Weather Critical Device Controller

Overview:

The WCDC consists of a new LCOM module which monitors different sensor channels and triggers relays based on user defined conditions.

This will allow triggering of 3rd party devices such as:

- Turning on warning lights (beacons).
- Turning on a siren.
- Displaying messages on a variable message sign (VMS).
- Enabling a de-icing system.

Requirements:

- Any sensor channel can be used to trigger a relay.
- Multiple sensor channels can be configured to trigger multiple relays.
- Logical equations are independent from each other (single IF statement).
- Relay is triggered when sensor value reaches minimum/maximum or status.
- Relay is reset to normal state when sensor value within normal range/status.
- Parameter settings and processing needs to be done on LCOM.

Functionality:

The LCOM polls the sensor channels every minute and processes the alarm logic. When an alarm threshold is exceeded, the LCOM sends the MODBUS/IP command to the ACROMAG module via Ethernet which in turn triggers the appropriate relay.

Example:

IF [IRS31 CH900 Road Condition] = “Freezing Wet” THEN trigger relay 1.

IF [IRS31 CH900 Road Condition] = “Critical” THEN trigger relay 2.

IF [R2S CH700 Precipitation Type] = “Freezing Rain” THEN trigger relay 3.

IF [VS2 CH600 Visibility] < 200m THEN trigger relay 4.

ACROMAG 983 EN module

Description:

The ACROMAG module provides an isolated Ethernet network interface for 12 discrete input and/or output channels. The outputs provide direct on/off, high/low, or open/close control of industrial devices such as beacons, VMSs etc…