

# IM18-05BUS-ZU0

IMW

**INDUCTIVE PROXIMITY SENSORS** 



#### INDUCTIVE PROXIMITY SENSORS



## Ordering information

Туре	part no.
IM18-05BUS-ZU0	7902122

Included in delivery: BEF-MU-M18 (1)

Other models and accessories → www.sick.com/IMW

Illustration may differ



#### Detailed technical data

#### **Features**

Housing	Metric
Housing	Standard design
Thread size	M18 x 1
Diameter	Ø 18 mm
Sensing range S <sub>n</sub>	5 mm
Safe sensing range S <sub>a</sub>	4.05 mm
Installation type	Flush
Switching frequency	25 Hz <sup>1)</sup> 50 Hz <sup>2)</sup>
Connection type	Cable, 2-wire, 2 m
Output function	NO
Electrical wiring	AC/DC 2-wire
Enclosure rating	IP67 <sup>3)</sup>
Items supplied	Mounting nut, brass, nickel-plated (2x)

<sup>&</sup>lt;sup>1)</sup> AC.

<sup>&</sup>lt;sup>2)</sup> DC.

<sup>3)</sup> According to EN 60529.

#### Mechanics/electronics

Voltage drop         ≤ 6.5 V.AC, ≤ 6 V.DC           Time delay before availability         ≤ 8 ms           Hysteresis         1 % 15 %           Reproducibility         2 10 % 10 21 31 31 31 31 31 31 31 31 31 31 31 31 31	Supply voltage	20 V AC/DC 250 V AC/DC
Time delay before availability  Hysteresis  1 % 15 %  Reproducibility  ≤ 10 % <sup>11</sup> 21 21 31  Temperature drift (of S <sub>1</sub> )  ± 10 %  EMC  As per EN 55011, class B  Continuous current I <sub>a</sub> ≤ 350 mA <sup>4)</sup> ≤ 250 mA <sup>5)</sup> ≤ 250 mA <sup>5)</sup> ≤ 100 mA <sup>6)</sup> Off-state current  ≤ 2.5 mA (AC 250 V) ≤ 1.3 mA (AC 110 V) ≤ 0.8 mA (DC 24 V)  Minimum load current  ≥ 5 mA  Short-time withstand current  2.2 A <sup>7)</sup> Cable material  PUR  Conductor size  0.5 mm²  Short-circuit protection  8)  Power-up pulse protection  8)  Short-circuit protection  8)  Ambient operating temperature  -25 °C +80 °C  Housing material  Plastic, PBT  Housing material  Plastic, PBT  Housing length  15 8 mm  Tightening torque, max.  Protection class  II  Rated insulation voitage U <sub>1</sub> Usage category  AC-140 <sup>9)</sup> CC-13 <sup>10)</sup> Contamination rating		
Hysteresis  Reproducibility  ≤ 10 % <sup>1)</sup> 2) 3)  Temperature drift (of S <sub>2</sub> )  ± 10 %  EMC  As per EN 55011, class B  Continuous current I <sub>a</sub> ≤ 350 mA <sup>4)</sup> ≤ 250 mA <sup>5)</sup> ≤ 100 mA <sup>5)</sup> Short-time withstand current  ≥ 5 mA  Short-time withstand current  2.2 A <sup>7)</sup> Cable material  PUR  Conductor size Short-circuit protection  8)  Power-up pulse protection  ✓ Shock and vibration resistance 30 g, 11 ms / 10 55 Hz, 1 mm  Ambient operating temperature  -25 °C +80 °C  Housing material  Brass, nickel-plated  Sensing face material  Housing length  Brass, nickel-plated  Sensing face material  Housing length  58 mm  Tightening torque, max.  ≤ 35 Nm  Protection class  II  Rated insulation voltage U <sub>1</sub> 250 ∨ AC  Usage category  AC-140 <sup>9)</sup> DC-13 <sup>10)</sup> Contamination rating		,
Reproducibility		
Temperature drift (of S <sub>1</sub> )		
EMC As per EN 55011, class B  Continuous current I <sub>a</sub> ≤ 350 mA <sup>51</sup> ≤ 250 mA <sup>51</sup> ≤ 100 mA <sup>61</sup> Off-state current ≤ 2.5 mA (AC 250 V) ≤ 1.3 mA (AC 110 V) ≤ 0.8 mA (DC 24 V)  Minimum load current ≥ 5 mA  Short-time withstand current 2.2 A <sup>71</sup> Cable material PUR  Conductor size 0.5 mm²  Short-circuit protection 8  Power-up pulse protection ✓  Shock and vibration resistance 30 g, 11 ms / 10 55 Hz, 1 mm  Ambient operating temperature −25 °C +80 °C  Housing material Brass, nickel-plated  Beasing face material Plastic, PBT  Housing length 80 mm  Thread length 58 mm  Tightening torque, max. ≤ 35 Nm  Protection class II  Rated insulation voltage U <sub>1</sub> 250 V AC  Usage category AC 140 <sup>61</sup> DC 13 <sup>100</sup> Contamination rating		
EMC Continuous current I₂		3)
Continuous current I <sub>a</sub>	Temperature drift (of S <sub>r</sub> )	± 10 %
