TF Series

BACnet Communicating Controllers

SPECIFICATION DATA

Features

- Two-wire polarity-free communicating between driver and wall module
- 32-bit ARM architecture CPU
- Power and communicating status indication with LED on driver
- Multi installation method for both driver and wall module, easy to install and set-up
- Optional terminal protection cover
- Random startup, freeze protection and data storage when power off
- Super modern appearance design, suitable for office, hotel and residential building
- Multi-color wall module to match different decorations
- Big LCD display with backlit in English and icons
- Replaceable fuse
- CE and BTL certification

Functions

- Application selection via wall module or BACnet network
- Room temperature or set point temperature display option
- Manual or automatic fan speed option
- Build-in temperature sensor or remote air temperature sensor option
- Cycle per Hour (CPH) setting
- °C or °F temperature unit option
- Keypad lock
- · Heat and cool set point limitation for energy saving
- Energy saving function, supports RSB1(hotel card) or/and RSB2(window contact)
- Runtime accumulation
- Purge function with 2-pipe auto changeover system
- Alert function



Application

The TF Series BACnet Communicating Controllers controls fan coil units (FCU) to create a comfortable environment. These controllers communicate via BACnet MS/TP interface and can be easily integrated into a BACnet network.

The TF series thermostat adopts a two-piece structure, and is made out of two devices: driver and wall module. The driver provides the control algorithm, inputs/outputs and the BACnet communication interface. The wall module is a the user interface which provides the LCD display and a keypad for setup and operation of the controller.

The TF Series Communicating Controllers can be used for the following applications:

- 2-pipe, On/Off valve, 3-speed fan
- 4-pipe, On/Off valve, 3-speed fan
- 2-pipe, 0-10Vdc modulating valve, 3-speed fan
- Ventilation only

Specifications

	Operation Power	110/230VAC, 50/60Hz		
Power Supply	Product Power Consumption	6VA		
Circuit Protection Fuse		6.3A @250VAC, replaceable		
	Action Type	1		
	Pollution Degree	2		
	Protection against electric shock class	Class I		
Classification	Electronic control software class	Class A		
	Rated Impulse Voltage	2500V		
	Maximum Temperature	Storage: 105°C Operating: 105°C		
	Valve Control Output TF228AD/U: Relay x 2 TF428AD/U: Relay x 4 TF223AD/U: Analog Output x1	Relay: 2(1)A at 250VAC(max.), life cycle: 100,000 2A: When the load is resistance 1A: When the load is inductance AO: 0 - 10Vdc at 10mA(max.) The valve need have overtravel-limit organ to turn off the load		
Output	Fan Control Output Relay x 3	3(2)A at 250VAC(max.), life cycle: 100,000 3A: When the load is resistance 2A: When the load is inductance		
	Whole Product Output Current	4A/3A 4A: When the load of the thermostat is resistance 3A: When the load of the thermostat is inductance		
Input	Remote temperature sensor x 1 Pipe sensor x 1	20K NTC, 50046805-001		
	RSB1(Hotel Card) x 1 RSB2(Window Contact) x 1	Dry contact, NO/NC selectable		
BACnet	BACnet Interface	EIA-485(BACnet MS/TP)		
	Working Ambient Temperature	-10°C to 48°C (14°F to 118°F)		
Environment	Storage Ambient Temperature	-30°C to 65°(-22°F to 149°F)		
	Relative Humidity	5% RH to 95% RH. Non-condensing.		
	Display Temperature Range	-9.5°C to 48°C (14°F to 118°F)		
Build-in Sensor	Calibration Temperature Range	+/- 5°C(+/-10°F)		
	Accuracy	+/-0.5°C(+/-1°F)@21°C (70°F)		
Terminal Wire Gauge (recommended) Line Voltage Terminals: 14AWG-18AWG 1mm) solid BACnet Terminals: 18AWG-24AWG (1m shielded twisted pair Other Terminals: 18AWG-24AWG(1mm		Line Voltage Terminals: 14AWG-18AWG (1.6mm – 1mm) solid BACnet Terminals: 18AWG-24AWG (1mm - 0.5mm), shielded twisted pair Other Terminals: 18AWG-24AWG(1mm - 0.5mm)		
Complianco	IP Level	IP20		
Compliance	Certification	CE, BTL		
Applied altitude u	up to 2000m above sea level for all r	ating capacity		

