Door open
		

## Advantages.

- Vandal-resistant: Impact resistant to IK10, front protection up to IP65/IP67
- Gold-plated silver contacts available for low voltages and currents
- Optional single or bi-colour LED illumination and laser markings
- Excellent tactile feedback
- Long service life: > 1 million cycles of operation

### Materials

- Stainless steel SUS 304/316L
- Stainless steel chrome coloured
- Brass gold coloured
- Aluminium (natural anodised), other colours on request

### Mechanical characteristics

- Mechanical lifetime: > 1 million cycles of operation
- Actuation force: 4 N to 7 N
- Terminals: Plug-in terminal 2.8 mm x 0.5 mm or screw terminal

### Operating data switching element\*

#### Silver Contacts

	Minimum Values	Maximum Values
Voltage	17 VAC/DC	240 V
Current	50 mA AC/DC	3 A

#### Gold plated Silver Contacts

	Minimum Values	Maximum Values
Voltage	1 VAC/DC	24 V
Current	5 mA AC/DC	200 mA

\* according to DIN EN 60947-5-4, methods of assessing the performance of low-voltage contacts.

For specifications of the minimum switching capacity see details in the online catalogue.

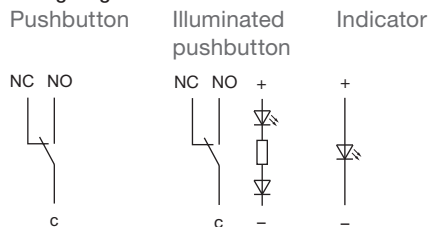
### Switching system

- Switching element: Snap-action switching element
- Contact arrangement: NO/NC contact (changeover)
- Switching action: Momentary or maintained
- Contact materials: Silver alloy or gold-plated silver alloy

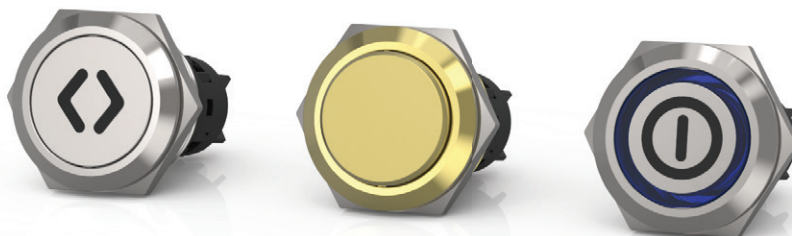
### Switching element

- Contact resistance:  $\leq 50 \text{ m}\Omega$ , according to IEC 60512-2
- Isolation resistance: > 1000 M $\Omega$ , according to IEC 60512-3
- Dielectric strength: 1500 VAC, according to IEC 60947-5

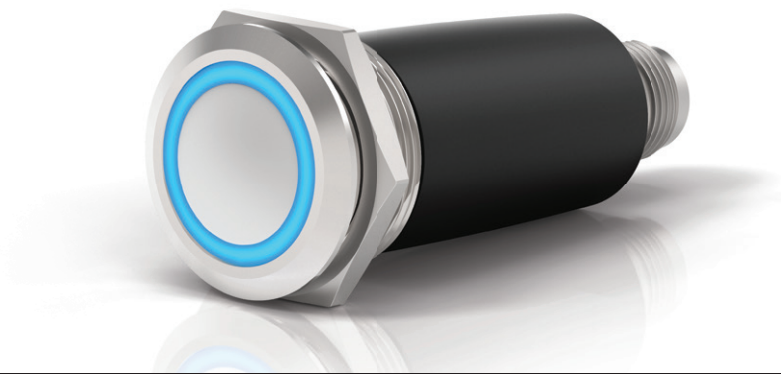
### Wiring diagram



Further information and the Online Product Configurator are available at [www.eao.com/82](http://www.eao.com/82)



## Series 82. Overmoulded and with M12 connector.



---

### Enhanced protection. Fast mounting.

It is common to expose actuators and indicators to extremely harsh operating conditions. For example in the food and beverage industry, where alkaline cleaning agents and corrosion severely affect HMIs. In addition, external factors in the form of hard-to-remove dirt, fine dust, along with severe vibrations and blunt impacts commonly encountered in heavy duty and special vehicles applications also require HMIs to offer a very high level of resistance.

