



## CATALOG

Smart Systems for Homes, Commercial Buildings and Hotels



HDL Automation

# HDL<sup>®</sup>

Residential Buildings Hospitality Buildings Commercial Building

## Contents

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05	Control Panels, Panel Power Interfaces
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## What is KNX?

A worldwide standard for home and building control.

KNX is a worldwide standard for home and building control. Solutions based on KNX are widely adopted around the globe. As a manufacturer member of KNX, HDL offers high quality KNX products to the market.

Most of our KNX products are used in office buildings, large gymnasiums, urban complexes, hotels right now. But we are trying to apply KNX in more industries such as home automation.





### Why choose KNX?

Whether in a single-family house or in an office complex, the demand for comfort and versatility in the management of air-conditioning, lighting and access control systems is growing. At the same time, the efficient use of energy is becoming increasingly important.

More convenience and safety coupled with lower energy consumption can however only be achieved by intelligent control and monitoring of all products involved. This however implies more wiring, running from the sensors and actuators to the control and monitoring centers.

### The answer: KNX – the Worldwide STANDARD for Home and Building Control

In 2007, HDL joined the KNX Association. As a manufacturer member of KNX, HDL offers high quality KNX products to the market. And HDL KNX products were applied to many projects, for example, Australian Institute of Architects, NATO Headquarters, and so on.

## KNX Assistant Software

Free Software



HDL-KNX Assistant Software is designed to aid system creation, and commissioning. The software is being constantly improved to offer you more customization and configuration possibilities.

### For KNX IR Emitter Module (M/IRAC.1)

Enable your system to learn new IR codes by downloading them to the KNX IR Emitter Module using the HDL-KNX Assistant Software.

### For KNX DLP Panel (M/DLP04.1)

Personalize your DLP's screen by downloading icons to the KNX DLP Intelligent Panel using the HDL-KNX Assistant Software.

### For KNX DALI Module (M/DALI.1)

Manage your DALI devices and their automatic address allocations, and create 16 DALI device groups.



## Control Panels

In most cases, people can use a mobile app to control everything connected to a smart system. However, control panels, or, most of the time wall panels, are essential to an automation project. The reasons are obvious.



Control  
Panels

A wall panel is a redundancy or backup that guarantees you still have your devices under control when you are not able to use the mobile way. For example, in the case that when you lose your phone.

It is preferred by the users that don't like tweaking on a smart phone.

A wall panel possibly can serve as an ornament that adds credits to the aesthetics of the interior decoration of a building.



## Granite Display

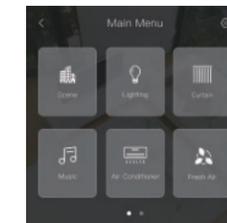


### Meant to be eye-catching.

Granite Display is designed to be a gorgeous ornament making your place look better. Just a glance, you would be stunned by its extraordinary beauty.

### Give it a touch, you would love to use it.

We redefine wall panel user experience by adding to the Granite Display our new generation user interface. With the responsive high-resolution display, you will fall in love with it the moment you touch the panel.



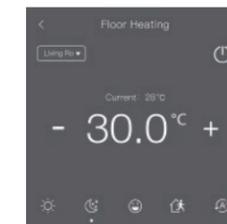
Main Menu



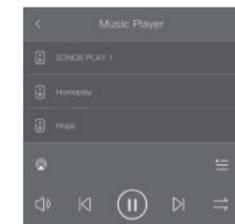
Air Conditioning



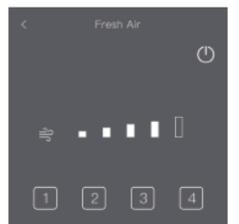
Lighting



Floor Heating



Music Player



Fresh Air



- Beautiful and user-friendly interface
- 720 x 720 HD 4.0-inch display
- Blasted finish aluminum frame
- Built-in proximity sensor, temperature sensor, humidity sensor
- **Power supply:** 24V DC
- **Dimensions:** 86 x 86 mm (EU)
- **Weight (without power socket):** 92g

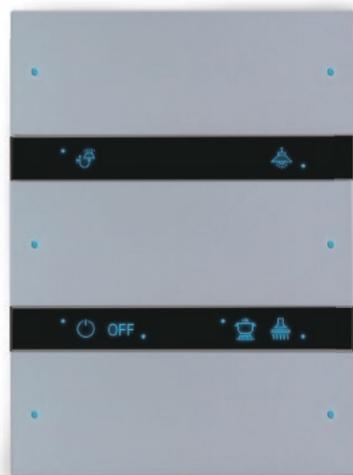
## Granite

Granite is a push-button panel with premium metal finish. The RGB indicators, icons and the firm button feedback all together make your control comfortable and intuitive.



### Color:

- Arctic silver
- Space gray
- Rose gold



- Premium metal finish
- Natural and comfortable push feedback
- Endures at least 100,000 times of pushes
- Power supply: DC 24V
- Dimensions: 86 x 86 mm (EU), 86 x 116.5 mm (US)



## Tile



### Control everything you need with buttons.

The basic unit of Tile is a keypad or socket panel in EU standard. You can use just one unit if it meets your requirement, or combine multiple units to serve more functions in a specific area.

#### Color:

- Plastic: ■ Ivory White ■ Ash Gray
- Metal: ■ Champagne Gold ■ Space Gray

### Premium quality with two materials.

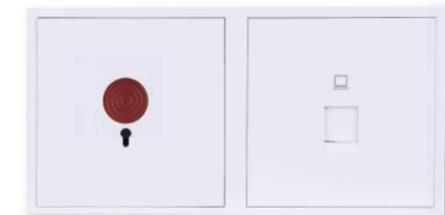
Tile series comes with two versions of different materials: metal and plastic. Each one is able to give you a sense of premium quality, either with the refined sandblasting finishes on the metal one or the skin-like touch feeling on the plastic one.

