# Field Control Layer Device

DSx1150B

BACnet Application Specific F.C.U Controller

【Description】

　　DSx1150B is a standalone BACnet B-ASC class programmable controller. It is designed for monitor and control fan coil unit or lighting devices. It uses 32-bit microprocessor core, transmission rate up to 76,800 bps, transmission distance up to 1,200 meter. DSx1150B has 1 Binary Input (BI), 1 Analog Input (AI) and 5 Binary Output (BO). In addition it has an MSnet port can connect to an external LCD control panel for user operation and control. Using a remote or local browser or a group control panel can perform all, group, or single unit control and monitoring functions such as temperature, fan speed, timer Off, schedule On/Off, etc, monitor temperature value, system operation status, fan speed status, run time accumulation, energy consumption, fault alarm, etc. DSx1150B conforms to international BACnet MS/TP communication protocol and fully compatible with any BACnet system.
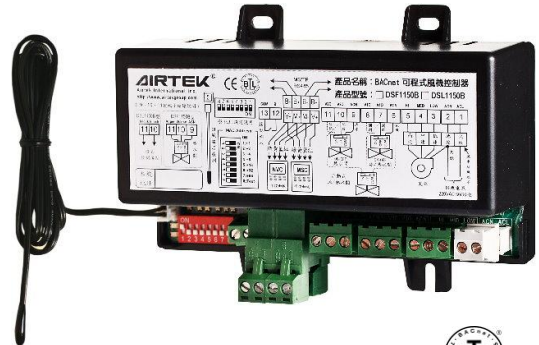
【Features】

● Conforms to ASHRAE and ISO16484-1 defined BACnet B-ASC standard communication protocol, compatible with BACnet system.
● An MS/TP(Master-Slave/Token-Passing) communication interface connect to upper layer global controller.
● An MSnet communication interface can connect to a MST20V, MST20S, DSP20U control panel or a MODBUS RTU device.
● An RS-232 communication interface connect to AD-Linker through the HyperTerminal program can change device parameters.
● Binary Input (BI) accepts dry contact or open collector signal.
● Analog Input (AI) has 12-bit resolution, accept 10KΩ NTC thermistor signal.
● Binary Output (BO) has following capacity, 8A/250VAC for fan speed control, 7A/250VAC for motorized valve control, 16A/250VAC with latching function for lighting control.
● With DDC control function, you can edit online, download control logic programming, and real-time debugging, with enthalpy, dew point temperature, PID control, etc. HVAC common computing capabilities and logarithmic, trigonometric functions, etc. advanced math functions.
● 100 Binary Value (BV) and 100 Analog Value(AV) points, can be used as the calculated values, set points, timer or alert points.
● Power failure backup for all AI/BO/AO/BV/AV values and stored in FRAM for at least 10 years.
● Priority control array by 16 level for all BO, AO and BV.
● Has a crash self wake-up call function (Watch Dog).
● Pluggable terminal design, ease of installation commissioning and maintenance.

【Specification】

Model	A/C Mode	Fan Speed	BI	AI	BO (fan)	BO (valve)	BO (light)	Remark
DSF1150B	Auto/Cool/Heat/Fan	Auto/High/Med./Low	1	1	3	2	0	Apply to 2/4-piping control
DSL1150B	Auto/Cool/Heat/Fan	Auto/High/Med./Low	1	1	3	1	1	Apply to 2-piping & lighting control

Power Supply　：220VAC,50/60Hz,5VA。

Microprocessor　：32-bit high performance MCU, 10K RAM, 8K FRAM and 64K Flash memory.

Binary Input　：12VDC detection voltage, accepts dry contact or open collector signal.

Analog Input　：12-bit resolution, attach an external 10KΩ@25℃ NTC temperature sensor, sensing Range 0～50 ℃.

Fan Output　：Three sets of UL/ CUL/ TUV certification 8A, 250VAC SPST contacts, for 3-speed fan control as high, medium, low and auto switching etc. (Four modes).

Valve Output　：One set of UL/ CUL/ TUV certification 7A(NO)/5A(NC), 250VAC SPDT, for 2 or 3-wire motorized valve control.

Light Output　：One set of UL/ CUL/ TUV certification 16A, 250VAC SPST Latching Relay contacts, for lighting control.

MS/TP Port　：2-wire MS/TP RS-485 bus, communication speed 9,600/ 19,200/ 38,400/ 76,800 bps, auto select, max. length 1,200 meters, 2500Vrms optical coupling isolator and TVS ARRAY surge protection.