The overmoulded version of the Series 82 is capable of meeting these strict requirements offering reliable enhanced protection. These attractively designed illuminated pushbuttons feature a housing made from SUS 316L stainless steel and a Tritan light guide resistant to cleaning agents. These design features provide protection against wear and ensure consistent clarity of both the dot and the ring illumination.

The switches utilise a robust M12 connector. This connection method saves customers time when it comes to mounting as well as enabling a highly resilient HMI connection.

The rear of the device is also IP67-compliant thanks to the overmoulding of the switch and connector, ensuring that the HMI has complete and reliable protection. The overmoulded version also offers very high resistance to vibrations and impact.

The optional enhanced protection is available for selected 22 mm diameter illuminated pushbuttons with a maximum voltage of 24VDC. Overall, this version of the Series 82 illuminated pushbutton is ideal for extremely harsh operating conditions that require reliable complete protection with no compromises.

#### Typical applications

- Food and beverage industry
- Heavy duty & special vehicles
- Buses and coaches
- Marine applications

#### Advantages

- Complete IP67 protection for illuminated pushbuttons
- Tritan light guide resistant to cleaning agents
- Housing made of SUS 316L stainless steel
- High resistance to vibration and impact
- M12 connector for fast and resilient mounting
- 24 VDC illuminated versions available with red, green, white or blue LEDs

## Properties and illuminations.

### Electrical characteristics

- Rated insulation voltage 250VAC
- Conventional thermal current:  
I<sub>TH</sub> 5 A, according to CB
- Electrical life: > 50 000 cycles (full load)
- Switching capacity: AC-15 (cosφ0.3) and DC-13 (according to IEC 60947-5-1)

	24V	110V	220V
AC-15	1.0A	1.0A	0.5A
DC-13	0.7A	0.2A	0.1A

### Ambient conditions

- Temperature
  - Storage temperature –40 °C to +80 °C
  - Operating temperature –30 °C to +70 °C
- Operating humidity: 45 % to 85 % RH (no condensation)
- Front protection:  
IP65, IP67, according IEC 60529
- Impact resistance:  
IK10, according to IEC 62262
- Approvals: CE, CB, UL, C UL, CCC

### LED illumination

- Red
- Green
- Yellow
- Blue
- White
- Red/green bi-colour

LED, series resistor and polarity protection are built in.

### Single LED

Voltage	Tolerance	Current
6 VAC/DC	± 10 %	7 mA
12 VAC/DC	± 10 %	7 mA
24 VAC/DC	± 10 %	7 mA
110 VAC	± 10 %	2 mA
230 VAC	± 10 %	1.5 mA

### Bi-colour LED

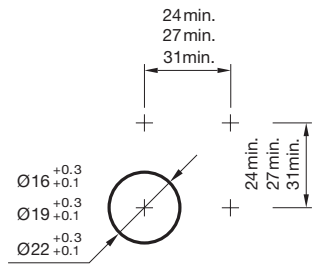
Voltage	Tolerance	Current
24 VDC	± 10 %	7 mA / 7 mA



