

External Control Unit CMM Easy / CM Tiny



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Preface

This manual is for the installation and use of the External Control Unit CMM Easy/CM Tiny, also referred to as Control Unit in this manual. The Control Unit is designed for use in combination with a CMM Easy or a CM Tiny, also referred to as high voltage generator or generator in this manual.

The IQ functions of the CMM IQ Easy and the CM Tiny IQ cannot be used in combination with an External Control Unit.

This manual must always be accessible to the operating personnel. Read this manual in its entirety before using this product.

Instructions given in this manual should be followed to ensure the proper working of the product and in order to avoid possible violation of the warranty terms.

The warranty terms are described in the SIMCO (Nederland) B.V. general terms and conditions.

Explanation of symbols



Warning

Indicates special information for preventing injury or significant damage to the product or the environment.



Danger

Indicates information for preventing electrical shocks.



Note

Important information for making the most efficient use of the product or for preventing damage to the product or the environment.

1 Introduction

The Control Unit is used to regulate the high voltage of the CMM Easy or the CM Tiny, indicating the signals [Cycle OK] and [High Voltage On] and passing those signals on to a PLC. The generator can also be remotely switched on and off.

The Control Unit is available in three different types:

- with a setpoint regulated locally (dial on the Control Unit),
- for a setpoint 0-10V presented externally (no dial), or
- for a setpoint 0-24V presented externally (no dial)

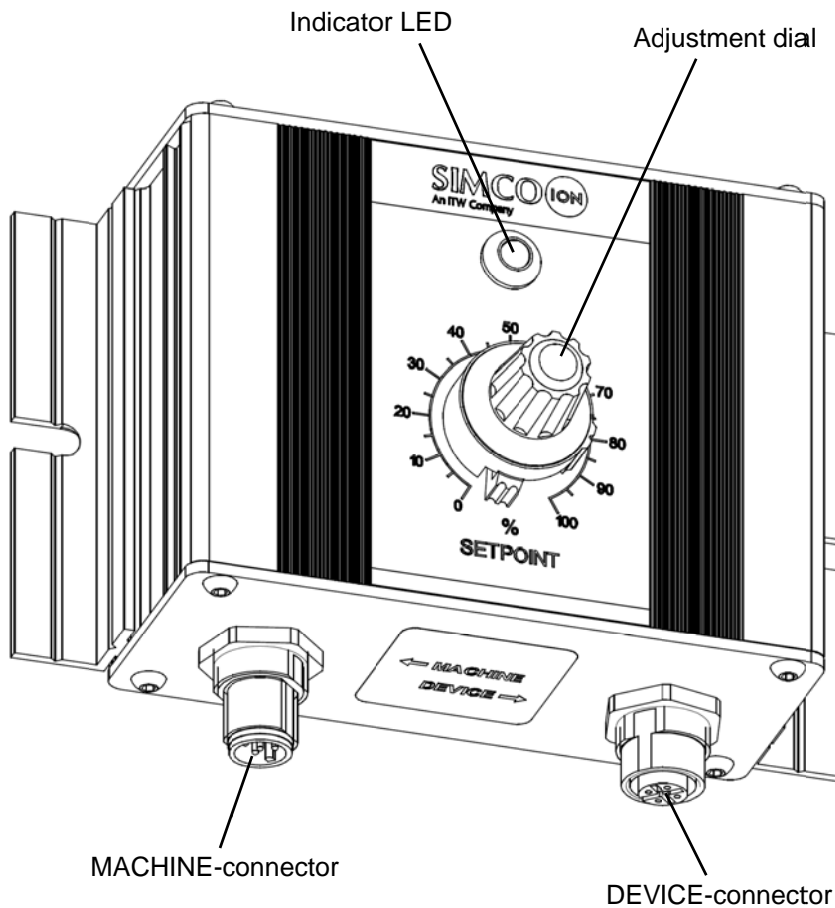


Fig. 1, External Control Unit CMM Easy/CM Tiny

2 Description and operation

The Control Unit is connected to the high voltage generator using a 5-pin cable. The power supply for the Control Unit is connected to the MACHINE-connector. This also provides the power supply for the generator connected to the DEVICE-connector. The output power level of the generator is set by using the dial on the Control Unit or, for those types with a setpoint presented externally, from either the machine or the PLC, passed on to the generator. The signals [High Voltage On] or [Cycle OK] from the high voltage generator are passed on through the MACHINE-connector to the machine or a PLC. Active high voltage is made visible by the LED on the Control Unit. In addition, the MACHINE-connector has a connection with which the generator can be remotely switched on and off.

3 Safety

The following safety guidelines must be observed in order to prevent physical injury and damage to objects or to the Control Unit itself.



Danger:

- Read the CMM Easy or CM Tiny manual for more information about the potential hazards of high voltages!



