Langmatz

Operating Instructions

Emergency call button for tunnel systems

EK534 2.0

safetyguide

Contents

1 General information

Note!
Any person involved in the installation, operation and repair of the product must first read, understand, and follow these instructions. We accept no liability for damage and operational malfunctions caused by failure to comply with these instructions.

In the interest of further development, we reserve the right to change individual assemblies and accessories as considered necessary for enhanced safety and performance improvements, while preserving the main features.

2 Safety information

The product complies with the state-of-the-art technology at the time of printing and is delivered in an operationally safe condition. Unauthorised modifications, particularly to safety-related parts, are prohibited.
Langmatz GmbH warns against the misuse of the product.
Work on electrical or electronic fixtures may only be performed by qualified electricians.

The operator is responsible for installing, operating and maintaining the fixtures.

The operator is responsible for the following:

- Preventing danger to the life and limb of users and third parties.
- Ensuring operational safety.
- Preventing downtime and environmental impact caused by incorrect handling.
- Ensuring that protective clothing is worn when working with or on the product.

Use of a damaged product is prohibited. Please contact the hotline (see section 18).

Note!
Risk of electric shock
Equipment may only be opened by specialist personnel. Before opening, make sure that it is disconnected from the operating voltage.

Note!
Comply with applicable occupational safety and environmental protection regulations during installation, operation, maintenance, and repair.

3 Product description

3.1 Dimensions

Fig. 1

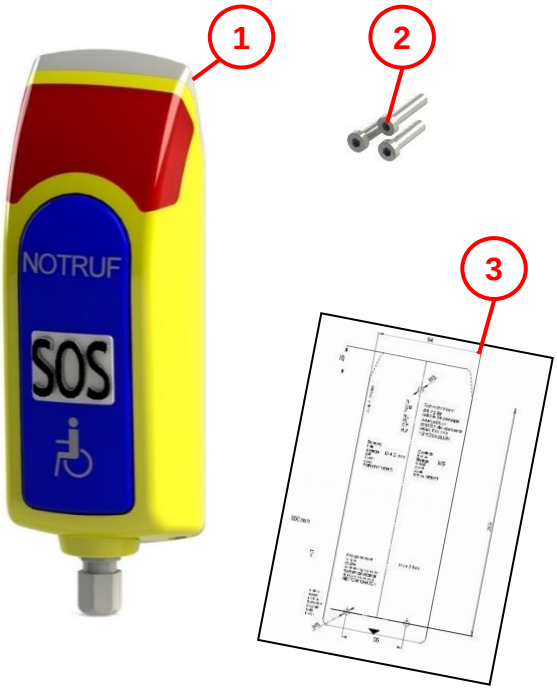
Fig. 2

3.2 Technical data

Designation	Safetyguide (Emergency call button 2.0 EK534)
Operating voltage	24 V DC | 40 V DC | 230 V AC
Housing colour	Solid yellow similar to RAL 1023 UV-stable
Housing material	ABS / PA / PC
Protection class	II
Protection rating	IP55
LED technology luminosity	Approx. 3000 mcd
Mounting	3x hexagon socket head bolts M5x10
Operating temperature	-25 °C to + 65 °C
H / W / D	250 mm / 95 mm / 60 mm
Weight	640 g
Emergency call signal volume	Min. 85 dB / 0.5 m
Service life	FIT4646 / MTTF 15 years
Complies with directives and regulations	RE-ING | BASt | EABT-80/100 | RABT

Voltage	**Standby**	**active mode**
24 V DC	1.7 W	6.6 W
40 V DC	2.1 W	5.6 W
230 V AC	8.6 W	11.2 W

4 Includes



Item 1 1x emergency call button without connection cable

Item 2 3x fastening screws for sheet steel M5x10 including caps

Item 3 1x drilling template (self-adhesive paper)

Fig. 3

5 Inputs and outputs

5.1 Supply

Designation	Core	Minimum	Maximum	Unit
Supply (L) Un=230 V AC	8	0.8 x Un.	1.2 x Un.	Volts
Supply (+) 24 V DC / 40 V DC	9	0.8 x Un.	1.2 x Un.	Volts
Neutral wire (-)	10			

