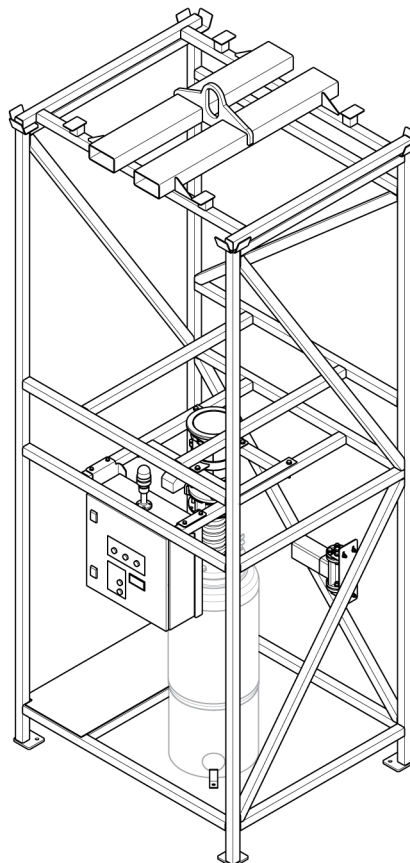




Flux BigBag Discharge Unit

Discharge units for ESAB's 600 and 1000 kg BigBag



Instruction manual
Original instructions



EU DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINERY

According to:

The Machine Directive 2006/42/EC, Annex II 1B;

The Low Voltage Directive 2014/35/EU

The EMC Directive 2014/30/EU;

The RoHS Directive 2011/65/EU;

Type of equipment

SAW Flux discharge unit

Type designation etc.

Big Bag discharge unit 600kg

from serial no LX535-xxxx-xxxx

Big Bag discharge unit1000kg

from serial no LX535-xxxx-xxxx

X and Y represents digits, 0 to 9 in the serial number, where YY indicates year of production.

Brand name or trade mark

ESAB

Manufacturer or his authorised representative established within the EEA

Name, address, telephone no:

ESAB AB

Lindholmsallén 9, Box 8004, SE-402 77 Göteborg, Sweden

Phone: +46 31 50 90 00

The following harmonised standard in force within the EEA has been used in the design:

EN ISO 12100:2010	Safety of machinery - General principles for design - Risk assessment and risk reduction
EN ISO 13857:2019	Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs
EN ISO 13854:2019	Safety of machinery — Safety of machinery - Minimum gaps to avoid crushing of parts of the human body
EN ISO 13850:2015	Safety of machinery — Emergency stop function — Principles for design
EN 60204-1:2018	Safety of machinery - Electrical equipment of machines - Part 1: General requirements

Additional information:

This is partly completed machinery must not be put into service until the final machinery into which it is to be incorporated complies with the provisions of Directive 2006/42/EC

By signing this document, the undersigned declares as manufacturer, or the manufacturer's authorised representative established within the EEA, that the equipment in question complies with the safety requirements stated above.

Place/Date

Signature

Gothenburg

2025-10-02

Cristiano Ferreira

R&D Director Automation

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1 SAFETY

1.1 Meaning of symbols

As used throughout this manual: Means Attention! Be Alert!



DANGER!

Means immediate hazards which, if not avoided, will result in immediate, serious personal injury or loss of life.



WARNING!

Means potential hazards which could result in personal injury or loss of life.



CAUTION!

Means hazards which could result in minor personal injury.



WARNING!

Before use, read and understand the instruction manual and follow all labels, employer's safety practices and Safety Data Sheets (SDSs).



1.2 Safety precautions

Users of ESAB equipment have the ultimate responsibility for ensuring that anyone who works on or near the equipment observes all the relevant safety precautions. Safety precautions must meet the requirements that apply to this type of equipment. The following recommendations should be observed in addition to the standard regulations that apply to the workplace.

All work must be carried out by trained personnel well-acquainted with the operation of the equipment. Incorrect operation of the equipment may lead to hazardous situations which can result in injury to the operator and damage to the equipment.

1. Anyone who uses the equipment must be familiar with:
 - its operation
 - location of emergency stops
 - its function
 - relevant safety precautions
 - welding and cutting or other applicable operation of the equipment
2. The operator must ensure that:
 - no unauthorised person is stationed within the working area of the equipment when it is started up
 - no-one is unprotected when the arc is struck or work is started with the equipment
3. The workplace must:
 - be suitable for the purpose
 - be free from drafts
4. Personal safety equipment:
 - always wear recommended personal safety equipment, such as safety glasses, flame-proof clothing, safety gloves
 - do not wear loose-fitting items, such as scarves, bracelets, rings, etc., which could become trapped or cause burns
5. General precautions:
 - make sure the return cable is connected securely
 - work on high voltage equipment **may only be carried out by a qualified electrician**
 - appropriate fire extinguishing equipment must be clearly marked and close at hand
 - lubrication and maintenance must **not** be carried out on the equipment during operation

**WARNING!**

Arc welding and cutting can be injurious to yourself and others. Take precautions when welding and cutting.

**ELECTRIC SHOCK - Can kill**

- Install and ground the unit in accordance with instruction manual.
- Do not touch live electrical parts or electrodes with bare skin, wet gloves or wet clothing
- Insulate yourself from work and ground.
- Ensure your working position is safe

**ELECTRIC AND MAGNETIC FIELDS - Can be dangerous to health**

- Welders having pacemakers should consult their physician before welding. EMF may interfere with some pacemakers.
- Exposure to EMF may have other health effects which are unknown.
- Welders should use the following procedures to minimize exposure to EMF:
 - Route the electrode and work cables together on the same side of your body. Secure them with tape when possible. Do not place your body between the torch and work cables. Never coil the torch or work cable around your body. Keep welding power source and cables as far away from your body as possible.
 - Connect the work cable to the workpiece as close as possible to the area being welded.

**FUMES AND GASES - Can be dangerous to health**

- Keep your head out of the fumes
- Use ventilation, extraction at the arc, or both, to take fumes and gases away from your breathing zone and the general area

**ARC RAYS - Can injure eyes and burn skin**

- Protect your eyes and body. Use the correct welding screen and filter lens and wear protective clothing
- Protect bystanders with suitable screens or curtains

**NOISE - Excessive noise can damage hearing**

Protect your ears. Use earmuffs or other hearing protection.

**MOVING PARTS - Can cause injuries**

- Keep all doors, panels and covers closed and securely in place. Have only qualified people remove covers for maintenance and troubleshooting as necessary. Reinstall panels or covers and close doors when service is finished and before starting engine.



- Stop engine before installing or connecting unit.
- Keep hands, hair, loose clothing and tools away from moving parts.

**FIRE HAZARD**

- Sparks (spatter) can cause fire. Make sure therefore that there are no inflammable materials nearby
- Do not use on closed containers.



HOT SURFACE - Parts can burn

- Do not touch parts bare handed.
- Allow cooling period before working on equipment.
- To handle hot parts, use proper tools and/or insulated welding gloves to prevent burns.

MALFUNCTION - Call for expert assistance in the event of malfunction.

PROTECT YOURSELF AND OTHERS!

ESAB has an assortment of welding accessories and personal protection equipment for purchase. For ordering information contact your local ESAB dealer or visit us on our website.

1.3 Danger zone

The danger zone is the area under and around the Flux BigBag Discharge Unit, in reach of movable parts



WARNING!

