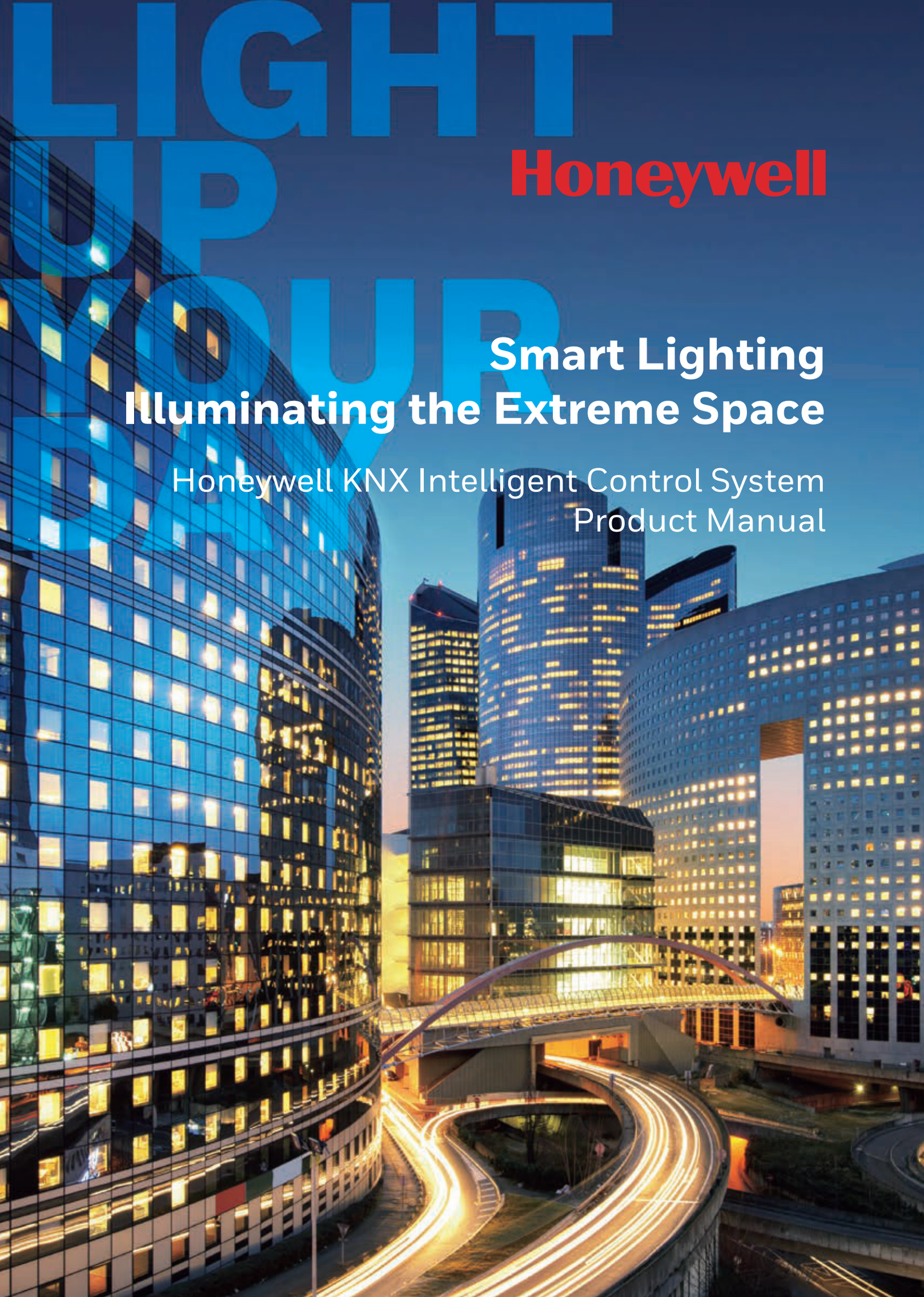


Honeywell

Smart Lighting
Illuminating the Extreme Space

Honeywell KNX Intelligent Control System
Product Manual

About Honeywell

Honeywell is a Fortune 500 company that focuses on the business in three development trends: automation, future aviation and energy transformation. Based on Honeywell Accelerator Operation System and Honeywell Interconnect Platform, Honeywell provides a wide range of technologies and services to multiple industries worldwide. As a trustworthy partner, we help customers solve tricky and complex global challenges through our four Strategic Business Groups: Aerospace Technologies, Industrial Automation, Honeywell Building Technologies, and Energy and Sustainability Solutions, and provide practical and feasible innovative solutions to make the world smarter, safer, and more sustainable.

In China, Honeywell has been growing through innovation, implementing the strategies of “East for East” and “East to Rest”. Today, all Honeywell’s four Strategic Business Groups are represented in China, with its Asia-Pacific headquarters in Shanghai. Honeywell has over 50 wholly owned enterprises and joint ventures in more than 30 cities across the country, including 20 plus manufacturing sites, with about 11,000 employees.

As one of Honeywell’s four Strategic Business Groups, Building Automation focuses on the intelligent building field, and is transforming the way every building operates with the cutting-edge technologies to help improve the residents’ life, working and use experience. Our products, software, technologies and services are used in more than 10 million buildings worldwide. We are devoted to helping building owners and operators create healthier, safer, more energy-saving and sustainable facilities.

Building Automation

Building Automation is committed to providing the most timely response solutions for local customers in China. These solutions cover building automation, fire protection, security, electrical control, and integrated building intelligence; are widely used in industries of commercial building, airport, subway, hospital, hotel, high-tech factory, data center, government and public facilities, etc. We also provide customized software and full lifecycle services for building operations, and boost the healthy, low-carbon, and expert style operation of buildings through digital solutions. Therefore, we have deployed a complete R&D and production system, with main R&D bases in Shanghai, Xi'an, Beijing, and Tianjin, and production bases mainly in Xi'an, Tianjin, and Guangzhou.

Honeywell Building Management System

Honeywell Building Management System provides a complete range of technically advanced building automation and energy-saving solutions, including intelligent equipment, e.g., various sensors, meters, valves and actuators, controllers, extended modules, gateways, energy management platforms and building automation systems, and provides efficient and energy-saving automated operation management for green and smart buildings.

Contents

Brand New "KNX Secure" Security Technical Standard

To address the system control security challenges brought about by the increasing automation, intelligence, and digitization degree of residential and building construction, the KNX Association has launched the KNX Secure security technical standard. Based on the secure encryption communication protocol and EN50090-3-4, the standard complies with AES128CCM encryption standard, and has passed VDE information security certification. KNX Secure provides dual protection, and extends the IP protocol, with the telegrams and data fully encrypted. KNX Data Secure protects user data from unauthorized access and manipulation.

All series products of Honeywell intelligent lighting system comply with the brand new KNX Secure security technical standard and apply to key departments with high security requirements as data centers and financial department. The control security level is increased to the highest international encryption standard to effectively block hacker intrusions, and ensure the control security of building electrical equipment.

Overview

In the current rapidly developing era, the building is not only a work and living space, but also a leading edge of technological innovation. Technologies such as the Internet of Things, big data, and artificial intelligence drive the transformation of building automation systems from traditional single control to intelligent, integrated, and efficient mode, to significantly improve the operational efficiency and management level, and provide users with a comfortable and convenient experience.

In the composition of building automation system, the intelligent lighting system has unique charm and plays an important role. As the advocate and practitioner of KNX international standard, our system seamlessly integrates with various building automation systems due to its high flexibility, extensibility, and strong compatibility. This integration breaks the limits of traditional lighting and adds innovative features such as intelligent dimming, to make the building residents feel convenient and comfort with the intelligent means.

KNX

KNX Intelligent Control System

Honeywell provides a complete building energy management solution with the KNX platform.
As an advanced and comprehensive building and home automation system, KNX achieves efficient management and control of the building and smart home through a unified communication protocol and distributed architecture.

Technical Features:

The KNX system is based on bus communication technology, where all equipment is connected through a unified communication line (e.g., twisted pair cable or power wire) to form a communication network. Data is transmitted in the form of telegrams on the bus, and each equipment connected to the KNX system has a unique address for mutual identification and communication.

System Advantages:

Strong compatibility: KNX can be integrated with various equipment, systems, and platforms for easy management and control.
High stability: With years of development and improvement, the KNX system has high stability and reliability.
High level of intelligence: It intelligently controls the equipment through the smart control center.
Good safety: It can be integrated with various security systems to provide the security guarantee.

Control Mode:

It supports scene, schedule, and remote control. For the scene control, it enables users to adjust multiple sets of equipment to the set status by one click. For the schedule control, it allows the equipment to automatically execute specific actions according to the settings. For the remote control, it allows users to control the equipment through mobile phones and tablets, etc. anytime and anywhere.

The Only Open International Standard in the Field of Home and Building Control

KNX has become the standard of Europe (CENELEC EN50090 and CEN EN13321-1), international community (ISO/IEC 14543-3), China (GB/T20965-2013 Control network HBES technical specification - Home and building control system) and the U.S. (ANSI/ASHRAE135) and the only global standard for home and building control systems.

