HDL®

Tile Series Button Panel, plastic version and metal version
方悦系列按键面板，塑料版本和金属版本

Product name 产品名称	Buttons 按键	Model No. 型号
Tile Series Button Panel (Plastic & metal versions) 方悦系列按键面板（塑料版本和金属版本）	1 Button Panel A 单开单控面板	M/PT1RA.1
	1 Button Panel B 单开双控面板	M/PT1RB.1
	2 Buttons Panel A 双开双控面板	M/PT2RA.1
	2 Buttons Panel B 双开四控面板	M/PT2RB.1
	4 Buttons Panel A 四开四控面板	M/PT4RA.1
	Frames 边框	HDL-MP1-EC/TILE.48

硬件版本：A / Hardware Version: A

KNX

Datasheet
产品说明书

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Figure 1. 1 Button Panel A
图 1. 单开单控面板



Figure 2. 1 Button Panel B
图 2. 单开双控面板



Figure 3. 2 Buttons Panel A
图 3. 双开双控面板



Figure 4. 2 Buttons Panel B
图 4. 双开四控面板



Figure 5. 4 Buttons Panel A
图 5. 四开四控面板

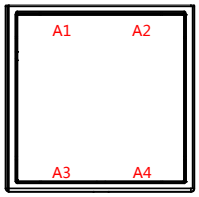


Figure 6-1. 1 Button Panel A/1 Button Panel B
Figure 6-1. 单开单控面板/单开双控面板

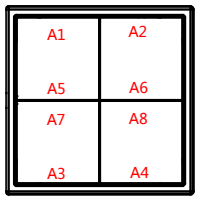


Figure 6-2. 4 Buttons Panel A
图 6-2. 四开四控面板

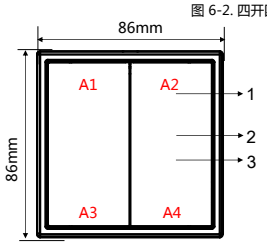


Figure 7. Dimensions - Plastic version
图 7. 尺寸图 - 塑料版本

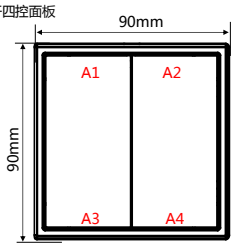


Figure 8. Dimensions - Metal version
图 8. 尺寸图 - 金属版本



Figure 9. Dimensions – Side View
图 9. 尺寸图 - 侧面

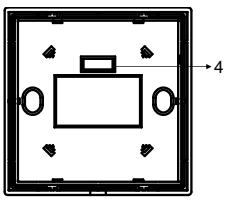


Figure 10. Components - Back View
图 10. 部件 - 背面图

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Overview

Tile series (See Figure 1-5) contains 1/2/4-button panels, both plastic and metal versions. Icons and text of each button supports laser labelling. With built-in RGB backlight for each pushbutton, the color and brightness level can be set by ETS or manually set on the panel. The panels support controls of lighting, curtains, scenes, music, etc.

Functions

- Built-in temperature sensor.
- 1/2/4-button panels with built-in backlight.
- The color and brightness level of each button can be set.
- Button modes: single mode and combined mode.
- Control modes: Switching control, Dimming control, Shutter control, Flexible control, Scene control, Sequence control, Percentage control, Threshold control, String (14 bytes) control, Alternate control, Pulse control, RGB control, Fan control, Combination control.

Important Notes

- The panel should be mounted on the wall box with power interface.
- The device is compliant with the KNX standard and the parameters are set by the Engineering Tool Software (ETS).

Product Information

1 Button Panel A/1 Button Panel B - See Figure 6 -1

4 Buttons Panel A - See Figure 6 - 2

Dimensions - See Figure 7 - 9

Components - See Figure 10

1. Button: Controls targets.
2. RGB backlight: Color and brightness level can be set.
3. Icons & text: Support laser labelling.
4. KNX bus connector
Backlight color setting:
Press button A2 and A3 (see Figure 6-1, 6-2, 7 & 8) simultaneously for 7 seconds, and the panel enters color selecting mode. Pressing button A2 means selecting previous color from local color library, while pressing button A3 means selecting next color. The color will be finally determined if without operation in 20 seconds.
Programming: Press on A1 and A4 (see Figure 6-1) simultaneously for 7 seconds, and the panel enters programming mode.
Press on A1 and A4 (see Figure 6-2, 7 & 8) simultaneously for 2 seconds, and the panel enters programming mode.

