CTRL SENS

Sensor and cable kit
for CTRL-AC-S-31/32 controllers

Model: CTRL SENS



DAICHI

Works with the
mobile app
Daichi Comfort

Dear Customer,

Thank you for purchasing the CTRL SENS sensor and cable kit.

Read this manual carefully before installing and commissioning the equipment. Keep the manual throughout the service life of the product.

The CTRL SENS kit is intended for use with CTRL-AC-S-31/32 controllers and the Daichi Comfort mobile app.

Components connected to the 220 V mains supply must be installed by a qualified technician. Before starting installation work, disconnect the power supply to the split system and verify the absence of voltage.

Do not allow children or persons lacking the necessary knowledge and experience to install or service the kit components without supervision by a responsible person.

The illustrations in this manual explain the installation and connection procedures. The appearance of individual components and the indoor unit may differ slightly from the illustrations.

The manufacturer shall not be liable for equipment damage, personal injury, or property damage resulting from incorrect installation, use other than as intended, unauthorised modifications, or failure to comply with the requirements of this manual.

The manufacturer reserves the right to modify the product design, construction, and functions without prior notice. Current information is available at *vrf.daichicloud.ru*.

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Package contents

No.	Item	Quantity
1	CTRLSENSSHT temperature and humidity sensor with connection cable	1
2	CTRLSENSPZEM energy consumption sensor with connection cable	1
3	CTRLSENSDIN heat exchanger temperature sensor assembly comprising two sensors	1
4	Installation and operation manual	1
5	Cable ties	6
6	Self-adhesive tape	1
7	Current transformer	1

Additionally required; not included in the kit:
- two insulated copper wires of the required length;
- two three-wire connectors;
- wire stripping tool;
- screwdriver;
- voltage detector or meter.

Main kit components

1. Temperature and humidity sensor **CTRLSENSSHT** with connection cable



2. Energy consumption sensor **CTRLSENSPZEM** with connection cable



3. Heat exchanger temperature sensor assembly **CTRLSENSDIN**, two sensors in the assembly



4. Current transformer



General installation and connection diagram for the CTRL SENS kit

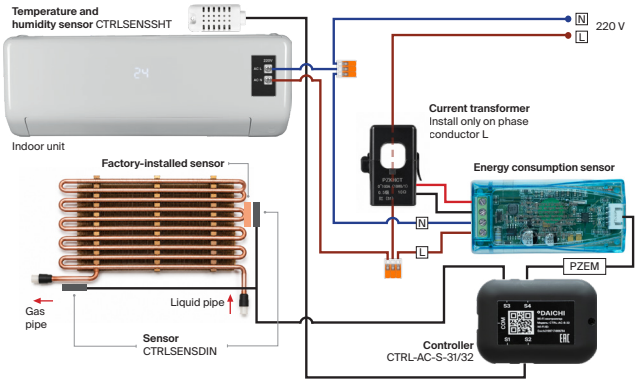


Fig. 1. General installation and connection diagram for the CTRL SENS kit

DANGER

Before starting installation, switch off the split-system power supply at the circuit breaker and verify the absence of voltage. Electrical connections must be made by a qualified technician.

CAUTION

The CTRLSENSPZEM energy consumption sensor may be installed only in split systems where power is supplied to the indoor unit.

Installing and connecting the CTRLSENSPZEM energy consumption sensor

1 Prepare two insulated copper wires with a cross-sectional area of 1.0 mm^2 and sufficient length for routing inside the indoor unit.

Use a brown wire for connecti
neutral N.

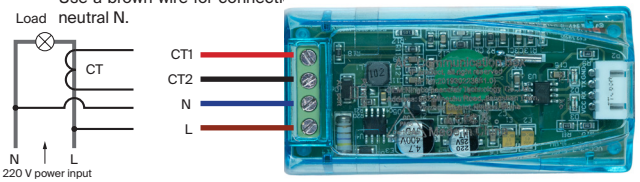


Fig. 2. CTRLSENSPZEM energy consumption sensor terminal assignments

2 Connect the prepared wires to the terminals of the energy consumption sensor:

- brown wire — to terminal L;
- blue wire — to terminal N.

Tighten the terminal screws and check that the wires are securely fastened.

3 Create branch connections on phase conductor L and neutral conductor N leading from the indoor unit terminal block.

At the selected locations, cut each conductor separately and strip the insulation from the ends to the length specified by the connector manufacturer.

Use a separate three-wire lever connector for each circuit:

- in the connector for circuit L, join the incoming phase conductor, the indoor unit phase conductor, and the brown wire of the energy consumption sensor;
- in the connector for circuit N, join the incoming neutral conductor, the indoor unit neutral conductor, and the blue wire of the energy consumption sensor.
- ensure that the stripped sections of the conductors do not protrude beyond the connector housings.

Note:
Identify conductor functions using the L and N markings on the indoor unit terminal block, not solely by the colour of the insulation.

