KNX - Modbus Gateway VRV

Overview

Seamless Control and Monitoring of VRV Systems is vital to reduce Energy wastage and for convenient and easy control by user.

Owners of Smart Home and building expect integrated control of all systems like Lighting, HVAC, curtains and AV devices from a common application installed on their mobile devices. To address this customer expectations, Major VRV /VRF brands provide Modbus communication adapters to allow Home Automation controllers to control VRV system.

AIRON is a gateway between Modbus adapters and Home Automation controllers and simplifies communication with HA controllers via KNX protocols.

AIRON communicates with VRV systems via officially provided Modbus communication adapters provided by major brands and do not intrude into the VRV Systems proprietary communication bus like D3Net, Mnet, TCC-Link etc.

AIRON is pre-loaded with license to control and monitor 16 indoor units.

Main Features of the product:

- Compatible with major HVAC brands
- Seamless integration of HVAC systems with major Home Automation brands.
- Full control & monitoring of HVAC indoor units operation.
- Supports up to 16 indoor units.
- Wired Interfaces: RS485, KNX*
- Direct KNX connection
- Macros & Scenes for easy control.
- Window position linked operation.
- Presence / Absence detector linked operation.

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FUNCTIONS

Control of Indoor Units

- ON and OFF control of individual indoor unit.
- Operation Mode of individual unit can be set to Cool, Heat, Auto, Dry and FAN.
- Temperature control, FAN speed control, Swing control and Filter sign reset of individual set to indoor unit.
- KNX Scene based operation.

Indoor units Monitoring and Diagnostic

- Unit ON/OFF status.
- Operation Mode status (Cool, Heat, Auto, Dry and FAN).
- Temperature status
- FAN Speed, Filter Sign and Swing Control Status.
- Connection and Communication status.
- Failure code update

Group Operation

- All ON and All OFF command to power ON an OFF all connected Indoor Units.
- Status reads of all Indoor Units.

ORDERING INFORMATION

AIRON VRV communication Gateway
Part Number: AIRON-XX

Where,
XX -- 'DK' for Daikin VRV
XX -- "TS" for Toshiba
XX -- BI - for Bluestar

NOTE

- Modbus adapters manufactured by respective OEMs is required for integration.
- Control and Monitoring capabilities are limited to functions provided by VRV manufacturers Modbus adapter.
- Number of indoor units that can be controlled is limited by capabilities of Modbus adapter and by AIRON.

Technical Specifications

Parameter	Description
Voltage	30V DC
External power supply	10-30V DC
Operation temperature	-5°C … +55°C
Installation	DIN-rail
Enclosure dimension (l x w x h mm)	106 x 90 x 58 mm
Max Average Operating Current	50 mA (maximum).
KNX Port	1, KNX TP1, Isolated
RS485 Port	One
Max RS485 communication Distance	500 meters

