

'INTERRA

ITR830 KNX Gateway for Mitsubishi Electric Air Condition Units

Product Manual



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1. SCOPE OF THE DOCUMENT

This document contains the specifications of Interra's ITR830 product and the project context. This document applies to all products involved as a common information base and is binding on KNX system equipment involved in the project. Changes are permitted only in coordination with the product management.

2. DESCRIPTION OF THE PRODUCT

ITR830 is a gateway that provides bidirectional communication between the KNX home and building automation system and Mitsubishi Electric air-conditioning system. ITR830 used for monitoring and control functioning parameters of Mitsubishi Electric air condition units with KNX. Thus the air conditioning system can be controlled from home and building automation system. ITR830 is compatible with models in PAC, RAC and City Multi VRF and Industrial types categorized in AP.1 sold by Mitsubishi Electric.

ITR830 is connected inside the AC indoor unit, it connects one side directly to the electronic circuit of the AC indoor unit (cable supplied) and in the other side directly to the KNX bus.

3. DETAILED SPECIFICATION OF THE FUNCTIONS

The most outstanding features of ITR830 are:

- Bidirectional control of Mitsubishi Electric AC units
- Control of the main functions of the air condition unit: On/Off, operating mode, setpoint, fan level control and vane position control
- AC unit error notifications for exception errors
- Control with up to five scenes
- Working hours counter, timer, window contact and standby functions are available as special functions
- Three dry contact to integrate into KNX (i.e. motion detector, evacuation pump, window contact)
- 4 logic gates and 3 customisable logic functions for each gates are available
- 8 converters are available to convert data types
- Module alive beacon notification

3.1. GENERAL

There are some general parameters which applied to all the parts

3.1.1. MODULE ALIVE BEACON

Module alive beacon Disabled Enabled

> Module alive beacon interval (sec)

This function play an important role in determining whether the product is working. By enabling the alive beacon parameter it is possible to know whether the device is working correctly. Via the object "Alive Beacon" the value true is sent with a preconfigured period. The receipt of this telegram periodically means that the device is working properly.

3.1.2. VOLTAGE FAILURES

Behaviour during bus voltage failure

Behaviour after bus voltage failure

The KNX data line can be selected according to the product is to be treated as required from this section if there is a power interruption or when the KNX energy comes back up.

It is possible to select the action to be taken during and after power failures.

3.1.3. FEEDBACK AT STARTUP

Feedback at startup Disabled Enabled

> Feedback startup time delay (sec)

Send feedback periodically

This function gives information about air condition unit status. The objects sent when this function is enabled are the following:

- Feedback Climate On/Off
- Feedback Operating Mode
- Feedback Operating Mode Heat/Cool
- Feedback Individual Mode Auto & Heat & Cool & Fan & Dry
- Feedback Operating Mode Text
- Feedback Fan Speed Percent
- Feedback Fan Speed Enumerated
- Feedback Fan Speed Manual/Auto
- Feedback Individual Fan Speed 1 & 2 & 3 & 4
- Feedback Fan Speed Text
- Feedback Vanes Position Percent
- Feedback Vanes Position Enumerated
- Feedback Vanes Position Manual/Auto
- Feedback Vanes Position 1 & 2 & 3 & 4 & 5
- Feedback Vanes Swing
- Feedback Vanes Position Text
- Feedback Setpoint Temperature
- Feedback Indoor Temperature

3.1.4. CONTROL LOCKING

Device control locking	Disabled ▾
Remote control locking	Disabled ▾

The device and the remote controller can be locked.

When the locking of the device is active via the object "Device Control Locking", the device is blocked and it can no longer be controlled via any telegram. The device remains the previous status before locking until the locking is deactivated. It must be taken into consideration that the device after the locking will take the last value received through the bus even though this value has been received during the locking time.

The locking of the remote controller can be performed via the object "Remote Control Locking". While the locking is active, any action from the remote controller to the air condition unit is blocked and it is not taken into consideration. However, it does not affect the control of the unit via KNX.



The locking functions remain active even after bus voltage failure.

3.1.5. ERROR CODE

Error code (2-byte)	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
Error code (14-char)	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled

Error codes are given in AP.2. This function makes easy to identify faults and focus on the problem directly by taking codes. Two types error codes can be receipt as text format via "Error code (14-char)" or 2-byte values via "Error code (2-byte)". Additionally, "Feedback Error Alarm" object is one of the constantly active objects.

3.1.6.LIST OF PARAMETERS

PARAMETER	DESCRIPTION	VALUES
Module Alive Beacon	This parameter allows sending the value "true" periodically while the device is running.	Disabled Enabled
Module Alive Beacon Interval (sec)*¹	This parameter determines the Module Alive Beacon sending period.	3600 (1...65535)
Behavior during bus voltage failure	This parameter determines the action to be taken during KNX bus voltage failure. No Reaction/Last State: The climate remains the last value received. Off: The climate is switched off. Scene: Selected scene is sent to the air condition unit.	No reaction-Last state Scene Off
Scene Selection*²	This parameter the scene to be launch during KNX bus voltage failure can be selected.	Scene 1...5
Behavior after bus voltage failure	This parameter determines the action to be taken after KNX bus voltage failure. No Reaction/Last State: The climate remains the last value received. Off: The climate is switched off. Scene: Selected scene is sent to the air condition unit.	No reaction-Last state Scene Off
Scene Selection*³	This parameter the scene to be launch after voltage failure can be selected.	Scene 1...5
Feedback at startup	This parameter enabled the sending of some feedback telegram at the startup.	Enabled Disabled
Feedback startup time delay (sec)*⁴	This parameter set delay between the startup and the sending of the feedback telegrams to the KNX bus line. The value "0" means that there is not any delay.	0 (0...255)
Send feedback periodically	This parameter allows to send feedback objects periodically according to selected time.	Disabled 5s, 10s, 30s, 1min, 5min, 10min, 20min, 30min, 40min, 50min, 1h. 2h, 3h, 4h, 5h, 6h, 12h, 24h.

Device control locking	This parameter determines if the device can be locked via locking object or not.	Disabled Lock On Value 0 Lock On Value 1
Remote control locking	This parameter determines if the remote control can be locked via locking object or not.	Disabled Lock On Value 0 Lock On Value 1
Error code (2-byte)	This parameter allows the object (Feedback Error Code) which shows the indoor unit errors in numeric format.	Disabled Enabled
Error code (14-char text)	This parameter allows the object (Feedback Error Code Text) which shows the indoor unit errors in text format.	Disabled Enabled

*1 This parameter is only visible when the parameter "Module Alive Beacon" is set to "Enabled".

*2 This parameter is only visible when the parameter "Behavior during bus voltage failure" is set to "Scene".

*3 This parameter is only visible when the parameter "Behavior after bus voltage failure" is set to "Scene".

*4 This parameter is only visible when the parameter "Feedback at startup" is set to "Enabled".

3.1.7. LIST OF OBJECTS

OBJECT NAME	FUNCTION	TYPE	FLAG
Alive Beacon	Alive Beacon	1 bit	CRT
This object is only visible when the "Module Alive Beacon" function is enabled. Via the group address linked, the value "true" is sent while the module is running.			
Climate On/Off	1:On / 0:Off	1 bit	CWT
This object is always enabled. Via the group address linked, the air condition unit power is controlled.			
Feedback Climate On/Off	1:On / 0:Off	1 bit	CRT
This object is always enabled. Via the group address linked, the status of the air condition unit is monitored.			
Setpoint Temperature	Temperature (Celcius)	2 bytes	CWT
This object is always enabled. Via the group address linked, the air condition unit setpoint temperature is controlled.			
Feedback Setpoint Temperature	Temperature (Celcius)	2 bytes	CRT
This object is always enabled. Via the group address linked, air condition unit set point temperature is monitored.			
Feedback Indoor Temperature	Temperature (Celcius)	2 bytes	CRT
This object is always enabled. Via the group address linked, air condition unit indoor temperature is monitored.			

Feedback Error Alarm	1:Alarm / 0:Disable	1 bit	CRT
This object is always enabled. Via the group address linked, air condition unit error alarm is monitored.			
Device Control Locking	1:Enabled / 0:Disabled 0:Enabled / 1:Disabled	1 bit	CWT
Via this object the device control can be blocked.			
Remote Control Locking	1:Enabled / 0:Disabled 0:Enabled / 1:Disabled	1 bit	CWT
Via this object the remote controller can be blocked.			

3.2. LOGIC GATE

Logic gate count 1 Logic gate

LOGIC GATE 1

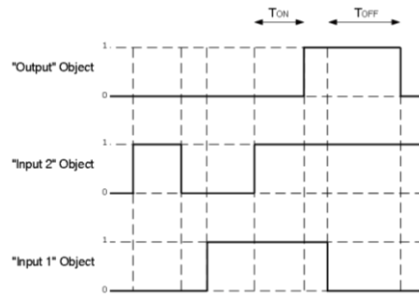
- > Type AND
- > Send status on Each input event Change of output
- > Number of inputs 1 Input
- > Output behaviour Normal Inverted
- > Switch on delay (sec) 0
- > Switch off delay (sec) 0
- > Send feedback periodically Disabled

Up to 4 logic gates can be used with the gateway. In addition, each logic gate allows the use of up to 4 inputs. The standard logic operations AND, OR and XOR are available.

The status of the output of logic gates can be shown normally or inverted. This configuration can be applied via the parameter "Output behavior" and when it is parameterized as inverted, the status of the output is shown inverted.

Through the parameter "Send status on", the type of feedback can be defined. The gateway allows sending the result of logic gates when the conversely logic output is changed or when one of the logic inputs is modified. Additionally, it is possible to define a cyclic sending of the feedback which permits getting information about the output status periodically.

The logic output can operate with previously configured delays. The logic output takes the values ON and OFF with delays. Depending of the switch delay parameters configuration, it is possible to set an ON delay (T_{ON}), an OFF delay (T_{OFF}) or both at the same time.



