

**EZA / HKR**

# Fibre-optic auxiliary signal indicators

Standard auxiliary signal indicator EZA, auxiliary indicator HKR for Ks signalling system

## Application

The purpose of the fibre-optic auxiliary signal indicators EZA / HKR is to convey additional information to the train driver to supplement that provided by the signals.

## Functional description

Fibre-optic supplementary indicators are used for additional signalling in conjunction with changing train speeds, changing train directions or changes of track. They can be assigned to station signals and line side signals. They are controlled from the signal box.

## Design

The fibre-optic supplementary indicators are accommodated in weatherproof aluminium housings with bowed view glass and a door on the back to ensure easy maintenance. They are secured either directly to a tubular steel post, a post fixture or signal housing (pivoting).

The indicated symbol is made up of numerous spots of light supplied from a single light source. The light collected by the lens system is forwarded to the light spots via the bundle of waveguides. The light is concentrated by one lens in the light spot and distributed both horizontally and vertically by a diffusing screen at the outlet so that the signal can be identified on the line. All devices are fitted with diffusing screens for right-hand or left-hand installation, depending on the location of the signal. To obtain yellow light for distant speed indicators yellow diffusing screens are used.

The EZA devices have an operating voltage of 12V (DC). The signal lamp is a double filament lamp with main and secondary filament, type Sig 1230Ü.

The HKR devices have an operating voltage of 230V (AC) which is converted to 12 (AC) by a toroidal-core transformer. The signal lamp is a halogen lamp, type Sig 64002.

## Possible indications

(according railway signalling regulations DS301)

- Zs 2 = auxiliary direction indicator 2
- Zs 2v = auxiliary direction indicator 2, distant signal
- Zs 3 = auxiliary speed indicator 3
- Zs 3v = auxiliary speed indicator 3, distant signal
- Zs 6 = Track change indicator 6
- Zp 9 = Departure signal 9 for train personnel

## Variations

- 1-aspect = 1 lens system = 1 symbol
- 2-aspect = 1 lens system = 2 symbols
- 3-aspect = 1 lens system = 3 symbols
- 4-aspect = 1 lens system = 4 symbols \*

\* only available for HKR



**Exit signal (Ks) with auxiliary signal indicators**



**1-aspect indicator**