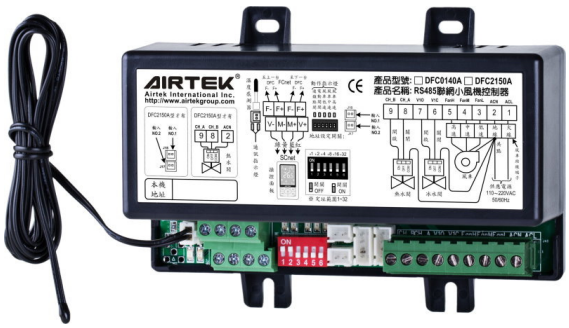
Field Control Layer Device

Networking Fan Coil Unit controller

DFC....A

【Description】

DFC.. Series networking fan coil unit controller is a multi-function, high performance, independent operating controller, Lan networkable up to 32 modules per Lan using Modbus RTU (RS485). A group control panel can be used as a remote master control for individual controllers or select a group to control. Using an Airtek PF-MB** Modbus–Bacnet protocol converter will allow the controller to be interfaced with a Building Management System or use a WCFB** for Intranet or Internet access. Typical control function include temperature control, fan speed control, timer Off, schedule On/Off, etc Typical monitoring functions include: field temperature value, system operation status, fan speed status, Total run time accumulation, energy consumption, alarm faults, etc. DFC** series controllers are suitable for use where centralized or individual management is required, such as office building, five-star hotel or restaurants, shopping centers, science and technology building.



【Features】

- High performance microprocessor and FLASH power failure memory function. Independent Operation.
- Build in self wakeup function (Watch Dog).
- Two sets of MODBUS RTU RS- 485 networks, one for the network FCnet (group control panel), a protocol converter or a BACnet web embedded F.C.U. controller to perform centralized management and control.
- 2nd network SCnet for Connection to a MFC32V, MFT28U as an independent control, or cascading into a sub-network connecting to a NFC32V, NFTC28U centralized control.
- 0~24 hours shut down timer and a daily On/Off timer, convenient for office usage.
- 2 digital input, dry contact is acceptable, can be connected to a motion detector, key card etc. to monitor status.
- Return Air senor included for air temperature control, control panel is not affected by the location of the control panel.
- Air Conditioning Modes include:- Automatic or Manual Cool/Heat, Fan-Lo,Med,Hi-Auto. Energy saving modes.
- Automatic synchronization with network time is possible from a central monitoring system or Building management system.
- When Connected to a Group control Panel or building automation system typical monitoring and control of any point is possible.
- Fire and abnormal temperature alarm when internal temperature rises too fast.
- Stagger Start after power failure by node number.(Controllers will restart one by one according address number if it is in running mode before the power failure).

【Specification】

Model	Mode	Fan speed	BI	AI	BO	Fan coil output	Heating/Cooling	Description
DFC0140A	Cool/Heat/Fan	Auto/High/Med./Low	0	1	1	3	Manual	2-piping(heating or cooling)
DFC2150A	Auto/Coo/Heat/Fan	Auto/High/Med./Low	2	1	2	3	Manual/Auto	2-piping+Interlock or 4- piping

Power Supply : 85 ~ 265VAC, 50/60Hz, 5VA(**A 5A fuse inside)**

Microprocessor : High speed processor

FCnet Communication : 2 wire MODBUS RTU standard RS-485 communication, network distance up to 1200 meters.

SCnet Communication : 2 wire MODBUS RTU standard RS-485 communication, network distance up to 1200 meters.

Input (BI) : 2 digit input, 12VDC detect, dry contact or open collector is acceptable, .

Analog Input (AI) : A external 10KΩ (25℃) NTC temperature sensor, sensing Range 0 ~ 50 ℃.

Fan output (BO) : Three sets of UL/ CUL/ TUV certification 10A, 250VAC SPST contacts, for 3-speed fan control as high, medium, low and auto switching etc. four modes.

Digital Output (BO) : Two set of UL/ CUL/ TUV certification 7A/NO, 5A/NC, 250VAC, SPDT for 2 or 3 wiring control valve.

: Second output can do 4-piping or interlock mode function select through internal parameter.

Range : 15~30℃, accuracy ± 1℃

Certification : EMC Directive 89/336/EEC (European CE Mark).

Environment : 0~50℃, 20~95%RH non-condensing

【Installation】

- Check the power source is correct (240V).
- Please use two cores AWG#22 shield twisted pair wire for MODBUS network wiring, network connecting must be daisy chain, do not use “Star” or Parallel connections. Insure Lan Network wiring is correct (positive and negative polarity).
- Use four cores AWG # 22 shield twisted pair wire as network cable to connect between MFC32V and DFC controller, two cores are Dc Power supply for MFC32V.
- All network wiring must have independent EMT, and must keep a distance from power cables to avoid electrical interference.
- DFC can be used for two or three position motorized valves.
- Digital input points must be dry contact, Do not use DFC internal Dc power supply to power any other device.
- The 240V power source is used for the Fan-Cooling-Heating outputs, do not mix power supplies.
- DFC**A has a factory preset 5A fuse. When the current draw is greater use slave relays.