KNX Intelligent Control System

Honeywell is Committed to Providing Customers with a Comprehensive User Experience

Integrating

Lighting Control, Shading, Temperature Control, Energy Efficiency

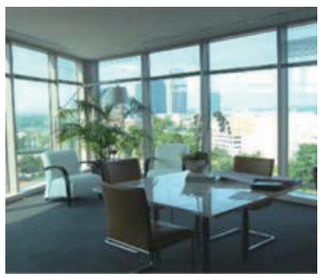
Honeywell's overall solution connects the best products in various subsystem fields, We invite customers to join us on a new journey of intelligent lighting solutions and create a new chapter in smart buildings together

Lighting Control

- We have achieved the multiple controls of lighting through KNX intelligent technology, including intelligent switch and intelligent dimming.
- It controls the light switch based on the data from existing sensors, adjusts the brightness according to the purpose of the lighting, makes full use of natural light, and uses the illumination Sensor to keep the indoor brightness constant. It achieves the unity of energy conservation and comfort, and creates a good lighting environment.
- It adjusts the intensity of artificial lighting according to the incident sunlight, dynamically adjusts the brightness and color temperature based on factors such as ambient light and personnel activities and achieves the maximized utilization of energy by relying on energy-saving optimization algorithms.

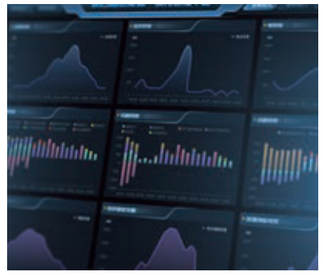
HVAC System Control

- HVAC accounts for 40-60% of commercial buildings' energy consumption, so precise control of HVAC systems can significantly save energy costs. It provides control and connection of building equipment in conjunction with Honeywell building management system.
- Based on the characteristics of the building, it sets a schedule to control the start and stop of the air conditioning system, and adjusts the temperature set point and schedule according to the pedestrian flow and occupancy status, to ensure the optimal balance between air quality, comfort, and energy conservation in the building.



Shading and Curtain Control

- It improves user comfort through the automatic sunshade and time-based louver control, and supports linkage with the air conditioning system.
- Associates the opening and closing status of windows through time scheduling.
- Captures or blocks the sunlight by adjusting the window blinds to ensure that the energy can be saved under illumination.
- Adjusts the blinds based on the sensor to determine the position of the sun to use the natural light to the greatest extent and adjust the brightness of the lighting fixtures.



Visual Analysis Data

- The system can be accessed and controlled at a single point from both inside and outside the building at any time.
- Performs intelligent control within the area through a 4-inch smart control panel arranged in the area.
- You can control the whole intelligent system on a central monitoring interface provided by the Honeywell system on the PC terminal to achieve the intelligent control of the whole office area at one end.

System Full Connection

- Honeywell BMS's Building energy Management Suite is perfectly integrated with KNX.
- KNX can easily integrate lighting and curtain control with Honeywell building management system, to ensure the good compatibility and minimize the integration difficulty and costs.
- The various parts of the building are interconnected and share data, with the great potential for energy conservation, which is conducive to achieving the energy optimization goal.

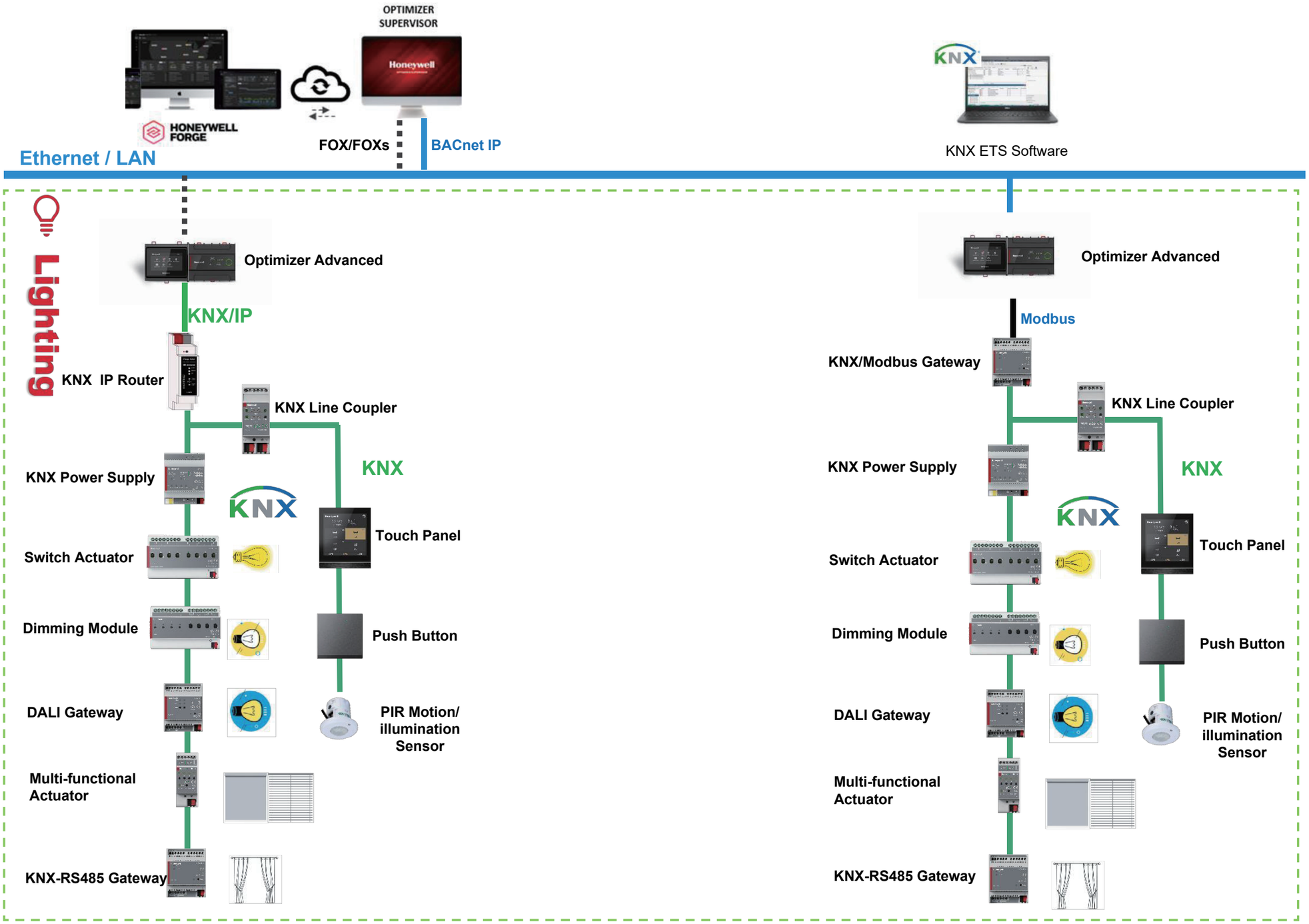
Energy Management

- All building control subsystems can be connected to Honeywell's Building energy Management Suite.
- It breaks down the isolated data island and combines the energy consumption data with lighting, shading, and air conditioning control.
- It real-timely monitors and records the energy consumption data of each lighting equipment, and also generates the detailed energy consumption reports. These reports provide users with intuitive energy consumption analysis basis, which helps them find energy consumption abnormalities and formulate improvement measures.
- Users can also set energy-saving targets based on the energy consumption data in the reports and track their implementation effectiveness.

Security

- Honeywell attaches great importance to the network security and adopts the KNX secure encryption communication protocol. The product complies with the high-level encryption standard AES128CCM, has passed VDE security certification and provides dual protection for IP and data to block threats such as hacker intrusion.
- It guarantees the system operation security and supports the on-site manual switching. In case of remote control failure or maintenance, engineering personnel can manually turn on and off the power on site.
- When an emergency alarm is triggered, the curtains can be linked and switched to the emergency lighting system.

System Architecture



SOLUTION

Office Building

- The KNX intelligent system automatically adjusts the operation of air conditioner, lighting, and other equipment based on changes in the internal and external environment of the office building, to thereby achieve the goal of energy conservation and emission reduction;
- Automatically adjusts indoor parameters based on work hours and personnel density, to create a comfortable and efficient environment and visual effect. It supports one click switching between various scenarios such as meetings and breaks to meet various requirements.
- Centrally manages and controls various equipment inside the office building to improve the management efficiency and convenience of engineering personnel;
- A healthy, comfortable, energy-efficient, and environmentally friendly building environment boosts LEED green building certification and WELL healthy building certification for buildings.

Shopping Mall and Shopping Center

- Based on the requirements of different regions and business types, it performs personalized artistic lighting design, and integrates lighting art with commercial space to create a unique, comfortable and attractive atmosphere, and enhance the image and value of the mall.
- It automatically adjusts parameters such as brightness and color temperature of lighting based on factors such as environment, pedestrian flow, time, and user demands to reduce energy consumption.
- It also manages the combination of fresh air and air conditioning based on the building control system to improve the environmental quality and enhance the customer experience.
- It remotely operates and manages all equipment to improve the management efficiency of engineering personnel and reduce store complaints.

SOLUTION

Hospital

- It controls areas such as the emergency hall, inpatient building, operating room, public passage lobby, and garage in a centralized or decentralized manner.
- Adjusts the brightness according to the ambient light and personnel activities, sets the scene modes according to the characteristics and requirements of different departments and also automatically controls the fresh air and air conditioning system based on room temperature and air quality.
- Considers the contactless and automatic sensing control methods in priority for waiting and corridors.
- In case of emergencies, it maintains sufficient lighting brightness for the operating room.
- Intelligently controls the areas such as public passage and garage through vehicle movement sensing and brightness sensor, while reducing lighting brightness during off-peak hours to further reduce energy consumption.

