# USER MANUAL

Longo programmable controller
LPC-2.DT3
Switch, access and temperature panel

**Version 4**

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Written by SMARTEH d.o.o.


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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# Index

## Longo programmable controller LPC-2.DT3

# 1 ABBREVIATIONS

| | |
|---|---|
| IR | Infrared |
| LED | Light emitting diode |
| LCD | Liquid crystal display |
| TB | Touch button |
| PWR | Power |
| ERR | Error |
| DIP | Dual in-line package |
| SEL | Selector |

# 2 DESCRIPTION

LPC-2.DT3 panel combines three types of common building automation modules in one module, RFID reader, thermostat and switch with statuses panel. All of this is incorporated into an enclosure with a frameless glass screen with LCD which offers an intuitive, clear and flexible interface between the user and the building. This means that this package as a whole brings a greater user-experience and ease of use for the integrators who benefits from less cabling and price reduction by having less modules to deal with.

Panel is equipped with LCD, RFID, eight touch buttons (TB), LED on each touch button, eight status symbols on LCD, buzzer, temperature sensor and light intensity sensor.

Color picture, size of status symbol on LCD and bar graphs is possible to be changed by using free Smarteh's LCD Composer software. This way - the best user experience for every situation can be achieved.

LPC-2.DT3 is controlled and powered from the main module (e.g., LPC-2.MC8, LPC-2.MC9) via Smarteh bus.

# 3 FEATURES

Figure 1: LPC-2.DT3, card holder or card access

| Table 1: Features |
|---|
| Frameless glass screen with LCD |
| 8 capacitive touch buttons |
| 8 blue LED, one on each touch button |
| 8 rectangular symbols to show on/off status on the LCD |
| Integrated ISO/IEC 14443 A/MIFARE RFID UID reader |
| Possibility to use as card access or card holder - supplied with two different plastic covers for RFID slot |
| Integrated temperature and light sensor |
| LCD intensity control |
| Color LCD with possibility of background picture changing and status symbols size changing[1] |
| Buzzer for touch beep signalization or other signalization which is controlled from PLC program |
| 2 diagnose LED |
| Flush mount in various flush mounting boxes or screw mount |
| Quality design |

1 For LCD background picture replacement, please refer to LCD Composer → Help.

# 4 OPERATION

LPC-2.DT3 can be in one of two operational modes - normal or error. When LPC-2.DT3 is in normal mode, module parameters can be read or written via Smarteh IDE software.

## 4.1 Operational modes

**Normal**
Communication with the main module is working. Only green “PWR” LED10 is turned on.

**Error**
In case of communication fault, red “ERR” LED9 will turn on.

## 4.2 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 a command or feedback. When parameter is marked as feedback it means that LPC-2.DT3 is sending information to the main module. On the other hand, command represents request from the main module to the LPC-2.DT3.

Command:

**New ID confirmation *[oIDNewConfirm]*:** When this bit goes to "1", *iIDNew* gets reset.
Type: BOOL
Raw to engineering data: “0” → New ID not confirmed
“1” → New ID confirmed - reset *iIDNew*

**LED for occupancy switch and card holder illumination *[oHolderLEDoff]*:** When this bit goes to "1", card holder LED goes off.
Type: BOOL
Raw to engineering data: “0” → LED ON
“1” → LED OFF

**Touch button LED 1 *[oTBLED1]*:** When this bit goes to "1", LED 1 turns ON.
Type: BOOL
Raw to engineering data: “0” → Touch button LED OFF
“1” → Touch button LED ON

**Touch button LED 2 *[oTBLED2]*:** When this bit goes to "1", LED 2 turns ON.
Type: BOOL
Raw to engineering data: “0” → Touch button LED OFF
“1” → Touch button LED ON

**Touch button LED 3 *[oTBLED3]*:** When this bit goes to "1", LED 3 turns ON.
Type: BOOL
Raw to engineering data: “0” → Touch button LED OFF
“1” → Touch button LED ON

**Touch button LED 4 *[oTBLED4]*:** When this bit goes to "1", LED 4 turns ON.
Type: BOOL
Raw to engineering data: “0” → Touch button LED OFF
“1” → Touch button LED ON

**Touch button LED 5 *[oTBLED5]*:** When this bit goes to "1", LED 5 turns ON.
Type: BOOL
Raw to engineering data: "0" → Touch button LED OFF
"1" → Touch button LED ON

**Touch button LED 6 *[oTBLED6]*:** When this bit goes to "1", LED 6 turns ON.
Type: BOOL
Raw to engineering data: "0" → Touch button LED OFF
"1" → Touch button LED ON

**Touch button LED 7 *[oTBLED7]*:** When this bit goes to "1", LED 7 turns ON.
Type: BOOL
Raw to engineering data: "0" → Touch button LED OFF
"1" → Touch button LED ON

**Touch button LED 8 *[oTBLED8]*:** When this bit goes to "1", LED 8 turns ON.
Type: BOOL
Raw to engineering data: "0" → Touch button LED OFF
"1" → Touch button LED ON

**Enable beep when new ID is detected *[oIDNewBeepEn]*:** This command enables short beep of the buzzer when new ID of RFID card is detected.

Type: BOOL
Raw to engineering data: "0" → New ID beep OFF
"1" → New ID beep ON

**Enable touch button beep *[oBeepEn]*:** This command enables short beep of the buzzer when any of the touch button is pressed and its corresponding LED is ON. Beep happens on rising-edge of the touch.

Type: BOOL
Raw to engineering data: "0" → Touch button beep OFF
"1" → Touch button beep ON

**Buzzer *[oBuzz]*:** When this bit goes to "1", buzzer turns ON until this bit is changed back to "0".
Type: BOOL
Raw to engineering data: "0" → Buzzer OFF
"1" → Buzzer ON

**Temp. display num enable *[oTmpEn]*:** When this bit goes to "1", temperature is shown on the LCD.
Type: BOOL
Raw to engineering data: "0" → Temperature not shown on the display
"1" → Temperature shown on the display

**Temp. unit selector *[oC_F_Sel]*:** Selector for temperature units
Type: BOOL
Raw to engineering data: "0" → Degrees Celsius
"1" → Degrees Fahrenheit

**Min temp. set par. [0.01°] *[oTMin]*:** Minimum allowed temperature setpoint. Parameter depends on the *oC_F_Sel* parameter.

Type: WORD

If *oC_F_Sel*
is "0":

Raw to engineering data: 0 .. 4000 → 0 .. 40.00°C
is "1":
Raw to engineering data: 3200 .. 9900 → 32.00 .. 99.00°F

**Max temp. set par. [0.01°] *[oTMax]*:** Maximum allowed temperature setpoint. Parameter depends on the *oC_F_Sel* parameter.
Type: WORD

If *oC_F_Sel*
is "0":
Raw to engineering data: 0 .. 4000 → 0 .. 40.00°C
is "1":
Raw to engineering data: 3200 .. 9900 → 32.00 .. 99.00°F

**Fan bar color selector *[oFanBarColor]*:** Selector for color of fan bar.
Type: WORD
Raw to engineering data: 0 → White
1 → Blue
2 → Red
3 → Green

**Temperature bar color selector *[oTmpBarColor]*:** Selector for color of temperature bar.

Type: WORD
Raw to engineering data: 0 → White
1 → Blue
2 → Red
3 → Green

**Fan mode set [TB,OFF,I,II,III,Auto] *[oFanSet]*:** Mode of fan.

Type: WORD
Raw to engineering data: 0 → Fan set from touch buttons
1 → OFF
2 → I
3 → II
4 → III
5 → Auto

**Remote temp. setpoint [0.01°] *[oRTSet]*:** Remote temperature setpoint. Parameter depends on the *oC_F_Sel* parameter.

