Ref: FAQ-0026	Version: 1.0
Title – HWMOnline Rate of Change Alarm	
Made By: KE_190214 (Issue 1)	

Question –

Could you please advise how the rate of change alarm works in HWMOnline?
What would trigger it and how it is calculated and setup?

Answer –

Alarm Levels

Channel	Low Level	High Level	Min Night Flow	Rate Of Change
CH1 Gas Flow (kWh)	0	0	0	3

Alarm Conditions

#	Channel	Type	Persistence
1	CH1 Gas Flow	Rate of Change	2 / 2

The Rate of Change alarm operates on the unit of that particular channel – so if channel is flow measuring in metres/ sec, then rate of change units will be in metres/sec as well.

The rate is the change in units between sampling period (i.e 15MIN)
Example: If the rate of change is set to 2 m/s, and the data shows an increase or decrease of more than 2 m/s over consecutive sampling periods – the alarm can be triggered (providing the Persistence condition is also met)

Persistence is the number of times N that an active alarm condition is satisfied during the last R samples before the alarm is reported.

N=R means the active alarm condition must be satisfied during the last R samples:

1 out of 1 will report an alarm as soon as the condition occurs.
2 out of 2 will report an alarm if the condition occurs for 2 consecutive readings.
3 out of 3 will report an alarm if the condition occurs for 3 consecutive readings.
4 out of 4 will report an alarm if the condition occurs for 4 consecutive readings.

N<R means the active alarm condition must be satisfied in any N out of R samples:

1 out of 4 will report an alarm if the condition occurs once in any 4 consecutive readings.
2 out of 4 will report an alarm if the condition occurs twice in any 4 consecutive readings.

And so on.

Document History:

Edition	Date of Issue	Modification	Notes
1st	19/02/14		1st release

Halma Water Management, Ty Coch House, Llantarnam Park Way, Cwmbran, Gwent. NP44 3AW.
www.hwm-water.com; Tel: +44 (0) 1633 489479; Fax: +44 (0) 1633 877857