

Hoval UltraGas 2 Hoval CAN Bus Interface



UltraGas 2 Hoval CAN Bus Interface Installation Guide

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Hoval

UltraGas 2 Hoval CAN Bus Interface



Specifications

- Product: KNX/Hoval CAN bus interface
- Model Number: 4 212 586 / 05
- Language: EN
- Installation: Specialist installation and commissioning required
- Electrical Installation: Must be performed by a licensed electrical company

These instructions are applicable to the following types:

2-TopTronic® E Gateway module KNX

Hoval products must be installed and commissioned by specialists only. These instructions are intended exclusively for the specialist. Electrical installation must be performed by a licensed electrical company.

Important notes

Intended use

- The gateway module KNX is the connection point between the Hoval CAN bus and the KNX fieldbus.
- The gateway module KNX enables users to access and operate the Hoval heating system via KNX.
- These instructions describe how to connect, install, and commission the interface.
- The KNX TP unit can be used as a programming interface for the ETS (3/4/5). Hoval does not offer any support if it is used for this purpose. Access via the Internet is also possible. Via KNXnet/IP tunneling, the unit can also be used as an interface for on-site visualizations. Hoval also does not offer any support for this function.
- The IP settings can also be configured by the ETS software in the same way as the data points. The power is supplied externally or alternatively directly from a switch with delivery of Power over Ethernet (IEEE 802.3af).

Explanation of the symbols

Warnings

NOTICE



... indicates a situation of possible danger which can lead to damage to property if not avoided.



“Warning: dangerous electrical voltage” as a warning for accident prevention.

Ensures that people do not come into contact with electrical voltage. The danger sign with the black lightning symbol warns against the danger of electrical voltage.

1.2.2 Symbols



Information:

Provides important information.

Technical information

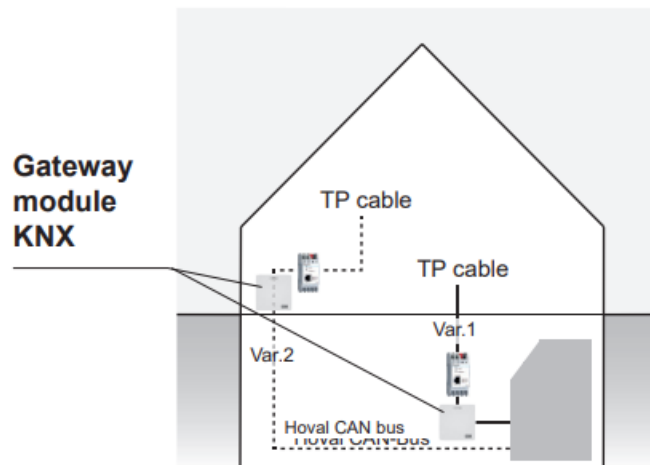
Installation site

TopTronic® E gateway module KNX

There are two options for installing the gateway module KNX.

In var. 1, the interface is installed in the basement, and a long TP cable leads to the KNX network.

In var. 2, the interface is installed in the living area, and a 4-wire cable (Hoval CAN bus) leads to the basement.



The gateway module KNX is prepared for installation in the control panel or wall casing.

Connections of the gateway module KNX

Installation variant 1:

(standard design as supplied by the factory)