Warning:

- Electrical installation and repairs must be carried out by a skilled electrical engineer with the relevant training and qualifications.
- Disconnect the power supply before carrying out work on the unit.
- The Control Unit must not be used in environments that pose a fire or explosion hazard.
- The Control Unit is intended for use with the CMM Easy or CM Tiny only. Any other use is not allowed.



Note:

- Making changes, adjustments etc. without prior written consent or carrying out repairs using non-original parts will invalidate the equipment's guarantee.

4 Technical specifications

MACHINE-connector

Input:	Power supply	21-27 V DC
	Energy consumption	Max. 1 A (incl. CMM Easy/CM Tiny connected)
	High voltage On/Off	24 V DC, <5 mA
	Setpoint for type Extern Setpoint 0–10 V	0–10 V, <1 mA
	Setpoint for type Extern Setpoint 0–24 V	0–24 V, <1 mA
Output:	CMM Easy: Cycle OK	24 V DC, max. 50 mA
	CM Tiny: Signal HV ON	24 V DC, max. 50 mA
Connection		M12-connector, 5-pin, male

DEVICE-connector

Input:	Power supply	24 V DC, max. 1 A
Output:	High voltage On/Off	24 V DC, <5 mA
	CMM Easy: Cycle OK	24 V DC, max. 50 mA
	CM Tiny: Signal HV ON	24 V DC, max. 50 mA
	Setpoint	4–20 mA
Connection		M12-connector, 5-pin, female

Environment

Operating environment	Industrial, operation inside
Temperature	0 - 55°C
Installation	Dust-free
Protection class	IP-52

Mechanical

Dimensions (lxwxh)	106 x 141 x 70 mm
Weight	0,35 kg
Casing material	Aluminium

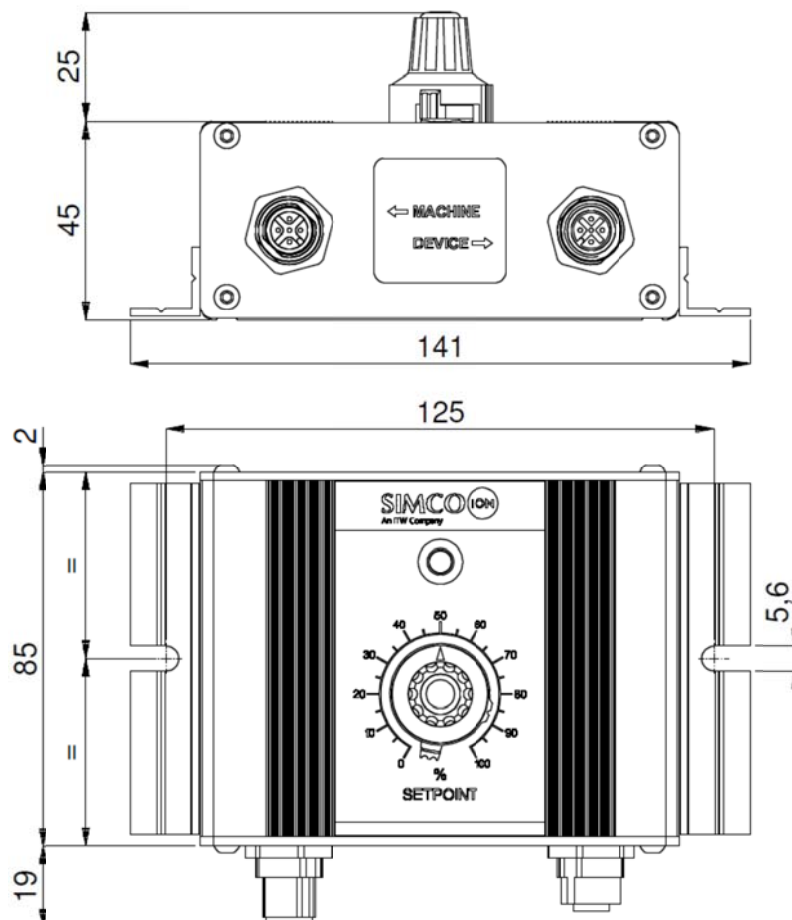


Fig. 2, dimensions External Control Unit CMM Easy/CM Tiny

5 Installation



Warning:

- Electrical installation and repairs must be carried out by a skilled electrical engineer with the relevant training and qualifications.
- Disconnect the power supply before carrying out work on the unit.
- The Control Unit and the CMM Easy/CM Tiny must be properly earthed. Earthing is needed to ensure proper operation of the equipment and to avoid electrical shocks upon contact.
- Read also the installation instructions for the CMM Easy/CM Tiny before mounting and connecting the CMM Easy/CM Tiny on the Control Unit and the machine.



