G4000 EnOcean KNX Gateway

Application

The G4000 is a bidirectional gateway between EnOcean and KNX ecosystems.
It allows additional configuration of sensors and actuators with the EnOcean/KNX database.
The G4000 gateway can connect up to 10 sensors and control up to 5 actuators.
The G4000 supports EEP2 .5 (EnOcean Equipment Profile).
The G4000 also has a selectable repeater function.

Total Interoperability

Any sensor or actuator, even bidirectional, from any manufacturer using the EnOcean standard can be connected to the gateway.
The function of the sensors or actuators is selected with the ETS software. Depending on the selected function, the EnOcean telegrams are associated with corresponding KNX communication objects.
Each sensor can be selected from the following list:

Toggle Switch	Control Panel	Meter
Switch - ON / OFF	Temperature sensor	Environmental Applications
Switch - Value	Temperature and humidity sensor	Presence sensor
Switch - Scenario	Temperature brightness and presence sensor	Digital input
Switch - Timer		Air Quality Sensor
Switch – Dimmer	Light, temperature and occupancy sensor	
Switch - Slats / Blinds		
Switch - Window handle	Light sensor	

Actuators that can be connected with EnOcean sensors or communication objects from KNX sensors are:

Lighting including automatic dimming; stair case, blind control and much more
Temperature (heating and cooling) with an unique auto adaptive fuzzy logic PID (12 separates PIDs)
Smart Slats/Blinds control
Ventilation based on multi criteria (CO2, VOC, Radon, particles maters, humidity)

Heating and cooling control by fuzzy logic self-adaptive PID

A conventional thermostatic radiator valve shut off the hot water flow when the temperature value is exceeded by the radiator, but the hot water contained in the radiator body continues to radiate, causing temperature variations of several degrees around the setpoint. The G4000 gateway has several control loops with fuzzy logic **PID** (Proportional, Integral, and Derivative) that avoid having to know the P, I and D coefficients. The installation is greatly simplified. The electronic valves or the air conditioning control allows PID temperature control with an accuracy of 0.1 ° C. If case of unoccupancy the heating and the cooling switch to ECO mode (T° setpoint reduced) and at night, the T° setpoint is further reduced. When opening the window, heating and air conditioning are switched off.

Efficient lighting Control

The lighting algorithm control is based on a return of overhead artificial lighting of 20% to the light sensor (natural light is diffused). Thus, regardless of natural light the control ensures a constant level of lux. The set value is stored and can be recalled by a short press. In case of unoccupancy, the lighting is automatically turned off (presence sensor).

Multicriteria ventilation Control

The ventilation control is usually based on CO_2 alone. The G4000 provides a CO_2, VOC, Humidity, Radon particles multi-sensor control. With the airtightness of low energy buildings VOC consideration becomes imperative. Ventilation is reduced in case of unoccupancy, shut down in case of window opening.

Pairing

The pairing between EnOcean device and KNX communication objects defined and configured into the KNX database is done through a graphical user interface (removable LCD screen tool) to display the EnOcean devices programmed by ETS.
The LCD shows the number and type of EnOcean device defined in ETS. Each device can then be paired with the gateway.
The LCD tool also allows updating the gateway firmware in case of future changes in EEP through a USB port and a PC. The update can be downloaded from the PC automatically with free management software.

Présence

Températures supplémentaires

Consigne Température

Interrupteurs

Volets roulants

Vannes Chauffage

KNX

- Mesures T° / CO2 / VOC / RH
- Fonctions de contrôle

Electrochrome / BSO

Registres VMC

Actionneur Dimming ou ON/Off

Ouvertures

Actionneur Continu ou ON/Off

VMC