HYTRONIK
SENSORS & LIGHTING CONTROL

Koolmesh
— TAILOR MAKE YOUR SOLUTION

System Level Components

Bluetooth®

Connected devices, such as central control screen, gateways and switches, allow you to monitor and control your lighting installation.
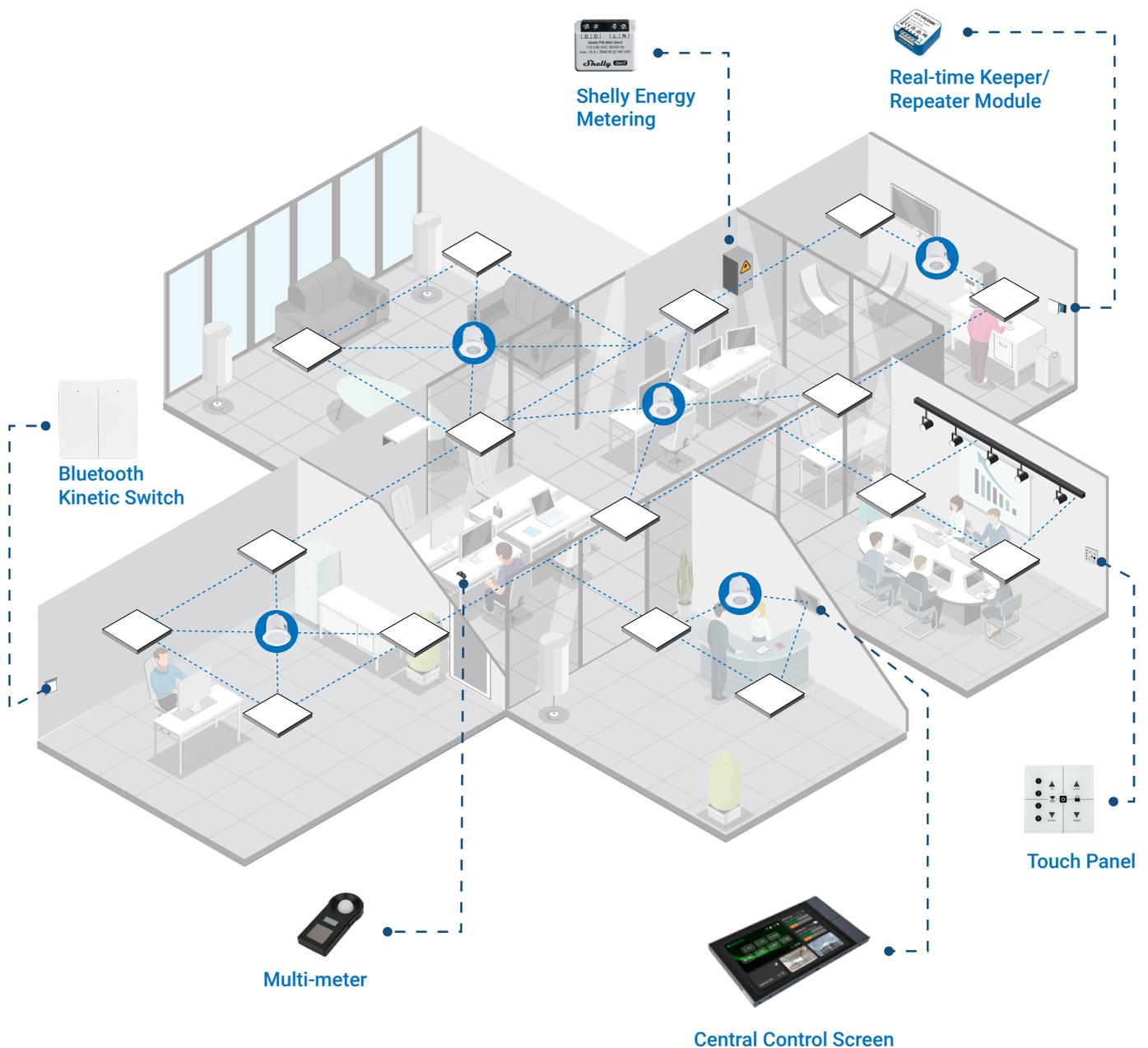
Constant Lux Control

Temp. Hum Monitoring

2026 | Website: www.hytronik.com

Connected. Intelligent. Powered by *Koolmesh*

Transform your lighting installation from fragmented and manual into a fully connected, automated ecosystem.