# Dimensions, mounting and terminals.

## Mounting cut-outs

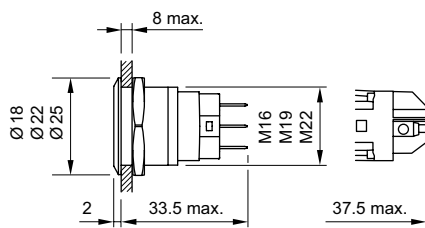
Ø 16 mm, Ø 19 mm, Ø 22 mm



## Dimensions

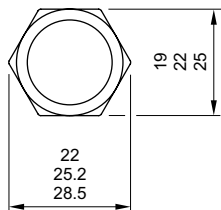
Side view

Plug-in terminal | Screw terminal

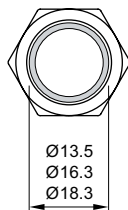


## Front view

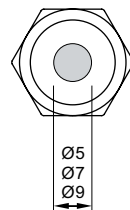
Non-illuminated



Ring illuminated

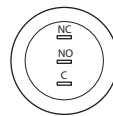


Central dot illuminated

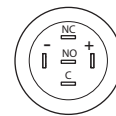


## Plug-in terminal

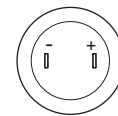
Pushbutton



Illuminated pushbutton

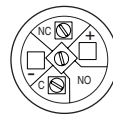


Indicator lamps

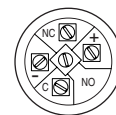


## Screw terminal

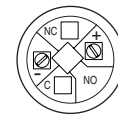
Pushbutton



Illuminated pushbutton



Indicator



## Front ring | Lens | Illumination

flat/flush

flat/raised

flat/convex

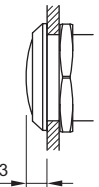
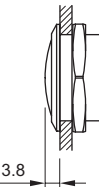
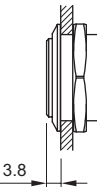
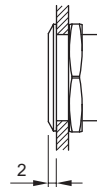
raised/convex

ring/dot

ring

ring

-



## Reliable assembly. Short delivery times.

Thanks to our international production sites and our global delivery and support centres, we offer you efficient, sustainable logistics and can optimise your supply chain.

- Qualified vendors worldwide
- Consistent multi-location processes
- Integrated quality measures throughout the supply chain

With four value-creating partners in Europe, Asia and North America, as well as other strong partnerships around the world, we are able to offer the following:

To us, speedy assembly, short delivery times and secure processing are all part of good customer service.

### Part number system (standard version)

Series	Diameter		Material		Bezel/Lens		Connection/SE Contacts		Switching action		Illumination		LED colour		LED voltage		Laser Engraving	
82	4	16mm	1	Stainless steel	5	flush/flat	1	Plug-in/Silver	0	Indicator	0	no LED	0	no LED	0	no LED	B001	On/Off
	5	19mm	2	Chrome colour	6	flush/raised flat	2	Srew/Silver	1	Momentary	1	Ring	1	red	2	6VAC/DC	B002	Stand By
	6	22mm	5	Aluminium natural anodized	7	flush/convex	3	Plug-in/Gold plated	2	Maintained	2	Dot	2	blue	3	12 VAC/DC	B003	Light
								4	Screw/Gold plated				3	green	4	24 VAC/DC	B004	Information
													4	yellow	5	110VAC	B005	Bell
													5	white	6	230VAC	B006	Door open
												A	red/green bi-colour			BXXX	Any other symbol	

### Part numbers of the overmoulded version with M12 connector

Diameter, front material, front design	Switching element, contact material	Connector	Switch function	Illumination	Part No.
22mm diameter, stainless steel 316L, flush with flat lens	1 NO/1 NC change over switch, silver contacts	M12/5 pins	Momentary	No LED	82-6657.1000
				Red LED, 24VDC	82-6657.1114
				Blue LED, 24VDC	82-6657.1124
				Green LED, 24VDC	82-6657.1134
				White LED, 24VDC	82-6657.1154
			Maintained	No LED	82-6657.2000
				Red LED, 24VDC	82-6657.2114
				Blue LED, 24VDC	82-6657.2124
				Green LED, 24VDC	82-6657.2134
				White LED, 24VDC	82-6657.2154





## *Diversity and individuality in HMI Components.*

EAO develops and manufactures one of the world's largest ranges of industrial HMI products.

A variety of mounting depths, designs and combinations of options make our products hugely versatile. But what makes every EAO component really stand out are the cutting-edge materials, innovative technologies, and complete user-friendly interfaces. We also modify our standard components individually in accordance with our customers' needs.

Design experts of EAO can simplify your search for the perfect products by analysing their exact application requirements and, based on their needs, determine the characteristics of the required components.

