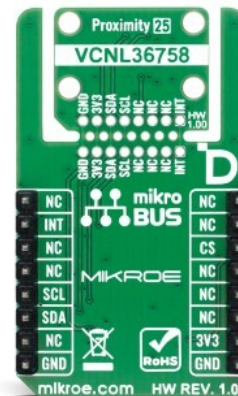
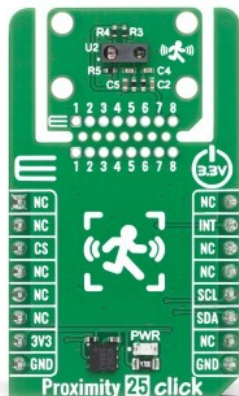


Proximity 25 Click



PID: MIKROE-6990

Proximity 25 Click is a compact add-on board designed for high-sensitivity medium-distance proximity sensing, object detection, and presence detection. This board is based on the [VCNL36758](#), a proximity sensor with integrated IR LED from [Vishay Semiconductor](#). Key features include proximity detection up to 600mm, 12-bit sensing resolution, intelligent crosstalk cancellation, programmable high and low threshold interrupt functions, smart persistence for reliable detection, active force mode for power-saving one-time measurements, temperature compensation for stable output, and I2C communication for configuration and data acquisition. The board also supports the Click Snap feature, allowing the sensor section to be separated and positioned independently through direct access to its signals. Proximity 25 Click is suitable for display activation, robotic collision detection, lighting control, parking space detection, lavatory appliances, and other object or presence sensing applications.

For more information about **Proximity 25 Click** visit the official [product page](#).

How does it work?

Proximity 25 Click is based on the VCNL36758, a high-sensitivity medium distance proximity sensor from Vishay Semiconductor. The VCNL36758 integrates a proximity sensor and an IR LED into a single package, combining a photodiode, amplifiers, and analog/digital signal processing circuits on one CMOS-based chip. It supports proximity detection up to 600mm, making it suitable for applications that require object or presence detection over a practical medium sensing range. It is suitable for presence detection used to activate displays in printers, copiers, tablets, and home appliances, collision detection in robots and toys, proximity sensing and lighting control in offices, corridors, and public buildings, parking space availability detection in lots and garages, and proximity detection in lavatory appliances.

Mikroe produces entire development toolchains for all major microcontroller architectures.

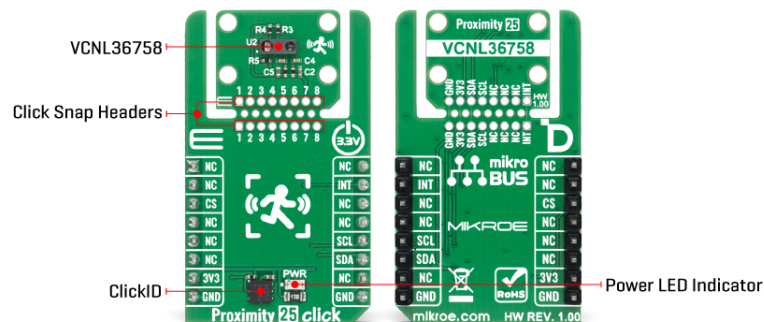
Committed to excellency, we are dedicated to helping engineers bring the project development up to speed and achieve outstanding results.



ISO 27001: 2013 certification of informational security management system.
ISO 14001: 2015 certification of environmental management system.
OHSAS 18001: 2008 certification of occupational health and safety management system.



ISO 9001: 2015 certification of quality management system (QMS).



This Click board™ is designed in a unique format supporting the newly introduced MIKROE feature called "Click Snap." Unlike the standardized version of Click boards, this feature allows the main sensor/IC/module area to become movable by breaking the PCB, opening many new possibilities for implementation. Thanks to the Snap feature, the VCNL36758 can operate autonomously by accessing its signals directly on the pins marked 1-8. Additionally, the Snap part includes a specified and fixed screw hole position, enabling users to secure the Snap board in their desired location.

The sensor provides 12-bit proximity sensing and uses an intelligent cancellation scheme to eliminate crosstalk, improving measurement reliability in real-world environments. It also includes programmable high and low threshold interrupt functions through the INT pin, allowing the host MCU to react only when defined proximity conditions are met, which helps optimize resource usage and reduce power consumption. Communication with the host MCU is performed through I2C interface for configuration and data acquisition.

