

UniCo

Universal Connecting tool



QUICK REFERENCE GUIDE

Translation of the original instructions.

Before installing and using the device, carefully read this manual and store it together with the product.

Symbols used in this manual and relative meaning

 **WARNING!**
Indicates particularly important information.

 **DANGER!**
Identifies actions that may lead to injury or damage to the device if not performed correctly.

 **PROHIBITED**
Indicates actions that **MUST NOT** be performed.

Compliance

Maddalena S.p.A. declares that **UniCo** is compliant with the mandatory requirements of the following directives and standards:

- Directive 2014/53/EU (RED - Radio Equipment Directive)
- Directive (EU) 2017/2102 (RoHS2)



The full declaration of EU compliance is available from the following website: www.maddalena.it.

Warranty

Conditions of sale and warranty

The conditions of sale and warranty are available on the website www.maddalena.it.

Warranty limitations

Maddalena S.p.A. declines all responsibility, with immediate invalidation of the warranty in relation to:

- Damage or defects caused by transport or loading/unloading
- Incorrect installation caused by a failure to observe the instructions provided
- Use for purposes other than those indicated in this manual
- Use by unqualified or untrained personnel

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1 Introduction

1.1 Introduction

UniCo (Universal Connecting tool) is a compact multifunctional device designed for two main purposes:

- Programming interface for compatible devices
- Reading of wM-Bus radios (EN13757, mode T1/C1) in ISM 868MHz band

1.2 Description

Software or apps running on tablets or PCs are generally used for reading and programming smart devices.

The programming of devices is generally done via a suitable communication port, which can be physical or radio. **UniCo** acts as an interface between PC/tablet and compatible devices.

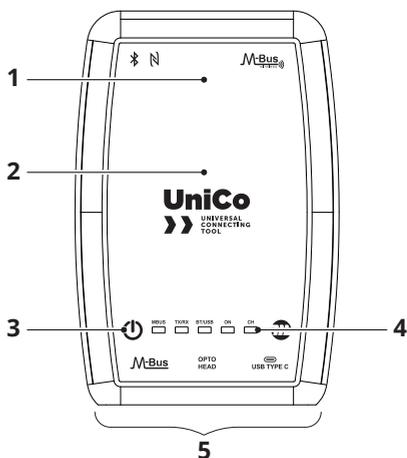
UniCo connects to PCs/tablets via USB and Bluetooth interfaces.

UniCo reads or programs compatible devices via 868 MHz radio, NFC, optical port interface (IEC 62056-21) and M-Bus port (EN13757).

UniCo is equipped with an internal rechargeable lithium-polymer battery for extended battery life. Charging is via the USB-C port through a PC/tablet or from a standard smartphone charger.

UniCo is designed for reading and programming compatible devices by means of a program or app appropriate for the purpose. The program or app controls **UniCo** and sets the programming parameters.

UniCo is not designed to perform reading and programming operations independently, but acts as an interface between the appropriate software and compatible devices.



- 1 BT and ISM 868MHz radio
- 2 NFC (on the back)
- 3 ON/OFF button
- 4 LED Indicators
- 5 Interfaces and connections

1.3 Label



1.4 Contents of the package

The correct functioning of the application requires an Android device with version 5.11 (Lollipop) or higher.

1.5 Technical specifications

Features	Description	
Power supply	Rechargeable lithium-ion battery	
Battery lifespan	> 10 hours	
Certifications/Approvals	CE in compliance with European standards.	
	RED 2014/53/EU, RoHS2 (EU) 2017/2102	
Radio	Standard	Wireless M-Bus, OMS
	Modes	T1, C1
	Operating frequency range	868.0 - 868.6 / 868.7 - 869.2 MHz
	Radiated power	14dBm max
	Reference standards	EN 13757
	Radio equipment class	Class 1
	Bluetooth version	4.2
Bluetooth	Operating frequency range	2402-2480 MHz
	Radiated power	8dBm max
	Radio equipment class	Class 1
NFC	Standard ISO/IEC 15693	
MBUS	EN 13757, 5 UL	
USB	USB 2.0 type C	
Optical port	TTL 3V, IEC 62056-21	
Environmental conditions	Storage temperature: -20°C - +60°C	
	Operating temperature: -10 °C - +55 °C	

2 First start-up

**WARNING!**

UniCo should only be used by trained and instructed personnel.

