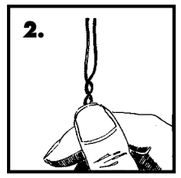
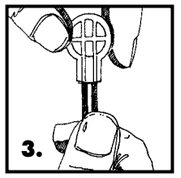
OPERATION

1. Cut the cable of the defective material and the cable of the new one

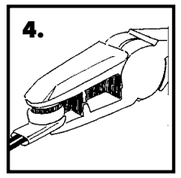


• Remove the cable sheath of 20 cm.

!!! Do not lay the wires bare

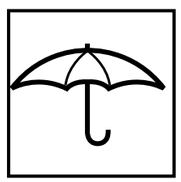


• Insert wires of same colour in the connector

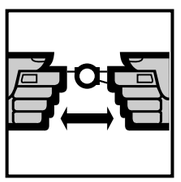


• Press the connector

U CONTACT
No unnecessary handling and no welding thanks to U contact



WATERTIGHT
Lubricated contact - perfect watertightness



SOLID
High insulation's resistance

FAST
Fast and reliable operation

TRANSPARENT
Easy connection check

42.0582-V1 05/07

BEA S.A – LIEGE Science Park – Allée des Noisetiers, 5 B-4031 Angleur – Tel. +32 4 361 65 65 – Fax +32 4 361 28 58 – info@bea.be – www.bea.be

SBK-111 INFRARED BARRIERS USER'S GUIDE

The SBK-111 infrared barrier is remarkably well adapted to modern requirements in the field of pedestrian protection for automatic doors. Increased use of microprocessor- controlled operating equipment, the establishment of new safety standards and the concern to offer pedestrians better protection have resulted in a product which is both simpler and more effective.

INTEGRATED AMPLIFICATION

The SBK-111 heads can be connected directly on to the majority of microprocessor-controlled operating equipment and amplification is built into the receiver's electronics.

MONITORING

In a certain number of applications the new European standards which came into force in 2001 stipulate intrinsic monitoring of safety equipment. The SBK-111 meets this requirement. Reaction time for triggering and cut-out is less than 5 milliseconds. The control microprocessor can interrupt power supply to the transmitter for a very short moment, wait for the disturbance to be perceived by the receiver and thereby diagnose functioning of the I/R barrier.

INSTALLATION FLEXIBILITY

The extremely small heads (11.5 mm x 9.5 mm cross-section) slide into most steel sections of automatic doors. Whatever the environmental conditions involved, the SBK-111 can be installed very near to the ground (20 cm) but still offers a good range (6m) and accepts misalignment (2 x 8°) of the receiver and transmitter.

RELIABILITY

The SBK-111 is designed to withstand practical conditions obtained in automatic door installations. For instance, it has complete protection from wrong connections and immunity from disturbances caused by ambient light (sunlight or artificial lighting). The SBK-111 is manufactured in accordance with the most stringent quality standards and testing of 100 % of the equipment at various levels makes it possible for BEA to offer a safe product with a full 2-year guarantee.

TECHNICAL SPECIFICATIONS

TRANSMITTER

Supply voltage	12 to 24 V DC –5/+20%
• Allowed ripple	1 Vpp at 24 V DC
• Polarity reversion	protected
Consumption	< 30 mA
Half-angle opening	8°
Frequency	833 pulses/sec.
Connections	dual conductor cable (Vcc and GND)
Weight	125 gr
Material	ABS
Housing tightness	IP65
Length of cable	6 m
Colour of cable	grey

KIT

Immunity	
• Sun light	100 000 LUX
• Incandescent lamp	33 000 LUX with an 8° angle
Range	min 0.3 m, max 5m
Height of installation	min 0.2 m above floor
Distance between beams	min 0.2 m (beams inverted)
Response time	< 5 ms (after switch on/off)
Temperature range	–25°C to +60°C

RECEIVER

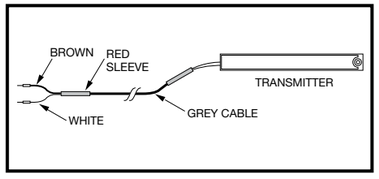
Supply voltage	12 to 24 V DC –5 / +20%
• Allowed ripple	1 Vpp at 24 V DC
• Polarity reversion	protected
Consumption	< 10 mA
Half-angle opening	8°
Indicator	red LED
Ouput	Transistor (see table below)
• Max voltage	30 V DC
• Max current	20 mA
• Voltage drop	2 V at 20 mA

