



### Model Number

**ML10-8-H-3,2-IR/115**

Background suppression sensor  
with fixed cable

### Features

- Ultra-small design in fiber optic format
- High-precision background suppression for safe recording, regardless of object color
- Precision through optimum switching accuracy
- Suitable for high-precision positioning tasks
- Safe function in case of dirt
- Full metal thread mounting
- Operation with Signal converter SU100

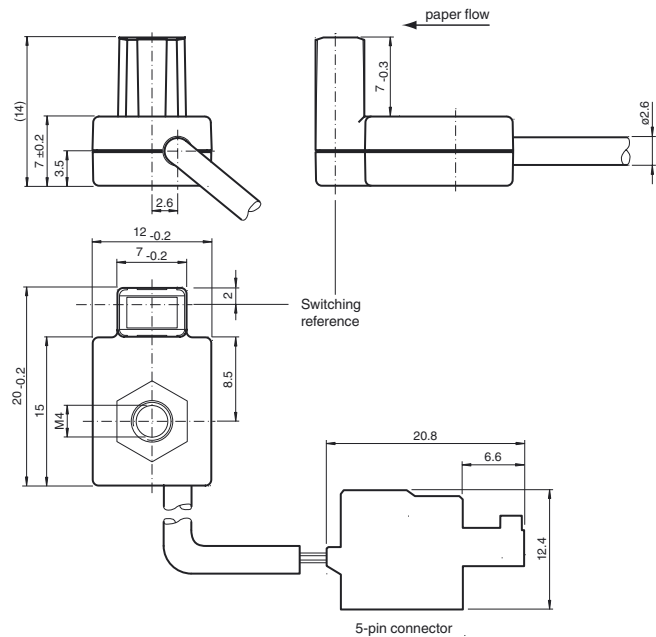
### Product information

The ML10 sensor is a miniature fiber-like sensor with real background suppression (BGS).

The sensor features high switching accuracy, color independence, dust resistance which ideally suits the sensor to precisely detect edges of sheet material for positioning purposes. Detectable sheet material ranges from all colors of sheet material such as paper, plastic, metal, wafer and PCB boards.

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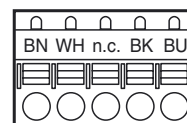
### Dimensions



### Electrical connection

BN	1
WH	2
n.c.	3
BK	4
BU	5

### Pinout



**Technical data****General specifications**

Detection range	0.9 ... 2.2 mm
Detection range max.	0 ... 4 mm
Background suppression	starts from 4 mm
Light source	IREL
Light type	modulated infrared light , 870 nm
Black/White difference (6 %/90 %)	< 10 %
Switching accuracy, Black 6 % / White 90 %	< 0.5 mm
Switching repeat accuracy, White 90 %	< 0.1 mm
Diameter of the light spot	2 mm at sensor range 2.2 mm
Angle of divergence	approx. 24 °

**Functional safety related parameters**

MTTF <sub>d</sub>	1180 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	0 %

**Electrical specifications**

Operating voltage	U <sub>B</sub>	see accessory: signal transformer
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**Output**

Signal output	see accessory: signal transformer
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**Ambient conditions**

Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Storage temperature	-20 ... 75 °C (-4 ... 167 °F)

**Mechanical specifications**

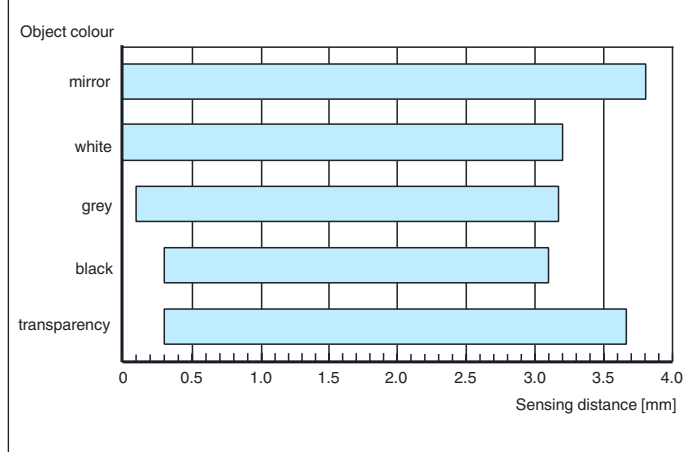
Degree of protection	IP65
Connection	2 m cable with 5-pin connector
Material	
Housing	PC/ABS
Optical face	glass
Threaded bushings	brass
Cable	PVC
Cable	
Sheath diameter	2.6 mm
Color	black
Mass	30 g

**Compliance with standards and directives**

Directive conformity	
EMC Directive 2004/108/EC	EN 60947-5-2:2007
Standard conformity	
Product standard	EN 60947-5-2:2007 IEC 60947-5-2:2007
Shock and impact resistance	IEC / EN 60068. half-sine, 40 g in each X, Y and Z directions
Vibration resistance	IEC / EN 60068-2-6. Sinus. 10 -2000 Hz, 10 g in each X, Y and Z directions

**Approvals and certificates**

UL approval	cULus Recognized, Class 2 Power Source
CCC approval	CCC approval / marking not required for products rated ≤36 V