KNX TP input

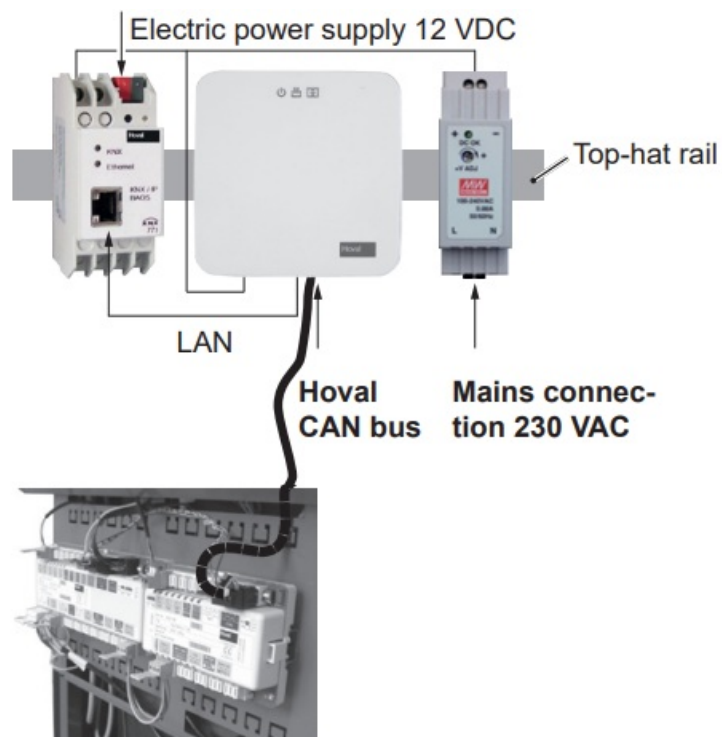


Fig. 01

Installation variant 2:

KNX TP input

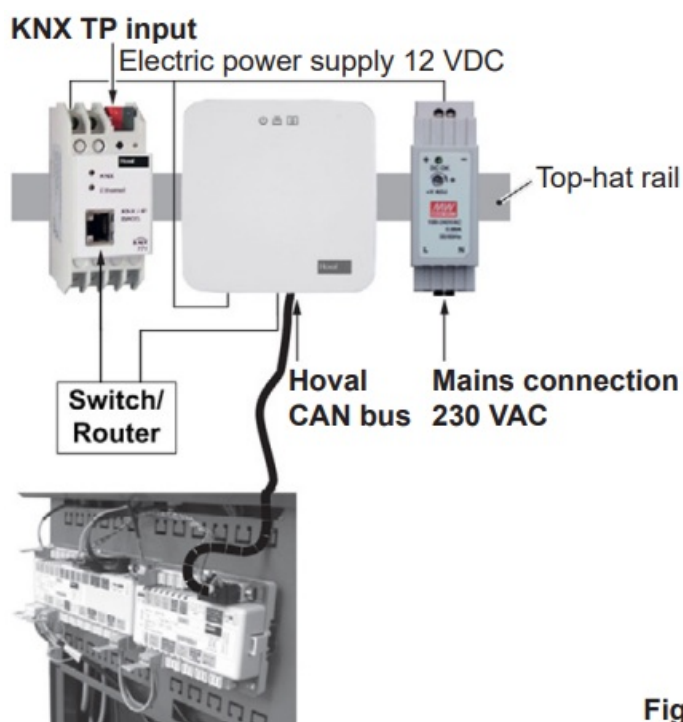


Fig. 02

Please note: If the module is being integrated into a network, the network settings must be compatible.

Back

On the back, the Hoval CAN bus connection to the heat generator can also be made using terminals.



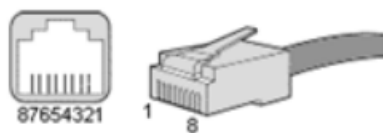
Fig. 03

- CAN bus The terminals enable direct wiring to the Hoval CAN bus
- CAN+ CAN bus data line
- CAN- CAN bus data line 12 VDC 12 V electrical power supply via CAN bus (electrical power supply is already assured through the supplied mains adapter)
- GND CAN bus earth

The earth must always be connected to all CAN bus subscribers.

This also applies when a mains adapter is used.

CAN pin assignment on RJ45



RJ45 pin	Signals
1	CAN_H
2	CAN_L
7	CAN_GND
8	CAN_12VDC+
	(electrical power supply is already assured through the supplied mains adapter)

Displays and controls of the gateway module KNX

The gateway module KNX is equipped with the following displays and controls:



Fig. 04

- **LED left “Power supply”**
via CAN bus or external supply **green**
- **Middle LED, “CAN bus”**
 - Connecting to the CAN bus flashing **blue**

- Connection to the CAN bus established **blue**
- No connection to the CAN bus **red**
- **Right LED, “Network”**
 - No network connection / no Internet connection or general connection problem **red**
 - No connection to HovalDesk and HovalConnect (there is an Internet connection in place, however) flashing **red**
 - No time synchronization / no connection to NTP, or no authentication for encrypted connection possible **Magenta (violet)**
 - HovalConnect is not authorized and no connection to HovalDesk **Yellow**
 - HovalConnect is not authorized and connection to HovalDesk **Alternating green/yellow (every 6 seconds)**
 - The only connection to HovalConnect (HovalConnect is authorized) **blue**
 - The only connection to HovalDesk **green**
 - Connection to HovalConnect and HovalDesk **Alternating blue/green (every 6 seconds)**
 - Data logging active on USB stick **flashing cyan**

Gateway module KNX connection procedure

1. Connect heat generator (Hoval CAN bus)
2. Establish KNX connection (see Fig. 01)
3. Establish network connection (230 V) (see Fig. 01)

There is a danger of electric shock.