Model Selection

Wall Modules

Material	Color
TFWNAP/U	white
TFDNAP/U	Black
TFLNAP/U	Sliver Hairline
TFKNAP/U	Rose Gold



BACnet controllers

Material	Application
TF228AD/U	2-pipe On/Off Valve
TF428AD/U	4-pipe On/Off Valve
TF223AD/U	2-pipe 0-10Vdc modulating Valve



Accessories

Material	Application	
TFDC	Controller terminal cover	
WP428-1U	Auxiliary wall plate for 2x4 junction box installation, white color	
WP428-2U	Auxiliary wall plate for 2x4 junction box installation, black color	



Product Design

Appearance/keypad



LCD display



Functions

System Mode

Comfort mode

In comfort mode, the thermostat operates with the comfort set point. This set point can be set via the up/down buttons of the wall module or via BACnet bus, the fan can be set to auto or manual speed: Low, medium or high.

Energy saving (ES) mode

ES mode can be active by the input of "RSB1(hotel card)" or by holding mode button for 3s.

If the ES mode is active by holding Mode button, pressing any button could inactive it.

In ES mode, the thermostat operates with the ES set point. This set point can be defined via ISU configuration. The fan speed will be auto or low speed which could be set in ISU configuration (Fan mode in ES mode)

Ventilation mode

The thermostat can be switched to ventilation mode by pressing "mode" button.

In ventilation mode, the fan can be set to manual speed: Low, medium or high.

Freeze protection mode

When the thermostat is in power off mode and the room temperature is lower than $6^{\circ}C$ (43°F), the thermostat will enter freeze protection mode.

In freeze protection mode, the thermostat will start to heating until the room temperature reach $8^{\circ}C$ (46 °F) or power on. Note: Protection mode will not be active when the system type is cool only, or the system type is 2 pipe auto and pipe water is cool

Off mode

Off mode can be active/inactive by the input of "RSB2 (window contact)" or pressing power button. If the Off mode is entered by "RSB2 (window contact)", it could be only inactive by "RSB2 (window contact)".

Valve & Fan Speed Control

Thermostat measures the room temperature via integrated sensor or remote temperature sensor and maintains the setpoint by delivering on/off valve control command outputs.

The fan setting can be selected as manual or automatic 3speed operation. When in "manual" mode, the fan is switched to the selected speed via control output FH (high), FM (Medium), FL (Low).

While in "automatic" mode, fan speed depends on the difference between room temperature and setpoint. When room temperature reaches the setpoint, the valve will be closed, and the fan will be closed as well.



Fig. 1. Fan Speed Ramping Control Algorithm

Memorized Time Off

The memorized time off feature will automatically turn off the thermostat after a selectable amount of time. To change the time setting, press and hold the power button for more than 3 seconds and press "up" and "down" button to change the value when the thermostat is working .

NOTE: The setting range is from 0 to 12 hours. The step is 1 hour and the default value is 0.



Backlight

To turn on the backlight, press any key. The backlight will timeout 8 seconds after the last key is pressed. When in ISU and Installation test mode, the backlight will timeout 60 seconds after the last key is pressed.

Keypad Lockout

Keypad lockout can be set in ISU and the default status is "all keys available". Keypad lock can be optioned to "mode button locked", "Fan and mode buttons locked", "all buttons (except power button) locked" and "all buttons locked".

Temperature Display

The displayed temperature can be set to room temperature or setpoint. The setting can be changed during ISU (Installation Set Up) process.

Cycle Per Hour (CPH)

In order to achieve more accurate temperature control, the CPH function enables the thermostat to open the valve several times per hour as the room temperature gets close to the sepoint.

The value can be changed in the ISU, the default values are 4 for heating and 3 for cooling.

LED Indication

One due-color LED on driver is used to indicate power, BACnet communication and data configuration status, detailed information is shown as below.

LED Status	BOAC State Description
Green blinking off once in 2.5sec	The processor is running, but there is no MS/TP token
Green blinking off twice in 2.5sec	The processor is running and there is an MS/TP token
Green blinking off thrice in 2.5sec	The processor is running and there is MS/TP communication
Solid off	There is no power, the processor is not running, or the processor is dead
Red blinking	Configuration data is error

Installation

Before Installation

- Review the specification and application before installing the thermostat.
- Make sure the devices are installed and used in physical security place, only the authorized person could operate the devices and access to the network.
- Make sure the security of installation and maintenance for the network and upper plant controllers, the detailed information could refer to the plant controllers' instruction.
- Make sure the thermostats are all in the isolated internal network.

