HDL®

SINCE 1985

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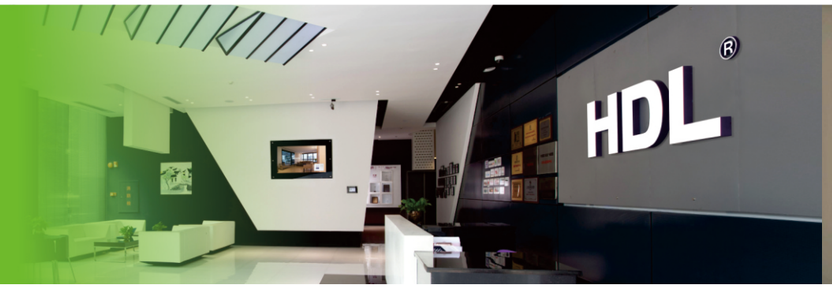
2016/6 Edition

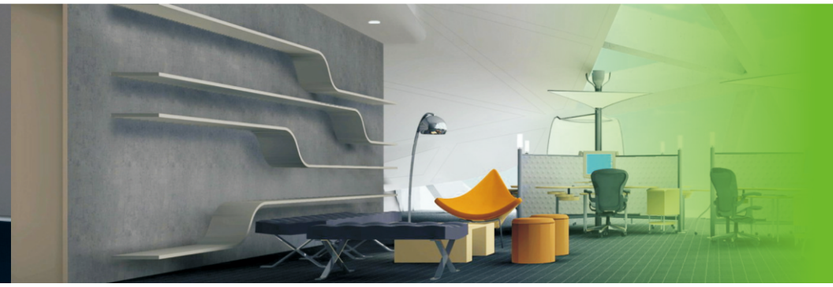
HDL®

BUILDING AND HOME AUTOMATION

CONTROL SYSTEM

KNX





HDL-KNX Building and Home Automation Control System

Company Profile

Founded in 1985 and headquartered in Guangzhou, HDL is a global company that manufactures building automation products and professional stage lighting equipment.

All HDL systems and products are geared towards sustainable growth and sustainable savings. We at HDL know that economic and environmental balance is essential. We are proud that through our innovative products people can optimise their energy efficiency, while ensuring convenience comfort and security.

Having an extensive network of offices around the world and a presence in over 88 countries HDL is truly international. These countries are served by more than 200 well established distributors, and over 1300 dealers/installers. The reason for our global reach is simple, HDL invests in tomorrow. Our team of 70 research and development engineers have produced countless innovative products; a perfect example of this is the DLP panel which made a highly complex building automation system easy for end users to understand.

Our prime position has not gone unnoticed. We have received numerous awards internationally, and have been recognised by KNX with the coveted 'Application Award'. Owning our own factory is another source of pride for HDL. It allows us to make quick decisions and tailor products to the needs and requirements of our customers.

Although HDL leads the market we are not complacent. During manufacture we inspect each and every product, ensuring that it reaches its end user in perfect condition. After the inspection our products are then rigorously tested in various demanding environmental conditions. Because of this quality is guaranteed, and reliability assured.

Please, find more about us in www.hdlautomation.com

KNX System Introduction

What is KNX?

HDL®

KNX

WELCOME

To the worldwide STANDARD for home and building control

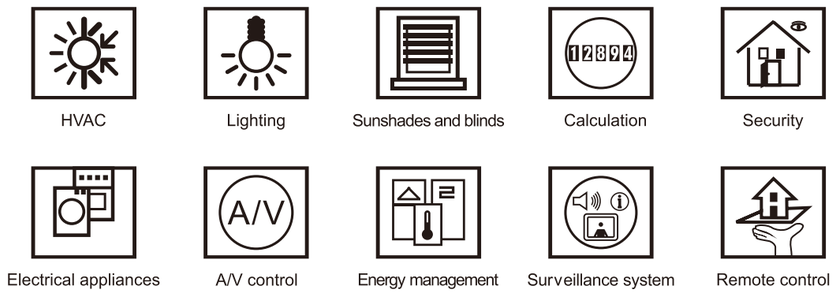
International standard: ISO/IEC 14543-3
European standard: CENELEC EN 50090 and CEN EN 13321-1
United States standard: ANSI/ASHRAE 135
Chinese standard: GB/T 20965-2013

KNX is the world's only open standard for building control and automation, it can make major energy savings of up to 60%, and significantly reduce the carbon footprint of a building. This is a truly green sustainable technology that can be applied to small and large buildings alike. The standard has been adopted by many international manufacturers who together provide a vast array of KNX certified products for a range of building control applications including lighting, HVAC, intruder alarms, audio visual systems, household appliances, blinds/solar control, automatic window control, facade management, and energy control/monitoring applications.

Choosing from this pool of technology, KNX Integrators, KNX Specifiers and KNX Developers can build entire control solutions by bringing together a variety of off-the-shelf components.

As the products all 'speak the same language' and can operate together across the same network, there is less cabling and higher functionality.

KNX is increasingly being heralded by specifiers and end users as a highly desirable open solution for any building control application. The drawbacks of proprietary solutions or various hardware-based controls are being increasingly recognized. One of the most important factors with building control and automation is knowing that support is always at hand and that the system will not be obsolete in a couple of years time. With KNX this is guaranteed as there are approved and trained companies all around the world offering support at all levels for projects large and small.



Advantages of KNX System

KNX Advantages

What does the KNX system offer?

System Integrators

Utilizing KNX intelligent building system technology will help you achieve professional success!

The demands of your customers are constantly changing, In order to be independent they need promising results by employing a compatible system solution. Convenience, low energy consumption, and high reliability are the basic requirements of customers.

With constantly innovative KNX residence and building control, you can accomplish a multitude functions.

High Technology

- Independent installation technology and modern installation technology that accords to the European standard (CENELEC EN 50090 and CEN EN 13321-1) and International standard (ISO/IEC 14543-3).

Flexibility

- It ensures high flexibility when it comes to preliminary installation schemes without affecting building modularization.
- KNX installation can easily adapt to new applications and can be easily extended.

Extensibility

- KNX certification process ensures the interoperability and intercommunication of different products from different manufacturers in different applications.
- The worldwide KNX standard is used to integrate different applications and products.

Useful Installation

- Assembly time is reduced due to convenient cable arrangement.
- New components can be easily connected to an existing bus installation.

Low Risk

- The risk of electrical fires is reduced because of the lowered amount of electrical circuits used. Because of this KNX can increase security and comfort.

User-friendly Tools

- By working with user-friendly tools, relevant planning, design, device introduction and diagnosis is easily achieved.
- ETS is a unique independent engineering tool focused on the manufacturer.

End User

Why do end users select KNX?

- Safety
- High efficiency
- Comfort
- Promising investment

Safety

- **Alert network**

  Even when you are away, KNX is always in an alert state. The automatic intelligent residence network stays connected to the motion detector, the glass breakage sensor, the shading control, the emergency switch and your mobile phone. It ensures your protection and your safety day in, day out!

- **Quick response**

  In the event of a fire the smoke detector enables the fire alarm to alert not only you, but also other residents. Similarly, water or gas leakage may also be detected and immediately reported before damage occurs.

- **Everything is under control**

  Enjoy your vacation without worrying about the safety of your home. KNX turns your home into a castle that lets you relax in comfort and security.

Comfort

- **Daily life**

  With KNX you don't have to waste your valuable time on daily chores, regard KNX as your reliable assistant. Simply tell the system what is to be monitored and controlled, and the intelligent residence automation system will manage the remaining tasks and automatically notify you with the results.

- **Customized comfort**

  At night, you only need to press a button to get perfect light settings in your living room. When inviting guests, you can set the background light and music according to the occasion.

- **Automated management**

  Automatic blinds that adjust depending on room light intensity give a seamless and elegant solution to end users, when coupled with a centralised lighting control simplicity is guaranteed.

- **Overall management**

  One central information panel is utilized.

High Efficiency

- **Energy conservation**

  Through saving energy we ensure future generations have a bright future, and save energy costs. KNX is at the forefront of energy saving. Be it shading, louver, room temperature controller, window sensor or light sensor, all can interconnect through KNX. The network can automatically reduce energy consumption, and heat consumption, making you achieve better power consumption rates.

- **Next-generation technology**

  A house can last a lifetime without being outdated. With KNX even though new generation devices will most likely supersede the old, the actual KNX system will remain. The system will help adapt your residence automation system, to meet your ever-changing demands. In doing so it may increase the long-term value of your property, and reduce the expense of upgrading in the future.

- **Customized**

  KNX is considered more than just an automation solution. We prefer to call it a modular system technology, and it has some prominent advantages. From being able to extend the network of automation at anytime, from small or large projects to rebuilt or newly built buildings, KNX always has the best customized products to ensure the most effective solutions.

Promising Investment

- **Value-preserved system**

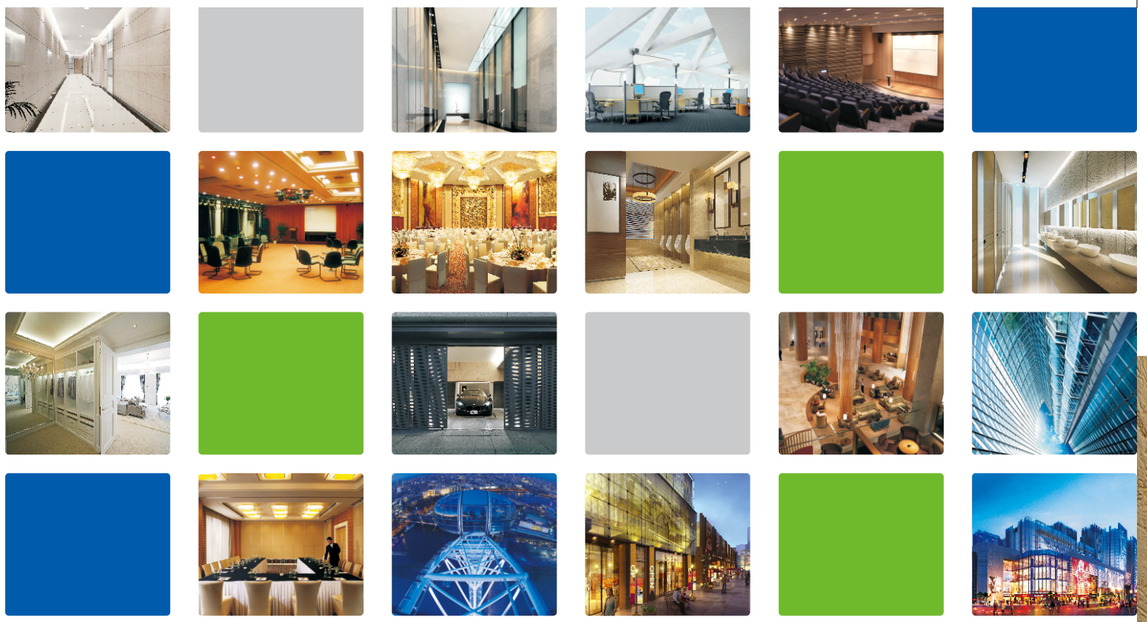
  KNX is the unique residence automation system that complies with the requirements of European (EN50090) and international (ISO/IEC 14543) standards. Its consistency confirms the quality and value of KNX technology. It provides quality assurance for owners. KNX is an open and extensible system easily used by users. It is ready set to provide new-generation products.