Because EAO offers one of the most comprehensive ranges of products, it is easy for everyone to select the right fit, according to:

- Electrical ratings – the right specifications for the task
- Actuation preferences – the most appropriate switch type
- Physical configuration and mounting needs – style and placement
- Special requirements – illumination and symbols
- International and market approvals

### **HMI functions**

Some of the HMI functions that EAO offers are:

- Pushbuttons
- Illuminated pushbuttons
- Mushroom-head pushbuttons
- Selector switches
- Keylock switches and key-insert switches

- Indicators
- Buzzers
- Potentiometer
- E-Stops and stop switches
- Door opening pushbuttons
- And many more

### **HMI features**

EAO's engineers analyse the application requirements of our customers. This ensures that our HMI Components always perform to the correct standard for:

- Front protection
- Switch rating
- Mounting cut-out
- Terminal selection
- Certification
- Design
- Ergonomics
- Materials

### **Value Added Services**

EAO makes it simple for designers to find the perfect equipment by analysing customers' exact application requirements and making the following adaptations to suit their needs:

- Marking
- Illumination
- Enhanced mechanical design
- Enhanced electronic design
- Software
- Cables and connections
- Assembled products/kits

*Expert manufacturers. EAO creates possibilities since 1947.*



**Founding year:** 1947

**Number of employees:** 600

**Headquarters:** Olten, Switzerland

**Manufacturing Companies:** Switzerland,

Germany, North America, China

**Sales Companies:** 10

**Distribution countries:** 50

**Core markets:** Transportation, Automotive,  
Heavy Duty & Special Vehicles, Machinery

EAO AG, a Swiss, family-owned company founded in 1947, has developed into one of the world's leading manufacturers of high-quality industrial switches, complete custom HMI panels and interface systems, and specialised automotive switch systems.

Efficient and modern development processes, effective global supply chains and skilled project and consultation management represent additional services that we offer our customers and business partners around the world.

**Your solution-focused expert and partner**

We do much more than just manufacture individual control elements. As a solution-focused partner, we provide the option of technically and mechanically customizing existing HMI Components in line with our customers' individual requirements. From simple control elements through to sophisticated HMI Systems, from serial production through to installation – we offer the entire range of HMI services and inspire the confidence of our customers.

# Visit our website.

## EAO.COM

EAO, the expert partner for Human Machine Interfaces (HMIs), offers a variety of innovative, intuitive and reliable HMI Products and Services.

### Online product configurator

Build your tailored product in the online product configuration system and obtain technical specifications and 3D data at the same time. The right HMI for you, step by step: [eao.com/products](http://eao.com/products)

### EAO downloads

Find more extensive documents such as catalogues, data sheets, certificates and brochures to read and use for research: [eao.com/downloads](http://eao.com/downloads)

### Related documents

Find out more about our innovative, intuitive and reliable HMI Products and Solutions.



Series 14  
Brochure



Series 45  
Brochure



Series 61  
Brochure



Series 84  
Brochure

# 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 Plaza,  
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

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Pushbutton Switches](#) category:*

*Click to view products by [EAO](#) manufacturer:*

Other Similar products are found below :

[8940K2012](#) [LW1L-M1C10V-A](#) [LW1L-M1C70-A](#) [LW2L-A1C20M-GD](#) [LW2L-M1C20M-A](#) [60324L](#) [M22-D-R-GB0/K11](#) [M7E-HRN2](#)  
[67021K512](#) [67081K512X](#) [701PB580](#) [7199K101](#) [810K12910](#) [810KSV30B](#) [MML21EA2ADK](#) [MML21KA3ABK](#) [MML23KA3AC05K-001](#)  
[MML23KW3AA01W](#) [8418K2](#) [8442K3](#) [8450K1](#) [860K11911T01A](#) [861901](#) [861K11911T01A07](#) [861K13810T00A14](#) [861K13911](#)  
[8646AB6X718UL](#) [8646ABUL](#) [9001KXRK](#) [907AYY100](#) [PMHD155A1](#) [9533CD4+U574+U4922](#) [95-414.000](#) [99-450.837](#) [99-453.837](#)  
[PV3H2B0NN-341](#) [1203MRA](#) [A22NZBGANGA](#) [A22NZBNANGA](#) [A22NZMPATRA](#) [A2PMA1X03EC56](#) [A3A-5123-02](#) [A3A-7140](#) [A3A-7310](#) [A3A-7340](#) [A3U-TMW-A2C-5M](#) [A595](#) [12037A2ULCSA](#) [ABD122N-B](#) [1211390004](#)