

ZÖLLNER

The New Cable-Based Warning Device ZPW126-31 in Action

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Trains are an effective mode of transportation for covering short and long distances quickly, easily and, most of all, in an environmentally friendly manner.

Both the number of travellers and the amount of freight traffic by rail have started to increase once again. The rising use of the infrastructure along with the growing number of track vehicles result in an expectedly notable surge in track wear. Consequently, infrastructure operators have to invest continued efforts into repair and upkeep in order to ensure that the tracks and the adjacent environment remain in good condition.

Trying to keep the interruption of rail traffic due to construction and upkeep as minimal as possible means only closing track segments on which works are carried out. Traffic on the adjacent track usually continues and might even be higher than normal since

one track is not passable for the duration of the works.

The workers performing tasks on or along the tracks often have to pay close attention to their job making them vulnerable to accidentally entering the danger zone of the active track. They thus have to be made aware and warned of approaching track vehicles. In order to always guarantee the best-possible way of warning all workers, ZÖLLNER offers a variety of warning devices. All warning devices adhere to the same principles however: the track vehicle is manually or automatically detected followed by an activation of the warning system. Acoustic signals warn of the approaching vehicle and visual light signals stay active until the vehicle has passed the work zone. Information is transmitted either via cable or via radio.

Radio-based systems are especially useful for short construction sites or those of brief duration.



Image 1 ZPW 126-31

To secure large construction sites that cover long stretches of track (several hundred metres or even several kilometres) and/or take more time, cable-based systems are the most common choice. They have been used for several decades but their use is and has been declining. This is due to the significant effort it took to install previous cable-based systems, especially when compared to radio-based systems. With the introduction of the ZPW126-31 in 2019, which combines the acoustic



Image 2 Several ZPW126-31 on tripods Switzerland

warning device with the visual reminder lights in one compact case so that the deployment of cable-based systems has once again become very attractive (image 1).

The compact warning device only weighs about 8kg, making it easily transportable in any terrain. It was designed according to CENELEC norms, reaches SIL 4 and is failsafe.

Like all collective warning devices by ZÖLLNER, the ZPW16-31 is equipped with an automatic volume adjustment which regulates the level of the warning signal according to the surrounding noise. The result is a warning signal that is always as loud as necessary in order to protect the workers but, at the same time, as quiet as possible in order to protect neighbours and the environment. The 'Autoprowa-Effect' was fine-tuned even further in this new generation of warning devices and is now nearly continuously variable. It is therefore perfectly suitable for noise-sensitive areas as well.

Small green LEDs blinking in all four corners of the warning device show the active status of the warning system. If no LED signal

warning device with the visual – neither the yellow warning signal lights nor the green status LEDs – is active, the system is not switched on. Since this allows anyone to see clearly whether the system is active and the worksite is thus secured, there is no need for temporary covers or the like to signal an inactive system.

Examples of the ZPW126-31 in Action

Germany

Image 2 shows the ZPW126-31 on a large construction site in Germany. The device safely warned workers of trains on the adjacent track during works for a track renewal over six kilometres.

Switzerland

The SBB (Switzerland), too, is securing its worksites using the ZPW126-31. Due to the limited space during this bridge redevelopment, the warning device was mounted on the posts of the overhead wires using a separately available magnet fastening (image 3).

The bridge is located in a noise-sensitive area which made



Image 3 ZPW126-31 mounted using magnet fastening

the ZPW126-31 especially suited for this worksite.

United Kingdom

ZÖLLNER UK Ltd is working with Network Rail in Scotland to implement the UK's first automatic warning system using the ZPW126-31. The worksite leads across the UNESCO World Heritage Site, Forth Bridge. The historic bridge leaves little space for the installation of a warning system and the compact design of the ZPW126-31 provides the necessary flexibility.

Conclusion

The ZPW126-31 is a compact warning device with versatile application. The nearly continuously variable Autoprowa-Effect makes it especially well-suited for noise-sensitive areas. The quick installation time, the high level of safety along with the integrated LEDs to signal the system's active status makes it state of the art.

After being successfully tested and deployed in several European countries, authorisation for use in other countries is expected to come soon.

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