Hytronik's System Level Components are the backbone of the Koolmesh Bluetooth platform, delivering centralized control, automation, and real-time monitoring for industrial and commercial projects of any scale.

Shelly Energy Metering

Real-time Keeper/ Repeater Module

Bluetooth Kinetic Switch

Touch Panel

Multi-meter

Central Control Screen

Why Hytronik System Components?

The Challenges in Projects

• Fragmented systems with multiple controllers

• Limited visibility into performance

• Manual adjustments wasting time and energy
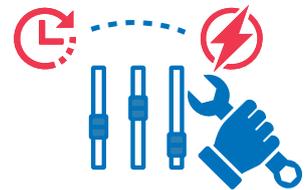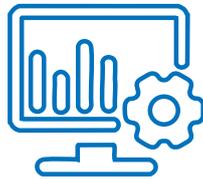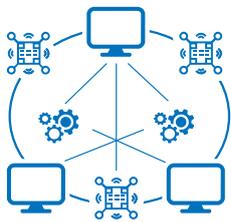
The Hytronik + Koolmesh Advantage

• One connected ecosystem — all components communicate seamlessly

• Smart automation with scenes, sensors, and timers

• Scalable from a single room to an entire industrial campus

• Proven Hytronik reliability in every device

• Real-time monitoring through central dashboards
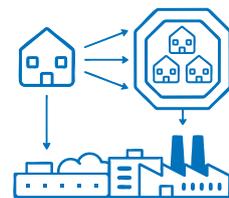
Core Modules & Highlights

1

Central Control Screens

- Real-time dashboards for full network visualization
- Configure zones, schedules, and scenes with ease
- Intuitive interface for facility managers

2

Gateways

- Seamless Bluetooth mesh connectivity
- Expandable for large-scale projects
- Reliable data communication and performance

3

Switches & Wireless Controls

- Flexible placement — no wiring needed
- Scene selection, dimming, and zone control
- Energy-harvesting options for maintenance-free operation

4

Multi-meter

- Monitor light, air quality, humidity, and temperature
- Automate responses for comfort and efficiency
- Integrate with occupancy & daylight sensing

5

Real Time Keepper

- Accurate, automated scheduling of lights and zones
- Match lighting to shifts, routines, or occupancy patterns
- Lower energy consumption and operational costs
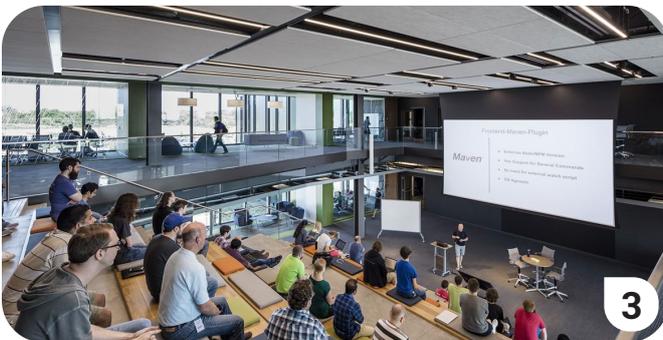
Applications in Action

Factories & Warehouses

Automate shifts, optimize lighting, reduce energy costs.

1

Offices & Commercial Buildings

Centralized zone-based control and scheduling.

2

Smart Campuses & Public Facilities

Integrated lighting, occupancy, air quality, and timing control.

3

Hotels & Hospitality

Intelligent guest room and common area control for comfort, efficiency, and convenience.

4

Multi-meter (NFC)

For Accurate Lux Measurement, Instant Dynamic Bluetooth Transmission, and Air Temperature & Humidity Monitoring

Designed for Office Desks & Warehouse Flow

Lux	HUM	TEMP
352 Lux	73.50 %rh	29.18 °C

NFC

Turn on NFC on your phone and close to the top of HBLM01 to pair the device.