Airport

- With the circuit current detection function, it monitors whether the lighting circuit is faulty to improve the airport operation efficiency; it utilizes the natural light sensing to maximize energy conservation and minimize consumption;
- Reduces operating costs: The intelligent control system helps to remotely monitor and manage the equipment, timely detect and resolve problems, and reduce maintenance and operating costs;
- KNX security protocol certified products greatly improve the security of airport lighting control systems.

SOLUTION

Subway

- It automatically controls through the sensing equipment and provides a comfortable working and travel environment for station staff and passengers taking the subway;
- The KNX intelligent system combines time logic, constant brightness and human body sensing control for full and reasonable use to reduce unnecessary energy consumption;
- With the circuit current detection function, it monitors whether the lighting circuit is faulty to improve the efficiency of subway operation; provides multiple open interfaces for easy access to the subway management platform;

Data Center

- It is unattended and needs to keep the basic illumination to save energy and also facilitate normal operation.
- Sets scenes according to different areas and creates a soft and comfortable lighting environment by adjusting brightness.
- Saves energy and reduces the power density.
- KNX security protocol certified products greatly improve the security and stability of data center lighting control systems, to ensure the normal operation of lighting equipment even in complex and changing environments.

SOLUTION

Stadium

- Implements fiber optic networking through IP routers to solve the wiring problems of large venue area, long distance, and multiple circuits, and greatly reduce cable usage.
- By using various control methods such as panel control, sensor control, and timed control, it greatly improves the efficiency of venue management while effectively reducing energy consumption.
- It sets the scenes according to different sports events and performance tasks, etc., and meets the lighting requirements of different occasions.

Museum

- It considers the issue of light damage for the lighting environment of museum to control the illumination and exposure within the standard range, so as to the protect the cultural relics
- Divides the areas finely, and controls different exhibits in groups according to different angles and lighting sources;
- Meets different cultural relic display requirements with a configuration solution easy to update.
- Counts the running time of each group of lights cumulatively, sets thresholds and issues an alarm message before reaching the critical point.
- The system is fully intelligent and automatically adjusts and controls the exhibition hall environment according to holidays and peak pedestrian flow.
- Saves the energy during operation to reduce the operation and maintenance costs.

SOLUTION

Industrial Plant

- The industrial plant is a major energy consumer with prominent requirements for energy conservation and environmental protection. Through intelligent control optimization, energy conservation and consumption reduction, it reduces the electricity fees, and alleviates the power supply pressure.
- It controls centrally to improve the management efficiency:
- The rotation control of lighting fixtures extends their service life on the basis of basic application lighting;
- Adjusts the brightness of lighting and ambient temperature according to different production environments, time periods, and weather conditions to ensure a suitable lighting environment.
- The system timely alarms in the event of a fault to enable the maintenance personnel to troubleshoot it to reduce the equipment losses accordingly.
- KNX security protocol certified products greatly improve the safety and stability of lighting control systems in the power plant.
- It centrally controls equipment through the touch screen to improve the plant management efficiency;
- It displays the environmental monitoring of PM2.5, temperature, humidity and VOC carbon dioxide on the instrument panel to provide a securer production and working environment.

Product Overview

KNX Secure
Switch Actuator

HKX-R04-16-N-S
HKX-R08-16-N-S
HKX-R12-16-N-S

Honeywell KNX Secure switch actuator is mainly used in building control systems, and installed together with other loads through the KNX bus to form a system to mainly control switch loads, e.g., lighting, heating control, signal loads, etc.

Product Features

- Manual control switch
- Time function: Delay on/off
- Stair lighting function with features of warning and adjustable stair lighting time
- Scene and preset control: 8 bits/1 bit
- Logical operations: AND, OR, XOR, gate functions
- Status value query reply
- Override operation and safety insurance function
- Threshold function setting
- Control of electric heating valve
- Selection of relay switch position after bus voltage disconnection and restoration
- Output inversion
- Supports KNX security

Technical Data

Power Supply	
Bus voltage	21~30VDC, obtained through KNX bus
Bus current	<6.5mA/24V, <5.5mA/30V
Bus power consumption	<165mW
Charging current	<20mA
Output	
Number of channels	4/8/12
Un rated voltage	250VAC(50~60Hz)
In rated current	16A
Surge impact current	480A/2ms
Output Lifespan Count	
Mechanical Lifespan Count	$>10^6$ cycles
Electrical Lifespan Count (Resistive load)	$>10^5$ cycles

Connection	
KNX	Bus connection terminal
Load connection terminal	Screw wiring terminal
Cable cross section	0.2~6.0mm²
Operation and indication	
Red LED and button	Physical address distribution
Flashing green LED	It indicates that the equipment application layer operates normally
Contact position indication	Contact closing - channel ON
	Contact opening - channel OFF
Protection grade	
IP20	In accordance with EN60529
Security level	
II	In accordance with EN61140
Temperature range	
Operation	−5° C~+45° C
Storage	−25° C~+55° C
Transportation	−25° C~+70° C
Ambient conditions	
Humidity	<93%, non-condensation
Installation method	
DIN rail module component	35mmDIN rail, modular installation

Model	Size	Weight
HKX-R04-16-N-S	72× 90× 64mm	0.35kg
HKX-R08-16-N-S	144× 90× 64mm	0.60kg
HKX-R12-16-N-S	216× 90× 64mm	0.85kg

* Note: We will not give a further notification in case of any update and change to the product design and specifications.

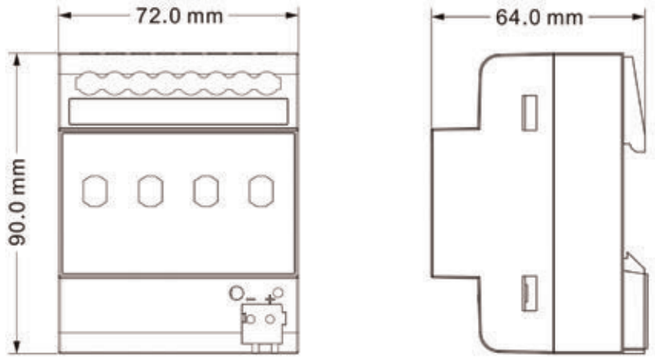
Model	Load type	Power	Lifespan Count
HKX-Rxx-16-N-S xx=04/08/12	Incandescent light	4000W	>30000
	Standard/Electronic ballast	4000W	>30000
	Motor	2200W	>30000
	LED light (surge current 470A/210us)	800W	>30000

*Note: The loads above are only applicable to a single lighting fixture. When multiple lighting fixtures are connected in parallel, the loads which can be carried will be reduced. Although the output power remains unchanged, the instantaneous surge current will increase, which may easily melt the relay contacts.
During normal use, the output is capable of carrying 16A resistive load at most and slightly lower inductive and capacitive loads.

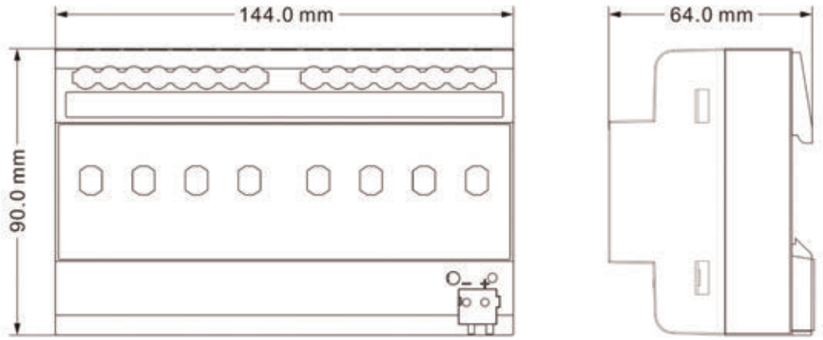
Model and Description

Product model	Product description
HKX-R04-16-N-S	KNX Secure switch actuator, 4 channels, control switch load, 16A, 250VAC, KNX bus, 21-30VDC power supply, 72X90X64mm, 0.35kg
HKX-R08-16-N-S	KNX Secure switch actuator, 8 channels, control switch load, 16A, 250VAC, KNX bus, 21-30VDC power supply, 144X90X64mm, 0.60kg
HKX-R12-16-N-S	KNX Secure switch actuator, 12 channels, control switch load, 16A, 250VAC, KNX bus, 21-30VDC power supply, 216X90X64mm, 0.85kg

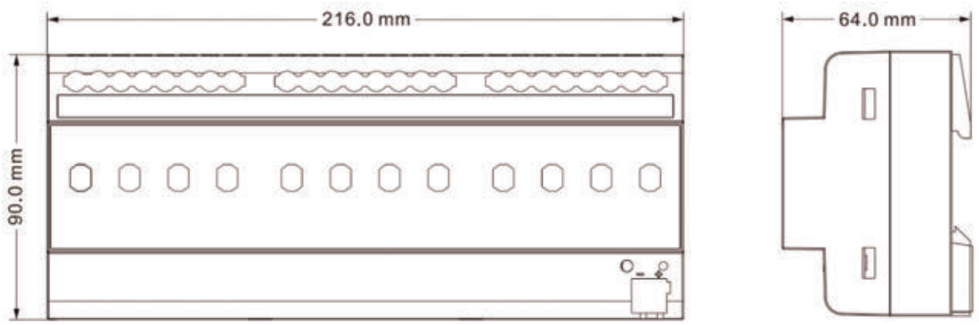
Dimension Diagram (mm)



HKX-R04-16-N-S



HKX-R08-16-N-S



HKX-R012-16-N-S

KNX Secure

Switch Actuator with Current Detection

HKX-R04-16-C-S
HKX-R08-16-C-S
HKX-R12-16-C-S

Honeywell KNX Secure switch actuator with current detection is mainly used in building control systems, and installed together with other loads through the KNX bus to form a system to mainly control switch loads, e.g., lighting, heating control, signal loads, etc.

