



## Ultrasonic sensors UM18 Double Sheet Detector

UM18-20014



**Model Name** > [UM18-20014](#)  
**Part No.** > [6037880](#)

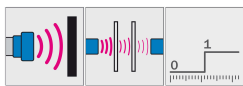


**At a glance**

- Double-sheet detection of foils, metal sheets and corrugated cardboard with F, N and G flute sizes
- Installation distance 37 mm ... 43 mm
- Automatic adjustment, plug and play operation
- Color-independent detection
- Two switching outputs for double and miss-fed sheets

**Your benefits**

- Increased quality and productivity through reliable double sheet detection
- Fast commissioning since sensor does not require calibration or teaching
- Reliable detection of transparent foils, various paper types and thin metal sheets provide application flexibility



**Performance**

Resolution:	Double sheets not completely glued together
Response time:	2.5 ms/6.5 ms
Ultrasonic frequency (typical):	400 kHz
Installation distance:	37 mm ... 43 mm
Blind zone:	7 mm from sender and receiver
Permissible angle deviation:	± 45 ° perpendicular to sheet
Detectable material:	Metal-laminated sheets and films: ≤0.4 mm, Paper grams per square meter: 20 ... 1,200 g/m <sup>2</sup> , Self-adhesive films, metal sheets: ≤0.3 mm, Corrugated cardboard: single wall F, N and G flute sizes:

<sup>1)</sup> Approximate values: should be qualified in the application

**Interfaces**

Output type <sup>1)</sup> , <sup>2)</sup> , <sup>3)</sup> :	2 x NPN (500 mA)
Off delay:	10 ms
Control input:	1 x

<sup>1)</sup> Output Q short-circuit protected <sup>2)</sup> Q<sub>1</sub>: switching output double sheet, Q<sub>2</sub>: switching output mis-fed sheet, normally closed <sup>3)</sup> NPN: HIGH ≤ 2 V/LOW = V<sub>S</sub>

**Mechanics/electronics**

Supply voltage $V_s$ <sup>1)</sup> :	DC 20 V ... 30 V
Power consumption <sup>2)</sup> :	$\leq 1.35$ W
Initialization time:	$< 300$ ms
Design:	Cylindrical, M18
Housing material:	nickel-plated brass
Electrical connection:	Connection cable: 5-pin, 2 m, PVC Sender: cable with connector, 2-pin, 1 m, PVC Receiver: cable with connector, 2-pin, 1.2 m, PVC
Indication:	1 x dual LED
Weight:	280 g <sup>3)</sup>

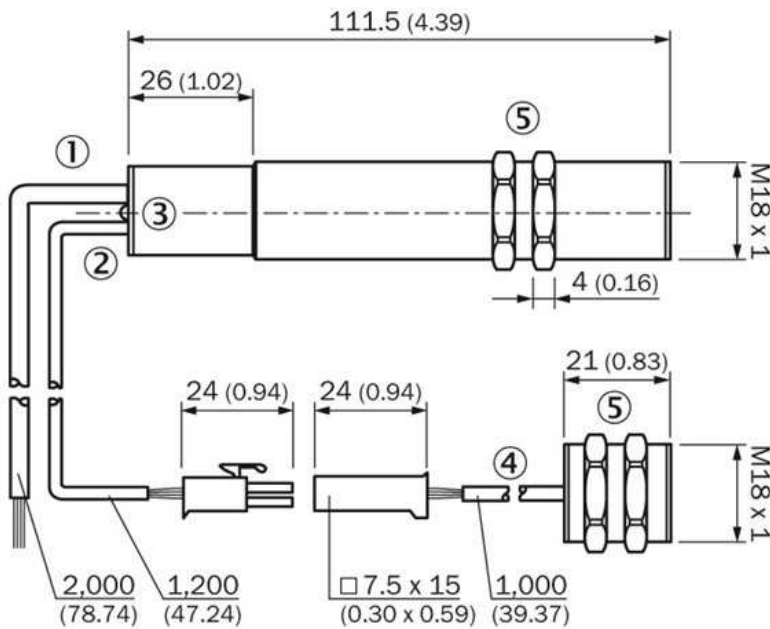
<sup>1)</sup> Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A <sup>2)</sup> Without load <sup>3)</sup> Incl. cable

### Ambient data

Enclosure rating:	IP 67 <sup>1)</sup>
Ambient temperature:	Operation: +5 ... +60 °C Storage: -40 ... +85 °C

<sup>1)</sup> Connector of connection cable between sender and receiver complies with IP 20

### Dimensional drawing

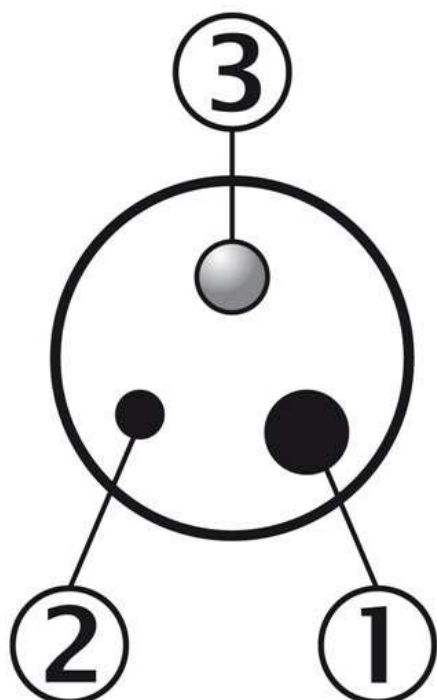


- [1] Connection cable: 5-pin, 2 m, PVC
- [2] Receiver: cable with connector, 2-pin, 1.2 m, PVC
- [3] Status indicator of the switching outputs
- [4] Sender: cable with connector, 2-pin, 1 m, PVC
- [5] Mounting nuts, SW 24 mm