- Supports various types of control targets
- Flexible combinations for required functions
- RGB icon backlight
- Customizable button icons
- Users are allowed to set the colors of icon backlight
- Available in two materials and four colors

### - Horizontal



1-Gang



2-Gang



4-Gang

### - Vertical



2-Gang



3-Gang



4-Gang

## Enviro



### What you see is what you control.

Enviro is a touch-control panel equipped with a 4.3-inch display. It allows you to control lighting, curtains, HVAC, music and more functions effortlessly on its graphic user interface. What you need to do is just a touch on the screen.

#### Color:

■ White   ■ black



- Color capacitive touch display
- Customizable UI
- Built-in proximity sensor
- Built-in temperature sensor
- Built-in IR receiver
- Built-in real-time clock
- Aluminum frame
- Power supply: DC 24V
- Dimensions: 86 x 116.5 mm (US)

## DLP Touch



### Color:

■ White ■ black

### Quick and simple touch-control experience.

DLP Touch is designed to offer you a quick and simple touch-control experience. Its face is entirely covered by one piece of glass. With the LCD in the middle, you can have the icons or text customized. Every time you touch the panel, you clearly know what to control. Not a single thought is needed.



- Mono-color LCD
- Customizable icons and captions
- Built-in temperature sensor
- Built-in proximity sensor
- Built-in IR receiver
- Aluminum frame
- Power supply: DC 24V
- Dimensions: 86 x 116.5 mm (US)

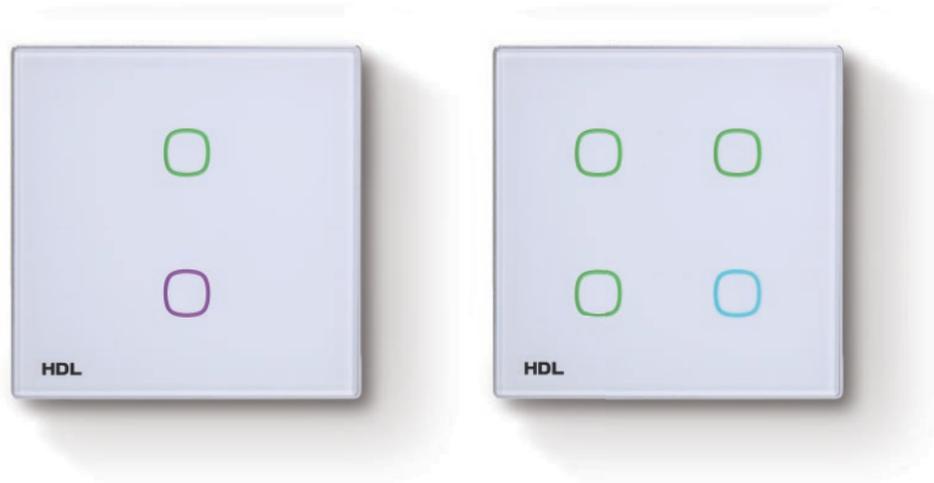
**DLP****A multi-functional push button keypad.**

If you prefer physical buttons but want to have a display to indicate the control targets, then the DLP panel is here for you.



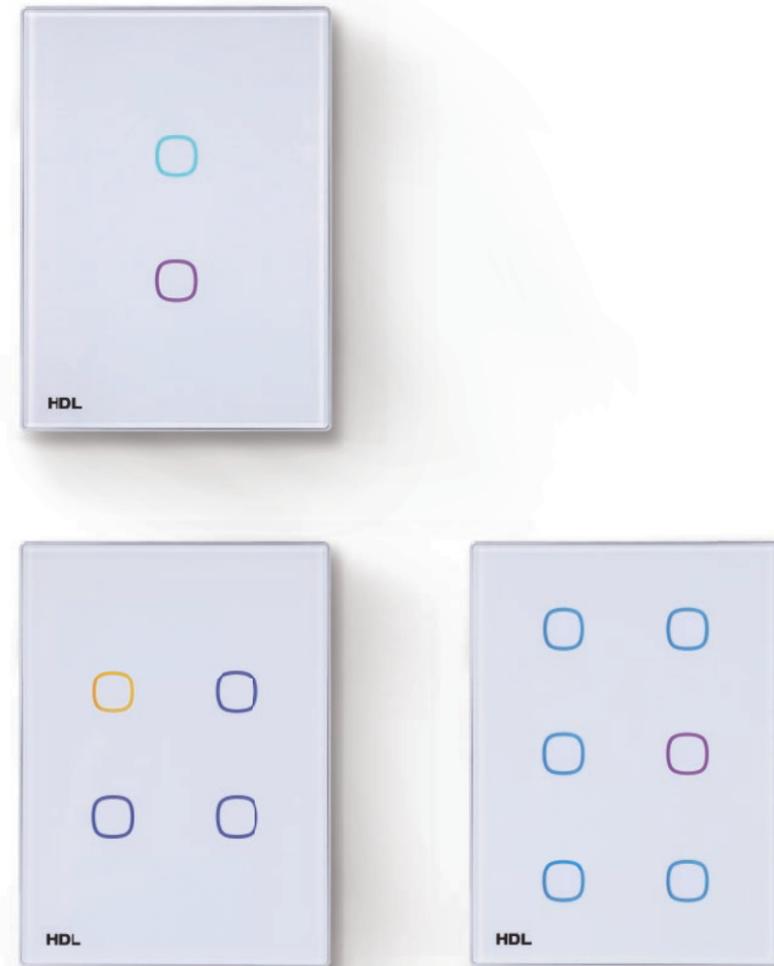
- Mono-color LCD
- Supports 147 languages
- Customizable icons or captions
- Built-in temperature sensor
- Aluminum frame
- Power supply: DC 24V
- Dimensions: 86 x 86 mm (EU), 86 x 116.5 mm (US)

## iTouch



### A graceful touch to control.

iTouch is always a great option if you are looking for a beautiful keypad of minimal design. Its body is enclosed by a fine aluminum frame, while the face is a piece of glass with touch buttons. It perfectly matches any interior decoration.



