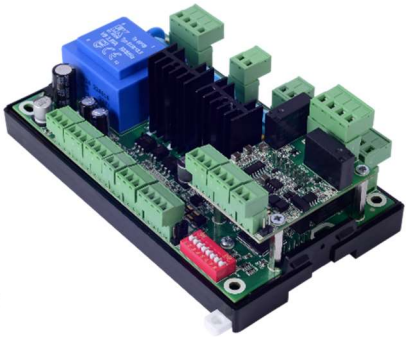
FC300.11
Fan Coil Control Unit

For 2-pipe and 4-pipe Fan Coil Units

Features



- Manual or automatic fan control with selectable stages
- Proportional or On/Off control heating/cooling valves
- Proportional or On/Off Fan control
- 6-Way Valve Control
- Auto, Heat, Cool, and Ventilation modes
- Economy Mode
- Manual or automatic heating/cooling changeover
- Fan Only, Heating and Fan, Cooling and Fan options
- On/Off electric heater control
- Universal input for external sensor or windows/energy saving contact etc.
- Automatic heating/cooling changeover via changeover sensor
- Automatic heating/cooling changeover via changeover contact
- User setpoint limitation
- Clock and time schedule functions
- Key lock
- Configurable user parameters
- Modbus RTU communication
- Panel communication (Optional)

Applications

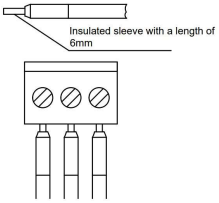
FC300 series Fan Coil controller is used in buildings, rooms, or spaces. The FC300 is designed and manufactured to be used in 2-pipe or 4-pipe systems. FC300 has 7 universal inputs, 3 analog outputs, 6 relay outputs, and 1 RS-485 port, which can be used as external sensor inputs or on/off contacts. The device controls the fan coil unit depending on the room sensor or external sensor temperature.

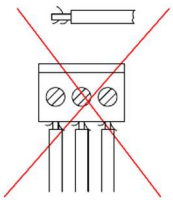
Notes on Usage

Please, read this datasheet carefully. FC300 thermostat is designed and manufactured with the latest technological developments and safety rules. To avoid injury and property damage, safety warnings must be observed.

Security Advice-Caution

Installation, maintenance, and repair of the device should be made by authorized personnel. The power supply of the device is 220V AC and the device has a 1A internal fuse. Relay outputs don't have internal protection due to the variety of components that can be used. It is recommended to use an external C-type fuse that is suitable for the required current level. Each pin of the supply and relay terminals can carry 20 A current maximum. Before making relay output connections, attention should be paid to recommended current levels.





As shown in the figure, the ends of the connection wires must be protected against delamination using insulated sleeves.

Product Information

Product Code	Description	Power	Communication
FC300.11	1 pcs Analog Output (0-10 V) Fan Control 2 pcs Analog Outputs (0-10 V) Valve Control 1 pcs Digital Output (Relay) Electrical Heater Control 3 pcs Digital Output (Relay) Fan Control 2 pcs Digital Output (Relay) Valve Control 7 pcs Universal Input 1 RS-485 Port	220V AC	Modbus RTU

Technical Specification

Power Supply	220VAC +%10-%15, 50/60Hz
Power Consumption	4VA max.
Operating Temperature	0°C... +50°C
Storage Temperature	-20°C ... +70°C
Relative Humidity	%5....95 RH, Non-Condensing
Cable Connected	Socket Terminal Block, max 1 x 2,5 mm2
Measuring Range	NTC10K -50°C ...+150°C
Measuring Resolution	NTC: 0,1°C
Inputs	7 pcs Passive Inputs (NTC10K Temperature Sensor, Voltage Free Dry Contact)
Outputs	6 pcs Digital Outputs* 3 pcs 0-10V Analog Outputs
Communication	1 pc RS-485, Modbus RTU
Box Type	Din Rail Base Case (Optional Junction Box)
Plastic Enclosure Material	ABS (UL 94 V-0)
Dimensions with EQUB	157 x 103 x 56 mm (W x H x D)

*There are relays with 5A current capability on the product. The recommended maximum current level for optimum relay life is 4A for resistive loads and 2A for inductive loads.

Mounting Location

Due to its structure, the device is suitable for wall mounting or rail mounting within the panel. It is recommended to leave space for cable connections to the terminals to be made while mounting on the rail.

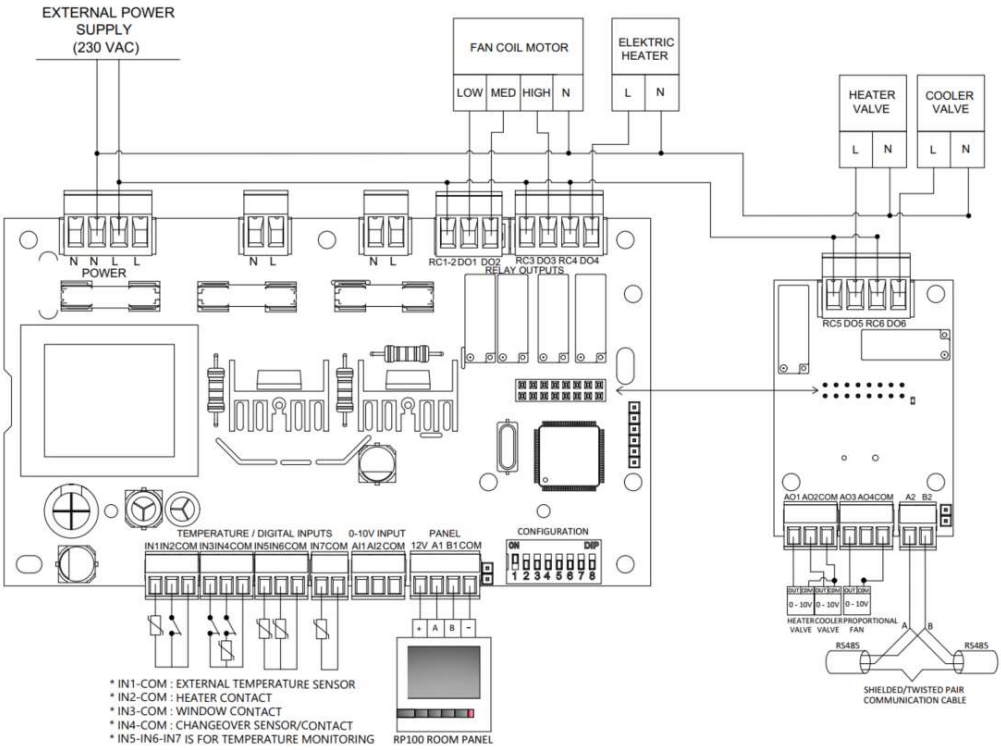
CAUTION: Power off the supply at C type circuit breaker or glass fuse before installation to avoid fire, shock or death