LCD Screen

Real-time display of temperature, humidity and light intensity

Solar Energy Storage

Range
(Typical indoor)

LUX 0~4000

16mm

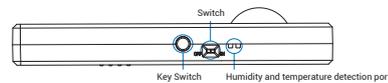## Mechanical Structure (unit: mm)

Ø57

124

52

LCD Screen

Daylighting Detection

Solar Energy Storage

16

22

Switch

Key Switch

Humidity and temperature detection port
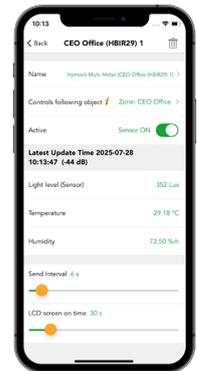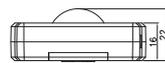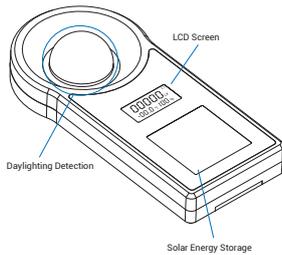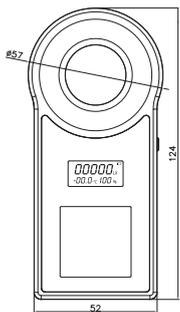
Easy configuration via Koolmesh APP

Technical Specifications

Designation	Input & Output Characteristics			Measurement Range		
	Input voltage	Standby current	NFC	Temperature	Humidity	Lux range
HBLM01	3.0V	10µA	13.56（MHz）	Ta: -40°C ~ +85°C	0% ~ 100%	0 ~ 4000 Lux

*Please always check the latest datasheet for technical requirements-------http://hytronik.com

Bluetooth Kinetic Switch

3 "NO"

NO cables
NO batteries needed
NO electric shock

Self powered	No battery	Without wiring	Freely placeable

Suitable for junction box	Waterproof (no electric shock)	Key indicator light	1, 2, 3 or 4 Push switches

Easy configuration via Koolmesh APP

## Mechanical Structure (unit: mm) & Options

HYTRONIK SENSORS & LIGHTING CONTROL

86.0mm × 86.0mm / 15.0mm × 86.0mm

One-gang HBKS01	Two-gang HBKS02	Three-gang HBKS03	Single Rocker HBKS01D	Double Rocker HBKS02D

EnOcean Self-powered IoT

81mm × 81mm / 14mm × 81mm

Single Rocker	Double Rocker		Single Rocker	Double Rocker
HBES01/W			HBES01/B	

Technical Specifications

\	Designation	Operation frequency	Transmission power	Range (Typical indoor)	Operation temperature
Hytronik Version	HBKS01, 02, 03	2.4 GHz - 2.483 GHz	-5dBm	10~30m	-10°C ~ +40°C
	HBKS01D, 02D	2.4 GHz - 2.483 GHz	0dBm	10~30m	-10°C ~ +40°C
EnOcean Version	HBES01/W, HBES01/B	2.4 GHz	-4dBm	up to 10 m	-25°C ~ +65°C

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Central Control Screen

HPAD Series
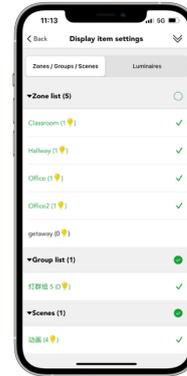
Easy configuration via Koolmesh APP

Instant scene recall
Instantly restore your preferred lighting and device settings

Visualized interface
Display temperature, humidity, lux value

4 custom Push
Free configuration of group control & individual light control

Energy-saving statistics
Electricity consumption and carbon footprint statistics

Multifunctional structure

Light sensor
Camera (ODM Only)
Microphones *4
Scene switch
Scene switch
Scene switch
Temperature and humidity sensor
Scene switch
2W Speakers
Type C
2W Speakers

Mechanical Structure (unit: mm)