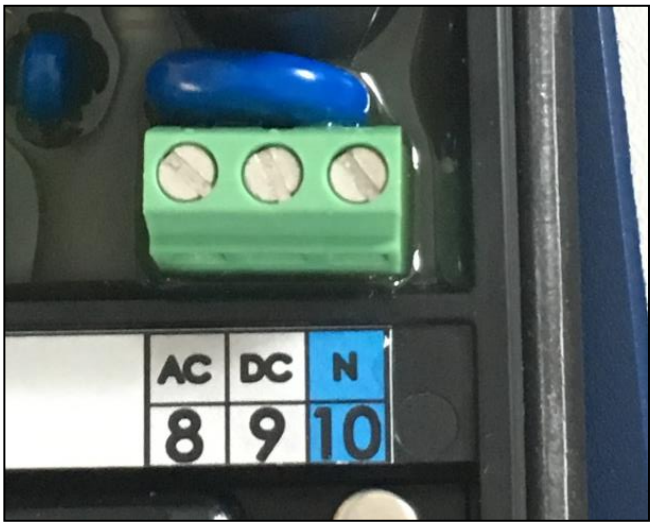


Fig. 4

5.2 Switching inputs / Feedback from control centre

Designation	Core	Minimum	Maximum	Unit
Control centre switching input Un=230 V AC	7	0.8 x Un.	1.2 x Un.	Volts
Control centre switching input Un=40 V DC	6	0.8 x Un.	1.2 x Un.	Volts
Control centre switching input Un=24 V DC	5	0.8 x Un.	1.2 x Un.	Volts

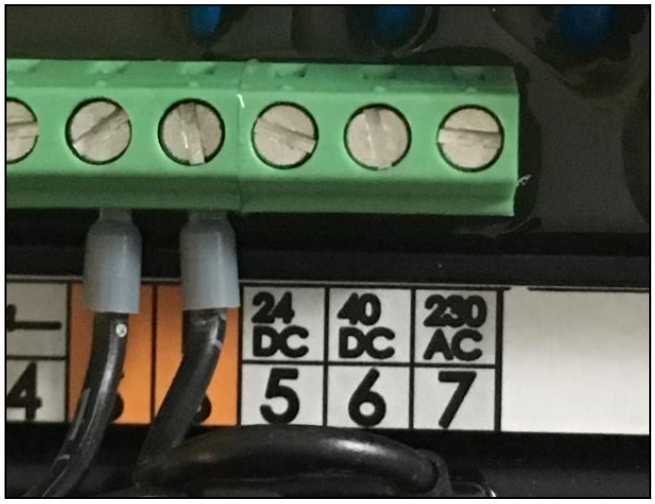


Fig. 5

5.3 Potential-free switching output / Normally open contact

Potential-free switching output	1/2	Potential-free switching output		
Switching voltage	1-250 V AC/DC			
Switching current		1	80	mA
Contact type	Normally open contact			

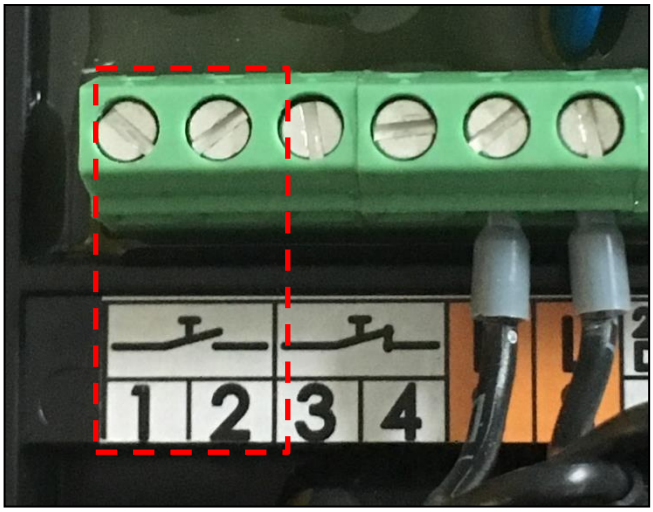


Fig. 6

5.4 Potential-free switching output / Normally closed contact

Potential-free switching output	3/4	Potential-free switching output		
Switching voltage	1-250 V AC/DC			
Switching current		1	80	mA
Contact type	Normally closed contact			

