



Safety Products for Rail Vehicles

Emergency Brake Switch Kiepe NBS
Dead Man's Pedal Switch Kiepe TFS
Passenger Safety System

General Information

Safety is an elementary objective with the operation of rail vehicles and these days, every business is also eager to improve their economic results through increase in productivity. This means more automatization and thus an increased hazard potential and a heightened consciousness towards

safety. Optimisation of vehicle safety devices can be justified by improved economic results through reduction of accident follow-up costs.

It is difficult for manufacturers and operators of vehicles to develop suitable safety devices themselves. That's why we recommend the usage of Vossloh Kiepe security products subsequently described here. Secure operability and protection from vandalism are combined in the best possible way.

Emergency Brake Switch NBS

Emergency brake switches belong to the standard equipment of rail vehicles and the passengers use them to activate the emergency brakes. They are manufactured with a rugged design of aluminium gravity die casting and have a high brand recognition.

In particular, the Kiepe NBS 400 and Kiepe NBS 500 emergency brake switches are very easy to recognize by their red cases. Because of the way it is triggered – pulling a handle – a clear distinction to other emergency procedures is given.

The Kiepe NBS is typically suitable for **control voltages** of DC 24V to 110V.

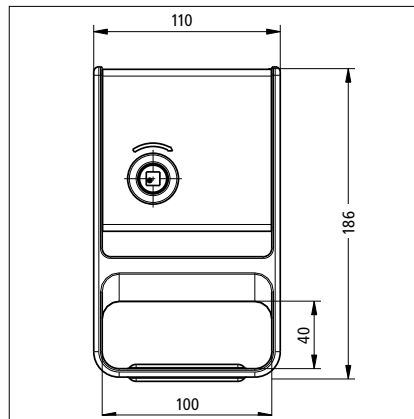
Lead sealing is possible with all variants.

Kiepe NBS 400



Emergency Brake Switch NBS 400 series

The Kiepe NBS 400 has installation casing (height approx. 45 mm) and does not require sectioning of the mounting surface.



The mounting screws are not accessible when in stand-by.

The handle and case front form a unit. When the handle of the Kiepe Emergency Brake Switch NBS 400 is pulled, it triggers a non-reversible energy release which simultaneously actuates the **contacts** (2 change over) and the locking device as well. The contacts have positive opening. **Unlocking** is carried out with a square bolt socket wrench¹⁾. A variant without locking but with automatic spring-loaded reset is also available, as is a variant with a locked emergency hammer. Labelling can be applied to the case²⁾.

¹⁾ *Not included in delivery*

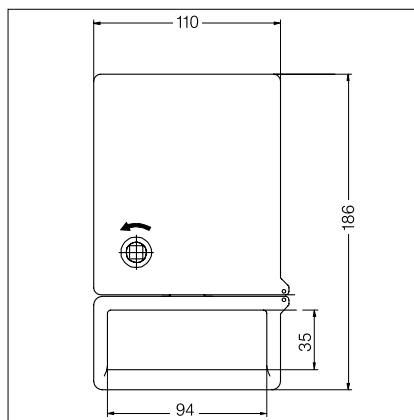
²⁾ *Please indicate when ordering*

Kiepe NBS 500



Emergency Brake Switch NBS 500 series

With the Emergency Brake Switch NBS 500 series, pulling the handle past a pressure point triggers a non-reversible energy release which simultaneously actuates the **contacts** (2 change



over) and the locking device as well. The contacts have positive opening. Depending on the variant, **unlocking** is carried out with a square bolt socket wrench¹⁾ or with a security key¹⁾.

The Kiepe NBS 500 has installation casing (height approx. 45 mm) and does not require sectioning of the mounting surface.

The NBS 500 is also available with an IP 54 protection class.

Labelling can be applied to the case²⁾.

