

Abstract

COLLISION DETECTION FOR A VEHICLE

The present invention relates to a collision detection device for detecting a collision of a vehicle, in particular, a rail vehicle, with a collision partner, comprising a collision unit (110), a mounting device (109) for mounting the collision detection device to the vehicle, and a sensor device (111). The collision unit (110) comprises at least one collision element (110.1) for contacting the collision partner in a collision event. The sensor device (111) is configured to generate a first collision signal representative of a first threshold collision event having a definable first threshold severity as a function of a first threshold relative deflection of the collision unit (110) relative to the mounting device (109) from a neutral position during the first threshold collision event. The collision unit (110) is coupled to the mounting device (109) via a resetting unit (114) and via a guide element (109.2), in particular a hinge element, defining a motion of the collision element (110.1) during the collision event. The resetting unit (114) is configured to undergo, during the threshold collision event, a first elastic resetting unit deflection from a neutral resetting unit position. The resetting unit (114) is configured to undergo, during a second threshold collision event having a second threshold severity greater than the first threshold severity, a second elastic resetting unit deflection, the second elastic resetting unit deflection being larger than the first elastic resetting unit deflection. The resetting unit (114) is configured to elastically reset, in a resetting action, from the second elastic resetting unit deflection to substantially the neutral resetting unit position upon removal of the collision partner, thereby resetting the collision unit (110) to substantially the neutral position.

Figure 3

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