# SpaceLogic™ Glass Touch Panels

## Modbus Glass Touch Panels User Guide

SLGM09BU / SLGM08BUM / SLGM03DP / SLGM03KH / SLGM07TH / SLGM08TH / SLGM08THM / SLGM09BT07 / SLGM09BS2G_D / SLGM09BS2G_U / SLGM09BS3G_D / SLGM09BS3G_U

Panels with Buttons

with PIR

Door Panel


Keycard Holder


Thermostats

with PIR

Bedside Panels

Life Is On Schneider Electric

Version 2

# Contents

# 1 Safety Information

## 1.1 Important Information

Read these instructions carefully and inspect the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of this symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

**⚠ DANGER**

**DANGER** indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

**⚠ WARNING**

**WARNING** indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

**⚠ CAUTION**

**CAUTION** indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

***NOTICE***

**NOTICE** is used to address practices not related to physical injury. The safety alert symbol shall not be used with this signal word.

## 1.2 Please Note

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

# 2 Before You Begin

## 2.1 Loss of Control

**⚠ WARNING**

**LOSS OF CONTROL**

- The designer of any control scheme must consider the potential failure modes of control paths and, for certain critical control functions, provide a means to achieve a safe state during and after a path failure. Examples of critical control functions are emergency stop and over travel stop.
- Separate or redundant control paths must be provided for critical control functions.
- System control paths may include communication links. Consideration must be given to the implications of anticipated transmission delays or failures of the link.[1]
- Each implementation of equipment utilizing communication links must be individually and thoroughly tested for proper operation before being placed into service.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

## 2.2 Electrostatic Discharge

***NOTICE***

**STATIC SENSITIVE COMPONENTS**

Circuit boards and option cards can be damaged by static electricity. Observe the electrostatic precautions below when handling circuit boards or testing components.

**Failure to follow these instructions can result in equipment damage.**

Observe the following precautions for handling static-sensitive components:

- Keep static-producing material such as plastic, upholstery, and carpeting out of the immediate work area.
- Store static-sensitive components in protective packaging when they are not installed in the drive.
- When handling a static-sensitive component, wear a conductive wrist strap connected to the component or drive through a minimum of 1 megohm resistance.
- Avoid touching exposed conductors and components leads with skin or clothing.

1 For additional information about anticipated transmission delays or failures of the link, refer to NEMA ICS 1.1 (latest edition), Safety Guidelines for the Application, Installation, and Maintenance of Solid State Control or its equivalent

## 2.3 Installation

**NOTICE**

INSTALLATION

- The system must be installed correctly by a qualified technician.
- It is important to refer to the Installation Sheet for this product.
- Electronic controls are static sensitive devices. Discharge yourself correctly before manipulating and installing the panel.
- A short circuit or wrong wiring may permanently damage the panel or equipment.
- The power supply must be connected to the power terminals (GND, +24V), the RS485 serial interface cannot be used to supply power to the panel.
- Do not modify or connect or disconnect components to the RS485 bus until the panel commissioning is completely finished.
- Use the Hotel Application Builder to commission the panel. Refer to the “Ecostruxure™ Connected Room Solutions for Hotels Hotel Application Builder User Guide” for more information.

**Failure to follow these instructions can result in equipment damage.**

## 2.4 Maintenance

**NOTICE**

CLEANING THE GLASS TOUCH PANELS

- Use a soft, pre-moistened lint-free cloth for cleaning.
- Do not spray anything directly on the panel or use compressed air.
- Do not use caustic/corrosive products, ammonia, solvents or any cleaning product containing alcohol or grit.
- Never use tools directly on the glass surface.
- Never use paint on the panel.
- Do not drop or crush the panel or allow it to come into contact with liquids.
- Do not use a damaged device (such as one with cracked glass).

**Failure to follow these instructions can result in equipment damage.**

**NOTICE**

STORING THE GLASS TOUCH PANELS

- When not using the panel, disconnect the power and communication wiring from the panel and store it inside the original packaging box in a dry place away from direct sunlight.
- Storage temperature: -40 °C to 70 °C (-40 to 158 °F)
- Storage humidity: 10%-90% RH, non-condensing

**Failure to follow these instructions can result in equipment damage.**

# 3 Cyber Security Guidelines

## 3.1 Security Features

The following security features are supported:

- The device firmware is digitally signed by the Schneider Electric Public Key Infrastructure (PKI) to ensure the integrity and authenticity of the firmware running on the device.
- Verifies the integrity of the data stored in the device to prevent configurations, business data and any other data from being tampered with.
- Robust input validation to prevent against remote attacks from the Modbus RTU bus.

