USER MANUAL

Longo programmable controller
LPC-2.CH1
Card Holder module

Version 5

Written by SMARTEH d.o.o.
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User Manual

Document Version: 5
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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.

MANUFACTURER:
SMARTEH d.o.o.
Poljubinj 114
5220 Tolmin
Slovenia

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Longo programmable controller LPC-2.CH1

1 DESCRIPTION

LPC-2.CH1 RFID reader is intended to be used as presence registering device and key-card holder. Module also provides touch buttons (TB) 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 CH1 card slot. If card ID for correspondent room is valid, several actions can be started (e.g. room light and air conditioning switched on).

CH1 module features two TB with which customer is able to activate notification to the personnel. One TB activates "DO NOT DISTURB" message and the other TB activates "ROOM SERVICE" request.

LPC-2.CH1 module can be modified on customer request: custom front label, push buttons changed, LEDs added, housing color. Please contact manufacturer for more information.
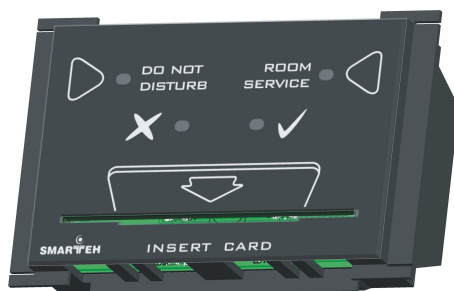
2 FEATURES

Figure 1: LPC-2.CH1 module.

Table 1: Technical data
RFID reader
RFID card slot
Adjustable LED intensity
LEDs for showing activated messages & requests: do not disturb, room service
2 touch 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 CH1 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 *iIDNew* and sends RFID code in *iIDW1-iIDW3* status fields. Code is send out until key-card is removed from slot.

While *iIDNew* 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 TB1 or TB2 toggles status *iDNDist* or *iRServ* respectively.

By activating commands *oOkLD, oFaultLD oDNDist*, *oRServ* corresponding LED is turned-on (LED3, LED4, LED1, LED2).

CH1 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 CH1 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.

iIDNew: When new RFID tag is recognized while inserted into CH1 slot, this status is set active till RFID card is not removed from the CH1 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.