Driver Installation

IMPORTANT!



- Short circuit or wrong wiring may permanently damage the driver or the equipment.
- If replacing an old driver, label the wires before removal of the old driver.

WARNING

Electrical Shock Hazard

Can cause severe injury, death or property damage.

- Disconnect power supply before beginning wiring or making wiring connection
- The driver must be mounted in a position that allows clearance for wiring, servicing, removal, connection of the devices, and access to superior controller.
- The driver may be mounted in any orientation.
- NOTE: The driver must be wired after mounting to a panel or DIN rail.

Panel mounting

• The driver enclosure is constructed of a plastic base plate and a plastic factory-snap-on cover.

- Note: The driver is designed so that the cover does not need to be removed from the base plate for either mounting or wiring.
 The driver mounts using four screws inserted through the corners of the base plate. Fasten securely with four No. 4 machine or sheet metal screws.
- The driver can be mounted in any orientation. Ventilation openings are designed into the cover to allow proper heat dissipation, regardless of the mounting orientation.

DIN rail mounting

- To mount the driver on a DIN rail [standard EN50022; 1-3/8 in. x 9/32 in. (7.5 mm x 35 mm)], perform the following steps:
 - 1. Holding the driver with its bottom tilted in towards the DIN rail, hook the two bottom tabs on the back of the driver onto the bottom of the DIN rail.
 - 2. Pull up and rotate the driver to make sure the two-tops snap of the driver onto the DIN rail



Wiring

- All wiring must comply with applicable electrical codes and ordinances, or as specified on installation wiring diagrams.
- Driver wiring is terminated to the screw terminal.
- Note: Keep the earth ground connection wire run as short as possible.

Terminal Definition

Terminal	Symbol	Description	TF228AD/U	TF428AD/U	TF223AD/U
1	RC	Remote sensor input (NTC20K)	0	0	0
2	СОМ	Common	0	0	0
3	PS	Pipe sensor input (NTC20K)	0	0	0
4	RSB1	Hotel card (dry contact)	0	0	0
5	СОМ	Common	0	0	0
6	RSB2	Window contact)dry contact)	0	0	0
7	VM	Valve modulating output			0
8	COM	Common			0
9		Not used			
10		Not used			
11		Not used			
12	S-BUS	Sylk bus	0	0	0
13	S-BUS	Sylk bus	0	0	0
14	BAC+	BACnet+	0	0	0
15	BAC-	BACnet-	0	0	0

Terminal	Symbol	Description	TF228AD/U	TF428AD/U	TF223AD/U
16	SHLD	BACnet Shield	0	0	0
17		Protective Earthing Wire	0	0	0
18	N	Neutral Wire	0	0	0
19	L	Live Wire	0	0	0
20	FH	High Speed Fan	0	0	0
21	FM	Medium Speed Fan	0	0	0
22	FL	Low Speed Fan	0	0	0
23	V01	Heating /Cooling Valve Open	0	0	
24	VC1	Heating /Cooling Valve Close	0	0	
25	VO2	Cooling valve open, 4 pipes only		0	
26	VC2	Cooling valve close , 4 pipes only		0	

Wiring diagram



2- Pipe with VC4013/VN4013 Valve



2-Pipe with VC6013/VN6013 Valve



4-Pipe with VC4013/VN4013 Valve



4-Pipe with VC6013/VN6013 Valve



2-Pipe with VC7931 Valve

Wiring method

Each terminal can accommodate the following gauges of wire:

- Single wire: from 24AWG(0.5mm) to 14 AWG(1.6mm) solid or stranded
- Multiple wires: up to two 18 AWG(1mm) stranded

NOTE: When attaching two or more wires to the same terminal, be sure to twist them together. Deviation from this rule can result in improper electrical contact.

Prepare wiring for the terminal, as follows:

1. Strip 1/2 in. (13 mm) insulation from the conductor.

2. Cut a single wire to 3/16 in. (5 mm). Insert the wire in the required terminal location and tighten the screw.

3. If two or more wires are being inserted into one terminal location, twist the wires together a minimum of three turns before inserting them.



4. Cut the twisted end of the wires to 3/16 in. (5 mm) before inserting them into the terminal and tightening the screw. 5. Pull on each wire in all terminals to check for good mechanical connection

IMPRTANT!