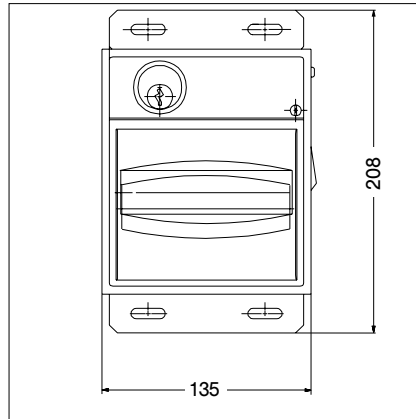
¹⁾ *Not included in delivery*

²⁾ *Please indicate when ordering*

Kiepe NBS 550



Emergency Brake Switch NBS 550 series



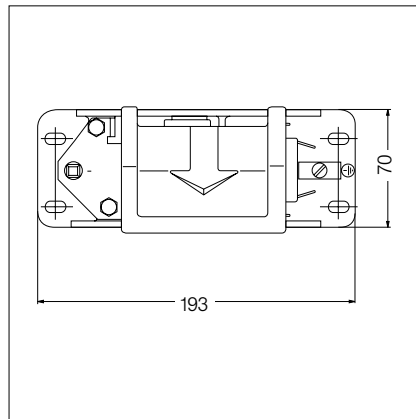
The actuation mechanism of the Emergency Brake Switch NBS 550 is similar to that of the Kiepe NBS 500. It is formed in such a way that the handle is recessed in a cavity. It can therefore be flush mounted if the mounting wall is sufficiently thick (approx. 80 mm). 2 NO 2 NC are integrated as **contacts**. The contacts have positive opening. Depending on the variant, **unlocking** is carried out with a square bolt socket wrench¹⁾ or with a security key¹⁾. For this design labelling may only be applied close to the handle.

¹⁾ Not included in delivery

Kiepe NBS 900



Emergency Brake Switch NBS 900 series



NBS 900 Emergency Brake Switches are equipped with a triggering mechanism similar to the NBS 500. They are mounted on an open base plate for installation behind a mounting surface (installation depth approx. 40mm). Only the handle is visible in the passenger area. 1 NO 1 NC are integrated as **contacts**. The contacts have positive opening. **Unlocking** is carried out with a square bolt socket wrench¹⁾.

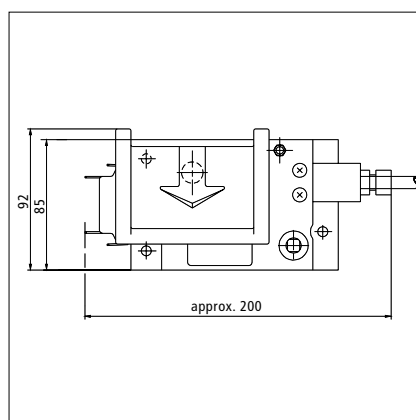
For this design labelling may only be applied close to the handle.

¹⁾ Not included in delivery

Kiepe NBS 920



Emergency Brake Switch NBS 920 series



The pneumatic Emergency Brake Switch NBS 920 is available optionally with or without auxiliary switches (**contacts** 1 NC 1 NO). They are mounted on an open base plate for installation behind a mounting surface (installation depth approx. 40 mm). Only the handle is visible in the passenger area. **Unlocking** is carried out with a square bolt socket wrench¹⁾.

For this design labelling may only be applied close to the handle.

¹⁾ Not included in delivery

Pressure air-brakes are actuated pneumatically through the switches of the Emergency Brake Switch NBS 920 series. The actuation mechanism is similar to

that of the Kiepe NBS 500. Pulling the actuation handle opens a venting valve through which a relay valve¹⁾ is actuated outside of the passenger area.

