

ARC-OP

On-wall controller

Operation manual

Version 1.01



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Revision history

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Revision	Date	Changes by	Changes
100	03. 06. 2026	Mlejnek J.	New document.
101	28. 07. 2026	Mlejnek J.	Additions in chapter "Mounting".

Related documentation

1. Application note AP0008 – Communication in MODBUS network
file: ap0008_en_xx.pdf
2. Application note AP0016 – Principles of RS485 interface usage
file: ap0016_en_xx.pdf

1 Introduction

ARC-OP are universal on-wall controllers with a fixed application programme. They are connected to the master system through the RS485 interface. Capacitive touch buttons are used to operate the on-wall controller.

Universal on-wall controllers **ARC-OP** always consist of two components – a front panel (various versions) and a baseboard (various versions). Combining these two components creates a functional assembly. Neither component (the front panel or the baseboard) operates independently.

The available front panel versions are:

ARC-DOP10/01	– LED display (full-glass), temperature, humidity, white
ARC-DOP10C/01	– LED display (full-glass), temperature, humidity, CO ₂ , white
ARC-DOP10/02	– LED display (full-glass), temperature, humidity, black
ARC-DOP10C/02	– LED display (full-glass), temperature, humidity, CO ₂ , black
ARC-DOP20/01	– LCD display, temperature, humidity, white
ARC-DOP20C/01	– LCD display, temperature, humidity, CO ₂ , white
ARC-DOP20/02	– LCD display, temperature, humidity, black
ARC-DOP20C/02	– LCD display, temperature, humidity, CO ₂ , black

The available baseboard versions are:

ARC-BOP/01	– baseboard, RS485, white
ARC-BOPDI2TRI2/01	– baseboard, RS485, 2× DI, 2× triac, white
ARC-BOP/02	– baseboard, RS485, black
ARC-BOPDI2TRI2/02	– baseboard, RS485, 2× DI, 2× triac, black

- Basic properties**
- Large LED/reflective segment LCD display
 - Control using capacitive touch buttons
 - RS485 serial interface without galvanic isolation
 - Communication protocol MODBUS RTU
 - Power supply 24 V DC/AC
 - Measurement of temperature, relative ambient humidity and CO₂ ¹⁾
 - Digital inputs and outputs ¹⁾
 - Fan-coil control (in conjunction with **ARC-FCx**, **AMR-FCT20/DM**)
 - Integration into control systems / SCADA

Note ¹⁾ Fitted equipment varies according to the selected components.

2 Technical parameters

RS485	Quantity	1
	Galvanic isolation	No
	Communication rate	1,200 bps to 115,200 bps
	Communication protocol	MODBUS RTU
	Connection point	Screw terminals
	Wire cross-section	0.5 mm ² to 1.5 mm ²

Power supply	Nominal power voltage	24 V DC/AC
	Supply voltage range	19.2 V DC/AC to 28.8 V DC/AC
	Maximum power consumption (complete assembly) typically	1 W
	Connection point	Screw terminals
	Wire cross-section	0.5 mm ² to 1.5 mm ²
	Power supply distribution	The device must not be powered from the DC distribution network of the building ²⁾

Note ²⁾ For more details, see chapter 8.3 “Installation rules”, section “Power supply”.

Mechanics	Mechanical design	Plastic cover, ABS
	Mounting	KU68 ³⁾
	Ingress protection rate	IP20
	Dimensions (w × h × d)	(88 × 88 × 45.5) mm

Caution ³⁾ **As the design of KU68-type installation boxes varies between manufacturers, it is necessary to check whether the internal dimensions of the selected box allow fitting of the ARC OP wall-mounted controller before installation.**

Temperatures	Operating temperature range	-5 °C to 45 °C
---------------------	-----------------------------	----------------

Other	Ambient humidity range	5 % to 95 % non-condensing
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Other technical parameters depend on the combination of components used and are specified in chapter 13 “Components”.

2.1 Assembly dimensions

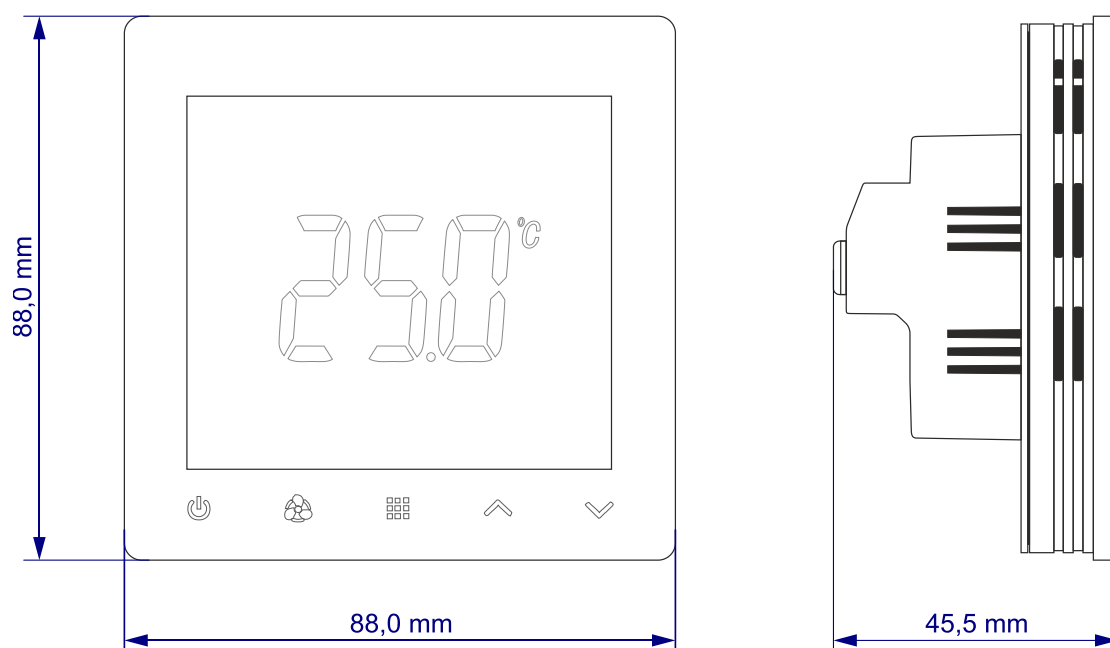


Fig. 1 – Dimensions **ARC-OP**

2.2 Recommended drawing symbols

For the **ARC-OP** on-wall controllers, the following drawing symbols are recommended.