Type: WORD

If *oC_F_Sel*
is "0":
Raw to engineering data: 0 .. 4000 → 0 .. 40.00°C
is "1":
Raw to engineering data: 3200 .. 9900 → 32.00 .. 99.00°F

**Remote temperature [0.01°] *[oTRem]*:** Remote temperature. Parameter depends on the *oC_F_Sel* parameter.

Type: WORD

If *oC_F_Sel*
is "0":
Raw to engineering data: 0 .. 4000 → 0 .. 40.00°C

is "1":
Raw to engineering data: 3200 .. 9900 → 32.00 .. 99.00°F

**Status on-screen text *[oStatus]*:** Selector for displaying text on the LCD screen.

Type: WORD
Raw to engineering data: 0 → No text
1 → OFF
2 → ECO
3 → ERR
4 → SET

**LCD and LED intensity selector *[oLCDandLEDintensity]*:** This parameter defines how will the intensity of LCD and LED be regulated.
Type: WORD
Raw to engineering data: xxxxxxxxxxxxxxx0 (bin) → Default intensity regulation
Low Byte = 1 → Change intensity to value that is in High Byte of *oLCDandLEDintensity*, no fade-effect
Low Byte = 2 → Change intensity to value that is in High Byte of *oLCDandLEDintensity*, fade-effect
High Byte = 0 .. 100 → 0 .. 100% manual SP for intensity

**Status symbol selector *[oStatusSymbolSel]*[2]:** Selector for Status 1 .. Status 8 on LCD
Type: WORD
Raw to engineering data: xxxxxxxxxxxxxx00 (bin) → Status 1 not shown
xxxxxxxxxxxxxx01 (bin) → Status 1 color Foreground (ON)
xxxxxxxxxxxxxx10 (bin) → Status 1 color Background (OFF)
xxxxxxxxxxxx00xx (bin) → Status 2 not shown
xxxxxxxxxxxx01xx (bin) → Status 2 color Foreground (ON)
xxxxxxxxxxxx10xx (bin) → Status 2 color Background (OFF)
xxxxxxxxxx00xxxx (bin) → Status 3 not shown
xxxxxxxxxx01xxxx (bin) → Status 3 color Foreground (ON)
xxxxxxxxxx10xxxx (bin) → Status 3 color Background (OFF)
xxxxxxxx00xxxxxx (bin) → Status 4 not shown
xxxxxxxx01xxxxxx (bin) → Status 4 color Foreground (ON)
xxxxxxxx10xxxxxx (bin) → Status 4 color Background (OFF)
xxxxxx00xxxxxxxx (bin) → Status 5 not shown
xxxxxx01xxxxxxxx (bin) → Status 5 color Foreground (ON)
xxxxxx10xxxxxxxx (bin) → Status 5 color Background (OFF)
xxxx00xxxxxxxxxx (bin) → Status 6 not shown
xxxx01xxxxxxxxxx (bin) → Status 6 color Foreground (ON)
xxxx10xxxxxxxxxx (bin) → Status 6 color Background (OFF)
xx00xxxxxxxxxxxx (bin) → Status 7 not shown
xx01xxxxxxxxxxxx (bin) → Status 7 color Foreground (ON)
xx10xxxxxxxxxxxx (bin) → Status 7 color Background (OFF)
00xxxxxxxxxxxxxx (bin) → Status 8 not shown
01xxxxxxxxxxxxxx (bin) → Status 8 color Foreground (ON)
10xxxxxxxxxxxxxx (bin) → Status 8 color Background (OFF)

Feedback:

**New ID detected *[iIDNew]*:** This bit goes to "1" when new ID is detected.
Type: BOOL

2 Programmer may use POU DT3_StatusSymbol in SmartehIDE, which already handles correct shifting of the bits.

Raw to engineering data: “0” → No new ID
“1” → New ID

**Occupancy switch *[iOccup]*:** This bit is "1" for as long as any type of card is present in card holder. It's functionality is based on interruption of blue light curtain so it is essential that holder LED is ON.

Type: BOOL
Raw to engineering data: “0” → Card is not present in card holder
“1” → Card is present in card holder

**MIFARE card presence *[iCardPresent]*:** This bit is "1" for as long as ISO/IEC 14443 A/MIFARE card is present at RFID reader.

Type: BOOL
Raw to engineering data: “0” → MIFARE card is not present
“1” → MIFARE card is present

**Toggle communication bit *[iComm]*:** At each valid Rx packet from main module, this bit is toggled.
Type: BOOL

**Touch button 1 *[iTB1]*:** Touch button 1 state
Type: BOOL
Raw to engineering data: “0” → Touch button OFF
“1” → Touch button ON

**Touch button 2 *[iTB2]*:** Touch button 2 state
Type: BOOL
Raw to engineering data: “0” → Touch button OFF
“1” → Touch button ON

**Touch button 3 *[iTB3]*:** Touch button 3 state

Type: BOOL
Raw to engineering data: “0” → Touch button OFF
“1” → Touch button ON

**Touch button 4 *[iTB4]*:** Touch button 4 state
Type: BOOL
Raw to engineering data: “0” → Touch button OFF
“1” → Touch button ON

**Touch button 5 *[iTB5]*:** Touch button 5 state
Type: BOOL
Raw to engineering data: “0” → Touch button OFF
“1” → Touch button ON

**Touch button 6 *[iTB6]*:** Touch button 6 state
Type: BOOL
Raw to engineering data: “0” → Touch button OFF
“1” → Touch button ON

**Touch button 7 *[iTB7]*:** Touch button 7 state
Type: BOOL
Raw to engineering data: “0” → Touch button OFF
“1” → Touch button ON

**Touch button 8 *[iTB8]*:** Touch button 8 state
Type: BOOL

Raw to engineering data: "0" → Touch button OFF
"1" → Touch button ON

**Act. Light intensity *[iLight]*:** Actual measured light intensity.

Type: WORD
Raw to engineering data: 0 .. 100 → 0 .. 100 %

**Act. Room temp. *[iTAct]*:** Actual room temperature measured by wireless panel. Parameter depends on the *oC_F_Sel* parameter.

Type: WORD

If *oC_F_Sel*

is "0":
Raw to engineering data: 0 .. 4000 → 0 .. 40.00°C
is "1":
Raw to engineering data: 3200 .. 9900 → 32.00 .. 99.00°F

**Temp. setpoint *[iTSet]*:** Temperature setpoint.

Type: WORD

If *oC_F_Sel*

is "0":
Raw to engineering data: 0 .. 4000 → 0 .. 40.00°C
is "1":
Raw to engineering data: 3200 .. 9900 → 32.00 .. 99.00°F

**Act. fan mode [OFF,I,II,III,Auto] *[iFanMode]*:** Actual fan mode selection.

Type: WORD
Raw to engineering data: 1 → OFF
2 → I
3 → II
4 → III
5 → Auto

**Length of ID code *[iIDLength]*:** This parameter has the information of the length of the cards UID code which has been read lastly. Data resets when RFID Mifare card is not present at RFID reader any more.