Components - See Figure 10

Product installation (Take M/PT4RA.1 as an example)

Installation - See Figure 11
Step 1. Install the wall box in the wall.
Step 2. Secure the power interface to the wall box with screws.
Step 3. Install the panel on the power interface.
Step 4. Install the frame around the panel.

Horizontal installation - See Figure 12

Vertical installation - See Figure 13

Safety Precautions

- The installation and commissioning of the device must be carried out by HDL or the organization designated by HDL. For planning and construction of electric installations, the relevant guidelines, regulations and standards of the respective country are to be considered.
- The device should be wall box mounted. HDL does not take responsibility for all the consequences caused by installation and wire connection that are not in accordance with this document.
- Please do not privately disassemble the device or change components, otherwise it may cause mechanical failure, electric shock, fire or body injury.
- Please resort to our customer service department or designated agencies for maintenance service. The warranty is not applicable for the product fault caused by private disassembly.

Package Contents

Panel*1 / Datasheet*1

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产品概述

方悦系列按键面板（见图1-5）设有机械按键，支持多种控制模式。每个按键内置RGB灯，每组按键镭雕可定制。按键状态灯/背光灯颜色和亮度可通过ETS软件配置，面板具有本地颜色库，可支持手动设置状态灯/背光灯颜色。可实现对灯光、场景、窗帘、音乐等的控制。方悦面板包含塑料版本和金属版本。

功能说明

- 内置温度传感器；
- 设有机械按键及按键指示灯/背光灯；
- 按键模式：按键上下组合或独立按键模式；
- 标签背光灯及按键指示灯的背光亮度和颜色可调；
- 支持多种控制模式：开关控制、调光控制、窗帘控制、灵活控制、场景控制、序列控制、百分比控制、阈值控制、字符串控制（14字节控制）、交替控制、脉冲控制、RGB控制、风扇控制、组合控制；

注意事项

- 面板必须与电源底座配合使用，并暗盒安装。
- 本设备属于KNX标准设备，使用ETS软件进行编程。

产品信息

单开单控面板/单开双控面板 - 见图 6-1

四开四控面板 - 见图 6-2

产品尺寸- 见图 7-9

部件 - 见图 10

1. 按键: 控制目标
2. 按键指示灯/背光灯: 指示被控目标的状态。指示灯/背光灯颜色和亮度可调。
3. 按键镭雕: 用户可定制按键镭雕。
4. KNX接口
颜色手动设置：如图6-1，6-2，7和8所示，同时按按键（M/PT1RA.1，M/PT1RB.1，M/PT2RA.1，M/PT2RB.1和M/PT4RA.1：A2和A3按键）约7秒，可进入颜色手动设置模式，按A2键可在本地颜色库向上选择颜色，按A3键可向下选择颜色，按键无操作20秒，颜色即选定。
编程: 同时按左上角和右下角按键（M/PT1RA.1，M/PT1RB.1：A1和A4）约7秒，面板将进入编程模式。
同时按左上角和右下角按键（M/PT2RA.1，M/PT2RB.1和M/PT4RA.1：A1和A4）约2秒，面板将进入编程模式。

部件 - 见图 10

设备的安装(以M/PT4RA.1为例)

安装 - 见图11
步骤1. 将底盒安装在墙上。
步骤2. 用螺丝将面板电源底座固定在底盒里。
步骤3. 将面板安装在电源底座上。
步骤4. 装上边框。

横向多联边框 - 见图 12

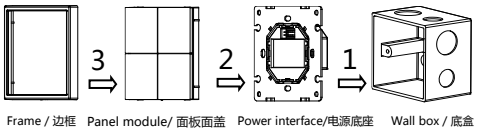
纵向多联边框 - 见图 13

安全警告

- 本设备的安装及调试工作必须由我司或我司指派的机构进行。其电气安装的计划和施工，必须遵守当地相关的安全标准和法规。
- 该产品需暗盒安装，未按照本说明书进行安装及接线方式的，所造成的一切后果皆与我司无关。
- 请不要私自拆装或更换零部件，否则可能会导致机械故障、电击、火灾或身体伤害。
- 请将一切维修工作交由我司售后部门或指定机构进行，本产品的保修范围不适用于因用户拆卸产品而导致的故障。

