Intesis Interface for the integration of Hitachi’s Air-to-Water units User Manual

Intesis Interface for the integration of Hitachi’s

Air-to-Water units User Manual

Interface for the integration of Hitachi's Air-to-Water units into KNX TP-1 (EIB) control systems

Compatible with Air-to-Water Yutaki S, Yutaki S Combi, Yutaki S80 and Yutaki M series

Application's Program Version: 1.1

USER MANUAL

Issue date: 07/2020 r2.2 ENGLISH

Important User Information
Disclaimer

The information in this document is for informational purposes only. Please inform HMS Industrial Networks of any inaccuracies or omissions found in this document. HMS Industrial Networks disclaims any responsibility or liability for any errors that may appear in this document.

HMS Industrial Networks reserves the right to modify its products in line with its policy of continuous product development. The information in this document shall therefore not be construed as a commitment on the part of HMS Industrial Networks and is subject to change without notice. HMS Industrial Networks makes no commitment to update or keep current the information in this document.

The data, examples, and illustrations found in this document are included for illustrative purposes and are only

intended to help improve understanding of the functionality and handling of the product. In view of the wide range of possible applications of the product, and because of the many variables and requirements associated with any particular implementation, HMS Industrial Networks cannot assume responsibility or liability for actual use based on the data, examples, or illustrations included in this document nor for any damages incurred during the installation of the product. Those responsible for the use of the product must acquire sufficient knowledge in order to ensure that the product is used correctly in their specific application and that the application meets all performance and safety requirements including any applicable laws, regulations, codes, and standards. Further, HMS Industrial Networks will under no circumstances assume liability or responsibility for any problems that may arise as a result of the use of undocumented features or functional side effects found outside the documented scope of the product. The effects caused by any direct or indirect use of such aspects of the product are undefined and may include e.g. compatibility issues and stability issues.

Interface for the integration of Hitachi's Air-to water units into KNX TP-1 (EIB) control systems.
Compatible with Air-to-Water Yutaki S, Yutaki S Combi, Yutaki S80 and Yutaki M series.
Application's Program Version: 1.1

ORDER CODE
INKNXHIT001A000

LEGACY ORDER CODE
HI-AW-KNX-1

Contents [hide

1. Presentation

The INKNXHIT001A000 gateways allow fully bidirectional monitoring and control of the Hitachi Air-to-Water systems from KNX installations.

The interface is compatible with all the models of the Yutaki S line commercialized by Hitachi.

General features:

- Reduced dimensions, easy and fast installation.
- Multiple control and status objects (bit, byte, characters…) with standard KNX datapoints.
- One status object available for each control object.
- Control on the A.W. unit based on the ambient temperature read from the unit itself or from the temperature read by any KNX thermostat.
- The Hitachi A.W. can be controlled simultaneously through the remote controller of the A.W. system or through the KNX bus.
- Total supervision and control of the Hitachi A.W. unit from KNX, including unit internal variables supervision, special modes control (such as Anti-legionella), an error alarm, and codes too.

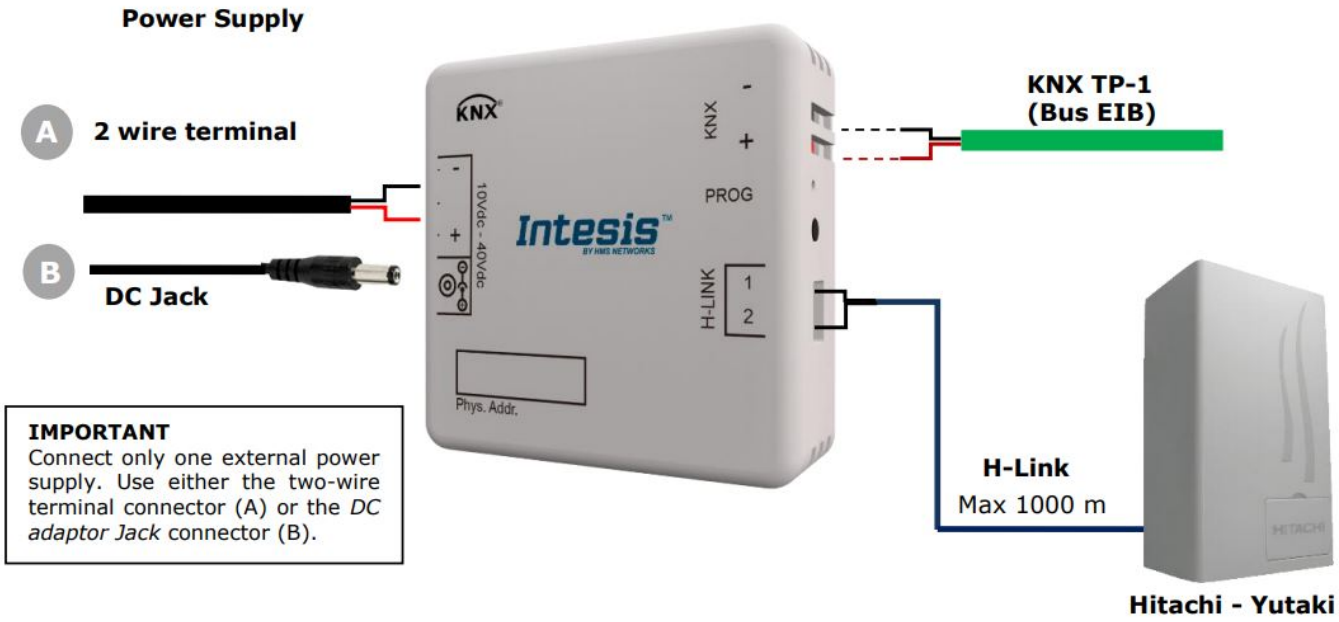
2. Connection

Connection of the interface to the AW indoor unit is by means of the cable supplied with the indoor unit to connect the remote controller. It must be connected to the interface on one side (connector H-Link) and to the internal electronic board of the Air-to-Water indoor unit on the other side.

Connection of the interface to the KNX bus is by means of the standard KNX bus connector also supplied with the interface.

In order to plug the interface into the external power supply, two different methods are available. The first one is using the external power supply provided with the interface using the DC JACK connector

Connections diagram:



3. Installation and setup

This is a fully compatible KNX device that must be configured using the ETS software. The ETS database can be downloaded from:
https://www.intesis.com/products/ac-interfaces/hitachi-gateways/hitachi-knx-air-to-water-hi-aw-knx-1

Please, check the README.txt file located inside the zip file to find instructions for proper installation of the database.

⚠ **IMPORTANT:** Do not forget to select the corresponding features of the Air-to-Water system connected to the INKNXHIT001A000 interface. This should be selected in the “Parameters” section on the ETS software.

