

Factstar Battery Monitor

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THERMAL RUNAWAY DETECTION WITH THE FACTSTAR

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Introduction

Thermal runaway is a condition caused by a battery float current that produces more internal heat than the battery can dissipate. As a result of temperature rise the float current is increased even further, therefore generating more heat. This condition may ultimately cause battery overheating, melt down or even fire. Refer to section 608.3 of The International Fire Code for regulation regarding this condition.

How It Works

The Factstar measures and monitors the battery float current of the string and detects the float current rise ratio over time. This indicates thermal runaway before the temperature of the battery increases. Since the Factstar monitors other parameters in the battery room (such as room temperature, battery voltage, ripple current, etc) it would not trigger a false alarm.

Installation

Figure 1 shows a simple installation of the Factstar on a battery string. After installation the unit must be set-up by enabling the thermal runaway alarm and associated relay. Rated ampere-hour of the battery must also be updated. When the alarm is triggered it is displayed on the LCD, and logged to internal memory of the Factstar. Thermal run-away alarm condition is also available in the form of dry contact of the relay. This can be used to generate an alarm in any control system or even provide a trip for the charger supplying the battery string.

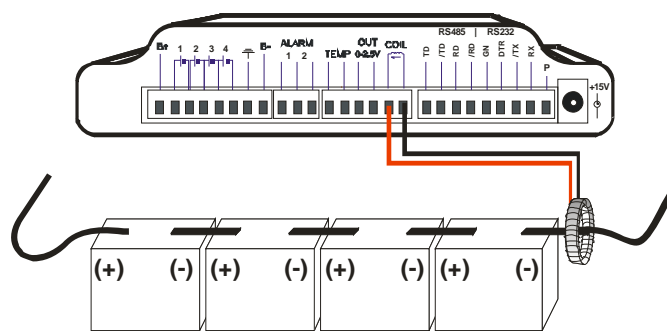


Figure 1: Factstar Core Installation.

References

- 1) International Fire Code (IFC) – 2007 Supplement