Type: WORD
Raw to engineering data: 1 .. 10 → 1 .. 10 bytes

**RFID ID received Word1 *[iIDW1]*:** Byte 0 and byte 1 of UID. UID resets when RFID card is not present at RFID reader any more.
Type: WORD
Raw to engineering data: 0 .. 65535 → 0 .. 65535

**RFID ID received Word2 *[iIDW2]*:** Byte 2 and byte 3 of UID. UID resets when RFID card is not present at RFID reader any more.
Type: WORD
Raw to engineering data: 0 .. 65535 → 0 .. 65535

**RFID ID received Word3 *[iIDW3]*:** Byte 4 and byte 5 of UID. Byte 8 and byte 9 of UID. UID resets when RFID card is not present at RFID reader any more.
Type: WORD
Raw to engineering data: 0 .. 65535 → 0 .. 65535

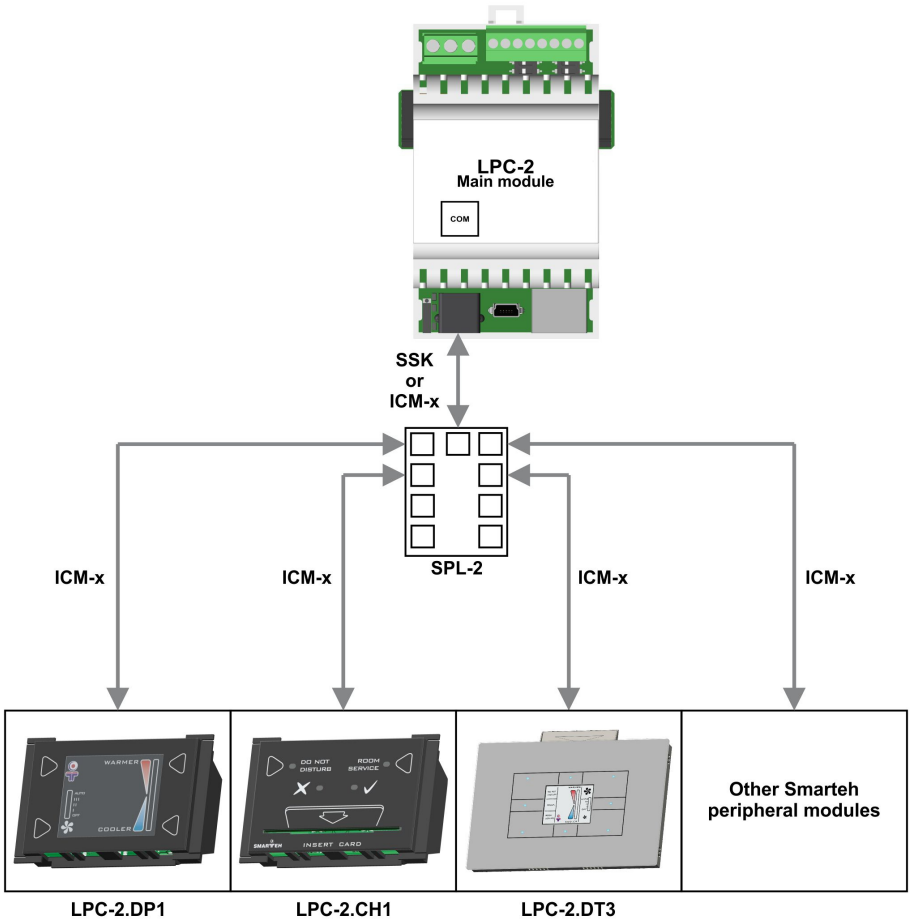
**RFID ID received Word4 *[iIDW4]*:** Byte 6 and byte 7 of UID. Byte 8 and byte 9 of UID. UID resets when RFID card is not present at RFID reader any more.
Type: WORD
Raw to engineering data: 0 .. 65535 → 0 .. 65535

**RFID ID received Word5 *[iIDW5]*:** Byte 8 and byte 9 of UID. UID resets when RFID card is not present at RFID reader any more.
Type: WORD
Raw to engineering data: 0 .. 65535 → 0 .. 65535

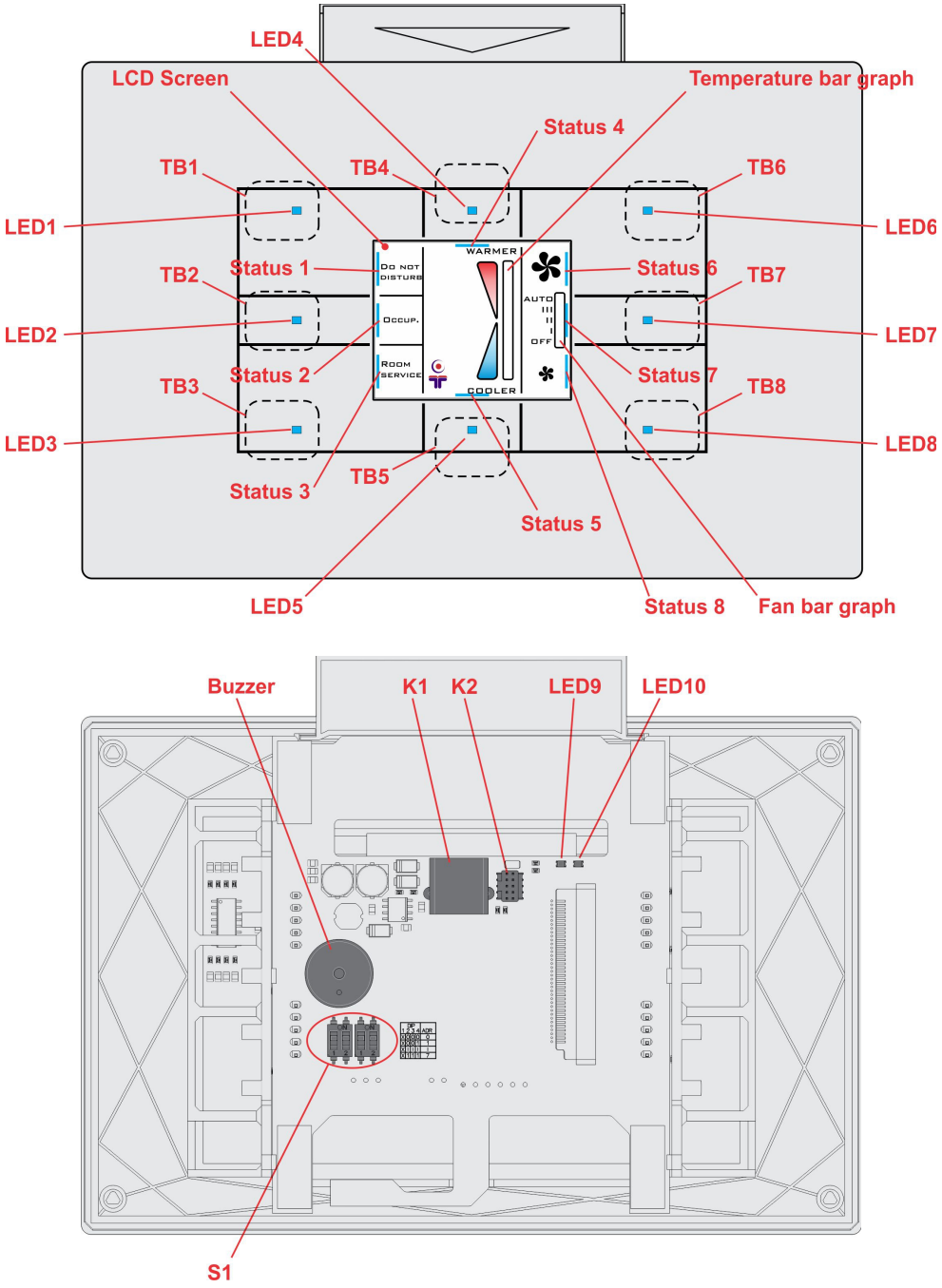
# 5 INSTALLATION

## 5.1 Connection scheme

**Figure 2: Connection scheme**



## Figure 2: Connection scheme




## Table 2: K1

| | | |
|---|---|---|
| K1.1 | GND | Ground |
| K1.2 | 7 .. 30 V DC | Power supply input |
| K1.3 | Standard RS-485 A | Data receive/send line A |
| K1.4 | Standard RS-485 B | Data receive/send line B |

| Table 3: K2 | | |
|---|---|---|
| K2 | Programming connector | Factory use only |