Logic Gate with delays

3.2.1.LIST OF PARAMETERS

PARAMETER	DESCRIPTION	VALUES
Logic gate count	This parameter determines the number of logic gates to use.	No Logic Gate 1 Logic Gate 2 Logic Gates 3 Logic Gates 4 Logic Gates
Logic gate type*1	This parameter determines the logic gate type. The output will be true or false depending on the result of this logic. The logic operations AND, OR and XOR are available for this function.	AND OR XOR
Send status on*1	This parameter determines when the status of the output is sent. Each Input Event: Sends status when any logic input is received. Change of Output: Sends status when the logic output is changed.	Each Input Event Change of Output
Number of inputs*1	This parameter determines the number of inputs for the logic.	1 Input 2 Inputs 3 Inputs 4 Inputs
Output behavior*1	This parameter defines the behavior of the logic output. Normal: The status of the output is sent without any modification. Inverted: The inverted status of the output is sent.	Normal Inverted

Switch on delay (x100ms)*1	The output takes the value ON after delay configured in this parameter.	0 (0...255)
Switch off delay (x100ms)*1	The output takes the value OFF after a delay configured in this parameter.	0 (0...255)
Send feedback periodically*1	This parameter allows to send feedback objects periodically according to selected time.	Disabled 5s, 10s, 30s, 1min, 5min, 10min, 20min, 30min, 40min, 50min, 1h. 2h, 3h, 4h, 5h, 6h, 12h, 24h.

*1 This parameter is only visible when the parameter "Logic gate count" is set to "1...4 Logic gate".

3.2.2. LIST OF OBJECTS

The following object can be used through the logic gate function:

OBJECT NAME	FUNCTION	TYPE	FLAG
Logic (1,2,3 or 4)	Logic Input (1,2,3 or 4)	1 bit	CRWT

Via this object it is possible to set the value of the logic inputs.

Logic (1,2,3 or 4)	Logic Output	1 bit	CRT
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Via this object the current value of the logic output is monitored.

3.3. CONVERTER

Converter gate count

CONVERTER 1

> Input type

> Input value

> Output type

> Output value

Up to 8 converters are available with the ITR830 gateway. Converters are used to convert the output to configured type value depending on the input value. There are 8 different types of data input which can be converted to 4 different data values.

Besides, for 1 byte and 2 byte input mathematic operation can be performed. In this case the output result will be as follow:



OUT = IN { + / - / x / ÷ } Calculation Value

Example 1

Input type: 1 Bit, 1
 Calculation: Multiply
 Calculation value: 5
 Output type: 1 Byte
 OUT = 1 x 5
 OUT = 5 (1 Byte)

Example 2

Input type: 2 Byte, 525
 Calculation: Divide
 Calculation value: 75
 Output type: 1 Byte
 OUT = 525 / 75
 OUT = 7 (1 Byte)

3.3.1.LIST OF PARAMETERS

PARAMETER	DESCRIPTION	VALUES
Converter gate count	This parameter determines the number of converter gates to use.	No Converter Gate 1 Converter Gate 2 Converter Gates 3 Converter Gates 4 Converter Gates 5 Converter Gate 6 Converter Gates 7 Converter Gates 8 Converter Gates
Input type*¹	This parameter determines the type of data for the converter input. When the input type is configured as 1 or 2 byte logic, the output data is 1 bit and it will take the value 1 provided that the entry is not 0.	1 Bit 2 Bit 1 Byte 2 Byte 1 Byte Logic 2 Byte Logic 1 Byte Threshold 2 Byte Threshold
Input value*¹	This parameter set the value of the converter input. Depending on the input type selected the input possible values are different:	1 Bit→ 0 (0-1) 2 Bit→ 0 (0...3) 1 Byte→ 0 (0...255) 2Bytes→ 0 (0...65535)

	Input Type: 1 Bit → 0 (0-1) Input Type: 2 Bit → 0 (0-3) Input Type: 1 Byte → 0 (0-255) Input Type: 2 Bytes → 0 (0-65535)	
Calculation*²	This parameter applies the selected operation to input value.	Disabled Plus Minus Multiply Divide
Calculation Value*²	This parameter specifies the values to be applied according to the operation selected for the input.	0 (0...255)
Lower limit*³	This parameter set the low threshold value for the input when it is configured as "1 Byte Threshold".	0 (0...255)
Higher limit*³	This parameter set the high threshold value for the input when it is configured as "1 Byte Threshold".	0 (0...255)
Lower limit*⁴	This parameter set the low threshold value for the input when it is configured as "2 Byte Threshold".	0 (0...65535)
Higher limit*⁴	This parameter set the high threshold value for the input when it is configured as "2 Byte Threshold".	0 (0...65535)
Output type*¹	This parameter determines the type of data for the logic output.	1 Bit 2 Bits 1 Byte 2 Bytes
Output value*¹	This parameter set the value of the converter output. Output Type: 1 Bit → 0 (0-1) Output Type: 2 Bits → 0 (0-3) Output Type: 1 Byte → 0 (0-255) Output Type: 2 Bytes → 0 (0-65535)	1 Bit → 0 (0-1) 2 Bits → 0 (0-3) 1 Byte → 0 (0-255) 2Bytes→ 0 (0-65535)

*¹ This parameter is only visible when the parameter "1 Converter gate" is set to "1...8 Converter gate".

*² This parameter is only visible when the parameter "Input Type" is set to "1 Byte" or "2 Byte".

*³ This parameters are only visible when the parameter "Input Type" is set to "1 Byte Threshold".

*⁴ This parameters are only visible when the parameter "Input Type" is set to "2 Byte Threshold".

3.3.2. LIST OF OBJECTS

The following object can be used through the converter function:

OBJECT NAME	FUNCTION	TYPE	FLAG
Converter (1...8)	Converter Input	1 bit	CRWT
		2 bits	
		1 byte	
		2 bytes	

Via this object it is possible to send values for the converter input.

Converter (1...8)	Converter Output	1 bit	CRWT
		2 bits	
		1 byte	
		2 bytes	

Via this object the current output of the converter is monitored.

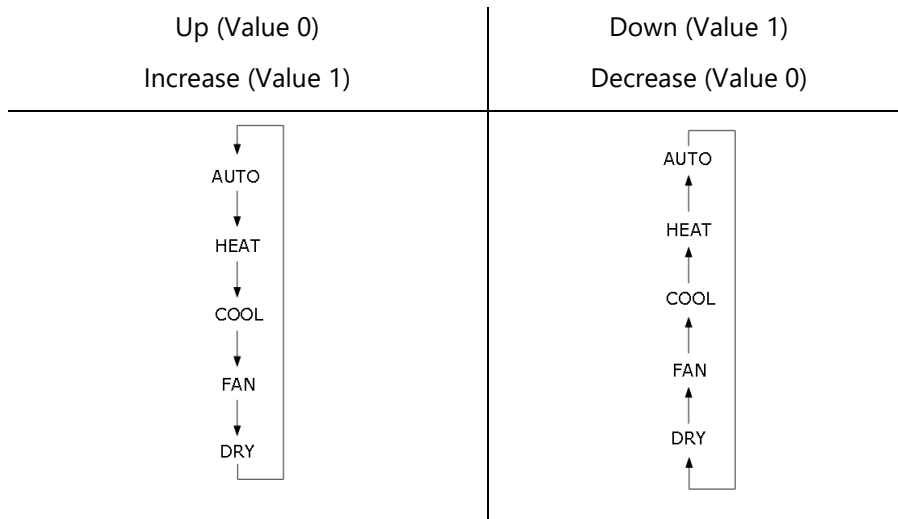
3.4. OPERATING MODE

Operating mode Heat/Cool object & feedback (1-bit)	<input type="text" value="Disabled"/>
Operating mode +/- object (1-bit)	<input type="text" value="Disabled"/>
Operating mode individual objects (1-bit)	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
Operating mode object (1-byte)	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
Operating mode percent value objects	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
Feedback operating mode individual objects (1-bit)	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
Feedback operating mode object (1-byte)	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
Feedback operating mode text objects (14-char)	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled

3.4.1. OPERATING MODE CONTROLS

The operating mode can be set via some different objects:

- Operating Mode Heat/Cool: Via this 1 bit object the operating mode heating or cooling can be selected.
- Operating mode +/- object (1-bit): Via this object the operating mode can be selected by sending 1 bit values. Using this object the following sequence is applied:



- Individual mode objects: Via these 1 bit objects the operating mode can be modified by sending the value 1 to the mode object to be activated.
- Operating Mode: Via this 1 byte object the operating mode can be modified with the following values:
 - AUTO: 0
 - HEAT: 1
 - COOL: 3
 - FAN: 9
 - DRY: 14
- Operating mode percent value objects: Via this 1 byte objects the indoor unit can be controlled via percentage values in order to provide compatibility with the thermostat that use this data type. By using this object, there are two different options:

- Priority to current operating mode: **Disabled**

When the priority is disabled, it does not matter what is the current mode of the indoor unit, the percentage values can switch the mode and activate the indoor unit in the following way:

- If the object "Heating Mode Percent Value" takes a value greater to 0, the indoor unit will be switched ON in HEAT mode. The value 0 will switch off the air condition.
- If the object "Cooling Mode Percent Value" takes a value greater to 0, the indoor unit will be switched ON in COOL mode. The value 0 will switch off the air condition.



When the priority is disabled and the air condition unit is working as FAN, AUTO or DRY modes, a new value to the objects "Heating/Cooling Mode Percent Value" or "Operating Mode Heat/Cool" will change the mode to HEAT or COOL.

- Priority to current operating mode: **Enabled**

When the priority is enabled, the operating mode defined cannot be modified by the percentage value objects and the behavior will be as follow:

Current operating mode: HEAT

- If the object "Heating Mode Percent Value" takes a value greater than 0, the indoor unit will be switched ON. The value 0 will switch off the air condition.

- Any data received via the object "Cooling Mode Percent Value" will not be taken into consideration.

Current operating mode: COOL

- If the object "Cooling Mode Percent Value" takes a value greater than 0, the indoor unit will be switched ON. The value 0 will switch off the air condition.
- Any data received via the object "Heating Mode Percent Value" will not be taken into consideration.



When the priority is enabled and the air condition unit is working as FAN, AUTO or DRY modes, a new value to the objects "Heating/Cooling Mode Percent Value" will not be taken into consideration. Only a new value to the object "Operating Mode Heat/Cool" will change the mode to HEAT or COOL.