After wiring, install terminal covers

Fuse replacement

Disconnecting power supply, ensure all terminals have no wiring, before replace the fuse, need to remove the top cover by pushing the snaps with tool, during the replacement procedure, be sure wearing antistatic gloves to avoid damage the electrical board.

Wall module Installation

Install the wall module about 5 feet (1.5m) above the floor in an area with good air circulation at average temperature.



You should avoid:

- Drafts or dead spots behind doors and in corners
- Hot or cold air from ducts
- Sunlight or radiant heat from appliances
- Concealed pipes or chimneys
- Unheated/uncooled areas such as an outside wall behind the wall module;

Installation steps:

- 1. Place the back cover of the wall module over junction box or panel, insert and tighten mounting screws, then connect the Sylk communicating wires of driver with wiring connector of the wall module, Sylk terminals have no polarity.
- 2. Insert the connector terminal into the socket.
- 3. Align 4 tabs on the back cover with corresponding slots on the back of the wall module, and then push it until the wall module snaps in place.







Dimensions (mm)

Wall module



Driver without terminal covers





Driver with terminal covers





ISU (Installation Setup)

Press and hold the "mode" and "up" buttons together for more than 3 seconds to enter or exit ISU. Change the ISU code by pressing the "mode" button and then change the option setting by pressing the "up" and "down" button refer to the following introduction.

Note: In ISU mode, the thermostat will ignore all message coming from BACnet bus.



ISU Code	Description	Configuration Data
0	BACnet MAC Address	0-99, default 1
		0 - Heat only
		1 - Cool only
1	System Type	2 - Two pipe manual(default)
1	System Type	3 - Two pipe auto (pipe sensor needed)
		4 - Four pipes manual
		5 - Four Pipes Auto
2	Sonsor Option	0 - Onboard Sensor(default)
2		1 - Remote Sensor
3	Hotel Card (Dry Contact)	0 - Disabled (default)
		1 - Enabled
1	Window Contact (Dry Contact)	0 - Disabled (default)
4	Window Contact (Dry Contact)	1 - Enabled
12	Hotel Card Ontion	0 - NO (default)
12		1 - NC
13	Window Contact Ontion	0 - NO (default)
10		1 - NC
20	Temperature Scale	0 - °F
20		1 - °C(default)
	Fan Control Type	0 - Cycle only
21		1 - Constant only low-med-high
		2 - User can choose Cycle or Constant(default) low -med-high-auto
26	Display Temperature adjustment	-5°C -5°C (-10°F -10°F), default 0, step 0.5°C(1°F)
07	Temperatura Diaplay Mada	0 - Display room temperature(default)
21	Temperature Display Mode	1 - Display Setpoint
28	Minimum range stop of setpoint	10°C - 32°C(50°F-90°F), default 10°C (50°F), step: 0.5°C(1°F)
29	Maximum range stop of setpoint	10°C - 32°C(50°F-90°F), default 32°C (90°F), step: 0.5°C(1°F)
		0 All keys available(default)
		1 System button Locked out
30	Keypad lockout	2 Fan and System button Locked out
		3 All button locked out except power button
		4 All buttons are locked
32	ES Heating Setpoint	10°C - 21°C(50°F -70°F), default 18°C(64°F)
33	ES Cooling Setpoint	22°C - 32°C(72°F - 90°F), default 26 °C(79°F)
35	Power recovery Status	0 - OFF
55		1 - Previous Status (default)
37	Ean mode in ES mode	0 - Run as Auto fan speed when ISU_21 =2
57		1 - Run as Low fan speed when ISU_21 = 2 (default)
38	Device ID	0-9999 default 5555

IT (Installation Test)

Press and hold the "up" and "down" buttons together for more than 3 seconds to enter or exit IT mode. Change the ISU code by pressing the "mode" button and then change the option setting by pressing the "up" and "down" buttons. \

IT Code	Description	Configuration Data	TF228AD/U	TF428AD/U	TF223AD/U
10	VO	0 - Off			
10	VO	1 - On	0	0	
		0 - 0V output			
		1 - 2.5V output			
20	VM	2 - 5V output			0
		3 - 7.5V output			
		4 - 10V output			
20	NO2	0 - Off		<u> </u>	
30	VOZ	1 - On		0	
		0 - Fan Close			
40	Fan Control	1 - Low Speed Open	0	o	0
		2 - Medium Speed Open			
		3 - High Speed Open			
50	Pipe Sensor	If pipe sensor out of range, display "-"	0	0	0
60	Domoto Cothook1	0 - Open		0	0
00	Remote Selback I	1 - Close	0		
70	Domoto Cothook?	0 - Open		0	0
70	Remote Setback2	1 - Close	0		
80	Application No.	0-2	0	1	2
91	Software main version	01	0	0	0
92	Software vice version	01	0	0	0
93	Configuration Data Main version	01	0	0	0

Error Information

If an error occurs, the alert icon and error code will be displayed on the LCD of the wall module, the buttons will be locked, but ISU/IT modes are accessible unless there is a Sylkbus communication error.