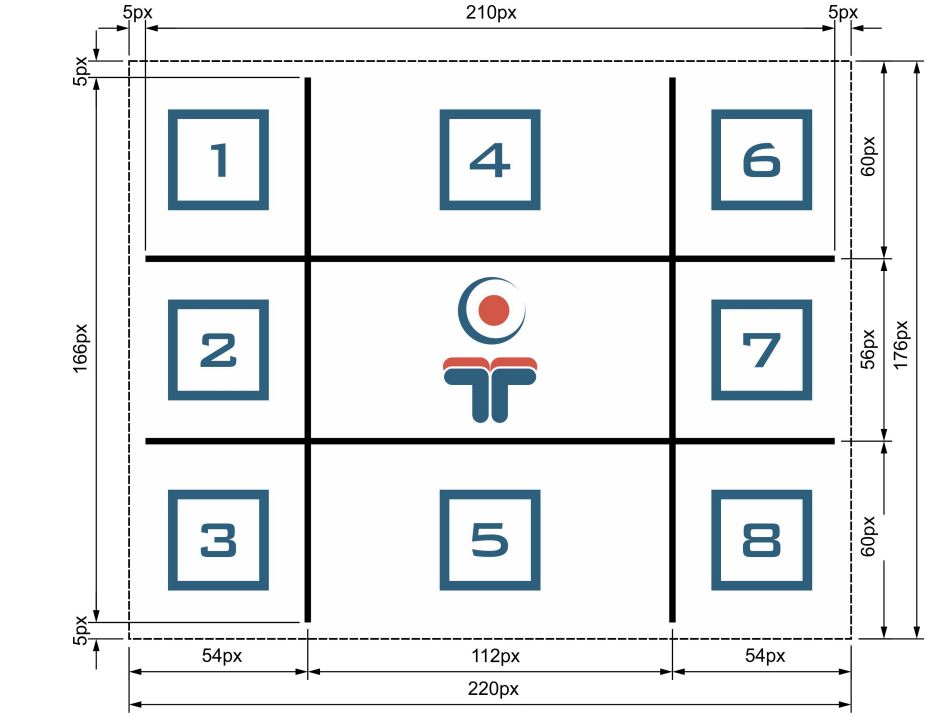
| Table 4: LEDs | | |
|---|---|---|
| LED1: blue | Touch button LED 1 | Programmable |
| LED2: blue | Touch button LED 2 | Programmable |
| LED3: blue | Touch button LED 3 | Programmable |
| LED4: blue | Touch button LED 4 | Programmable |
| LED5: blue | Touch button LED 5 | Programmable |
| LED6: blue | Touch button LED 6 | Programmable |
| LED7: blue | Touch button LED 7 | Programmable |
| LED8: blue | Touch button LED 8 | Programmable |
| LED9: red | Communication | ON: RS-485 communication fault<br>OFF: RS-485 communication OK |
| LED10: green | Power supply | ON: power supply OK<br>OFF: power supply missing or power off |

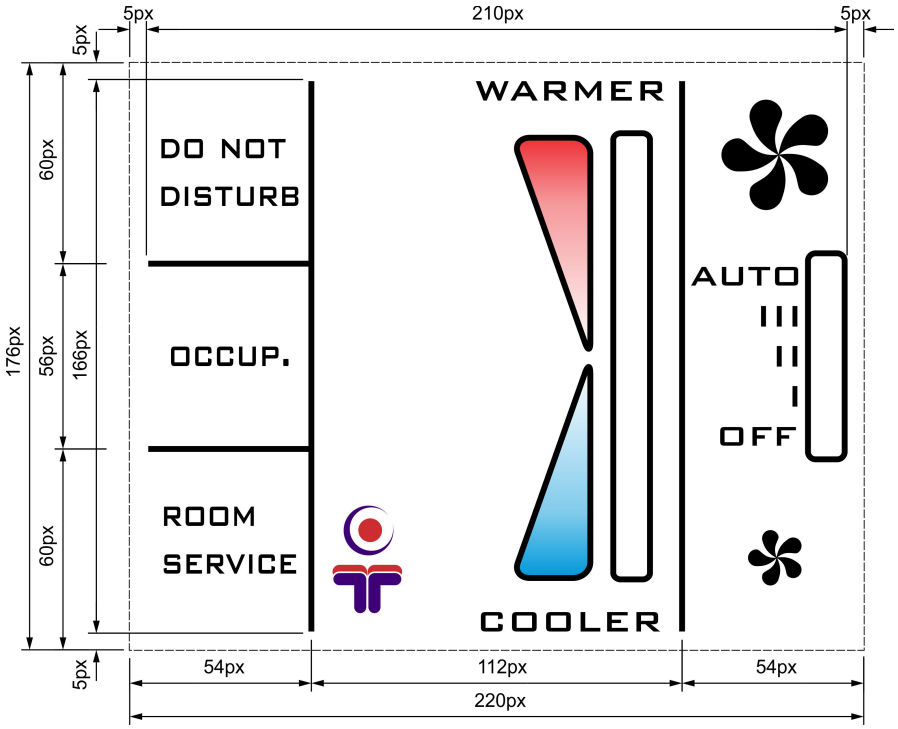
| Table 5: LCD bars & Buttons | | |
|---|---|---|
| Temperature bar graph | Temp. SP | Active LCD bar presents actual set point relative to range<br>*oTMin* (bottom LCD bar) - *oTMax* (top LCD bar) |
| Fan bar graph | Fan mode | I: minimum speed selected<br>II: middle speed selected<br>III: maximum speed selected<br>AUTO: auto speed selection<br>OFF: module functions switched-off |
| TB1 | Touch button 1 | Readable |
| TB2 | Touch button 2 | Readable |
| TB3 | Touch button 3 | Readable |
| TB4 | Touch button 4, Temp. SP up | Readable and increase by one step, step = (*Max. temp* - *Min. temp*) * 1/10 |
| TB5 | Touch button 5, Temp. SP down | Readable and decrease by one step, step = (*Max. temp* - *Min. temp*) * 1/10 |
| TB6 | Touch button 6, Fan mode up | Readable and Increase Mode & speed selection |
| TB7 | Touch button 7 | Readable |
| TB8 | Touch button 8, Fan mode down | Readable and Decrease Mode & speed selection |

| Table 6: S1 | | | | |
|---|---|---|---|---|
| **RS-485 ADDRESS** | **Switch 1** | **Switch 2** | **Switch 3** | **Switch 4** |
| 0 | NOT USED | OFF | OFF | OFF |
| 1 | | OFF | OFF | ON |
| 2 | | OFF | ON | OFF |
| 3 | | OFF | ON | ON |
| 4 | | ON | OFF | OFF |
| 5 | | ON | OFF | ON |
| 6 | | ON | ON | OFF |
| 7 | | ON | ON | ON |

