

Series
45

Innovative and comprehensive.

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Series 45

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Modular, aesthetic and robust in use – EAO's new Series 45 unites an extremely broad range of machine operating functions with outstanding technical characteristics.

The mechanical engineering industry has constituted a key market for EAO and the company's programme of HMI Products and Systems for this sector has been correspondingly extensive. The new Series 45 once again sets new standards in terms of design, robustness, functionality, reliability and safety.

The innovative and comprehensive Series 45 from EAO offers safety in all functions and for every conceivable application in the mechanical engineering sector.

For EAO's partners in the mechanical engineering industry, this opens up unique new opportunities in the use of main operator panels, operator devices and handheld control units.

Series 45 from EAO unites an extremely broad range of machine operating functions with outstanding technical features. Penetration by dust and liquids is prevented even under the most adverse conditions. Resistant to aggressive cleaning agents, oils, lyes and other chemical substances, the actuators and indicators in the new series work perfectly each and every time.

Even high humidity and extreme fluctuations in temperature have no impact on functionality – even when control units are subjected to dust or water at high pressures (up to IP69K). Series 45 is therefore ideal for use in the most severe conditions.

Their modular construction also ensures that these HMI Components all operate smoothly with each other. They are straightforward to install and can also be integrated easily into decentralised systems that are capable of performing every conceivable HMI function.

Functions of the comprehensive Series 45

- Indicators
- Pushbuttons
- Illuminated pushbutton
- Emergency stop switches
- Stop switches
- Mushroom-head pushbuttons
- Keylock switches
- Selector switches
- Potentiometers
- Toggle sticks

EAO, the expert partner for Human Machine Interfaces (HMIs), offers a variety of innovative, intuitive and reliable products and services for the machinery industry.

Advantages.

- Comprehensive and modular Series
- Rugged in use (up to IP69K)
- Easy to assemble and use
- Modern design with many options
- Value Added Services

Attractive front appearance

Thanks to high-quality metal, attractive plastic versions and the flush design, the Series 45 is predestined for aesthetically designed panels. Simultaneously, the HMIs are protected up to IP69K depending on function.

Modern illumination

Many Series 45 functions can be illuminated. Only modern LED technology is used, which ensures both a long service life and low energy consumption.

Worldwide certified

Comprehensive and worldwide valid certificates and approvals allow almost unlimited

application possibilities of Series 45 – even under severe environmental conditions.

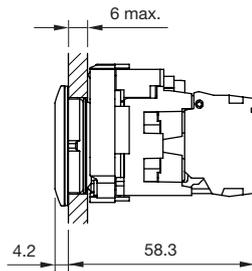
Long service life

Series 45's service life of up to 10 million switching cycles (depending on function) is crucial for machinery operating over long periods – preferably without maintenance. The reliable Series 45 is mechanically and electrically designed for this exact purpose. At the end of the service life, the modular system allows any single component to be easily replaced, saving time and money.

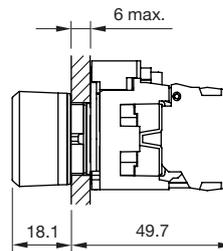


Dimensions and mounting cut-outs.

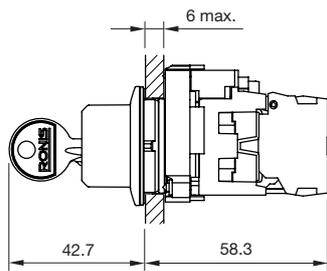
Dimensions flush design
Indicator/pushbutton