3.4.2. OPERATING MODE FEEDBACKS

Any modification on all above objects will be advised in the following feedback objects:

- Feedback Operating Mode Heat/Cool
- Feedback Operating Mode Auto, Feedback Operating Mode Heat, Feedback Operating Mode Cool, Feedback Operating Mode Fan, Feedback Operating Mode Dry.
- Feedback Operating Mode
- Feedback Operating Mode Text

3.4.3. ENERGY SAVER 1 MODE

Energy Saver mode	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
> Polarity	<input checked="" type="radio"/> 1:Start / 0:Stop <input type="radio"/> 0:Start / 1:Stop
> Timer for Energy Saver mode	Disabled <input type="text"/>
> Setpoint shifting for Energy Saver mode	<input checked="" type="radio"/> Via parameter <input type="radio"/> Via communication object
> Setpoint shifting (°C)	1 <input type="text"/>
> Fan speed for Energy Saver mode	<input checked="" type="radio"/> Via parameter <input type="radio"/> Via communication object
> Fan speed	Fan 2 <input type="text"/>

The energy saver mode can be applied via the object "Energy Saver 1 Mode". This mode can be configured to work during a period or during the "stop" value is received. Via the parameter or via communication object "Timer for Energy Saver 1 mode" period can be set. If the timer is disabled, the "Energy Saver 1 Mode" will be finished at the following actions:

- The object "Energy Saver 1 Mode" receives the "stop" value, the mode will stop and the previous state will be recovered at this moment.
- A new value for fan, mode or set point is received via KNX, the Energy Saver 1 Mode will stop and the new value will be applied at this moment.
- A new value for fan, mode or set point is received via the remote control, the new value will be applied, the mode will stop and the previous state will be recovered.

If the timer is enabled, the energy saver mode will be finished at below situation or once the time is elapsed. Then the previous state will be recovered. The timer can always be retriggerable by sending the start value to the object "Energy Saver 1 Mode".

The timer, variation of the set point and the fan speed to be applied during the energy saver mode can be selected via parameter or via communication object. With this last option, the user could modify the values any time as required.



If the timer, set point shifting or fan speed values are modified via their respective objects ("Energy Saver 1 Mode Timer Duration", "Energy Saver 1 Mode Setpoint Shifting" and "Energy Saver 1 Mode Fan Speed") while the energy saver mode is active, the new values will be directly applied.

3.4.4. ENERGY SAVER 2 MODE

Power Saver mode	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
> Polarity	<input checked="" type="radio"/> 1:Start / 0:Stop <input type="radio"/> 0:Start / 1:Stop
> Timer for Power Saver mode	Via parameter ▼
> Timer (min)	15 ▲▼
> Setpoint shifting for Power Saver mode	<input checked="" type="radio"/> Via parameter <input type="radio"/> Via communication object
> Setpoint shifting (°C)	2 ▲▼
> Fan speed for Power Saver mode	<input checked="" type="radio"/> Via parameter <input type="radio"/> Via communication object
> Fan speed	Fan 2 ▼

The second energy saver mode can be applied via the object "Energy Saver 2 Mode".

This mode can be configured to work during a period or during the "stop" value is received. Via the parameter "Timer for Energy Saver 2 Mode" period can be selected. If the timer is disabled, the "Energy Saver 2 Mode" will be finished at the following actions:

- The object "Energy Saver 2 Mode" receives "stop" value. At this moment the mode will stop and the previous state will be recovered.
- A new value for fan, mode or set point is received via KNX. At this moment the Energy Saver 2 Mode will stop and the new value will be applied.
- A new value for fan, mode or set point is received via the remote control. At this moment the new value will be applied, the Energy Saver 2 Mode will stop and the previous state will be recovered.

If the timer is enabled, the Energy Saver 2 Mode will be finished at below situation or once the time is elapsed. Then the previous state will be recovered.

The timer, variation of the set point and the fan speed to be applied during the Energy Saver 2 Mode can be selected via parameter or via communication object. With this last option, the user could modify the values every time as required.



If the timer, set point shifting or fan speed values are modified via their respective objects ("Energy Saver 2 Mode Timer Duration", "Energy Saver 2 Mode Setpoint Shifting" and "Energy Saver 2 Mode Fan Speed") while the energy saver mode is active, the new values will be directly applied.

3.4.5. WINTER MODE

Winter mode	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
> Polarity	<input checked="" type="radio"/> 1:Start / 0:Stop <input type="radio"/> 0:Start / 1:Stop
> Timer for Winter mode	Disabled ▼
> Setpoint for Winter mode	<input checked="" type="radio"/> Via parameter <input type="radio"/> Via communication object
> Setpoint (°C)	22 ▲▼
> Fan speed for Winter mode	<input checked="" type="radio"/> Via parameter <input type="radio"/> Via communication object
> Fan speed	Fan 2 ▼

The winter mode can be applied via the object "Winter Mode". If the winter mode is applied while the operating mode is COOL, the mode will be automatically changed to HEAT mode and the unit indoor will switch on.

This mode can be configured to work during a period or during the "stop" value is received. Via the parameter "Timer for winter mode" this can be selected. If the timer is disabled, the winter mode will be finished once the object "Winter Mode" receives the "stop" value. At this moment the mode will stop and the previous state will be recovered.

If the timer is enabled, the winter mode will be finished at bellow action or once the time is elapsed. Then the previous state will be recovered.

- A new value for fan, mode or set point is received via KNX or remote control will be directly applied and then the winter mode will be disable. However, the previous status will not be recovered and the air condition will remain the winter mode values applied.

The timer, set point and the fan speed to be applied during the winter mode can be selected via parameter or via communication object. With this last option, the user could modify the values every time as required.



If the timer, set point or fan speed values are modified via their respective objects ("Winter Mode Timer Duration", "Winter Mode Setpoint Shifting" and "Winter Mode Fan Speed") while the winter mode is active, the new values will be directly applied.

3.4.6. SUMMER MODE

Summer mode	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
> Polarity	<input checked="" type="radio"/> 1:Start / 0:Stop <input type="radio"/> 0:Start / 1:Stop
> Timer for Summer mode	Disabled ▼
> Setpoint for Summer mode	<input checked="" type="radio"/> Via parameter <input type="radio"/> Via communication object
> Setpoint (°C)	22 ▲▼
> Fan speed for Summer mode	<input checked="" type="radio"/> Via parameter <input type="radio"/> Via communication object
> Fan speed	Fan 2 ▼

The summer mode can be applied via the object "Summer Mode". If the summer mode is applied while the operating mode is HEAT, the mode will be automatically changed to COOL mode and the unit indoor will switch on.

This mode can be configured to work during a period or during the “stop” value is received. Via the parameter “Timer for summer mode” this can be selected. If the timer is disabled, the “Summer Mode” will be finished once the object “Summer Mode” receives the “stop” value. At this moment the mode will stop and the previous state will be recovered.

If the timer is enabled, the summer mode will be finished at below action or once the time is elapsed. Then the previous state will be recovered.

- A new value for fan, mode or set point is received via KNX or remote control will be directly applied and then the winter mode will be disable. However, the previous status will not be recovered and the air condition will remain the winter mode values applied.

The timer, set point and the fan speed to be applied during the winter mode can be selected via parameter or via communication object. With this last option, the user could modify the values every time as required.



If the timer, set point or fan speed values are modified via their respective objects (“Summer Mode Timer Duration”, “Summer Mode Setpoint Shifting” and “Summer Mode Fan Speed”) while the summer mode is active, the new values will be directly applied.

3.4.7.LIST OF PARAMETERS

PARAMETER	EXPLANATION	VALUES
Operating mode Heat/Cool object & feedback (1-bit)	This parameter determines the polarity of the “Operating Mode Heat / Cool” and “Feedback Operating Mode Heat / Cool” objects.	Disabled 1:Heat/0:Cool 0:Heat/1:Cool
Operating mode +/- object (1-bit)	This parameter enables the object “Operating Mode +/-”.	Disabled 1:Increase/0:Decrease 0:Up/1:Down
Operating mode individual objects (1-bit)	This parameter enables the objects “Individual Mode Auto”, “Individual Mode Heat”, “Individual Mode Cool”, “Individual Mode Fan” and “Individual Mode Dry”.	Disabled Enabled
Operating mode object (1-byte)	This parameter enables the object “Operating Mode”.	Disabled Enabled
Operating mode percent value objects	This parameter enables the objects “Heating Mode Percent Value” and “Cooling Mode Percent Value”.	Disabled Enabled
Priority to “Operating mode Heat/Cool”^{*1}	This parameter allows activating or deactivating priority for Heat/Cool parameter.	Disabled Enabled
Feedback operating mode individual objects (1-bit)	This parameter enables the object “Feedback operating mode individual (1-bit)” objects.	Disabled Enabled
Feedback operating mode object (1-byte)	This parameter enables the object “Feedback operating mode (1-byte)” object.	Disabled Enabled

Feedback operating mode text object (14-char)	This parameter enables the object "Feedback operating mode text (14-char)" object.	Disabled Enabled
Text for mode AUTO / HEAT / COOL / FAN / DRY*2	Those parameters allows 14-char text for "Feedback operating mode text (14-char)" object.	Auto / Heat / Cool / Fan / Dry
Energy Saver 1 Mode	This parameter enables Energy Saver 1 Mode.	Disabled Enabled
Polarity*3	This parameter allows to determine polarity of enabling command of Energy Saver 1 Mode.	1:Start / 0:Stop 0:Start / 1:Stop
Timer for Energy Saver 1 Mode*3	This parameter enables to set a timer for Energy Saver 1 Mode.	Disabled Via parameter Via communication object
Timer (min)*4	Time duration is determined via this parameter.	0 (0...255)
Setpoint shifting for Energy Saver 1 Mode*3	This parameter is the shifting type of setpoint.	Via parameter Via communication object
Setpoint shifting (°C)*6	This parameter allows to set the value for how many degrees the setpoint is to be shifted.	1 (1...4)
Fan speed for Energy Saver 1 Mode*3	This parameter is sending type of fan speed for Energy Saver 1 Mode.	Via parameter Via communication object
Fan Speed*6	Fan speed value is determined via this parameter.	No change Auto Fan 1 Fan 2 Fan 3 Fan 4
Energy Saver 2 Mode	This parameter enables Energy Saver 2 Mode.	Disabled Enabled
Polarity*7	This parameter allows to determine polarity of enabling command of Energy Saver 2 Mode.	1:Start / 0:Stop 0:Start / 1:Stop
Timer for Energy Saver 2 Mode*7	This parameter allows to set a timer for Energy Saver 2 Mode.	Disabled Via parameter

