Smappee CT Hub

CT inputs
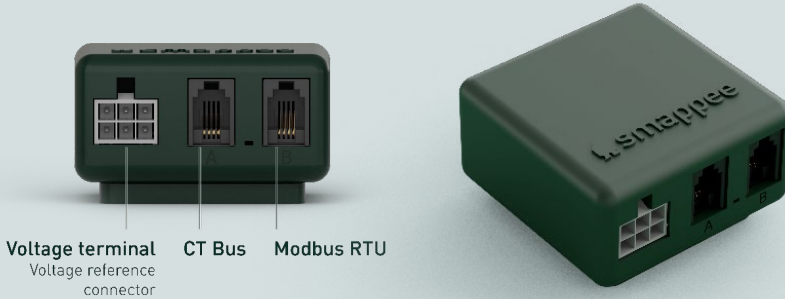Current Transformers

Smappee Bus A
connector

- Daisy chain up to 7 CT Hubs up to a distance of 100 meters (109 yards).
- Connect CTs and Rogowski coils to the CT Hubs.
- Connected CTs measure currents up to 4,000 A.

The CT Hub is the main component of the Smappee Infinity monitoring system. You can connect up to 4 Current Transformers (CTs) or Rogowski coils to a CT Hub to measure different currents up to 4,000 A. This allows for accurate submetering of (a group of) appliances. Daisy chain several CT Hubs to measure different installations up to a distance of 100 meters (109 yards).

- **Dimensions:** 70 × 31 × 23 mm (2.75 x 1.22 x 0.90 inches)
- **Weight:** 29 g (1.02 oz)
- **Operating temperature:** -25 °C to 75 °C (-13 °F to 167 °F)
- **Storage temperature:** -25 °C to 90 °C (-13 °F to 194 °F)
- **Relative humidity:** 0 % - 95 %, non-condensing
- **Operating altitude:** 0 – 2,000 m (0 – 6,562 feet)
- **EMC:** IEC 61326-1, FCC 47 part 15
- **Safety:** IEC 61010-1:2010/COR1:2011 Complies with UL 61010-1 and CAN/CSA-C22.2 No. 61010-1-12

- **Product certifications:** CE, FCC, CSGSus (UL 61010-1), RCM
- **IP rating (IEC 60529):** IP X0
- **Connectivity:**
  – 2 x Smappee Bus A
  – 4 inputs for Smappee split core CTs (50 A, 100 A, 200 A, 400 A) and Rogowski coils (12 cm/4.72 inches or 19 cm/7.48 inches)
- **Included accessories:**
  – Smappee Bus cable 40 cm (15.75 inches)

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Smappee Power Box

Voltage terminal
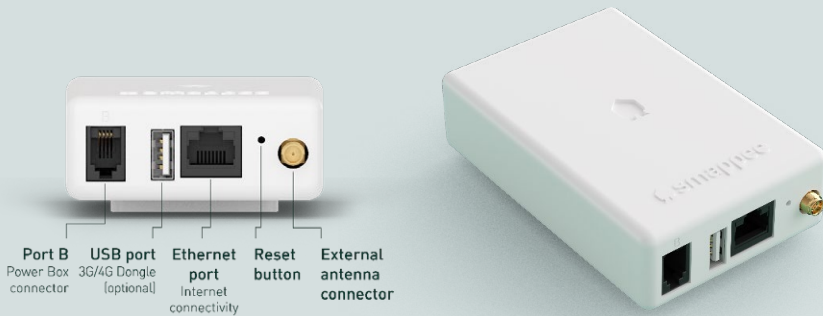Voltage reference connector

CT Bus

Modbus RTU

- Works with almost any electricity network worldwide.
- Energy metering functionalities.
- You can measure up to 28 loads.
- Provides power to the entire system.

The Power Box is the compact and robust heart of the Smappee Infinity monitoring system. It's compatible with almost any electricity network worldwide and is DIN-rail mountable. It measures the line voltage of the connected phases, collects the currents from the CT sensors and calculates power, active energy, reactive energy and other energy and power quality data. Any data logger can collect this data via the Modbus RTU interface. It also provides power to all components.