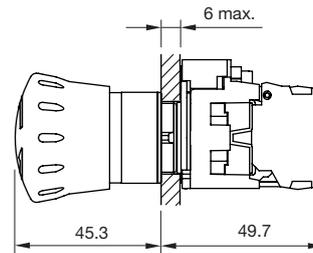
Pushbutton/illuminated pushbutton



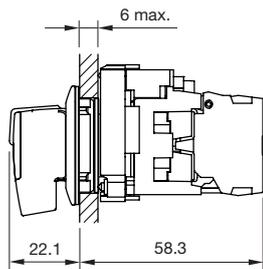
Keylock switch



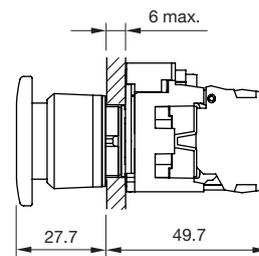
Emergency stop switch



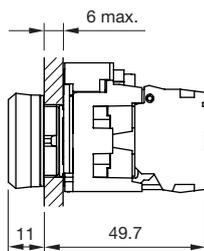
Selector switch



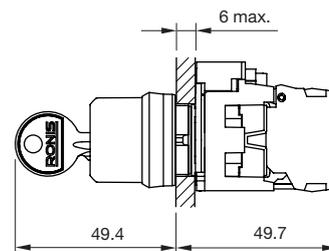
Mushroom-head pushbutton



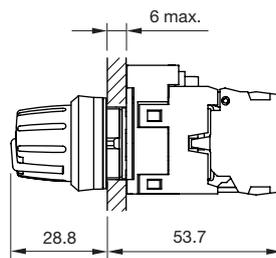
Dimensions raised design
Indicator



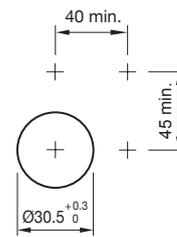
Keylock switch



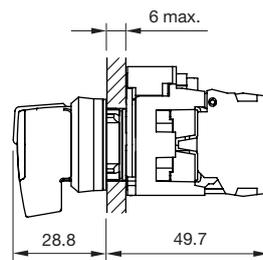
Selector switch round lever



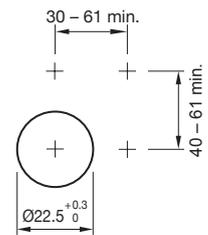
Mounting cut-outs flush design



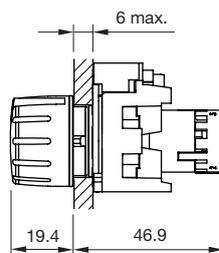
Selector switch long lever



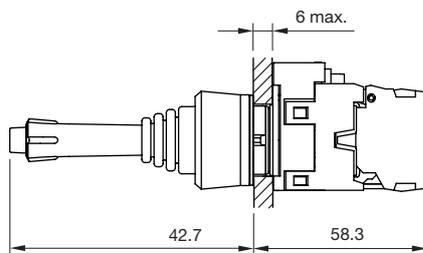
Mounting cut-outs raised design



Potentiometer

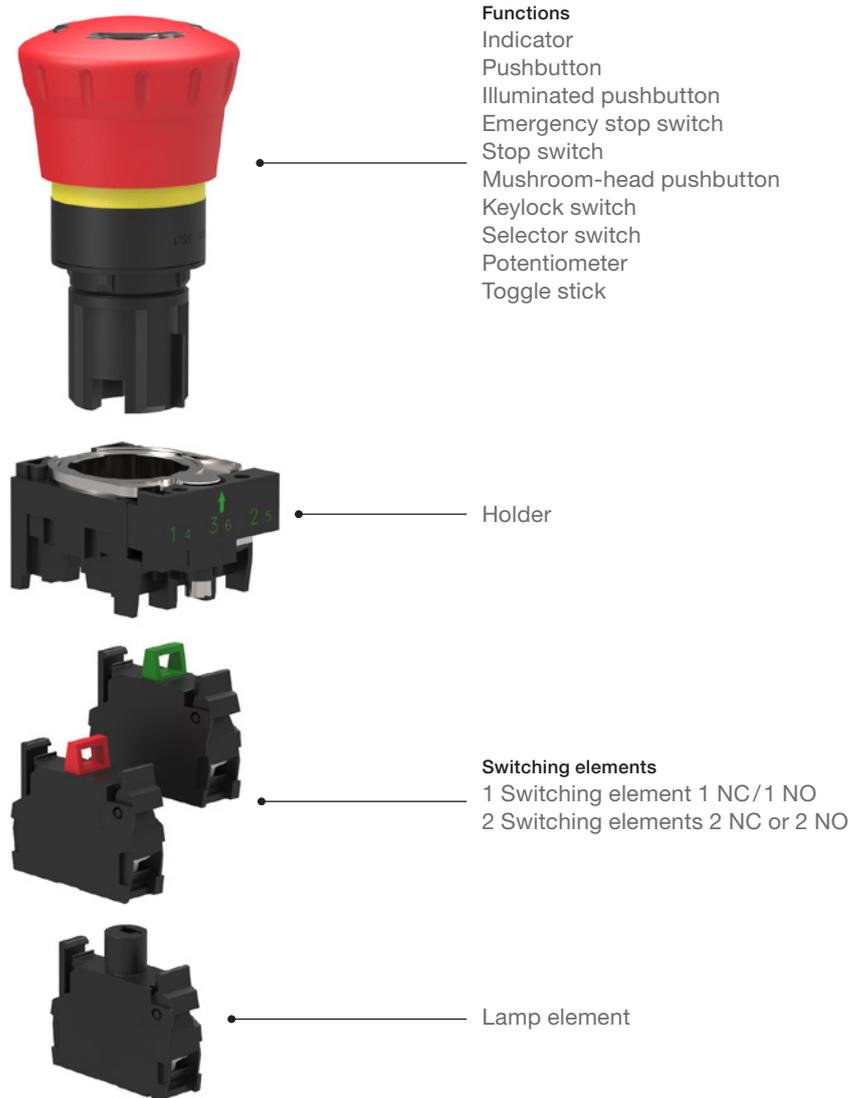


Toggle stick



Please find additional specifications in the product catalogue.

Product structure of Series 45.



HMI Functions of Series 45.



Indicator

Indicators from Series 45 are suitable for use in all applications. They are used throughout the world wherever reliable visual feedback is crucial.

With their uniform, full-face and dazzle-free illumination, these indicators come in a wide range of colours and have a long service life (typically 100 000 hours).

- Low energy consumption
- Long service life
- IP69K protection
- Harmonious illumination
- Attractive design
- From 6 to 230 VAC



Pushbutton

The pushbuttons from Series 45 are suitable for all applications in the construction of machinery and control equipment. These actuators are intuitive to operate, provide good tactile feedback, have a long service life of up to 10 million switching cycles and are robust in use thanks to their high front protection (up to IP69K).

A large choice of actuation surfaces and colours together with a wide range of minimum and maximum switch ratings make the pushbuttons from Series 45 ideal for use in a broad variety of applications.

- Long service life
- IP69K protection
- Good haptic feedback
- Plastic or metal front
- Wide range of colours



Illuminated pushbuttons

EAO is the leading pioneer in the field of illuminated pushbuttons. Its universal modular actuators and indicators have been in use all over the world – even under the toughest conditions. They are used wherever reliable visual feedback is crucial. Typical areas of application are the construction of machinery and control equipment.

With their uniform, full-face illumination, these actuators are intuitive to operate, provide distinctive tactile feedback, have a long service life of up to 1 million switching cycles and are very robust in use thanks to their high front protection (up to IP69K). A large choice of actuation surfaces and illumination colours together with a broad spectrum – from minimum to maximum switch ratings – make the illuminated pushbuttons from Series 45 ideal for use in an enormous range of applications.