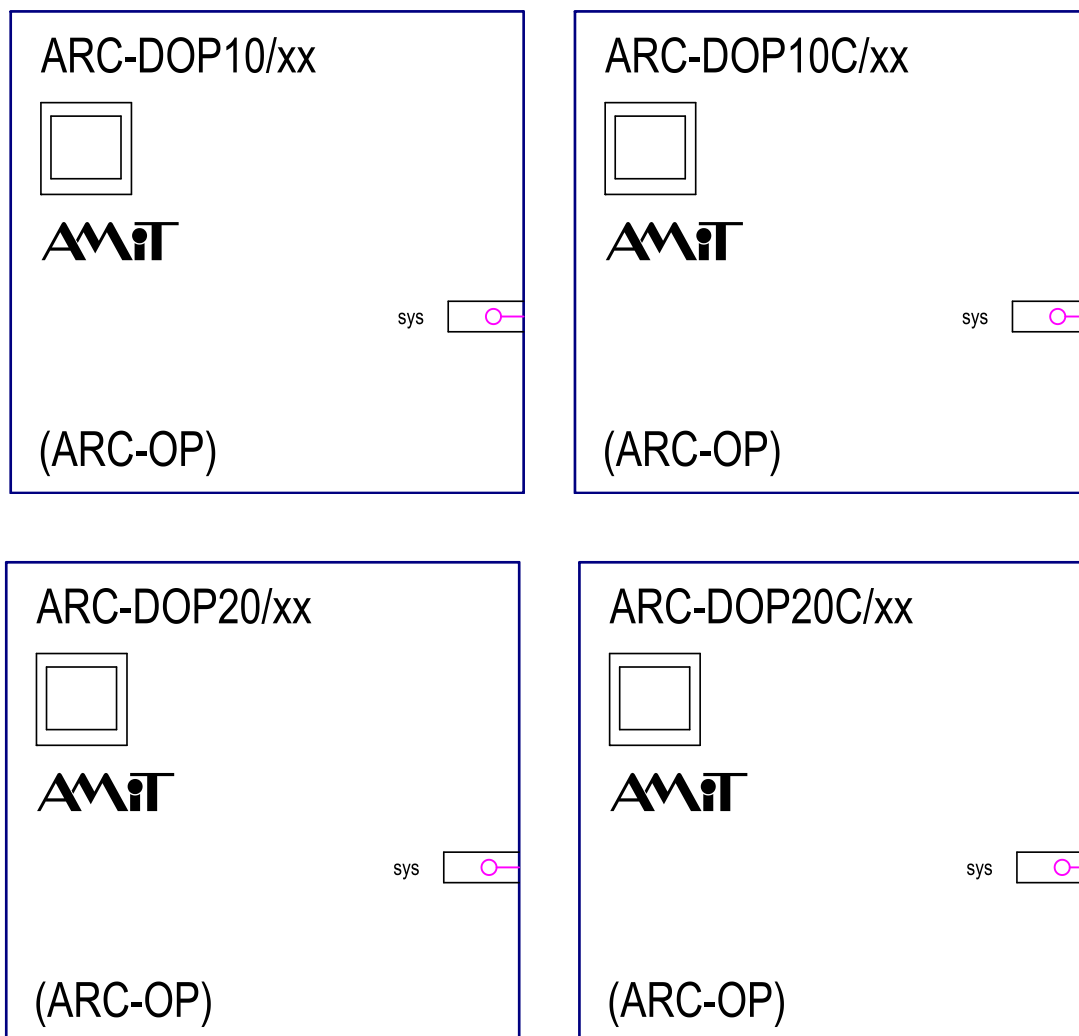


Fig. 2 – Recommended drawing symbols for components **ARC-DOP**

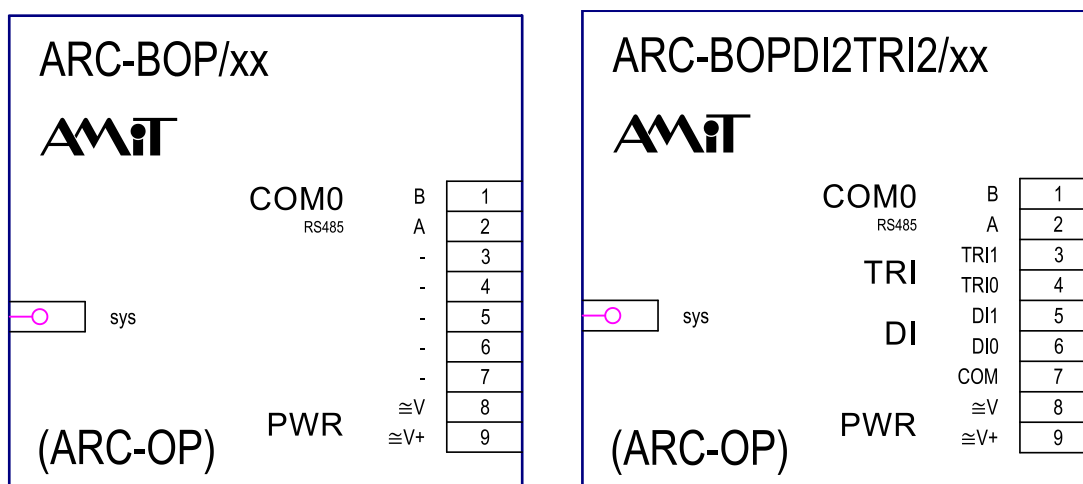


Fig. 3 – Recommended drawing symbols for components **ARC-BOP**

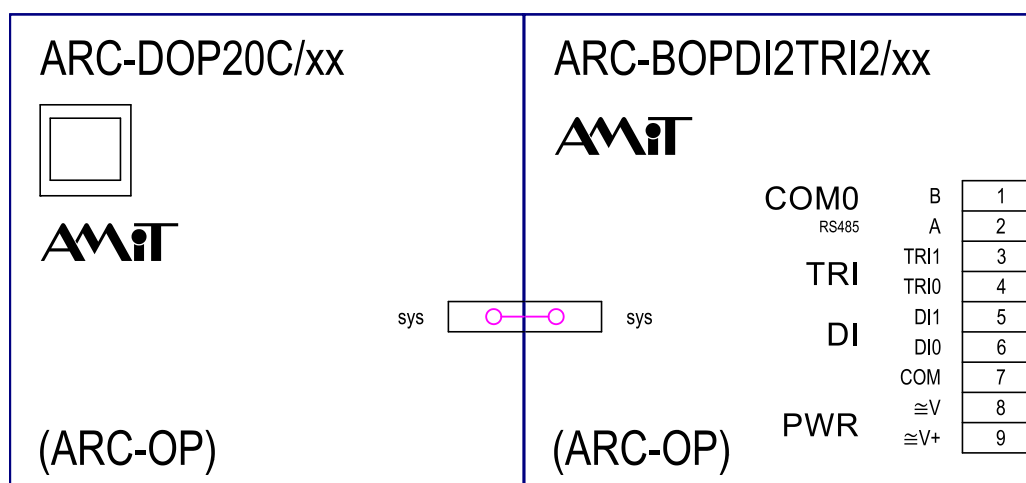


Fig. 4 – Assembly wiring example for **ARC-OP**

3 Product nameplate

Each component of the on-wall controller has its own nameplate.

3.1 Front panel

For the nameplate location, see “Fig. 5 – Location of the marking on the front panel cover”.

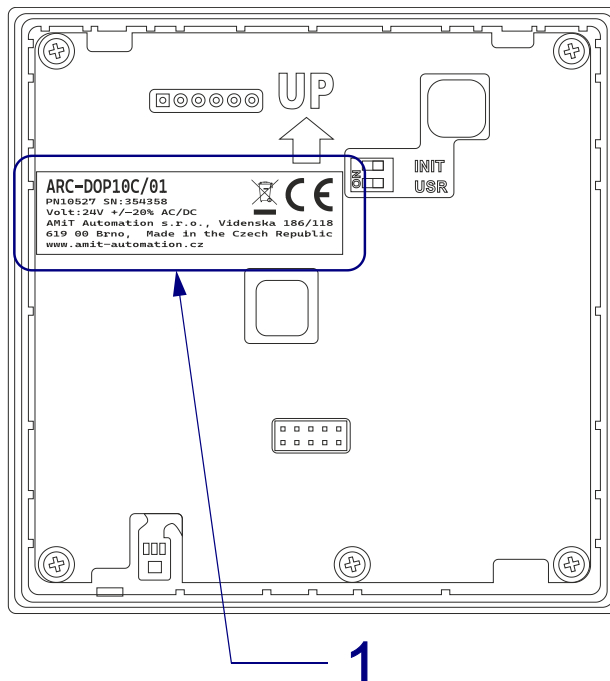


Fig. 5 – Location of the marking on the front panel cover

Legend	Number	Description
	1	Nameplate

3.2 Baseboard

For the nameplate location, see “Fig. 6 – Location of the marking on the baseboard cover”.

