

What is claimed is:

1. A mass flow controller comprising:
 - a first flow meter constructed and arranged to measured flow rate of mass through the mass flow controller in real time during the running of a process;
 - a second flow meter constructed and arranged to measure flow rate of mass through the mass flow controller in real time during the running of a process;
 - a control valve constructed and arranged so as to control the flow rate of mass through the mass flow controller in response to a control signal generated as a function of the flow rate as measured by one of the flow meters in real time during the running of a process; and
 - a system controller constructed and arranged to generate the control signal, and to provide an indication when a difference between the flow rate of mass as measured by the first flow meter and the flow rate of mass as measured by the second flow meter exceeds a threshold.
2. A mass flow controller according to claim 1, wherein the first and second flow meters are of the same type.
3. A mass flow controller according to claim 1, wherein the first and second flow meters are of different types.
4. A mass flow controller according to claim 1, wherein at least one of the flow meters is differential pressure flow meter.
5. A mass flow controller according to claim 1, wherein at least one of the flow meters is thermal mass flow meter.
6. A mass flow controller according to claim 5, wherein the other of the flow meters is differential pressure flow meter.
7. A mass flow controller according to claim 1, wherein at least one of the flow meters is a coriolis flow meter.
8. A mass flow controller according to claim 1, wherein at least one of the flow meters is a magnetic flow meter.