AGRID

Fan Coil Thermostat

Model / Reference: AGR25-01

INSTALLATION MANUAL

⚠ **Read this manual before installation.**

This appliance is Class II (double insulation). It has no protective earth terminal.

SCAN ME

a-grid.com/docs/thermostat/agr25-01

Online documentation : a-grid.com/docs/thermostat/agr25-01

1. Technical Specifications

Product	Fan coil thermostat
Model	AGR25-01
Power supply	220-240V~ 50Hz
Power consumption	MAX 2W
Relay outputs	5 SPST-NO relays (RL1-RL5), Max 5A (Ind.) 220-240V~
0-10V outputs	3 DAC outputs (DAC1, DAC2, DAC3)
External sensor inputs	2 inputs (S1, S2)
Communication	WiFi 2.4 GHz
Display	4-inch colour touchscreen
Protection	Class II (double insulation), IP20
Operating temperature	0°C to +50°C
Setpoint range	5°C to 35°C (configurable)
Accuracy	± 1°C
Built-in sensors	Temperature, Humidity, Ambient light sensor
Dimensions	105 × 85 × 30 mm
Weight	196 g
Mounting	Surface-mounted wall installation

Environmental conditions

Environment	Indoor dry locations only
Maximum altitude	≤ 2 000 m
Relative humidity	5-95% non-condensing
Overvoltage category	II
Pollution degree	2

2. Safety

⚠ **Installation must be carried out by a qualified electrician in accordance with local regulations.**

⚠ **Disconnect power before any wiring work. Verify absence of voltage.**

⚠ **As the thermostat is permanently connected, an all-pole disconnection and overcurrent protection device (e.g. a double-pole circuit breaker) must be incorporated in the fixed wiring in accordance with applicable installation rules. This device must simultaneously disconnect all live conductors (line and neutral), with a contact opening distance of at least 3 mm, and must remain accessible after the thermostat is installed.**

⚠ **Installation must be carried out on a protected circuit in accordance with applicable installation standards (HD 60364 / NF C 15-100 or equivalent).**

⚠ **Indoor dry locations only (IP20). Do not install in damp or outdoor locations.**

⚠ **Do not open the housing. No user-serviceable parts inside.**

⚠ **The thermostat relays provide control signals only. They must not carry the power load of an auxiliary electric heater. The heater must be controlled via an external contactor (power relay) rated for the load. Failure to comply may result in a fire hazard.**

3. Installation

3.1 Mounting

Install the thermostat on a wall, at a maximum height of 2 m above the floor. The recommended installation height is at person height, at a location representative of the room ambient temperature. Avoid:

- Proximity to heat sources (radiator, hot water pipes)
- Direct sunlight
- Draughts (doors, windows, ventilation outlets)
- Dead zones (corners, behind doors)

Step 1: Loosen the bottom screw. Separate the front panel from the rear plate.

Step 2: Fix the rear plate to the wall.

Step 3: Proceed with electrical connections (see section 3.2 and section 4).

Step 4: Reconnect the front panel and tighten the screw.

Do not obstruct the ventilation slots on the housing (required for the sensors).

3.2 Terminal block

Terminal	Name	Description
N	Neutral	Neutral conductor
L	Line	Line conductor
RL1	Relay 1	ON/OFF output 230V~ — Fan high speed (FH)
RL2	Relay 2	ON/OFF output 230V~ — Fan medium speed (FM)
RL3	Relay 3	ON/OFF output 230V~ — Fan low speed (FL) — or heater depending on config.
RL4	Relay 4	ON/OFF output 230V~ — Heating valve (HV)
RL5	Relay 5	ON/OFF output 230V~ — Cooling valve (CV) or heater depending on config.
G	0V Ref.	0V reference for DAC outputs and S1/S2 inputs
DAC1	0-10V output	Proportional signal — Heating valve (HV)
DAC2	0-10V output	Proportional signal — Cooling valve (CV)
DAC3	0-10V output	Proportional signal — Fan
B	Reserved	Reserved — do not connect
A	Reserved	Reserved — do not connect
S1	Input 1	External sensor
S2	Input 2	External sensor