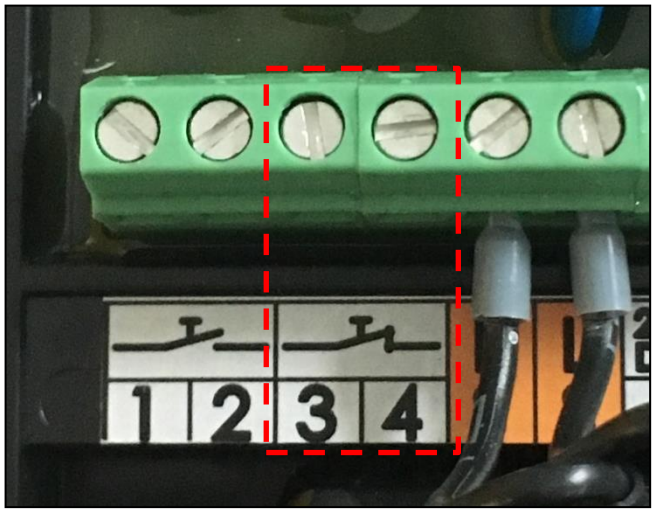


Fig. 7

5.5 Terminal to invert the switching inputs of the control centre

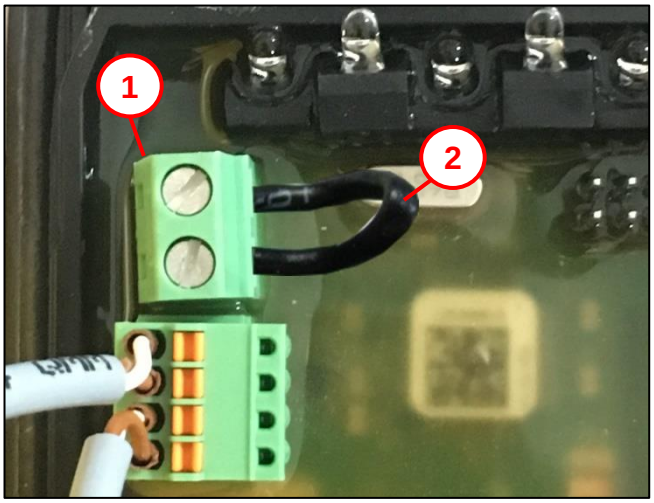


Fig. 8

- Socket for inversion **(1).**
- Clamp jumper **(2)**.
- Switching inputs of the control centre become “low active”.

