





## MPB10-VS00VSIQ00

Multi Physics Box

**CONDITION MONITORING SENSORS** 

**SICK**Sensor Intelligence.





Туре	part no.
MPB10-VS00VSIQ00	1123926

Other models and accessories → www.sick.com/Multi\_Physics\_Box



#### Detailed technical data

#### **Features**

Vibration	
Number of axis	3
Measuring range	±8g
Measurement error	± 6 %
Measuring range a-RMS	0 g 5.65 g
Measuring range v-RMS	0 mm/s 100 mm/s, At 88 Hz
Frequency range	0.78 Hz 3,200 Hz
Frequency resolution	≥ 0.78 Hz
Bandpass filter	Freely parameterizable in the range 1 3200 Hz
Trigger	Automatic/IO-Link/external
Block length	0.02 s 1.28 s
Signal type	Acceleration/speed
Vibration analysis	a-RMS
	v-RMS
	Variance
	Skewness
	Kurtosis
	Peak to peak
	Shape factor
	Crest factor
	Impulse factor
	Frequency analysis
Vibration monitoring	Evaluation of the severity zone according to ISO 10816-3

	Teach-in of the reference vibration pattern
	Raw data output for parameterization
Contact temperature	
Measuring range	- 40 °C + 80 °C
Accuracy	Typ. ± 1 °C
Resolution	1 °C
Shock	
Number of axis	3
Measuring range	10 g 200 g