- Long service life
- IP69K protection
- Good haptic feedback
- Plastic or metal front
- Wide range of colours



Emergency stop switch

Emergency stop switches from Series 45 with forced opening contacts (in compliance with DIN EN ISO 13850 and EN 60204-1) are used primarily to ensure people's safety. They also help prevent damage to machinery, equipment and control systems in the event of malfunctions.

Emergency stop switches are always fool-proof, even in harsh environments and over a wide range of minimum and maximum switched currents. In addition, the actuators can be illuminated and are resistant to impact, vibration and shock. They enjoy an extremely long service life of up to 300 000 switching cycles.

- Up to 6 switch contacts
- Long service life
- Optional illumination
- Suitable for harsh environments
- Twist or pull to release



Stop switch

Unlike emergency stop switches, stop switches from Series 45 do not need to be foolproof. Also available with illumination, they are used primarily as on-off switches for safe switching in mechanical engineering applications.

The wide range of minimum and maximum switch ratings combined with resistance to impact, vibration and shock (up to IP69K) and long service life of 300 000 switching cycles enable the stop switches from Series 45 to be used in all applications.

- Up to 6 switch contacts
- Long service life
- Suitable for harsh environments
- IP69K protection



Mushroom-head pushbuttons

Mushroom-head pushbuttons from Series 45 are used in harsh environments throughout the world. Their large, distinctive operating elements enable them to be used reliably even with gloves. Despite this, the pushbuttons also provide good tactile feedback.

A wealth of potential configurations including the diameter and colour of the operating element, optional illumination or customer-specific markings make the mushroom-head pushbuttons from Series 45 suitable for a very wide range of applications. In addition, their high front protection (IP69K) and long service life (up to 10 million switching cycles) make these mushroom-head pushbuttons extraordinarily robust and reliable.

- Large operating area
- Optional illumination
- Wide range of colours
- Various operating options
- Long service life



Keylock switch

Keylock switches from Series 45 are used throughout the world in order to prevent erroneous or unauthorised operations. They also enable access control systems to be implemented for different user groups.