- **Open system**

  KNX lets you select from over 200 device manufacturers that provide various KNX-certified and compatible products. From this immense range you can select the product that best applies to your solution.

- **The demands of tomorrow**

  The future is unknown but KNX guarantees an independent future. Old age, infirmity or disability hamper independence. KNX makes household tasks obstacle and problem free, with the ability to integrate emergency buttons or house monitoring safety can be assured.



KNX Applications

- Lobbies / Public corridors / Elevator halls
- Offices
- Meeting rooms / Multi-function Halls / Banquet Halls
- WCs/ Bathrooms / Dressing rooms
- Garage or parking lots
- Outdoor landscape Lighting
- Malls
- Airports
- Clubs
- Convention Centers
- Museums
- Stadiums
- Schools
- Hospitals
- Subways / Stations

Elevator Lights

Main Control Targets

Lighting | Shade and blinds | Temperature control

Main Control Mode

Manual control | Timer | Sensor control | Lux control | Scene control

- To trigger pre-set scenes such as the welcome scene, daytime scene, or night scene, simply activate them with one touch. There is no need to repeatedly program the system to perform the same action.
- From adjusting lighting, and HVAC, to raising and lowering curtains and blinds the intelligent control panel or touch screen covers all areas and situations.
- The lighting/air conditioning is activated when the room is occupied, when the room detects it is vacant it is able to turn off part or all of the system depending on the programming.
- This ability is enabled through the use of displacement induction control, and timing control. As an example, when the system detects people lights are turned on, when it detects the room is vacant they are turned off.
- The system is also able to automatically control the lighting based on the amount of natural light present. In doing so energy conservation is maximised, and electrical costs are reduced.
- During the summertime, the system will regulate the sunshades automatically. This blocks the solar irradiation and keeps the indoor temperature relatively low, in winter the system works to increase the indoor temperature to reduce heating costs and energy consumption.

Offices

Main Control Targets

Lighting | Sunshade and blinds | Temperature control

Main Control Modes

Manual control | Central control | Body inductive control | Lux control | Scene control

- When displacement induction is triggered in the office space the lighting is automatically turned on, and the welcome mode is activated.
- Through the intelligent panel or remote control the lighting can be turned on/off, the brightness adjusted, blind angle manipulated, and scenes chosen. Common scenes for offices include meeting mode, rest mode, and working mode.
- While the intelligent panel or remote control can manage the environment, automatic control of the indoor lighting, curtains, and temperature ensures a hassle free office atmosphere.

Meeting Rooms, Multi-Function Halls, Banquet Halls

Main Control Targets

Lighting | Sunshade and blinds | Temperature control | Multi-media control

Main Control Modes

Manual control | Timing control | Body inductive control | Lux control | Scene control | Performance control

- The control of lighting, air conditioning, curtains and projection equipment can all be accomplished from one intelligent panel. Via the intelligent panel various scenes can be enabled, common scenes include meeting, banquet, speech, and rest.
- With an intelligent panel it is possible to partition a room into several areas. The lighting, curtains, and air conditioning can be controlled via area, or as a group of areas. This level of convenience and control gives the user a unique experience and tailors the environment to their specifications.
- Cost saving is also assured through the use of sensors that activate the lighting and air conditioning automatically when a person enters. When the room is empty lighting and A/C is deactivated.

WCs/Bathrooms / Dressing Rooms

Main Control Targets

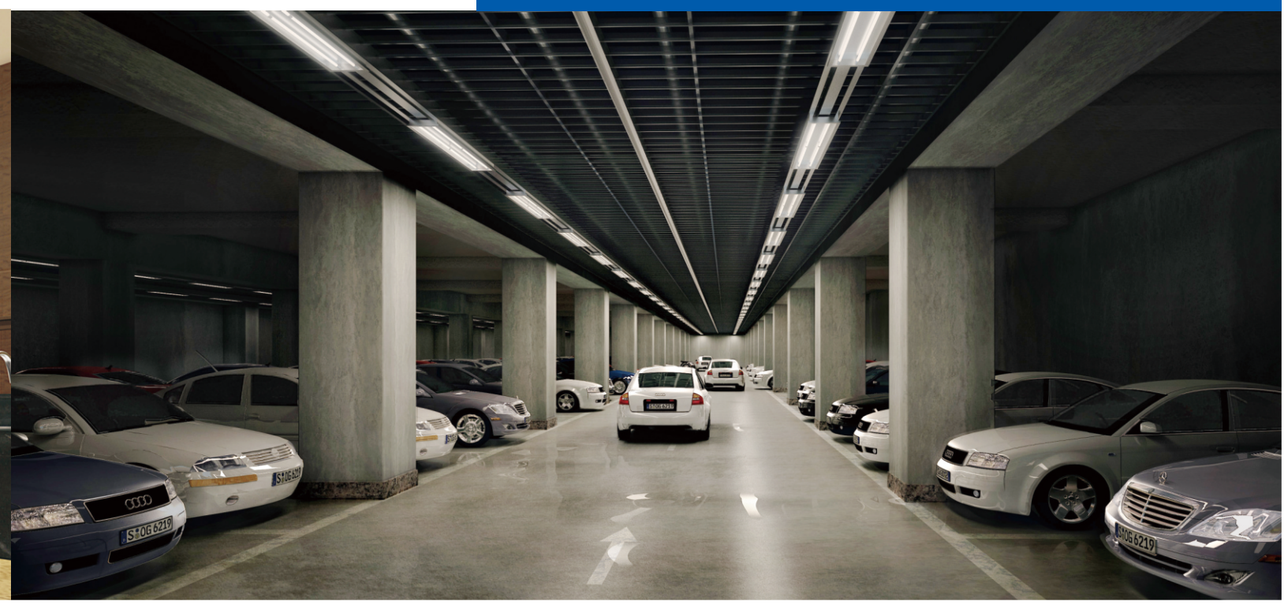
Lighting | Exhaust fan | Temperature control

Main Control Modes

Manual control | Central control | Body inductive control

- Automatically activate the lighting, air conditioning, and exhaust fan when the room is occupied. When the room becomes vacant the lights, A/C and exhaust fan will deactivate automatically.
- The exhaust fan also has the ability to be intermittently activated during the night.

Garage or Parking Lots



Main Control Targets

Lighting | Exhaust fan | Water pump

Main Control Modes

Manual control | Timing control | Lux control | Scene control | Co_2 concentration | Fire control | Linkage control

- Turn on different lighting modes based on area division through manual control, timing control, and remote centralized control from the intelligent panel.
- The lighting can be turned on in one specific area if the luminosity sensor detects a low light reading. This application is especially useful in large installations where varied weather conditions may cause insufficient natural illumination.
- Automatic control of fans and exhaust fans can provide the optimum environmental conditions for underground garages.
- When the system detects carbon dioxide via its air quality sensor, the relevant exhaust fan will automatically remove the gas from the area.
- Emergency lighting serves a dual role as normal lighting, the lighting can also be interlinked to the firefighting system in case of emergency.
- Linkage control with the parking management system allows vehicles to follow lane guidance lights to their designated parking space.

Outdoor Landscape Lighting

Main Control Targets

Lighting | Fountains | Irrigation systems | Sightseeing show control

Main Control Mode

Manual control | Timing control | Body inductive control | Lux control | Scene control | Remote control

- Manage outdoor lighting seamlessly with full manual control, alternatively use an intelligent panel or touch screen for remote control.
- Turn on outdoor floodlighting at a fixed time or use a remote control, when night falls turn off non-essential circuits.
- Holistically control water circulation, soil moisture, sprinklers, fountains and landscape lighting through integrating with their system management programmes. Through this centralised control, scenes can be created that exemplify architectural style, landscapes or seasons.
- Scenes can be activated with a simple one-key switch and can be changed instantly. This immense level of management provides optimum control and energy savings.

Malls

Main Control Targets

Lighting | Sunshade and blinds | Temperature control

Main Control Modes

Manual control | Timing control | Lux control | Scene control | Central control | Fire control | Linkage control | Energy management

- Different lighting and HVAC parameters can be established to meet the needs and functions of different areas.
- Scenes can be established in different areas and at different times. Common scenes for malls are, opening mode, business mode, clearing mode, and security mode.
- Different seasons demand different control modes, for example in summer, sunshades and illumination sensors are necessary to reduce air conditioning load. During the winter sunlight must be allowed into the building in order to reduce illumination and heating costs.
- If a system failure does occur a manual/auto switch is included to ensure normal operations can be accomplished.
- Energy measurement is used to ensure proficient energy distribution, this can give huge energy savings and increase operational efficiency.

Airports

Main Control Targets

Lighting | Sunshades and blinds | Temperature control | Socket

Main Control Modes

Manual control | Timing control | Lux control | Scene control | Central control | Fire control | Climate station

- All lighting, sunshades, air conditioners, sunroofs, power sockets, can be accessed from in the inward and outward port hall, or from the waiting hall.
- Different lighting scenes can be set in the waiting hall, these scenes can have separated time periods and activate the air conditioning in different areas.
- The sunshades can be automatically adjusted through illumination induction, this reduces energy consumption and increases the efficiency of air conditioners and lighting.
- Light damage can be estimated through current detection, this gives maintenance crews advanced warning so they can save costs and remedy the situation.
- A sensor that monitors weather conditions is able to control skylights and ventilating blinds, this guarantees efficient air circulation.
- Fire protection systems are linked to the lighting in public areas to ensure effective emergency lighting.

Clubs

Main Control Targets

Lighting | Sunshades and blinds | Temperature control | Multi-media control

Main Control Modes

Manual control | Timing control | Scene control | Central control | Remote control

- Differing atmospheres can be created by altering the lighting scenes. Different scenes can be set to match different scenarios, popular scenes include relaxed, party, dinner, wedding, meeting, etc.
- The lighting, curtains, air conditioners, and background music can be controlled via an intelligent control panel, a remote controller, or an android/iOS device.
- Any blinds or curtains can be automatically adjusted based on seasonal information, or sensor input. This can reduce energy consumption, and increase the efficiency of air conditioners and lighting.
- Complete control of a clubs environment is possible by utilizing a single member of staff to monitor the control interface.

Exhibition Centers

Main Control Targets

Lighting
Sunshades and blinds
Temperature control
Socket
Exhaust fan

Main Control Modes

Manual control
Timing control
Body inductive control
Lux control
Scene control
Central control

- Different scenes can be set during the exhibition, from move In mode, exhibition mode, and move out mode, etc.
- Different scenes can be set in the exhibition hall at different time periods, air conditioning can also be set at different levels for different areas.
- Exhibition spaces can be partitioned with localised lighting and HVAC control. Lighting can also be reconfigured to meet the needs of exhibitors.
- Electrical shading devices can be regulated automatically via a luminance transducer, this dramatically reduces the energy consumption of air conditioners.
- Fire protection systems are linked to the lighting in public areas to ensure effective emergency lighting.

