

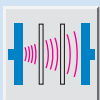
Ultrasonic double-sheet control UM18, the specialist for double layers – with smart vision.

UM18 FOR DOUBLE-SHEET CONTROL



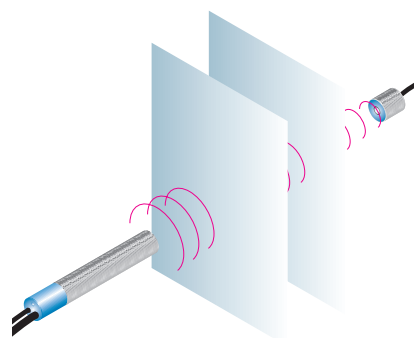
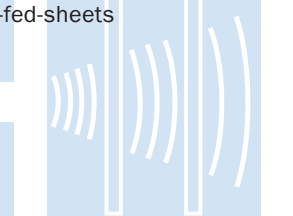
When ultrasonic is used to detect two thin sheets, one of which is immediately behind the other, e.g. paper, film or thin sheet material, separate sender and receiver units are required. The continuously transmitted sonic waves packages cause vibrations in the first sheet which it then transmits via the intervening air to the second sheet, which also begins to vibrate. The receiver unit is able to detect these weakened signals via the air.

The sender and receiver units of the UM18 are only 40 mm apart and work effectively without having to be parametered. They adjust automatically to a wide spectrum of different materials.



UM18 sheet for sheet

- Double-sheet check for film, paper, corrugated cardboard and fine metal sheet
- Automatic adjustment
Alignment and Teach-in unnecessary
- Compact design
- Plug and Play
- 2 PNP outputs for double- and mis-fed-sheets



A sensor that does not stop at the surface

Detection of two superimposed sheets of material is no easy matter.

The UM18 can find out whether one or two sheets of film, paper, metal or cardboard lie between its sender and receiver. Which other sensor is able to look beyond the surface?

No need to tell it what to do


The UM18 adjusts to its task itself. Fully automatically. Film down to 0.4 mm in thickness, paper of 1200 g/m² or metal sheet of 0.3 mm thickness – almost anything is detected.

Small and versatile

The sender and receiver of the UM18 are located in an 18 mm threaded tube, and, because they are mounted only 40 mm apart, can be accommodated in the most confined spaces.

With regard to alignment to the sheets, the UM18 is undemanding. It puts up with as much as 45 degrees deviation from the vertical.

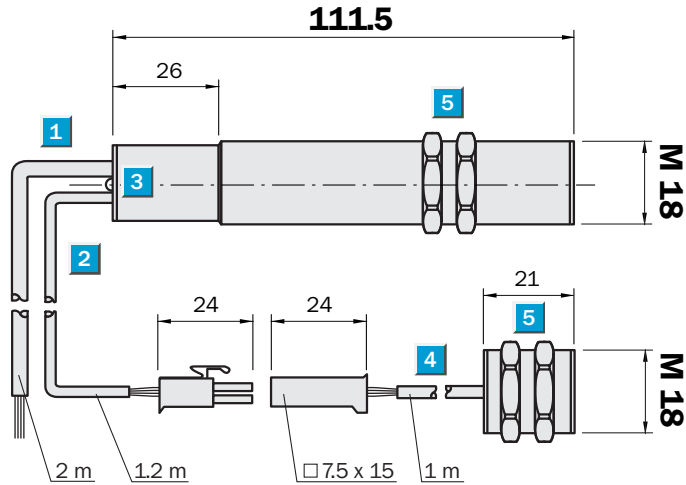
UM18 Ultrasonic double-sheet detector

 **Operational area**
40 mm ± 3 mm

Ultrasonic double-sheet detector

- Double-sheet detection of foils, metal sheets and ultra-fine corrugated cardboards
- Automatic adjustment, no Teach-in necessary
- Colour-independent
- Plug & Play
- 2 PNP outputs for double- and mis-fed-sheets

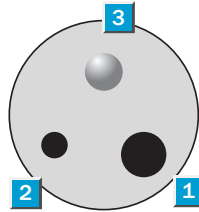
Dimensional drawing



Adjustments possible

UM18-20012

- 1 Connection cable 2 m (receiver)
- 2 Connection cable 1.2 m, 2-pin sender and receiver
- 3 2-color LED indicator, receiver
- 4 Connection cable 1 m, 2-pin sender and receiver
- 5 Fastening nuts, width across 24 mm

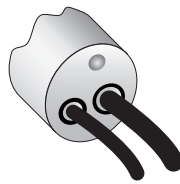


Connection types

UM18-20012*)

