TOPOSENS

ECHO ONE®

Data Sheet

Data Sheet

For Use with Toposens ECHO ONE® Sensor and Toposens Processing Unit (TPU)

Legal Notice

The contents of this document are subject to change without prior notice.
The latest version of this document is available online at toposens.com/downloads

For more information on the Toposens ECHO ONE® 3D Collision Avoidance System, its installation, configuration, and maintenance, please refer to the Instruction Manual.

For more information on advanced configuration, parametrization, and optimization of the Toposens ECHO ONE® system, please refer to the Application Manual.

These documents and other resources are available online at toposens.com/downloads

If you are experiencing difficulties setting up the system, please contact us at support@toposens.com

Features

Technology	3D Ultrasonic Echolocation and Ranging
Detection Range*	Up to 3000 mm
Field-of-View*	±55° Horizontal (±70° when Target <100 cm) ±55° Vertical (±70° when Target <100 cm)
Accuracy**	± 6 cm (for opening angles up to ± 60°)
Working Frequency	40 kHz ± 1 kHz

*Target: 75 mm diameter pole
** Target: 75 mm diameter pole in 1 m distance

Electrical

Nominal Supply Voltage	12 V DC
Operating Voltage Range	10V - 30 V DC
Current Consumption typ. (12 V)	450 mA
Peak Current Consumption (12 V)	580 mA
Power Consumption avg. (12 V)	5.4 W

Performance

Response Time (typical)	200 ms*
Startup Time	60 s (getting first point cloud over UDP) 75 s (getting first zone violations over I/O)

* without MMM activated

Interface

Ethernet	1x 1000 Mbps Ethernet port, RJ45 connector 1x 100 Mbps Ethernet port, RJ45 connector
Digital Inputs (EN 61131-2)	4x Voltage Input, 8-30 V, 3 mA, isolated, Removable Connector
Digital Outputs (EN 61131-2)	4x Voltage Source, max. 0.5 A, isolated, Removable Connector

Environmental Sensor

Ambient operating temperature	-10 °C to 50 °C
Storage temperature	-20 °C to 70 °C
Enclosure rating	IP67, Front and Back
Connector rating (mated)	IP67

Environmental TPU

Ambient operating temperature	-40 °C to 80 °C
Cooling	Passive, fanless
Protection Type	10% to 90%, no condensation
Permissible relative humidity	Use in dry environment only

Compliance Sensor

EMC	EN 55011 Group 1 Class A EN 61326-1:2021 EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-6 FCC 47CFR Part 15: Subpart B - Class A
Declaration of conformity	CE, FCC, RoHS
Protection class	III (EN 61140)

Compliance TPU

EMC	FCC 47CFR part 15: 2015 – Class B VCCI-CISPR 32: 2016 ICES-003: 2017 – Class B EN 55032: 2015 - Class B EN 61000-6-3: 2007 EN 61000-3-2: 2014 EN 61000-3-3: 2013 EN 61000-6-2: 2019 EN 55035: 2017
Declaration of conformity	CE, FCC, RoHS

I

Resources

Additional Documentation and Software	https://toposens.com/members/

Dimensions Sensor

Outline Dimensions [L x W x H]	125 mm x 56 mm x 42 mm (excl. Cable)
Weight	180 g (excl. Cable)

