GST-RP16
Conventional Repeater Panel
Installation and Operation Manual

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CONTENTS

I General

GST-RP16 Conventional Repeater Panel (hereinafter called GST-RP16), the supporting product of a conventional fire alarm control panel （FACP）, is a type of fire display unit used in buildings or fire control center. When the conventional FACP receives fire signal, it will alarm and send the signal to GST-RP16. Then the GST-RP16 will indicate the alarm zone and sound to notice the people there to act accordingly. GST-RP16 is a non-addressable repeater panel matching with GST102A, GST104A, GST108A, and GST116A Conventional Fire Alarm Control Panel.

II Features

1. It can indicate fire signals in 16 zones separately.
2. With two fault outputs, it can show fault signals from conventional FACP.
3. It is wall-mounted, with advantages of small dimension, simple installation and operation, good performance, high reliability, and flexible configuration etc.

III Technical Specifications

1. Display Capacity: Maximum 16 zones' fire signals, 2 fault signals.
2. Wiring: Connect with conventional FACP by multi-wire (16 for fire signals and 2 for fault signals) and two 24VDC power wires in addition.
3. Operation Environment:

    Temperature: 0℃～+40℃

    Relative Humidity ≤95%, no condensation
4. Power supply with 18VDC～28VDC, standby current≤12mA, alarm current≤60mA.
5. Dimension: 280mm×110mm×46mm.

IV Structure and Operation Principle

1. GST-RP16 is wall-mounted. Its appearance is shown in Fig. 1.

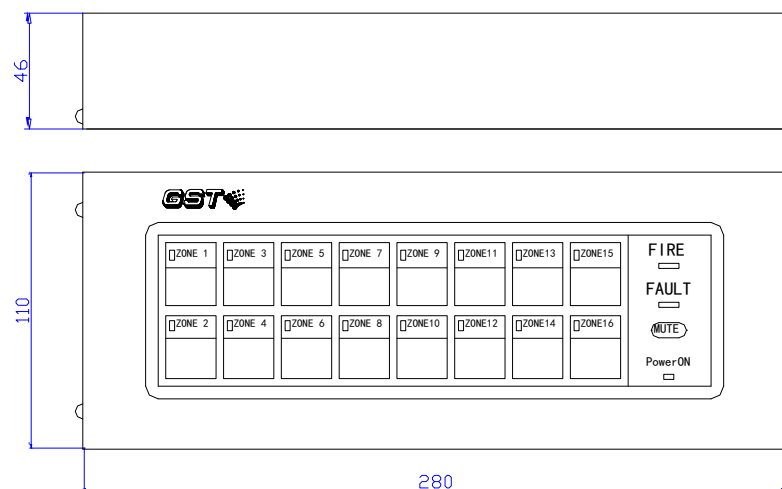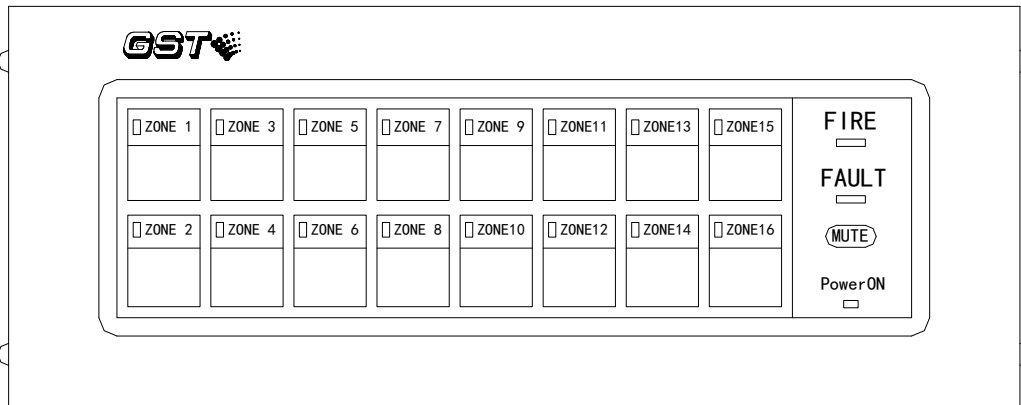
Fig. 1

2. Front panel is shown in Fig. 2.

Fig. 2

Instructions of Key and Indicators:

✧ **Power ON**：This green LED is constantly lit after the power is on.

✧ **FIRE**：General fire alarm light. It's a red LED, lit when there is a fire signal.

✧ **ZONE1~ZONE16**：Zone fire lights, red LEDs, lit if there are fire alarms in corresponding zones. The flashing of an LED indicates it is the latest fire alarm.

✧ **FAULT**：Fault light, yellow, lit when there is a fault signal.

✧ **MUTE**：Pressing this key in alarm or fault state can silence the alarm sound, while it gives another sound to indicate the mute state.

3. Operation Principle

   GST-RP16 is a zonal fire display panel developed with microprocessor. It indicates the alarm zone with LED and audio-visual signal. It connects with conventional FACP with multi-wire, providing alarm signal after processing the data from conventional FACP.

