1E0671-1 MCR2.9

1E0671 LCM

User Manual

Version 1.00

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Inhalt

Introduction

The MCR2.9 and the LCM is a compact module designed for use with the Carsharing System of BMW vehicles.

It will be used for short range reading of high and low frequency (HF and LF) tags to identify the Carsharing user. Another function of the reader is, when the car is not used, that the mounted LEDs shows the status of the car (booked, available).

The module consists of a radio module and a printed loop antenna and a coil for both RFID-frequencies, an LIN and CAN interface, IR-proximity sensor for wakeup, a microcontroller as host processor and the LEDs as indicator of the vehicle condition

There are 2 versions

1E0671: LCM with a can interface (LIN is not connected to the cable)

1E0671-1: MCR2.9 with a LIN interface (CAN is not connected to the cable)

Figure 1 - front view MCR 2.9

Figure 2 – back view MCR2.9

Specifications

General Specifications

Height:	19mm
Diameter:	78mm
Weight:	61g
Electrical rating:	
	Input Voltage: 9-18V DC
	Input Current: 120mA
Operating temperature:	-40°C to +85°C
Storage temperature:	-30°C to +70°C
Relative Humidity:	5% to 95% non-condensing
Host Interface:	LIN, High Speed CAN

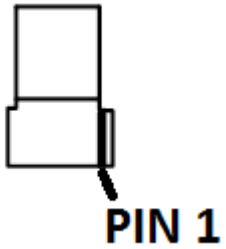
RFID Specifications*:*

Frequency range:	125 KHz and 13,56 MHz
Protocols supported:	
125 KHz:	HITAG 1,2,S
13,56 MHz:	Legic,ISO14443 A/B, Sony Felica, HID, ISO15693
Read range[1] (typical maximum)	
125 KHz:	up to 70mm
13,56 MHz:	up to 80mm

[1] Read and write range varies based on tag performance and environmental conditions.

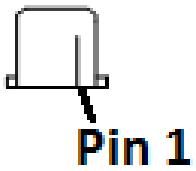
Pin Assigment

1E0671-1 MCR2.9 with LIN Interface



PIN	Description
1	GND
2	LIN-Bus
3	Vbat_out
4	Vbat_in

1E0671 MCR2.9 with CAN Interface = LCM



PIN	Description
1	GND
2	Vbat
3	not connected
4	not connected
5	CAN-H
6	CAN L

FCC Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note:

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Device Labeling:

The Label contains FCC ID: 2AELV-1E0671-1

Precautions of Use

Avoid using the RFID Reader in the presence of strong electomagnetic waves.

The RFID Reader supplies power to the card or tag using an electromagnetic wave to communicate with the card or tag. The presence of strong electromagnetic waves affects communication between the RFID Reader and card or tag, causing reduced access area or inability to access the card. Test the RFID Reader using the actual power source in the installation location environment before use.

Keep precision devices that might be affected by electromagnetic waves away from the RFID Reader.

Because the RFID Reader constantly emits an electromagnetic wave of about 125 KHz and 13.56 MHz, placing precision devices that might be affected by electromagnetic waves near the reader can cause malfunction or failure of the devices. When operating the reader, keep precision devices away from the RFID Reader. If such precision devices must be located near the RFID Reader, shield the precision devices with a metal cover and test the devices to check for any influence.

Avoid using multiple RFID Readers in proximity to each other.

The RFID Reader supplies power to the card or tag using an electromagnetic wave to communicate with the card or tag and constantly emits an electromagnetic wave of about 125 KHz and 13.56 MHz. Using multiple readers in proximity to each other causes interference, interrupts communication between the card and reader, and prevents access to the card.

Safety Information

To maintain compliance with the FCC RF exposure guidelines, install and operate this equipment with a minimum distance of 20 cm between the radiator and your body.

Use only with the supplied antenna. Unauthorized antenna, modification, or attachments can damage the transmitter and violate FCC regulations.

Technical Assistance

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