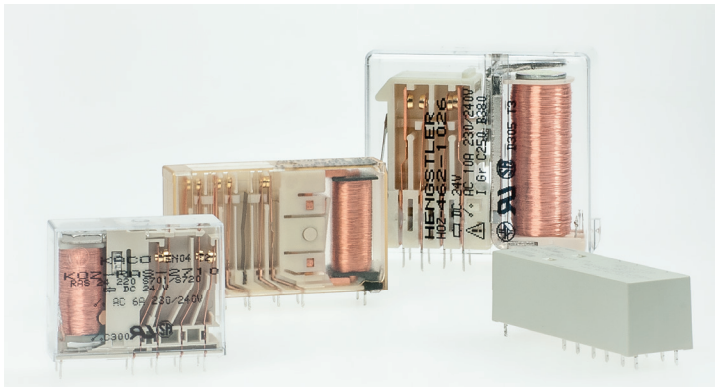


Relays

More than 35 years of experience for a safe journey

HENGSTLER

HENGSTLER
Diversity and Know-How

The ambition to make our environment a safer place can be seen everywhere. Known are emergency stops at ski lifts, at escalators in the shopping mall or after a flight at the baggage carrousel. Although less obvious, but by far not less important, the same principle can be found everywhere in Railway infrastructure where it is about to guarantee safety for both humans and machines.
Railway technics, same as process technology and machine building, do have one thing in common - since decades they use safety relays (force guided relays acc. to **IEC 61810-3**) to control safety relevant functions. Compared with other solutions they offer next to the deterministic working forced guidance, the benefit of a galvanic isolation. Specifically for the railway industry the **EN 50155** is of importance. It describes in detail the requirements related to a relay towards voltage fluctuations, mechanical parameters and environmental conditions.

Next to the control function, the safety relay needs to fulfill the high requirements on signal availability.
Related failures bear the risk of having a high impact on the railway operation.
With high contact forces and the relative movement while opening and closing the contacts (self-cleaning) relays from Hengstler ensure high signal availability. In case of switching low currents Hengstler offers for some relay families contacts with up to 5 µm gold plating.
Last but not least a forward-looking product management is needed to fulfil the demand for a long availability of the chosen product.

HENGSTLER
The Perfect Fit

In the railway-business exist a variety of application with most divers requirements. This starts with demands towards the components due to restrictions in space up to parameters given by the control layout. In our product range you can select among a wide range of characteristics to find a suitable relay for your individual application:

- **Number of contacts:** From 2-10 contacts per relay
- **Contact combination:** Different combinations of NO and NC contacts available.
- **Coil voltage:** Standard and customized coil voltages available.
- **Contact plating:** Up to 5 µm Au for high reliability at small loads.
- **Versions:** Lying and standing safety relays as well as flat relays with low profile to meet all kind of different space restrictions.

Many of our relays used in railway applications are fulfilling the requirements of **UIC 736e**. Furthermore all relays are **cULus** approved which helps to meet fire prevention demands in railway vehicle.

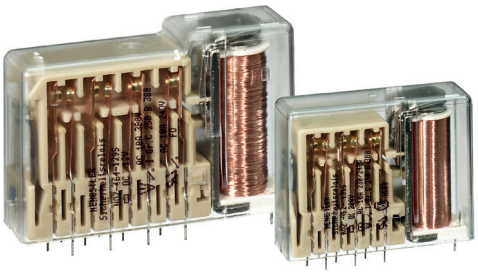
Applications:

- Plattform screen doors
- Dead man switch
- Break control
- Signaling systems
- Axe counting
- Signal interlock
- Door Controls
- Autonome trains

HENGSTLER
Experience Meets Flexibility

Since more than **35 years** Hengstler safety relays are used in railway applications. Over the time our relays are used in many countries worldwide and have been approved by our customers at different **approval authorities** such as the **Eisenbahnbundesamt (EBA)** in Germany. Our long and profound history in lean production enables us to supply high and low quantities at a high product mix. By producing on customer order we can achieve short lead times and a high availability of the products.

Especially in railway industry customer **individual solutions** are key to fulfill the highly specific requirements. The close cooperation between production and R&D at the same site allows us to efficiently develop and realize such solutions. Samples as well as the tests needed for serial release of the products can be done in our **intern laboratory**.
The production and development of our relays is completely in Europe.