- **Dimensions:** 55 × 55 × 26.6 mm (2.17 x 2.17 x 1.05 inches)
- **Weight:** 44 g (1.55 oz)
- **Operating temperature:** -25 °C to 75 °C (-13 °F to 167 °F)
- **Storage temperature:** -25 °C to 90 °C (-13 °F to 194 °F)
- **Relative humidity:** 0 % - 95 %, non-condensing
- **Operating altitude:** 0 – 2,000 m (0 – 6,562 feet)
- **Product certification:** CE, FCC, CSGSus (UL 61010-1), RCM
- **EMC:** IEC 61326-1, FCC 47 part 15
- **Safety:** IEC 61010-1:2010/COR1:2011 Complies with UL 61010-1 and CAN/CSA-C22.2 No. 61010-1-12
- **Impact rating (IEC 62262):** IK 06 (Impact Energy: 1J)
- **IP rating (IEC 60529):** IP X0
- **Power supply input:** 90 – 264 V AC
- **Power consumption:** 8 W max

- **Voltage measurement inputs:** L1, L2, L3, N
- **Topology and maximum nominal ranges:**
  – Single phase - 1~: 240 Vrms
  – Split phase - 2~: 120/240 Vrms
  – 3 phase (3 wires) - 3~: 240 Vrms
  – 3 phase (4 wires) - 3~: 240/415 Vrms
  – 3 phase (4 wires) - 3~: 277/480 Vrms
- **Frequency:** 50/60 Hz
- **Intended environment conditions:** Pollution degree 2
- **Overvoltage conditions:** overvoltage category II
- **Connectivity:**
  – Smappee Bus A
  – Smappee Bus B (Modbus RTU)
- **Accessories included:**
  – DIN mounting plate
  – Power cable 90 cm open-ended (35.43 inches)
  – Bus termination plug

- **Modbus RTU (RS-485) interface:**
  – Type: Multidrop, bidirectional
  – Connections: 2-wire, maximum distance 1,000 m
  – Address range: 1- 247, default address 61, auto-assigned in case of multiple devices
  – Protocol: Modbus RTU
  – Data format: 1 start bit, 8 data bit, no parity, 1 stop bit
  – Baud-rate: 38.400 or 115.200 bit/sec (auto-detect)
  – Driver input impedance: 1/8 unit load, maximum 256 transceivers on the same bus
  – Insulation: 3240 V AC RS-485 bus to mains input

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Smappee Genius

Port B
Power Box
connector

USB port
3G/4G Dongle
(optional)

Ethernet
port
Internet
connectivity

Reset
button

External
antenna
connector

- Gateway between monitoring system and Smappee cloud.
- High-end HEMS/BEMS allowing dynamic load balancing and smart control.
- Compatible with various communication protocols.
- Future-proof thanks to over-the-air updates.
- Connectivity via Ethernet, Wi-Fi or 3G/4G (optional).

The Genius is the gateway between the monitoring system and the Smappee cloud, ensuring secure data storage from different components via Ethernet, Wi-Fi or 3G/4G (optional). In case of network outage, it will store the data for two days. It communicates and interacts with third party components, Smappee Gas & Water and Smappee Switch. Thanks to these various options, the Genius allows Smappee Infinity to take on the role of a Home or Building Energy Management System (HEMS or BEMS) and guarantee optimised self-consumption.