		Via communication object
Timer (min)*⁸	Time duration is determined in minutes via this parameter.	0 (0...255)
Setpoint shifting for Energy Saver 2 Mode*⁷	This parameter is the shifting type of setpoint.	Via parameter Via communication object
Setpoint shifting (°C)*⁹	This parameter allows to set the value for how many degrees the setpoint is to be shifted.	1 (1...4)
Fan speed for Energy Saver 2 Mode*⁷	This parameter is sending type of fan speed for Energy Saver 2 Mode.	Via parameter Via communication object
Fan Speed*¹⁰	Fan speed value is determined via this parameter.	No change Auto Fan 1 Fan 2 Fan 3 Fan 4
Winter Mode	This parameter enables Winter Mode.	Disabled Enabled
Polarity*¹¹	This parameter allows to determine polarity of enabling command of Winter Mode.	1:Start / 0:Stop 0:Start / 1:Stop
Timer for Winter Mode*¹¹	This parameter allows to set a timer for Winter Mode.	Disabled Via parameter Via communication object
Timer (min)*¹²	Time duration is determined in minutes via this parameter.	0 (0...255)
Setpoint shifting for Winter Mode*¹¹	This parameter is the shifting type of setpoint.	Via parameter Via communication object
Setpoint shifting (°C)*¹³	This parameter allows to set the value for how many degrees the setpoint is to be shifted.	1 (1...4)

Fan speed for Winter Mode*11	This parameter is sending type of fan speed for Winter Mode.	Via parameter Via communication object
Fan Speed*14	Fan speed value is determined via this parameter.	No change Auto Fan 1 Fan 2 Fan 3 Fan 4
Summer mode	This parameter enables Summer Mode.	Disabled Enabled
Polarity*15	This parameter allows to determine polarity of enabling command of Summer Mode.	1:Start / 0:Stop 0:Start / 1:Stop
Timer for Summer Mode*15	This parameter allows to set a timer for Summer Mode.	Disabled Via parameter Via communication object
Timer (min)*16	Time duration is determined in minutes via this parameter.	0 (0...255)
Setpoint shifting for Summer Mode*15	This parameter is the shifting type of setpoint.	Via parameter Via communication object
Setpoint shifting (°C)*17	This parameter allows to set the value for how many degrees the setpoint is to be shifted.	1 (1...4)
Fan speed for Summer Mode*15	This parameter is sending type of fan speed for Summer Mode.	Via parameter Via communication object
Fan Speed*18	Fan speed value is determined via this parameter.	No change Auto Fan 1 Fan 2 Fan 3 Fan 4

- *1 This parameter is only visible when the parameter "Operating mode percent value objects" is set to "Enabled".
- *2 This parameter is only visible when the parameter "Feedback operating mode text objects (14-char)" is set to "Enabled".
- *3 This parameter is only visible when the parameter "Energy Saver 1 Mode" is set to "Enabled".
- *4 This parameter is only visible when the parameter "Time for Energy Saver 1 Mode" is set to "Via parameter".
- *5 This parameter is only visible when the parameter "Setpoint shifting for Energy Saver 1 Mode" is set to "Via parameter".
- *6 This parameter is only visible when the parameter "Fan speed for Energy Saver 1 Mode" is set to "Via parameter".
- *7 This parameter is only visible when the parameter "Energy Saver 2 Mode" is set to "Enabled".
- *8 This parameter is only visible when the parameter "Time for Energy Saver 2 Mode" is set to "Via parameter".
- *9 This parameter is only visible when the parameter "Setpoint shifting for Energy Saver 2 Mode" is set to "Via parameter".
- *10 This parameter is only visible when the parameter "Fan speed for Winter Mode" is set to "Via parameter".
- *11 This parameter is only visible when the parameter "Winter Mode" is set to "Enabled".
- *12 This parameter is only visible when the parameter "Time for Winter Mode" is set to "Via parameter".
- *13 This parameter is only visible when the parameter "Setpoint shifting for Winter Mode" is set to "Via parameter".
- *14 This parameter is only visible when the parameter "Fan speed for Winter Mode" is set to "Via parameter".
- *15 This parameter is only visible when the parameter "Summer Mode" is set to "Enabled".
- *16 This parameter is only visible when the parameter "Time for Summer Mode" is set to "Via parameter".
- *17 This parameter is only visible when the parameter "Setpoint shifting for Summer Mode" is set to "Via parameter".
- *18 This parameter is only visible when the parameter "Fan speed for Summer Mode" is set to "Via parameter".

3.4.8.LIST OF OBJECTS

OBJECT NAME	FUNCTION	TYPE	FLAG
Operating Mode	0:Auto/1:Heat/3:Cool/9:Fan/14:Dry	1 byte	CWT
Via this object air condition unit operating mode is controlled.			
Feedback Operating Mode	0:Auto/1:Heat/3:Cool/9:Fan/14:Dry	1 byte	CRT
Via this object air condition unit operating mode is monitored.			
Operating Mode Heat/Cool	1:Heat/0:Cool	1 bit	CWT
Via this object air condition unit Cool/Heat Mode is controlled.			

Operating Mode Cool/ Heat	0:Heat/1:Cool	1 bit	CWT
Via this object air condition unit Heat/Cool Mode is controlled.			
Feedback Operating Mode Heat/Cool	1:Heat/0:Cool	1 bit	CRT
Via this object air condition unit Heat/Cool Mode is monitored.			
Feedback Operating Mode Cool/ Heat	0:Heat/1:Cool	1 bit	CRT
Via this object air condition unit Cool/Heat Mode is monitored.			
Heating Mode Percent Value	0%:Off/1%-100%:On+Heat	1 byte	CWT
This object changes operating mode to heat via incoming percentage value.			
Cooling Mode Percent Value	0%:Off/1%-100%:On+Cool	1 byte	CWT
This object changes operating mode to cool via incoming percentage value.			
Individual Mode Auto	1:Set Mode Auto/0:Nothing	1 bit	CWT
This object changes operating mode to auto via 1 bit value.			
Feedback Individual Mode Auto	1-Auto	1 bit	CRT
Via this object air condition unit Auto Mode is monitored.			
Individual Mode Heat	1:Set Mode Heat/0:Nothing	1 bit	CWT
This object changes operating mode to heat via 1 bit value.			
Feedback Individual Mode Heat	1-Heat	1 bit	CRT
Via this object air condition unit Heat Mode is monitored.			
Individual Mode Cool	1:Set Mode Cool/0:Nothing	1 bit	CWT
This object changes operating mode to cool via 1 bit value.			
Feedback Individual Mode Cool	1-Cool	1 bit	CRT
Via this object air condition unit Cool Mode is monitored.			
Individual Mode Fan	1:Set Mode Fan/0:Nothing	1 bit	CWT
This object changes operating mode to fan via 1 bit value.			
Feedback Individual Mode Fan	1-Fan	1 bit	CRT
Via this object air condition unit Fan Mode is monitored.			
Individual Mode Dry	1:Set Mode Dry/0:Nothing	1 bit	CWT
This object changes operating mode to dry via 1 bit value.			
Feedback Individual Mode Dry	1-Dry	1 bit	CRT
Via this object air condition unit Dry Mode is monitored.			
Operating Mode +/-	1:Increase/0:Decrease	1 bit	CWT
This object changes between operating modes as +/- via 1 bit value.			

Operating Mode -/+	0:Up/1:Down	1 bit	CWT
This object changes between operating modes as -/+ via 1 bit value.			
Feedback Operating Mode Text	Operating Mode Text	14 bytes	CRT
Via this object air condition unit Operating Mode Text is monitored.			
Energy Saver 1 Mode	1:Start/0:Stop 0:Start/1:Stop	1 bit	CWT
Via this object Energy Saver 1 Mode is controlled.			
Energy Saver 2 Mode	1:Start/0:Stop 0:Start/1:Stop	1 bit	CWT
Via this object Energy Saver 2 Mode is controlled.			
Winter Mode	1:Start/0:Stop 0:Start/1:Stop	1 bit	CWT
Via this object Winter Mode is controlled.			
Summer Mode	1:Start/0:Stop 0:Start/1:Stop	1 bit	CWT
Via this object Summer Mode is controlled.			
Feedback Energy Saver 1 Mode	1:Start/0:Stop 0:Start/1:Stop	1 bit	CRT
Via this object Energy Saver 1 Mode is monitored.			
Feedback Energy Saver 2 Mode	1:Start/0:Stop 0:Start/1:Stop	1 bit	CRT
Via this object Energy Saver 2 Mode is monitored.			
Feedback Winter Mode	1:Start/0:Stop 0:Start/1:Stop	1 bit	CRT
Via this object air condition unit Winter Mode is monitored.			
Feedback Summer Mode	1:Start/0:Stop 0:Start/1:Stop	1 bit	CRT
Via this air condition unit object Summer Mode is monitored.			
Energy Saver 1 Mode Time Duration	0-255 min	1 byte	CWT
Via this object air condition unit Energy Saver 1 Mode time duration is determined in minutes.			
Energy Saver 2 Mode Time Duration	0-255 min	1 byte	CWT
Via this object air condition unit Energy Saver 2 Mode time duration is determined in minutes.			
Winter Mode Time Duration	0-255 min	1 byte	CWT
Via this object air condition unit Winter Mode time duration is determined in minutes.			
Summer Mode Time Duration	0-255 min	1 byte	CWT
Via this object air condition unit Summer Mode time duration is determined in minutes.			

