

# Sensors and Systems

Edition 3.0



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**pf** PEPPERL+FUCHS

**Technical Data**

For detailed data and product description refer to the data sheets at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

<b>Model Number</b>	<b>UBE1000-18GM40-SE2-V1</b>
Sensing range	15 ... 1000 mm
Transducer frequency	approx. 255 kHz
Operating voltage	10 ... 30 V DC , ripple 10 % <sub>SS</sub>
No-load supply current	≤ 20 mA
Output type	PNP, NO
Rated operational current	200 mA , short-circuit/overload protected
Switching frequency	≤ 100 Hz
Input type	1 program input free air path: -U <sub>B</sub> ... +1 V, object: +6 V ... +U <sub>B</sub> input impedance: > 4,7 kΩ program pulse: ≥ 1 s
LED green	Power on
LED yellow	switching state
LED red	error, object uncertain
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Material	
Housing	brass, nickel-plated
Transducer	epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT
Protection degree	IP67
Connection type	Device connector M12 x 1 , 4-pin



**Approvals and Certificates**

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose

**Dimensions**

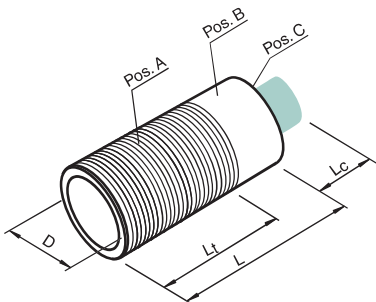
Length L [mm]	49.2
Diameter D [mm]	18
Thread length l <sub>t</sub> [mm]	24.5
Connector area l <sub>c</sub> [mm]	10
LED position	Pos. C

**Accessories** This and more accessories can be found in chapter 3.5 from page 673  
See pages from 972 ... for cordsets    See pages 1068 ... for mounting aids

<b>UB-PROG2</b>	Programming unit
<b>OMH-04</b>	Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm
<b>BF 18</b>	Mounting flange, 18 mm
<b>BF 18-F</b>	Mounting flange with dead stop, 18 mm
<b>BF 5-30</b>	Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm
<b>V1-G-2M-PVC</b>	Cable socket, M12, 4-pin, PVC cable
<b>V1-W-2M-PUR</b>	Cable socket, M12, 4-pin, PUR cable

**Properties**

- Ø18 mm housing
- 1000 mm sensing range
- DC, 3-wire switching output
- Connector version



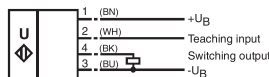
**Electrical Connection**



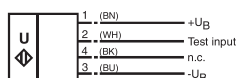
UBE1000-18GM40-SE2-V1

Standard symbol/Connection:  
(version E2, pnp)

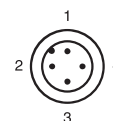
Receiver:



Emitter:



Core colours in accordance with EN 60947-5-2.



Wire colors in accordance with EN 60947-5-2

- 1 | BN (brown)
- 2 | WH (white)
- 3 | BU (blue)
- 4 | BK (black)

Date of issue: 04/08/2015





### Properties

- Ø18 mm high grade steel housing
- 300 mm sensing range
- DC, 3-wire switching output
- Connector version

### Technical Data

For detailed data and product description refer to the data sheets at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

<b>Model Number</b>	<b>UBEC300-18GH40-SE2-V1</b>
Sensing range	100 ... 300 mm
Transducer frequency	approx. 255 kHz
Operating voltage	10 ... 30 V DC, ripple 10 % <sub>SS</sub>
No-load supply current	≤ 20 mA
Output type	PNP, NO
Rated operational current	200 mA, short-circuit/overload protected
Switching frequency	≤ 100 Hz
Input type	1 program input [receiver] switch point 1: -U <sub>B</sub> ... +1 V, switch point 2: +6 V ... +U <sub>B</sub> 1 test input [emitter] emitter deactivated: +6 V ... +U <sub>B</sub>
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Material	
Housing	Stainless steel 1.4435 / AISI 316L O-ring for cover sealing: EPDM
Transducer	PTFE (diaphragm surface)
Protection degree	IP68 / IP69K
Connection type	Device connector M12 x 1, 4-pin



### Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose

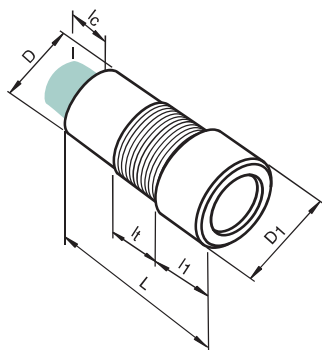
### Dimensions

Length L [mm]	43
Diameter D [mm]	18
Head diameter D <sub>1</sub> [mm]	21
Thread length l <sub>t</sub> [mm]	15
Head length l <sub>1</sub> [mm]	13
Connector area l <sub>c</sub> [mm]	10