Museums

Main Control Targets

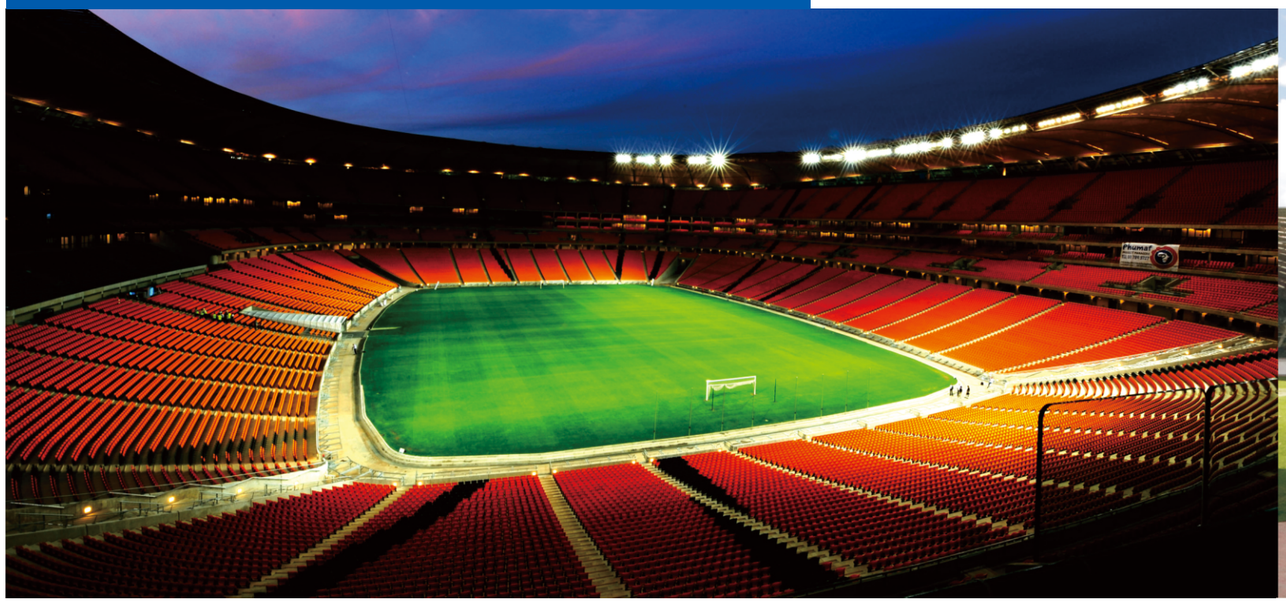
Lighting
Temperature control

Main Control Modes

Manual control
Body inductive control
Scene control
Central control
Anti-misoperation
Security and protection control

- All lighting devices in the museum are managed through a central control system, this system can be manipulated via intelligent control panels and inductive controls. Different scenes can be set during the museums preparation period, operational period, cleaning period and closing period.
- In the exhibition areas switches control only the basic lighting, they are automatically activated via displacement induction when visitors or staff are detected.
- Illumination in the major exhibition areas is activated when a display is approached, when the display is not being viewed the lights are deactivated.
- In special exhibition areas intelligent control panels manage the lighting effects. When the panels are in operation they are locked to prevent tampering, after the public have left the panel is unlocked enabling staff to control the system.
- Temperature is controlled according to the different requirements of individual areas. From exhibition areas, rest areas, passageways, and storage areas the temperature can be adjusted. This provides a suitable temperature for visitors, and ensures areas of low use do not waste electrical resources.
- The system can also be interlinked to the security control system. This gives additional security, and enables an alarm to be raised if there is an emergency situation.

Stadiums



Main Control Targets

Lighting | Shades and blinds | Temperature control | Fan

Main Control Mode

Manual control | Scene control | Central control | Fire control | Coordinated control | Current detect

- Various modes can be switched to using an intelligent panel, from TV broadcast mode, game mode, training mode, cleaning mode, security mode, etc.
- The real time monitoring of system status is available which notifies the user if any fault is detected.
- Device status can be monitored, and statistics delivered. This makes the system simple to manage, and saves on maintenance costs.
- Fire prevention devices are able to interlink and coordinate with the system, the general lighting can be dimmed and emergency lighting activated.
- The system is able to control lighting, electrical shading, drainage pumps, and ventilation all through one central hub.

Schools

Main Control Targets

Lighting | Shades and blinds | Temperature control | Fan

Main Control Mode

Manual control | Timer | Sensor control | Lux control | Scene control | Central control | Fire control | Coordinated control | Anti-misoperation control

- Each classroom can have the lighting, fans, and air conditioning managed via a customisable schedule. Different modes can be used for different times, common modes are weekdays, weekends, holidays, and special events.
- Intelligent panels can control the lights, curtains, air conditioning and projectors. Different modes can be selected or programmed via the panel itself.
- Through sensors the lights and air conditioning can be automatically activated when a presence is detected. The lights can be dimmed or brightened depending on the amount of natural light present.
- The entire school can be managed centrally, and graphical management software can be used to detect the status of each device. This ensures immediate notification when a failure occurs, enabling swift maintenance and saving manpower.
- Every panel can be locked by an administrator to prevent and avoid tampering.

Hospitals

Main Control Targets

Lighting | Shades and blinds | Temperature control

Main Control Mode

Manual control | Timer | Sensor control | Lux control | Scene control

- Intelligent panels can control lights, curtains, air conditioning, and activate different modes such as consultation mode or rest mode.
- The nurse's station can control lighting, curtains, and air conditioning. The temperature of the ward can also be monitored, this ensures an optimal environment for the patient.
- Corridor lighting can be activated automatically by Lux and logic control, dome lights can be automatically turned off at midnight.
- Administrators can remotely control the system and operate ward lights, curtains, and air conditioning when a patient checks in. After checkout an administrator can automatically or manually manage the ward.
- The system is able to display and control the temperature of each ward and set upper and lower temperature limits from a central control station. If a door or window is detected as being open, the air conditioner will automatically deactivate to ensure energy in not wasted.

Subway Stations

Main Control Targets

Lighting | Shades and blinds

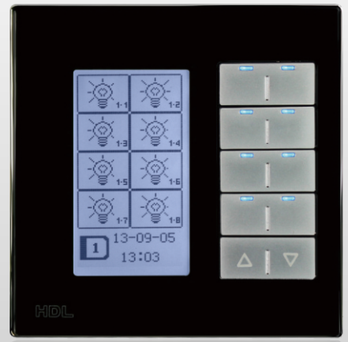
Main Control Mode

Coordinated control | Central control | Timer | Lux control | Scene control

- The system is able to coordinate with Lux sensors, and timing controls. This enables the user to remotely manage the platform or waiting room.
- Different control modes can be used for different seasons, this provides a tailored response to varying environmental conditions.
- Fire prevention devices are able to coordinate with the system, the general lighting can be dimmed and emergency lighting activated when an alarm is tripped.
- The status of lighting, curtains, blinds, and fans can be observed via graphical management software. This can be manually configured on site to achieve efficient command and control.

HDL-KNX
PRODUCTS

- KNX-DLP European / American standard intelligence multifunction panel
- KNX European / American standard intelligence panel
- KNX European / American standard intelligence panel
- KNX Intelligence panel
- KNX European / American standard touch panel
- KNX Panel Controller-C
- KNX Relay Actuator
- KNX Dimming Actuator
- KNX Motor Curtain 1CH Actuator
- KNX RGBW 4 fold Driver
- KNX Outdoor Doppler Sensor
- KNX Indoor Doppler Sensor
- KNX Ultrasonic &Motion Sensor
- KNX Motion Sensor
- KNX USB Interface
- KNX Curtain Module
- KNX HVAC Module
- KNX Dry contact Module
- KNX DMX512 Recorder
- KNX Infrared Emission Module
- KNX 960mA Power supply
- KNX 4 Core Cable
- KNX Line Coupler/Repeater



KNX-DLP Intelligent Multifunction Panel To European Standard

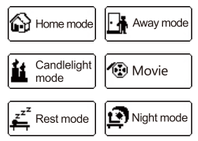
M/DLP04.1-48

Material and color are customizable

The plate and button material can be customized to meet different design styles.

Multipurpose

With a total of 6 pages, 3 pages can be used for lighting, 1 page for HVAC, 1 page for AC, and 1 page for Floor Heating.



DIY personalized labels

Users can define their own button icons with the HDL-KNX Assistant Software.

Lock

Users can lock the LCD panel by the onboard buttons or by the Bus.

Specifications

- Working voltage: 21-30V DC
- Dynamic current: <17mA
- BUS Interface: KNX / EIB
- Static current: <13 mA

Combination support

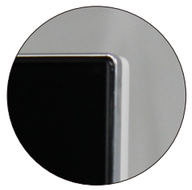
- Work with M/IRAC.1 infrared module for IR control
- Work with M/FCUO1.10.1 HVAC module for HVAC/Floor heating control

Features

- Switch control
- Percentage control
- HVAC Control
- Dimming control
- Combination control
- Button Lock
- Shutter control
- Bytes(String) control
- Button Trigger
- Flexible control
- Backlight brightness settings
- Remote control
- Scene control
- Floor heating control
- Temperature Report
- Sequence control
- IR Control
- Night mode setting
- Threshold control

KNX European Standard Intelligence Panel

M/P01.2-48 | M/P02.2-48 | M/P03.2-48 | M/P04.2-48



Unique and elegant

The product is characterized by a metal frame with glass plating, this is consistent with new design trends.

LED indicator

It is equipped with an LED button status indicator that allows you to properly monitor the device.

DIY personalized labels

Users can define their own button icons.

Variety of keypad types

There are four types of keypads to choose from, they have 1,2,3,4 keys respectively.

Specifications

- Working voltage: 21-30V DC
- BUS Interface: KNX/EIB
- Dynamic current: <10mA
- Static current: <6mA

Features

Switch control	Percentage control	Button Trigger
Dimming control	Threshold control	Remote control
Shutter control	Combination control	Night mode setting
Flexible control	Bytes(String) control	Independent control
Scene control	Button lock	Key combination control
Sequence control	Backlight brightness settings	

KNX European Standard Intelligence Panel

M/P02.1-38 | M/P04.1-38

Unique and elegant

With a single glass plate, the layout is more concise, this highlights the elegant style of the unit.

DIY personalized label

Laser engraving technology with back light effect makes your panel look unique.

Large buttons, LED indication

A large button design ensures simple use, an LED button status indicator allows you to check the device status.