## 3.2 Firmware Update

To update the device firmware, follow these steps:

1. Register on the Schneider Electric Cyber Security support portal.
2. Contact Schneider Electric technical support or your local agent to help you update the device firmware.

## 3.3 Physical Security of the Device

The following are the important physical security points to keep in mind for installing the device:

- Recommend to deploy and use the switching equipment in accordance with a defense-in-depth approach recommended by Schneider Electronic to reduce the risk of switching equipment being attacked.
- Install the device in an appropriate manner, to avoid risks during installation or the risk of unauthorized physical access.
- I/O accessories (if any) shall be securely deployed to prevent unauthorized access to mitigate the risk of changing the switch settings for the predefined application in use.
- For Modbus RTU accessories (if any), which is recognized as a security risk in the industry, physical security measures (such as dedicated pipes) are recommended to protect communication cables from unauthorized access, communication drops, data leakage and tampering, etc.

## 3.4 Recommended Maintenance Operations

Recommended maintenance is required regularly over the lifetime of the device:

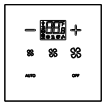
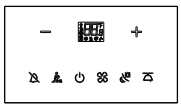
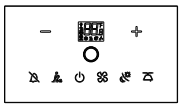
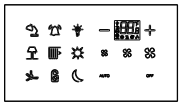
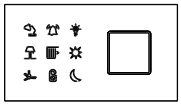
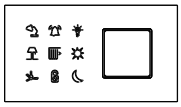
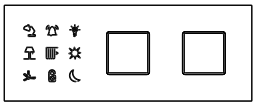
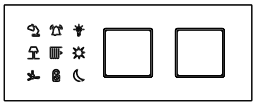
- Make sure that the latest firmware is updated.
- Regularly check the I/O cables to ensure they are properly connected and there is no unauthorized access.
- Regularly check the Modbus-RTU communication cables to ensure there is no unauthorized access.
- Power off the device when it's not needed.

# 4 Introduction

Schneider Electric offers beautifully designed glass panels with an intuitive touch interface to enable guests to control room temperature, lighting, curtains, services, and more for a best-in-class guest experience. Our complete line of Glass Touch Panels (GTP) is highly customizable to reflect each hotel's unique visual aesthetic. The panels are EcoStruxure™ ready devices and integrate with the SpaceLogic RP-C Pro Room Controller through the Modbus RTU (RS485) serial interface.

This document provides information on how to use the Modbus Glass Touch Panels, as well as a description of the various functions available in the add order flow and customization details.

## 4.1 Product Description

| Product | Part Number | Diagram |
|---|---|---|
| Panel with 9 buttons | SLGM09BU |  |
| Panel with 8 buttons and PIR | SLGM08BUM |  |
| Door Panel with 1 button, 2 indicators and room number | SLGM03DP |  |
| Keycard Holder with 3 buttons | SLGM03KH |  |
| Thermostat with 7 buttons | SLGM07TH |  |
| Thermostat with 8 buttons | SLGM08TH |  |
| Thermostat with 8 buttons and PIR | SLGM08THM |  |
| Combo Bedside Panel with 9 buttons & Thermostat with 7 buttons | SLGM09BT07 |  |
| Bedside Panel with 9 buttons & 1 D-Life socket | SLGM09BS2G_D |  |
| Bedside Panel with 9 buttons & 1 New Unica socket | SLGM09BS2G_U |  |
| Bedside Panel with 9 buttons & 2 D-Life sockets | SLGM09BS3G_D |  |
| Bedside Panel with 9 buttons & 2 New Unica sockets | SLGM09BS3G_U |  |

## 4.2 Related Documents

- SpaceLogic Modbus Glass Touch Panels Specification Sheet
- SpaceLogic Modbus Glass Touch Panels Installation Sheet
- Ecostruxure Connected Room Solutions for Hotels Hotel Application Builder User Guide
- SpaceLogic and EasyLogic - Hardware Reference Guide

## 4.3 Prerequisites

To be able to install and configure the Modbus Glass Touch Panels the following tools, software, and equipment are required:

- EcoStruxure Building Operation version 5.0.3 (117)
- SpaceLogic RP-C Pro (RP-C-16B) with firmware 5.00.03.01107
- Hotel Application version 3.2 (10)
- Hotel Application Builder (Engineering Version) version 0.2.0 (135)
- EcoStruxure Guest Room Expert version 4.2 (3)

# 5 Modbus Registers

| Register | Name | Value | Description | Internal Logic | Access Type | Persisted |
|---|---|---|---|---|---|---|
| 0 | Who am I / Restart Flag | H: Restart Counter | Increase after each restart | 0 at factory or factory reset, incremented by 1 after each power on, back to 0 when it reaches max (0xFF) | R | N/A |
| | | L: Panel Type | An enumeration value | 0: Door panel<br>1: Keycard holder<br>2: Thermostat, 7 buttons<br>3: Thermostat, 8 buttons<br>4: Thermostat, 8 buttons, PIR<br>5: Panel, 8 buttons, PIR<br>6: Panel, 9 buttons | | |
| 1 | FW version | H: xx | Major version digits in xx.yy | | R | N/A |
| | | L: yy | Minor version digits in xx.yy | | | |
| 2 | Bootloader version | H: xx | Major version digits in xx.yy | | R | N/A |
| | | L: yy | Minor version digits in xx.yy | | | |
| 3 | HW version | H: xx | Major version digits in xx.yy | | R | N/A |
| | | L: yy | Minor version digits in xx.yy | | | |
| 4 | Serial Number 1 | H: xx | BOM code | xx: Part Number<br>0x24: SLGM09BT07<br>0x25: SLGM09BS3G_U<br>0x26: SLGM09BS3G_D<br>0x27: SLGM09BS2G_U<br>0x28: SLGM09BS2G_D<br>0x31: SLGM08THM<br>0x32: SLGM08TH<br>0x33: SLGM07TH<br>0x34: SLGM09BU<br>0x35: SLGM08BUM<br>0x36: SLGM03KH<br>0x37: SLGM03DP | R | N/A |
| | | L: yy | Production date year | | | |
| 5 | Serial Number 2 | H: xx | Production date week | | R | N/A |
| | | L: yy | Product serial number 1 | yy=High two digits of product serial number | | |
| 6 | Serial Number 3 | H: xx | Product serial number 2 | xx=Middle two digits of product serial number | R | N/A |
| | | L: yz | Product serial number 3 (y), factory code (z) | y=Low digit of product serial number<br>z=A-Huizhou, B-Xiamen, C-Dayawan | | |

