KS-Ad Signal Tower

Product description

Regarding its specificity the KS-Ad signal tower is mainly designed for signalling the machine operation state, through optical or acoustic and optical signalling. Signal towers find application in the industry, in companies producing machines as the accessories element of newly designed machines, and also among users modifying the machine park. For users modifying the machine park the special advantage of KS-Ad is a simple control method (it is essential when it comes to modernization of old machines, which in most case offer only relay outputs).

Construction

The tower is made of non-flammable plastic ABS V0 as well as polycarbonate V2. Individual segments are integrated permanently, without the possibility of exchanging colours (elements are joined in a factory according to the client's order). Each tower segment (colour) is made of shade with the outer diameter of 75 mm. The light source is the set of LED diodes. There is possibility of receiving five luminous effects (depending on the control signal). At the tower bottom there is an acoustic module (in the version with a sound), which gives the possibility of generating to six acoustic signals (depending on the number of tower segments). The sound source is a piezoceramic transducer, thanks to which it is possible to receive a considerable sound volume. Additionally, by means of microswitches placed in the tower basis on can make the four-level volume control. The signal tower has got in its basis two terminal blocks, to which it is necessary to connect control signals as well as supply lines. In the basis there is provided a cable clamp. Terminal blocks are disassembling blocks, what gives the possibility of removing the tower from the machine (e.g. for the transport time) without the necessity of disassembling the cabling.

Control options

The KS-Ad signal tower through the built-in control system enables generating optical as well as acoustic and optical signals such as:

- fixed light,
- pulsed light 1 Hz, flash time of 0.5 s,
- pulsed light 5 Hz,
- rotating light for all colours except for green,
- irregular light (irregular flash frequency) for all colours except for green (except for the colour 3 counting from the top)
- brightness modulation, only for the green colour,
- in the version without a sound module, the strobe light for the red signal.

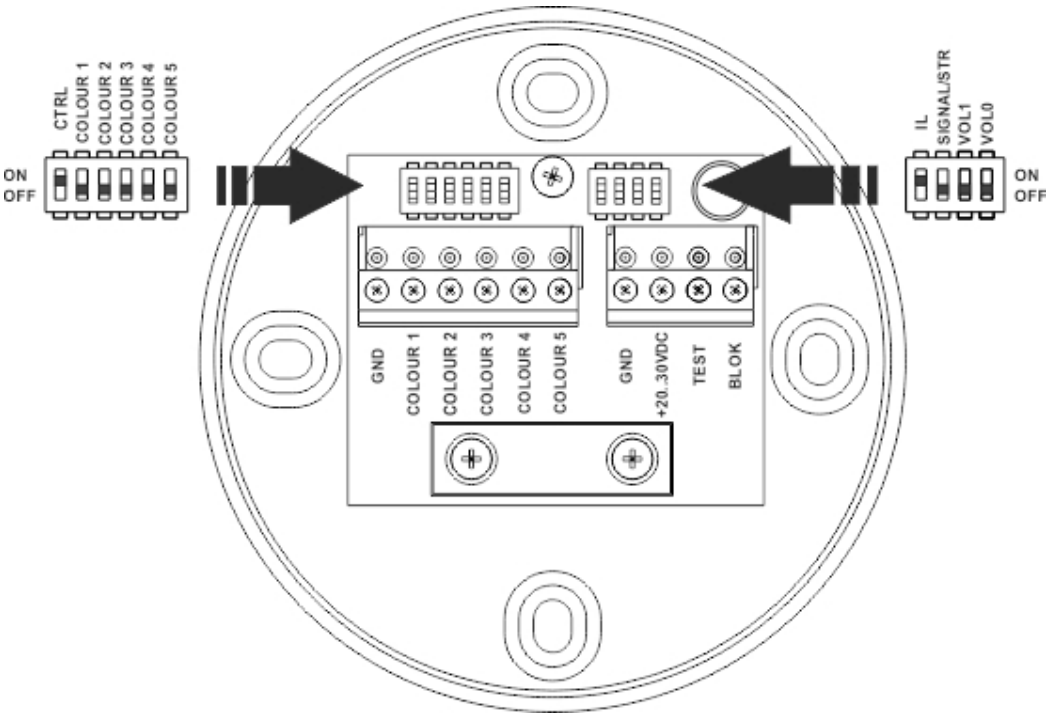
The KS-Ad signal tower offers the user three controlling options: **analogue** (voltage or resistance dialled by means of microswitches COLOUR 1..COLOUR 5), **volt-free** (binary control by means of relay contacts) as well as **digital control** (two-stage). The selection of control type is made by means of the microswitch CTRL placed in the device basis.
In case of analogue control each tower input (COLOUR 1..COLOUR 5) can be controlled independently (e.g. 4 inputs in the voltage way, 1 input in the resistance way). In the voltage mode the voltage given on terminals should be included in the range of 0..10V DC.
In the volt-free control mode all inputs operate in the two-stage mode: input connected to gnd or left unconnected. The change of control input state can be made e.g. by means of relay contacts.

In case of digital control the user gives signals of two logical levels to the tower input. This controlling is as good as it can be connected with the free-volt control, i.e. some inputs can be controlled in a free-volt way and others – in a digital way.

The control system of the signal tower prevents generating accidental warning signals as a result of incorrect control. In case of appearing a fault (or breakdown) in the system applying control signals to the tower input (e.g. a situation, when the user wants to receive two acoustic signals at the same time) the tower electronic system operates on a priority basis (reproduces the signal of greater importance). It means that e.g. when there is a warning signal and then there appears the danger signal, the tower will reproduce the danger signal.

Additionally, the KS-Ad signal tower has got: the option of switching off the audible signal, a test mode, the option IL (Irregular light), the possibility of selecting the additional sound for the red light as well as in case of the version without an acoustic mode the option of selecting the strobe light for the red colour.

Connection diagram



Technical data

Supply voltage	+20...30V DC
Current consumption at 24V DC	
In the standby mode	<40mA
Optical module	<30mA/colour
Acoustic module	50-250mA (depending on the type of acoustic signal)
Ingress Protection	
Version with sound module	IP54
Version without sound module	IP65
Weight (5 colours + acoustic module)	<600g
Sound output at 1m (depending on the type of audible signal), for the voltage of 24V DC	
Min.	>85 dB
Max.	>95 dB
Range of working temperatures	-25÷55°C
Voltage range in inputs COLOUR1...COLOUR5	0...10V DC
Max. wire cross-section	2,5mm^2