

Specifications for DC Fan Sensors

Pulse sensor (Tach output type) example

Pulse sensor outputs two pulse waves per revolution of fan, and it is good to detect fan speed. Pulse sensors can be incorporated in all kinds of DC fans.

Noise from inside the fan or from external devices may effect sensor output.

Contact us for more information.

The specifications listed below are for the 9G1212H101 model, and vary with the model number used. Please contact your point of sale for details.

Output circuit

Open collector

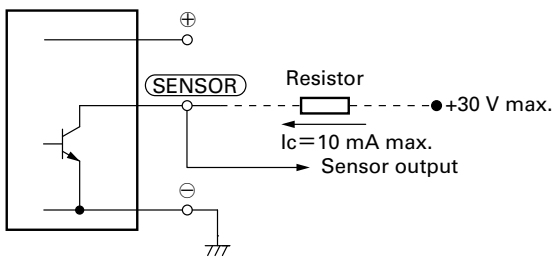
Specifications

$V_{CE} = +30\text{ V max.}$

(For a 48 V-rated fan: $V_{ce} = +60\text{ V max.}$)

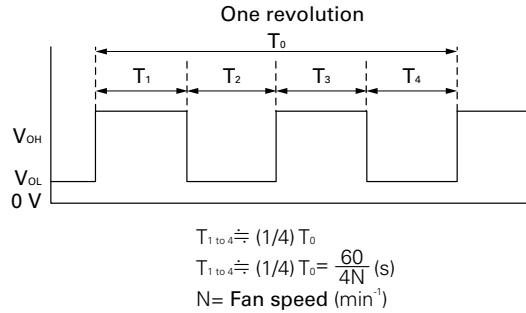
$I_c = 10\text{ mA max.}$ [$V_{OL} = V_{ce}(\text{SAT}) = 0.4\text{ V or less}$]

Inside of DC fan



Output waveform (Need pull-up resistor)

In case of steady running



If you want detailed specifications that apply when the rotor is locked, please contact SANYO DENKI.

Locked rotor sensor (rotation / lock detection type) example

Locked rotor sensor outputs fan status signals. It is good to check whether the fan is running or locked

Noise from inside the fan or from external devices may effect sensor output.

Regarding details of the reverse logic and specifications of lock sensor output signals, please contact SANYO DENKI.

Lock sensor can not be used in some models. Contact us for more information.

The specifications listed below are for the 9G1212H1D01 model, and vary with the model number used. Please contact your point of sale for details.

Output circuit

Open collector

Specifications

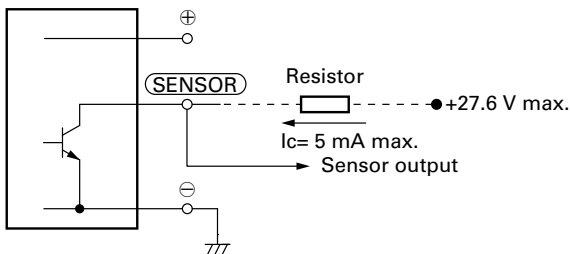
$V_{CE} = +27.6\text{ V max.}$

For a 48 V fan $V_{CE} = +60\text{ V max.}$

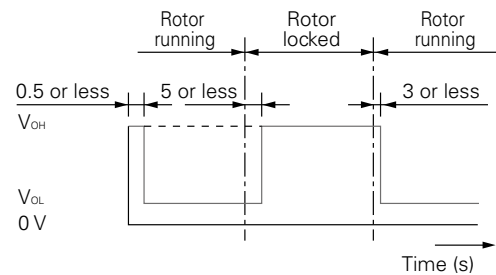
$I_c = 5\text{ mA max.}$ [$V_{OL} = V_{ce}(\text{SAT}) = 0.6\text{ V or less}$]

For a 48 V fan: $V_{ce}(\text{SAT}) = 0.4\text{ V or less}$

Inside of DC fan



Output waveform (Need pull-up resistor)



Note: The output is completely at V_{OL} with 0.5 s or less after power-up.

Low-speed sensor (rotating speed detection type) example

Low-speed sensor outputs a signal when fan speed goes down to trip point or less. It is good to detect cooling degradation of fan. Noise from inside the fan or from external devices may effect sensor output, please. If you want detailed specification and reverse signal output, please contact SANYO DENKI. Low-speed sensors can not be used in some models. Contact us for more information.

The specifications listed below are for the 9G1212H1H01 model, and vary with the model number used. Please contact your point of sale for details.