The heat generator can only be de-energized by disconnecting it from the mains (fuse).

The gateway can be connected to the CAN bus at any point on the bus system.

In doing so, ensure that the CAN bus is correctly terminated.

1. Expose the basic or controller module in the heat generator, wall housing, or control panel. See also “Technical Information Installation Instructions” in the “Electrical Connection” chapter.
2. Connect the Hoval CAN bus to a basic or controller module (chapter 2.2, Fig. 01).
3. Route the cable according to the “Technical Information Installation Instructions” in the “Electrical Connection” chapter.

The CAN bus cable must have strain relief applied.

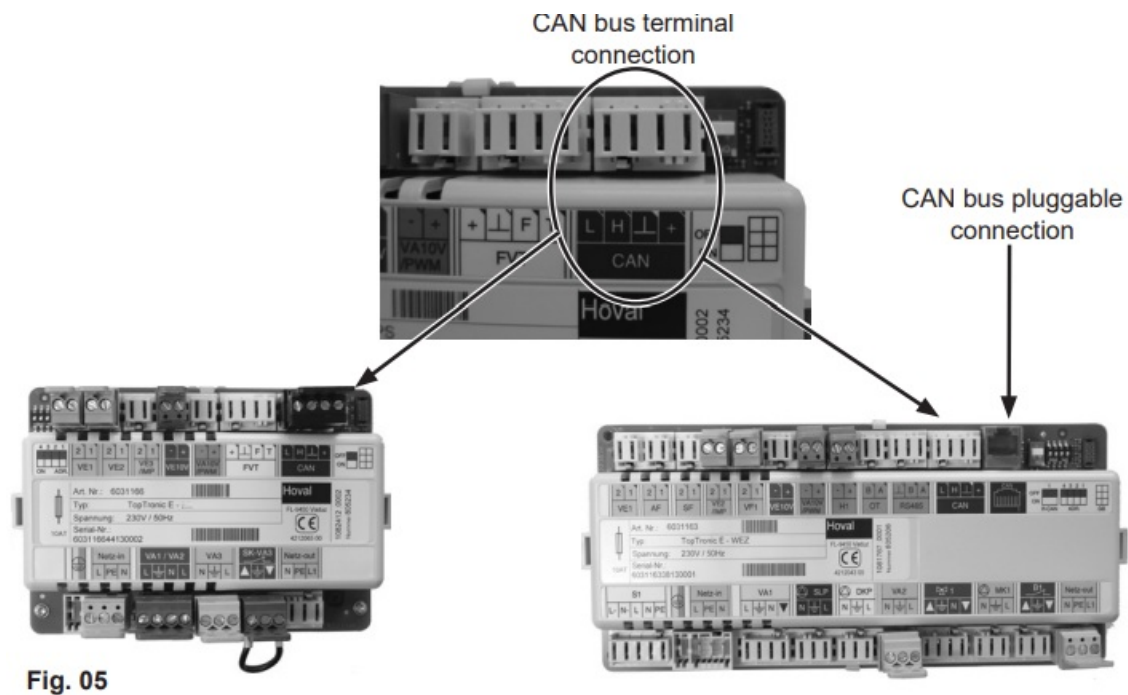


Fig. 05

Commissioning of the TopTronic® E gateway module KNX

TP..... Twisted Pair

ETS... Engineering tool software for setting the parameters by the KNX technician