Before using **UniCo**, a full charge cycle of the batteries must be carried out.

After the first charging operation, the instrument can remain connected to the power supply during use.

Connect **UniCo** to a PC/Tablet or to the charger and connect this to the power socket.

The red CH LED comes on and stays on until the batteries are fully charged.

Disconnect and use the instrument only when the batteries are fully charged and the red LED has gone out.

Use a standard smartphone charger (not supplied) or one with the following specifications (5 VDC, 500 mA).

**WARNING!**

An inappropriate charger may cause irreversible damage to the batteries.

**WARNING!**

UniCo cannot be recharged when the ambient temperature exceeds 35°C.

To communicate with Windows PCs, it is necessary to install USB drivers, which can be downloaded from <https://www.ftdichip.com/Drivers/VCP.htm>.

In order to communicate with the PC/Tablet via BlueTooth, you need to add **UniCo** to the BlueTooth pairing list of the device in the standard Windows or Android mode.

3 Configuration

3.1 LED indicators and buttons



Indicator	Description	Colour	Status
MBus	M-Bus status	Red/Green	Green: M-Bus connection active Red: MBus overloaded
TX/RX	Radio transmission and reception status	Yellow/Green	Yellow: transmitting Green: receiving
BT/USB	BT/USB status	Blue/Yellow/Blue	Blue: BT connection active Blue: BT+USB Yellow: USB-C connection active
ON	Device on	Green	On = 100% charged Slow flash = 35-65% charged Quick flash = less than 35% charged
CH	Charging	Red	The device is charging from the USB-C cable

On button: press for a few seconds to switch the instrument on or off.

NOTE: the BlueTooth connection is activated when the **UniCo** is switched on and cannot be switched on or off separately.

3.2 Interfaces and connections

UniCo has three physical connection interfaces and three wireless connections.

The physical connections are located at the bottom of the instrument.

3.2.1 USB-C interface

The USB-C interface makes two operations available:

- Interfacing with reading/programming programs **Maddalena** and allowing firmware upgrades via the appropriate download software.
- Charge the device.



WARNING!

UniCo cannot be recharged when the ambient temperature exceeds 35°C.

3.2.2 BlueTooth interface

The BT interface allows wireless connection **UniCo** to a Windows PC or Android Tablet for reading and programming operations of compatible devices.

The device must be associated with the PC/ Tablet before it can be operated. A suitable reading and/or programming program must be installed on the tablet or PC.

3.2.3 Optical port interface (IEC 62056-21)

The interface for the optical port is equipped with a 3.5 mm jack connector that allows connection with the optical head P/N 1.ETRMD.1510 for programming compatible devices.

3.2.4 M-BUS (Master) interface

The interface uses the M-Bus protocol in accordance with EN 13757.

The device acts as a Master for programming compatible devices.

The maximum electrical load of the M-Bus interface is 5 UL (unit load).

3.2.5 NFC interface

The NFC port (ISO 15693) is located on the back of the device and is identified by the symbol:



The NFC port allows configuring compatible devices.

The NFC port has a limited speed and range. It is necessary to keep the **UniCo** adhered to the device to be configured for as long as necessary for the operation.

3.2.6 ISM 868 Radio Interface

UniCo is equipped with an ISM 868 MHz band radio with internal antenna.

This radio can be used to read devices using the wM-Bus protocol (EN13757) in T1/C1 modes and transfer this data to the app or reading software.

UniCo's 868MHz radio interface, together with the appropriate software/app, can be used to radio-program compatible devices.



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