High number of contacts / robust design 462/464

Products of this category are always used where high currents (up to 10A) need to be switched and at the same time high contact reliability is mandatory. Exposure to **high values of shock and vibration** are standard in railway application. Due to the robust design Hengstler Relays can be easily used in this environment. Depending on the selected product family it is possible to choose up to **10 contacts** in a variety of combinations, with up to **5 µm** gold plating. Relays of these group are fulfilling the standard for signaling relays
UIC 736e.

Flat Relays 472/473/480/466

If height is the restriction in your application, flat relays with a **mounting height of e.g. 15,7 mm** help you two achieve a high packing density. Depending on the chosen product family up to 10 contacts in different contact combinations are available. Some families are also fulfilling the standard of UIC 736e. Relays of product family 472/473 help you to achieve an easy and well-arranged PCB design by a **user friendly pin layout**.

Special versions

Bistable Relais:

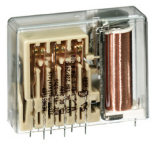
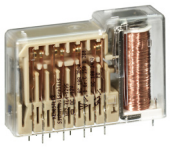
In safety applications where it is mandatory that the switching state of the relay is kept also after a voltage breakdown, bistable safety relays of Hengstler can be used. This special feature is realized by a magnetic remanence drive.

Activation by load current:

For special applications we can offer solutions where the load current is led directly through the coil and can control the correct function of the load.

Notes

Safety Relays

		Signaling relays according to UIC 736				
Typ		**H-462**	**H-464**	**H-466**	**H-472**	**H-473**
						
Technical data mechanical						
No. of contacts		4 / 6	8 / 10	4 / 6 / 8 / 10	7	5
Dimensions (L x W x H)	mm	**4 contacts:** 57,8 x 20,5 x 48,6 **6 contacts:** 67,4 x 20,5 x 48,6	**8 contacts:** 77,4 x 20,5 x 48,6 **10 contacts:** 87,4 x 20,5 x 48,6	**4 contacts:** 57,7 x 66,5 x 20,5 **6 contacts:** 67,4 x 66,5 x 20,5 **8 contacts:** 77,4 x 66,5 x 20,5 **10 contacts:** 87,4 x 66,5 x 20,5	**7 contacts:** 54,5 x 35,7 x 15,7	**5 contacts:** 47,7 x 35,7 x 15,7
Contact configuration Example: 110 = 1 NO, 1 NC, 0 CO		**4 contacts:** 220/310 **6 contacts:** 330/420	**8 contacts:** 350/440/620/530 **10 contacts:** 550/640/730/820	**4 contacts:** 220/310 **6 contacts:** 330/420 **8 contacts:** 350/440/620/530 **10 contacts:** 550/640/730/820	**7 contacts:** 430/520	**5 contacts:** 320/410
Contact material		AgSnO2 + 0,2 / 5 µm Au	AgSnO2 + 0,2 / 5 µm Au	AgSnO2 + 0,2 / 5 µm Au	AgNi + 0,2 / 2 / 5 µm Au AgSnO2 + 0,2 / 2 µm Au	AgNi + 0,2 / 2 / 5 µm Au AgSnO2 + 0,2 / 2 µm Au
Housing, type of enclosure		RT II	RT II	RT II	RT II	RT II
Technical data electrical						
Switching voltage, max.	V AC	230 / 240	230 / 240	230 / 240	230 / 240	230 / 240
Switching current, max.	A	10	10	10	6	6
Switching capacity, max.	VA	2000	2000	2000	1380	1380
Coils operating ranges (U1 - U2) at 20°C U1: min. Operating voltage, heated coil U2: max. voltage, thermic limited	V DC V AC	2,5 - 500 12 - 290	2,5 - 500	2,5 - 500 12 - 290 (AC drive on request)	3 - 195	3 - 185
Min. operating power (at U1)	W	4 contacts: 0,33 6 contacts: 0,47 - 0,51	8 contacts: 0,48 - 0,64 10 contacts: 0,55 - 0,64	4 contacts: 0,33 6 contacts : 0,47 - 0,51 8 contacts : 0,48 - 0,64 10 contacts : 0,55 - 0,64	0,33	0,35
Insulation						
Insulation Ü=III; V=2; 120/240 V		Reinforced insulation	Reinforced insulation	Reinforced insulation	Reinforced insulation	Reinforced insulation
Insulation Ü=III; V=2; 230/400 V		Basic insulation	Basic insulation	Basic insulation	Reinforced insulation	Reinforced insulation
Others						
Ambient temperature min/max	°C	-25 / +80	-25/+80	-25 / +80	-25 / +80	-25 / +75
Approvals		TÜV / cULus	TÜV / cULus	TÜV / cULus	TÜV / cULus	TÜV / cULus
Special features		- High Shock and Vibration resistance - High reliability of the contacts - Wide coil operating range - Signal relay according to UIC 736e. - Current controlled or bistable drive possible.	- High Shock and Vibration resistance - High reliability of the contacts - Wide coil operating range - Signal relay according to UIC 736e. - Current controlled or bistable drive possible.	- High Shock and Vibration resistance - High reliability of the contacts - Wide coil operating range - Signal relay according to UIC 736e. - Current controlled or bistable drive possible.	- Flat relay = low hight - Smart pinning for optimized PCB layouting - Fault tolerant contact behaviour. - Signal relay according to UIC 736e.	- Flat relay = low hight - Smart pinning for optimized PCB layouting - Fault tolerant contact behaviour. - Signal relay according to UIC 736e.

