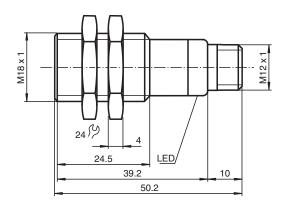


Single head system



Dimensions



Technical Data

General specifications	
Sensing range	35 300 mm
Adjustment range	50 300 mm
Dead band	0 35 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 390 kHz
Response delay	approx. 50 ms
Indicators/operating means	
LED green	Power on

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

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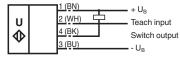
UB300-18GM40-E4-V1

LED yellow indication of the switching state flashing: program function object detected LED red sold red: Error red. flashing: program function, object not detected Electrical specifications Up Operating voltage Up No-load supply ournent b Input Iprogram input operating voltage Input type 1 or 30 V DC , ripple 10 %ss No-load supply ournent b Input type 1 program input operating distance 1: -Us +1 V, operating distance 2: +6 V +Un input impedance: -4 / X CX program publes: 2: 1 s Output Isset operating output 54, NPN, NO/NC, programmable Rated operating current Ip 20 mA, short-circuit/overload protected Default setting Switch point A1: 50 mm Switch point A2: 300 mm Voltage drop Ua Range hysteresis H 1 % of the set operating distance Tamperature influence ± 1.5 % of full-scale value Compliance with standards and directives Standards EN IEC 60947-55-2020 EC C approval Colus Listed, Class 2 Power Source CCC approval CDC (-13 158 °F) Motiont conditions Ambient conditions Motional Material Hereinsolut Ornection type Connector plug M12 x 1 , 4	Technical Data		
LED red solid red: Error red, flashing: program function object detected Electrical specifications red, flashing: program function, object not detected Operating voltage Vm 1030 V DC, ripple 10 %ss. No-load supply current Vm 5 20 mA Input Input type I program input operating distance 1: Us +1 V. operating distance 2: +6 V +Us input imput impedance: > 4,7 KΩ program pulse: ≥ 1 s Output I switching output E4, NPN, NO/NC, programmable Rated operating current Vm 200 mA, short-circuit/overload protected Default setting Switch point A1: 50 mm Switch point A2: 300 mm Voltage drop Ug ≤ 3 V Repeat accuracy ≤ 1 % Switch point A1: 50 mm Switch point A2: 300 mm I Switch point A1: 50 mm Switch point A2: 300 mm Voltage drop Ug ≤ 3 V Repeat accuracy ≤ 1 % Switch point A1: 50 mm Switch point A2: 300 mm I Switch point A1: 50 mm Switch point A2: 300 mm Voltage drop Ug ≤ 1 % Switch point A1: 50 mm Switch point A2: 300 mm I Switch point A1: 50 mm Switch point A2: 300 mm Switch point A1: 50 mm Switch point A1: 50 mm Switch point A1: 50 mm Switch poi			
Interestred, flashing: program function, object not detectedElectrical specifications10 30 V DC , ripple 10 %ssNo-load supply current $l_0 \le 20$ mAInputiporaring distance 1: $U_0 + 1$ V, operating distance 2: $+6$ V $+U_0$ Input typeiprogram input operating distance 1: $U_0 + 1$ V, operating distance 2: $+6$ V $+U_0$ Outputoperating distance 1: $U_0 + 1$ V, operating distance 2: $+6$ V $+U_0$ Outputiprogram input operating distance 1: $U_0 + 1$ V, operating distance 2: $+6$ V $+U_0$ Output type1 switching output E4, NPN, NO/NC; programmablePated operating current l_0 Voltage drop U_a Voltage drop U_a Switch point A2: 300 mmVoltage drop U_a Switch fing frequecyff\$13 HzRange hysteresisHH1% of the set operating distanceTemperature influence $= 15.\%$ of full-scale valueCompliance with standards and directivesStandard conformityEN EEC 60947-5-2:200StandardsEN EC 60947-5-2:2019ApprovalcULus Listed, Class 2 Power SourceCCC approvalcCC approval (-40 185 °F)Storege temperature $-25 70 °C$ (-13 158 °F)Storege temperature -2	LED yellow		
Operating voltageUB1030 V DC, ripple 10 %essNo-load supply currentIp $\leq 20 \text{ mA}$ Inputipportant distance 1: Ua +1 V, operating distance 2: +6 V +Ua input impedance: $\Rightarrow 4 \times 7 \text{ KQ}$ program pulse; $\geq 1 \text{ s}$ Output1 switching output E4, NPN, NOINC, programmableRated operating currentIp200 mA, short-circuit/overload protectedDefault settingSwitch point A1: 50 mm Switch point A2: 300 mmVoltage dropUg $\leq 3 V$ Repeat accuracy $\leq 13 \text{ Hz}$ Range hysteresisH1 % of the set operating distanceStandardsEN IEC 60947-5-2:2020 IEC 60947-5-2:2020StandardsEN IEC 60947-5-2:2020 IEC 60947-5-2:2019Approvals and certificatesCCC approval / marking not required for products rated $\leq 36 V$ Ambient conditionsAmbient conditionsMechanical BeschilcationsIP67Mechanical BeschilcationsMetanialDefault setingStandardIP67MetanialMetanialMetanialStandardsE0 Connactor plug M12 x 1, 4-pinDegree of protectionIP67MaterialMaterialLengthMassDimensionsLength40 mm	LED red		
