**Regarding claim 1**. A rotation detecting apparatus comprising:  
at least first and second rotation sensors, each of the first and second rotation sensors comprising:  
a sensor element configured to output a measurement value indicative of rotation of a measurement target;  
a first calculator configured to:  
calculate first rotation information about rotation of the measurement target in accordance with the measurement value output from the sensor element while a switch is in an on state so that electrical power is supplied from a power source to the first calculator via the switch; and  
stop calculation of the first rotation information while the switch is in an off state;  
  
a second calculator configured to calculate second rotation information about rotation of the measurement target in accordance with the measurement value of the sensor element independently of the on state or off state of the switch, the second rotation information being different from the first rotational information; and  
an output unit configured to generate an output signal including at least the first rotational information and the second rotational information, and output the output signal; and  
  
a controller configured to, while the switch is in the on state, receive, as a first output signal, the output signal output from the output unit of the first rotation sensor, and receive, as a second output signal, the output signal output from the output unit of the second rotation sensor,  
the controller being configured to monitor whether there is a malfunction in each of the first rotation sensor and the second rotation sensor as a function of the first output signal and the second output signal.   
   
**Regarding claim 2**. The rotation detecting apparatus according to claim 1, wherein:  
the controller is configured to determine, upon the switch being changed from the off state to the on state, whether there is a malfunction in the second rotational information included in at least one of the first and second output signals during the off state of the switch as a function of:  
the second rotational information included in the first output signal; and  
the second rotational information included in the second output signal.   
   
**Regarding claim 3**. The rotation detecting apparatus according to claim 1, wherein:  
the controller is configured to:  
calculate, upon the switch being changed from the off state to the on state, a first change amount and a second change amount,  
the first change amount being between:  
the second rotational information included in the first output signal immediately before the switch being off state and  
the second rotational information included in the first output signal immediately after the switch being on state;  
  
the second change amount between:  
the second rotational information included in the second output signal immediately before the switch being off state and  
the second rotational information included in the second output signal immediately after the switch being on state; and  
  
determine, upon the switch being changed from the off state to the on state, whether there is a malfunction in the second rotational information included in each of the first and second output signals during the off state of the switch as a function of the first change amount and the second change amount.   
   
**Regarding claim 4**. The rotation detecting apparatus according to claim 1, wherein:  
the controller is configured to:  
calculate, upon the switch being changed from the off state to the on state, a first rotation parameter calculated as a function of the first rotational information and the second rotational information included in the first output signal;  
calculate, upon the switch being changed from the off state to the on state, a second rotation parameter calculated as a function of the first rotational information included in the first output signal and the second rotational information included in the second output signal; and  
monitor whether there is a malfunction in the second rotational information included in each of the first and second output signals during the off state of the switch as a function of the first and second rotational parameters.   
   
**Regarding claim 5**. The rotation detecting apparatus according to claim 1, wherein:  
the controller is configured to:  
calculate, upon the switch being in the on state, equivalent information based on conversion of the first rotational information included in at least one of the first and second output signals, the equivalent information being equivalent to the second rotational information included in the at least one of the first and second output signals; and  
determine, upon the switch being in the on state, whether there is a malfunction in the second rotational information included in the at least one of the first and second output signals as a function of:  
the second rotational information included in the at least one of the first and second output signals; and  
the equivalent information based on conversion of the first rotational information included in the at least one of the first and second output signals.   
   
**Regarding claim 6**. The rotation detecting apparatus according to claim 1, wherein:  
the controller is configured to:  
calculate, upon the switch being in the on state, a first rotation parameter based on the first rotational information and the second rotational information included in at least one of the first and second output signals;  
calculate, upon the switch being in the on state, a second rotation parameter based on the first rotational information independently of the second rotational information included in the at least one of the first and second output signals; and  
determine, upon the switch being in the on state, whether there is a malfunction in the second rotational information included in each of the first and second output signals as a function of the first rotation parameter and the second rotation parameter.   
   
**Regarding claim 7**. The rotation detecting apparatus according to claim 1, wherein:  
the controller is communicable with an external sensor configured to output, as a third output signal, external rotational information indicative of rotation of a rotational member that is rotated based on rotation of the measurement target; and  
the controller is configured to monitor whether there is a malfunction in each of the first rotation sensor and the second rotation sensor as a function of the first output signal, the second output signal, and the third output signal.   
   
