

TF228WN-C 220/230VAC, FAN COIL CONTROL

- Memorized time off
- Cycle Per Hour (CPH)
- Random startup
- LCD display with simple user interface
- Room temperature or setpoint temperature display selectable
- Manual or automatic fan speed selectable
- Temperature units in either °C or °F
- User setting can be stored with power loss
- Freeze protection available
- Four keypad lock options
- Heating and cooling setpoint limitation



General

The TF228WN-C digital thermostat is designed for 3-speed fan and valve control in a fan coil system, including:

- 2-pipe cool only/heat only/manual changeover
- Ventilation mode
- Manual or automatic 3-speed fan control
- Water valve control

Besides the basic controls, TF228WN-C featuring CPH (Cycle Per Hour) better maintains the room temperature to the setpoint and memorized time off function can automatically turn off the thermostat to save energy.

In addition, Honeywell Random start-up function would help to maintain power grid stability.

Technical Specification

Power supply	220/230VAC, 50/60Hz
Control	PI, On/off output
Accuracy	1°C at 21°C
Auto Cycle times	100,000 times
Manual Cycle times	10,000 times
Protection class	IP20
Set point range	0~37°C
Protection Class	10 ~ 32°C
Monitor range	0 ~ 37°C
Ambient operating limits	0~ +49°
Ambient storage limits	30 ~ +60°C
Humidity limits	5~90% RH, non-condensing
Action Type:	1
Pollution Degree	2
Protection against electric	Class II

shock class Electronic control software class	Class A
Rated Impulse Voltage:	2500V
Maximum Temperature for relay wiring	155°C
Wire sectional area (Recommendati on)	1.0-1.5mm ²
1A	when the load is inductance The valve need have overtravel-limit organ to turn off The load.

4(3)A	Applied altitude up to 2000m above sea level Working current for the whole product
4A	When the load of the thermostat is resistance
3A	When the load of the thermostat is inductance. For Fan Load
4A	When the load of the thermostat is resistance
2A	when the load is inductance For Valve load
2A:	when the load is resistance

Model summary

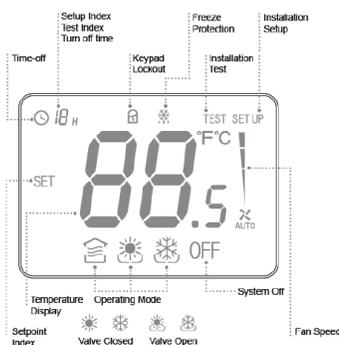
Model Number	Backlight	Application	Ventilation Mode	Automatic Fan
TF228WN-C	White	2 pipes FCU	Y	Y

Product Design

Thermostat appearance



LCD Display



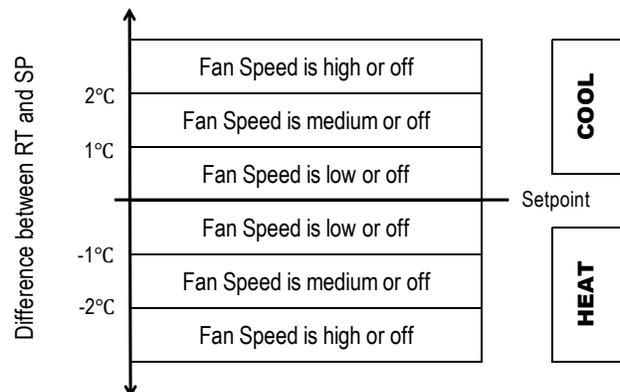
Function

Valve Control

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

The fan setting can be selected as manual or automatic 3-speed 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 in the meanwhile



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

Memorized Time Off

The 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.



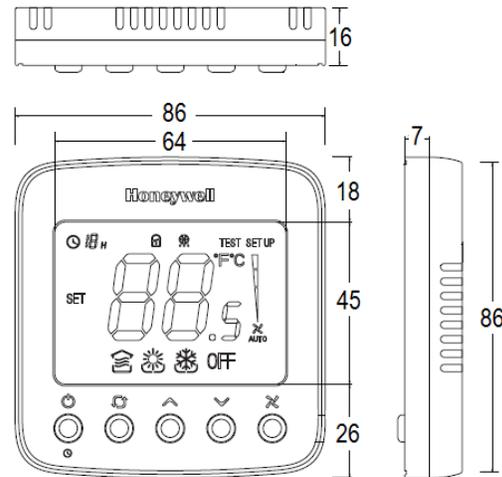
Backlight

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”.