Mounting Instructions

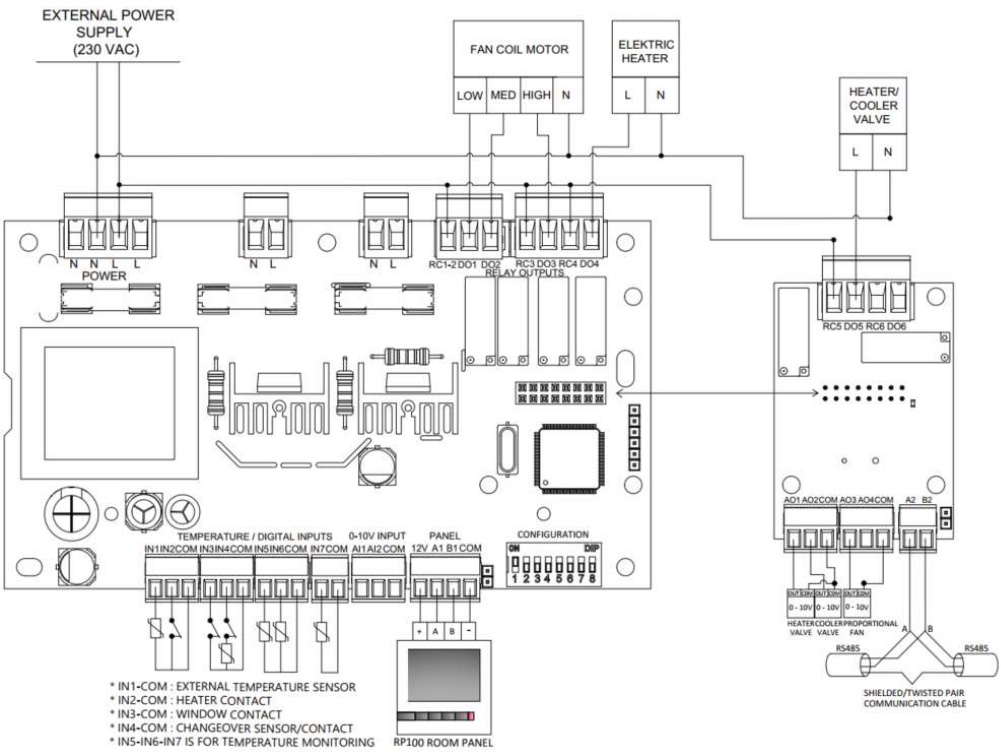
Please follow the below instructions during mounting.

Step 1: Make sure the device is powered OFF.
Step 2: Connect the wires and equipment according to the connection diagrams below.
Step 3: Make sure that all connections are made correctly.
Step 4: Power on the device.

Connection Diagrams



Connection Diagram for 4-Pipe Fan Coil



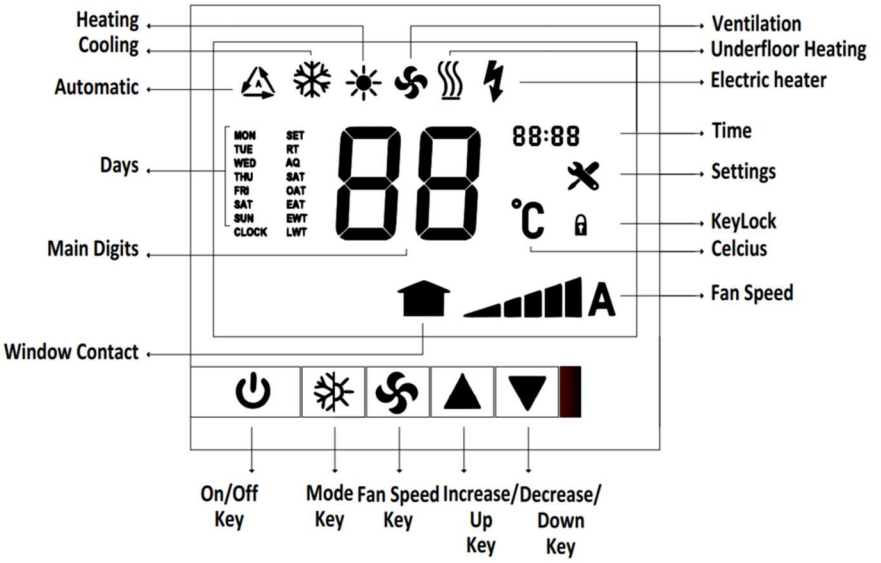
Connection Diagram for 2-Pipe Fan Coil and 6-Way Valve

Note: In the case of using a 3-stage On/Off fan, 3-stage should be selected via service menu parameter **P71** or Modbus. If not changed, the output values will not work properly. If the fan is to be used as On/Off, fan minimum and fan maximum values should be left as default (0-100).

Note: If the valves are to be used as On/Off, the valve minimum and valve maximum values are defaulted. It should be left as (0-100).

Note: If the device will not be used with a panel, the temperature control selection parameter (service menu parameter **P85**) must be changed according to the sensor type to be used.

