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KNX bus

KNX
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Configuration
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CIAT

V3000 KNX system control

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Konnex
is now an
international standard:
ISO/IEC 14543-3

KNX has recently been approved as an international standard (ISO/IEC 14543-3) for home and building automation. Before that, it already met the requirements of two European standards: CENELEC EN 50090 and CEN EN 13321-1.

The KNX association is currently made up of over 100 members around the world.

It has signed agreements with over 21,000 installers and added some 70 technical universities to its scientific partnership programme.

INTRODUCTION

KNX was created through the merging of Batibus and EIB. The aim was to create a uniform standard that could be used for building automation systems around the world.

What was seen as a highly innovative idea at the time has since become a standard built on internationally-recognised standards.

The following figures testify to KNX's success:
- Over 110 renowned manufacturers
- Over 12,000 licences granted for KNX software
- Over 100,000 buildings equipped with KNX
- Over 10 million products installed.

CONFIGURATION MODES AND COMMUNICATION MEDIUM

The KNX standard allows each manufacturer to select the right configuration mode and communication medium need.

The KNX standard includes two different configuration modes:

▪ S-mode (System mode)

This configuration mode is designed for installers certified in installing sophisticated functions. In S-mode, all components connected to the network are supported by the ETS3 software tool for configuration. With the ETS tool, each component can be programmed precisely to the specific needs of each system.

▪ E-mode (Easy mode)

This configuration mode meets the requirements of installers who have the basic training needed to test and configure complete networks quickly. In E-mode, components are preprogrammed and loaded with a set of default parameters. Each component can be partially reconfigured with the help of a simple configuration device. The main purpose of this mode is to enable the adjustment of parameters and communication links.

- The V3000 controller supports both configuration modes.

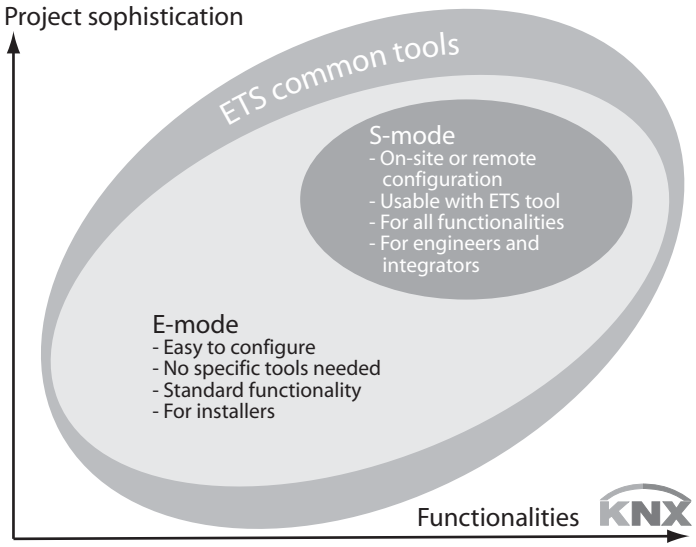
E-mode and S-mode components may be used together in a KNX network. The common primary ETS tool makes it possible to connect devices in a network and can even reconfigure settings.

▪ Communication medium:
The medium used for the KNX V3000 is a shielded twisted pair called TP1.

THE ETS TOOL

ETS3 is the name of the programming software for S-mode.

It also makes it possible to link "S-mode" and "E-mode" components together.



THE KONNEX ASSOCIATION

Based in Brussels, the Konnex association is an international organization dedicated to developing Konnex, the international standard for home and building automation.

▪ Konnex's aims

→ Organise the technical transition from Batibus to KNX.
→ Promote the use of KNX solutions.
→ Promote dialogue between the sectors of the building industry and its related professions in order to enhance and optimise building system solutions.
→ Adapt the standard to the cultural values and trade practices in France.
→ Set up a communication strategy and initiatives for the market.
→ Unite the main participants around a common technology.

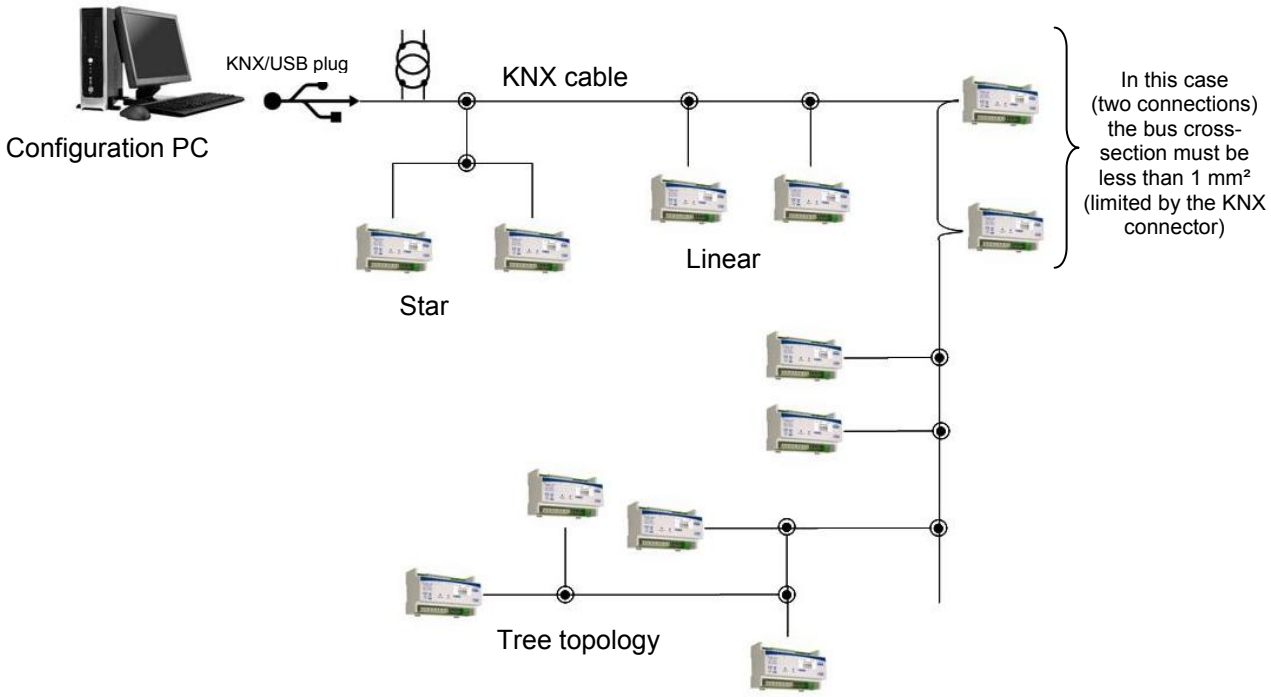
▪ Over 110 renowned manufacturers are affiliated with the Konnex association.

This document sets out the precautions to be taken when using KNX, particularly when selecting the cable and installing it in buildings.

Introduction

The KNX cable is a 29 VDC polarised two-wire electric cable. It connects all the system components together.
This cable is usually identified as KNX-TP1 in KNX systems.
The cable serves two purposes:
▪ It provides power to the components (from the central control system or an auxiliary power module)
▪ It carries messages to and from the KNX components

Using KNX

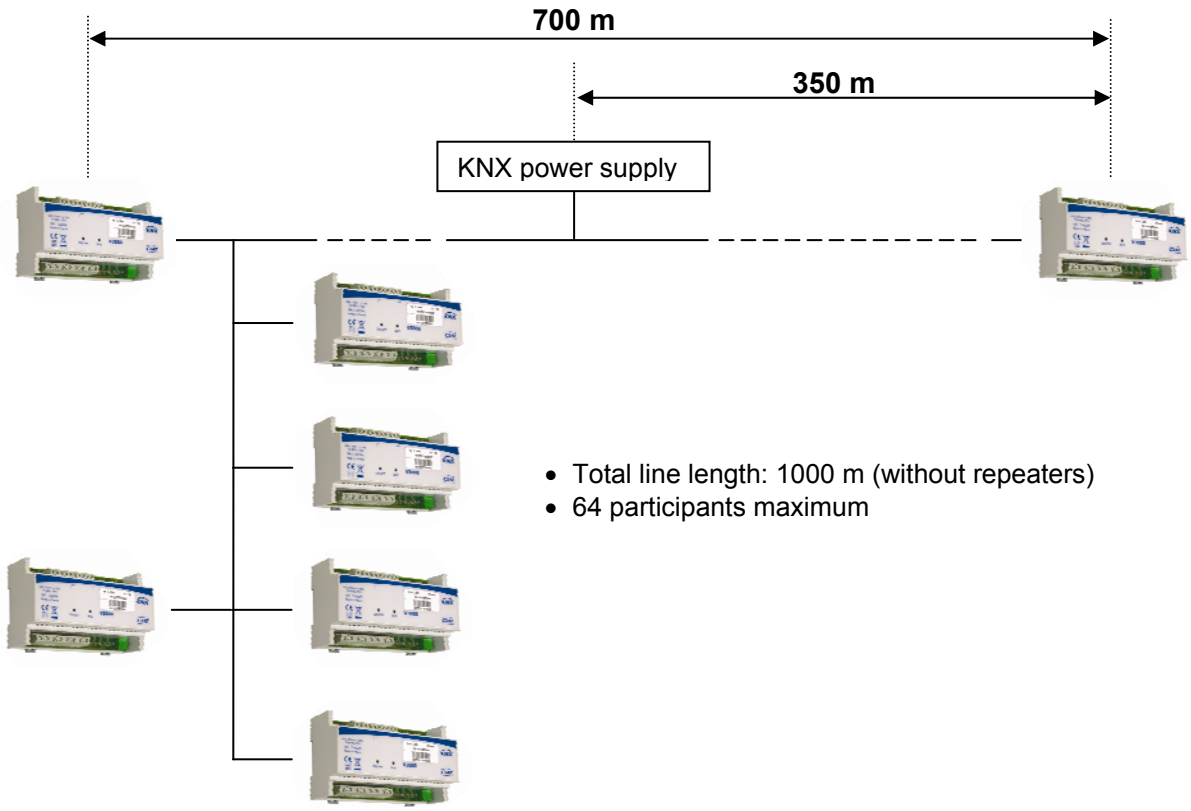


Any wiring topology may be used. As a general rule, the bus should be wired in the direction of the data flows and each module should be connected via junction boxes in a star network.
Note: ring topology is not allowed.

▪ Line characteristics:

→ No more than 64 controllers may be connected to a line.
→ Each line must have a standardised KNX power supply (29 VDC).

TP1 line length

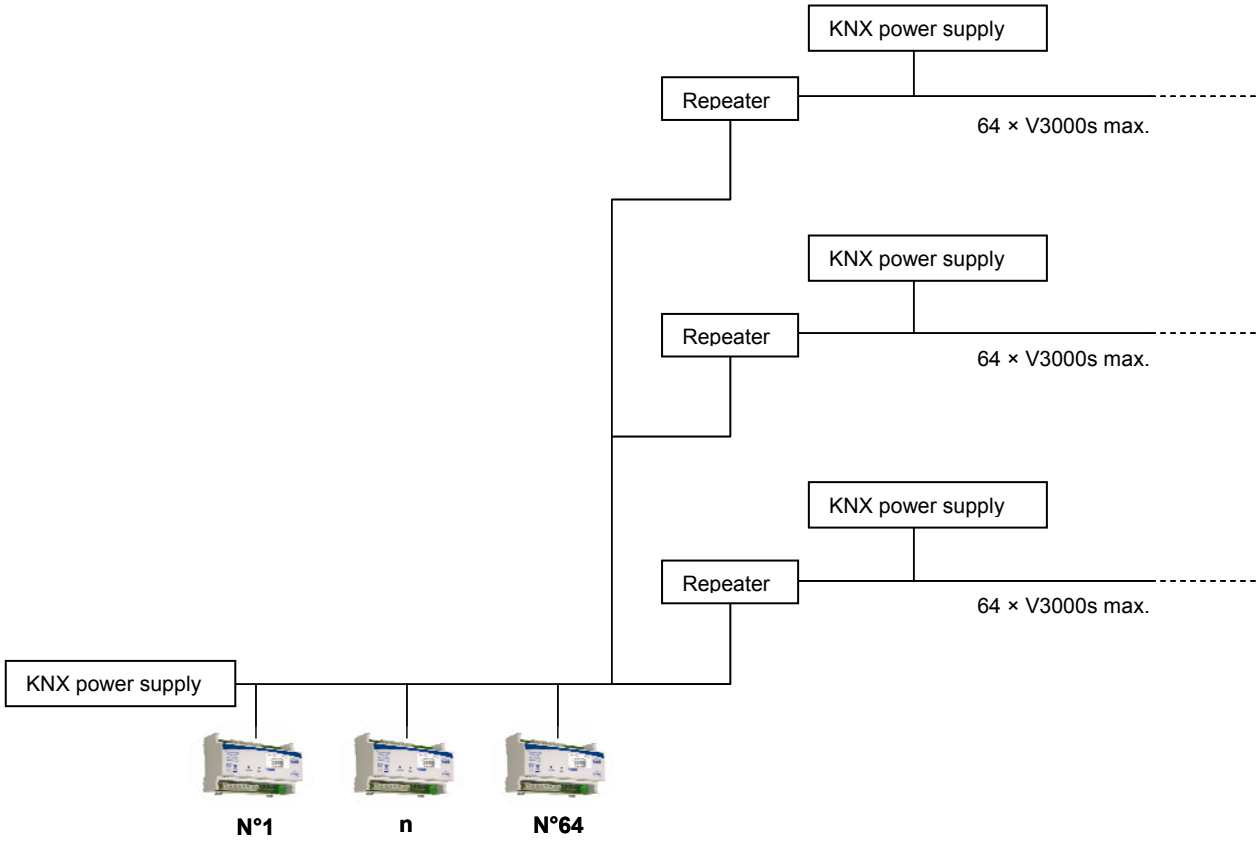


- Total line length: 1000 m (without repeaters)
- 64 participants maximum

- Maximum allowable lengths between:
  - ▪ Power supply/V3000: 350 m
  - ▪ Two V3000s: 700 m
- Total line length: 1000 m

▪ Line extensions:

→ When extending a line in order to add more V3000 controllers to it, a line repeater with a KNX power supply must be installed at the end of the line.
→ No more than three repeaters may be added to a line.

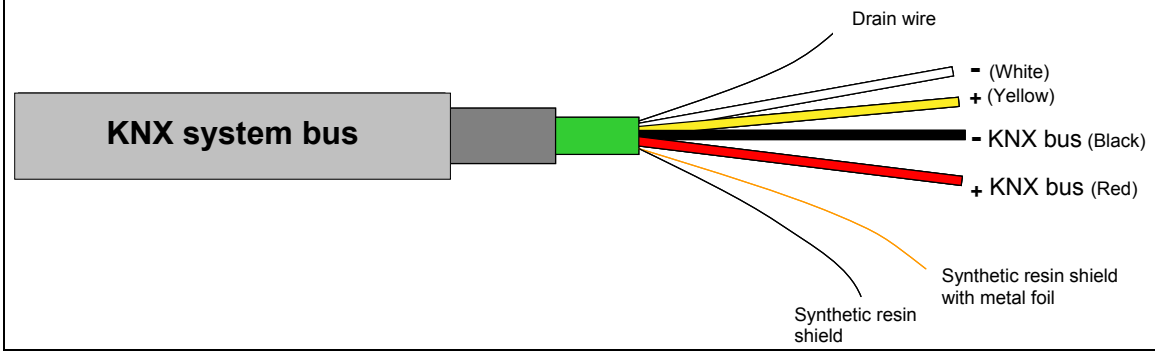


- Maximum allowable lengths between:
  - ▪ Power supply/V3000: 350 m
  - ▪ Two V3000s: 700 m
- Total line length: 1000 m

Note:
Line couplers and zone couplers may be added to create larger systems and therefore allow several lines to communicate with each other.
Consult us for further information.

KNX CABLE SELECTION

YCYM 2x2x0.8	JY(St) Y 2x2x0.8 VDE 0815
Permanent installation; Dry, damp or wet spaces; Outdoors (if shaded) Visible, recessed, in conduits; Test voltage: 4 kV in accordance with DIN VDE 0829	Permanent installation; Indoors only; Visible, in conduits;



TP1 cables that meet Konnex requirements (e.g. TP1 versions of YCYM 2x2x0.8 or J-Y (St) Y 2x2x0.8) may be either recognised by Konnex (no KNX logo) or approved by Konnex (with KNX logo)*. Only the standard green KNX TP1 cable guarantees:

- The maximum line length,
- The maximum difference between bus participants on a line,
- The maximum number of bus participants per line.

- This also relates to the loop resistance (72 Ω) and the loop capacity (0.12 µF for 1000 m).
- Important: the units will disconnect from the bus if the voltage is below 21 V.
- There is no need to use bus termination resistors (bus plugs).

All other cables must be limited to the maximum lengths specified in the corresponding data sheets.

The shield on the line types used does not usually need to be connected.

The following conditions apply to installing a standard cable with a test voltage of 4 kV:

→ Unused pair of conductors
- Red: positive
- Black: negative

* For the list of KNX approved/certified cables, please go to www.konnex.org.

→ Used pair of conductors: admissible applications
- Leave empty
- Use for other Safety extra-low voltage (SELV) networks

Test voltage in accordance with EN 50090: this test voltage must be applied between the connected conductors and with the shielded cable against the outer sheath.

Important:

Each installed bus line must be identified with its own identifier!

LOCATION CONSTRAINTS

4 kV outer insulation on the KNX cable makes it possible to route the cable near 230 V power cables and continue to meet SELV or PELV requirements within the meaning of the C15-100 standard.

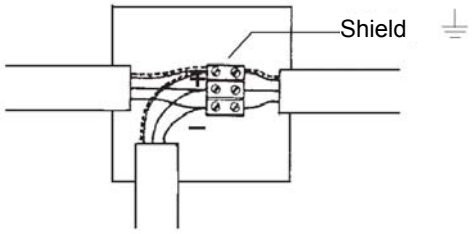
The resistance of the connection points must be less than 0.1 Ω. In general, the use of connecting blocks is sufficient.
The continuity of the shield must be maintained along the entire the bus line.

JUNCTION BOXES

If a KNX cable is connected to a junction box in which a 230 V cable is also connected, both cables must be separated by a high-current/low current divider plate.

Be sure to observe the polarity when connecting the KNX cable to the KNX connector of each module, otherwise a short-circuit will occur.

The end of the cable does not have to be connected to a module.

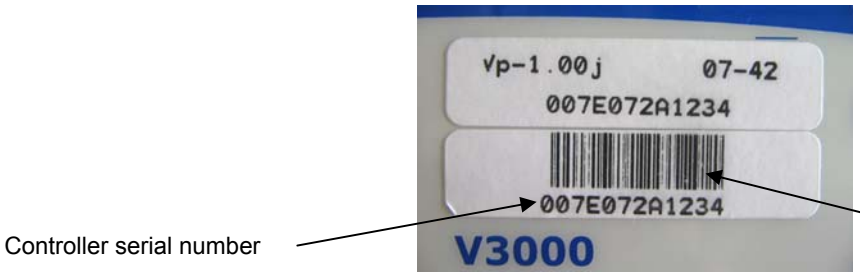


ASSIGNING FAN COIL UNIT ADDRESSES

Each fan coil unit is given an address so that the central control system can identify each one individually.

The installer must provide a map of the fan coil units to the supplier of the central control system so that it can draw up the addressing plan.
Each controller is assigned an address in accordance with the plan.
This procedure is performed by the installer or the BAS integrator.

- A barcode label is affixed to the front of the V3000 controller.
- Its purpose is to allow the BAS supplier or the integrator to physically locate the controllers on the blueprints of the building in which the V3000 is installed.
- This label consists of:



Each controller's serial number can therefore be read directly using a barcode reader (and if this type of reading is supported by the integration software).

Learning mode over the KNX bus:

▪ "Learning Mode" or "Programming mode" provides another way to identify the controllers on a bus. As the controllers do not have a Service Pin button, Learning Mode is turned on via a display terminal.

Procedure:

- Enter the CnF menu:  for 5 seconds
- Press the  key for five seconds. When "Lrn" appears, the ETS tool recognises the V3000 selected on the bus.

Note: the ETS tool can be used to locate a V3000 controller configured over the bus. When the V3000 is contacted by the ETS tool, the terminal display will automatically shift to "Lrn" when "On" is pressed (or the display will alternate between "Lrn" and normal display when "Flash" is pressed.

PARAMETERS TABLE

- The table below provides an overview of the parameters of the V3000 controller.
- This list makes up the controller's database.