Risk of falling objects. Wear safety helmet and safety shoes.

It is **absolutely forbidden** and also hazardous for unauthorised persons to enter into the danger zone of the Flux BigBag Discharge Unit during operation, or during a power failure.

It is the responsibility of the operator to make sure that no one is within the danger zone.

The danger zone must be made inaccessible in some way.

IMPORTANT: In order to avoid the risk of slipping and stumbling, the operator's area in front of the equipment must be kept clean and dry and free of objects.

1.4 Switching the machine off

Switch the equipment off and interrupt the voltage supply and the media supply,

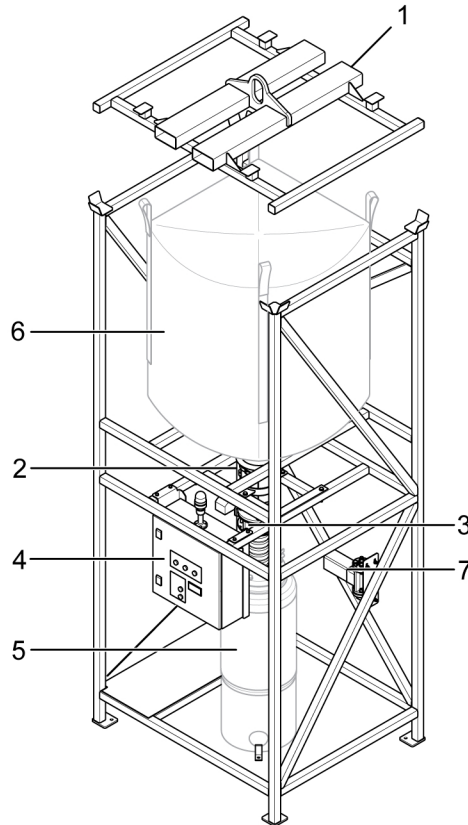
- before you leave the machine,
- before you carry out any service and cleaning work.

2 INTRODUCTION

The **Flux BigBag Discharge Unit** is a discharge unit for automatic transfer of flux from the BigBag to a flux hopper at the point for welding. The BigBag outlet nozzle attaches directly to the connecting tube to avoid exposure to air.

The discharge unit is available in two versions; one for ESAB's 600 kg BigBag and one for ESAB's 1000 kg BigBag.

2.1 Equipment



- | | |
|----------------------------|---|
| 1. Lifting yoke for BigBag | 5. Flux pressure tank TPC 75 with low level sensor (not included) |
| 2. Bag connection | 6. BigBag (not included) |
| 3. Flux valve | 7. Evacuation valve |
| 4. Control cabinet K | |

The discharge unit is supplied with:

- Quick start guide
- Instruction manual
- Spare parts list

3 TECHNICAL DATA

	600 kg	1000 kg
Dimensions l × w × h		
Discharge unit	1140 × 900 × 3750 mm	1130 × 1370 × 3650 mm
BigBag	620 × 620 × 1 300 mm	850 × 850 × 1150 mm
Weight	400 kg	450 kg
Max load on the footstep	130 kg	130 kg
Required power supply	3 x 400-500 VAC, 50/60 Hz (heaters in TPC 75 requires additional power supply)	3 x 400-500 VAC, 50/60 Hz (heaters in TPC 75 requires additional power supply)
Required air supply	6 bar, 300 l/min. (with TPC 75)	6 bar, 300 l/min. (with TPC 75)

4 INSTALLATION

4.1 Check-up of delivery

- 1) Unpack the equipment supplied.
- 2) Make sure that no visible damages exist. In the event of damage in transit, e.g. rust, dents or scratches, contact the forwarding agent.

4.2 Check-up of installation site

- 1) Check that supply voltage is available and that the air hoses are connected in accordance with layout and specification.
- 2) Make sure a suitable lifting equipment is available.

4.3 Required components not included in the delivery

The following components, which are (according to agreement) **not** included in the delivery, must be available:

- TPC 75 flux pressure tank
- Low level indicator for TPC 75 pressure tank
- Flux feeding hose (for connection between TPC 75 pressure tank and flux hopper)

4.4 Demand for disconnection of power

- Mains supply must be fitted with a lockable main switch that will disconnect all power to the equipment.
- The switch must be clearly marked out. It must be possible to lock the disconnection device if reconnection could involve danger to exposed persons.
- It must be possible to lock the disconnection device to safeguard the operator's work when it is impossible for the operator to check that the power supply is still cut out.
- When the power supply is cut out, it must be possible in a normal way to discharge any energy remaining or stored in the circuits of the machinery without risk to exposed persons.

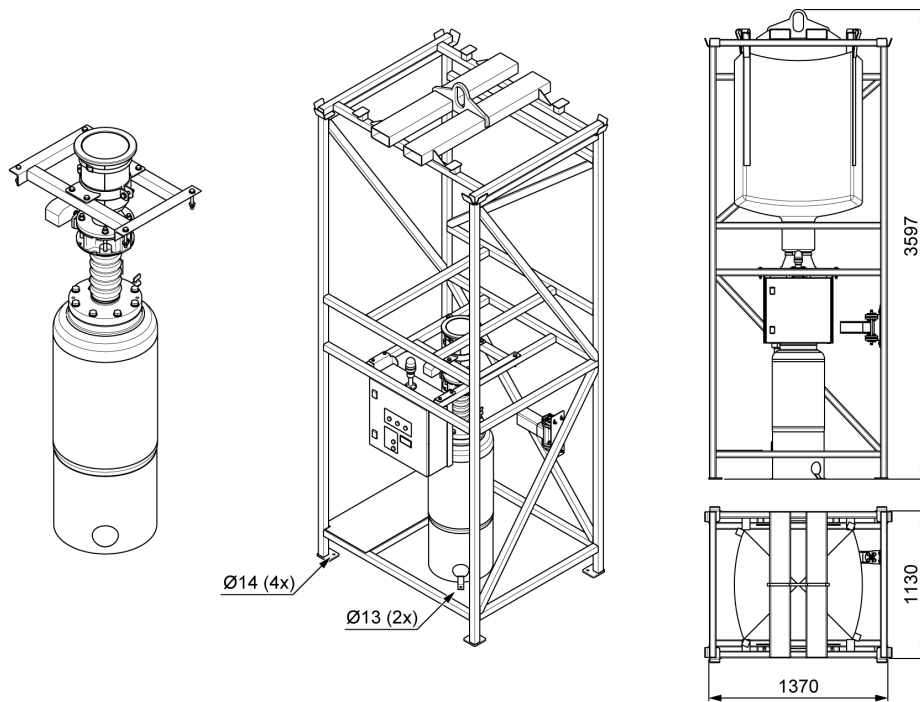
4.5 Mechanical installation

- 1) Erect the Flux BigBag Discharge Unit, using a suitable lifting equipment.

The weight of the system is 400/450 kg (excluding any TPC 75 flux pressure tank or flux hopper).

- 2) Securely attach the equipment to a platform or directly to the floor:
 - a) Use the fasteners on the TPC 75 and two screws.

b) Use the bolt holes in the stand and four screws.



4.6 Electrical installation

Refer to "*WIRING DIAGRAM*", page 20 for information about the installation of electrical equipment.



WARNING!

Make sure the main power to control cabinet K is connected through an existing emergency stop circuit!

