

KNX Multi Functional Switch

Reference Manual



KNX Multi Functional Switch MS104 FA	WRKT62045FA
KNX Multi Functional Switch MS104-D FA	WRKT62145FA

V1.0

Panasonic

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3 Document overview

3.1 Document updates

Version	Date	Modifications
1.0	December 2019	Preparation of the final version

Table 1

3.2 List of abbreviations

Abbreviation	Description

Table 2

4 Product description

4.1 General information

KNX Multi-Functional Switch is a room controller with 12 capacitive touch buttons over 4 Gang and integrated real time clock, temperature sensor, humidity sensor, proximity sensor and brightness sensor. It also has one digital input and one temperature sensor (NTC) input.

KNX Multi-Functional Switch is powered via KNX bus line without an external power supply. The device can be programmed to enable, disable or configure its features and functions via ETS.

Thanks to thermostat function which is one of the most important feature of the product; heating and cooling control can be done included 2/4 pipe fancoil systems. With the help of touch buttons, a lot of control operations can be done especially blinds/shutter, switching and dimming. Additionally; the device also can send temperature and humidity measured values to other KNX devices on the bus line.

KNX Multi-Functional Switch can be installed in flushed-mounted or hollow-wall boxes.

4.2 Main features

- Configurable touch buttons up to 4 Gang for single or rocker operation
- Sound feedback for touch buttons functions
- Configurable feedback LEDs can be used with buttons or KNX group objects
- Customized icon label stickers for touch buttons
- Activating standby mode according to presence information determined via proximity sensor
- Adjusting backlight of display and touch buttons according to ambient light information determined via brightness sensor
- Operating energy saving functions of thermostat according to information of the digital input
- Controlling thermostat functions according to information of external temperature sensor input or monitoring the sensor values via KNX
- Temperature and humidity sensors can be calibrated before ETS programming by parameters or after ETS programming by communication objects
- Weekly Thermostat Program can be configured over the device (only LCD model) or DCA (Device configuration app) inside ETS
- Scene actuator functions

4.3 Technical information

Supply voltage	21 ... 32 V DC via KNX Bus
Operating temperature	-5°C ... +45°C
Type of protection	IP 20 to EN60529
Safety class	III to IEC 60664-1
Cable length for external inputs	Maximum 3 m
Temperature measurement	0°C to 45°C
Relative humidity	0% to 100%

Table 3

4.4 Product versions

Product Features	WRKT62045FA	WRKT62145FA
	KNX Multi Functional Switch 4 Gang MS104-FA	KNX Multi Functional Switch 4 Gang MS104-D FA
Button Functions	✓	✓
Thermostat Functions	✓	✓
Scene Actuator	✓	✓
LCD Display	-	✓