The database is available in ".pr3" format. To obtain a copy, contact your CIAT sales office (see relevant section "V3000 database" on page 56).

Parameter	Name	Explanation	Adjustment range	Default value	ETS tab	Reserved for installer	Reserved for CIAT
P00	Master/Slave/Standalone	The controller must be told if it is the master, a slave, or a standalone unit. 0 = Individual 1 = Master 2 = Slave by enabling heating/cooling mode 3 = Slave by indoor temperatures 4 = Slave by positioning of actuators	0…4	0	General	X	X
P02	Heating comfort setpoint	Heating control setpoint during comfort mode	5…40 pas de 0,5	19.0	Setpoints	X	X
P03	Cooling comfort setpoint	Cooling control setpoint during comfort mode	5…40 pas de 0,5	26.0	Setpoints	X	X
P04	Standby heating setpoint	Heating control setpoint during standby mode	5…40 pas de 0,5	17.0	Setpoints	X	X
P05	Standby cooling setpoint	Cooling control setpoint during standby mode	5…40 pas de 0,5	28.0	Setpoints	X	X
P06	Economy heating setpoint	Heating control setpoint during economy mode	5…40 pas de 0,5	14.0	Setpoints	X	X
P07	Economy cooling setpoint	Cooling control setpoint during economy mode	5…40 pas de 0,5	32.0	Setpoints	X	X
P08	Frost protection setpoint	Control setpoint during frost protection mode	5…40 pas de 0,5	8.0	Setpoints		X
P09	Supply air low limit	Setpoint below which the supply air temperature is limited	5…35 résolution de 0,5	16.0	Setpoints	X	X
P10	Supply air high limit	Setpoint above which the supply air temperature is limited	20…70 résolution de 0,5	40.0	Setpoints	X	X
P11	Comfort setpoint adjustment range	Adjusts the maximum pos/neg shift of the setpoint for room units	0,0…9,5 résolution de 0,5	4.5	User terminal	X	X
P12	Air quality setpoint	If an air quality sensor is present on the Konnex bus, the air quality setpoint is expressed in ppm and the hysteresis is fixed at 200 ppm: 0 = Function off 0.1…5.0 = Setpoint in thousands of ppm	0…5,0 pas de 0,1	1.0	Setpoints	X	X
P13	Optional comfort mode operation	0 = Off 1 = Dehumidification (=cooling + fan output)	0:1:2:3	0	Special functions	X	X
P14	Dehumidification setpoint (if option = dehumidification)	If a humidity sensor is present on the Konnex bus, the dehumidification function remains on as long as the humidity value is greater than the setpoint: 0 = Off 1… 100 = Setpoint	0…100	0	Setpoints	X	X

Parameter	Name	Explanation	Adjustment range	Default value	ETS tab	Reserved for installer	Reserved for CIAT
P15	Time delay for operation option	This time delay is used to automatically turn off the optional function if the sensor is absent 0 = Off (manual off) 1…60 = Time delay in minutes	0…60	15	Special functions		X
P17	Use of condensation sensor S3	0 = Off 1 = On	0:1	0	Condensation-free air conditioning		X
P22	Minimum deadband (°C)	The deadband value prevents incorrect adjustments of the cooling or heating setpoints. The adjusted cooling setpoint cannot be less than the heating setpoint plus the deadband value.	0…10; resolution of 0.5	2	Special functions		X
P23	Minimum comfort deadband in the supply air control	This minimum deadband is used only to adjust the supply air low and high limits room/supply cascade control	0.0…40; resolution of 0.5	10	Special functions		X
P24	Temperature sensor selection (if air recirculated)	Control sensor selection 0 = Priority on return air sensor 1 = Priority on room sensor	0:1	1	Sensors	X	X
P25	S1 sensor calibration	Correction factor for the S1 sensor	-9.9…+9.9; resol. of 0.1	0	Sensors	X	X
P26	Room sensor calibration	Correction factor for the room sensor	-9.9…+9.9; resol. of 0.1	0	Sensors	X	X
P27	Changeover high threshold	Two-pipe changeover high threshold for detection of hot water compared to ambient temperature	0/20	+7	Sensors	X	X
P28	Changeover low threshold	Two-pipe changeover low threshold for detection of cold water compared to ambient temperature	0/-20	-4	Sensors	X	X
P30	Auxiliary electric heater authorisation threshold	Hot water temperature beyond which the electric heater cannot be used as an auxiliary	20…70	50	Sensors		X
P31	Changeover	1 = local C/O (sensor on piping) 2 = central C/O (BMS)	1:2	1	Sensors		X
P32	Heating P band	Proportional band (in °C) for heating	1…15	4	PID		X
P33	Heating I time	Integral time (in minutes) for heating 0 = Integral function off	0…40	5	PID		X
P34	Heating D time	Derivative time (in minutes) for heating 0 = Derivative function off	0…40	0	PID		X
P35	Cooling P band	Proportional band (in °C) for cooling	1…15	2	PID		X
P36	Cooling I time	Integral time (in minutes) for cooling 0 = Integral function off	0…40	10	PID		X
P37	Cooling D time	Derivative time (in minutes) for cooling 0 = Derivative function off	0…40	0	PID		X
P38	Heating supply air control P band	Proportional band (in °C) for supply air control	1…20	10	PID		X
P39	Cooling supply air control P band	Proportional band (in °C) for supply air control	1…20	10	PID		X

Parameter	Name	Explanation	Adjustment range	Default value	ETS tab	Reserved for installer	Reserved for CIAT
P40	Ventilation in comfort mode deadband	In the comfort mode deadband, the fan may be on continuously, be off, or turn on periodically for a set number of seconds: 0 = ventilation off 1 = continuous ventilation in all seasons 2 = continuous ventilation in summer 3 = periodic ventilation restart	0:1:2:3	0	Ventilation	X	X
P41	Ventilation in standby mode deadband	In the standby mode deadband, the fan may be on continuously, be off, or turn on periodically for a set number of seconds: 0 = ventilation off 1 = continuous ventilation in all seasons 2 = continuous ventilation in summer 3 = periodic ventilation restart	0:1:2:3	0	Ventilation	X	X
P42	Ventilation in economy mode deadband	In the economy mode deadband, the fan may be on continuously, be off, or turn on periodically for a set number of seconds: 0 = ventilation off 1 = continuous ventilation in all seasons 2 = continuous ventilation in summer 3 = periodic ventilation restart	0:1:2:3	0	Ventilation		
P43	Ventilation in frost protection mode deadband	In the frost protection mode deadband, the fan may be on continuously, be off, or turn on periodically for a set number of seconds: 0 = ventilation off 1 = continuous ventilation in all seasons 2 = continuous ventilation in summer 3 = periodic ventilation restart	0:1:2:3	0	Ventilation		X
P44	Time between two periodic restarts	The time set in this parameter is that during which the fan is off if it must run periodically in the deadband zone.	10…120 (resolution of 10)	30	Ventilation		X
P45	Restart time	Restart time if the periodic restart function is enabled on the above parameters.	30…180 (resolution of 30 s)	30	Ventilation		X
P46	Time delay between fan speeds (in Auto mode)	The fan does not shift directly to speed 3 without first remaining at speed 1 or 2 for a minimum period (in minutes). This also prevents oscillation of the fan speed during hysteresis.	0…10	1	Ventilation		X
P47	Operating mode turned on by the sleep button on the user terminal	1 = Comfort --> Frost protection 2 = Comfort --> Economy 3 = Comfort --> Standby	1:2:3	1	User terminal	X	X
P48	Comfort override time delay	Override for remaining in comfort mode after comfort mode is turned on via the user terminal. May be set to remain on at all times, to turn on for a specific period, or be disabled. 0 = Override impossible 0.5...24 = Override time in hours 24.5 = Continuous override	0.0…24.5 (resolution of 0.5 h)	4.0	User terminal	X	X

Parameter	Name	Explanation	Adjustment range	Default value	ETS tab	Reserved for installer	Reserved for CIAT
P49	Direction of action of auxiliary contact on input D1	The auxiliary contact on input D1 may be normally closed or normally open: 0 = Normally open 1 = Normally closed	0:1	1	Inputs/Outputs	X	X
P50	Direction of action of auxiliary contact on input D2	The auxiliary contact on input D2 may be normally closed or normally open: 0 = Normally open 1 = Normally closed	0:1	1	Inputs/Outputs	X	X
P51	Function of input D1	This parameter allows the input to have several functions: 0 = Off 1 = Window switch (= Frost protection) 2 = Presence contact (Max. eco) 3 = Occupancy contact (Max. standby) 4 = Condensate pump 5 = FMA motor alarm 6 = General alarm 7 = Air quality sensor 8 = Comfort clock → Eco 9 = Comfort clock → Standby	0…9	1	Inputs/Outputs	X	X
P52	Function of input D2	This parameter allows the input to have several functions: 0 = Off 1 = Window switch (= Frost protection) 2 = Presence contact (Max. eco) 3 = Occupancy contact (Max. standby) 4 = Condensate pump 5 = FMA motor alarm 6 = General alarm 7 = Air quality sensor 8 = Comfort clock → Eco 9 = Comfort clock→ Standby 10 = Frost protection for "Fresh air" 11 = Condensation-free AC function	0…11	4 (or 10)	Inputs/Outputs	X Setting limited to 0...9 Read-only if 10:11	X
P53	Function of the free output	0 = Off 1 = Synchronisation with input D1 2 = Synchronisation with input D2 3 = Synchronisation with comfort mode 4 = Synchronisation with input D1 and comfort 5 = Synchronisation with input D2 and comfort 6 = Synchronisation with KNX OnOff signal 7 = Synchronisation with KNX OnOff signal and comfort 8 = UV filter 9= Fresh air damper	0:1:2:3:4:5:6:7:8:9	0	Inputs Outputs		X
P54	Free output	1 = 24 V valve output 2 = 230 V elec output	1:2	2	Inputs Outputs		X
P55	Electric power of heating (basis: 230 V)	If an electric heater is used, the power (in kW) must be indicated, rounded up to the nearest 100 W, in this parameter. Used for certain energy demand applications.	0…20.0; resolution of 0.1	2.0	Power	X	X
P56	LS power	The power must be indicated, rounded to the nearest 5 or 10 kW, in this parameter. Used for certain energy demand applications.	5…990 resolution of 5	50	Power	X	X

Parameter	Name	Explanation	Adjustment range	Default value	ETS tab	Reserved for installer	Reserved for CIAT
P57	MS power	The power must be indicated, rounded to the nearest 5 or 10 kW, in this parameter. Used for certain energy demand applications.	5…990 resolution of 5	75	Power	X	X
P58	HS power	The power must be indicated, rounded to the nearest 5 or 10 kW, in this parameter. Used for certain energy demand applications.	5…990 resolution of 5	100	Power	X	X
P59	Nominal capacity of hot water coil	Nominal capacity (in kW) of the hot water coil, rounded up to the nearest 100 W. Used for certain energy demand applications.	0…99.0; resolution of 0.1	3.0	Power	X	X
P60	Nominal capacity of cold water coil	Nominal capacity (in kW) of the cold water coil, rounded up to the nearest 100 W. Used for certain energy demand applications.	0…99.0; resolution of 0.1	2.0	Power	X	X
P62	Outdoor design temperature	The lowest outdoor temperature for limiting the electric heater power	-35…+5	-10	Outdoor temperature		X
P63	Excess capacity difference	Temperature difference (°C) between the real energy limitation curve and the theoretical energy limitation curve	0…5 resolution of 0.5	1.0	Outdoor temperature		X
P64	Setpoint drift as a function of the outdoor temperature Control slope	Maximum difference between the cooling setpoint and the outdoor temperature 0 = Off	0…20	6	Outdoor temperature	X	X
P65	Setpoint drift as a function of the outdoor temperature Max. setpoint	There is no longer any setpoint drift beyond a certain outdoor temperature.	25…40	30	Outdoor temperature		X
P66	Free cooling	For the fresh air function: minimum difference (°C) between the indoor and outdoor temperatures in order to automatically shift to free cooling mode.	0…10	1	Outdoor temperature		X
P67	Authorisation to use coils	1 = hydraulic + electric 2 = hydraulic only 3 = electric only	1:2:3	2	Special function	X	X
P68	Actuator of valve on fan coil unit	1 = 3 position 2 = On/Off 3 = Thermo 4 = 0/10 V	1:2:3	1	Valves		X
P76	Scanning period for KNX objects sent cyclically.	Frequency at which the controller sends objects that must be sent in cycles over Konnex (temperatures, positions of outputs, etc.): 0 = No transmission 1…30 = period of time (minutes) between two transmissions	0…30	15	Special functions		X
P77	Application type	1 = Recirculated air sequence 2 = Fresh air sequence	1:2	1	General		X
P78	Supply air temperature limitation function	1 = Ambient temperature check without supply air limitation 2 = Ambient temperature check with supply air limitation 3 = Constant supply air temperature control	1:2:3	1	General		X
P79	Number of fan speeds	1 = 1 auto and manual speed 2 = 2 auto and manual speeds 3 = 3 auto and manual speeds 4 = 1 manual speed only 5 = 2 manual speeds only 6 = 3 manual speeds only	1…6	3	Ventilation		X

Parameter	Name	Explanation	Adjustment range	Default value	ETS tab	Reserved for installer	Reserved for CIAT
P92	Use of 0/10 V output	Not used or 0/10 V valve 1 = Ventilation 2 = Current PID value	0…2	0	Ventilation		X
P93	Filter maintenance period	The maintenance pictogram appears onscreen at the end of this ventilation period to indicate that the filter needs to be changed. This pictogram does not turn off the control: 0 = Off 1…200 = duration in days (equivalent to HS)	0…200	30	Special functions	X	X
P94	Temperature displayed in °C or °F	1 = Temperature displayed in °C 2 = Temperature displayed in °F	1:2	1	User terminal	X	X
P95	Temperature displayed on terminal	Display of actual temperature on LCD of room unit: 1 = Setpoint 2 = Measurement	1:2	2	User terminal	X	X
P96	Display of setpoint shift value	Display of actual temperature shift value: 1 = Not displayed (bar chart) 2 = Display shift + bar chart 3 = Display setpoint + bar chart	1:2:3	1	User terminal	X	X
P97	Application code	1 = 2 Wires 2 = 2 pipes 21 = 2 Pipes/2 Wires 22 = 2 Pipes Cooling + radiator 23 = 2 Pipes + elec. convector 4 = 4 pipes 41 = 4 Pipes/2 Wires	1:2:21:22:23:4:41	2	General		X

DIAGNOSTIC

Note: A terminal with display is required in order to perform a diagnostic.

To enter diagnostic mode, press the fan button and simultaneously for 5 seconds.

Use the and buttons to select a parameter. To read a parameter's value, press the sleep button. To exit a diagnostic parameter, press. To exit diagnostic mode, press the fan button.

Diagnostic	Name	Explanation
d01	Individual address	
d02	Master device address	**Applies only to configurations in PB mode**
d03	Zone number	**Applies only to configurations in PB mode**
d04	Application type	1 = 2 Wires 2 = 2 pipes 21 = 2 Pipes/2 Wires 22 = 2 Pipes Cooling + radiator 23 = 2 Pipes + elec. convector 4 = 4 pipes 41 = 4 Pipes/2 Wires
d05	Application type	1 = Recirculated air sequence 2 = Fresh air sequence
d06	Supply air temperature limitation function	1 = Ambient temperature check without supply air limitation 2 = Ambient temperature check with supply air limitation 3 = Constant supply air temperature control

d07	Actuator of valve on fan coil unit	1 = 3 position 2 = On/Off 3 = Thermo 4 = 0/10 V	
d08	Ambient temperature	Display of ambient temperature	
d09	Return air or supply air temperature	Display of return air or supply air temperature	
d10	Current setpoint	Actual setpoint taken into account when diagnostic consulted	
d11	C/O	Temperature if local C/O or central C/O state	
d12	Heating/cooling authorisation	CO = Cooling HE = Heating 0 = None AU = Auto	
d13	Electric/hydraulic authorisation	1 = hydraulic + electric 2 = hydraulic only 3 = electric only	
d14	Communication mode	InI = Initialisation BUS = Bus energised, no central control system BMS = Communication with central control system --- = Bus de-energised	
d15	Fan electricity consumption	Calculated fan power consumption (unit displayed = kWh)	
d16	Electric heater power consumption	Calculated electric heater power consumption (unit displayed = kWh)	
d17	Heating heat energy consumption	Calculated heat energy consumption of heater (unit displayed = hundreds of kWh)	
d18	AC heat energy consumption	Calculated heat energy consumption of air conditioning coil (unit displayed = hundreds of kWh)	
d19	Filter maintenance time counter	Number of hours of ventilation (equivalent to high speed) since the last time the filter was changed	
d20	Controller software version	100 (example)	
d21	Terminal software version	100 (example)	
d22		Alarm code	Alarm description
		E07	Filter to be replaced
		E08	Supply air sensor fault
		E09	Return air sensor fault
		E10	Room sensor fault
		E11	Central changeover not received
		E12	Fresh air frost protection alarm (supply air protection)
		E13	Fresh air frost protection alarm (safety thermostat)
		E14	Condensation alarm
		E15	Slave cut off from master
		E16	Condensate pump alarm
		E17	General alarm
		E18	FMA alarm
		E19	Fault on active temperature sensor
		E20	Condensation sensor S3 fault
		E21	Master or Slave not configured
		E22	No other push button product selected over the bus
		E23	Cannot link with push button product selected
d23	Last error message	Same as for d22	
d24	Outdoor temperature	Display of outdoor temperature	

Where:
E00: non-critical alarm; unit remains on; steady spanner icon (E07 to E15)
E00: critical alarm; forces unit off; flashing spanner icon (E16 to E23)

