



Passenger Safety System

Introduction

Different security systems are available for passenger protection in railway vehicles. Passengers should be able to discover these safety devices quickly in emergency situations and to be able to operate them correctly. Up to now, the various safety devices – for example emergency brake switches, emergency door release, emergency intercom – have been traditionally designed as separate devices and built-in to the passenger compartment at different places.

The Passenger Safety System unites the individual safety devices into one unit and therefore also in one location. The achieved centralization facilitates the information about presence and function of the safety devices for the passenger. The passenger is thus already

comprehensively informed about the emergency brake switch, emergency door release and emergency intercom before an emergency situation occurs. Should such a situation arise, one achieves a faster and more successful passenger reaction to the dangers via the improved display of information.

The better clarity and information in the operation of the safety equipment positively influences the passengers' perception of safety.

The Passenger Safety System is delivered preassembled, tested, and ready for installation, which results in a cost-reducing simplification for the wagon manufacturer, both in the design office and in purchasing.

For the railway vehicle operator, the centralization means a simplification of the regular checks, the servicing and maintenance. The spare part stock is dealt with by one supplier. In the case of modernization projects, the centralization simplifies the retrofitting in available vehicles and the passenger compartment can be accentuated through appropriate use of colour schemes. Manipulation and vandalism are significantly reduced through the covered fastenings.

The Passenger Safety System has a modular construction. And so it is easily possible to put together the respective project-specific equipment to form a total device.

Description

The following Passenger Safety System is described in conformity with the dimension illustration, and consists of the emergency brake switch modules, emergency door release, emergency intercom and door locking device. Other arrangements are also possible due to the modular construction.

1 Emergency Brake Switch

After passing a pressure point whilst pulling the handle, an energy release is triggered which can then no longer be influenced. The contacts are activated and the locking device is implemented simultaneously via this energy release. The N.C. contacts are designed as positive opening switches and the entire emergency brake switch mechanism fulfils the requirements of positive opening operation. The unlocking is carried out via square bolt socket wrench through actuation of a release bolt. A design with lock cylinder or automatic reset through spring tension is also possible.

2 Emergency Intercom

The emergency intercom is designed corresponding to the requirements of the vehicle operator according to the electroacoustic (PA) unit present in the vehicle. Typically, a product by the manufacturer of the vehicle's PA unit is chosen for this. This guarantees the flawless functioning of the emergency intercom and PA unit. Unidirectional or bidirectional intercoms can be used. Alternatively, a loudspeaker module can be built

at installation places where no emergency intercom is provided. The acoustic exposure of the passenger compartment can be improved by this.

3 Emergency Door Release

The emergency door release is ready to be connected to a Bowden cable. It has a 90° angle of actuation. Optional models with a detent mechanism (i.e. resettable by the passenger) or with a locking device (i.e. resettable only by conductor with detachable key) are possible. Additionally, optional models are planned with contacts for notification of operation.

4 Door Locking Device

A defect door must be able to be locked independently from the door drive. For this, a door locking device module has been integrated in the case described here. A bolt (which is to be operated via a detachable key) is connected to a Bowden cable. The disabling of the door is carried out using this Bowden cable.



All control elements relevant to passenger safety are integrated into one device.

Description

5 Key Switch

The key switch module 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.

Casing

The individual technical modules described previously are integrated into one electrical and mechanical unit in one casing. The casing consists of one special shape. End-modules create an optically appealing finish at the top and bottom ends. The casing is designed to be installed into the vehicle wall.