4. ETS parameters and communication objects

4.1 Default settings

When importing the ETS database for the first time, the following menu appears, with these parameter values selected as default:

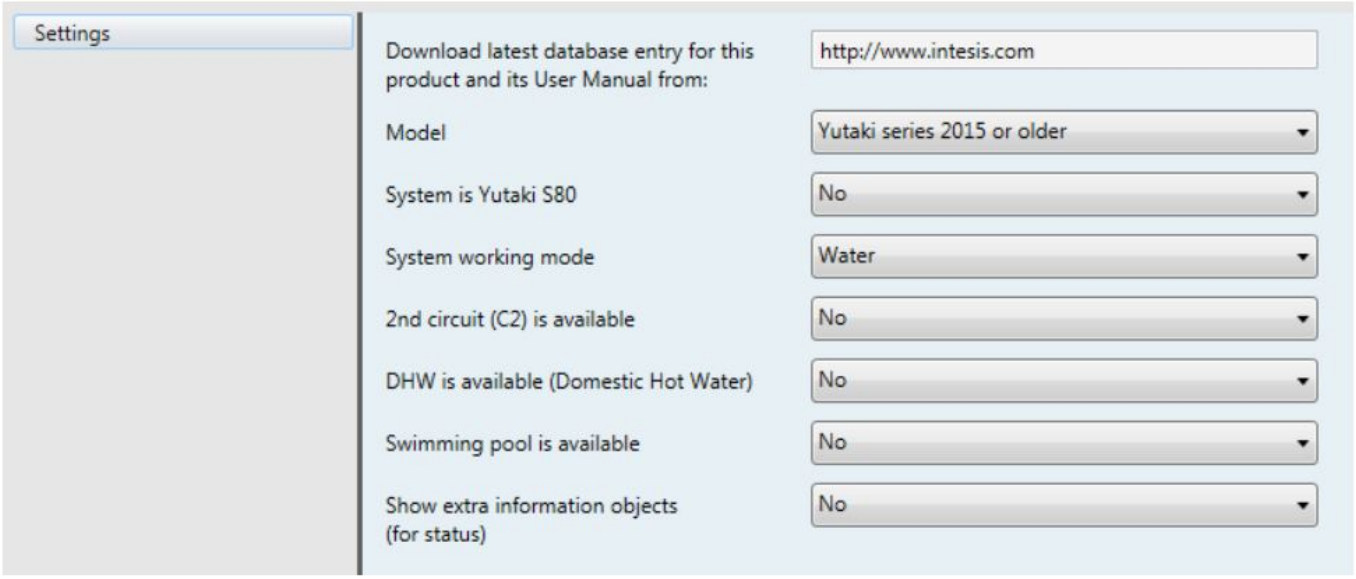


Figure 4.1 Parameter values by default

With this configuration is possible to control the system (Control_ objects) and monitoring it (Status_ objects) through the following communication objects:

4.1.1 Run or Stop the unit

Figure 4.2 Run/Stop communication objects

This object allows to run or to stop the Hitachi unit features (C1, C2, DHW, and/or SwimPool) at once. Sending a “0” value will turn them off while sending a “1” value will turn them on.

4.1.2 Change de Unit mode

Figure 4.3 Unit mode selection communication objects

This object allows changing the working mode of the Hitachi unit. Sending a “0” value the unit will turn into “Cool” mode while sending a “1” value will make the unit turn into “Heat” mode.

4.1.3 Run or Stop the C1 Circuit

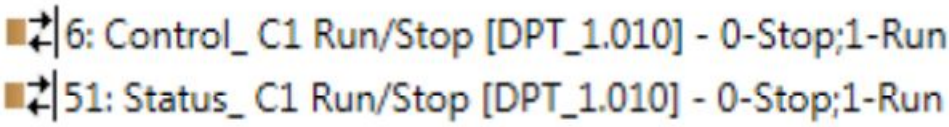


Figure 4.4 C1 circuit Run/Stop communication objects

This object allows to run or to stop the Hitachi C1 Circuit (or C1 climate zone). Sending a “0” value will close the C1 circuit while sending a “1” value will open the C1 Circuit. More functions related to the C1 circuit and its communication objects can be seen in section 4.2.3.

4.1.4 Anti-legionella System

NOTE: The anti-legionella function is hidden to users by default. The installer can make it available if desired.

Figure 4.5 Anti-legionella sysmte communication objects

The Hitachi Yutaki S units include an Anti-legionella system. From the gateway, this function can be activated by sending a “1” value to the Control_ AntiLeg Run/Stop object and can be stopped by sending a “0” value to the same object.

It is also possible to send a value to set the temperature of the Anti-legionella system to this value. To do it so you have to use the Control_ AntiLeg Setpoint object.

⚠**IMPORTANT:** Anti-legionella will set the water temperature to the setting value during the specified time. This temperature will be dangerous to the user and could burn him or her. The installer is responsible for configuring it properly, advising the user, and enabling the function.

4.1.5 KNX menu blocking

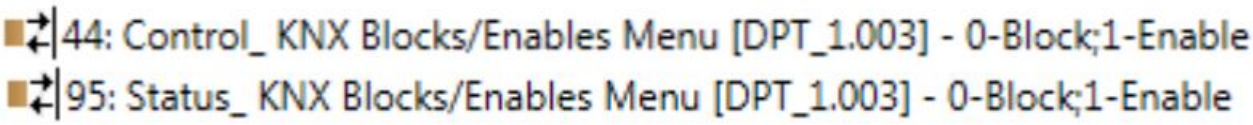


Figure 4.6 KNX menu communication objects

This object allows blocking or enabling the KNX menu from Hitachi’s LCD panel. Sending a “0” value will block the Menu while sending a “1” value will enable the Menu.

4.1.6 Errors and Alarms

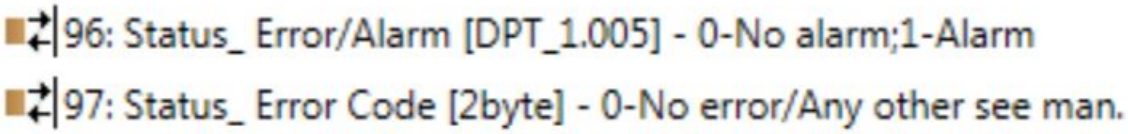


Figure 4.7 Errors and alarms communication objects

These objects allow reading the system status indicating if any alarm or error is active (Status_ Error/Alarm) and, in case it exists, it indicates which error is (Status_ Error Code). See section 7 to get more information about the error codes.

4.2 General dialog

In the General Dialog (settings) tab, it is possible to enable, disable or modify the parameters shown in Figure 4.1. For instance, the first field is showing where you can download the database and the user manual from.

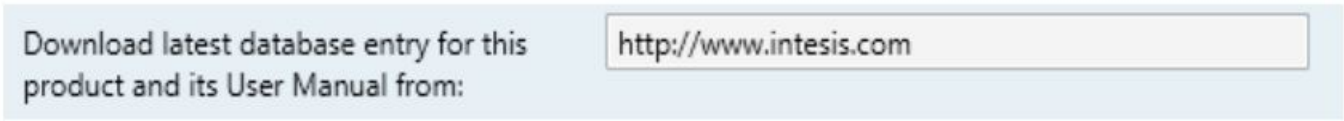


Figure 4.8 Database and User Manual location

4.2.1 Model

This parameter enables or disables communication objects depending on the Yutaki model.

