

HealthWatch

Introduction

The HealthWatch feature puts diagnostic data at your fingertips so you can monitor vital performance status to improve your process, predict failures, and minimize downtime.

Valuable data regarding maintenance and diagnostic selections can be read by operator-accessed displays. Alarms can be configured to activate when the desired threshold is reached.

See Section 4.18 Maintenance for details on using the various HealthWatch timers and counters. See Section 4.15 Alarms for details on HealthWatch maintenance alarms.

4.15 Alarms Set Up Group

Introduction

An alarm is an indication that an event that you have configured (for example—Process Variable) has exceeded one or more alarm limits. There are two alarms available. Each alarm has two setpoints. You can configure each of these two setpoints to alarm on various controller parameters.

There are two alarm output selections, High and Low. You can configure each setpoint to alarm either High or Low. These are called single alarms.

You can also configure the two setpoints to alarm on the same event and to alarm both high and low. A single adjustable Hysteresis of 0 to 100% is configurable for the alarm setpoint.

See Table 2-8 in the Installation section for Alarm relay contact information.

The prompts for the Alarm Outputs appear whether or not the alarm relays are physically present. This allows the Alarm status to be shown on the display and/or sent via communications to a host computer.

Alarms group prompts

Table 4-14 lists all the function prompts in the Alarms Set Up group and their definitions.

Table 4-14 Alarms Group Definitions

Lower Display Prompt	Upper Display Range of Setting or Selection	Parameter Definition
A1S1 VAL*	Value in engineering units	<p>ALARM 1 SETPOINT 1 VALUE—This is the value at which you want the alarm type chosen in prompt A1S1TYPE to actuate. The value depends on what the setpoint has been configured to represent. NO setpoint is required for Communications SHED. For SP Programming the value is the segment number for which the event applies.</p> <p>For Maintenance Timers, the setpoint value is HOURS.TENTHS OF HOURS. Example: setpoint value 4.2 means 4 hours 12 minutes. (Be aware that the value of the Timer itself is displayed in HOURS.MINUTES. Example: 4.2 means 4 hours 2 minutes.)</p> <p>For Maintenance Counters for output relays 1 and 2, the setpoint value is in thousands of counts (1 = 1000 counts).</p> <p>This prompt does not appear for “Alarm on Manual” type alarm. For example: A1S1TYPE = MANUAL.</p>

Lower Display Prompt	Upper Display Range of Setting or Selection	Parameter Definition
A1S2 VAL*	Value in engineering units	<p>ALARM 1 SETPOINT 2 VALUE—This is the value at which you want the alarm type chosen in prompt A1S2TYPE to actuate.</p> <p>The details are the same as A1S1 VAL.</p>
A2S1 VAL*	Value in engineering units	<p>ALARM 2 SETPOINT 1 VALUE—This is the value at which you want the alarm type chosen in prompt A2S1TYPE to actuate.</p> <p>The details are the same as A1S1 VAL.</p>
A2S2 VAL*	Value in engineering units	<p>ALARM 2 SETPOINT 2 VALUE—This is the value at which you want the alarm type chosen in prompt A2S2TYPE to actuate.</p> <p>The details are the same as A1S1 VAL.</p>
<p>*When the associated type is configured for Alarm on Totalizer Value, the Alarm SP value represents the four lowest digits for the selected Totalizer Scale Factor. When the Totalizer value exceeds the Alarm SP, the alarm is activated. The range is 0 to 9999 x Totalizer Scale Factor.</p>		
A1S1TYPE	<p>NONE INP 1 INP 2 INP 3 PV DEV OUTPUT SHED EV ON EV OFF MANUAL REM SP F SAFE PVRATE PV 2 DEV 2 OUT 2 MAN 2 RSP 2 F SAF2 PVRAT2 BREAK BREAK2 TOTAL TIME1 TIME2 TIME3 COUNT1 COUNT2 COUNT3</p>	<p>ALARM 1 SETPOINT 1 TYPE—Select what you want Setpoint 1 of Alarm 1 to represent. It can represent the Process Variable, Deviation, Input 1, Input 2, Output, and if you have a model with communications, you can configure the controller to alarm on SHED. If you have setpoint programming, you can alarm when a segment goes ON or OFF.</p> <p>NO ALARM INPUT 1 INPUT 2 INPUT 3 PROCESS VARIABLE (Loop 1) DEVIATION (Loop 1) OUTPUT (Loop 1) (NOTE 1) SHED FROM COMMUNICATIONS (Both Loops) EVENT ON (SP PROGRAMMING) EVENT OFF (SP PROGRAMMING) ALARM ON MANUAL MODE (Loop 1) (NOTE 2) REMOTE SETPOINT FAILSAFE PV RATE OF CHANGE (Loop 1) PROCESS VARIABLE (Loop 2) DEVIATION (Loop 2) OUTPUT (Loop 2) (NOTE 1) ALARM ON MANUAL MODE (Loop 2) (NOTE 2) REMOTE SETPOINT (Loop 2) FAILSAFE (Loop 2) PV RATE OF CHANGE (Loop 2) LOOP BREAK (Loop 1) (NOTE 3) LOOP BREAK (Loop 2) (NOTE 3) ALARM ON TOTALIZER VALUE HEALTHWATCH MAINTENANCE TIMER 1 VALUE HEALTHWATCH MAINTENANCE TIMER 2 VALUE HEALTHWATCH MAINTENANCE TIMER 3 VALUE HEALTHWATCH MAINTENANCE COUNTER 1 VALUE HEALTHWATCH MAINTENANCE COUNTER 2 VALUE HEALTHWATCH MAINTENANCE COUNTER 3 VALUE</p>