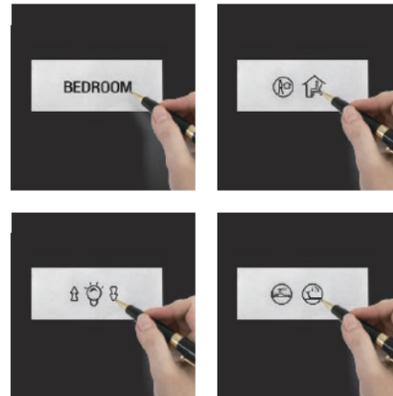
- Touch button with RGB backlight
- Aluminum frame
- Supports online upgrade
- **Power supply:** DC 24V
- **Dimensions:** 86 x 86 mm (EU), 86 x 116.5 mm (US)

## iFlex



### An easy but nice way to have a tag for the button.

What do you think is the easiest way to put an icon or caption on a button? Right, we can draw an icon or write a caption on a piece of paper, and place it on the button. And we call that piece of paper a tag. This IS the idea of HDL iFlex.



- Push button with removable tags
- Aluminum frame
- **Power supply:** DC 24V
- **Dimensions:** 86 x 86 mm (EU), 86 x 116.5 mm (US)

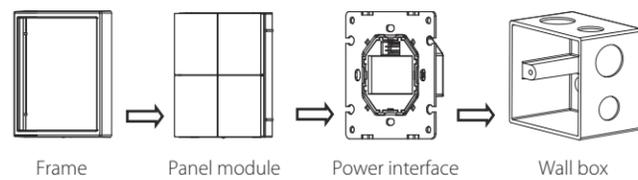


### Tile Series Power Interface



M/PTCI.1

- Working voltage: 21~30V DC
- Dimensions: 81.4x81.4x27 (mm)
- Net weight: 69g



### Panel Power Interface

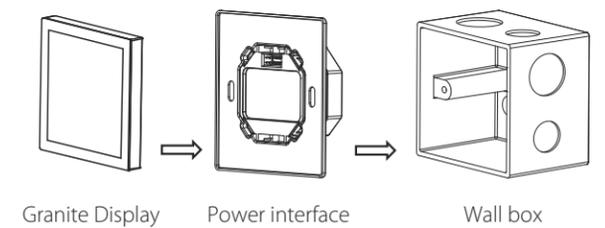
- Provides working and communication power for matching panels
- Provides auxiliary power supply for matching panels
- Working voltage: 21~30V DC



M/PCI2PE.1



M/PCI2PU.2



M/PCI2PE.1	M/PCI2PU.2
80x80x28.5(mm)	110.5x80x28.5(mm)
78g	87g

## Panel Power Interface

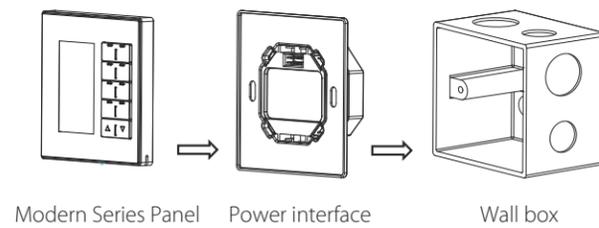
- Provide panel or sensor with working power
- Provide panel or sensor with communication signal
- Working voltage: 21~30V DC



M/PCI.1-A



M/PCI.3-A



M/PCI.1-A	M/PCI.3-A
80×80×28.5(mm)	110.5×80×28.5(mm)
96g	121g

## Panel Power Interface

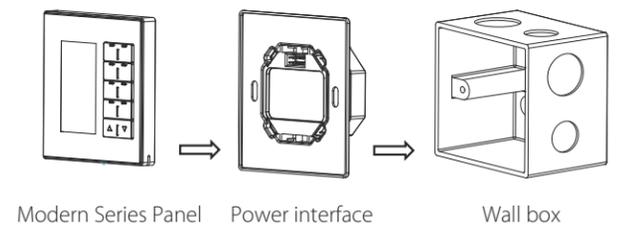
- Provide panel or sensor with working power
- Provide panel or sensor with communication signal
- Working voltage: 21~30V DC