13
38
155
272

86*86mm
Standard Wall Box
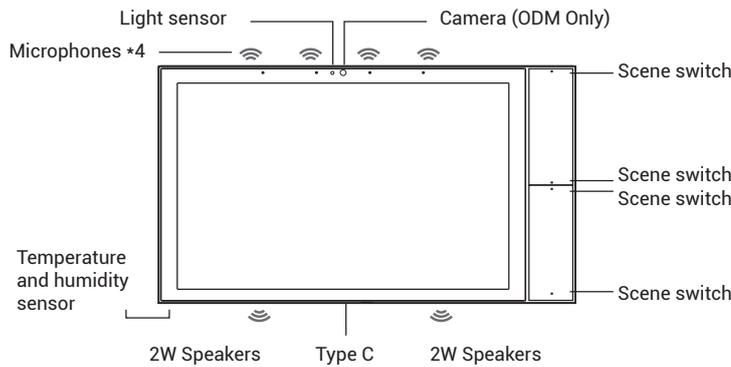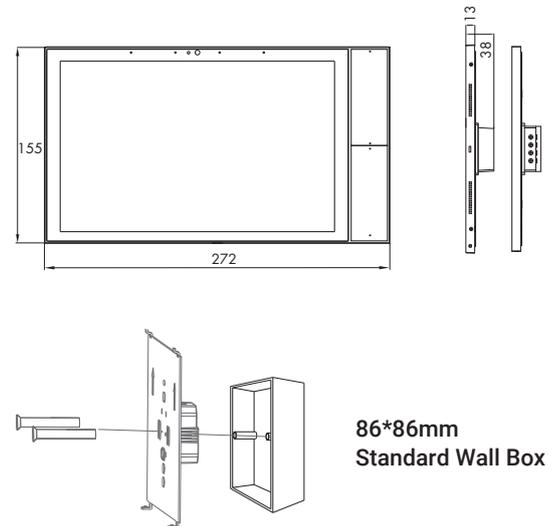
Technical Specifications

Designation	Operating voltage	Wi-Fi	RAM	Storage	Interfaces
HPAD Series	100-240VAC,50/60Hz	2.4G/5G Dual-Band (802.11b/g/n)	-20°C ~ +50°C	16GB	USB port, Ethernet port (RJ45)

*Please always check the latest datasheet for technical requirements--------http://hytronik.com
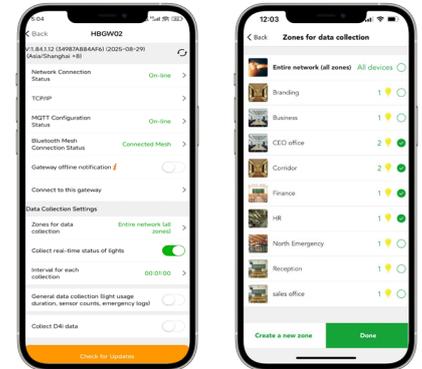
Third-party BMS Gateway

Industrial-grade BACnet gateway

HBGW02 Series

HBGW02 Series   HBGW03/R

HBGW03/R

Easy configuration via Koolmesh APP

Real-time readouts
occupancy, light levels, energy use, alerts

All local. No cloud

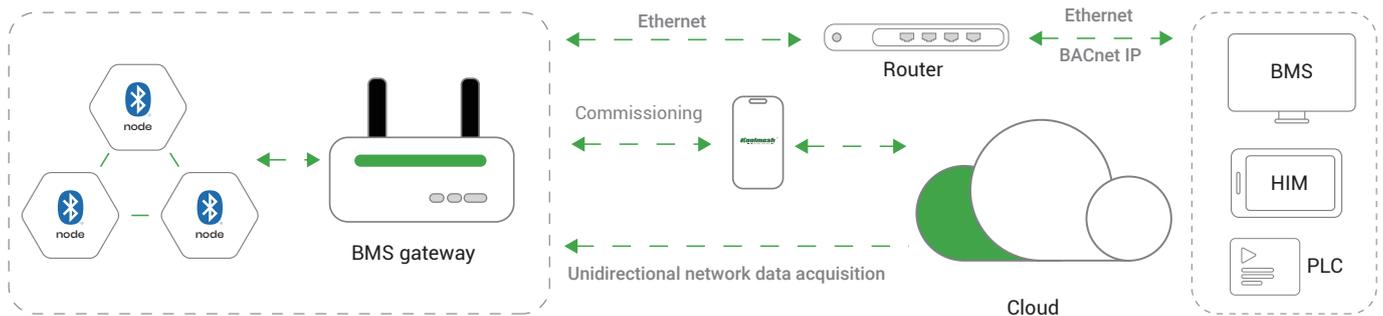**Direct integration with BACnet/IP BMS** systems (HBGW03)

USB-C + POE power supply
(HBGW03)

