



Product Brief 2024

Ultrasonic Sensor Modules

The compact TDK Ultrasonic Sensor Module is a sensor that measures distances completely invisible and contact-free. It detects objects using inaudible ultrasonic waves, which are transmitted and received by a piezoelectric disc. All necessary electronics for analog/digital conversion and signal processing are built into the sensor itself which results in best reliability and best noise immunity. Detection thresholds and characteristics can be customized and optimized as needed.

The very compact aluminum housing makes it a highly robust, dust and splash waterproof ultrasonic sensor. As such, it is ideally suitable for numerous harsh industrial applications and wherever size is a limiting factor and best object detection is desired.

- Easy to mount due to integrated decoupling element
- Water/dust protected chassis integration up to IP65/67
- Single sensor or pitch-and-catch mode possible
- For harsh industrial applications
- TDK evaluation board available

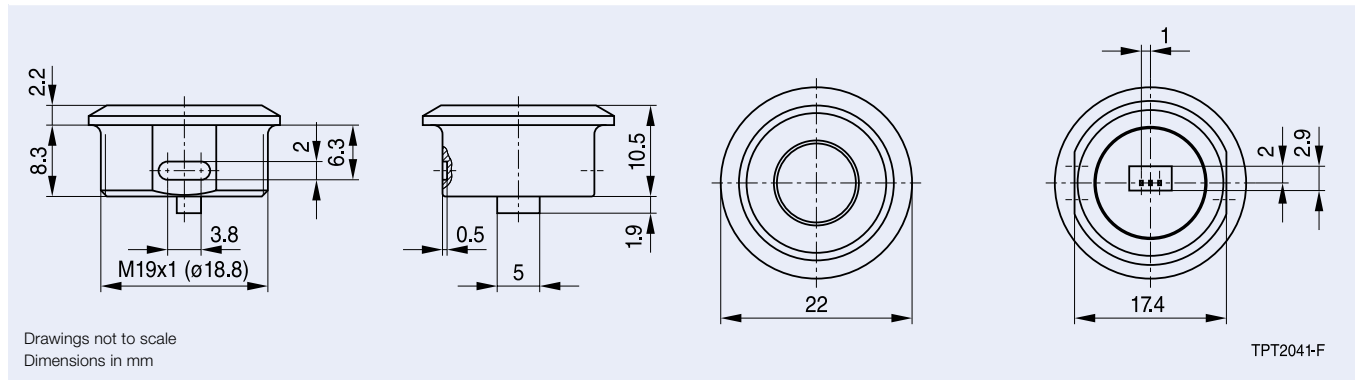


More information

www.tdk-electronics.tdk.com/en/ultrasonic_sensor_module
or contact your local sales office

Ultrasonic Sensor Module

B59110W2111W032



Electrical specification

	Parameter	Symbol	Unit	Typical
1	Supply voltage	VSUP	V	12
2	Current consumption	I	mA	5.5
3	Power down mode	I	mA	<1
4	Communication Interface ¹⁾	proprietary bidirectional IO (3-wire), point to point architecture		

1) The IO line is not equipped with a pull-up resistor.

Functional parameters

	Parameter	Symbol	Unit	Typical
1	Minimal measuring distance in solo mode ²⁾	D_{min}	mm	180
2	Minimal measuring distance in pitch-and-catch mode ³⁾	D_{min}	mm	40
3	Maximum measuring distance ⁴⁾	D_{max}	mm	5000
4	Directivity of emitted acoustic signal ⁵⁾	α	°	±35
5	Detection field of view ⁶⁾	δ_{min} δ_{max}	°	±10 ±45
6	Operating frequency	f	kHz	74.5

2) Evaluated based on test target: cylindrical pole, 75 mm diameter, 1 m height, standard conditions for temperature and humidity

3) EPD = '0'. Test target: cylindrical pole, 75 mm diameter, 1 m height, standard conditions for temperature and humidity

4) Default D_{max} = 2000 mm

5) -6 dB sound pressure level, circular beam

6) The detection field of view depends strongly on the threshold settings and on the target size and acoustic properties.