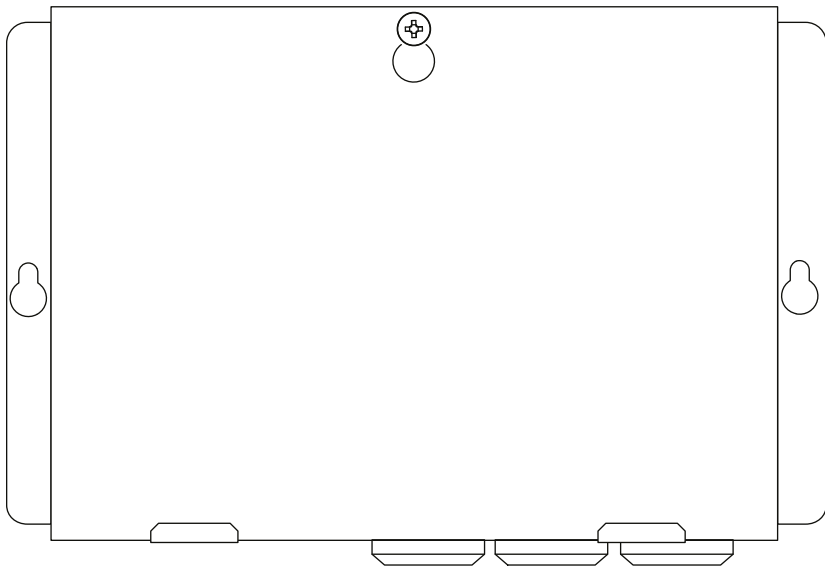


UP3 manual



Uninterrupted power supply for lift emergency telephones
www.safeline-group.com

Reliability - brought to you from Tyresö Sweden

Dimensions

Mounting drawing in mm

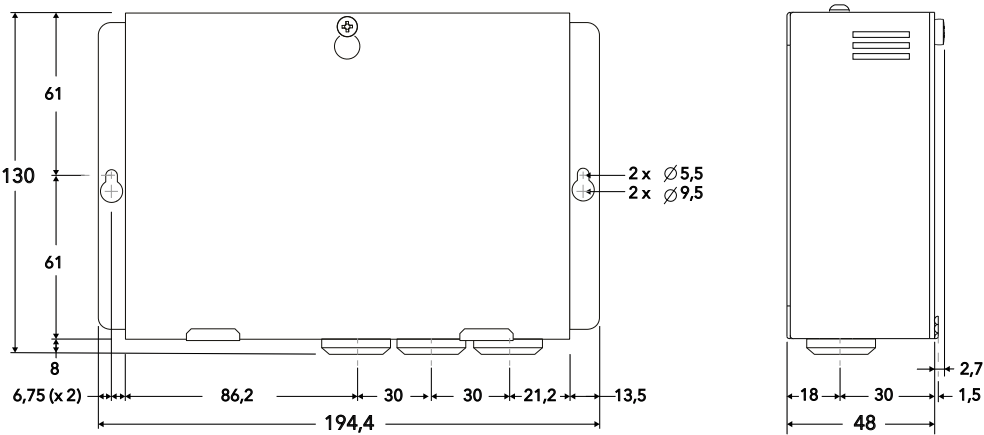


Fig. 1

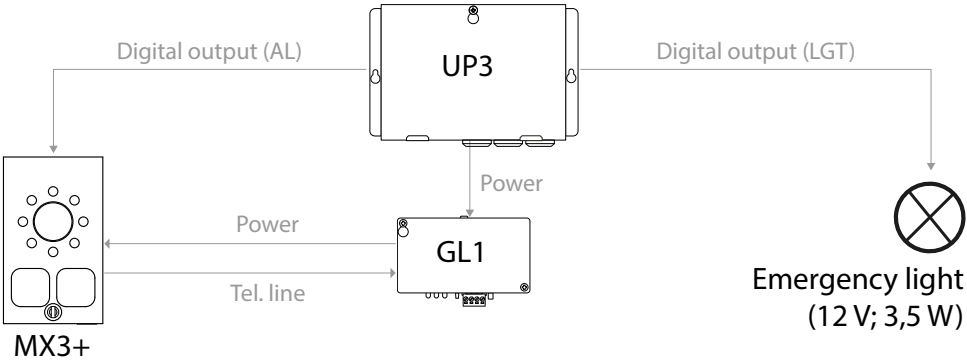


Fig.
2

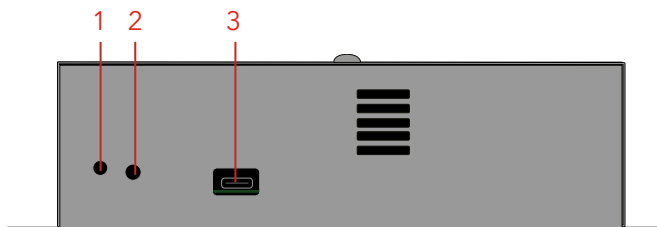


Fig.
3

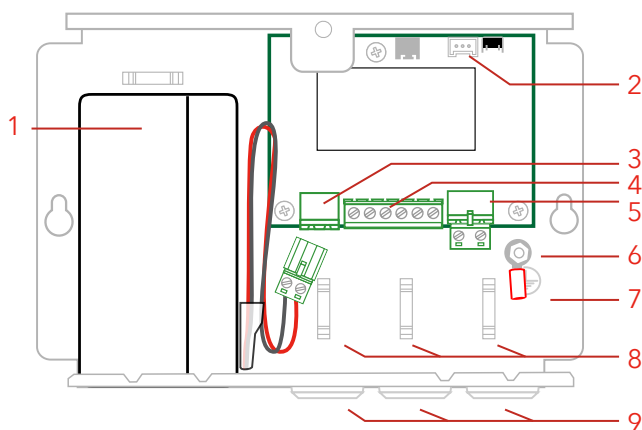
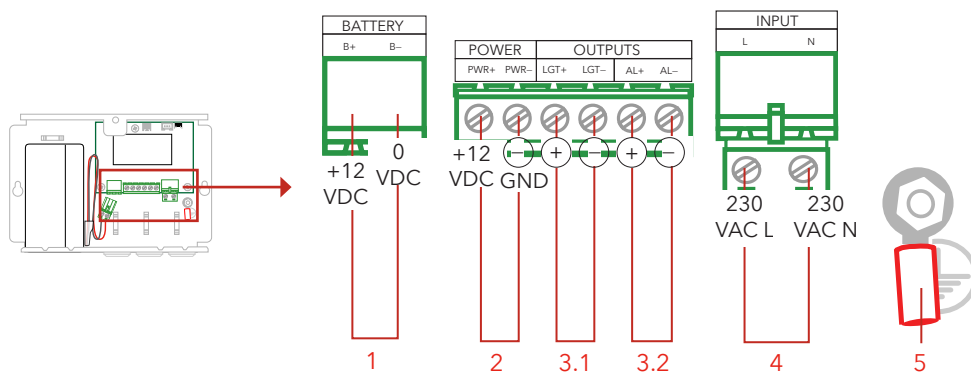


Fig.
4



General information

This unit was built with state-of-the-art technology and to generally recognised safety related technical standards currently applicable. These installation instructions are to be followed by all people working with the unit, in both installation and maintenance.

It is extremely important that these installation instructions are made available at all times to the relevant technicians, engineers or servicing and maintenance personnel. The basis prerequisite for safe handling and trouble free operation of this system is a sound knowledge of the basic and special safety regulations concerning conveyor technology, and elevators in particular. The unit may only be used for its intended purpose. Note in particular that, no unauthorised changes or additions may be made inside the unit or individual components.

Exclusion of liability

The manufacturer is not liable with respect to the buyer of this product or to third parties for damage, loss, costs or work incurred as a result of accidents, misuse of the product, incorrect installation or illegal changes, repairs or additions. Claims under warranty are likewise excluded in such cases. The technical data is the latest available. The manufacturer accepts no liability arising from printing errors, mistakes or changes.

Declaration of conformity

Download "The declaration of conformity" at our website: www.safeline-group.com

Safety Precautions!