6 Emergency call button block diagram

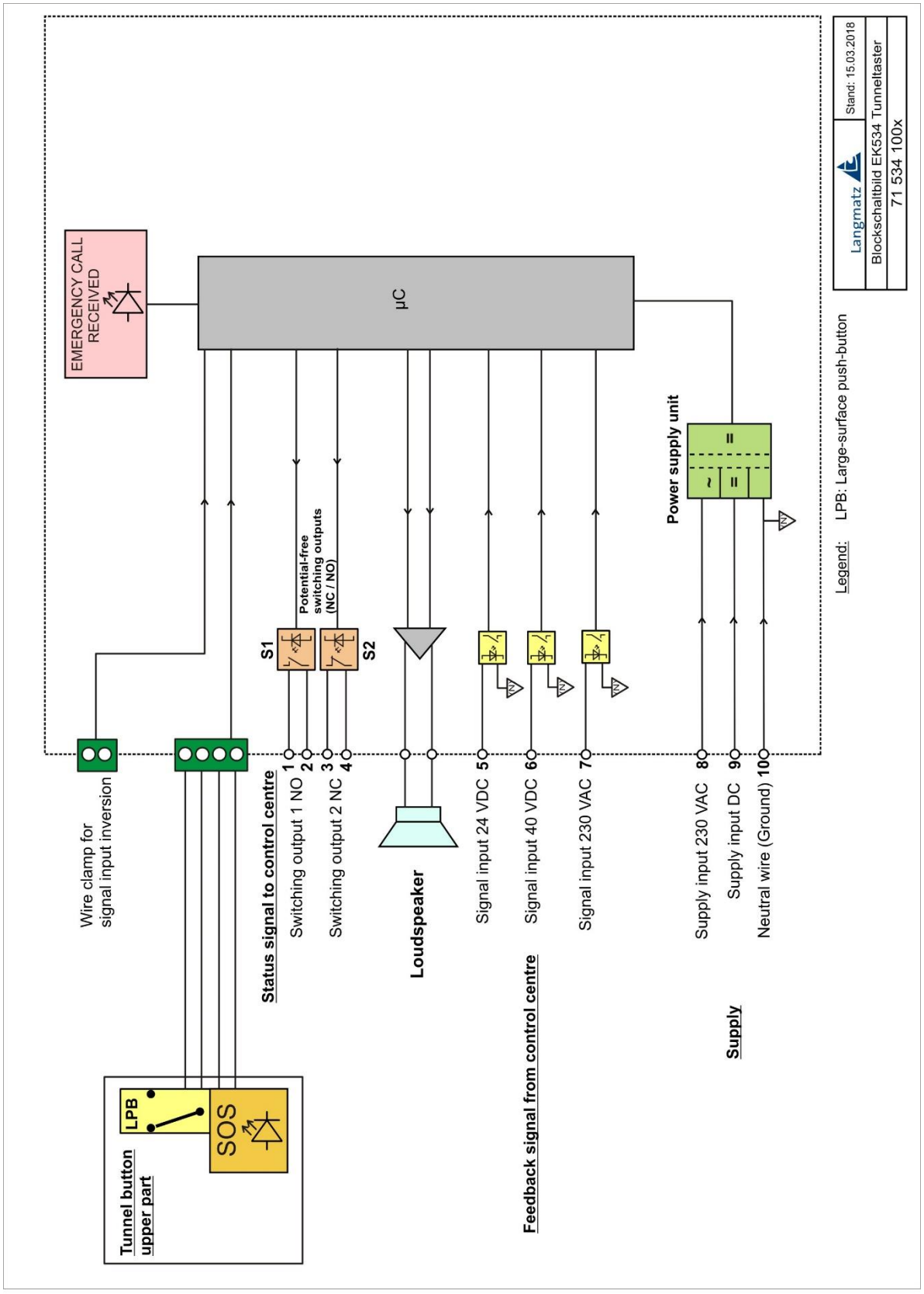


Fig. 9

7 Emergency call button block diagram / Control centre

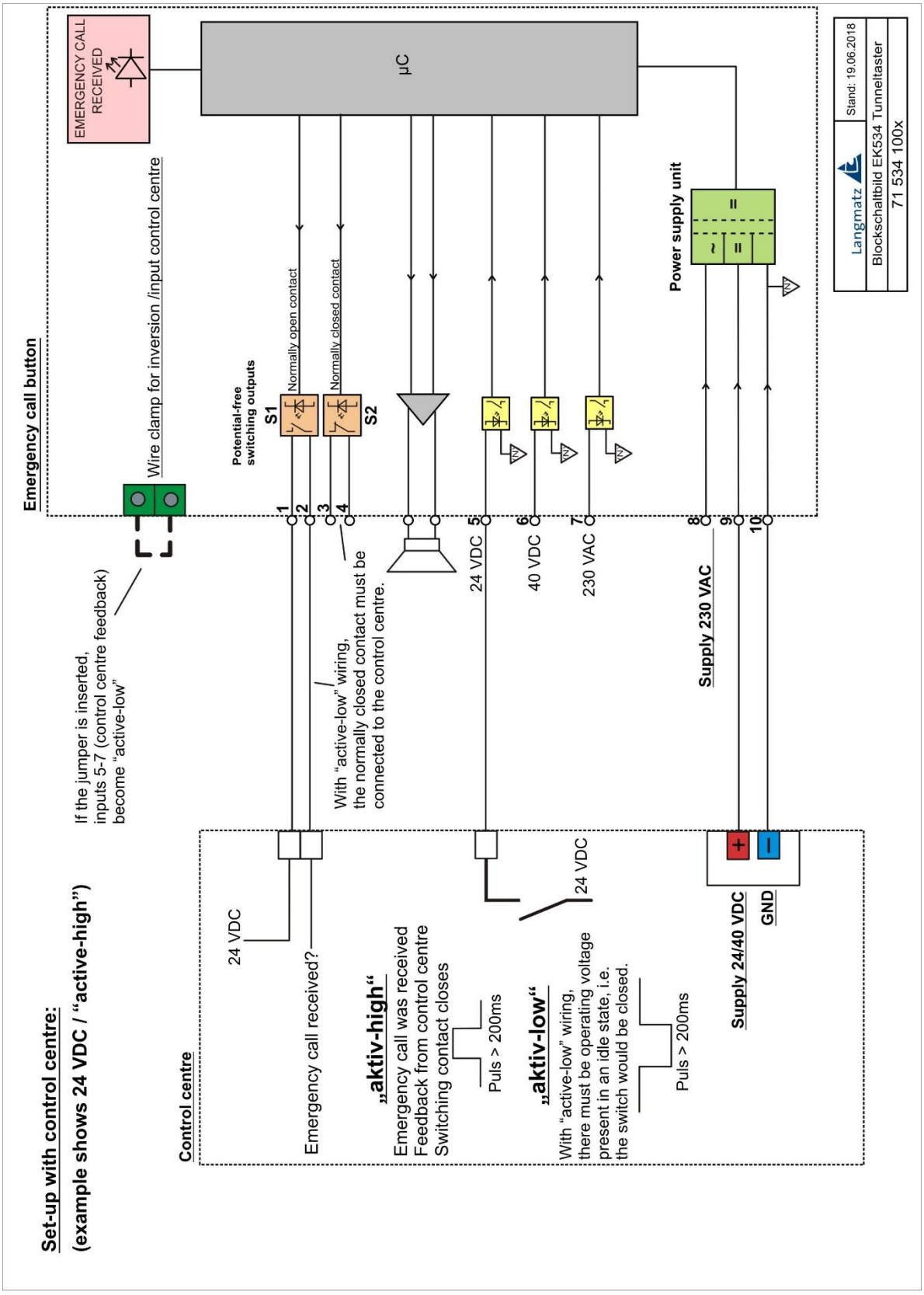


Fig. 10

8 Installation

Make sure that the emergency call button is installed on a rigid and flat base surface (compliance with IPX5).

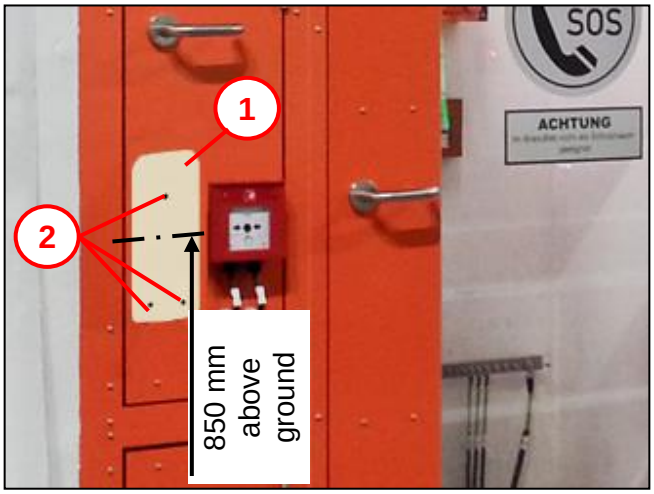


Fig. 11

- Remove the protective film from the drilling template **(1)**.