Product Features

- Manual control switch
- Time function: Delay on/off
- Stair lighting function with features of warning and adjustable stair lighting time
- Scene and preset control: 8 bits/1 bit
- Logical operations: AND, OR, XOR, gate functions
- Status value query reply
- Override operation and safety insurance function
- Threshold function setting
- Control of electric heating valve
- Selection of relay switch position after bus voltage disconnection and restoration
- Output inversion
- Supports KNX security
- Current detection

Technical Data

Power Supply	
Bus voltage	21~30VDC, obtained through KNX bus
Bus current	<6.5mA/24V, <5.5mA/30V
Bus power consumption	<165mW
Charging current	<20mA
Output	
Number of channels	4/8/12
Un rated voltage	250VAC(50~60Hz)
In rated current	16A
Maximum load loss	1.5W/2.5W/4W
Current detection range	90mA~16A
Minimum detection load	20W
Current detection accuracy	±5% and ± 20mA

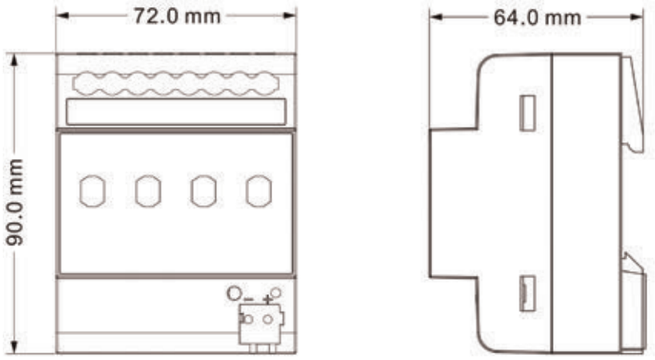
Connection		
KNX	Bus connection terminal	
Load connection terminal	Screw wiring terminal	
Cable cross section	0.2~6.0mm²	
Operation and indication		
Red LED and button	Physical address distribution	
Flashing green LED	It indicates that the equipment application layer operates normally	
Green LED normally ON	It indicates that the relay power supply is charging or during the power-on delay period	
Contact position indication	Contact closing - channel ON	
	Contact opening - channel OFF	
Temperature range		
Operation	−5° C~+45° C	
Storage	−25° C~+55° C	
Transportation	−25° C~+70° C	
Ambient conditions		
Humidity	<93%, non-condensation	
Load type	**Power**	**Lifespan Count**
Incandescent light	4000W	>30000
Electronic ballast	4000W	>6000
Motor	2200W	>30000
LED light (surge current 470A/210us)	800W	>30000

* Notes:

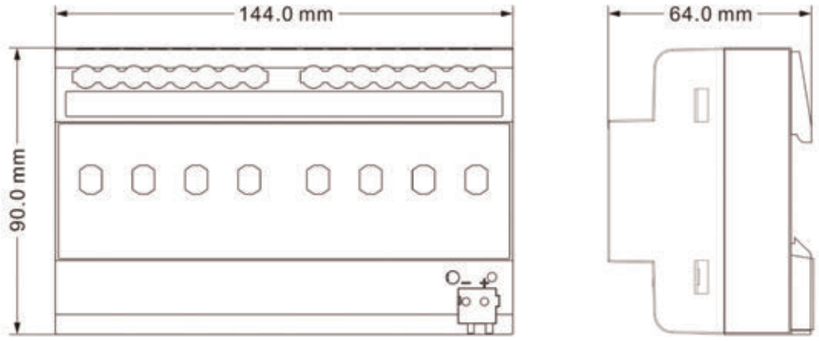
1. We will not give a further notification in case of any update and change to the product design and specifications.

2. For relay parameters, the loads above are only applicable to a single lighting fixture. In the case of multiple lighting fixtures connected in parallel, the loads that can be carried will be reduced. Although the power remains unchanged, the instantaneous surge current will increase, which can easily melt the relay contacts. Therefore, the measured current shall prevail during normal use, and the maximum impulse current measured must be within the allowable range.

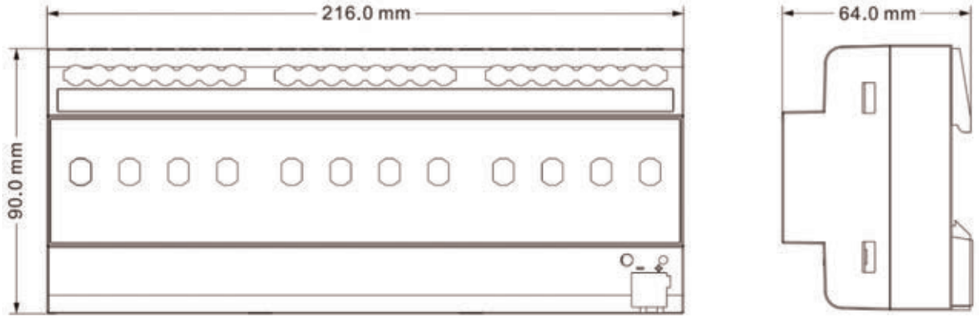
Dimension Diagram (mm)



HKX-R04-16-C-S



HKX-R08-16-C-S



HKX-R012-16-C-S

Model and Description

Product model	Product description
HKX-R04-16-C-S	KNX Secure switch actuator with current detection, 4 channels, control switch load, 16A, 250VAC, KNX bus, 21-30VDC power supply
HKX-R08-16-C-S	KNX Secure switch actuator with current detection, 8 channels,control switch load, 16A, 250VAC, KNX bus, 21-30VDC power supply
HKX-R12-16-C-S	KNX Secure switch actuator with current detection, 12 channels, control switch load, 16A, 250VAC, KNX bus, 21-30VDC power supply

KNX Secure
Dimming Controller

HKX-D04-16-L-S

Honeywell KNX Secure 4-channel 1-10V dimming controller directly controls the channel brightness with the data stored in the memory. The brightness data stored in the memory is pre-set by programming software based on the brightness distribution features of the light. The control circuit of the dimmer converts the brightness data value into output voltage or current to achieve the brightness control.

Product Features

- Switch lighting function
- Relative dimming function
- It controls the brightness of the lighting fixtures
- Status report
- 15 scenes
- Stair light function
- Preset function and preset save function
- Bus reset function
- Manual switch/dimming
- Supports KNX security

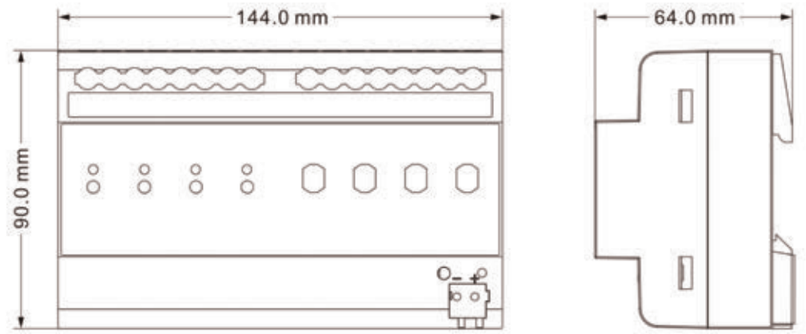
Technical Data

Power Supply	
Bus voltage	21~30VDC, obtained through KNX bus
Bus current	<9mA/24V, <8.5mA/30V
Bus power consumption	<255mW
Charging current	<20mA
Output	
Channels	4 channels of independent switch/dimming
Output voltage	1~10VDC (suction type), max. output 100mA per channel
Contact switching current	16A/250VAC
Connection	
KNX	Bus connection terminal
Output	16 screw binding posts, 8 terminals connected to 4 channels of 1-10V common ground and 1-10V output, 8 terminals connected to 4 channels of switches
Operation and indication	
Red LED and button	Physical address distribution
Flashing green LED	It indicates that the equipment application layer operates normally

Protection grade	
IP20	
Temperature range	
Operation	–5° C~+45° C
Storage	–25° C~+55° C
Transportation	–25° C~+70° C
Ambient conditions	
Humidity	<93%, non-condensation
Installation method	
35mm DIN rail, modular installation	
Size and specification	
144× 90× 64mm	
Weight	
0.5kg	

* Note: We will not give a further notification in case of any update and change to the product design and specifications.

