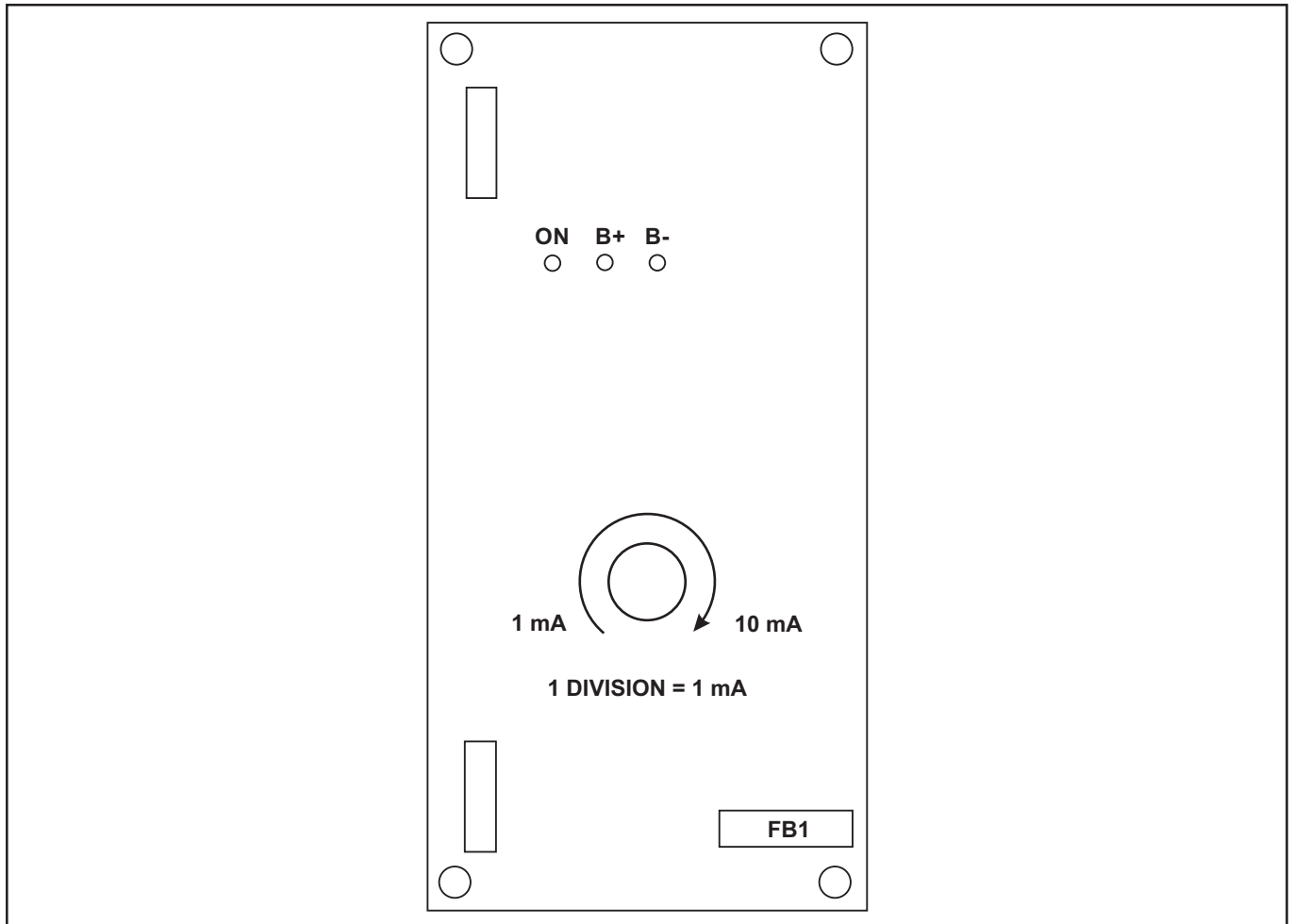


High-Tech Range

FB1 - Battery Earth Fault Relay



1. Introduction and Application

2. Features

3. Design

3.1 Front Plate

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3.3 Output Relays

4. Operation & Settings

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1. Introduction & Application

The battery earth fault type relay FB1 continuously checks the insulation resistance (leakage current) of all parallel connected paths between earth and either pole of the battery. Maximum insulation resistance which can be detected by the relay depends on the rated battery voltage. Relay FB1 protects the battery against Earth fault and deterioration of wiring insulation in either pole of the battery.

