

Series  
**46**

*Reliable. Cost-effective. Modular.*

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



# Series 46 EcoTouch

*Reliable. Cost-effective. Modular.*

**Series 46 EcoTouch offers a cost competitive solution for industrial switches in control panels, machinery operator controls, and other factory automation applications.**

The EAO Series 46 is an easy to assemble, cost competitive, range of 22mm raised and 30mm flush mount switches. It is ideal for general purpose industrial controls in machinery and industrial automation applications.

This easy to assemble, modular Human Machine Interface (HMI) range of products includes all the typical switching functions required for the control of industrial equipment.

The raised 22 mm switch actuators have plastic bodies with either plastic or metal front bezels, while the 30 mm flush mount versions have aluminium flush bezels and plastic actuator bodies.

The Series 46 is environmentally sealed to meet the IP65 requirements. The use of sealing covers allows higher levels of sealing up to IP69K on some actuator styles.

EAO's Series 46 switches are easily assembled with a separate front actuator, a sturdy metal fixing ring, and either a snap-on style mounting flange or an integrated mounting flange with BA9s LED holder. The contact blocks clip-on to the mounting flange with up to two contacts per row, and additional blocks can be added.

The Series 46 is rated to EN 60947-5-1 and UL 508. Their maximum AC switching voltage is 500V AC with a maximum switching current of 10A per AC15. Their maximum DC rating is 220V DC with a maximum DC current of 5A according to DC13.

## Typical applications

- Machinery and industrial equipment
- Factory and process automation
- Panel building
- Lifting and moving equipment
- HVAC controls

## Functions of the Series

- Indicator
- Pushbutton
- Illuminated pushbutton
- Mushroom-head pushbutton
- Keylock switch
- Selector switch
- Stop switch
- Emergency stop
- USB Socket
- Signal Light Tower
- Digital Joystick
- Palm Switch
- Enclosure
- Pendant Control

## Switching system

- Slow make self-cleaning switching elements
- Normally closed elements are positive opening
- Silver, or gold-plated silver contacts
- Depending on switch function type, use up to 6 contacts per switch

## Materials

- Plastic lens
- Front ring: aluminium, plastic
- Flush mount bezel: aluminium
- Contact material: Silver or gold-plated silver contacts
- Actuator case material: plastic
- Switch case: plastic

## Mechanical characteristics

- Screw terminal with combined slot/Philips PH2
  - min. wire cross-section: 1 wire  $\geq 0.5 \text{ mm}^2$
  - max. wire cross-section: 2 wires  $\leq 2.5 \text{ mm}^2$  each
- Plug-in terminal (with adaptor accessory on screw version)
  - 1 x 6.35 mm terminal or
  - 2 x 2.8 mm terminal

## Advantages.

- Cost-effective solution for general switching applications
- Modular 22 mm and 30 mm mount switches for easy assembly and installation
- Wide range to cover every switching function and control options
- Switches can be assembled into ergonomic pendant controllers and enclosures
- Modular Signal light towers are ideal for identifying machine operating status

### **Mechanical life**

- Pushbutton switch
  - Momentary action:  
1 million cycles of operation
  - Maintained action:  
500 000 cycles of operation
- Selector switch
  - 1 million cycles of operation
- Keylock, Emergency stop
  - 50 000 cycles of operation
- Joystick
  - 2 million cycles of operation

### **Ambient conditions**

- Temperature
  - Operating temperature:  $-25^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$
- Resistance to shock (semi-sinusoidal)
  - 50 g, pulse width 11 ms, in accordance with EN IEC 60068-2-27
- Resistance to vibration
  - 16 g force from 40 Hz to 500 Hz, in accordance with EN IEC 60068-2-6

### **Degrees of protection (front)**

- In accordance with EN IEC 60529
- Indicator: IP65
  - Pushbutton and double pushbutton: IP65
  - Illuminated pushbutton: IP65
  - Mushroom-head pushbutton: IP65
  - Selector switch: IP65
  - Keylock and Emergency stop: IP65
  - Pendant Control: IP66
  - Digital Joysticks: IP66
  - Enclosure: IP66
  - Protective covers can be used to increase the IP rating on some actuators