- Position the centre of the drilling template 850 mm above ground level.
- Punch-mark 3x drill holes **(2)**.
- Make 3x drill holes Ø 4.2 mm.
  (threaded holes) **(2)**.
- Cut 3x M5 threads **(2)**.

Note:
An adapter plate is recommended for **installation on uneven base surfaces**. The adapter plate is not included with the emergency call button
(Refer to section 13 Accessories).

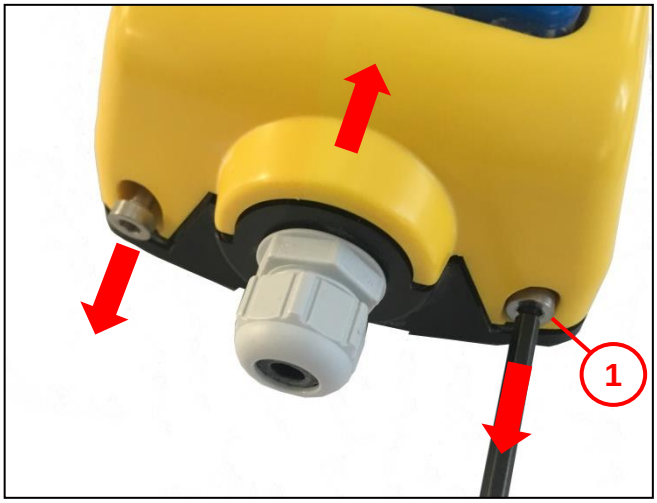


Fig. 12

- Loosen the locking screws (hexagon socket screws) **(1)**.
- Open the unit.