No.	Name	Object function	DPT	Values	length	Inputs	Outputs
0	HVACModeEff	Mode (comfort, standby, economy, frost protection) provided by master device	20.102	1=Comfort/2=Stdby/3=Eco/4=Frost prot.	1 Byte	E	-
1	HVACModeOptim	Override mode (comfort, standby, economy, frost protection) provided by supervisor	20.102	0=Auto/1=Comfort/2=Stdby/3=Eco/4=Frost prot.	1 Byte	E	-
2	ContrMode	Special functions (provided by supervisor)	20.105	0=Auto/1=Heating/3=Cooling/9=Ventilation/10=Free cooling	1 Byte	E	-
3	EnableHeat	Heating authorisation	1.003	0=Disabled/1=Enabled	1 bit	E	-
4	EnableCool	Air conditioning authorisation	1.003	0=Disabled/1=Enabled	1 bit	E	-
5	ChangeOverStatusWater	Central changeover	1.100	0=Cooling/1=Heating	1 bit	E	-
6	TempOutside	Outdoor temperature	9.001	Temp. value in °C	2 Byte	E	-
7	TempRoomSetpSetHeatEff	Heating setpoints provided by master device (comfort, standby, economy)	222.100	Three temp. values in °C	6 Byte	E	-
8	TempRoomSetpSetCoolEff	Air conditioning setpoints provided by master device (comfort, standby, economy)	222.100	Three temp. values in °C	6 Byte	E	-
9	FanSpeedUser	Manual speed set via the user terminal (CIAT or KNX)	5.001	Values of 0 to 100% LS 33% MS 66% GS 100%	1 Byte	E	-
10	FanManual	Auto/Man. speed selection via user terminal (CIAT or KNX)	1.003	0=Auto/1=Man.	1 bit	E	-
11	AQSetpEff	Air quality setpoint provided by master device	9.008	CO_2 value in ppm	2 Byte	E	-
12	HumRelSetpDehumEff	Dehumidification setpoint provided by master device	9.007	Relative humidity value in %	2 Byte	E	-
13	TempRoom	Ambient temperature provided by user terminal (CIAT or KNX)	9.001	Temp. value in °C	2 Byte	E	-
14	TempReturnAir	Return air temperature provided by master controller	9.001	Temp. value in °C	2 Byte	E	-
15	TempFlowWater	Water temperature (local changeover) provided by master device	9.001	Temp. value in °C	2 Byte	E	-
16	AQRoom	Air quality in ppm	9.008	CO_2 value in ppm	2 Byte	E	-
17	HumRelRoom	Relative humidity level in %	9.007	Relative humidity value in %	2 Byte	E	-
18	OnOff	On/Off control for synchronised output	1.001	0=OFF/1=ON	1 bit	E	-
19	EnableAlarmInfo	Enable sending of AlarmInfo	1.003	0=Disabled/1=Enabled	1 bit	E	-
20	EnableAlarmText	Enable sending of AlarmText	1.003	0=Disabled/1=Enabled	1 bit	E	-
21	Filtre counter reset	Alarm acknowledgment (dirty filter)	1.016	0=No action/1=Acknowledge	1 bit	E	-
22	ElectricalpowerLimitation	Electric heater power limitation in %	5.001	Values of 0 to 100%	1 Byte	E	-
23	PRelChiller	Relative power supplied by the production of cold water in %	5.004	Values of 0 to 255%	1 Byte	E	-
24	PRelBurner	Relative power supplied by the production of hot water in %	5.004	Values of 0 to 255%	1 Byte	E	-
25	InfoEnergyDemandAC	Cold water demand from master to slave by positioning of actuators	5.004	Values of 0 to 255%	1 Byte	E	-
26	InfoEnergyDemandAH	Hot water demand from master to slave by positioning of actuators	5.004	Values of 0 to 255%	1 Byte	E	-
27	InfoEnergyDemandAir	Fresh air demand from master to slave by positioning of actuators	5.004	0 or 100%	1 Byte	E	-
28	ActPosSetpHeatStageA	Heating valve control from master to slave by positioning of actuators	5.001	Values of 0 to 100%	1 Byte	E	-
29	ActPosSetpHeatStageB	Electric heater control from master to slave by positioning of actuators	5.001	Values of 0 to 100%	1 Byte	E	-
30	ActPosSetpCoolStageA	Air conditioning valve control from master to slave by positioning of actuators	5.001	Values of 0 to 100%	1 Byte	E	-
31	FanSpeedSetp	Ventilation control from master to slave by positioning of actuators	5.001	Values of 0 to 100%	1 Byte	E	-
32	ActPosSetpFreshAir	Fresh air control from master to slave by positioning of actuators	5.001	0 or 100%	1 Byte	E	-
33	InfoEnableHeat	Enable heating from master to slave by enabling heating/cooling mode	1.003	0=Disabled/1=Enabled	1 bit	E	-
34	InfoEnableCool	Enable air conditioning from master to slave by enabling heating/cooling mode	1.003	0=Disabled/1=Enabled	1 bit	E	-
35	WindowSwitch	Synchronisation input for master/slave window switches	1.019	0=Closed/1=Open	1 bit	E	-
36	EnergyDemandAC ou DemAC	Cold water demand expressed in %	5.004	Values of 0 to 255%	1 Byte	-	S
37	EnergyDemandAH ou DemAH	Hot water demand expressed in %	5.004	Values of 0 to 255%	1 Byte	-	S
38	EnergyDemandeAir ou DemAir	Fresh air demand expressed in %	5.004	0 or 100%	1 Byte	-	S
39	ActPosHeatStageA	Information on state of heating valve position in %	5.001	Values of 0 to 100%	1 Byte	-	S
40	ActPosHeatStageB	Information on state of electric heater position in %	5.001	Values of 0 to 100%	1 Byte	-	S
41	ActPosCoolStageA	Information on state of air conditioning valve position in %	5.001	Values of 0 to 100%	1 Byte	-	S
42	FanSpeed	Information on state of fan speed in %	5.001	Values of 0 to 100%	1 Byte	-	S
43	ActPosFreshAir	Information on state of fresh air damper position in %	5.001	0 or 100%	1 Byte	-	S
44	CoilConsumptionAC	Cold water coil consumption in kWh	13013	Cold water coil consumption in kWh	4 Byte	-	S
45	CoilConsumptionAH	Hot water coil consumption in kWh	13013	Hot water coil consumption in kWh	4 Byte	-	S
46	ElectricConsumption	Electric heater consumption in kWh	13013	Electric heater consumption in kWh	4 Byte	-	S
47	FanConsumption	Fan motor consumption in kWh	13013	Ventilation consumption in kWh	4 Byte	-	S
48	TempReturnAir	Return air temperature	9.001	Temp. value in °C	2 Byte	-	S
49	TempDischargeAir	Supply air temperature	9.001	Temp. value in °C	2 Byte	-	S
50	TempFlowWater	Water temperature (local changeover)	9.001	Temp. value in °C	2 Byte	-	S
51	InfoOnOff	Information on state of synchronised output	1.001	0=OFF/1=ON	1 bit	-	S
52	OnOff	On/Off control of switch wired to controller	1.001	0=OFF/1=ON	1 bit	-	S
53	InAlarm	Controller alarm	1.005	0=No Alarm/1=Alarm	1 bit	-	S
54	AlarmInfo	Error code of current alarm	219.001	Error code	6 Byte	-	S
55	AlarmText	Text description of current alarm	16.001	Text description of alarm	14 Byte	-	S
56	WindowSwitch	Synchronisation output for master/slave window switches	1.019	0=Closed/1=Open	1 bit	-	S

]

No.	Name	Object function	DPT	Values	length	Inputs	Outputs
Master							
57	BuildingMode	Building occupancy (provided by supervisor)	20.002	0=Bldg occupied/1=Bldg unoccupied/2=Bldg frost prot.	1 Byte	E	-
58	OccMode	Space occupancy (provided by supervisor)	20.003	0=Occupied/1=Standby/2=Unoccupied	1 Byte	E	-
59	HVACMode	Mode (comfort, standby, economy, frost protection) provided by a clock	20.102	1=Comfort/2=Stdby/3=Eco/4=Frost prot.	1 Byte	E	-
60	HVACModeOptim	Override mode (comfort, standby, economy, frost protection) provided by supervisor	20.102	0=Auto/1=Comfort/2=Stdby/3=Eco/4=Frost prot.	1 Byte	E	-
61	ContrMode	Special functions (provided by supervisor)	20.105	0=Auto/1=Heating/3=Cooling/9=Ventilation/10=Free cooling	1 Byte	E	-
62	EnableHeat	Heating authorisation	1.003	0=Disabled/1=Enabled	1 bit	E	-
63	EnableCool	Air conditioning authorisation	1.003	0=Disabled/1=Enabled	1 bit	E	-
64	ChangeOverStatusWater	Central changeover	1.100	0=Cooling/1=Heating	1 bit	E	-
65	TempOutside	Outdoor temperature	9.001	Temp. value in °C	2 Byte	E	-
66	TempRoomSetpSetHeat	Base heating setpoints (comfort, standby, economy)	222.100	Three temp. values in °C	6 Byte	E	-
67	TempRoomSetpSetCool	Base air conditioning setpoints (comfort, standby, economy)	222.100	Three temp. values in °C	6 Byte	E	-
68	TempRoomSetpSetHeatShift	Drift of base heating setpoints (comfort, standby, economy)	222.101	Three temp. values in K	6 Byte	E	-
69	TempRoomSetpSetCoolShift	Drift of base air conditioning setpoints (comfort, standby, economy)	222.101	Three temp. values in K	6 Byte	E	-
70	TempRoomSetpUserAbs	User comfort setpoint, set via a KNX terminal	9.001	Temp. value in °C	2 Byte	E	-
71	TempRoomSetpUserOffset	User comfort setpoint override set via a KNX terminal	9.002	Temperature shift value in K	2 Byte	E	-
72	ComfortPushButton	On/Off control via a KNX user terminal	1.017	0=Reduced (Stdby/Eco/Frost protection)/1=Comfort	1 bit	E	-
73	HVACModeUser	User mode (comfort, standby, economy, frost protection) set via a KNX terminal	20.102	0=Auto/1=Comfort/2=Stdby/3=Eco/4=Frost prot.	1 Byte	E	-
74	FanSpeedUser	Manual speed set via a KNX terminal	5.001	Values of 0 to 100% LS 33% MS 66% GS 100%	1 Byte	E	-
75	FanManual	Auto/Man. speed selection via a KNX terminal	1.003	0=Auto/1=Man.	1 bit	E	-
76	AQSetpUser	Air quality setpoint	9.008	CO_2 value in ppm	2 Byte	E	-
77	HumRelSetpUser	Dehumidification setpoint	9.007	Relative humidity value in %	2 Byte	E	-
78	TempRoom	Ambient temperature provided by a terminal or KNX sensor	9.001	Temp. value in °C	2 Byte	E	-
79	AQRoom	Air quality in ppm	9.008	CO_2 value in ppm	2 Byte	E	-
80	HumRelRoom	Relative humidity level in %	9.007	Relative humidity value in %	2 Byte	E	-
81	PresenceStatus	KNX presence detector	1.018	0=Unoccupied/1=Occupied	1 bit	E	-
82	WindowSwitch	Synchronisation input for master/slave window switches	1.019	0=Closed/1=Open	1 bit	E	-
83	WindowStatus	State of KNX window switch	1.019	0=Closed/1=Open	1 bit	E	-
84	OnOff	On/Off control for synchronised output	1.001	0=OFF/1=ON	1 bit	E	-
85	EnableAlarmInfo	Enable sending of AlarmInfo	1.003	0=Disabled/1=Enabled	1 bit	E	-
86	EnableAlarmText	Enable sending of AlarmText	1.003	0=Disabled/1=Enabled	1 bit	E	-
87	Filter counter reset	Alarm acknowledgment (dirty filter)	1.016	0=No action/1=Acknowledge	1 bit	E	-
88	ElectricalpowerLimitation	Electric heater power limitation in %	5.001	Values of 0 to 100%	1 Byte	E	-
89	PRelChiller	Relative power supplied by the production of cold water in %	5.004	values of 0 to 255%	1 Byte	E	-
90	PRelBurner	Relative power supplied by the production of hot water in %	5.004	values of 0 to 255%	1 Byte	E	-
91	EnergyDemandAC ou DemAC	Cold water demand expressed in %	5.004	values of 0 to 255%	1 Byte	-	S
92	EnergyDemandAH ou DemAH	Hot water demand expressed in %	5.004	values of 0 to 255%	1 Byte	-	S
93	EnergyDemandeAir ou DemAir	Fresh air demand expressed in %	5.004	0 or 100%	1 Byte	-	S
94	ActPosHeatStageA	Information on state of heating valve position in %	5.001	Values of 0 to 100%	1 Byte	-	S
95	ActPosHeatStageB	Information on state of electric heater position in %	5.001	Values of 0 to 100%	1 Byte	-	S
96	ActPosCoolStageA	Information on state of air conditioning valve position in %	5.001	Values of 0 to 100%	1 Byte	-	S
97	FanSpeed	Information on state of fan speed in %	5.001	Values of 0 to 100%	1 Byte	-	S
98	ActPosFreshAir	Information on state of fresh air damper position in %	5.001	0 or 100%	1 Byte	-	S
99	CoilConsumptionAC	Cold water coil consumption in kWh	13013	Cold water coil consumption in kWh	4 Byte	-	S
100	CoilConsumptionAH	Hot water coil consumption in kWh	13013	Hot water coil consumption in kWh	4 Byte	-	S
101	ElectricConsumption	Electric heater consumption in kWh	13013	Electric heater consumption in kWh	4 Byte	-	S
102	FanConsumption	Fan motor consumption in kWh	13013	Ventilation consumption in kWh	4 Byte	-	S
103	HVACModeEff	Mode currently being used (comfort, standby, economy frost protection)	20.102	0=Auto/1=Comfort/2=Stdby/3=Eco/4=Frost prot.	1 Byte	-	S
104	TempRoomSetpSetHeatEff	Operating heating setpoints (comfort, standby, economy)	222.100	Three temp. values in °C	6 Byte	-	S

Master/HMI CHANNEL *(Master and control interface) (continued)*

No.	Name	Object function	DPT	Values	length	Inputs	Outputs
105	TempRoomSetpSetCoolEff	Operating air conditioning setpoints (comfort, standby, economy)	222.100	Three temp. values in °C	6 Byte	-	S
106	AQSetpEff	Actual air quality setpoint in ppm	9.008	CO_2 value in ppm	2 Byte	-	S
107	HumRelSetpDehumEff	Actual dehumidification setpoint in %	9.007	Relative humidity value in %	2 Byte	-	S
108	TempReturnAir	Return air temperature	9.001	Temp. value in °C	2 Byte	-	S
109	TempDischargeAir	Supply air temperature	9.001	Temp. value in °C	2 Byte	-	S
110	TempFlowWater	Water temperature (local changeover)	9.001	Temp. value in °C	2 Byte	-	S
111	PresenceStatus	Presence detector (wired to controller)	1.018	0=Unoccupied/1=Occupied	1 bit	-	S
112	WindowSwitch	Synchronisation output for master/slave window switches	1.019	0=Closed/1=Open	1 bit	-	S
113	WindowStatus	Information on state of all window switches	1.019	0=Closed/1=Open	1 bit	-	S
114	InfoOnOff	Information on state of synchronised output	1.001	0=OFF/1=ON	1 bit	-	S
115	OnOff	On/Off control of switch wired to controller	1.001	0=OFF/1=ON	1 bit	-	S
116	InAlarm	Controller alarm	1.005	0=No Alarm/1=Alarm	1 bit	-	S
117	AlarmInfo	Error code of current alarm	219.001	Error code	6 Byte	-	S
118	AlarmText	Text description of current alarm	16.001	Text description of alarm	14 Byte	-	S
119	InfoEnergyDemandAC	Cold water demand from master to slave by positioning of actuators	5.004	values of 0 to 255%	1 Byte	-	S
120	InfoEnergyDemandAH	Hot water demand from master to slave by positioning of actuators	5.004	values of 0 to 255%	1 Byte	-	S
121	InfoEnergyDemandAir	Fresh air demand from master to slave by positioning of actuators	5.004	0 or 100%	1 Byte	-	S
122	ActPosSetpHeatStageA	Heating valve control from master to slave by positioning of actuators	5.001	Values of 0 to 100%	1 Byte	-	S
123	ActPosSetpHeatStageB	Electric heater control from master to slave by positioning of actuators	5.001	Values of 0 to 100%	1 Byte	-	S
124	ActPosSetpCoolStageA	Air conditioning valve control from master to slave by positioning of actuators	5.001	Values of 0 to 100%	1 Byte	-	S
125	FanSpeedSetp	Ventilation control from master to slave by positioning of actuators	5.001	Values of 0 to 100%	1 Byte	-	S
126	ActPosSetpFreshAir	Fresh air control from master to slave by positioning of actuators	5.001	0 or 100%	1 Byte	-	S
127	InfoEnableHeat	Enable heating from master to slave by enabling heating/cooling mode	1.003	0=Disabled/1=Enabled	1 bit	-	S
128	InfoEnableCool	Enable air conditioning from master to slave by enabling heating/cooling mode	1.003	0=Disabled/1=Enabled	1 bit	-	S
HMI							
129	TempRoom	CIAT terminal ambient temperature	9.001	Temp. value in °C	2 Byte	-	S
130	TempRoomSetpUserOffset	Comfort setpoint override via CIAT terminal	9.002	Temperature shift value in K	2 Byte	-	S
131	ComfortPushButton	On/Off control via CIAT terminal	1.017	0=Reduced (Stdby/Eco/Frost protection)/1=Comfort	1 bit	-	S
132	FanSpeedUser	Manual speed selected via CIAT terminal	5.001	Values of 0 to 100% LS 33% MS 66% GS 100%	1 Byte	-	S
133	FanManual	Auto/Man. speed selection on CIAT terminal	1.003	0=Auto/1=Man.	1 bit	-	S

INPUTS

	Slave	Master	Received after change of value	Received periodically	Timeout** if datapoints received periodically	Comments
HVACModeEff	0		Yes	Mandatory	2*P76+1	
BuidingMode		57	Yes	Optional	No timeout	
OccMode		58	Yes	Optional	No timeout	
HVACMode		59	Yes	Optional	No timeout	
HVACModeOptim	1	60	Yes	Optional	No timeout	
ContrMode	2	61	Yes	Optional	No timeout	
EnableHeat	3	62	Yes	Optional	No timeout	
EnableCool	4	63	Yes	Optional	No timeout	
ChangeOverStatusWater	5	64	Yes	Optional	No timeout	
TempOutside	6	65	Yes	Mandatory	2*P76+1	
TempRoomSetpSetHeatEff	7		Yes	Mandatory	2*P76+1	Timeout linked to HVACModeEff
TempRoomSetpSetCoolEff	8		Yes	Mandatory	2*P76+1	Timeout linked to HVACModeEff
TempRoomSetpSetHeat		66	Yes	No		
TempRoomSetpSetCool		67	Yes	No		
TempRoomSetpSetHeatShift		68	Yes	Optional	No timeout	
TempRoomSetpSetCoolShift		69	Yes	Optional	No timeout	
TempRoomSetpUserAbs		70	Yes	Optional	No timeout	
TempRoomSetpUserOffset		71	Yes	Optional	No timeout	
ComfortPushButton		72	Yes, after an event	No		
HVACModeUser		73	Yes, after an event	No		
FanSpeedUser	9	74	Yes, after an event	No		
FanManual	10	75	Yes, after an event	No		
AQSetpEff	11		Yes	Optional	No timeout	
HumRelSetpDehumEff	12		Yes	Optional	No timeout	
AQSetpUser		76	Yes	No		
HumRelSetpUser		77	Yes	No		
TempRoom	13	78	Yes	Mandatory	2*P76+1	On slave, timeout linked to HVACModeEff
TempReturnAir	14		Yes	Mandatory	2*P76+1	Timeout linked to HVACModeEff
TempFlowWater	15		Yes	Mandatory	2*P76+1	Timeout linked to HVACModeEff
AQRoom	16	79	Yes	Mandatory	2*P76+1	
HumRelRoom	17	80	Yes	Mandatory	2*P76+1	
PresenceStatus		81	Yes	Optional	No timeout	
WindowSwitch	35	82	Yes, after an event	No		
WindowStatus		83	Yes	Optional	No timeout	
OnOff	18	84	Yes	No		
EnableAlarmInfo	19	85	Yes	Optional	No timeout	
EnableAlarmText	20	86	Yes	Optional	No timeout	
AlarmAck	21	87	Yes, after an event	No		
ElectricalPowerLimitation	22	88	Yes	Optional	No timeout	
PRelChiller	23	89	Yes	Optional	No timeout	
PRelBurner	24	90	Yes	Optional	No timeout	
InfoEnergyDemAC	25		No	Mandatory	2*P76+1	Timeout linked to FanSpeedSetp
InfoEnergyDemAH	26		No	Mandatory	2*P76+1	Timeout linked to FanSpeedSetp
InfoEnergyDemAir	27		Yes	Mandatory	2*P76+1	Timeout linked to FanSpeedSetp
ActPosSetpHeatStageA	28		Yes	Mandatory	2*P76+1	Timeout linked to FanSpeedSetp
ActPosSetpHeatStageB	29		Yes	Mandatory	2*P76+1	Timeout linked to FanSpeedSetp
ActPosSetpCoolStageA	30		Yes	Mandatory	2*P76+1	Timeout linked to FanSpeedSetp
FanSpeedSetp	31		Yes	Mandatory	2*P76+1	
ActPosSetpFreshAir	32		Yes	Mandatory	2*P76+1	Timeout linked to FanSpeedSetp
InfoEnableHeat	33		Yes	Mandatory	No timeout	
InfoEnableCool	34		Yes	Mandatory	No timeout	

** Timeout:
Corresponds to the time during which the controller retains the value of the datapoint. If the value is not repeated before the end of the timeout, it will be lost and the controller will return to the datapoint's original value.

Note: P76 is set to 15 minutes by default.