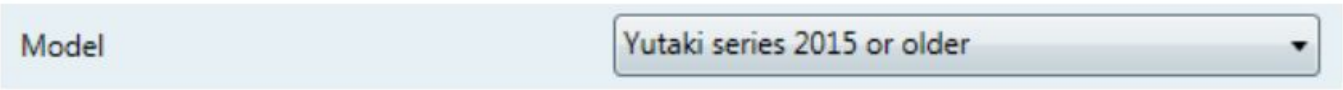


Figure 4.9 System working mode parameter details

- When selecting **"Yutaki series 2015 or older"**, objects available will be related to Yutaki S and Yutaki S80 models from 2015 or before (default objects).
- When selecting **"Yutaki series 2016 or newer"**, objects available will be related to Yutaki S, Yutaki S Combi, Yutaki S80, and Yutaki M models from 2016 or later.

4.2.2 System is Yutaki S80

This parameter enables specific objects for Yutaki S80 and filters objects that do not apply to the Yutaki S80.

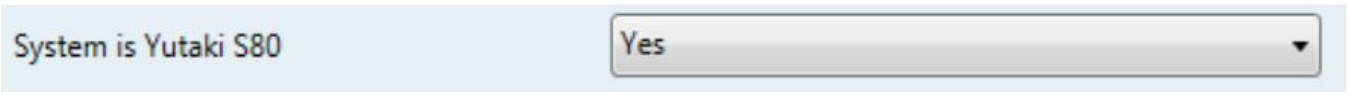


Figure 4.10 System working mode parameter details

4.2.3 System working mode

This parameter enables or disables communication objects depending on the working mode selected: Water

mode, Air, mode or Full (which includes both: Water and Air).

Figure 4.11 System working mode parameter details

- When selecting “**Water**” the interface will work for a water climate environment only. Water climate control and status objects will be available. Air climate control and status objects will be disabled.

OTC Mode
The OTC model (Output Temperature Compensation) allows keeping the desired indoor temperature despite external temperature variations.

From the gateway, you can:

• Turn this function off by sending a “1” value to the Control_ C1 OTC Mode Heat/Cool Off communication object.

Figure 4.12 OTC Mode Off communication objects

- Activate the different modes available for the calculus of the water temperature for the cooling or heating the facility where the unit is placed:
  - Points: The user fixes 4 points that will create a line function that will depend on the current ambient temperature.
  - Gradients: In this case, the function used is not a line but a gradient. Only available for the Heat mode.
  - Fix: The temperature adjustment is only performed by a fixed value. This makes the unit keep this fixed value all the time.

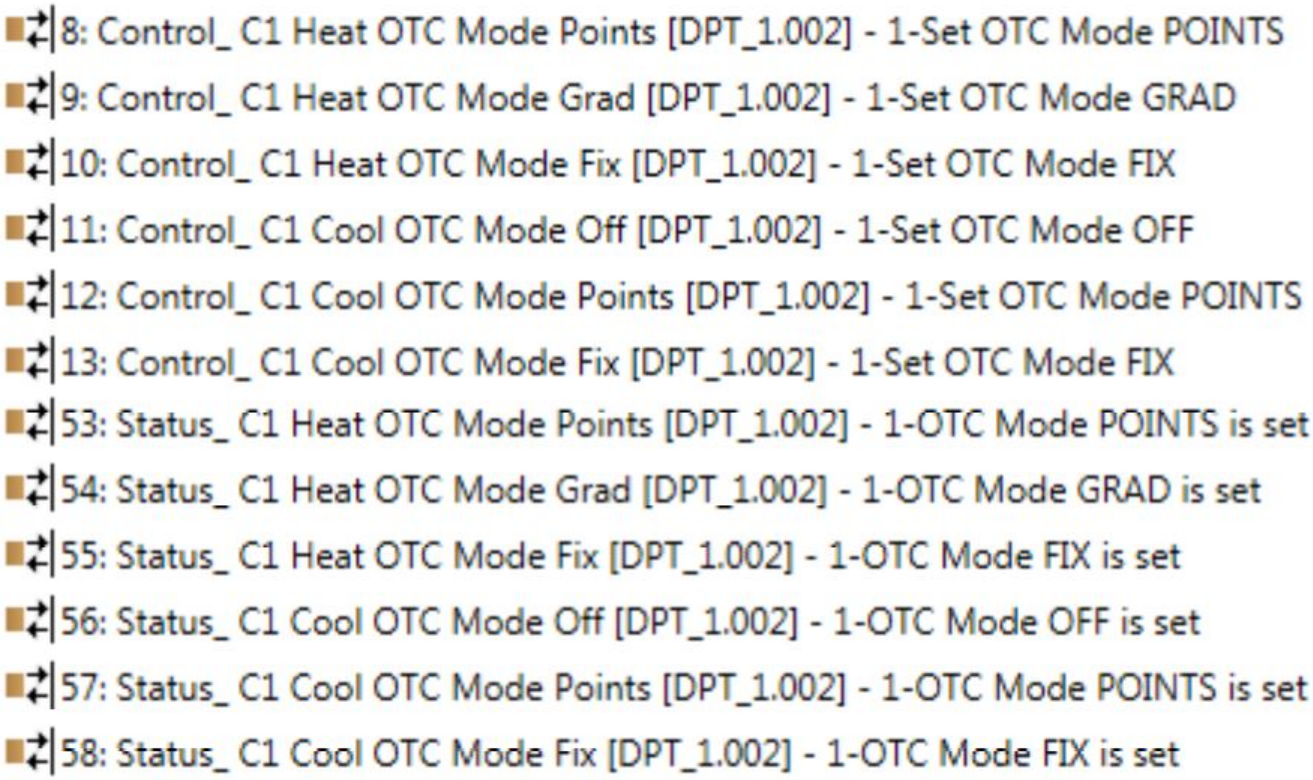


Figure 4.13 OTC Mode type selection communication objects

Water mode temperatures
Using the following communication objects it is possible to control/monitor water setpoint temperatures for the Heat and Cool modes (C1 Water Heat Setpoint and C1 Water Cool Setpoint).

Figure 4.14 Water Mode temperatures communication objects

- When selecting “Air”, the interface will work for an air climate environment only. Air climate control and status objects will be available. Water climate control and status objects will be disabled.

Air mode temperatures

With the communication objects corresponding to this mode enabled, control/monitoring of the setpoint temperature of the thermal (C1 Thermo Setpoint) and the ambient temperature provided by a thermostat not included in the Hitachi system (C1 Ambient Temp).

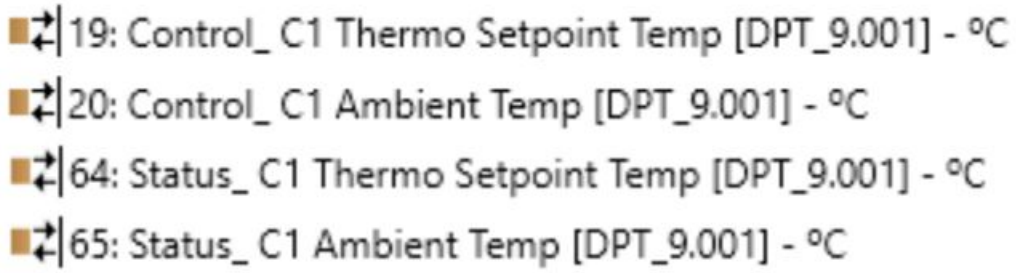


Figure 4.15 Air mode temperature communication objects

- When selecting "**Full**", the interface will work for an air and water climate environment. Air and Water climate control and status objects will be available.