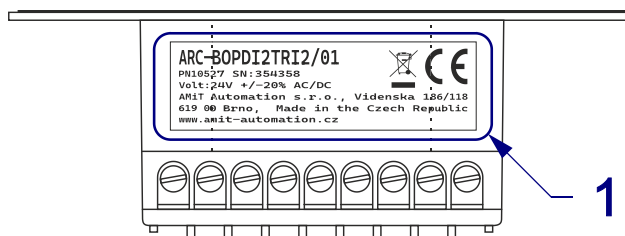


Fig. 6 – Location of the marking on the baseboard cover

Legend	Number	Description
	1	Nameplate

3.3 Nameplate

The information on the nameplate is summarised in the following table. For a nameplate sample, see “Fig. 7 – Example of an AMiT nameplate”.

Data	Note
AMR-BOPDI2TRI2/01	Product type designation
PN10527	Stock item identifier
SN:354358	Serial number
Volt:24V +/-20% AC/DC	Supply voltage
AMiT Automation s.r.o. Videňská 186/118 619 00 Brno Made in the Czech Republic www.amit-automation.cz	Producer
Crossed-out bin logo	The product disposal is subject to regulations on disposal of electronic waste
CE logo	The product is in accordance with EU legislation and directives

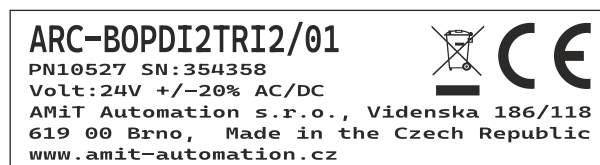
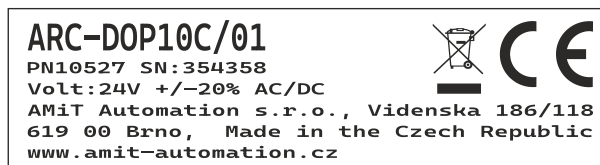


Fig. 7 – Example of an AMiT nameplate

4 Compliance assessment

The device complies with the harmonised standards	Classification
EN IEC 62368-1:2020 + A11:2020	Complies
EN IEC 61000-6-2:2019	Complies
EN IEC 61000-6-4:2019	Complies
EN IEC 63000:2019	Complies

5 Power supply and RS485 interface

Power supply On-wall controller **ARC-OP** can be powered from either a DC or an AC power source. The power source must comply with the requirements specified in chapter 2 “Technical parameters”.

RS485 In order for RS485 to work properly, it is necessary to follow the rules mentioned in Application note AP0016 – Principles of RS485 interface usage.

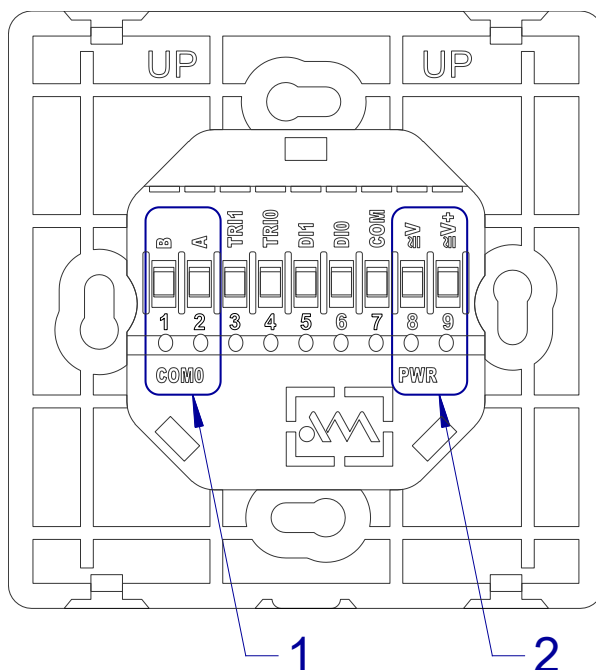


Fig. 8 – Location of power supply and RS485 terminals (rear view)

Legend	Number	Significance
	1	RS485 terminals
	2	Power supply terminals

Terminal connection	Terminal	Signal	Significance
	1	B	RS485, signal B
	2	A	RS485, signal A
	...		
	8	≅V	Power supply (DC/AC)
	9	≅V+	Power supply (DC/AC); for DC power supply, +24 V is connected here

RS485 termination Each station in the RS485 network must have the idle-state definition and terminating resistor set correctly. The configuration jumper is used to set the termination. Terminal stations on the RS485 network must always have the termination connected; intermediate stations must have it disconnected.

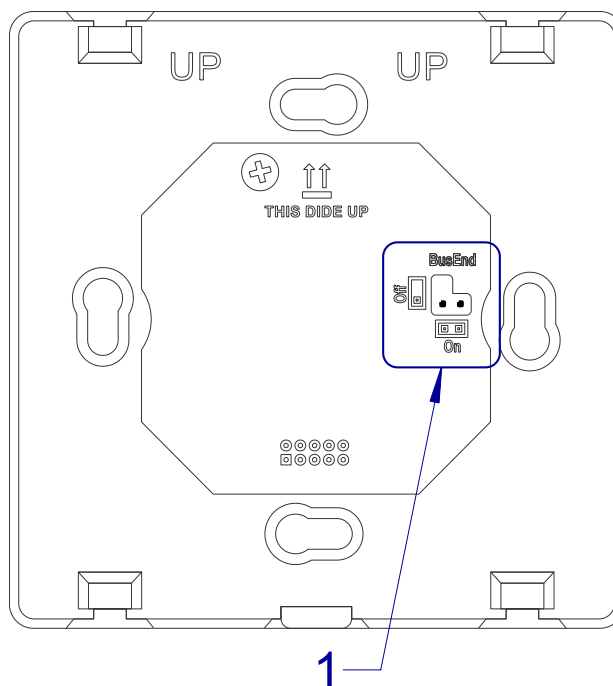


Fig. 9 – Location of the RS485 configuration jumper
(front view of the **ARC-BOP**)

Legend

Number	Significance
1	RS485 configuration jumper

*Jumper
description*

Pins	Significance
Closed	Terminal station – idle states and terminations are active.
Open	Intermediate station – idle states and terminations are inactive.

**Wiring
example**

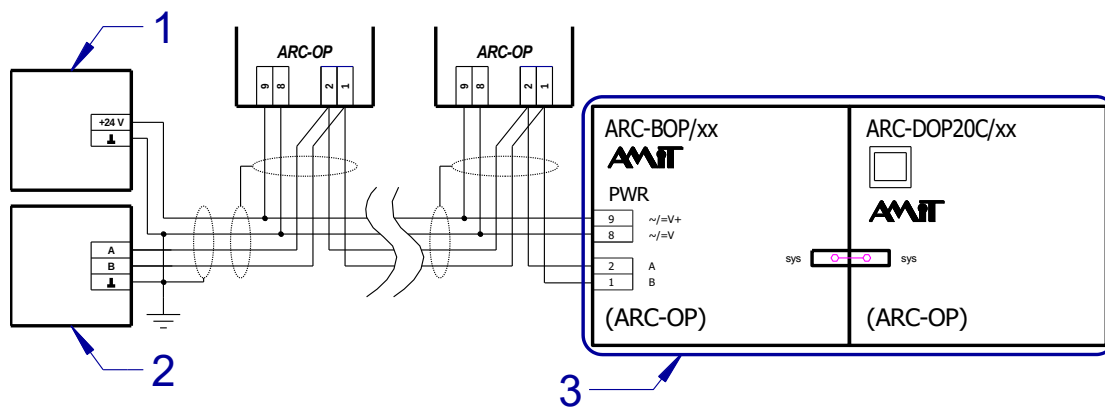


Fig. 10 – Power supply and RS485 wiring example

Legend

Number	Significance
1	Power supply source 24 V DC
2	Master system
3	On-wall controller ARC-OP

6 Inputs/outputs

6.1 Digital inputs when using ARC-BOPDI2TRI2/xx

On-wall controller **ARC-OP** contains two digital inputs. These can read signals, for example, from a window contact and an occupancy sensor.