#### Mechanics/electronics

Supply voltage         10 V DC 30 V DC           Voltage drop         ≤ 1 V           Continuous current I₂         ≤ 200 mA           Enclosure rating         III           Protection class         III           Power consumption         < 350 mW           Ambient operating temperature         −40 °C +80 °C           Shock and vibration resistance         EN 60068 2.27 shock resistance Ea: 30 g 11 ms; 3 shocks in each direction of the 3 coordinate awas ince awas in		
Continuous current I a   Fe8	Supply voltage	10 V DC 30 V DC
P68   Protection class   III	Voltage drop	≤1V
Protection class III  Power consumption	Continuous current I <sub>a</sub>	≤ 200 mA
Power consumption Ambient operating temperature -40 °C +80 °C Shock and vibration resistance Shock and vibration resistance EN 60068-2-27 shock resistance Ea: 30 g 11 ms; 3 shocks in each direction of the 3 coordinate axes IEC 60068-2-31 drop test: 2 times from 1 m, 100 times from 0.5 m EN 60068-2-6 vibration resistance Fc: 10 Hz 150 Hz, 1 mm / 15 g  Reverse polarity protection Yes Short-circuit protection Yes  EMC Connection type Cable diameter Conductor cross section Conductor cross section Acable outlet  Material  Housing Cable Dimensions (W x H x D) Divice status Operating hour counter Yes Operating hour counter Operating hour sounter with reset function Digital switching output Yes Status indicator LED, green/orange  LED, green/orange	Enclosure rating	IP68
Ambient operating temperature Shock and vibration resistance Shock and vibration resistance Shock and vibration resistance  EN 60068-2-27 shock resistance Ea: 30 g 11 ms; 3 shocks in each direction of the 3 coordinate axes  IEC 60068-2-31 drop test: 2 times from 1 m, 100 times from 0.5 m EN 60068-2-6 vibration resistance Fc: 10 Hz 150 Hz, 1 mm/ 15 g  Reverse polarity protection Yes Short-circuit protection Yes  EMC Connection type Cable diameter Conductor cross section Conductor cross section Acable diameter Conductor cross section Conductor cross section Acable diameter Cable outlet Avial  Material  Housing Cable Cable Stainless steel PUR  Dimensions (W x H x D) Digital switching output Yes  Operating hour counter Ves  Operating hour scounter with reset function Digital switching output Yes  Boot cycle counter Ves  LED, green/orange LED, green/orange	Protection class	III
Shock and vibration resistance ale According to IO-Link IEC 61131-9 standard  Connection type Connection type Detail  Conductor cross section Bending radius Cable outlet Material  Housing Cable Cabl	Power consumption	< 350 mW
nate axes   EC 60068-2-31 drop test: 2 times from 1 m, 100 times from 0.5 m   EN 60068-2-6 vibration resistance Fc: 10 Hz 150 Hz, 1 mm / 15 g	Ambient operating temperature	-40 °C +80 °C
Short-circuit protectionYesEMCAccording to IO-Link IEC 61131-9 standardConnection typeCable with connector M12, with knurled nuts, 0.3 mConnection type DetailØ 2.6 mmCable diameter Conductor cross section Bending radius With fixed installation > 5 x cable diameter With fixed installation > 5 x cable diameterMaterialHousing Cable PURStainless steel PURDimensions (W x H x D)10 mm x 28 mm x 28 mmDevice statusYesOperating hour counterYesOperating hours counter with reset function Digital switching outputYesBoot cycle counter IO-LinkYesStatus indicatorLED, green/orange	Shock and vibration resistance	nate axes IEC 60068-2-31 drop test: 2 times from 1 m, 100 times from 0.5 m
EMC Connection type Cable with connector M12, with knurled nuts, 0.3 m  Cable diameter Conductor cross section Bending radius Cable outlet  Cable outlet  Material  Housing Cable  Dimensions (W x H x D) Device status  Operating hour counter Operating hour sounter with reset function Digital switching output  Boot cycle counter IO-Link Status indicator  According to IO-Link IEC 61131-9 standard  Cable with connector M12, with knurled nuts, 0.3 m  Ø 2.6 mm  Ø 2.6 mm  Op. 0.08 mm²  For flexible use > 10 x cable diameter  With fixed installation > 5 x cable diameter  Axial  Stainless steel  PUR  10 mm x 28 mm x 28 mm  Yes  Operating hour counter  Yes  Yes  Stainless steel  Axial	Reverse polarity protection	Yes
Connection type Detail  Cable diameter Conductor cross section Bending radius Cable outlet Cable outlet Cable outlet Cable outlet Cable Ca	Short-circuit protection	Yes
Connection type Detail  Cable diameter Conductor cross section Conductor cross section  Bending radius Waterial  Cable outlet Cable  Ca	EMC	According to IO-Link IEC 61131-9 standard
Cable diameter Conductor cross section Bending radius  Cable outlet  Material  Housing Cable  Cable  PUR  Dimensions (W x H x D)  Device status  Operating hour counter  Operating hours counter with reset function Digital switching output  Poss  Dout cycle counter  Distal switching output  For flexible use > 10 x cable diameter  With fixed installation > 5 x cable diameter  Axial  PUR  10 mm x 28 mm x 28 mm  Yes  Pus  Pus  Pus  Pus  Pus  Pus  Pus  P	Connection type	Cable with connector M12, with knurled nuts, 0.3 m
Conductor cross section Bending radius For flexible use > 10 x cable diameter With fixed installation > 5 x cable diameter Axial  Material  Housing Stainless steel Cable PUR  Dimensions (W x H x D) 10 mm x 28 mm x 28 mm  Device status  Operating hour counter Operating hours counter with reset function Digital switching output  Boot cycle counter IO-Link Yes  LED, green/orange	Connection type Detail	
Bending radius  Cable outlet  Material  Housing Cable  Cable  PUR  Dimensions (W x H x D)  Device status  Operating hour counter  Operating hours counter with reset function  Digital switching output  Boot cycle counter  IO-Link  Status indicator  For flexible use > 10 x cable diameter  With fixed installation > 5 x cable diameter  Axial  Axial  Stainless steel  PUR  PUR  PUR  PUR  PUR  PUR  PUR  PU	Cable diameter	Ø 2.6 mm
Cable outlet  Material  Housing Stainless steel Cable PUR  Dimensions (W x H x D) 10 mm x 28 mm x 28 mm  Device status Yes  Operating hour counter Yes  Digital switching output Yes  Boot cycle counter  10-Link Yes  LED, green/orange	Conductor cross section	0.08 mm <sup>2</sup>
Material  Housing Cable outlet Cable  Cable  PUR  Dimensions (W x H x D)  Device status  Operating hour counter  Operating hours counter with reset function Digital switching output  Boot cycle counter  Yes  U-Link  Yes  LED, green/orange	Bending radius	For flexible use > 10 x cable diameter
Housing Stainless steel  Cable PUR  Dimensions (W x H x D) 10 mm x 28 mm x 28 mm  Device status Yes  Operating hour counter Yes  Operating hours counter with reset function Yes  Digital switching output Yes  Boot cycle counter Yes  IO-Link Yes  Status indicator LED, green/orange		
Housing CableStainless steelDimensions (W x H x D)10 mm x 28 mm x 28 mmDevice statusYesOperating hour counterYesOperating hours counter with reset functionYesDigital switching outputYesBoot cycle counterYesIO-LinkYesStatus indicatorLED, green/orange	Cable outlet	Axial
Cable PUR  Dimensions (W x H x D) 10 mm x 28 mm x 28 mm  Device status Yes  Operating hour counter Yes  Operating hours counter with reset function Yes  Digital switching output Yes  Boot cycle counter Yes  IO-Link Yes  Status indicator LED, green/orange	Material	
Dimensions (W x H x D)  10 mm x 28 mm x 28 mm  Yes  Operating hour counter  Operating hours counter with reset function  Digital switching output  Yes  Boot cycle counter  Yes  IO-Link  Yes  Status indicator  10 mm x 28 mm x 28 mm  Yes  Yes  LED, green/orange		
Device status  Operating hour counter  Operating hours counter with reset function  Digital switching output  Boot cycle counter  IO-Link  Yes  LED, green/orange		
Operating hour counterYesOperating hours counter with reset functionYesDigital switching outputYesBoot cycle counterYesIO-LinkYesStatus indicatorLED, green/orange		
Operating hours counter with reset function Digital switching output Yes Boot cycle counter Yes IO-Link Yes Status indicator LED, green/orange		
Digital switching output  Boot cycle counter  Yes  10-Link  Yes  Status indicator  Yes  LED, green/orange		
Boot cycle counter Yes  IO-Link Yes  Status indicator  LED, green/orange	Operating hours counter with reset function	
IO-Link Yes Status indicator LED, green/orange	Digital switching output	Yes
Status indicator LED, green/orange	·	Yes
	IO-Link	Yes
Switching output Push-pull: PNP/NPN	Status indicator	LED, green/orange
	Switching output	Push-pull: PNP/NPN