Variety of key types

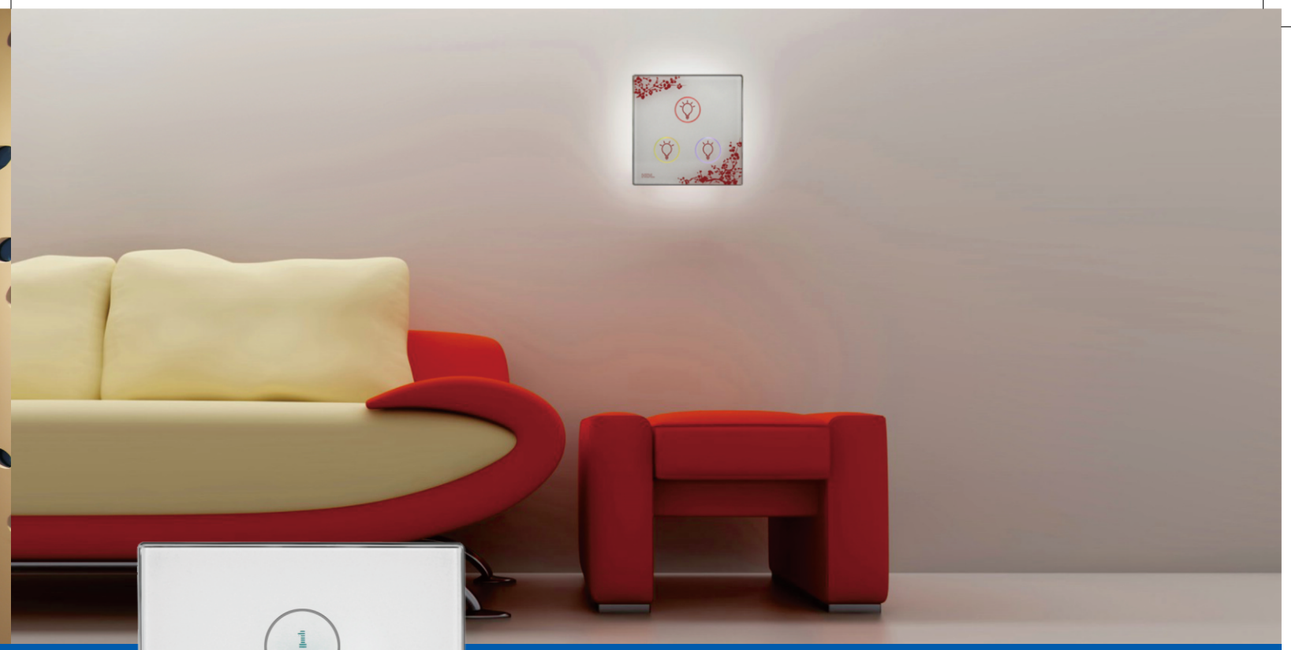
There are two types of keypad, choose from 2 or 4 key combinations that meet a multitude of needs.

Specifications

- Working voltage: 21-30V DC
- BUS Interface: KNX/EIB
- Power consumption: <10mA

Features

Switch control	Percentage control	Button Lock
Dimming control	Threshold control	Button Trigger
Shutter control	Combination control	Remote control
Flexible control	Bytes(String) control	Night mode setting
Scene control	Backlight brightness settings	
Sequence control		



KNX Intelligence Panel

M/P01.3 | M/P02.3 | M/P04.3

LED indication

Equipped with LED button status indicators, you can easily check the device status.

Unique and elegant

With a timeless brushed aluminum housing, the unit is sleek and built to last.

A variety of key types

With a choice of three keypads and 2, 4, or 8 keys you can choose the solution that best meets your needs.

Specifications

- Working voltage: 21-30V DC
- BUS Interface: KNX/EIB
- Dynamic current: <10mA
- Static current: <6mA

Features

- Switch control
- Sequence control
- Bytes(String) control
- Dimming control
- Percentage control
- Night mode setting
- Shutter control
- Threshold control
- Independent control
- Flexible control
- Combination control
- Key combination control
- Scene control
- Backlight brightness settings

KNX European Standard Touch Panel

M/TBP1.1-48 | M/TBP2.1-48 | M/TBP3.1-48 | M/TBP4.1-48

A touch button illuminated display with replaceable plate and frame

The buttons support RGB colors, and are ergonomic and easy to use.

DIY personalized labels

Different colors and patterns are available for the fascia, this enables them to blend seamlessly into a multitude of environments.

A variety of choices for key types

Four keypad types are available with 1, 2, 3, or 4 buttons to choose from.

Specifications

- Working voltage: 21-30V DC
- BUS Interface: KNX/EIB
- Dynamic current: <12mA
- Static current: <7mA

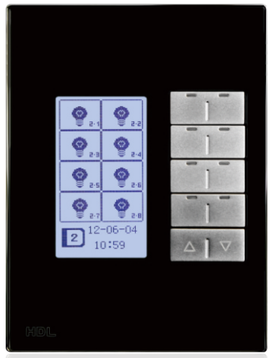
Features

- Switch control
- Sequence control
- Bytes(String) control
- Dimming control
- Percentage control
- Button lock
- Shutter control
- Threshold control
- Button trigger
- Flexible control
- Combination control
- Scene control
- Backlight brightness settings

KNX-DLP Multifunctional LCD Switch US

M/DLP04.1-46

M/DLP04.1-46 / Black glass



M/DLP04.1-46 / White glass

- Metal buttons
- Electronic labels
- Selectable plate and frame

Specifications

- Working voltage: 21-30V DC
- BUS interface：KNX/EIB
- Dynamic current: <17mA
- Static current: <13mA

Features

Switch control	Percentage control	HVAC control
Dimming control	Combination control	Button lock
Shutter control	Bytes(String) control	Button trigger
Flexible control	Backlight brightness settings	Remote control
Scene control	Floor heating control	Temperature report
Sequence control	IR control	Night mode setting
Threshold control		

Combination support

- Works with M/IRAC.1 infrared emission modules for IR control
- Works with M/FCUO1.10.1 HVAC modules for HVAC/Floor heating control

Multiple Control Pages

- Lighting
- HVAC
- Floor Heating
- Air Condition

- Note: Built-in IR receiver, the plate needs an IR receiving hole to accommodate IR functionality.

KNX Multifunctional Switch US

M/P01.2-46 | M/P02.2-46 | M/P03.2-46 | M/P04.2-46

M/P01.2-46

Specifications

- Working voltage: 21-30V DC
- BUS interface：KNX/EIB
- Dynamic current: <10mA
- Static current: <6mA

Features

Switch control	Percentage control	Button Trigger
Dimming control	Threshold control	Remote control
Shutter control	Combination control	Night mode setting
Flexible control	Bytes(String) control	Independent control
Scene control	Button Lock	Key combination control
Sequence control	Backlight brightness settings	

Fascia color and style is customizable

- White/8 Buttons
- White /6 Buttons
- White/4 Buttons
- White/2 Buttons

- Note: Built-in IR receiver, the plate needs an IR receiving hole to accommodate IR functionality.

M/P02.2-46

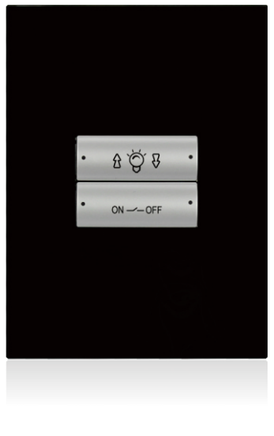
M/P03.2-46

M/P04.2-46

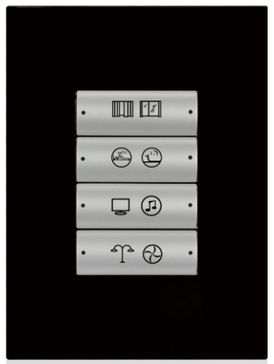
KNX Multifunction Switch

M/P02.1-46 | M/P04.1-46

M/P02.1-46



M/P04.1-46



Specifications

- Working voltage: 21-30V DC
- BUS interface: KNX/EIB
- Current consumption: <20mA

Features

- Switch control
- Dimming control
- Shutter control
- Flexible control
- Scene control
- Sequence control
- Percentage control
- Threshold control
- Combination control
- String control
- Key lock
- Button trigger
- Backlight brightness setting
- Night mode setting

Fascia color and buttons are customizable

- Note: Built-in IR receiver, the plate needs an IR receiving hole to accommodate IR functionality.

KNX Touch switch US

M/TBP2.1-46 | M/TBP4.1-46 | M/TBP6.1-46

Specifications

- Working voltage: 21-30V DC
- BUS interface: KNX/EIB
- Dynamic current: <12mA
- Static current: <7mA

Features

- Switch control
- Sequence control
- Bytes(String) control
- Dimming control
- Percentage control
- Button lock
- Shutter control
- Threshold control
- Button trigger
- Flexible control
- Combination control
- Scene control
- Backlight brightness settings

Supports RGB Back-light
Fascia color and style is customizable

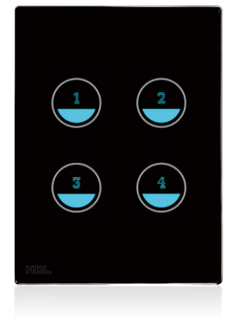
- White/2 Buttons

- White/4 Buttons

- White/6 Buttons

M/TBP2.1-46

M/TBP4.1-46



M/TBP6.1-46

KNX Panel Controller-C

NEW PRODUCT

M/P01.2-C1 | M/P02.2-C2 | M/P02.2-C3 | M/P02.2-C4 | M/P03.2-C5 M/P03.2-C6

M/P01.2-C1

- Panel 1Rocker Controller-PV2(V1.2)

M/P02.2-C2 | M/P02.2-C3 | M/P02.2-C4

- Panel 2Rocker Controller-PV2(V1.2)

M/P03.2-C | M/P03.2-C6

- Panel 3Rocker Controller-PV2(V1.2)

Specifications

- Working Voltage: 21~30VDC
- Bus interface: KNX/EIB
- Static current: ＜9mA
- Dynamic current: ＜16mA

Features

- Each rocker has 2 work modes: Combined button mode and independent button mode.
- It supports kinds of data point and function, include Switch control, Dimming, Shutter control, Flexible control, Scene control, Sequence control, Percentage control, Threshold control, Combination control, String(14bytes) controller, pulse controller.
- Button Lock, Button Trigger.
- Keep pressing the first and last button together for 2 seconds, the LED Indicators will flashing and the device enter programming mode.
- User can define button icon.

HDL KNX / EIB multifunction Panel controller include many kindof data point, can be used for many applications like lighting dimming, switch, curtain etc.