### **Approvals, standards, and directives**

- CE
- CSA
- UL508 (selected products)
- EAC
- EN 60947-5-1
- EN 60947-5-5, EN ISO 13850 (Emergency stop switch)
- RoHS, REACH

Further information and the Online Product Configurator are available under  
[www.eao.com/46](http://www.eao.com/46)



## Series 46 Switch functions.



Pushbutton

- Raised 22 mm and flush 30 mm mounting
- Plastic or metal front bezel
- Raised, recessed and flush bezels
- Silver or gold-plated silver contacts



Illuminated Pushbutton

- Raised 22 mm and flush 30 mm mounting
- LED Illumination
- Plastic or metal front bezel
- Raised, recessed and flush bezels



Double Pushbutton

- Raised 22 mm mounting
- Two switching operations in one actuator
- Clear marking of switching function
- Silver or gold-plated silver contacts



Mushroom-head Pushbutton

- Actuator sizes up to 60 mm diameter
- Red, yellow or green
- Illuminated versions offered
- Silver or gold-plated silver contacts



Selector Switch

- 2, 3, 4 or 5 switching positions
- Momentary and maintained switching
- A range of actuator knob colours
- Silver or gold-plated silver contacts



Illuminated Selector Switch

- Raised 22 mm or flush 30 mm mounting
- Full face illumination option
- Momentary and maintained switching
- A range of actuator knob colors



### Keylock Switch

- Easily secure equipment
- Restrict access levels
- 2 or 3 switching positions
- Momentary and maintained switching



### Indicator

- Full face illumination
- Wide viewing angle
- Raised 22mm mounting
- LED illumination



### Stop Switch

- 40 mm diameter actuator
- Simple equipment stop function
- Latching action prevents accidental restart
- Suitable for 22 mm and 30 mm mounting



### Emergency Stop Switch

- Certified with foolproof action
- Designed in accordance with EN ISO 13850 and EN 60947-5-5
- Forced opening contacts



### USB Socket

- Front panel mounted
- Import, export status and data
- Auxiliary charging point
- USB A or USB C front connection



### Palm Switch

- Front panel mounted
- 60/90 mm front panel
- Rugged construction, ideal for use in harsh environments

## Series 46 Switch functions.



### Digital Joysticks

- 22 mm and 30 mm mounting
- 22 mm Version as modular device (contact blocks sold separately)
- 30 mm Version as complete device
- 2/4 directions
- Optional interlock options available



### Illuminated Stop Switch

- Push Pull / Twist
- With foolproof action
- Designed in accordance with EN ISO 13850 and EN 60947-5-5
- Forced opening contacts



### Signal Light Tower

- Flexible component-based style
- Click and connect function, for maximum versatility
- Single base for wiring to minimise installation time



### Pendant Control

- Two sizes with up to 5 holes for maximum versatility
- Wall mounting holder available
- Cable gland included for easy wiring
- Ergonomic design



### Enclosure

- Compact back panel with raised front
- Ideal for use with the Series 46 Palm Switch

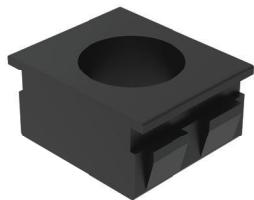
## *Product structure of Series 46.*

Example: Pushbutton, raised design, 22mm



### Other functions

- Illuminated pushbutton
- Double pushbutton
- Mushroom-head pushbutton
- Selector switch
- Keylock switch
- Emergency stop switch
- Indicator
- Digital Joystick
- Illuminated Stop Switch
- Palm Switch  
(all with fixing nut)



Mounting flange  
without lamp block



### Switching element

One normally open  
Silver, or gold-plated silver



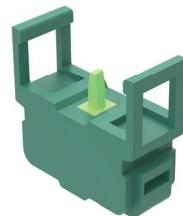
### One normally closed

Silver, or gold-plated silver

Example: Illuminated pushbutton, flush design, 30mm



Mounting flange  
with lamp block



### Switching element

One normally open  
Silver, or gold-plated silver

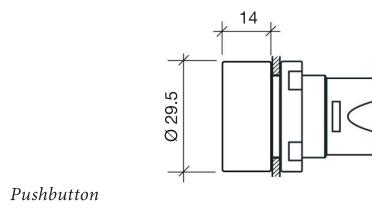


### One normally closed

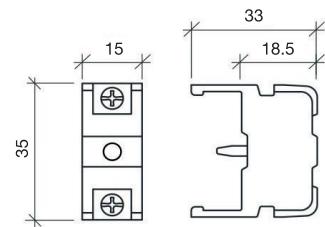
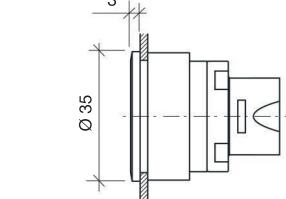
Silver, or gold-plated silver