## 5.2 Default image drawing

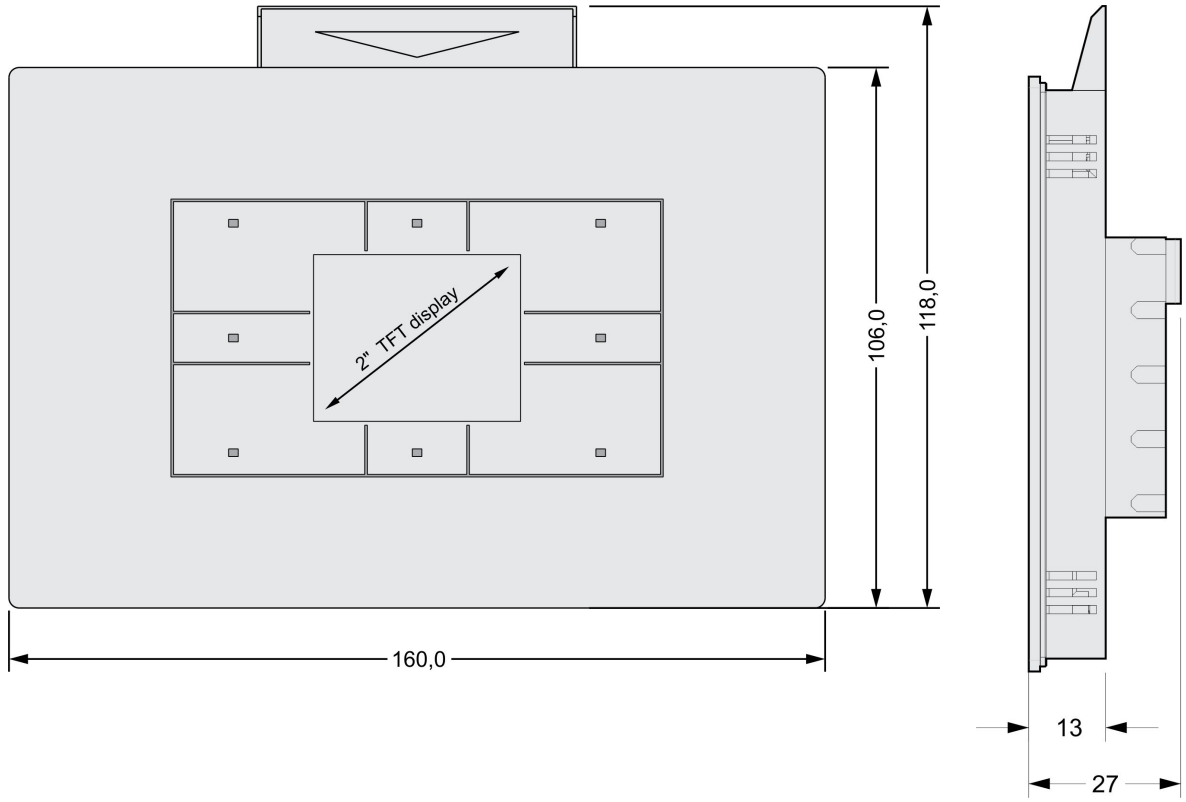
**Figure 3: Default image drawings**

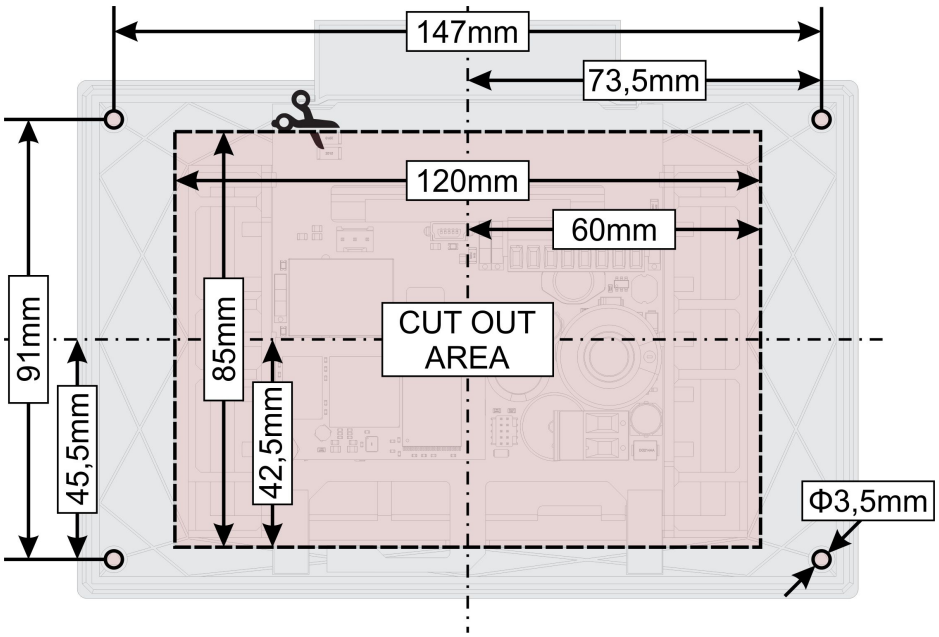


## 5.3 Mounting instructions

**Figure 4: Housing dimensions**




Dimensions in milimeters.

All connections, module attachments and assembling must be done while module is not connected to the power supply.
Module should be positioned in the wall inside of the room. Avoid direct sunlight, positioning near heating/cooling source object or under high luminance lights for best performance of the on-board sensors. Junction box and tubes in the wall must be sealed to prevent airflow. Displayed temperature is adequate to temperature approx. 10 cm below module and 1 cm off the wall. Recommended installation height is 1.5 m above floor level.

**Mounting instructions:**

1. Fasten mounting frame[3] with screws[5] into TEM VM4 HM40, TEM PM4 DM40, Elettrocanali EC37104, Legrand 801 42 or similar flush mounting box[4] - see Figure 5. The holder must be turned so that the opening is up, otherwise RFID will not work.[5]
2. Mount the desired plastic cover for RFID slot - card holder or card access - see Figure 5
3. Set the correct RS-485 address for LPC-2.DT3 (refer to the table 5).
4. Connect interconnection cable to the connector K1. Max. allowed tensile force is 30 N.
5. Mount LPC-2.DT3 into flush mounting box, using provided springs - see Figure 5.

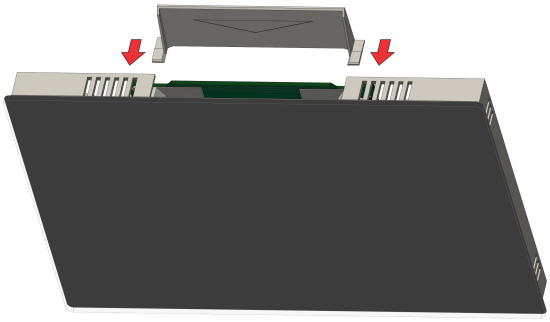
LPC-2.DT3 module must be installed properly, isolating any potential connection with electrical sources other than power supply from main module. Improperly installed module may cause failure of the module itself, other devices on the same wiring, main module or may lead to fire or personal injury.

