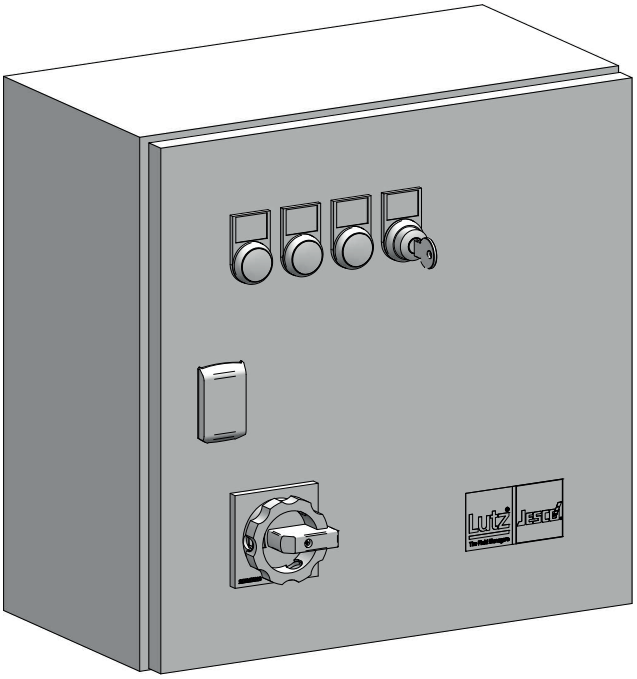
Control unit
ChlorStop
Operating instructions



Read the operating manual!

The user is responsible for installation and operation related mistakes!

Original operating instructions

BA-22107-02-V04

Dosing | *Liquids*
Conveying | *Gases*
Control | *Systems*

Table of Contents

1 Notes for the Reader

This operating manual contains information and behaviour rules for the safe and designated operation of the device.

Observe the following principles:

- Read the entire operating manual prior to starting-up the device.
- Ensure that everyone who works with or on the device has read the operating manual and follows it.
- Maintain the operating manual throughout the service life of the device.
- Pass the operating manual on to any subsequent owner of the device.

1.1 General non-discrimination

In this operating manual, only the male gender is used where grammar allows gender allocation. The purpose of this is to make the text easy to read. Men and women are always referred to equally. We would like to ask female readers for understanding of this text simplification.

1.2 Explanation of the signal words

Different signal words in combination with warning signs are used in this operating manual. Signal words illustrate the gravity of possible injuries if the risk is ignored:

Signal word	Meaning
DANGER	Refers to imminent danger. Ignoring this sign may lead to death or the most serious injuries.
WARNING	Refers to a potentially hazardous situation. Failure to follow this instruction may lead to death or severe injuries.
CAUTION	Refers to a potentially hazardous situation. Failure to follow this instruction may lead to minor injury or damage to property.
PLEASE NOTE	Refers to a danger which, if ignored, may lead to risk to the machine and its function.

Tab. 1: Explanation of the signal words

1.3 Explanation of the warning signs

Warning signs represent the type and source of a danger:

Warning sign	Type of danger
	General danger
	Danger from poisonous substances
	Danger from electrical voltage
	Danger of damage to machine or functional influences

Tab. 2: Explanation of the warning signs

1.4 Identification of warnings

Warnings are intended to help you recognise risks and avoid negative consequences.

This is how warnings are identified:

Warning sign	**SIGNAL WORD**
Description of danger. Consequences if ignored. ⇨ The arrow signals a safety precaution to be taken to eliminate the danger.	

1.5 Instruction for action identification

This is how pre-conditions for action are identified:

✓ Pre-condition for action which must be met before taking action.

🛠 A resource such as a tool or auxiliary materials required to perform the operating instructions.

This is how instructions for action are identified:

➔ Separate step with no follow-up action.

1. First step in a series of steps.
2. Second step in a series of steps.

▸ Result of the above action.

✓ **Action completed, aim achieved.**

2 Safety

2.1 General warnings

The following warnings are intended to help you eliminate the dangers that can arise while handling the device. Risk prevention measures always apply regardless of any specific action.

Safety instructions warning against risks arising from specific activities or situations can be found in the respective sub-chapters.

DANGER

Mortal danger from electric shock!

Live parts can inflict fatal injuries.

⇨ Before carrying out any work, always disconnect the device from the power supply.