Receiver

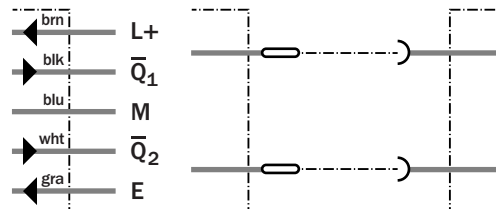
Sender



5 x 0.25 mm²

2-pin

2-pin



*) Sender/receiver pair:
Individual components on request



Accessories

Mounting systems

Technical data	UM18-	20012											
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Installation distance

sender – receiver	40 mm ± 3 mm	
Blind zone	7 mm, each time before sender and receiver	
Permissible angle deviation	± 45° perpendicular to sheet	
Ultrasonic frequency	400 kHz	
Resolution	Double-sheets not completely glued together	

Operational area

Paper grams per square meter	20 ... 1200 g/m ²	
Metal-laminated sheets and films	≤ 0.4 mm thickness	
Self-adhesive films, metal sheets	≤ 0.3 mm	
Ultra-fine corrugated cardboard		

Supply voltage V_s	20 ... 30 V DC ¹⁾	
Ripple	± 10 %	

Current consumption ²⁾	≤ 45 mA	
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Double-sheet switching/Q₁ ³⁾	Q ₁ : PNP, V _s -2 V, I _{max} = 500 mA	
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Mis-fed-sheet switching/output/Q₂ ³⁾	Q ₂ : PNP, V _s -2 V, I _{max} = 500 mA	
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Response time ⁴⁾	2.5 ms or 6.5 ms	
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Off delay	10 ms	
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V _s at control unit ⁴⁾	Response time 6.5 ms: V _s > 9 V DC Response time 2.5 ms: V _s < 5 V DC	
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Standby delay	300 ms	
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Connection type	Cable PVC, 2 m; 5 x 0.25 mm ²	
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Sender cable ⁵⁾	PVC, 1.2 m with 2-pin plug	
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Receiver cable ⁵⁾	PVC, 1 m with 2-pin plug	
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Enclosure rating	IP 65	
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Ambient temperature	Operation +5 °C ... +60 °C Storage -40 °C ... +85 °C	
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Weight	280 g	
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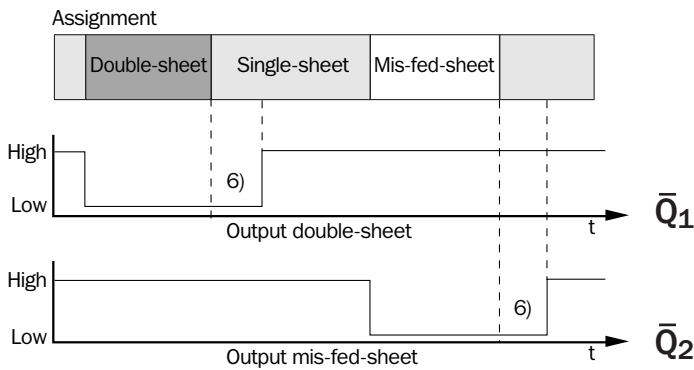
Housing material	Nickel-plated brass	
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- ¹⁾ Limit values
- ²⁾ Without load
- ³⁾ Outputs short-circuit protected, Opener; no switching hysteresis
- ⁴⁾ If the control line is laid against a ground, the response time is 2.5 ms. If the control line is laid against L+, the response time is 6.5 ms.
- ⁵⁾ Not reverse-polarity protected