Inscription

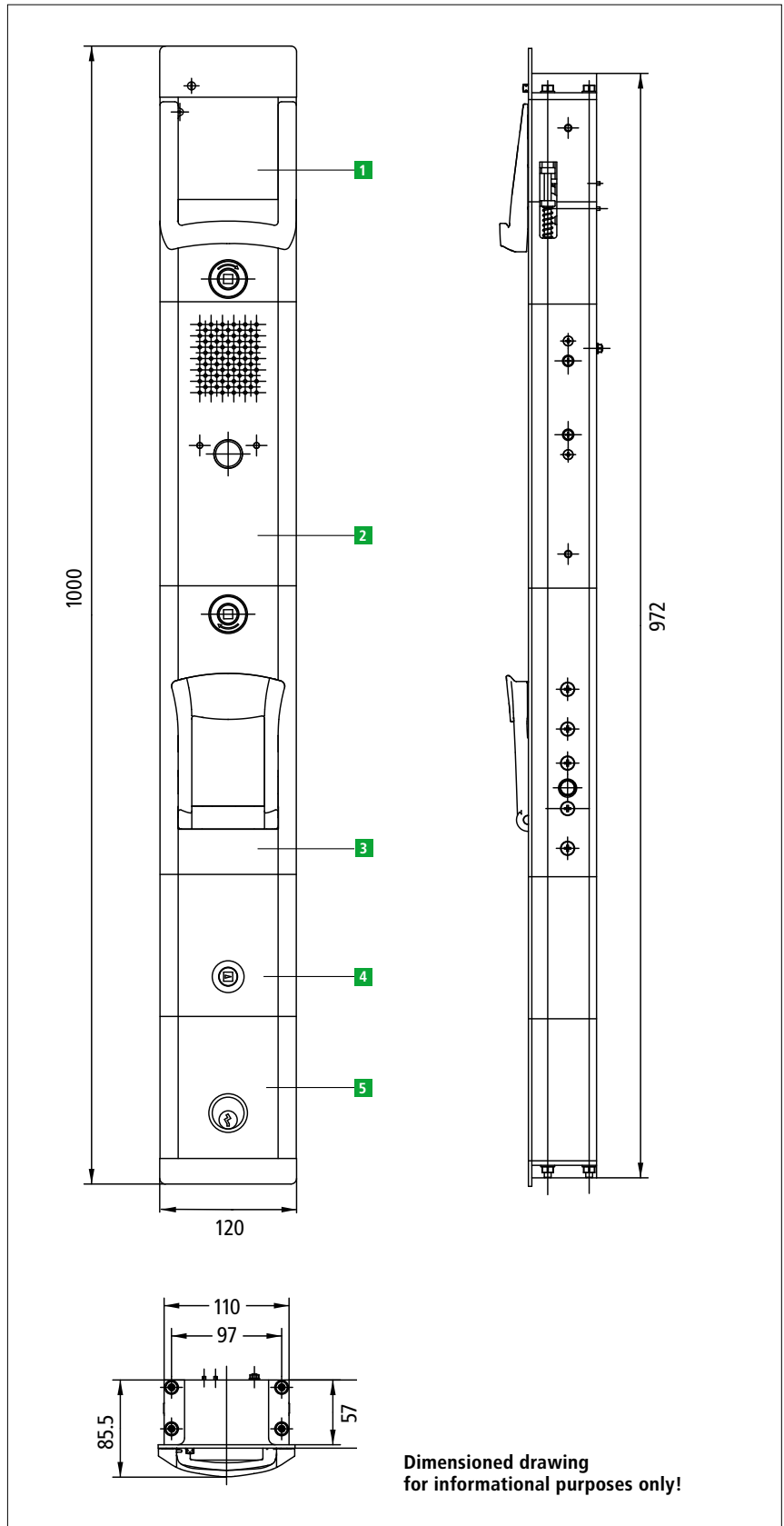
Inscription is carried out using adhesive labels. The adhesive labels are especially resistant and also enable the labelling in a raised form which can be felt by visually-impaired passengers. Customer-specific inscription variants are optionally possible.

Options

Modules can be omitted or additional modules can be inserted depending on the project. Alternatively, a loud-speaker module is available in addition to the emergency intercom.



The installation place is beside the door



Technical Data	
Type	Passenger Safety System
Emergency Brake Switch	
Contacts (changeover, 3 connections) up to	3
- Thermal constant current	6 A
- Rated breaking capacities DC 24 V/110 V ^{1) 2)}	6 A / 0.7 A
- Connection	faston plug 6.3 mm
Locking device	8x8 square bolts
- optional	locking cylinder, spring-driven
Door Emergency Release	
Contacts (changeover, 3 connections) up to	2
- Thermal constant current	6 A
- Rated breaking capacities DC 24 V/110 V ^{1) 2)}	6 A / 0.7 A
- Connection	faston plug 6.3 mm
Locking device	8x8 square bolts
- optional	detent mechanism
Actuation	Bowden cable ³⁾
Emergency Intercom	
According to project-specific requirements	
Door Locking Device	
Actuation	8x8 square bolts with Bowden cable ³⁾
Key Switch	
Actuation	locking cylinder ^{3) 4)}
Contacts (NO/NC)	2/2
- Thermal constant current	10 A
- Rated breaking capacities DC 110 V ¹⁾	0.5 A
- Connection	faston plug 6.3 mm
Casing	
Dimensions	dimensioned drawing see page 3
General	
Rated insulation voltage ⁵⁾	DC 110 V
Temperature	-25° C ... +70° C
Degree of protection (Contacts)	IP 20 (IP 40)
Colour	optional
Labelling	optional
Weight approx.	5,5 kg (design according to dimensioned drawing page 3)

¹⁾ switching category DC 13

²⁾ min. load 10 V/30 mA for new switches

³⁾ not included in delivery

⁴⁾ locking cylinder similar to IKON SL 320

⁵⁾ emergency intercom excluded

Subject to change without notice.