



SMARTEH[®]
LIVING SYSTEMS

USER MANUAL

- ▶ Longo programmable controller
LPC-2.CH1M
Card Holder module

Version 3

Written by SMARTEH d.o.o.
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User Manual

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STANDARDS AND PROVISIONS: Standards, recommendations, regulations and provisions of the country in which the devices will operate, must be considered while planning and setting up electrical devices. Work on 100 .. 240 V AC network is allowed for authorized personnel only.

DANGER WARNINGS: Devices or modules must be protected from moisture, dirt and damage during transport, storing and operation.

WARRANTY CONDITIONS: For all modules LONGO LPC-2 - if no modifications are performed upon and are correctly connected by authorized personnel - in consideration of maximum allowed connecting power, warranty of 24 months is valid from the date of sale to the end buyer, but not more than 36 months after delivery from Smarteh. In case of claims within warranty time, which are based on material malfunctions the producer offers free replacement. The method of return of malfunctioned module, together with description, can be arranged with our authorized representative. Warranty does not include damage due to transport or because of unconsidered corresponding regulations of the country, where the module is installed.

This device must be connected properly by the provided connection scheme in this manual. Misconnections may result in device damage, fire or personal injury.

Hazardous voltage in the device can cause electric shock and may result in personal injury or death.

NEVER SERVICE THIS PRODUCT YOURSELF!

This device must not be installed in the systems critical for life (e.g. medical devices, aircrafts, etc.).

If the device is used in a manner not specified by the manufacturer, the degree of protection provided by the equipment may be impaired.

Waste electrical and electronic equipment (WEEE) must be collected separately!

LONGO LPC-2 complies to the following standards:

- EMC: EN 61000-6-3:2007 + A1:2011, EN 61000-6-1:2007, EN 61000-3-2:2006 + A1:2009 + A2: 2009, EN 61000-3-3:2013
- LVD: IEC 61010-1:2010 (3rd Ed.), IEC 61010-2-201:2013 (1st Ed.)

Smarteh d.o.o. operates a policy of continuous development. Therefore we reserve the right to make changes and improvements to any of the products described in this manual without any prior notice.

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Longo programmable controller LPC-2.CH1M

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1 DESCRIPTION

LPC-2.CH1M RFID reader is intended to be used as presence registering device and key-card holder. Module also provides push buttons (PB) for activating requested messages. This messages are convenient to notify personnel (e.g. occupied, do not disturb).

Once a person has entered to the room, the key-card should be inserted to the CH1M card slot¹. If card ID for correspondent room is valid, several actions can be started (e.g. room light and air conditioning switched on).

CH1M module features two PB with which customer is able to activate notification to the personnel. One PB activates “DO NOT DISTURB” message and the other PB activates “ROOM SERVICE” request.

LPC-2.CH1M module can be modified on customer request: custom front label, push buttons changed, LEDs added, housing color. Please contact manufacturer for more information.

LPC-2.CH1M reads unique ID (UID) from standard ISO/IEC 14443 A/MIFARE.

¹ To achieve most reliable RFID card reading results use Smarteh RFID Mifare cards.
RFID Mifare card must be inserted at least 40 mm deep into LPC-2.CH1M card slot in a time period between 1 .. 3 seconds.



2 FEATURES

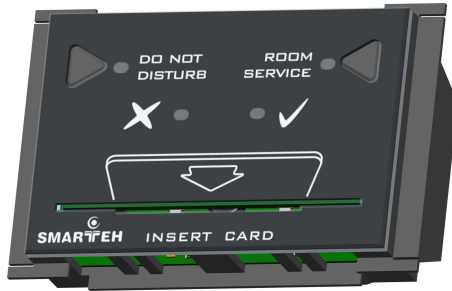


Figure 1: LPC-2.CH1M.

Table 1: Features

RFID reader
RFID card slot
Adjustable LED intensity
LEDs for showing activated messages & requests: do not disturb, room service
2 push buttons for activating messages & requests: do not disturb, room service
OK “✓” LED
FAULT “X” LED
Power LED
Internal fault LED
Internal built-in buzzer



3 OPERATION

Operation of the CH1M module is also dependent on parameters received on RS-485 communication channel.

If RFID card is inserted into slot, reader tries to resolve RFID tag code. If code is read successfully, module activates status *iDNew* and sends RFID code in *iDW1-iDW7* status fields. Code is send out until key-card is removed from slot.

While *iDNew* status is active and *oOK* or *oFault* is activated, corresponding LED is turned on. (LED3 OK or LED4 fault respectively). This state is sustained until key-card is removed.