Keylock switches from Series 45 have various switching angles and two or three switching positions, together with a wide range of different combinations of momentary and maintained action functions, a long service life (up to 1 million switching cycles) and high front protection (up to IP69K).

- IP69K protection
- Wide range of momentary and maintained action functions
- Suitable for harsh environments
- Long service life



Selector switch

Selector switches from Series 45 are equipped with up to four switch positions, up to eight contacts and with various combinations of momentary and maintained action functions.

Their intuitive operation, distinctive tactile feedback and the optional illumination of switching positions make these actuators extremely user-friendly. Selector switches from Series 45 also have a long service life of up to 1 million switching cycles and high front protection (up to IP69K).

- Optional illumination
- IP69K protection
- Wide range of colours
- Good haptic feedback
- 2, 3 or 4 switching positions



Potentiometer

Mechanically turning the user-friendly potentiometers from Series 45 makes it possible for the resistance of machinery to be adjusted steplessly over a rotational range of 270 degrees.

In addition, the potentiometers from Series 45 are extremely robust thanks to their high front protection (IP69K).

- IP69K protection
- Long service life
- Easy mounting
- Rotational range of 270°
- Resistance from 1 k to 470 k Ω



Toggle stick

Toggle sticks from Series 45 are robust and versatile. They are available with up to four clearly visible switch positions and various combinations of momentary and maintained action functions.

Their use in coordinate-controlled machinery provides intuitive control for the user. In addition, the toggle sticks from Series 45 are robust and reliable thanks to their service life of up to 170 000 switching cycles and high front protection (up to IP67).

- 2 or 4 switching positions
- Optional maintained action
- IP67 protection
- Long service life
- Plastic or metal front

Adaptable. Your application – our strength.



Our comprehensive programme of standard components coupled with our ability to adapt and customise our products enable us to provide individually tailored solutions for a broad range of applications.

EAO products and solutions provide front protection against moisture, coolants, oil and dirt and are resistant to shock, vibration, dust and extreme fluctuations in temperature.

With long service life in mind, we develop reliable high-quality operating concepts for machines that comply with IP, NEMA, IEC, ADA, ANSI and OSHA specifications. Multifunctional utilisation and ease of modification make our products economical and suitable for use virtually everywhere.



Our HMI Components and Systems meet the specifications of the world's leading plant manufacturers in the realms of machinery and industrial automation technology and are used successfully in a wide range of industries.

Applications

- Food and beverages
- Semiconductor and electronics production
- Packaging systems
- CNC milling, lathing, grinding and boring equipment
- Tobacco production and process control
- Industrial lifting and handling automation
- Pharmaceutical and chemical production and process control
- Cooling and ventilation equipment
- Textile production, including equipment for preparing, drying, spinning and weaving
- Plus many other applications

You too can benefit from our impressive portfolio, which offers you the ideal solution for every conceivable HMI application.

HMI Functions and Features – At a glance.

Function	Series					
	14	45	61	71	82	84
Function						
Indicator	■	■	■	■	■	■
Pushbutton	■	■	■	■	■	■
Illuminated pushbutton	■	■	■	■	■	■
Emergency stop switch		■	■			■
Stop switch		■	■			■
Mushroom-head pushbutton	■	■	■	■		■
Keylock switch	■	■	■	■		
Selector switch	■	■	■	■		
Potentiometer		■	■			
Toggle stick		■				
Design						
Flush	■	■	■	■	■	■
Raised	■	■	■		■	■
Mounting cut-out						
16 mm			■		■	
19 mm					■	
22.5 mm	■	■	■	■	■	■
30.5 mm	■	■				■
Square/rectangular			■	■		
Terminal						
Soldering terminal	■		■			
Solder/Plug-in terminal	■		■		■	■
Screw terminal		■	■		■	
PCB	■		■	■		■
Spring-loaded terminal		■				
Front protection						
IP65	■	■	■	■	■	■
IP66		■				
IP67	■	■			■	■
IP69K		■				

Various combination options

Depending of application requirements, the broad range of Series 45 functions can be variously combined with other Series. For example, Series 14, 61, 71, 82 and 84 are intended for this purpose.

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

EAO downloads

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

Related documents

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



Machinery
Brochure



Series 45
Main catalogue



Series 61
Brochure



Series 71
Brochure



Series 82
Brochure



Series 84
Brochure

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