Dimensions (mm)



Operating Mode

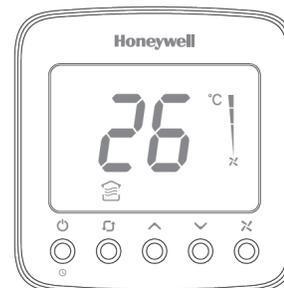
Comfort Mode

In comfort mode, the setpoint can be changed by pressing up and down button. Applications include cool only, heat only and manual heat/cool changeover.



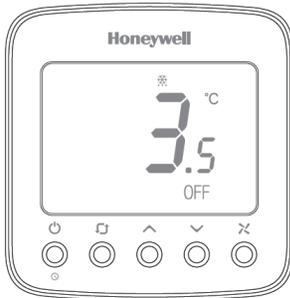
Ventilation Mode

Press “mode” button to enter “ventilation” mode. In “ventilation” mode, no output for valve while the fan will operate at selected fan speed.



Freeze Protection Mode

Freeze protection can be selected as disabled (default) or enabled in the ISU. In freeze protection mode (only in heating applications), when thermostat is off and the temperature is below 6°C, the thermostat will activate heating mode until the temperature rises to 8°C.



Wiring

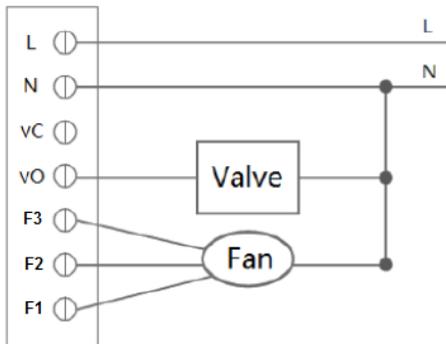


Fig. 2. Honeywell VC4013/VN4013/VS4016 Wiring

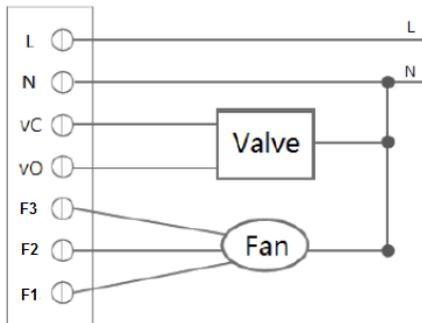


Fig. 3. Honeywell VC6013/VN6013 Wiring

For more information,
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Terminal Designations

If...	Then...
Heating system does not turn on.	<ul style="list-style-type: none"> Set the mode to Heat by pressing the Mode button. Check that the heat temperature setting is set above the room temperature and "Heat On" shows solidly in the display. Wait five minutes for the heating system to respond.
Cooling system does not turn on.	<ul style="list-style-type: none"> Check whether the Fan mode is set to Auto Check whether the heating or cooling system works.
The Fan button doesn't work.	<ul style="list-style-type: none"> Check whether the keypad is locked or not. Check whether the system is working in Energy saving mode. Check whether the thermostat is off.
The Mode button doesn't work.	<ul style="list-style-type: none"> Check whether the keypad is locked or not. Check whether the system is working in Energy saving mode. Check whether the thermostat is off.
The Fan button doesn't work.	<ul style="list-style-type: none"> Check whether the keypad is locked or not. Check whether the system is working in Energy saving mode. Check whether the thermostat is off.

Terminal Designations

Item	Terminal	Description
1	R	24VAC power
2	C	Common 24VAC / Common for control output
3	W/Y	Control Output DC 0.....10V
4	L	230VAC operating voltage for the fan
5	Gh	High speed fan
6	Gm	Medium speed fan
7	Gl	Low speed fan
8	Gm	Medium speed fan
9	SB	Common for remote setback

T6865 SERIES
2-PIPE FAN COIL
CONTROL