

We touch your **electricity** everyday!

Battery Earth Fault Relay

**Hi-Tech Range  
FB-1**

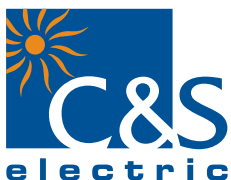


**STATIC  
DESIGN**

**FAST  
OPERATION**

**FLUSH  
MOUNTABLE**

**WIDE  
RANGE OF  
BATTERY  
VOLTAGE**



**PMD Division**

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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

## 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

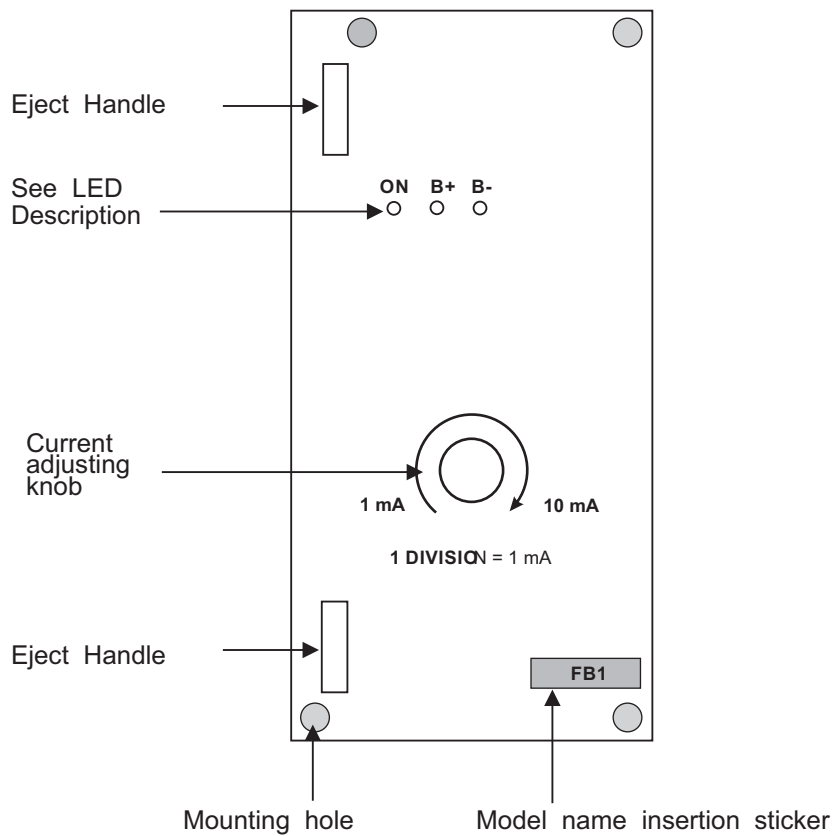
### 3.3 Output Relays

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.