All dimensions in mm (inch)

## Adjustments

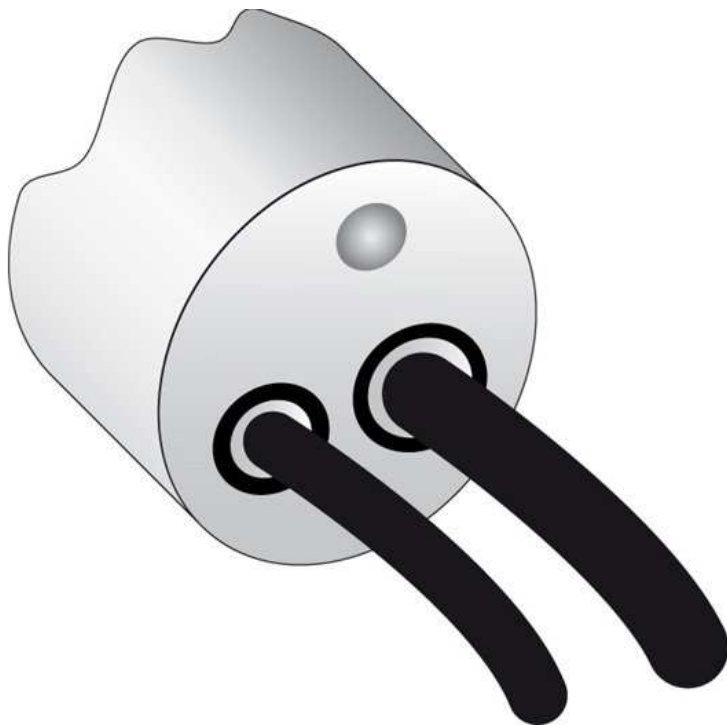
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- |1| Connection cable: 5-pin, 2 m, PVC
- |2| Receiver: cable with connector, 2-pin, 1.2 m, PVC
- |3| Status indicator of the switching outputs

## Connection type receiver

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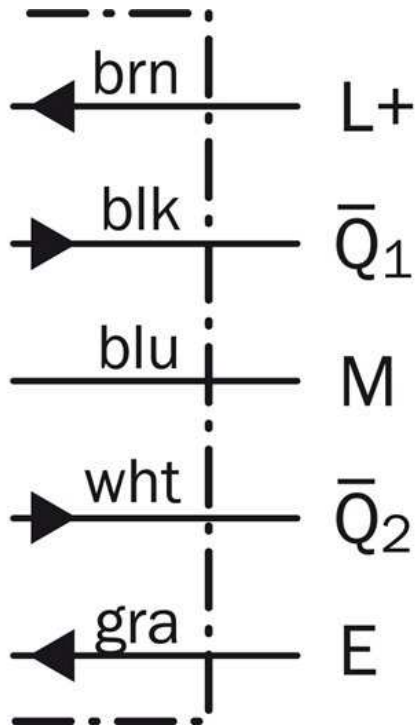
Connection type sender

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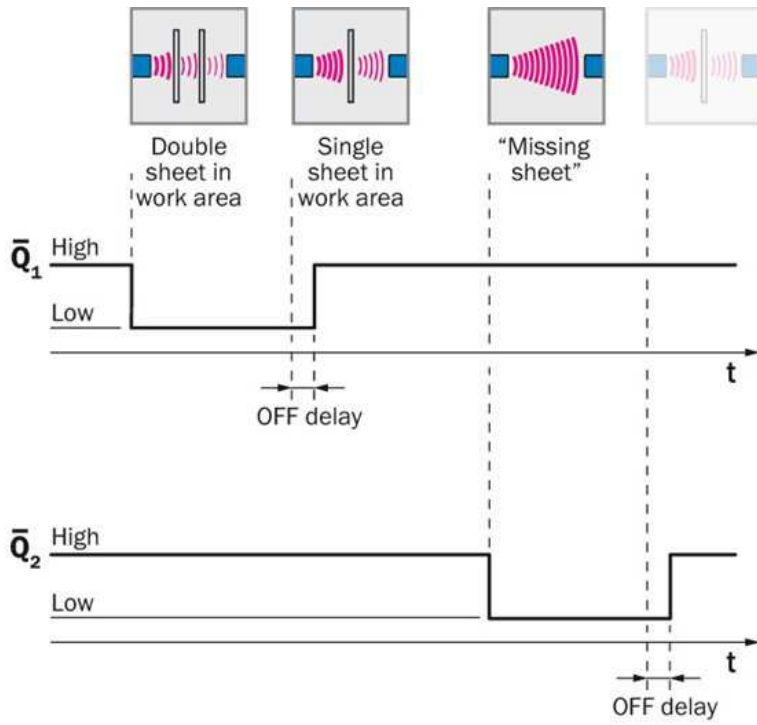


Connection diagram receiver

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# Characteristic curve



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