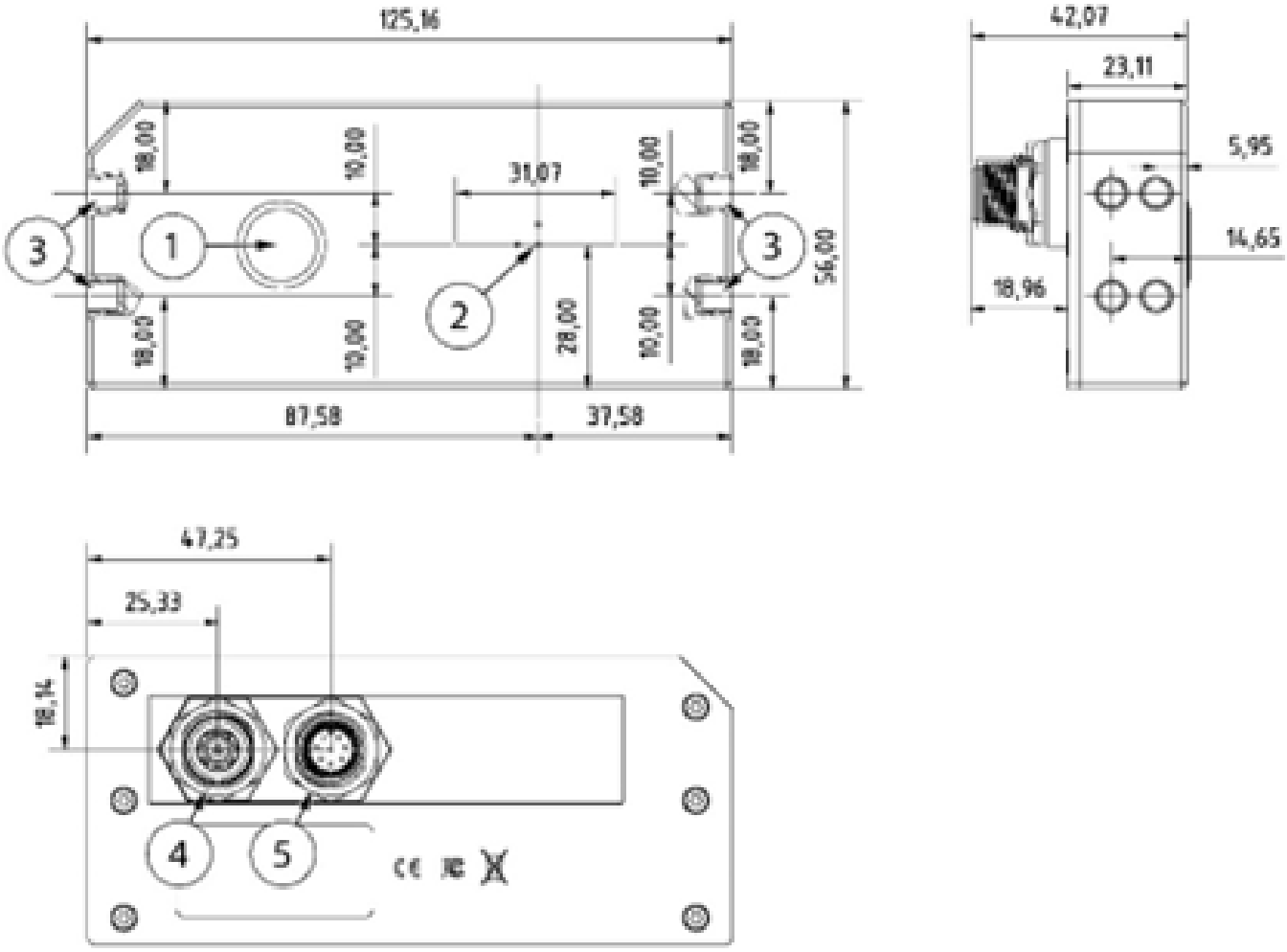


Figure 1 - Sensor Dimensions

1	Ultrasonic Emitter “Transducer”
2	Microphone Array
3	M5 Thread, 5mm Depth
4	M12 A-coded 8-pin plug
5	M12 A-coded 8-pin socket

Dimensions TPU

Outline Dimensions [L x W x H]	113 mm x 85 mm x 25 mm (excl. Cable)
Weight	240 g (excl. Cable)