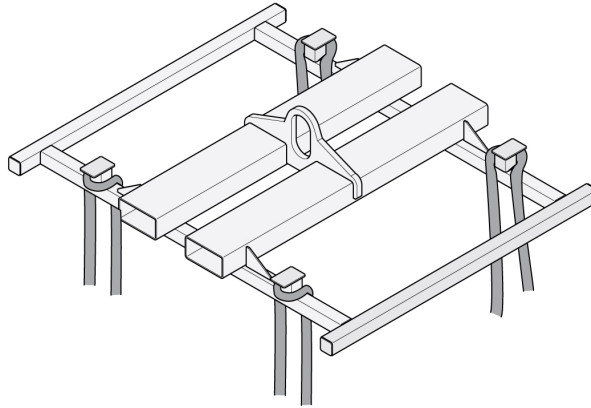
Since there is no internal emergency stop included in the Flux BigBag Discharge Unit, the main power must be connected through an existing emergency stop circuit.

4.7 Loading a new BigBag

A forklift is used to lift the lifting yoke. As an alternative, the lifting yoke can be connected to a traverse/hoist. In this case, the centrally positioned lifting eye should be used.

- 1) Check that the lifting yoke and components are not damaged in a way that could compromise safety.

- 2) Insert a ribbon loop of the new BigBag into each hook.



- 3) Test lift and check the lifting points and that the load is hanging correctly.

- 4) Lift/move gently and carefully.



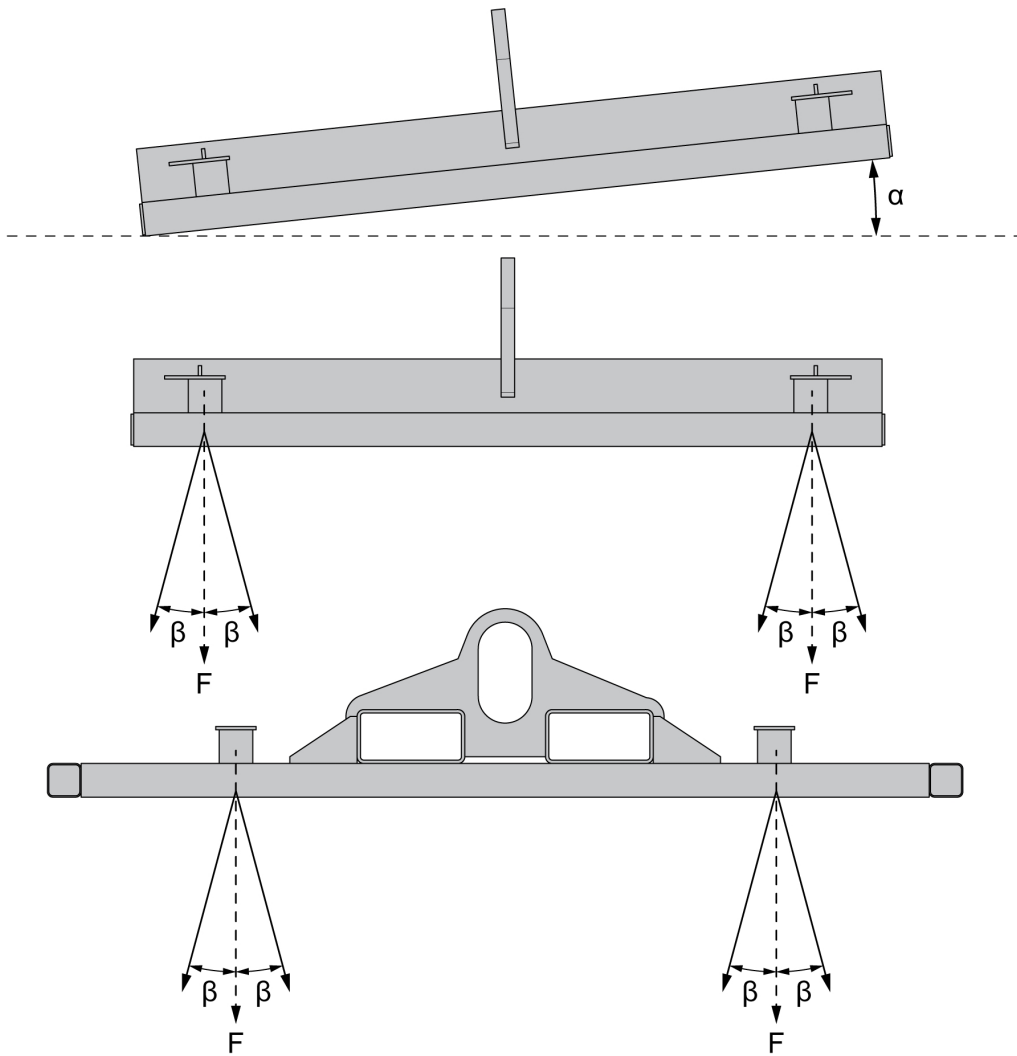
WARNING!

Avoid jerking and oblique loading that can overload the lifting equipment.

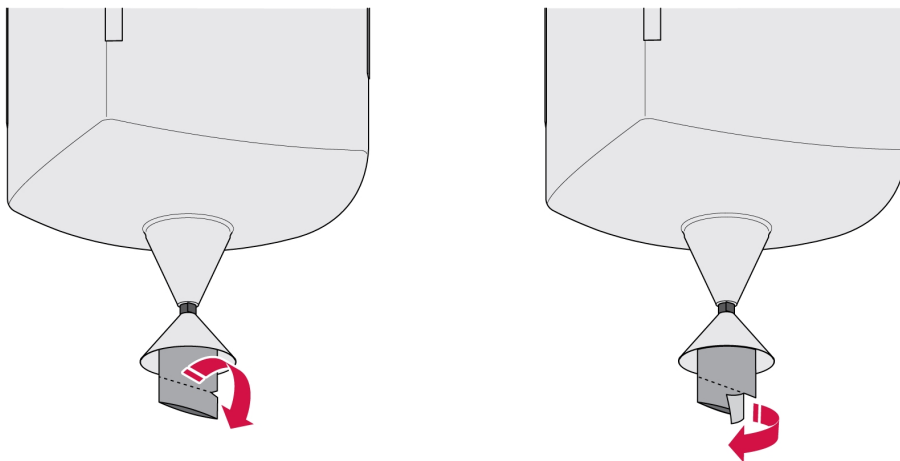


WARNING!

The lifting yoke must not be used at an angle α exceeding 6° from the horizontal. It must also not be loaded at an angle β exceeding 15° .