- **Dimensions:** 108 × 69 × 25 mm (4.25 x 2.72 x 0.98 inches)
- **Weight:** 119 g (4.20 oz)
- **Operating temperature:** -10 °C to 60 °C (14 °F to 140 °F)
- **Storage temperature:** -20 °C to 90 °C (-4 °F to 194 °F)
- **Relative humidity:** 0 % - 95 %, non-condensing
- **Operating altitude:** 0 – 2,000 m (0 – 6,562 feet)
- **EMC:** IEC 61326-1, FCC 47 part 15
- **Safety:** IEC 60950-1
- **IP rating (IEC 60529):** IP X0
- **Spectrum:** EN 300 328 V2.1.1 and EN 300 220

- **Product certifications:** CE, FCC, RCM
- **Connectivity:**
  - Ethernet 100BASE-T
  - Wi-Fi 2.4 GHz
  - 3G/4G (optional USB Dongle)
  - RF 433 MHz
  - Smappee Bus B (Modbus RTU)
- **Accessories included:**
  - Wall mounting plate
  - Smappee Bus cable 150 cm (59 inches)

Please don't litter.

Smappee Wi-Fi Connect
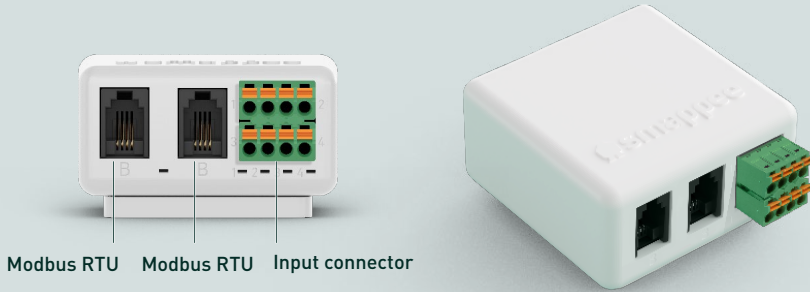

Reset button

Modbus RTU   **Modbus RTU**

- Gateway between monitoring system and cloud via Wi-Fi.
- Future-proof thanks to over-the-air updates.
- Cost-effective alternative to the Smappee Genius.
- Ensures secured data storage from components.
- 1-day data storage in case of network outage.

The Wi-Fi Connect is, similar to the Genius, the gateway between the Power Box and the cloud (Smappee or other), ensuring secure data storage from different components. Data is transferred via Wi-Fi. In the event of a network outage, data will be stored for one day. It only transfers data and does not offer smart control or load balancing functionalities. The Wi-Fi Connect is a cost-efficient way to add intelligence to the Smappee Infinity setup.

- **Dimensions:** 55 mm x 55 mm x 26.6 mm (2.17 x 2.17 x 1.05 inches)
- **Weight:** 45 g (1.59 oz)
- **Operating temperature:** -10 °C to 60 °C (14 °F to 140 °F)
- **Storage temperature:** -20 °C to 90 °C (-4 °F to 194 °F)
- **Relative humidity:** 0 % - 95 %, non-condensing
- **Operating altitude:** 0 – 2,000 m (0 – 6,562 feet)
- **EMC:** IEC 61326-1, FCC 47 part 15
- **Safety:** IEC 60950-1
- **Spectrum:** EN 300 328 V2.1.1 and EN 300 220

- **Product certifications:** CE, FCC, RCM
- **IP rating (IEC 60529):** IP X0
- **Connectivity:**
  – Wi-Fi 2.4 GHz
  – RF 433 MHz
  – 2 x Smappee Bus B (Modbus RTU)
- **Accessories included:**
  – Wall mounting plate
  – Smappee Bus cable 150 cm (59 inches)

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Smappee Input module
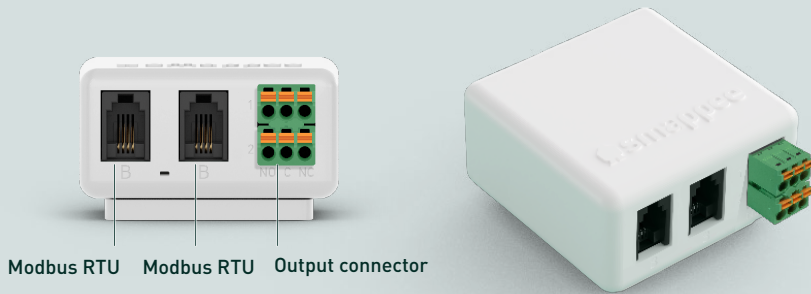

Modbus RTU   Modbus RTU   Input connector

- Add additional inputs to the Smappee Infinity ecosystem.
- 4 digital inputs to count pulses or monitor input status (low/high).
- Daisy-chain up to 10 modules.
- The input modules can easily be added thanks to a quick RJ10 connection.
- All reported data is available in the Smappee App, Dashboard and API.