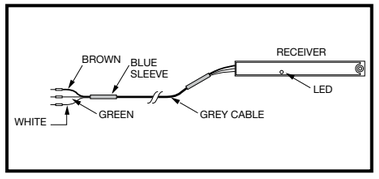
VERSION	OUTPUT VOLTAGE barrier established	barrier interrupted
SBK-111/NPN/normal	oV	*
SBK-111/NPN/reverse	*	oV
SBK-111/PNP/normal	Vcc (**)	*
SBK-111/PNP/reverse	*	Vcc (**)

* : Voltage determined by the electronic input circuit of the operating equipment.
** : Vcc = Supply voltage.

Connections	3 conductor cable
Weight	160 gr
Material	ABS
Housing tightness	IP65
Length of cable	6 m
Colour of cable	grey

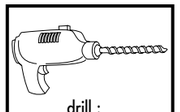
DESCRIPTION OF THE SENSOR



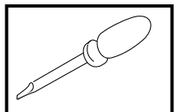


Screw M3
DIN 965 M3X6
steel / stainless

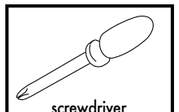
WORKING TOOLS



drill :
3.5 mm
7.5 mm



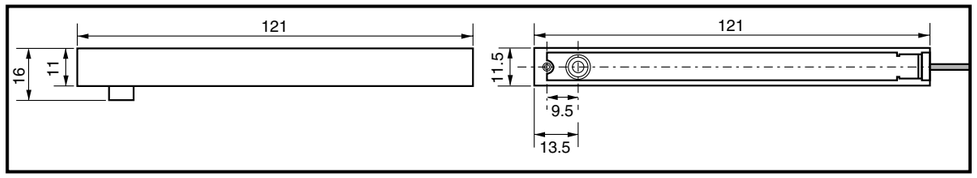
screwdriver (flat) :
5 mm



screwdriver
(cruciform)

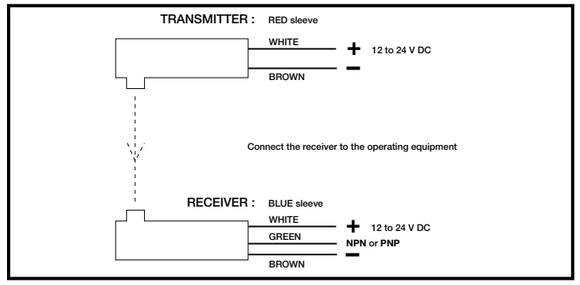
A HALMA COMPANY

DIMENSIONS

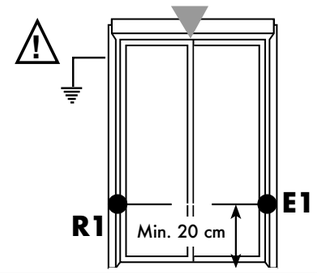
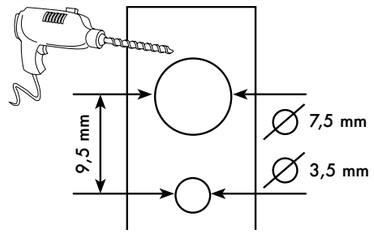
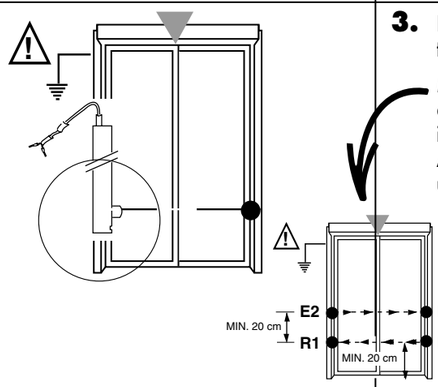
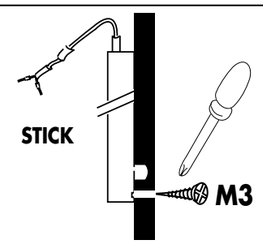


CONNECTION TO THE OPERATING EQUIPMENT

See "Application instructions" available on request.