M/PCI.1



M/PCI.3

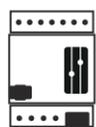


M/PCI.1	M/PCI.3
83.5×83.5×26.5(mm)	83.5×114.5×26.5(mm)
103g	132g

## Controllers / Actuators

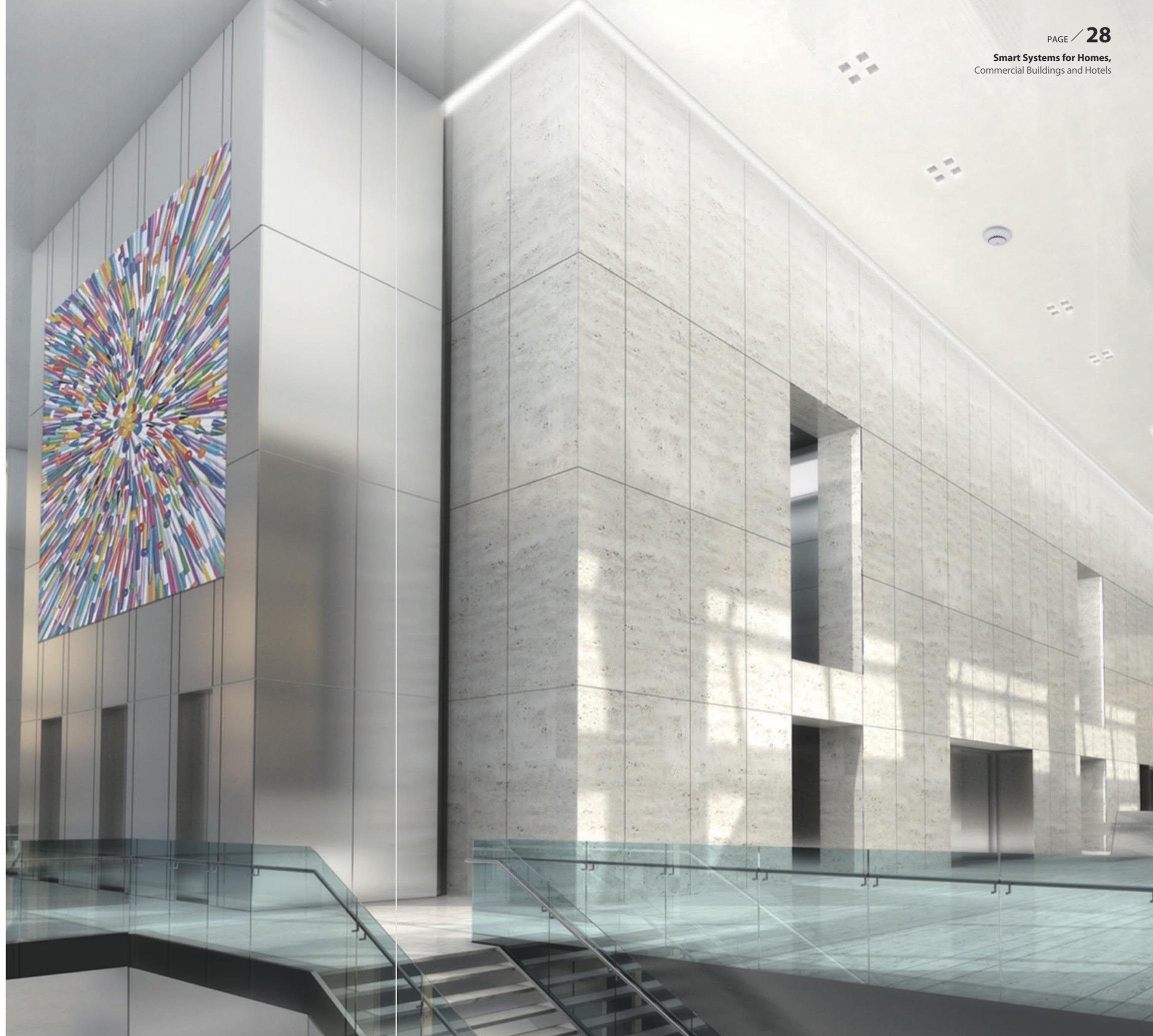
With a smart system installed, users are allowed to control all connected devices and appliances such as lamps, curtains, air-conditioners, etc. To integrate these devices into a smart system, controllers are required.

For wired systems, controllers (also known as actuators) are installed in a distribution box in most cases. Power cables of the control targets are inserted in controllers. Then controllers connect with other system devices, say, a wall panel, via data cables.



Controllers  
/Actuators

Relays, dimmers, curtain controllers, floor heating units and logic modules are controllers that often used in building automation projects. In this chapter, we will introduce to you all KNX controllers.



## Dimmers

Universal Dimming Actuator



M/D02.1

M/D04.1

M/D06.1

- Power supply: 21~30V DC
- Working current: 15mA/30V DC
- Input voltage: 120V/240V AC (50/60Hz)
- User control: Manual operation for each channel
- Line in/Line out terminals: 2.5 - 4mm 2
- Dimensions: 90x216x64(mm)

	M/D02.1	M/D04.1	M/D06.1
Output channel	2CH/3A	4CH/1.5A	6CH/1A
Net weight	0.73kg	0.76kg	0.78kg

## Dimmers

6CH 10A 0~10V Dimming Actuator



M/DA6.10.1

- Dimming output: 0~10V DC, 24mA/CH
- Dimensions: 90x144x66(mm)
- Net weight: 448.7g
- Working voltage: 21~30V DC Class 2
- Working current: 15mA/30V DC
- Communication: KNX/EIB

## Dimmers

DALI Gateway



M/DALI.1

With built-in DALI power supply and a single DALI Bus, DALI Gateway can be connected to up to 64 DALI devices. Real-time failure detection enables the gateway to detect ballast failure and lamp failure etc.

- Working voltage: 21~30V DC
- Working current: 5mA/30V DC
- Input voltage: AC100-240V (50/60Hz)
- DALI output: 64 channels
- Dimensions: 72×90×64(mm)
- Net weight: 241g

## Dimmers

4CH 7A RGBW Driver



M/DRGBW4.1

- Working voltage: 21~30V DC
- Working current: 10mA/30V DC
- Communication: KNX/EIB
- Output channel: R, G, B, W 4channels
- Dimensions: 183×84×39(mm)
- Net weight: 212g

## DMX Controller

DMX512 Gateway



M/DMX512.1

- Working voltage: 21~30V DC
- Working current: 5mA/30V DC
- Communication: KNX/EIB
- Auxiliary power supply: 40mA/24V DC
- Dimensions: 72×90×64(mm)
- Net weight: 189g

## Relays

High Power Switch Actuator



M/R4.10.1

M/R8.10.1

M/R12.10.1

- Working voltage: 21~30V DC Class 2
- Working current: 15mA/30V DC
- Input voltage: 120V/240V AC (50/60Hz)
- Rated switch current: 10A lighting load, max inrush 500A
- Output channel: 4CH/10A, 8CH/10A, 12CH/10A
- Capacitance: <300μF

	M/R4.10.1	M/R8.10.1	M/R12.10.1
<b>Dimensions</b>	90×72×64(mm)	90×144×64(mm)	90×216×64(mm)
<b>Net weight</b>	256g	576g	823g