Measurement ranges

Order information

Type	Order no.
UM18-20012	6025670



⁶⁾ Off delay

Dimensional drawings and order informations

SENSICK screw-in system M12, 5-pin, enclosure rating IP 67

- Contact assignment according to EN 50 044
- DC coding

Pin assignment

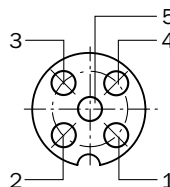
Pin 1 = brown

Pin 2 = white

Pin 3 = blue

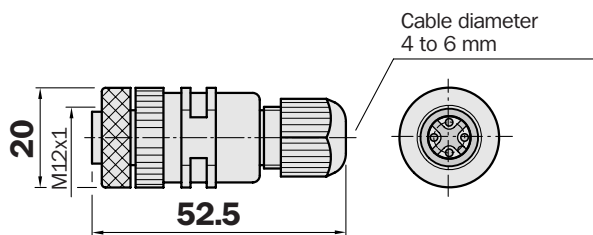
Pin 4 = black

Pin 5 = grey



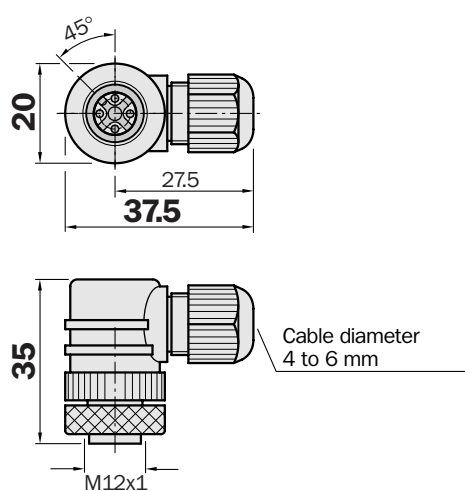
Female connector M12, 5-pin, straight

Type	Order no.	Contacts
DOS-1205-G	6009719	5



Female connector M12, 5-pin, right angle

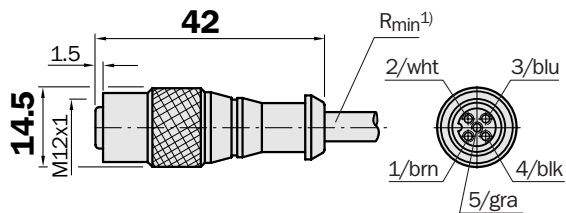
Type	Order no.	Contacts
DOS-1205-W	6009720	5



Female connector M12, 5-pin, straight

Cable diameter 6 mm, 5 x 0.25 mm², sheath PVC

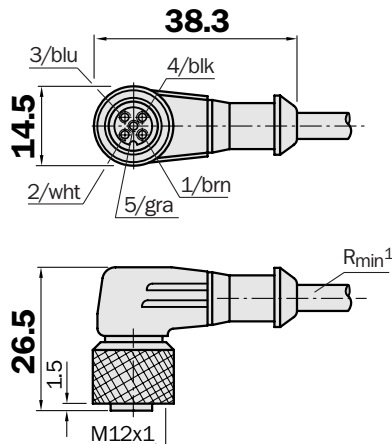
Type	Order no.	Contacts	Cable length
DOL-1205-G02M	6008899	5	2 m
DOL-1205-G05M	6009868	5	5 m
DOL-1205-G10M	6010544	5	10 m



Female connector M12, 5-pin, right angle

Cable diameter 6 mm, 5 x 0.25 mm², sheath PVC

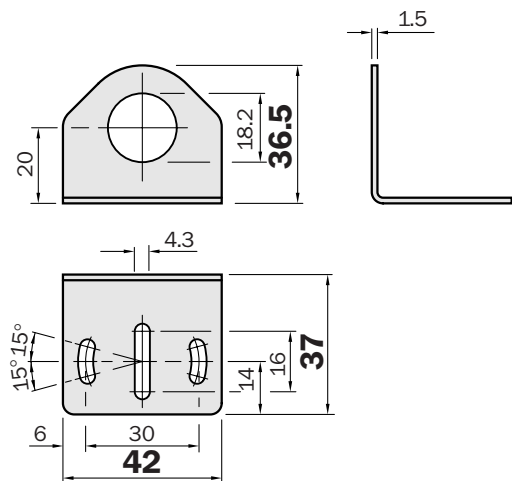
Type	Order no.	Contacts	Cable length
DOL-1205-W02M	6008900	5	2 m
DOL-1205-W05M	6009869	5	5 m
DOL-1205-W10M	6010542	5	10 m



Dimensional drawings and order informations

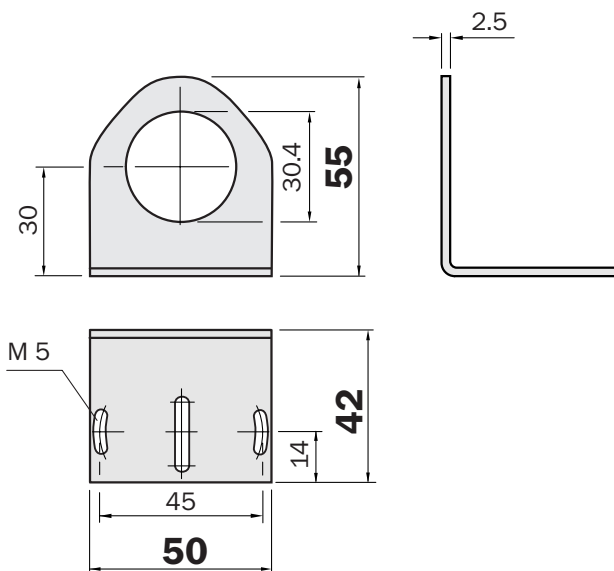
Mounting bracket for UM18

Type	Order no.
BEF-WN-M18	5308446



Mounting bracket for UM30

Type	Order no.
BEF-WN-M30	5308445



Diverter plate for UM30 to 1300 mm operating scanning range

Type	Order no.
USP-UM30	5312916

