



Selection of 2 outputs (& Alarm LED Display) for Aichi Small Electromagnetic Flowsensor VN

1. General

VN flowsensor has 2 outputs (OUTPUT 1 and OUTPUT 2), which are able to be selected from the following table (One kind of output content is selectable for the each OUTPUT).

		OUTPUT 2			
		Alarm	Switch		Unit pulse (※1)
			Level	Window	
OUTPUT 1	High-density pulse	○	○	○	○
	Unit pulse (※1)	○	○	○	○
	Switch: Level judgment	○	○	○	○
	Alarm	×	○	○	○
	Switch: Window judgment	○	○	○	○

○: Able to be selected

×: Not able to be selected

※1: Pulse unit for OUTPUT 1 and OUTPUT 2 can be differ

(Example: 1L/pulse for OUTPUT 1 and 10L/pulse for OUTPUT 2).

2. Output specification common to OUTPUT1 and OUTPUT2

Contact output: NPN open collector

Maximum current: 20mA

Resistance voltage between terminals: 30V

Remaining voltage at ON time: Not more than 1V

LED display: 2 colors LED of green and red

3. Selection of OUTPUT 1

■ Output type:

- Normal open (N.O.:Standard)
- Normal Close (N.C.)

■ Kind of output:

- High-density pulse (Standard) → Move to ①
- Unit pulse → Move to ②
- Alarm → Move to ③
- Switch level judgment → Move to ④
- Switch window judgment → Move to ⑤

- ◆ ① High-density pulse
(Please enter frequency)

. Hz

20.0~400.0Hz (Standard: 200.0Hz)

★ The frequency is selectable by 0.1Hz step.

■ ② Unit pulse

- | | | | |
|-----------|-----------------------------------|----------------------------------|---------------------------------|
| For VN05R | <input type="checkbox"/> 0.001L/P | <input type="checkbox"/> 0.01L/P | <input type="checkbox"/> 0.1L/P |
| For VN10R | <input type="checkbox"/> 0.01L/P | <input type="checkbox"/> 0.1L/P | <input type="checkbox"/> 1L/P |
| For VN20R | <input type="checkbox"/> 0.1L/P | <input type="checkbox"/> 1L/P | <input type="checkbox"/> 10L/P |

- ③ Alarm (In case Alarm is selected for OUTPUT1, please select kind of output content other than Alarm for OUTPUT 2)

This is to judge as normal condition when nothing of the selected alarm items is detected and as abnormal condition when any of the selected alarm items is detected.