Connecting and installing the current transformer

The current transformer measures the current drawn by the split system. It is connected to the CTRLSENSPZEM energy consumption sensor and must be installed only on phase conductor L.

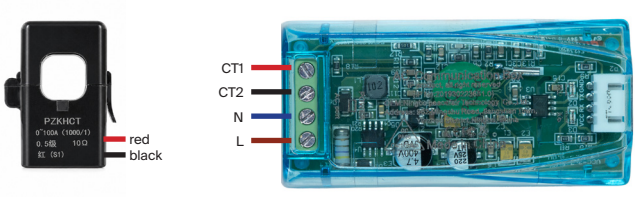


Fig. 3. Connecting the current transformer to the energy consumption sensor

1 **Connect the current transformer wires to the terminals of the energy consumption sensor.**

- red wire — to terminal CT1.
- black wire — to terminal CT2.



2 **Open the current transformer housing.**

Press the side latch and open the current transformer housing.

3 **Install the current transformer on phase conductor L.**

Pass phase conductor L through the window of the open current transformer. The conductor must pass through the centre of the window, perpendicular to the plane of the current transformer housing.



4 **Close the current transformer housing until it clicks into place.**

Ensure that the housing is fully closed, the latch is secured, and the phase conductor passes freely through the current transformer window.

CAUTION

- Install the current transformer only on phase conductor L.
- Do not install the current transformer on neutral conductor N.
- Do not route conductors L and N through the window at the same time.
- Only one conductor may pass through the current transformer window.

Installing the CTRLSENSSHT temperature and humidity sensor

1 **Connect the sensor to the controller.**

Connect the CTRLSENSSHT temperature and humidity sensor cable to the S2 connector on the CTRL-AC-S-31/32 controller. Insert the connector fully without applying excessive force.



Fig. 4. Connecting the CTRLSENSSHT sensor to controller the S2 connector

2 **Select the sensor installation location.**

Select a location on the top panel of the indoor unit that allows unobstructed air circulation. The sensor must not obstruct the indoor unit air intake grille.



Fig. 5. Recommended installation location for the CTRLSENSSHT sensor

3 **Secure the sensor.**

Secure the sensor so that it cannot move. Do not cover the ventilation openings in the sensor housing.

4 **Route the cable.**

Route the sensor cable to the controller inside the indoor unit casing. Do not allow the cable to contact the fan, sharp edges, hot components, or power terminals. When closing the casing, ensure that the cable is not pinched.

Installing the CTRLSENSDIN cable of the heat exchanger temperature sensor assembly

1 **Connect the CTRLSENSDIN assembly to the controller.**

Connect the CTRLSENSDIN heat exchanger temperature sensor assembly cable to the S3 connector on the CTRL-AC-S-31/32 controller. Insert the connector fully without applying excessive force.

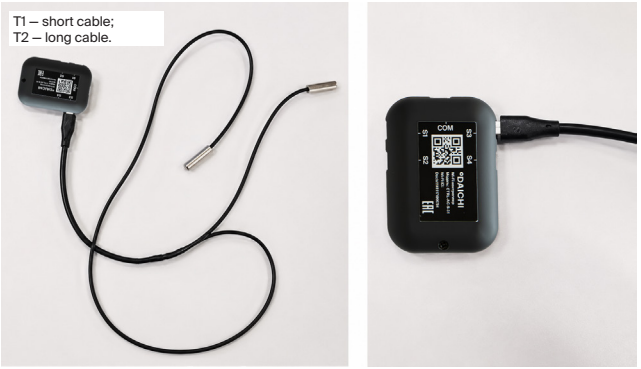


Fig. 6. Connecting the CTRLSENSDIN assembly to controller the S3 connector

2 **Identify sensors T1 and T2.**

The CTRLSENSDIN assembly includes two sensors:

- **T1** — sensor with a short cable, intended for installation on the indoor unit heat exchanger;
- **T2** — sensor with a long cable, intended for installation on the refrigerant gas pipe.

Install sensor T1 on the indoor unit heat exchanger.

- Open the front panel of the indoor unit to access the heat exchanger.
- Locate the factory-installed heat exchanger temperature sensor. Install sensor T1 on the copper heat exchanger tube next to the factory-installed sensor.
- The metal sensing element of the sensor must be in firm contact with the surface of the copper tube. Secure the sensor using the cable ties supplied.
- Do not install the sensor directly on the aluminium fins of the heat exchanger. Do not deform the tubes or fins when tightening the cable ties.

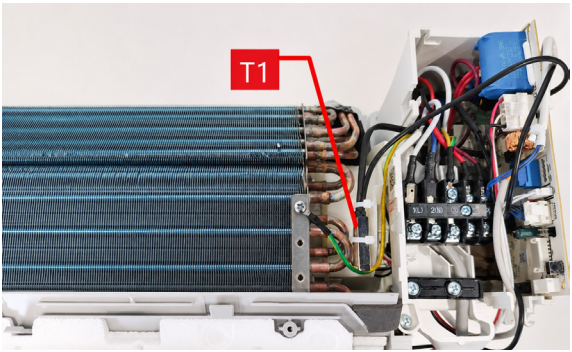


Fig. 7. Recommended installation location for sensor T1

Select the installation location for sensor T2.