\$250 mA <sup>5)</sup>     \$100 mA <sup>6)</sup>     \$100 mA <sup>6)</sup>     \$2.5 mA (AC 250 V)     \$1.3 mA (AC 210 V)     \$0.8 mA (DC 24 V)     \$1.3 mA (AC 210 V)     \$0.8 mA (DC 24 V)     \$1.3 mA (AC 210 V)     \$0.8 mA (DC 24 V)     \$1.3 mA (AC 210 V)     \$0.8 mA (DC 24 V)     \$1.3 mA (AC 210 V)     \$0.8 mA (DC 24 V)     \$1.3 mA (AC 210 V)	EMC	As per EN 55011, class B
≤ 100 mA <sup>6)</sup>   Off-state current	Continuous current I <sub>a</sub>	
Off-state current       ≤ 2.5 mA (AC 250 V)         ≤ 1.3 mA (AC 110 V)       ≤ 0.8 mA (DC 24 V)         Minimum load current       ≥ 5 mA         Short-time withstand current       2.2 A 7)         Cable material       PUR         Conductor size       0.5 mm²         Short-circuit protection       ✓         Power-up pulse protection       ✓         Shock and vibration resistance       30 g, 11 ms / 10 55 Hz, 1 mm         Ambient operating temperature       −25 °C +80 °C         Housing material       Brass, nickel-plated         Sensing face material       Plastic, PBT         Housing length       80 mm         Thread length       58 mm         Tightening torque, max.       ≤ 35 Nm         Protection class       II         Rated insulation voltage U₁       250 V AC         Usage category       AC:140 °!         DC:13 ¹¹0)       DC:13 ¹¹0)         Contamination rating       3		
\$ 1.3 mA (AC 110 V) \$ 0.8 mA (DC 24 V)  Nort-time withstand current  \$ 5 mA  \$ 5 mA  \$ 2.2 A 7)  Cable material  Conductor size  0.5 mm²  Short-circuit protection  8)  Power-up pulse protection  Shock and vibration resistance  30 g, 11 ms / 10 55 Hz, 1 mm  Ambient operating temperature  -25 °C +80 °C  Housing material  Brass, nickel-plated  Sensing face material  Plastic, PBT  Housing length  Thread length  58 mm  Tightening torque, max.  Protection class  Rated insulation voltage U₁  Usage category  AC-140 9) DC-13 10)  Contamination rating  \$ 3		
Minimum load current  Short-time withstand current  2.2 A <sup>77</sup> Cable material  PUR  Conductor size  0.5 mm²  Short-circuit protection  Power-up pulse protection  Shock and vibration resistance  Ambient operating temperature  -25 °C +80 °C  Housing material  Brass, nickel-plated  Sensing face material  Plastic, PBT  Housing length  Thread length  Tightening torque, max.  Protection class  II  Rated insulation voltage U₁  Usage category  AC.140 <sup>9)</sup> DC.13 <sup>10)</sup> Contamination rating  3 3	UTI-STATE CURRENT	
Short-time withstand current Cable material PUR Conductor size 0.5 mm² Short-circuit protection  Power-up pulse protection  Shock and vibration resistance 30 g, 11 ms / 10 55 Hz, 1 mm Ambient operating temperature −25 °C +80 °C Housing material Brass, nickel-plated Sensing face material Plastic, PBT Housing length 80 mm Thread length Tightening torque, max.  Protection class  II Rated insulation voltage U₁ Usage category AC-140 ® DC-13 ¹0⟩ Contamination rating  2.2 A 7)  8.  PUR 2.2 A 7)  8.  8.  8.  8.  4.  4.  5.  8.  8.  8.  8.  8.  8.  8.  8.  8		≤ 0.8 mA (DC 24 V)
Cable material  Conductor size  Short-circuit protection  8)  Power-up pulse protection  Shock and vibration resistance  Ambient operating temperature  -25 °C +80 °C  Housing material  Brass, nickel-plated  Sensing face material  Plastic, PBT  Housing length  80 mm  Thread length  18 mm  1 ightening torque, max.  Protection class  II  Rated insulation voltage U <sub>i</sub> Usage category  AC-140 9) DC-13 10)  Contamination rating	Minimum load current	≥ 5 mA
Conductor size 0.5 mm²   Short-circuit protection ✓   Power-up pulse protection ✓   Shock and vibration resistance 30 g, 11 ms / 10 55 Hz, 1 mm   Ambient operating temperature -25 °C +80 °C   Housing material Brass, nickel-plated   Sensing face material Plastic, PBT   Housing length 80 mm   Thread length 58 mm   Tightening torque, max. ≤ 35 Nm   Protection class II   Rated insulation voltage U₁ 250 V AC   Usage category AC·140 °) DC·13 ¹0)   Contamination rating 3	Short-time withstand current	2.2 A <sup>7)</sup>