Dimension Diagram (mm)



Model and Description

Product model	Product description
HKX-D04-16-L-S	Honeywell KNX Secure 4-channel 1-10V dimming controller, brightness control, 4 channels, 1-10V output voltage, KNX bus, 21-30VDC power supply

KNX
Bus Power Supply

HKX-PW-640

Honeywell KNX bus power supply is mainly used in the intelligent control system to achieve 640mA bus power supply, provide and monitor the voltage of the KNX system.

Product Features

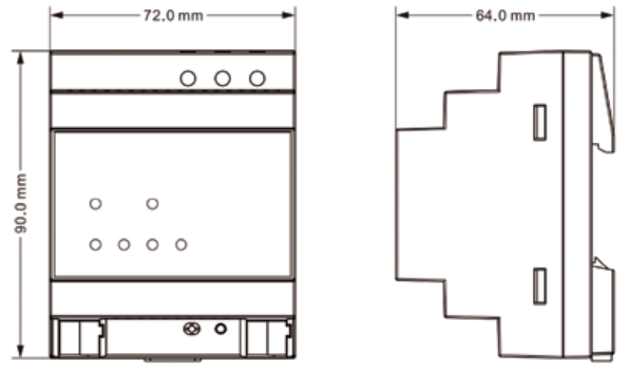
- 640mA bus power supply
- Provides and monitors the voltage of KNX system

Technical Data

Power Supply	
Input voltage	100~240VAC, 50~60Hz
Efficiency	≥80%
Output	
KNX output	1 circuit (with electric reactor)
KNX voltage	30V+1V/-2VDC, SELV
Auxiliuary power supply output	1 circuit (without electric reactor)
Auxiliary voltage	30±1VDC, SELV
Rated current for normal output of KNX and auxiliary power supply	640mA, short circuit protection
Continuous short-circuit current	<1.5A
Power-off output buffer time	>200ms
Operation and indication	
Reset button	22s delayed reset function (press the reset button>0.5s to reset the KNX bus voltage)
Red LED1 (reset)	Reset bus
Green LED2 (ON)	Normal operation
Red LED3(I>Imax)	Overload/ short circuit (I>Imax)
Green LED4	It indicates the current level 1, 0 ≤ I<160 (± 20) mA
Green LED5	It indicates the current level 2, 160 ≤ I<320 (± 20) mA
Green LED6	It indicates the current level 3, 320≤I<640 (±20) mA
Green LED7	It indicates the current level 4, 640≤I<Imax
Wiring method	
Power input terminal	3 terminals, connected with the screw binding posts
Cable cross section	Single-core 0.5~2.5mm^2
	multi-core 0.5~1.5mm^2
KNX voltage output terminal	Bus connection terminal 1 (red/black)
Auxiliary power supply output terminal	Connection terminal 2 (yellow/white)
Temperature range	
Operation	–5° C~+45° C
Storage	–25° C~+55° C
Transportation	–25° C~+70° C
Ambient conditions	
Humidity	<93%, non-condensation
Installation method	
35mm DIN rail, modular installation	
Size and specification	
90×72×64mm	
Weight	
0.3kg	
Enclosure, color	
Plastic enclosure, off-white	

* Note: We will not give a further notification in case of any update and change to the product design and specifications.

Dimension Diagram (mm)



Model and Description

Product model	Product description
HKX-PW-640	KNX bus power supply, 640mA, auxiliary power supply 30VDC, KNX bus, 100-240VAC power supply, 90X72X64mm, 0.3kg

KNX
DALI Gateway

HKX-DALI-01
HKX-DALI-02

Honeywell KNX DALI gateway can achieve functions such as switching, dimming, and scene control for various lighting fixtures with DALI ballasts. Meanwhile, the DALI gateway can query the status and detect faults of DALI equipment.

Product Features

- Each output channel supports 64 DALI equipments, enabling users to separately perform operations such as switching, dimming and setting brightness values for each DALI equipment.
- Global scene control: Each output channel has 16 scenes available for calling or storage, and the brightness values of the scenes are configured by the commissioning tool (DCA).
- Group control: Each output channel can be configured with 16 different groups, and the allocation of equipment in each group is implemented by ETS or the commissioning tool. The system enables users to perform operations such as switching, dimming and setting brightness values for each group, and supports the color temperature adjustment.
- Group scene control: Each group can be assigned with 8 KNX scenes or 16 DALI scenes. The brightness of KNX scenes is configured by ETS, and the brightness of DALI scenes is configured by the commissioning tool.
- Each output channel can be configured with 8 operation templates, and the switching and dimming control of each DALI equipment and DALI group can be with reference to the template configuration or based on the ECG's own configuration.
- Status inquiry and response, e.g., switch, brightness, running time, etc.
- Error detection of DALI equipment ballasts and lighting fixtures
- DALI bus voltage, DALI bus current, and DALI bus short circuit monitoring
- Channel broadcast control: It enables users to perform operations such as switching, dimming and setting brightness values for all DALI equipment in the channel.

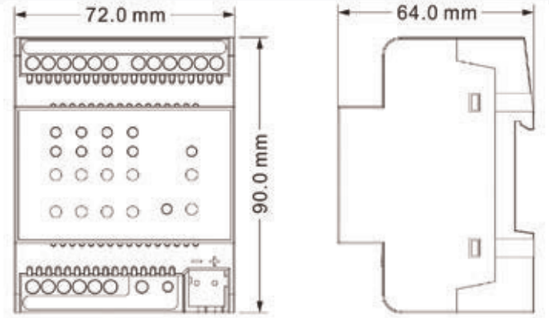
Technical Data

Power Supply	
Bus voltage	21~30VDC, obtained through KNX bus
Bus static current	10.1mA/30VDC, 12.3mA/24VDC
Bus standby power consumption	<360mW
Auxiliary supply voltage	100~240VAC, 50/60Hz
Auxiliary power input current	<55mA,220VAC
Auxiliary power input power consumption	<12W,220VAC
DALI output	
1/2 channels	64 DALI equipments per channel
Single channel current	≤250mA
Load voltage	15~19VDC
Distance between gateway and DAL equipment: (Cross section of cable - distance)	0.5mm² ~100 m
	1.5mm² ~300 m

Connection	
KNX	Bus connection terminal
Auxiliary power supply and output	Screw binding post Used wire diameter 0.5~2.5mm² Torque 0.5N·m
Operation and indication	
Programming button and red LED	Physical address distribution
Flashing green LED	It indicates that the equipment application layer operates normally
LED (Tele.)	Quick flashing indicates initiating DALI bus Flashing during communication indicates that the DALI bus has received the message data The normally ON light indicates that the DALI bus initiation has been completed
LED (Status)	The ON LED indicates that the entire channel switch is turned on, and the OFF LED indicates that the entire channel is closed. It is only applicable to the control indicators of channel buttons A and B and the broadcast switch control indicators of the channel (only A is available for single channel equipment) Flashing LED, indicates that the DALI gateway is initializing
Test/Set button	Short-pressing <5s: Turn on/off all equipments on the DALI bus, to test the unconnected DALI equipment Long-pressing >5s: To re-initialize the DALI bus.
Protection grade	
IP20, EN60529	
Temperature range	
Operation	−5° C~+45° C
Storage	−25° C~+55° C
Transportation	−25° C~+70° C
Ambient conditions	
Humidity	<93%, non-condensation
Installation method	
35mm DIN rail, modular installation	
Size and specification	
72×90×64mm	
Weight	
0.25kg	
Enclosure, color	
Plastic enclosure, off-white	

* Note: We will not give a further notification in case of any update and change to the product design and specifications.

Dimension Diagram (mm)



Model and Description

Product model	Product description
HKX-DALI-01	Honeywell single-channel KNX/DALI gateway, brightness control, single channel, DALI bus, KNX bus, DCA, 21-30VDC power supply
HKX-DALI-02	Honeywell dual-channel KNX/DALI gateway, brightness control, dual channel, DALI bus, KNX bus, DCA, 21-30VDC power supply

KNX

RS485 Protocol Gateway

HKX-MODBUS-01

Honeywell KNX RS485 protocol gateway is mainly used in the intelligent control system, to achieve communication between Modbus/RS485 and KNX bus.

Product Features

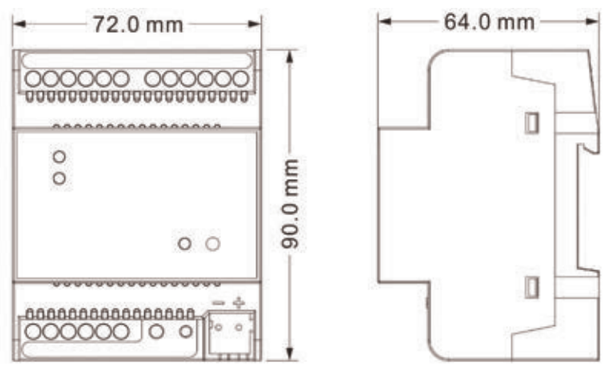
- Configurable communication related basic parameters, e.g., baud rate, data bits, stop bits, parity bits, etc.
- The channel supports 500 unidirectional-function points, with independently configurable direction and the corresponding point's name and data type (supporting 1 bit/2bits/4 bits/1 byte/2 bytes)
- Can serve as Modbus master equipment, read register data from slave equipment, and communicate with KNX
- Can serve as Modbus slave equipment to upload data from KNX equipment to the host equipment or BA system
- Can serve as a regular gateway, only for data conversion, without communication mechanism and logical processing
- Supports electric curtains from the manufacturer Dooya

Technical Data

Power Supply	
Bus voltage	21~30VDC, obtained through KNX bus
Bus current	<12mA/30VDC
Bus power consumption	<360mW
Auxiliary power supply	
Voltage	12-30VDC
Current	<60mA/30VDC
Power consumption	<1.8W
Connection	
KNX	Bus connection terminal
Auxiliary power supply	Screw binding post
RS485	Screw binding post
Cross section of cable	0.2~2.5mm²
Torque	0.4N·m
Operation and indication	
Channel power indicator LED	Yellow light, normal power supply of the corresponding channel
Channel communication indicator LED	Flashing red light, KNX message ->Third-party protocol message Flashing green light, third-party protocol message->KNX message
Programming button and LED	Red light, for physical address distribution
Temperature range	
Operation	–5° C~+45° C
Storage	–25° C~+55° C
Transportation	–25° C~+70° C
Ambient conditions	
Humidity	<93%, non-condensation
Installation method	
35mm DIN rail, modular installation	
Size and specification	
72×90×64mm	
Weight	
0.17kg	

* Note: We will not give a further notification in case of any update and change to the product design and specifications.