Each press on a PB1 or PB2 toggles status *iDNDist* or *iRServ* respectively. By activating commands *oOkLD*, *oFaultLD* *oDNDist*, *oRServ* corresponding LED is turned-on (LED3, LED4, LED1, LED2).

CH1M module LED's intensity can be adjusted from main module application also. By default their intensity is set to 75%. While *oEnInts* status is active, LED's intensity can be adjusted by changing *oLdInts* parameter.

3.1 Parameters

If parameter is set to logical "1", is considered to be active, enabled or set. If parameter has logical value "0" is considered to be inactive, disabled, or cleared.

Parameter can be status or command. Parameter as status means that CH1M module is sending information to main module. On the other hand, command represents request from main module to module.

iComm: Normal state is "0". If set, there is communication error or no communication established.

iDNew: When new RFID tag is recognized while inserted into CH1M slot, this status is set active till RFID card is not removed from the CH1M slot.

iDNDist: Active status denotes user has requested "do not disturb" message to be displayed - LED1

iRServ: Active status denotes user has requested "room service" message to be displayed - LED2

oBuzz: While this command is active, buzzer is active.

oOK: Command for authorization of RFID code.

oFault: Command for rejecting authorization of RFID code.

oDNDist: Command for activation of "do not disturb" message, do not disturb LED1 is toggled

oRServ: Command for activation of "room service" request, room service request LED2 is toggled

oOkLD: While this command is active, OK LED4 is set.

oFaultLD: While this command is active, fault LED3 is set.

oEnInts: Enables changing LED's intensity together with *oLdInts* value.

oLdInts: Command for setting LED intensity. Only valid while *oEnInts* active.

iDW1: Upper (most significant) third of RFID code (UID0, UID1)

iDW2: Middle third of RFID code (UID2, UID3)

iDW3: Middle third of RFID code (UID4, UID5)

iDW4: Lower (least significant) third of RFID code (UID6, UID7)



4 INSTALLATION

4.1 Connection scheme

Figure 2: Connection scheme

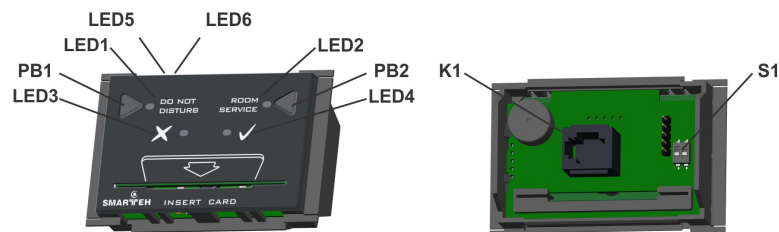
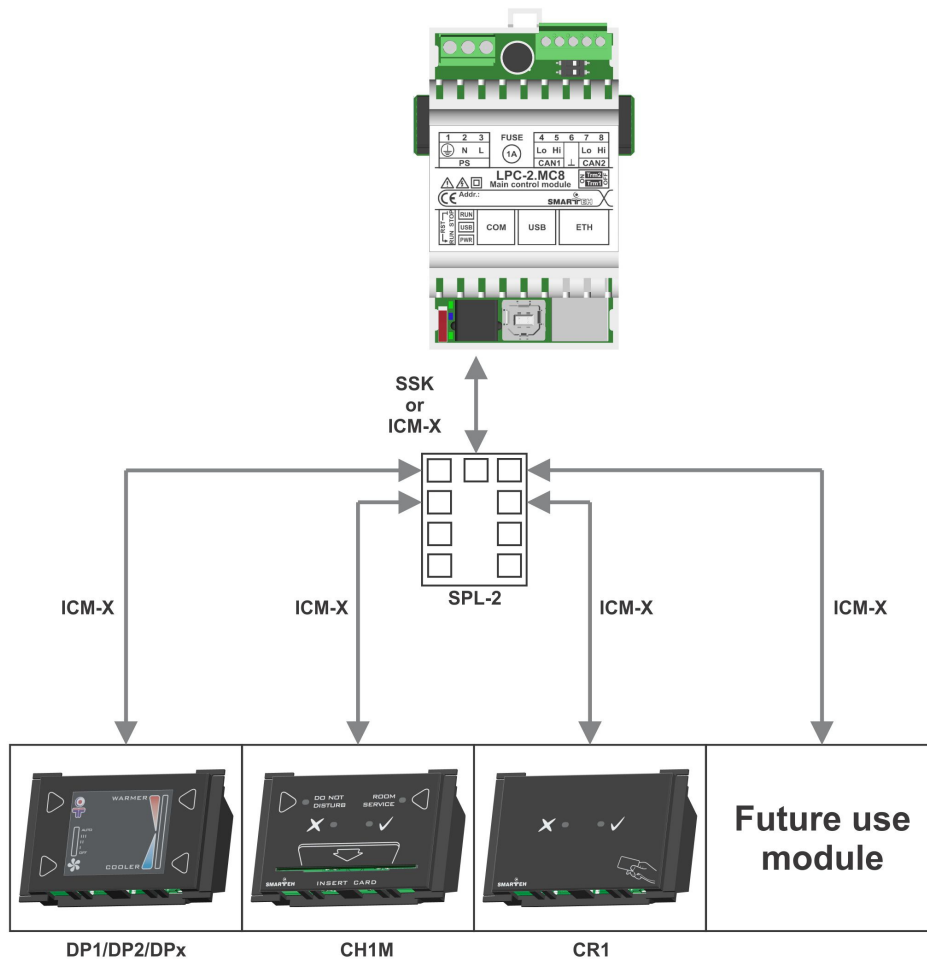