Table 4

5 Product parts

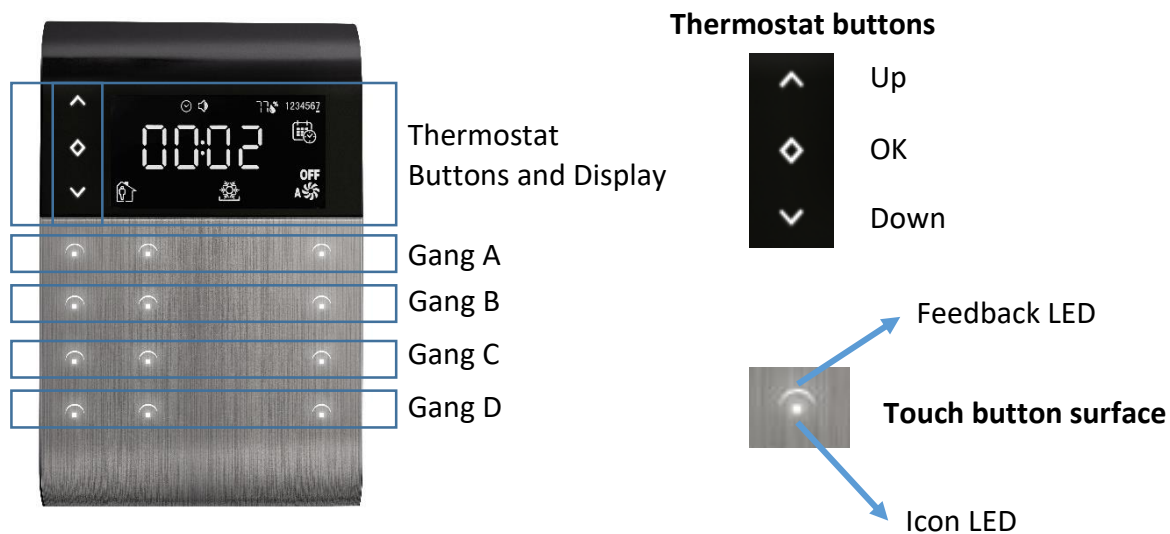


Figure 1 Product front view

6 Main screen

After start-up, the display enters main screen. At the main screen, some information like room temperature, clock, operation mode, control mode, fan level etc. are given to users.

Power up → Start-up delay → Start-up → Main screen








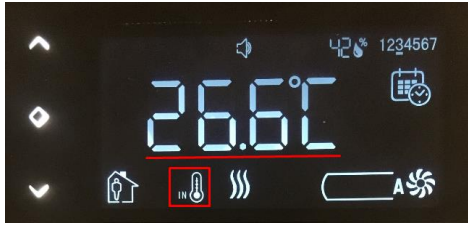







Icon	Name	Touch type	Current menu	Target menu
	Up	Short	Main screen	User settings menu
	OK	Short	Main screen	User settings menu
	Down	Short	Main screen	User settings menu
	Up	Long	Main screen	Advance settings menu
	OK	Long	Main screen	Thermostat off
	Down	Long	Main screen	Weekly settings menu

Table 5

The following table includes some basic information which are shown at main screen. For more information about icons, check reference manual.

Information	Visual
Clock	
Internal temperature sensor value	

Information	Visual
External temperature input value	
Internal humidity sensor value / External humidity value	
Current thermostat operation mode	
Current thermostat control mode	
Current thermostat control mode is active	
Current thermostat fan level and fan mode	
Thermostat weekly program is active	

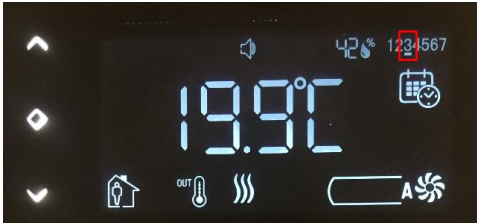
Information	Visual
Day of week	 A digital display with a black background and white icons. The central display shows '19.9°C'. Above it, there's a small speaker icon and a clock showing '12:34:567'. To the right of the clock is a calendar icon. Below the temperature, there's a house icon, a thermometer icon labeled 'OUT', a fan icon, and a battery level indicator. On the left side of the display, there are three vertical icons: an upward arrow, a diamond, and a downward arrow.

Table 6

7 Display menus

7.1 User settings menu

When the display is at the main screen, if a short touch is detected at the one of thermostat buttons, the display enters user settings menu.



Icon	Name	Touch type	Current menu	Target setting
	Up	Short	Main screen	Setpoint temperature
	Down	Short	Main screen	Setpoint temperature

Table 7









Icon	Name	Touch type	Current setting	Target setting
	OK	Short	Main screen	Thermostat operation mode
	OK	Short	Operation mode	Fan level
	OK	Short	Fan level	Swing level
	OK	Short	Swing level	Main screen

Table 8

Settings	Visual
Setpoint temperature	
<p>If there is not a restriction for manual control at the system,</p> <ul style="list-style-type: none">  Up /  Down buttons increase or decrease the setpoint within specific step and limit No operation for 10 seconds saves the value and returns to main screen  OK button saves the value and returns to main screen 	