INSTALLATION

BARRIERE SIMPLE		BARRIERE DOUBLE
1. Select 1 installation height. Mark the position (or stick on holder).		**1.** Select 2 installation heights. Ensure that the 2 barriers are at least 20 cm apart. Mark the position (or stick on holder).
2. Drill 1 hole of 7.5 mm and 1 hole of 3.5 mm into each of the door uprights.		**2.** Drill 2 holes of 7.5 mm and 2 holes of 3.5 mm into each of the door uprights.
3. Insert the heads and the cables in the profiles.		**3.** Insert the heads and the cables in the profiles. Make sure that the direction of beam propagation is inverted by sliding a transmitter AND a receiver into each upright. Check that there is a receiver facing each transmitter. Identify the wires of each transmitter-receiver pair.
4. Fasten the transmitter and receiver by sticking them with the double-sided adhesive provided and the M3 screw.		**4.** Fasten the transmitter and receiver by sticking them with the double-sided adhesive provided and the M3 screw.

PROCEDURE TO FOLLOW FOR CASES OF MALFUNCTION OR BREAKDOWN

Please note that the back of the receiver is fitted with a red LED, whereby operation of the barrier can be checked :

MODEL : NORMAL
- **when the LED is on, the barrier is established ;**
- **when the LED is off, the barrier is interrupted.**

MODEL : REVERSE
- **when the LED is off, the barrier is established ;**
- **when the LED is on, the barrier is interrupted.**

Before assembly is completed and this LED is visible, it is possible to use the LED's indications to adjust the angles and test the barrier function.

Steps to follow if the barrier(s) do(es) not function correctly :

1. Use a voltmeter to check whether the supply voltage (12 to 24 VDC (-5 % + 20 %)) in fact exists between the + and – terminals of each transmitter and each receiver.

2. Check the wiring and components as described in the application instructions.

3. Check the alignment of the transmitter with the receiver; a tolerance of 2 x 8° is normally possible; check that the range is not excessive (it cannot exceed 6 m).

4. Check that the lower barrier is not too near the ground (20 cm min.).

5. If 2 barriers are used check that they are over 20 cm apart.

6. If 2 barriers are used, check that they cross properly; there must be the transmitter of one barrier and the receiver of the other barrier in the same upright. Check that the wiring links a transmitter with the receiver facing it.

7. If checks 1 to 6 are positive, place a voltmeter between the NPN or the PNP and - terminals of the receiver. Check the displayed voltage according to following table :

	SBK-111/NPN/normal	SBK-111/NPN/reverse	SBK-111/PNP/normal	SBK-111/PNP/reverse
Barrier established	**± oV**	**± Vcc (*)**	**± Vcc (*)**	**± oV**
Barrier interrupted	**± Vcc (*)**	**± oV**	**± oV**	**± Vcc (*)**

***** : Vcc = Supply voltage

8. If test 7 is negative, the receiver or the transmitter has broken down.

9. To check the transmitter, it is practical to use a spare receiver as the test instrument. It is preferable to use an independent source of supply, for example, a 12 or 24 VDC battery connected between + and –; the NPN or PNP output may remain disconnected. Place the test receiver at a distance of about 30 cm in front of the transmitter to be tested; align it well and check whether the test receiver's red LED changes when it is disaligned ; if it does not, the transmitter has broken down, and must be replaced.

10. To check the receiver, it is practical to use a spare transmitter as the test instrument. It is preferable to use an independent source of supply, for example, a 12 or 24 VDC battery connected between + and –.
Before commencing the test, mask the barrier transmitter to be checked using black self-adhesive tape, for example. Place the test transmitter about 30 cm in front of the receiver to be tested; align it well and check whether the red LED of the receiver to be tested changes when the test transmitter is disaligned.
If the red LED on the receiver to be tested is not available, check the receiver as indicated in item 7 above.
If the receiver does not function with this test barrier it has broken down and must be replaced.

IN CASE OF BREAKDOWN, FOLLOWING MATERIAL IS AVAILABLE

(It allows a rapid and sure connection without drawing the cable out.)

KIT FOR REPAIRS	CONTENTS
SBK-111 / KRE	- 1 transmitter *- 3 connectors Scotchlok™/UY of 3m
SBK-111 / NPN / normal / KRR SBK-111 / NPN / reverse / KRR SBK-111 / PNP / normal / KRR SBK-111 / PNP / reverse / KRR	- 1 appropriate receiver *- 4 connectors Scotchlok™/UY of 3m