Gas Detection Controller

GDS V1.0

GDS

【Description】

The GDS controller is a powerful economical detection system designed for the user in mind. Featuring a multi-page touch screen for simplicity and informative data. All outputs including the 0-10v dc outputs have monitored onboard A-O-M override toggle switch's allowing the user to override the control program for service and commissioning purposes. Communications are possible via a Modbus RTU and Bacnet MSTP ports. The controller can be ordered with a remote screen or fixed onboard screen, multiple networked screens are also possible. With so many options available the controller can cover almost any project with ease.

【Features】

- Conforms to ASHRAE and ISO16484-1 defined BACnet ASC standard communication protocol, compatible with BACnet system.
- An MS/TP(Master-Slave/Token-Passing) communication interface connect to upper layer global controllers.
- A Modbus RTU port can connect to Airtek DST28, DST35U & DST70P screens or any other MODBUS RTU device.
- Universal Input (UI) has 12-bit resolution, accept dry contact, pulse, 3K or 10KΩ NTC thermistor, 0~5VDC, 0~10VDC, 0~20mA or 4~20mA input signal.
- Binary Output (BO) have a 5,000Vrms optical coupling isolator, 8A/24VAC/SPST relay, LED Status Indicator.
- Analog Output (AO) has 12-bit resolution, can be software selected as 0~10VDC or 2~10VDC output signal.
- Program is saved in flash memory of the controller and can be updated.
- Carry out calculations such as proportional, integral, differential, floating, logic, arithmetic etc.
- 100 Binary Value (BV) and 100 Analog Value (AV) points for high precision floating-point calculation.
- Priority control array by 16 for all BO, AO and BV.
- Gold capacitor enables backup for all AI/BO/AO/BV/AV values in FRAM for at least 10 years.

【Specification】

Model	UI Points	BO Points	AO Points	BV Points	AV Points
DSCU842B	8	4	2	100	100

Power Supply : 24VAC/VDC, 5VA.

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

Auxiliary Power : Provide 24VDC/160mA power supply for external transmitters.

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.
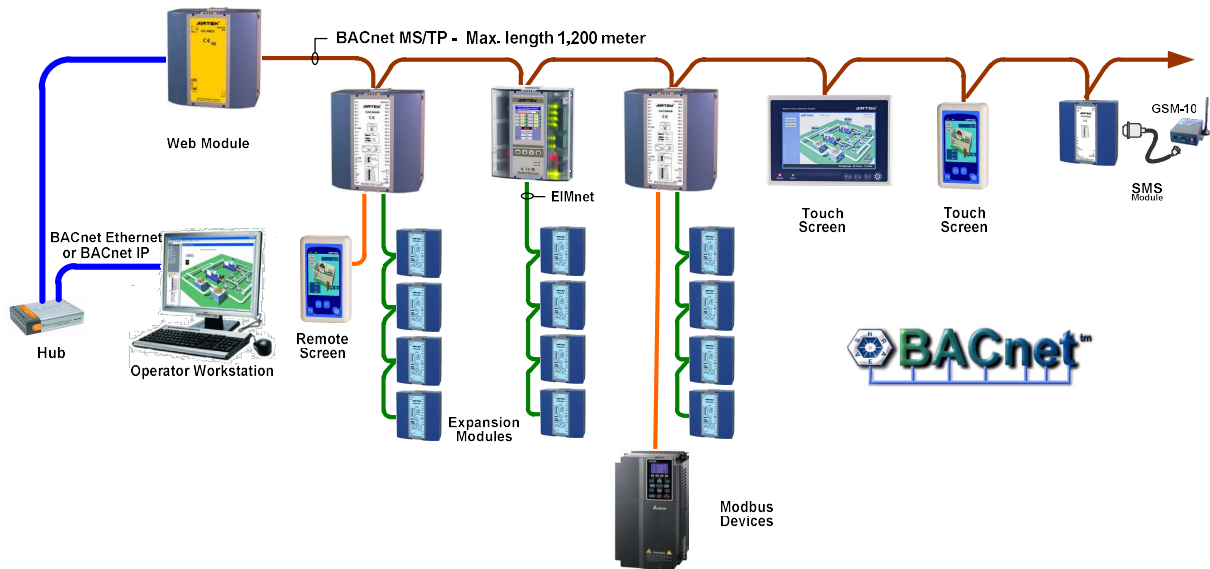
MSnet Port : 2-wire MODBUS RTU RS-485 bus, communication speed 9,600 bps, maximum length 100 meters.