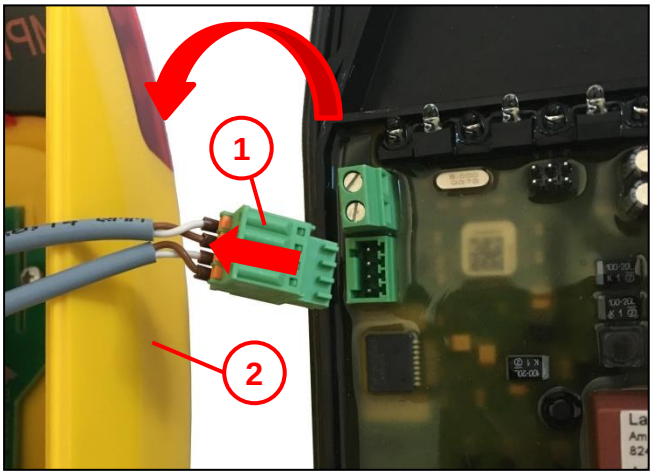


Fig. 13

- Let the upper part of the unit **(2)** drop down.
- Disconnect the 4-pin cable **(1)** from the lower part.

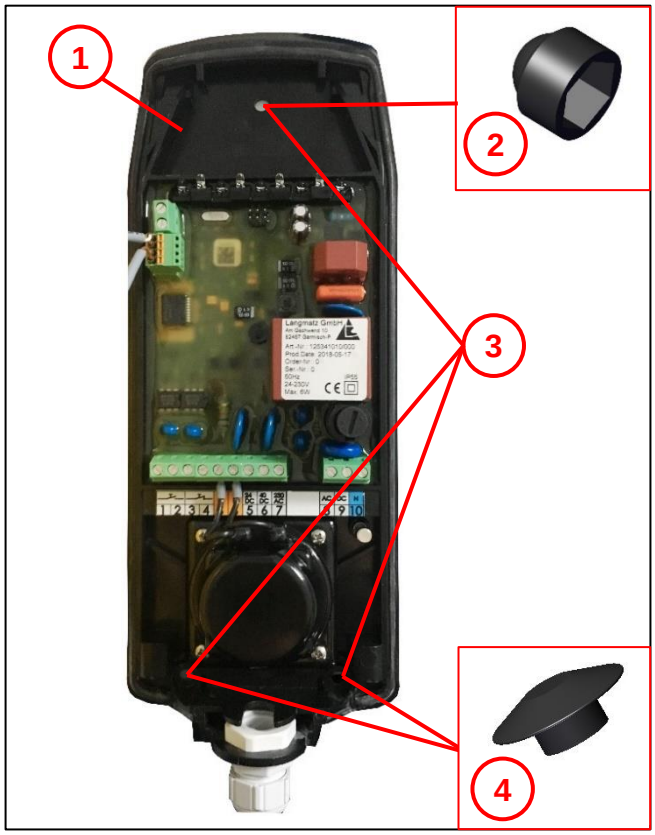


Fig. 14

- Fix the lower part of the unit **(1)** in place with
  3x fastening screws M5x10 (A2) **(3).**
  Note:
  - Torque approx. 3 Nm.
  - Do not use lubricants.
  - Check for correct seating.

- Fit the plastic caps **(2 + 4)** straight.

  Note:
  - Check for correct seating. **Protection class**!

- Connect the connection cable to the unit as per the block diagram.

WARNING!
The installer must conduct a functional check after installation!

9 Functional check

9.1 Emergency call request / Output of “Emergency” signal tone

Emergency call request by “EMERGENCY CALL PUSH-BUTTON”

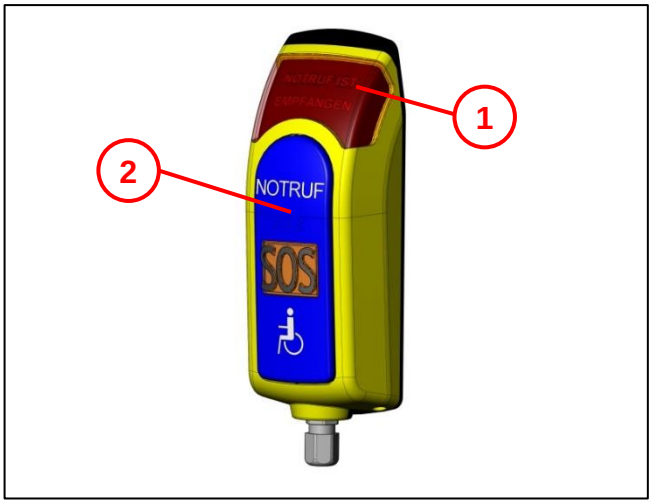
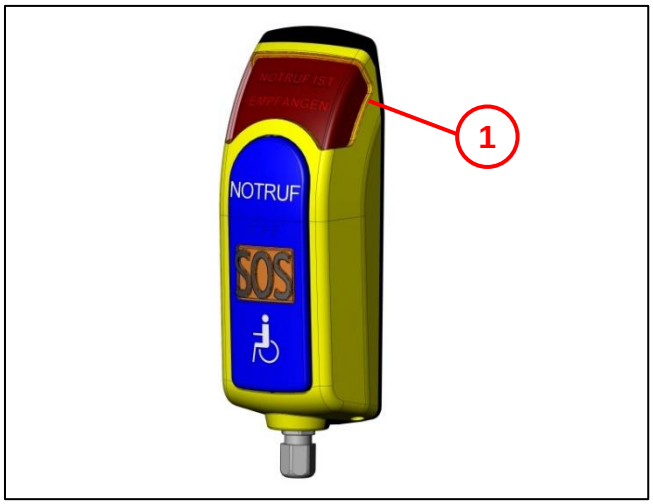