NOTE: If Yutaki S80 is selected, some of these communication objects may not be present.

4.2.4 2nd circuit (C2) is available

This parameter enables or disables the Control_ and Status_ communication objects of a second circuit (or climate zone). In case the project is divided into 2 separate circuits this parameter needs to be selected to get control on each circuit independently.

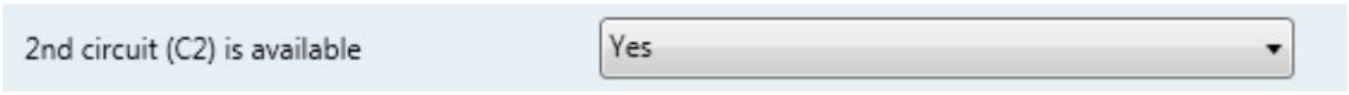


Figure 4.16 2nd circuit parameter detail

- When selecting "No", the gateway will hide the 2nd circuit (C2) communication objects.
- When selecting "Yes", the gateway will show the 2nd circuit (C2) communication objects. Depending on the other selected parameters, some objects will remain hidden and some others will be shown.
- Run and Stop status:

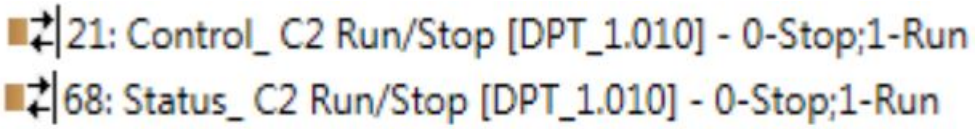


Figure 4.17 2nd circuit Run/Stop communication objects

To activate or deactivate the 2nd circuit (C2) a "1" value or a "0" value needs to be sent respectively to the Run/stop communication object.

- If "**Water**" mode is selected:

Figure 4.18 2nd circuit Water Mode communication objects

- If “Air” mode is selected:

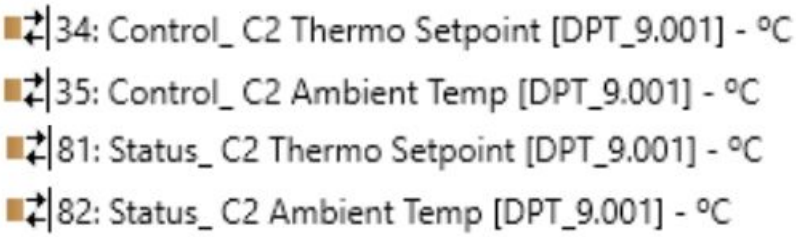


Figure 4.19 2nd circuit Air Mode communication objects

- If the “**Full**” mode is selected, all communication objects present when selecting “ **Water**” or “**Air**” will be enabled for this mode too.

4.2.5 DHW is available (Domestic Hot Water)

This parameter enables or disables the Control_ and Status_ objects corresponding to the control and monitoring of a water tank or DHW system.

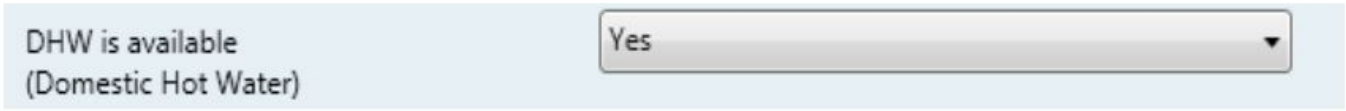


Figure 4.20 DHW Parameter detail

- When selecting “**No**“, the gateway will hide communication objects related to the water tank or the Domestic Hot Water system.
- When selecting “**Yes**“, the gateway will show the communication objects related to the water tank or the Domestic Hot Water system.

Domestic Hot Water
By means of Control_ DHW Run/Stop and Control_ DHW Setpoint, it is possible to turn on/off the DHW system and to control its setpoint temperature.

Through the Status_ DHW Temperature communication object, it is possible to read the instantaneous temperature of the DHW system.

Figure 4.21 DHW mode communication objects

4.2.6 Swimming pool is available

This parameter enables or disables the Control_ and Status_ objects corresponding to the control and monitoring of a swimming pool system present in the project

Figure 4.22 Swimming pool parameter details

- When selecting “No”, the gateway will hide communication objects related to the swimming pool.
- When selecting “Yes”, the gateway will show communication objects related to the swimming pool.

Swimming pool
By means of Control_ SwimPool Run/Stop and Control_ SwimPool Setpoint, it is possible to turn on/off the Swimming pool system and also to control its setpoint temperature.

Through the Status_ SwimPool Temperature communication object, it is possible to read the instantaneous temperature of the Swimming pool system.

Figure 4.23 Swimming pool mode communication objects

4.2.7 Show extra information objects (for Status)

These parameters enable or disable the Status_ communication objects related to the monitoring of extra information depending on the installed Hitachi model (Yutaki S or Yutaki S80).

- When selecting “**No**“, the gateway will hide communication objects related to the extra information provided by the Hitachi units.
- When selecting “**Yes**“, the gateway will offer you to select extra information for a Yutaki S80 model or the rest of the Yutaki S models.