Dead Man's Pedal Switch TFS

The readiness of rail vehicle drivers is usually monitored via a dead man's switch. The driver operates the dead man safety circuit via the TFS Dead Man's Pedal Switch. A contact is closed by pushing the Dead Man's Pedal Switch down into the middle position – palpable through a pressure point – and thus the readiness of the driver is signalled to the dead man safety circuit. The contacts switch into another position at either release of the foot switch or at the pushing of it through to the end position. The contacts have positive opening. The typical installation position for the Dead Man's Pedal Switch is in the driver's cab underneath the control panel.



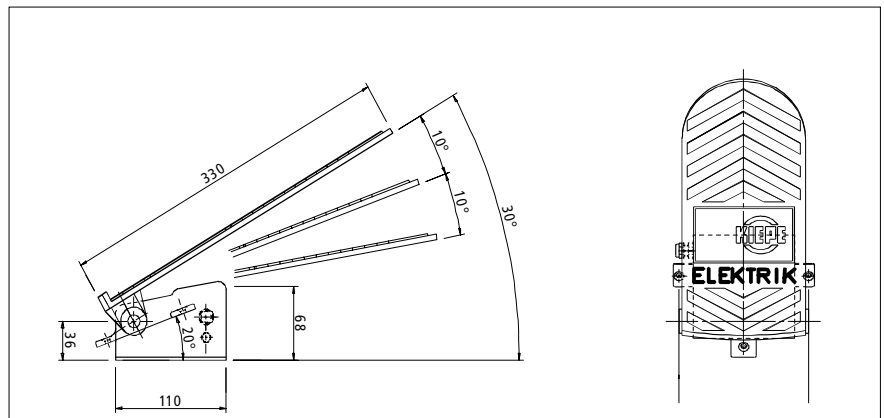
Dead Man's Pedal Switch TFS 001 installed below control panel

Depending on the variant, the Kiepe TFS is typically available for control voltages of DC 24V and DC 110V.

Kiepe TFS 001



Dead Man's Pedal Switch TFS 001

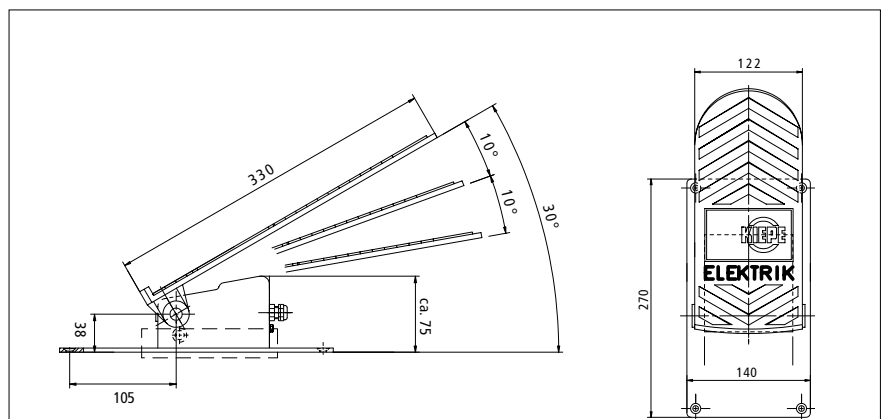


The Kiepe Dead Man's Pedal Switch TFS 001 is constructed for flush-mounting in the floor or height adjustable platform. 1 NC is installed as a **contact**.

Kiepe TFS 002



Dead Man's Pedal Switch TFS 002



The Kiepe Dead Man's Pedal Switch TFS 002 is constructed for mounting on the floor. The mounting size of the base plate enables usage as a replacement for the older TP 4 model. 1 NO 1 NC are installed as **contacts**.

There are different safety systems available in rail vehicles for passenger protection. Up to now, the different safety installations – e.g. emergency brake switches, emergency door release, emergency intercom – have traditionally been designed as separate devices and installed in different places.

The Passenger Safety System unifies these individual safety installations in one device and thus in one place. The

centralization achieved by this simplifies the information of the passenger on availability and function of the safety devices and a faster and more targeted passenger reaction towards the dangers to be averted in an emergency results. This influences the passengers' perception of safety positively.