- Sensor T2 is installed on the refrigerant gas pipe connecting the indoor unit to the outdoor unit.
- The gas pipe has a larger diameter than the liquid pipe.
- Select a straight, accessible section of the gas pipe near its connection to the indoor unit.

Prepare the pipe surface.

Carefully pull back the thermal insulation at the sensor installation location.

Clean any dirt and moisture from the pipe surface. Do not damage or deform the copper pipe.

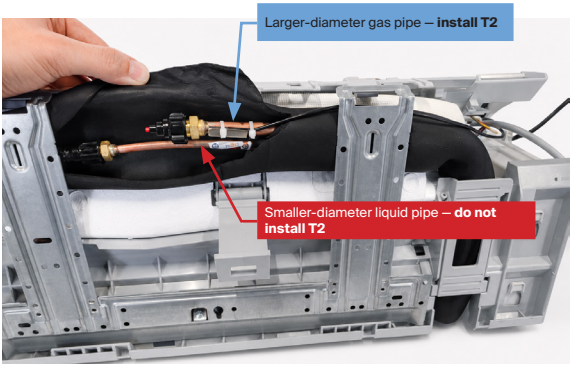


Fig. 8. Selecting the gas pipe for sensor T2 installation

6 **Install and secure sensor T2.**

Position the metal part of sensor T2 along the gas pipe. The sensor must be in firm contact with the pipe surface over the entire length of the sensing element.

Secure the sensor using the cable ties supplied. Do not overtighten the cable ties, as this may damage the sensor or the copper pipe.

CAUTION

Sensor T2 must be installed only on the larger-diameter gas pipe. Do not install the sensor on the smaller-diameter liquid pipe.

7 **Restore the thermal insulation.**

Cover the sensor and the pipe section with the existing thermal insulation. If necessary, secure the thermal insulation using the self-adhesive tape supplied.

Ensure that the sensor is completely covered by thermal insulation and cannot move during equipment operation.

8 **Route the sensor cable.**

Route the T2 sensor cable to the controller inside the indoor unit casing.

Do not allow the cable to contact the fan, sharp edges, moving parts, or hot components. Secure any excess cable using cable ties.

Purpose and functions of the CTRL SENS kit

Energy consumption monitoring

- The CTRLSENSPZEM energy consumption sensor measures the electrical energy consumed by the split system.
- Energy consumption data is displayed in the Daichi Comfort mobile app. When the relevant settings are configured, the app can calculate the estimated cost of the electricity consumed.

Temperature and humidity monitoring

- The CTRLSENSSHT sensor measures the air temperature and relative humidity near the indoor unit.
- The measured values are transmitted to the controller and displayed in the Daichi Comfort mobile app.

Split-system operation monitoring

- Sensors T1 and T2 measure the temperatures of the heat exchanger and gas pipe. The measured data is used to monitor split-system operation and assess its operating condition.
- Depending on the available service functions, the user may receive notifications of possible abnormal equipment operation and the need for maintenance.

Detailed information about the CTRL SENS kit

Latest manual version

Additional information

Maintenance

The kit components require no scheduled maintenance. Maintenance is limited to periodic visual inspection, checking that the components are securely fastened, and removing dust from the components.

Disconnect the power supply to the split system before cleaning. Use a dry, soft cloth for cleaning. Do not use liquid cleaning agents, solvents, or abrasive materials.

Transportation and storage

The product must be transported and stored in its original packaging.

The product may be transported by any type of enclosed means of transport in accordance with the freight regulations applicable to that type of transport.

Storage conditions:

- ambient temperature — from –30 to +30 °C;
- relative humidity — from 15 to 85%;
- no condensation.

Waste disposal

Do not dispose of electrical and electronic components with unsorted household waste.



Information on disposal procedures is available from local authorities or a specialist organisation that collects and recycles electronic equipment.

Actions in the event of a malfunction

If there are signs of a malfunction, including a burning smell, overheating, or damage to the wires or housing, immediately disconnect the power supply to the split system.

Do not continue operating the equipment until the malfunction has been rectified.

Do not open or repair the kit components yourself. Contact an authorised service centre for diagnosis and repair.

Warranty and service

Warranty: 1 year

Manufacturer: Shenzhen Taihaoda Electronics Co., Ltd.

Manufacturing address: China, Room 301, No. 92, 94, 96, 98, Hongmian 2nd Road, Henggang Community, Henggang Street, Longgang District, Shenzhen.

Country of origin: China.

The month and year of manufacture are indicated on the product packaging.

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