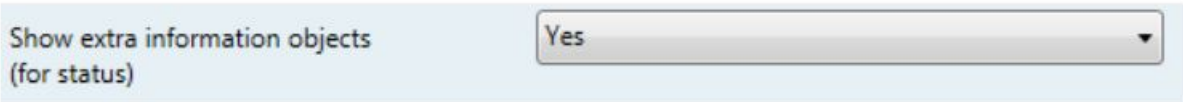


Figure 4.24 Extra Information parameters detail

Yutaki S Extra Information

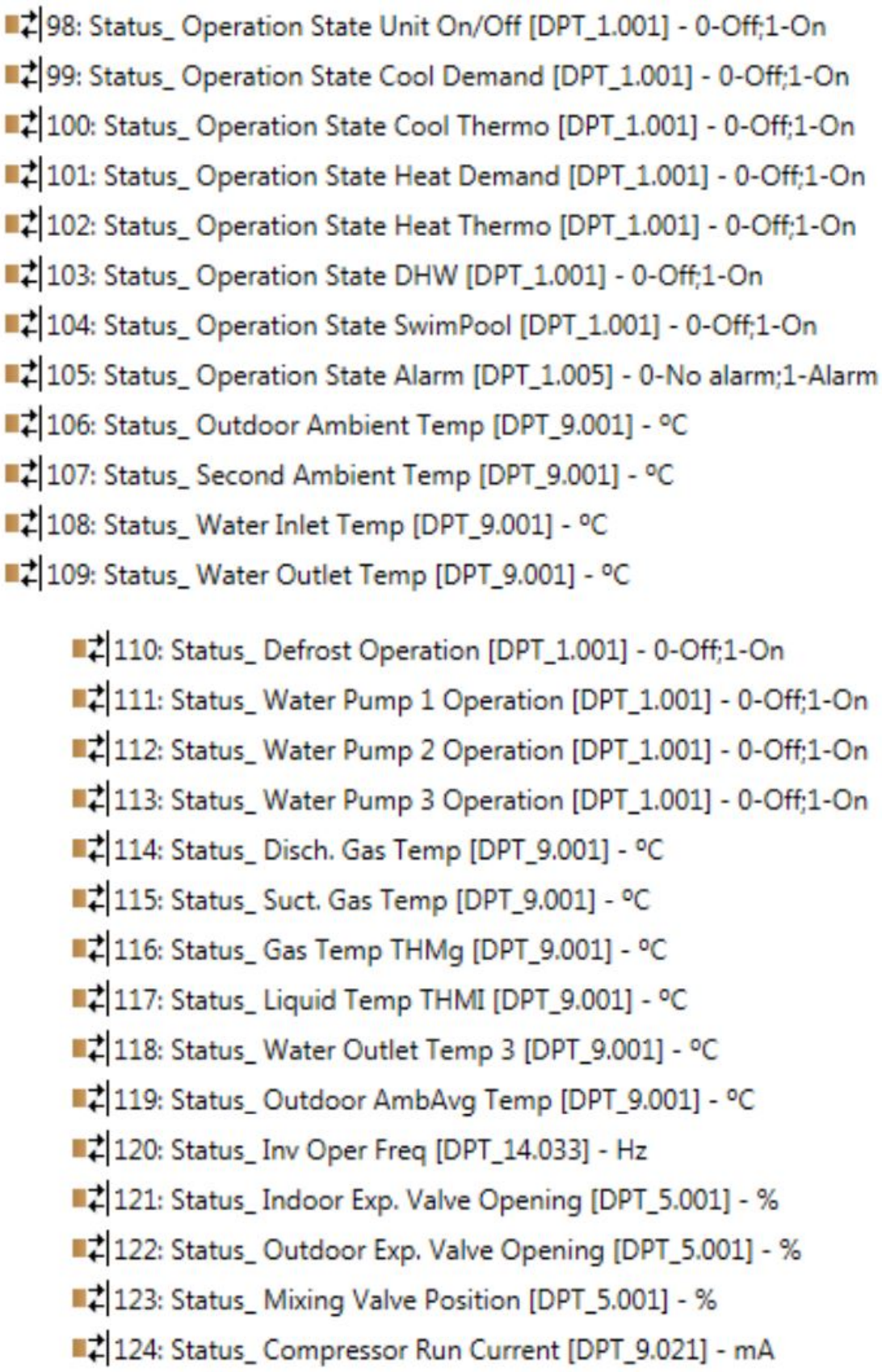


Figure 4.25 Extra Information for non Yutaki S80 status communication objects

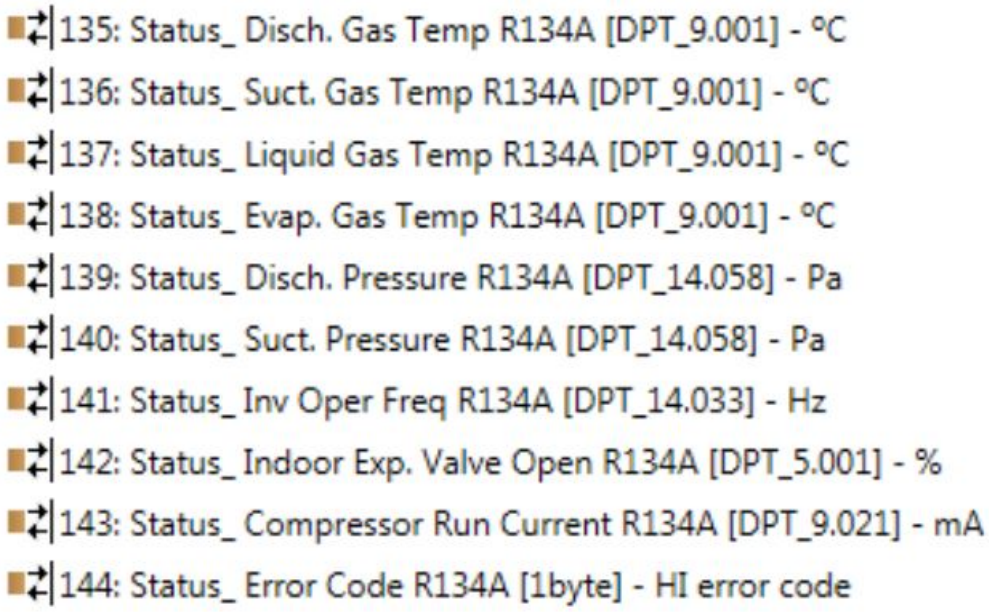


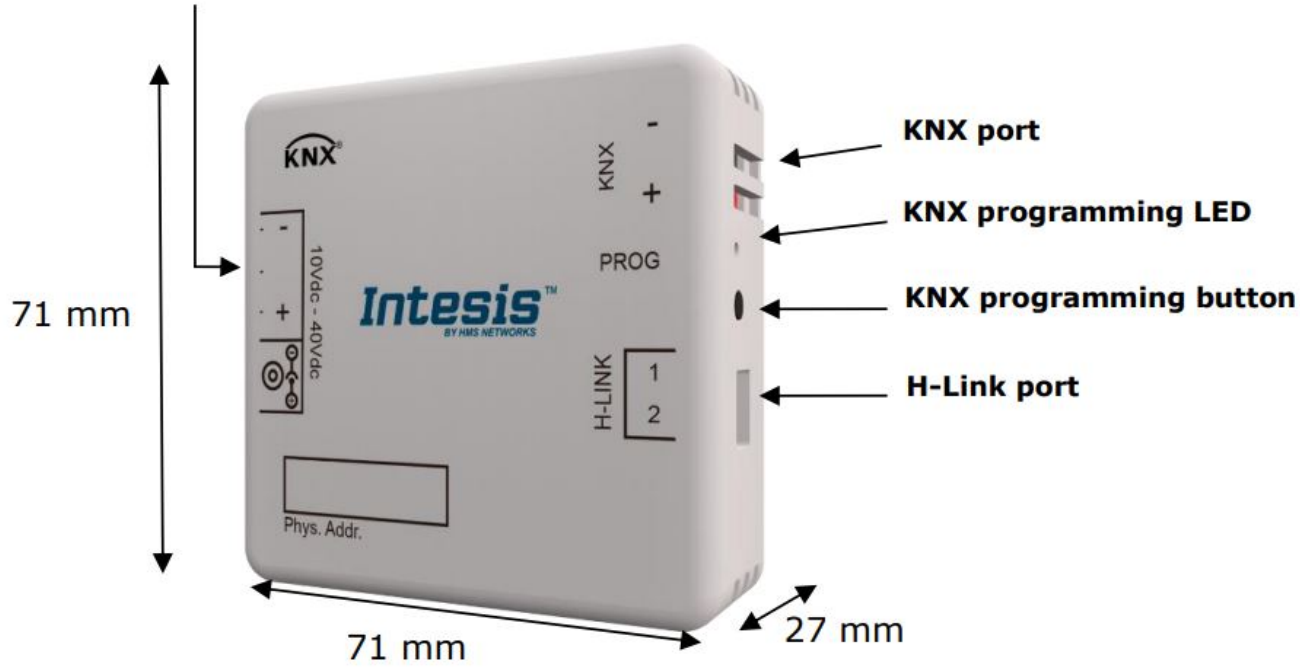
Figure 4.26 Extra Information for Yutaki S80 status communication objects

For more details about the information provided by those communication objects, please check the Hitachi user manual.