Display and Operations



• **On / Off:** The **ON/OFF** button is used to turn the device on and off. Press once and the device will switch to an on or off position.

• **Mode Selection:** Press the **MODE** key to change the mode of the device. Active mode options are as follows.

	AUTOMATIC	COOL	HEAT	FAN
FAN ONLY	-	-	-	√
COOLING + FAN	-	√	-	√
2 PIPE SYSTEM	-	√	√	√
HEATING + FAN	-	-	√	√
4 PIPE SYSTEM	√	√	√	√
6-WAY VALVE SYSTEM	√	√	√	√

• **Fan Selection:** Use the **FAN SPEED** button to change the fan speed of the device. Fan speed change is as 1st Stage, 2nd Stage, 3rd Stage, 4th Stage, 5th Stage, Auto. Fan stages can be adjusted as 1-stage, 3-s,tage, or 5-stage with the **P42** parameter.

• **Set Point:** Use the **INCREASE** and **DECREASE** keys to set the temperature. It changes by 1 C for each press. The setting range is 05°C - 99°C.

• **Time Setting:** While the device is on, press and hold the **MODE** button for 7 seconds. The hour digits will flash. Adjust the "clock" by using the **INCREASE** and **DECREASE** keys. Press the **MODE** button again to switch to the minute setting and use the **INCREASE** and **DECREASE** buttons to set the "minute".

• **Time Schedule Settings:** Before making time schedule settings, make sure that your time and date settings are correct. Pressing the **MODE** button twice after the clock settings enters the time schedule settings menu. "**Monday opening hour digits**" will flash in the weekly time program settings menu. "**Monday opening hour digits**" will flash when the **MODE** button is pressed while "**Monday opening hour digits**" are lit. While "Monday opening minute digits" is lit, "**Monday closing hour digits**" will flash when the **MODE** key is pressed. "Monday closing hour digits" will flash when the **MODE** key is pressed while "**Monday closing hour digits**" are lit.

• Hours and minutes are changed with the **INCREASE** and **DECREASE** keys. Proceed by pressing the **MODE** buttons to make selections for other days.

• **Key Lock Operation:** Key Lock Operations: When **MODE** and **INCREASE** devices are pressed together for 7 seconds, the key lock will be activated on the panel. The keylock icon will appear when any key is pressed. While the panel is locked, the panel can be unlocked by pressing the **MODE** and **INCREASE** products together for 7 seconds. Key locks can also be active/passive via the service screen or BMS. (Service menu parameter **P46** on/off key lock, **P45** mode lock, **P44** set value change lock, **P43** fan lock, **P42** Weekly Program Lock, **P41** Time Lock)

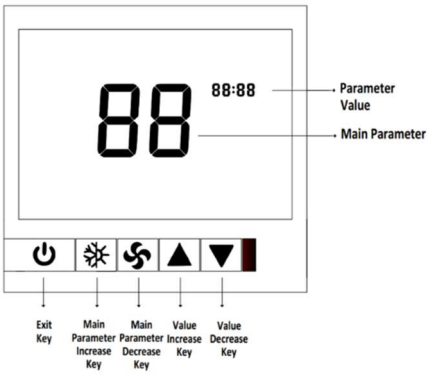
Configuration

Configuration Menu Description

The service menu is accessed by pressing the **MODE** and **DECREASE** keys together for 7 seconds when the device is on or off. To save the parameter changes to be made, first, the parameter value of the **P99** service menu must be set to "123".

The "Parameter" value is changed with **MODE** and **FAN** keys, and the "Parameter Value" value is changed with **INCREASE** and **DECREASE** keys.

After the necessary adjustments are made, the service menu can be exited with the **ON/OFF** button, or the device will automatically exit the service menu if there is no operation for 30 seconds. All parameters are stored in the device memory to avoid data loss when the power is cut off.



Electric Heater (via Parameter P91 or Modbus)

The electric heater enables parameter **P91** to be activated. The device must be in heating or automatic mode. If the set value is greater than the room temperature value and the Electric Heater Opening Difference (P90) value, the electric heater output will be active.

Energy Saving Mode (ECO Mode) (Parameter P89 or via Modbus)

Economy mode enables parameter **P89** to be activated. When economy mode is enabled, the device will operate in economy mode instead of shutting down. In ECO mode, the system will operate according to the setpoint value for heating and cooling.

The economy mode cooling setpoint value can be changed with the service menu parameter P88 (default 210).
The economy mode heating setpoint value can be changed with service menu parameter P87 (default 210).

The situations that will be affected by the economy mode are as follows;

- Auto mode enables will be turned off.
- Fan/Valve control will operate as Valve Dependent.
- Economy mode will not be activated when Changeover is enabled.

Temperature Input Selection Parameter (Parameter P85 or via Modbus)

- Internal Room Temperature Sensor (parameter P85 = 0):

The system will reference the temperature sensor on the Room Panel.

If the panel is not connected, the AL:01 alarm is active, and all outputs are closed. If the panel is connected, the device continues to operate.

-External Temperature Sensor (parameter P85 = 1):

The system will reference the External Temperature Sensor.

If the external temperature sensor is not connected to the IN1 input, the AL:02 alarm is active, and all outputs are closed.

If the sensor is connected, the device continues to operate.

For the external room temperature value to appear on the RP100 panel main screen, its value must be set to "1" via the service menu parameter P59 or Modbus.

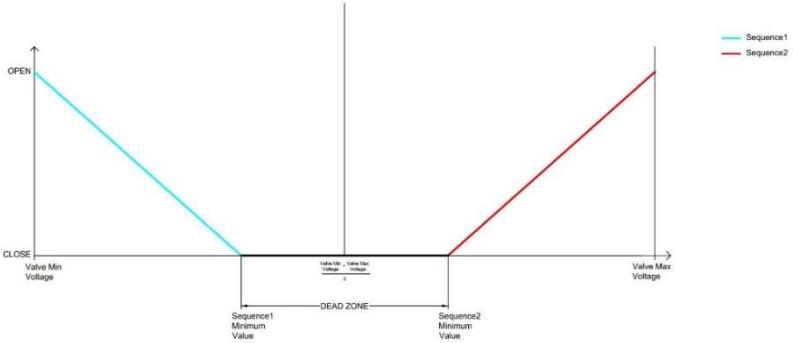
-BMS Room Temperature (parameter P85 = 2):

The system references the value entered from the BMS.