【Network Architecture】

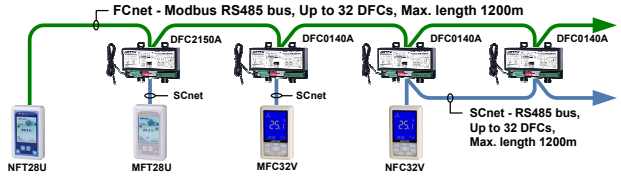


Figure 1. Not more than 16 FCU control network diagram

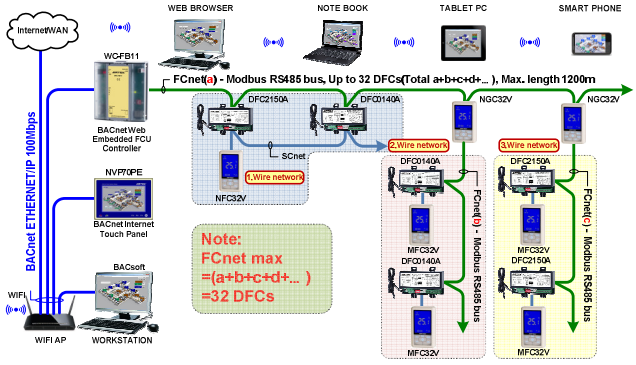


Figure 2. Not more than 32 FCU control network diagram

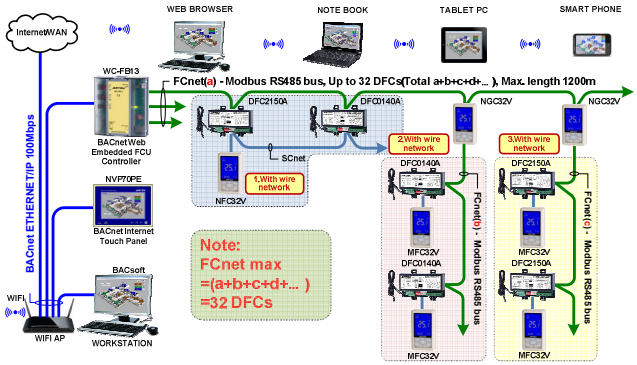


Figure 3. Not more than 96 FCU control network diagram

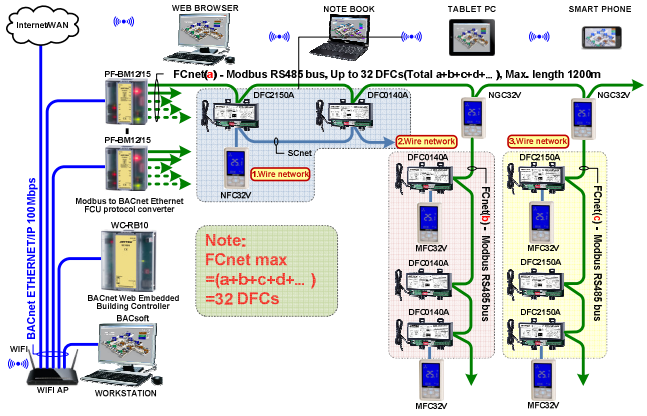


Figure 4. 96 and above FCU control network diagram

【Wiring Diagrams】

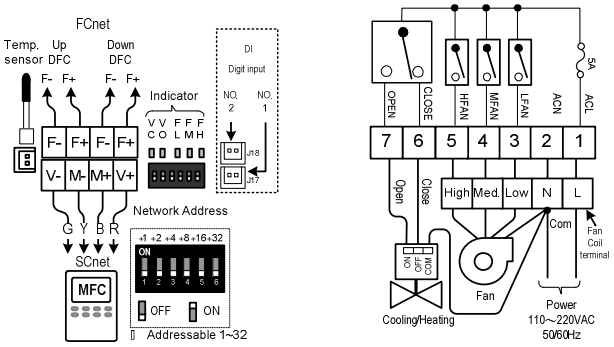


Figure 5. DFC0140A wiring diagram

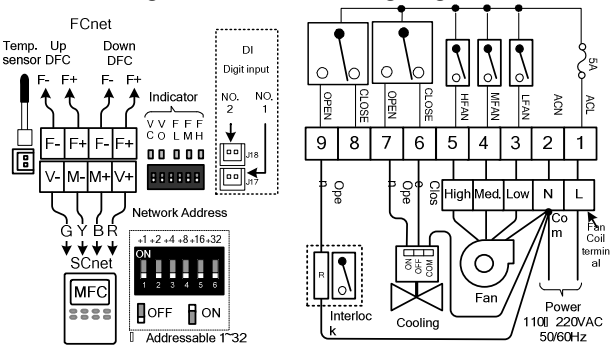


Figure 6. DFC2150A 2 piping cooling or heating + interlock diagram

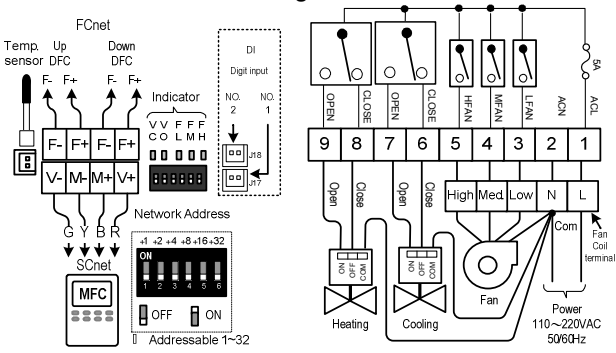
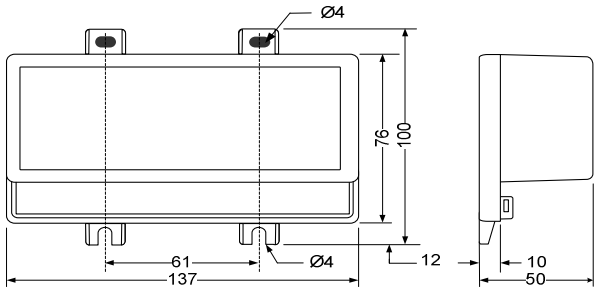


Figure 7. DFC2150A cooling and heating(4 piping) diagram



Dimension unit mm