Note:

The Control Unit is not to be used in a damp or dusty environment or an environment where chemicals or other corrosive materials are in use.

5.1 Check

- Check whether the equipment received is undamaged and in the version required.
- Check whether the information on the delivery note corresponds with the information of the product received.

Contact SIMCO (Nederland) B.V. or your regional agent in case of problems and/or doubts.

5.2 Mounting the Control Unit

- Mount the Control Unit on a clearly visible, easily reached and stable location on or close to the machine.
- Mount the Control Unit using 2 screws in the 2 notches in the flanges of the Control Unit.

5.3 Connecting the Control Unit



Note:

The GND of the power supply connected to the MACHINE-connector of the Control Unit as well as the external earth wire of the CMM Easy/CM Tiny have to be grounded.

- Connect the external earth wire of the CMM Easy/CM Tiny to a grounded machine part.
- Use a device cord M12 female-male to connect the CMM Easy/CM Tiny to the device connector.
- Use a device connector M12 female or a device cord M12 female to connect the power supply and the PLC output.
- See fig. 3 and Table 1 for the connections of the Control Unit and the CMM Easy/CM Tiny.

Standard connection cables and connectors are available through Simco-Ion or your regional agent. See spare parts list on page 9.

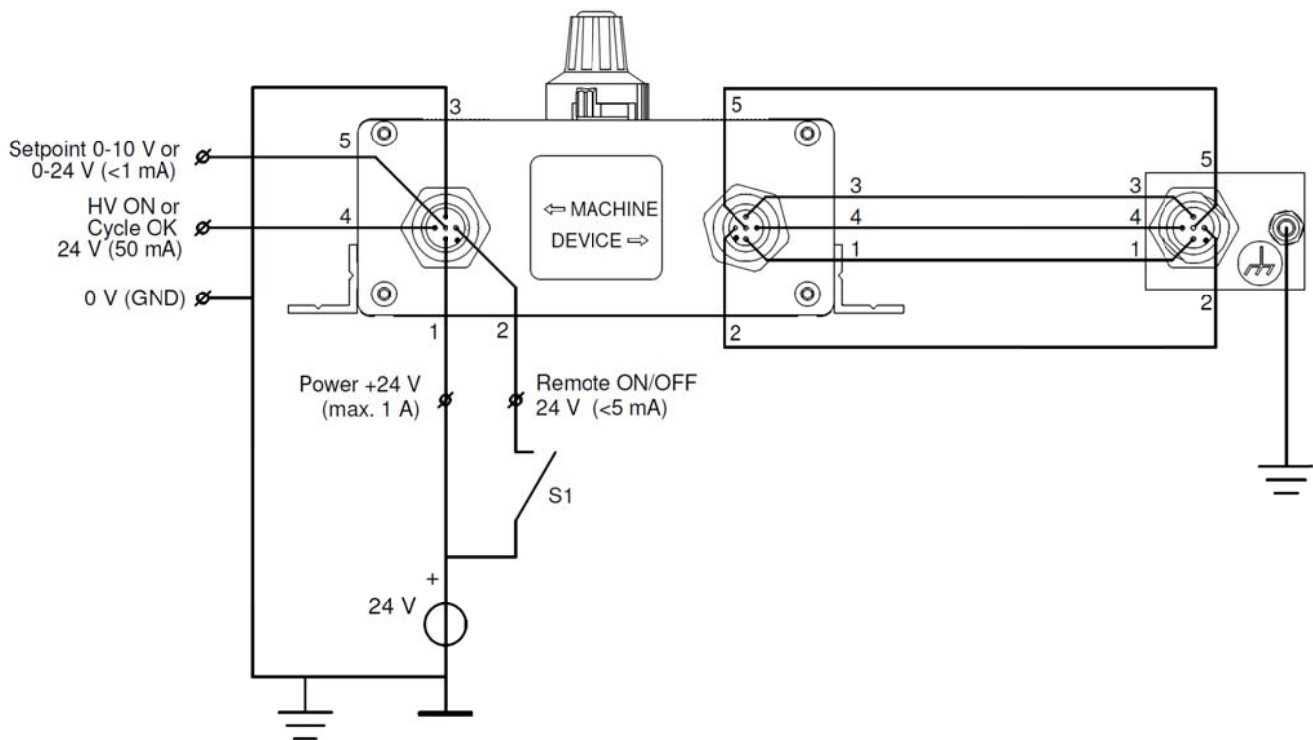


Fig. 3, External Control Unit - CMM Easy/CM Tiny connections.