If BMS communication is faulty, the AL:05 alarm is activated, and all outputs are closed. In the case of communication, the device continues to work.

6-Way Valve (Parameter P79 or via Modbus)

The 6-way valve operation diagram is as follows;



- To activate the 6-way valve, the service menu "Fan Coil Type" parameter **P79** value must be set to "6".

-Sequence 1 is set as the default cooling valve. For Sequence 1 to operate in heating mode, it can be done by changing the Valve1 direction parameter **P81**.

-The dead band mentioned in the graph is the 6-way valve dead zone parameter. **(P86)**

-*Dead band is divided equally in Sequence 1 and Sequence 2 plots.

-e.g. The midpoint on a 0-10 valve is 5 volts. If the 6-way valve dead band parameter is 2, the minimum value of sequence 1 is 5-(2/2) 4. Sequence 2 minimum value is also 5+(2/2).

External Room Temperature Sensor Display (via Parameter P59 or Modbus)

- External Room Temperature Sensor (parameter P59 = 0)

External temperature values will not be displayed on the room panel.

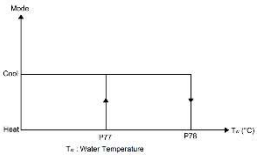
- External Temperature Sensor (parameter P59 = 1)

If the external temperature sensor is activated, the external temperature value will be displayed with the "EAT" symbol on the screen.

Changeover Sensor Selection Enable

- Changeover sensors can only be authorized in a 2-pipe system.
- The device can be used in automatic mode and fan mode when the changeover sensor is authorized.
- ECO mode cannot be activated when the changeover sensor is authorized.
- If Changeover is activated as a temperature sensor, the "EWT" symbol and the Changeover temperature value will be displayed on the screen.
- When P60 value is "1" (NO Contact) of the "Changeover Sensor Enable" parameter, it will operate according to the cooling mode when the contact is open. It will operate according to the heating mode when the contact is in the off position.
- When the “Changeover Sensor Enable” parameter P60 value is “2” (NC Contact), it will operate according to the heating mode when the contact is open. It will operate according to the cooling mode when the contact is in the off position.
- "Change Sensor Enable" parameter can operate in heating and cooling mode depending on conditions when P60 value is "3" (Sensor).
- For the device to start heating process, the SET (Setpoint) value must be greater than the RT (Room Temperature) value by hysteresis.
- For the device to start cooling process, the SET (Setpoint) value must be less than the RT (Room Temperature) value by hysteresis.

If the changeover sensor is selected, the "dead zone" cannot be used.



When the water temperature is above **P77** the thermostat changes over to heating mode. It stays in heating mode until the temperature falls below **P78**.
When the water temperature is below **P78**, the thermostat changes over to cooling mode. It stays in cooling mode until the temperature rises above **P77**.

Window Contact Enable

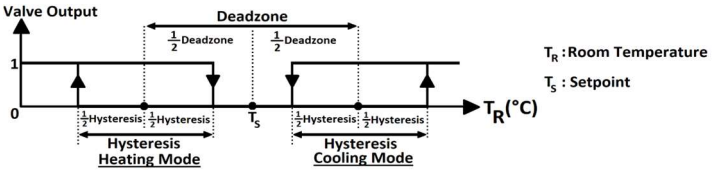
- When the “Window Contact Enable” parameter **P57** value is “1” (NO Contact), the device is in the “ON” position when the contact is in the open position. When the contact is in the off position, the window will be displayed on the panel screen and all outputs of the device will be turned off.
- When the “Window Contact Enable” parameter **P57** value is “2” (NC Contact), the device is in the open position. window will appear on the panel screen and all outputs of the device will be turned off. When the contact is off, the device is in the “ON” position.

Heater Alarm Contact Enable

When the “Heater Alarm Contact Enable” parameter **P58** value is “1” (NO Contact), the device operates normally when the contact is in the open position. When the contact is in the off position, the **AL:04** alarm, which is the “Heater Contact Alarm”, appears on the panel screen and all outputs of the device are turned off.
When “Heater Alarm Contact Enable” parameter **P58** value is “2” (NC Contact), when the contact is on, the **AL:04** alarm, which is “Heat Contact Alarm”, appears on the panel screen and all outputs of the device are closed. The device operates normally when the contact is in the off position.

Hysteresis (Parameter P73 or via Modbus)

The output diagram of the valve according to the relation between T_S and T_R is given below.



Fan/Valve Control Selection (Parameter P72 or via Modbus)

When the "Fan/Valve Control Selection" parameter **P72** value is "0", the valve will operate in stand-alone mode. The fan will be controlled manually or automatically. When the valve is closed, the fan will continue to run.

When the "Fan/Valve Control Selection" parameter **P72** value is "1", the valve will operate in slave mode. The fan will turn off when the valve is closed. If the valve is open, the fan will continue to run manually or automatically.

Fan Stage Selection (Parameter P71 or via Modbus)

The thermostat fan speed can be adjusted as 1, 3, or 5 stages via **P71** or Modbus. The minimum and maximum fan speed output values can be adjusted via **P70** and **P69**, respectively.