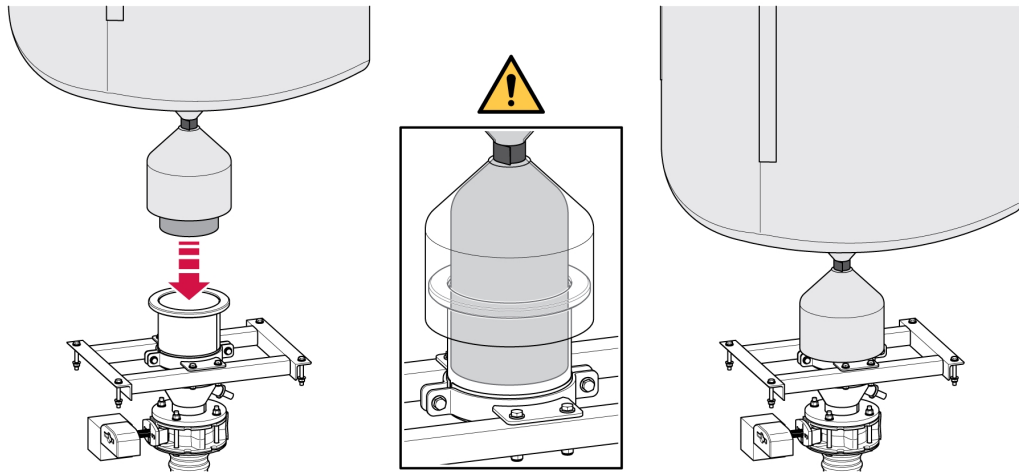


- 5) Make sure the new BigBag is securely in place in the discharge unit.
- 6) Unfold the spout of the new BigBag and tear off the end of the alu-liner.



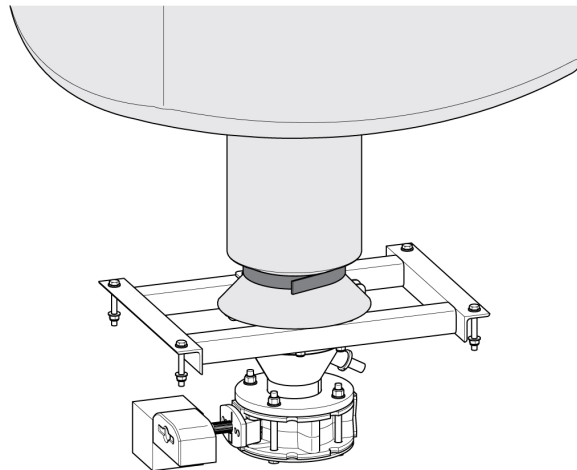
4 INSTALLATION

7) Insert the alu-liner into the tube. Make sure the yellow fabric is on the outside of the flange.



8) Make sure that the flux valve is closed. If the flux valve is open, press button to manually close it.

9) Remove the black Velcro strap. The flux fills up the tube down to the valve.



10) Tighten the spout under flange.

5 OPERATION

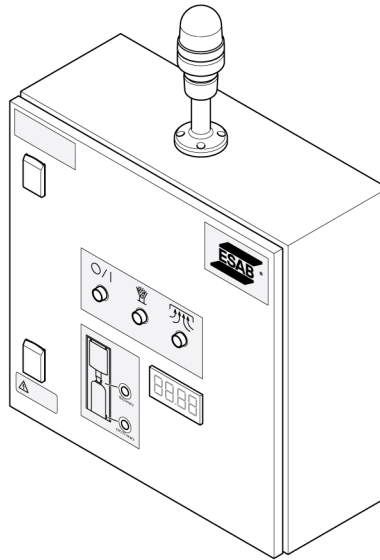
General safety regulations for handling the equipment can be found in the "SAFETY" chapter of this manual. Read it through before you start using the equipment!



WARNING!
Risk of injury!

Only qualified persons are allowed to be inside the danger zone when the Flux BigBag Discharge Unit is operated.

The operation of the Flux BigBag Discharge Unit is controlled using Control cabinet K.



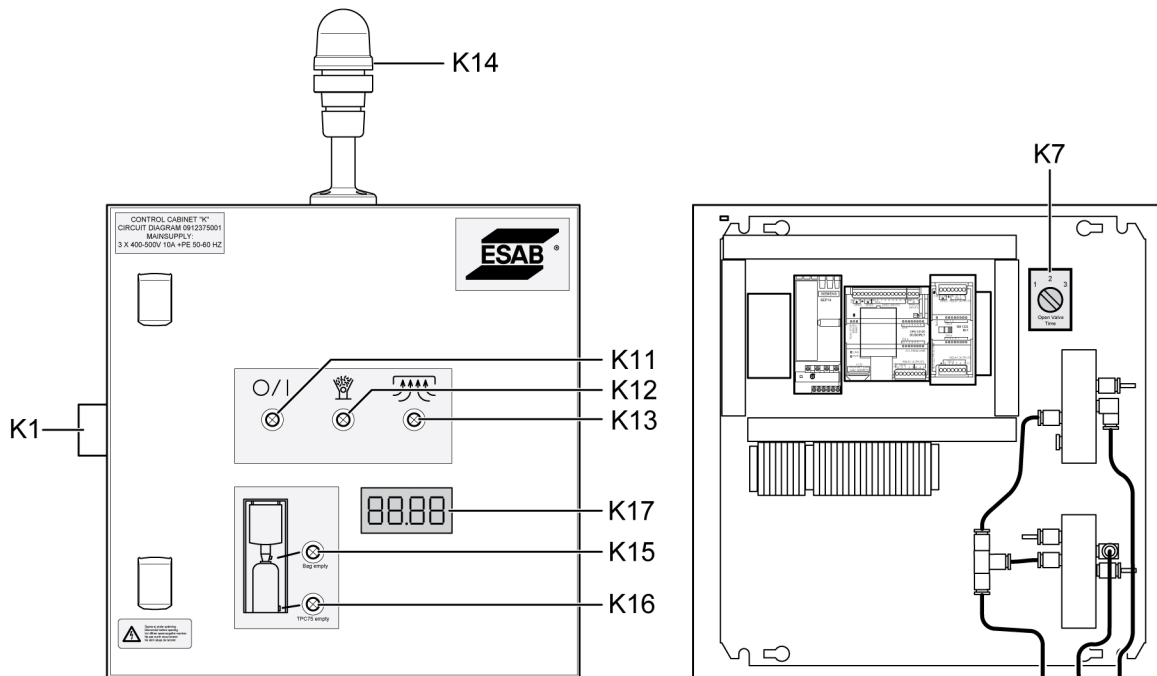
5.1 Buttons and indicators on Control cabinet K



CAUTION!
Connections in the cabinet are only to be made by skilled personnel.



NOTE!
The alphabetical and numeral notations below, "K1", "K11", "K12" etc., refers to the component designations in the circuit diagram.



Main switch, loadbreaker	K1	Switch ON/OFF
Open valve time	K7	Switch for setting how long the flux valve between the BigBag and TPC 75 should be open during filling process. 1, 2, and 3 on the switch represents 10, 20, and 30 seconds of fill time.
Mode selector	K11	Push button for shifting between automatic and manual mode. The white lamp in the button is on in automatic mode and off in manual mode. Flashing light is indicating filling of flux in progress.
Manual opening/closing of flux valve	K12	Push button for manual opening and closing of flux valve. Each push toggles between open and closed flux valve. The white lamp in the button is on when the valve is open and off when the valve is closed .
Manual evacuation/pressurization of flux pressure tank	K13	Push button for manual shifting between evacuation and pressurization of TPC 75 flux pressure tank. Each push toggles between evacuation and pressurization of the tank. The white lamp in the button is on during evacuation and off during pressurization .
Warning beacon	K14	The warning beacon indicates when: <ul style="list-style-type: none"> the BigBag connector tube is empty any system alarm is active.
Flux level for BigBag connector tube	K15	Sensor status for level of flux in the BigBag. Red light indicates low level.
Flux level in TPC 75	K16	Sensor status for level of flux in TPC 75. Red light indicates low level.
Temperature display	K17	Temperature sensor with display for TPC 75 (optional).