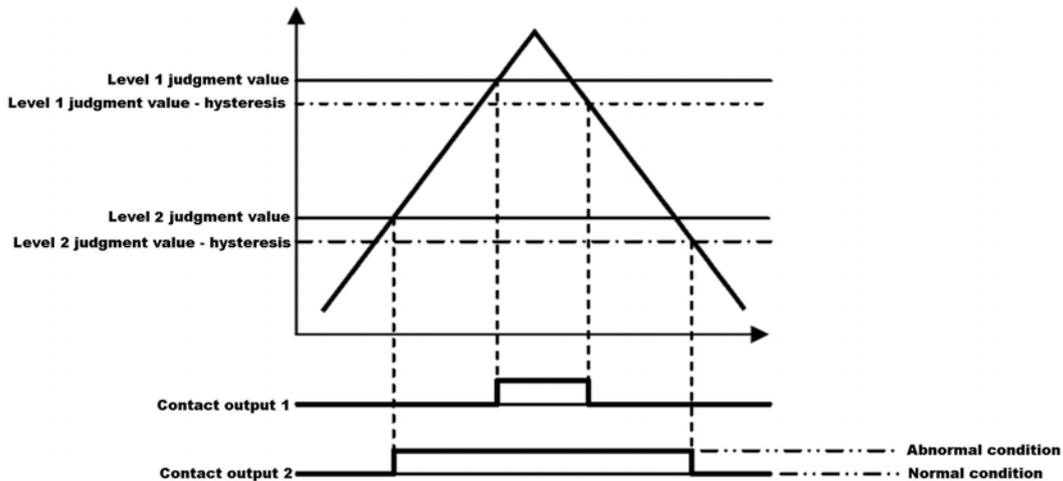
Selection of Alarm judgment items

- | | | |
|---------------------------------|-----------------------|------------------------------------------------------------------------------|
| Excitation error | Active | |
| Memory error | Active | |
| Low power voltage detection | Active | |
| ■ No-water detection | Contact signal output | <input type="checkbox"/> Active (Standard) <input type="checkbox"/> Inactive |
| | Alarm on LED | <input type="checkbox"/> Active (Standard) <input type="checkbox"/> Inactive |
| ■ Excessive fluid noise | Contact signal output | <input type="checkbox"/> Active (Standard) <input type="checkbox"/> Inactive |
| | Alarm on LED | <input type="checkbox"/> Active (Standard) <input type="checkbox"/> Inactive |
| ■ Reverse-flow detection | Contact signal output | <input type="checkbox"/> Active (Standard) <input type="checkbox"/> Inactive |
| | Alarm on LED | <input type="checkbox"/> Active (Standard) <input type="checkbox"/> Inactive |
| ■ Excessive flow-rate detection | Contact signal output | <input type="checkbox"/> Active (Standard) <input type="checkbox"/> Inactive |
| | Alarm on LED | <input type="checkbox"/> Active (Standard) <input type="checkbox"/> Inactive |

Name of alarm	Content
Excitation error	Electric current does not correctly flow through the excitation coil.
Memory error	Error of data at the memory is detected.
Low power voltage detection	Power voltage lower than 9.6V is detected.
No-water detection	The measuring pipe is not fulfilled with liquid.
Excessive fluid noise	Circumstances that correct flow measurement is not possible because of abnormal current flown in the fluid, air exists in the fluid, etc.
Reverse-flow detection	Reverse flow of the fluid, which flow direction is opposite of the arrow mark on the body of VN.
Excessive flow-rate detection	Not less than 25% excess from the upper limit of the accuracy guaranteed flow-rate range is detected.

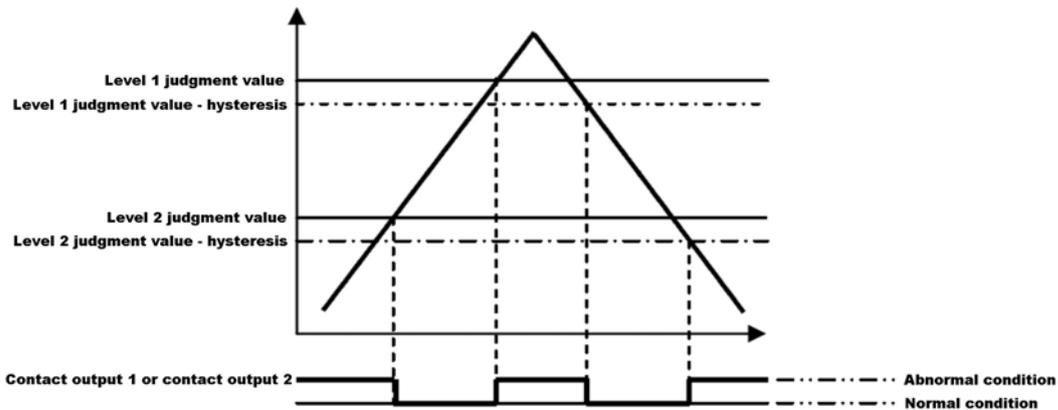
- ④ Switch level judgment

This is to judge as normal condition when flow-rate is not more than the set Level 1 Judgment Value and as abnormal condition when flow-rate is above the set Level 1 Judgment Value. → Move to "5. Setting of Level Judgment Values"



⑤ Switch window judgment

This is to detect whether flow-rate is within the set upper limit and the set lower limit or falls outside of the range, and to judge as normal condition when flow-rate is not more than the set upper limit and not less than the set and as abnormal condition when flow-rate or falls outside of the range. Setting of the upper limit value and the lower limit value can be with either of Level 1 Judgment Value and Level 2 Judgment Value. → Move to “5. Setting of Level Judgment Values”



4. Selection of OUTPUT 2

■ Output type:

- Normal open (N.O.:Standard)
- Normal Close (N.C.)