## Dimensions and mounting cut-outs.

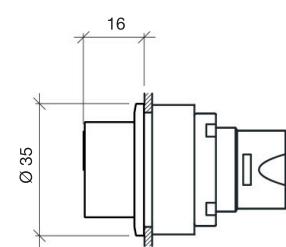
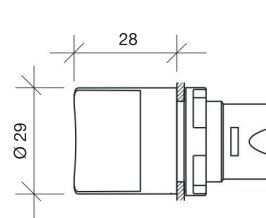
Dimensions raised design



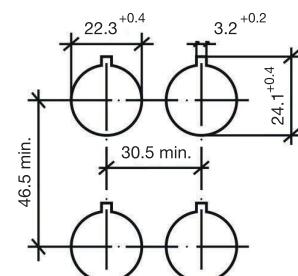
Dimensions flush design



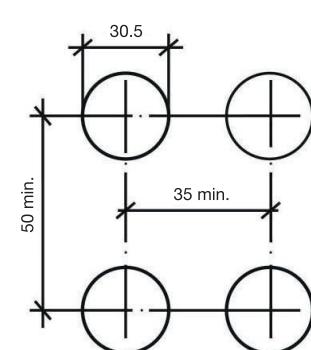
Selector switch



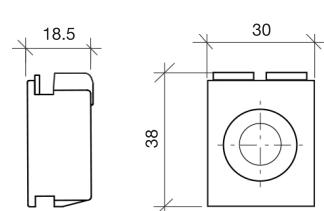
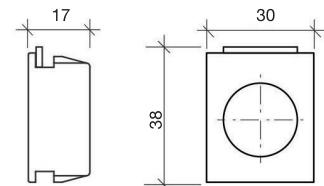
Mounting cut-outs



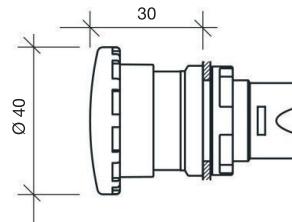
Keylock switch



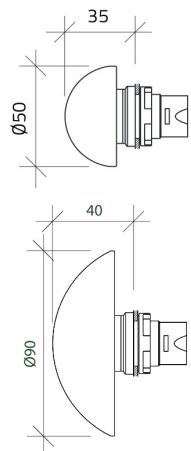
Dimensions component



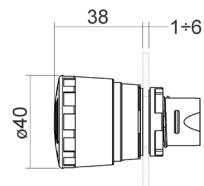
Emergency stop switch



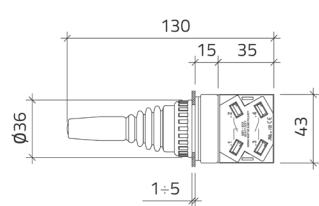
Palm Switch



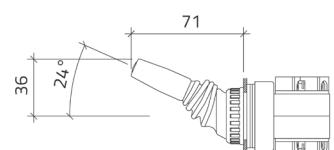
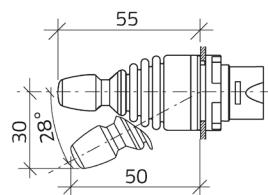
Illuminated Pull/Twist Stop Switch