Lower Display Prompt	Upper Display Range of Setting or Selection	Parameter Definition
A1S2 H L A1S2 EV	HIGH LOW BEGIN END	ALARM 1 SETPOINT 2 STATE —Same as A1S1 H L. ALARM 1 SEGMENT EVENT 2 —Same as A1S1 EV.
A2S1 H L A2S1 EV	HIGH LOW BEGIN END	ALARM 2 SETPOINT 1 STATE —Same as A1S1 H L. ALARM 2 SEGMENT EVENT 1 —Same as A1S1 EV.
A2S2 H L A2S2 EV	HIGH LOW BEGIN END	ALARM 2 SETPOINT 2 STATE —Same as A1S1 H L. ALARM 2 SEGMENT EVENT 2 —Same as A1S1 EV.
AL HYST	0.0 to 100.0% of span or full output as appropriate	ALARM HYSTERESIS —A single adjustable Hysteresis is provided on alarms such that when the alarm is OFF it activates at exactly the alarm setpoint; when the alarm is ON, it will not deactivate until the variable is 0.0% to 100% away from the alarm setpoint. Configure the Hysteresis of the alarms based on INPUT signals as a % of input range span. Configure the Hysteresis of the alarm based on OUTPUT signals as a % of the full scale output range.
ALM OUT1	NO LAT LATCH	LATCHING ALARM FOR OUTPUT 1 —Each alarm output can be configured to be Latching or Non-latching. NO LAT —Non-latching LATCH —Latching ATTENTION When configured for latching, the alarm will stay on, after the alarm condition ends, until the RUN/HOLD key is pressed.
BLOCK	DISABL BLOCK1 BLOCK2 BLK 12	ALARM BLOCKING —Prevents nuisance alarms when the controller is first powered up. The alarm is suppressed until the parameter gets to the non-alarm limit or band. Alarm blocking affects both alarm setpoints. DISABL —Disables blocking BLOCK1 —Blocks alarm 1 only BLOCK2 —Blocks alarm 2 only BLK 12 —Blocks both alarms ATTENTION When enabled on power up or initial enabling via configuration, the alarm will not activate unless it has not been in alarm for one cycle (167 ms).

4.18 Maintenance Group

Introduction

The Maintenance group prompts are part of the HealthWatch feature. These prompts let you count and time the activity of discrete events such as relays, alarms, control modes and others, to keep track of maintenance needs.

Maintenance group prompts

Table 4-16 lists all the function prompts in the Maintenance Set Up group.

Table 4-16 Maintenance Group Definitions

Lower Display Prompt	Upper Display Range of Setting or Selection	Parameter Definition
TIME1	DISABL LASTR AL1SP1 AL1SP2 AL2SP1 AL2SP2 MANUAL	TIMER 1 —The timer tracks the elapsed time of the selected event. DISABL —Disables the timer. LAST RESET —Time elapsed since the last reset. ALARM 1 SETPOINT 1 —Cumulative time Alarm 1 Setpoint 1 was activated. ALARM 1 SETPOINT 2 — Cumulative time Alarm 1 Setpoint 2 was activated. ALARM 2 SETPOINT 1 — Cumulative time Alarm 2 Setpoint 1 was activated. ALARM 2 SETPOINT 2 — Cumulative time Alarm 2 Setpoint 2 was activated. LOOP 1 MANUAL —Cumulative time Loop 1 was in Manual.
TIME1 (cont'd)	GSOAK SOOTNG DIGIN1 DIGIN2 MAN2	GUARANTEED SOAK — Cumulative time the process was outside the guaranteed soak band. SOOTING — Cumulative time process was in sooting state DIGITAL INPUT1 — Cumulative time Digital Input 1 was closed DIGITAL INPUT 2 — Cumulative time Digital Input 2 was closed LOOP 2 MANUAL — Cumulative time Loop 2 was in Manual.
HRS.MIN1 OR DAYS.HRS1	00.00 to 23.59 1.00 to 416.15	Shows elapsed time of Timer 1 in Hours and Minutes. At 24.00, units change automatically to Days and Hours.
TIME 2	Same as TIME 1	The timer tracks the elapsed time of the selected event.
HRS.MIN2 OR DAYS.HRS2	00.00 to 23.59 1.00 to 416.15	Shows elapsed time of Timer 2 in Hours and Minutes. At 24.00, units change automatically to Days and Hours.
TIME 3	Same as TIME 1	The timer tracks the elapsed time of the selected event.
HRS.MIN3 OR DAYS.HRS3	00.00 to 23.59 1.00 to 416.15	Shows elapsed time of Timer 3 in Hours and Minutes. At 24.00, units change automatically to Days and Hours.