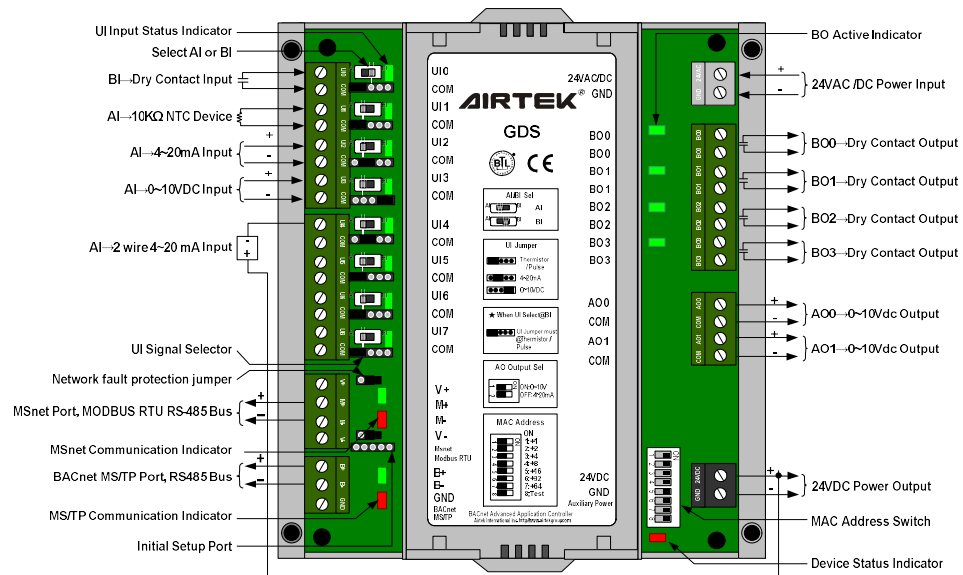**Envirement** : 0~70℃, 0~95%RH, non-condensing

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

AIRTEK®

【Network】

BACnet MS/TP - Max. length 1,200 meter

Web Module

BACnet Ethernet
or BACnet IP

Hub

Operator Workstation

Remote
Screen

EIMnet

Expansion
Modules

Modbus
Devices

Touch
Screen

Touch
Screen

GSM-10

SMS
Module

BACnet™

【Wiring】

Left side labels (top to bottom):
- UI Input Status Indicator
- Select AI or BI
- BI→Dry Contact Input
- AI→10KΩ NTC Device
- AI→4~20mA Input
- AI→0~10VDC Input
- AI→2 wire 4~20 mA Input
- UI Signal Selector
- Network fault protection jumper
- MSnet Port, MODBUS RTU RS-485 Bus
- MSnet Communication Indicator
- BACnet MS/TP Port, RS485 Bus
- MS/TP Communication Indicator
- Initial Setup Port

Center module labels:
- UI0, COM, UI1, COM, UI2, COM, UI3, COM
- 24VAC/DC, GND
- AIRTEK® GDS
- BO0, BO0, BO1, BO1, BO2, BO2, BO3, BO3
- AI/BI Sel — AI / BI
- UI Jumper — Thermister /Pulse, 4~20mA, 0~10VDC
- ★ When UI Select @BI, UI Jumper must @Thermister / Pulse
- UI4, COM, UI5, COM, UI6, COM, UI7, COM
- AO0, COM, AO1, COM
- AO Output Sel — ON:0~10V, OFF:4~20mA
- MAC Address — ON 1:+1 2:+2 3:+4 4:+8 5:+16 6:+32 7:+64 8:RTest
- V+, M+, M-, V- Msnet Modbus RTU
- E+, E-, GND BACnet MSTP
- 24VDC, GND Auxiliary Power
- BACnet Advanced Application Controller

Right side labels (top to bottom):
- BO Active Indicator
- 24VAC /DC Power Input
- BO0→Dry Contact Output
- BO1→Dry Contact Output
- BO2→Dry Contact Output
- BO3→Dry Contact Output
- AO0→0~10Vdc Output
- AO1→0~10Vdc Output
- 24VDC Power Output
- MAC Address Switch
- Device Status Indicator

Note : 1. Besides the BACnet MS/TP GND, all other GND and COM are inner connected together.
2. Make sure to select correct signal type for UI and AO.
3. Make sure there is enough power supply when DAC work with EIMs.

【Dimension】 Unit : mm

137 / 164 / 170
135
147
Ø4
9
49