OUTPUTS

	Slave	Master	MMI	Sent after change of value	Sent periodically	Sending period	Queries	Comments
EnergyDemAC	36	91		No	Yes	P76	Yes	
EnergyDemAH	37	92		No	Yes	P76	Yes	
EnergyDemAir	38	93		Yes	Yes	P76	Yes	
ActPosHeatStageA	39	94		Yes, difference = 5%	Yes	P76	Yes	
ActPosHeatStageB	40	95		Yes, difference = 5%	Yes	P76	Yes	Only if an electric heater is present
ActPosCoolStageA	41	96		Yes, difference = 5%	Yes	P76	Yes	
FanSpeed	42	97		Yes, difference = 5%	Yes	P76	Yes	
ActPosFreshAir	43	98		Yes	Yes	P76	Yes	Only if a fresh air damper is present
CoilConsumptionAC	44	99		No	Yes	24h	Yes	
CoilConsumptionAH	45	100		No	Yes	24h	Yes	
ElectricConsumption	46	101		No	Yes	24h	Yes	
FanConsumption	47	102		No	Yes	24h	Yes	
HVACModeEff		103		Yes	Yes	P76	Yes	**
TempRoomSetpSetHeatEff		104		Yes	Yes	P76	Yes	
TempRoomSetpSetCoolEff		105		Yes	Yes	P76	Yes	
AQSetpEff		106		Yes	No		Yes	
HumRelSetpDehumEff		107		Yes	No		Yes	
TempReturnAir	48	108		Yes, difference = 0.2 K	Yes	P76	Yes	Only if a return air sensor is connected
TempDischargeAir	49	109		Yes, difference = 1 K	Yes	P76	Yes	Only if a return air sensor is connected
TempFlowWater	50	110		Yes, difference = 1 K	Yes	P76	Yes	Only if a return air sensor is connected
PresenceStatus		111		Yes	No		Yes	
WindowSwitch	56	112		Yes, after an event	No		No	
WindowStatus		113		Yes	No		Yes	
InfoOnOff	51	114		Yes	No		Yes	
OnOff	52	115		Yes	No		No	
InAlarm	53	116		Yes	No		Yes	
AlarmInfo	54	117		Yes	No		Yes	Only if EnableAlarmInfo=1
AlarmText	55	118		Yes	No		Yes	Only if EnableAlarmText=1
InfoEnergyDemAC		119		No	Yes	P76	Yes	Only if P00 = 1 (master controller)
InfoEnergyDemAH		120		No	Yes	P76	Yes	Only if P00 = 1 (master controller)
InfoEnergyDemAir		121		Yes	Yes	P76	Yes	Only if P00 = 1 (master controller)
ActPosSetpHeatStageA		122		Yes, difference = 5%	Yes	P76	Yes	Only if P00 = 1 (master controller)
ActPosSetpHeatStageB		123		Yes, difference = 5%	Yes	P76	Yes	Only if P00 = 1 (master controller)
ActPosSetpCoolStageA		124		Yes, difference = 5%	Yes	P76	Yes	Only if P00 = 1 (master controller)
FanSpeedSetp		125		Yes, difference = 5%	Yes	P76	Yes	Only if P00 = 1 (master controller) **
ActPosSetpFreshAir		126		Yes	Yes	P76	Yes	Only if P00 = 1 (master controller)
InfoEnableHeat		127		Yes	Yes	P76	Yes	Only if P00 = 1 (master controller)
InfoEnableCool		128		Yes	Yes	P76	Yes	Only if P00 = 1 (master controller)
TempRoom			129	Yes, difference = 0.2 K	Yes	P76	Yes	
TempRoomSetpUserOffset			130	Yes, difference = 0.5 K	No		Yes	
ComfortPushButton			131	Yes, after an event	No		No	
FanSpeedUser			132	Yes, after an event	No		No	Only in a manual speed
FanManual			133	Yes	No		Yes	

**

- On a master device: either of these objects must have a group address, otherwise an alarm will occur on the controller.
- On a slave device via enabling of heating/cooling or via indoor temperature: the object HVACModeEff must have a group address, otherwise an alarm will occur on the controller.
- On a slave device by positioning of actuators: the object FanSpeedSetp must have a group address, otherwise an alarm will occur on the controller.

Note: P76 is set to 15 minutes by default.

The controller uses channels to "free up" KNX datapoints associated with the selected channel (P00 on the controller).
There are three different channels:

- Master channel
- Slave channel
- HMI channel (CIAT control terminal)

Definitions of values:

Name: name of the datapoint as defined in the ETS tool:
DPT KNX: standard format of the KNX standard for defining the object.
This standardisation enables a single object to be used with different products from different manufacturers.
Flags: Settings flags that allow objects to be communicated. There are four types:
K = Communication. If this flag is absent, the corresponding object will never be visible over the bus.
E = Write. Object modifiable over the bus. It is therefore an input datapoint of the product.
L = Read. Object whose value can be queried over the bus. This type of datapoint represents the current state of the product.
T = Transmission. Object that is automatically sent in cycles or after a change of value (COV). It is therefore an output datapoint for the product.

Slave channel

A: INPUT DATAPOINTS

HVACModeEff:

Description: Comfort, Standby, Economy or Frost protection mode provided by master device.
This information is mandatory for slaves by enabling heating/cooling mode or by indoor temperatures.
The absence of a group address on this input will trigger alarm E21 on the slaves by enabling heating/cooling mode or by indoor temperatures.
Name: Mode provided by master device.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
0	HVACModeEff	1 byte	20.102	K – E – T	- State change - Periodic, with a 31 min. timeout	1 = Comfort 2 = Standby 3 = Economy 4 = Frost prot.

HVACModeOptim:

Description: Override mode (comfort, standby, economy, frost protection) provided by supervisor.
This mode overrides HVACModeEff and any local settings from the Master (except for the window switch). It allows a supervisor to take over in order to optimise the current mode without changing the preset time schedule.
The supervisor must send back a '0' signal to resume local control.
Example of use: anticipate restart of comfort mode on Monday mornings during the winter.
Name: Override mode provided by supervisor.

NO.	Object function	Length	KNX DPT	FLAGS	When received	Setting
1	HVACModeOptim	1 byte	20.102	K – E	- State change - Periodic (optional)	0 = Auto 1 = Comfort 2 = Standby 3 = Economy 4 = Frost prot.

ContrMode:

Description: Special function provided by supervisor.
This datapoint makes it possible to simultaneously define authorisation of heating and air conditioning and switch to ventilation only or free cooling.
The heating and air conditioning authorisations operate on the same principle as EnableHeat and EnableCool. In this case, the latter two datapoints become unnecessary.
The ventilation function prevents any action on the valves. Only the ventilation will be turned when the setpoints are reached.
The free cooling function prevents any action on the cold water valve. The hot water valve, however, will continue to operate normally. This function is beneficial if the preconditioned fresh air supplied via the terminal unit is sufficient to meet the needs of the space.
Frost protection mode remains activated by the controller even if ContrMode = 3 (if hot water available or if terminal unit is equipped with an electric heater).
Name: Special function (provided by supervisor).

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
2	ContrMode	1 byte	20.105	K – E	- State change - Periodic (optional)	0 = Auto (heating and air conditioning enabled) 1 = Heating enabled 3 = Air conditioning enabled 9 = Ventilation 10 = Free cooling

EnableHeat:

Description: Enable heating.
Without this information, heating remains enabled at all times.
Frost protection remains activated even if it is set to disabled.
Name: Enable heating.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
3	EnableHeat	1 bit	1.003	K – E	- State change - Periodic (optional)	0 = Disabled 1 = Enabled

EnableCool:

Description: Enable air conditioning.
Without this information, the air conditioning remains enabled at all times.
Name: Enable air conditioning.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
4	EnableCool	1 bit	1.003	K – E	- State change - Periodic (optional)	0 = Disabled 1 = Enabled

ChangeOverStatusWater:

Description: System central changeover.
This information corresponds to the hot or cold state of the water provided by the production system.
For a centralised changeover (P31=2), V3000 awaits this variable to start in Heating or Cooling mode.
When powering up, powering down or if V3000 does not receive this variable, it will bring up the E11 alarm (see p53) and will not authorise Heating or Cooling production (we recommend sending this datapoint periodically so that all the V3000s in the system are synchronised).
Name: Central changeover.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
5	ChangeOverStatusWater	1 bit	1.100	K – E	- State change - Periodic (optional)	0 = Cooling 1 = Heating

TempOutside:

Description: Outdoor temperature value.
This temperature is used by the V3000 to limit the duty cycle of the electric heater and to allow the air conditioning setpoints to drift.
Name: Outdoor temperature.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
6	TempOutside	2 bytes	9.001	K – E	- State change - Periodic, with a 31 min. timeout	Outdoor temp. value in °C

TempRoomSetpSetHeatEff:

Description: All Comfort, Standby and Economy operating heating setpoints provided by master.
This information is necessary for slaves by enabling heating/cooling mode and by slaves by indoor temperatures.
Name: Three heating setpoints provided by master device.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
7	TempRoomSetpSetHeatEff	6 bytes	222.100	K – E – T	- State change - Periodic, with a 31 min. timeout	Three temp. values in °C

TempRoomSetpSetCoolEff:

Description: All Comfort, Standby and Economy operating air conditioning setpoints provided by master. This information is necessary for slaves by enabling heating/cooling mode and by slaves by indoor temperatures.
Name: Three air conditioning setpoints provided by master device.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
8	TempRoomSetpSetCoolEff	6 bytes	222.100	K – E – T	- State change - Periodic, with a 31 min. timeout	Three temp. values in °C

FanSpeedUser:

Description: Manual fan speed set via a KNX user terminal.
Without this information, the controller runs at automatic speed.
When a FanSpeedUser signal is received, the following automatically occurs:

- The unit shifts to comfort mode/manual speed if it was in standby, reduced or FP (unless shut off by window switch or HVACModeOptim or alarm)
- The unit shifts to the corresponding manual speed if it was in comfort mode/automatic speed

Name: Manual speed set via KNX terminal.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
9	FanSpeedUser	1 byte	5.001	K – E	- Event	Value: 0 to 100% < LS ≤ 48% 49% ≤ MS ≤ 82% HS ≥ 83%

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FanManual:

Description: Selection of automatic or manual speed via a KNX user terminal.
When a FanManual value of '1' is sent, a non-null value must be sent to FanSpeedUser at the same time.
Comment:

- When it receives a FanSpeedUser value, the controller automatically considers that FanManual has switched to '1'.
- The V3000 will not restart if a FanManual value of '0' is sent to it while the unit is in Standby, Eco or FP mode.

Name: Auto/Man. speed selection via KNX terminal.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
10	FanManual	1 bit	1.003	K – E	- Event	0 = Auto 1 = Manual

AQSetpEff:

Description: Air quality setpoint provided by master device.
Name: Air quality setpoint provided by master device.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
11	AQSetpEff	2 bytes	9.008	K – E	- State change - Periodic (optional)	Value of CO_2 level in ppm

HumRelSetpDehumEff:

Description: Dehumidification setpoint provided by master device.
Name: Dehumidification setpoint provided by master device.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
12	HumRelSetpDehumEff	2 bytes	9.007	K – E	- State change - Periodic (optional)	Relative humidity value in %

TempRoom:

Description: Ambient temperature value provided by KNX or CIAT user terminal.
This information is necessary for slaves by indoor temperatures when the room sensor has priority.
Name: Ambient temperature provided by user terminal.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
13	TempRoom	2 bytes	9.001	K – E	- State change - Periodic, with a 31 min. timeout	Temperature value in °C

TempReturnAir:

Description: Return air temperature value provided by master device.
This information is necessary for slaves by indoor temperatures when the return air sensor has priority.
Name: Return air temperature provided by master device.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
14	TempReturnAir	2 bytes	9.001	K – E	- State change - Periodic, with a 31 min. timeout	Temperature value in °C

TempFlowWater:

Description: Water temperature value given by local changeover sensor wired to master controller.
Name: Water temperature provided by master device.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
15	TempFlowWater	2 bytes	9.001	K – E	- State change - Periodic, with a 31 min. timeout	Temperature value in °C

AQRoom:

Description: Value of room CO_2 level in ppm.
Name: Air quality in ppm.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
16	AQRoom	2 bytes	9.008	K – E	- State change - Periodic, with a 31 min. timeout	Value of CO_2 level in ppm

HumRelRoom:

Description: Value of room humidity level in %.
Name: Relative humidity level in %.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
17	HumRelRoom	2 bytes	9.007	K – E	- State change - Periodic, with a 31 min. timeout	Relative humidity value in %

OnOff:

Description: On/Off control for synchronised output.
Name: On/Off control for synchronised output.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
18	On Off	1 bit	1.001	K – E	State change	0 = Off 1 = On

EnableAlarmInfo:

Description: Enable sending of alarm code (AlarmInfo object) present on controller.
Name: Enable AlarmInfo sending.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
19	EnableAlarmInfo	1 bit	1.003	K – E	- State change - Periodic (optional)	0 = Disabled 1 = Enabled

EnableAlarmText:

Description: Enable sending of alarm description (AlarmText object) present on controller.
Name: Enable AlarmText sending.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
20	EnableAlarmText	1 bit	1.003	K – E	- State change - Periodic (optional)	0 = Disabled 1 = Enabled

FilterCounterReset:

Description: Filter counter reset: acknowledge dirty filter alarm.
Name: Filter counter reset.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
21	FilterCounterReset	1 bit	1.016	K – E	- Event	0 = No action 1 = Acknowledgment

ElectricalPowerLimitation:

Description: Limit the electric power (limitation of the cycling of the electric heating stage) of the electric heater in %.
Name: Electric heater power limitation or load shedding in %.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
22	ElectricalPowerLimitation	1 byte	5.001	K – E	- State change - Periodic (optional)	Value of 0 to 100% 0% = 0 100% = 255

PRelChiller:

Description: Relative power supplied by the production of cold water.
The percentage sent to this datapoint must be representative of the position of the supply temperature on the water law so that the controllers can estimate their cooling consumption (available on datapoint CoilConsumptionAC).
Without this information, the controllers consider that PRelChiller is at 100%.
Name: Relative power of the production of cold water.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
23	PRelChiller	1 byte	5.004	K – E	- State change - Periodic (optional)	Value of 0 to 255%

PRelBurner:

Description: Relative power supplied by the production of hot water.
The percentage sent to this datapoint must be representative of the position of the supply temperature on the water law so that the controllers can estimate their heating consumption (available on datapoint CoilConsumptionAH).
Without this information, the controllers consider that PRelBurner is at 100%.
Name: Relative power of the production of hot water.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
24	PRelBurner	1 byte	5.004	K – E	- State change - Periodic (optional)	Value of 0 to 255%

Master/Slave by positioning of actuators:

The following eight datapoints are essential for the correct operation of the slaves by positioning of the actuators. Whether or not they are used depends on the application.
Example: ActPosSetpFreshAir should be used only if a fresh air damper is present.

InfoEnergyDemandAC:

Description: Cold water demand from master to slave by positioning of actuators.
Name: Cold water demand for slave by actuator position.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
25	InfoEnergyDemandAC	1 byte	5.004	K – E	- Periodic (with a 31 min. timeout)	Value of 0 to 255%

InfoEnergyDemandAH:

Description: Hot water demand from master to slave by positioning of actuators.
Name: Hot water demand for slave by actuator position.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
26	InfoEnergyDemandAH	1 byte	5.004	K – E	- Periodic (with a 31 min. timeout)	Value of 0 to 255%

InfoEnergyDemandAir:

Description: Fresh air demand from master to slave by positioning of actuators.
Name: Fresh air demand for slave by actuator position.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
27	InfoEnergyDemandAir	1 byte	5.004	K – E	- State change - Periodic (with a 31 min. timeout)	0 or 100%

ActPosSetpHeatStageA:

Description: Heating valve control from master to slave by positioning of actuators.
Name: Heating valve control for slave by positioning of actuators.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
28	ActPosSetpHeatStageA	1 byte	5.001	K – E	- State change - Periodic (with a 31 min. timeout)	Value of 0 to 100% 0% = 0 100% = 255

ActPosSetpHeatStageB:

Description: Electric heater control from master to slave by positioning of actuators.
Name: Electric heater control for slave by positioning of actuators.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
29	ActPosSetpHeatStageB	1 byte	5.001	K – E	- State change - Periodic (with a 31 min. timeout)	Value of 0 to 100% 0% = 0 100% = 255

ActPosSetpCoolStageA:

Description: Air conditioning valve control from master to slave by positioning of actuators.
Name: Air conditioning valve control for slave by positioning of actuators.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
30	ActPosSetpCoolStageA	1 byte	5.001	K – E	- State change - Periodic (with a 31 min. timeout)	Value of 0 to 100% 0% = 0 100% = 255

FanSpeedSetp:

Description: Ventilation control from master to slave by positioning of actuators.
This information is mandatory for slaves by positioning of actuators. The absence of a group on this input will trigger alarm E21 on the slaves by positioning of actuators.
Name: Ventilation control for by actuator position.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
31	FanSpeedSetp	1 byte	5.001	K – E	- State change - Periodic (with a 31 min. timeout)	Value of 0 to 100% 0% = 0 100% = 255

ActPosSetpFreshAir:

Description: Fresh air damper control from master to slave by positioning of actuators.
Name: Fresh air control for slave by positioning of actuators.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
32	ActPosSetpFreshAir	1 byte	5.001	K – E	- State change - Periodic (with a 31 min. timeout)	0 or 100%

Master/slave by enabling heating/cooling mode

The following two datapoints are essential for the correct operation of the slaves by positioning of the actuators.

InfoEnableHeat:

Description: Enable heating from master to slave by enabling heating/cooling mode.
Name: Enable heating for heating/cooling slave.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
33	InfoEnableHeat	1 bit	1.003	K – E	- State change - Periodic	0 = Disabled 1 = Enabled

InfoEnableCool:

Description: Enable air conditioning from master to slave by enabling heating/cooling mode.
Name: Enable air conditioning for heating/cooling slave.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
34	InfoEnableCool	1 bit	1.003	K – E	- State change - Periodic	0 = Disabled 1 = Enabled

WindowSwitch:

Description: Input for synchronising the master and slave window switches (if the window switches are divided among several units on the master/slave loop). This datapoint applies to slaves of all types.
It is of no use if all the window switches are on the master device.
Name: Synchronisation of master/slave window switches.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
35	WindowSwitch	1 bit	1.019	K – E	- Event	0 = Closed 1 = Open

B: OUTPUT DATAPOINTS

EnergyDemandAC:

Description: Cold water demand, expressed in %.
This information is sent to the supervisor in order to turn production on or off depending on the cold water demand of all the terminal units.
Name: Cold water demand, expressed in %.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
36	EnergyDemandAC	1 byte	5.004	K – L – T	- Every 15 min. - When requested	Value of 0 to 255%

EnergyDemandAH:

Description: Hot water demand, expressed in %.
This information is sent to the supervisor in order to turn production on or off depending on the hot water demand of all the terminal units.
Name: Hot water demand, expressed in %.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
37	EnergyDemandAH	1 byte	5.004	K – L – T	- Every 15 min. - When requested	Value of 0 to 255%

EnergyDemandAir:

Description: Fresh air demand, expressed in %.
This information is sent to the supervisor in order to adjust the flow of fresh air on the unit to the demand of all the terminal units.
Name: Fresh air demand, expressed in %.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
38	EnergyDemandAir	1 byte	5.004	K – L – T	- State change - Every 15 min. - When requested	0 or 100%

ActPosHeatStageA:

Description: Actual heating valve position in %.
Name: Actual heating valve position in %.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
39	ActPosHeatStageA	1 byte	5.001	K – L – T	- State change ≥ 5% - Every 15 min. - When requested	Value of 0 to 100% 0%=0 100%=255

ActPosHeatStageB:

Description: Actual electric heater position (in %) resulting from current time-proportional signal.
Name: Actual electric heater position in %.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
40	ActPosHeatStageB	1 byte	5.001	K – L – T	- State change ≥ 5% - Every 15 min. - When requested	Value of 0 to 100% 0%=0 100%=255

ActPosCoolStageA:

Description: Actual air conditioning valve position in %.
Name: Actual air conditioning valve position in %.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
41	ActPosCoolStageA	1 byte	5.001	K – L – T	- State change ≥ 5% - Every 15 min. - When requested	Value of 0 to 100% 0%=0 100%=255

FanSpeed:

Description: Actual fan speed in %.
For a three-speed fan:

- low speed = 33%
- medium speed = 66%
- high speed = 100%

Name: Actual fan speed in %.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
42	FanSpeed	1 byte	5.001	K – L – T	- State change ≥ 5% - Every 15 min. - When requested	Value of 0 to 100% 0%=0 100%=255

ActPosFreshAir:

Description: Actual fresh air damper position in %.
This damper operates by on/off control. Therefore, the closed position corresponds to 0% and the open position corresponds to 100%.
Name: Actual fresh air position in %.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
43	ActPosFreshAir	1 byte	5.001	K – L – T	- State change - Every 15 min. - When requested	0 or 100%

CoilConsumptionAC:

Description: Estimation of the cold water coil consumption in kW.
Attention: this value is only an estimation. Its reliability will depend on how accurately the data entered in the Cooling Coil Nominal Capacity parameter and the PRelChiller emissions reflect reality.
Name: Cold water coil consumption in kWh.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
44	CoilConsumptionAC	4 bytes	13.013	K – L – T	- Every 24 h - When requested	Value in kWh

CoilConsumptionAH:

Description: Hot water coil consumption.
Attention: this value is only an estimation. Its reliability will depend on how accurately the data entered in the Heating Coil Nominal Capacity parameter and the PRelBurner emissions reflect reality.
Name: Hot water coil consumption in kWh.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
45	CoilConsumptionAH	4 bytes	13.013	K – L – T	- Every 24 h - When requested	Value in kWh

ElectricConsumption:

Description: Electric heater consumption in kWh.
Attention: this value is only an estimation. Its reliability will depend on how accurately the data entered in the Electric Heater Nominal Power parameter reflect reality.
Name: Electric heater consumption in kWh.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
46	ElectricConsumption	4 bytes	13.013	K – L – T	- Every 24 h - When requested	Value in kWh

FanConsumption:

Description: Fan motor consumption in kWh.
Attention: this value is only an estimation. Its reliability will depend on how accurately the data entered in the LS Power, MS Power and HS Power reflect reality.
Name: Fan motor consumption in kWh.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
47	FanConsumption	4 bytes	13.013	K – L – T	- Every 24 h - When requested	Value in kWh

TempReturnAir:

Description: Return air temperature.
Name: Return air temperature.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
48	TempReturnAir	2 bytes	9.001	K – L – T	- State change ≥ 0.2 K - Every 15 min. - When requested	Temp. value in °C

TempDischargeAir:

Description: Supply air temperature.
Name: Supply air temperature.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
49	TempDischargeAir	2 bytes	9.001	K – L – T	- State change ≥ 1 K - Every 15 min. - When requested	Temp. value in °C

TempFlowWater:

Description: Water temperature given by the local changeover sensor.
Name: Water temperature (local changeover).