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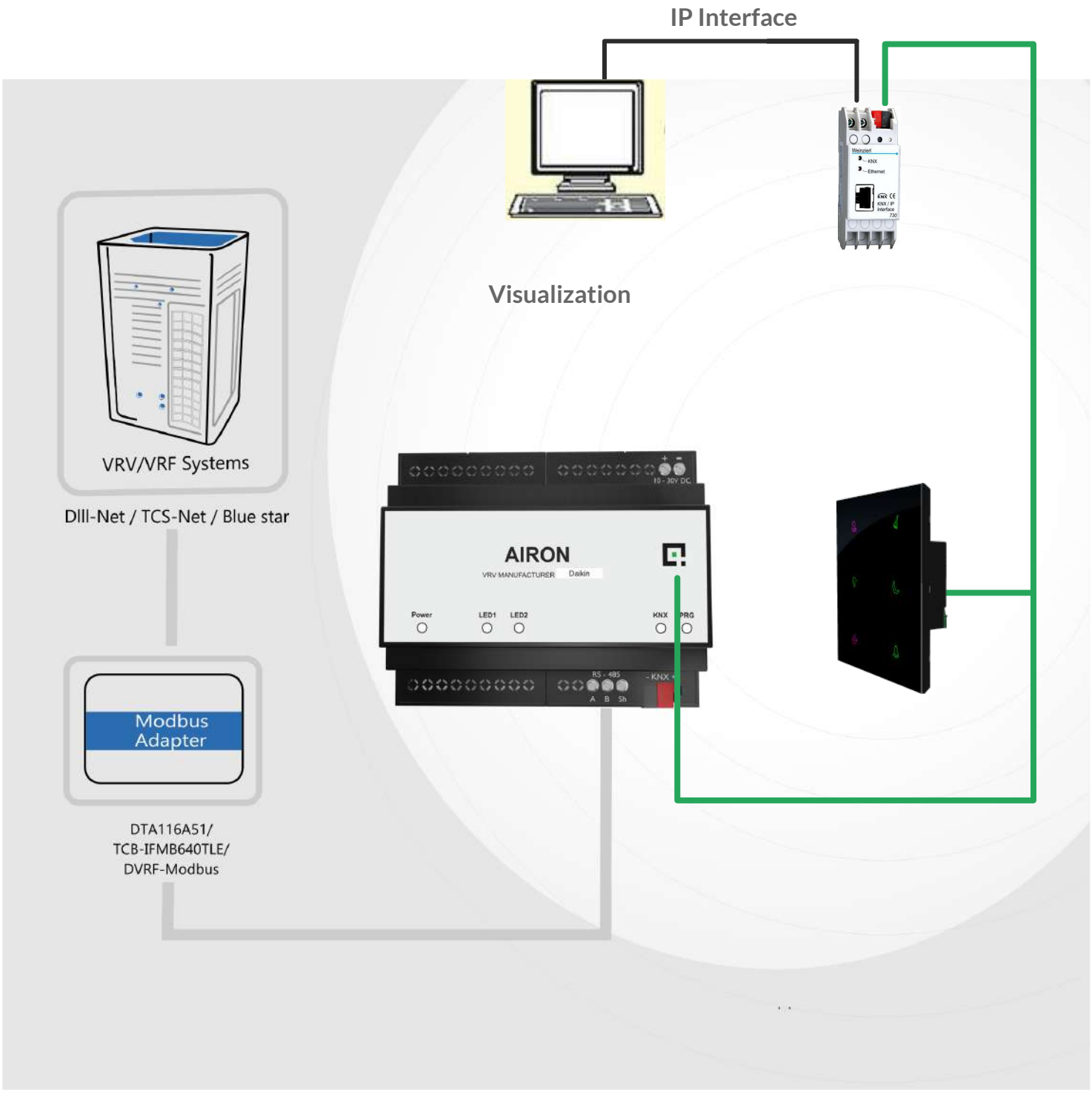
