



VQ Series Tuning Fork Level Sensor

Ideal for liquid detection of built-in sensor on small device

Products Overview

VQ is a compact level sensor ideal for integration into machinery. Wetted parts, the fork and process connection, are 316L stainless steel to offer high corrosion resistance. The cover has a window. The user can check operation status through it by LED without opening the cover. The fork assembly incorporates a piezo-electric crystal. This crystal oscillates the detecting element, the fork, at a frequency.

The frequency changes when the fork is covered by the material. The electronics of the sensor detects this change in frequency, and gives an output for presence or absence of the material.

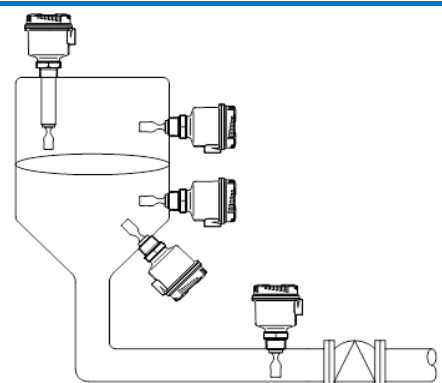


Features

- **Compact and no limitation of mounting direction**
Since the protrusion inside the tank is small and the housing can be rotated by 330 degree, the mounting direction is free and it is ideal for mounting in small equipment.
- **Excellent durability and corrosion resistance, compatible with most of the liquids.**
The standard wetted parts material is 316LSS, which has achieved outstanding corrosion resistance. ECTFE coating is optionally available.
- **No adjustment and maintenance**
No adjustment is required even if the type of liquid is changed, and it can be used without adjustment after installation.
- **AC/DC Free supply power is available**
24-240V AC \pm 10% 50/60Hz / 24-54V DC \pm 10% (Two wire type)
100-240V AC \pm 10% 50/60Hz / 24-54V DC \pm 10% (Relay type)
- **With operation check and failure diagnosis function**
Operation can be checked externally with the built-in LED. In case of failure, the built-in LED flashes, blinks 5 times and turn off 1 second.
- **Test Switch is available**
By pressing the test button, the operation is reversed, so you can easily check the loop during installation and maintenance.

Applications

- High or Low Alarm in small tank
- Pump control (Charge or Discharge control)
- Short fork design for Flow or Empty detection in small pipe



Specifications

		VQ20-R□0	VQ20-R□X	VQ20-S□0B	VQ20-S□XB
		Plug Mounting		Sanitary Ferrule	
		Standard	Extended probe	Standard	Extended probe
Measuring Object		Liquids			
Specific Gravity		0.6 to 2.0			
Viscosity		0.2 mPa·s to 10 Pa·s			
Switching Point (Water)		Approx. 13.5mm from tip (Vertical) Approx. 3mm above the center line (Horizontal)			
Mounting (*1)		R1		IOS 2"	
Probe Length		51mm	100 to 3000mm	72mm	95 to 440mm
Supply power	2-wire	24-240V AC±10% 50/60Hz / 24-54V DC±10%			
	Relay	100-240V AC±10% 50/60Hz / 24-54V DC±10%			
	3-wire	24V DC±10%			
Relay Output	2-wire	2-wire, ON by detection/OFF by detection selectable			
	Relay	Dry contact relay (SPDT), ON by detection/OFF by detection selectable			
	3-wire	NPN/PNP open collector, ON by detection/OFF by detection selectable			
Insulation Resistance		100 MΩ or more, 500V DC (Between power and E Terminal)			
Withstand Voltage		2200V AC for 5 seconds (Between power and E terminal)			
Delay Timer		Approx. 0.5 to 30 seconds selectable			
Operating Temperature	Housing	- 40 to 80°C (Get rid of dew)			
	Vibration Rod	- 40 to 150 °C			
Operating Humidity		85% RH Max.			
Operating Pressure		6 Mpa Max. (Except a mounting part)			
Material	Housing	Glass reinforced PBT (With anti-static agent), PC (Window of LED)			
	Vibration Rod	316LSS, BNI-2 (Nickel based alloy)		316LSS, BNI-2 (Nickel based alloy) Surface finishing #400 buffing	
Protection	Housing	IP65 / IP67			
	Vibration Rod	IP68 (10 Mpa, Static Pressure 15 Minutes)			
Housing rotation		330°			
Cable Entry		G1/2 or equivalent			