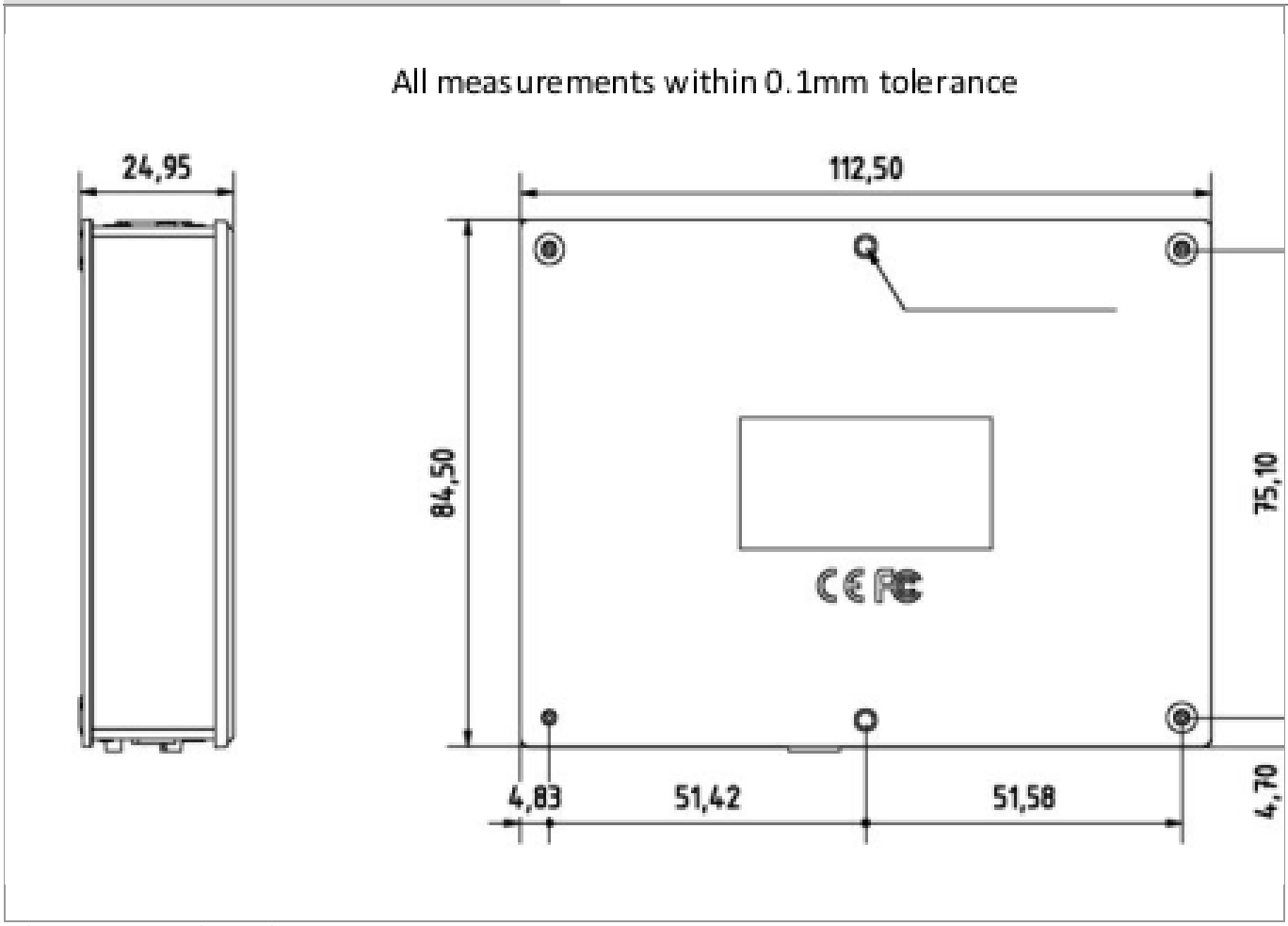
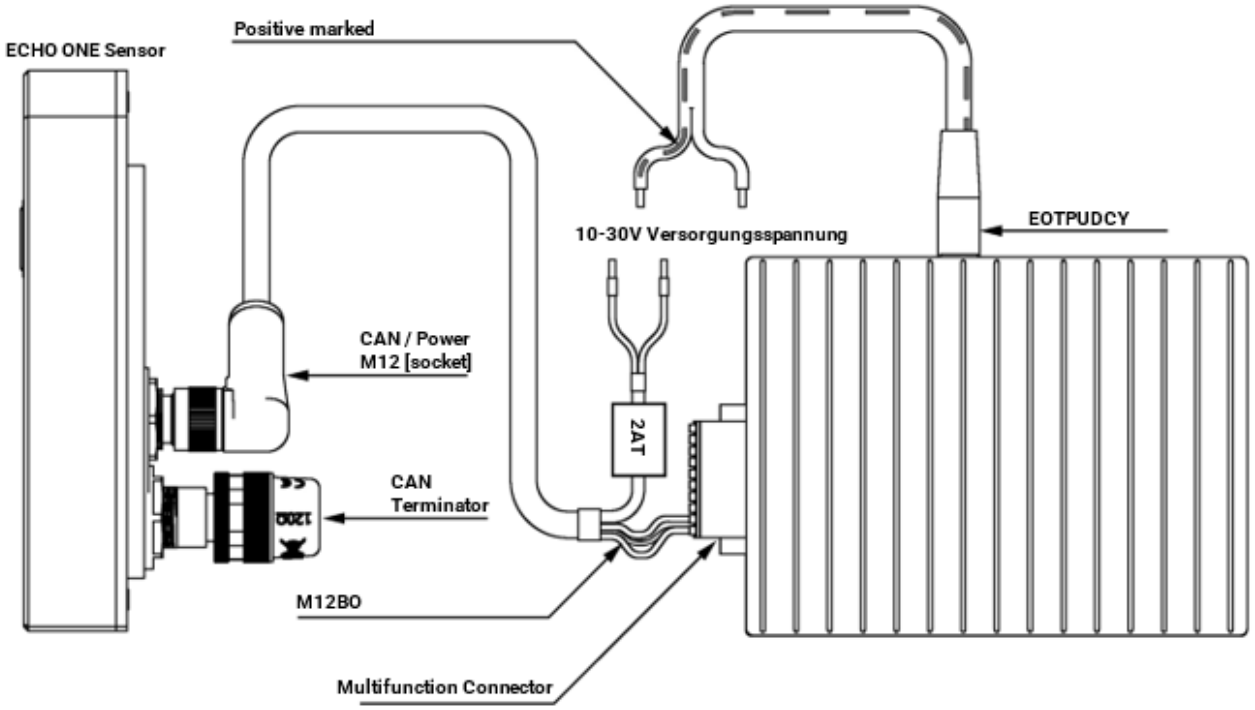