Short-circuit protection  Power-up pulse protection  Shock and vibration resistance  30 g, 11 ms / 10 55 Hz, 1 mm  -25 °C +80 °C  Housing material  Brass, nickel-plated  Sensing face material  Plastic, PBT  Housing length  80 mm  Thread length  58 mm  Tightening torque, max.  Protection class  II  Rated insulation voltage Ui  250 V AC  Usage category  AC-140 9) DC-13 10)  Contamination rating  3	Cable material	PUR
Power-up pulse protection  Shock and vibration resistance  30 g, 11 ms / 10 55 Hz, 1 mm  -25 °C +80 °C  Housing material  Brass, nickel-plated  Sensing face material  Plastic, PBT  Housing length  Thread length  58 mm  Tightening torque, max.  Protection class  II  Rated insulation voltage U <sub>i</sub> Usage category  Contamination rating  3 3 9, 11 ms / 10 55 Hz, 1 mm  -25 °C +80 °C  Brass, nickel-plated  Plastic, PBT  80 mm  58 mm  2 35 Nm  Contamination rating	Conductor size	0.5 mm <sup>2</sup>
Shock and vibration resistance 30 g, 11 ms / 10 55 Hz, 1 mm   Ambient operating temperature -25 °C +80 °C   Housing material Brass, nickel-plated   Sensing face material Plastic, PBT   Housing length 80 mm   Thread length 58 mm   Tightening torque, max. ≤ 35 Nm   Protection class II   Rated insulation voltage Ui 250 V AC   Usage category AC-140 9) DC-13 10)   Contamination rating 3	Short-circuit protection	8)
Ambient operating temperature       -25 °C +80 °C         Housing material       Brass, nickel-plated         Sensing face material       Plastic, PBT         Housing length       80 mm         Thread length       58 mm         Tightening torque, max.       ≤ 35 Nm         Protection class       II         Rated insulation voltage U₁       250 V AC         Usage category       AC-140 <sup>9)</sup> DC-13 <sup>10)</sup> Contamination rating       3	Power-up pulse protection	✓
Housing material  Sensing face material  Plastic, PBT  Housing length  80 mm  Thread length  58 mm  Tightening torque, max.  Protection class  II  Rated insulation voltage U <sub>i</sub> Usage category  AC-140 9) DC-13 10)  Contamination rating  Brass, nickel-plated  Plastic, PBT  80 mm  58 mm  40 mm  58 mm  40 mm  58 mm  40 mm  59 mm  60 mm  6	Shock and vibration resistance	30 g, 11 ms / 10 55 Hz, 1 mm
Sensing face material Plastic, PBT   Housing length 80 mm   Thread length 58 mm   Tightening torque, max. ≤ 35 Nm   Protection class II   Rated insulation voltage Ui 250 V AC   Usage category AC-140 9) DC-13 10)   Contamination rating 3	Ambient operating temperature	-25 °C +80 °C
Housing length 80 mm  Thread length 58 mm  Tightening torque, max. ≤ 35 Nm  Protection class II  Rated insulation voltage U <sub>i</sub> 250 V AC  Usage category AC-140 <sup>9)</sup> DC-13 <sup>10)</sup> Contamination rating 3	Housing material	Brass, nickel-plated
Thread length 58 mm  Tightening torque, max. ≤ 35 Nm  Protection class II  Rated insulation voltage U <sub>i</sub> 250 V AC  Usage category AC-140 <sup>9)</sup> DC-13 <sup>10)</sup> Contamination rating 3	Sensing face material	Plastic, PBT
Tightening torque, max. ≤ 35 Nm  Protection class  II  Rated insulation voltage U <sub>i</sub> Usage category  AC-140 <sup>9)</sup> DC-13 <sup>10)</sup> Contamination rating  3	Housing length	80 mm
Protection class  Rated insulation voltage U <sub>i</sub> Usage category  AC-140 9) DC-13 10)  Contamination rating  3	Thread length	58 mm
Rated insulation voltage U <sub>i</sub> 250 V AC  Usage category AC-140 <sup>9)</sup> DC-13 <sup>10)</sup> Contamination rating 3	Tightening torque, max.	≤ 35 Nm
Usage category  AC-140 <sup>9)</sup> DC-13 <sup>10)</sup> Contamination rating  3	Protection class	II
DC-13 <sup>10)</sup> Contamination rating 3	Rated insulation voltage U <sub>i</sub>	250 V AC
	Usage category	
Rated impulse withstand voltage 4 kV	Contamination rating	3
	Rated impulse withstand voltage	4 kV