iIDW1: Upper (most significant) third of RFID code
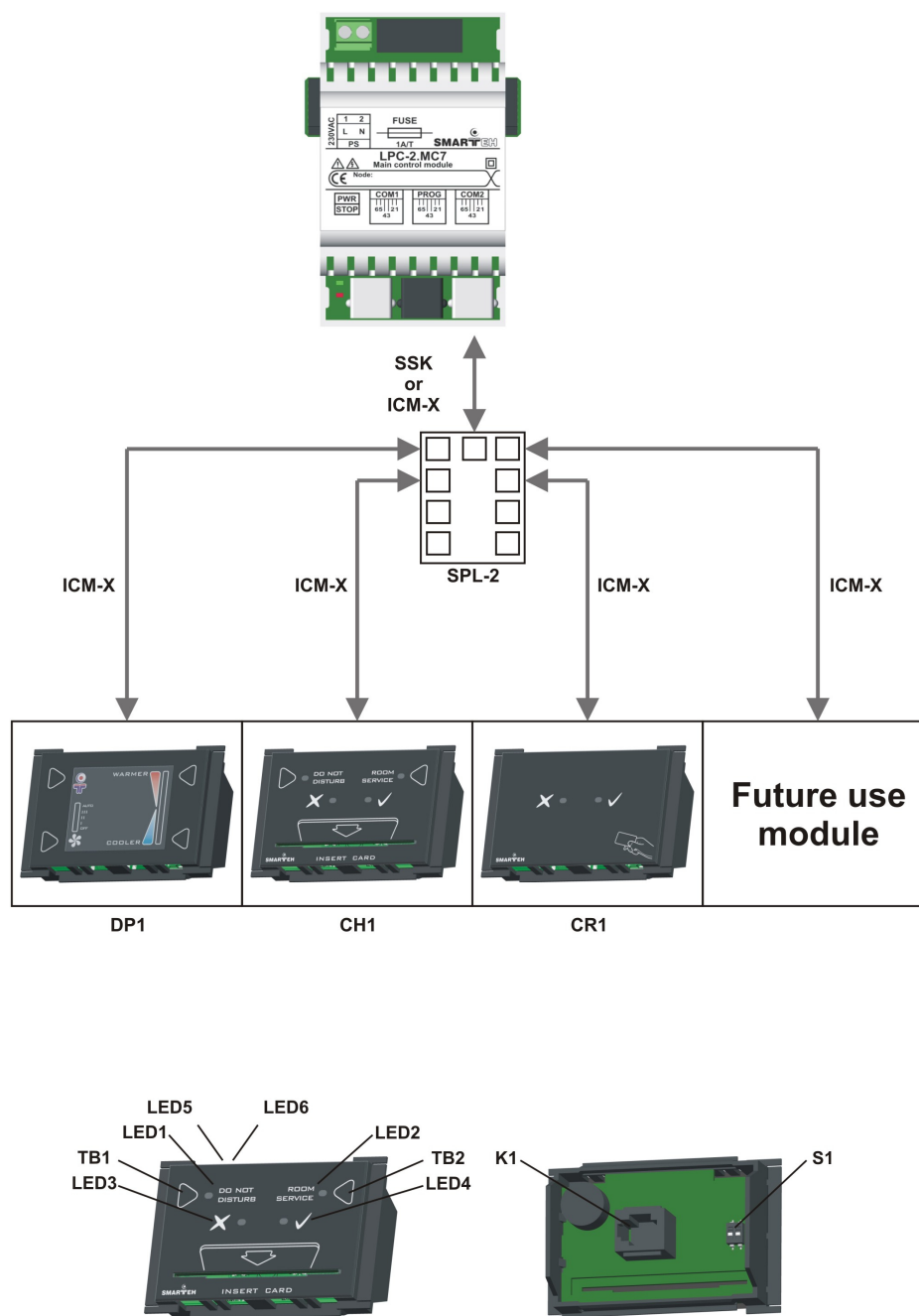
iIDW2: Middle third of RFID code