KNX Motor Curtain 1CH Actuator

NEW PRODUCT

M/WM70M.1

Specifications

- Program name: Motor Curtain 1CH Actuator
- Bus interface: KNX/EIB (Master)
- Model NO.: M/WM70M.1 (Master) M/WM70S.1 (Slave)
- Rated voltage: AC220V 50Hz
- Voltage range: AC220V±20% 50HZ
- Working voltage: DC21 -30V(Master) DC12V(Slave) from Master
- Bus power Consumption: <10mA/DC30V (Master)
- Slave interface: 6P network port
- Rated power: 70W
- Rated torque: 1.0Nm
- Rated speed: 112rpm
- Rail belt speed: 16cm/s

Features

- Standard control (with percentage)
- Simple control (without percentage)
- Automatic measure distance.
- Manual mode: Long drag, short drag.
- Can control to open, close, stop and percentage.
- Can respond the status (open, close, stop, percentage, lim ited position, etc.)
- Has status after bus voltage recovery function.
- Safety control. Control the curtain position by wind, rain, fr ost signal
- Auto control. Control the curtain position by sun/ no sun, heating, cooling signal
- Scene control
- Forced operation
- Trigger control
- Save status before power off function

MASTER SLAVE

M/WM70M.1 M/WM70S.1

MASTER SLAVE

KNX Relay Series

M/R4.16.1 | M/R8.16.1 | M/R12.16.1 | M/R16.16.1

HDL / KNX-EIB BUS relay series products are fully compliant with European safety standards and protocols for High-power KNX switching equipment. With almost zero power consumption, and 50A High-current magnetic relays, the unit ensures a long service life. Being widely used in airports, metro stations, stadiums, parks, roads, and studios KNX products have proven themselves to be reliable and efficient.

M/R4.16.1 | 4CH*16A

- Output channel : 4 relays channel

M/R8.16.1 | 8CH*16A

- Output channel : 8 relays channel

M/R12.16.1 | 12CH*16A

- Output channel : 12 relays channel

M/R16.16.1 | 16CH*16A

- Output channel : 16 relays channel

Specifications

- Working voltage：21-30V DC
- BUS interface: KNX/EIB
- Dynamic current: <15mA
- Static current: <5mA
- Dynamic power consumption : <450mW
- Static power consumption : <150mW
- Output current: 16A
- Rated voltage：250V AC(50/60Hz)
- Electrical life：>100000 times
- Mechanical life：>1000000 times

Features

- Time statistics function
- Channel status response
- On/Off status can set on power failure
- Staircase light
- Flashing
- On/Off/Protection delay
- Scene control
- Threshold function
- Curtain control function
- Logic function: And, Or, Xor, Gate
- Heating function: PWM control output

KNX Relay Series

M/R4.10.1 | M/R8.10.1 | M/R12.10.1 | M/R16.10.1

HDL provides solutions for smart homes and building control, our systems enable the world to save energy, and protect the environment.

In doing so we provide comfort, convenience and a higher living standard.

Specifications

- Working voltage:21-30V DC
- BUS interface: KNX/EIB
- Dynamic current: <15mA
- Static current: <5mA
- Dynamic power consumption : <450mW
- Static power consumption : <150mW
- Output current: 10A
- Rated current：250V AC(50/60Hz)
- Electrical life：>100000 times
- Mechanical life：>1000000 times

Features

- Time statistics function
- Channel status response
- On/Off status can set on power failure
- Staircase light
- Flashing
- On/Off/Protection delay
- Scene control
- Threshold function
- Curtain control function
- Logic function: And, Or, Xor, Gate
- Heating function: PWM control output

M/R4.10.1 | 4CH*10A

- Output channel: 4 relays channel

M/R8.10.1 | 8CH*10A

- Output channel: 8 relays channel

M/R12.10.1 | 12CH*10A

- Output channel: 12 relays channel

M/R16.10.1 | 16CH*10A

- Output channel: 16 relays channel

KNX Dimmer Series

M/D01.1 | M/D02.1 | M/D04.1 | M/D06.1

The HDL KNX/EIB series of Leading Edge/Trailing Edge Dimmers fully comply with both the European safety standards and KNX protocol standards.

Chopper 20A MOSFET dimming technology is used, coupled with a high performance embedded EMC filter. The dimmers all have short circuit protection, over load protection, and over Heat protection. They can be used for the dimming of ordinary incandescent lamps, high pressure halogen lamps, low voltage halogen lamps, other light sources, and dimmable ballasts.

KNX/EIB Dimmers can be used in variety applications from Homes, Hotels, Super Markets, offices to airports and stadiums.

HDL provides solutions for smart homes and building control, our systems enable the world to save energy, and protect the environment.

In doing so we provide comfort, convenience and a higher living standard.

M/D01.1 | 1CH*6A

- Output current：6A/1CH

M/D02.1 | 2CH*3A

- Output current：3A/1CH
- Signal channel maximum output voltage ：3.5A

M/D04.1 | 4CH*1.5A

- Output current：1.5A/1CH
- Signal channel maximum output voltage ：2A

M/D06.1 | 6CH*1A

- Output current：1A/1CH
- Signal channel maximum output voltage ：1.5A

Specifications

- Working voltage：21-30V DC
- BUS interface: KNX/EIB
- Dynamic current: <12mA
- Static current: <7mA
- Allow total power : ≤6A
- Extended current: Parallel circuit
- Load type: Capacitive load, inductive load, resistive load
- Dimming mode: Leading edge dimming, trailing edge dimming
- Rated voltage：220V/110V AC(50/60Hz).

Features

- Time statistics function
- Status response
- Status recovery
- Short circuit protection
- Overload protection
- Overheat protection
- Staircase light
- Flash light
- Scene control
- Temperature reading
- High temperature alarm
- Over temperature power reduce
- Dimming higher limit
- Dimming lower limit
- Sequence control
- Threshold switch
- Heating control (PWM)
- 1.5 power dimming curve (very smooth visual sense)

KNX Ballast Dimmer 6CH 0-10V

M/DA6.10.1

Specifications

- Working voltage：21-30V DC
- BUS interface: KNX/EIB
- Dynamic current: <15mA
- Static current: <5mA
- Shut down way :Pulsed with the lock relay shut off
- Rated Voltage : 220~250V AC(50/60Hz)
- Analogue dimming：0-10v
- Output current: 10A/1CH
- Output channel : 6 channel

Features

- Time statistics function
- Status response
- Status recovery
- Staircase light
- Flash light
- Scene control
- Dimming higher limit
- Dimming lower limit
- Sequence control
- Threshold control
- Heating control(PWM)

KNX Leading Edge Dimmer Serials

M/DL02.1 | M/DL04.1 | M/DL06.1

The HDL KNX/EIB Leading Edge Dimmers fully comply with European safety standards and KNX protocol standards. The 25A TRIAC is used for the M/DL02.1 and M/DL04.1, while the 16A TRIAC used for M/DL06.1. This dimmer series has short circuit, over load protection, and over heat protection.

Specifications

- Working voltage：21-30V DC
- BUS interface: KNX/EIB
- Dynamic current: <12mA
- Static current: <7mA
- Maximum current : ≤6A
- Dimming mode : Leading Edge Dimming
- Dimming curve :1.5 power dimming curve
- Rated voltage:220V/110V±20%
- Frequency: 50/60Hz

Features

- Time statistics function
- Staircase light
- Status response
- Status recovery
- Short circuit fuse protection
- Overload fuse protection
- Overheat power reduce
- Flash light
- Scene control
- Temperature Reading
- High temperature
- Over temperature alarm
- Dimming higher limit
- Dimming lower limit
- Sequence control
- Threshold switch
- Heating control (PWM)
- 1.5 power dimming curve
- Very smooth visual sense

M/DA6.10.1 | 6CH*10V

- The HDL KNX / EIB dimmers can control from 0v to 10v per channel.
  The output channels have a maximum amperage of 10A per channel, they can control both inputs and outputs. Because of this absorption and output type ballasts can be utilized.

M/DL02.1 | 2CH*6A

- Output channel：2CH/6A；Fuse：10A aR type;
- Silicon controlled：25A TRIAC，Minimum Load 40w

M/DL04.1 | 4CH*3A

- Output channel：4CH/3A；Fuse：8A aR type;
- Silicon controlled：25A TRIAC, Minimum Load 40w

M/DL06.1 | 6CH*2A

- Output channel：6CH/2A；Fuse：4A aR type;
- Silicon controlled：16A TRIAC, Minimum Load 30w

KNX Curtain Controller Series

M/W02.10.1 I M/W04.10.1 I M/W06.10.1

The HDL / KNX-EIB Curtain controller fully abides to European safety standards. Using a 10A magnetic current, this series offers power free functionality and high reliability.

The curtain controller can be installed in airports, metro stations, sports stadiums, buildings, clubs, hospital wards, or other areas where curtain control is required.

Our company specializes in developing, manufacturing and distributing Home/building automation systems and stage lighting control systems. We provide green solutions that are environmentally friendly, conserve energy, and ensure a high quality of life.

M/W02.10.1 I 2CH

- Output channel：4 Relay /2 channel

M/W04.10.1 I 4CH

- Output channel：8 Relay /4 channel

M/W06.10.1 I 6CH

- Output channel：12Relay/6Channel

Specifications

- Working voltage：21-30V DC
- BUS interface: KNX/EIB
- Static power consumption : <150mW
- Output current ：10A
- Dynamic current: <12mA
- Static current: <5mA
- Dynamic power consumption : <450mW
- Rated current：250V AC(50/60Hz)
- Electrical life：>100000 times
- Mechanical life：>1000000 times

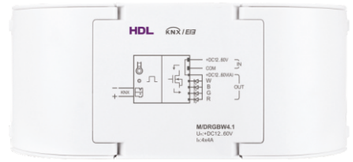
Features

- Shutter mode
- Ordinary curtains mode
- Limit position control
- Position status response
- Power down status save
- Power on status recovery
- Manual operation
- Priority setting
- Operation status response
- Scene control
- Force position operation
- Safety control
- Automatic control

KNX RGBW 4 fold Driver NEW PRODUCT

M/DRGBW4.1

M/DRGBW4.1



Specifications

- Bus interface: KNX/EIB
- Working voltage: DC21 -30V(Master)
- Bus power Consumption: <10mA/DC30V
- Output: R, G, B,W 4channels, 4A/CH
- Output type: common anode RGBW LED strip and single LED
- Housing material: ABS， PC， ALU
- Dimensions:183.5×75×35.5(mm)

Features

- Dimming function: relative dimming and absolute dimming
- Sequence, total 5 sequences. Each sequence has 24steps.
- Staircase light
- Flashing light
- Scene, total 64 scenes.
- Logic
- Threshold
- Custom on/off *
- Color selection *

* only for combination RGBW channel.