BMS Integration

The BMS gateway supports multiple protocols, including BACnet, KNX, and MQTT.
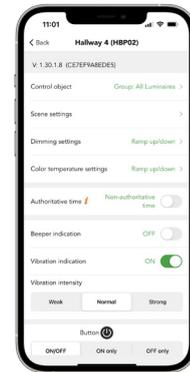

Technical Specifications

Designation	DC In	Power supply port	WiFi Frequency	WiFi Output Power	WiFi Range
HBGW02	DC5V/3A	POE	2412-2484MHZ	19.5±1dBm	Max.30m
HBGW03/R Series	DC5V/3A	USB Type-C	2401-2473MHZ	19.5±1dBm	Max.30m

*Please always check the latest datasheet for technical requirements--------http://hytronik.com
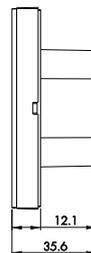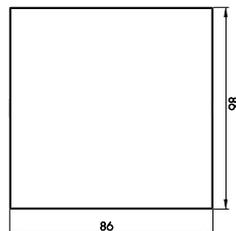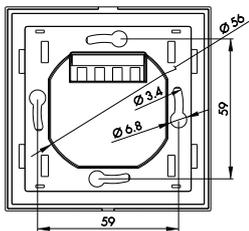
Touch Panel

HBP02

Easy configuration via Koolmesh APP

Manual adjustment: on/off, dim and color tuning

Keeps real time for 10 days during power failure

With vibration/ beeper/ LED indication/ Screen lock time

Mechanical Structure (unit: mm)

Ø 56

Ø 3.4

Ø 6.8

59

59

98

86

12.1

35.6

Designed for
electrical box/junction box

Technical Specifications

Designation	Operating voltage	Stand-by power	Operation temperature
HBP02	220~240VAC 50/60Hz	<1.5W	-20°C ~ +50°C

*Please always check the latest datasheet for technical requirements--------http://hytronik.com

Real-time Keeper/ Repeater Module

HTG01   HTG02
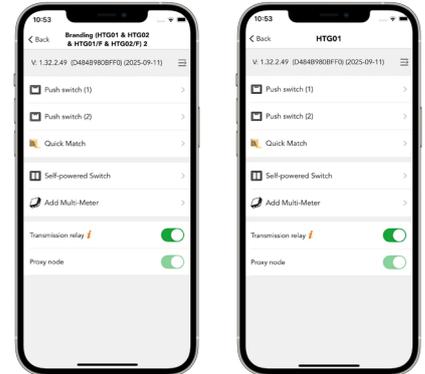
HTG01   **HTG02**

Easy configuration via Koolmesh APP
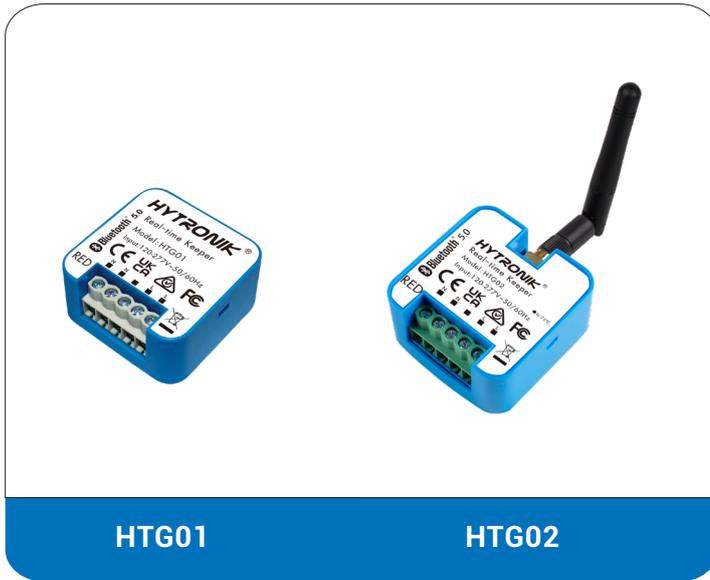
Extend the Bluetooth transmission distance Option

