ELDRO® classic

ELECTRO HYDRAULIC THRUSTERS

THE ORIGINAL. BE SAFE.

EMG. moving ahead.
ELECTRO HYDRAULIC THRUSTERS

For 70 years, EMG Automation GmbH has been developing and producing drive systems for industrial brakes in a wide range of industrial applications, from low ambient temperatures to extremely harsh environments.

The customer benefit arises due to the combination of long-term experience with industrial strength, efficient solutions, outstanding logistics and top quality standards.

EMG offers its customers uncompromising reliability coupled with intelligent innovation. In production, EMG greatly values the highest possible manufacturing quality in order to ensure its high quality standards.

THE ORIGINAL. BE SAFE.

The electrohydraulic thrusters ELDRO® and ELHY®, produced by EMG, ensure safe and “soft” braking in combination with modern drum and disc brakes. Additionally, they ensure safety for man and machine.

As an independent manufacturer of linear industrial drive systems, the most important application fields for EMG products comprise ports, steel and metalurgy, as well as mining and raw material extraction.

To date, more than 2 million electro hydraulic thrusters have been supplied in many thousands of design variants worldwide.
FUNCTION AND ADVANTAGES

MODE OF OPERATION

All elements of a hydraulic actuation system are combined in the ELDROclassic® to produce a compact assembly. When switched off, the hydraulic piston with the piston rod is located in its bottom limit position.

When switched on, the hydraulic pump pumps the operating fluid beneath the piston and in doing so generates the hydraulic pressure here. This moves the piston up to the maximum stroke path. When doing so, the counterforce – which is generated through an integrated brake or return spring, or an external load (e.g. a brake) – must be safely overcome.

Due to its hydraulic operating principle, an ELDROclassic® thruster with a maximum travel distance of, for example, 60 mm can be used in any brake that requires a stroke travel between 20 mm and 60 mm.

In the respective piston limit position, the power consumption of the motor reduces in comparison to the power consumed during the lifting process due to the laws of hydraulics. The pressure in the device reaches its maximum value here. The drive motor is therefore relieved in the resting position of the piston. Mechanical overloading of the ELDROclassic® thruster is not possible.

ADVANTAGES

- Use of robust asynchronous motors
- Use of high quality materials
- Use of the proven hydrodynamic principle
- Broad standard temperature range from -25 °C to +50 °C, expandable to -45 °C to +80 °C with additional equipment, e.g. heating and use of special operating media
- Mains voltage fluctuations only have a limited influence on the function of the devices, because the motor speed is predominantly dependent on frequency and less on voltage
- No thermal protective circuit required
- Automatic driving back of the piston to the default position when switched off
- Linear lifting and lowering speeds (exception: motor start-up and run-down range)
- No sensitive electronic and sensory installation parts needed for the operating principle
- Long service intervals
CHARACTERISTIC FEATURES

The electro hydraulic system of the ELDROclassic® thrusters, in conjunction with the straightforward integration in brake systems and the simple electrical start-up, result in the following features under the diverse application conditions:

- High operational safety
- Long service life due to wear-free work under constant self-lubrication
- Soft and impact-free mode of operation, as a systemic result of the hydraulic working principle
- Short actuating times
- Approved continuous operation S1
- High switching frequency of up to 2,000 cycles per hour in switching operation S3
- Reversing operation without limitations
- Easy to install and de-install
- Arbitrary direction of motor rotation, meaning no changeover contactors required
- Overloading not possible during operation
- Arbitrary external limiting of the stroke path
- Stepless extension of the lifting and/or lowering times through the installation of valves
- The fill level of the operating medium is optimised according to the application conditions and requires no further checking
DESIGN AND FUNCTION

- PRESSURE STRAP
- REDUNDANT DUST PROTECTION SEAL
- PISTON ROD PROTECTIVE TUBE
- PISTON ROD
- OIL FILLER OPENING
- REDUNDANT SEAL TO THE HYDRAULIC CHAMBER
- BRAKE SPRING (C-SPRING)
- HYDRAULIC CYLINDER
- OIL GUIDE RING
- HYDRAULIC PUMP
- TERMINAL BOX
- REDUNDANT MOTOR SHAFT SEAL
- THREE-PHASE ASYNCHRONOUS MOTOR, 2-POLE
- BASE FASTENING

\(^{11}\) Auxiliary equipment
GENERAL INFORMATION

- For device key data see device type plate
- The devices are delivered ready for operation, filled with operating fluid

ELECTRICAL & MECHANICAL AUXILIARY EQUIPMENT

POSITIONING MEASURING SYSTEMS

- Analogue measuring systems for monitoring the entire stroke path
- Version dependent on the stroke path

LIMIT SWITCHES

- All ELDROclassic® devices can be fitted with mechanical or inductive limit switches for the electrical display of the air and brake setting.
- Detailed information is available in the data sheet for the limit switches
**ELECTRICAL CONNECTION**

- The connection diagram can be found in the terminal box cover.
- Motor is voltage interchangeable for delta (Δ) or star (Y) switching.
- The devices exhibit star (Y) switching when delivered. Phase sequence arbitrary with connection.

**INSTALLATION POSITION**

- The pivoting of the device must be ensured at the installation into the brake.
- There must be no transverse forces on the piston bar.