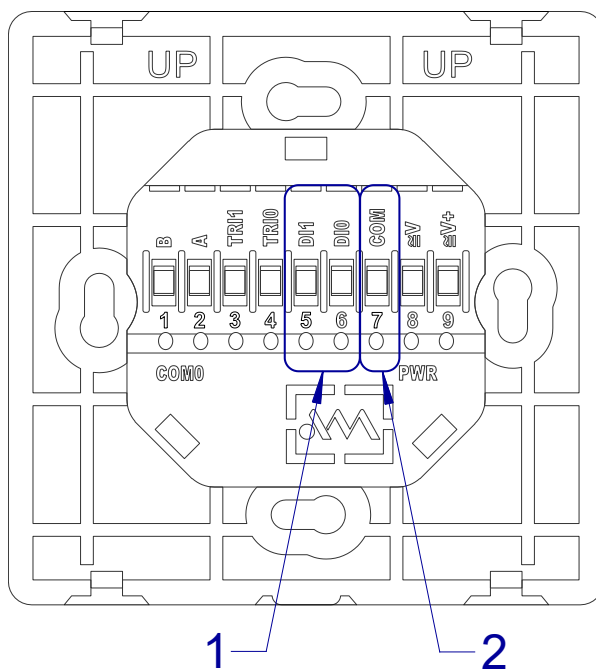


Fig. 11 – Location of terminals for inputs DI0 and DI1 (rear view)

<i>Legend</i>	Number	Significance
	1	Terminals for inputs DI0 and DI1
	2	Common terminal for inputs/outputs

<i>Terminal connection</i>	Terminal	Signal	Significance
	5	DI1	Digital input 1 (passive contact to terminal COM)
	6	DI0	Digital input 0 (passive contact to terminal COM)
	7	COM	Common terminal for inputs/outputs

Note Terminal COM (7) must be used as the common terminal for the digital inputs; it is shared by the digital inputs and outputs.

6.2 Digital outputs when using ARC-BOPDI2TRI2/xx

The on-wall controller **ARC-OP** contains two digital outputs with zero-crossing triacs (24 V AC, maximum current 0.4 A).

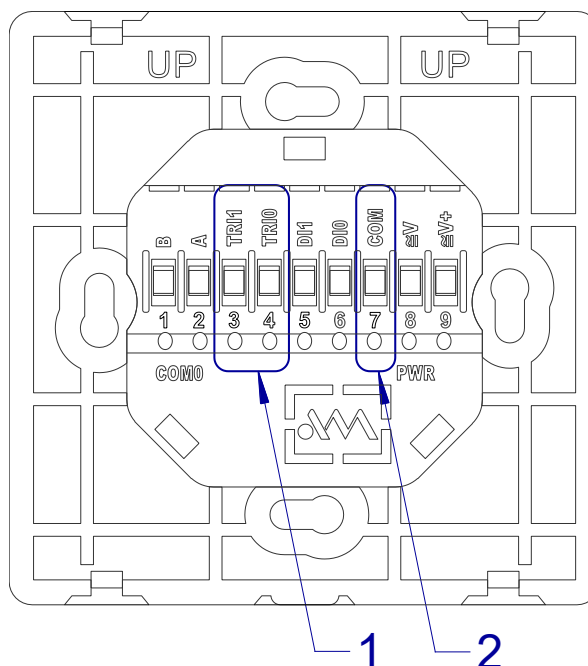


Fig. 12 – Location of terminals for outputs TRI0 and TRI1 (rear view)

Legend

Number	Significance
1	Terminals for outputs TRI0 and TRI1
2	Common terminal for I/O

Terminal connection

Terminal	Signal	Significance
3	TRI1	Triac output 1 (24 V AC relative to terminal COM)
4	TRI0	Triac output 0 (24 V AC relative to terminal COM)
7	COM	Common terminal for inputs/outputs

Note Terminal COM (7) must be used as the common terminal for the digital inputs; it is shared by the digital inputs and outputs.

7 DIP switches *INIT* and *USR*

There are two DIP switches on the inner side of the front panel (HMI): *INIT* and *USR*.

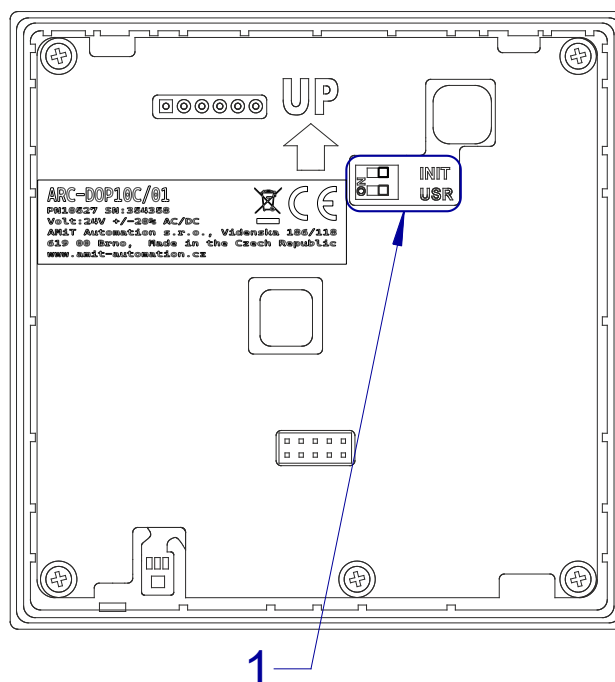


Fig. 13 – Location of the DIP switches on the rear of the front panel

Legend

Number	Significance
1	DIP switches INIT and USR

DIP switch functions

DIP	Significance
INIT	ON – the default configuration parameters are set at power-up
USR	Not in use

8 Mounting

The on-wall controller is intended for installation in a dry indoor environment. It should be installed approximately 1.5 m above the floor in a location with good natural air circulation.

Do not install the on-wall controller where its temperature may be affected by draughts, sunlight, direct heat transfer from a heater or any other undesirable influence. If the supply wires are routed through a plastic conduit, the conduit must be sealed to prevent air flow.

8.1 Mounting procedure

1. Connect the power supply and communication wires to the baseboard (**ARC-BOPx/xx**) (see chapter 5 “Power supply and RS485 interface”).
2. Mount the baseboard at the selected location. Two pairs of mounting holes are available and may be used for mounting on a KU 68 installation box. The baseboard must always be positioned with the “UP” markings facing upwards.