 $<sup>^{1)}</sup>$  Supply voltage  $\mathrm{U}_{\mathrm{B}}$  and constant ambient temperature Ta.

<sup>&</sup>lt;sup>2)</sup> Of Sr.

<sup>3)</sup> Repeatability (T<sub>a</sub> not constant).

<sup>&</sup>lt;sup>4)</sup> AC (+50 °C).

<sup>&</sup>lt;sup>5)</sup> AC (+80 °C).

<sup>6)</sup> DC.

<sup>&</sup>lt;sup>7)</sup> 20 ms / 0.5 Hz.

 $<sup>^{8)}</sup>$  Miniature fuse to IEC 60217-2 Sheet 1,  $\leq$  2 A (quick-blow).

 $<sup>^{9)}</sup>$  Control of small electromagnetic loads with holding currents < 200 mA.

<sup>&</sup>lt;sup>10)</sup> Control of solenoids.

# **IM18-05BUS-ZU0 | IMW**

## INDUCTIVE PROXIMITY SENSORS

#### Safety-related parameters

MTTF <sub>D</sub>	974 years
<b>DC</b> <sub>avg</sub>	0 %
T <sub>M</sub> (mission time)	20 years

#### **Reduction factors**

Note	The values are reference values which may vary	
Stainless steel (V2A, 304)	Approx. 0.8	
Aluminum (Al)	Approx. 0.45	
Copper (Cu)	Approx. 0.4	

#### Installation note

Remark	Associated graphic see "Installation"
A	0 mm
В	18 mm
C	18 mm
D	15 mm
E	0 mm
F	40 mm

#### Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
CCC certificate	✓

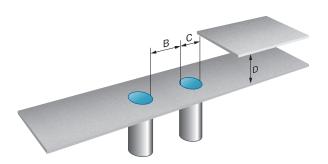
#### Classifications

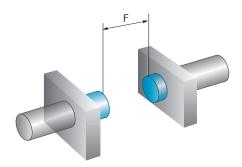
ECLASS 5.0	27270101
ECLASS 5.1.4	27270101
ECLASS 6.0	27270101
ECLASS 6.2	27270101
ECLASS 7.0	27270101
ECLASS 8.0	27270101
ECLASS 8.1	27270101
ECLASS 9.0	27270101
ECLASS 10.0	27270101
ECLASS 11.0	27270101
ECLASS 12.0	27274001
ETIM 5.0	EC002714
ETIM 6.0	EC002714
ETIM 7.0	EC002714
ETIM 8.0	EC002714

UNSPSC 16.0901

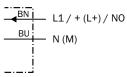
39122230

#### Installation note Flush installation



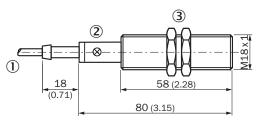


#### Connection diagram Cd-020



Miniature fuse to IEC60127-2 sheet 1, ≤ 2 A (fast acting)

#### Dimensional drawing IM18, AC/DC 2-wire, cable, flush



Dimensions in mm (inch)

- ① Connection
- 2 Display LED
- 3 Fastening nuts (2x); width across 24, metal

#### Recommended accessories

Other models and accessories → www.sick.com/IMW

	Brief description	Туре	part no.	
Mounting syst	Mounting systems			
40	<ul> <li>Description: Mounting bracket for M18 sensors</li> <li>Material: Steel</li> <li>Details: Steel, zinc coated</li> <li>Items supplied: Without mounting hardware</li> <li>Suitable for: GR18, V180-2, V18, W15, Z1, Z2</li> </ul>	BEF-WN-M18	5308446	
40	<ul> <li>Description: Mounting bracket for M18 sensors</li> <li>Material: Stainless steel</li> <li>Details: Stainless steel</li> <li>Items supplied: Without mounting hardware</li> </ul>	BEF-WN-M18N	5320947	
	<ul> <li>Description: Mounting plate for M18 sensors</li> <li>Material: Steel</li> <li>Details: Steel, zinc coated</li> <li>Items supplied: Without mounting hardware</li> <li>Suitable for: GR18, V180-2, V18, W15, Z1, Z2</li> </ul>	BEF-WG-M18	5321870	
	<ul> <li>Description: Clamping block for round sensors M18, without fixed stop</li> <li>Material: Plastic</li> <li>Details: Plastic (PA12), glass-fiber reinforced</li> <li>Items supplied: Mounting hardware included</li> <li>Suitable for: GR18, MH15V, V180-2, V18</li> </ul>	BEF-KH-M18	2051481	

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is "Sensor Intelligence."

# **WORLDWIDE PRESENCE:**

Contacts and other locations -www.sick.com