Lower Display Prompt	Upper Display Range of Setting or Selection	Parameter Definition
<p>COUNTER1</p> <p>DISABL MANUAL</p> <p>AL1SP1 AL1SP2 AL2SP1 AL2SP2 DIGIN1 DIGIN2 OUT1*1K OUT2*1K GSOAK PWRCYC PV_RNG FAILSF TUNE MAN2 PVRNG2 FSF2</p> <p>COUNTER 1 (cont'd)</p>		<p>COUNTER 1—The counter counts the number of times the selected event has occurred.</p> <p>DISABLE—Counter is not in use.</p> <p>LOOP 1 MANUAL—Number of times Loop 1 has been in Manual mode.</p> <p>ALARM 1 SETPOINT 1—Number of times Alarm 1 Setpoint 1 has been activated.</p> <p>ALARM 1 SETPOINT 2—Number of times Alarm 1 Setpoint 2 has been activated.</p> <p>ALARM 2 SETPOINT 1—Number of times Alarm 2 Setpoint 1 has been activated.</p> <p>ALARM 2 SETPOINT 2—Number of times Alarm 2 Setpoint 2 has been activated.</p> <p>DIGITAL INPUT 1—Number of times Digital Input 1 has closed.</p> <p>DIGITAL INPUT 2—Number of times Digital Input 2 has closed.</p> <p>OUTPUT 1 RELAY x 1000—Thousands of times Output 1 relay has been activated.</p> <p>OUTPUT 2 RELAY x 1000—Thousands of times Output 2 relay has been activated.</p> <p>GUARANTEED SOAK—Number of times unit has been in guaranteed soak.</p> <p>POWER CYCLE—Number of times unit's power has cycled off and on.</p> <p>LOOP 1 PV RANGE—Number of times Loop 1's PV has been out of range.</p> <p>LOOP 1 FAILSAFE—Number of times Loop 1 has been in Failsafe mode.</p> <p>LOOP 1 TUNE—Number of times Loop 1 has been tuned (manually and automatically)</p> <p>LOOP 2 MANUAL—Number of times Loop 2 has been in Manual mode.</p> <p>LOOP 2 PV RANGE—Number of times Loop 2's PV has been out of range.</p> <p>LOOP 2 FAILSAFE—Number of times Loop 2 has been in Failsafe mode.</p> <p>LOOP 2 TUNE—Number of times Loop 2 has been tuned (manually and automatically).</p>
COUNTS1	0-9999 (1 = 1000 counts for output relays 1 and 2)	Shows the value of Counter 1. Read only.
COUNTER2	Same as COUNTER1	Counter 2 counts the number of times the selected event has occurred.
COUNTS2	Same as COUNTS1	Shows the value of Counter 2. Read only.
COUNTER3	Same as COUNTER1	Counter 3 counts the number of times the selected event has occurred.
COUNTS3	Same as COUNTS1	Shows the value of Counter 3. Read only.

Lower Display Prompt	Upper Display Range of Setting or Selection	Parameter Definition
RESET ID	0-9999	<p>RESET ID—Entering the designated RESET ID resets to zero the timer or counter specified by Reset Type.</p> <p>To designate a number as the Reset ID:</p> <ol style="list-style-type: none"> 1. Set all timers and counters to DISABL. 2. Enter the desired RESET ID (0-9999). 3. Select a Reset Type (next prompt). The Reset ID goes into effect when you press FUNC , that is, you can use it to reset the counters and timers.
RES TYPE	NONE TIMER1 TIMER2 TIMER3 ALL TM COUNT1 COUNT2 COUNT3 ALL CO ALL TC	<p>RESET TYPE—Select which timers and/or counters will be reset to zero when the RESET ID is entered.</p> <p>NONE—No values will be reset</p> <p>TIMER 1 will be reset</p> <p>TIMER 2 will be reset</p> <p>TIMER 3 will be reset</p> <p>ALL TIMERS will be reset</p> <p>COUNTER 1 will be reset</p> <p>COUNTER 2 will be reset</p> <p>COUNTER 3 will be reset</p> <p>ALL COUNTERS will be reset</p> <p>ALL TIMERS AND COUNTERS will be reset</p>