Fan Output Value Calculation (via Modbus)

The fan output value is calculated as below;
Fan Output Value in Fan Stage X = Fan Minimum Stage Value + Value * Fan Stage X
Value is calculated below;
Value = (Fan Maximum Stage Value – Fan Minimum Stage Value) / Fan Stage Selection
For Example;
Fan Minimum Stage Value (Parameter P70 or via Modbus) = 20
Fan Maximum Stage Value (Parameter P69 or via Modbus) = 80
Fan Stage Selection (Parameter P71 or via Modbus) = 3
Value = (80 - 20) / 3 = 20
Fan Output Value in Fan Stage 1 = 20 + 20 * 1 = 40
Fan Output Value in Fan Stage 2 = 20 + 20 * 2 = 60
Fan Output Value in Fan Stage 3 = 20 + 20 * 3 = 80

Restore Factory Setting

For the device to return to its factory settings, the 8th switch of the red dipswitch on the FC300 card is lifted. The red alarm led on the card lights up. When the switch is lowered again and the power is cut off and energized again, the factory settings of the device will be restored.

Note: The device can be restored to factory settings when the "Restore Factory Settings" parameter **P64** value is set to "1" or via BMS.

Alarms

Alarm Code will appear on the screen, if one of the alarm conditions is met. Alarm Codes will appear on the screen alternately if multiple alarms are active.

- Panel Temperature Sensor Alarm:
If the panel temperature sensor fails, alarm **AL:01** is displayed on the panel display. If the device is in sensor alarm status, all outputs are turned off. To eliminate the alarm, "Panel Temperature Sensor" must be changed or "Temperature Control Selection" parameter **P85** "External Temperature Sensor" must be selected.

- External Temperature Sensor Alarm:
If the "Temperature Control Selection" parameter is **P85** "External Temperature Sensor" is selected, but the sensor is not connected to the passive input **IN1** or the connection is broken, the **AL:02** alarm is displayed on the panel screen. If the device is in sensor alarm status, all outputs are turned off. To eliminate the alarm, an "External Temperature Sensor" must be connected or if a panel is used, the "Temperature Control Selection" parameter **P85** "Panel Temperature Sensor" should be selected.

- Changeover Sensor Alarm:
If the "Changeover Sensor Enable" parameter **P60** "Changeover Sensor" is selected, but the sensor is not connected to the passive input **IN4** or the connection is broken, an **AL:03** alarm is displayed on the screen. If the device is in sensor alarm status, all outputs are turned off. To eliminate the alarm, a sensor must be connected or the "Changeover Sensor Enable" parameter must be disabled.

- Heater Contact Alarm:
When "Heat Contact Enable" parameter **P58** value is set to "1", the **AL:04** alarm is displayed on the panel screen when Heater Contact (NO) is connected to passive input **IN2,** and the contact is turned off. If the device is in contact alarm status, all outputs are closed. To eliminate the alarm, the contact position must be changed or the "Heat Contact Enable" parameter must be disabled.

When the "Heat Contact Enable" parameter **P58** value is set to "2", the **AL:04** alarm is displayed on the panel screen when Heater Contact (NC) is connected to **IN2** passive input, and the contact is turned on. If the device is in contact alarm status, all outputs are closed. To eliminate the alarm, the contact position must be changed or the "Heat Contact Enable" parameter must be disabled.

-BMS Temperature Input Alarm:
"Temperature Control Selection" parameter **P85** value is "1" If BMS communication is broken, **AL:05** alarm is displayed on the panel screen. If the device is in BMS sensor alarm status, all outputs are turned off. To eliminate the alarm, communication must be provided, or the "Temperature Control Selection" parameter can be selected as an external or internal sensor.

Configuration Menu Parameters

No.	Name of Parameter	Parameter Definition	Default
99	Service Menu Password	The password is required to change parameters.	123
98	Hardware Version	Device hardware version	110 => 1.1
97	Firmware Version	Device firmware version	100 => 1.0
96	Setpoint High Limit	Range: 5°C ... 99.9°C	300 = 30°C
95	Setpoint Low Limit	Range: 5°C ... 99.9°C	50 = 5°C
94	Time Schedule Enable	0 = Disable 1 = Enable	0
93	Power Failure	This parameter adjusts the condition that the device will continue when the power fails. 0 = Device starts off 1 = Device starts on 2 = Keep State Before Power Failure	2
92	Valve Proportional Band	Range: 1 … 100 => 0.1°C … 10°C	20°C
91	Electrical Heater Enable	0 = Disable 1 = Enable	0
90	Electrical Heater Setpoint Differential	Range: 0 … 150 => 0°C … 15°C	50 = 5°C
89	ECO Mode Activation	0 = Eco Mode enable turned off 1 = Eco Mode enable turned on	0
88	ECO Mode Cooling Mode Set Point	Set Point Low Limit … Set Point High Limit	210 = 21°C
87	ECO Mode Heating Mode Set Point	Set Point Low Limit … Set Point High Limit	210 = 21°C
86	6-Way Valve Deadband	This parameter determines the deadband value for the 6-way valve.	20 = 2V