5. Technical Specifications

Enclosure	Plastic, type ABS (UL 94 V-0) de 2,5 mm thick
Dimensions	71 X 71 X 27 mm
Weight	70g
Color	White, RAL 9010
Power supply	29V DC, 6mA (KNX bus)
External Power Supply	10-40V DC, 100mA (**Recommended:** 12V DC, 100 mA) Must use a NEC Class 2 or Limited Power Source (LPS) and SELV rated power supply. Plug-in terminal block for power connection (2 poles).
Terminal wiring (for power supply and low-voltage signals)	Per terminal: solid wires or stranded wires (twisted or with ferrule) 1 core: 0.5mm2… 2.5mm2 2 cores: 0.5mm2… 1.5mm2 3 cores: not permitted
KNX port	1 x KNX TP1 (EIB) port opto-isolated. Plug-in terminal block (2 poles). TNV-1
H-Link port	Plug-in terminal block for H-Link bus connection (2 poles) with no polarity
LED indicators	1 x KNX programming.
Push buttons	1 x KNX programming.
Configuration	Configuration with ETS.
Operating Temperature	From 0ºC to 40ºC
Storage Temperature	From 0ºC to 40ºC
Operating Humidity	25-90% at 50ºC, non condensing
Isolation voltage	External Power Supply – KNX: 2500V
	External Power Supply – H-Link: 1500V
RoHS conformity	Compliant with RoHS directive (2002/95/CE).
Certifications	CE conformity to EMC directive (2004/108/EC) and Low-voltage directive (2006/95/EC) EN 61000-6-2; EN 61000-6-3; EN 60950-1; EN 50491-3; EN 50090-2-2; EN 50428; EN 60669-1; EN 60669-2-1

External Power Supply connection



6. Compatible Air-to-Water (A.W.) units

A list of Hitachi unit model references compatible with INKNXHIT001A000 and their available features can be found in:
intesis_inxxxhit001a000_compatibility-list [PDF]

7. Error Codes object #97: Status_Error_Code.

KNX Error Code	Remote Controller Error Code	Error Description
00	N/A	No errors
02	02	Activation of Outdoor Unit Protection Device (Except for Alarm Code 41, 42)
03	03	Transmission Error
04	04	Inverter Transmission Abnormality
05	05	Power Phase Detection Abnormality
06	06	Undervoltage, Overvoltage
07	07	Abnormal decrease of discharge gas superheat degree
08	08	Compressor-Top Temp Over-increase
11	11	Water inlet thermistor abnormally (THM_{WI})
12	12	Water outlet thermistor abnormally (THM_{WO})
13	13	Indoor Liquid Pipe Temp Thermistor Abnormality (THM_{L})
14	14	Indoor Gas Pipe Temp. Thermistor Abnormality (THM_{G})
15	15	Water outlet C2 thermistor abnormally (THM_{WO2})
16	16	Water DHWT thermistor abnormally (THM_{DHWT})
17	17	Swimming pool thermistor abnormally (THM_{SWP})
18	18	Water outlet boiler thermistor abnormally (THM_{WO3})
20	20	Compressor-Top Temp Thermistor Abnormality
21	21	2nd ambient thermistor abnormally (THM_{AMB2})
22	22	Outdoor Temp Thermistor Abnormality
24	24	Outdoor Heat Exchanger Liquid Pipe Thermistor Abnormality
31	31	Indoor/Outdoor Combination Setting Error
35	35	Indoor Unit Number Setting Error
38	38	Outdoor Protection Detection Circuit Abnormality
41	41	Cooling Overload
42	42	Heating Overload
47	47	Suction Pressure Decrease Prevention Activated
48	48	Inverter Current Sensor Abnormality
51	51	Overload Operation Protection Activation
53	53	Inverter Module Error
54	54	Inverter Fin Temp. Abnormality
55	55	Inverter Non-Operation
59	59	Inverter Fin Temp Thermistor Abnormality
b1	b1	Error in Address/Refrigerant System Setting
EE	EE	Compressor Factor Alarm
70	70	Hydraulic alarm
71	71	Water Pump Feedback
72	72	Thermostat Heater Alarm
73	73	Mixing over-temperature limit protection for Mixed circuit
74	74	Unit over-temperature limit protection
75	75	Freeze Protection by Cold water inlet, outlet temperature detection
76	76	Freeze Protection Stop by indoor liquid temperature thermistor
77	77	Opentherm Communication failure
78	78	RF Communication failure
79	79	Unit Capacity setting Error
80	80	LCD H-link transmission error
81	81	Incorrect PCB operation
65535	N/A	Communication error between INKNXHIT001A000 interface and the Hitachi Unit

In case you detect an error code not listed, please contact your nearest Hitachi support center to get more information about the meaning of the error.

8. Error Codes object #144: Status_Error_Code_R134A.

Available only if parameter “Show extra information objects (for Status)” is set active. (See Section 4.2.7).

KNX Error Code	Remote Controller Error Code	Error Description
00	N/A	No errors
101	101	Activation of high pressure switch
102	102	Activation of protection control for excessively hitgh pressure
103	103	Activation of low pressure switch
104	104	Activation of low control
105	105	Excessively low pressure difference
106	106	Excessively high discharge gas temperature
107	107	Excessively low temperature of heating exchanger refrigerant inlet
108	108	Excessively low suction gas temperature
109	109	Activation of freeze protection control (water inlet)
110	110	Activation of freeze protection control (water outlet)
111	111	Cooler water failure
112	112	Condensor water failure
113	113	Excessively high water temperature
121	121	Failure of water inlet temperature thermistor
122	122	Failure of water outlet temperature thermistor
123	123	Free
124	124	Failure of refrigerant evaporating temperature thermistor
125	125	Failure of ambient Inverter E.BOX temperature thermistor
126	126	Failure of discharge gas temperature thermistor
127	127	Failure of refrigerant liquid temperature thermistar
128	128	Failure of suction gas temperature thermistor
129	129	Failure of discharge gas pressure sensor
130	130	Failure of suction gas pressure sensor
131	131	Free
132	132	Tranmission error between Inverter PCB and Main PCB
133	133	Transmission error between Main PCBs
134	134	Abnormality of Power Supply Phase
135	135	Incorrect PCB Setting
136	136	Incorrect PCB operation
151	151	Excessively low voltage or excessively high voltage for the inverter
152	152	Abnormal operation of the current sensor
153	153	Activation of protection for inverter instantaneous over current
154	154	Transistor module protection activation
155	155	Increase in the inverter fin temperature
156	156	Free
1557	157	No feed back signal from water pump

In case you detect an error code not listed, please contact your nearest Hitachi support center to get more information about the meaning of the error.