| Register | Name | Value | Description | Internal Logic | Access Type | Persisted |
|---|---|---|---|---|---|---|
| 7 | Button press indicator | H: A | Button 9 press indicator, keycard status, proximity sensor status, PIR status | Bit 0=button 9 (1=pressed, 0=released or not pressed)<br>Bits 1,2,3,4 not used<br>Bit 5=Keycard (1=inserted, 0=not inserted)<br>Bit 6=Proximity (1=detected, 0=not detected)<br>Bit 7=PIR (1=motion, 0=no motion)<br>[PIR][Proximity][KeyCard][0][0][0][0][b9] | R | N |
| | | L: B | Buttons 1-8 press indicator | Bits 0-7=buttons 1-8 (1=pressed, 0=released or not pressed)<br>[b8][b7][b6][b5][b4][b3][b2][b1] | | |
| 8 | Sensor temperature | | Holds the calibrated temperature value from the integrated temperature sensor on the thermostat panels. | Value is multiplied by 10 to remove fraction (ex. 21.5 °C is written as 215). On non-thermostat panels, the value is 0. The value is always in degrees Celsius (°C). | R | N |
| 9 | Set buttons status 1 (1-8) | H: B | Buttons 1 to 8 indicator index | Bits 0-7=buttons 1-8 (1=set, 0=not set)<br>[b8][b7][b6][b5][b4][b3][b2][b1].<br>When the button bit is set (1) the value bit should be considered as status (1=active, 0=inactive). | R/W | N |
| | | L: V | Buttons 1 to 8 new state value status | Bits 0-7=buttons 1-8 (1=active, 0=inactive)<br>[b8][b7][b6][b5][b4][b3][b2][b1] | | |
| 10 | Set buttons status (9-14) | H: B | Buttons 9 to 14 indicator index | Bits 0-5=buttons 9-14 (1=set, 0=not set)<br>Bits 6,7 not used<br>[0][0][b14][b13][b12][b11][b10][b9]<br>When the button bit is set (1) the value bit should be considered as status (1=active, 0=inactive). | R/W | N |
| | | L: V | Buttons 9 to 14 new state value status | Bits 0-5=buttons 9-14 (1=active, 0=inactive)<br>Bits 6,7 not used<br>[0][0][b14][b13][b12][b11][b10][b9]. | | |
| 11 | Sleep mode status | | GTP goes to sleep mode (after time expired) and goes back to full mode (user touch any button, proximity sensor triggered). | 0=full mode, 1=sleep mode<br>This bit can be set by master (via Modbus) (Refer to the Panel Modes - Sleep Mode section below) | R/W | N |
| 12 | Temperature unit | | Unit used to display the temperature and the setpoint value on the thermostat panel. The register value is always in °C. | 0=°C, 1=°F, default value=0<br>This bit can be set by master (via Modbus), this unit is used on displays only, values stored and exchanged with master are in °C only. | R/W | Y |
| 13 | Fan Mode | | Sets the current FAN mode | 0=Off, 1=Low, 2=Medium, 3=High, 4=Auto, 5=Turbo | R/W | N |
| 14 | System Mode | | Sets the current system mode | 0=Off, 1=Cool, 2=Heat, 3=Auto, 4=Dry, 5=Dehumidification, 6=Ventilation<br>When system mode is set to off by the master, the fan mode is also set off. | R/W | N |
| 15 | Setpoint value | | The current value for the setpoint temperature. This register can be set remotely by the master or locally using the increase/decrease buttons on the thermostat panels. | The value is multiplied by 10 to remove the fraction (ex. 21.0 °C is written as 210), default value=210 (21.0 °C). On non-thermostat panels, the value is 0. The value is always in degrees Celsius (°C). | R/W | N |
| 16 | Lock-on | | Lock the panel and ignore all touches on all the buttons. | 0=Buttons enabled, 1=Buttons locked (all touch are ignored), default value=0. When locked, the button press indicator register will not change (all bits on read command will be 0) and the button will blink 3 times in 500 ms intervals to let the user know that the panel is locked. | R/W | N |
| 17 | Occupancy status | | Set the occupancy status (by the master) | 0=Unoccupied, 1=Occupied, default value=0 | R/W | N |
| 18 | Eco mode status | | Set the Eco mode status (by the master) | 0=Eco mode inactive, 1=Eco mode active, default value=0 | R/W | N |
| 19 | DND/MUR status | | Set the DND and MUR status (by the master) | 0=Both DND & MUR disabled, 1=DND enabled & MUR disabled, 2=MUR enabled & DND disabled, default value=0 | R/W | N |

| Register | Name | Value | Description | Internal Logic | Access Type | Persisted |
|---|---|---|---|---|---|---|
| 20 | External room temperature | | Provide the room temperature to be displayed on the thermostat panel. | The value is multiplied by 10 to remove the fraction (ex. 21.5 °C is written as 215), default value=0. On non-thermostat panels, the value is 0. The value is always in degrees Celsius (°C). | R/W | Y |
| 21 | Reserved | | | | | |
| 22 | Reserved | | | | | |
| 23 | Reserved | | | | | |
| 24 | Modbus settings | H: 0D | Modbus communication data bit value | Data bit: value between 1 and 9 (GTP support 8 data bits only), default value=8 | R/W | Y |
| | | L: SP | Modbus communication stop bit and parity settings | Stop bit: 0=1 stop bit, 1=1.5 stop bit (unavailable for GTP), 2=2 stop bits, default value=0<br>Parity: 0=None, 1=Odd, 2=Even, default value=1 | | |
| 25 | Button 1 configuration | H: L0 | LED function for button 1. Refer to the LED configuration table. | Bits 0,1,2,3 not used (set to 0, reserved for future use)<br>Bits 4,5,6,7=LED configuration code, default Value=0 | R/W | Y |
| | | L: BF | Button function for button 1. Refer to the button configuration table. | Default value=0 | | |
| 26 | Button 2 Configuration | H: L0 | LED function for button 2. Refer to the LED configuration table. | Bits 0,1,2,3 not used (set to 0, reserved for future use)<br>Bits 4,5,6,7=LED configuration code, default Value=0 | R/W | Y |
| | | L: BF | Button function for button 2. Refer to the button configuration table. | Default value=0 | | |
| 27 | Button 3 Configuration | H: L0 | LED function for button 3. Refer to the LED configuration table. | Bits 0,1,2,3 not used (set to 0, reserved for future use)<br>Bits 4,5,6,7=LED configuration code, default Value=0 | R/W | Y |
| | | L: BF | Button function for button 3. Refer to the button configuration table. | Default value=0 | | |
| 28 | Button 4 Configuration | H: L0 | LED function for button 4. Refer to the LED configuration table. | Bits 0,1,2,3 not used (set to 0, reserved for future use)<br>Bits 4,5,6,7=LED configuration code, default Value=0 | R/W | Y |
| | | L: BF | Button function for button 4. Refer to the button configuration table. | Default value=0 | | |
| 29 | Button 5 Configuration | H: L0 | LED function for button 5. Refer to the LED configuration table. | Bits 0,1,2,3 not used (set to 0, reserved for future use)<br>Bits 4,5,6,7=LED configuration code, default Value=0 | R/W | Y |
| | | L: BF | Button function for button 5. Refer to the button configuration table. | Default value=0 | | |
| 30 | Button 6 Configuration | H: L0 | LED function for button 6. Refer to the LED configuration table. | Bits 0,1,2,3 not used (set to 0, reserved for future use)<br>Bits 4,5,6,7=LED configuration code, default Value=0 | R/W | Y |
| | | L: BF | Button function for button 6. Refer to the button configuration table. | Default value=0 | | |
| 31 | Button 7 Configuration | H: L0 | LED function for button 7. Refer to the LED configuration table. | Bits 0,1,2,3 not used (set to 0, reserved for future use)<br>Bits 4,5,6,7=LED configuration code, default Value=0 | R/W | Y |
| | | L: BF | Button function for button 7. Refer to the button configuration table. | Default value=0 | | |