⇨ Secure the system to prevent it from being switched on by accident.

WARNING

Increased risk of accidents due to insufficient qualification of personnel!

Chlorinators and their accessories must only be installed, operated and maintained by personnel with sufficient qualifications. Insufficient qualification will increase the risk of accidents.

⇨ Ensure that all action is taken only by personnel with sufficient and corresponding qualifications.

⇨ Prevent access to the system for unauthorised persons.

2.2 Hazards due to non-compliance with the safety instructions

Failure to follow the safety instructions may endanger not only persons, but also the environment and the device.

The specific consequences can be:

- failure of important functions of the device and of the corresponding system
- danger to persons
- Danger to the environment caused by substances leaking from the system

2.3 Working in a safety-conscious manner

Besides the safety instructions specified in this operating manual, further safety rules apply and must be followed:

- Accident prevention regulations
- Safety and operating provisions
- Safety regulations on handling hazardous substances
- Environmental protection provisions
- Applicable standards and legislation

2.4 Personnel qualification

Any personnel who work on the device must have appropriate special knowledge and skills.

Anybody who works on the device must meet the conditions below:

- Attendance at all the training courses offered by the owner
- Personal suitability for the respective activity
- Sufficient qualification for the respective activity
- Training in how to handle the device
- Knowledge of safety equipment and the way this equipment functions
- Knowledge of this operating manual, particularly of safety instructions and sections relevant for the activity
- Knowledge of fundamental regulations regarding health and safety and accident prevention

All persons must generally have the following minimum qualification:

- Training as specialists to carry out work on the device unsupervised
- Sufficient training that they can work on the device under the supervision and guidance of a trained specialist

These operating instructions differentiate between these user groups:

2.4.1 Specialist staff

Thanks to their professional training, knowledge, experience and knowledge of the relevant specifications, specialist staff are able to perform the job allocated to them and recognise and/or eliminate any possible dangers by themselves.

2.4.2 Trained electricians

Due to their professional training, knowledge and experience as well as knowledge of specific standards and provisions, trained electricians are able to do the electrical work assigned to them and to recognise and avoid any potential dangers by themselves.

They are specially trained for their specific working environment and are familiar with relevant standards and provisions.

They must comply with the legally binding regulations on accident prevention.

2.4.3 Trained persons

Trained persons have received training from the operator about the tasks they are to perform and about the dangers stemming from improper behaviour.

Trained persons have attended all trainings offered by the operator.

2.4.4 Personnel tasks

In the table below you can check what qualifications are the pre-condition for the respective tasks. Only people with appropriate qualifications are allowed to perform these tasks!

Qualification	Activities
Specialist staff	■ Transportation ■ Assembly ■ Taking out of operation ■ Fault rectification ■ Repairs ■ Disposal
Trained electricians	■ Electrical installation ■ Rectifying electrical faults ■ Electrical repairs
Trained persons	■ Commissioning ■ Control ■ Storage

Tab. 3: Personnel qualification

3 Intended use

3.1 Notes on product warranty

Any non-designated use of the device can impair its function and the protection provided. This leads to invalidation of any warranty claims!

Please note that liability is on the side of the user in the following cases:

- the device is operated in a manner which is not consistent with these operating instructions, particularly safety instructions, handling instructions and the section "Intended Use".
- Information on usage and environment (see section 5 "Technical data" on page 8) is not adhered to.
- If people operate the device who are not adequately qualified to carry out their respective activities.
- No original spare parts or accessories of Lutz-Jesco GmbH are used.
- Unauthorised changes are made to the device.
- Maintenance and inspection intervals are not adhered to as required or not adhered to at all.
- The device is commissioned before it or the corresponding system has been correctly and completely installed.
- Safety equipment has been bridged, removed or made inoperative in any other way.

3.2 Intended purpose

The control unit is intended exclusively for the actuation of the ChlorStop valves.