Fig. 15

- Carry out a functional check by pressing the EMERGENCY CALL push-button **(2).**
- Optical EMERGENCY CALL display on the visual field at the top **(1)** lights up for 5 seconds.
- “Emergency call” signal tone is output.
- Tone sequence **(.-.-.)**.
- Status signal normally open and normally closed contacts are switched for 2 seconds.

9.2 Feedback from control centre / Output of “Emergency call received” signal tone

Acoustic and visual emergency call output “Emergency call received”



- Feedback from the control centre via signal inputs 5-7 / Emergency call was received (pulse >200 ms).
- Optical EMERGENCY CALL display on the visual field at the top lights up for 15 seconds **(1).**
- “Emergency call received” signal tone is output.
- Tone sequence **(.-.__.-.__.-.__.-.__.-.__.-.)**

Fig. 16

10 Maintenance

In accordance with DIN 0832, emergency call buttons need to be maintained at regular intervals:

Action	Interval	Remark
External visual inspection	At least every 12 months or during maintenance on the complete installation	Check the unit for external dirt and damage. **Note:** Do not use aggressive cleaning agents or solvents to clean the housing
Carry out a complete functional check		If the unit is faulty, send a description of the fault to Langmatz GmbH

11 Fuse

Proceed as follows should the fuse trip due to incorrect assignment of the connecting contacts:

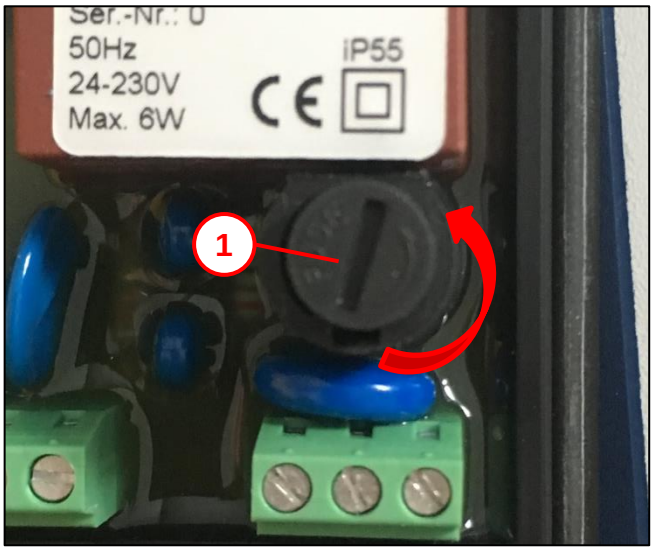


Fig. 17

- Open the fuse **(1).**
- Use a screwdriver to turn the fuse inserts in the direction of the arrow putting slight pressure on the insert.

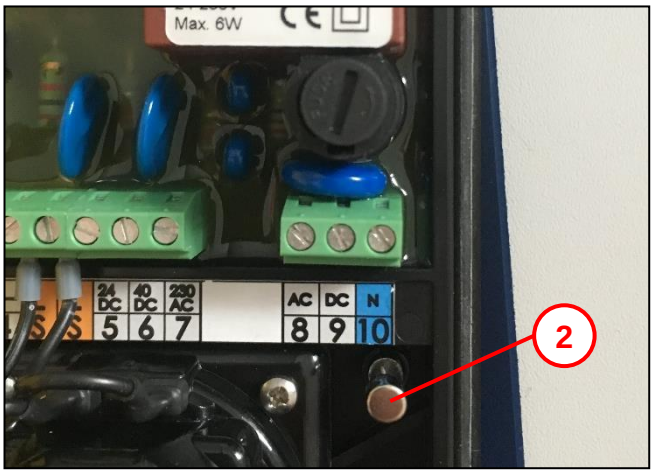
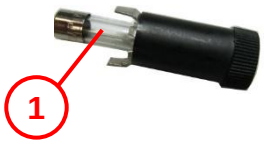


