Technical Bulletin, Using Boolean Statements to Provide Custom Alarms in the Flow Computer

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NOTE: User Manual Reference - This Technical Bulletin complements the information contained in the User Manual and is applicable to all firmware revisions.

This bulletin was previously published with a different page layout.

Table of Contents

Scope

All firmware revisions of OMNI 6000/OMNI 3000 Flow Computers have the feature of customizing alarms with Boolean statements.

Abstract

The flow computer automatically records and logs many important alarm events and status changes. These events include transducer 'Low Alarm and High Alarm' states and failure of any transducer connected to the flow computer which is measurement related.

There are instances however where the flow computer user would like to monitor other internal or external status events that may have nothing to do with the measurement functions. These alarms may be the result of a digital I/O point changing state, or the result of a Boolean logic statement or a variable statement comparison.

Because of this requirement, the last sixteen (16) Boolean statements of the flow computer serve the dual function of evaluating normal logic expressions, and also providing user configurable alarm messages. The alarm message text to be logged and displayed can be entered into the expression fields in any of these last sixteen (16) Boolean statements. These statement numbers are, 1057 through 1072 for flow computers with forty-eight (48) Boolean statements, and 1073 through 1088 for computers with sixty-four (64) statements.

Each Boolean statement has an associated status point which is accessed using the same address as the statement number (Modbus Point 1072 for instance). The logic state of this status bit normally reflects the logical result of the statement (1 or 0, true or false). When the statement is used to provide a custom alarm message it functions in a different manner. To cause an alarm message to be logged, simply turn on the status point associated with the message.

Example

In this example, the user wishes to monitor a tank level switch that is connected to Digital I/O Point #1. When the tank level is high, the level switch applies 24 volts to the digital I/O point.

Digital I/O Point #1 is first assigned to the Dummy Boolean 1700. This reserves the Point as a digital Input Modbus Point 1001 will simply follow the digital level applied to the terminals of digital point #1. Had it been Digital Point #22, Modbus Point 1022 would be affected.

1025:	**1072=1001**	Move logic value of Digital I/O #1 into Point 1072
•		
•		
•		
1072:	**High Level Alarm**	Actual 'alarm text' which appears in alarm log

Statement 1025 is used to transfer the logic state of Digital I/O Point #1 to Point 1072, activating the user alarm whenever 24 volts is applied to the input terminals by the 'tank high level' switch contacts.

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