4 Product description

4.1 Scope of delivery

Please compare the delivery note with the scope of delivery. The following items are part of the scope of delivery:

- Control unit for ChlorStop valves
- Circuit diagram
- Operating instructions

4.2 Design and function

4.2.1 Device design

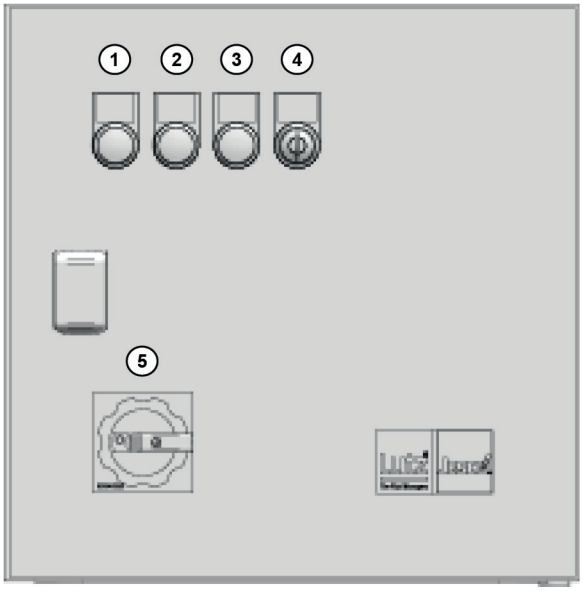


Fig. 1: Device design

Item	Description
1	Operating light
2	Uninterrupted power supply (UPS)
3	Alarm reset
4	Test
5	Main switch

Tab. 4: Components

4.2.2 Function description

The control unit enables the connection of up to 12 ChlorStop valves. It connects the ChlorStop valves to a gas warning device or an external control and closes them in the event of an alarm.

Optionally, the control unit is equipped with an uninterrupted power supply (UPS), with which the ChlorStop valves can be temporarily operated with 24 V.

4.3 Rating plate

There is information on the equipment about safety or the product's way of functioning. The information must stay legible for the duration of the service life of the product.

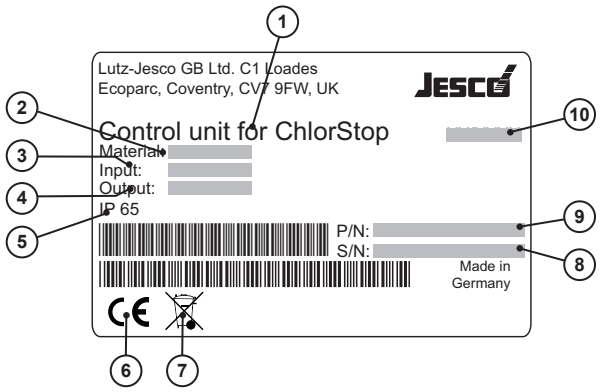


Fig. 2: Rating plate

No.	Description
1	Product name
2	Material
3	Input voltage
4	Control voltage
5	Protection class
6	Label showing conformity with applicable European directives
7	WEEE label
8	Serial number
9	Part number
10	Month/year of manufacture

Tab. 5: Rating plate

5 Technical data

Information		Value
Operating voltage		110 – 230 V AC, 50/60 Hz
Supply voltage		230 V AC, 24 V DC
Control voltage		24 V DC
Protection class		IP66 (Nema 4)
UPS	Capacity	1.3 Ah
	Charging current	1.36 A
	Complete charge time	16 h
	Operating time	min. 15 min
Weight	Without UPS	12 kg
	With UPS	15 kg
Ambient temperature		0 – 40 °C, avoid direct sunlight