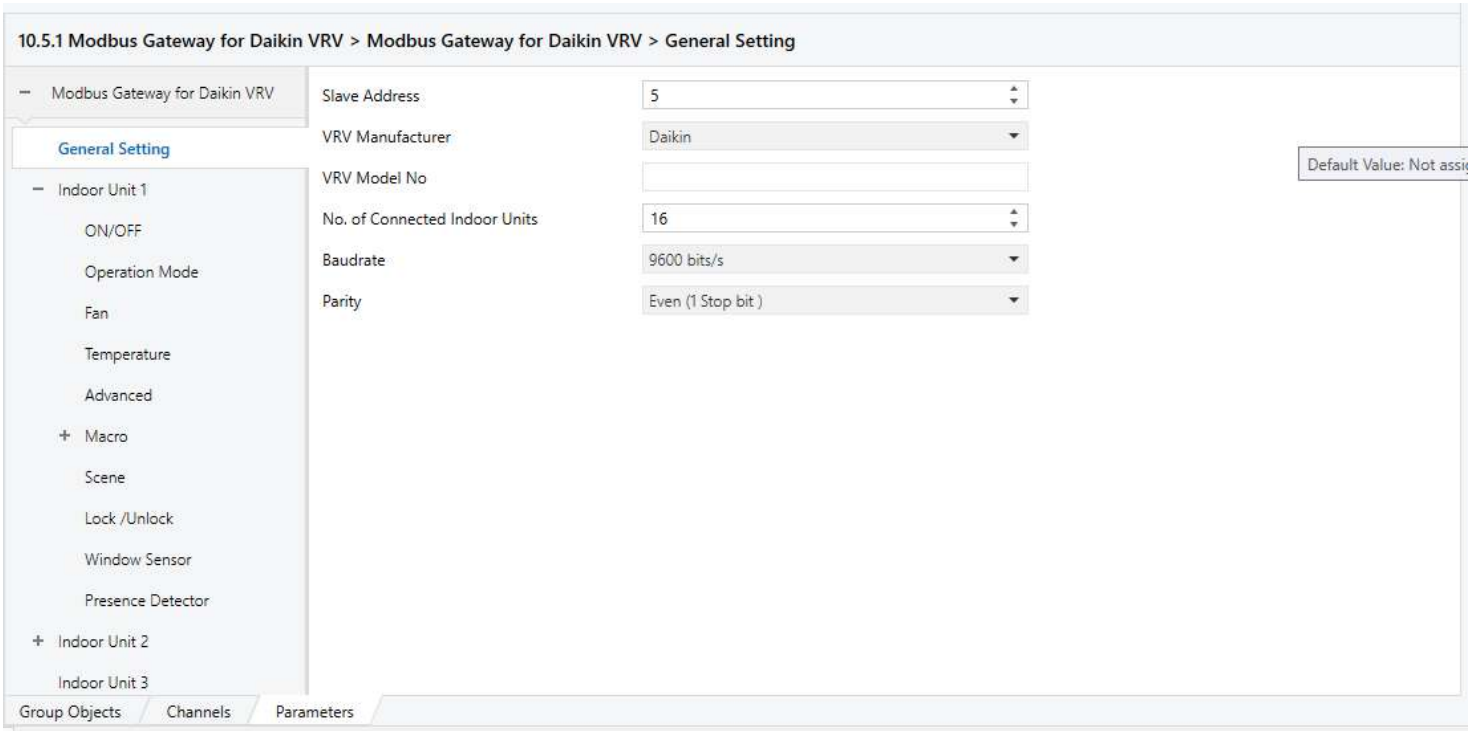
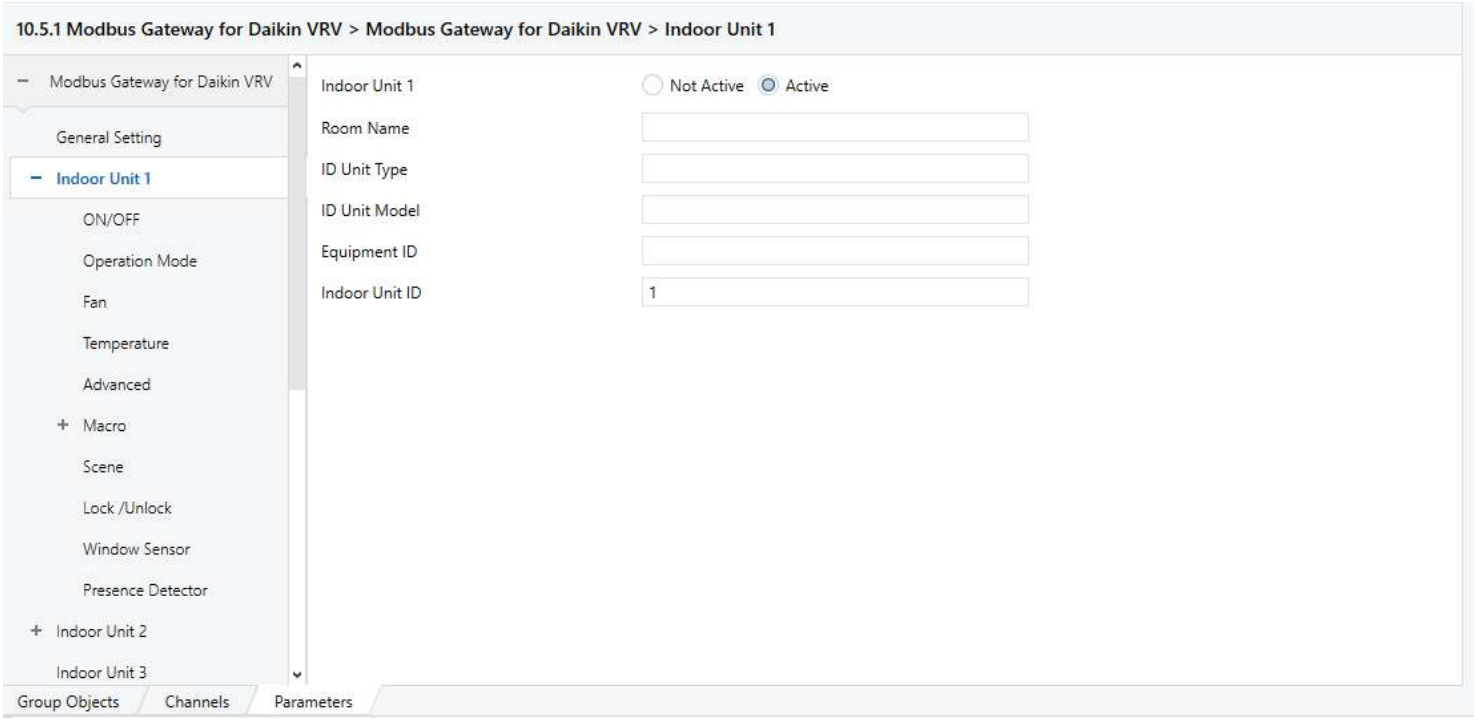