Table 2: K1

K1.1	GND	Ground
K1.2	10 .. 24 V DC	Power supply input
K1.3	RS-485 A	Data receive/send line A
K1.4	RS-485 B	Data receive/send line B

Table 3: LEDs & Buttons

LED1: blue	do not disturb	On: request active Off: no request
LED2: blue	room service	On: request active Off: no request
LED3: red	FAULT “ X ”	On: RFID key standard NOK or ID card number wrong Off: No tag in proximity
LED4: green	OK “ √ ”	On: RFID key standard OK and ID card number valid Off: No tag in proximity
LED5: red	Communication	On: RS-485 communication fault Off: RS-485 communication OK
LED6: green	Power supply	On: power supply OK Off: power supply missing or power off
PB1	do not disturb	each press toggles request on/off
PB2	room service	each press toggles request on/off

Table 4: S1

RS-485 ADDRESS	Switch 1	Switch 2
0	OFF	OFF
1	OFF	ON
2	ON	OFF
3	ON	ON



4.2 Mounting frame selection

Frame, suitable for CH1M module insertion, should be modular one at least 3 gang wide. Be careful to have corresponding flush-mounting box provided on the place where module will be positioned.

SmarteH has verified following lines to be compatible with LPC-2.CH1M module:

- Bticino - Living, Light
- Gewiss - Playbus, System
- Vimar - Plana, Idea
- Tem - Modul Soft, Modul Line
- Master

Frames of other vendors most probably suits as well, but they were not verified by SmarteH. Before installation verify compatibility of non listed frames.

Module housing has a fin on each side, which can be easily removed with knife cutter or pliers. This adaptation enables housing to be build in various frame formats with two different depths. With regard to frame used you may remove fin for housing to fit in. RFID module should not be positioned close to conductive areas (e.g.: metal frames and metal cover plate).

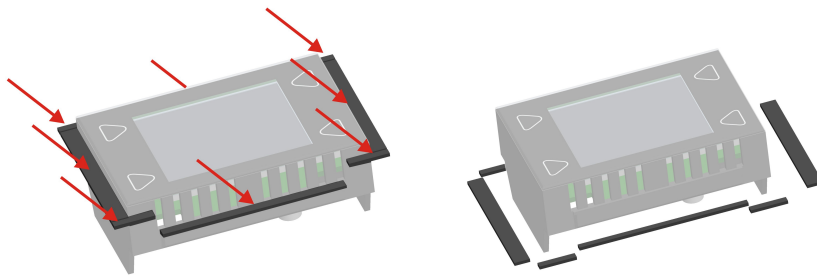
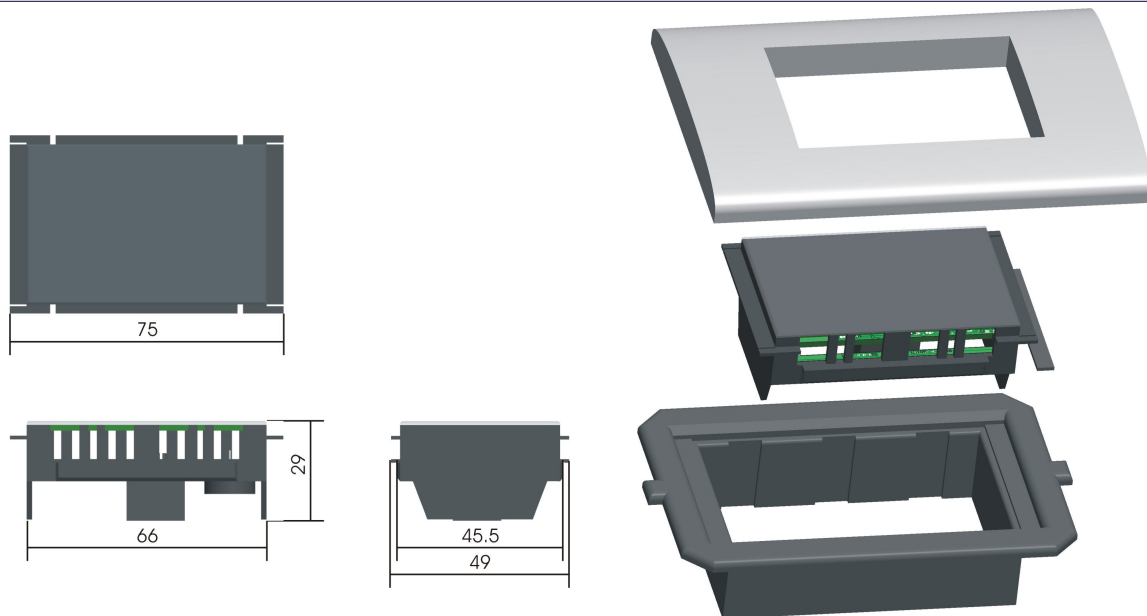


