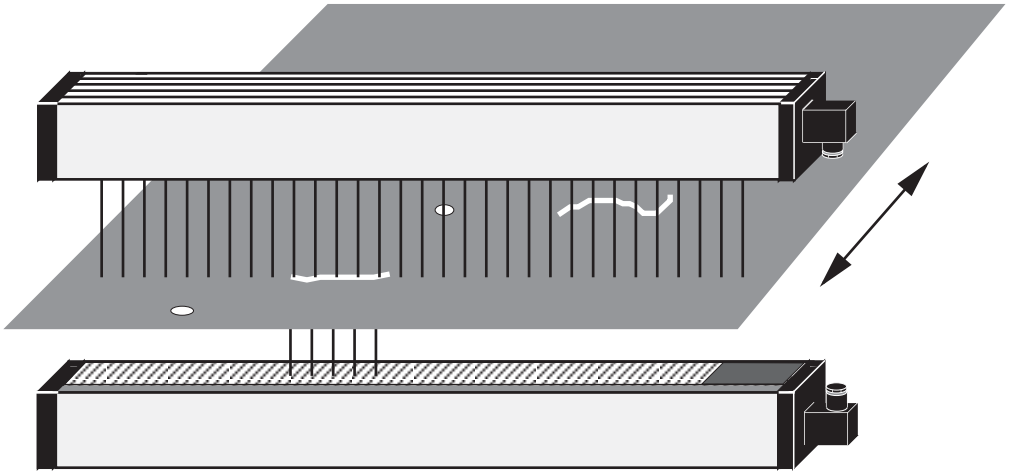
FIESSLER ELEKTRONIK

# Technical Manual

## Hole-Detector GLSL



*recognition of*

*holes*

*chinks*

*defective spots*

**Recognition of holes > 1mm**

**Control field up to 2,8m**

**Sensitivity adjustable**

**Compact design**

**High scanning speed**

DIN EN ISO 9001
Reg.Nr. 96007

CE

Fiessler Elektronik Kastellstr. 9
D-73734 Esslingen

Telefon: 0711 / 91 96 97-0 Internet: http://www.fiessler.de
Telefax: 0711 / 91 96 97-50 eMail: info@fiessler.de

**Funktion:**

Recognition of faults (holes, chinks) in metal- and plastic sheet, sheet stell band and paper web, veneer wood, etc.

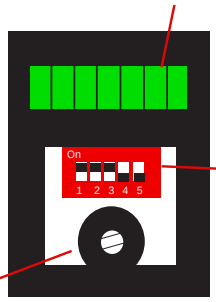
The device consists of the two components, light transmitter and light receiver.
The **transmitter** creates an invisible, modulated infrared light band.
The **receiver** consists of a number of optical modules, the signal amplifier and the integrating control unit.
The sensitifity is adjustable, therefore the device can recognize very small holes ( ≥1mm Ø ). In the case of a hole, the out put transistor respectively the out put relay picks up and the LED "Loch erkannt" (hole recognized) lights up.

**Adjustment possibilities:**

receiver:


Covers unscrew around hole size and operating mode to select

Link only for external hole size adjustment




Dipswitch for operating mode adjustment

Potentiometer for adjustment of the hole size:

Turn in the clockwise direction: smaller hole size is detected
turn against clockwise direction: larger hole size is detected

**Hole-Size:**

The hole-size is adjustable between ≥1mm Ø up to 15 m Ø by the potentiometer " Lochgröße " (hole size). The setting range diminish by the increasing light transmitting capacity of the to be controlled material.

**Mode Of Operation:**

**Static:**

Impervious to light material:
The mode of operation "statistic" is used for material which is impervious to light.
The ouput switches if there are holes larger than the adjusted hole size. The examination will be also if there is a stop (stillstand) of the material.

Transparent material:
By using the mode of operation "statistic" for material which is transparent, there must be used another sensitivity for every change of the light transmitting capacity, for recognizing the same hole-size.

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**Application:**

**Dynamical material adaptation:**

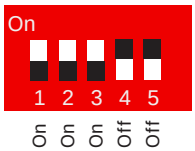
Transparent material:

This operation mode is **only** suited for transparent material.