Error Code	Error Information	Description
E1	Room temperature error	The room temperature is higher than 48°C or lower than -10°C
E2	Sylkbus communication error	Sylkbus communication is failure.
E3	Pipe sensor error	The temperature of pipe sensor is higher than 93°C or lower than 0°C
E4	Room temperature and Sylkbus error	The room temperature and sylkbus communication are both failure
E5	Room Temperature and Pipe sensor error	The room temperature and pipe sensor are both failure
E6	Sylkbus and pipe sensor error	Sylkbus communication and pipe sensor are both failure
E7	Room temperature, pipe sensor and sylkbus error	Room temperature, pipe sensor and sylkbus are all failure

BACnet Integration

Specifications for a Honeywell EIA-485 network

Cable Type: Twisted pair 18AWG-24AWG (1mm – 0.5mm), Shield Distributed Capacitance between conductors: less than 100pF/m Max length per segment: 1000m Polarity: Polarity sensitive Network wiring: Daisy-chain Maximum number of node per EIA-485 network: 63 Baud rate: 9600, 19200, 38400, 76800(auto detect) Termination: 80~130 Ω (should be installed at each end) **Note: Less than 40 devices are recommended in a EIA - 485 network and shall use shielded twisted pair.**

MAC address

The driver is delivered from the factory with the default MAC address set at 1 (referred to ISU of wall module). To enable BACnet communication, set the local MAC address configuration property of the driver to any valid value from 0 to 99.

Device object ID and device object name

The BACnet Data Link layer has two key parameters: the device object name and the device object ID. The device object ID must be unique from any other BACnet device object ID on the entire BACnet network (i.e. not just the MS/ TP sub-network).

Device Name and Device ID properties are writable in Honeywell device object. Both properties can be renamed from any BACnet network management tool if the tool itself gives access to write to these properties. Device ID can also be changed by wall module.

BACnet services

The BACnet communicating driver meets all requirements for designation as an Application Specific Controller (B-ASC), the detail information refer to PICS.

BACnet objects

Configuration Data

Name	Description	R/W for Network	Settings
AV35FObjMACAddress	BACnet Address	R/W	[0-99], default value is 1
ISU_01_SysType	System Type	R/W	0 - Heat Only 1 - Cool Only 2 - 2 pipe manual (default) 3 - 2 pipe auto changeover 4 - 4 pipe manual 5 - 4 pipe auto
ISU_02_SenOpt	Sensor Option	R/W	0 - Onboard sensor(default) 1 - Remote sensor
ISU_03_RS1	Hotel Card Enable/Disable	R/W	0 - Disable (default) 1 - Enable
ISU_04_RS2	Window Contact Enable/ Disable	R/W	0 - Disable (default) 1 - Enable
ISU_12_RS1Opt	Hotel Card Configuration	R/W	0 - NO (default) 1 – NC
ISU_13_RS2Opt	Window Contact Configuration	R/W	0 - NO (default) 1 - NC
PS_threshold_C	Pipe Sensor Threshold for cool	R/W	10°C-22°C(50°F-72°F), default 15.5°C(60° F)
PS_threshold_H	Pipe Sensor Threshold for heat	R/W	24°C-32°C(75°F-90°F), default 26.5°C (80° F)
AV38FObjTempScale	F/C display	R/W	0 - °F 1 - °C(default)