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
50	TempFlowWater	2 bytes	9.001	K – L – T	- State change ≥ 1 K - Every 15 min. - When requested	Temp. value in °C

InfoOnOff:

Description: Indication of synchronised output state.
Name: Information on state of synchronised output.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
51	InfoOnOff	1 bit	1.001	K – L – T	- State change - When requested	0 = Off 1 = On

OnOff:

Description: On/Off control via a switch wired to an unused on/off input (D1 or D2) on the controller.
Name: Switch on/off control wired to controller.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
52	OnOff	1 bit	1.001	K – T	- State change	0 = Off 1 = On

InAlarm:

Description: Controller alarm.
Name: Controller alarm.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
53	InAlarm	1 bit	1.005	K – L – T	- State change - When requested	0 = No Alarm 1 = Alarm

AlarmInfo:

Description: Error code of current alarm.
This information is sent only if datapoint EnableAlarmInf0 = 1 or when it is requested.
Name: Error code of current alarm.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
54	AlarmInfo	6 bytes	219.001	K – L – T	- State change if EnableAlarmInf0 = 1 - When requested	Alarm error code

AlarmText:

Description: Text description of current alarm.
This information is sent only if datapoint EnableAlarmText = 1 or when it is requested.
Name: Text description of current alarm.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
55	AlarmText	14 bytes	16.001	K – L – T	- State change if EnableAlarmText = 1 - When requested	Text description of alarm

List of V3000 controller alarm codes and texts:
See table in V3000 Alarm section.

WindowSwitch:

Description: Output for synchronising the master and slave window switches (if the window switches are divided among several units on the master/slave loop). This datapoint applies to slaves of all types.
It is of no use if all the window switches are on the master device.
Name: Synchronisation of master/slave window switches.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
56	Windowswitch	1 bit	1.019	K – T	- Event	0 = Closed 1 = Open

Master channel

A: INPUT DATAPOINTS

Depending on the desired level of automation, a number of datapoints may be used to control space occupancy modes via a supervisor.
Combination of:

1. BuildingMode + OccMode (supervision)
   or
2. HVACMode (clock)

BuildingMode:

Description: Building occupancy (information provided by supervisor).
Name: Building occupancy (provided by supervisor).

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
57	BuildingMode	1 byte	20.002	K – E	- State change - Periodic (optional)	0 = Bldg occupied 1 = Bldg unoccupied 2 = Bldg frost prot.

OccMode:

Description: Space or office occupancy (information provided by supervisor).
Name: Space occupancy (provided by supervisor).

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
58	OccMode	1 byte	20.003	K – E	- State change - Periodic (optional)	0 = Occupied 1 = Standby 2 = Unoccupied

When both modes are combined:

BuildingMode	OccMode	Mode taken into account by the V3000
0 = Building occupied	0 = Occupied	Comfort
	1 = Standby	Standby
	2 = Unoccupied	Economy
1 = Building unoccupied	0 = Occupied 1 = Standby 2 = Unoccupied	Economy
2 = Building frost protection	0 = Occupied 1 = Standby 2 = Unoccupied	Frost protection

HVACMode:

Description: Comfort, Standby, Economy or Frost protection mode (information provided by clock).
Name: Mode provided by clock.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
59	HVACMode	1 byte	20.102	K – E	- State change - Periodic (optional)	1 = Comfort 2 = Standby 3 = Economy 4 = Frost protection

HVACModeOptim:

Description: Override mode (comfort, standby, economy, frost protection) provided by supervisor.
This mode overrides HVACMode and any local settings (except for the window switch). It allows a supervisor to take over in order to optimise the current mode without changing the preset time schedule.
The supervisor must send back a '0' signal to resume local control.
Note: HVACModeOptim does not modify the object 103 HVACModeEff (in progress status of the controller).
Example of use: anticipate restart of comfort mode on monday mornings during the winter.

Name: Override mode provided by supervisor.

NO.	Object function	Length	KNX DPT	FLAGS	When received	Setting
60	HVACModeOptim	1 byte	20.102	K – E	- State change - Periodic (optional)	0 = Auto 1 = Comfort 2 = Standby 3 = Economy 4 = Frost protection

ContrMode:

Description: Special function provided by supervisor.
This datapoint makes it possible to simultaneously define authorisation of heating and air conditioning and switch to ventilation only or free cooling.
The heating and air conditioning authorisations operate on the same principle as EnableHeat and EnableCool. In this case, the latter two datapoints become unnecessary.
The ventilation function prevents any action on the valves. Only the ventilation will be turned when the setpoints are reached.
The free cooling function prevents any action on the cold water valve. The hot water valve, however, will continue to operate normally. This function is beneficial if the preconditioned fresh air supplied via the terminal unit is sufficient to meet the needs of the space.
Frost protection mode remains activated by the controller even if ContrMode = 3 (if hot water available or if terminal unit is equipped with an electric heater)
Name: Special function (provided by supervisor).

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
61	ContrMode	1 byte	20.105	K – E	- State change - Periodic (optional)	0 = Auto (heating and air conditioning enabled) 1 = Heating enabled (air conditioning disabled) 3 = Air conditioning enabled (heating disabled) 9 = Ventilation 10 = Free cooling

EnableHeat:

Description: Enable heating.
Without this information, heating remains enabled at all times.
Frost protection remains activated even if it is set to disabled.
Name: Enable heating.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
62	EnableHeat	1 bit	1.003	K – E	- State change - Periodic (optional)	0 = Disabled 1 = Enabled

EnableCool:

Description: Enable air conditioning.
Without this information, the air conditioning remains enabled at all times.
Name: Enable air conditioning.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
63	EnableCool	1 bit	1.003	K – E	- State change - Periodic (optional)	0 = Disabled 1 = Enabled

ChangeOverStatusWater:

Description: System central changeover.

For a centralised changeover (P31=2), V3000 awaits this variable to start in Heating or Cooling mode. When powering up, powering down or if V3000 does not receive this variable, it will bring up the E11 alarm (see p53) and will not authorise Heating or Cooling production (we recommend sending this datapoint periodically so that all the V3000s in the system are synchronised).
Name: Central changeover.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
64	ChangeOverStatusWater	1 bit	1.100	K – E	- State change - Periodic (optional)	0 = Cooling 1 = Heating

TempOutside:

Description: Outdoor temperature value.
This temperature is used by the V3000 to limit the duty cycle of the electric heater and to allow the air conditioning setpoints to drift.
Name: Outdoor temperature.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
65	TempOutside	2 bytes	9.001	K – E	- State change - Periodic, with a 31 min. timeout	Outdoor temp. value in °C

TempRoomSetpSetHeat:

Description: All Comfort, Standby and Economy heating setpoints provided by supervisor.
These three values correspond to controller parameters P02, P04 and P06.
Name: Three base heating setpoints.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
66	TempRoomSetpSetHeat	6 bytes	222.100	K – E	- State change	Three temp. values in °C

TempRoomSetpSetCool:

Description: All Comfort, Standby and Economy air conditioning setpoints provided by supervisor. These three values correspond to controller parameters P03, P05 and P07.
Name: Three base air conditioning setpoints.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
67	TempRoomSetpSetCool	6 bytes	222.100	K – E	- State change	Three temp. values in °C

TempRoomSetpSetHeatShift:

Description: All three shift/drift values of the Comfort, Standby and Economy heating setpoints provided by a supervisor.
Name: Drift of base heating setpoints.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
68	TempRoomSetpSetHeat	6 bytes	222.100	K – E	- State change - Periodic (optional)	Three temp. values in °C

TempRoomSetpSetCoolShift:

Description: All three shift/drift values of the Comfort, Standby and Economy air conditioning setpoints provided by a supervisor.
Name: Drift of base air conditioning setpoints.

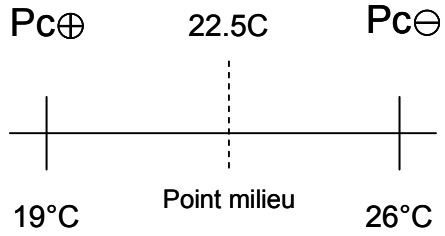
No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
69	TempRoomSetpSetCool	6 bytes	222.100	K – E	- State change - Periodic (optional)	Three temp. values in K

Datapoints for controlling Comfort mode, the Setpoint and the Fan speeds via a KNX terminal:

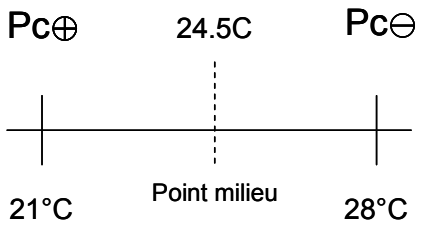
TempRoomSetpUserAbs:

Description: Comfort setpoint given via a local KNX terminal. Corresponds to the deadband midpoint on the V3000.
Name: Comfort setpoint set via a KNX terminal.
▪ The V3000 automatically recalculates its Comfort Heating and Cooling setpoints as a function of its deadband and the midpoint value received.

If base =



If the midpoint value sent is 24.5°C,
the V3000 will recalculate Pc+ et PC-:

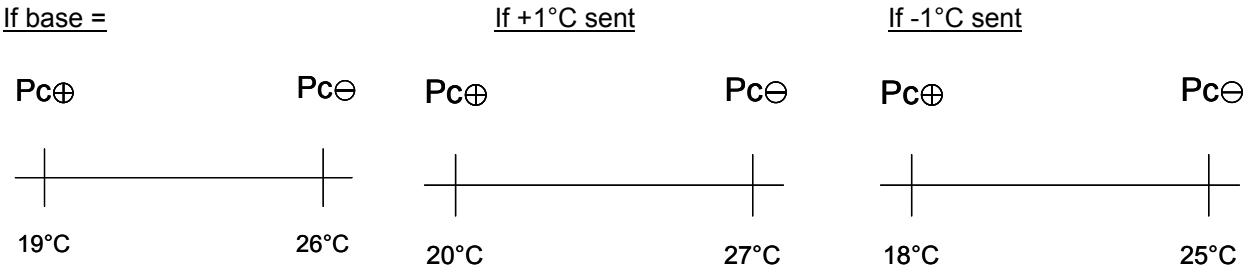


▪ If combined with a CIAT room terminal:
- the new midpoint for the setpoints is given by datapoint 70
- the V3000 recalculates its heating and cooling setpoints
- the CIAT terminal allows the shift around this new midpoint (±4.5°C depending on P11)

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
70	TempRoomSetpUserAbs	2 bytes	9.001	K – E	- State change - Periodic (optional)	Temp. value in °C

TempRoomSetpUserOffset:

Description: Comfort setpoint override via a KNX local terminal
Name: Comfort setpoint override via KNX terminal
▪ Positive/negative shift of V3000 base setpoints



▪ If combined with a CIAT room display terminal:
- the shift is automatically taken into account by the controller which sends it on to the terminal (the bar chart automatically adds the shift value sent to datapoint 71).

Note: Do not use this variable for a wall-mounted terminal with potentiometer.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
71	TempRoomSetpUserOffset	2 bytes	9.002	K – E	- State change - Periodic (optional)	Temperature shift value in K

ComfortPushButton:

Description: On/Off control via a KNX user terminal.
Name: On/off control via KNX user terminal.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
72	ComfortPushButton	2 bit	1.017	K – E	- Event	0 = Reduced (Standby/Eco/FP depending on value of P47) 1 = Comfort

HVACModeUser:

Description: On/Off control via a KNX user terminal.
Name: User mode set via a KNX terminal.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
73	HVACModeUser	2 bytes	20.102	K – E	- Event	0 = Auto 1 = Comfort 2 = Standby 3 = Economy 4 = Frost protection

FanSpeedUser:

Description: Manual fan speed set via a KNX user terminal.
Without this information, the controller runs at automatic speed.
When a FanSpeedUser signal is received, the following automatically occurs:
- The unit shifts to comfort mode/manual speed if it was in standby, reduced or FP (unless shut off by window switch or HVACModeOptim or alarm)
- The unit shifts to the corresponding manual speed if it was in comfort mode/automatic speed

Name: Manual speed set via KNX terminal.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
74	FanSpeedUser	1 byte	5.001	K – E	- Event	Value: 0 to 100% < LS ≤ 48% 49% ≤ MS ≤ 82% HS ≥ 83%

FanManual:

Description: Selection of automatic or manual speed via a KNX user terminal.
When a FanManual value of '1' is sent, a non-null value must be sent to FanSpeedUser at the same time.
Comment:

- When it receives a FanSpeedUser value, the controller automatically considers that FanManual has switched to '1'.
- The V3000 will not restart if a FanManual value of '0' is sent to it while the unit is in Standby, Eco or FP mode.

Name: Auto/Man. speed selection via KNX terminal.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
75	FanManual	1 bit	1.003	K – E	- Event	0 = Auto 1 = Manual

AQSetpUser:

Description: Air quality setpoint.
Name: Air quality setpoint in ppm.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
76	AQSetpUser	2 bytes	9.008	K – E	- State change	CO_2 setpoint in ppm

HumRelSetpUser:

Description: Dehumidification setpoint.
Name: Dehumidification setpoint in %.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
77	HumRelSetpUser	2 bytes	9.007	K – E	- State change	Relative humidity setpoint in %

TempRoom:

Description: Ambient temperature value provided by KNX user terminal. When a CIAT terminal is used, this information will override the temperature on the CIAT terminal.
Name: Ambient temperature provided by KNX sensor.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
78	TempRoom	2 bytes	9.001	K – E	- State change - Periodic, with a 31 min. timeout	Temperature value in °C

AQRoom:

Description: Value of room CO_2 level in ppm.
Name: Air quality in ppm.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
79	AQRoom	2 bytes	9.008	K – E	- State change - Periodic, with a 31 min. timeout	Value of CO_2 level in ppm

HumRelRoom:

Description: Value of room humidity level in %.
Name: Relative humidity level in %.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
80	HumRelRoom	2 bytes	9.007	K – E	- State change - Periodic, with a 31 min. timeout	Relative humidity value in %

PresenceStatus:

Description: space occupancy information via a KNX presence detector.
Name: KNX presence detector.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
81	PresenceStatus	1 bit	1.018	K – E	- State change - Periodic (optional)	0 = Unoccupied 1 = Occupied

▪ Controller state:
If 0 = unoccupied, maximum standby mode
If 1 = occupied, comfort mode unless:

- Window open
- HVACModeOptim $\neq$ 0
- Current unit shut down by alarms

WindowSwitch:

Description: Input for synchronising the master and slave window switches (if the window switches are divided among several units on the master/slave loop).
It is of no use if all the window switches are on the master device.
Name: Synchronisation of master/slave window switches.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
82	WindowSwitch	1 bit	1.019	K – E	- Event	0 = Closed 1 = Open

WindowStatus:

Description: State of KNX window switch.
Name: State of KNX window switch.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
83	WindowStatus	1 bit	1.019	K – E	- State change - Periodic (optional)	0 = Closed 1 = Open

OnOff:

Description: On/Off control for synchronised output.
Name: On/Off control for synchronised output.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
84	On Off	1 bit	1.001	K – E	- State change	0 = Off 1 = On

EnableAlarmInfo:

Description: Enable sending of alarm code (AlarmInfo object) present on controller.
Name: Enable AlarmInfo sending.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
85	EnableAlarmInfo	1 bit	1.003	K – E	- State change - Periodic (optional)	0 = Disabled 1 = Enabled

EnableAlarmText:

Description: Enable sending of alarm description (AlarmText object) present on controller.
Name: Enable AlarmText sending.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
86	EnableAlarmText	1 bit	1.003	K – E	- State change - Periodic (optional)	0 = Disabled 1 = Enabled

FilterCounterReset:

Description: Filter counter reset: acknowledge dirty filter alarm.
Name: Filter counter reset.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
87	FilterCounterReset	1 bit	1.016	K – E	- Event	0 = No action 1 = Acknowledgment

ElectricalPowerLimitation:

Description: Limitation of the electric power (limitation of the cycling of the electric heating stage) of the electric heater in %.
Name: Electric heater power limitation or load shedding in %.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
88	ElectricalPowerLimitation	1 byte	5.001	K – E	- State change - Periodic (optional)	Value of 0 to 100% 0% = 0 100% = 255

PRelChiller:

Description: Relative power supplied by the production of cold water.
The percentage sent to this datapoint must be representative of the position of the supply temperature on the water law so that the controllers can estimate their cooling consumption (available on datapoint CoilConsumptionAC).
Without this information, the controllers consider that PRelChiller is at 100%.
Name: Relative power of the production of cold water.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
89	PRelChiller	1 byte	5.004	K – E	- State change - Periodic (optional)	Value of 0 to 255%

PRelBurner:

Description: Relative power supplied by the production of hot water.
The percentage sent to this datapoint must be representative of the position of the supply temperature on the water law so that the controllers can estimate their heating consumption (available on datapoint CoilConsumptionAH).
Without this information, the controllers consider that PRelChiller is at 100%.
Name: Relative power of the production of hot water.