Appendix A Communication objects description table

Control Objects

SECTION	OBJECT NUMBER	NAME	LONG.	DATAPOINT TYPE		FLAGS				FUNCTION
				DPT_NAME	DPT_ID	R	W	T	U	
Run/Stop	0	Control_ Unit Run/Stop	1 bit	DPT_Start	1.010		W	T		0 - Stop; 1 - Run
Mode	1	Control_ Unit Mode	1 byte	DPT_HVACContrMode	20.105		W	T		0 - Auto; 1 – Heat; 3 - Cool
	2	Control_Unit Mode Cool/Heat	1 bit	DPT_Heat/Cool	1.100		W	T		0 - Cool; 1 – Heat
	3	Control_Unit Mode Auto	1 bit	DPT_Bool	1.002		W	T		1 – Set Auto Mode
	4	Control_Unit Mode Heat	1 bit	DPT_Bool	1.002		W	T		1 – Set Heat Mode
	5	Control_Unit Mode Cool	1 bit	DPT_Bool	1.002		W	T		1 – Set Cool Mode
Water Circuit (C1 and C2)	6/21	Control_ Cx[1] Run/Stop	1 bit	DPT_Start	1.010		W	T		0 - Stop; 1 - Run
	7/22	Control_ Cx[1] Heat OTC Mode Off	1 bit	DPT_Bool	1.002		W	T		1 – Set OTC Mode OFF
	8/23	Control_ Cx[1] Heat OTC Mode Points	1 bit	DPT_Bool	1.002		W	T		1 – Set OTC Mode POINTS
	9/24	Control_ Cx[1] Heat OTC Mode Grad	1 bit	DPT_Bool	1.002		W	T		1 – Set OTC Mode GRAD
	10/25	Control_ Cx[1] Heat OTC Mode Fix	1 bit	DPT_Bool	1.002		W	T		1 – Set OTC Mode FIX
	11/26	Control_ Cx[1] Cool OTC Mode Off	1 bit	DPT_Bool	1.002		W	T		1 – Set OTC Mode OFF
	12/27	Control_ Cx[1] Cool OTC Mode Points	1 bit	DPT_Bool	1.002		W	T		1 – Set OTC Mode POINTS
	13/28	Control_ Cx[1] Cool OTC Mode Fix	1 bit	DPT_Bool	1.002		W	T		1 – Set OTC Mode FIX
	14/29	Control_ Cx[1] Water Heat Setpoint	2 bytes	DPT_Value_Temp	9.001		W	T		ºC (Between 20ºC and 80ºC)
	15/30	Control_ Cx[1] Water Cool Setpoint	2 bytes	DPT_Value_Temp	9.001		W	T		ºC (Between 5ºC and 21ºC)
	16/31	Control_ Cx[1] ECO Mode	1 bit	DPT_Bool	1.002		W	T		0 – Comfort Mode; 1 – ECO Mode
	17/32	Control_ Cx[1] ECO Heat Offset Temperature	2 bytes	DPT_Value_Temp	9.001		W	T		ºC
	18/33	Control_ Cx[1] ECO Cool Offset Temperature	2 bytes	DPT_Value_Temp	9.001		W	T		ºC
	19/34	Control_ Cx[1] Thermo Setpoint	2 bytes	DPT_Value_Temp	9.001		W	T		ºC (Between 0ºC and 35ºC)
	20/35	Control_ Cx[1] Ambient Temp	2 bytes	DPT_Value_Temp	9.001		W	T		ºC (Between -20ºC and 40ºC)
DHW	36	Control_ DHW Run/Stop	1 bit	DPT_Start	1.010		W	T		0 - Stop; 1 - Run
	37	Control_ DHW Boost	1 bit	DPT_Bool	1.002		W	T		1 – Request
	38	Control_ DHW High Demand Mode	1 bit	DPT_Bool	1.002		W	T		0 - Standard; 1 – High
	39	Control_ DHW Setpoint	2 bytes	DPT_Value_Temp	9.001		W	T		ºC (Between 30ºC and 75ºC)
Swimming pool	40	Control_ SwimPool Run/Stop	1 bit	DPT_Start	1.010		W	T		0 - Stop; 1 - Run
	41	Control_ SwimPool Setpoint	2 bytes	DPT_Value_Temp	9.001		W	T		ºC (Between 24ºC and 33ºC)
AntiLeg	42	Control_ AntiLeg Run/Stop	1 bit	DPT_Start	1.010		W	T		0 - Stop; 1 - Run
	43	Control_ AntiLeg Setpoint	2 bytes	DPT_Value_Temp	9.001		W	T		ºC (Between 50ºC and 75ºC)
KNX Block	44	Control_ KNX Blocks/Enables Menu	1 bit	DPT_Enable	1.003		W	T		0 – Blocks; 1 – Enables

1 X can be 1 or 2 depending on which circuit is being controlled.

Status Objects

SECTION	OBJET NUMBER	NAME	LENGTH	DATAPOINT TYPE		FLAGS				FUNCTION
				DPT_NAME	DPT_ID	R	W	T	U	
Run/Stop	45	Status_ Unit Run/Stop	1 bit	DPT_Start	1.010	R		T		0 - Stop; 1 - Run
Mode	46	Status_ Unit Mode	1 byte	DPT_HVACContrMode	20.105	R		T		0 - Auto; 1 – Heat; 3 - Cool
	47	Status_Unit Mode Cool/Heat	1 bit	DPT_Heat/Cool	1.100	R		T		0 - Cool; 1 – Heat
	48	Status_Unit Mode Auto	1 bit	DPT_Bool	1.002	R		T		1 – Set Auto Mode
	49	Status_Unit Mode Heat	1 bit	DPT_Bool	1.002	R		T		1 – Set Heat Mode
	50	Status_Unit Mode Cool	1 bit	DPT_Bool	1.002	R		T		1 – Set Cool Mode
Water Circuit (C1 y C2)	51/68	Status_ Cx² Run/Stop	1 bit	DPT_Start	1.010	R		T		0 – Stop; 1 – Run
	52/69	Status_ Cx² Heat OTC Mode Off	1 bit	DPT_Bool	1.002	R		T		1 – OTC Mode Off Set
	53/70	Status_ Cx² Heat OTC Mode Points	1 bit	DPT_Bool	1.002	R		T		1 – OTC Mode POINTS Set
	54/71	Status_ Cx² Heat OTC Mode Grad	1 bit	DPT_Bool	1.002	R		T		1 – OTC Mode FIX Set
	55/72	Status_ Cx² Heat OTC Mode Fix	1 bit	DPT_Bool	1.002	R		T		1 – OTC Mode Off Set
	56/73	Status_ Cx² Cool OTC Mode Off	1 bit	DPT_Bool	1.002	R		T		1 – OTC Mode Off Set
	57/74	Status_ Cx² Cool OTC Mode Points	1 bit	DPT_Bool	1.002	R		T		1 – OTC Mode POINTS Set
	58/75	Status_ Cx² Cool OTC Mode Fix	1 bit	DPT_Bool	1.002	R		T		1 – OTC Mode FIX Set
	59/76	Status_ Cx² Water Heat Setpoint	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	60/77	Status_ Cx² Water Cool Setpoint	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	61/78	Status_ Cx² ECO Mode	1 bit	DPT_Bool	1.002	R		T		0 – Comfort; 1 – ECO
	62/79	Status_ Cx² ECO Heat Offset Temperature	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	63/80	Status_ Cx² ECO Cool Offset Temperature	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	64/81	Status_ Cx² Thermo Setpoint	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	65/82	Status_ Cx² Ambient Temp	2 bytes	DPT_Value_Temp	9.001	R		T		ºC

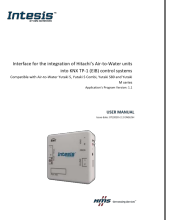
2 X can be 1 or 2 depending on which circuit is being observed.