LPC-2.DT3 is connected to the main module with interconnection cable (e.g. SSK, ICM-7). When more modules are connected to the main module, splitter (e.g. SPL-2) is also required (figure 2).

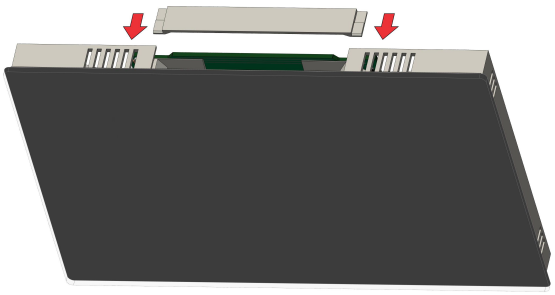
**NOTE**: Signal wires must be installed separately from power and high voltage wires in accordance with general industry electrical installation standard.

**Figure 5: Mounting cover for RFID slot**

Card holder cover

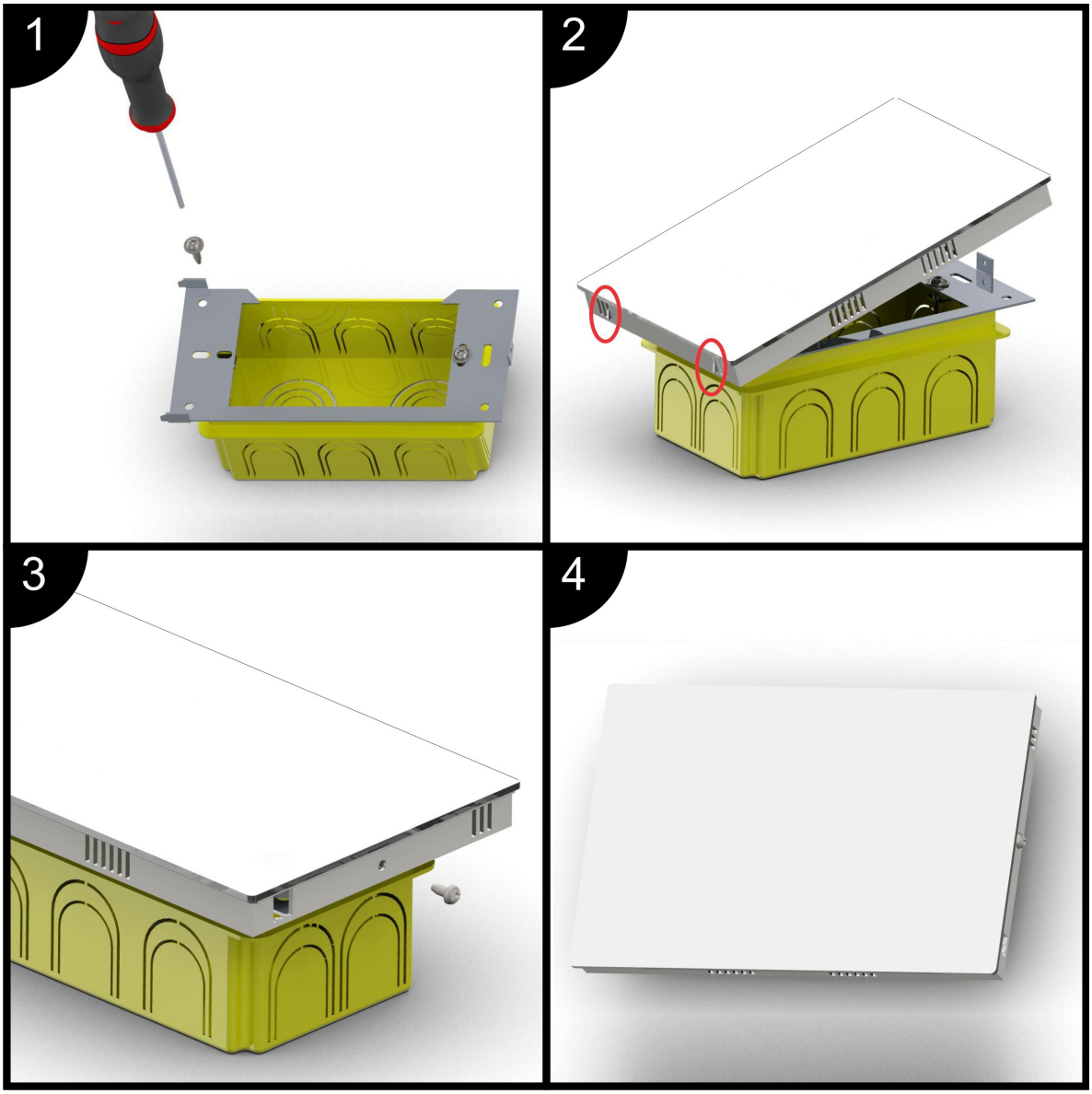


Card access cover



3 Holders, screws and springs are provided in package with LPC-2.DT3
4 Flush mounting box must be ordered separately - contact Smarteh.
5 In case that the bracket touches the walls of the mounting box, it can be folded inwards.

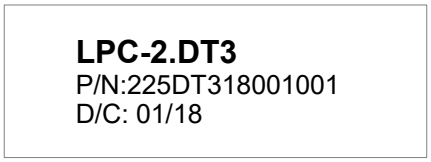
**Figure 6: Mounting instructions for flush mount**



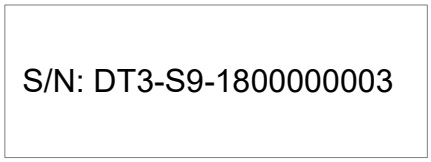
## 5.4 Module labeling

**Figure 7: Labels**

Label 1 (sample):




Label 2 (sample):




***Label 1 descriptions:***

1. **LPC-2.DT3** is the full product name.
2. **P/N:225DT318001001** is the part number.
   - **225** – general code for product family,
   - **DT3** – short product name,
   - **18001** – sequence code,
     - 18 – year of code opening,
     - 001 – derivation code,
   - **001** – version code (reserved for future HW and/or SW firmware upgrades).
3. **D/C: 01/18** is the date code.
   - **01** – week and
   - **18** – year of production.

***Label 2 descriptions:***

1. **S/N: DT2-S9-1800000003** is the serial number.
   - **DT3** – short product name,
   - **S9** – user code (test procedure, e.g. Smarteh person xxx),
   - **1800000003** – year and current stack code,
     - 18 – year (last two cyphers),
     - 00000003 – current stack number; previous module would have the stack number 00000002 and the next one 00000004.

# 6 TECHNICAL SPECIFICATIONS

| Table 7: Technical specifications | |
|---|---|
| Power supply | from main module |
| Interconnection connector type | RJ-12 6/6 |
| Power consumption | 2 W |
| Display | 2", 220 × 176 resolution |
| RFID type - unique ID read | ISO/IEC 14443 A/MIFARE |
| Max. reading distance | 6 cm |
| Dimensions (L x W x H) | 118 x 160 x 27 mm |
| Weight | 200 g |
| Maximum altitude | 2000 m |
| Mounting position | vertical |
| Ambient temperature | 0 to 50 °C |
| Ambient humidity | max. 95 %, no condensation |
| Transport and storage temperature | -20 to 60 °C |
| Protection class | IP 20 |

# 7 PROGRAMMING GUIDE

## 7.1 Background picture replacement and changing of status symbols

For LCD background picture replacement, please refer to LCD Composer → Help.