Energy Saver 1 Mode Setpoint Shifting	Temperature (Celcius)	2 bytes	CWT
This object allows to shifting at setpoint temperature for Energy Saver 1 Mode.			
Energy Saver 2 Mode Setpoint Shifting	Temperature (Celcius)	2 bytes	CWT
This object allows to shifting at setpoint temperature for Energy Saver 2 Mode.			
Winter Mode Setpoint Shifting	Temperature (Celcius)	2 bytes	CWT
This object allows to shifting at setpoint temperature for Winter Mode.			
Summer Mode Setpoint Shifting	Temperature (Celcius)	2 bytes	CWT
This object allows to shifting at setpoint temperature for Summer Mode.			
Energy Saver 1 Mode Fan Speed	1:Fan1/2:Fan2/3:Fan3/4:Fan4	1 byte	CWT
This object allows to determine the fan speed for Energy Saver 1 Mode.			
Energy Saver 2 Mode Fan Speed	1:Fan1/2:Fan2/3:Fan3/4:Fan4	1 byte	CWT
This object allows to determine the fan speed for Energy Saver 2 Mode.			
Winter Mode Fan Speed	1:Fan1/2:Fan2/3:Fan3/4:Fan4	1 byte	CWT
This object allows to determine the fan speed for Winter Mode.			
Summer Mode Fan Speed	1:Fan1/2:Fan2/3:Fan3/4:Fan4	1 byte	CWT
This object allows to determine the fan speed for Summer Mode.			

3.5. FAN

The parameter “Fan mode available” defines if the fan mode is available in the indoor unit. If this parameter is set to “No”, all the fan parameters and objects are hidden.

Fan mode available	<input checked="" type="radio"/> Yes <input type="radio"/> No
Number of fan level	<input type="text" value="3"/>
AUTO fan mode available	<input type="radio"/> Yes <input checked="" type="radio"/> No
Fan level control +/- object (1-bit)	<input type="text" value="Disabled"/>
Fan level control individual objects (1-bit)	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
Fan level control & feedback objects (1-byte)	<input type="text" value="Enumerated"/>
Feedback fan level individual objects (1-bit)	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
Feedback fan level text objects (14-char)	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled

Once the fan mode is enabled, the number of available fan levels in the indoor unit should be defined via the parameter "Number of fan level". Besides the parameter "AUTO fan mode available" defines if the AUTO fan mode is available in the indoor unit.



While selection for fan level, air condition unit user manual should be checked.

3.5.1.FAN LEVEL CONTROL

The fan level can be set via some different methods:

- Fan level can be selected by sending 1 bit values. While using this method the following sequence is applied:

Loop the sequence: Yes		Loop the sequence: No	
Up (Value 0) Increase (Value 1)	Down (Value 1) Decrease (Value 0)	Up (Value 0) Increase (Value 1)	Down (Value 1) Decrease (Value 0)
<p>Sequence diagram for 'Loop the sequence: Yes' - Up (Value 0): Shows a vertical flow from AUTO to FAN 1, FAN 2, FAN 3, and FAN 4. A green dashed box encloses the AUTO and FAN 1 steps. A red dashed box encloses the FAN 3 and FAN 4 steps. A blue dashed box encloses the FAN 4 step. Arrows indicate the direction of the sequence.</p>	<p>Sequence diagram for 'Loop the sequence: Yes' - Down (Value 1): Shows a vertical flow from FAN 4 to FAN 3, FAN 2, FAN 1, and AUTO. A green dashed box encloses the AUTO and FAN 1 steps. A red dashed box encloses the FAN 3 and FAN 4 steps. A blue dashed box encloses the FAN 4 step. Arrows indicate the direction of the sequence.</p>	<p>Sequence diagram for 'Loop the sequence: No' - Up (Value 0): Shows a vertical flow from AUTO to FAN 1, FAN 2, FAN 3, and FAN 4. A green dashed box encloses the AUTO step. A red dashed box encloses the FAN 3 step. A blue dashed box encloses the FAN 4 step. Arrows indicate the direction of the sequence.</p>	<p>Sequence diagram for 'Loop the sequence: No' - Down (Value 1): Shows a vertical flow from FAN 4 to FAN 3, FAN 2, FAN 1, and AUTO. A green dashed box encloses the AUTO step. A red dashed box encloses the FAN 3 step. A blue dashed box encloses the FAN 4 step. Arrows indicate the direction of the sequence.</p>

--- AUTO mode is available

--- FAN 3 is available

--- FAN 4 is available

- Fan speeds can be activate via percentage values. The thresholding values for each fan speed are set in the parameters "Fan (1, 2, 3, 4) lower limit".
- Fan speeds can be activated by sending the numbers of each speed: 1, 2, 3 or 4.



If a value greater than 4 or the value 0 are received, this data will be discarded and the fan will remain in the current speed.

Any modification on all above objects will be advised in the following feedback objects:

- Feedback Fan Speed Percent / Enumerated
- Feedback Fan Speed Manual/Auto, Feedback Individual Fan Speed 1, Feedback Individual Fan Speed 2, Feedback Individual Fan Speed 3, Feedback Individual Fan Speed 4.
- Feedback Fan Speed Text

3.5.2.LIST OF PARAMETERS

PARAMETER	EXPLANATION	VALUES
Fan Mode Available	This parameter enables Fan Mode.	No Yes
Number of fan level*1	This parameter allows to select available fan levels.	2(2...4)
AUTO fan mode available*1	This parameter enables AUTO fan mode to be activated.	No Yes
Fan Level control +/- object (1-bit)*1	This parameter enables to change the desired fan level as +/- via 1 bit object.	Disabled 1:Increase / 0:Decrease 0:Up / 1:Down
Loop the sequence*2	This parameter controls the loop, considering the selected polarity.	Yes No
Fan level control individual objects (1-bit) *1	This parameter enables the objects "Individual Fan Speed 1", "Individual Fan Speed 2", "Individual Fan Speed 3" and "Individual Fan Speed 4".	Disabled Enabled
Fan level control & feedback objects (1-byte) *1	This parameter controls the fan level via 1 byte objects and allows the feedback to be received.	Disabled Scaling Enumerated
Fan (1,2,3,4) lower limit (%)*3	This parameter changes the fan level, according to received 1 byte percentage values.	0(0...100)
Feedback fan level individual object (1-bit) *1	This parameter sends changes of fan level.	Disabled Enabled
Feedback fan level text object (14-char) *1	This parameter enables the object "Feedback fan level text (14-char)" object.	Disabled Enabled

Text for fan speed (1,2,3,4) *4	Those parameters allows 14-char text for "Feedback fan level text (14-char)" object.	FAN1, FAN2, FAN3, FAN4
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*1 This parameter is only visible when the parameter "Fan mode available" is set to "Yes".

*2 This parameter is only visible when the parameter "Fan Level control +/- object (1-bit)" is set to "1:Increase / 0:Decrease" or "0:Up / 1:Down".

*3 This parameter is only visible when the parameter "Fan level control & feedback objects (1-byte)" is set to "Scaling".

*4 This parameter is only visible when the parameter "Feedback fan level text objects (14-char)" is set to "Enabled".

3.5.3.LIST OF OBJECTS

OBJECT NAME	FUNCTION	TYPE	FLAG
Fan Speed Percent	Threshold defined in parameter	1 byte	CWT
Via this object air condition unit fan speed can be selected by sending percentage value.			
Fan Speed Enumerated	1:Speed1...4:Speed4	1 byte	CWT
Via this object air condition unit fan speed can be selected by sending value between 1-4.			
Feedback Fan Speed Percent	Threshold defined in parameter	1 byte	CRT
This object allows the air condition unit to receive current fan speed in percentage value.			
Feedback Fan Speed Enumerated	1:Speed1...4:Speed4	1 byte	CRT
This object allows the air condition unit to receive current fan speed in between 1-4.			
Fan Speed Auto/Manual	Threshold defined in parameter	1 bit	CWT
Via this object Fan Speed can be selected as Manual / Auto.			
Feedback Fan Speed Auto/Manual	1:Speed1...4:Speed4	1 bit	CRT
This object allows the air condition unit to receive current fan speed Auto or Manual.			
Individual Fan Speed 1	1:Set Fan Speed 1 / 0:Nothing	1 bit	CWT
Via this object air condition unit Fan Speed 1 can be selected.			
Individual Fan Speed 2	1:Set Fan Speed 2 / 0:Nothing	1 bit	CWT
Via this object air condition unit Fan Speed 2 can be selected.			
Individual Fan Speed 3	1:Set Fan Speed 3 / 0:Nothing	1 bit	CWT
Via this object air condition unit Fan Speed 3 can be selected.			
Individual Fan Speed 4	1:Set Fan Speed 4 / 0:Nothing	1 bit	CWT
Via this object air condition unit Fan Speed 4 can be selected.			
Feedback Individual Fan Speed 1	1:Fan Speed 1	1 bit	CRT
Via this object air condition unit Fan Speed 1 is monitored.			
Feedback Individual Fan Speed 2	1:Fan Speed 2	1 bit	CRT

Via this object air condition unit Fan Speed 2 is monitored.

Feedback Individual Fan Speed 3	1:Fan Speed 3	1 bit	CRT
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Via this object air condition unit Fan Speed 3 is monitored.

Feedback Individual Fan Speed 4	1:Fan Speed 4	1 bit	CRT
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Via this object air condition unit Fan Speed 4 is monitored.

Fan Speed +/-	1:Increase/0:Decrease	1 bit	CWT
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This object changes between fan speeds as +/- via 1 bit value.

Fan Speed -/+	0:Up/1:Down	1 bit	CWT
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This object changes between fan speeds as -/+ via 1 bit value.

Feedback Fan Speed Text	Fan Speed Text	14 bytes	CRT
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Via this object air condition unit fan speed is monitored in text form.

3.6. VANES

The parameter "Vanes control available" defines if the vanes control is available in the indoor unit. If this parameter is set to "No", all the fan parameters and objects are hidden.

Vanes control available	<input checked="" type="radio"/> Yes <input type="radio"/> No
Available vanes positions	<input type="text" value="5"/>
AUTO vanes mode available	<input type="radio"/> Yes <input checked="" type="radio"/> No
Vanes control +/- objects (1-bit)	<input type="text" value="Disabled"/>
Vanes control individual objects (1-bit)	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
Vanes control & feedback objects (1-byte)	<input type="text" value="Enumerated"/>
Feedback vanes control individual objects (1-bit)	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
Feedback vanes control text objects (14-char)	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled

Once the vane control is enabled, the number of available positions in the indoor unit should be defined via the parameter "Available vanes positions". Besides the parameter "AUTO vanes mode available" defines if the AUTO vanes mode is available.