1. Launch the TopTronic® E control module and select Main Menu > Service.

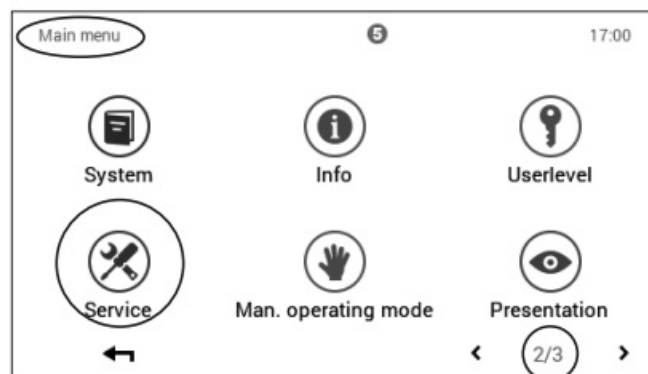


Fig. 06

Service > TTE-GW > KNX > Settings > All data points > KNX name

1. The standard name "TopTronic® E gateway module KNX"
2. This should not be changed, because the default value of the 2-TTE KNX TP module corresponds to this value.
3. By default, the 2-TTE KNX TP modules is directly connected to the gateway module KNX via a network cable.
In this case, the gateway module KNX must have a static IP assigned to it via the control module.
Service > TTE-GW > General > Gateway general > All data points > Internet access
4. Select network (= cable connection) and confirm with "OK".
5. > Network is set as standard
6. Set fixed IP address:
 - Set DHCP > No.
 - Open IP address, enter a valid IP address, and confirm with "OK".
 - Open the subnet mask, enter the valid subnet mask, and confirm with "OK".

- Open the default gateway, enter the valid IP address, and confirm with “OK”.
- Open and select Apply IP changes > Apply and confirm with “OK”.

An IP mask that is permitted in the subnet must be entered even if the system does not have a default gateway.

7. If the 2-TTE KNX TP module is connected to the gate-way module KNX via a network with Da HCP server, DHCP can be activated on the gateway module KNX.

Set Service > TTE-GW > General > Gateway general > All data points > Internet access DHCP > Yes

8. When the connection has been established, the gateway is restarted; the control module continues to op-erate. The KNX technician must contact the service technician for cthe correct parameter settings within the ETS.

The KNX technician must additionally be notified of the following settings:

- KNX name
- With a static set IP configuration:
 - IP address
 - IP subnet
 - IP gateway
- With activated DHCP:
 - DHCP active

9. The 2-TTE KNX TP module must be disconnected from the gateway module KNX (network).

The 2-TTE KNX TP module must be connected to the KNX ETS computer via Ethernet (KNX/IP BAOS socket).

10. Next, the 2-TTE KNX TP module must be parameterized and programmed using a KNX technician with the ETS software.

11. Following the programming procedure, the 2-TTE KNX TP module must be restarted (switch off the electrical power supply so the LEDs are no longer illuminated, then wait 10 seconds and switch back on).

12. The 2-TTE KNX TP module must be reconnected to the gateway module KNX via a network.

Data point list / ETS database

The following database and datapoint list apply to ETS 5 and higher:

The data point list can be downloaded from the following link: <https://www.hoval.com/medias/TTE-GW-KNX-datapoints-ext.xlsx>

The ETS database can be downloaded from the following link: <https://www.hoval.com/medias/TTE-GW-KNX-database-ext.zip>

The integration of a HomeVent® in a KNX sys-tem requires at least the ETS 5 with the corre-sponding database. If data points are written as percentages, values greater than 100 % are written as 0 on the KNX bus.

Settings in the ETS

- The ETS (management data) must be updated to the current status.
- A device name must be configured within the ETS. This must be given the same name on the gateway module KNX under Service > TTE-GW > KNX > Settings > Set-tings > KNX Name.
- The names are the same by default.
- In the settings of the IP configuration, it is possible to assign either DHCP (router assigns the address) or a manual IP address.
- The flags of the objects from 2-TTE KNX TP may have to be configured for the particular application in the ETS

(e.g.: KNX TP-display).