No-load supply current I_0 $\leq 20 \text{ mA}$ InputInput supply current $I_program input operating distance 1: U_B, +1 V, operating distance 2: +6 V, +U_Binput impedance: > 4,7 KQ program pulse; \geq 1 sOutputOutput type1 switching output E4, NPN, NO/NC, programmableRated operating currentI_0Q_0\leq 3VRepeat accuracy\leq 1 %Switch point A1: 50 mm Switch point A2: 300 mmVoltage dropU_d\leq 3VRepeat accuracy\leq 1 %Switching frequencyff\leq 13 HzRange hysteresisHH1 % of the set operating distanceTemperature influenceENIEC 60947-5-2:2020IEC 60947-5-2:2019Approvals and certificatesENIEC 60947-5-2:2020IEC 60947-5-2:2019U. approvalUL approvalCCC approvalcUcus Listed, Class 2 Power SourceCCC approvalMeint temperature-25 70 °C (-13 158 °F)Storage temperature40 85 °C (-40 185 °F)Storage temperatureMechanical specificationsConnector plug M12 x 1 , 4-pinIPG7Degree of protectionIpDegree of protectionIpMaterialImportant Connector Plug M12 x 1 , 4-pinMaseDegree of protectionIp brass, nickel-platedepoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBTMaseDegree of protectionIp brass, nickel-platedepoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBTMaseDefinencionsIp plateHamHousingIm$	Electrical specifications		
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Switching frequencyf≤ 13 HzRange hysteresisH1 % of the set operating distanceTemperature influence± 1.5 % of full-scale valueCompliance with standards and directivesStandard conformityIIIStandardsEN IEC 60947-5-2:2020 IEC 60947-5-2:2019Approvals and certificatesEN IEC 60947-5-2:2020 IEC 60947-5-2:2019UL approvalcULus Listed, Class 2 Power SourceCCC approvalCCC approval / marking not required for products rated ≤36 VAmbient temperature-25 70 °C (-13 158 °F)Storage temperature-40 85 °C (-40 185 °F)Mechanical specificationsConnector plug M12 x 1, 4-pinDegree of protectionIIP 7Material-Housingbrass, nickel-platedTransducerepoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBTMass25 gDimensions25 g	Voltage drop	U _d	≤ 3 V
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Approvals and certificates UL approval cULus Listed, Class 2 Power Source CCC approval CCC approval / marking not required for products rated ≤36 V Ambient conditions CCC approval / marking not required for products rated ≤36 V Ambient temperature -25 70 °C (-13 158 °F) Storage temperature -40 85 °C (-40 185 °F) Storage temperature -40 85 °C (-40 185 °F) Connection type Connector plug M12 x 1 , 4-pin Degree of protection IP67 Material uses, nickel-plated Transducer epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT Mass 25 g Dimensions 25 g Length 40 mm	Standard conformity		
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Ambient conditionsAmbient temperature-25 70 °C (-13 158 °F)Storage temperature-40 85 °C (-40 185 °F)Mechanical specificationsConnection typeConnector plug M12 x 1 , 4-pinDegree of protection10MaterialHousingbrass, nickel-platedTransducerepoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBTMass25 gDimensionsLength40 mm	UL approval		cULus Listed, Class 2 Power Source
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Storage temperature -40 85 °C (-40 185 °F) Mechanical specifications Connector plug M12 x 1 , 4-pin Connection type Connector plug M12 x 1 , 4-pin Degree of protection IP67 Material IP67 Housing brass, nickel-plated Transducer epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT Mass 25 g Dimensions 40 mm	Ambient conditions		
Mechanical specifications Connection type Connector plug M12 x 1, 4-pin Degree of protection IP67 Material brass, nickel-plated Transducer epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT Mass 25 g Dimensions 40 mm	Ambient temperature		-25 70 °C (-13 158 °F)
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Degree of protection IP67 Material IP67 Housing brass, nickel-plated Transducer epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT Mass 25 g Dimensions 40 mm	Mechanical specifications		
Material Material Housing brass, nickel-plated Transducer epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT Mass 25 g Dimensions 40 mm	Connection type		Connector plug M12 x 1 , 4-pin
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Transducerepoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBTMass25 gDimensions40 mm	Material		
Mass 25 g Dimensions 40 mm	Housing		brass, nickel-plated
Dimensions Length 40 mm	Transducer		epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT
Dimensions Length 40 mm	Mass		25 g
	Dimensions		
Diameter 18 mm	Length		40 mm
	Diameter		18 mm