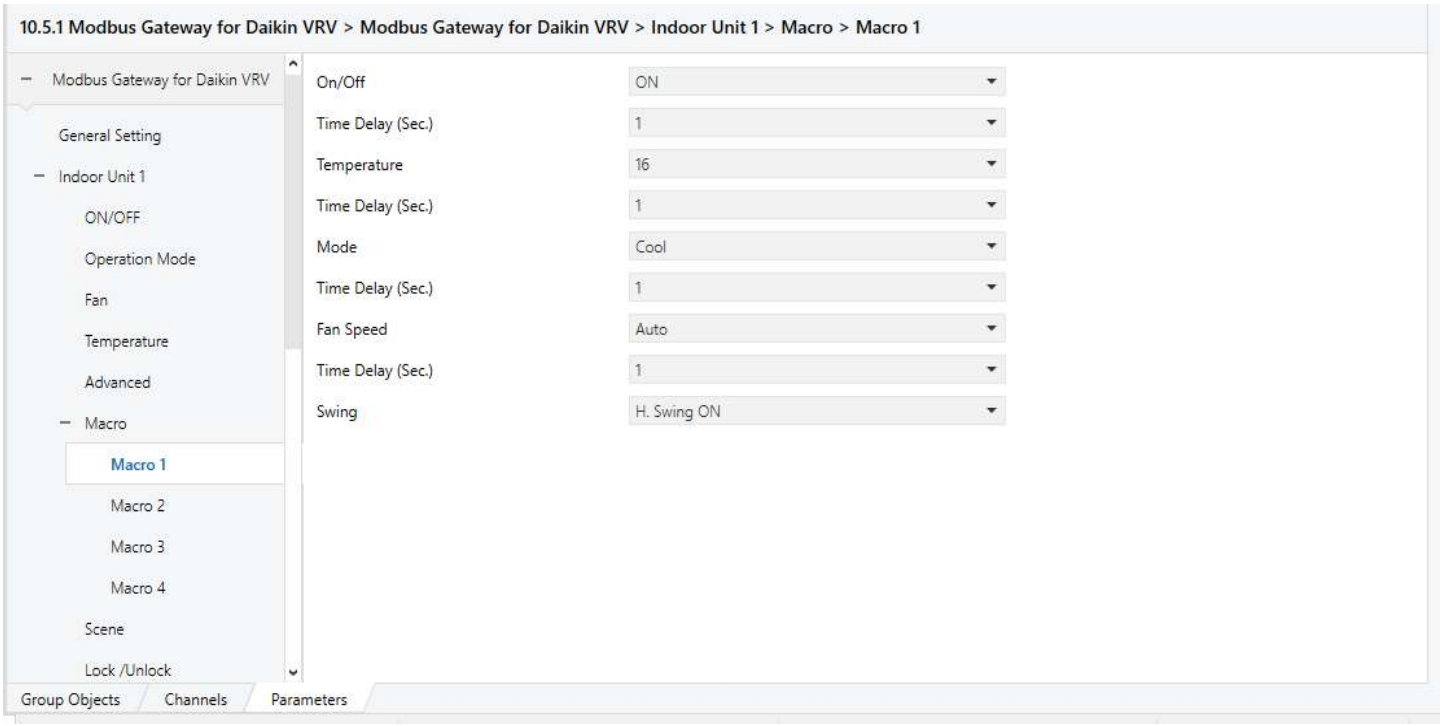
General Settings



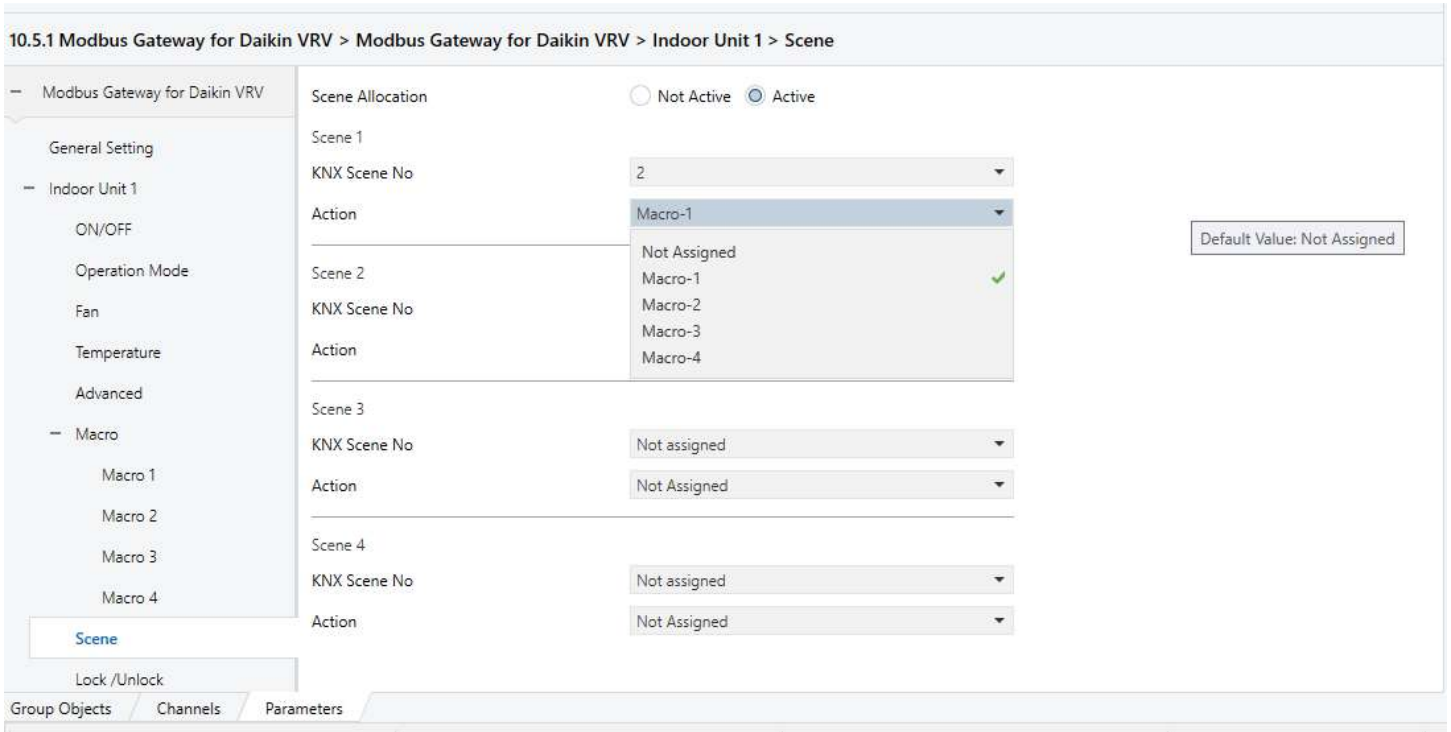
Indoor Unit



Macro

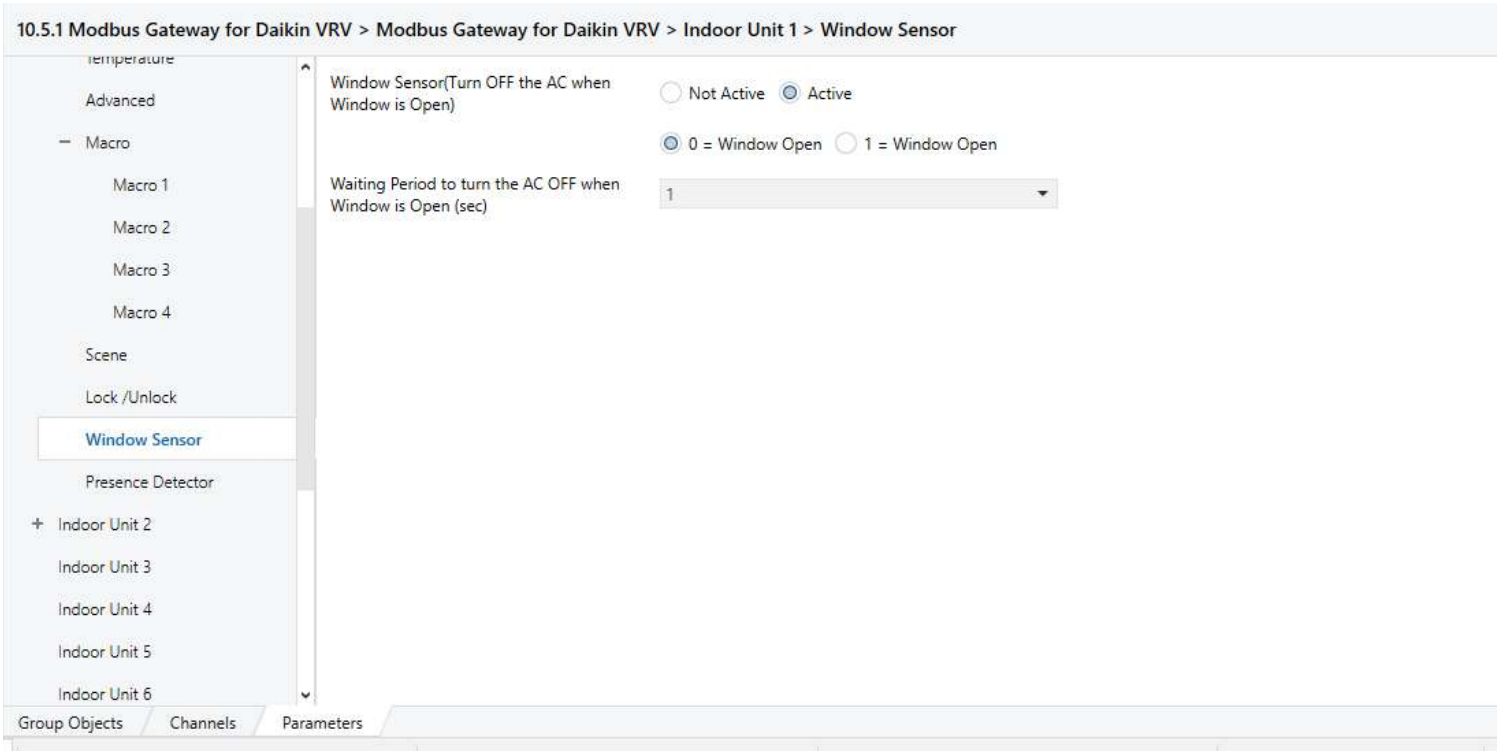


Scene

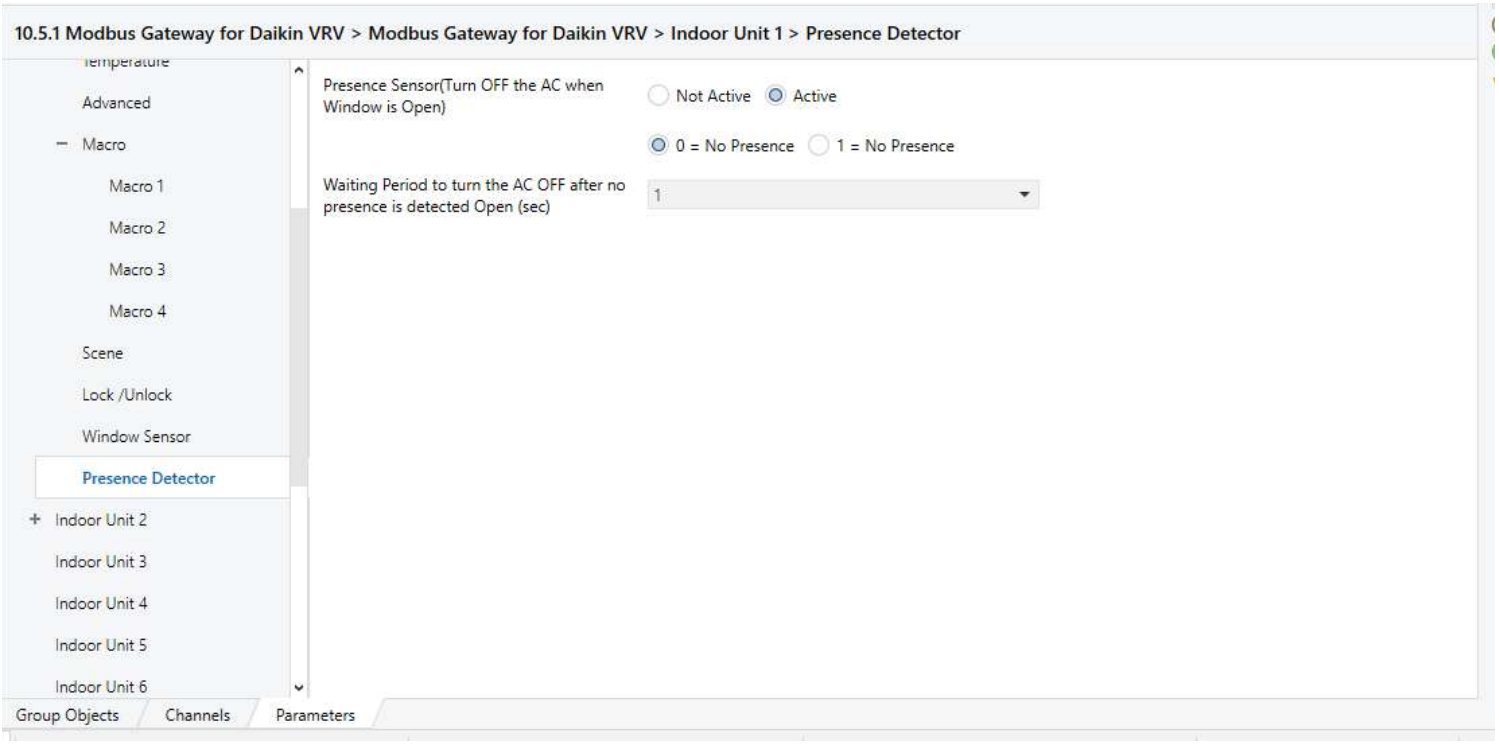


Lock/Unlock

Windows Sensor



Presence Detector



Group Objects

Number	Name	Object Function	Group Address	Length	C	R	W	T	U	Data Type	Priority
1	System	Scan for Indoor Unit	0/0/1	1 bit	C	-	W	-	-	switch	Low
27	Indoor Unit 1	Lock/Unlock		1 bit	C	-	W	-	-	switch	Low