Notes:

- Outputs RL1-RL5 are used for ON/OFF control only. Outputs DAC1-DAC3 are used for 0-10V proportional control.
- The terminal block is divided into two galvanically isolated zones: low voltage section 230V~ (N, L, RL1-RL5) and extra-low voltage section 0-10V (G, DAC1-DAC3, B, A, S1, S2).
- The exact assignment of each output depends on the configuration. Refer to section 4.
- 2-pipe systems: the single valve is connected to the HV output (RL4 or DAC1 depending on configuration).
- Systems without heater: do not connect anything to the HR output.

Conventions:

- FH = fan high speed,
- FM = medium speed,
- FL = low speed,
- HV = heating valve,
- CV = cooling valve,
- HR = auxiliary electric heater.

Wiring specifications:

Parameter	Value
Wire gauge — LV section 230V ~(N, L, RL1-RL5)	1.5 mm²
Wire gauge — ELV section 0-10V (G, DAC1-DAC3, S1, S2)	0.5 to 0.75 mm²
Max. cable length DAC 0-10V	20 m (shielded cable recommended beyond 10 m)
Max. cable length sensors S1/S2	20 m (shielded cable recommended beyond 10 m)
Wire type	Solid or stranded wire with crimped ferrule

4. Wiring Configurations

Detailed wiring diagrams are provided in the separate wiring guide (Wiring Diagrams). The tables below show the exact output assignment for each configuration.

Control types:

- ON/OFF: via relays. This includes the 3-speed fan mode (3 ON/OFF relays, one per speed).
- 0-10V (proportional): via DAC output.

4.1 No valve

Fan coil unit without control valve.

N°	Configuration	Status	Output assignment
1	Fan 3-speed	OK	RL1=FH, RL2=FM, RL3=FL
2	Fan 0-10V	OK	DAC3=Fan

4.2 No valve + 2-wire (heater)

Fan coil unit without valve, with electric heater.

N°	Configuration	Status	Output assignment
3	Fan 3S / Heater ON/OFF	OK	RL1=FH, RL2=FM, RL3=FL, RL5=HR
4	Fan 0-10V / Heater ON/OFF	OK	DAC3=Fan, RL5=HR

4.3 2-pipe (2P)

Fan coil unit with 1 valve (2P changeover, 2P heating only or 2P cooling only). The single valve is always connected to HV: RL4 for ON/OFF, DAC1 for 0-10V.

N°	Configuration	Status	Output assignment
5	Fan 3S / Valve ON/OFF	OK	RL1=FH, RL2=FM, RL3=FL, RL4=HV
6	Fan 3S / Valve 0-10V	OK	RL1=FH, RL2=FM, RL3=FL, DAC1=HV
7	Fan 0-10V / Valve ON/OFF	OK	DAC3=Fan, RL4=HV
8	Fan 0-10V / Valve 0-10V	OK	DAC1=HV, DAC3=Fan

4.4 2-pipe + 2-wire (heater)

2-pipe fan coil unit with electric heater.

N°	Configuration	Status	Output assignment
9	Fan 3S / Valve ON/OFF / Heater ON/OFF	OK	RL1=FH, RL2=FM, RL3=FL, RL4=HV, RL5=HR
10	Fan 3S / Valve 0-10V / Heater ON/OFF	OK	RL1=FH, RL2=FM, RL3=FL, DAC1=HV, RL5=HR
11	Fan 0-10V / Valve ON/OFF / Heater ON/OFF	OK	DAC3=Fan, RL4=HV, RL5=HR
12	Fan 0-10V / Valve 0-10V / Heater ON/OFF	OK	DAC1=HV, DAC3=Fan, RL5=HR

4.5 4-pipe (4P)

Fan coil unit with 2 independent valves (heating + cooling).