MSnet Port　：2-wire MODBUS RTU RS-485 bus, communication speed 9,600 bps, for MSC, DSP or NVC series panel connection.

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

Certification　：BTL、EMC Directive 89/336/EEC (European CE Mark)。

【Related Products】(The detailed specifications please refer to the catalog)

NVC20U - LCD group control panel.
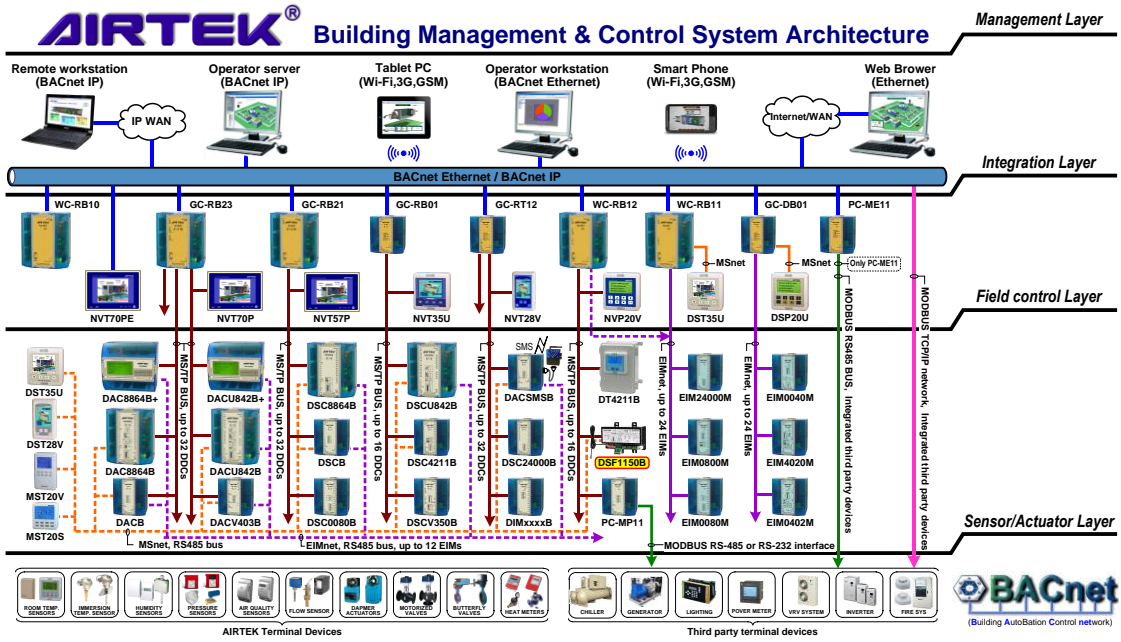
DSP20U - LCD unitary control panel.

NVC51V - LCD group control panel.

MSC20V - LCD unitary control panel.

Airtek-AU

AIRTEK®

【Network Architecture】

AIRTEK® **Building Management & Control System Architecture**

Management Layer

Remote workstation (BACnet IP) | Operator server (BACnet IP) | Tablet PC (Wi-Fi,3G,GSM) | Operator workstation (BACnet Ethernet) | Smart Phone (Wi-Fi,3G,GSM) | Web Brower (Ethernet)

IP WAN | Internet/WAN

Integration Layer

BACnet Ethernet / BACnet IP

WC-RB10 | GC-RB23 | GC-RB21 | GC-RB01 | GC-RT12 | WC-RB12 | WC-RB11 | GC-DB01 | PC-ME11

MSnet | MSnet | Only PC-ME11

Field control Layer

NVT70PE | NVT70P | NVT57P | NVT35U | NVT28V | NVP20V | DST35U | DSP20U

DST35U | DST28V | MST20V | MST20S

DAC8864B+ | DACU842B+ | DSC8864B | DSCU842B | DACSMSB | DT4211B | EIM24000M | EIM0040M

DAC8864B | DACU842B | DSCB | DSC4211B | DSC24000B | DSF1150B | EIM0800M | EIM4020M

DACB | DACV403B | DSC0080B | DSCV350B | DIMxxxxB | PC-MP11 | EIM0080M | EIM0402M

MSnet, RS485 bus | EIMnet, RS485 bus, up to 12 EIMs | MODBUS RS-485 or RS-232 interface