While selection for vane positions, air condition unit user manual should be checked.

3.6.1.VANES CONTROL

The vanes position can be set via some different methods:

- Vane position can be controlled by sending 1 bit values. While using this method the following sequence is applied:

Loop the sequence: Yes		Loop the sequence: No	
Up (Value 0) Increase (Value 1)	Down (Value 1) Decrease (Value 0)	Up (Value 0) Increase (Value 1)	Down (Value 1) Decrease (Value 0)

- AUTO mode is available
- POS 3 is available
- POS 4 is available
- POS 5 is available
- SWING is available

- Vane positions can be controlled via percentage values. The thresholding values for each position are set in the parameters "Vanes position (1, 2, 3, 4, 5) lower limit".
- Vane positions can be control by sending the numbers of each position: 1, 2, 3, 4 or 5.



If a value greater than 5 or the value 0 are received, this data will be discarded and the vanes will remain in the current position.

Any modification on all above objects will be advised in the following feedback objects:

- Feedback Vanes Position Percent / Enumerated.
- Feedback Vanes Position Manual/Auto, Feedback Vanes Position 1, Feedback Vanes Position 2, Feedback Vanes Position 3, Feedback Vanes Position 4, Feedback Vanes Position 5 and Feedback Vanes Swing.
- Feedback Vanes Position Text.

3.6.2.LIST OF PARAMETER

PARAMETER	EXPLANATION	VALUES
Vanes Control Available	This parameter enables vane control.	No Yes
Available vanes positions*¹	This parameter allows to select available vane positions.	4(4-5)
AUTO vane mode available*¹	This parameter enables AUTO vane positions to be activated.	No Yes
Vane control +/- object (1-bit) *¹	This parameter enables to change the desired vane position as +/- via 1 bit object.	Disabled 1:Increase / 0:Decrease 0:Up / 1:Down
Include SWING vane mode in the sequence*²	This parameter determines whether or not the SWING option is in the control loop of the vanes positions.	Yes No
Loop the sequence*²	This parameter controls the loop, considering the selected polarity.	Yes No
Vane control individual objects (1-bit)*¹	This parameter enables the objects "Vane Set Position 1", "Vane Set Position 2", "Vane Set Position 3", "Vane Set Position 4", and "Vane Set Position 5".	Disabled Enabled
Vanes control & feedback objects (1-byte)*¹	This parameter controls the vane positions via 1-byte objects and allows the feedback to be received.	Disabled Scaling Enumerated
Vane position (1,2,3,4,5) lower limit (%)*³	This parameter changes the vane positions, according to received percentage values.	0(0...100)
Feedback vanes control individual object (1-bit)*¹	This parameter reports the changes from vane positions for control via 1 bit.	Disabled Enabled
Feedback vanes control text objects (14-char)*¹	This parameter enables the object "Feedback vanes control text (14-char)" object.	Disabled Enabled
Text for vanes (SWING, 1,2,3,4,5)*⁴	Those parameters allows 14-char text for "Feedback vanes control text (14-char)" object.	SWING, POSITION 1, POSITION 2, POSITION 3, POSITION 4, POSITION 5

*1 This parameter is only visible when the parameter "Vane control available" is set to "Yes".

*2 This parameter is only visible when the parameter "Vane control +/- object (1-bit)" is set to "1:Increase / 0:Decrease" or "0:Up / 1:Down".

*3 This parameter is only visible when the parameter "Vane control & feedback objects (1-byte)" is set to "Scaling".

*4 This parameter is only visible when the parameter "Feedback vanes control text objects (14-char)" is set to "Enabled".

3.6.3.LIST OF OBJECTS

OBJECT NAME	FUNCTION	TYPE	FLAG
Vane Position Percent	Threshold defined in parameter	1 byte	CWT
Via this object air condition unit vane position can be selected by sending percentage value.			
Vane Position Enumerated	1:Pos1...5:Pos5	1 byte	CWT
Via this object air condition unit vane position can be selected by sending value between 1-5.			
Feedback Vane Position Percent	Threshold defined in parameter	1 byte	CRT
This object allows the air condition unit to receive current vane position in percentage value.			
Feedback Vane Position Enumerated	1:Pos1...5:Pos5	1 byte	CRT
This object allows the air condition unit to receive current vane position in between 1-5.			
Vane Position Auto / Manual	1:Auto/0:Manual	1 bit	CWT
Via this object vane position can be selected as Manual / Auto.			
Feedback Vane Position Auto / Manual	1:Auto/0:Manual	1 bit	CRT
This object allows the air condition unit to receive current vane position Auto or Manual.			
Vanes Set Position 1	1:Set Position 1/0:Nothing	1 bit	CWT
Via this object air condition unit Vanes Set Position 1 can be selected.			
Vanes Set Position 2	1:Set Position 2/0:Nothing	1 bit	CWT
Via this object air condition unit Vanes Set Position 2 can be selected.			
Vanes Set Position 3	1:Set Position 3/0:Nothing	1 bit	CWT
Via this object air condition unit Vanes Set Position 3 can be selected.			
Vanes Set Position 4	1:Set Position 4/0:Nothing	1 bit	CWT
Via this object air condition unit Vanes Set Position 4 can be selected.			
Vanes Set Position 5	1:Set Position 5/0:Nothing	1 bit	CWT
Via this object air condition unit Vanes Set Position 5 can be selected.			
Feedback Vanes Set Position 1	1:Position 1	1 bit	CRT

Via this object air condition unit Vanes Set Position 1 is monitored.

Feedback Vanes Set Position 2	1: Position 2	1 bit	CRT
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Via this object air condition unit Vanes Set Position 2 is monitored.

Feedback Vanes Set Position 3	1: Position 3	1 bit	CRT
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Via this object air condition unit Vanes Set Position 3 is monitored.

Feedback Vanes Set Position 4	1: Position 4	1 bit	CRT
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Via this object air condition unit Vanes Set Position 4 is monitored.

Feedback Vanes Set Position 5	1: Position 5	1 bit	CRT
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Via this object air condition unit Vanes Set Position 5 is monitored.

Vanes Set Swing	1:Swing/0:Off	1 bit	CWT
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This object allows vanes to swing.

Feedback Vanes Swing	1:Swing/0:Off	1 bit	CRT
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This object provides current swing status information of vanes.

Vane Position +/-	1:Increase/0:Decrease	1 bit	CWT
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This object changes between vane positions as +/- via 1 bit value.

Vane Position -/+	0:Up/1:Down	1 bit	CWT
--------------------------	-------------	-------	-----

This object changes between vane positions as -/+ via 1 bit value.

Feedback Vanes Position Text	Vanes Position Text	14 bytes	CRT
-------------------------------------	---------------------	----------	-----

Via this object air condition unit vane position is monitored in text form.

3.7. TEMPERATURE

Ambient temperature received from KNX Disabled Enabled

Sending of AC internal temperature

Sending of AC setpoint temperature

Setpoint control +/- object (1-bit)

Limits for setpoint control Disabled Enabled

3.7.1. AMBIENT TEMPERATURE

The air conditioner internal unit can display the temperature information via the "Feedback Indoor Temperature" object. However it is also possible to receive the measurement of the measured ambient temperature from KNX by enabling the parameter "Ambient temperature received from KNX".

If this option is enable, it is necessary to do an adjustment in the setpoint to be sent to the indoor unit. The result of the following calculation is sent to the air condition:

$$\text{"FB Setpoint Temp"} = \text{"FB Indoor Temp"} - (\text{"KNX Ambient Temp"} - \text{"Setpoint Temp"})$$

If the setpoint result is out of the limits defined in the parameters, the lower or higher limit will be applied.

If there is not any external KNX temperature information, there is not any modification in the setpoint:

$$\text{"FB Setpoint Temp"} = \text{"Setpoint Temp"}$$

Example 1

User wants: 22°C ("Setpoint Temp.")

KNX Ambient Temp read by a KNX sensor: 25°C ("KNX Ambient Temp.")

FB Indoor Temp. read by indoor unit is: 27°C ("FB Indoor Temp")

In this example, the final setpoint temperature that ITR830 will send out to the indoor unit (shown in "Setpoint Temperature") will become:

$$27^{\circ}\text{C} - (25^{\circ}\text{C} - 22^{\circ}\text{C}) = 24^{\circ}\text{C}$$

This is the setpoint that will actually be requested to Mitsubishi Electric indoor unit.

Example 2

User wants: 25°C ("Setpoint Temp.")

KNX Ambient Temp read by a KNX sensor: 22°C ("KNX Ambient Temp.")

FB Indoor Temp. read by indoor unit is: 19°C ("FB Indoor Temp")

In this example, the final setpoint temperature that ITR830 will send out to the indoor unit (shown in "Setpoint Temperature") will become:

$$19^{\circ}\text{C} - (22^{\circ}\text{C} - 25^{\circ}\text{C}) = 22^{\circ}\text{C}$$

This is the setpoint that will actually be requested to Mitsubishi Electric indoor unit.



The values of the air condition internal temperature and setpoint can be sent to the bus on change and/or periodically. By choosing periodically the period of sending can be defined from 1 to 255 seconds.

3.7.2. SET POINT TEMPERATURE

Via the parameter "Limits for setpoint control" it is possible to enable a range for the setpoint to be modified. By enabling this option, the minimum and maximum set points available to send via KNX will be defined in the parameters "Setpoint lower limit" and "Setpoint higher limit".

By disabling this option, per default the lower and higher limits will be limits of air condition unit.

Via the object "Setpoint Temperature +/-" the setpoint temperature can be modified via a 1 bit object as follow:

- By sending "Up" (Value 0) or "Increase" (Value 1): The setpoint temperature will be increased by steps of 1°C until air condition unit limit or defined higher limit value.
- By sending "Down" (Value 1) or "Decrease" (Value 0): The setpoint temperature will be decreased by steps of 1°C until the air condition unit lower limit value.