## Relays

High Power Switch Actuator with Current Detection



M/R4.16.1-CD

M/R8.16.1-CD

M/R12.16.1-CD

- Working voltage: 21~30V DC Class 2
- Working current: 15mA/30V DC
- Input voltage: 120V/240V AC (50/60Hz)
- Rated switch current: 16A lighting load, max inrush 500A
- Output channel: 4CH/16A, 8CH/16A, 12CH/16A
- Capacitance: <300μF

	M/R4.16.1-CD	M/R8.16.1-CD	M/R12.16.1-CD
<b>Dimensions</b>	90×72×64(mm)	90×144×64(mm)	90×216×64(mm)
<b>Net weight</b>	257g	577g	823g

## Relays

High Power Switch Actuator



M/R4.16.1

M/R8.16.1

M/R12.16.1

- Power supply: 21~30V DC Class 2
- Working current: 15mA/30V DC
- Input voltage: 120V/240V AC (50/60Hz)
- Rated switch current: 16A lighting load, max inrush 500A
- Output channel: 4CH/16A, 8CH/16A, 12CH/16A
- Capacitance: <math><300\mu\text{F}</math>

	M/R4.16.1	M/R8.16.1	M/R12.16.1
<b>Dimensions</b>	90×72×64(mm)	90×144×64(mm)	90×216×64(mm)
<b>Net weight</b>	257g	577g	823g

## Mix Actuator

17CH Mix Actuator



M/MHR17U.1

- Working voltage: 21~30V DC
- Working current: 14mA/30V DC
- Output channel: 12CH/5A  
TV8 relay (CH1-6, CH12-17)
- Dimensions: 144×90×64(mm)
- Net weight: 469g
- Output channel: 5CH/10A  
Magnetic latching relay (CH7-11)

## Mix Actuator

19CH Mix Actuator



M/MHD02R17U.1

- Working voltage: 21-30V DC
- Working current: 14mA/30V DC
- Dimensions: 144x90x64(mm)
- Net weight: 524g
- Output channel: 12CH/5A  
TV8 relay (CH1-6, CH12-17)
- Output channel: 5CH/10A  
Magnetic latching relay (CH7-11)
- Output channel: 2CH/1A  
MOSFET dimming channel (CH , CH )

## Infrared Emitter



M/IRAC.1

- Working voltage: 21~30V DC
- Working current: 5mA/30V DC
- Communication: KNX/EIB
- Emission distance: 7m

- Current detection: <2A
- Transmitting carrier wave frequency: 38kHz
- Dimensions: 45x45x16(mm)
- Net weight: 60g

## IR Learner



SB-IR-Learn.01

- USB Interface, no driver and easy to use
- Infrared Code learning
- Infrared Code sending test
- Indicator will flash when the device is learning the IR Code
- Range of carrier wave frequency: 38KHz±20%
- USB: 2.0, no need driver
- Dimensions: 98×70×38(mm)
- Weight: 179.7g

## CoolBox VRV Gateway



M/CBVRV.GW.1

- Working voltage: 21~30V DC
- Working current: 6mA/30V DC
- Auxiliary voltage: 20~30V DC
- Auxiliary current: 26mA/24V DC
- Dimensions: 72×90×64(mm)
- Net weight: 175g

## HVAC Module



M/FCU01.10.1

- Working voltage: 21~30V DC Class 2
- Working current: 20mA /30V DC
- Output channel: 5CH/10A
- Dimensions: 90×72×64(mm)
- Net weight: 310g

## FCHC Actuator



M/FCHC.4.1

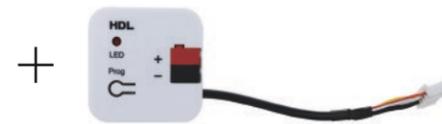
- Working voltage: 21~30V DC
- Working current: 20mA/30V DC
- Dimensions: 90×72×64(mm)
- Net weight: 168g

## Shading Control

Blinds Motor 220V AC



M/AG40B.1



controls the roller blind travel up/down, travel up/down to aspecified percentage position by receiving a KNX signal.

- Working voltage: 21~30V DC
- Working current: 6mA/30V DC
- Rated input current: 0.9A
- Rated input voltage: AC220-240V (50Hz)
- Motor rotate torque: 3N.m
- Motor rotate speed: 22rpm
- Dimensions:  $\phi 35 \times 528$ (mm)
- Net weight: 1224g (Motor)  
+20g (Communication module)

## Shading Control

M/S410.1



Curtain Motor 220V AC

Curtain Motor with Adapter

- Working voltage: 21-30V DC
- Working current: 6mA/30V DC
- Motor rotate torque: 1.2N.m
- Motor rotate speed: 95rpm
- Dimensions: 283×71×50.6(mm)

	Curtain Motor 220V AC	Curtain Motor with Adapter
Rated input voltage	AC100-240V (50/60Hz)	24V DC
Rated input current	0.4A	1.5A
Net weight	976g	874g

## Shading Control

Dry Contact Curtain Motor 220V AC



Product code: 230

- **Power:** 100-240V AC
- **Motor rotate speed:** 118rpm
- **Rated input voltage:** AC 100-240V (50/60Hz)
- **Motor torque:** 1.0N.m
- Ultra-quiet at 35dB
- **Rated input current:** 1.2A
- **IP rating:** IP41
- Anti-sinking and waterproof design
- Quiet, DC motor, unique compact and neat motor design
- Full automatic setting of the limits
- Built-in radio receiver, with dry contact port
- Supports Open, Stop, Close and Percentage control

Dry Contact Curtain Motor with Adapter  
/Curtain Remote Controller



Curtain Motor 220V AC



Product code: 210

- **Power:** External 24V DC
- **Rated input voltage:** 24V DC
- **Rated input current:** 1.3A
- **Motor rotate speed:** 85rpm
- **Motor torque:** 1.2N.m
- **IP rating:** IP41
- Ultra-quiet at 35dB

## Shading Control

10A Curtain Actuator



M/W04.10.1

- Working voltage: 21~30V DC Class 2
- Working current: 12mA/30V DC
- Input voltage: 120V/240V AC (50/60Hz)
- Output channel: 4CH/10A
- Dimensions: 144×90×64(mm)
- Net weight: 362g

## Timer Controller

Master/Slave Timer Controller



M/TM04.1

- Working voltage: 21-30V DC
- Working current: 10mA/30V DC
- Dimensions: 144×90×64(mm)
- Net weight: 240g

## Sensors

A smart system can do a lot of interesting and useful things automatically.