Settings	Visual
Thermostat operation mode	 <p>The mode border flashes</p>
<p>If there is not a restricted for manual control at the system,</p> <ul style="list-style-type: none"> •  Up /  Down buttons changes thermostat operation mode • No operation for 10 seconds saves the value and returns to main screen •  OK button saves the value and goes to the next setting 	
Fan level	 <p>The fan icon flashes</p>
<p>If there is not a restricted for manual control at the system,</p> <ul style="list-style-type: none"> •  Up /  Down buttons increase or decrease the fan level within specific limit • No operation for 10 seconds saves the value and returns to main screen •  OK button saves the value and goes to the next setting 	
Swing level	 <p>The flap icon flashes</p>  <p>If level is selected as "Auto", the flap icon appears at the main screen</p>
<p>If there is not a restricted for manual control at the system,</p> <ul style="list-style-type: none"> •  Up /  Down buttons increase or decrease the flap position within Level 0 – Level 5 • Level A means swing auto enabled • No operation for 10 seconds saves the value and returns to main screen •  OK button saves the value and goes to the next setting 	

Table 9

7.2 Advance settings menu

When the display is in the main screen, if a short touch is detected at the one of thermostat buttons, the display enters user settings menu.
































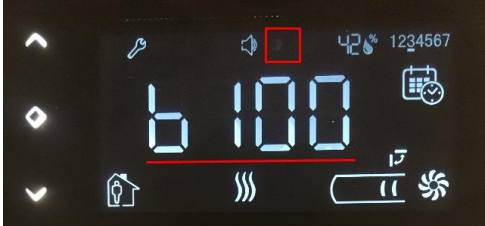



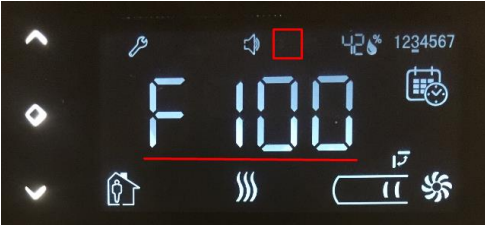


Icon	Name	Touch type	Current setting	Target setting
	Up	Long	Main screen	Clock
	Up	Short	Clock	Day of week
	OK	Short	Day of week	Hour
	OK	Short	Hour	Minute
	OK	Short	Minute	Sound level
	OK	Short	Clock	Sound level
	OK	Short	Sound level	Display brightness level
	OK	Short	Display brightness level	Icon LEDs brightness level
	OK	Short	Icon LEDs brightness level	Feedback LEDs brightness level
	OK	Short	Feedback LEDs brightness level	Thermostat control mode
	OK	Short	Thermostat control mode	Main screen

Table 10

Settings	Visual
Clock -> Day of week	 <p>The clock icon flashes</p>

Settings	Visual
<ul style="list-style-type: none">  Up /  Down buttons increase or decrease the day of week. The value should be set the number what is day of the week for your region. For example: For Turkey, first day of week is Monday. If today is Wednesday, the value should be set to day3. For USA, first day of week is Sunday. If today is Wednesday, the value should be set to day4. No operation for 10 seconds does not save the value and returns to main screen  OK button does not save the value and goes to the next setting 	
Clock -> Hour	 <p>The clock icon and hour digit flashes</p>
<ul style="list-style-type: none">  Up /  Down buttons increase or decrease hour. No operation for 10 seconds does not save the value and returns to main screen  OK button does not save the value and goes to the next setting 	
Clock -> Minute	 <p>The clock icon and minute digit flashes</p>
<ul style="list-style-type: none">  Up /  Down buttons increase or decrease minute. No operation for 10 seconds does not save the value and returns to main screen  OK button saves the all clock values (day of week, hour and minute) and change settings to the next setting 	
Sound level	 <p>The speaker icon flashes</p>
<ul style="list-style-type: none">  Up /  Down buttons increase or decreasesound level within level 0-1-2. No operation for 10 seconds saves the value and returns to main screen  OK button saves the value and goes to the next setting 	