*1 The mounting size can be optionally changed with customer's request. (Subject to our final confirmation)

Specifications

		VQ20-F□0	VQ20-F□X	VQ20-F□0E	VQ20-F□XE
		Flange		Coating	
		Standard	Extended probe	Standard	Extended probe
Measuring Object		Liquids			
Specific Gravity		0.6 to 2.0			
Viscosity		0.2 mPa·s to 10 Pa·s			
Switching Point (Water)		Approx. 13.5mm from tip (Vertical) Approx. 3mm above the center line (Horizontal)			
Mounting (*1)		JIS5K50A FF		JIS5K50A RF	
Probe Length		65mm	95 to 3000mm	65mm	95 to 440mm
Supply power	2-wire	24-240V AC±10% 50/60Hz / 24-54V DC±10%			
	Relay	100-240V AC±10% 50/60Hz / 24-54V DC±10%			
	3-wire	24V DC±10%			
Relay Output	2-wire	2-wire, ON by detection/OFF by detection selectable			
	Relay	Dry contact relay (SPDT), ON by detection/OFF by detection selectable			
	3-wire	NPN/PNP open collector, ON by detection/OFF by detection selectable			
Insulation Resistance		100 MΩ or more, 500V DC (Between power and E Terminal)			
Withstand Voltage		2200V AC for 5 seconds (Between power and E terminal)			
Delay Timer		Approx. 0.5 to 30 seconds selectable			
Operating Temperature	Housing	- 40 to 80°C (Get rid of dew)			
	Vibration Rod	- 40 to 150 °C			
Operating Humidity		85% RH Max.			
Operating Pressure		6 Mpa Max. (Except a mounting part)			
Material	Housing	Glass reinforced PBT (With anti-static agent), PC (Window of LED)			
	Vibration Rod	316LSS, BNI-2 (Nickel based alloy)		316LSS, BNI-2 (Nickel based alloy) ECTF Coating	
Protection	Housing	IP65 / IP67			
	Vibration Rod	IP68 (10 Mpa, Static Pressure 15 Minutes)			
Housing rotation		330°			
Cable Entry		G1/2 or equivalent			

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Model number configurators

VQ20 -

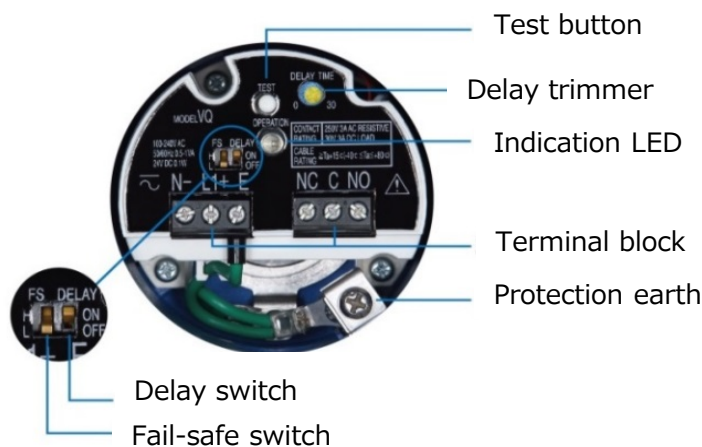
Mounting	
R	R thread
F	Flange
S	Sanitary ferrule

Output	
0	2 wire
1	3 wire (NPN/PNP open collector)
2	Dry contact relay (SPDT)

Insertion length		
0	Standard	R thread: 51mm
		Flange: 65mm
		Sanitary ferrule: 72mm
X	Extended	R thread: 100 to 3000mm
		Flange: 95 to 3000mm
		Sanitary ferrule: 95mm to 3000mm
		Coated: 95 to 440mm

Others	
E	ETFE coating (Flange version only)
B	#400 buffing (Sanitary type only)
Z	Special request

Nomenclature



Due to product improvement, specifications are subject to change without notice.

NOHKEN INC.

15-32, Hiroshiba-cho, Suita-city, Osaka, 564-0052, Japan

Tel:06-6386-8149 / Fax:06-6386-8307

E-mail:overseas.dept@nohken.co.jp

URL: <http://www.nohken.com/overseas/index.htm>