Tab. 6: Technical data

6 Dimensions

All dimensions in mm

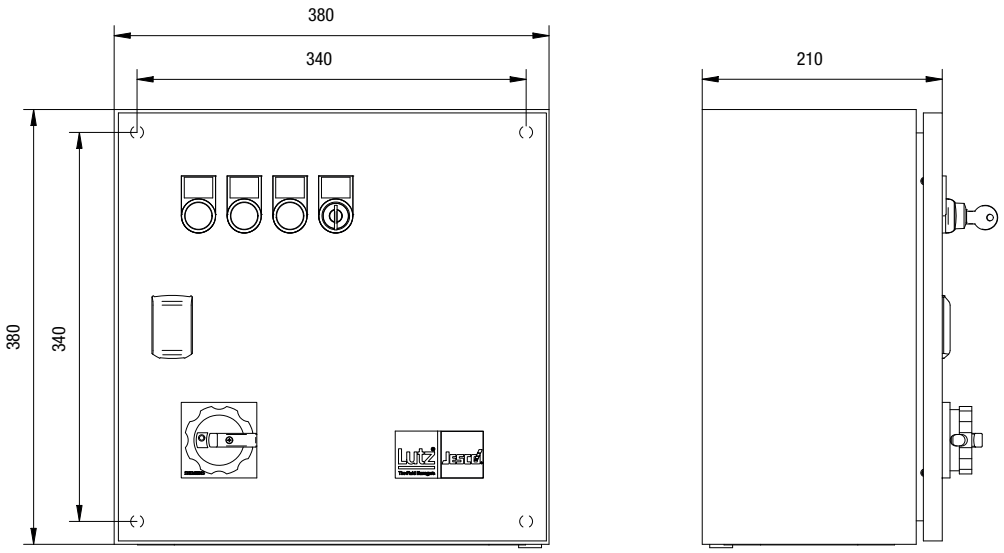


Fig. 3: Dimensional drawing

7 Installation

7.1 Installation location

Install the control unit in the system control room. We do not recommend installation in the same room as the ChlorStop valves.

The room must fulfil the following minimum requirements:

- Secured against unauthorised access.
- Protected against weather.
- The climactic conditions are complied with (see 5 "Technical data" on page 8).

7.2 Fitting the control unit

Install the control unit on a vertical wall surface.

Pre-conditions for actions:

✓ The wall is flat, dry and can bear the weight.

✓ Suitable mounting material is available.

Perform the following working steps:

1. Hold the device against the wall and mark the fixing points.
2. Drill in the marked holes and insert the rawlplug.
3. Mount the device with the correct screws.

✓ **The device is fitted on the wall.**

7.3 Electrical installation

DANGER

Mortal danger from electric shock!

Improperly installed or damaged components in the electronics installation can cause injury.

⇨ Ensure that all work on the electrical installation is performed by a qualified electrician.

⇨ Ensure that all work on the electrical installation is performed in a de-energised state.

⇨ Ensure that the power supply is secured with a fault current protective circuit.

⇨ Replace damaged cables or components without delay.

Connect all the devices to the control unit in accordance with the circuit diagram and section 7.3.1 "Terminal connection" on page 9. The circuit diagram can be found on the inside of the control unit.

✓ **Electrical installation of the device completed.**

7.3.1 Terminal connection

X	Position	Configuration	Description
1	L1	phase	Operating voltage control unit
	N	Neutral	
	PE	protective conductor	
	N	Neutral	
	N	Neutral	
	N	Neutral	
	PE	protective conductor	
	PE	protective conductor	
	PE	protective conductor	
2	1	phase	Alarm signal input 230 V AC
	2	Neutral	
3.1	1	+24 VDC	Connection ChlorStop valve 1
	2	GND	
	3	+24 VDC	Connection ChlorStop valve 4
	4	GND	
	5	+24 VDC	Connection ChlorStop valve 7
	6	GND	
	7	+24 VDC	Connection ChlorStop valve 10
	8	GND	
3.2	1	+24 VDC	Connection ChlorStop valve 2
	2	GND	
	3	+24 VDC	Connection ChlorStop valve 5
	4	GND	
	5	+24 VDC	Connection ChlorStop valve 8
	6	GND	
	7	+24 VDC	Connection ChlorStop valve 11
	8	GND	
3.3	1	+24 VDC	Connection ChlorStop valve 3
	2	GND	
	3	+24 VDC	Connection ChlorStop valve 6
	4	GND	
	5	+24 VDC	Connection ChlorStop valve 9
	6	GND	
	7	+24 VDC	Connection ChlorStop valve 12
	8	GND	
4	1	GND (3)	Alarm signal output Potential-free 230 V AC, 2 A
	2	External On/off (4)	
	3	GND (3)	
	4	+24 VDC	
	5	Loop A1	Alarm signal output 24 V DC
	6	Loop A2	
	7	GND	
5	1	+24 VDC	Bridge alarm signal input 24 V DC: Bridge between 1 & 2 230 V AC: Bridge between 2 & 3
	2	COM	
	3	230V	

Tab. 7: Assignation of the terminals

7.3.2 24 V and 230 V alarm signals

The alarm input signal, e.g. from a gas warning device, is usually a 230 V AC signal. Alternatively, you can also use a 24 V DC alarm input signal.

The control unit has been prepared for a 230 V AC alarm input signal on the factory side. You can recognise this by the fact that a bridge is inserted between terminals 2 and 3 on terminal block -X5. For a 24 V DC alarm input signal, you must insert the red bridge between terminals 1 and 2.