No.	Object function	Length	KNX DPT	FLAGS	When received	Setting
90	PRelBurner	1 byte	5.004	K – E	- State change - Periodic (optional)	Value of 0 to 255%

B: OUTPUT DATAPOINTS

EnergyDemandAC:

Description: Cold water demand, expressed in %.
This information is sent to the supervisor in order to turn production on or off depending on the cold water demand of all the terminal units.
Name: Cold water demand, expressed in %.
Value given for V3000: 0 to 120% max

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
91	EnergyDemandAC	1 byte	5.004	K – L – T	- Every 15 min. - When requested	Value of 0 to 255%

EnergyDemandAH:

Description: Hot water demand, expressed in %.
This information is sent to the supervisor in order to turn production on or off depending on the hot water demand of all the terminal units.
Name: Hot water demand, expressed in %.
Value given for V3000: 0 to 120% max

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
92	EnergyDemandAH	1 byte	5.004	K – L – T	- Every 15 min. - When requested	Value of 0 to 255%

EnergyDemandAir:

Description: Fresh air demand, expressed in %.
This information is sent to the supervisor in order to adjust the flow of fresh air on the unit to the demand of all the terminal units.
Name: Fresh air demand, expressed in %.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
93	EnergyDemandAir	1 byte	5.004	K – L – T	- State change - Every 15 min. - When requested	0 or 100%

ActPosHeatStageA:

Description: Actual heating valve position in %.
Name: Actual heating valve position in %.
Note: For an application with 2 heating/cooling tubes, the V3000 will use the 2 variables ActPostHeatStageA and ActPost CoolStageA depending on the water available in the network.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
94	ActPosHeatStageA	1 byte	5.001	K – L – T	- State change ≥ 5% - Every 15 min. - When requested	Value of 0 to 100% 0%=0 100%=255

ActPosHeatStageB:

Description: Actual electric heater position (in %) resulting from current time-proportional signal.
Example: 50% means 2 minutes on, 2 minutes off.
Name: Actual electric heater position in %.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
95	ActPosHeatStageB	1 byte	5.001	K – L – T	- State change ≥ 5% - Every 15 min. - When requested	Value of 0 to 100% 0%=0 100%=255

ActPosCoolStageA:

Description: Actual air conditioning valve position in %.
Name: Actual air conditioning valve position in %.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
96	ActPosCoolStageA	1 byte	5.001	K – L – T	- State change ≥ 5% - Every 15 min. - When requested	Value of 0 to 100% 0%=0 100%=255

FanSpeed:

Description: Actual fan speed in %.
For a three-speed fan:

- low speed = 33%
- medium speed = 66%
- high speed = 100%

Name: Actual fan speed in %.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
97	FanSpeed	1 byte	5.001	K – L – T	- State change ≥ 5% - Every 15 min. - When requested	Value of 0 to 100% 0%=0 100%=255

ActPosFreshAir:

Description: Actual fresh air damper position in %.
This damper operates by on/off control. Therefore, the closed position corresponds to 0% and the open position corresponds to 100%.
Name: Actual fresh air position in %.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
98	ActPosFreshAir	1 byte	5.001	K – L – T	- State change - Every 15 min. - When requested	0 or 100%

CoilConsumptionAC:

Description: Estimation of the cold water coil consumption in kW.
Attention: this value is only an estimation. Its reliability will depend on how accurately the data entered in the Cooling Coil Nominal Capacity parameter and the PRelChiller emissions reflect reality.
Name: Cold water coil consumption in kWh.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
99	CoilConsumptionAC	4 bytes	13.013	K – L – T	- Every 24 h - When requested	Value in kWh

CoilConsumptionAH:

Description: Hot water coil consumption.
Attention: this value is only an estimation. Its reliability will depend on how accurately the data entered in the Heating Coil Nominal Capacity parameter and the PRelBurner emissions reflect reality.
Name: Hot water coil consumption in kWh.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
100	CoilConsumptionAH	4 bytes	13.013	K – L – T	- Every 24 h - When requested	Value in kWh

ElectricConsumption:

Description: Electric heater consumption in kWh.
Attention: this value is only an estimation. Its reliability will depend on how accurately the data entered in the Electric Heater Nominal Power parameter reflect reality.
Name: Electric heater consumption in kWh.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
101	ElectricConsumption	4 bytes	13.013	K – L – T	- Every 24 h - When requested	Value in kWh

FanConsumption:

Description: Fan motor consumption in kWh.
Attention: this value is only an estimation. Its reliability will depend on how accurately the data entered in the LS Power, MS Power and HS Power reflect reality.
Name: Fan motor consumption in kWh.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
102	FanConsumption	4 bytes	13.013	K – L – T	- Every 24 h - When requested	Value in kWh

HVACModeEff:

Description: Mode currently being used (Comfort, Standby, Economy or Frost protection).
This information is used to tell any slave devices which mode they must switch to.
If a controller is configured as the master device and it controls slaves by enabling heating/cooling mode or by indoor temperatures, HVACModeEff must have a group address, otherwise alarm E21 will be triggered on the master device.
Name: Mode currently being used.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
103	HVACModeEff	1 byte	20.102	K – L – T	- State change - Every 15 min. - When requested	0 = Auto 1 = Comfort 2 = Standby 3 = Economy 4 = Frost protection

TempRoomSetpSetHeatEff:

Description: All Comfort, Standby and Economy operating heating setpoints.
This information is necessary for any slaves by enabling heating/cooling mode and for slaves by indoor temperatures.
Name: Three operating heating setpoints.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
104	TempRoomSetpSetHeatEff	6 bytes	222.100	K – L – T	- State change - Every 15 min. - When requested	Three temp. values in °C

TempRoomSetpSetCoolEff:

Description: All Comfort, Standby and Economy operating air conditioning setpoints. This information is required for any slaves by enabling heating/cooling mode and for slaves by indoor temperatures.
Name: Three operating air conditioning setpoints.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
105	TempRoomSetpSetCoolEff	6 bytes	222.100	K – L – T	- State change - Every 15 min. - When requested	Three temp. values in °C

AQSetpEff:

Description: Actual air quality setpoint.
Name: Actual air quality setpoint in ppm.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
106	AQSetpEff	2 bytes	9.008	K – L – T	- State change - When requested	Value of CO_2 level in ppm

HumRelSetpDehumEff:

Description: Actual dehumidification setpoint.
Name: Actual dehumidification setpoint in %.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
107	HumRelSetpDehumEff	2 bytes	9.007	K – L – T	- State change - When requested	Relative humidity value in %

TempReturnAir:

Description: Return air temperature value on terminal unit.
This information is necessary for slaves by indoor temperatures when the return air sensor has priority.
Name: Return air temperature.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
108	TempReturnAir	2 bytes	9.001	K – L – T	- State change ≥ 0.2 K - Every 15 min. - When requested	Temperature value in °C

TempDischargeAir:

Description: Supply air temperature value on terminal unit.
Name: Supply air temperature.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
109	TempDischargeAir	2 bytes	9.001	K – L – T	- State change ≥ 1 K - Every 15 min. - When requested	Temperature value in °C

TempFlowWater:

Description: Water temperature given by the local changeover sensor.
Name: Water temperature (local changeover).

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
110	TempFlowWater	2 bytes	9.001	K – L – T	- State change ≥ 1 K - Every 15 min. - When requested	Temperature value in °C

PresenceStatus:

Description: Space occupancy information via a presence detector wired to the controller.
Name: Presence detector (wired to controller).

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
111	PresenceStatus	1 bit	1.018	K – L – T	- State change - When requested	0 = Unoccupied 1 = Occupied

WindowSwitch:

Description: Output for synchronising the master and slave window switches (if the window switches are divided among several units on the master/slave loop).
It is of no use if all the window switches are on the master device.
Name: Synchronisation of master/slave window switches.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
112	Windowswitch	1 bit	1.019	K – T	- Event	0 = Closed 1 = Open

WindowStatus:

Description: Information on state of all window switches.
Name: Information on state of all window switches.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
113	WindowStatus	1 bit	1.019	K – L – T	- State change - When requested	0 = Closed 1 = Open

InfoOnOff:

Description: Indication of synchronised output state.
Name: Information on state of synchronised output.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
114	InfoOnOff	1 bit	1.001	K – L – T	- State change - When requested	0 = Off 1 = On

OnOff:

Description: On/Off control via a switch wired to an unused on/off input (D1 or D2) on the controller.
Name: Switch on/off control wired to controller.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
115	OnOff	1 bit	1.001	K – T	- State change	0 = Off 1 = On

InAlarm:

Description: Controller alarm.
Name: Controller alarm.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
116	InAlarm	1 bit	1.005	K – L – T	- State change - When requested	0 = No Alarm 1 = Alarm

AlarmInfo:

Description: Error code of current alarm.
This information is sent only if datapoint EnableAlarmInfo = 1 or when it is requested.
Name: Error code of current alarm.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
117	AlarmInfo	6 bytes	219.001	K – L – T	- State change if EnableAlarmInfo = 1 - When requested	Alarm error code

AlarmText:

Description: Text description of current alarm.
This information is sent only if datapoint EnableAlarmText = 1 or when it is requested.
Name: Text description of current alarm.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
118	AlarmText	14 bytes	16.001	K – L – T	- State change if EnableAlarmText = 1 - When requested	Text description of alarm

List of V3000 controller alarm codes and texts
See table on page 53 in V3000 Alarm section.

Master/Slave by positioning of actuators:

InfoEnergyDemandAC:

Description: Cold water demand from master to slave by positioning of actuators, expressed in %.
This datapoint is available on the ETS only if parameter P00 (Master/Slave/Standalone) is set to 'Master'.
Name: Cold water demand for slave by positioning of actuators.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
119	InfoEnergyDemandAC	1 byte	5.004	K – L – T	- Every 15 min. - When requested	Value of 0 to 255%

InfoEnergyDemandAH:

Description: Cold water demand from master to slave by positioning of actuators, expressed in %.
This datapoint is available on the ETS only if parameter P00 (Master/Slave/Standalone) is set to 'Master'.
Name: Hot water demand for slave by positioning of actuators.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
120	InfoEnergyDemandAH	1 byte	5.004	K – L – T	- Every 15 min. - When requested	Value of 0 to 255%

InfoEnergyDemandAir:

Description: Fresh air demand from master to slave by positioning of actuators, expressed in %.
This datapoint is available on the ETS only if parameter P00 (Master/Slave/Standalone) is set to 'Master'.
Name: Fresh air demand for slave by positioning of actuators.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
121	InfoEnergyDemandAir	1 byte	5.004	K – L – T	- State change - Every 15 min. - When requested	0 or 100%

ActPosSetpHeatStageA:

Description: Heating valve control from master to slave by positioning of actuators.
This datapoint is available on the ETS only if parameter P00 (Master/Slave/Standalone) is set to 'Master'.
Name: Heating valve control for slave by positioning of actuators.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
122	ActPosSetpHeatStageA	1 byte	5.001	K – L – T	- State change ≥ 5% - Every 15 min. - When requested	Value of 0 to 100% 0% = 0 100% = 255

ActPosSetpHeatStageB:

Description: Electric heater control from master to slave by positioning of actuators.
This datapoint is available on the ETS only if parameter P00 (Master/Slave/Standalone) is set to 'Master'.
Name: Electric heater control for slave by positioning of actuators.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
123	ActPosSetpHeatStageB	1 byte	5.001	K – L – T	- State change ≥ 5% - Every 15 min. - When requested	Value of 0 to 100% 0% = 0 100% = 255

ActPosSetpCoolStageA:

Description: Air conditioning valve control from master to slave by positioning of actuators.
This datapoint is available on the ETS only if parameter P00 (Master/Slave/Standalone) is set to 'Master'.
Name: Air conditioning valve control for slave by positioning of actuators.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
124	ActPosSetpCoolStageA	1 byte	5.001	K – L – T	- State change ≥ 5% - Every 15 min. - When requested	Value of 0 to 100% 0% = 0 100% = 255

FanSpeedSetp:

Description: Ventilation control from master to slave by positioning of actuators.
This datapoint is available on the ETS only if parameter P00 (Master/Slave/Standalone) is set to 'Master'.
If the master controller controls the slaves by positioning of actuators, FanSpeedSetp must have a group address, otherwise alarm E21 will be triggered.
Name: Ventilation control for by actuator position.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
125	FanSpeedSetp	1 byte	5.001	K – L – T	- State change ≥ 5% - Every 15 min. - When requested	Value of 0 to 100% 0% = 0 100% = 255

ActPosSetpFreshAir:

Description: Fresh air damper control from master to slave by positioning of actuators.
This datapoint is available on the ETS only if parameter P00 (Master/Slave/Standalone) is set to 'Master'.
Name: Fresh air control for slave by positioning of actuators.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
126	ActPosSetpFreshAir	1 byte	5.001	K – L – T	- State change - Every 15 min. - When requested	0 or 100%

Master/slave by enabling heating/cooling mode

The following two datapoints are essential for the correct operation of the slaves by positioning of the actuators.

InfoEnableHeat:

Description: Enable heating from master to slave by enabling heating/cooling mode.
This datapoint is available on the ETS only if parameter P00 (Master/Slave/Standalone) is set to 'Master'.
Name: Enable heating for heating/cooling slave.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
127	InfoEnableHeat	1 bit	1.003	K – L – T	- State change - Every 15 min. - When requested	0 = Disabled 1 = Enabled

InfoEnableCool:

Description: Enable air conditioning from master to slave by enabling heating/cooling mode.
This datapoint is available on the ETS only if parameter P00 (Master/Slave/Standalone) is set to 'Master'.
Name: Enable air conditioning for heating/cooling slave.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
128	InfoEnableCool	1 bit	1.003	K – L – T	- State change - Every 15 min. - When requested	0 = Disabled 1 = Enabled

HMI channel (CIAT control terminal)

TempRoom:

Description: Ambient temperature value provided by CIAT user terminal.
This datapoint is available on the ETS tool only if the User Terminal parameter (General tab) is set to 'CIAT terminal connected to controller'.
Name: Ambient temperature from CIAT terminal.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
129	TempRoom	2 bytes	9.001	K – L – T	- State change ≥ 0.2 K - Every 15 min. - When requested	Temperature value in °C

TempRoomSetpUserOffset:

Description: Comfort setpoint override via CIAT terminal.
This datapoint is available on the ETS tool only if the User Terminal parameter (General tab) is set to 'CIAT terminal connected to controller'.
Name: Comfort setpoint override via CIAT terminal.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
130	TempRoomSetpUserOffset	2 bytes	9.002	K – L – T	- State change ≥ 0.5 K - When requested	Temperature shift value in K

ComfortPushButton:

Description: On/off control set via CIAT user terminal.
This datapoint is available on the ETS tool only if the User Terminal parameter (General tab) is set to 'CIAT terminal connected to controller'.
Name: On/Off control via CIAT terminal.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
131	ComfortPushButton	1 bit	1.017	K – T	- Event	0 = Reduced (Standby/Eco/FP depending on value of P47) 1 = Comfort

FanSpeedUser:

Description: Manual fan speed set via CIAT user terminal.
This datapoint is available on the ETS tool only if the User Terminal parameter (General tab) is set to 'CIAT terminal connected to controller'.
Name: Manual speed selected via CIAT terminal.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
132	FanSpeedUser	1 byte	5.001	K – T	- Event	Value: 0 to 100% < LS ≤ 48% 49% ≤ MS ≤ 82% HS ≥ 83%

FanManual:

Description: Selection of automatic or manual speed via CIAT user terminal.
When a FanManual value of '1' is sent, a non-null value is automatically sent to FanSpeedUser at the same time.
This datapoint is available on the ETS tool only if the User Terminal parameter (General tab) is set to 'CIAT terminal connected to controller'.
Nom: Auto/Man. speed selection on CIAT terminal.

No.	Object function	Length	KNX DPT	FLAGS	When sent	Setting
133	FanManual	1 bit	1.003	K – L – T	- State change - When requested	0 = Auto 1 = Manual

Note concerning the HMI channel:
The corresponding datapoints can be masked via the ETS tool if the CIAT terminal is not used
See CIAT Terminal Presence/Absence in the General tab of the ETS tool.

General comment:
Even if periodic reception is optional for certain inputs, we recommend sending them periodically (once every 24 hours is sufficient) in order to avoid losing data in the event of failures, such as power outages.

List of V3000 controller alarm codes and texts:

Alarm code	Alarm description	AlarmInfo			AlarmText
		Alarm Priority	Application Aera	Error Class	
E03	Software error (record table) or after a master reset	3	13	4	record table
E05	KNX address table error	2	13	4	comm. Obj.
E06	Overly frequent writing to EEPROM (>100/day)	1	13	4	param. writing
E07	Filter to be replaced	3	13	3	filter
E08	Supply air sensor fault	3	13	1	dis. temp
E09	Return air sensor fault	3	13	1	return temp.
E10	Room sensor fault	3	13	1	room temp.
E11	Central changeover not received	2	13	1	change over
E12	Fresh air frost protection alarm (supply air protection)	2	13	2	anti freeze 1
E13	Fresh air frost protection alarm (safety thermostat)	1	13	2	anti freeze 2
E14	Condensation alarm	0	13	2	condensation
E15	Slave cut off from master	1	13	4	no master
E16	Condensate pump alarm	2	13	3	drain pump
E17	General alarm	1	13	3	gen. alarm
E18	FMA alarm	0	13	3	fan motor
E19	E19: Fault on active temperature sensor	1	13	1	temperature
E20	E20: Condensation sensor S3 fault	0	13	1	cond. sensor
E21	Master or Slave not configured	2	13	4	master slave
E22	No other push button product selected over the bus	2	13	4	pb timeout
E23	Cannot link with push button product selected	2	13	4	pb linking
E25	Controller fault	0	13	4	eeprom
--	No alarm	3	13	0	no alarm

E00: non-critical alarm; does not shut down the terminal unit
E00*:* critical alarm; shuts down the terminal unit
Alarm priority: 0 = highest/1 = medium/2 = lowest/3 = void priority
Error class: 0 = no fault/1 = sensor fault/2 = process fault/3 = actuator fault/4 = other fault
Application area: 13 = HVAC terminal unit.

Using and understanding V3000 alarms sent over the KNX network

1) Alarm management:
   - Three information levels are available with KNX:
     - InAlarm
     - AlarmInfo
     - Alarmtext
   - The only datapoint managed by default is InAlarm. It indicates whether an alarm has been triggered on a controller.
   - The AlarmInfo and/or AlarmText datapoints must be enabled in order to find out which alarm has been triggered on the controller.
   - Therefore:
     → EnableAlarmInfo = 1 AlarmInfo is sent systematically
     → EnableAlarmText = 1 AlarmText is sent systematically.

2) Example: Condensation Protection alarm:
When the Condensation Protection is triggered on a fan coil unit, the V3000 issues:

- **InAlarm = 1**
- **AlarmInfo:**

Format:	6 bytes: $U_8N_8N_8N_8B_8B_8$					
Byte No.	6 MSB	5	4	3	2	1 LSB
Field name	LogNumber	AlarmPriority	Application-Area	ErrorClass	Attributes	AlarmStatus Attributes
Coding	UUUUUUUU	NNNNNNNN	NNNNNNNN	NNNNNNNN	00BBBBBB	0000BBBB

MSB: Most significant byte LSB: Least significant byte

LogNumber is a counter. It indicates the number of times AlarmInfo has been sent by the controller since it was last turned on. It therefore makes it possible to estimate the frequency at which alarms are triggered on the V3000 (a total of two AlarmInfo frames are sent when an alarm appears and disappears). An example is given below.

The Attributes and AlarmStatusAttributes datapoints are not managed by the V3000; they therefore remain at '0'.

Example:

First sending: condensation alarm triggered:	01 00 0D 02 00 00
Second sending: condensation alarm automatically disappears (no Alarm) :	02 03 0D 00 00 00
Third sending: condensation detection sensor fault:	03 00 0D 01 00 00
Fourth sending: after condensation detection sensor repaired:	04 03 0D 00 00

- **AlarmText:**

Format:	14 bytes: A_{14}			
Byte No.	14 MSB	...	1 LSB	MSB: Most significant byte
Field name	Character 1	...	Character 14	LSB: Least significant byte
Coding	AAAAAAAA		AAAAAAAA	

This datapoint is used to send string of text characters with a fixed length of 14 bytes. The data is entered starting with the most significant byte. Each byte represents a letter or character and is coded as shown below.

If the text to be sent is less than 14 bytes long, a null byte (00h) must be inserted after the last character in the string in order to signal the end of the message. The data that follows the null byte does not need to be interpreted.

AAAA	AAAA	LSN = Least significant nibble
MSN	LSN	MSN = Most significant nibble

MSN	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LSN																
0	NUL	DLE		0	@	P	`	p				°	À	Ð	à	ð
1	SOH	DC1	!	1	A	Q	a	q			¡	±	Á	Ñ	á	ñ
2	STX	DC2	"	2	B	R	b	r			¢	²	Â	Ò	â	ò
3	ETX	DC3	#	3	C	S	c	s			£	³	Ã	Ó	ã	ó
4	EOT	DC4	$	4	D	T	d	t			¤	´	Ä	Ô	ä	ô
5	ENQ	NAK	%	5	E	U	e	u			¥	µ	Å	Õ	å	õ
6	ACK	SYN	&	6	F	V	f	v			¦	¶	Æ	Ö	æ	ö
7	BEL	ETB	‘	7	G	W	g	w			§	·	Ç	×	ç	÷
8	BS	CAN	(	8	H	X	h	x			¨	¸	È	Ø	è	ø
9	HT	EM	)	9	I	Y	i	y			©	¹	É	Ù	é	ù
A	LF	SUB	*	:	J	Z	j	z			ª	º	Ê	Ú	ê	ú
B	VT	ESC	+	;	K	[	k	{			«	»	Ë	Û	ë	û
C	FF	FS	,	<	L	\	l	|		¬	¼	Ì	Ü	ì	ü
D	CR	GS	-	=	M	]	m	}			-	½	Í	Ý	í	ý
E	SO	RS	.	>	N	^	n	~			®	¾	Î	Þ	î	þ
F	SI	US	/	?	O	_	o				¯	¿	Ï	ß	ï	ÿ

Examples:

```
condensation:      63 6F 6E 64 65 6E 73 61 74 69 6F 6E 00 XX
cond. sensor:      63 6F 6E 64 2E 20 73 65 6E 73 6F 72 00 XX
no alarm:          6E 6F 20 61 6C 61 72 6D 00 XX XX XX XX XX
```

Where XX are unspecified values that should be ignored.

▪ Upon receiving these values and frames, the BAS can use them to deduce the necessary corrective actions (optimisation of water temperatures)

Note: All the V3000 alarms are handled based on the principle described above.

Use with ETS3

ETS file "F30xx.pr3"

Introduction:

- Only people experienced in using the ETS3 configuration tool for the KNX bus and associated specifications may use the V3000's ETS tool.
  Follow the recommendations of the KNX association (www.konnex.org) on using these configuration tools.

Special features of the V3000 database:

Two types of files are available:

- ➔ Application file corresponding to the factory preconfiguration ordered
- ➔ Generic files containing an application: one master/two slave with the necessary links between the three controllers created

A. File with factory application

• CIAT fan coil units are factory-preconfigured for the application indicated by the installer at the time of ordering (2 pipes, 4 pipes, 2 pipes/2 wires, window switch, condensate pump, fan type used, etc).