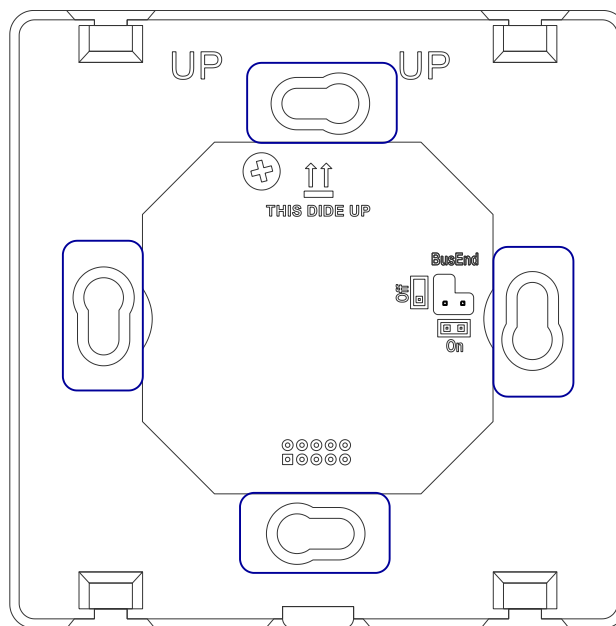


Fig. 14 – Locations of mounting holes

3. Insert the front panel diagonally from above so that it engages in the catches (1). Then tilt it into place (2) so that the pins (3) connect to the baseboard. The front panel is secured in position by a lock at the bottom of the baseboard.

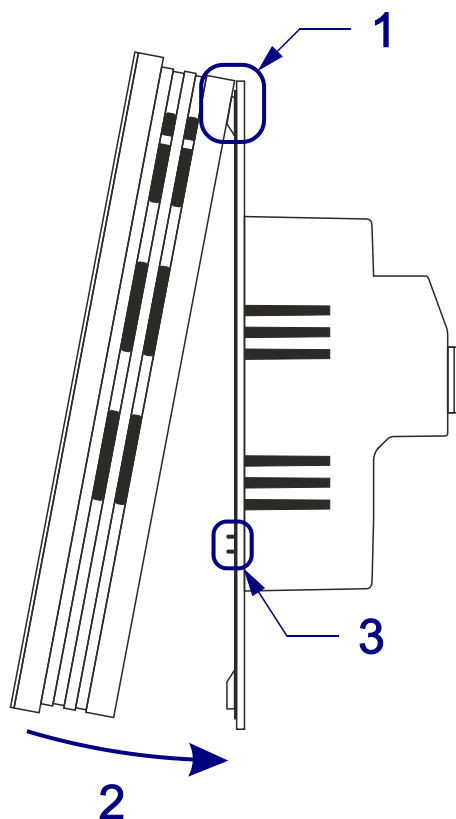


Fig. 15 – Attaching the front panel

8.2 Front panel removal procedure

1. Insert a sufficiently wide flat-bladed screwdriver (recommended size 1x5.5) into the cut-out between the baseboard and the front panel (at the centre of the lower edge) and turn it (1) to release the lower catches. Tilt the front panel away from the bottom (2) and slide it upwards.

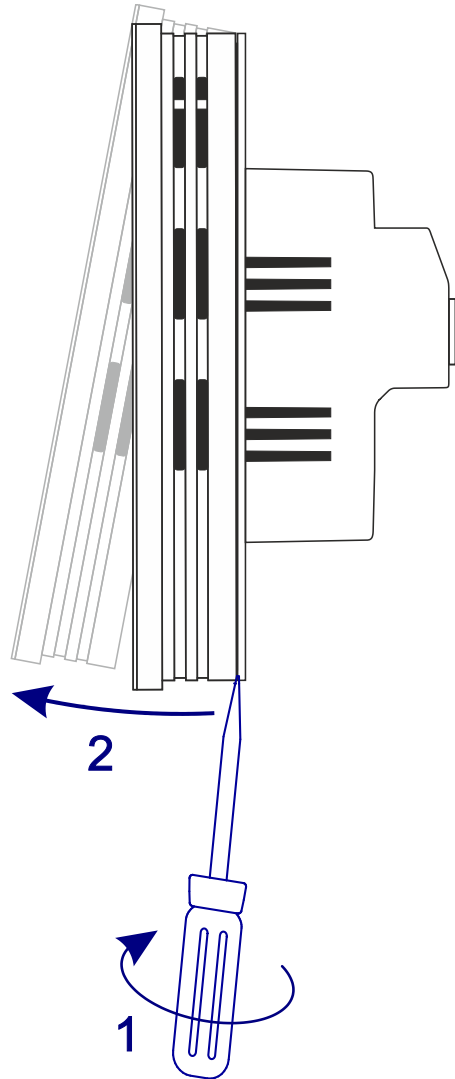


Fig. 16 – Removing the front panel

8.3 Installation rules

EMC filter Use an EMC filter at the power supply input. This requirement may be reconsidered based on the wiring layout, the nature of the environment and the power supply characteristics.

Power supply The device must not be powered from the DC distribution network of the building. Multiple devices may be powered from a single power supply provided that the power supply powers only devices of a similar type located in the same building.

If the supply line leads out of the building, it is necessary to implement surge protectors on relevant inputs and outputs.

RS485 It is necessary to connect the RS485 interface according to recommendations in Application note AP0016 – Principles of RS485 interface usage.

Note All connections to PE must be made with the lowest possible impedance. The technical parameters of the on-wall controller are guaranteed only with this connection.

9 On-wall controller settings and operation

On-wall controller **ARC-OP** is operated using a set of buttons located at the bottom of the front panel.

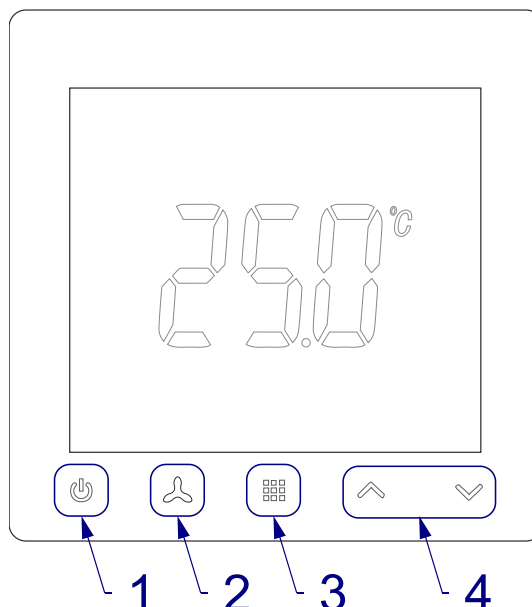


Fig. 17 – Control buttons on the front panel

<i>Legend</i>	Number	Significance
	1	ON/OFF button
	2	Fan (speed) button
	3	Occupancy or room mode edit button
	4	Buttons for increasing/decreasing the temperature setpoint correction

The controller has several display modes:

- “OFF” mode the display is off; only the (⏻) button can be used; the technology still has access to data from the controller but is controlled only by the master system,
- “Stand-by” mode the backlight is set to low intensity; the fan status and room mode//occupancy are displayed; the values rotate on the display according to register 304; the technology operates according to information from the controller,
- “ON” mode the backlight is set to high intensity; the fan status and room mode//occupancy are displayed; the values rotate on the display according to register 304; the technology operates according to information from the controller,
- “Edit” mode the backlight is set to high intensity; the user changes the selected property/value.

9.1 “OFF” mode

In this mode, the controller user interface is completely disabled (the display is off/the LEDs are off), and the “off” status is signalled to the master system. In this mode, the controller continues to provide the master system with all measured values and the most recent user settings. In “OFF” mode, the controller responds only to the .

The on-wall control unit switches to “OFF” mode when the .

It is only possible to exit this mode by pressing the .

9.2 “Stand-by” mode

In this mode, the controller user interface responds to all button presses. The controller provides the master system with all measured values and the current user settings.

The display shows the fan status and room mode/occupancy, and the values rotate according to register 304 (see chapter 10.1 “Registers layout”).

The behaviour of the display or LEDs (with regard to brightness level) in this mode is determined by the controller configuration.