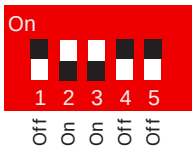
The device adapts itself automatically to the transparent material. Thereby the device recognize with the same adjusted hole-size the same size of holes also if the material has not the same light transmitting capacity (for example differnt kind of paper). The device messures and memorizes the light transmitting capacity of the moving material. This value is used like a reference for the sensitivity adjustment. Important by using this mode of operation is the movemnet of the to be controlled material. There is not examination by stillstand!

**intern hole size selection active:**

**static operating mode**

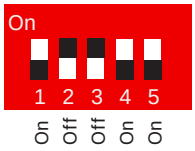



**dynamic operating mode**




**external hole size selection active:**

**static operating mode**




**dynamic operating mode**


**Rating :**

| | Light Transmitter | Light Receiver | |
|---|---|---|---|
| | | Transitor Output | Relay Output |
| **Supply Voltage** | 24V DC stabilized | 24V DC stabilized | |
| **Power Consumption Depending On The Lenght Of Installation** | 100 mA - 1,4 A | 50 mA - 200 mA | |
| **Light Source** | GaAlAs, infrared, 36 kHz | -- | -- |
| **Output** | -- | NPN / PNP<br>max. 100 mA<br>short circuit proof *1 | Relay<br>2 A/ 50 V, ind. free<br>0,2 s fall delay time |
| **Response Time** | -- | ca. 1ms | ca. 10ms |
| **Enclosure Rating** | IP 51 (opional IP 65) | | |
| **Ambient Temperature** | -10to +50 °C | | |

*1 by the plug-on relay extension LSRA (in the delivery program of the company Fiessler electronics) is at any time possible a modification of the outputs of transistor on relay output.

**Band Speed:**

The max. band speed depends on the min. hole-size.

The sensitivity takes off with increasing band speed. Band speeds are possible till about 30 m/s.

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**Output:**

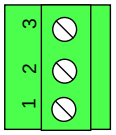
The standard type provides with transistor output (PNP and NPN). A relay output is optional available. The type with transistor output has a rise time of abou 1 ms. The type with relay output has a fall-delay time of about 200 ms.

**Installation:**

Movable key blocks on the backside of the housing enable a flexible installation.
The housings must be installed plane-paralle in a distance of about 50-100mm. Please observe that the profile remains untwisted.
The to be controlled material should be in the middle between transmitter and receiver.
The band has to cover the complete light field. On both sides the band must be 15 mm wider than the light field itself. If the band is smaller, the free space of the receiver must be covered.

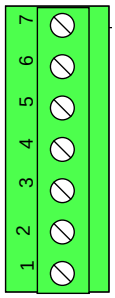
**Connection Diagram:**

**Transmitter**




: ----
: 0 V
: +24 V DC stab.

**Receiver**




| | Transistor output | Relay Output |
|---|---|---|
| | : +24 V DC stab. | : +24 V DC stab. |
| | : 0 V | : 0 V |
| | : NPN | : --- |
| | : PNP | : --- |
| | : --- | : |
| | : --- | : |
| | : --- | : |

**Size:**

| Type | Sensing Width mm | Overall length transmitter mm | Overall length receiver mm |
|---|---|---|---|
| GLSL 200 | 200 | 321 | 338 |
| GLSL 400 | 400 | 521 | 538 |
| GLSL 600 | 600 | 721 | 738 |
| GLSL 800 | 800 | 921 | 938 |
| GLSL 1000 | 1000 | 1121 | 1138 |
| GLSL 1200 | 1200 | 1321 | 1338 |
| GLSL 1400 | 1400 | 1521 | 1538 |
| GLSL 1600 | 1600 | 1721 | 1738 |
| GLSL 1800 | 1800 | 1921 | 1938 |
| GLSL 2000 | 2000 | 2121 | 2138 |
| GLSL 2200 | 2200 | 2321 | 2338 |
| GLSL 2400 | 2400 | 2521 | 2538 |
| GLSL 2600 | 2600 | 2721 | 2738 |
| GLSL 2800 | 2800 | 2921 | 2938 |

**Dimensions:**