Fig. 18

- Replace the faulty fuse insert (5x20 mm) **(1).**

  Note: Back-up fuse **(2).**



- Close the fuse in reverse order

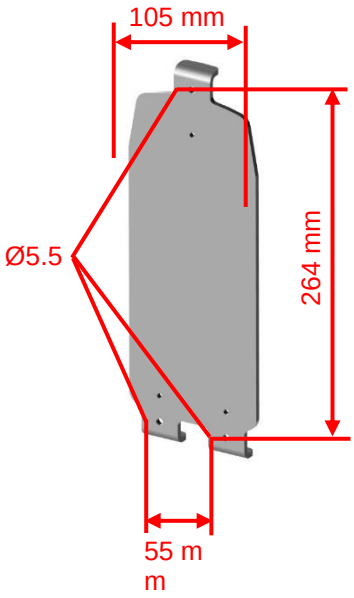
12 Installation

Attention:
Please note the loop resistance up to the unit when installing it.
With low voltage (24 V DC) and long cable lengths this can result in serious voltage drop along the line.
We recommend a minimum cable cross-section of 0.75 mm².

Maximum cable cross-section for terminal:

Min. rigid cable cross-section	0.14 mm²
Max. rigid cable cross-section	1.5 mm²
Min. flexible cable cross-section	0.14 mm²
Max. flexible cable cross-section	1.5 mm²
Min. flexible cable cross-section with bootlace ferrule without plastic ferrule	0.25 mm²
Max. flexible cable cross-section with bootlace ferrule without plastic ferrule	1.5 mm²
Min. flexible cable cross-section with bootlace ferrule with plastic ferrule	0.25 mm²
Max. flexible cable cross-section with bootlace ferrule with plastic ferrule:	1.5 mm²

13 Accessories

No.	Item no.	Designation	Illustrations
1.0	715340017	Adapter plate for tunnel wall - for installation on uneven base surfaces (excluding screws and dowels for mounting on the tunnel wall) - Weight: 0.839 kg	
2.0	Included	Cable gland M 16 - for small cable diameters	

14 EC Declaration of Conformity

The product meets the requirements of the following applicable harmonisation directives:

2014/30/EU	Electromagnetic Compatibility (EMC)
2014/35/EU	Low Voltage Directive (LVD)

Compliance with the relevant harmonisation legislation has been demonstrated through the application of the following harmonised standards:

EN 50293:2012 (EMC)
EN 50556:2011 (LVD)
DIN 32981:2015-10

The EU Declaration of Conformity for this product can be requested from Langmatz GmbH.

15 Material defects

Langmatz GmbH accepts liability for material defects in the product as per Section 434 BGB (German Civil Code) for 24 months, starting from the date on the purchase receipt.

Within the scope of liability, all parts that become damaged due to manufacturing faults or material defects will be replaced or repaired free of charge.
The purchaser must report any deficiency complaints immediately in writing.
Claims by the purchaser for damages due to material defects or for whatever legal reason will not be accepted.
Any damage or failure caused by the following are also excluded from liability

- Incorrect use,
- Natural wear and tear
- Intervention by third parties.

We accept no liability for damage caused by force majeure or transport.

Repairs due to a complaint about a defect do not extend the warranty period for the replaced parts or for the product.

If you experience any problems, please contact our hotline (section 18).

16 Quality management

The Langmatz GmbH quality management system is certified to DIN EN ISO 9001.

17 Disclaimer/Warranty

The information in this technical document is presented appropriately and correctly in compliance with the technical regulations, and to the best of our knowledge. However, this does not confer any guarantee of particular characteristics. In this context, the operator of the Langmatz GmbH products is expressly obliged to decide, based on their own judgement, whether the products are suitable and appropriate for the application or use being considered. The product liability accepted by Langmatz GmbH relates exclusively to our conditions of sale, delivery, and payment. Langmatz GmbH accepts no liability on the basis of random, indirect and resultant consequential damage, or of any damage attributable to any use of the product other than its intended purpose as described.

18 Contact

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