N°	Configuration	Status	Output assignment
13	Fan 3S / Valves ON/OFF	OK	RL1=FH, RL2=FM, RL3=FL, RL4=HV, RL5=CV
14	Fan 3S / Valves 0-10V	OK	RL1=FH, RL2=FM, RL3=FL, DAC1=HV, DAC2=CV
15	Fan 0-10V / Valves ON/OFF	OK	DAC3=Fan, RL4=HV, RL5=CV
16	Fan 0-10V / Valves 0-10V	OK	DAC1=HV, DAC2=CV, DAC3=Fan

4.6 4-pipe + 2-wire (heater)

4-pipe fan coil unit with electric heater.

N°	Configuration	Status	Output assignment
17	Fan 3S / Valves 0-10V / Heater ON/OFF	OK	RL1=FH, RL2=FM, RL3=FL, DAC1=HV, DAC2=CV, RL5=HR
18	Fan 0-10V / Valves ON/OFF / Heater ON/OFF	OK	DAC3=Fan, RL4=HV, RL5=CV, RL3=HR
19	Fan 0-10V / Valves 0-10V / Heater ON/OFF	OK	DAC1=HV, DAC2=CV, DAC3=Fan, RL5=HR
20	Fan 3S / Valves ON/OFF / Heater ON/OFF	N/S	Not enough relays available to handle this configuration

N/S = Configuration not supported. If this configuration is selected, outputs remain disabled for safety.

⚠ **Regardless of the configuration, the HR output must never directly switch a power heater. Use an external power contactor (see section 2).**

Each output supports invertible logic (NO / NC) individually configurable.

5. External Sensors (S1, S2)

Inputs S1 and S2 accept two types of sensors, configurable from the screen or the AGRID server:

- Analogue sensor (thermistor): remote temperature measurement (supply air, outdoor, etc.).
- ON/OFF sensor (dry contact): window open detector, presence card, PIR detector, etc.

Sensors requiring external power must have their own power supply with suitable galvanic isolation.

6. Operation

From the touchscreen, the user can:

- Turn the thermostat ON / OFF
- Adjust the temperature setpoint
- Select the operating mode
- Select the fan speed

Operating Modes

Mode	Description
Heat	Heating only — the thermostat controls heating outputs to reach the setpoint
Cool	Cooling only — the thermostat controls cooling outputs to reach the setpoint
Fan	Fan only — no heating or cooling, fan runs at the selected speed
Auto	Automatic switching between Heat and Cool depending on the room temperature and setpoint

Fan Speed

Speed	Description
Low	Fan runs at low speed
Medium	Fan runs at medium speed
High	Fan runs at high speed
Auto	Fan speed is automatically adjusted by the thermostat based on the difference between the room temperature and the setpoint

The thermostat can also be controlled remotely via WiFi 2.4 GHz and the AGRID application.
In case of WiFi loss, the thermostat continues in local standalone mode.

7. Symbols

CE	European conformity (directives RED, LVD, EMC, RoHS, ErP, WEEE).
(Class II symbol)	Class II: double insulated appliance. Electrical safety is ensured by reinforced insulation, without protective earth.
~ **(tilde)**	Alternating current (AC).
⎓	Direct current (DC)
T50	Maximum ambient operating temperature: 50°C.
IP20	Protected against solid objects > 12.5 mm. No protection against water.
Type 1.B / μ	Automatic action Type 1, micro-disconnection (single pole switched).
Crossed-out wheelie bin	WEEE Directive. Do not dispose of with household waste (see section 10).
Black bar	Product placed on the market after 13 August 2005.
RoHS	Restriction of hazardous substances (Directive 2011/65/EU).

8. Maintenance

- Do not open the housing. No serviceable parts. No consumables to replace.
- Clean with a dry or slightly damp cloth. No solvents, abrasives or water jets.
- Keep ventilation slots clear.
- The appliance does not release any toxic substances during normal operation.

In case of malfunction, contact AGRID or a qualified installer.