	66/83	Status_ Cx² Wireless Setpoint Temp	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	67/84	Status_ Cx² Wireless Ambient Temp	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
DHW	85	Status_ DHW Run/Stop	1 bit	DPT_Start	1.010	R		T		0 – Stop; 1 – Run
	86	Status_ DHW Boost	1 bit	DPT_Bool	1.002		W	T		0 – Not requested; 1 – Requested
	87	Status_ DHW High Demand Mode	1 bit	DPT_Bool	1.002		W	T		0 - Standard; 1 – High
	88	Status_ DHW Setpoint	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	89	Status_ DHW Temperature	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
Swimming pool	90	Status_ SwimPool Run/Stop	1 bit	DPT_Start	1.010	R		T		0 – Stop; 1 – Run
	91	Status_ SwimPool Setpoint	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	92	Status_ SwimPool Temperature	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
AntiLeg	93	Status_ AntiLeg Run/Stop	1 bit	DPT_Start	1.010	R		T		0 – Stop; 1 – Run
	94	Status_ AntiLeg Setpoint	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
KNX Block	95	Status_ KNX Block/Enable Menu	1 bit	DPT_Enable	1.003	R		T		0 – Block; 1 – Enable
Error and Alarms	96	Status_ Error/Alarm	1 bit	DTP_Alarm	1.005	R		T		0 - No Alarm; 1 - Alarm
	97	Status_ Error Code	2 bytes	Enumerated		R		T		0 – No error; Other values see 7
Extra Information	98	Status_ Operation State Unit On/Off	1 bit	DPT_Switch	1.001	R		T		0 - Off; 1-On
	99	Status_ Operation State Cool Demand	1 bit	DPT_Switch	1.001	R		T		0 - Off; 1-On
	100	Status_ Operation State Cool Thermo	1 bit	DPT_Switch	1.001	R		T		0 - Off; 1-On
	101	Status_ Operation State Heat Demand	1 bit	DPT_Switch	1.001	R		T		0 - Off; 1-On
	102	Status_ Operation State Heat Thermo	1 bit	DPT_Switch	1.001	R		T		0 - Off; 1-On
	103	Status_ Operation State DHW	1 bit	DPT_Switch	1.001	R		T		0 - Off; 1-On
	104	Status_ Operation State Swim Pool	1 bit	DPT_Switch	1.001	R		T		0 - Off; 1-On
	105	Status_ Operation State Alarm	1 bit	DTP_Alarm	1.005	R		T		0 - No Alarm; 1 - Alarm
Extra Information	106	Status_ Outdoor Ambient Temp	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	107	Status_ Second Ambient Temp	2 bytes	DPT_Value_Temp	9.001	R		T		ºC

Extra Information	108	Status_ Water Inlet Temp	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	109	Status_ Water Outlet Temp	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	110	Status_ Defrost Operation	1 bit	DPT_Switch	1.001	R		T		0 - Off; 1-On
	111	Status_ Water Pump 1 Operation	1 bit	DPT_Switch	1.001	R		T		0 - Off; 1-On
	112	Status_ Water Pump 2 Operation	1 bit	DPT_Switch	1.001	R		T		0 - Off; 1-On
	113	Status_ Water Pump 3 Operation	1 bit	DPT_Switch	1.001	R		T		0 - Off; 1-On
	114	Status_ Dish. Gas Temp	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	115	Status_ Suct. Gas Temp	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	116	Status_ Gas Temp THMg	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	117	Status_ Liquid Temp THMI	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	118	Status_ Water Outlet Temp 3	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	119	Status_ Outdoor AmbAvg Temp	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	120	Status_ Inv Oper Freq	2 bytes	DPT_Value_Frequency	14.033	R		T		Hz
	121	Status_ Indoor Exp Valve Opening	1 byte	DPT_Scaling	5.001	R		T		%
	122	Status_ Outdoor Exp Valve Opening	1 byte	DPT_Scaling	5.001	R		T		%
	123	Status_ Mixing Valve Position	1 byte	DPT_Scaling	5.001	R		T		%
	124	Status_ Compressor Run Current	2 bytes	DPT_Value_Cur	9.021	R		T		mA
	125	Status_ Water Flow	2 bytes	DPT_Flow_Rate_M3_H	13.002	R		T		m^3/h
	126	Status_ Water Pump Speed	1 byte	DPT_Scaling	5.001	R		T		%
	127	Status_ Unit model Yutaki S	1 bit	DPT_Bool	1.002	R		T		1 – Model is Yutaki S
	128	Status_ Unit model Yutaki S Combi	1 bit	DPT_Bool	1.002	R		T		1 – Model is Yutaki S Combi
	129	Status_ Unit model Yutaki S80	1 bit	DPT_Bool	1.002	R		T		1 – Model is Yutaki S80
	130	Status_ Unit model Yutaki M	1 bit	DPT_Bool	1.002	R		T		1 – Model is Yutaki M
	131	Status_ PCB Software Version	2 bytes	DPT_Version	217.001	R		T		Software version
	132	Status_ LCD Software Version	2 bytes	DPT_Version	217.001	R		T		Software version
	133	Status_ Instant Capacity	2 bytes	DPT_Active_Energy_kWh	13.013	R		T		kWh
	134	Status_ Unit Power Consumption	2 bytes	DPT_Active_Energy_kWh	13.013	R		T		kWh
Extra Information Yutaki S80	135	Status_ Dish. Gas Temp R134A	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	136	Status_ Suct. Gas Temp R134A	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	137	Status_ Liquid Temp R134A	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	138	Status_ Evap. Gas Temp R134A	2 bytes	DPT_Value_Temp	9.001	R		T		ºC
	139	Status_ Disch. Pressure R134A	2 bytes	DPT_Value_Pressure	14.058	R		T		Pa
	140	Status_ Suct. Pressure R134A	2 bytes	DPT_Value_Pressure	14.058	R		T		Pa
	141	Status_ Inv Oper Freq R134A	2 bytes	DPT_Value_Frequency	14.033	R		T		HZ
	142	Status_ Indoor Exp Valve Open R134A	1 byte	DPT_Scaling	5.001	R		T		%
	143	Status_ Compressor Run Current R134A	2 bytes	DPT_Value_Cur	9.021	R		T		A
	144	Status_ Error Code R134A	2 bytes	Enumerated		R		T		0 – No error; Other values see 7

URL https://www.intesis.com

Documents / Resources

	[Intesis Interface for the integration of Hitachi's Air-to-Water units](#) [pdf] User Manual Interface for the integration of Hitachi s Air-to-Water units KNX TP-1 EIB control systems

References

- [Intesis | Gateway solutions for Building Automation](#)

- intesis.com/docs/compatibilities/inxxxhit001a000_compatibility
- Hitachi AC Interface Gateways