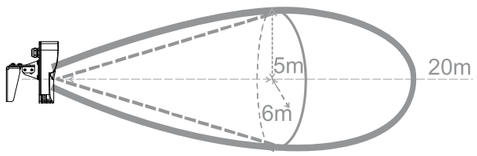
KNX Outdoor Doppler Sensor

NEW PRODUCT

M/WS05.1-A

Specifications

- Working power: 21~30VDC
- BUS interface: KNX/EIB
- Dynamic current: < 24mA
- Static current: < 20mA
- Temperature detection range: -30℃~70℃
- Illumination detection range:0~15000LUX
- Humidity detection range:20~95% RH
- KNX terminals:(Red /Black) 0.75 – 0.85mm Diameter Single-Core



sensing range

Functions

- Built-in LUX sensor, microwave sensor, humidity sensor,temperature sensor, dry contact, external telegram.
- The multi-function motion sensor have 5 logic function blocks and can be set the logical relation AND/OR, Each with 10 output objects. The work mode include single mode and Master & Slave mode.
- The multi-function motion sensor can report movement status, Lux status to KNX system.
- The multi-function motion sensor supports constant brightness output.
- It can controls for Switch control, Absolute dimming control,Shutter control, Alarm control, Percentage control , Sequence control, Scene control, String(14 bytes) control,Threshold control, Logic combination.
- With function of constant brightness: keep the Lux in the constant value, will dim the lights to the corresponding intensity according to the surrounding brightness.
- The logic validity can be set by external telegram, enable end-user to enable or disable the preset logics.

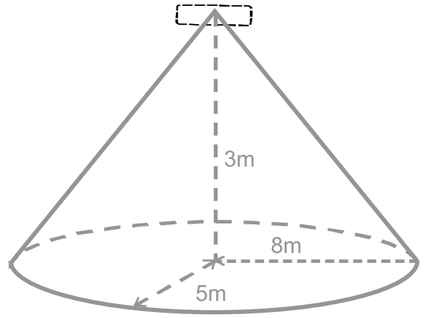
KNX Indoor Doppler Sensor

NEW PRODUCT

M/WS05.1-B

Electrical parameters

- Working power :21~30VDC
- BUS interface ;KNX/EIB
- Dynamic current : < 20mA
- Static current : < 16.5mA
- Temperature detection range :-30°C~70°C
- Illumination detection range :0~15000LUX
- Humidity detection range :20~95%RH
- KNX terminals:(Red /Black) 0.75 – 0.85mm/Diameter Single-Core



sensing range

Functions

- Built-in LUX sensor, microwave sensor, humidity sensor,temperature sensor, dry contact, external telegram.
- The multi-function motion sensor have 5 logic function blocks and can be set the logical relation AND/OR, Each with 10 output objects. The work mode include single mode and Master & Slave mode.
- The multi-function motion sensor can report movement status, Lux status to KNX system.
- The multi-function motion sensor supports constant brightness output.
- It can controls for Switch control, Absolute dimming control,Shutter control, Alarm control, Percentage control , Sequence control, Scene control, String(14 bytes) control,Threshold control, Logic combination.
- With function of constant brightness: keep the Lux in the constant value, will dim the lights to the corresponding intensity according to the surrounding brightness.
- The logic validity can be set by external telegram, enable end-user to enable or disable the preset logics.

KNX Ultrasonic & Motion Sensor

M/HSIU05.1

Specifications

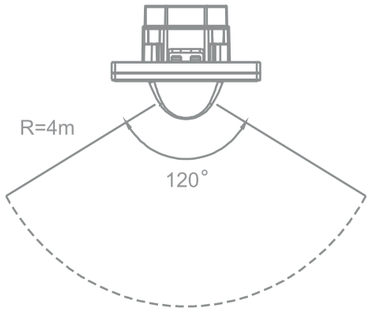
- Working voltage: 21-30V DC
- Dynamic current: <15mA
- Static current: <6mA

Logic Block input Conditions

- 6 different logic input conditions
- External conditions input
- Motion sensor
- Ultrasonic sensor
- LUX sensor
- Dry contact
- Temperature sensor
- Logic relations: AND, OR

Features

- Switch control
- Percentage control
- Absolute Dimming
- Sequence control
- Shutter control
- Scene control
- Alarm control
- String control(14 bytes)



sensing range

Functions

- The HDL-HSIU05.1 multi-function sensor include ultrasonic, PIR, temperature, LUX and drycontact input.
- The sensor have 5 logic function blocks with logical relation AND/OR, Each with ten output objects.
- Master & Slave for many sensor to control one channel light.
- The sensor can report movement status, temperature,Lux or dry contacts status to KNX system.
- The recommend install on the wall, the height about 1.2 to 1.8m.
- Support many controls type: Switch control,Absolute dimming control, Shutter control, Alarm control, Percentage control , Sequence control, Scene control, String(14bytes) control, Threshold controller, Logic combination control.

KNX Motion Sensor

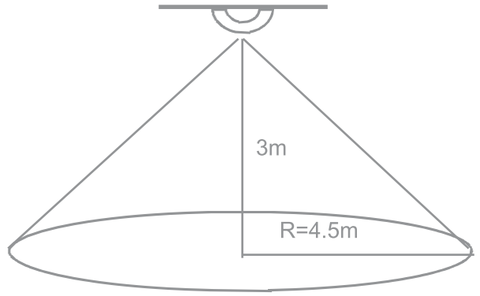
M/HS05.1-B

Specifications

- Working voltage: 21-30V DC
- BUS interface: KNX/EIB
- Dynamic current: <10mA
- Static current: <5mA

Features

- Switch control
- Dry contact input
- Shutter control
- Dry contact status report
- Alarm control
- Temperature compensation
- Percentage control
- Temperature report
- Sequence control
- Lux control
- Absolute value dimming control
- Lux report
- Scene control
- Motions status report
- String control
- Multifunction logic combination



sensing range

Functions

- The multi-function motion sensor can report movement status, temperature, Lux or dry contacts status to KNX system.
- The multi-function motion sensor supports constant brightness output.
- The recommended assembly height is 2 m –3m. The sensitivity of the detector reduces as the assembly height increases.
- It can controls for Switch control, Absolute dimming control, Shutter control, Alarm control, Percentage control , Sequence control, Scene control, String control, Logic combination control.
- With function of constant brightness: keep the lux in the constant value, will dim the lights to the corresponding intensity according to the surrounding brightness.
- The logic validity can be set by dry contact or external telegram, enable end-user to enable or disable the preset logics.

PIR 5logics Sensor

M/IS05.1

- The HDL KNX-M/IS05.1 includes 4 independent logic blocks and 1 combined logic block. The logic process can be AND/OR, the logic inputs can be from the motion sensor, Lux, or other external sensors.
  The sensor can be configured to meet different requirements, and can operate as the master/slave, or individually.

Specifications

- Working voltage: 21-30V DC
- BUS interface: KNX/EIB
- Dynamic current: <6mA
- Static current: <5mA

Features

- This multi-function motion sensor can detect Movement, Lux, and external telegram.
- With 5 logic function blocks the unit is capable of independent or combined logic, combining AND/OR processing and outputting up to 10 objects.
- The work modes include independent mode, master mode, and slave mode.
- Able to report movement and Lux status to the KNX system.
- Supports constant brightness output control.
- The recommended position of the sensor is 2m-3m above ground level, as the height increases the sensitivity of the sensor is reduced.
- The sensor can control switches, absolute dimming, shutters, alarms, sequences, scenes, etc.

Ultrasonic 5logics Sensor

M/US05.1

- The HDL KNX-M/US05.1 includes 4 independent logic blocks and 1 combined logic block. The logic condition can be AND/OR and it can accept ultrasonic input, and Lux input. To meet the needs of different situations the sensor can be configured to operate in master/slave mode or in independent mode.

Specifications

- Working voltage: 21-30V DC
- BUS interface: KNX/EIB
- Dynamic current: <15mA
- Static current: <10mA

Features

- This multi-function motion sensor includes an ultrasonic sensor, Lux sensor, and external telegram detection.
- Up to 5 AND/OR processing blocks can each output 10 objects.
- When in work mode the unit is able to operate in both master or slave mode.
- The device is able to report movement and Lux status to the KNX system.
- Supports constant brightness output
- The recommended height to install the device is 2m-3m. Sensitivity decreases as the height increases.
- It is possible to control switching, absolute dimming, shutters, alarms, sequences, and scenes, etc.

DALI Gateway

M/DALI.1

Specifications

- Working voltage: 21-30V DC
- BUS interface: KNX/EIB
- Dynamic current: <12mA
- Static current: <5mA
- Rated voltage: AC85-135V(60Hz) ---USA
  AC195-265V(50Hz)

Features

- Fault status report
- Central control
- 24 Channel control
- 16 Group control
- 32 Scene control
- 16 Staircase light control
- 16 Sequence control
- 16 Emergency light control

- This HDL KNX DALI module can connect up to 64 DALI devices, assign them addresses, and manage the connections.
  Real-time fault detection is provided which lets users check the status of DALI, lamps, and ballasts.
  Each channel and group supports switching on/off, relative dimming, absolute dimming, 1bit and 1bytestatus response.
  The standard KNX dimming curve, and standard DALI dimming curve is supported.

KNX Timer Master/Slave 4CH Controller

M/TM04.1

Specifications

- Working voltage: 21-30V DC
- BUS interface: KNX/EIB
- Dynamic current: <10mA

Features

- Master clock
- Slave clock
- Year routine
- Month routine
- Week routine
- Day routine
- Special day
- Switching control
- Alarm control
- Shutter control
- Scene control
- Sequence control
- Percentage control
- Threshold control
- Voltage recovery

- Our 4CH Master/Slave Controller fully complies with European safety standards and KNX protocols. Its high Performance EMC Filter is embedded, fully complying the requests of EMC. The timer controller is embedded with a real time clock (RTC), which can be used as a master timer and slave timer.

KNX HVAC Controller

M/FCU01.10.1

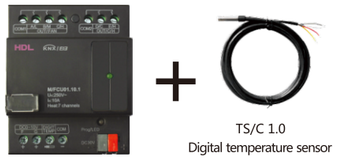
The HVAC Controller is one of the HDL KNX/EIB serials. It can control heating, cooling, and a range of fan speeds.

The HDL HVAC controller supports 7 independent floor heating control channels, and works with digital temperature sensors that can calculate the specific temperature. The unit has 5 relay output channels, and 2 0-10v output channels.

Specifications

- Working voltage：21-30V DC
- BUS interface: KNX/EIB
- Dynamic current: <20mA
- Static current: <5mA
- Dynamic power consumption : <450mW
- Static power consumption : <150Mw
- Rated current：250V AC(50/60Hz)
- Relay current: 10A
- Relay electrical life：>100000 times
- Relay mechanical life：>1000000 times

TIPS



TS/C 1.0
Digital temperature sensor

The HVAC Module utilizes a digital temperature sensor, it can use 7 Digital temperature sensors to collect data from different locations and calculate an average temperature.
The HDL HVAC control is used to create a comfortable energy saving environment.