## 7.2 Changing of status symbols

For changing the size of rectangular status symbols, adjust Xs and Ys on Bar graphs/symbols data **4** in LCD composer as it is shown in Figure 8. Figures 9 and 10 shows two examples of how number of Xs and Ys influences the size of displayed status symbol. Color of the status symbol can be toogled between Back color and Fore color using *oStatusSymbolSel* parameter. For more information about color definition and other, please refer to LCD Composer → Help.

Default values can be seen in Figure 8.

**Figure 8: Field for status symbols in LCD Composer**

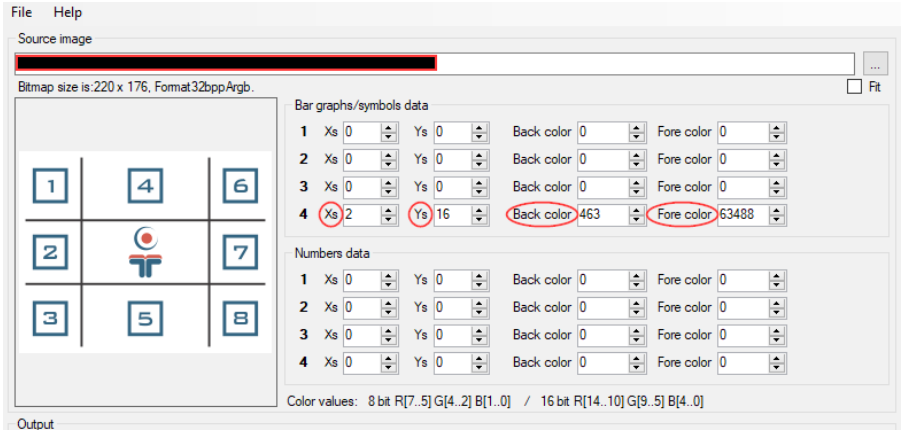



**Figure 9: Example for Xs = 4, Ys = 19**

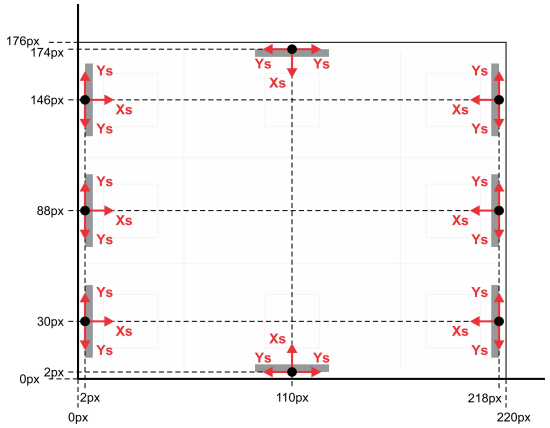
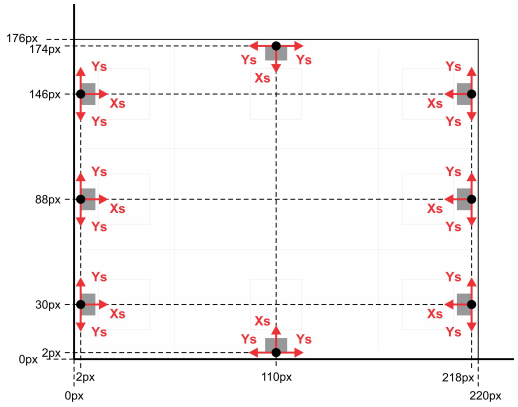


**Figure 10: Example for Xs = 8, Ys = 6**




## 7.3 Bar graphs positioning

There are two 2 bar graphs available. Temperature bar graph has 11 vertical cursor positions and fan bar graph has 5 vertical cursor positions. For origin positioning of bar graphs, adjust Xs and Ys on Bar graphs/symbols data **1** for temperature bar graph and Bar graphs/symbols data **2** for fan bar graph as it is shown in Figure 11. Graphical representation of positioning can be seen in Figure 12. Color of bar graphs background is defined in Back color. Fore color is not applicable through LCD Composer. Cursor color can be changed through module parameters. Cursor size is 9 x 12 px.

If Xs and Ys are greater than 221 than graph will be moved out of the display area and it won't be shown.

Default values can be seen in Figure 11.

**Figure 11: Field for bar graphs in LCD Composer**

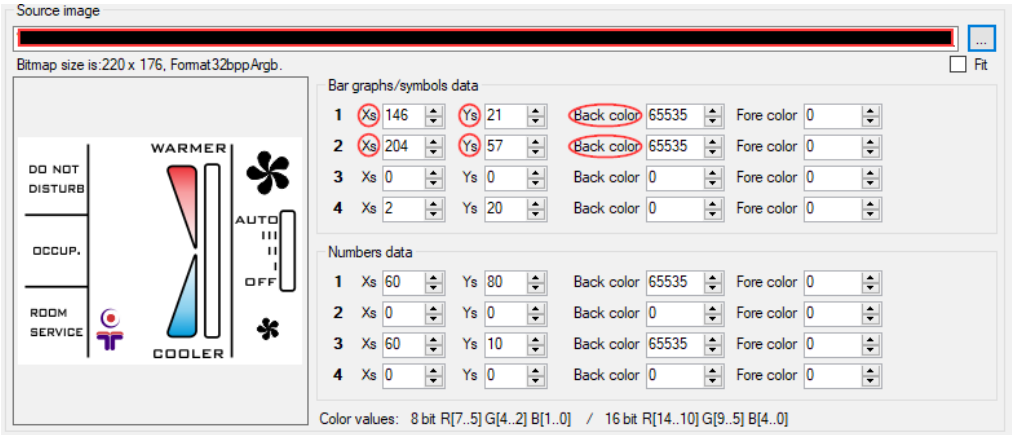
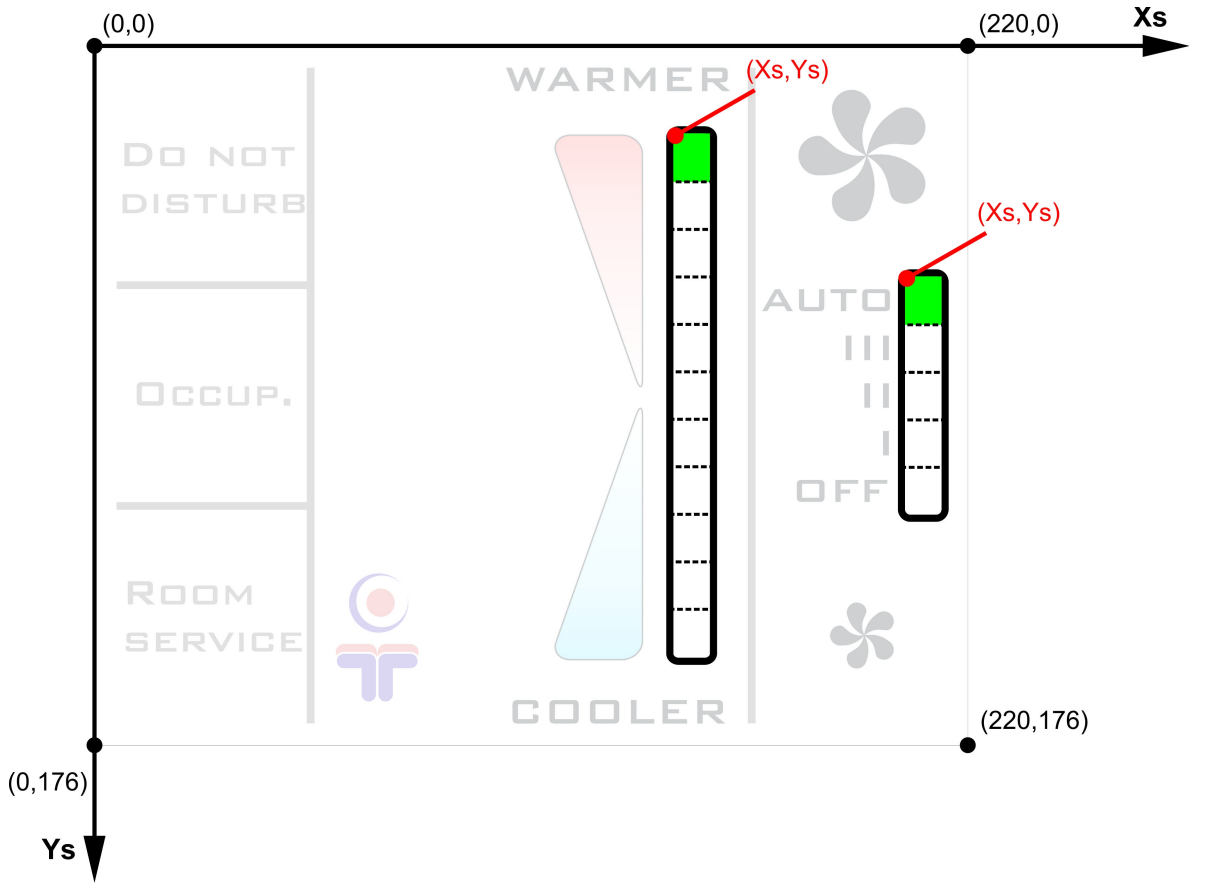