Dimension Diagram (mm)



Model and Description

Product model	Product description
HKX-MODBUS-01	KNX RS485 protocol gateway, MODBUS, RS485, protocol conversion, KNX bus, 21-30VDC power supply, 72X90X64mm, 0.17kg

KNX
IP Router

KNX IP RTR SEC

The compact KNX IP router provides data connectivity between Ethernet KNX IP lines (main or backbone line) and KNX TP bus (branch). The basic functions of an IP router is to couple Ethernet with one or more KNX-TP buses and use electrical isolation between Ethernet and KNX-TP buses. This equipment supports KNX IP Security protocol.

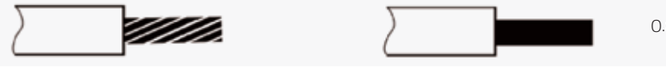
Product Features

- Efficient connection between KNX IP and TP network, multi-channel communication.
- The encryption technology and secure authentication are adopted to ensure data security.
- Strong data processing ability, fast, accurate, stable and reliable.
- Simple configuration for easy monitoring of operational status.
- Wide compatibility; it can be connected to multiple equipment and integrated with other systems.

Technical Data

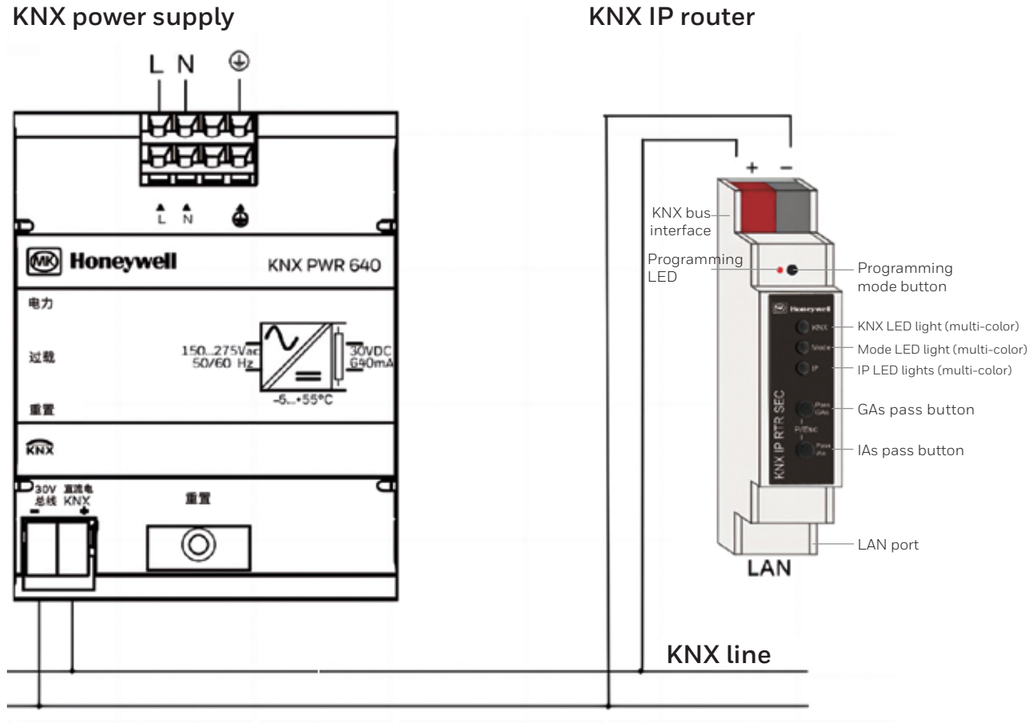
Power Supply	
Bus voltage	30V DC KNX bus
Bus current	Approximately 20mA/30V DC
Bus power consumption	Generally 600mW
Communication	KNX
Temperature range	
Operation	-5°C ~ +45°C
Storage	-20° C ~ +70°C
Ambient conditions	
Humidity (non-condensation)	5-93%
Installation method	
35mm DIN rail, modular installation	

Size and specification
90×18×60mm
Weight
0.4kg
Enclosure material
Polycarbonate (PC)
Protection grade
IP20
Compliant standards
• EN 63044-3, EN 50491-5-1, EN 50491-5-2 and EN 50491.5-3
• EN 61000-6-2 and EN 61000-6-3
• EN 63000



* Note: We will not give a further notification in case of any update and change to the product design and specifications.

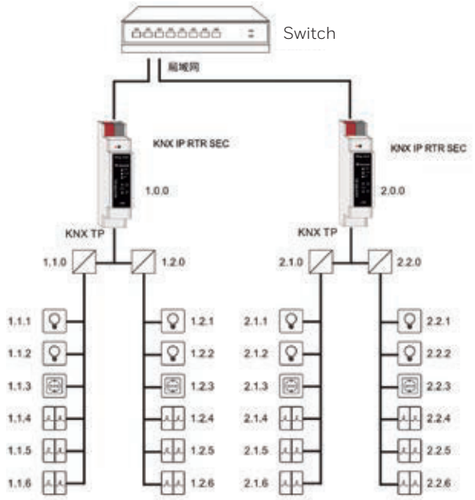
Connection Diagrams



Coupler Functions (KNXnet/IP Routing)

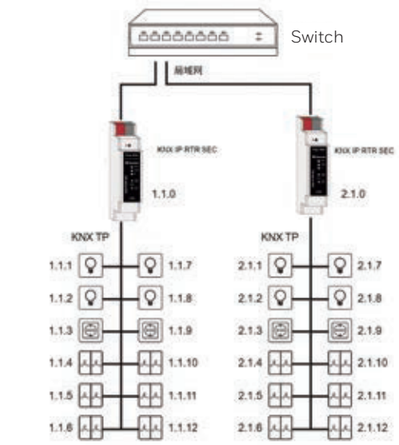
KNX IP RTR SEC operates as a line or backbone coupler. In both cases, the local area network (IP) is used as the backbone network.
The table below compares the application scope of KNX IP router with classical topology structures.

	Classic topology structure (without IP)	Regional IP coupling (IP area coupler)	Line IP coupling (IP line coupler)
Area	TP	IP	IP
(Backbone network)	KNX line coupler (Up to 15 pcs)	KNX IP router (Up to 15 pcs)	Directly passing LAN switch
Coupler	TP	TP	IP
Main line	KNX line coupler (up to 15x158 pcs)	KNX line coupler (up to 15x158 pcs)	KNX IP router (up to 225 pcs)
Coupler	TP	TP	TP



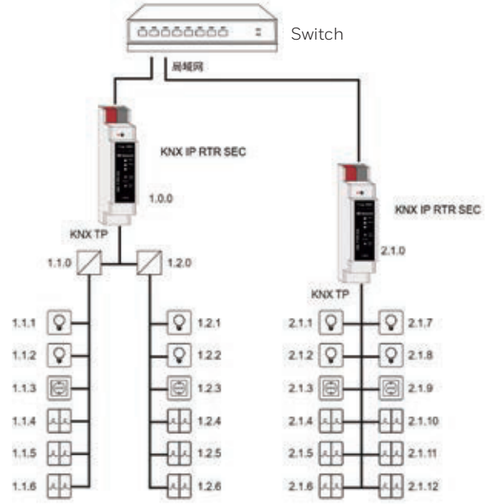
KNX IP router as an area coupler

If KNX IP RTR SEC is used as an area coupler (x.0.0), there must be no KNX IP routers in the topology below it. For example, when the independent address of a KNX IP router is 1.0.0, there shall not be a KNX IP router with address 1.1.0.
If KNX IP RTR SEC is used as a line coupler (x.y.0), there must be no KNX IP router in the topology above it. For example, when the independent address of a KNX IP router is 1.1.0, there shall not be a KNX IP router with an address of 1.0.0.



KNX IP router as a line coupler

The independent address assigned to KNX IP RTR SEC determines whether the equipment operates as a line coupler or an area coupler. If the format of the independent address is x.y.0 (x, y: 1. 15), the router will operate as a line coupler. If the format is x.0.0 (x: 1. 15), the router will serve as a backbone coupler.