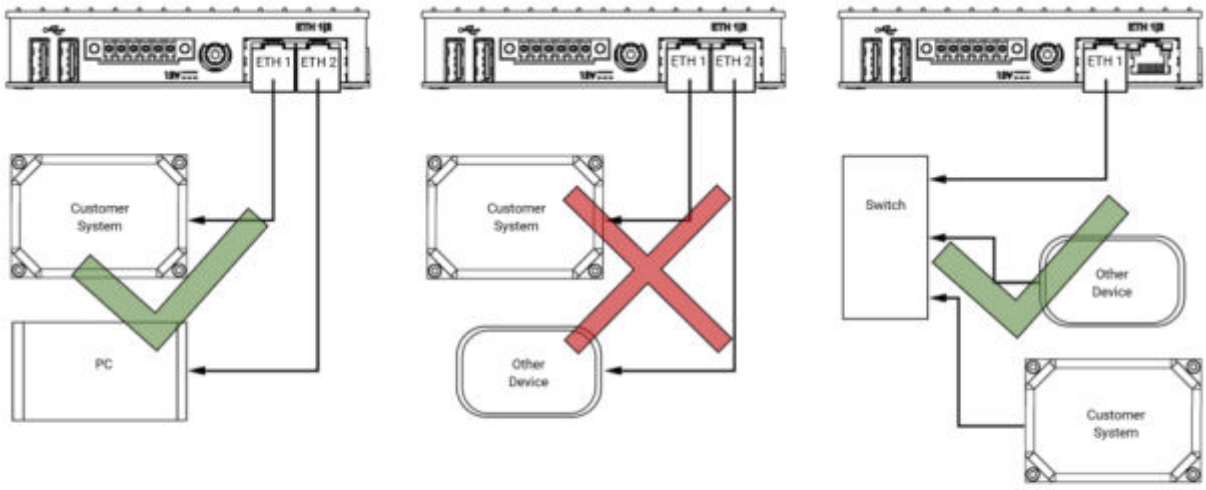