3.7.3.LIST OF PARAMETER

PARAMETER	EXPLANATION	VALUES
Ambient temperature received from KNX	This parameter enables the ambient temperature reception from KNX bus.	Disabled Enabled
Sending of AC internal temperature	This parameter enables the sending of internal temperature value information. Disabled: Temperature information is not sent. Periodically: Temperature information is sent periodically. On change: Temperature information is sent when there is 1K change in the temperature value. Periodically and on change: Temperature information is sent periodically and this information is sent when there is 1K change in the temperature value.	Disabled Periodically On change Periodically and on change
Period of sending (sec)*¹	This parameter sets the sending period of the internal temperature value in seconds.	180 (1...255)
Sending of AC setpoint temperature	This parameter enables sending of the setpoint temperature value information. Disabled: Temperature information is not sent. Periodically: Temperature information is sent periodically. On change: Temperature information is sent when there is 1K change in the temperature value. Periodically and on change: Temperature information is sent periodically and this information is sent when there is 1K change in the temperature value.	Disabled Periodically On change Periodically and on change
Period of sending (sec)*²	This parameter sets the sending period of the setpoint temperature value in seconds.	180 (1...255)
Setpoint control +/- object (1-bit)	This parameter enables to change the desired temperature value as +/- with 1 bit object.	Disabled 1:Increase / 0:Decrease 0:Up / 1:Down

Limits for setpoint control	This parameter enables limits for the setpoint temperature value.	Disabled Enabled
Setpoint lower limit*³	This parameter activates lower limit for the setpoint temperature value.	18 (18...28)
Setpoint higher limit*³	This parameter activates higher limit for the setpoint temperature value.	26 (18...28)

*¹ This parameter is only visible when the parameter "Sending of AC internal temperature" is set to "Periodically" or "Periodically and on change"

*² This parameter is only visible when the parameter "Sending of AC setpoint temperature" is set to "Periodically" or "Periodically and on change".

*³ This parameter is only visible when the parameter "Limits for setpoint control" is set to "Enabled" .

3.7.4. LIST OF OBJECTS

OBJECT NAME	FUNCTION	TYPE	FLAG
Setpoint Temperature	Temperature (Celcius)	2 bytes	CWT
Via this object air condition unit setpoint temperature value is sent.			
Feedback Setpoint Temperature	Temperature (Celcius)	2 bytes	CRT
Via this object air condition unit setpoint temperature is monitored.			
Setpoint Temperature +/-	1:Increase/0:Decrease	1 bit	CWT
This object changes air condition unit setpoint temperature as +/- via 1 bit value.			
Setpoint Temperature -/+	0:Up/1:Down	1 bit	CWT
This object changes air condition unit setpoint temperature as -/+ via 1 bit value.			
KNX Ambient Temperature	Temperature (Celcius)	2 bytes	CRWT
Via this object KNX ambient temperature value is received.			
Feedback Indoor Temperature	Temperature (Celcius)	2 bytes	CRT
Via this object indoor temperature read by air conditioner internal unit is received.			

3.8. SCENES

Up to 5 scenes can be configured. The configuration of each scene permits:

- Assign a number of scenes (1-64).
- Set on/off values for the air condition unit.
- Determine mode of air condition unit of scene
- Determine fan level of scene
- Determine vane position of scene
- Set desired temperature value of scene
- AC remote controller locking during scene

- Enable storing of the scene
- Define delay for starting the scene.
- Use of 1 bit object for operating the scene

SCENE 1	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
> Number	1
> AC On/Off	On
> AC Mode	Auto
> AC Fan level	Fan 2
> AC Vanes position	Auto
> AC Setpoint temperature	Not Involved
> AC Remote lock	Not Involved
> Storage function	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
> Delay (sec)	0
> Activation object (1-bit)	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled

Via the object "Scene", telegrams which contents the call or store functions of a scene are sent. Up to 1...64 scenario numbers can be selected for 5 scenarios via a single group address. The scenario number telegram must match the pre-configured scenario number in the parameters. The scene number (1-64), is used to recall the scene via the corresponding object. For storage the scene, the value sent via the object "Scene" must be 128+scene number.

The recall of each scene can be delayed whether a time delay has been previously defined in the parameter window.



After ETS programming, the scene values parameterized for the output concerned will be overwritten into the gateway. It means that any change made by the user will be deleted. Therefore it is important, before any maintenance, to know the previous scene configuration and whether the user wants to keep operating with that configuration.

3.8.1.LIST OF PARAMETER

PARAMETER	EXPLANATION	VALUES
Scene 1...5	This parameter enables the scenario.	Disabled Enabled
Number*1	This parameter allows to give number to scenarios.	1(1...64)

AC On/Off*¹	This parameter enables On/Off status of air condition unit for scenario.	On Off No involved
AC Mode*¹	This parameter determines mode of air condition unit for scenario.	Auto Heat Cool Fan Dry Not involved
AC Fan level*¹	This parameter determines fan level of air condition unit for scenario.	Fan 1 Fan 2 Fan 3 Fan 4 Not involved
AC Vane position*¹	This parameter determines vanes positions of air condition unit for scenario.	Auto Pos 1 Pos 2 Pos 3 Pos 4 Pos 5 Swing Not involved
AC Setpoint temperature*¹	This parameter determines setpoint temperature of the scenario.	Not involved 18°C , 19°C, 20°C, 21°C, 22°C, 23°C, 24°C, 25°C, 26°C, 27°C, 28°C
AC Remote lock*¹	This parameter determines whether the air condition unit can be controlled by its own remote controller during the scenario.	Not involved Locked Unlocked
Storage Function*¹	This parameter allows to save the scenario.	Disabled Enabled
Delay (sec)*¹	This parameter enables to set delay time for starting the scene.	0(0...255)

Activation object (1-bit)*1	This parameter activates the scenario via 1 bit object.	Disabled Enabled
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*1 This parameter is only visible when the parameter "Scene 1...5" is set to "Enabled".

3.8.2.LIST OF OBJECTS

OBJ NAME	FUNCTION	TYPE	FLAG
Scene	1-64:Run/128+Scene:Storage	1 byte	CWT

Via this object scenario is executed or saved via using given scenario number.

Scene 1...5 Run	1:Run Scene/0:Nothing	1 bit	CWT
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Via this object linked Scenario 1...5 is executed.

Scene 1...5 Storage	1:Storage Scene/0:Nothing	1 bit	CWT
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Via this object current status of air condition unit is recorded in Scenario1...5.

Feedback Current Scene	1-64:Current Scene	1 byte	CRT
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Via this object air condition current scene is monitored.

3.9. SPECIAL

Using the configuration of this section working hours counter, window contact, standby function, timer function are controlled.

Working hours counter Disabled Enabled

Enable window contact Disabled

Enable standby function Disabled

Enable timer function Disabled Enabled

3.9.1.WORKING HOURS COUNTER

Working hours counter Disabled Enabled

> Setpoint for alert (hour) 1000

This function is used to know air conditioner's operating hour as "ON" position. When the "ON" status of air condition unit is counted during one hour, object value increasing "1K". Counter is available to create an alert in order to warn the user after desired time later. The counter can be reset via "Reset Hours Counter" object.

3.9.2.WINDOW CONTACT

Enable window contact	0:Open / 1:Close
> Switch-off time delay	<input checked="" type="radio"/> Via parameter <input type="radio"/> Via communication object
> Switch-off time delay (min)	1
> Reject On/Off actions if window is open	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
> Behavior after window is close	No reaction - Last state

This function is used for window contacts to determine the operation type when the window contacts are open or close. When the “window is open” information is received, it is possible to switch off the air condition unit or activate any predefined scene. However, it is possible to specify a delay time for operation type to be started or to restrict the On / Off action of the air condition unit. After incoming “window contacts are closed” information, behavior of air condition unit can be selected as one of predefined scenario, OFF or previous state of this function.

3.9.3.STANDBY FUNCTION

Enable standby function	1:Occupied / 0:Not occupied
> Standby function delay	<input checked="" type="radio"/> Via parameter <input type="radio"/> Via communication object
> Standby function delay (min)	5
> Behavior during standby function	Off
> Activate secondary standby action	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
> Secondary standby action delay	<input checked="" type="radio"/> Via parameter <input type="radio"/> Via communication object
> Secondary standby action delay (min)	15
> Behavior during secondary standby function	Off
> Reject modifications during standby function	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
> Behavior after standby function	No reaction - Last state

This function is used to activate the standby modes for the air condition unit to determine operation type for the standby modes. During standby function, it is possible to make setpoint shifting, activate any predefined scene or switch off the air condition unit. However, it is possible to specify delay time for operation type to be started or to reject modifications for the air condition unit during standby function. After incoming standby function stop information, behavior of air condition unit can be selected as one of scenario, off or previous state. Additionally, secondary standby function is available and same parameters and object are valid for secondary standby function.

3.9.4.TIMER FUNCTION

Enable timer function	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
> Polarity	<input checked="" type="radio"/> 1:Start / 0:Stop <input type="radio"/> 0:Start / 1:Stop
> Timer duration	<input checked="" type="radio"/> Via parameter <input type="radio"/> Via communication object
> Timer duration (min)	5
> Timer retriggerable	<input type="radio"/> Yes <input checked="" type="radio"/> No

Timer function switches off the air condition unit after defined time. Polarity and durations can be determined via subparameters of this function. Timer function is also retriggerable and when timer retrigger is enabled, timer restart itself for counting for switch off the air condition unit.