KNX IP router as an area and line coupler

KNX IP router has a filtering table that helps to reduce bus load. The filtering table (8kB) supports an extended group address range (main group 0.. 31), and is automatically generated by ETS.
Due to the speed difference between Ethernet (10/100 MBit/s) and KNX TP (9.6 kBit/s), more messages can be transmitted on IP. If multiple consecutive messages are transmitted on the same line, they must be cached in the router to avoid message loss. KNX IP RTR SEC can store 150 pieces of messages (from IP to KNX).

Model and Description

Product model	Product description
KNX IP RTR SEC	KNX IP router, efficiently connecting KNX bus and IP network, 30V power supply, KNX bus, 90X18X60mm, 0.4kg

KNX Secure
Multi-functional Actuator

HKX-C04-S

Honeywell KNX Secure multifunctional actuators are mainly used in building control systems to connect load equipment to achieve output functions such as switches, curtains and fans, etc.

Product Features

- Switch output; it connects some electrical loads such as lighting, sockets, and heating control, supporting time functions such as ordinary switch, delay/flashing/stair lighting, scene control, logic operation, status value query and reply, electric heating valve control and manual switch output, etc.
- Curtain AC/DC output; it connects some motorized window blinds, awnings, roller blinds, curtains and vertical blinds, etc., and supports functions of vertical movement, blinds adjustment, scene control, automatic sun protection, safety protection function and current position status recovery, etc.
- Valve control; it connects 2-pipe or 4-pipe fan coil systems and controls the cooling valve and the heating valve to separately output by relay. It supports three types of valve control and functions of fault status sending, valve characteristic curve correction/automatic adjustment function (only applicable to continuous valves), heating valve or cooling valve disabling/enabling, valve position status feedback or query and manual or automatic valve cleaning, etc.
- Fan control; it connects single-phase fans, supports up to 3-speed adjustment and supports functions of level 1, level 2, and level 3 fan speed adjustment, step switch, change-over switch operation modes, automatic/manual fan speed operation and status feedback.

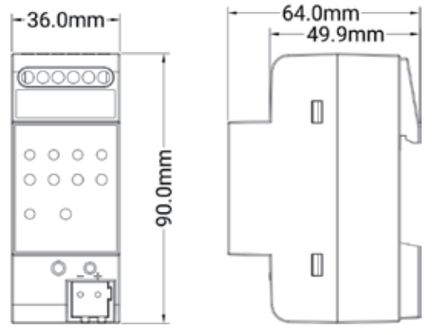
Technical Data

Power Supply	
Bus voltage	21~30VDC, obtained through the KNX bus
Bus current	<9mA/24V, <8mA/30V
Bus power consumption	<240mW
Charging current	<20mA
Connection	
KNX	Bus connection terminal (red/black)
Output terminal	Connected with screw binding posts Wire diameter of 0.2~2.5mm² and torque of 0.4N-m
Operation and indication	
Programming button and red LED	Physical address distribution
Flashing green LED	It indicates that the equipment application layer operates normally
Manual operation button	Switching output
Output LED	It indicates the output status
Manual/Automatic button	Press it to switch the manual/automatic operation mode
Manual/Automatic LED	It indicates the manual/automatic mode status
Protection grade	
IP20,EN60529	
Temperature range	
Operation	−5° C~+45° C
Storage	−25° C~+55° C
Transportation	−25° C~+70° C
Ambient conditions	
Humidity	<93%, non-condensation
Installation method	
35mm DIN rail, modular installation	
Enclosure, color	Plastic enclosure, off-white
Installation	35mm DIN rail, modular installation, DIN EN60715
Size	36 X 90 X 64mm
Weight	0.20kg
Output	
Up to 4 channels of switching outputs/2 channels of curtain AC outputs/1 channels of curtain DC output/1 channels of fan output/2 channels of heating, cooling or 2-pipe system outputs/1 channels of 4-pipe system output; each output can be configured separately	
Un rated voltage	230VAC (50~60Hz)
In rated current	6A
Surge impact current	192A/1.2ms
Output Lifespan Count	
Mechanical Lifespan Count	>1×10^6
Electrical Lifespan Count (Resistive load)	>5×10^4

Load type	Power	Lifespan Count
Electronic ballast	600W	>6000
Motor	370W	>20000
LED light (surge current 260A/120us)	450W	>30000

*Notes
1. We will not give a further notification in case of any update and change to the product design and specifications.
2. For relay parameters, the loads above are only applicable to a single lighting fixture. In the case of multiple lighting fixtures connected in parallel, the loads that can be carried will be reduced. Although the power remains unchanged, the instantaneous surge current will increase, which can easily melt the relay contacts. Therefore, the measured current shall prevail during normal use, and the maximum impulse current measured must be within the allowable range.

Dimension Diagram (mm)



Model and Description

Product model	Product description
HKX-C04-S	KNX Secure 4-channel 6A multifunctional actuator, switch, curtain DC/AC, fan, valve output, KNX bus, 36X90X64mm, 0.2kg

KNX
General Input Module

HKX-I04

Honeywell KNX general input module is mainly used in building control systems and is installed together with KNX bus and other equipment to form a system, providing functions easy and intuitive to operate. It enables users to plan and execute these functions according to their own needs.

Product Features

- Switching and dimming functions
- Controlling the blinds
- Sending values, e.g., temperature, water level
- Invoking and storing scenes
- Triggering LED report operation
- Multi-operation function
- Fixing the switch sequence operation
- Standard counting and differential counting functions

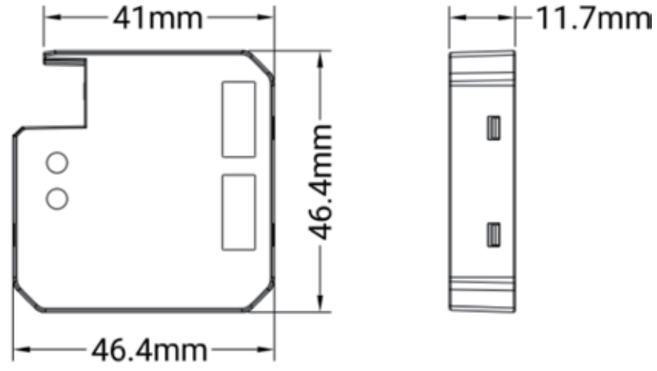
Technical Data

Power Supply	
Operating voltage	21~30VDC, obtained through the KNX bus
Input/Output	
KNX	Bus connection terminal (red/black)
4 channel buttons	Key functions can be configured separately
4 channel LEDs	LED functions can be configured separately
Key scanning voltage	20VDC
Key scanning current	0.5mA
LED output voltage	5VDC
LED output current	Max. 2.5mA, with a resistance limit of 2KΩ in series
Security	Short circuit protection, overload protection, reverse voltage protection
Connection	
Input/Output	Two five-bit lines, approximately a length of 30cm, with a maximum length of 10m
KNX	Bus conenction terminal

Operation and indication	
Programming button and red LED	Physical address distribution
Flashing green LED	It indicates that the equipment application layer operates normally
Temperature range	
Operation	–5° C~+45° C
Storage	–25° C~+55° C
Transportation	–25° C~+70° C
Ambient conditions	
Humidity	<93%, non-condensation
CE standard	
Compliance with EMC standards and low-voltage standards, and compliance with EN50491-5-1, -5-2	
Certification	
KNX certification	
Installation method	
National standard 86 embedded wall bottom box or European standard 80 embedded wall bottom box	
Size and specification	
46.4×46.4×11.7mm	
Weight	
0.05kg	

*Note: We will not give a further notification in case of any update and change to the product design and specifications.

Dimension Diagram (mm)



Model and Description

Product model	Product description
HKX-I04	KNX general input module, 4 channel buttons/LED, KNX bus, 21-30VDC, 86/80 embedded wall bottom box, 46.4X46.4X11.7mm, 0.05kg

KNX Secure
Intelligent Panel

HKX-MP04-D-S
HKX-MP06-D-S
HKX-MP08-D-S

Honeywell KNX Secure intelligent panel is mainly used in building control systems to achieve functions such as switching and dimming control of actuator through buttons.