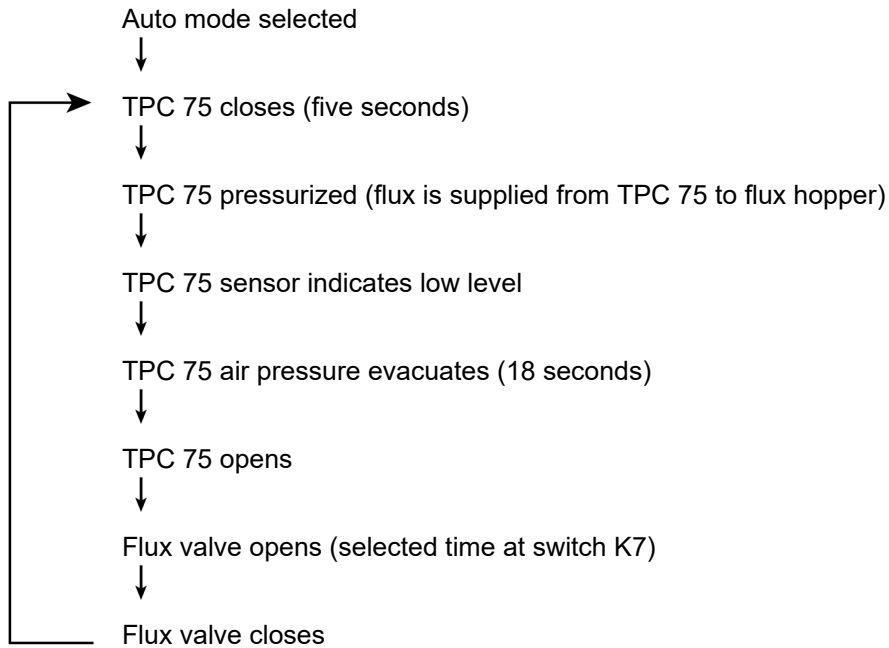
5.2 Operating in automatic mode

- 1) Load an ESAB 600/1000 kg BigBag, using the lifting yoke according to instructions in "[Loading a new BigBag](#)", page 10.

- 2) Press the **Mode selector** push button. The white lamp in the button is lit, which indicates automatic mode (if the lamp is **not** lit, push the button again to activate automatic mode).

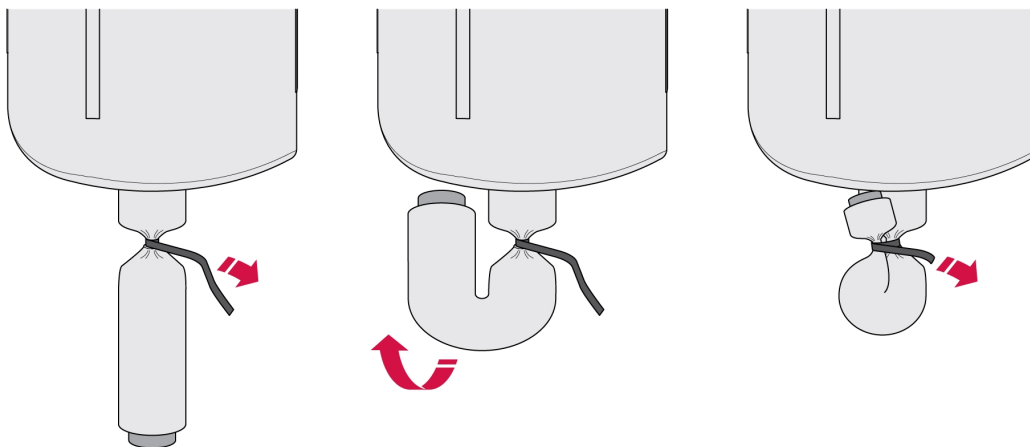
When automatic mode is activated, the automatic sequence starts.

Automatic mode sequence



5.3 Sealing a partially emptied BigBag

- 1) Tighten the strap when flux is filling the TPC.
- 2) Fold the empty spout upwards and tighten it with an additional loop of the strap.



6 MAINTENANCE

The following should be seen as a general guide line, the estimated intervals may vary depending on working conditions. It is important that faulty parts are changed immediately.



WARNING!

Work on the Flux BigBag Discharge Unit may only be carried out by qualified personnel trained for this purpose, and electrical work only by a trained electrician.



WARNING!

The mains supply must be disconnected during cleaning and maintenance.



WARNING!

Risk of personal injury and damage to the equipment!

Never remove, modify or disable safety devices! Never modify the equipment in any way!



CAUTION!

Carrying out repair and maintenance work requires equipment and safety knowledge as well as appropriate tools.

Read, understand and follow all the safety and machine instructions as well as safety advice from the operating personnel.



NOTE!

Regular maintenance is important for safe and reliable operation.



NOTE!

Perform maintenance more often during severe dusty conditions.

6.1 Routine maintenance

Maintenance schedule during normal conditions. Check equipment prior to every use.



CAUTION!

Do not touch any of the equipment with sharp objects.

Interval	Area to maintain			
As necessary	Keep all parts of the system clean from foreign objects and excessive dirt. Use a soft cloth with mild detergent and compressed air to blow parts clean.			
Daily	Remove dust and slag from the equipment.	Check all cables, hoses and connections.	Check all electrical joints.	Make sure all screwed joints are tightened.
Monthly	Clean Control cabinet K and its push-buttons and keys with a soft cloth and mild detergent.	Check that the push-buttons and keys do not get blocked or seize. Change faulty items immediately.	Inspect visually that the relays are not burnt. If so, the plastic cap of the relay is black.	Check all electrical connections of the relay.
Every 3 months	Check that all cables are undamaged.			
Every 6 months	Check that all electrical connections are tightened.			

6.2 Periodic maintenance of the lifting yoke

Interval

Inspection of the lifting yoke should be carried out regularly based on frequency of use and wear. The lifting equipment is designed for 16,000 load connections. When the equipment has exceeded this, there is an increased risk of wear and tear due to fatigue. Inspection and maintenance should then be carried out with greater frequency.

Inspection

The lifting yoke must be checked (inspection, function test, and adjustment and lubrication) continuously as long as it is used. Special attention must be paid to load-bearing parts and any locking devices. It is the employer's responsibility to specify what the continuous inspection shall include in addition to what is stated above and what must be observed in addition.

Test lift

Test lift shall be carried out during continuous inspection of the lifting equipment when deemed necessary.



WARNING!

Test lift should only be carried out where it can be ensured that they are done safely, without risk to the safety of personnel. During test, personnel should under no circumstances stand close to lifting equipment or the load.

The test lift depends on the maximum permissible load as follows:

Max load P (tons)	Test load (tons)
< 5	$1.5 \times P$
$5 \leq P \leq 20$	$1.20 \times P$
$20 < P \leq 50$	$1.15 \times P$
> 50	$1.1 \times P$

If any deviations are detected after test lifting, the lifting yoke should be immediately taken out of service for corrective action.

Deviations

If, during inspection, any defects, wear or other damage are observed that could endanger the safety of the lifting equipment, the employer must be notified immediately. Any defects discovered must be rectified or repaired before continued use. When replacing components or parts, only equivalent ones must be used. If in doubt, contact the manufacturer.

