



EN Operating instructions. pages 1 to 2
Original

1. About this document

This operating instructions manual provides all the information required for the mounting, set-up and commissioning to ensure the safe operation and disassembly of the safety switchgear. The operating instructions must be available in a legible condition and a complete version in the vicinity of the device.

All operations described in this operating instructions manual must be carried out by trained specialist personnel, authorised by the plant operator only. The machine builder must carefully select the harmonised standards to be complied with as well as other technical specifications for the selection, mounting and integration of the components.

The user must observe the country-specific installation standards as well as all prevailing safety regulations and accident prevention rules.

2. Product description

Belt alignment switches are suitable for use on material handling equipment. It is actuated, when the conveyor belt becomes misaligned. The belt alignment switches feature the two switch statuses: prewarning and deactivation.

On the Dupline® version, the switch statuses are queried via the two-channel Dupline® input module and transmitted via the Dupline® 2-wire installation bus to a control unit.

2.1 Ordering code

This operating instructions manual applies to the following types:

T. 454-22Z-H-①

No.	Option	Description
①	DN	Without With integrated Dupline® input module

RF-454-DN Retrofit kit Dupline® input module

Accessory stainless steel lever

LEV-U14-B30-150-RVA Ø 30 mm, contact surface 150 mm
LEV-U14-B50-150-RVA Ø 50 mm, contact surface 150 mm

2.2 Technical data

Standards:	IEC 60947-5-1
Housing material:	Grey cast iron, galvanised and painted with 2-component paint
Protection class:	IP66, IP67
Switching system:	Slow action
Connection / cable section:	Screw terminals, 0.75 ... 2.5 mm²
Ambient temperature:	-40 °C ... +70 °C
Degree of pollution:	3
Mechanical life:	1 million operations
Electrical data	
Rated impulse withstand voltage U_{imp} :	6 kV
Rated insulation voltage U_i :	500 V
Thermal test current I_{the} :	10 A
Utilisation category:	AC-15: 230 V / 4 A DC-13: 24 V / 1 A
Max. fuse rating:	6 A gG D-fuse
Required rated short-circuit current:	1,000 A
Electrical data - Dupline®	
Supply voltage:	8.2 VDC
Power consumption:	100 µA
Device insulation:	internal short-circuit proof
Rated impulse withstand voltage U_{imp} :	800 V
Rated insulation voltage U_i :	30 VDC
Connection / cable section:	Screw terminals, 0.25 ... 2.5 mm²



Further technical information can be found in the Schmersal catalogues or in the online catalogue on the Internet: www.schmersal.net.



The currently valid declaration of conformity can be downloaded from the internet at www.schmersal.net.

3. Mounting and electrical connection

3.1 General mounting instructions



Assembly and the electrical connection may only be carried out by authorised personnel in a de-energised state.

Two mounting holes are available.

To ensure a proper functioning, the switch must be installed so that the required switch travel is obtained.

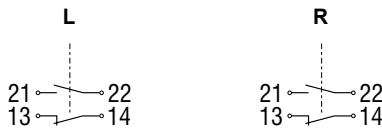
The use of a protective ground wire is imperative.



Please observe the remarks of the standard EN 60204-1.

3.2 Contacts

The belt alignment switches have two switch inserts. The right switch insert serves as a prewarning (NC contact at 10°), the left to deactivate (NC contact at 25°).



3.3 Mounting and electrical connection of Dupline® input module

Before electrical installation, the Dupline® input module must be addressed and parametrised in accordance with the specifications of Dupline® (www.dupline.com).

To do this, attach the Dupline® connecting wires to the programming device.



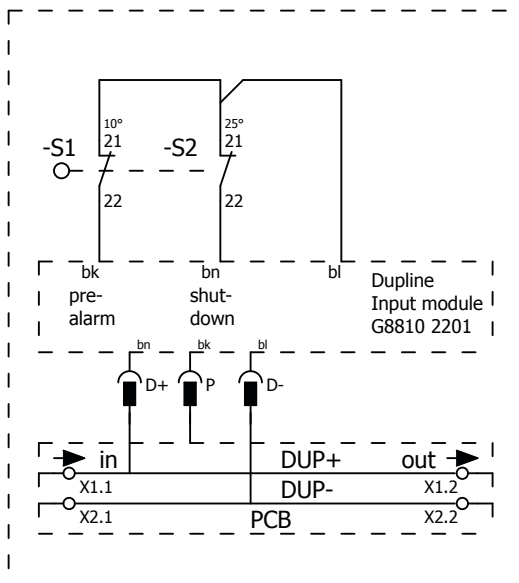
RF-454-DN

Insert the Dupline® input module in the dedicated holder and secure the circuit board using the screw provided (tightening torque 0.5 Nm).

Then connect the Dupline® connecting wires at the terminals marked with DUP+, DUP and P on the circuit board.

Place the I/O connecting wires on the normally-closed contacts of both switch inserts in accordance with the circuit diagram.

Tightening torque of contact screws 0.8 Nm.



Connect the wires of the Dupline® installation bus to the dedicated terminals marked with DUP+ / DUP-.

The terminals marked with DUP+ / DUP- on the side serve as a means of connection to the next Dupline® bus subscribers.

The two normally-closed contacts of the switch elements are already connected in the prewired version T. 454-22Z-H-DN to the Dupline® input module.

For the cable entry, suitable cable glands with an appropriate degree of protection must be used. After wiring, dust and soiling must be removed from the wiring compartment.

To protect the device against condensation caused by large temperature fluctuations, we recommend the use of a pressure compensation element for continued safe operation.

Any inlet openings not used are to be sealed with a sealing screw with suitable protection. The constructor must provide for the necessary strain relief.

Accessories cable entry (Brass, nickel-plated, M20 x 1.5)	Tightening torque	Ordering code
Cable gland	8 Nm	103006011
Cable gland with pressure compensation element	3 Nm	103007570
screw plug	4 Nm	103006009

Once wired, fit the housing cover and tighten the screws evenly (tightening torque 1 Nm).

For correct operation, the installation regulations of the Dupline® input module must be observed. For supply and also addressing of the Dupline® input modules, the following Dupline® system components are required.

Dupline® system components	Ordering code
Hand-held programming device GAP1605	103010199
Terminal box hand-held programming device ADAPT1605	103010202
Channel generator G34900000 230	103010205
Cable termination DT01	103010203

4. Set-up and maintenance

The function of the component must be tested. The following conditions must be previously checked and met:

1. Check the switch enclosure for damage
2. Check for free movement of the actuating element
3. Check the integrity of the cable entry and connections

We recommend carrying out a visual inspection and functional test at regular intervals.

Damaged or defective components must be replaced.

5. Disassembly and disposal

The switchgear may only be removed when de-energised, professionally and in accordance with national rules and regulations.

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