The Passenger Safety System is delivered ready for installation, which results in a cost-reducing simplification

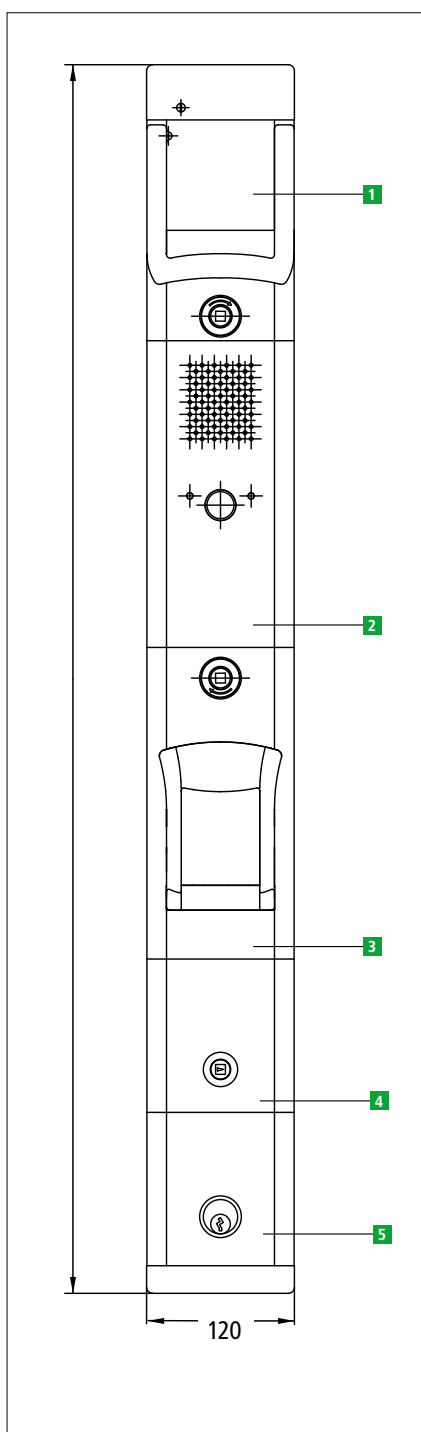
for the wagon manufacturer. For the rail vehicle operator, on the other hand, this centralization means a simplification of the maintenance process and the storage of replacement parts.

The centralization simplifies the retrofitting within modernisation projects and creative accents can be set in the passenger area by the paint schemes.



Passenger Safety System
Model without door-locking device
and without key switch

The Passenger Safety System is constructed modularly. The function and modular construction is exemplarily described by this assembly drawing. The **Emergency Brake Switch 1** is designed for the electric triggering of an emergency braking by the passenger via contacts (≤ 3 change-over) having positive opening.



Depending on the variant, the unlocking can occur through square bolts/triangular bolts, lock cylinder or via automatic spring-loaded reset.

Unidirectional or bidirectional intercoms can optionally be used as **emergency intercoms 2** – a loud speaker module can be alternatively used here. In order to guarantee the flawless interoperability with the vehicle's electroacoustic unit, a product of the same manufacturer is typically used.

An **emergency unlocking 3** of the door is carried out via Bowden cable by turning a lever downwards at 90°. Variants are available with or without locking.

The **door locking device 4** is for securely locking a malfunctioning door. The door mechanism is operated through a Bowden cable via a square bolt/triangular bolt.

The module **key switch 5** allows for example various switching operations to be carried out by the train service crew. This key switch can be carried out by using square bolts/triangular bolts or a lock cylinder.

The individual modules described are integrated into one unit in a specially profiled case (mounting depth approx. 75 mm).

The device is flush-mounted into a mounting surface. Manipulation and vandalism are significantly reduced through the covered fastenings. Inscription with adhesive labels is extremely resistant and is also available as a tactile variant for persons with impaired vision.

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