The controller automatically switches to “Stand-by” mode if no user action is detected for the configured period. This function can be adjusted in the controller configuration.

9.3 “ON” mode

In this mode, the controller user interface responds to all button presses. The controller provides the master system with all measured values and the current user settings, and allows the required values or modes to be adjusted.

The on-wall controller can switch to “ON” mode only from:

- Stand-by,
- Edit.

If the controller is in “Stand-by” mode, it switches to “ON” mode when any of the , ,  and .

If the controller is in “Edit” mode, it switches to “ON” mode after the predefined inactivity period has elapsed.

If the controller is in “ON” mode and no user action is detected for the configured period, the on-wall control unit automatically switches to “Stand-by” mode.

9.4 “Edit” mode

This mode is used to set:

- room mode,
- fan speed,
- room temperature setpoint correction.

The on-wall control unit switches to “Edit” mode only from “ON” mode when one of the , ,  and .

If the controller is in “Edit” mode and no user action is detected for the configured period, the on-wall control unit automatically switches to “ON” mode.

9.4.1 Room mode setting

The room mode can be changed by repeatedly pressing the . Depending on the setting of register 307 (see chapter 10.1 “Registers layout”), the controller switches either between the following modes:

- Day plan ,
- Energy-saving ,
- Comfort ,
- (Party ).

Or between the following modes:

- Occupied ,
- Unoccupied .

The selected mode is indicated on the controller by the symbols shown above.

9.4.2 Fan speed setting

The fan speed can be changed by repeatedly pressing the .

Off > level 1 > level 2 > level 3 > automatic.

The selected fan speed is indicated on the controller by symbols. If it is set manually by the user, manual mode is indicated on the controller by the letter “M”.

Symbol	Significance
	Off
	Level 1
	Level 2
	Level 3

9.4.3 Room temperature setpoint correction setting

The temperature setpoint correction setting can be activated using the  or . Pressing the button displays the correction value. The value flashes in this mode. The correction can be changed by pressing the buttons again.

The correction value range is determined by the controller configuration (registers 310 and 311 – see chapter 10.1 “Registers layout”).

The setting is completed (and saved) after the period specified in the controller configuration has elapsed (register 301 – see chapter 10.1 “Registers layout”), or by pressing the .

10 MODBUS protocol program operation

Communication between the master system (MODBUS RTU master) and the on-wall controller (MODBUS RTU slave) takes place through holding registers. Due to the number of registers, it is not advisable to read all of them periodically. The information in the Status register (register 103) can be used to control communication on the master side.

The on-wall controller sets bit 0 of the Status register to True to signal a write to the registers caused by a user action or a periodic (1× every 30 s) write of the measured values. The recommended communication method is to read only the Status register periodically and, when a change is signalled, read the other registers and reset the change flag. The master does not write directly to the Status register; it writes to the StatusSet register (which sets the corresponding bits of the Status register) and the StatusReset register (which resets the corresponding bits).

If the on-wall controller detects a communication failure or restarts, it sets the Status register to 255. This signals to the master that valid values (modes and setpoints) must be written to the unit.

If a communication failure occurs, the icons  and  are displayed and the on-wall controller switches to the home screen (the same indication as in the native firmware). On the home screen, the string ---- is displayed instead of the setpoints and time.

The unit can have the following states on a MODBUS RTU network:

App.Reset After the on-wall controller restarts, bits 0 to 7 of the **Status** register are set to True. The on-wall controller has no valid value for:

- room mode and fan mode,
- correction value (has zero value),
- temperature setpoint.

Note A valid value can only be written by the master system. Values entered by the user are ignored until the master system writes a valid value to register 101.

Error The on-wall controller supports communication failure monitoring (register **Guard Time**). If a communication failure occurs, the icons  and  are displayed and the on-wall controller behaves in the same way as in the **App.Reset** state (except for the correction value, which remains unchanged). If the master system does not use the **Guard Time** parameter and the on-wall controller does not receive a valid frame within 30 s, it automatically switches to the **Error**.

Note If the on-wall controller is set to **even or odd parity**, communication uses one stop bit. If the controller is set to **no parity**, communication uses two stop bits.

10.1 Registers layout

Supported functions:

- 03 Read Holding Registers,
- 06 Write Single Register,
- 16 Write Multiple Registers.

All values are stored in Big-Endian.

**System
registers
with
addresses
0 to 8**

Name	Address	Type	Description						
Module ID	0	R	Module identification. The number specifies the unit type. 0x10C = ARC-OP (for all types).						
FW	1	R	Firmware version.						
Time (DWord)	2 3	R/W	System time. Number of seconds elapsed since 1.1.1980, 0:00:00.						
Guard Time	4	R/W EEPROM	Time [ms] for detecting a MODBUS communication failure. A zero value causes permanent disconnection and the Error state. Default value is 30 s.						
Baud Rate	5	R/W EEPROM	Communication rate. 0: 9600 bps, 1: 19,200 bps, 2: 38,400 bps, 3: 57,600 bps, 4: 115,200 bps. Default value is 38,400 bps.						
Parity	6	R/W EEPROM	Parity. 0: none, 1: even, 2: odd. Default value is 1 – even.						
Address	7	R/W EEPROM	Address (1 to 253). Default value is 1.						
Reserved	8	R/W	Reserved.						
DIP switch	9	R	<table><tr><th>Bit</th><th>Significance</th></tr><tr><td>0</td><td>INIT (True = on).</td></tr><tr><td>1</td><td>USR (True = on).</td></tr></table>	Bit	Significance	0	INIT (True = on).	1	USR (True = on).
Bit	Significance								
0	INIT (True = on).								
1	USR (True = on).								
UpTime	10	R	Time since the last failure [s].						

**Application
registers with
addresses 100
and higher**

These parameters are determined by the FW.

Name	Address	Type	Description
Status Set	100	R/W	Setting corresponding bits of the Status register. When reading this register, the last written value is returned.
Status Reset	101	R/W	Resetting corresponding bits of the Status register. When reading this register, the last written value is returned.

Note When True value is entered simultaneously into the bits of registers “Status reset” and “Status set” (registers that reset and set the same bit), the resulting value is True (the dominant Set).

Name	Address	Type	Description																																																																																																								
Status	103	R	Individual bit descriptions:																																																																																																								
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Fan-coil output	114	R/W	Fan-coil output [%] as a floating-point value.																																																																																																								

Name	Address	Type	Description						
(Real)	115		Range: 0 to 100. (Fan levels 10 % / 40 % / 70 %.)						
Reserved	116 117	R	Reserved.						
Error status	118	R	Sensor errors: bit = 0 (valid value or not fitted; see HW version) bit = 1 (sensor error; the corresponding value is invalid) <table><tr><th>Bit</th><th>Significance</th></tr><tr><td>0</td><td>t + rH</td></tr><tr><td>1</td><td>CO₂</td></tr></table>	Bit	Significance	0	t + rH	1	CO ₂
Bit	Significance								
0	t + rH								
1	CO ₂								