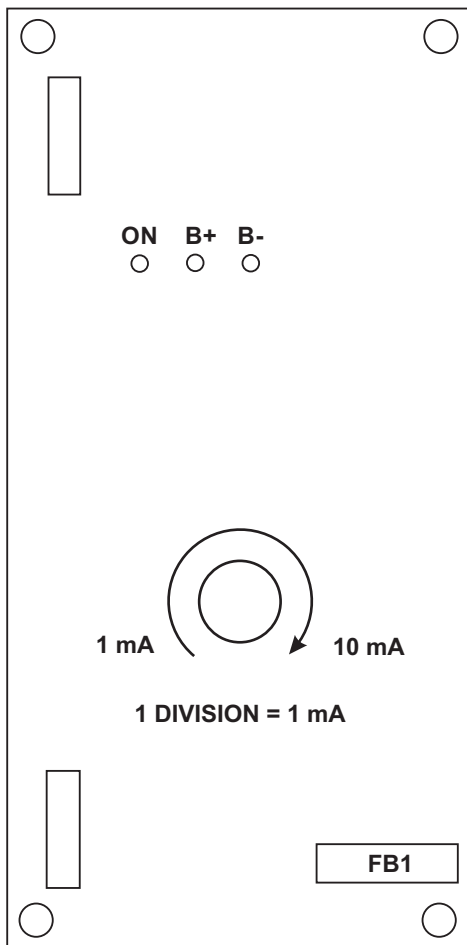


Fig. 3.1 Front plate

2. Features

- Static Design
- Variable setting range
- Fast Operation
- Application for wide range of battery voltage
- Self reset LED indication
- Flush mounting

3. Design

3.1 Front plate

3.2 Indications

Three LEDs have been provided on the front plate of FB1.

- LED indication for power ON.
- LED indication for earth fault at positive terminal.
- LED indication for earth fault at negative terminal.

B+ indicates battery leakage from positive side and B- indicates battery leakage from negative to the system earth.

3.3 Output Relays

FB1 is equipped with two relays, one for detection of earth fault at positive pole and other for negative pole.

4. Operation and Settings

FB1 has one potentiometer on the front plate. With the help of this potentiometer the user can select leakage current, at and above which FB1 should trip. This settings is applicable to both the cases, either positive leakage or negative leakage. Minimum 1.0 mA current can be detected with the help of FB1.