| Register | Name | Value | Description | Internal Logic | Access Type | Persisted |
|---|---|---|---|---|---|---|
| 32 | Button 8 Configuration | H: L0 | LED function for button 8. Refer to the LED configuration table. | Bits 0,1,2,3 not used (set to 0, reserved for future use)<br>Bits 4,5,6,7=LED configuration code, default Value=0 | R/W | Y |
| | | L: BF | Button function for button 8. Refer to the button configuration table. | Default value=0 | | |
| 33 | Button 9 Configuration | H: L0 | LED function for button 9. Refer to the LED configuration table. | Bits 0,1,2,3 not used (set to 0, reserved for future use)<br>Bits 4,5,6,7=LED configuration code, default Value=0 | R/W | Y |
| | | L: BF | Button function for button 9. Refer to the button configuration table. | Default value=0 | | |
| 34 | Button 1 & 2 RGB | H: Button 2 RGB | RGB color code for the button 2 | [R2][R1][R0][G1][G0][B2][B1][B0]<br>Default Value=FFFF | R/W | Y |
| | | L: Button 1 RGB | RGB color code for the button 1 | [R2][R1][R0][G1][G0][B2][B1][B0]<br>Default Value=FFFF | | |
| 35 | Button 3 & 4 RGB | H: Button 4 RGB | RGB color code for the button 4 | [R2][R1][R0][G1][G0][B2][B1][B0]<br>Default Value=FFFF | R/W | Y |
| | | L: Button 3 RGB | RGB color code for the button 3 | [R2][R1][R0][G1][G0][B2][B1][B0]<br>Default Value=FFFF | | |
| 36 | Button 5 & 6 RGB | H: Button 6 RGB | RGB color code for the button 6 | [R2][R1][R0][G1][G0][B2][B1][B0]<br>Default Value=FFFF | R/W | Y |
| | | H: Button 5 RGB | RGB color code for the button 5 | [R2][R1][R0][G1][G0][B2][B1][B0]<br>Default Value=FFFF | | |
| 37 | Button 7 & 8 RGB | H: Button 8 RGB | RGB color code for the button 8 | [R2][R1][R0][G1][G0][B2][B1][B0]<br>Default Value=FFFF | R/W | Y |
| | | L: Button 7 RGB | RGB color code for the button 7 | [R2][R1][R0][G1][G0][B2][B1][B0]<br>Default Value=FFFF | | |
| 38 | Button 9 RGB | H: | Not used | Default value=0 | R/W | Y |
| | | L: Button 9 RGB | RGB color code for the button 9 | [R2][R1][R0][G1][G0][B2][B1][B0]<br>Default Value=FF | | |
| 39 | Reserved | | | | | |
| 40 | Thermostat display configuration | | Configure what is displayed on the thermostat panel screen<br>Bitmap:<br>0: Room temperature or setpoint value<br>1: System mode<br>2: Occupancy status<br>3: FAN mode<br>4: Eco mode<br>5: Internal or external temperature value | Bit 0: 0=display the room temperature, 1=display the setpoint value<br>Bit 1: 0=do not display the system mode, 1=display the system mode<br>Bit 2: 0=Do not display the Occupancy status, 1=Display the occupancy status<br>Bit 3: 0=Do not display the Fan mode, 1=Display the Fan mode<br>Bit 4: 0=do not display the Eco mode status, 1=Display the Eco mode status<br>Bit 5: 0=Display the internal temperature value from the integrated sensor of the panel, 1=Display the external provided room temperature value | R/W | Y |
| 41 | Temperature sensor calibration | | Set the temperature calibration value applied to the integrated temperature sensor value.<br>Bit 15 indicates if the calibration value is added to subtracted from the sensor value. | Bits 0-14: value in °C, the value is multiplied by 10 to remove the fraction (ex. 2.5 °C is written as 25)<br>Bit 15: 0=add value, 1=subtract value<br>Default value for bits 0-15=0<br>Ex: For value 0x8019 (1000 0000 0001 1001) the calibration value is -2.5C. For value 0x0019 (0000 0000 0001 1001) the calibration value is +2.5C | R/W | Y |
| 42 | Brightness config | H: Active | Set the brightness level when the button is active | Level=0%-100%, default value=100% (0x64) | R/W | Y |
| | | L: Inactive | Set the brightness level when the button is not active | Level=0%-100%, default value=0% (0x00) | | |