Smart persistence functionality helps prevent false proximity judgments while still maintaining fast response time, and the active force mode allows one-time proximity measurements to be triggered by a single instruction for additional power-saving operation. The VCNL36758 also offers excellent temperature compensation capability, helping maintain stable output performance across different temperature conditions.

This Click board™ can be operated only with a 3.3V logic voltage level. The board must perform appropriate logic voltage level conversion before using MCUs with different logic levels. It also comes equipped with a library containing functions and example code that can be used as a reference for further development.

Click Snap

Click Snap is an innovative feature of our standardized Click add-on boards, designed to bring greater flexibility and optimize your prototypes. By simply snapping the PCB along predefined lines, you can easily detach the main sensor/IC/module area, reducing the overall size, weight, and power consumption - ideal for the final phase of prototyping. For more details about Click Snap, visit the [official page](#) dedicated to this feature.

Specifications

Type	Proximity
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Applications	Ideal for display activation, robotic collision detection, lighting control, parking space detection, lavatory appliances, and other object or presence sensing applications
On-board modules	VCNL36758 - high-sensitivity medium distance proximity sensor from Vishay Semiconductor
Key Features	High-sensitivity medium-distance proximity sensing, 12-bit proximity sensing, intelligent crosstalk cancellation, programmable high and low threshold interrupt functions, smart persistence for reduced false detection, fast proximity response time, active force mode for power-saving one-time measurements, temperature compensation for stable output, I2C communication interface, and more
Interface	I2C
Feature	Click Snap, ClickID
Compatibility	mikroBUS™
Click board size	M (42.9 x 25.4 mm)
Input Voltage	3.3V

Pinout diagram

This table shows how the pinout on Proximity 25 Click corresponds to the pinout on the mikroBUS™ socket (the latter shown in the two middle columns).

Notes	Pin					Pin	Notes
	NC	1	AN	PWM	16	NC	
	NC	2	RST	INT	15	INT	Interrupt
ID COMM	CS	3	CS	RX	14	NC	
	NC	4	SCK	TX	13	NC	
	NC	5	MISO	SCL	12	SCL	I2C Clock
	NC	6	MOSI	SDA	11	SDA	I2C Data
Power Supply	3.3V	7	3.3V	5V	10	NC	
Ground	GND	8	GND	GND	9	GND	Ground

Onboard settings and indicators

Label	Name	Default	Description
LD1	PWR	-	Power LED Indicator

Proximity 25 Click electrical specifications

Description	Min	Typ	Max	Unit
Supply Voltage	-	3.3	-	V
Proximity Detection Range	-	-	600	mm
Proximity Resolution	-	12	-	bit

Software Support

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[Proximity 25 Click](#) demo application is developed using the [NECTO Studio](#), ensuring compatibility with [mikroSDK](#)'s open-source libraries and tools. Designed for plug-and-play implementation and testing, the demo is fully compatible with all development, starter, and mikromedia boards featuring a [mikroBUS™](#) socket.

Example Description

This example demonstrates the use of Proximity 25 Click board by reading and displaying the proximity data on the USB UART.

Key Functions

- `proximity25_cfg_setup` This function initializes Click configuration structure to initial values.
- `proximity25_init` This function initializes all necessary pins and peripherals used for this Click board.
- `proximity25_default_cfg` This function executes a default configuration of Proximity 25 Click board.
- `proximity25_read_proximity` This function reads the proximity data.

Application Init

Initializes the driver and logger, and performs the Click default configuration.

Application Task

Reads the proximity data and displays the results on the USB UART every 200ms. The higher the proximity value, the closer the detected object.

Application Output

This Click board can be interfaced and monitored in two ways:

- Application Output - Use the "Application Output" window in Debug mode for real-time data monitoring. Set it up properly by following [this tutorial](#).
- UART Terminal - Monitor data via the UART Terminal using a [USB to UART converter](#). For detailed instructions, check out [this tutorial](#).

Additional Notes and Information

The complete application code and a ready-to-use project are available through the NECTO Studio Package Manager for direct installation in the [NECTO Studio](#). The application code can also be found on the MIKROE [GitHub](#) account.

Resources

[mikroBUS™](#)

[mikroSDK](#)

[Click board™ Catalog](#)

[Click boards™](#)

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[ClickID](#)

Downloads

[Proximity 25 click example package](#)

[Proximity 25 click schematic v100](#)

[VCNL36758 datasheet](#)

[Proximity 25 click 2D and 3D files v100](#)

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