• The ETS3 database is therefore specific to each factory-preconfigured application.

• For each application there is a ".pr3" file that contains all the parameters in the factory preconfiguration.
As a result, there is no need to reconfigure the entire factory configuration.

See the factory configuration selection table.
The factory configuration sheet is also provided on the order acknowledgement form for each project.

Example: File F3004.pr3 for a standard 2-pipe, cooling only unit with 3-speed fan and room sensor.

• In addition to the above file, there is also a factory configuration summary:

Example: F3004.pdf for a standard 2-pipe, cooling only unit with 3-speed fan and room sensor.

NOTE: the correct operation of the units is guaranteed only if the factory configuration and the associated file are used.
The downloading of applications of any other type or which do not meet the factory configuration remain the responsibility of the integrator and/or installer.

• The parameter sheet selection table for three-way valve applications is provided on the following page.
Contact your CIAT service office for other applications or special configurations.

Configuration sheet table for a three-way valve

V3000 Version 1.00 Nov 2008

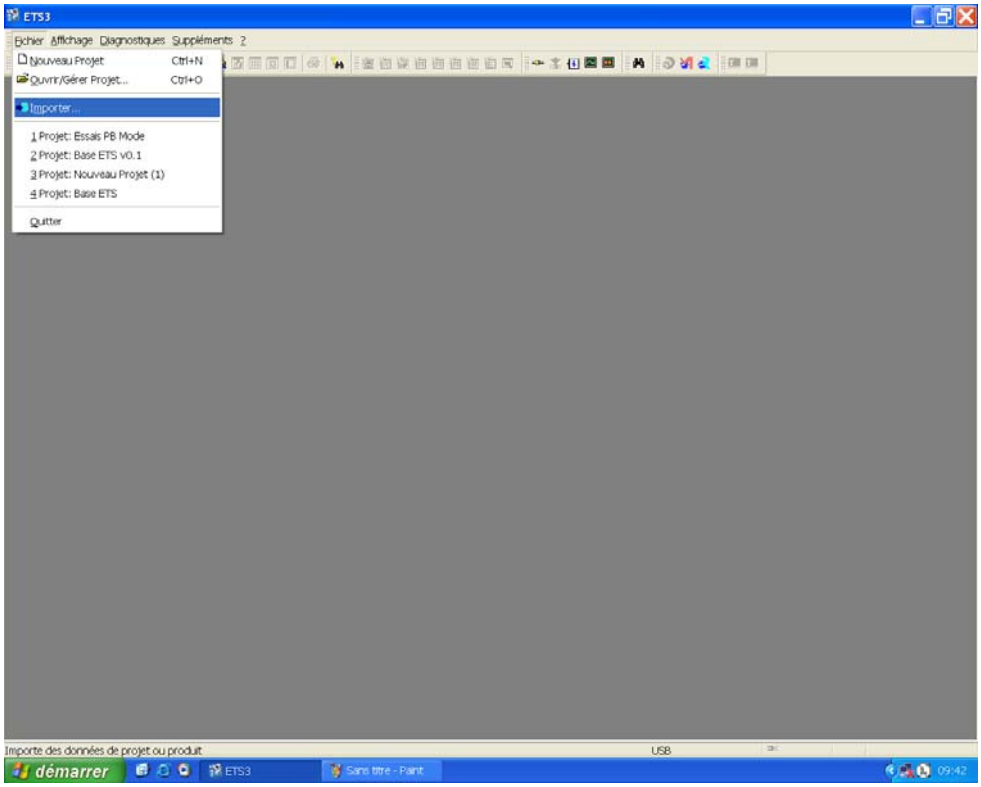
SELECTION OF STANDARD WIRING DIAGRAMS FOR *THREE-WAY VALVES*

CIAT

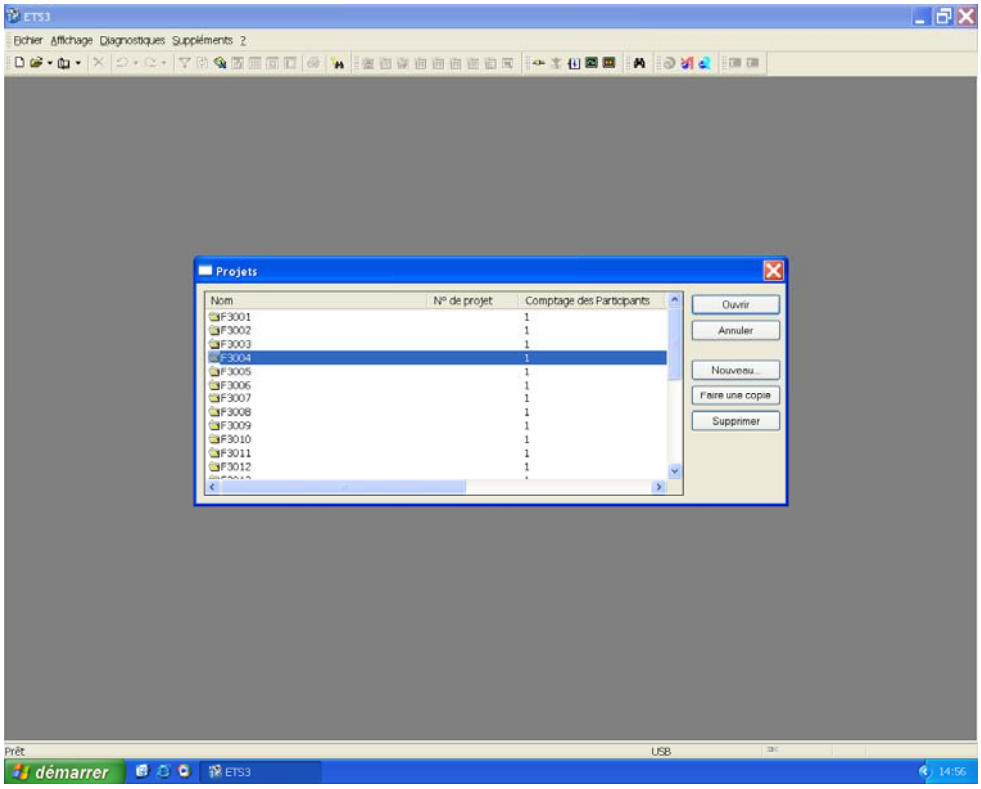
			Standard	PRODUCT CODE	VALVES	WIRING DIAGRAM	AMBIENT PARAMETER	RETURN PARAMETER ***Flush-mounted + RF***	Parameter AMBIENT + Supply limiter	Wiring diagram COND. PUMP
2 pipes	Heating only	3 speeds	STD	E3000/E3001	2WV/4WV	7186220	F3004	F3005	F3006	
		Brushless	STD	E3000/E3001	2WV/4WV	7186221	F3025	F3026	F3027	
	Cooling only	3 speeds	STD	E3002/E3003	2WV/4WV	7186222	F3004	F3005	F3006	7186223
		Brushless	STD	E3002/E3003	2WV/4WV	7186225	F3025	F3026	F3027	7186226
	Heating/Cooling Auto C/O	3 speeds	STD	E3004/E3005	2WV/4WV	7186228	F3004	F3005	F3006	7186229
		Brushless	STD	E3004/E3005	2WV/4WV	7186231	F3025	F3026	F3027	7186232
	MELODY 2P	3 speeds	STD	E3000 to E3005	2WV/4WV		F3004	F3005	F3006	7186234
		Brushless	STD	E3000 to E3005	2WV/4WV		F3025	F3026	F3027	7186235
2 Wires + Electric	Cooling only + Electric < 2000 W	3 speeds	STD	E3006/E3007	2WV/4WV	7186236	F3007	F3008	F3009	7186237
		Brushless	STD	E3006/E3007	2WV/4WV	7186239	F3028	F3029	F3030	7186240
	Cooling only + Electric < 2000 W	3 speeds	STD	E3006/E3007	2WV/4WV	7186242	F3007	F3008	F3009	7186243
		Brushless	STD	E3006/E3007	2WV/4WV	7186245	F3028	F3029	F3030	7186246
	Heating/Cooling + Elec. < 2000 W Auto CO	3 speeds	STD	E3008/E3009	2WV/4WV	7186248	F3007	F3008	F3009	7186249
		Brushless	STD	E3008/E3009	2WV/4WV	7186251	F3028	F3029	F3030	7186252
	Heating/Cooling + Electric > 2000 W Auto CO	3 speeds	STD	E3008/E3009	2WV/4WV	7186254	F3007	F3008	F3009	7186255
		Brushless	STD	E3008/E3009	2WV/4WV	7186257	F3028	F3029	F3030	7186258
	MELODY 2W2P	3 speeds	STD	E3006 to E3009	2WV/4WV		F3007	F3008	F3009	7186234
		Brushless	STD	E3006 to E3009	2WV/4WV		F3028	F3029	F3030	7186235
4 pipes		3 speeds	STD	E3040/E3041	2WV/4WV	7186262	F3001	F3002	F3003	7186263
		Brushless	STD	E3040/E3041	2WV/4WV	7186265	F3022	F3023	F3024	7186266
	MELODY 4P	3 speeds	STD	E3040 to E3041	2WV/4WV		F3001	F3002	F3003	7186268
		Brushless	STD	E3040 to E3041	2WV/4WV		F3022	F3023	F3024	7186269

Note on brushless motors: The four voltage thresholds required for this application are not entered in the corresponding configuration sheet. To obtain these thresholds, refer to the original order for the units (Ventilation tab in the ETS tool). Consult us for all applications not described above.

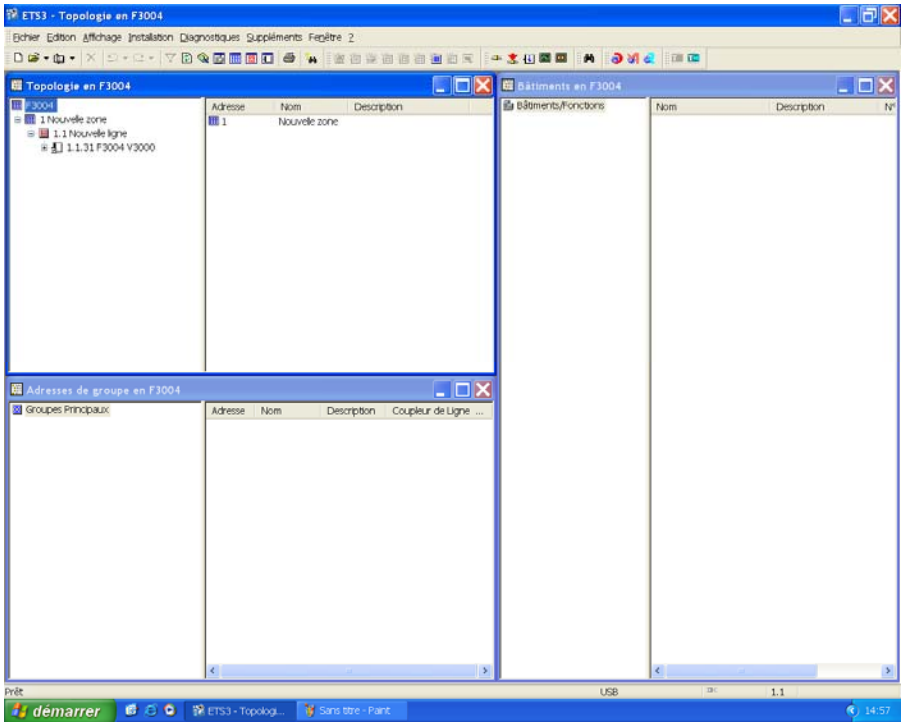
Import the .pr3 file provided in the ETS tool.



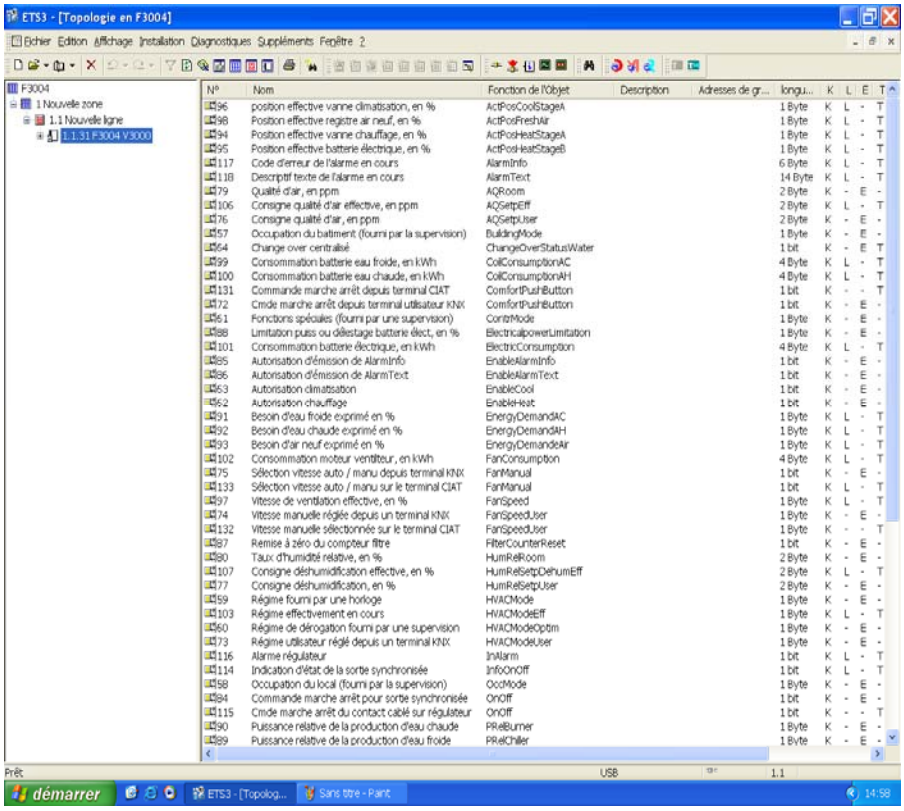
Once this filed has been imported, you can open a new project.
File F30xx created in the Projects tab



The ETS tool proposes the following topology:



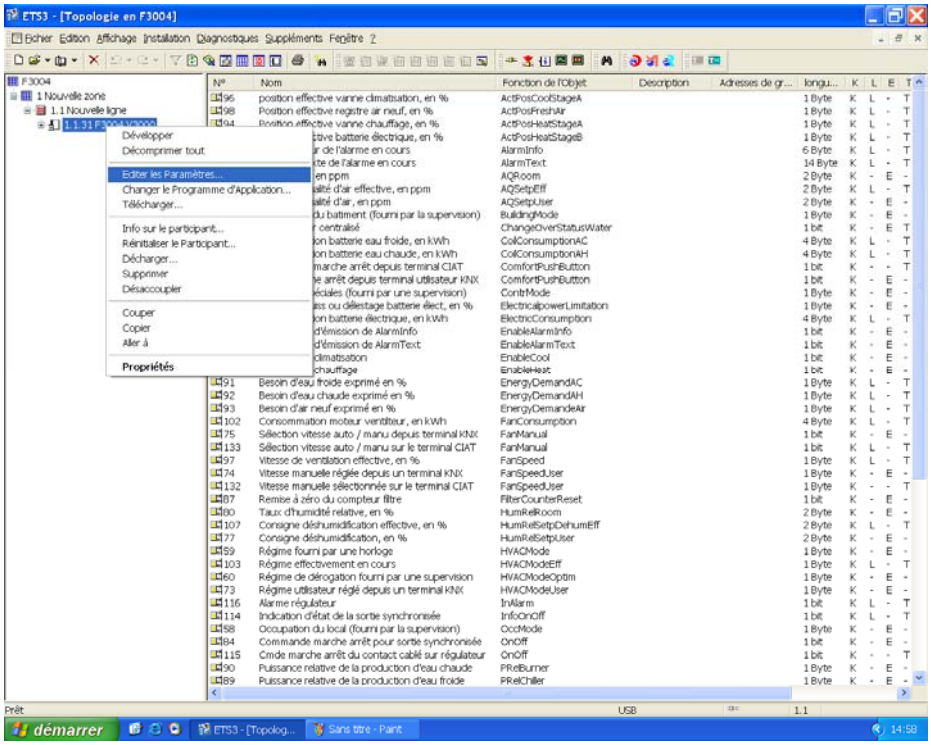
Detailed view of the created V3000 controller:



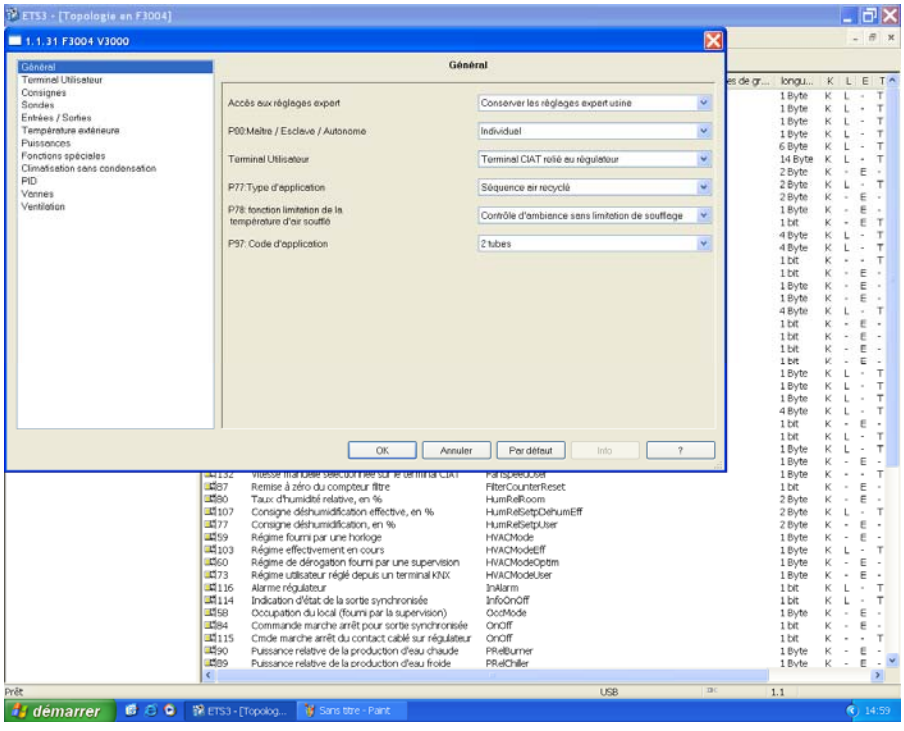
All the V3000 controller datapoints appear as shown when the controller is selected.
The breakdown and exact names of these datapoints are given on page 18, 19 and 20 of this document.

Values of the parameters corresponding to the file imported (F30xx.pr3).

- Print the parameters
- This list of factory parameters is summarised in file F30xx.pdf.

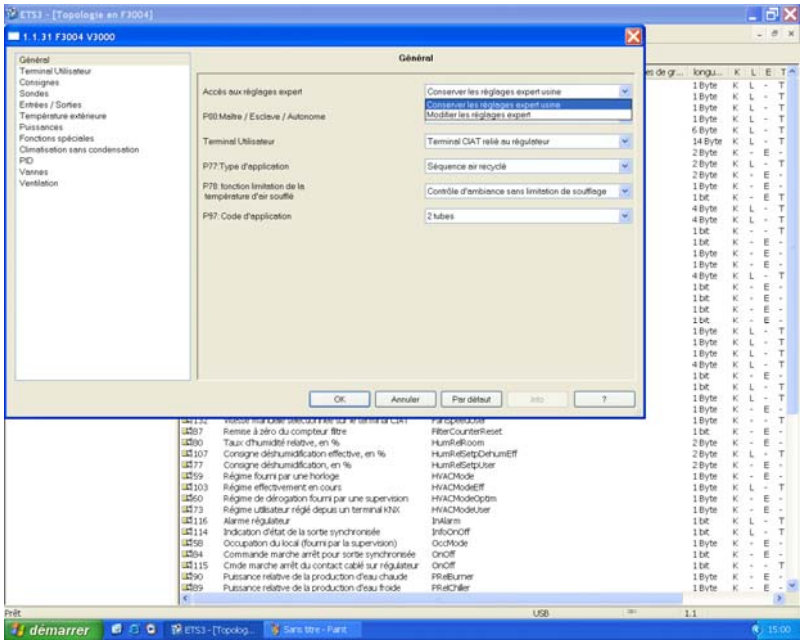


General parameters of the V3000 controller



In this window you can change the controller parameters in order to create a reference controller for your entire system.
These parameters are broken down and listed by type on page 11 to 16 of this document.