Table 1, Machine connector

Machine connector		
Pin	Name	Cable colour (standard)
1	Power +24V DC input	Brown
2	Remote ON/OFF input	White
3	0V / GND	Blue
4	CMM Easy: Cycle OK output CM Tiny: HV ON output	Black
5	Setpoint input	Yellow/Green or grey

Table 2, Device connector

Device connector (CMM Easy/CM Tiny)		
Pin	Name	Cable colour (standard)
1	+24V DC output	Brown
2	Remote ON/OFF output	White
3	0V / GND	Blue
4	CMM Easy: Cycle OK input CM Tiny: HV ON input	Black
5	Setpoint output	Yellow/Green or grey

6 Commissioning and operation

- Consult chapter 6 of the CMM Easy/CM Tiny user manual before commissioning and operating the CMM Easy/CM Tiny.
- The power on the CMM Easy/CM Tiny is set using the dial on the Control Unit or by presenting an external setpoint to the Control Unit.
- We recommend to set the setpoint for the output power on 0 at first (turn the dial all the way left) and to increase it later on.
- Turn the power supply on.
- Present 24 V DC to the Remote ON/OFF input or switch on the Remote ON/OFF through the machine or the PLC.
- Increase the setpoint so that the LED's on the generator light up orange. High voltage is now active. The CMM Easy will present a [Cycle OK] signal if no current to the electrodes is detected. The CM Tiny will present a [HV ON] signal.

7 External Control Unit and checking the CMM Easy/CM Tiny

The system is functioning correctly if the LED's on the CMM Easy/CM Tiny and Control Unit light up orange.



Note:

If the level of power needs to be set higher than usual on a regular basis, or if the maximum setting is not sufficient, the electrodes may be dirty or worn. See chapter 9 (Faults) for solutions.

8 Maintenance



Warning:

- **Disconnect the power supply before carrying out work on the unit.**
- Keep the Control Unit free of moisture, dust, dirt and chemicals.
- The Control Unit contains no parts that require periodic maintenance.
- For maintenance of the connected Perfomaster, see the corresponding manual.

9 Faults



Warning:

- **Disconnect the power supply before carrying out work on the unit.**
- **Electrical installation and repairs must be carried out by a skilled electrical engineer with the relevant training and qualifications.**
- **Refer to the CMM Easy/CM Tiny manual for problems regarding the CMM Easy/CM Tiny.**

Table 3, trouble shooting

Problem	Possible Cause	Solution
LED's on CMM Easy/CM Tiny do not light up	No power supply	Connect to power supply
	Wiring fault	Locate fault and repair. See 5.3
- Indication LED on the Control Unit does not light up	Remote external signal [High Voltage On] not present	Switch on remote external signal [High Voltage On]
	Wiring fault	Locate fault and repair. See 5.3

10 Repairs



Warning:

- **Disconnect the power supply before carrying out work on the unit.**
- **Electrical installation and repairs must be carried out by a skilled electrical engineer with the relevant training and qualifications.**

Control Unit parts cannot be repaired. To order parts, see the spares list.

Request an RMA form for any returns by sending an email to service@simco-ion.nl.

Pack the equipment properly and clearly state the reason for return.

11 Disposal



At the end of its service life, do not throw the device away with the normal waste but hand it in at an official collection point. By doing so, you will help to protect the environment.

Spare parts

Part number Description

General

9526350065 Button ø23 mm lockable
6811113020 Cover button ø23 mm

Connectors and connection cables MACHINE-connector

7519020350 Connector device M12 female right ø4-6 mm cables
7519020351 Connector device M12 female right ø6-8 mm cables
7519020355 Connector device M12 female right-angled ø4-6 mm cables
7519020356 Connector device M12 female right-angled ø6-8 mm cables
7519020365 Cable device M12 female right 5 m
7519020366 Cable device M12 female right 10 m
7519020380 Cable device M12 female right 10 m shielded cable carrier
7519020375 Cable device M12 female right-angled 5 m
7519020375 Cable device M12 female right-angled 10 m

Connectors and connection cables DEVICE-connector

7519020352 Connector M12 male right ø4-6 mm cables
7519020353 Connector M12 male right ø6-8 mm cables
7519020357 Connector M12 male right-angled ø4-6 mm cables
7519020358 Connector M12 male right-angled ø6-8 mm cables
7519020383 Cable device M12 female-male right 5 m shielded cable carrier
7519020384 Cable device M12 female-male right 10 m shielded cable carrier
7519020386 Cable device M12 female-male right 5 m cable carrier
7519020387 Cable device M12 female-male right 10 m cable carrier
7519020390 Cable device M12 female-male right 2 m
7519020391 Cable device M12 female-male right 5 m
7519020392 Cable device M12 female-male right 10 m

Spare parts can be obtained from the agent in your region or from SIMCO (Nederland) B.V.

SIMCO (Nederland) B.V.
PO box 71
NL-7240 AB Lochem
Telephone+31-(0)573-288333
Telefax +31-(0)573-257319
E-mail general@simco-ion.nl
Internet <http://www.simco-ion.nl>