





Alarms BS 60**

Types of Explosion Protection:

-  I M1 EEx ia I
-  I M2 EEx de [ib] I
-  I M2 EEx deq [ib] I
-  I M2 EEx d I

Degrees of Enclosure Protection: ≥ IP 54 (BS 606A IP 68)

EC-Type Examination

Certificate:

IBExU 03 ATEX 1147



Use

The alarms BS 60** are used for generating optical and/or acoustical signals.
In underground mines they can fulfill various tasks.



Possible Fields of Application are:

- ✓ As warning at main and auxiliary drives when the conveyor approaches the drive
- ✓ In passenger railway stations
- ✓ At other hauling devices (belt conveyor, rail transporter, telpher etc.)
- ✓ As amplifier in telephone installations
- ✓ etc.

The BöSha-alarms are available as opto-acoustical, acoustical or optical versions.
The different versions differ in shape and in type of signalling.

Flameproof Alarms

The flameproof version consists of a two-compartment enclosure with attached translucent cover with flash lamp and it contains printed circuit boards as well as a junction box in "Increased Safety" (EEx e).



This translucent cover consists of polycarbonate 5 mm thick covering the flash lamp which is attached to the enclosure and radiates all around.

The cover is textured in order to achieve an even light distribution. In addition, it is uv-resistant and impact proof so that no protective cage is required.

The covers are available in different colours or in crystal-clear transparent.

A loudspeaker may be fixed on the inside of the lid and a mains transformer may be attached to the enclosure side wall.

Optionally, a galvanically separated control circuit is connected with the circuitry.

The compartment with the electrical circuits is filled with sealing compound or silica sand.

Combined Alarms „Flameproof“ (Opto-Acoustical)

The alarms BS 601 and BS 602 exist as four versions each, i. e. for four different AC-voltages ranging from 110 V to 1000 V; whose type designations differ in a letter that is annexed to the main designation.

The acoustical part consists of an electronic two-tone siren and a loudspeaker (IP 67), which is attached to the inside of the lid of the junction box. The loudness level is adjustable and can be turned up to 107 dB.

The optical part consists of a xenon photo-flash lamp with an extremely high light intensity and its control electronics, which generate a flash frequency of approximately 1 Hz.

The two combined alarms only differ in the ratings of their photo-flash lamps.

Type BS 601 emits flashes of a rating of 5 Ws, and BS 602 of 10 Ws, which corresponds to 5 W or 10 W, assuming a flash frequency of approximately 1 Hz.

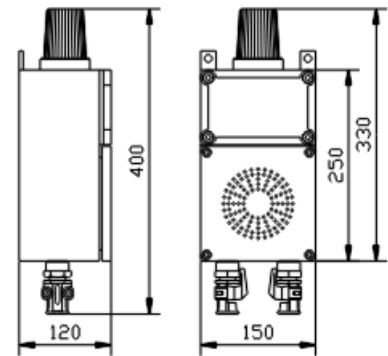
Except type BS 601 E, all combined alarms are activated by applying an additional control voltage of 5 to 15 V DC.

The current consumption of the control input end is 10 mA maximum. On request, the controlling can be achieved by a telephone ringing signal, or it can be dropped altogether.

The special version BS 601 is activated by applying the supply voltage.

Electrical Data „Opto-Acoustical“ Alarms (Flameproof)

Type	Input Voltage	Type of Current	Frequency	Nominal Current (approx.)	Nominal Rating
BS 601 A	230 V	AC	50/60 Hz	0.12 A	26 VA
BS 601 B	500 V	AC	50 Hz	0.055 A	28 VA
BS 601 C	1000 V	AC	50 Hz	0.028 A	28 VA
BS 601 D	110 V	AC	50/60 Hz	0.26 A	28 VA
BS 601 E	12 V	DC	0 Hz	1.0 A	12 W
BS 602 A	230 V	AC	50/60 Hz	0.15 A	33 VA
BS 602 B	500 V	AC	50 Hz	0.07 A	35 VA
BS 602 C	1000 V	AC	50 Hz	0.035 A	35 VA
BS 602 D	110 V	AC	50/60 Hz	0.32 A	35 VA



Combined Alarms „Intrinsically Safe“

In addition to the flameproof versions, also the intrinsically safe types BS 601 *I and BS 601 *IS are available.

Their functioning is identical with the afore-mentioned types.

Type BS 601 *I is put into operation by applying the supply voltage.

In type BS 601 *IS the supply voltage can always stay connected and the alarm is activated by an external potential-free contact (e. g. switches, relay-contacts, optocouplers).

	<u>BS 601 EI and 601 EIS</u>	<u>BS 601 FI and BS 601 FIS</u>
Input Voltage:	12 V	24 V
Rated Current:	0.8 A	0.45 A
Nominal Rating:	9.6 W	10.8 W
Nominal Rating of		
Photo-Flash Lamp:	5 Ws	5 Ws
Flash Frequency:	1 Hz	1 Hz
Loudness Level of Siren:	approx. 97 dB	approx. 107 dB

In these types a switching-off lag of 0 – 7 seconds can be adjusted in order to bridge breaks, in between telephone ringing signals, for example.

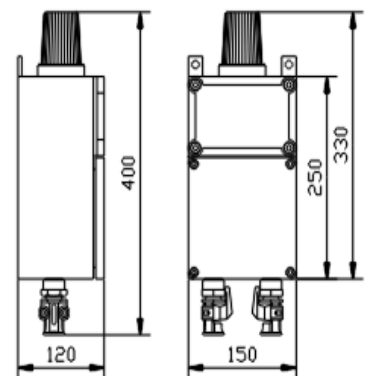
Optical Alarms „Flameproof“

Types BS 603 and BS 604 are alarms which produce optical signals in the form of high-energy flashes being generated by a xenon photo-flash lamp with an extremely high light intensity and its control electronics, at a flash frequency of approximately 1 Hz. Again, both types only differ in the ratings of their photo-flash lamps (technical specifications are given in the table). Except type BS 603 E, all optical alarms are activated by applying a control voltage of 5 to 15 V DC.