Figure 3: Module with removable fin.



4.3 Mounting instructions

Figure 4: Housing dimensions



Dimensions in millimeters.



All connections, module attachments and assembling must be done while module is not connected to the main power supply.

Module should not be mounted outdoors.

Module should be positioned in the wall inside of the room. Avoid direct sunlight or positioning near heating/cooling source object.

Several RFID panels should not be mounted close to each other. Minimum distance to next panel is at least 30 cm. This restriction also applies in case of mounting panels on both sides of the same wall. Adequate shielding material and provisions could be used to avoid interference between panels.

RFID panel should not be positioned close to conductive areas (e.g.: metal frames and metal cover plate).

Mounting instructions:

1. Set the correct RS-485 address (S1 switch) for LPC-2.CH1M (refer to the Table 4).
2. Connect interconnection cable to the connector K1. Max. allowed tractive force is 30 N.
3. Put the LPC-2.CH1M in mounting frames.
4. Cover LPC-2.CH1M with cover plate.

LPC-2.CH1M connects to the main module on its RS-485 port using interconnection cable. When more special modules (e.g. LPC-2.CR1, LPC-2.CH1, LPC-2.DP1) are connected to main module, splitter is also required (e.g. SPL-2).

NOTE: Signal wires must be installed separately from power and high voltage wires in accordance with general industry electrical installation standard.



4.4 Module labeling

Table 5: Labels

Label 1 (sample):

LPC-2.CH1M
P/N:225CH1130V02002
D/C: 01/10

Label 2 (sample):

S/N: CH1-S9-1000000003

Label description:

- **LPC-2.CH1M** is the full product name
- P/N: 225CH113V02002 is the part number
 - 225 - general code for LPC-2 product family,
 - CH1M - short product name,
 - 10 - year of code opening
 - V - denotes flush frame mounting module
 - 01 - derivation code
 - 001 - version code (reserved for future HW and/or SW firmware upgrades).
- D/C: 10/10 is the date code.
 - 01 - week and
 - 10 - year of production
- S/N: CH1-S9-1000000003 is the serial number.
 - CH1 - short product name,
 - S9 - user code (test procedure, e.g. Smarteh person xxx),
 - 10 - year (last two cyphers)
 - 00000003 - current stack number; previous module would have the stack number 00000002 and the next one 00000004.



5 TECHNICAL SPECIFICATIONS

Table 6: Technical specifications

Power supply	from main module
Interconnection connector type	RJ-12 6/6
Power consumption	1 W
RFID type	ISO/IEC 14443 A/MIFARE ²
Max. reading distance	RFID card must be inserted into LPC-2.CH1M ²
Dimensions (W x H x D)	75 x 49 x 29 mm
Weight	40 g
Ambient temperature	0 to 50 °C
Ambient humidity	max. 95 %, no condensation
Maximum altitude	2000 m
Mounting position	horizontal
Transport and storage temperature	-20 to 60 °C
Protection class	IP 20

² To achieve most reliable RFID card reading results use Smarteh RFID Mifare cards. RFID Mifare card must be inserted at least 40 mm deep into LPC-2.CH1M card slot in a time period between 1 .. 3 seconds.



6 CHANGES

The following table describes all the changes to the document.

Date	V.	Description
30.05.17	3	Technical data update.
23.12.15	2	Pictures update.
01.06.14	1	The initial version, issued as <i>LPC-2.CH1M module UserManual</i> .



7 NOTES