- Only trained professionals, who are authorised to work on the equipment, should install and configure this product.
- This quality product is dedicated for the lift industry. It has been designed and manufactured to be used for its specified purpose only. If it is to be used for any other purpose, SafeLine must be contacted in advance.
- It should not be modified or altered in any way, and should only be installed and configured strictly following the procedures described in this manual.
- All applicable health and safety requirements and equipment standards should be considered and strictly adhered to when installing and configuring this product.
- After installation and configuration this product and the operation of the equipment should be fully tested to ensure correct operation before the equipment is returned to normal use.

Electrical and electronic products may contain materials, parts and units that can be dangerous for the environment and human health. Please inform yourself about the local rules and disposal collection system for electrical and electronic products. The correct disposal of your old product will help to prevent negative consequences for the environment and human health.



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Technical Data

UP3

General:	Product name: UP3 Product type: Uninterruptible Power Supply (UPS)
Mechanical:	Dimension: 51 x 195 x 131 mm (H x L x W) Weight: 245 g Enclosure protection: IP2X
Environmental Conditions:	Pollution degree: 2 Installation environment: Indoor, dry location
Electrical Characteristics	Input Nominal voltage: 100-240 V AC ±10 % Frequency: 50-60 Hz ±5 % External overcurrent protection: Max 10 A (time-delay) Output (Normal Mode) Voltage: 15 V DC Rated current: 0,65 A (max. 1 A for 60 s) Outputs (Storage Energy Mode) Voltage: 10-15 V DC Rated current: 0,65 A
Energy Storage Device	Type: VRLA battery Nominal voltage: 12 V DC Nominal capacity: 1.2 Ah Expected service life: 2 years (typical) Recharge time to 90 %: ≤ 12 h

Overview

Product Description

The UP3 is a backup power unit that plugs into the mains and has built-in energy storage. It keeps lift emergency phones and emergency lights working, in line with European lift standards.

In normal operation, the UP3 is powered by the AC mains supply. In the event of mains failure, the device automatically switches to its internal battery without interruption of the DC output.

The device continuously monitors battery presence and health. Fault conditions are indicated by a front panel LED and a digital alarm output.

Scope and Purpose

This document provides installation, commissioning, operation, service, and maintenance instructions for the UP3. It is intended for qualified personnel involved in lift installation, servicing, and inspection.

WARNING

The product may only be used for its intended purpose and be installed by a skilled person in a restricted access area.

When installed and operated according to this manual, the UP3 fulfills the requirements of:

- EN 81-28:2022 for emergency electrical power supply to lift emergency telephones.
- EN 81-20:2014 for rechargeable emergency power supply for emergency lighting.

Functional Overview (Fig. 1)

Battery Charging and Management

The UP3 employs an automatic multi-stage battery charging process consisting of bulk, absorption, and float stages. This process ensures rapid recovery of the energy storage device after discharge while preventing overcharging and premature battery ageing.

The charging behaviour adapts to the connected output load, which may influence the time required to restore full battery capacity. Battery charging and monitoring are fully automatic and require no user adjustment.

Outputs

- PWR Output: Supplies uninterrupted DC power to the lift emergency telephone.
- LGT Output: Supplies power to an emergency light when mains power is lost.
- AL Output: Signals UPS or battery failure.

Glossary

Term	Definition
UPS	Uninterruptible Power Supply
Stored energy time	Minimum duration the UPS supplies load after mains failure
VRLA battery	Valve-regulated lead-acid battery
CC	Constant current.
CV	Constant voltage.

Product Overview (Fig.2-4)

Side view with cover (Fig. 2)

1	Front panel indicator light
2	Front panel button
3	USB Connector

Top without cover (Fig. 3)

1	Battery 1,2 Ah
2	RS232 connector
3	Battery terminal block
4	Power and outputs terminal block
5	Input terminal block, 230 VAC
6	Protective earth stud
7	Protective earth ring terminal (PE)
8	Cable tie mount
9	Cable grommet

Electrical connectors (Fig. 4)

1	Battery, 12 VDC
2	Output, 12 VDC
3	Outputs
3.1	<i>Emergency light</i>
3.2	<i>Battery Alarm</i>
4	Power Input, 230 AC

For detailed electrical and connectors information, see Technical specifications.