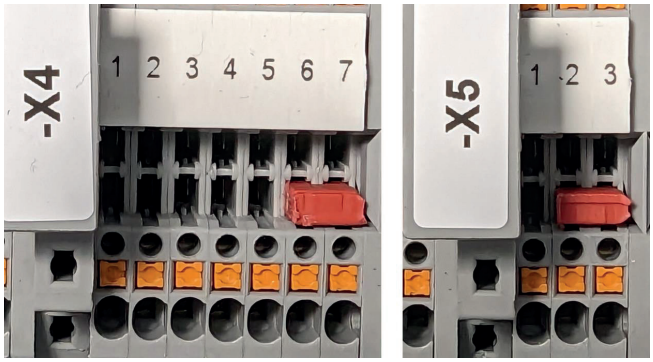


Fig. 4: Bridges on -X4 and -X5

If the 24 V DC alarm input signal comes from a gas warning device or external control, the control unit itself must be potential-free (passive). To this end, the bridge between terminals 6 and 7 on terminal block -X4 must be removed. The signal input contact is connected to terminal 5. The external GND signal is connected to terminal 6.

If the 24 V DC alarm input signal is to come from a sensor, Emergency-Stop button, etc., the control unit must supply the 24 V DC supply voltage. For this purpose, the bridge is placed between terminals 6 and 7 on terminal block -X4. The signal input contact of the sensor is connected to terminal 5. The signal output contact is connected to terminal 6.

Terminal block -X4 also has a potential-free alarm output. Here, you can connect e.g. a flashing light or alarm horn that signals the closing of the ChlorStop valves.

7.3.3 Switching function of the control unit

To detect a cable break between the gas warning device and the control unit, the switching function of the control unit is a normally closed contact. This means that if the input signal is cancelled, the self-holding function of the control unit is triggered and the voltage supply is interrupted. As a result, all connected ChlorStop valves close. If the control unit has an uninterrupted voltage supply, the closing process is delayed.

If a normally open contact is required as the switching function of the control unit, the contact on the respective relay must be connected from 14 to 12. However, this means that cable break detection is no longer possible.

8 Operation

8.1 Commissioning

Please note that the uninterrupted power supply (UPS) takes approximately 16 hours to charge during initial commissioning.

Precondition for action:

- ✓ You have completed the electrical installation of the devices.
- ✓ The control cabinet door is closed.
- ✓ The key switch is set to "0".
- ✓ The chlorine container valves are closed.
- ✓ All system parts are ready for operation.
- ✓ You are wearing personal protective equipment.

Perform the following working steps:

1. Activate the gas warning device or the external control, from which the control unit is to receive signals.
2. Activate the ejector to generate a vacuum in the gas-conveying system.
3. Turn the mains switch (Fig. 1 "Device design" on page 7, pos. 5) of the control unit to “On” to activate it and press the reset button (pos. 3).

▶ Now all connected ChlorStop valves are supplied with voltage. Open the ChlorStop valves by pulling the stop lever upwards. Comply with the specifications of the documentation for the valves.

✓ **Commissioning completed.**

8.2 Operating signals

The control unit informs you visually about the current state:

- Operating light (white): illuminates when the control unit is switched on.
- “Reset” button (red): illuminates when there is an alarm signal and the control unit interrupts the voltage supply to the ChlorStop valves. The valves are closed.
- UPS light (blue): Illuminates when the UPS is active and the connected devices are temporarily supplied with voltage. The valves are open, the operating light (white) extinguishes.

8.3 Function test of the ChlorStop valves

You can check the functionality of the control unit and the connected ChlorStop valves by turning the key switch (pos. 4) to position "1". The control unit then interrupts the voltage supply to the valves and the valves close.

Turn the key switch to the "0” position, press the reset button (pos. 3) and then open the valves again by pulling the stop levers upwards.

8.4 What to do in an emergency

DANGER

Danger to life from chlorine escape!

Chlorine is poisonous. In severe cases, breathing in chlorine may lead to death. It irritates the eyes, the respiratory system and the skin.

- ⇨ If chlorine escapes, leave the room immediately.
- ⇨ Use sufficient personal protective equipment.
- ⇨ If chlorine gas escapes, wear a Type 2 self-contained breathing apparatus that complies with EN 137.
- ⇨ Only initiate counter measures after putting on the protective equipment.