Features

- 5 channel 10 A relay output
- 2 channel 0~10V output
- Fan speed : High, medium, low
- HVAC working mode : Cooling, heating
- HVAC operation mode : Comfort mode, Standby mode, Night mode, Frost/heat protection mode
- Fan speed, valve status report
- Local 7 channel temperature collection
- Bus temperature collection
- Local temperature report
- 7 channel independent floor heating control
- 7 channel independent control output
- 5 floor heating control mode / channel
- Channel runtime statistics
- Channel status response
- Power on recovery
- Power down status
- Staircase light
- Switch delay
- Protection delay
- PWM control output

4 Channel Dry Contact Sensor

M/S04.1

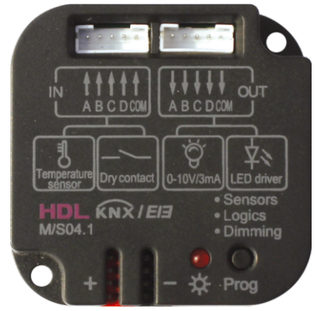
The dry contact output and input sensor is one of the HDL KNX/EIB serials. It includes a 4 channel signal input and a 4 channel signal output. The signal input channel can receive data from both the temperature sensor and dry contact sensor. It offers a DC output of 0-10v, a dimming signal, or drives the LED status channel.

This module can support temperature data, dry contact inputs, output 5 logics, 0-10 V dimming, various sensors, and LED drivers, etc.

Control of relays, dimming, curtains, and scenes is also possible. Each logic control process is able to combine with 4 signal input channels.

Specifications

- Working voltage：21-30V DC
- BUS interface: KNX/EIB
- Dynamic current: <25mA
- Static current: <5mA
- Channel output Voltage ：0-10V
- Channel output current ：3 mA
- Input sensor type: Switch/Temperature sensor



Features

- Switch control
- Dimming control
- Shutter control
- Flexible control
- Scene control
- Sequence control
- Percentage control
- Threshold control
- String control
- Forced control
- PWM output
- 5 Logic control
- Counting control
- Combination control
- LED status indicator
- Alarm control
- Loop time Open statistics
- Channel status response
- Power-state recovery, stair lights
- Flashing function
- Scene save , scene dimming
- Threshold switch
- Heating control
- 0-10V dimming

TIPS

TTS/APR 1.0
Temperature sensor

The dry contact sensor works with the temperature sensor to collect and report the temperature.

Dry Contact 8CH Sensor
M/S08.1

- This dry contact 8CH sensor has dry contact input, and 2 work modes: sensor control and logic control.

Specifications

- Working voltage: 21-30V DC
- BUS interface: KNX/EIB
- Dynamic current: <30mA
- Static current: <5mA

Features

- It can send a variety of control telegrams to the KNX system.
- Two work modes: Sensor control, Logic control.
- Logic functionality consists of three parts: dry contact input, logical operation (four levels) , logic block output.
- Controls: Switch controller, Switch/Dimming controller, Shutter controller, Flexible controller, Scene controller, Sequence controller, Percentage controller, Threshold controller, String(14 bytes) controller, Forced position controller, Bell controller, Counter controller, Combination controller.

Dry Contact 24CH Sensor
M/S24.1

- HDL KNX-M/S24.1 is a sensor signal input module, it supports up to 24 dry contact inputs.

Specifications

- Working voltage: 21-30V DC
- BUS interface: KNX/EIB
- Dynamic current: <30mA
- Static current: <5mA

Features

- It can sending a variety control telegrams to the KNX system.
- Two work modes: Sensor control, Logic control.
- Controls: Switch controller, Switch/Dimming controller, Shutter controller, Flexible controller, Scene controller, Sequence controller, Percentage controller, Threshold controller, String(14 bytes) controller, Forced position controller, Bell controller, Counter controller, Combination controller. Logical controller mode.

KNX DMX512 Recorder Module
M/DMX512.1

Specifications

- Working voltage: 21-30V DC
- BUS interface: KNX/EIB
- Dynamic current:<12mA
- Static current:<5mA

Features

- A massive 24 programs can be played
- Ability to record 24 programs
- A record time of 4 hours
- KNX to DMX Data exchange
- DMX to KNX Data exchange
- Intelligent sequence control
- Scene output control
- Switch control
- Relative value diming
- Absolute value dimming
- Input signal: DMX512-1990, HDLNet DMX, ArtNet DMX
- Output signal: DMX512-1990, HDLNet DMX, ArtNet DMX

- The KNX/DMX recorder is not only a KNX/DMX gateway which supports two-way control, it can make, record, play back, and delete DMX programs from the ETS software or KNX wall panel. It has a maximum record time of 4 hours, and can be used to control devices with built-in DMX protocols such as LED color changers, moving lights, or laser lights.

KNX 960mA Power Supply module
M/P960.1

Specifications

- Input voltage: AC110V ~ 230V 50/60Hz
- Output voltage: DC30V
- BUS interface: KNX/EIB
- Output current ：960mA
- Power consumption: <2W
- Power-on time: <1s

Features

- Green LED indicator: Normal output
- Red LED indicator: overload
- Overload and short-circuit protection
- Reset button

- This HDL KNX/EIB 960 mA power supply module fully complies with European safety standards and KNX protocols, it outputs a maximum 960mA current to EIB BUS.

KNX IR Emitter Module

M/IRAC.1

- The 4 channel HDL-M/IRAC1 IR emitter can store up to 650 IR codes. The first 150 codes are used for controlling televisions, DVD players, music systems, etc.
  The remaining 500 IR codes are used to control air conditioners, the system is compatible with all air conditioners regardless of manufacturer. The system can turn the AC system on/off, control temperature, fan speed, and louver angle.

Specifications

- Working voltage: 21-30V DC
- BUS interface: KNX/EIB
- Dynamic current: <15mA
- Static current: <5mA
- Maximum effective distance: 6m

Features

- Singe control
- Repeat control
- Split AC control
- Sequence control
- Current detection

IR Codes

- The HDL-KNX Assistant Software allows the system to learn new codes and download them to the KNX IR Emitter Module.

KNX net/IP Router

M/IPRT.1

M/IPRF.1: KNX net/IP Router

- The KNX net/IP can connect the two communication protocols to effectively send/receive data.

Specifications

- KNX Bus voltage: DC21-30V
- KNX Bus current: 5mA
- External power supply: DC 24V (DC 12 to 30V)
- Power consumption: typ. 520mW, max. 800mW
- External current: typ. 190mA
- Dimensions: 70x36x90mm (L x W x H)
- IP Class: Ip20

Features

- The KNX net/IP Routing & Tunneling interface device offers a router the ability to temporarily disable the filtering of messages by pressing a button.
- This eases system commissioning considerably.
- Temporary access to other lines is possible without having to download data from the ETS.
- If the bus experiences communication failure, the user is notified by the devices onboard LEDs.

KNX USB Interface

M/USB.1

Specifications

- Bus voltage: 21-31DC
- Bus interface: KNX/EIB
- BUS current: <10mA
- Installation: Standard 35mm Din Rail
- Type of connection: KNX/EIB Connector
  USB Interface 1.0 HID
- Dimensions: 70x36x90mm (LxWxH)
- IP class: IP20

Features

- Type B USB Connector
- Automatic recognition of PC and KNX equipment to be programmed
- LED indication of data transmission
- Usable from ETS4/3
- Automatic detection and installation of the USB interface
- Easy access USB connection

- The M/USB.1 is a new KNX-USB interface, it establishes a bidirectional data connection between a PC and KNX bus. Protection of the KNX BUS is ensured through the galvanic isolation of the USB connector. The device enables addressing, setting of parameters, visualization, protocoling, and the diagnosis of bus devices.
  With a KNX-USB interface you have the possibility of addressing every bus device in the system.
  Located on the front of the device the USB socket is easy to find, and has twin yellow LEDs which indicate the status and traffic between the bus and PC.

KNX Line Coupler / Repeater

M/LCR.1

Specifications

- Bus Voltage: 21-31DC
- Bus Interface: KNX/EIB
- BUS Main Line Current: <30mA
- BUS Secondary Line Current: 3mA
- Installation: Standard 35mm Din Rail
- Connections: KNX / EIB Main line - Left bus connection terminal
  KNX / EIB Sub line - Right bus connection terminal
- Dimensions: 70x36x90mm (L x W x H)
- IP Class: IP20

Features

- Line coupler for connecting wide KNX lines or areas
- Filter functionality, telegrams can be filtered to reduce telegram traffic.
- Galvanic isolation of the lines/areas
- 6 LEDs display data transmission and 1 LED displays programming mode
- Can be used as line amplifier/repeater as well

- The HDL-KNX Line Coupler can be used as coupler or repeater (to amplify the signal). If the device is used as a line coupler, it can be linked with the sub-line or main-line. A separate power supply including choke is required for each new line segment, each line will still be electrically isolated. The Line Coupler can filter telegrams and pass or block them to other lines.

KNX 4 Core Shield Cable

HDL BUS/KNX/EIB

HDL-BUS & KNX/EIB 4 core shield cable is specifically designed to be used with HDL devices.
The HDL-BUS and KNX/EIB Cable gives optimum data transmission, and is the recommended choice when wiring HDL devices.

HDL BUS/KNX/EIB/4 Core Shield Cable

Connection:

Specifications

- Twisted Pair: 2 twisted pair (red and black, white and yellow)
- Cable Description: Aluminum foil shield , ground line
- Insulation resistance(70℃): >5X106ohm/km
- Conductor resistance(20℃): <35 ohm/km
- Copper Wire diameter: 0.75~0.85mm
- Cable withstand voltage: AC 300V
- Cable diameter: 7.0~8.0mm
- Impedance: 120 ohm
- Twisted No. : 40/m

Environment conditions

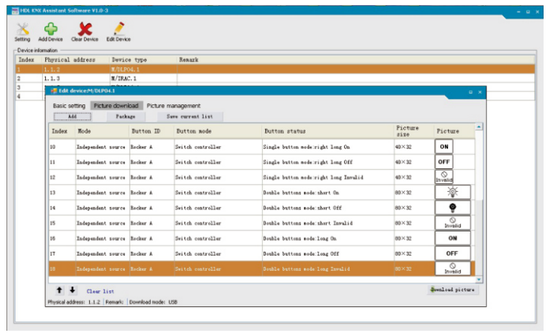
- Working temperature： -20℃~85℃
- Working relative Humidity： 10%~98%
- Storage temperature： -40℃~+100℃
- Storage relative humidity： 10%~98%

Features

- 4 core shield cable: red, black, white, yellow
- Strong signal transmission capability
- Strong anti-jamming capability

HDL Assistant Software V1.0

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 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 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 DALI Module(M/DALI.1)

