Technical Manual of DS-1H03-A

1. Overview

It offers the solution for data interactive between PC board and user's defined front-control-board. 8-ch alarm input and 4-ch alarm output is available, so it can satisfy most small size environment. Communication between the PC and alarm board is processing via USB interface. Moreover, it offers I2C interface, so it can easily support peripheral equipment which also supports I2C communication protocol. (etc. customer's front-control-board and so on). In the application, PC wants to control the front-control-board, PC will send commands to alarm board's MCU via USB first, then the MCU will convey the commands to the front-control-board via I2C bus. In this way, PC can control the LED's on and off on front-control-board, PC can also read the value in front-control-board's chip registers. Alarm board's alarm input is valid when a low-level signal comes in, which means that a low-level signal will trigger the alarm of this alarm input channel. Each channel's alarm status information can be uploaded to PC via USB. Similarly, PC can not only control the 4-ch alarm output(relay control), but also can obtain the status of alarm output whether it is on or off. Alarm output can be used as switch control.

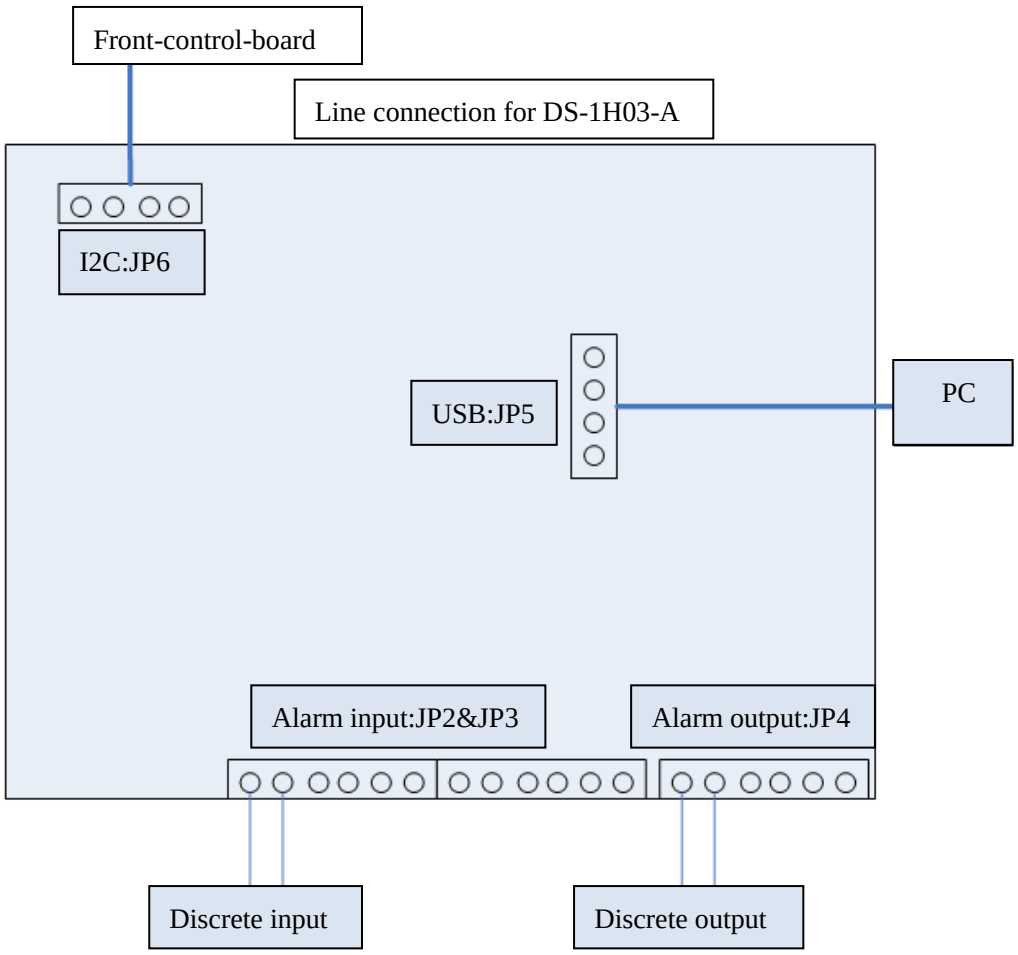
2. Function and performance

1) Low-power consumption, can be powered by USB interface, no need to plug with other power supply
2) 8-ch alarm input ,4-ch alarm output supported
3) USB2.0 communication protocol supported
4) Offering interfaces for external development of USB, users can define it from application layer. It mainly offers 5 interfaces:
    a) Read the status of alarm input
    b) Read the status of alarm output
    c) Control the status of alarm output
    d) Read the peripheral's info on I2C bus.(etc.the value of front-control-board's chip registers)
    e) Write information to peripheral device which is on I2C bus.(etc. the value of front-control-board's chip registers)
5) Offering 3.3V to external devices

3. Technical parameters

Model	DS-1H03-A
Alarm input	8-ch, switching value, normally open
Alarm output	4-ch, relay control
USB interface	1 USB 2.0 interface
I2C interface	1-ch
Power supply	DC5V, 500mA, powered by USB interface
Power output	DC3.3V, 500mA, powered by I2C interface
Consumption:	≤1W (with load≤2.5W)
Working Temperature:	-10℃--＋55℃
Working Humidity:	10%--90%
Dimensions:	103mm(high) ×100mm(width) ×10mm(depth)
Weight:	＜150g
Operation system	None

4. schematic diagram for line connection



Schematic diagram is above, for details, please see below:

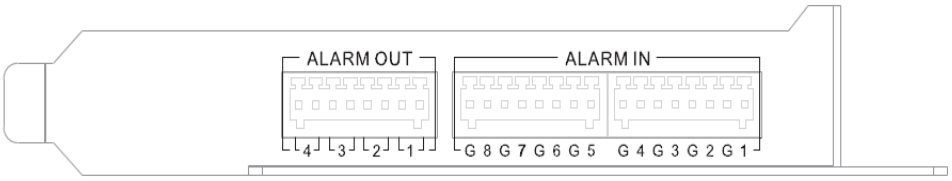
I2C interface: 4-pin, located on JP6, used for connect front-control-board (etc. front-control board which is working with indicator light).

USB interface: 4-pin, located on JP5, connected to PC's 10d USB interface via USB line.

Alarm input interface: 6-pin, located on JP2&JP3, can input switch value via connection terminal.

Alarm output interface: 6-pin, located on JP4，can output switch value via connection terminal.

Peripheral board has silk-screen as below:



ALARM IN: Offer 8 input channels. If discrete alarm input signal is connected between 1&G, then when there is alarm input , 1&G will be short circuit, in the mean time it will generate the alarm signal and upload it to PC as well.

ALARM OUT: Offer 4 output channels. For example core 2 of silk-screen-1 is disconnected normally, but when there is alarm ouput , it's connected.