5. Connection Diagram

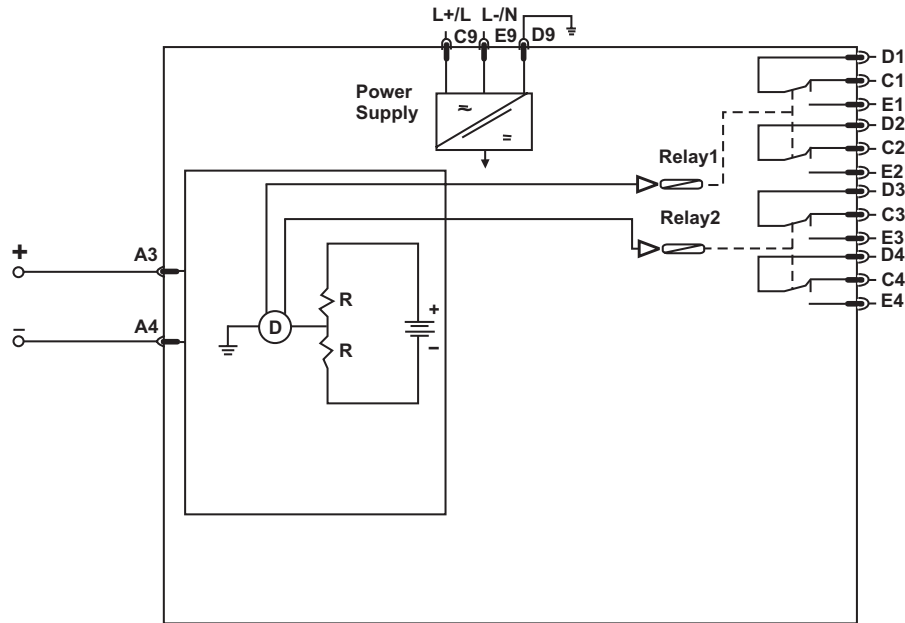


Fig. : 5.1 : Connection Diagram

The battery connections are to be done at A3 and A4

6. Technical Data

6.1 Measuring Input

Rated Data

Power Consumption in voltage circuit	: < 1VA
Thermal withstand capability in voltage circuit	: Continuously $1.25 \times U_N$

6.2 Auxiliary Voltage

Rated auxiliary voltage	: 16-270V AC / 16-360V DC
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6.3 Common Data

Returning time	: 30ms
Minimum response time	: 30ms

6.4 Output relay

Two output relays with two change over contacts.

Max. breaking capacity (AC voltage)	: 250V AC / 1000 VA
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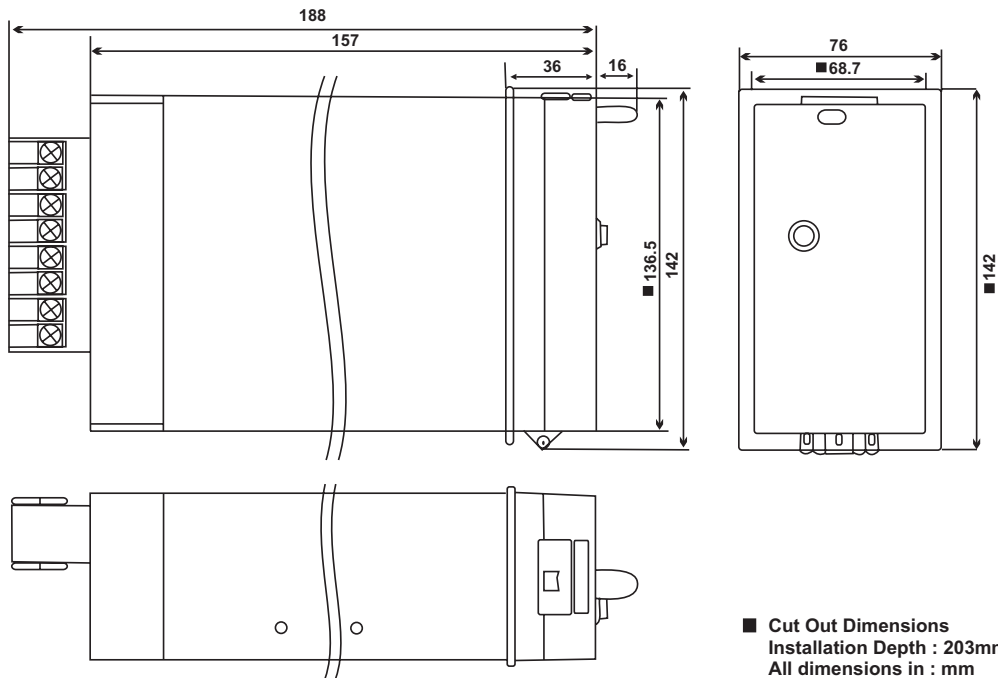
6.5 System Data

Specific ambient service

Storage temperature range	: -40°C to $+85^{\circ}\text{C}$
Operating temperature range	: -20°C to $+70^{\circ}\text{C}$
Insulation test voltage, input and outputs and to the relay frame as per EN 60255-6 and IEC 255-5	: 2.5kv(eff.), 50Hz, 1 min.
Impulse test voltage, input and output between themselves and to the relay frame as per IS 8686	: 5.0 kv; 1.2/50us; 0.5J
High frequency interference test voltage, input and outputs between themselves and to the relay frame as per IS 8686	: 2.5 kv / 1 MHz

7. Dimensional Details

Dimensional drawing (12TE Relay case)



8. Order Form

Battery Earth Fault Relay	FB1	
Battery Rating (VDC)	24V	1
	30V	2
	48V	3
	50V	4
	60V	5
	110V	6
	220V	7
	360V	8

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