iIDW3: Lower (least significant) third of RFID code

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
TB1	do not disturb	each press toggles request on/off
TB2	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 CH1 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.CH1 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.
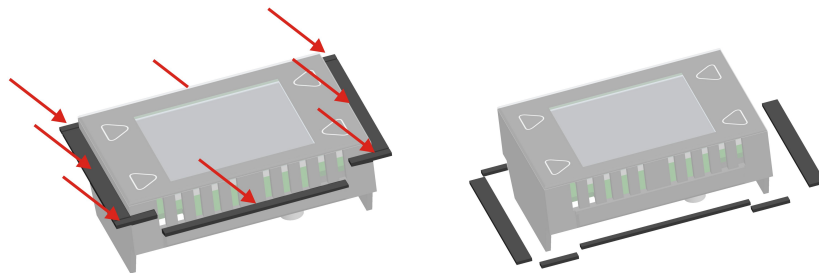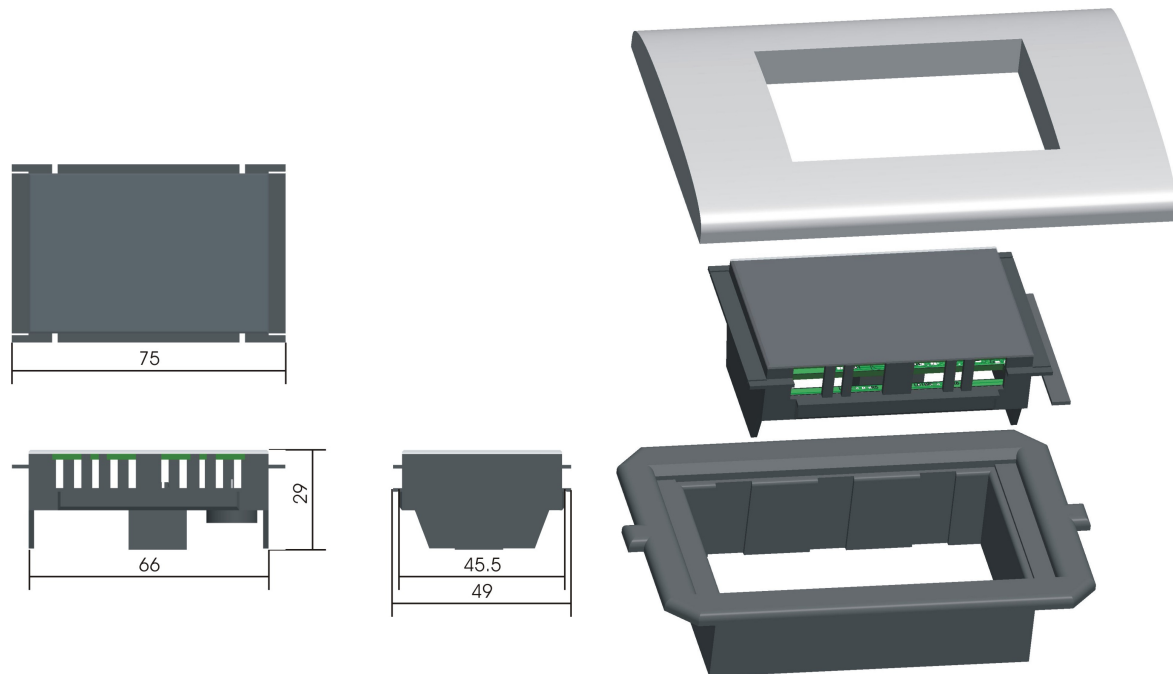
Figure 3: Module with removable fin.

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.

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.

Mounting of RFID panels into conductive, metal frames, is not allowed.

1. Set the correct RS-485 address (S1 switch) for LPC-2.CH1 (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.CH1 in mounting frames

4. Cover LPC-2.CH1 with cover plate

LPC-2.CH1 connects to the main module unit 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). Interconnection cable can be terminated on site, considering wiring scheme bellow:
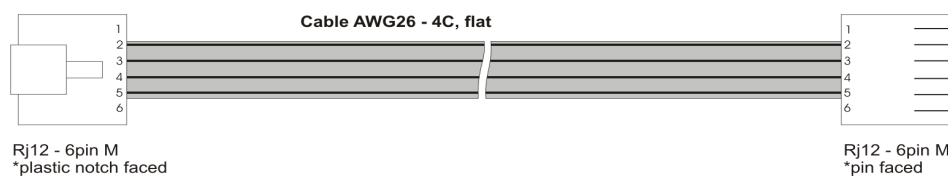

Figure 5: Interconnection cable ICM-x.

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:   Label 2:

LPC-2.CH1
P/N:225CH110V01001
D/C: 01/10

S/N: CH1-S9-1000000003

Label description:

- **LPC-2.CH1** is the full product name.
- P/N: 225CH110V01001 is the part number.
    - 225 – general code for LPC-2 product family,
    - CH1 – 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	1.5 W
RFID type	EM4100, 125 kHz, Manchester 64, read only HITEG2 UID read only
Max. reading distance	RFID card inserted into CH1 slot
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

6 CHANGES

The following table describes all the changes to the document.

Date	V.	Description
23.12.2015	005	Pictures update.
1.6.2014	004	Power consumption data update.
1.2.2013	003	Technical data update.
1.1.2012	002	CGP General update.
1.10.2010	001	The initial version, issued as *LPC-2.CH1 module UserManual*.

7 NOTES