It can close curtains or adjust the brightness of a lamp to keep a room at a constant lighting level. It can turn on the air-conditioner when a person sits in a meeting room for over 60 seconds, and turns it off when everybody leaves the room. It can shut down the heating system when you left the window open. It can trigger the alarm system if a thief breaks in your home when you are away for vacation...

But how does the system read the status of the environment? How does it learn the changes of a certain subject? It's the sensors.



Sensors

Sensors are like our eyes, ears, nose that help us acquire the information of the external world. Sensors detect what happens in the environment and translate the information into the language (or protocol) spoken by the system. The system receives this information and will see what it has to do in accordance with its logic settings.

If we categorize sensors according to the technology they use, there can be ultrasonic sensors, doppler sensors, PIR sensors, light sensors and more. And sometimes, we refer them as what they are used for, such as motion sensors, which are used for detecting human motions. But either a PIR sensor, Doppler sensor or ultrasonic sensor can be used for motion detecting. It's up to you, the engineer, to decide and define how a sensor works in a solution.





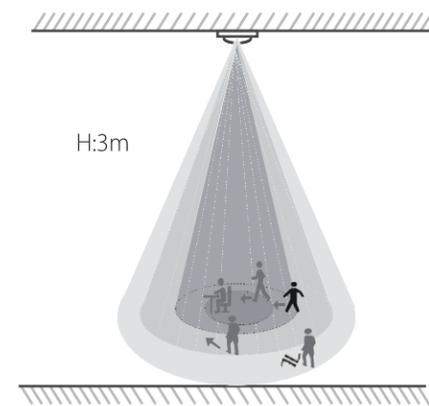
## KNX PIR Sensor



- Working voltage: 21~30V DC
- Working current: 7mA/30V DC
- PIR detection range:  $\Phi$ 12m (Installation height:3m)
- Dimensions:  $\Phi$ 85x85(mm)
- Net weight: 96g

M/SIS05.1

- Walking across
- Small steps
- Sitting / Slight movements



Detection Range (25 °C)

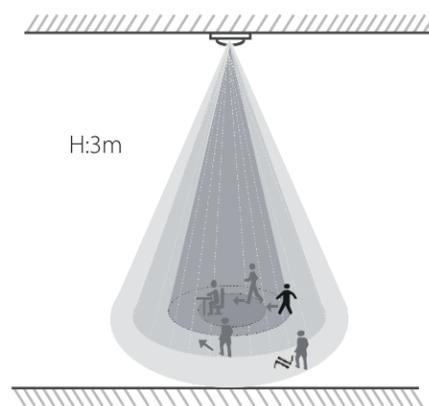
Mounting height	Sitting / Slight movements	Small steps	Walking across
3m	5m	8m	12m

## Ceiling Mount OmniSense Sensor



- Power supply: 21~30V DC
- Working current: 10mA/30V DC
- PIR detection range:  $\Phi$ 30m (Installation height: 3m)
- Dimensions:  $\Phi$ 84x42 (mm)
- Net weight: 60g

M/HSD24.1



Detection Range(At 29 °C)

Mounting height	Sitting / Walking towards constantly	Walking towards with pause	Walking across constantly	Walking across back and forth for 7s
3m	8m	10m	22m	30m

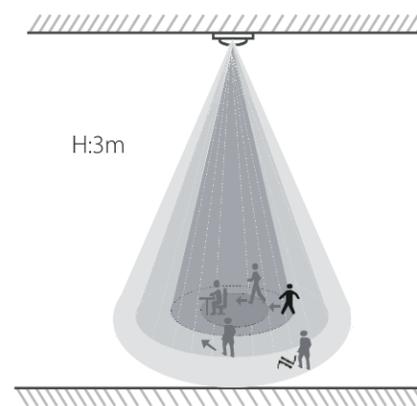
- Walking across back and forth for 7s
- Walking across constantly
- Walking towards with pause
- Sitting / Walking towards constantly

## Wall Mount Outdoor Microwave Sensor



- Working voltage: 21~30V DC
- Working current: 20mA/30V DC
- Microwave detection range:  $\Phi$ 28m (Installation height:3m)
- Temperature detection range: -30°C~70°C
- Humidity detection range: 20~95%RH
- Brightness detection range: 0~15000LUX
- Dimensions: 126x78x114(mm)
- Net weight: 360g

M/WS05.1-A



Detection Range(At 26 °C)

Mounting height	Walking towards	Sitting	Walking across	Jumping
3m	10m	16m	24m	28m

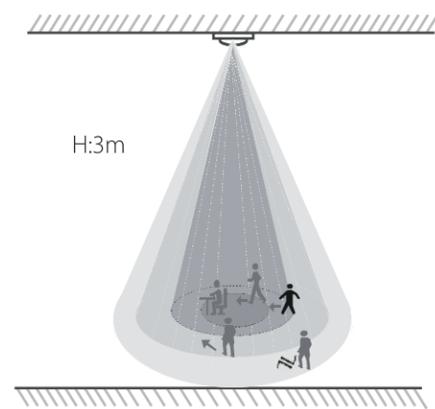
- Jumping
- Walking across
- Sitting
- Walking towards

## Ceiling Mount Indoor Microwave Sensor



- Working voltage: 21~30V DC
- Working current: 17mA/30V DC
- Microwave sensing range:  $\Phi$ 16m (Installation height: 3m)
- Temperature detection range: -30°C~70°C
- Brightness detection range: 0~15000LUX
- Dimensions:  $\Phi$ 84.5x32 (mm)
- Net weight: 67.5g