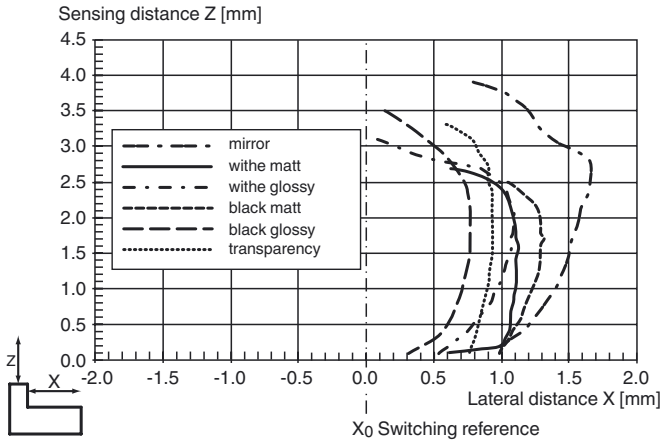
**Detection ranges****Accessories****SU100/25/145/165**

Control unit for ML10 series miniature sensors

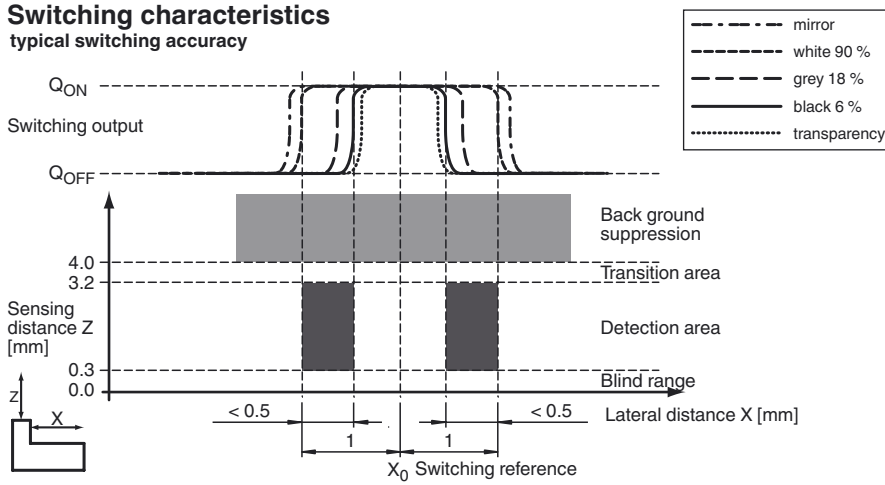
Other suitable accessories can be found at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

Curves/Diagrams

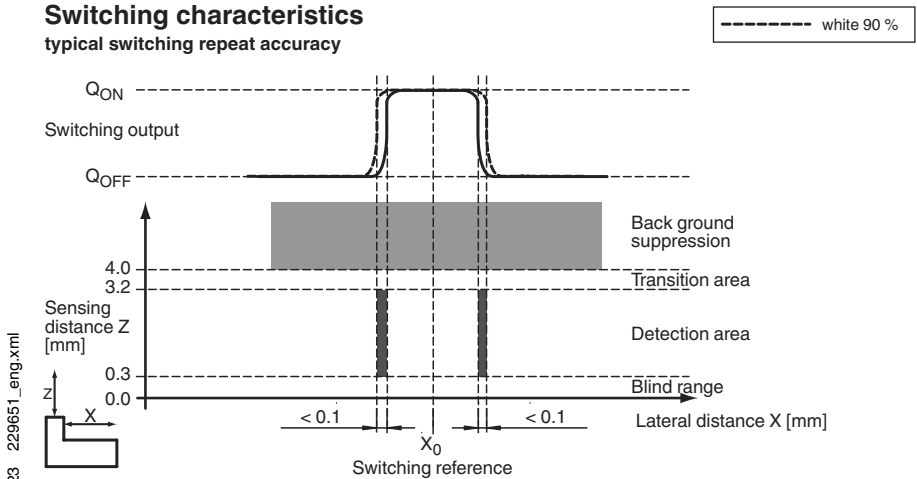
Characteristic response curve



Switching characteristics  
typical switching accuracy



Switching characteristics  
typical switching repeat accuracy

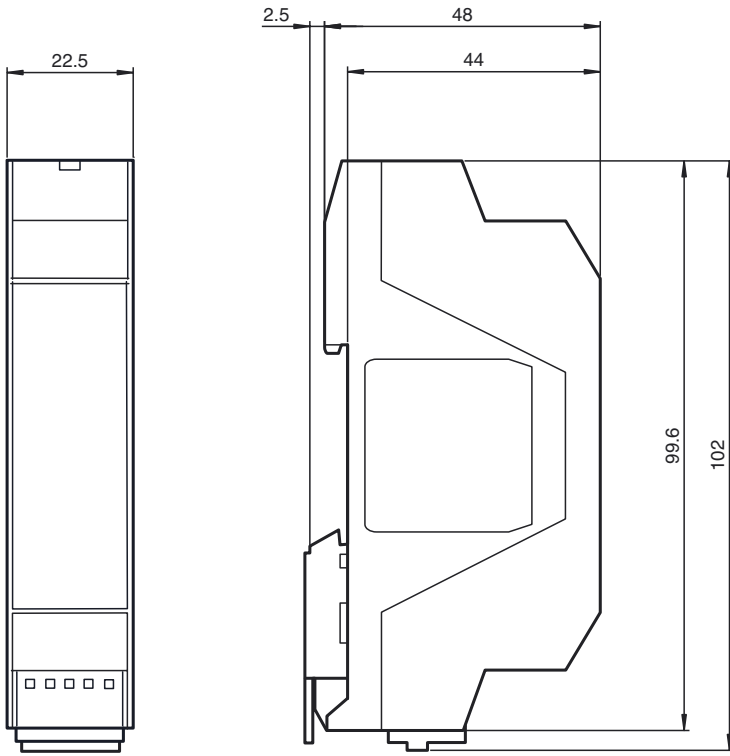


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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

**Dimensions of the control unit**

**Control unit SU100/25/145/165**



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