Note regarding expert parameters:

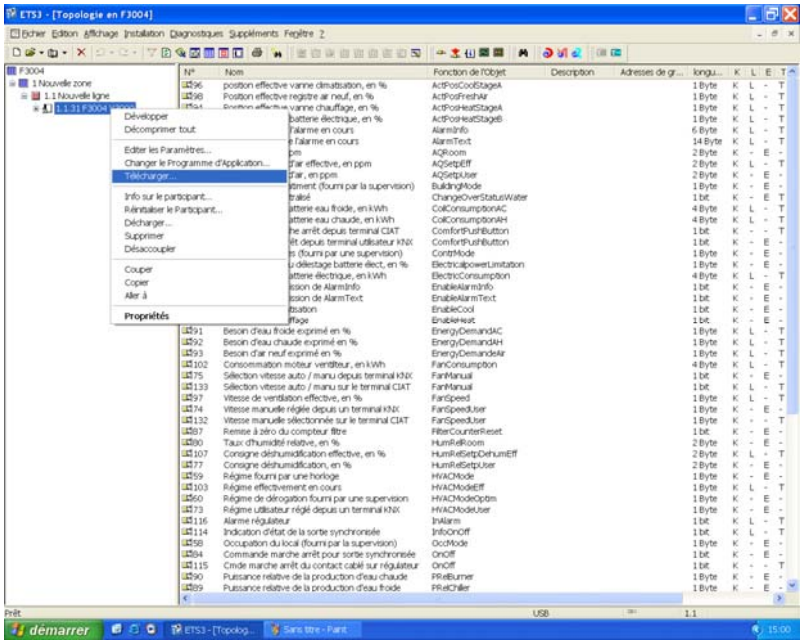


This tab frees up expert parameters in each tab in case you need to adjust the operation of your units.

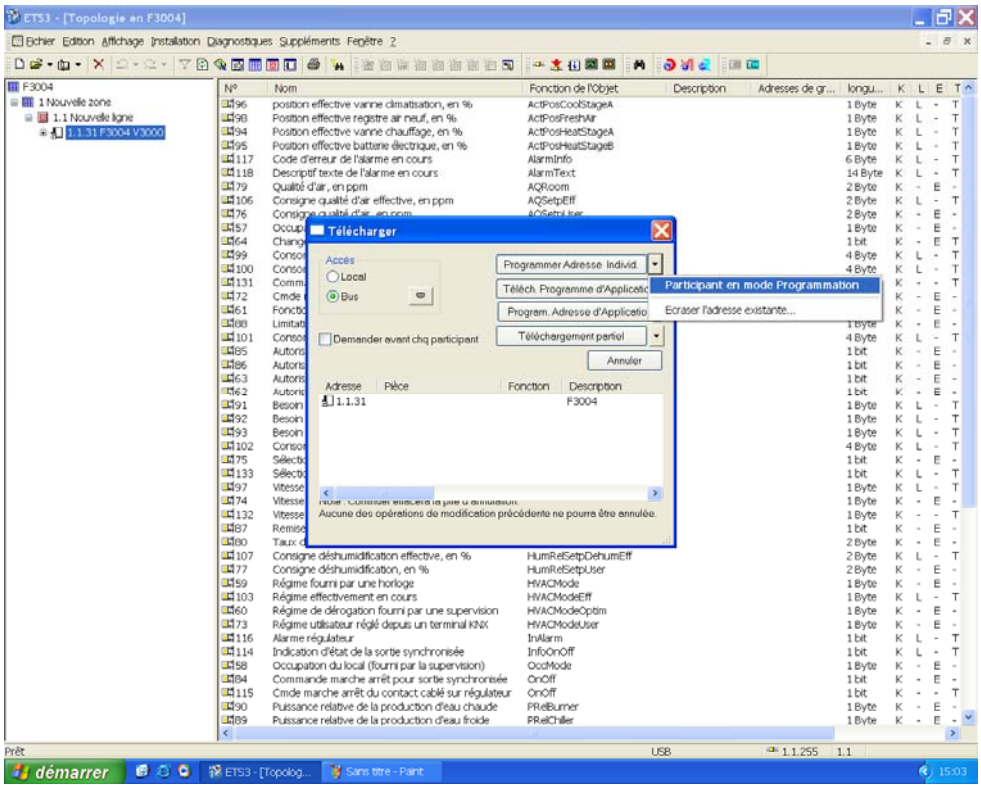
This step remains the under entire responsibility of the integrator/installer, who must make sure that the new parameters are compatible with the on-site terminal units.

- This reference controller can then be copied and pasted as many times as needed to create the exact number of controllers on your system.
- The functional links must then be identified with each V3000 via group addresses (see section B: Generic master/slave files).
- Once your project is finished, you can log on to the KNX bus and download your project on-site.

Assigning an address to a controller:



In this example, the ETS tool will give the physical address 1.1.31 to the controller placed in programming mode:



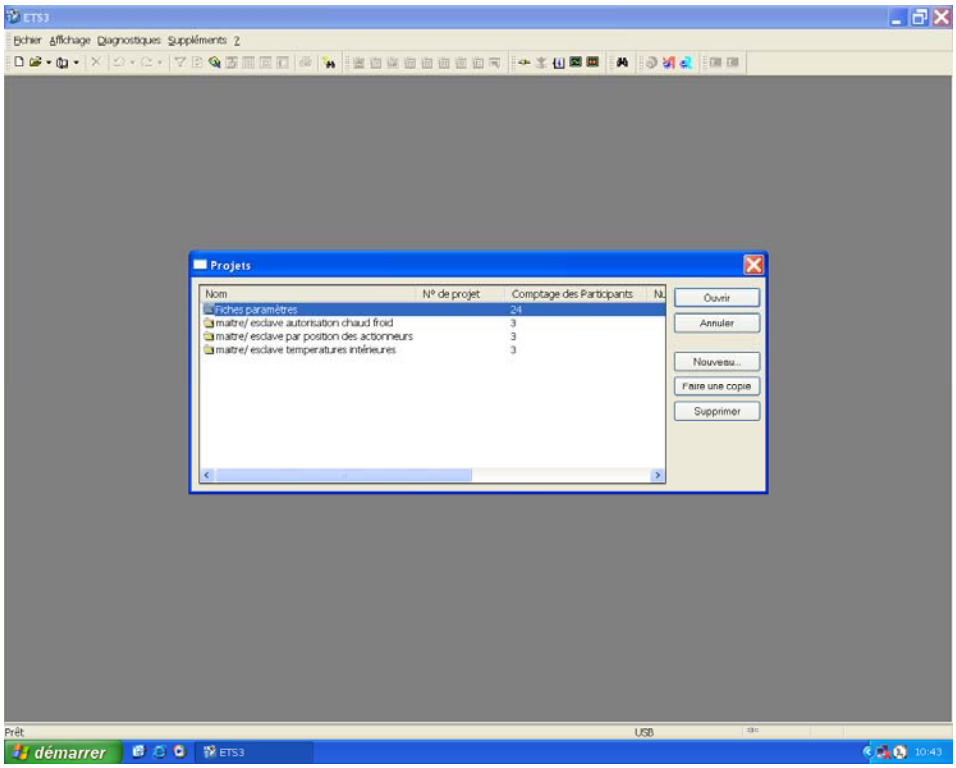
At the start of this operation, the ETS tool will wait until the controller enters learning mode.
For details on this step, go to page 10 of this document.

Once addresses have been assigned to the controllers, the application program can be loaded in order to update all the parameters and group addresses on all the installed V3000s.

B. Generic Master/Slave Files

The V3000 allows three different types of Master/Slave pairs to be managed:

1. *Master by indoor temperatures*:
   Maitre/Esclave température intérieure.pr3 (Master/Slave indoor temperatures.pr3) file
2. *Master by enabling of heating/cooling*:
   Maitre/Esclave autorisation chaud froid.pr3 (Master/Slave heating/cooling enabling) file
3. *Master by positioning of actuators*:
   Maitre/Esclave par Position des Actionneurs.pr3 (Master/Slave by positioning of actuators.pr3) file



All the links needed to manage these three Master/Slave modes are thereby created (see the diagrams of these links on the following pages).

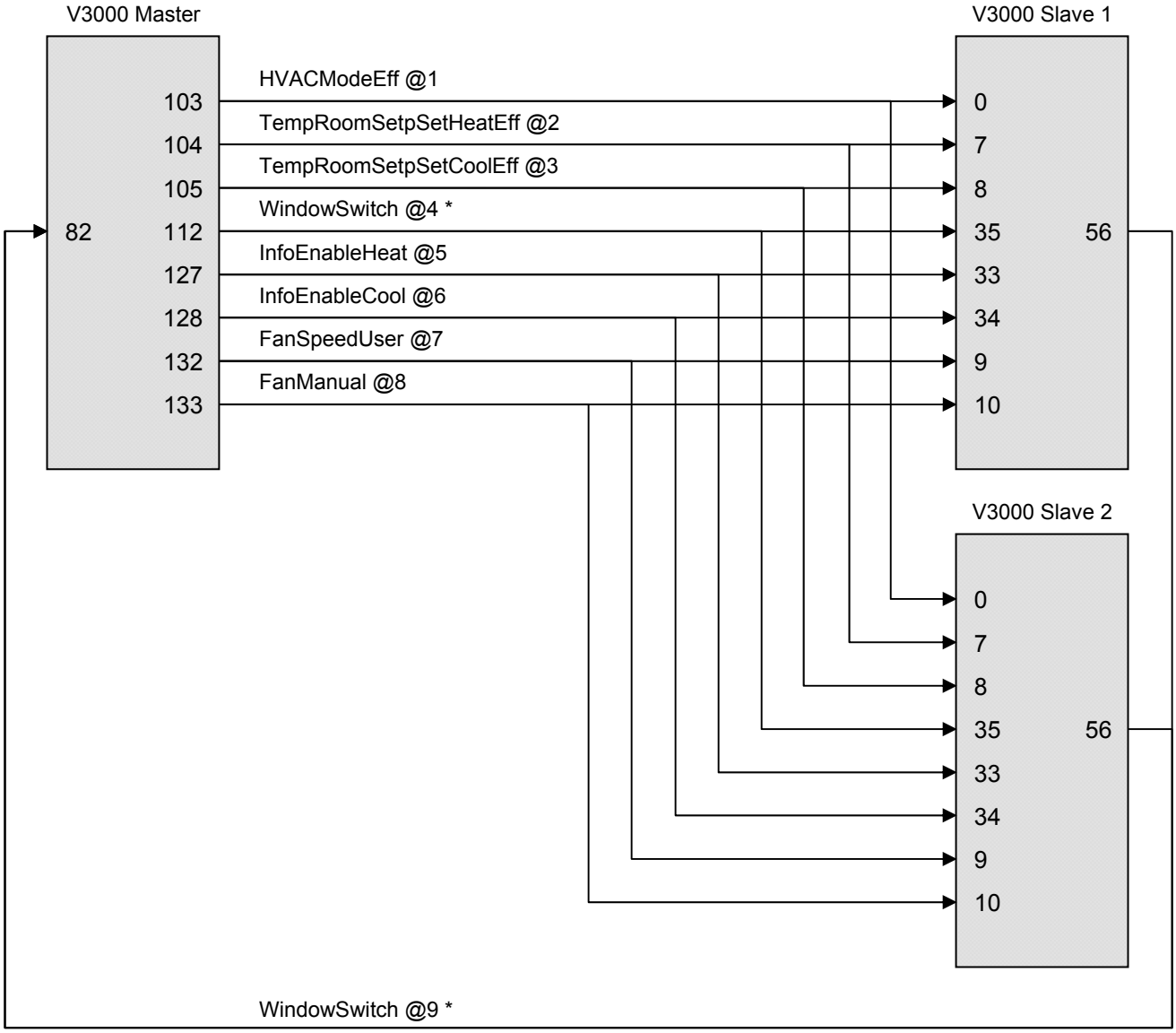
Other links can, however, be added depending on the needs of each system.

Important:

➔ Before loading parameters over the network, all the controller parameters given by ".pr3" file must first be changed, based on the site and system, in order to retrieve the factory configuration of the installed V3000s.

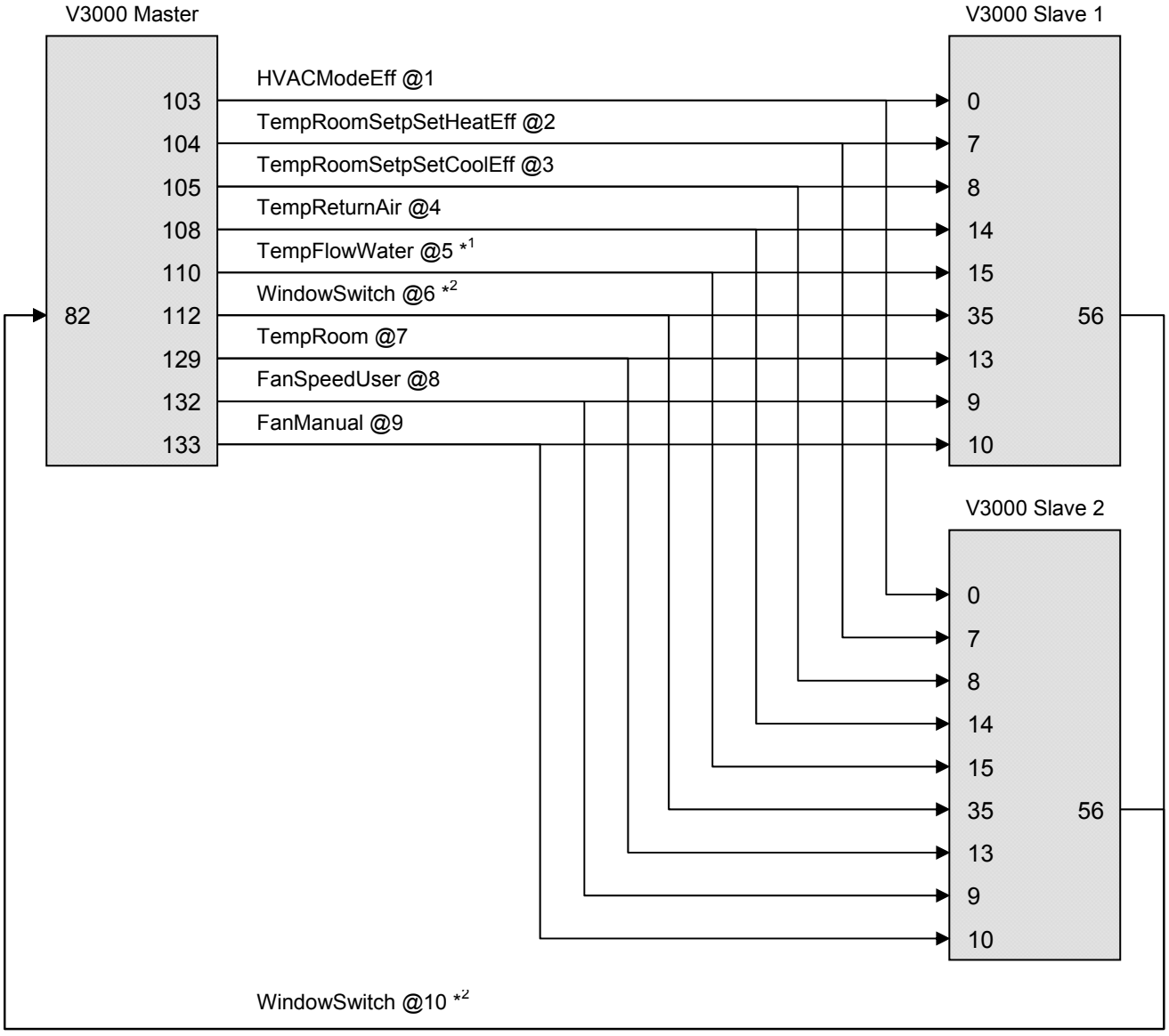
The list of these parameters corresponds to the PDF file (F30xx.pdf) for the project. To obtain this file, contact your CIAT service office.

Master/slave by enabling heating/cooling mode



* WindowSwitch is required only if one or more window switches are wired to the slave units.
In this case, the group address used for communication from the slaves back to the master must be different from the group address used for communication from the master to the slaves.

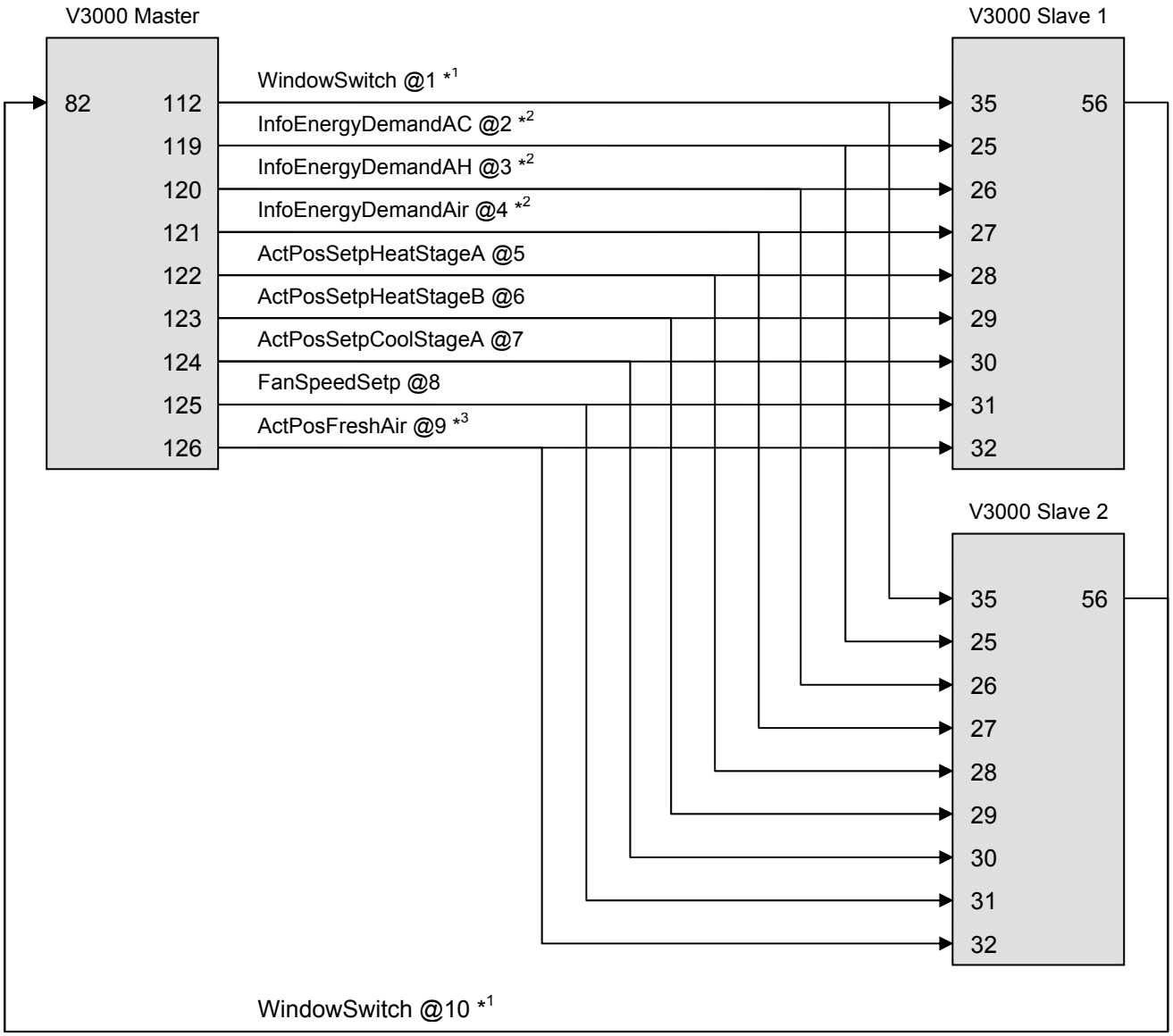
Master/slave by indoor temperatures



*1 TempFlowWater is required only for applications with a local changeover sensor.

*2 WindowSwitch is required only if one or more window switches are wired to the slave units.
In this case, the group address used for communication from the slaves back to the master must be different from the group address used for communication from the master to the slaves.

Master/slave by positioning of actuators



*1 WindowSwitch is required only if one or more window switches are wired to the slave units.
In this case, the group address used for communication from the slaves back to the master must be different from the group address used for communication from the master to the slaves.

*2 The three InfoEnergyDemand datapoints are required only if the controllers must send back hot water/cold water/fresh air demand information (EnergyDemand) to a supervisor.

*3 ActPosFreshAir is required only for applications that use a fresh air damper.

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