M/WS05.1-D



Detection Range (At 30 °C)

Mounting height	Sitting / Slight movements / Walking towards	Small steps	Walking across
3m	5m	10m	16m

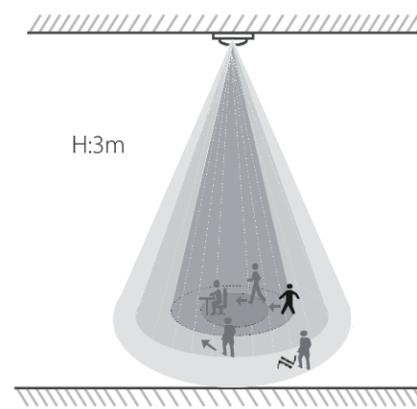
- Walking across
- Small steps
- Sitting / Slight movements / Walking towards

## Mini PIR & Lux Sensor



- Working voltage: 21~30V DC
- Working current: 5mA/30V DC
- PIR detection range:  $\Phi$ 8m (Installation height: 3m)
- Dimensions:  $\Phi$ 63x46.6 (mm)
- Net weight: 43g

M/IS05.1



Detection Range (At 25 °C)

Mounting height	Sitting / Slight movements / Walking towards	Small steps	Walking across
3m	4m	4.5m	8m

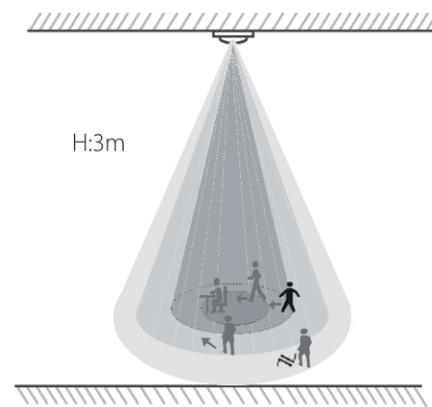
- Walking across
- Small steps
- Sitting / Slight movements / Walking towards

## Mini Ultrasonic Sensor



- Working voltage: 21~30V DC
- Working current: 10mA/30V DC
- PIR detection range:  $\Phi$ 8m (Installation height:3m)
- Temperature detection range: -30°C~70°C
- Brightness detection range: 0~15000LUX
- Dimensions:  $\Phi$ 63x38 (mm)
- Net weight: 42.4g

M/US05.1



Detection Range (At 25 °C)

Mounting height	Sitting / Slight movements / Walking towards	Small steps	Walking across
3m	4.6m	5m	8m

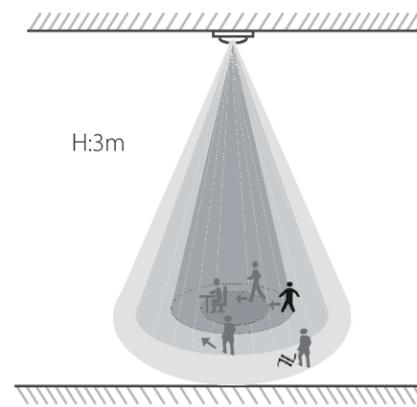
- Walking across
- Small steps
- Sitting / Slight movements / Walking toward

## Ceiling Mount PIR & Lux Sensor



- Working voltage: 21~30V DC
- Working current: 5mA/30V DC
- PIR detection range:  $\Phi$ 8m (Installation height:3m)
- Dimensions:  $\Phi$ 84x42.6 (mm)
- Net weight: 50g

M/HS05.1



Detection Range (At 25 °C)

Mounting height	Sitting / Slight movements / Walking towards	Small steps	Walking across
3m	4m	4.5m	8m

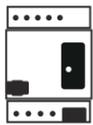
- Walking across
- Small steps
- Sitting / Slight movements / Walking towards

## Gateways

A gateway is the translator between different communication protocols.

It is required when a system or device talks to another one that speaks a different language. For example, a KNX IP Router should be in place if we want to connect KNX with the Internet so that a user would be able to access the system with a mobile phone. In this case, the IP Router translates KNX into IP spoken by the Internet.

Most of the time, gateways are used for integrating different technologies into one system or project. We can see Buspro gateways for integrating with Buspro system, HVAC gateways for adding centralized air-conditioning systems, etc.