装箱清单

面板*1 / 说明书*1



Frame / 边框 Panel module/ 面板面盖 Power interface/电源底座 Wall box / 底盒

Figure 11. Installation
图 11. 安装图



Figure 12. Horizontal installation
图 12. 横向多联边框

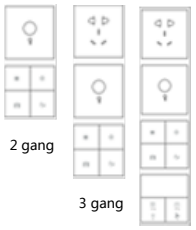


Figure 13. Vertical installation
图 13. 纵向多联边框

Notes: Metal panels can be installed either horizontally or vertically. Plastic panels can be only installed horizontally.
注意：金属版本支持横向和纵向多联体安装，塑料版本仅支持横向多联体安装。

Product name 产品名称	Frame Types 边框类型	Gang 联体数	Dimensions 尺寸
2/3/4-gang frames 多联边框	金属边框 Metal	2 gang 2联	176*90*10.5(mm)
		3 gang 3联	262*90*10.5(mm)
		4 gang 4联	348*90*10.5(mm)
	塑料边框 Plastic	2 gang 2联	172*86*10.5(mm)
		3 gang 3联	258*86*10.5(mm)
		4 gang 4联	344*86*10.5(mm)

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网址：http://www.hdlchina.com

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Technical Data

Basic Parameters

Working voltage	21~30V DC
Working current	M/PT1RA.1: 7mA / 30V DC M/PT1RB.1: 8.5mA / 30V DC M/PT2RA.1: 9mA / 30V DC M/PT2RB.1: 11.5mA / 30V DC M/PT4RA.1: 12mA / 30V DC
Communication	KNX
Cable diameter of KNX terminal	0.6 - 0.8mm

External Environment

Working temperature	-5℃~45℃
Working relative humidity	≤90%
Storage temperature	-20℃~60℃
Storage relative humidity	≤93%

Specifications

Dimensions	Plastic version: 86×86×11(mm) Metal version: 90×90×11(mm)
Net weight	Plastic version: 64g Metal version: 110g
Housing material	Plastic version: Flame retardant PC Metal version: Aluminum alloy
Installation	Wall box (See Figure 11-14)
Protection rating (Compliant with EN 60529)	IP20

Name and Content of Hazardous Substances in Products

Components	Hazardous substances					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Chromium VI (Cr (VI))	Poly-brominated biphenyls (PBB)	Poly-brominated diphenyl ethers (PBDE)
Plastic	o	o	o	o	o	o
Hardware	o	o	o	o	-	-
Screw	o	o	o	×	-	-
Solder	×	o	o	o	-	-
PCB	×	o	o	o	o	o
IC	o	o	o	o	×	×

The symbol "-" indicates that the hazardous substance is not contained.
The symbol "o" indicates that the content of the hazardous substances in all the homogeneous materials of the component is below the limit requirement specified in the Standard IEC62321-2015.
The symbol "×" indicates that the content of the hazardous substance in at least one of the homogeneous materials of the part exceeds the limit requirement specified in the Standard IEC62321-2015.

Cable Guide

KNX	KNX cable
-	Black
+	Red

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技术参数

基本参数

工作电压	21~30V DC
工作电流	M/PT1RA.1: 7mA / 30V DC M/PT1RB.1: 8.5mA / 30V DC M/PT2RA.1: 9mA / 30V DC M/PT2RB.1: 11.5mA / 30V DC M/PT4RA.1: 12mA / 30V DC
通信协议	KNX
KNX端子要求线径	0.6 - 0.8mm

外部环境

工作温度	-5℃~45℃
工作相对湿度	≤90%
储存温度	-20℃~60℃
储存相对湿度	≤93%

产品规格

尺寸	塑料版本：86×86×11(mm) 金属版本：90×90×11(mm)
净重	塑料版本：64g 金属版本：110g
外壳材料	塑料版本： 阻燃PC 金属版本： 铝合金
安装方式	暗盒安装 (见图11-14)
防护级别 (符合 EN 60529)	IP20

产品中有害物质的名称及含量

部件名称	有害物质					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
塑胶组件	o	o	o	o	o	o
五金铜件	o	o	o	o	-	-
螺丝组件	o	o	o	×	-	-
焊锡	×	o	o	o	-	-
PCB组件	×	o	o	o	o	o
IC	o	o	o	o	×	×

-：表示不含有该有害物质。
o：表示该有害物质在该部件所有均质材料中的含量均在IEC62321-2015规定的限量要求以下。
×：表示该有害物质至少在该部件的某一均质材料中的含量超出IEC62321-2015规定的限量要求。

KNX总线定义

KNX	KNX 电缆
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+	红