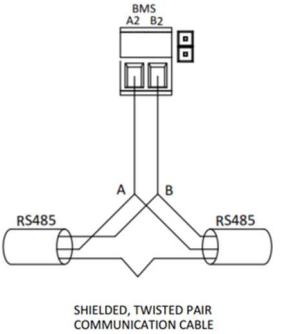
85	Control Temperature Selection	This parameter determines which sensor will be used to control the device. 0 =Internal Temperature Sensor 1=External Temperature Sensor 2=BMS	0
84	Valve Minimum Value	It determines the minimum value of the valve outputs. 0 … 100 => 0V … 10V	0
83	Valve Maximum Value	It determines the maximum value of the valve outputs. 0 … 100 => 0V … 10V	100 = 10V
82	Underfloor Heating Activation	0 = Underfloor heating disable 1 = Underfloor heating enable	0
81	VA1 Direction	0 = Normal Direction 1 = Reverse Direction	0
80	VA2 Direction	0 = Normal Direction 1 = Reverse Direction	0
79	Fan Coil Type	0 = Fan Only 1 = 2 Pipe System Cooling + Fan 2 = 2 Pipe System 3 = 2 Pipe System Heating + Fan 4 = 4 Pipe System 6 = 6-Way Valve System	4
78	Changeover Temperature For Cooling	Range: 10°C … 25°C.	160 =>16°C
77	Changeover Temperature For Heating	Range: 26°C … 45°C.	280 =>28°C
76	Mode Change Delay	Range: 0 … 255 minutes	3 min.
75	Auto Mode Enable	0 = Disable 1 = Enable Only valid when P30 is set to 4	1
74	Dead Zone	Range: 0°C … 15°C. Only valid when P75 is set to 1	20 => 2°C
73	Hysteresis	Range: 0°C … 15°C	10 => 1°C
72	Fan/Valve Control Selection	0 = Valve independent 1 = Valve dependent	1
71	Fan Stage Selection	1 = 1 Stage 3 = 3 Stage 5 = 5 Stage	5
70	Fan Minimum Stage Value	Range: 0 … 100 => 0V … 10V	0
69	Fan Maximum Stage Value	Range: 0 … 100 => 0V … 10V	100
68	Fan Proportional Band	Range: 1 … 100 => 0.1°C … 10°C	20
67	Reset Time	Range: 0 … 100 minutes	30 min.
66	Fan Start-Up Time	Range: 0 … 30 seconds	3 sec.
65	Fan Off Delay	Range: 0 … 60 seconds	0 sec.
64	Restore Factory Setting	0 = Factory Setting Disable 1 = Factory Setting Enabled	0
63	Baud rate	1 = 9600bps 2 = 19200bps 3 = 38400bps 4 = 76800bps	1
62	Parity	0 = Odd 1 = Even 2 = None	2
61	Slave Address	Range: 001 … 247	1

60	Changeover Enable	0 = Disabled 1 = NO Contact 2 = NC Contact 3 = Changeover Temperature Sensor	0
59	External Temperature Sensor Monitoring	0 = External sensor value is not visible on the panel. 1 = External sensor value is visible on the panel.	0
58	Heater Contact Enable	0 = Disabled 1 = NO Contact 2 = NC Contact	0
57	Window Contact Enable	0 = Disabled 1 = NO Contact 2 = NC Contact	30
56	Control Temperature	The temperature value that the device refers to is displayed. It ranges from -10°C to 100°C.	-
55	BMS Temperature	Displays the temperature value read from the BMS. It varies between -10°C ... 100°C.	225=>22.5
54	External Sensor Temperature	Displays the temperature value read from the IN1 passive input. It varies between -10°C ... 100°C.	-
53	Changeover Sensor Temperature	Displays the temperature value read from the IN4 passive input. It varies between -10°C ... 100°C.	-
52	Input 5 Temperature	Displays the temperature value read from the IN5 passive input. It varies between -50°C ... 100°C.	-
51	Input 6 Temperature	Displays the temperature value read from the IN6 passive input. It varies between -50°C ... 100°C.	-
50	Input 7 Temperature	Displays the temperature value read from the IN7 passive input. It varies between -50°C ... 100°C.	-
49	Heater Contact	Indicates the value of the IN2 contact input. 0 = Contact On 1 = Contact Off	0
48	Window Contact	Indicates the value of the IN3 contact input. 0 = Contact On 1 = Contact Off	0
47	Changeover Contact	Indicates the value of the IN4 contact input. 0 = Contact On 1 = Contact Off	0
46	On / Off Lock	0 = Disabled 1 = Enabled	0
45	Mode Lock	0 = Disabled 1 = Enabled	0
44	SetPoint Lock	0 = Disabled 1 = Enabled	0
43	Fan Lock	0 = Disabled 1 = Enabled	0
42	Time Schedule Lock	0 = Disabled 1 = Enabled	0
41	Time Lock	0 = Disabled 1 = Enabled	0
40	Current Day	The day is adjusted with this parameter.	-
39	Current Month	The month is adjusted with this parameter.	-
38	Current Year	The year is adjusted with this parameter.	-

Modbus Parameters

Slave Address : 1 … 247. **Default 1**
Baudrate : 9600, 19200, 38400, 76800. **Default 9600**
Parity : Odd, Even, None. **Default None**

Communication Connection and End of Line (EOL) Resistor



Communication connection on the EQUB module (upper board) can be made as shown in the left figure. Make a connection between the "A" or "+" terminal of the device communication port and the A2 terminal of the control card and between the "B" or "-"terminal and the B2 terminal. To activate the end-of-line resistor, activate the jumper next to the word A2 B2 on the PCB.

Modbus Address: 1 … 247. **The default "1"**
Baud rate: 9600, 19200, 38400, 76800. **The default is "9600"**
Parity: Odd, Even, No Parity (None). **The default is "None"**

Note: Baud rate and address value can be changed via the service menu and BMS.

FC300.11 Modbus Registers

Address (Decimal)	Parameter Name	Read (R)/ Write (W)	Default	Min	Max	Description
0	Hardware Version	R	110	0	999	Device hardware version 110 => 1.1
1	Firmware Version	R	100	0	999	Device firmware version 100 => 1.0
2	Start/Stop	R/W	1	0	1	0 = Stop 1 = Start
3	Mode	R/W	3	0	3	0 = Auto 1 = Cool 2 = Heat 3 = Fan
4	Active Mode	R	3	0	5	1 = Active Cooling 2 = Active Heating 3 = Fan Mode 5 = No mods active
5	Fan Speed	R/W	1	1	6	1 = Stage 1 2 = Stage 2 3 = Stage 3 4 = Stage 4 5 = Stage 5 6 = Auto
6	Set Point	R/W	210	Set Point Low Limit	Set Point High Limit	This parameter is the desired room temperature value. 210 => 21.0°C
7	Set Point High Limit	R/W	300	Set Point Low Limit	999	This parameter adjusts the high limit for desired room temperature. 50 … 999 => 5°C … 99.9°C