If an emergency occurs and large quantities of chlorine gas escape, this will be detected by the sensors and transmitted to the control unit. It then closes all connected ChlorStop valves and the red reset button (pos. 3) starts to illuminate.

The further procedure depends on the type of accident and should be planned and executed by professional personnel.

After the danger has been eliminated and there is no longer an alarm signal, you must acknowledge the alarm once by pressing the reset button.

8.5 Shut-down

8.5.1 Short-term shut-down

Perform the following working steps:

1. Close the chlorine tank valves.
2. Use the injector to suck off the remaining chlorine gas.
3. Turn the mains switch (pos. 5) to "Off".

▶ All connected ChlorStop valves close.

4. Switch off the injector.

✓ **Chlorinator shut down for the short term.**

8.5.2 Disposal

PLEASE NOTE

Do not dispose of the device in the domestic waste!

Do not dispose of electric devices via the domestic waste.

- ⇨ The device and its packaging must be disposed of in accordance with locally-valid laws and regulations.
- ⇨ Dispose of different materials separately and ensure that they are recycled.

9 EU Declaration of Conformity

(DE) EU-Konformitätserklärung
Hiermit erklären wir, dass das nachfolgend bezeichnete Gerät aufgrund seiner Konzipierung und Bauart sowie in der von uns in Verkehr gebrachten Ausführung den einschlägigen grundlegenden Sicherheits- und Gesundheitsanforderungen der aufgeführten EU-Richtlinien entspricht. Bei einer nicht mit uns abgestimmten Änderung am Gerät verliert diese Erklärung ihre Gültigkeit.

(EN) EU Declaration of Conformity
We hereby certify that the device described in the following complies with the relevant fundamental safety and sanitary requirements and the listed EU regulations due to the concept and design of the version sold by us.
If the device is modified without our consent, this declaration loses its validity.

(FR) Déclaration de conformité UE
Nous déclarons sous notre propre responsabilité que le produit ci-dessous mentionné répond aux exigences essentielles de sécurité et de santé des directives UE énumérées aussi bien sur le plan de sa conception et de son type de construction que du modèle que nous avons mis en circulation.
Cette déclaration perdra sa validité en cas d'une modification effectuée sur le produit sans notre accord explicite.

(ES) Declaración de conformidad UE
Por la presente declaramos que, dados la concepción y los aspectos constructivos del modelo puesto por nosotros en circulación, el aparato mencionado a continuación cumple con los requisitos sanitarios y de seguridad vigentes de las directivas de la U.E. citadas a continuación.
Esta declaración será invalidad por cambios en el aparato realizados sin nuestro consentimiento.

(PT) Declaração de conformidade UE
Declaramos pelo presente documento que o equipamento a seguir descrito, devido à sua concepção e ao tipo de construção daí resultante, bem como a versão por nós lançada no mercado, cumpre as exigências básicas aplicáveis de segurança e de saúde das directivas CE indicadas.
A presente declaração perde a sua validade em caso de alteração ao equipamento não autorizada por nós.

Bezeichnung des Gerätes:	ChlorStop Steuereinheit
Description of the unit:	ChlorStop control unit
Désignation du matériel:	ChlorStop poste de commande
Descripción de la mercancía:	ChlorStop control unidad
Designação do aparelho:	ChlorStop unidade de controle
Typ: **Type:**	ChlorStop Steuereinheit
EU-Richtlinien: **EU directives:**	2014/30/EU 2014/35/EU 2011/65/EU
Harmonisierte Normen: **Harmonized standards:**	DIN EN 60204-1: 2006 DIN EN 61000-6-2:2005 DIN EN 61000-6-4:2007
Dokumentationsbevollmächtigter: **Authorized person for documentation:**	Lutz-Jesco GmbH

Heinz Lutz
Geschäftsführer / Chief Executive Officer
Lutz-Jesco GmbH
Wedemark, 25.02.2020

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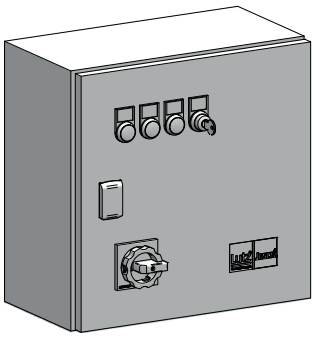

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