Connection Assignment

Standard symbol/Connections:

(version E4, npn)



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

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

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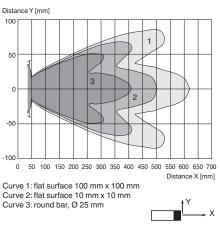
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Connection Assignment

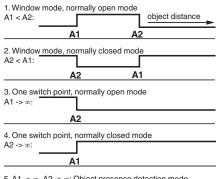


Characteristic Curve

Characteristic response curve



Programmable output modes



5. A1 -> ∞ , A2 -> ∞ : Object presence detection mode Object detected: Switch output closed No object detected: Switch output open

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



Teach-In

Adjusting the switching points

The ultrasonic sensor features a switch output with two teachable switching points. These are set by applying the supply voltage $-U_B$ or $+U_B$ to the TEACH-IN input. The supply voltage must be applied to the TEACH-IN input for at least 1 s. LEDs indicate whether the sensor has recognised the target during the TEACH-IN procedure. Switching point A1 is taught with $-U_B$, A2 with $+U_B$.

Five different output functions can be set

- 1. Window mode, normally-open function
- 2. Window mode, normally-closed function
- 3. one switching point, normally-open function
- 4. one switching point, normally-closed function
- 5. Detection of object presence

TEACH-IN window mode, normally-open function

- Set target to near switching point
- TEACH-IN switching point A1 with -U_B
- Set target to far switching point
- TEACH-IN switching point A2 with +U_B

TEACH-IN window mode, normally-closed function

- Set target to near switching point
- TEACH-IN switching point A2 with +U_B
- Set target to far switching point
- TEACH-IN switching point A1 with -U_B

TEACH-IN switching point, normally-open function

- Set target to near switching point
- TEACH-IN switching point A2 with +U_B
- Cover sensor with hand or remove all objects from sensing range
- TEACH-IN switching point A1 with -U_B

TEACH-IN switching point, normally-closed function

- Set target to near switching point
- TEACH-IN switching point A1 with -U_B
- Cover sensor with hand or remove all objects from sensing range
- TEACH-IN switching point A2 with +U_B

TEACH-IN detection of objects presence

- Cover sensor with hand or remove all objects from sensing range
- TEACH-IN switching point A1 with -U_B
- TEACH-IN switching point A2 with +U_B

LED Displays

Displays in dependence on operating mode	Red LED	Yellow LED
TEACH-IN switching point:		
Object detected	off	flashes
No object detected	flashes	off
Object uncertain (TEACH-IN invalid)	On	off
Normal operation	off	Switching state
Fault	on	Previous state

Installation Conditions

If the sensor is installed at places, where the environment temperature can fall below 0 °C, for the sensors fixation, one of the mounting flanges BF18, BF18-F or BF 5-30 must be used.

In case of direct mounting of the sensor in a through hole using the steel nuts, it has to be fixed at the middle of the housing thread. If a fixation at the front end of the threaded housing is required, plastic nuts with centering ring (accessories) must be used.

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