Product Features

- Switching and dimming
- Curtain control
- Value sending
- Scene control
- Shifting register
- RGB, RGBW and color temperature control
- Multiple operations
- Delayed value sending
- RTC sending operation mode
- Character string sending
- Logical output, scene group conversion
- RGB LED indication function

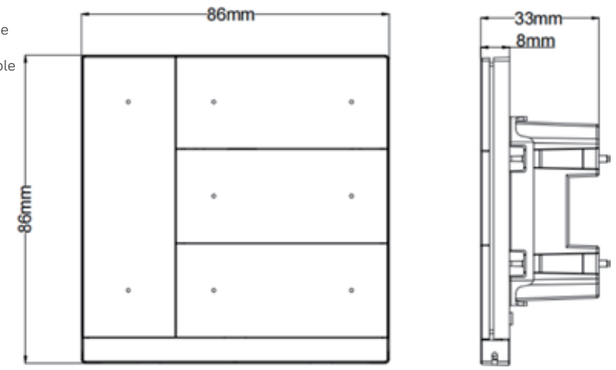
Technical Data

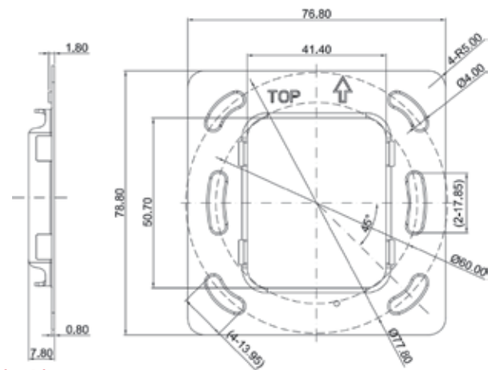
Power Supply	
Bus voltage	21~30VDC, obtained through the KNX bus
Bus current	<12.2mA/24V, <10.0mA/30V(4 keys)
	<15.1mA/24V, <12.2mA/30V(6 keys)
	<18.4mA/24V, <14.9mA/30V(8 keys)
Bus power consumption	<300mW(4keys)
	<366mW(6keys)
	<447mW(8keys)
Input	
2-channel external inputs; can serve as the dry contact input or 10K NTC input	
Wiring method	
KNX	Bus connectioin terminal
Input	Screw binding post connection, multi-core 0.2-1.5mm², single-core 0.2-2.5mm², torque 0.4N·m, wire length<5m
Temperature range	
Operation	−5° C~+45° C
Storage	−25° C~+55° C
Transportation	−25° C~+70° C
Ambient conditions	
Humidity	<93%, non-condensation
Size and specification	
86×86×33mm	
Weight	
0.09kg	

* Note: We will not give a further notification in case of any update and change to the product design and specifications.

Dimension Diagram (mm)

The size of the 4/6/8-key KNX intelligent panel is the same, and only the 8-key panel is used as an example here for description.





Model and Description

Product model	Product description
HKX-MP04-D-S	KNX Secure 4-key intelligent panel, KNX bus, bus current<12.2mA/24V, <10.0mA/30V, 21-30VDC power supply, 86X86X33mm
HKX-MP06-D-S	KNX Secure 6-key intelligent panel, KNX bus, bus current<15.1mA/24V, <12.2mA/30V, 21-30VDC power supply, 86X86X33mm
HKX-MP08-D-S	KNX Secure 8-key intelligent panel, KNX bus, bus current<18.4mA/24V, <14.9mA/30V, 21-30VDC power supply, 86X86X33mm

KNX
Intelligent Touch Panel

HKX-TP04-D

Honeywell KNX intelligent touch panel is mainly used in intelligent control systems to display status and control various KNX equipment.

Product Features

- 4.0-inch color IPS, resolution 480x480, capacitive touch screen design
- Switching, dimming, curtains, scene, value sending, switch indication function
- Temperature controller function
- Air conditioner control
- Background music module control
- RGB, RGBW, RGBCW control and color temperature adjustment
- Control of fresh air and underfloor heating
- Displays the air quality detection value
- Displays energy monitoring value
- Cycle timer; it enables users to modify the triggering time of the timer on the screen
- Scene group function
- Logical function; supports AND, OR, XOR, logic gate forwarding, threshold comparator, conversion of different data types
- Home page navigation function
- Alarm function
- Time and date display, temperature and humidity display, daytime/nighttime signal output
- Proximity sensing, screen brightness adjustment, color light bar indication, touch vibration feedback
- Functions of password protection, screen saver and screen lock; the clock and electronic album are optional for the screen saver, or the screen saver may not be used.

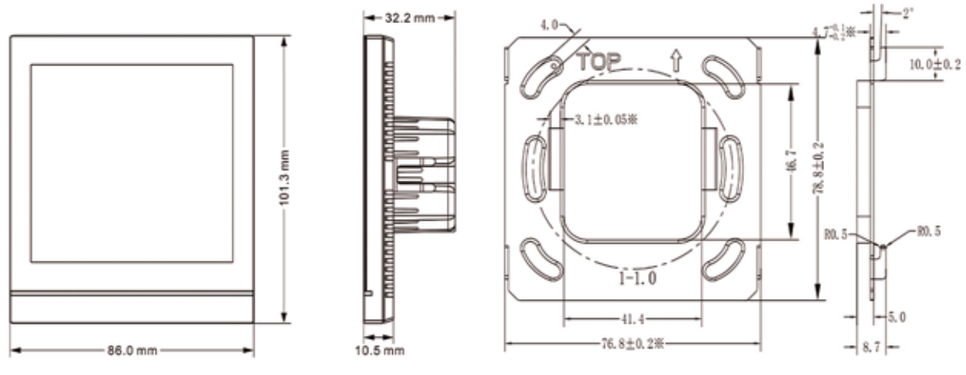
Technical Data

Power Supply	
Bus voltage	21~30VDC, obtained by KNX bus
Bus current	<4.5mA/24VDC, <4mA/30VDC
Bus power consumption	<120mW
Auxliliary power supply	
Voltage	24~30VDC
Current	<86mA/24VDC, <71mA/30VDC
Power consumption	<2.2W

Connection	
KNX	Bus connection terminal (red/black)
Auxiliary power supply	KNX auxiliary power supply terminal (yellow/white)
Temperature range	
Operation	–5° C~+45° C
Storage	–25° C~+55° C
Transportation	–25° C~+70° C
Ambient conditions	
Humidity	<93%, non-condensation
Proximity sensing distance	
Approximately 30 cm (This distance is obtained based on human detection as a reference, not obstructions.)	
Installation method	
National standard 86 embedded wall bottom box or European standard 80 embedded wall bottom box	
Size and specification	
86x101.3x10.5mm (This size is the thickness of the front panel, and the overall thickness of the 4-inch intelligent touch panel is 32.2mm.)	
Weight	
0.2kg	

* Note: We will not give a further notification in case of any update and change to the product design and specifications.

Dimension Diagram (mm)



Model and Description

Product model	Product description
HKX-TP04-D	KNX intelligent touch panel V4, 4.0-inch color IPS, resolution 480x480, 24-30VDC auxiliary power supply, wall mounted installation, 0.2kg

KNX Secure

PIR Motion/illumination Sensor

HKX-PIR-A

Honeywell KNX PIR motion sensor adopts PIR (Pyroelectric Infrared) technology, with built-in motion detection sensor and illumination sensor.

The illumination sensor measures the current illumination. In addition to supporting normal illuminance control functions, it also supports constant illuminance control functions. At the same time, illuminance and motion can be flexibly combined for control. In addition, it also integrates temperature controller function, logic function, and scene group function, to meet more complex and diverse control and application needs. It is mainly used in occasions with requirements for illumination control or motion detection, such as office, hotel or home.

Product Features

- Ordinary Passive Infrared Sensor, only detects obvious movement behaviors
- Supports master-slave operating mode
- Up to 4 channels of motion detection function configurable, with the first channel supporting three-level control
- Provided with a built-in illumination sensor, and controls the lighting according to the illumination threshold. It can also be linked with motion detection for logical control
- Supports sending different motion detection messages based on day/night configuration
- Supports constant illumination control
- Supports temperature controller function for heating/cooling systems, and also supports additional heating/cooling valve control
- Supports logic and scene group functions
- Supports KNX security protocol

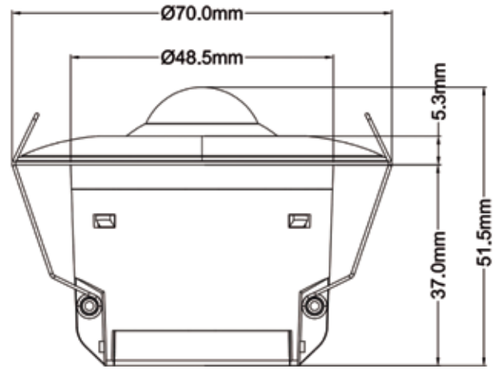
Technical Data

Power Supply	
Bus voltage	21~30VDC, obtained by KNX bus
Bus current	<6.5mA/24V; <5.5mA/30V
Bus power consumption	<165mW
Connection	
KNX	Bus connection terminal (red/black)
Detection range	
Illumination	0-2000lux
Temperature	0-40°C
Humidity	20~90%

Operation and indication	
Programming button and red LED	Physical address distribution
Flashing green LED	It indicates that the equipment application layer operates normally
Temperature range	
Operation	−5° C~+45° C
Storage	−25° C~+55° C
Transportation	−25° C~+70° C
Ambient conditions	
Humidity	<93%, non-condensation
Installation method	
Ceiling mounted/embedded installation, compatible with 80 or 86 boxes	
Size and specification	
Φ70x51.5mm	
Weight	
0.05kg	

*Note: We will not give a further notification in case of any update and change to the product design and specifications.

Dimension Diagram (mm)



Model and Description

Product model	Product description
HKX-PIR-A	KNX PIR Motion/illumination Sensor, PIR, KNX bus, 21-30VDC power supply, Ø 70x51.5mm, 0.05kg

Excellent Building, Optimal Response Smart Building, Gives You the Future

The intelligent lighting system is perfectly integrated with the building management system to achieve efficient unified management, to ensure that the program is validated, runs stably and reliably, and allows you to use it worry free and with peace of mind.

Relying on the full visibility provided by the KNX platform, it is convenient for monitoring; the indicator evaluation is more conducive to optimizing the lighting effects; with the strong controllability, it meets diverse needs to achieve predictive maintenance, and reduce the risk of fault.

Smart Building, Intelligent Life Intelligent Lighting, Illuminates the Extreme Space

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