



SMARTEH[®]
LIVING SYSTEMS

USER MANUAL

- ▶ Longo programmable controller
LPC-2.DI2
Digital Input module

Version 5

Written by SMARTEH d.o.o.
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User Manual

Document Version: 005
July 1, 2012



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.DI2

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1 DESCRIPTION

LPC-2.DI2 is used as digital input module for 230 V AC direct connection. Module is galvanic isolated from the rest of the LPC-2 system and can be used in a wide range of operation.

LED indicates active signal present on module input (refer to the Table 5).

Module is powered from internal BUS.

NOTE: For proper system configuration and data allocation please refer to LPC Composer software help menu.



2 FEATURES

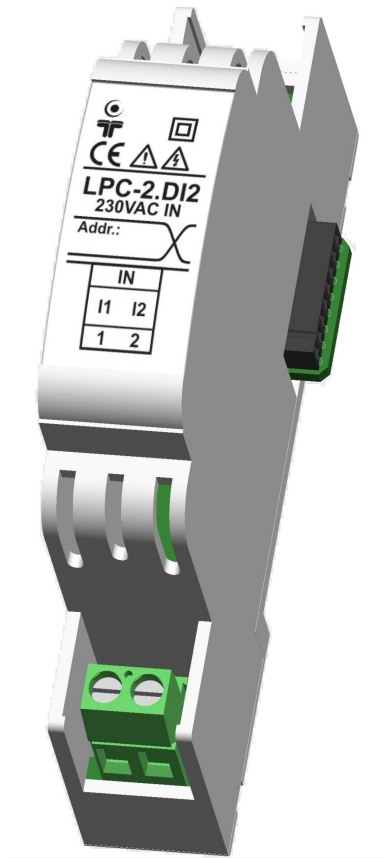


Figure 1: LPC-2.DI2 module.

Table 1: Technical data

Direct 230 V AC digital input, galvanic isolated

Flexible input for wide use of operation

Small dimensions and standard DIN EN50022-35 rail mounting



3 INSTALLATION

3.1 Connection scheme

Figure 2: Connection scheme

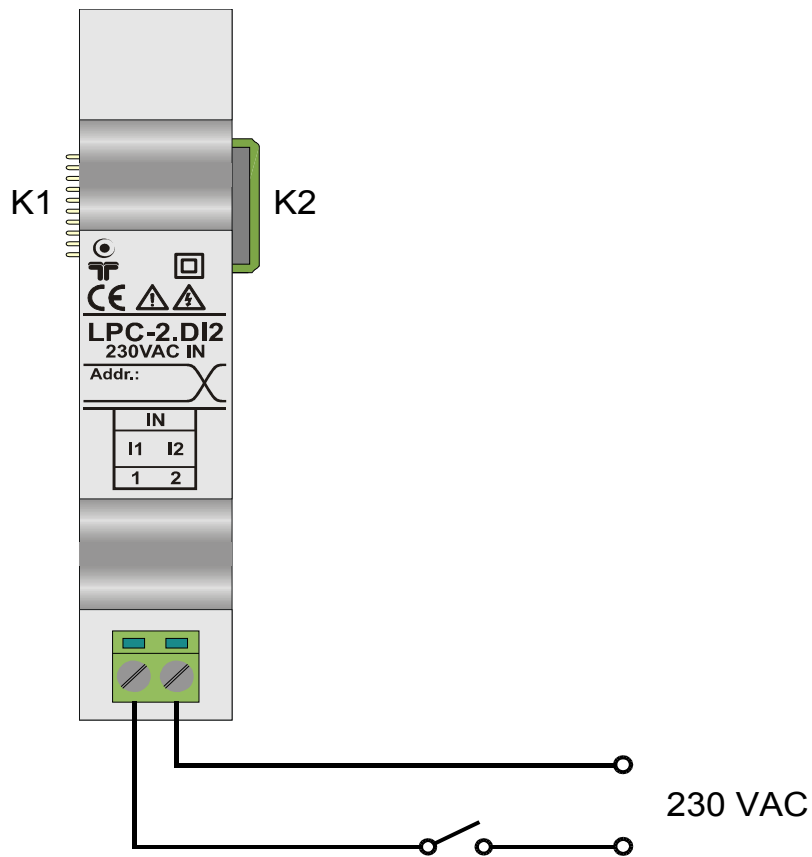


Table 2: IN¹

	Digital input in reference to IN.2, 0..230 V AC	
IN.1 (I1)	$R_{in} = 72 \text{ k}\Omega$ Off ($U_{in} < 20 \text{ V AC RMS}$) On ($U_{in} > 150 \text{ V AC RMS}$)	230 V AC
IN.2 (I2)	Reference	230 V AC

¹ Wires connected to the module must have cross sectional area at least 0.75 mm². Minimum temperature rating of wire insulation must be 85 °C.