9. Troubleshooting

Symptom	Possible cause	Action
Screen does not turn on	No power supply	Check the circuit breaker and voltage at terminals N/L (220-240V~)
Screen turns on then off repeatedly	Repeated watchdog restart	Disconnect power for 30 s then reconnect. If the problem persists, contact AGRID.
Inconsistent displayed temperature	Temperature sensor disturbed	Check that ventilation slots are not blocked. Check for nearby heat sources.
Fan or valve does not respond	Wrong configuration or incorrect wiring	Check the selected configuration (section 4). Check wiring. Check the operation of the controlled equipment.
No output is working	Unsupported configuration (N/S) or output conflict	Select a supported configuration (see section 4). Outputs are disabled for safety.
No WiFi connection	WiFi network unavailable or incorrect credentials	Check WiFi 2.4 GHz network availability. Reconfigure via the AGRID Installer app. The thermostat continues in standalone mode.
Touchscreen does not respond	Screen in standby or software freeze	Touch the screen to wake it. If no response, disconnect power for 30 s then reconnect.

10. Disposal

This product must not be disposed of with household waste. In accordance with the WEEE Directive (2012/19/EU), return it to an authorised collection point or to the distributor.

11. EU Declaration of Conformity

Simplified EU declaration of conformity (in accordance with Article 10(9) of Directive 2014/53/EU):

AGRID SAS hereby declares that the AGR25-01 thermostat is in conformity with the following European directives and regulations:

- Directive 2014/35/EU (LVD) — Safety of low voltage electrical equipment
- Directive 2014/30/EU (EMC) — Electromagnetic compatibility
- Directive 2014/53/EU (RED) — Radio equipment
- Directive 2011/65/EU (RoHS) — Restriction of hazardous substances
- Directive 2009/125/EC (ErP) — Ecodesign of energy-related products
- Regulation (EU) 2024/1103 — Ecodesign of local space heaters and separate controls
- Commission Delegated Regulation (EU) 2022/30 — Cybersecurity requirements (Article 3(3) of the RED)
- Directive 2012/19/EU (WEEE) — Waste electrical and electronic equipment
- Regulation (EC) No 1907/2006 (REACH) — Registration, Evaluation, Authorisation and Restriction of Chemicals
- Council Recommendation 1999/519/EC — Limitation of public exposure to electromagnetic fields

The full text of the EU declaration of conformity is available at: a-grid.com/docs/thermostat/agr25-01

12. Security and Data

The thermostat connects to the installation WiFi network. The following information relates to data security:

WiFi configuration: WiFi credentials are configured during commissioning via the setting screen or via the AGRID Installer application.

Firmware updates: software updates are performed remotely (OTA) via the AGRID server in a secure manner.

Factory Reset: a complete reset of the thermostat is possible from the settings screen or via the AGRID application. This operation erases all personal data (WiFi credentials, configuration) and restores factory settings.

13. Ecodesign

Information relating to Regulation (EU) 2024/1103 on the ecodesign of local space heaters and separate related controls:

Parameter	Standalone config.	AGRID server config.
Device type	Independent related control	
Control class (TC)	TE	TW
Function code	TE — open window detection, remote control, activation timer, black globe sensor, control accuracy	TW — open window detection, remote control, adaptive start, activation timer, black globe sensor, self-learning, control accuracy
Off-mode consumption (Po)	< 0,23 W	
Standby consumption (Psm)	< 0,23 W	
Operating consumption (Po)	MAX 2W	
Networked standby consumption (Pnsm)	1.18 W	

The thermostat is declared in two configurations: standalone (TE) and with AGRID server (TW). The server configuration enables additional functions (scheduling, adaptive control, self-learning).

14. Contact

Manufacturer	Importer
Beijing Breeze Technology Co., Ltd. Floor 22, Bldg 1, Yard 1, Guanyinan South St., Tongzhou Dist., Beijing, China	**AGRID SAS** 33 rue du Faubourg Saint-Antoine, 75011 Paris, FRANCE Email: contact@a-grid.com