Name	Address	Type	Description																		
Outdoor temperature (Real)	200 201	R/W	Measured outdoor temperature [°C] as a floating-point value.																		
Reserved	202 203	R	Reserved.																		
TRI control	204	R/W	True – switch on, False – switch off. <table><tr><th>Bit</th><th>Significance</th></tr><tr><td>0</td><td>TRI0</td></tr><tr><td>1</td><td>TRI1</td></tr></table>	Bit	Significance	0	TRI0	1	TRI1												
Bit	Significance																				
0	TRI0																				
1	TRI1																				
Info icon	205	R/W	Show/hide icons on the bottom row; icons to be displayed: <table><tr><th>Bit</th><th>Significance</th></tr><tr><td>0</td><td>Heating (icon ).</td></tr><tr><td>1</td><td>Snowflake (icon ).</td></tr><tr><td>2</td><td>Fan (icon ).</td></tr><tr><td>3</td><td>Tap (icon ).</td></tr><tr><td>4</td><td>Key (icon ).</td></tr><tr><td>5</td><td>Boiler (icon ).</td></tr><tr><td>6</td><td>Bell (icon ).</td></tr><tr><td>7</td><td>Error text (LCD only).</td></tr></table>	Bit	Significance	0	Heating (icon ).	1	Snowflake (icon ).	2	Fan (icon ).	3	Tap (icon ).	4	Key (icon ).	5	Boiler (icon ).	6	Bell (icon ).	7	Error text (LCD only).
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6	Bell (icon ).																				
7	Error text (LCD only).																				
Index	206	R/W	Digits 1 to 7 displayed in the status bar. 0 = nothing is displayed (LCD only).																		
Error	207	R/W	If a number from 0 to 9 is entered, the text “Error” is displayed with that number. If a number outside the range is entered, neither the text nor the number is displayed (LCD only).																		
SW reset	298	R/W	SW restart if enabled in register 211.																		
SW reset enable	299	R/W	Enable SW reset – write 0xDEAD.																		

Name	Address	Type	Description
Screen saver	300	R/W EEPROM	Backlight time after the last user activity [s]. Range: 0 to 600. Default value is 3 s. 0 = the backlight does not switch off (it remains at the LCD backlight intensity low value).
Edit return time	301	R/W EEPROM	Inactivity period for ending editing [s]. Range: 1 to 30. Default value is 5 s.

Name	Address	Type	Description														
Long push time	302	R/W EEPROM	Time [100 ms] after which a long button press is detected. Default value is 1.5 s.														
Show time	303	R/W EEPROM	Time [100 ms] after which the next item is displayed when values are scrolled on the LCD. Default value is 3 s.														
Value display	304	R/W EEPROM	Data to be scrolled on the LCD: <table><tr><th>Bit</th><th>Significance</th></tr><tr><td>0</td><td>Temperature (°C display) 0.1.</td></tr><tr><td>1</td><td>Humidity (% rH display) 1.</td></tr><tr><td>2</td><td>CO₂ (CO₂ + ppm display) 1 ppm.</td></tr><tr><td>3</td><td>Outdoor temperature (°C and thermometer display) 0.1.</td></tr><tr><td>4</td><td>Current time hh:mm.</td></tr><tr><td>5</td><td>Temperature setpoint 0.1.</td></tr></table> Default setting is 7 (T, rH, CO ₂).	Bit	Significance	0	Temperature (°C display) 0.1.	1	Humidity (% rH display) 1.	2	CO ₂ (CO ₂ + ppm display) 1 ppm.	3	Outdoor temperature (°C and thermometer display) 0.1.	4	Current time hh:mm.	5	Temperature setpoint 0.1.
Bit	Significance																
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3	Outdoor temperature (°C and thermometer display) 0.1.																
4	Current time hh:mm.																
5	Temperature setpoint 0.1.																
LCD backlight intensity high	305	R/W EEPROM	LCD backlight intensity [%]. High level. Range: 0 to 100. Default value is 100 %.														
LCD backlight intensity low	306	R/W EEPROM	LCD backlight intensity [%]. Low level. Range: 0 to 100. Default value is 0 % for LCD and 10 % for LED.														
Mode	307	R/W EEPROM	Modes: <table><tr><th>Bit</th><th>Significance</th></tr><tr><td>0</td><td>Mode changed by pressing the  False = ☹ > ☾ > ☀ (> ☹), True = ⤴ and ⤵.</td></tr><tr><td>1</td><td>Enable Party mode (applicable only if bit 0 of register 307 is False. If bit 0 is True, the state of this bit (1) is ignored). False = the icon ☹ is  not displayed when the button is pressed, True = the icon ☹ is  displayed when the button is pressed.</td></tr><tr><td>2</td><td>Enable Off mode. False = use of the ⏻, True = use of the ⏻.</td></tr></table> Default value is 1.	Bit	Significance	0	Mode changed by pressing the  False = ☹ > ☾ > ☀ (> ☹), True = ⤴ and ⤵.	1	Enable Party mode (applicable only if bit 0 of register 307 is False. If bit 0 is True, the state of this bit (1) is ignored). False = the icon ☹ is  not displayed when the button is pressed, True = the icon ☹ is  displayed when the button is pressed.	2	Enable Off mode. False = use of the ⏻, True = use of the ⏻.						
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2	Enable Off mode. False = use of the ⏻, True = use of the ⏻.																
Correction of measured temperature (Real)	308 309	R/W EEPROM	Correction [K]. Range: -5 to 5. Default value is 0.														
Temperature setpoint correction range (Real)	310 311	R/W EEPROM	Temperature [K]. Range: 1 to 5. Default value is 2.5. Step 0.5 °C.														
Correction of measured humidity (Real)	312 313	R/W EEPROM	Humidity [%]. Range: -20 to 20. Default value is 0.														
CO measurement correction ₂ (Real) ³⁾	314 315	R/W EEPROM	CO correction ₂ [ppm]. Range: -2,000 to 2,000. Default value is 0.														
Communication	316	R/W	0 = the display does not respond to touches.														

Name	Address	Type	Description
failure behaviour setting		EEPROM	1 = the display responds to touches. Default value is 0.

Note ³⁾ Applies only to the version with a CO₂.

10.2 Time operation

The time is written to a single on-wall controller connected to a MODBUS network by writing to registers 2 and 3 of the relevant on-wall controller.

11 Settings

The on-wall controller **ARC-OP** is supplied with a factory-loaded application programme. The application programme parameters can be set using the AppConfig configuration program.

SW download The AppConfig program can be downloaded from the manufacturer's [website](#).

11.1 Communication parameters settings

You may change communication parameters:

- from PC using DetStudio / AMRconfig,
- from a PC using AppConfig.

Connection to a PC On-wall controller **ARC-OP** must be connected to a PC through an RS485 converter in a point-to-point connection.

12 Factory settings

RS485 configuration The controller is fitted with jumpers that activate termination and idle state definition.

Program settings

Item	Set value
Address	1
Baud rate	38,400 bps
Parity	Even

13 Components

On-wall controllers **ARC-OP** always consist of two components – a front panel (various versions) and a baseboard (various versions).

All versions are available in different colours. The specific colour is identified by the numeric code “/xx” in the component name.

Designation	Colour	RAL
01	White	RAL9003
02	Black	RAL9005

13.1 Front panel

The individual front panel types differ not only in display type (LED//LCD) or whether a CO₂ sensor is fitted, but also in the number of available icons.