8	Set Point Low Limit	R/W	50	50	Set Point High Limit	This parameter adjusts the low limit for desired room temperature. 50 … 999 => 5°C … 99.9°C
9	Time Schedule Enable	R/W	0	0	1	0 = Disable 1 = Enable
10	Proportional Band for Valve	R/W	20	1	100	This parameter determines proportionally the output value of the fan depending on the difference between Room Temperature and Set Point. Range: 1 … 100 => 0.1°C … 10°C
11	Electrical Heater Enable	R/W	0	0	1	This parameter allows active or passive selection of electrical heater 0 = Electrical Heater Disable 1 = Electrical Heater Enable
12	Electrical Heater Setpoint Differential	R/W	50	0	150	This parameter determines the difference between the desired temperature and the room temperature for switching on the electrical heater. Range: 0 … 150 => 0°C … 15°C
13	Electrical Heater Status	R	-	0	1	0 = Electrical Heater Closed 1 = Electrical Heater Opened
14	Power Failure	R/W	2	0	2	This parameter adjusts the a condition that the device will continue when the power failure happens. 0 = Device starts off 1 = Device starts on 2 = Keep State Before Power Failure
15	Eco Mode Enable	R/W	0	0	1	0 = Economy Mode enable turned off 1 = Economy Mode enable turned off
16	Eco Mode Cooling Set Point	R/W	210	Set Point Low Limit	Set Point High Limit	This parameter is the Set Point value for ECO MODE Cooling Mode. 210 => 21.0°C
17	Eco Mode Heating Set Point	R/W	210	Set Point Low Limit	Set Point High Limit	This parameter is the Set Point value for ECO MODE Heating Mode. 210 => 21.0°C
18	Control Temperature Input	R	-	-100	1000	This parameter displays the reference temperature. -100 … 1000 => -10°C … 100°C
19	Panel Temperature	R	-	-100	1000	This parameter displays the sensor temperature on the panel. -100 … 1000 => -10°C … 100°C
20	BMS Temperature	R	-	-100	1000	This parameter displays the BMS temperature. -100 … 1000 => -10°C … 100°C

21	External Sensor Temperature	R	-	-100	1000	This parameter displays the external sensor temperature. -100 … 1000 => -10°C … 100°C
22	Changeover Temperature	R	-	-100	1000	This parameter displays the changeover sensor temperature. -100 … 1000 => -10°C … 100°C
23	Input 5 Temperature	R	-	-500	1000	This parameter displays the temperature of the sensor connected to the IN5 input. -500 … 1000 => -50°C … 100°C
24	Input 6 Temperature	R	-	-500	1000	This parameter displays the temperature of the sensor connected to the IN6 input. -500 … 1000 => -50°C … 100°C
25	Input 7 Temperature	R	-	-500	1000	This parameter displays the temperature of the sensor connected to the IN7 input. -500 … 1000 => -50°C … 100°C
26	Heater Contact	R	0	0	1	0 = Contact on position 1 = Contact off position
27	Window Contact	R	0	0	1	0 = Contact on position 1 = Contact off position
28	Changeover Contact	R	0	0	1	0 = Contact on position 1 = Contact off position
29	Valve Minimum Value	R/W	0	0	100	It determines the minimum value of the valve outputs. 0 … 100 => 0V … 10V
30	Valve Maximum Value	R/W	100	0	100	It determines the maximum value of the valve outputs. 0 … 100 => 0V … 10V
31	VA1 Direction	R/W	0	0	1	0 = Normal Direction 1 = Reverse Direction
32	VA2 Direction	R/W	0	0	1	0 = Normal Direction 1 = Reverse Direction
33	Underfloor Heating Activation	R/W	0	0	1	0 = Underfloor heating disable 1 = Underfloor heating enable
34	Fan Coil Type	R/W	4	0	6	0 = Fan Only 1 = 2 pipe system Cooling + Fan 2 = 2 pipe system 3 = 2 pipe system Heating + Fan 4 = 4 pipe system 6= 6-Way Valve
35	Temperature Control Selection	R/W	0	0	2	0 = Internal sensor is referenced for temperature control. 1 = External sensor is referenced for temperature control. 2 = BMS temperature value is referenced for temperature control.
36	Changeover Temperature for Cooling	R/W	160	100	250	If “Universal Input” is set to 3, this parameter adjusts the changeover temperature for cooling mode. 100 … 250 => 10°C … 25°C

37	Changeover Temperature for Heating	R/W	280	260	450	If “Universal Input” is set to 3, this parameter adjusts the changeover temperature for heating mode. 260 … 450 => 26°C … 45°C
38	Mode Change Delay	R/W	3 min.	0 min.	255 min.	This parameter adjusts the delay time between heat and cool modes.
39	Auto Mode Enable	R/W	1	0	1	0 = Disable 1 = Enable Only valid when “Fan Coil Type” is set to 4
40	Dead Zone	R/W	20	0	150	If “Mode” is set to Auto, this parameter adjusts the dead zone. 0 … 150 => 0°C … 15°C
41	Hysteresis	R/W	10	0	150	This parameter adjusts hysteresis. 0 … 150 => 0°C … 15°C
42	Fan/Valve Control Selection	R/W	1	0	1	0 = Valve Independent 1 = Valve Dependent
43	Fan Stage Selection	R/W	5	1	5	1 = 1 Stage 3 = 3 Stage 5 = 5 Stage
44	Fan Minimum Stage Value	R/W	0	0	100	Range: 0 … 100 => 0V … 10V
45	Fan Maximum Stage Value	R/W	100	0	100	Range: 0 … 100 => 0V … 10V
46	Fan Proportional Band	R/W	20	1	100	This parameter determines proportionally the output value of the fan depending on the difference between Room Temperature and Set Point. When the difference between Room Temperature and Set Point equals the value entered in this parameter, the fan output is increased to the maximum fan level value. Range: 1 … 100 => 0.1°C … 10°C
47	Reset Time	R/W	30 min.	0 min.	100 min.	When the time specified in this parameter is exceeded, the fan output value produced by the integral part is equal to the produced by the proportional band parameter. (*) If this value is set to "0", the device operates only according to the proportional band value.
48	Fan Start-Up Time	R/W	3 sec.	0 sec.	30 sec.	To guarantee a safe start-up of the fan, this parameter determines, how long the fan will stay at the fan's maximum stage value at the start-up time.
49	Fan Off Delay	R/W	0 sec.	0 sec.	60 sec.	This parameter adjusts the delay of the closing time of the fan.
50	Fan Output Value	R	0	0	100	Range: 0 … 100 => 0V … 10V