| Register | Name | Value | Description | Internal Logic | Access Type | Persisted |
|---|---|---|---|---|---|---|
| 43 | Timeout before sleep mode | | Set the inactivity time out (in seconds) for a panel before the panel goes to sleep mode. The time out range is 0-65535 seconds. | Default value=0 (sleep mode disabled).<br>If no button is touched during the time out, the panel will go into sleep mode and apply the sleep mode brightness level and set the sleep mode status to true.<br>If a button is touched during the time out, the timer will reset and restart counting. | R/W | Y |
| 44 | Sleep mode brightness level | | Set the sleep mode brightness level when the button is not touched | Level=0%-100%, default value=0%(0) | R/W | Y |
| 45 | Buzzer level | | Set the buzzer level when a button is touched. | Level=0%-100%, default value=0%(0)<br>If the buzzer level is not supported then 0=disable buzzer and 100=enable buzzer (buzzer level is unavailable for GTP) | R/W | Y |
| 46 | Setpoint minimum value - limit | | Set the minimum value for the setpoint value. | The value is multiplied by 10 to remove the fraction (ex. 0.5 °C is written as 5), default value=18.0 °C (180) | R/W | Y |
| 47 | Setpoint Maximum value - limit | | Set the maximum value for the setpoint value. | The value is multiplied by 10 to remove the fraction (ex. 0.5 °C is written as 5), default value=26.0 °C (260) | R/W | Y |
| 48 | Setpoint step | | Set the change steps when adjusting the setpoint value using the +/- buttons | The value is multiplied by 10 to remove the fraction (ex. 0.5 is written as 5), default value=0.5 (5). The value has no unit and only accepts 5,10,15,20,25,30,35,40,45,50…200 (integer multiple of 5). | R/W | Y |
| 49 | Fan speed options | | Set the fan speed options used with the cycle FAN button. | 0=Low/Medium/High<br>1=Low/Medium/High/Auto<br>2=Low/Medium/High/Auto/Off<br>Default value=2 | R/W | Y |
| 50 | System mode options | | Set the system mode options used with cycle system mode button. | 0=Cool/Heat<br>1=Cool/Heat/Auto<br>2=Cool/Heat/Auto/Off<br>Default value=0 | R/W | Y |
| 51 | Features Enabler | | Deactivate internal logic/ functions<br>Bit map:<br>0: Lock-on<br>1: Courtesy inter-lock<br>2: BELL inter-lock (with DND)<br>3: BELL self-lock<br>4: Proximity sensor<br>5: PIR sensor<br>6: Hidden occupancy check | Bit 0: 0=disable the lock function, 1=enable the lock function. When disabled, the buttons will always be enabled and will ignore the lock command from the master.<br>Bit 1: 0=Disable the DND/MUR interlock function, 1= Enable the DND/MUR interlock<br>Bit 2: 0=Disable the BELL/DND interlock, 1=Enable the BELL/DND interlock<br>Bit 3: 0=Disable the BELL self lock, 1=Enable the BELL self lock<br>Bit 4: 0=Disable the Proximity sensor function, 1=Enable the Proximity sensor function<br>Bit 5: 0=Disable the PIR sensor function, 1=Enable the PIR sensor function<br>Bit 6: 0=Disable the Hidden occupancy check function, 1=Enable the Hidden occupancy check function<br>Default value for bits 0-6=Enabled | R/W | Y |
| 52 | Reserved | | | | | |
| 53 | Flash button (identify) | H: button mask<br>L: button mask | Identify a button or panel by flashing the specific button 3 times in 500ms intervals. | The register contains bit mask (button index to flash), bit 0=button 1, bit 1=button 2 etc.<br>If all masked bits are 1 then all buttons will flash. The register value will reset back to 0 after receiving/executing the action. | R/W | N |
| 54 | Restart PIN? | | A specific value that will force the panel to restart | Define the value to reset (PIN value: 0x5A5A)<br>Default value=0 | R/W | N |