### Accessories

This and more accessories can be found in chapter 3.5 from page 673  
See pages from 972 ... for cordsets See pages 1068 ... for mounting aids

<b>UB-PROG2</b>	Programming unit
<b>V1-GU-BK2M-PVC</b>	Cable socket, M12 Ultra-Lock, 4-pin, PVC cable
<b>V1-WU-BK2M-PVC</b>	Cable socket, M12 Ultra-Lock, 4-pin, PVC cable



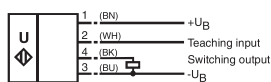
### Electrical Connection



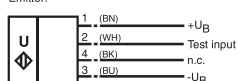
UBEC300-18GH40-SE2-V1

Standard symbol/Connection:  
(version E2, pnp)

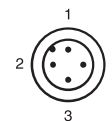
Receiver:



Emitter:



Core colours in accordance with EN 60947-5-2.



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Date of issue 04/08/2015

3  
2  
Ultrasonic Sensors, Thru-Beam Sensors, cylindrical



### Properties

- Ø18 mm housing, angled head
- 1000 mm sensing range
- DC, 3-wire switching output
- Connector version

### Technical Data

For detailed data and product description refer to the data sheets at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

<b>Model Number</b>	<b>UBE1000-18GM40A-SE2-V1</b>
Sensing range	15 ... 1000 mm
Transducer frequency	approx. 255 kHz
Operating voltage	10 ... 30 V DC , ripple 10 % <sub>SS</sub>
No-load supply current	≤ 20 mA
Output type	PNP, NO
Rated operational current	200 mA , short-circuit/overload protected
Switching frequency	≤ 100 Hz
Input type	1 program input free air path: -U <sub>B</sub> ... +1 V, object: +6 V ... +U <sub>B</sub> input impedance: > 4,7 kΩ program pulse: ≥ 1 s
LED green	Power on
LED yellow	switching state
LED red	error, object uncertain
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
<b>Material</b>	
Housing	brass, nickel-plated
Transducer	epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT
Protection degree	IP67
Connection type	Device connector M12 x 1 , 4-pin



### Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose

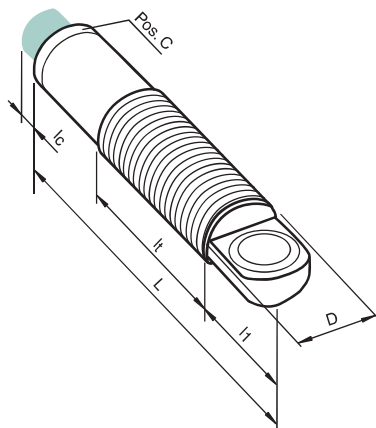
### Dimensions

Length L [mm]	57.7
Diameter D [mm]	18
Transducer length l <sub>t</sub> [mm]	18.5
Thread length l <sub>t</sub> [mm]	24.5
Connector area l <sub>c</sub> [mm]	10
LED position	Pos. C

### Accessories

This and more accessories can be found in chapter 3.5 from page 673  
See pages from 972 ... for cordsets    See pages 1068 ... for mounting aids

<b>UB-PROG2</b>	Programming unit
<b>OMH-04</b>	Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm
<b>BF 18</b>	Mounting flange, 18 mm
<b>BF 18-F</b>	Mounting flange with dead stop, 18 mm
<b>BF 5-30</b>	Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm
<b>V1-G-2M-PVC</b>	Cable socket, M12, 4-pin, PVC cable
<b>V1-W-2M-PUR</b>	Cable socket, M12, 4-pin, PUR cable



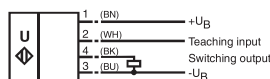
### Electrical Connection



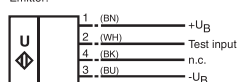
UBE1000-18GM40A-SE2-V1

Standard symbol/Connection:  
(version E2, pnp)

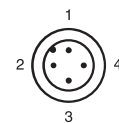
Receiver:



Emitter:



Core colours in accordance with EN 60947-5-2.



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)



## Properties

- Ø18 mm high grade steel housing, hygienic design
- 1000 mm sensing range
- DC, 3-wire switching output
- Cable version

## Technical Data

For detailed data and product description refer to the data sheets at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

### General Data

Sensing range	15 ... 1000 mm
Transducer frequency	170 kHz
Operating voltage	10 ... 30 V DC , ripple 10 % <sub>SS</sub>
No-load supply current	≤ 20 mA
Output type	1 switch output E2, PNP, NO
Rated operational current	200 mA , short-circuit/overload protected
Switching frequency	≤ 100 Hz
Input type	1 program input free air path: -U <sub>B</sub> ... +1 V, object: +6 V ... +U <sub>B</sub>
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Material	
Housing	Stainless steel 1.4435 / AISI 316L
Transducer	Stainless steel 1.4435 / AISI 316L
Protection degree	IP68 / IP69K