### MPB10-VS00VSIQ00 | Multi Physics Box

#### CONDITION MONITORING SENSORS

#### Safety-related parameters

MTTF <sub>D</sub>	428 years
DC <sub>avg</sub>	0%
T <sub>M</sub> (mission time)	20 years

#### Communication interface

Communication interface	IO-Link V1.1
Communication Interface detail	COM3
Cycle time	5 ms
Process data length	160 Bit
Process data structure	Bit 0 15 = alarm bit 1 - alarm bit 16 Bit 16 bit 31 = reserved Value 0 3 = configurable with vibration and temperature data
VendorID	26
DeviceID HEX	0x8002F6
DeviceID DEC	8389366
Compatible master port type	A
SIO mode support	Yes

#### **Smart Task**

Smart Task name	Base logics
Logic function	Direct AND OR
Timer function	Deactivated Switch-on delay Off delay ON and OFF delay Impulse (one shot)
Inverter	Yes
Switching signal	
Switching signal Q <sub>L1</sub>	Switching output
Switching signal $ar{Q}_{L1}$	Switching output

#### Certificates

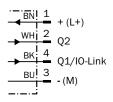
EU declaration of conformity	✓
UK declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓
cULus certificate	✓
IO-Link	✓

#### Classifications

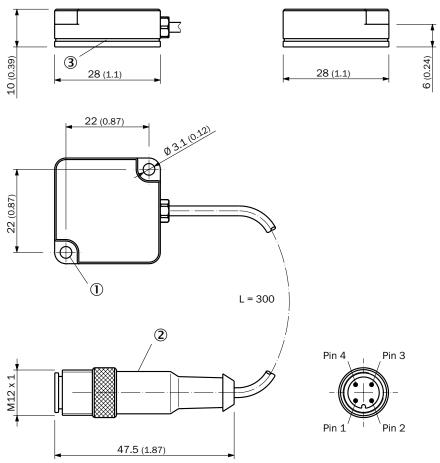
ECLASS 5.0	27209090
ECLASS 5.1.4	27209090
ECLASS 6.0	27209090
ECLASS 6.2	27209090
ECLASS 7.0	27209090

ECLASS 8.0	27209090
ECLASS 8.1	27209090
ECLASS 9.0	27209090
ECLASS 10.0	27209090
ECLASS 11.0	27209090
ECLASS 12.0	27209090
ETIM 5.0	EC004309
ETIM 6.0	EC004309
ETIM 7.0	EC004309
ETIM 8.0	EC004309
UNSPSC 16.0901	39121552

#### Connection diagram Cd-466



#### Dimensional drawing



Dimensions in mm (inch)

- ① Mounting holes for M3 x 10 EN ISO 4762
- ② Connection
- ③ Transparent seal with several integrated status LEDs

#### Recommended accessories

Other models and accessories → www.sick.com/Multi\_Physics\_Box

	Brief description	Туре	part no.
network devic	es		
		IOLA2US-01101 (SiLink2 Master)	1061790
		SIG200-0A0512200	1089796
		SIG200-0A0412200	1089794
		SIG200-0A0G12200	1102605
		SIG350-0004AP100	6076871
		SIG350-0005AP100	6076923
		SIG350-0006AP100	6076924
025-06-12 08:11:1 ubject t ange wi		ONDITION MONITORING SENSO SIG300-0A0GAA100	1131014

# MPB10-VS00VSIQ00 | Multi Physics Box CONDITION MONITORING SENSORS

	Brief description	Туре	part no.
edge computin	ng devices		
***************************************		SIM1012-0P0G200	1098146
connectors an	d cables		
	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 5 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A14-050UB3XLEAX	2095608
Mounting syst	ems		
	Material: Aluminum     Details: Aluminum     Items supplied: Mounting hardware included     Usable for: Magnetic mounting plate for screwless mounting of the Multi Physics Box	BEF-APM-MPB	2125439
(8)	<ul> <li>Material: Aluminum</li> <li>Details: Aluminum</li> <li>Items supplied: Mounting hardware included</li> <li>Usable for: Adapter plate with M5 threaded hole for mounting the Multi Physics Box</li> </ul>	BEF-AP5-MPB	2129152
0	<ul> <li>Material: Aluminum</li> <li>Details: Aluminum</li> <li>Items supplied: Mounting hardware included</li> <li>Usable for: Adapter plate with M8 threaded hole for mounting the Multi Physics Box</li> </ul>	BEF-AP8-MPB	2129153

#### 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