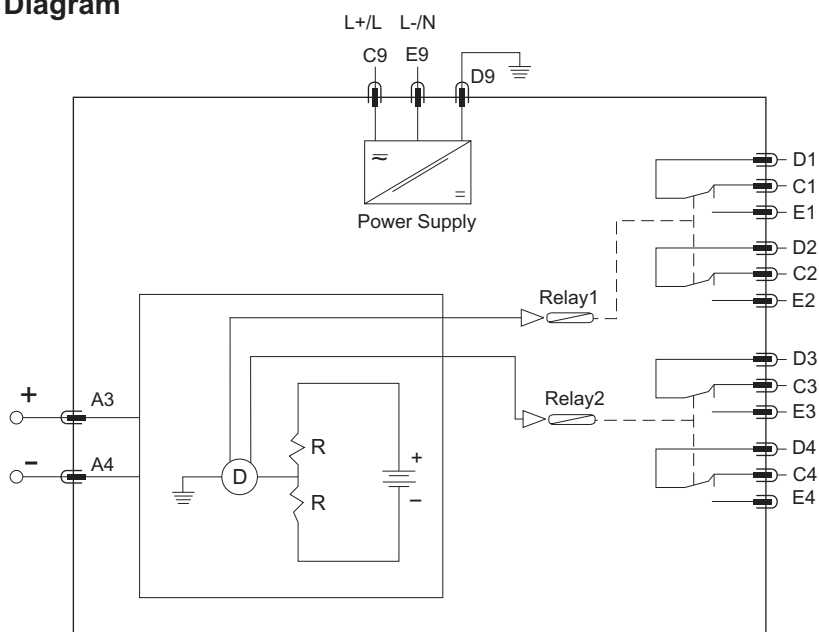
## 5. Human Machine Interface



### LED Description

ON: Indicated the Power ON status
B+ : B+ indicates battery leakage from positive side
B- : B- indicates battery leakage from negative to the system earth

## 6. Connection Diagram



The battery connections are to be done at A3 and A4

## 7. Back Terminal View



## 8. Technical Data

### a) Measuring Input

Rated Data

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

### b) Auxiliary Voltage

Rated auxiliary voltage	: L : 18-60V DC
	: H : 90-280V AC/ 100-360V DC

### c) Common Data

Returning time	: 30ms
Minimum response time	: 30ms

### d) Output relay

Two output relays with two change over contacts.

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

Specific ambient service	
Storage temperature range	: -40°C to +85 °C
Operating temperature range	: -20 °C to +70 °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.
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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
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High frequency interference test voltage,

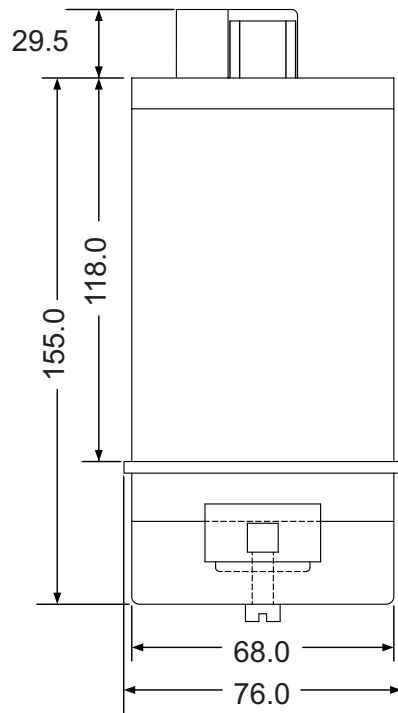
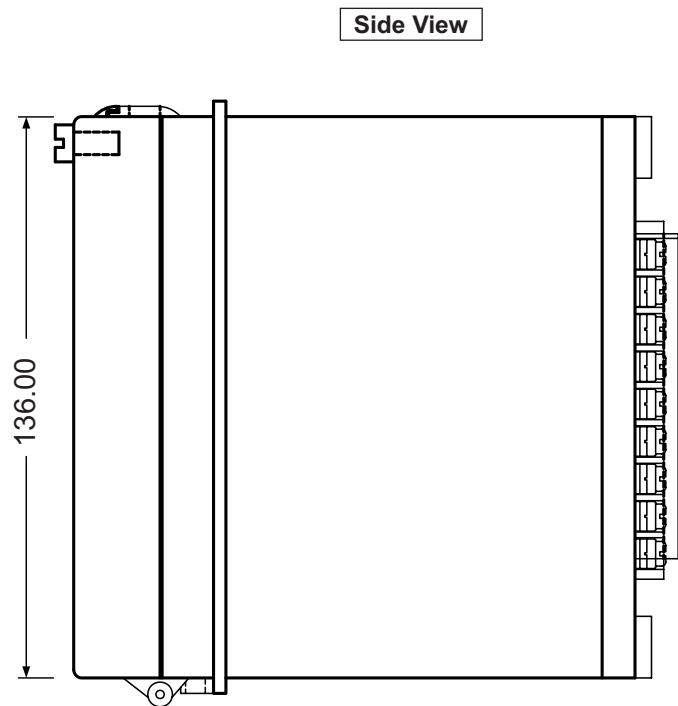
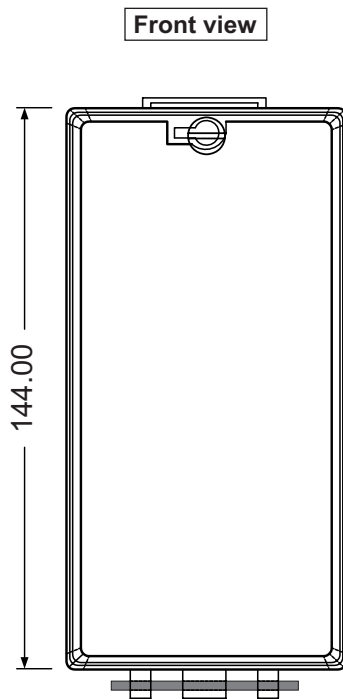
input and outputs between themselves and