Model Number		UME1000-18H-SE2-FA	UME1000-18H-SE2-FB	UME1000-18GH-SE2-FB
LED green	Power on		●	●
LED yellow	Receiver: switching state, uncertain object, Teach-In		●	●
LED red	Transducer: test input		●	●
Connection type	cable PUR , 2 m	●		
	cable PVC , 2 m		●	●

### Approvals and Certificates

UL approval	cULus Listed, General Purpose		●	●
CSA approval	cCSAus Listed, General Purpose		●	●

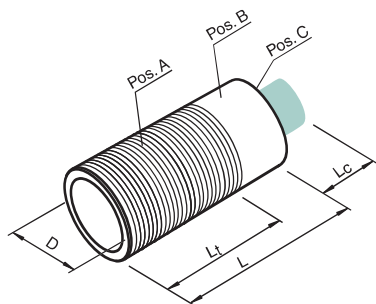
### Dimensions

Length L [mm]	55	66,7
Diameter D [mm]		18
Thread length l <sub>t</sub> [mm]	0	32
Connector area l <sub>c</sub> [mm]		0
LED position	-	Pos. C

## Accessories

This and more accessories can be found in chapter 3.5 from page 673  
See pages from 972 ... for cordsets    See pages 1068 ... for mounting aids

<b>BF 18</b>	Mounting flange, 18 mm
<b>BF 18-F</b>	Mounting flange with dead stop, 18 mm
<b>MH-18H-01-FA</b>	



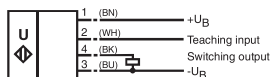
## Electrical Connection



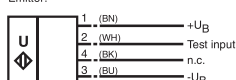
UME1000-18H-SE2-FA  
UME1000-18GH-SE2-FB  
UME1000-18H-SE2-FB

Standard symbol/Connection:  
(version E2, pnp)

Receiver:



Emitter:





### Properties

- Ø30 mm housing
- 4 m sensing range
- DC, 4-wire complementary switching outputs
- Connector version

### Technical Data

For detailed data and product description refer to the data sheets at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

<b>Model Number</b>	<b>UBE4000-30GM-SA2-V15</b>
Sensing range	0 ... 4000 mm , distance emitter-receiver 500 mm ... 4000 mm
Transducer frequency	85 kHz
Operating voltage	18 ... 30 V DC , ripple 10 % <sub>SS</sub>
No-load supply current	35 mA emitter 25 mA receiver
Output type	2 switch outputs PNP, normally open/closed (complementary)
Rated operational current	200 mA
Switching frequency	≤ 15 Hz
LED green	alignment aid OFF: no ultrasonic signal flashing: uncertain area ON: positive reception
LED yellow	switching state
Ambient temperature	0 ... 60 °C (32 ... 140 °F)
Material	
Housing	nickel plated brass; plastic components: PBT
Protection degree	IP65
Connection type	Device connector M12 x 1 , 5-pin



### Approvals and Certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose

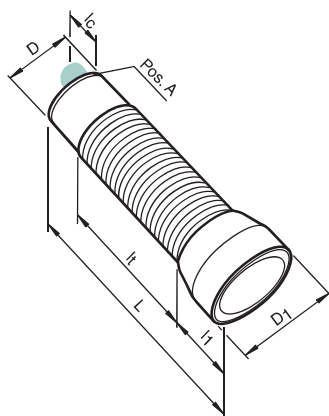
### Dimensions

Length L [mm]	90
Diameter D [mm]	30
Transducer diameter D <sub>1</sub> [mm]	40
Transducer length l <sub>1</sub> [mm]	25
Thread length l <sub>t</sub> [mm]	43
Connector area l <sub>c</sub> [mm]	10
LED position	Pos. A

### Accessories

This and more accessories can be found in chapter 3.5 from page 673  
See pages from 972 ... for cordsets    See pages 1068 ... for mounting aids

<b>FP100</b>	Remote potentiometer
<b>BF 30</b>	Mounting flange, 30 mm
<b>BF 5-30</b>	Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm
<b>V1-G-2M-PVC</b>	Cable socket, M12, 4-pin, PVC cable
<b>V1-W-2M-PVC</b>	Cable socket, M12, 4-pin, PVC cable



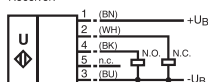
### Electrical Connection



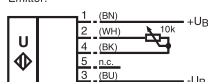
UBE4000-30GM-SA2-V15

Standard symbol/Connection:  
(version A2, pnp)

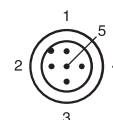
Receiver:



Emitter:



Core colours in accordance with EN 60947-5-2.



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)