Fig. 18 – Information available on the **ARC-DOP10**

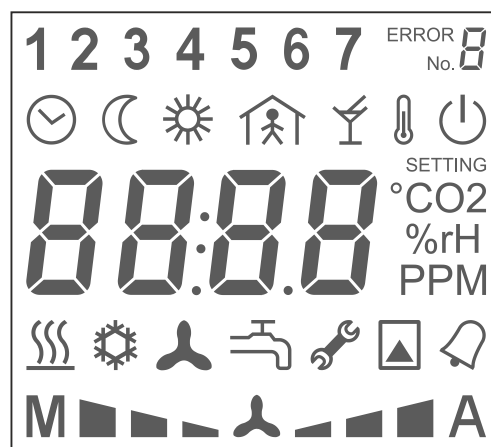


Fig. 19 – Information available on the **ARC-DOP20**

13.1.1 ARC-DOP10/xx

- Large LED display (full-glass)
- Control using capacitive touch buttons
- Measurement of temperature and relative humidity
- Mounting on baseboard type **ARC-BOP**
- Power supply from the baseboard

Display	Segment LED (full-glass)
Display area	(69 × 56) mm
Control	Capacitive touch buttons
Temperature, humidity measurement	
Temperature measurement range	-20 °C to 55 °C
Temperature measurement accuracy	±0.5 °C
Humidity measurement range	10 % to 90 %
Humidity measurement accuracy	±3 %
Power supply	From the baseboard
Other	
Connection point	Connector to the baseboard
Mounting	On baseboard type ARC-BOP
Weight – net	80 g ±5 %
– brutto	95 g ±5 %
Dimensions (w × h × d)	(88 × 88 × 13.6) mm

13.1.2 ARC-DOP10C/xx

- Large LED display (full-glass)
- Control using capacitive touch buttons
- Measurement of temperature, relative humidity and CO₂ ambient
- Mounting on baseboard type **ARC-BOP**
- Power supply from the baseboard

Display	Segment LED (full-glass)
Display area	(69 × 56) mm
Control	Capacitive touch buttons
Temperature, humidity measurement	
Temperature measurement range	-20 °C to 55 °C
Temperature measurement accuracy	±0.5 °C
Humidity measurement range	10 % to 90 %
Humidity measurement accuracy	±3 %
CO concentration measurement₂	
Measurement range	400 ppm to 5,000 ppm
Accuracy	±(30 ppm + 3 % of reading) *)
Power supply	From the baseboard
Other	
Connection point	Connector to the baseboard
Mounting	On baseboard type ARC-BOP
Weight – net	80 g ±5 %
– brutto	95 g ±5 %
Dimensions (w × h × d)	(88 × 88 × 13.6) mm

Note *) At least 3 completed calibrations within the last 3 weeks.

13.1.3 ARC-DOP20/xx

- Large LCD display
- Control using capacitive touch buttons
- Measurement of temperature and relative humidity
- Mounting on baseboard type **ARC-BOP**
- Power supply from the baseboard

Display	Reflective segment LCD
Display area	(65 × 60) mm
Control	Capacitive touch buttons
Temperature, humidity measurement	
Temperature measurement range	-20 °C to 55 °C
Temperature measurement accuracy	±0.5 °C
Humidity measurement range	10 % to 90 %
Humidity measurement accuracy	±3 %
Power supply	From the baseboard
Other	
Connection point	Connector to the baseboard
Mounting	On baseboard type ARC-BOP
Weight – net	79 g ±5 %
– brutto	94 g ±5 %
Dimensions (w × h × d)	(88 × 88 × 13.6) mm

13.1.4 ARC-DOP20C/xx

- Large LCD display
- Control using capacitive touch buttons
- Measurement of temperature, relative humidity and CO₂ ambient
- Mounting on baseboard type **ARC-BOP**
- Power supply from the baseboard

Display	Segment LCD
Display area	(65 × 60) mm
Control	Capacitive touch buttons
Temperature, humidity measurement	
Temperature measurement range	-20 °C to 55 °C
Temperature measurement accuracy	±0.5 °C
Humidity measurement range	10 % to 90 %
Humidity measurement accuracy	±3 %
CO concentration measurement₂	
Measurement range	400 ppm to 5,000 ppm
Accuracy	±(30 ppm + 3 % of reading) *)
Power supply	From the baseboard
Other	
Connection point	Connector to the baseboard
Mounting	On baseboard type ARC-BOP
Weight – net	79 g ±5 %
– brutto	94 g ±5 %
Dimensions (w × h × d)	(88 × 88 × 13.6) mm

Note *) At least 3 completed calibrations within the last 3 weeks.

13.2 Baseboard

13.2.1 ARC-BOP/xx

- Baseboard for **ARC-OP**
- RS485 (see chapter 2 “Technical parameters”)
- Mounting on KU68
- Power supply 24 V DC/AC

Inputs	–
Outputs	–
Other	
Connection point	Connector to the front panel
Weight – net	64 g ±5 %
– brutto	92 g ±5 %
Dimensions (w × h × d)	(88 × 88 × 36) mm

13.2.2 ARC-BOPDI2TRI2/xx

- Baseboard for **ARC-OP**
- 2× digital input
- 2× triac output
- RS485 (see chapter 2 “Technical parameters”)
- Mounting on KU68
- Power supply 24 V DC/AC

Inputs	2×
Input type	Passive contact / 24 V AC
GI strength	1 kV
Outputs	2×
Output type	Zero-crossing triac
Switched voltage	24 V AC
Maximum current	0.4 A
Other	
Connection point	Connector to the front panel
Weight – net	62 g ±5 %
– brutto	90 g ±5 %
Dimensions (w × h × d)	(88 × 88 × 36) mm

14 Ordering information and package contents

Front panel ⁴⁾	ARC-DOP10/xx	LED display (full-glass), temperature, humidity
	ARC-DOP10C/xx	LED display (full-glass), temperature, humidity, CO ₂
	ARC-DOP20/xx	LCD display, temperature, humidity
	ARC-DOP20C/xx	LCD display, temperature, humidity, CO ₂

Baseboard ⁴⁾	ARC-BOP/xx	Baseboard, RS485
	ARC-BOPDI2TRI2/xx	Baseboard, RS485, 2× DI, 2× TRI

Note ⁴⁾ xx indicates the product colour. The available versions are listed in the following table.

Colour variants	Colour	
ARC-DOP10/01	White	RAL 9003
ARC-DOP10C/01	White	RAL 9003
ARC-DOP10/02	Black	RAL 9005
ARC-DOP10C/02	Black	RAL 9005
ARC-DOP20/01	White	RAL 9003
ARC-DOP20C/01	White	RAL 9003
ARC-DOP20/02	Black	RAL 9005
ARC-DOP20C/02	Black	RAL 9005

Colour	
ARC-BOP/01	White
ARC-BOPDI2TRI2/01	White
ARC-BOP/02	Black
ARC-BOPDI2TRI2/02	Black

Note Small recesses on the surface and colour inhomogeneity do not justify a warranty claim.

14.1 Package contents

ARC-DOP10/xx	Part, AMiT designation	Producer designation	Quantity
	LED front panel	ARC-DOP10/xx	1
ARC-DOP10C/xx	Part, AMiT designation	Producer designation	Quantity
	LED front panel with CO ₂	ARC-DOP10C/xx	1
ARC-DOP20/xx	Part, AMiT designation	Producer designation	Quantity
	LCD front panel	ARC-DOP20/xx	1
ARC-DOP20C/xx	Part, AMiT designation	Producer designation	Quantity
	LCD front panel with CO ₂	ARC-DOP20C/xx	1
ARC-BOP/xx	Part, AMiT designation	Producer designation	Quantity
	Baseboard	ARC-BOP/xx	1
ARC-BOPDI2TRI2/xx	Part, AMiT designation	Producer designation	Quantity
	Baseboard with DI and TRI	ARC-BOPDI2TRI2/xx	1

15 Maintenance

With exception of cleaning, the device requires no periodic inspections or maintenance.

Cleaning Depending on how the device is used, dust must be removed from it from time to time. Clean the device while it is switched off and disassembled, using a dry paintbrush, a soft brush or a vacuum cleaner.

Note **The maintenance mentioned above may be performed by manufacturer or authorised service only!**

16 Waste disposal

Electronics disposal Device disposal is governed by regulations on electrical waste. The device must not be disposed of with ordinary municipal waste. It must be taken to a designated collection point and recycled.