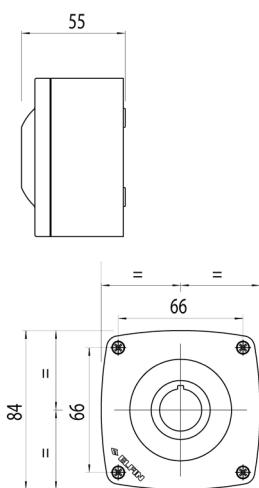
Digital Joystick 30mm



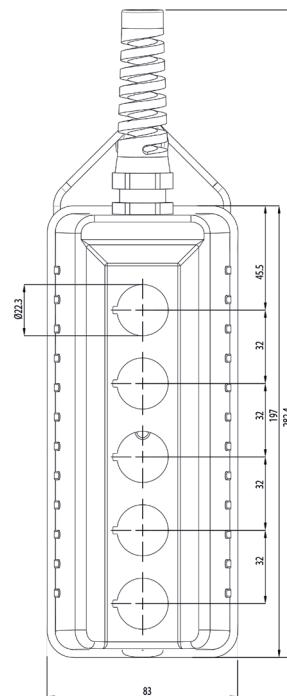
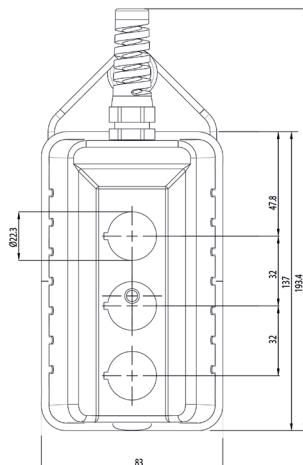
Digital Joystick 22mm



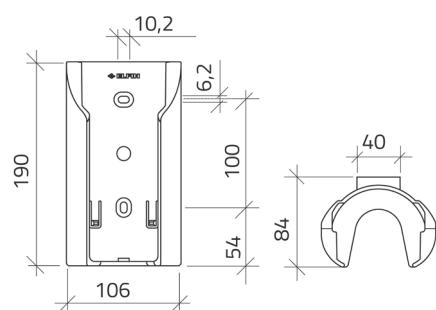
Enclosure



Pendant Control



Wall Holder Pendant Control



## *Product Components and Assemblies.*



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### Signal Light Tower

Our Signal Light Towers are built with ease of use and flexibility in mind. Featuring a single point of wiring and a modular click-and-connect locking system, installation is quick, secure, and hassle-free. The combinable components are available in multiple colours and compatible with two voltage options (24VDC and 230VAC). These Signal Light Towers adapt seamlessly to a wide range of applications.

To enhance versatility, a range of accessories is available, including wall and panel mounting options as well as extension poles for elevated placement.

This combination of smart design and adaptability ensures reliable, tailored lighting solutions for every environment.

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### Palm Switch and Enclosure

The enclosure is designed with a raised face to limit mounting depth and features a 22mm cut-out hole with an anti-rotation notch, ensuring secure and accurate installation.

Paired with this enclosure, the palm switch offers a robust safety solution with a pull-to-release function, available in 50mm or 90mm front diameters. Its red actuator head with yellow body provides high visibility, while flexible configurations allow a combination of two contact blocks (NO or NC). Engineered to IP66 standards, this unit is built for rugged environments, delivering high reliability and safety even under demanding conditions.

Together, the enclosure and palm switch provide a dependable, user-friendly, and safety compliant operator control solution.



## Pendant Control

Our Pendant Controls are available in two sizes, with capacity for three or up to five Switches (22.3 mm cut-out), depending on the version. Built to IP66 standards, they are designed for use in rugged and harsh environments, making them ideal for the machinery and heavy-duty vehicle markets.

Each unit is supplied with an M12 cable gland and a durable metal mounting loop. As an accessory, we also have optional wall mounting brackets available. These Pendant Controls, either in grey or yellow, can also be supplied with labels or symbol-marked switches (MOQ and charges apply), ensuring a tailored and professional solution for operator control applications.



## Digital Joysticks

Our Digital Joysticks are engineered for precision and reliability in demanding environments. With 2- or 4-position configurations and a mechanical lifetime of 1 million operations, they deliver long-lasting, dependable performance. Their rugged construction and IP66 protection make them ideally suited to harsh and heavy-duty applications, including specialist vehicles and industrial machinery.

Available in both, 22 mm modular front mounted or 30 mm rear-mounted with front fixing ring designs, they offer installation flexibility. Combining robust durability with versatile mounting options, these joysticks provide operators with a safe, reliable, and efficient control solution that reduces downtime and increases productivity.

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