RtCAN

MOTION CONTROL

Table of contents

1. PRODUCT DESCRIPTION

1.1. FUNCTION

The MC RtCAN module provides an advanced solution for converting a machine's reversing signal into a compatible CAN signal for the LEICA MC1 (version 7 and above). This feature improves the integration and functionality of TPS control, significantly increasing efficiency and user-friendliness. The MC RtCAN module receives the machine's traditional reversing signal and converts it into a CAN signal that is seamlessly recognized and processed by the LEICA MC1.

1.2. IMPORTANT NOTE

Make sure the module is connected correctly to ensure reliable signal transmission. Check firmware compatibility: the MC RtCAN module is designed for use with LEICA MC1 version 7 and above. Incorrect firmware versions can lead to communication errors. Be aware of the ambient temperatures in which the module is used; Extreme temperatures can affect performance. After installation, always test the operation of the reversing signal to ensure that it is correctly converted and transmitted. In case of any problems, consult the vendor's technical support for assistance and troubleshooting.

1.3. DECLARATION OF CONFORMITY

This product complies with:

- **Directive 2001/95/EC** General Product Safety

And that the equipment complies with the following harmonized standards:

- EN 60950-1:2006
- EN 60950-1:2006/A12:2011
- EN IEC 62368-1:2020
- EN IEC 62368-1:2020/A11:2020

2. SAFETY INFORMATION

2.1. READ INSTRUCTIONS FOR USE IN ADVANCE

Before starting to use the MC RtCAN, it is essential to thoroughly read the entire instructions for use. It provides crucial instructions regarding installation and safety. Gaining insight into the functionality of the system is the initial step towards its safe and correct handling.

2.3. TRAINING REQUIRED

Before using the MC RtCAN on its own, it is strongly recommended to undergo extensive training. During this training you will learn how to start up the system, how to control movements and functions, as well as how to act correctly in emergency situations. Thorough training contributes to minimizing the risks of errors and accidents.

2.4. HAZARDS

The use of the MC RtCAN can be potentially dangerous if not handled properly. Some potential dangers include:

2.4.1. Wrong connection

Incorrect connection of the MC RtCAN module can lead to incorrect signal conversion or damage to both the module and the connected equipment. This can result in an unusable machine or LEICA MC1 and high repair costs.

2.4.2. Environmental factors

Extreme ambient temperatures or humid conditions may adversely affect the operation of the MC RtCAN module. This can cause signal failure or complete system failure, which can lead to dangerous situations, especially if the machine relies on correct reversing signals for safe operation.

2.4.5. Firmware and Compatibility Issues

Using the MC RtCAN module with an incorrect firmware version or with an incompatible version of the LEICA MC1 may cause communication errors. This can lead to unpredictable system reactions, compromising machine safety and reliability.

2.4.6. Lack of Maintenance and Updates

Failure to regularly perform maintenance and updates to the MC RtCAN module can entail risks. Outdated software or worn components can lead to malfunctions or reduced module performance. This can affect the effectiveness of the TPS control and compromise operational safety.

2.4.7. Unforeseen system errors

Unexpected system failures can occur even with proper use and maintenance. It is essential to have a robust contingency plan in place to be able to respond to such failures quickly and safely.

3. INSTALLATION

3.1. ASSEMBLY

Choose a Flat Surface
Select a suitable, flat surface on the machine for mounting the MC RtCAN module. Make sure the location is accessible for maintenance and updates.

Clean the Magnets and Surface
Before inserting the module, thoroughly clean both the magnets on the module and the selected mounting surface. Use a clean cloth and a non-abrasive detergent to remove dirt, dust, and grease. This ensures a firm and stable attachment.

Insert the RtCAN Module
Carefully position the MC RtCAN module on the cleaned surface. Make sure the magnets are in full contact with the surface for optimal grip.

Attach the Cables
Connect the cables of the MC RtCAN module to the correct connections of the machine and the LEICA MC1. Make sure the cables are secure and do not put stress on the connections.

Check the Connections
Check all connections to ensure a firm and correct connection. This prevents loose contacts that can lead to signal loss or interference.

Perform a Test
After installation, perform a functional test to confirm that the MC RtCAN module is working correctly. Check that the reversing signal is correctly converted and recognized by the LEICA MC1.

By carefully following these steps, you ensure correct and safe mounting of the RtCAN module, contributing to reliable operation and long life of your equipment.

4. ELECTRIC

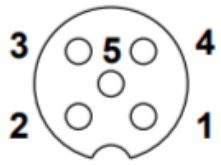
4.1. GENERAL

Power supply:	9 – 36 VDC (12/24VDC Nominal)
Supply current:	30mA @ 12 VDC
Input voltage:	9 – 36 VDC (12/24VDC Nominal)
Max reverse polarity:	40 VDC

4.2. CONNECTORS

The MC RtCAN is connected by means of 2 connectors.

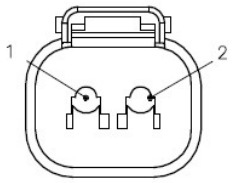
CAN - 5P M12 (LEICA)



PIN	MEANING
1	Power
2	CAN-H
3	Ground
4	CAN-L
5	N.C.

Module can be connected directly to LEICA.

REAR SIGNAL - 2P DEUTSCH DT



PIN	MEANING
1	Ground
2	Power

Ground and power supply can be connected as needed:

1. Machine reversing signal is **switched plus**: Connect switch wire to pin 2. Connect pin 1 to ground.
2. Machine reversing signal is **ground switched**: Connect switch wire to pin 1. Connect pin 1 to power supply.

4.3. BUS TERMINATION

A termination resistance of 120Ω is required when the MC RtCAN module is connected to the beginning or end of the CAN bus. This resistance ensures that no information is sent back to the bus.

4.4. INTERFACE

Source Address (SA)	250d; FAh
Baud Rate	250kbaud
Priority	6
Terminating resistor	External
Cycle time	100ms

5. STATUS LED

STATUS	MEANING
Blink slowly, 1Hz	Enabled, no reverse signal
Burn	Enabled, reverse signal
Flashing fast, 2Hz	CAN Error

6. MAINTENANCE AND REPAIR

The MC RtCAN module is maintenance-free. When the module is at the end of its service life, dispose of it in accordance with national environmental laws and regulations.

7. PROBLEMS AND SOLUTIONS

	PROBLEM	POSSIBLE CAUSE
1.	MC RtCAN: CAN failure	-Poor contact -Cable/plug damaged -RtCAN defect
2.	MC RtCAN: No LED	-Poor contact -Cable/plug damaged -No voltage present -RtCAN defect
3.	MC RtCAN: No reversing signal	-Poor contact -Cable/plug damaged -No voltage present -RtCAN defect
4.	MC RtCAN is experiencing problems at startup or not functioning properly.	-No/low voltage -Faulty fuse -Insufficient/no mass

8. COMPANY DETAILS

Motion Control BV
Burgemeester Van Meeuwenstraat 29
6191ND Beek LB
Nederland

Tel: +31 46 437 7812
Mail: motioncontrol@theodebruynbv.nl