CLAIMS

1. An inside air control system comprising:

a gas sensor (92) configured to measure a concentration of a target gas contained in inside air in a storage (1),

the inside air control system performing a concentration control operation to control the concentration of the target gas in the inside air based on a measured value obtained by the gas sensor (92),

the inside air control system further comprising:

an outdoor air supply passage (255, 281) through which outdoor air is to be supplied to the gas sensor (92); and

a controller (110) configured to perform a determination operation if the measured value obtained by the gas sensor (92) returns to a predetermined normal range after falling outside the normal range, the determination operation being performed to supply outdoor air through the outdoor air supply passage (255, 281) to the gas sensor (92) to determine whether or not the gas sensor (92) is normal.

2. The inside air control system of claim 1, wherein

if the measured value obtained by the gas sensor (92) falls within a predetermined reference range including a concentration of the target gas in outdoor air that is being supplied to the gas sensor (92), the controller (110) determines in the determination operation that the gas sensor (92) is normal, and if the value measured by the gas sensor (92) falls outside the reference range, the controller (110) determines that the gas sensor (92) is not normal.

3. The inside air control system of claim 1 or 2, wherein

if the controller (110) determines in the determination operation that the gas sensor (92) is normal, the controller (110) calibrates the gas sensor (92) based on the measured value obtained by the gas sensor (92) to which outdoor air is being supplied.

4. The inside air control system of any one of claims 1 to 3, wherein

if the measured value obtained by the gas sensor (92) falls outside the predetermined normal range, the controller (110) stops the concentration control operation.

5. The inside air control system of any one of claims 1 to 4, wherein

if the controller (110) determines in the determination operation that the gas sensor (92) is not normal, the controller (110) temporarily stops supply of outdoor air to the gas sensor (92), and if a predetermined re-determination condition is thereafter satisfied, the controller (110) again performs the determination operation.

6. The inside air control system of claim 5 further comprising:

in addition to the gas sensor (92), an oxygen sensor (91) configured to measure a concentration of oxygen contained in the inside air,

an oxygen control operation being performed to control the concentration of oxygen in the inside air based on a measured value obtained by the oxygen sensor (91),

the re-determination condition for the controller (110) being a condition where a predetermined period of time has elapsed since supply of outdoor air to the gas sensor (92) is temporarily stopped, or the measured value obtained by the oxygen sensor (91) falls within a predetermined range.

7. The inside air control system of any one of claims 1 to 5, wherein

a carbon dioxide sensor (92) configured to measure a concentration of carbon dioxide serving as the target gas is used as the gas sensor (92), a carbon dioxide control operation is performed as the concentration control operation to control the concentration of carbon dioxide in the inside air based on a measured value obtained by the carbon dioxide sensor (92),

the inside air control system further comprises an oxygen sensor (91) configured to measure a concentration of oxygen contained in the inside air, an oxygen control operation is performed to control the concentration of oxygen in the inside air based on a measured value obtained by the oxygen sensor (91), and

if the measured value obtained by the carbon dioxide sensor (92), which serves as the gas sensor, falls outside the normal range, the controller (110) disables only the carbon dioxide control operation among the carbon dioxide control operation and the oxygen control operation.

8. The inside air control system of claim 7, wherein

if the controller (110) determines in the determination operation that the carbon dioxide sensor (92), which serves as the gas sensor, is normal, the controller (110) enables the carbon dioxide control operation.

9. The inside air control system of any one of claims 1 to 8, wherein

during the concentration control operation, the controller (110) performs a calibration operation at predetermined time intervals, the calibration operation being performed to supply outdoor air through the outdoor air supply passage (255, 281) to the gas sensor (92) to calibrate the gas sensor (92).