V Mounting and Commission

1. Mounting

   GST-RP16 is wall-mounted. Drill twoφ 5 holes on the wall as shown in Fig. 3, push twoφ 5 plastic expansion sleeves into the holes, then fix the back of GST-RP16 with expansion bolts and connect wires.
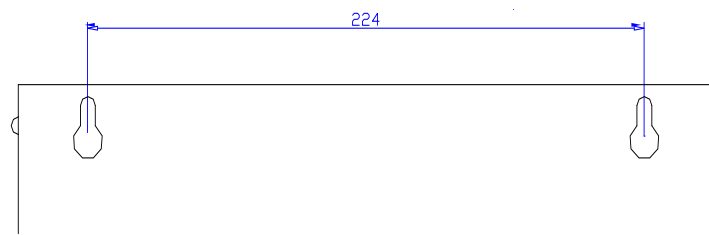

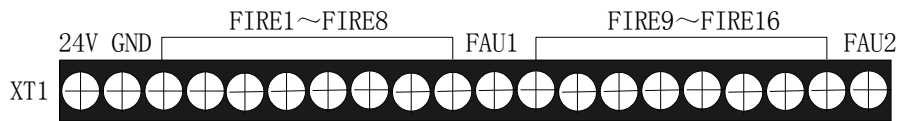
Fig. 3

2. Terminals are shown in Fig. 4.

Fig. 4

24V GND: Connect with auxiliary power terminals **AUX SUPPLY**（**+，-**）of conventional FACP. Other 24VDC power supply can also be used, but please make sure that the "Ground" of the power supply is well connected to the "-" of "AUX SUPPLY (+, -)" of conventional FACP.

FIRE1～FIRE16: Connect with zonal indication terminals **Z1~Z8** of **REPEATER OUTPUT** of conventional FACP.

FAU1～FAU2: Connect with fault terminal **FLT** of **REPEATER OUTPUT** of conventional FACP.

Wiring: 227 IEC 05 cables for signal input and power supply, cross section is 1.0mm^2.

3. Commission: GST-RP16 carries out self-test when power is on and all LEDs are lit. The buzzer alarms fire. After self-test, Power ON LED is lit, other LEDs are off, and the buzzer doesn't sound.
4. Keep chassis well grounded to ensure stable operation.

VI Operations

1. Put the jumper X1 at "ON".
2. In monitoring state, only "Power ON" LED is lit.
3. When there is a fire alarm, the "FIRE" LED is lit, and the zonal FIRE LED corresponding to conventional FACP is also lit. If it is the latest fire, relevant zonal FIRE LED flashes every 0.25s and GST-RP16 sounds every 0.25s.
4. FAULT LED is lit when there is a fault. The buzzer provides a fault sound (0.5s on, 4.5s off) if no fire alarm comes. If a fire condition occurs, the buzzer then gives fire alarm sound every 0.25s.
5. When MUTE is pressed, fire or fault sound will be silenced, and another sound (0.5s on, 9.5s off) indicates the mute state. If there is a fire or fault signal again, it will sound again.

VII Troubleshooting

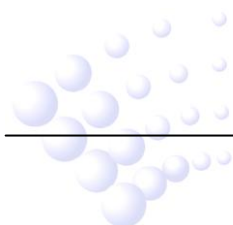Common problems and repair methods are shown in Table1 below.

Table1

Number	Problem	Reasons	Repair Methods
1	The device can't be started up.	a. Jumper X1 is not at "ON" end. b. No 5V	a. Put X1 to "ON". b. Check 7805 and its periphery circuit
2	No self-test or display wrongly after power-on	a. Power supply is abnormal. b. Connection with display panel is loose. c. LED is damaged. d. Transistor oscillator or main CPU damaged	a. Check 24V power supply b. Check wiring c. Replace the LED. d. Check transistor oscillator or replace main CPU
3	No dealing with alarm signals	a. Connection loose in input part. b. Insulated optocoupler does not work. c. Output circuit is damaged. d. Transistor oscillator or main CPU damaged.	a. Connect it in a right way. b. Replace the optocoupler. c. Check 74HC595 and ULN2003 d. Check transistor oscillator or replace main CPU
4	No sound	a. Output circuit is damaged b. Buzzer is damaged.	a. Check 74HC595 and ULN2003 b. Replace the buzzer.

VIII Cautions

1. Before powering up, check all cable problems, such as short circuit, open circuit and wrong connections etc.
2. GST-RP16 is a precise electronic product and must be maintained by specific personnel.
3. Make record on duty.
4. We take the responsibility of repairing the repeater. If any problem occurs, please contact us in time. The users will be responsible for any result from repairing GST-RP16 themselves.
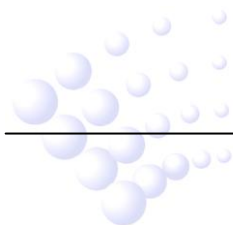
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