Sensor/Actuator Layer

ROOM TEMP SENSORS | IMMERSION TEMP. SENSORS | HUMIDITY SENSORS | PRESSURE SENSORS | AIR QUALITY SENSORS | FLOW SENSOR | DAMPER ACTUATORS | MOTORIZED VALVES | BUTTERFLY VALVES | HEAT METERS | CHILLER | GENERATOR | LIGHTING | POWER METER | VRV SYSTEM | INVERTER | FIRE SYS

AIRTEK Terminal Devices | Third party terminal devices

BACnet (**B**uilding **A**uto**B**ation **C**ontrol **net**work)

【Wiring Instruction】

- Before wiring please check the power source is correct.
- Please use two cores AWG#22 shield twist wire for DFC wiring, remember that network connecting must be daisy chain style and Star or parallel connection are prohibited.
- Use four cores of AWG#22 shield twist wire for network connection between MSC/NVC control panel and DSx1150B controller.
- All network wire must have independent EMT, and must keep distance from power cables to ensures network communication quality.
- DSx1150B provides two or three position motorized valve control function.
- The common point of motorized valve and fan should be connecting to the neutral of power. (Terminals Provided)
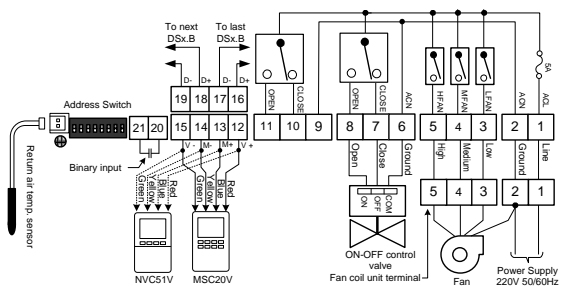- Avoid mounting on vibration surfaces.
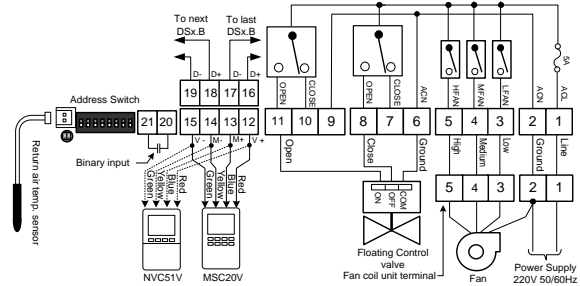

FIG. 1 2-pipe ON-OFF valve control wiring diagram

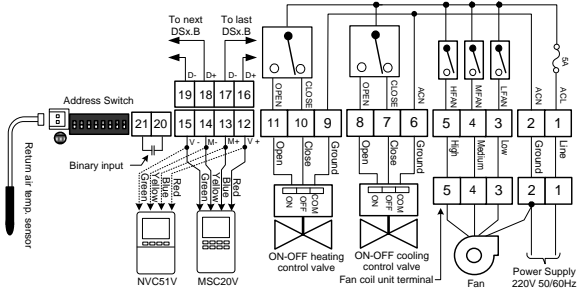
FIG. 2 2-pipe floating valve control wiring diagram

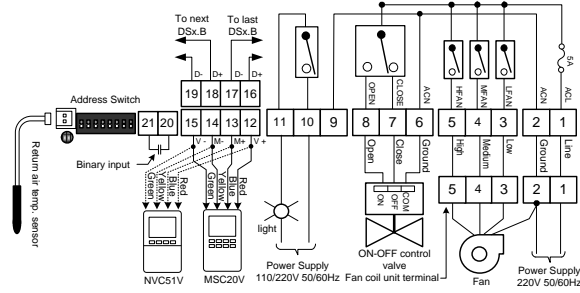**FIG. 3 4-pipe ON-OFF valve control wiring diagram**

FIG. 4 2-pipe ON-OFF valve & lighting control wiring diagram

【Dimension】 Unit：mm
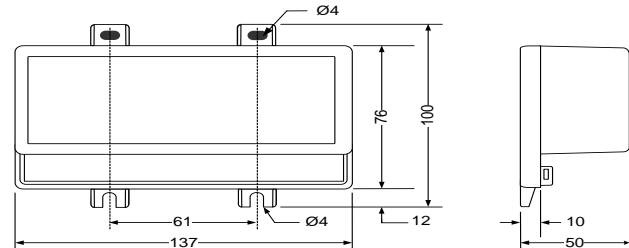
Please refer to http://www.airtek.com.au for the most recent updated information.