29	Indoor Unit 1	Lock/Unlock Indication	0/0/28	1 bit	C	-	-	T	-	switch	Low
30	Indoor Unit 1	Window Sensor	0/0/29	1 bit	C	-	W	-	-	switch	Low
31	Indoor Unit 1	Presence Detector	0/0/30	1 bit	C	-	W	-	-	switch	Low
32	Indoor Unit 1	Presence Detector block	0/0/31	1 bit	C	-	W	-	-	switch	Low
483	Indoor Unit 1	Mode-1 Status	0/1/0	1 bit	C	-	-	T	-	switch	Low
484	Indoor Unit 1	Mode-2 Status	0/1/1	1 bit	C	-	-	T	-	switch	Low
485	Indoor Unit 1	Mode-3 Status	0/1/2	1 bit	C	-	-	T	-	switch	Low
486	Indoor Unit 1	Mode-4 Status	0/1/3	1 bit	C	-	-	T	-	switch	Low
26	Indoor Unit 1	Scene Extension	0/0/26	1 byte	C	-	W	-	-	scene cont...	Low
487	Indoor Unit 1	Mode-5 Status	0/1/4	1 bit	C	-	-	T	-	switch	Low
489	Indoor Unit 1	Fan Swing-1 Status	0/1/6	1 bit	C	-	-	T	-	switch	Low
490	Indoor Unit 1	Fan Swing-2 Status	0/1/7	1 bit	C	-	-	T	-	switch	Low
491	Indoor Unit 1	Fan Swing-3 Status	0/1/8	1 bit	C	-	-	T	-	switch	Low
492	Indoor Unit 1	Fan Swing-4 Status	0/1/9	1 bit	C	-	-	T	-	switch	Low
493	Indoor Unit 1	Fan Swing-5 Status	0/1/10	1 bit	C	-	-	T	-	switch	Low
494	Indoor Unit 1	Fan Swing-6 Status	0/1/11	1 bit	C	-	-	T	-	switch	Low
495	Indoor Unit 1	Fan Speed-1 Status	0/1/12	1 bit	C	-	-	T	-	switch	Low
496	Indoor Unit 1	Fan Speed-2 Status	0/1/13	1 bit	C	-	-	T	-	switch	Low
497	Indoor Unit 1	Fan Speed-3 Status	0/1/14	1 bit	C	-	-	T	-	switch	Low
488	Indoor Unit 1	Fan Swing-0 Status	0/1/5	1 bit	C	-	-	T	-	switch	Low
25	Indoor Unit 1	Macro 4	0/0/25	1 bit	C	-	W	-	-	switch	Low
24	Indoor Unit 1	Macro 3	0/0/24	1 bit	C	-	W	-	-	switch	Low