to the relay frame as per IS 8686

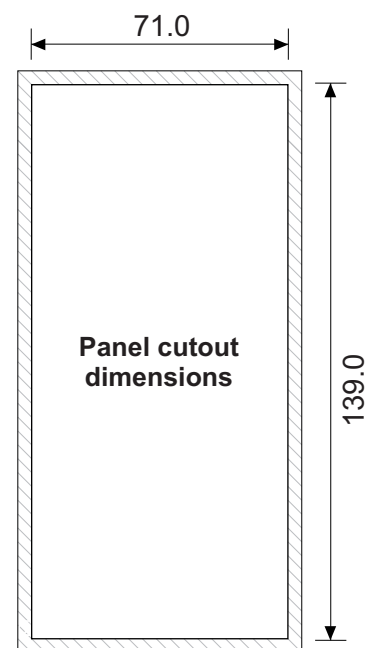
: 2.5 kv / 1 MHz
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## 7. Dimensional Details

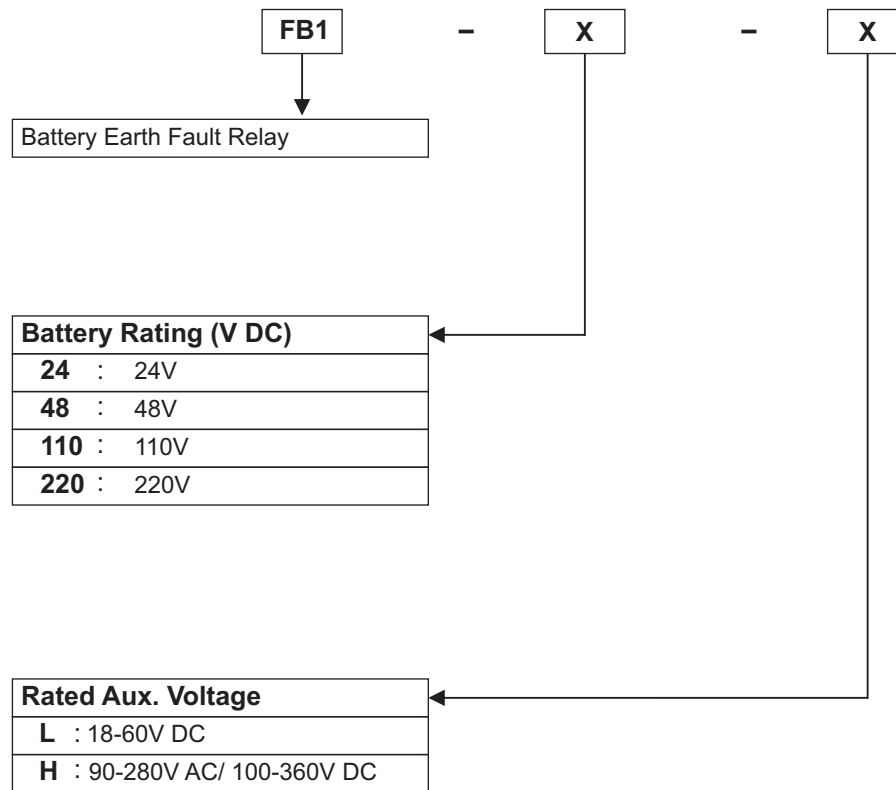
Dimensional drawing (12TE Relay case)



### Panel Cut out Details



## 8. Ordering Information



[illegible]

**NOTE**  
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