Maintenance record

A record must be kept of periodic maintenance and ongoing supervision. This should include the date of performed inspection, notes, signature, and a checkbox for if the lifting yoke is deemed safe for continued use.

7 ORDERING SPARE PARTS



CAUTION!

Repair and electrical work should be performed by an authorised ESAB service technician.
Use only ESAB original spare and wear parts.

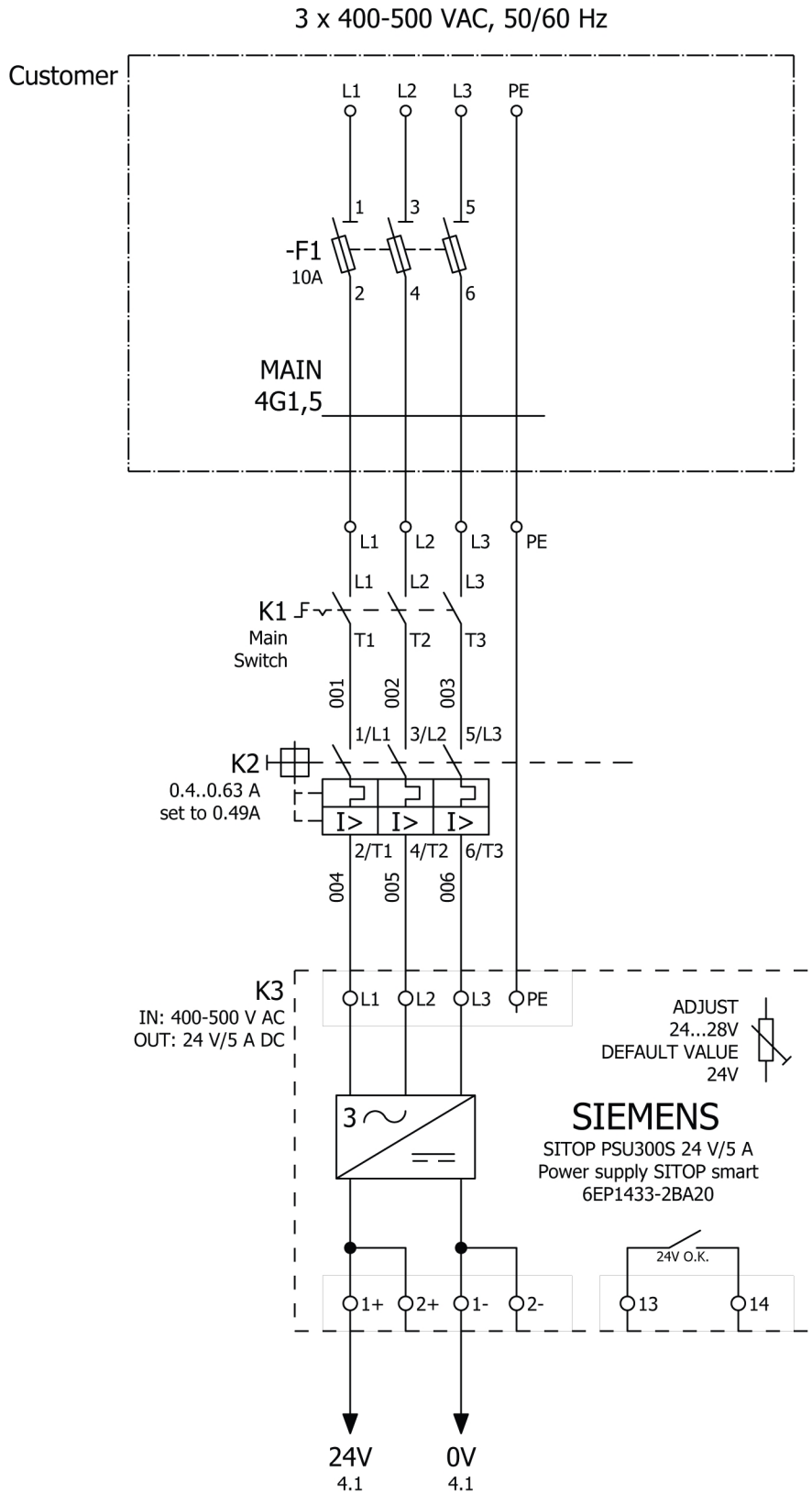
The Flux BigBag Discharge Unit is designed and tested in accordance with the international and European standards **EN 12100:2010**, **EN 60204-1:2018**, **EN 61000-6-2:2019**, and **EN 61000-6-4:2019**. On completion of service or repair work, it is the responsibility of the person(s) performing the work to ensure that the product still complies with the requirements of the above standards.

Spare parts and wear parts can be ordered through your nearest ESAB dealer, see [esab.com](https://www.esab.com). When ordering, please state product type, serial number, designation and spare part number in accordance with the spare parts list. This facilitates dispatch and ensures correct delivery.