HTG02   Default Antenna   Up to 50m transmission distance
                                         (device to device)
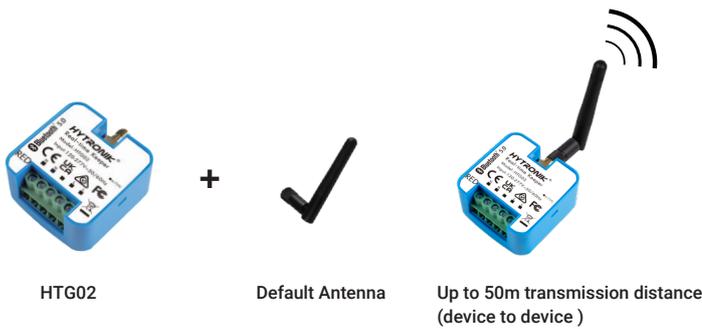
Supports up to 30m / 50m transmission range

Short-circuit protection

Optional reinforced antenna available

Keeps real-time for 10 days during power failure

Mechanical Structure (unit: mm)
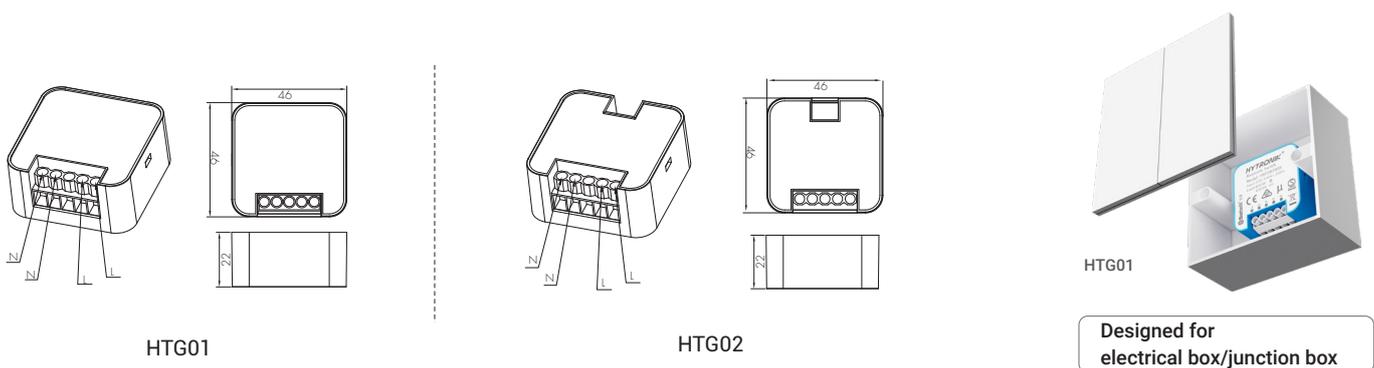
46
97
22

HTG01

46
97
22

HTG02

HTG01

Designed for
electrical box/junction box

Technical Specifications

Designation	Operating voltage	Bluetooth Range (device to device)	
HTG01 / HTG02	120~277VAC 50/60Hz	30m (HTG01)	50m (HTG02)

*Please always check the latest datasheet for technical requirements--------http://hytronik.com

Shelly Energy Metering

Track Real Consumption, Wirelessly And Effortlessly

- ■ **Precise energy monitoring**

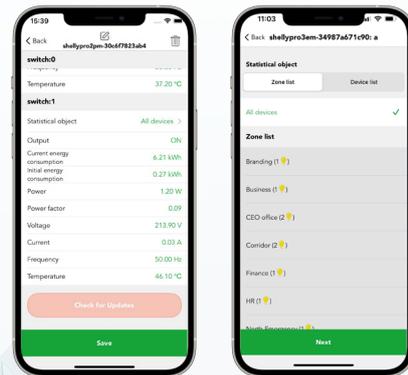 Accurate measurement and real-time tracking of power consumption.

- ■ **Smart alerts & protection**

  Notifications for overheating, overvoltage, overcurrent, and overpower.

- ■ **Energy efficiency & cost optimization**

  Identify high usage areas, analyze patterns, and reduce operational costs.

- ■ **Data visualization & management**

Easy configuration via Koolmesh APP

Koolmesh®
— TAILOR MAKE YOUR SOLUTION

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Connected. Intelligent. Automated. Future-Ready.

With Hytronik System Level Components powered by Koolmesh, your lighting is smart, adaptive, scheduled, and fully integrated.

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Learn More About System Level components:

https://hytronik.com/products/system-level-components

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