3.9.5. LIST OF PARAMETERS

PARAMETER	EXPLANATION	VALUES
Working hours counter	This parameter enables working hours counter function.	Disabled Enabled
Setpoint for the alert (hour)*¹	This parameter enables an alert for working hours counter of air conditioner.	1000 (1...65535)
Enable window contact	This parameter determines air condition unit window contact function.	Disable 0:Open / 1:Close 1:Open / 0:Close
Switch-off time delay*²	This parameter determines sending type of Switch-off AC time delay.	Via parameter Via communication object
Switch-off time delay (min)*³	This parameter enables to set delay time in minutes for switching of the air conditioner.	5 (1...255)
Reject On/Off actions if window is open*²	This parameter allows to reject On/Off action while window is open.	Disabled Enabled
Behavior after window close*²	This parameter allows the sending of operation variation after window is closed.	No reaction last state Off Scene 1 Scene 2 Scene 3 Scene 4 Scene 5
Enable standby function	This parameter enables standby function.	Disabled 0:Occupied / 1:Not occupied 1:Start / 0:Stop
Standby function delay*⁴	This parameter determines sending type of standby function delay.	Via parameter Via communication object

Standby function delay (min)*⁵	This parameter enables to set delay time in minutes for standby function.	5 (1...255)
Behavior during standby function*⁴	This parameter allows the sending of operation variation during standby function.	Off Setpoint shifting Scene 1 Scene 2 Scene 3 Scene 4 Scene 5
Setpoint shifting*⁶	This parameter is the shifting type of setpoint for standby function.	Via communication object Via parameter
Setpoint shifting (°C)*⁷	This parameter allows to set the value for how many degrees the setpoint is to be shifted.	1 (1...4)
Activate secondary standby action*⁸	This parameter enables secondary standby function.	Disabled Enabled
Secondary standby action delay*⁸	This parameter determines sending type of secondary standby action delay.	Via parameter Via communication object
Secondary standby action delay (min)*⁹	This parameter enables to set delay time in minutes for secondary standby function.	15 (1...255)
Secondary setpoint shifting *⁸	This parameter is the shifting type of setpoint for secondary standby function.	Via communication object Via parameter
Secondary setpoint shifting (°C)*⁸	This parameter allows to set the value for how many degrees the setpoint is to be shifted.	1 (1...4)
Behavior during secondary standby function*⁸	This parameter allows the sending of operation variation during secondary standby function.	Setpoint shifting Off Scene 1 Scene 2 Scene 3 Scene 4 Scene 5

Reject modifications during standby function*⁸	This parameter allows to reject modifications during standby function.	Disabled Enabled
Behavior after stanby function*⁸	This parameter allows the sending of operation variation after standby function.	No reaction last state Off Scene 1 Scene 2 Scene 3 Scene 4 Scene 5
Enable timer function	This parameter enables timer function.	Disabled Enabled
Polarity*¹⁰	This parameter allows to determine polarity of enabling command of timer function.	1:Start / 0:Stop 0: Start /1:Stop
Time duration*¹⁰	This parameter determines sending type of time duration.	Via parameter Via communication object
Time duration (min)*¹¹	This parameter enables to set delay time in minutes for timer function.	5 (1...255)
Time retriggerable*¹⁰	This parameter allows to restart the timer.	Disabled Enabled

*¹ This parameter is only visible when the parameter "Working hours counter" is set to "Enabled".

*² This parameter is only visible when the parameter "Enable window contact" is set to "0:Open/1:Close" or "1:Open/0:Close".

*³ This parameter is only visible when the parameter "Switch-off time delay" is set to "Via communication object".

*⁴ This parameter is only visible when the parameter "Enable standby function" is set to "1:Occupied / 0:Not Occupied" or "1:Start/0:Stop".

*⁵ This parameter is only visible when the parameter "Standby function delay" is set to "Via parameter".

*⁶ This parameter is only visible when the parameter "Behavior during standby function" is set to "Setpoint shifting".

*⁷ This parameter is only visible when the parameter "Setpoint shifting" is set to "Via communication object".

*⁸ This parameter is only visible when the parameter "Activate secondary standby action" is set to "Enabled".

*⁹ This parameter is only visible when the parameter "Secondary standby action delay" is set to "Via parameter".

*¹⁰ This parameter is only visible when the parameter "Enable timer function" is set to "Enabled".

*¹¹ This parameter is only visible when the parameter "Timer duration" is set to "Via parameter".

3.9.6.LIST OF OBJECTS

OBJ NAME	FUNCTION	TYPE	FLAG
Feedback Working Hours Counter	Working Hours Counter	2 bytes	CRT
Via this object air condition unit working hours counter function is monitored.			
Feedback Working Hours Alert	1:Alarm/0:No Alarm	1 bit	CRT
Via this object air condition unit working hours alert is monitored at the end of specified period of operation.			
Reset Hours Counter	1:Reset/0:Nothing	1 bit	CWT
Via this object air condition unit operating counter reset is controlled.			
Window Contact Status	0:Open/1:Close 1:Open/0:Close	1 bit	CRWT
Via this object air condition unit window contact status is taken.			
Window Switch-Off Delay	0-255 min	1 byte	CWT
Via this object delay time is sent for switching of the air condition unit.			
Standby Function	1:Occupied/0:Not Occupied 1:Start/0:Stop	1 bit	CWT
Via this object air condition unit standby function is controlled.			
Feedback Standby Function	1:Occupied/0:Not Occupied 1:Start/0:Stop	1 bit	CRT
Via this object air condition unit standby function is monitored.			
Standby Function Delay	0-255 min	1 byte	CWT
Via this object standby function delay time is sent.			
Standby Function Setpoint Shifting	Temperature (Celcius)	2 bytes	CWT
Via this object standby function setpoint shifting is controlled.			
Standby Function Secondary Delay	0-255 min	1 byte	CWT
Via this object secondary standby function delay time is sent.			
Standby Function Secondary Setpoint Shifting	Temperature (Celcius)	2 bytes	CWT
Via this object secondary standby function setpoint shifting is controlled.			
Timer Function	1:Start/0:Stop 0:Start/1:Stop	1 bit	CWT
Via this object air condition unit timer function is controlled.			
Feedback Timer Function	1:Start/0:Stop 0:Start/1:Stop	1 bit	CRT
Via this object air condition unit timer function is monitored.			

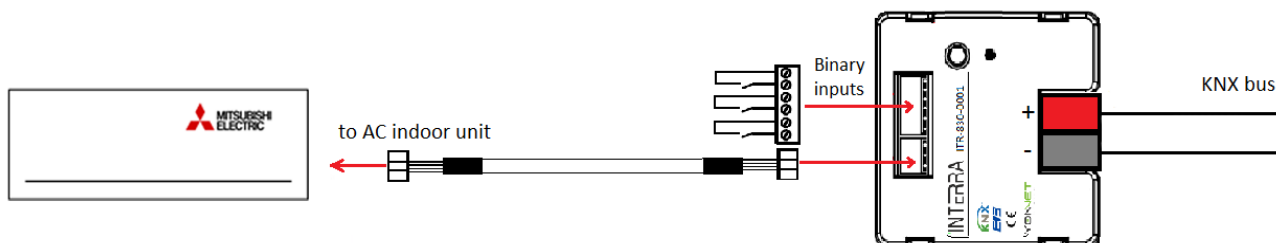
Timer Duration	1-65535 min	2 bytes	CWT
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Via this object time duration is sent for timer function.

4. MAIN TECHNICAL FEATURES

Device	ITR830
Power Supply	EIB Power supply
Power Consumption	10mA
Inputs	3 Dry Contact Inputs
Push Buttons	1 x KNX programming
LED indicators	1 x KNX programming
Mode of commissioning	S-Mode
Type of protection	IP 20
Temperature Range	Operation (-10°C...70°C) Storage (-25°C...100°C)
Maximum air humidity	<90RH
Flammability	Non-flammable product
Colour	Light Grey
Dimensions	40x10x40 mm (WxHxD)
Certification	KNX Certified
Configuration	Configuration with ETS

4.1. CONNECTION DIAGRAM



5. APPLICABLE DOCUMENTS

5.1. PAC TYPE AC INDOOR UNITS

Model
PCA-RP
PEAD-RP
PEAD-SP
PLA-RP
PLA-ZRP
PKA-RP
PSA-RP
SEZ-KA / KC
SEZ-KD
SLZ-KA
SLZ-KF
PEAD-RP...JALQR3

The Mr Slim type AC indoor units PCA-RP71/125HA/HAQ are not compatible.

5.2. RAC TYPE AC INDOOR UNITS

Model
MFZ-KA
MFZ-KJ
MLZ-KA
MSZ-CGE
MSZ-EF
MSZ-FA
MSZ-FD
MSZ-FH
MSZ-GA
MSZ-GB
MSZ-GC
MSZ-GE
MSZ-GF
MSZ-SF
MSZ-DM
MSZ-LN
MSZ-WN

MSZ-HA, MSZ-HC and MSZ-HJ models are not supported.

5.3. CITY MULTI VRF (1) TYPE AC INDOOR UNITS

Model
PCFY-P ... VKM-ER ¹
PEFY-P ... VMA-E
PEFY-P ... VMA-ER3 ¹
PEFY-P ... VMAL-E
PEFY-P ... -VMH(S)-E1
PEFY-P ... VMR-E1
PEFY-P ... VMS1-E ¹
PFFY-P ... VKM-E2 ¹
PFFY-P ... VLRM/LEM ¹
PFFY-P ... VLRMM-E ^{1,2}
PFFY-P ... VFM-E
PKFY-P ... VHM-ER2 ^{1,2}
PKFY-P ... VKM-ER1 ^{1,2}
PLFY-P ... VBM-ER3 ^{1,2}
PLFY-P ... VCM-ER2 ^{1,2}
PLFY-P ... VLDM-E ¹
PMFY-P ... VBM-E#2
PMFY-P ... VBM-ER3
PMFY-P ... VBM-ER41

¹: Compatible with units manufactured since 2014.

²: Requires PAC-IT51AD-E adaptor for CN51 connection on the Mitsubishi AC unit or PAC-IT52AD-E adaptor for CN52 connection on the Mitsubishi AC unit. Those adaptors shall be purchased to Mitsubishi Electric directly.

5.4. INDUSTRIAL TYPE AC INDOOR UNITS

Model
PEA-RP
PEH-RP

Industrial type AC Indoor units PEA-RP400/500GAQ are not compatible.

CONTACT INFORMATION

THE INTERRA WEB SITE

Interra provides documentation support via our WWW site www.interra.com.tr. This web site is used as a means to make files and information easily available to customers. Accessible by using your favourite Internet browser, the web site contains the following information:

- Overview of Interra Technoloji company and values.
- Information about our products and projects.
- Product Support: Data sheets, product manuals, application descriptions, latest software releases and archived software.

EUROPE, Turkey

ITR830 KNX Gateway for Mitsubishi Electric Air condition units - Product Manual

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