Installation

Conditions

- The product shall be installed with an appropriate and readily accessible disconnect device incorporated in the fixed wiring.
- Mount on non-combustible surfaces only.
- Provide adequate ventilation and clearance.
- Battery shall not be installed upside down.

Mechanical installation

- Secure the enclosure using two suitable fasteners.
- Ensure access to front panel indicators and connectors.
- Ensure all cables are strain-relieved and routed through grommets. Make sure cable ties are installed around the outer most insulation of the cable.

Commissioning Steps

1. Verify wiring and connections.
2. Connect:
 - AC mains (L, N, PE)
 - Battery connector
 - Output terminals (PWR, LGT, AL) as required
3. Observe front panel LED for normal operation indication.
4. Perform functional test of emergency telephone and alarm outputs.

Electronic Safety

The product includes an internal battery. The following precautions should be observed when working on the battery:

1. Disconnect the charging source prior to connecting or disconnecting battery terminals.
2. Do not wear any metal objects including watches and rings.
3. Do not lay tools or metal parts on top of batteries.
4. Use tools with insulated handles.



WARNING:

- Do not dispose of batteries in a fire. The batteries may explode.
- Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.
- A battery can present a risk of electric shock and burns by high short-circuit current.
- Failed batteries can reach temperatures that exceed the burn thresholds for touchable surfaces.
- If replacing the battery with a non SafeLine provided battery, ensure that the battery specifications match the original battery and that the battery is installed with the correct polarity.

Front Panel Indicator

Front Panel Indicator	
LED STATUS	OPERATING MODE
Steady green	Fully charged, Normal mode
Flashing green	Charging, Normal mode
Flashing yellow	Battery test active, Normal mode
Flashing red	Stored energy mode
Steady red	Battery fault
Off	Device fault

Front panel button	
OPERATION	PERFORM
Factory reset	Press and hold for 10 s
Manual battery test	Press 3 times
Alarm polarity toggle	Press and hold for 5 s

Periodic inspection

The UP3 is designed for maintenance-free operation.

Recommended interval: 12 months

- Verify LED indicates normal operation
- Inspect enclosure and wiring

Battery replacement

WARNING

- Disconnect mains power before servicing.
- Avoid short circuits.

Replacement steps:

1. Disconnect power
2. Open enclosure
3. Disconnect battery
4. Replace battery
5. Reconnect battery
6. Close enclosure
7. Restore power and verify operation

Technical Specification

General:	Product name/model: UP3 Product description: Uninterruptible power supply (UPS) for emergency lift telephones
Mechanical:	Dimension: 51 x 195 x 131 mm (H x L x W) Weight: 245 g
Environmental:	IP code: IP2X Pollution degree: 2
Climatic	Operational +5 °C to +40 °C; 5-85 % R.H. (non-condensing) Transport -20 °C to +60 °C; 5-95 % R.H. (non-condensing) Storage -20 °C to +60 °C; 5-85 % R.H. (non-condensing)
Communication:	USB 2.0
Electrical	Equipment protective class: Class I Power distribution system compatibility: TN, TT, IT Input Nominal voltage: 100-240 V AC $\pm 10\%$ Nominal frequency: 50-60 Hz $\pm 5\%$ Maximum current (115 V AC / 230 V AC): 450 mA / 400 mA Power factor (115 V AC / 230 V AC): $\geq 0,6 / \geq 0,5$ Inrush current: < 40 A (at 25 °C & 230 V AC) Fuse: 3,15 A (slow-blow, internal) Required external overcurrent protection: Max 10 A time-delay (gG/gL fuse or type C MCB) Overvoltage category (OVC): II Power (normal / stored energy mode) Voltage (steady state): 15 V DC / 10-15 V DC Rated average current: 0,65 A / 0,65 A (average current ¹⁾) Rated standby current: 0,50 A / 0,50 A (standby current ¹⁾) Rated call current: 0,80 A / 0,80 A (call current ¹⁾) Internal current limiting: 1 A per port Rated power: 10 W / 7 W Overload capability: 1 A / 1 A for 60 s Voltage variation (no load): $\pm 0,5\%$ / $\pm 0,5\%$ Performance classification (IEC 62040-5-3): NW Ripple and Noise (20MHz BW): typ 150 mVp-p, max 2 % Outputs Signal type: Solid state sourcing digital output (DO) See "Power" for more details.