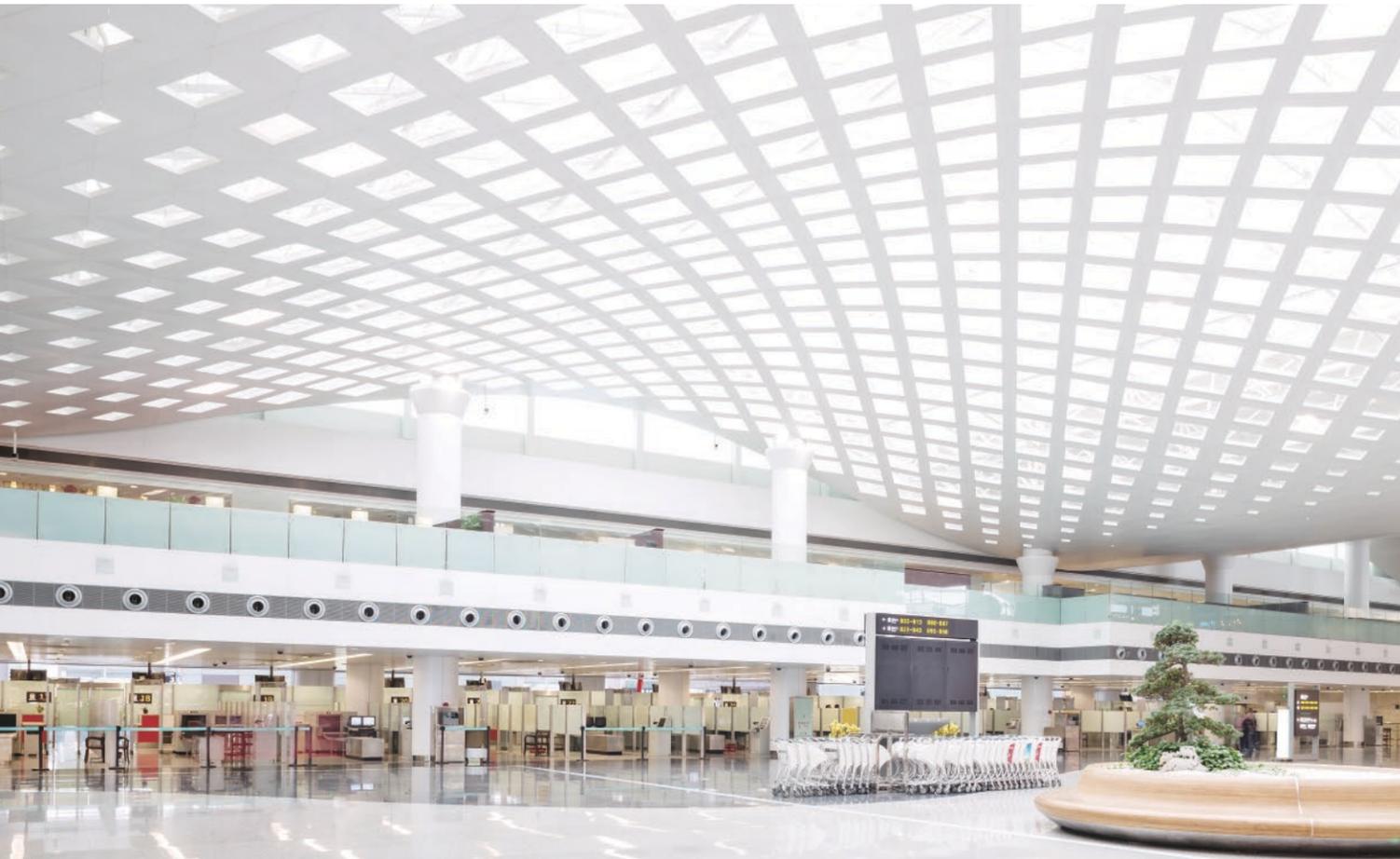


Gateways

But sometimes, we may not have a proper gateway to translate the signal from a certain device. And we use a dry contact module to connect with that device. So, here we regard dry contact modules as some kind of universal gateways and list them in this chapter.

Take a look at this chapter and find the gateway you need for HDL projects.





## Net/IP Router



M/IPRT.1

- Working voltage: 21~30V DC
- Working current: 5mA/30V DC
- Power consumption: typ. 520mW, max. 800mW
- Dimensions: 90x36(2SU)x70(mm)
- Net weight: 66g

## USB Interface



M/USB.1

- Working voltage: 21~30V DC
- Working current: 10mA/30V DC
- Interface: USB
- Dimensions: 90x36x70(mm)
- Net weight: 70g

## Line Coupler



M/LCR.1

- Working voltage: 21~30V DC
- Communication: KNX/EIB
- Main line current: < 30mA
- Sub line current: 3mA
- Dimensions: 90x36x70(mm)
- Net weight: 68.4g

## 4-Zone Dry Contact Module



M/S04.1

- Working voltage: 21~30V DC
- Working current: 5mA/30V DC
- Output voltage: 0~10V DC
- DC0~10V output current: 3mA
- Input sensor: Switch/temperature sensor
- Temperature sensor: TTS/APR1.0
- Communication: KNX/EIB
- Dimensions: 50×50×13(mm)
- Net weight: 24g

## 8-Zone Dry Contact Module



M/S08.1

- Working voltage: 21~30V DC
- Working current: 5mA/30V DC
- Communication: KNX/EIB
- Dimensions: 50×50×13(mm)
- Net weight: 24g

## 24-Zone Dry Contact Module



M/S24.1

- Working voltage: 21~30V DC
- Working current: 10mA/30V DC
- Communication: KNX/EIB
- Dimensions: 90×72×64(mm)
- Net weight: 110g

## 48CH Dry Contact Module



M/S48.1

- Working voltage: 21~30V DC
- Working current: 3mA/30V DC
- Auxiliary voltage: 20-30V DC
- Auxiliary current: 10mA/24V DC
- Dimensions: 72×90×64(mm)
- Net weight: 143g

## Infrastructure Devices / Accessories

An infrastructure device is something that you have to use in your project regardless whatever features or functions to be achieved. For instance, a power supply module is always needed. But it has nothing to do with lighting, shading or any other functions.



Infrastructure Devices  
/ Accessories

In this chapter, you will pick up what you must need in an HDL project.



## 960mA Power Supply Module

- KNX Power Supply Module provides maximum current 960mA to KNX/EIB bus
- Overload protection and over current protection
- Output short circuit protection
- Keep pressing the RESET button for 2 seconds to reset the device



M/P960.1

- **Input voltage:** AC 100-240V(50/60Hz)
- **Output voltage:** 30V DC
- **Dimensions:** 144x90x64(mm)
- **Net weight:** 390g

## KNX Cable

You are suggested to connect HDL KNX devices with our dedicated bus cable. Apart from the fast-connect cables with preset ports, you can also purchase the cable according to the length you need. It is available in two versions: shielded and unshielded.



- 4 core shield cable: red, black, white, yellow
- Strong signal transmission capability
- Strong anti-jamming capability
- **Twisted Pair:** 2 twisted pair (red and black, white and yellow)
- **Insulation resistance(70 °C):** >5X106ohm/km
- **Conductor resistance(20 °C):** <35 ohm/km
- **Cable withstand voltage:** AC 300V
- **Impedance:** 120 ohm
- **Twisted No.:** 40/m