Figure 2 - TPU Dimensions

Network Diagram

System Fuse	2AT



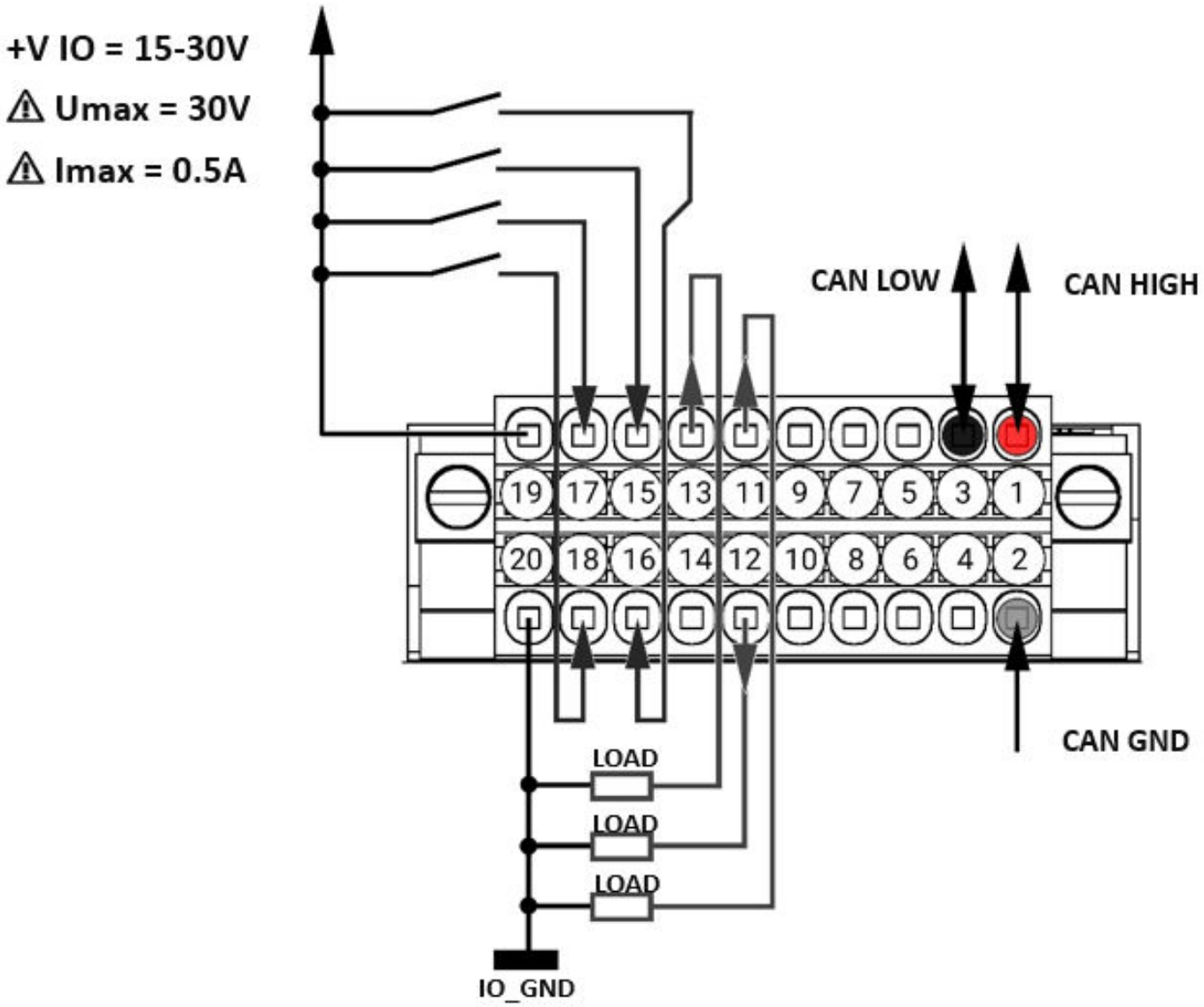


PC is used for configuration

Devices can't communicate through TPU

TPU can be used with an Ethernet switch

Pinout of Multifunction Connector



MEYSENS GmbH

Wilhelm-Wagenfeld-Straße 24
80807 Munich
www.toposens.com
+49 089 23751542

Document Version: V 2.0
Release Date: September 2023

toposens.com/downloads