Name	Description	R/W for Network	Settings
ISU_21_FanCtrl	Fan control type	R/W	0 - Cycle 1 - Constant; 2 – Cycle and Constant (default)
Differential	Differential for 4 pipe	R/W	1°C -3°C(2°F-6°F), default 1.5C(3°F)
CPH_Heat	Heat Cycle Rate	R/W	[1-12], default 4 (only for TF228AD, TF428AD)
CPH_Cool	Cool Cycle Rate	R/W	[1-6], default 3 (only for TF228AD, TF428AD)
FanAutoConfig	Fan Auto Configuration	R/W	0, Off-Low-Med-High in Auto mode(default) 1, Low-Med-High in Auto mode
ISU_26_TempAdj	Temp Display adjust	R/W	-5°C -5°C (-10°F -10°F),
ISU_27_DispType	Display Type	R/W	0 – Room(default) 1 - Setpoint
ISU_28_SP_min	Setpoint minimum value	R/W	10°C - 32°C(50°F-90°F), default 10°C (50° F), step 0.5°C (1°F)
ISU_29_ SP_max	Setpoint maximum value	R/W	10°C - 32°C(50°F-90°F), default 32°C (90° F), step 0.5°C (1°F)
AV37ObjLockOption	Keypad Lockout	RW	0 – None (default) 1 – "Mode"button 2 – "Fan" and "Mode" buttons 3 - All except "Power" buttons 4 – ALL buttons
ISU_32_ES_SP_H	ES Heating Setpoint	R/W	10°C - 21°C(50°F -70°F), default 18°C(64° F)
ISU_33_ES_SP_C	ES Cooling Setpoint	R/W	22.5°C - 32°C(72°F - 90°F), default 26 °C (79°F)
ISU_35_Pwr Recovery	Power recover status	R/W	0 - OFF; 1 - Previous Status (default)
ISU_37_ES_Fan	Fan mode in ES	R/W	0 - Run auto fan 1 - Run low fan (default)
Object Identifier	Device ID	R/W	0-9999, default 5555

Run Data

Name	Description	R/W for Network	Settings
RoomTemperature	Room Temperature	R	-9.5°C -48°C
Setpoint	setpoint	R/W	10°C - 32°C(50°F -90°F), default 25.5°C (78°F), 0.5°C(1°F)
FanSwitch	Fan status	R/W	0 - Auto 1 - Low (default) 2 - Med 3 - High
SystemSwitch	System type(Heat/cool/Auto/ vent)	R/W	0 - Auto 1 - Cool 2 - Heat(default) 3 - Vent
PowerSwitch	Power On/Off	R/W	0 - OFF 1 - ON(default)
FreezeProtectState	Freeze protection	R	0 - Normal mode 1 - Freeze protection mode
ES mode	Energy saving mode	R	0 - Normal mode (default) 1 - ES mode
AV39MObjSylkStatus	Sylkbus communication status	R	0 – Offline 1 - Online

Inputs/Outputs

Name	Description	R/W for Network	Settings
AIORS	Remote sensor	R	The remote sensor temperature
AI1PS	Pipe sensor	R	The pipe sensor temperature.
AI2RSB1	Remote setback1	R	0 - Open 1 - Short
AI3RSB2	Remote setback2	R	0 – Open 1 - Short
BO0FL	Fan Iow	R/W	0 - OFF 1 - ON
BO1FM	Fan Medium	R/W	0 - OFF 1 - ON
BO2FH	Fan High	R/W	0 - OFF 1 - ON
BO3VO1	Heat Valve	R/W	0 - OFF 1 – ON (Only For TF228AD, TF428AD)
BO5VO2	Cool Valve	R/W	0 - OFF 1 – ON (Only For TF428AD)
VM	Modulating Valve	R/W	0-10V (For TF223AD)

Others

Name	Description	R/W for Network	Settings
AV48FObjAppNo0	The application number of driv- er	R	0 - 2 pipe on/off 1 - 4 pipe on/off 2 - 2 pipe modulating
VO1Runing time	Heat relay Runing time	R	Unit : second (only for TF228AD, TF428AD)
VO2Running time	cool relay Runing time	R	Unit : second (only for TF228AD, TF428AD)
FLRunning time	fan low Runing time	R	Unit : second
FM Running time	fan med Runing time	R	Unit : second
FH Running time	fan highRuning time	R	Unit : second
ResetVOAccumulate	Clear Heat and Cool valve running time	R/W	0 - Not clear 1 - Clear (only for TF228AD, TF428AD)
ResetFanAccumulate	Clear all the fan relay running time.	R/W	0 - Not clear 1 - Clear

Note:

Please use the parameters listed in above parameter table, others are not in guarantee.



Pittway Sarl, Z.A. La Pièce 4, 1180 Rolle, Swirzerland Country of origin: China



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