Communication settings:

1.1.1 TopTronic E GatewayModul KNX > Allgemein		
Allgemein	Gerätename (Datenpunkt KNX Name am GatewayModul KNX muss gleich sein)	TopTronic E GatewayModul KNX
IP-Konfiguration 1	IP-Konfiguration <input type="radio"/> DHCP <input checked="" type="radio"/> manuell	
IP-Konfiguration 2		
Datenpunkte 1 bis 10		

Fig. 07

1.1.1 TopTronic E GatewayModul KNX > IP-Konfiguration 1		
Allgemein	IP-Adresse	
IP-Konfiguration 1	Byte 1	192
IP-Konfiguration 2	Byte 2	168
Datenpunkte 1 bis 10	Byte 3	1
Datenpunkte 11 bis 20	Byte 4	80
Datenpunkte 21 bis 30	IP-Subnetz	
Datenpunkte 31 bis 40	Byte 1	255
Datenpunkte 41 bis 50	Byte 2	255
Datenpunkte 51 bis 60	Byte 3	255
Datenpunkte 61 bis 70	Byte 4	0
Datenpunkte 71 bis 80		

Fig. 08

1.1.1 TopTronic E GatewayModul KNX > IP-Konfiguration 2		
Allgemein	IP-Gateway	
IP-Konfiguration 1	Byte 1	192
IP-Konfiguration 2	Byte 2	168
Datenpunkte 1 bis 10	Byte 3	1
Datenpunkte 11 bis 20	Byte 4	254
Datenpunkte 21 bis 30		

Fig. 09

KNX data points:

Data points (modules) are deactivated by default.

1.1.1 TopTronic E GatewayModul KNX > Datenpunkte 1 bis 10		
Allgemein	Modul 1	Deaktiviert
IP-Konfiguration 1	Modul 2	Deaktiviert
IP-Konfiguration 2	Modul 3	Deaktiviert
Datenpunkte 1 bis 10	Modul 4	Deaktiviert
Datenpunkte 11 bis 20	Modul 5	Deaktiviert
Datenpunkte 21 bis 30	Modul 6	Deaktiviert
Datenpunkte 31 bis 40	Modul 7	Deaktiviert
Datenpunkte 41 bis 50	Modul 8	Deaktiviert
Datenpunkte 51 bis 60	Modul 9	Deaktiviert
Datenpunkte 61 bis 70	Modul 10	Deaktiviert
Datenpunkte 71 bis 80		

Fig. 10

A data point is selected by selecting a module. Then the bus address and the actual data points can be set in the parameters. The bus address of the modules is assigned during commissioning and can be read out using the control module in the Service screen.

Service
TTE-GW (1)

TTE-BM (1)
TTE-GW (1)

Allgemein (0)
IP-Einstellungen (1)
WLAN (2)
UMTS (3)

←
↑
↓

Fig. 11

1.1.1 TopTronic E GatewayModul KNX > Datenpunkte 1 bis 10

Allgemein	Modul 1	Regler 2-TopTronic E - FW
IP-Konfiguration 1	Busadresse	1
IP-Konfiguration 2	Datenpunkt	Allgemein - AF1 - Aussenfühler 1 - Status
Datenpunkte 1 bis 10	Modul 2	Regler 2-TopTronic E - FW
Datenpunkte 11 bis 20	Busadresse	1
Datenpunkte 21 bis 30	Datenpunkt	Allgemein - Betriebssekunden - Status
Datenpunkte 31 bis 40	Modul 3	Regler 2-TopTronic E - FW
Datenpunkte 41 bis 50	Busadresse	1
Datenpunkte 51 bis 60	Datenpunkt	Allgemein - Energie Station - Status
Datenpunkte 61 bis 70	Modul 4	Regler 2-TopTronic E - FW
Datenpunkte 71 bis 80	Busadresse	1
Datenpunkte 81 bis 90	Datenpunkt	Heizkreis 1 - Betriebswahl Heizung - Auslösen
Datenpunkte 91 bis 100	Betriebsmodus	Standby
Datenpunkte 101 bis 110	Modul 5	Regler 2-TopTronic E - FW
Datenpunkte 111 bis 120	Busadresse	1
Datenpunkte 121 bis 130	Datenpunkt	Heizkreis 1 - Betriebswahl Heizung - Auslösen
Datenpunkte 131 bis 140	Betriebsmodus	Woche 1
Datenpunkte 141 bis 150	Modul 6	Regler 2-TopTronic E - FW
Datenpunkte 151 bis 160	Busadresse	1
Datenpunkte 161 bis 170	Datenpunkt	Heizkreis 1 - Betriebswahl Heizung - Auslösen
Datenpunkte 171 bis 180	Betriebsmodus	Woche 2
Datenpunkte 181 bis 190		
Datenpunkte 191 bis 200		

Kommunikationsobjekte Parameter

Fig. 12

If required modules/data points have been set in the parameters, the application and/or the physical address can be programmed on the TopTronic® E KNX gateway in the usual way for ETS.