# 6 Button Configuration

| Code | Function | Description | LED Config | Internal Logic |
|---|---|---|---|---|
| 0 | None / Disabled | Factory value: touch will be ignored | Any | The button is disabled (LED follows the configured LED function). |
| 1 | Setpoint decrease | Decrease setpoint by predefined step | Off<br>On while on touch<br>Short blink on touch | When button is touched while the room temperature is displayed, the display should change to the setpoint and switch back to room temperature 5 sec after last decrease/increase touch.<br>If the button is touched while the setpoint is displayed, decrease the setpoint by the configured value, updated setpoint should be displayed on the GTP on each decrement, the holding register should be updated with the last setpoint value only when button is released.<br>In case of long press, display the setpoint and decrease the value every 0.5sec till button is released , and display back room temperature (5 sec after last change) in case it was displayed.<br>The decrease should stop when the setpoint reached the minimum configured value. |
| 2 | Setpoint increase | Increase setpoint by predefined step | Off<br>On while on touch<br>Short blink on touch | When button is touched while the room temperature is displayed, the display should change to the setpoint and switch back to room temperature 5 sec after last decrease/increase touch.<br>If the button is touched while the setpoint is displayed, increase the setpoint by the configured value, updated setpoint should be displayed on the GTP on each increment, the holding register should be updated with the last setpoint value only when button is released.<br>In case of long press, display the setpoint and increase the value every 0.5sec till button is released and display back room temperature (5 sec after last change) in case it was displayed.<br>The increase should stop when the setpoint reached the maximum configured value. |
| 3 | Push | Active on touch | Off<br>On while on touch<br>Short blink on touch | |
| 4 | Toggle | Toggle button value | Off<br>follow button status | Toggle the status of the button, if the button was active it should be inactive when touched, and if it was inactive it should go to active |
| 5 | Cycle FAN mode | Change FAN following the order of configured value (L-M-H-…) | Off<br>On while on touch<br>Short blink on touch | Go the next Fan mode using the configured value |
| 6 | Cycle System mode | Change system mode following the order of configured mode (C-H-A-…) | Off<br>On while on touch<br>Short blink on touch | Go the next system mode using the configured value |
| 7 | Low Fan | | Off<br>follow button status | Set Fan mode to Low, when FAN is low button should be active (LED on) |
| 8 | Medium Fan | | Off<br>follow button status | Set Fan mode to Medium. Reflect the FAN medium state, when the FAN is medium the button should be active (LED on) |
| 9 | High Fan | | Off<br>follow button status | Set Fan mode to High. Reflect the FAN high state, when FAN is high the button should be active (LED on) |
| 10 | Auto Fan | | Off<br>follow button status | Set Fan mode to Auto. Reflect the FAN auto state, when FAN is auto the button should be active (LED on) |
| 11 | System Mode Off | | Off<br>follow button status | Set system mode to Off. When system is off, the FAN mode will be set to off. Reflect the system off status, if system is off the button should be active (LED on) |
| 12 | BELL | Logic related to courtesy | Off<br>Short blink on touch | When a button is configured as BELL, it will apply the logic related to the BELL/DND interlock and BELL self lock (when features are enabled). Refer to the Panel Modes - Courtesy Interlock section below. |
| 13 | DND | Logic related to courtesy | Off<br>follow button status | When a button is configured as DND, it will apply the logic related to the BELL/DND interlock and DND/MUR interlock (when features are enabled). Refer to the Panel Modes - Courtesy Interlock section below. |
| 14 | MUR | Logic related to courtesy | Off<br>follow button status | When a button is configured as MUR, it will apply the logic related to the DND/MUR interlock (when features are enabled). Refer to the Panel Modes - Courtesy Interlock section below. |
| 15 | Outdoor DND | Buttons disabled, only status is reflected (LED) | | A button configured as outdoor DND will be used to display the DND status only and not touchable (touch ignored). Refer to the Panel Modes - Courtesy Interlock section below. |