The alarm BS 603 E is activated by applying the supply voltage.

Electrical Data Optical Alarms:

Type	Input Voltage	Type of Current	Frequency	Nominal Current (approx.)	Nominal Rating
BS 603 A	230 V	AC	50/60 Hz	0.055 A	12 VA
BS 603 B	500 V	AC	50 Hz	0.028 A	14 VA
BS 603 C	1000 V	AC	50 Hz	0.014 A	14 VA
BS 603 D	110 V	AC	50/60 Hz	0.13 A	14 VA
BS 603 E	12 V	DC	0 Hz	0.72 A	8.5 W
BS 604 A	230 V	AC	50/60 Hz	0.085 A	19 VA
BS 604 B	500 V	AC	50 Hz	0.042 A	21 VA
BS 604 C	1000 V	AC	50 Hz	0.021 A	21 VA
BS 604 D	110 V	AC	50/60 Hz	0.19 A	21 VA



Optical Alarms „Intrinsically Safe“

In addition to the flameproof versions, also the intrinsically safe types BS 603 *I and BS 603 *IS are available.

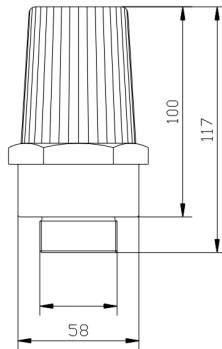
Unlike type BS 603 *I, which requires applying of supply voltage, in type BS 603 *IS the supply voltage can stay connected permanently and the alarm is activated by an external potential-free contact (e. g. switches, relay-contacts, optocouplers).

	<u>BS 603 EI and 603EIS</u>	<u>BS 603 FI and BS 603 FIS</u>
Input Voltage:	12 V	24 V
Rated Current:	0.6 A	0.3 A
Nominal Rating:	7.2 W	7.2 W
Nominal Rating of		
Photo-Flash Lamp:	5 Ws	5 Ws
Flash Frequency:	1 Hz	1 Hz

When using external controlling a switching-off lag of 0 – 7 seconds can be adjusted in order to bridge breaks, in between telephone ringing signals, for example.

Optical Alarm BS 606 A

It consists of a photo-flash lamp with sealed electronics and open connecting cables. The alarm is activated by connecting the supply voltage to the cables coming out of the flameproof and sealed enclosure.



Enclosure: Screw-in socket of brass with external thread Pg 16 – 42 or corresponding threads
M 22 x 1.5 – M 55 x 1.5

Dimensions: Approx.. Ø 58 x 100 mm without screw-in thread
External hexagon SW 60

Electrical Data

Input Voltage: 230 Volt
Frequency: 50/60 HZ
Nominal Current: 0.055 A
Nominal Rating: 12 VA

Acoustical Alarm „Flameproof“

Type BS 605 is an alarm which produces acoustical signals by means of an electronical two-tone siren and an extremely robust loudspeaker (IP 67) which is attached to the inside of the lid of the junction box.

The volume can be adjusted up to 107 dB with a rotary-type regulator.

The acoustical alarm BS 605 exists in 4 versions for different AC-voltages ranging from 110 to 1000 V. The type designations differ in a letter that is annexed to the main designation.

Except type BS 605 E, all acoustical alarms are activated by applying an additional control voltage of 5 to 15 V DC.

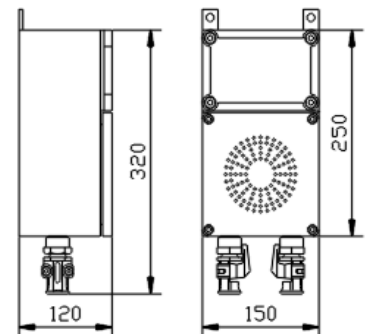
The current consumption of the control input end is 10 mA maximum.

On request, the controlling can be achieved by a telephone ringing signal, or it can be dropped altogether.

The special version BS 605 E is activated by applying a supply voltage.

Elektrical Data Acoustical Alarms:

Type	Input Voltage	Type of Current	Frequency	Amperage (approx.)	Wattage
BS 605 A	230 V	AC	50/60 Hz	0.065 A	14 VA
BS 605 B	500 V	AC	50 Hz	0.032 A	16 VA
BS 605 C	1000 V	AC	50 Hz	0.016 A	16 VA
BS 605 D	110 V	AC	50/60 Hz	0.145 A	16 VA
BS 605 E	12 V	DC	0 Hz	0.3 A	3,6 W



Acoustical Alarms „Intrinsically Safe“

In addition to the flameproof versions, also types BS 605 *I and BS 605 *IS are available. With them acoustical signals of increasing and decreasing audio frequencies are generated. Unlike type BS 605 *I, which requires applying of supply voltage, in type BS 605 *IS the supply voltage can stay connected permanently and the alarm is activated by an external potential-free contact (e. g. switches, relay-contacts, optocouplers).

	<u>BS 605 EI and 605EIS</u>	<u>BS 605 FI and BS 605 FIS</u>
Input Voltage:	12 V	24 V
Rated Current:	0.2 A	0.15 A
Nominal Rating:	2.4 W	3.6 W
Loudness Level of Siren:	approx. 97 dB	approx. 107 dB

When using external controlling a switching-off lag of 0 – 7 seconds can be adjusted in order to bridge breaks, in between telephone ringing signals, for example.