Group Objects | Channels | Parameters

Group Objects

Number	Name	Object Function	Group Address	Length	C	R	W	T	U	Data Type	Priority
24	Indoor Unit 1	Macro 3	0/0/24	1 bit	C	-	W	-	-	switch	Low
23	Indoor Unit 1	Macro 2	0/0/23	1 bit	C	-	W	-	-	switch	Low
2	System	Connected Indoor Unit	0/0/2	1 byte	C	-	-	T	-	percentag...	Low
3	Indoor Unit 1	ON/OFF	0/0/3	1 bit	C	-	W	-	-	switch	Low
4	Indoor Unit 1	ON/OFF Status	0/0/4	1 bit	C	-	-	T	-	switch	Low
5	Indoor Unit 1	Mode	0/0/5	1 byte	C	-	W	-	-	percentag...	Low
6	Indoor Unit 1	Mode Status	0/0/6	1 byte	C	-	-	T	-	percentag...	Low
7	Indoor Unit 1	Fan Swing	0/0/7	1 byte	C	-	W	-	-	percentag...	Low
8	Indoor Unit 1	Fan Swing Status	0/0/8	1 byte	C	-	-	T	-	percentag...	Low
9	Indoor Unit 1	Fan Speed	0/0/9	1 byte	C	-	W	-	-	percentag...	Low
10	Indoor Unit 1	Fan Speed Status	0/0/10	1 byte	C	-	-	T	-	percentag...	Low
11	Indoor Unit 1	Fan Speed Up	0/0/11	1 bit	C	-	W	-	-	switch	Low
12	Indoor Unit 1	Fan Speed Down	0/0/12	1 bit	C	-	W	-	-	switch	Low
13	Indoor Unit 1	Room Temperature	0/0/13	2 bytes	C	-	-	T	-	temperatu...	Low
14	Indoor Unit 1	Set Temprature	0/0/14	2 bytes	C	-	W	-	-	temperatu...	Low
15	Indoor Unit 1	Set Temperature Status	0/0/15	2 bytes	C	-	-	T	-	temperatu...	Low
16	Indoor Unit 1	Set Temprature Up	0/0/16	1 bit	C	-	W	-	-	switch	Low
17	Indoor Unit 1	Set Temprature Down	0/0/17	1 bit	C	-	W	-	-	switch	Low
18	Indoor Unit 1	Filter Sign	0/0/18	1 bit	C	-	-	T	-	switch	Low
19	Indoor Unit 1	Filter sign reset	0/0/19	1 bit	C	-	W	-	-	switch	Low
20	Indoor Unit 1	Communication Status	0/0/20	1 bit	C	-	-	T	-	switch	Low
21	Indoor Unit 1	Error	0/0/21	2 bytes	C	-	-	T	-	pulses	Low
22	Indoor Unit 1	Macro 1	0/0/22	1 bit	C	-	W	-	-	switch	Low
498	Indoor Unit 1	Fan Speed-4 Status	0/1/15	1 bit	C	-	-	T	-	switch	Low

Group Objects | Channels | Parameters