The Smappee Input module can count pulses of up to four digital inputs such as sensors, meters and other devices. It can also monitor state changes (low/high) to trigger other processes.
Add up to 10 input modules to the Smappee Infinity setup thanks to its RJ10 connection. The modules transfer all collected data via Modbus RTU (RS-485) to the Smappee Genius or any third party data logger. This data is available in the Smappee App, Dashboard and API.

- **Power supply input range:** 5 - 12 V DC
- **Dimensions:** 55 mm x 55 mm x 26.6 mm (2.17 x 2.17 x 1.05 inches)
- **Weight:** 49 g (1.72 oz)
- **Operating temperature:** -10 °C to 60 °C (14 °F to 140 °F)
- **Storage temperature:** -20 °C to 90 °C (-4 °F to 194 °F)
- **Relative humidity:** 0 % - 95 %, non-condensing
- **Operating altitude:** 0 – 2,000 m (0 – 6,562 feet)
- **Connectivity:** 2 x Smappee Bus B (Modbus RTU)
- **Input connector:**
  - Removable push in spring connection terminal block, 8 positions
  - Solid cable with diameter range 0.5 to 1.5 mm² (20 AWG - 15 AWG). Stranded cable not recommended.

- **Digital input specifications:**
  - 4 inputs
  - 12 V powered inputs to support external devices with simple contact switch
  - All inputs have common power
  - Typical current when input is closed : 5 mA
  - Inputs can withstand 30 V max
  - Inputs galvanically isolated from RJ10 connector (1 KV)
  - Maximum pulse input frequency: 10 Hz (low pass filtered)
- **Accessories included:**
  - DIN mounting plate
  - Smappee Bus cable 150 cm (59 inches)

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Smappee Output module

Modbus RTU **Modbus RTU** **Output connector**

- Add control to the Smappee Infinity ecosystem.
- 2 relay outputs (NO/NC/Common).
- Daisy-chain up to 10 output modules.
- The output modules can easily be added thanks to a quick RJ10 connection.

The Smappee Output module is, next to the Smappee Switch and Smappee scenes, a cost-efficient way to add smart control to the Smappee Infinity ecosystem. The module has 2 separate power relay outputs (dual throw: NO/NC/Common). This allows remote control of devices that are either directly powered (max. 5 A switching capability) or control a breaker (single or 3-phase) to steer high power equipment e.g. a motor, EV charging station, hot water boiler. It can also be used as control signal for smart devices such as Smart Grid Ready heat pumps. You can add up to 10 output modules to the Smappee Infinity setup thanks to its RJ10 connection. The modules communicate via Modbus RTU (RS-485) with the Smappee Genius or any third party data logger.

- **Power supply input range:** 5 - 12 V DC
- **Dimensions:** 55 mm x 55 mm x 26.6 mm (2.17 x 2.17 x 1.05 inches)
- **Weight:** 61 g (2.15 oz)
- **Operating temperature:** -10 °C to 60 °C (14 °F to 140 °F)
- **Storage temperature:** -20 °C to 90 °C (-4 °F to 194 °F)
- **Relative humidity:** 0 % - 95 %, non-condensing
- **Operating altitude:** 0 – 2,000 m (0 – 6,562 feet)
- **Connectivity:** 2 x Smappee Bus B (Modbus RTU)
- **Output connector:**
  - Removable push in spring connection terminal block, 6 positions
  - Solid cable with diameter range 0.5 to 1.5 mm² (20 AWG - 15 AWG). Stranded cable not recommended.