Topologie

Hinzufügen | Löschen | Download | Geräteinfo | Zurücksetzen | Entladen

Topologie

- Dynamische Ordner
- 1 Neuer Bereich
- 1.1 Neue Linie
- 1.1.1 TopTronic E Gateway
 - 1: Allgemein - AF1 - Ausenfühler 1 - Status
 - 2: Allgemein - Betriebssekunden - Status
 - 3: Allgemein - Energie Station - Status
 - 4: Heizung 1 - Betriebswahl Heizung - Auslösen
 - 5: Heizung 1 - Betriebswahl Heizung - Auslösen Standby
 - 6: Heizung 1 - Betriebswahl Heizung - Auslösen
 - 7: Heizung 1 - Betriebswahl Heizung - Auslösen
 - 8: Heizung 1 - Betriebswahl Heizung - Auslösen
 - 9: Heizung 1 - Betriebswahl Heizung - Auslösen
 - 10: Heizung 1 - Betriebswahl Heizung - Auslösen
 - 11: Heizung 1 - Betriebswahl Heizung - Auslösen
 - 12: Heizung 1 - Betriebswahl Heizung - Auslösen
 - 13: Heizung 1 - Betriebswahl Heizung - Auslösen
 - 14: Heizung 1 - Normal-Raumtemperatur - Status
 - 15: Heizung 1 - Normal-Raumtemperatur - Status

Nummer	Name	Objektfunktion	Beschreibung	Gruppenadresse	Länge	K	L	S	Ü	A	Daten
#2/1	Allgemein - AF1 - Ausenfühler 1 - Status			0/0/1	2 bytes	K	-	-	Ü	-	Temperatur
#2/2	Allgemein - Betriebssekunden - Status			0/0/2	4 bytes	K	-	-	Ü	-	Temperatur
#2/3	Allgemein - Energie Station - Status			0/0/3	4 bytes	K	-	-	Ü	-	Temperatur
#2/4	Heizung 1 - Betriebswahl Heizung - Auslösen Standby			0/0/4	1 bit	K	-	-	Ü	-	Temperatur

Programmiermenü

- Programmieren
- Entladen
- Info
- Gerät zurücksetzen
- Gerät vergleichen
- Etiketten drucken
- Parameter und Flags übernehmen
- Trennen
- Ermittelte Objektbeschreibung durch
- Löschen
- Ausschneiden
- Kopieren
- Einfügen
- Inhalte einfügen
- Erweitertes Einfügen
- Eigenschaften

Programmiermenü (Physische Adresse & Applikationsprogramm)

- Strg + Umschalttaste + L
- Strg + D
- Physische Adresse
- Strg + Umschalttaste + I
- Überschreibe physische Adresse
- Strg + Umschalttaste + Alt + I
- Applikationsprogramm
- Strg + Umschalttaste + Alt + D

Fig. 13

After the TopTronic® E KNX TP interface has been programmed using the ETS software, the device must be restarted (switch the electrical power supply on and off).

Extended settings

- If the IP configuration of the TopTronic® E KNX TP interface is valid, the device can be used as a programming interface for ETS, for example.
- The following settings are required for this:
- In the main view of the ETS 4, the “Settings” menu item must be selected with the “Communication” sub-item. All available connections are listed under “Found connections”. Once the required connection has been clicked, it can be selected using the corresponding button.
- The TopTronic® E KNX TP interface supports up to 5 connections at the same time. A separate physical address is used for each connection.
- The first additional physical address is allocated with the ETS. Clicking the “Settings” button for the selected connection displays the “Local settings” dialog box with a corresponding text box:



- The other additional addresses can be assigned directly on the device. To do this, press the teach-in button for at least one second during operation. After that, the teach-in LED flashes and the address is assigned as follows:
- Connection 2 is given the next higher address to connection 1, connection 3 the next higher address to connection 2, etc.