| Code | Function | Description | LED Config | Internal Logic |
|---|---|---|---|---|
| 16 | Outdoor MUR | Buttons disabled, only status is reflected (LED) | | A button configured as outdoor MUR will be used to display the MUR status only and not touchable (touch ignored). Refer to the Panel Modes - Courtesy Interlock section below. |
| 17 | Temperature unit set | Toggle between C/F | Off<br>On while on touch<br>Short blink on touch | When a button is configured to switch between the °C and °F, the displayed temperature and setpoint is converted and displayed in the selected unit. The stored values are in °C, if °C is selected the values are displayed as they are, if °F is selected the displayed values are converted from °C to °F, the stored values are always kept in °C. |
| 18 | Turbo Fan | | Off<br>follow button status | Set Fan mode to turbo. When FAN is turbo, button should be active (LED on). Otherwise, button should be inactive (LED off). |

# 7 LED Configuration

| Code | Function | Description |
|---|---|---|
| 0 | Off | Factory value: LED always off |
| 1 | On while on touch | LED is ON as long as the finger is on the button |
| 2 | Short blink | LED blinks 500ms interval (on/off) when button is touched |
| 3 | Toggle | Follow the button status, if button is active LED should be ON, and if button is inactive LED should be OFF |

# 8 Panel Modes

## 8.1 Sleep Mode

After a certain time of non-activity, the panel will go into sleep mode where the brightness of active buttons are reduced to the configurable value and the inactive buttons are in zero brightness until wake up by touch or proximity sensor activity. The time out for non-activity is configurable (second precision). When time out is set to 0, the sleep mode will be disabled and the brightness level will not change.

## 8.2 Courtesy Interlock

Courtesy buttons (DND, MUR and BELL) are interlocked and work together depending on each of their status. DND and MUR will never be active at the same time. When DND is active, the BELL button will be ignored and it will blink 3 times in 500ms intervals to notify the user. The Bell button will not be operational after 2 presses in 3 seconds, the non-operational time is 30 seconds. During the non-operational time, the BELL press will not be reported and the BELL button will blink 3 times in 500 ms intervals to notify the user.

## 8.3 Hidden Occupancy Check

The door panel (SLGM03DP) has a hidden function so that the hotel staff can see the room occupancy status. A long press on the MUR button for 5 seconds, and if the room is occupied, all LED on the door panel will flash 3 times in 500ms intervals.

# 9 Troubleshooting Tips

## 9.1 For Setup Issues

- If the boot process fails and the panel does not light up, check the power wiring connection
- If the controller and panel cannot communicate, check the RS485 wiring connection
- If the panel acts abnormally, check the dip switch configuration of Modbus address and Baud rate

## 9.2 For Maintenance Issues

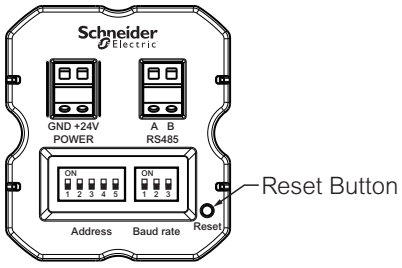
In the event of an abnormal operating exception, all button indicators will flash the color red at 500ms intervals and 100% brightness for a 1 minute duration. The thermostat panel will also display the related error code:

- E1: Invalid application
- E2: Touch button IC exception
- E3: Temperature sensor exception
- E4: Proximity sensor exception

# 10 Factory Reset

To do a factory reset of a panel, follow these steps:

1. Power up the panel
2. Press and hold the reset button (located in the hole on the back of the panel) for at least 5 seconds
3. After all LEDs on the panel flash red, release the reset button.
4. The panel will reboot, completing the factory reset







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