- **Output specifications:**
  - 2 outputs
  - Insulated relais output. 3 contacts per output (NO/NC/C)
  - 5 A max. 250 Vac max.
- **Accessories included:**
  - DIN Mounting plate
  - Smappee Bus cable 150 cm (59 inches)

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Smappee Current Transformers

Smappee offers a wide array of Split Core CTs and Rogowski coils that are compatible with the CT Hub. In addition, Smappee offers a Solid Core 3-Phase CT.

1 Split Core CTs

Type	Article number	L × W × H (mm)	L × W × H (inches)	Max. wire diameter	Cable length
50 A	AC-CT-50A	25.5 × 40.5 × 26	1 × 0.41 × 1.02	10 mm / 0.39 inches	180 cm / 70.87 inches
100 A	AC-CT-100A	32 × 44.5 × 31	1.26 × 1.75 × 1.22	16 mm / 0.63 inches	180 cm / 70.87 inches
200 A	AC-CT-200A	50.5 × 66.5 × 41	1.99 × 2.62 × 1.61	24 mm / 0.94 inches	180 cm / 70.87 inches
400 A	AC-CT-400A	57.8 × 85 × 42.5	2.28 × 3.35 × 1.67	36 mm / 1.42 inches	180 cm / 70.87 inches
50 A	AC-CT-S-50A	25.5 × 40.5 × 26	1 × 0.41 × 1.02	10 mm / 0.39 inches	30 cm / 11.81 inches
100 A	AC-CT-S-100A	32 × 44.5 × 31	1.26 × 1.75 × 1.22	16 mm / 0.63 inches	30 cm / 11.81 inches
200 A	AC-CT-S-200A	50.5 × 66.5 × 41	1.99 × 2.62 × 1.61	24 mm / 0.94 inches	30 cm / 11.81 inches

Conforms to UL Std. 61010-1, 61010-2-032

2 Rogowski coils

Type	Article number	External diameter	Internal diameter	Cable length
0 - 1,600 A	AC-RSCT-12CM	140 mm / 5.51 inches	120 mm / 4.72 inches	150 cm / 59 inches
0 - 4,000 A	AC-RSCT-19CM	210 mm / 8.27 inches	190 mm / 7.48 inches	150 cm / 59 inches

3 Solid Core 3-Phase CT

- Typically used for 3-phase measurements.
- Accuracy class 0.2 %.
- Daisy-chain up to 9 Solid Core 3-Phase CTs or combine with Smappee CT Hubs to measure up to 28 inputs and up to a distance of 100 meters (109 yards).
- Small, compact.
- Cost-effective alternative to the CT Hub with CTs.

ARTICLE NUMBER: I1-IAC-2

- **Input current:** 3 × 50 A
- **Outer cable diameter:** Maximum 6.7 mm / 0.26 inches
- **Dimensions:** 59 × 35 × 23 mm (2.32 × 1.38 × 0.91 inches)
- **Weight:** 45 g (1.59 oz)
- **Operating temperature:** -10 °C to 70 °C (14 °F to 158 °F)
- **Storage temperature:** -20 °C to 90 °C (-4 °F to 194 °F)
- **Relative humidity:** 0 % - 95 %, non-condensing
- **EMC:** IEC 61326-1, FCC 47 part 15
- **Connectivity:** 2x Smappee Bus A
- **Included accessories:**

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Smappee Switch

- Additional submetering of one appliance or group of appliances.
- Controls appliances remotely.
- Multiple Switches can build a network that bridges distances and obstacles.
- Works only when combined with a Smappee energy monitor.

Smappee Switch is a smart plug offering a cost-effective way to add an extra method of submetering and smart control to the Smappee Infinity monitoring system. The Switch measures the exact consumption of an appliance or group of appliances connected to a power strip and offers control over these appliances (remotely or by tapping the Switch). The Switch can also improve Smappee's appliance recognition technology (NILM) via the 'Learn with Switch' app feature.