Output circuit

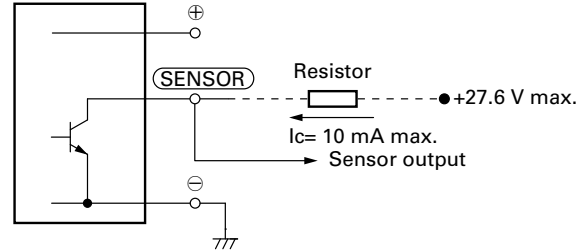
Open collector

Specifications

$V_{CE} = +27.6 \text{ V max.}$

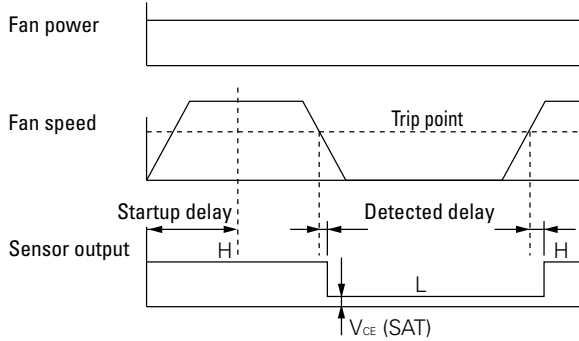
$I_c = 10 \text{ mA max.}$ [$V_{OL} = V_{CE}(\text{SAT}) = 0.5 \text{ V or less}$]

Inside of DC fan

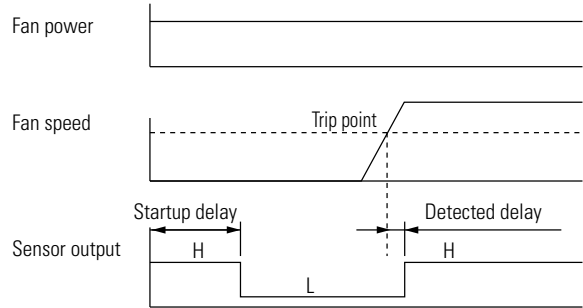


Sensor scheme

Example 1: In case steady running



Example 2: In case that the rotor is locked when the fan motor is turned on and released after the start-up delay time

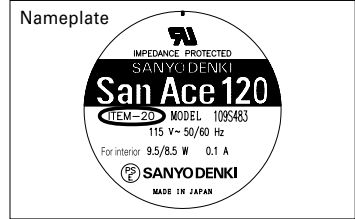


Specifications for AC Fan Sensor

ACDC fan sensor specifications differ from those below. Please refer to each product page.

Specifications of sensor circuit

	5 V (ITEM-20*)	12 V (ITEM-30*)
Example of model.no	109S405UL	
System	Speed detection, Auto-restart, Open collector	
Power supply	5 VDC±10% At 5 V, 6 mA	12 VDC±20% At 12 V, 10 mA
Recommend sensor circuit output	At Vp= 5 V, I= 100 mA max.	At Vp= 12 V, I = 200 mA max.
Trip point	Standard speed: 1700 min ⁻¹ ±10% Low speed: 850 min ⁻¹ ±10%	
Response speed	Standard speed: Startup delay 18 s Detection delay 1 s Low speed: Startup delay 36 s Detection delay 2 s	
Insulation resistance	10 MΩ min. at 500 VDC (Note)	
Dielectric strength	50/60 Hz, 1000 VAC, 1 minute (Note)	
Ambient conditions	Temperature: -10 to +70°C , humidity: 90% RH max. (at 40°C)	

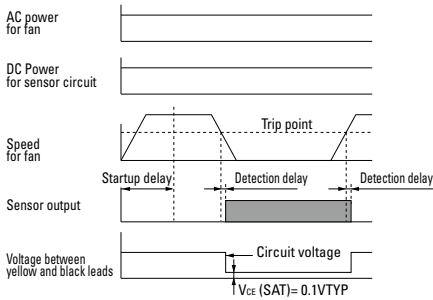


*[ITEM-20] and [ITEM-30] are printed on the fan nameplate.

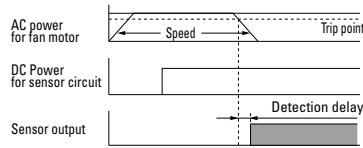
Note: Between one end that all sensor leads consisting of brown, yellow and black are tied together and the G terminal or power terminal of the fan.

Sensor scheme

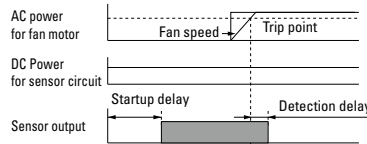
Example 1: When the AC power for the fan and the DC power for the sensor are turned on at the same time



Example 2: When the AC power for the fan is turned on first, then the DC power for sensor is powered on

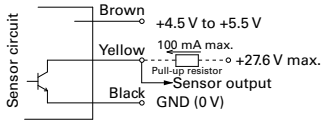


Example 3: When the DC power for sensor is first powered on, then the AC power for the fan is turned on

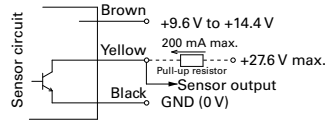


Sensor output circuit

5 V (ITEM-20*)



12 V (ITEM-30*)



GND (Black) should be shared in case that power supply for sensor circuit (Brown) and that for sensor pull-up (Yellow) are separated.