■ Kind of output:

- Alarm (Standard) → Move to ⑥
- Unit pulse → Move to ⑦
- Switch level judgment → Move to ⑧
- Switch window judgment → Move to ⑨

- ⑥ Alarm (In case Alarm is selected for OUTPUT 2, please select kind of output content other than Alarm for OUTPUT 1)

This is to judge as normal condition when nothing of the selected alarm items is detected and as abnormal condition when any of the selected alarm items is detected.

Selection of Alarm judgment items

Excitation error	Active		
Memory error	Active		
Low power voltage detection	Active		
■ No-water detection	Contact signal output	<input type="checkbox"/> Active (Standard)	<input type="checkbox"/> Inactive
	Alarm on LED	<input type="checkbox"/> Active (Standard)	<input type="checkbox"/> Inactive
■ Excessive fluid noise	Contact signal output	<input type="checkbox"/> Active (Standard)	<input type="checkbox"/> Inactive
	Alarm on LED	<input type="checkbox"/> Active (Standard)	<input type="checkbox"/> Inactive
■ Reverse-flow detection	Contact signal output	<input type="checkbox"/> Active (Standard)	<input type="checkbox"/> Inactive
	Alarm on LED	<input type="checkbox"/> Active (Standard)	<input type="checkbox"/> Inactive
■ Excessive flow-rate detection	Contact signal output	<input type="checkbox"/> Active (Standard)	<input type="checkbox"/> Inactive
	Alarm on LED	<input type="checkbox"/> Active (Standard)	<input type="checkbox"/> Inactive

(For the explanation of each Alarm judgment item, please refer to the above ③.)

■ ⑦ Unit pulse

For VN05R	<input type="checkbox"/> 0.001L/P	<input type="checkbox"/> 0.01L/P	<input type="checkbox"/> 0.1L/P
For VN10R	<input type="checkbox"/> 0.01L/P	<input type="checkbox"/> 0.1L/P	<input type="checkbox"/> 1L/P
For VN20R	<input type="checkbox"/> 0.1L/P	<input type="checkbox"/> 1L/P	<input type="checkbox"/> 10L/P

⑧ Switch level judgment

This is to judge as normal condition when flow-rate is not more than the set Level 2 Judgment Value and as abnormal condition when flow-rate is above the set Level 2 Judgment Value. (For the explanation drawing, please refer to the above ④.) → Move to "5. Setting of Level Judgment Values"

⑨ Switch window judgment

This is to detect whether flow-rate is within the set upper limit and the set lower limit or falls outside of the range, and to judge as normal condition when flow-rate is not more than the set upper limit and not less than the set and as abnormal condition when flow-rate or falls outside of the range. Setting of the upper limit value and the lower limit value can be with either of Level 1 Judgment Value and Level 2 Judgment Value. (For the explanation drawing, please refer to the above ⑤.) → Move to "5. Setting of Level Judgment Values"

5. Setting of Level Judgment Values

(Only in case Switch level judgment or Switch window judgment is selected for OUTPUT1 / OUTPUT 2)

Level Judgment Values

Level 1 Judgment Value

 %

0~100% (Standard: 50%)

★ This is selectable by 1% step.

Level 2 Judgment Value

 %

0~100% (Standard: 30%)

★ This is selectable by 1% step.

Hysteresis

 %

0~9% (Standard: 3%)

★ This is selectable by 1% step.

Note:

- 1. ■ is the selection item and ◆ is the write-in item.**
- 2. Specifications are subject to change without notice.**