- **Cable length:** 600 mm (23.62 inches)
- **Operating temperature:** 5 °C to 40 °C (41 °F to 104 °F)
- **Storage temperature:** -10 °C to 60 °C (14 °F to 140 °F)
- **Relative humidity:** 0 % to 80 %, 5 °C to 40 °C (41 °F to 104 °F)
- **Protection class:** IP20

- **Connectivity:** RF 433 MHz
- Switching up to 16 A (country-specific)
- Fitted with the most frequently used plugs (B, E, F, G, I, J, M) or open-ended
- Configure up to 20 Switches with 1 Smappee Genius

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Smappee Gas & Water

- Monitors gas and water consumption.
- Real-time insights, when combined with a Smappee energy monitor.
- Alerts about excessive consumption or small leaks.
- Compatible with most common analog gas & water meters.

Smappee Gas & Water adds detailed data on gas and water consumption to the Smappee Infinity monitoring system. It's easy to install via optical or magnetic sensors which are attached to the gas and water meter. The monitor is compatible with most common analog gas and water meters. In case of excessive usage or a small leak, the Smappee App sends an alert.

- **Power:** 2 AA batteries
- **Dimensions:** 120 x 70 x 60 mm (4.72 X 2.75 x 2.36 inches)
- **Weight:** 130 g (4.59 oz.)
- **Operating temperature:** -10 °C to 60 °C (14 °F to 140 °F)
- **Storage temperature:** -20 °C to 90 °C (-4 °F to 194 °F)
- **Relative humidity:** 0 % - 95 %, non-condensing
- **Operating altitude:** 0 – 2,000 m (0 – 6,562 feet)
- **EMC:** IEC 61326-1, FCC 47 part 15
- **Safety:** IEC 60950-1

- **IP rating (IEC 60529):** IP X0
- **Connectivity:**
  - RF 433 MHz range 20 - 30 m (21.87 to 32.80 yards) without obstacles
  - Bluetooth 4.0 range up to 7 m (7.65 yards)
  - 2 inputs for 2 sensors
- **Included accessories:**
  - 1 magnetic sensor cable length 2 m (78.74 inches)
  - 1 optical sensor cable length 1.4 m (55.11 inches)
  - 2 AA batteries

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Smappee Connect

Reset button · Ethernet port
Modbus RTU · Modbus RTU

- Gateway between monitoring system and cloud via Ethernet or Wi-Fi.
- Future-proof thanks to over-the-air updates.
- Cost-effective alternative to the Smappee Genius.
- Ensures secured data storage from components.
- 1-day data storage in case of network outage.

The Connect is, similar to the Genius, the gateway between the Power Box and the cloud (Smappee or other), ensuring secure data storage from different components. Data is transferred via Ethernet or Wi-Fi. In the event of a network outage, data will be stored for one day. It only transfers data and does not offer smart control or load balancing functionalities. The Connect is a cost-efficient way to add intelligence to the Smappee Infinity setup.

- **Dimensions:** 55 mm x 55 mm x 26.6 mm (2.17 x 2.17 x 1.05 inches)
- **Weight:** 45 g (1.59 oz)
- **Operating temperature:** -10 °C to 60 °C (14 °F to 140 °F)
- **Storage temperature:** -20 °C to 90 °C (-4 °F to 194 °F)
- **Relative humidity:** 0 % - 95 %, non-condensing
- **Operating altitude:** 0 – 2,000 m (0 – 6,562 feet)
- **EMC:** IEC 61326-1, FCC 47 part 15
- **Safety:** IEC 60950-1
- **Spectrum:** EN 300 328 V2.1.1

- **Product certifications:** CE, FCC, RCM
- **IP rating (IEC 60529):** IP X0
- **Connectivity:**
  – Ethernet 100BASE-T
  – Wi-Fi 2.4 GHz
  – 2 x Smappee Bus B (Modbus RTU)
- **Accessories included:**
  – Wall mounting plate
  – Smappee Bus cable 150 cm (59 inches)

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