¹ 1 h = 45 min standby + 15 min call (Based on stored energy time requirements in the EN 81:28 2022 for the emergency electrical power supply.)

Technical Specification

Energy storage device:

Charge retention: The device may be stored for up to 6 months at 25 °C, after that a refresh charge is required to ensure maximal battery health.

Expected life: 2 years

Technology: Secondary battery, valve-regulated lead-acid (VRLA) battery

Nominal voltage (total): 12 V DC

Nominal capacity: 1,2 Ah

Stored energy time (at rated output current): 1 h ¹

Restored energy time (recharge time to 90 % capacity): 12 h ²

Reference ambient temperature: see Environmental -> Operation conditions.

RMS ripple current (normal mode): <5 % of rated Ah capacity

Connections³

Battery

Position: J1.x

Identification: J1.1 (B+), J1.2 (B-)

Connection type: +/-

Connection method: Pluggable screw terminals with tension sleeve

Conductor cross section (rigid/flexible): 0,2 - 2,5 mm²

Conductor cross section (flexible, with ferrule): 0,25 - 2,5 mm²

Stripping length: 7 mm

Drive form screw head: Slotted (L)

Tightening torque: 0,5 - 0,6 Nm

Power and outputs

Position: J2.x

Identification: J2.1 (PWR+), J2.2 (PWR-), J2.3 (LGT+), J2.4 (LGT-),

J2.5 (AL+), J2.6 (AL-)

Connection type: +/-

Connection method: Screw terminals with tension sleeve

Conductor cross section (rigid/flexible): 0,08 - 1,5 mm²

Conductor cross section (flexible, with ferrule, without plastic sleeve): 0,25 - 0,75 mm²

Conductor cross section (flexible, with ferrule, with plastic sleeve): 0,25 - 0,75 mm²

Conductor material: Copper (Cu)

Stripping length: 7 mm

Drive form screw head: Slotted (L)

Tightening torque: 0,22 - 0,25 Nm

¹ 1 h = 45 min standby + 15 min call (Based on stored energy time requirements in the EN 81:28 2022 for the emergency electrical power supply.)

² The device is utilizing a dynamic charging algorithm that adapts the maximum charging current depending on the devices output load. This means the restored energy time can be significantly reduced if the output load is lower than the rated output current.

³ In accordance with IEC 61984, all connectors are classified as "connector without breaking capacity" (COC). During designated use, they must not be plugged in or disconnected when live or under load.

Technical Specification

Input

Position: J3.x, PE stud

Identification: J3.1 (L), J3.2 (N), PE

Connection type: 1/N/PE

Connection method (3.1, 3.2): Pluggable screw terminals with tension sleeve

Conductor cross section (rigid/flexible): 0,2 - 2,5 mm²

Conductor cross section (flexible, with ferrule): 0,25 - 2,5 mm²

Conductor material: Copper (Cu)

Stripping length: 7 mm

Drive form screw head: Slotted (L)

Tightening torque (3.1, 3.2): 0,5 - 0,6 Nm

Connection method (PE): Ring terminal on threaded stud with washer and nut

Stud - thread: M5 x 0,8

Stud - nut: M5 x 0,8 hex nut, ISO 4032 CL.8 M5 (included)

Stud - nut tightening torque: 3,8 Nm

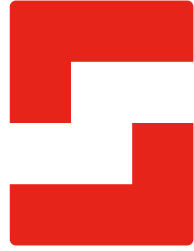
Washer - type: Serrated washer, DIN 6798 A (included)

Washer - diameter: 5,3 mm

Washer - placement: Between the nut and the ring terminal

Ring terminal - Conductor cross section (rigid/flexible): 1,5 mm²

Ring terminal - Stripping length (ring terminal): 7 mm

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