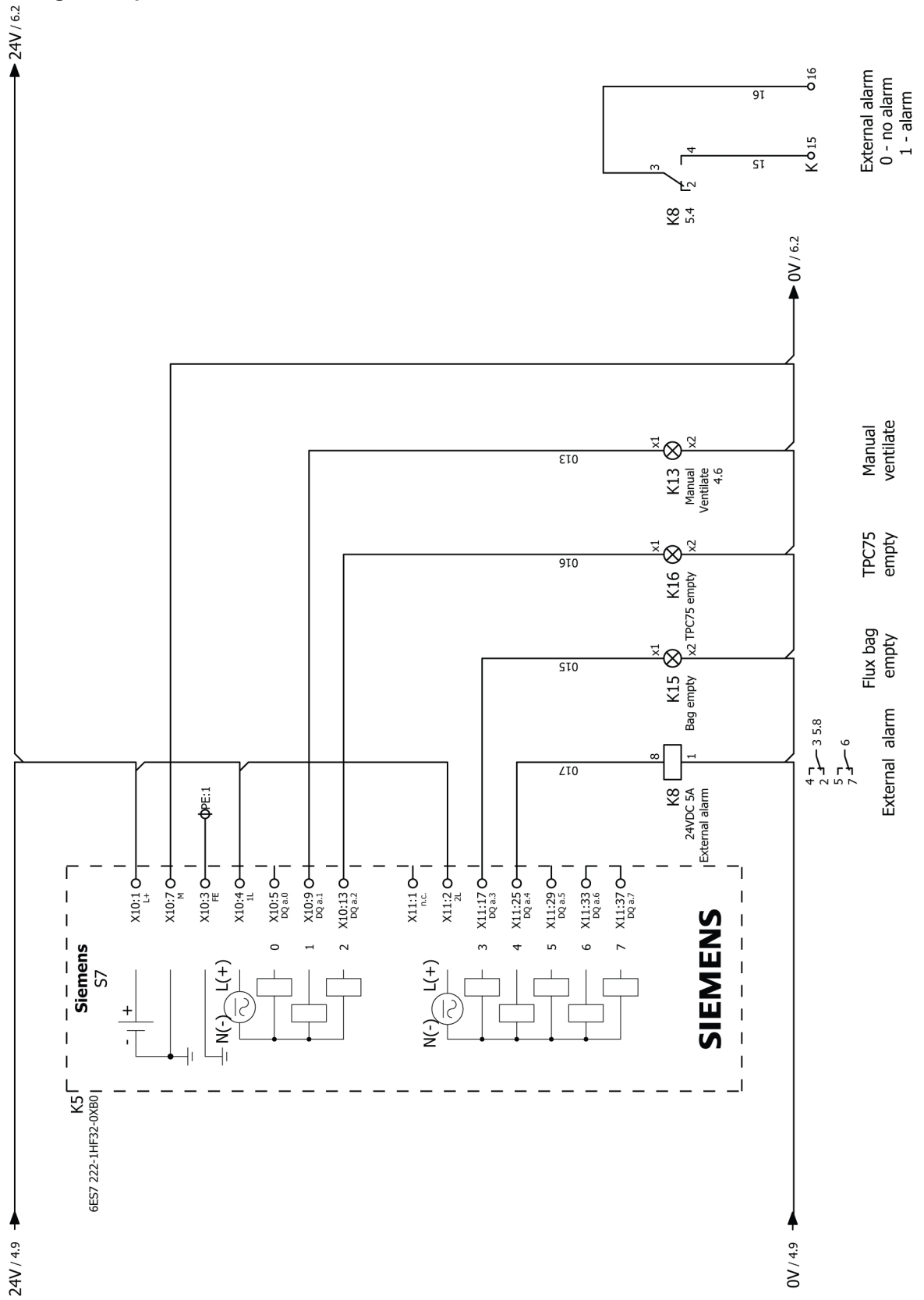
APPENDIX

WIRING DIAGRAM

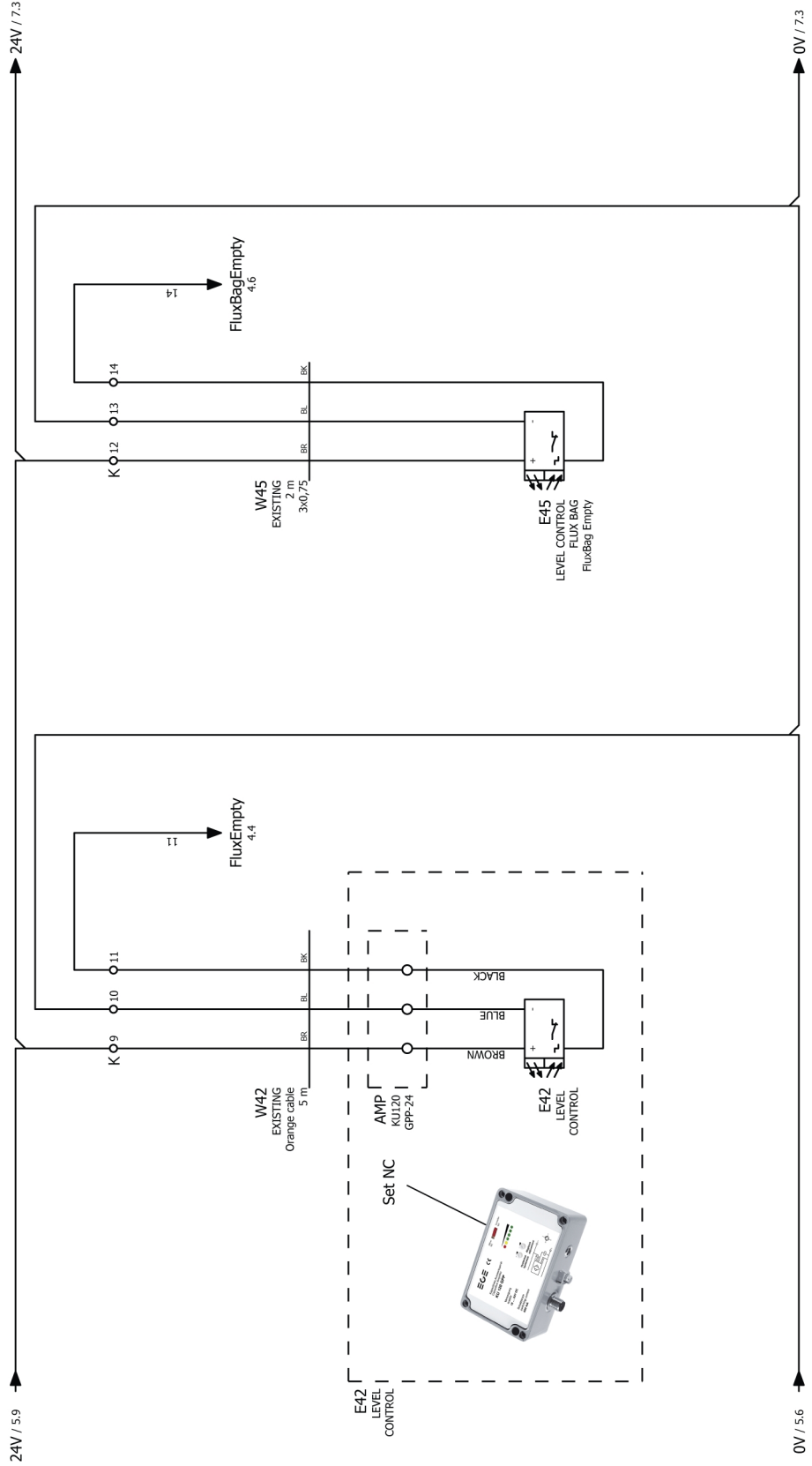
Main connection



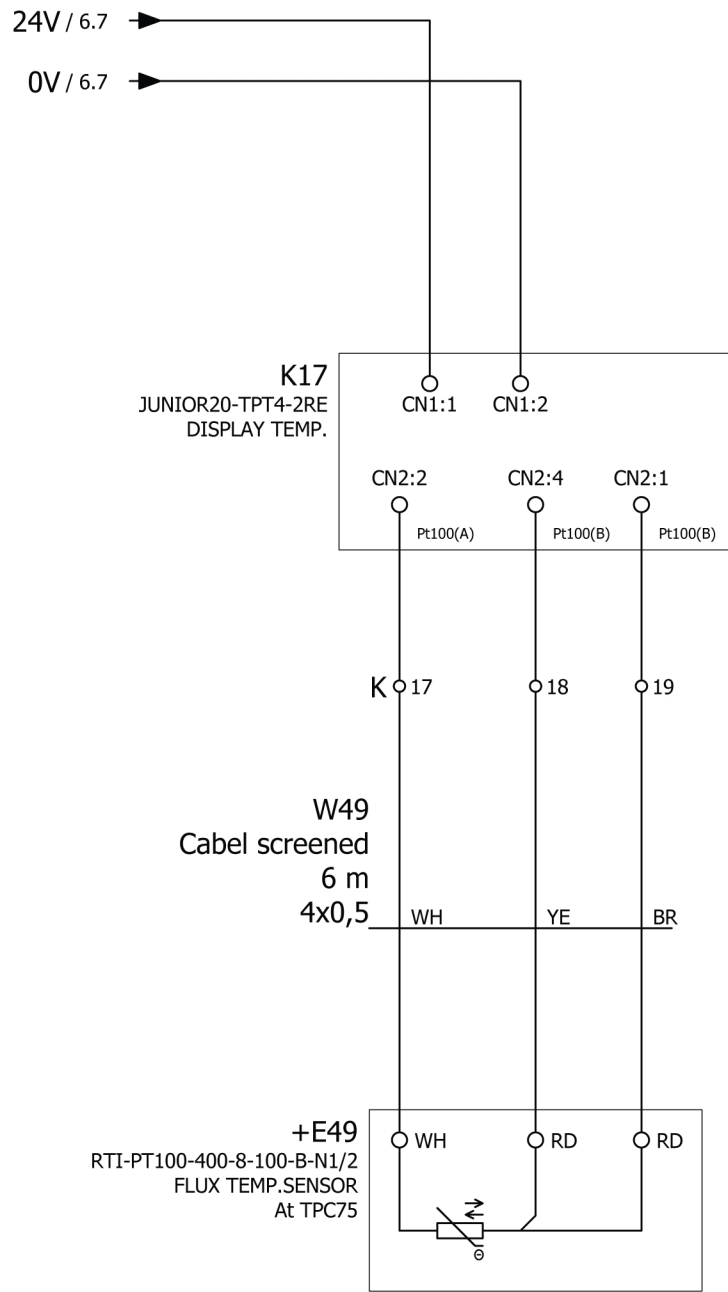
PLC digital output



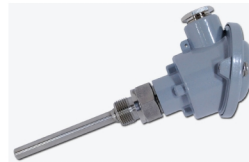
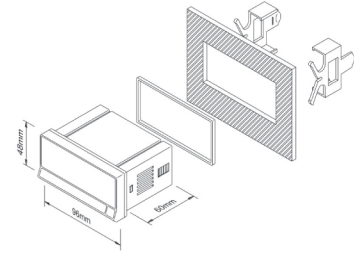
Level sensor TPC75



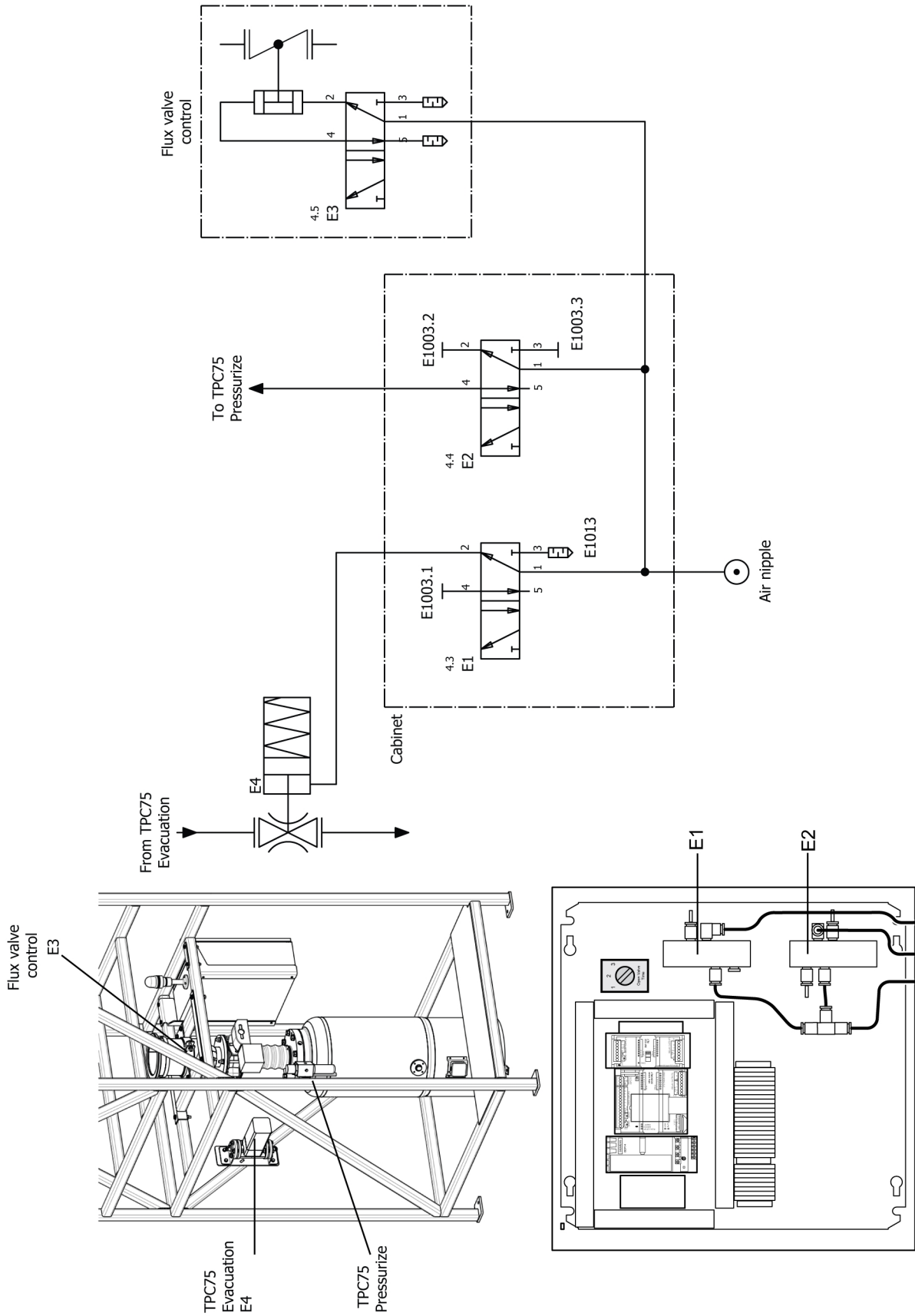
Temperature sensor



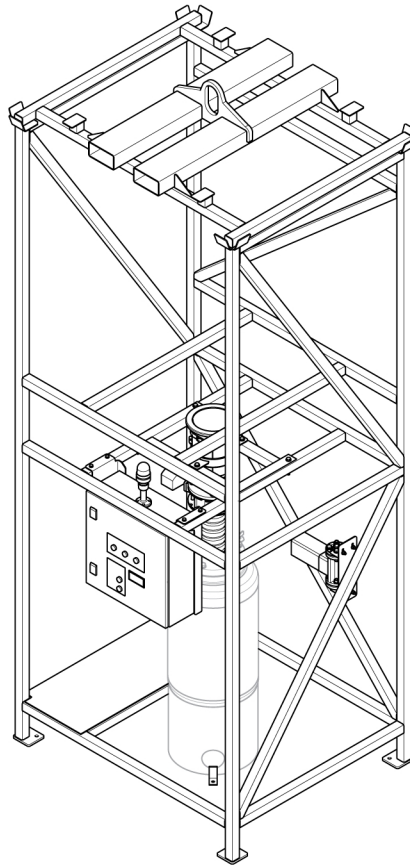
Panel cutout 92 x 45 mm



PNEUMATIC DIAGRAM



ORDERING NUMBERS



Ordering number	Denomination	Type	Notes
0912 716 880	Discharge unit	Flux BigBag Discharge Unit	1000 kg
0912 897 880	Discharge unit	Flux BigBag Discharge Unit	600 kg
0448 706 001	Quick start guide		
0448 703 *	Instruction manual		
0448 704 001	Spare parts list		

The three last digits in the document number of the manual show the version of the manual. Therefore they are replaced with * here. Make sure to use a manual with a serial number or software version that corresponds with the product, see the front page of the manual.

Technical documentation is available on the Internet at: www.esab.com



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