Further safety relays for railway application

H-463	H-468	H-469	H-480	K-RAS	K-RBS	K-ROS
						
4	4 / 6	2	4 / 6	4	2	4
4 contacts: 42,7 x 16 x 38,8	**4 contacts:** 44,6 x 12,5 x 30 **6 contacts:** 50,0 x 12,5 x 30	**2 contacts:** 37,6 x 12,5 x 30	**4 contacts:** 46 x 16,5 x 15,7 **6 contacts:** 55 x 16,5 x 15,7	**4 contacts:** 36 x 12,5 x 29	**2 contacts:** 30 x 12,5 x 29	**4 contacts:** 42 x 16 x 32,2
4 contacts: 220/310	**4 contacts:** 220/310 **6 contacts:** 510/420	**2 contacts:** 110	**4 contacts:** on request **6 contacts:** 420 / 510	**4 contacts:** 220/310	**2 contacts:** 110/002	**4 contacts:** 220/310
AgSnO2 + 0,2 / 5 µm Au	AgNi + 0,2 / 2 µm Au AgSnO2 + 0,2 / 2 µm Au	AgNi + 0,2 / 2 µm Au AgSnO2 + 0,2 / 2 µm Au	AgNi + 0,2 / 2 µm Au AgSnO2 + 0,2 / 2 µm Au	AgSnO2 + 0,2 / 2 µm Au	AgSnO2 + 0,2 / 2 µm Au	AgNi + 0,2 / 10 µm Au AgSnO2 + 0,2 / 2 µm Au
RT II / RT III	RT II / RT III	RT II / RT III	RT III	RT II	RT II	RT II
230 / 240	230 / 240	230 / 240	230 / 240	230 / 240	230 / 240	230 / 240
6	8	8	8	6	6	8
1200	1500	1500	2000	1500	1500	1840
2,5 - 385	4,5 - 210	4 - 210	4,4 - 182	2,5 - 180	2,5 - 195	3 - 380
0,4	0,26	0,21	0,33	0,25	0,25	0,4
Reinforced insulation	Reinforced insulation	Reinforced insulation	Reinforced insulation	Reinforced insulation	Reinforced insulation	Reinforced insulation
Basic insulation	Basic insulation/ reinforced insulation (size 2)	Basic insulation	Reinforced insulation	Basic insulation	Basic insulation	Basic insulation
-25 / +80	-25 / +80	-25 / +80	-25 / +75	-25 / +70	-10 / +70	-15 / +70
TÜV	TÜV / cULus	TÜV / cULus	TÜV / cULus	TÜV / cULus	TÜV / cULus	TÜV / cULus
- High Shock resistance - High reliability of the contacts - Wide coil operating range	- Low power consumption - High Shock and Vibration resistance - High reliability of the contacts - Wide coil operating range	- Low power consumption - High Shock and Vibration resistance - High reliability of the contacts - Wide coil operating range	- Max. switching current: 8A - Low power consumption - Reinforced insulation between all contacts - Low height	- Compact relay - Small outside dimension - Used in a broad variety of applications - Different connection grids available. - Wide coil operating range	- Compact relay - Small outside dimension - Used in a broad variety of applications - Different connection grids available. - Wide coil operating range	- Compact relay - Small outside dimension - Up to 8A

HENGSTLER

Uhlandstr. 49
D-78554 Aldingen

Telefon: +49 (0) 7424-89-0
info@hengstler.com
www.hengstler.com