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

KNX Product List

US Standard Panel

Multifunction DLP panel
HDL-M/DLP04.1-46

One gang push button
HDL-M/P01.2 46

Two gang push button
HDL-M/P02.2 46

Three gang push button
HDL-M/P03.2 46

Four gang push button
HDL-M/P04.2 46

Two gang push button
HDL-M/P02.1-46

Four gang push button
HDL-M/P04.1-46

Two button touch panel
HDL-M/TBP2.1-46

Four button touch panel
HDL-M/TBP4.1-46

Six button touch panel
HDL-M/TBP6.1-46

KNX Product List

EU Standard Panel

One gang push button
HDL-M/P01.2 48

Two gang push button
HDL-M/P02.2 48

Three gang push button
HDL-M/P03.2 48

Four gang push button
HDL-M/P04.2 48

Two gang push button
HDL-M/P02.1-48

Four gang push button
HDL-M/P04.1-48

South Korea Standard Panel

Two button panel
HDL-M/P01.3

Four button panel
HDL-M/P02.3

Eight button panel
HDL-M/P04.3

EU Standard LCD Panel

Multifunction DLP panel
HDL-M/DLP04.1-48

EU Standard Touch Panel

EU Standard Touch Panel

One button touch panel
HDL-M/TBP1.1-48

Two button touch panel
HDL-M/TBP2.1-48

three button touch panel
HDL-M/TBP3.1-48

Four button touch panel
HDL-M/TBP4.1-48

RGBW 4 fold Driver

RGBW 4 fold Driver
M/WM70M.1

Panel Controller-C

Panel 1Rocker Controller-PV2(V1.2)
M/P01.2-C1

Panel 2Rocker Controller-PV2(V1.2)
M/P02.2-C2

Panel 2Rocker Controller-PV2(V1.2)
M/P02.2-C3

Panel 2Rocker Controller-PV2(V1.2)
M/P02.2-C4

Panel 3Rocker Controller-PV2(V1.2)
M/P03.2-C

Panel 3Rocker Controller-PV2(V1.2)
M/P03.2-C6

Power Supply Module

KNX 960mA power module
HDL-M/P960.1

Relay Series

4ch 10A relay module
HDL-M/R04.10.1

8ch 10A relay module
HDL-M/R08.10.1

12ch 10A relay module
HDL-M/R12.10.1

16ch 10A relay module
HDL-M/R16.10.1

DMX Recorder

KNX DMX512 recorder
HDL-M/DMX512.1

Relay Series

4ch 16A relay module
HDL-M/R4.16.1

8ch 16A relay module
HDL-M/R8.16.1

12ch 16A relay module
HDL-M/R12.16.1

16ch 16A relay module
HDL-M/R16.16.1

Ultrasonic & Motion sensor

5 logic Ultrasonic & Motion Sensor
M/HSIU05.1

KNX Outdoor Doppler Sensor
M/WS05.1-A

KNX Indoor Doppler Sensor
M/WS05.1-B

Motion Sensor

5 logic motion sensor
M/HS05.1

PIR 5logics Sensor
M/IS05.1

Ultrasonic 5logics Sensor
M/US05.1

Dimmer Series

1ch 6A dimmer module
HDL-M/D01.1

2ch 3A dimmer module
HDL-M/D02.1

4ch 1.5A dimmer module
HDL-M/D04.1

4ch 3A dimmer module
HDL-M/DL04.1

DALI Gateway

DALI Gateway
HDL-M/DALI.1

KNX Timer Module

6ch 2A dimmer module
HDL-M/DL06.1

6ch 0-10V ballast dimmer
HDL-M/DA6.10.1

6ch 1A dimmer module
HDL-M/D06.1

2ch 6A dimmer module
HDL-M/DL02.1

KNX Timer Master/Slave
4CH Controller
HDL-M/TM04. 1

Curtain Controller Series

2ch curtain controller
HDL-M/W02.10.1

4ch curtain controller
HDL-M/W04.10.1

6ch curtain controller
HDL-M/W06.10.1

Motor Curtain

1CH Actuator
M/WM70M.1

IR Emitter

IR emitter
HDL-M/IRAC.1

Dry contact input module

4ch dry contact input module
HDL-M/S04.1

Dry Contact 8CH Sensor
HDL-M/W04.10.1

Dry Contact 24CH Sensor
HDL-M/S24.1

HVAC control module

HVAC control module
HDL- M/FCU01.10.1

KNX Cable

4 Core shield cable
HDL BUS/KNX/EIB

Line Coupler / Repeater

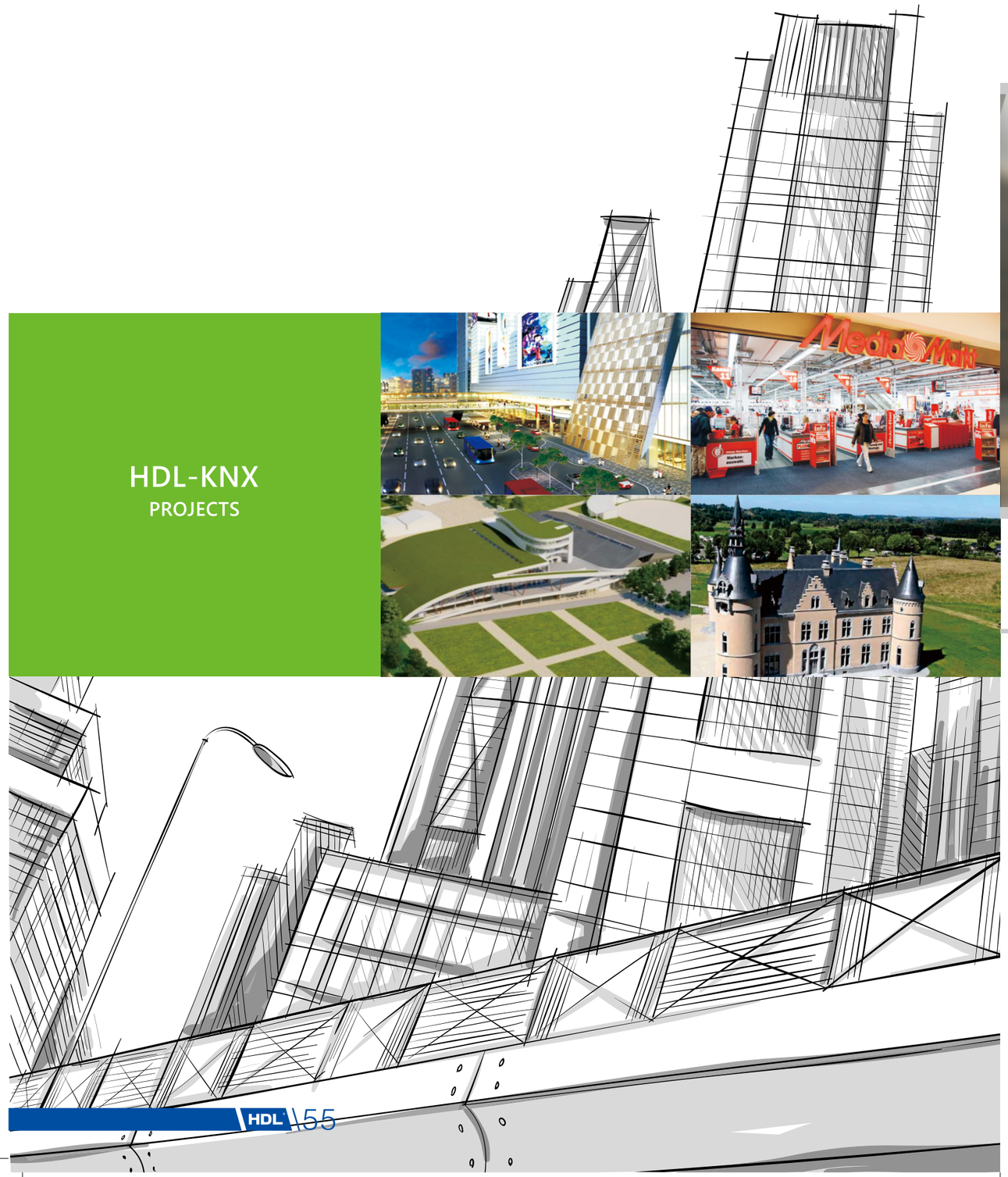
KNX Line Coupler / Repeater
HDL-M/LCR.1

USB Interface

KNX USB Interface
HDL-M/USB.1

KNX net/IP Router

KNX net / IP Router
M/IPRF.1



FEDERATION OF KOREAN INDUSTRIES

SEOUL, SOUTH KOREA

Description

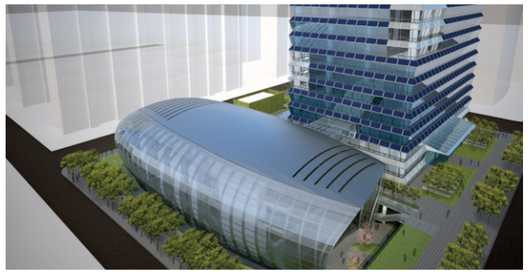
The Federation of Korean Industries headquarters utilized 963 HDL-KNX products. This beacon of Seoul's skyline heralded the importance of smart energy saving in large skyscrapers. The building is 240 meters tall (800ft), and features an innovative exterior glass facade designed specifically to reduce the internal heating and cooling loads.

Energy is collected by integrating photovoltaic panels into the spandrel areas of the southwest and northwest facades, these are the areas which receive most direct sunlight.

By angling the spandrel panels 30 degrees upwards, the design team maximized the amount of energy collected, this energy is enough to power the electrical systems throughout the tower core and the office space.

The KNX solution chosen used a total of 290 HDL-KNX Relays(M/Rx.16.1 series) which provide an output current of 16 Amperes per channel.

Inside the building, 457 HDL-KNX Sensors composed the Lux and motion net. These sensors were essential as they helped to control the skin of the building, enabling it to save energy at different times of the day.



WALEXPO EXHIBITION COMPLEX AND BUSINESS CENTER

ARDENES, BELGIUM

Description

Walexpo is a multi functional, innovative, passive, exhibition complex and business center. Situated in the rural heart of the Belgian Ardennes, it is the first European building that adheres to passive energy criteria. Its contemporary design covers an area of 25,000m², and is located in the midst of a superbly landscaped park that covers some 60 hectares.

KL SENTRAL RAILWAY STATION

KUALA LUMPUR, MALAYSIA

Description

Kuala Lumpur Sentral is an exclusive urban center built around Malaysia's largest transit hub, offering global connectivity, excellent investment opportunities, business convenience and an international lifestyle.

The HDL-KNX/EIB building automation system was applied in 4 basement floors, 7 shopping mall floors, and 27 office floors. This gave the end user total control of over 6000 channels and their lighting loads.

MEDIAMARKT STORE PROJECT

ZWIJNAARDE, BELGIUM

Description

Media Markt is a German chain of stores selling consumer electronics with numerous branches throughout Europe and Asia; it is Europe's largest retailer of consumer electronics, and the second largest in the world after American retailer Best-Buy.

The project required several relay modules to be installed that could split the store into sectors, and control different devices. The chosen user interface to control the HDL systems was a touchscreen installed in the manager's office.

CHATEAU DU FAING PROJECT

CHINY, BELGIUM

Description

HDL was selected to retrofit this 12th century castles electrical systems. Nestled in the south east of Belgium the castle lies close to the small village of Jamoigne.

The end-user required total control of lighting and HVAC, to meet these needs HDL-KNX solutions were installed.

Due to the castles immense dimensions, the installation required countless HDL power supply modules and relays.

The end result is a perfect blend of old and new, ancient and modern, giving the best of both worlds to the customer.