**Figure 12: Example for Bar graphs/symbols data from Figure 11**

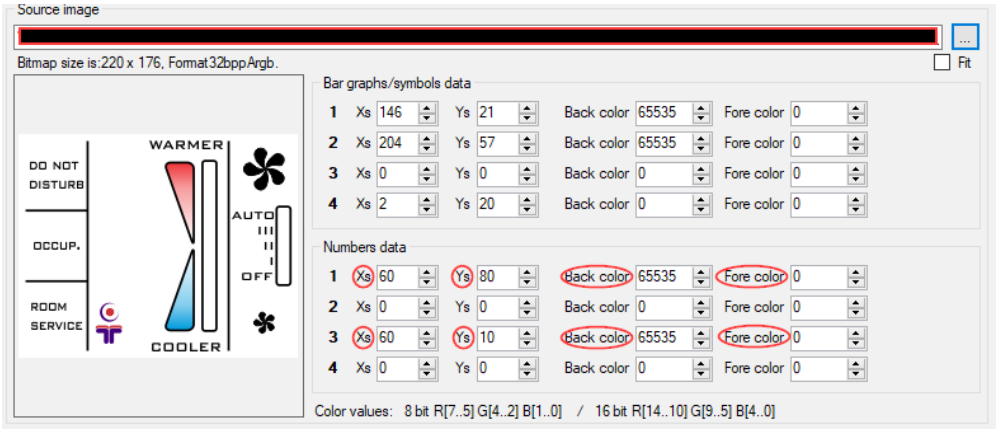



## 7.4 Temperature and status text positioning

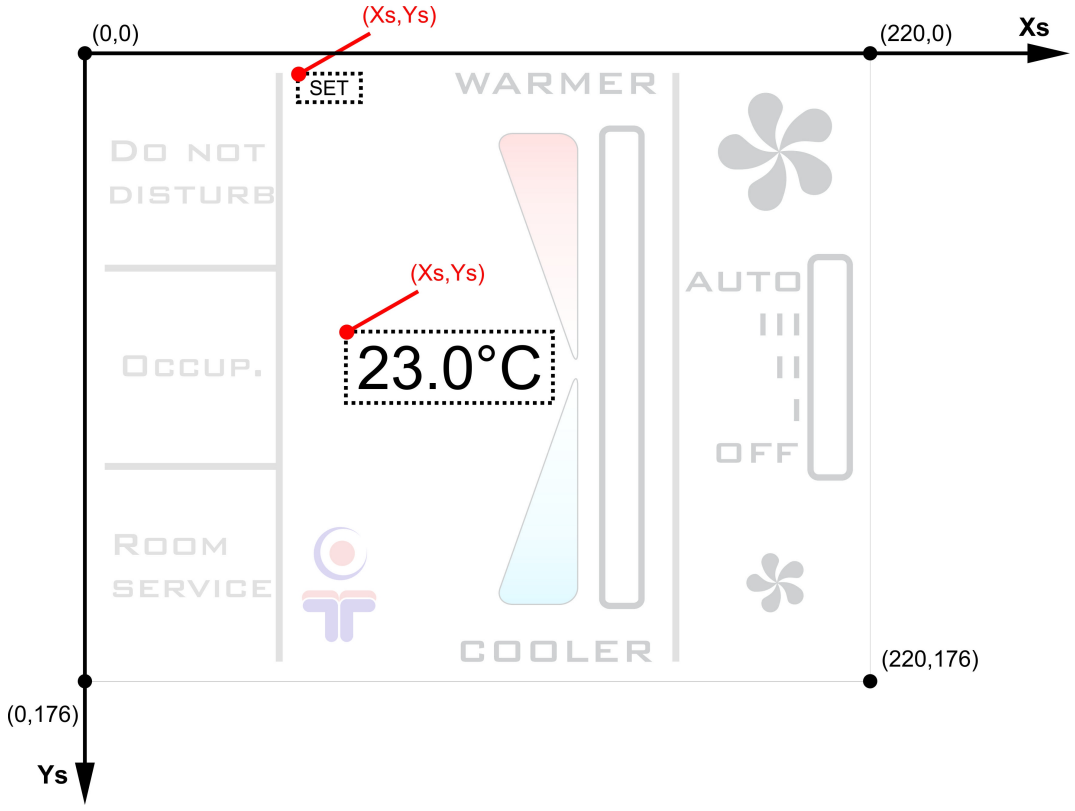
Temperature text is related to parameter *iTAct*/*iTSet* and status text is related to parameter *oStatus*.
Temperature text origin is adjusted using Numbers data **1** and origin of status text is adjusted using Numbers data **3**. Graphical representation of positioning can be seen in Figure 14. Back color field is used for defining background color of square where text is positioned and Fore color is used for text color.

Default values can be seen in Figure 13.

## Figure 13: Field for temperature and status texts in LCD Composer




## Figure 14: Example for Numbers data from Figure 13



# 8 SPARE PARTS

For ordering spare parts following Part Numbers should be used:

| LPC-2.DT3 switch, access and temperature panel | |
|---|---|
| LPC-2.DT3 - white | P/N: 225DT318001001 |
| LPC-2.DT3 - black | P/N: 225DT320002001 |

| Interconnection cable | |
|---|---|
| ICM-x | P/N: 203ICMxxxxxxxx |

| Splitter | |
|---|---|
| SPL-2 (1/8) | P/N: 206SPL04002001 |

# 9 CHANGES

The following table describes all the changes to the document.

| Date | V. | Description |
|---|---|---|
| 25.11.21 | 4 | Figure 6 updated. |
| 21.04.20 | 3 | Black version added. |
| 27.03.20 | 2 | Mounting instructions update. |
| 01.08.18 | 1 | The initial version, issued as *LPC-2.DT3 User Manual*. |

# 10 NOTES