**Regarding claim 8**. The rotation detecting apparatus according to claim 1, wherein:  
each of the first and second rotation sensors comprises a self-diagnostic unit configured to perform a diagnosis task to diagnose whether there is a malfunction in the corresponding one of the first and second rotation sensors;  
the output unit of the first rotation sensor is configured to generate the first output signal that includes a result of the diagnostic task obtained by the self-diagnostic unit of the first rotation sensor; and  
the output unit of the second rotation sensor is configured to generate the second output signal that includes a result of the diagnostic task obtained by the self-diagnostic unit of the second rotation sensor.   
   
**Regarding claim 9**. The rotation detecting apparatus according to claim 8, wherein:  
the sensor element included in each of the first and second rotation sensors comprises a first sensor element and a second sensor element;  
the first calculator, included in each of the first and second rotation sensors, comprises at least two first calculators provided for the respective first and second sensor elements; and  
the self-diagnostic unit of each of the first and second rotation sensors is configured to:  
perform a comparison between the first rotation information calculated by one of the first calculators and the first rotation information calculated by the other of the first calculators; and  
monitor whether there is a malfunction in the corresponding one of the first and second rotation sensors as a function of a result of the comparison.   
   
**Regarding claim 10**. The rotation detecting apparatus according to claim 8, wherein:  
the sensor element included in each of the first and second rotation sensors comprises a first sensor element and a second sensor element;  
the second calculator, included in each of the first and second rotation sensors, comprises at least two second calculators provided for the respective first and second sensor elements; and  
the self-diagnostic unit of each of the first and second rotation sensors is configured to:  
perform a comparison between the second rotation information calculated by one of the second calculators and the second rotation information calculated by the other of the second calculators; and  
monitor whether there is a malfunction in the corresponding one of the first and second rotation sensors as a function of a result of the comparison.   
   
**Regarding claim 11**. The rotation detecting apparatus according to claim 1, wherein:  
the sensor element included in each of the first and second rotation sensors comprises a first sensor element and a second sensor element;  
the first calculator, included in each of the first and second rotation sensors, comprises at least two first calculators provided for the respective first and second sensor elements; and  
the controller is configured to monitor whether there is a malfunction in each of the first rotation sensor and the second rotation sensor based on a comparison between:  
the first rotation information calculated by one of the first calculators in the corresponding one of the first rotation sensor and the second rotation sensor; and  
the first rotation information calculated by the other of the first calculators in the corresponding one of the first rotation sensor and the second rotation sensor.   
   
**Regarding claim 12**. The rotation detecting apparatus according to claim 1, wherein:  
the sensor element included in each of the first and second rotation sensors comprises a first sensor element and a second sensor element;  
the second calculator, included in each of the first and second rotation sensors, comprises at least two second calculators provided for the respective first and second sensor elements; and  
the controller is configured to monitor whether there is a malfunction in each of the first rotation sensor and the second rotation sensor based on a comparison between:  
the second rotation information calculated by one of the second calculators in the corresponding one of the first rotation sensor and the second rotation sensor; and  
the second rotation information calculated by the other of the first calculators in the corresponding one of the first rotation sensor and the second rotation sensor.   
   
**Regarding claim 13**. The rotation detecting apparatus according to claim 1, wherein:  
the controller comprises a first controller and a second controller provided for the first and second rotation sensors; and  
the first controller and the second controller are communicably connected to each other.   
   
**Regarding claim 14**. The rotation detecting apparatus according to claim 1, wherein:  
the measurement target is a motor;  
the first rotational information includes a rotational angle of the motor; and  
the second rotational information includes a rotation number of the motor.   
   
**Regarding claim 15**. The rotation detecting apparatus according to claim 14, wherein:  
the motor is installed in an electric steering apparatus of a vehicle, the vehicle including a steering shaft linked to the motor, and wheels liked to the motor; and  
the controller is configured to calculate, as a function of the first rotational information and the second rotational information for at least one of the first and second rotation sensors, at least one of:  
a rotational angle of the steering shaft; and  
a parameter correlated with a rotational angle of each of the wheels.   
   
**Regarding claim 16**. The rotation detecting apparatus according to claim 15, wherein:  
the controller is configured to:  
perform automatic control of the electric steering apparatus in accordance with the first rotational information and the second rotational information for at least one of the first and second rotation sensors upon monitoring that there is not a malfunction in one of the first rotation sensor and the second rotation sensor; and  
stop the automatic control of the electric steering apparatus upon monitoring that there is a malfunction in at least one of the first rotation sensor and the second rotation sensor.