Table 3: K1

Internal BUS	Data & DC power supply	Connection to I/O module
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Table 4: K2

Internal BUS	Data & DC power supply	Connection to I/O module
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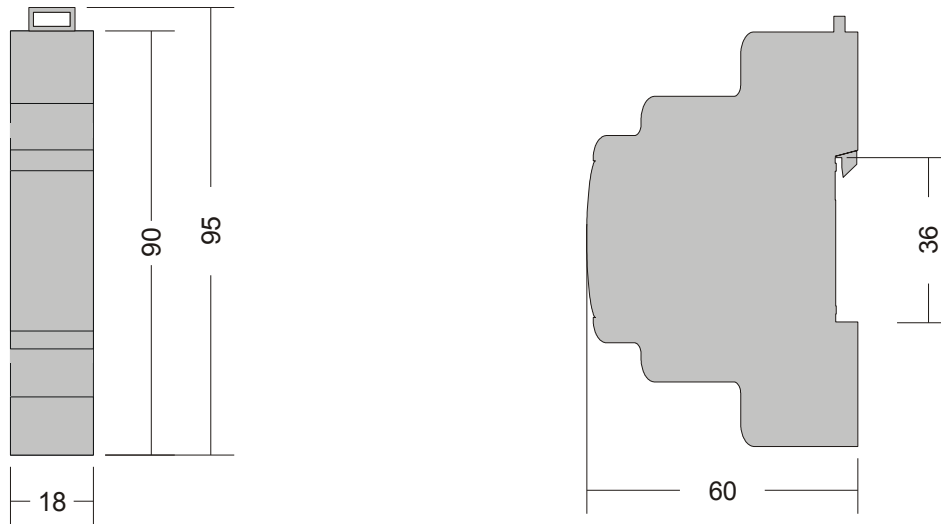
Table 5: LED1

Status	Digital input state	On: Input voltage present between IN.1 and IN.2 Off: Input voltage not present between IN.1 and IN.2
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3.2 Mounting instructions

Figure 3: Housing dimensions



Dimensions in millimeters.



EXTERNAL SWITCH OR CIRCUIT-BREAKER AND EXTERNAL OVERCURRENT PROTECTION: The unit is allowed to be connected to installation with over current protection that has nominal value of 16 A or less.

RECOMMENDATION ON SWITCH OR CIRCUIT-BREAKER PROTECTION: There should be two poles main switch in the installation in order to switch off the unit. The switch should meet the requirements of standard IEC60947 and have a nominal value at least 6 A. The switch or circuit-breaker should be within easy reach of the operator. It should be marked as the disconnecting device for the equipment.

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



Mounting instructions:

1. Switch OFF main power supply.
2. Mount LPC-2.DI2 module to the provided place inside an electrical panel (DIN EN50022-35 rail mounting).
3. Mount other LPC-2 modules (if required). Mount each module to the DIN rail first, then attach modules together through K1 and K2 connectors.
4. Connect digital input wires according to the connection scheme in Figure 2.
5. Switch ON main power supply.

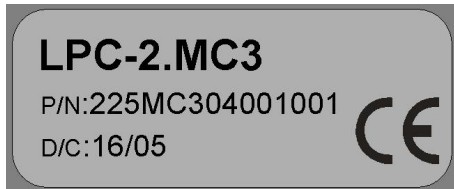
Dismount in reverse order. For mounting/dismounting modules to/from DIN rail a free space of at least one module must be left on the DIN rail.



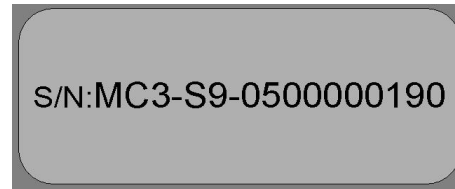
3.3 Module labeling

Figure 4: Labels on housing

Label 1 (MC3 sample):



Label 2(MC3 sample):



Label 1 description:

1. **LPC-2.MC3** is the full product name.
2. **P/N:225MC304001001** is the part number.
 - **225** - general code for product family,
 - **MC3** - short product name,
 - **04001** - sequence code,
 - **04** - year of code opening,
 - **001** - derivation code,
 - **001** - version code (reserved for future HW and/or SW firmware upgrades).
3. **D/C:16/05** is the date code.
 - **16** - week and
 - **05** - year of production.

Label 2 description:

1. **S/N:MC3-S9-0500000190** is the serial number.
 - **MC3** - short product name,
 - **S9** - user code (test procedure, e.g. Smarteh person xxx),
 - **0500000190** - year and current stack code,
 - **05** - year (last two cyphers),
 - **00000190** - current stack number; previous module would have the stack number 00000189 and the next one 00000191.



4 TECHNICAL SPECIFICATIONS

Table 6: Technical specifications

Power supply	from internal BUS
Power consumption	0.25 W
Nominal input voltage	230 V AC
Max. input voltage	260 V AC
Number of digital inputs	1
Off / “0” input signal voltage	$U_{in} < 20$ V AC RMS
On / “1” input signal voltage	$U_{in} > 150$ V AC RMS
Connection type	screw type connector for stranded wire 0.75 to 2.5 mm ²
Dimensions (L x W x H)	90 x 18 x 60 mm
Weight	40 g
Ambient temperature	0 to 50 °C
Ambient humidity	max. 95 %, no condensation
Transport and storage temperature	-20 to 60 °C
Pollution degree	2
Overvoltage category	II
Electrical equipment	Class II (double insulation)
Protection class	IP 30



5 CHANGES

The following table describes all the changes to the document.

Date	V.	Description
1.7.2012	005	CGP General update
11.5.2010	004	Updated warranty permanence.
30.6.2005	003	The initial version, issued as <i>LPC-2.DI2 module UserManual</i> .





6 NOTES