Settings	Visual
Display brightness level	 <p>The lamp icon flashes</p>
<ul style="list-style-type: none">  Up /  Down buttons increase or decrease the display brightness level within 0 low limit - specific high limit No operation for 10 seconds saves the value and returns to main screen  OK button saves the value and goes to the next setting 	
Icon LEDs brightness level	 <p>The lamp icon flashes</p>
<ul style="list-style-type: none">  Up /  Down buttons increase or decrease the icon LEDs brightness level within 0 low limit - specific high limit No operation for 10 seconds saves the value and returns to main screen  OK button saves the value and goes to the next setting 	
Feedback LEDs brightness level	 <p>The lamp icon flashes</p>
<p>Feedback LEDs must be turned on to see the effect of the change.</p> <ul style="list-style-type: none">  Up /  Down buttons increase or decrease the feedback LEDs brightness level within 0 low limit - specific high limit No operation for 10 seconds saves the value and returns to main screen  OK button saves the value and goes to the next setting 	





Settings	Visual
Thermostat control mode	
<ul style="list-style-type: none"> Up /  Down buttons changes thermostat control modNo operation for 10 seconds saves the value and returns to main screen OK button saves the value and returns to main screen	

Table 11

7.3 Weekly program settings menu

When the display is in the main screen, if a short touch is detected at the one of thermostat buttons, the display enters user settings menu.














Icon	Name	Touch type	Current setting	Target setting
	Down	Long	Main screen	Weekly program status
	Down	Long	Weekly program status	Select program day
	OK	Short	Select program day	Select mode
	OK	Short	Select mode	Select hour
	OK	Short	Select hour	Select minute

Table 12

Settings	Visual
Weekly program status	 <p>The calendar and days of week icons flash</p>
<ul style="list-style-type: none">  Up /  Down buttons changes weekly program status. If “On” is selected, weekly program is enabled No operation for 10 seconds saves the value and returns to main screen  OK button saves the value and returns to main screen Long touch at the  Down button goes to the next setting 	

Settings	Visual
Select program day	 <p>The day of week icon flashes</p>
<ul style="list-style-type: none"> Up / Down buttons changes selected program day No operation for 10 seconds returns to main screen OK button selects the day to program and goes to the next setting 	
Select mode	 <p>The zone number icon flashes</p>
<ul style="list-style-type: none"> Up / Down buttons changes operation mode for the zone No operation for 10 seconds returns to main screen <p>If the operation mode is selected as “none”,</p> <ul style="list-style-type: none"> OK button changes the zone number <p>If the operation mode is not selected as “none”,</p> <ul style="list-style-type: none"> OK button goes to the next setting Long touch at the Down button saves the values and changes setting to select program day 	
Select hour	 <p>The zone number icon and hour digits flash</p>
<ul style="list-style-type: none"> Up / Down buttons changes hour for the operation mode No operation for 10 seconds returns to main screen OK button goes to the next setting Long touch at the Down button saves the values and changes setting to select program day 	






Settings	Visual
Select minute	 <p>The zone number icon and minute digits flash</p>
<ul style="list-style-type: none">  Up /  Down buttons changes minute for the operation mode No operation for 10 seconds returns to main screen  OK button changes setting to the select mode for the next zone Long touch at the  Down button saves the values and changes setting to select program day 	

Table 13

7.4 Thermostat off

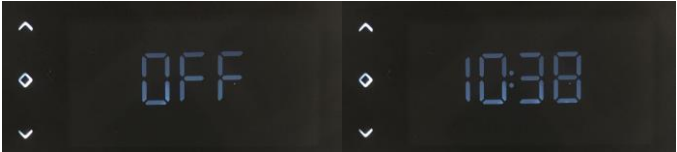



Settings	Visual
Thermostat off	
<ul style="list-style-type: none"> Up /  Down buttons increase or decrease the setpoint within specific step and limitLong touch to  OK button changes thermostat status “On”.If “clock” is activated for main screen, it is shown on the thermostat off mode.	

Table 14