Example:

Device address 1.1.255 (device address in topology)

- Connection 1 1.1.250 (local settings)
- Connection 2 1.1.251 (activated by teach-in button)
- Connection 3 1.1.252 (activated by teach-in button)
- Connection 4 1.1.253 (activated by teach-in button)
- Connection 5 1.1.254 (activated by teach-in button)
- The additional physical addresses must be from the address range of the sub-line in which the TopTronic® E KNX TP interface is located. They are not allowed to be used by another device.
- In the delivery condition, only the additional physical address of the first connection is active. To use more connections at the same time, the addresses must be assigned as described above.
- The object server is inactive if the ETS bus monitor is used via a KNXnet/IP tunneling connection! This means accesses via the object server are not possible.
- This only concerns the ETS bus monitor mode. This restriction does not apply when the ETS group monitor is used.
- The teach-in button (3) must be pressed for programming the physical address.

Reset to factory settings

It is possible to reset the 2-TTE KNX TP module to its factory settings.

Reset to factory settings:

- Disconnect the electrical power supply from the 2- TTE KNX TP module
- Press and hold the teach-in button (3).
- Restore the electrical power supply to the 2-TTE KNX TP module.
- Press and hold the teach-in button (3) for another 6 seconds at least.
- All LEDs (4, 5, 6) flash briefly to indicate that the factory reset has been performed successfully

Technical data

• Electrical safety

- Protection class (according to EN 60529): IP 20
- Complies with EN 50491-3
- Safety extra-low voltage SELV 24 V DC

• EMC requirements

- Complies with EN 61000-6-2, EN 61000-6-3, EN 50491-5-1, EN 50491-5-2 and EN 50491-5-3
- According to EMC Directive (residential and functional building)

• Environmental conditions

- Ambient temp. during operation: 0 to +45 °C
- Storage temperature: -20 ... +60 °C
- Rel. humidity (not condense.): 20 % to 80 %

• Approval

KNX

• Mechanical data

- Housing: plastic
- Mounted on top-hat rails (approx. 160 cm × 110 cm)
- Weight: approx. 500 g

• Operating elements

Teach-in button for KNX

• Display elements

- Teach-in LED (red)
- LED indicator (green) for KNX
- LED indicator (green) for LAN

• KNX

Communication objects acc. to Hoval data point list

• Ethernet

- 10BaseT (10 Mbit/s)
- Supported Internet protocols ARP, ICMP, IGMP, UDP/

• IP, TCP/IP, DHCP and Auto IP

- Up to 5 connections possible at the same time using

• KNXnet/IP tunneling

- KNX BAOS binary protocol V2.0
- KNX BAOS web services (JSON)

- **Electrical power supply**

- External supply: 12 V DC
- Power consumption: < 800 mW

- **Connections**

- KNX connection terminal
- RJ45 LAN connector
- Screw terminals for supply voltage

Hoval quality.

You can count on us.

Hoval is one of the leading international companies for heating and indoor climate solutions. Drawing on more than 75 years of experience and benefiting from a close-knit team culture, the Hoval Group delivers exciting solutions and develops technically superior products. This leadership role requires a sense of responsibility for energy and the environment, which is expressed in an intelligent combination of different heating technologies and customized indoor climate solutions.

Hoval also provides personal consultations and comprehensive customer service. With around 2500 employees in 15 companies around the world, Hoval sees itself not as a conglomerate, but as a large family that thinks and acts globally.

Hoval heating and indoor climate solutions are currently exported to more than 50 countries.

Responsibility for energy and environment

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FAQ


Q: Can I install the product myself?

A: No, Hoval products must be installed and commissioned by specialists only to ensure proper functioning and safety.

Q: What is the purpose of the gateway module KNX?

A: The gateway module KNX acts as a bridge between the Hoval CAN bus and the KNX fieldbus, allowing users to control the heating system via KNX.

Documents / Resources

	<p>Hoval UltraGas 2 Hoval CAN Bus Interface [pdf] Installation Guide 125, 1550, UltraGas 2 Hoval CAN Bus Interface, UltraGas 2, Hoval CAN Bus Interface, CAN Bu s Interface</p>
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References

- [User Manual](#)

Manuals+. [Privacy Policy](#)

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