51	Panel Sensor Alarm	R	0	0	1	0: No Alarm 1:AL:01 Alarm
52	External Sensor Alarm	R	0	0	1	0: No Alarm 1:AL:01 Alarm
53	Changeover Sensor Alarm	R	0	0	1	0: No Alarm 1:AL:03 Alarm
54	Heater Contact Alarm	R	0	0	1	0: No Alarm 1:AL:04 Alarm
55	BMS Alarm	R	0	0	1	0: No Alarm 1:AL:05 Alarm
56	Panel Lock	R/W	0	0	1	0 = Panel is unlocked 1 = Panel locked
57	On / Off Lock	R/W	0	0	1	0 =On / Off is unlocked 1 = On / Off locked
58	Mode Lock	R/W	0	0	1	0 = Mode is unlocked 1 = Mode-locked
59	Setpoint Lock	R/W	0	0	1	0 = Setpoint is unlocked 1 = Setpoint locked
60	Fan Lock	R/W	0	0	1	0 = Fan is unlocked 1 = Fan locked
61	Time Schedule Lock	R/W	0	0	1	0 = Disabled 1 = Enabled
62	Time Lock	R/W	0	0	1	0 = Disabled 1 = Enabled
63	Monday Start Time	R/W	0	0	2359	The hour and minute values written in this parameter are set to turn on the device on Monday.
64	Monday Stop Time	R/W	0	0	2359	The hour and minute value written in this parameter are set to turn off the device on Monday.
65	Tuesday Start Time	R/W	0	0	2359	The hour and minute values written in this parameter are set to turn on the device on Tuesday.
66	Tuesday Stop Time	R/W	0	0	2359	The hour and minute values written in this parameter are set to turn off the device on Tuesday.
67	Wednesday Start Time	R/W	0	0	2359	The hour and minute values written in this parameter are set to turn on the device on Wednesday.
68	Wednesday Stop Time	R/W	0	0	2359	The hour and minute value written in this parameter are set to turn off the device on Wednesday.
69	Thursday Start Time	R/W	0	0	2359	The hour and minute values written in this parameter are set to turn on the device on Thursday.
70	Thursday Stop Time	R/W	0	0	2359	The hour and minute values written in this parameter are set to turn off the device on Thursday.
71	Friday Start Time	R/W	0	0	2359	The hour and minute values written in this parameter are set to turn on the device on Friday.
72	Friday Stop Time	R/W	0	0	2359	The hour and minute values written in this parameter are set to turn off the device on Friday.

73	Saturday Start Time	R/W	0	0	2359	The hour and minute values written in this parameter are set to turn on the device on Saturday.
74	Saturday Stop Time	R/W	0	0	2359	The hour and minute values written in this parameter are set to turn off the device on Saturday.
75	Sunday Start Time	R/W	0	0	2359	The hour and minute values written in this parameter are set to turn on the device on Sunday.
76	Sunday Stop Time	R/W	0	0	2359	The hour and minute values written in this parameter are set to turn off the device on Sunday.
77	Current Year	R/W	-	2017	2099	This parameter adjusts the current year.
78	Current Month	R/W	-	1	12	This parameter adjusts the current month.
79	Current Day	R/W	-	1	31	This parameter adjusts the current day.
80	Current Hour	R/W	-	00	23	This parameter adjusts the current hour.
81	Current Minute	R/W	-	00	59	This parameter adjusts the current minute.
82	Day of Week	R	-	1	7	This parameter displays the day of the week we are on after the date settings have been made.
83	Restore Factory Setting	R/W	0	0	1	0 = Factory Setting Disable 1 = Factory Setting Started
84	Baud rate	R/W	1	1	4	1 = 9600bps 3 = 38400bps 2= 19200bps 4 = 76800bps
85	Parity	R/W	2	0	2	0 = Odd 1 = Even 2 = None
86	Slave Address	R/W	1	1	247	This parameter shows the address of the device.
87	6 Way Valve Dead band	R/W	2	0	4	This parameter determines the dead band value for the 6-way valve.
88	Sequence 1 Minimum Value	R/W	40	0	100	This parameter displays the minimum value of the sequence 1 valve.
89	Sequence 2 Minimum Value	R/W	60	0	100	This parameter displays the minimum value of the sequence 2 valve.
90	Changeover Enable	R/W	0	0	3	0: Disabled 1: NO Contact 2: NC Contact 3: Changeover Temperature Sensor
91	External Temperature Sensor Monitoring	R/W	0	0	1	0 = External sensor value does not appear on the panel. 1 = External sensor value appears on the panel.
92	Heater Contact Enable	R/W	0	0	2	0: Disabled 1: NO Contact 2: NC Contact

93	Window Contact Enable	R/W	0	0	2	0: Disabled 1: NO Contact 2: NC Contact
94	Analog Output 1	R	0	0	100	Range: 0 … 100 => 0V … 10V
95	Analog Output 2	R	0	0	100	Range: 0 … 100 => 0V … 10V
96	Analog Output 3	R	0	0	100	Range: 0 … 100 => 0V … 10V
97	Analog Output 4	R	0	0	100	Range: 0 … 100 => 0V … 10V
98	Digital Output 1	R	0	0	1	0 = Disabled 1 = Enabled
99	Digital Output 2	R	0	0	1	0 = Disabled 1 = Enabled
100	Digital Output 3	R	0	0	1	0 = Disabled 1 = Enabled
101	Digital Output 4	R	0	0	1	0 = Disabled 1 = Enabled
102	Digital Output 5	R	0	0	1	0 = Disabled 1 = Enabled
103	Digital Output 6	R	0	0	1	0 = Disabled 1 = Enabled

Dimensions (mm)