

INSTRUCTION MANUAL
VIBRATING FORK POINT LEVEL SWITCH
JAYCEEFORK – 2000 SERIES

FUNCTION:

The electronically stimulated fork vibrates at its mechanically resonance frequency of approx.125 Hz. If the bulk material covers the fork, the damping of the vibration is detected electronically and a corresponding signal output is actuated. The vibration of the fork has self-cleaning properties.

The light deposit on the container wall does not affect the operation of the JAYCEEFORK.

MEASURING SYSTEM:

The complete system, JAYCEEFORK -2000... series consists of: -The sensing probe of Vibrating Fork and the Electronic Switching unit.

PRIMARY AREA OF APPLICATION

- Building industry materials, cement, sand, lime, etc
- Foodstuff industry, milk powder, flour, salt, food grains, etc
- Plastic industry, powder, granular etc
- Timber industry, chemical and mining etc.

TECHNICAL SPECIFICATIONS:**CONTROL UNIT:**

Parameters	Specifications
Housing	Cast Aluminum, weatherproof, powder coated Integral with fork
Cable entry	2 nos.
Ambient temperature	0 ° C to +60° C
Power consumption	1.9 VA
Mains Voltage	230 V AC (+/-15%), 50 Hz OR 110 V AC (+/-15%), 50 Hz. OR 24VDC.
Output	2 sets of potential free c/o contacts rated at 5 amps, 230 V AC for non-inductive load
Signal delay	Fork covered to fork free about 2 to 3secs. Fork free to fork covered about 2 secs
Switching delay	Continuously adjustable from 2 to 20 secs. Fork free and fork covered (optional).
Safety operation (FSL/FSH)	Field selected switch over for Maximum or Minimum switching points.
Switch status display	Green LED shows Normal and Red LED shows Alarm conditions

SENSING PROBE (FORK):

Parameters	Specifications
Mounting	Screwed – 1 ½” BSP (standard) Flanged (as per requirement)
Fork	stainless steel, 316
Operating temperature	150 ° C max. (inside vessel) 200 ° C max (inside vessel temp. on request)
Probe Length	250 mm (standard) TO 3000mm

INSTALLATION OF JAYCEEFORK:

The standard unit has screwed mounting, which can be mounted laterally on the container wall at the desired level of the material to be controlled. The fork tines should be horizontally or pointed slightly downward.

Following precautions should be taken during installations -

- The tines should not be bent or position distorted.
- During filling operation, the material should not fall directly onto the tines. Otherwise protection shield should be provided over the tines.
- During installation of probe with screwed mounting, turn the hexagonal mounting nut of the probe and not the housing.
- For side mounting location the tines position should be such that the material can flow freely through them.
- The knife-edges of the tines should face the ground plane in horizontal mounting position.
- The tines should extend far enough into the vessel so that they are free to vibrate despite the build-up on the vessel wall. The extended probe should be mounted in such a way that it does not extend further than necessary in the vessel.
- Turbulence during pneumatic conveying can cause operational problems and can be avoided by shielding the tines by windscreen.
- For remote mounting of the Electronics Switching unit, the probe connection cable gland of the Cast Aluminum housing of the Switching unit should point towards ground plane.

FAIL SAFE MODE SELECTION:

Depending upon the process requirement, the minimum or maximum fail-safe mode can be selected in the JAYCEEFORK.

In JAYCEEFORK the Relay is in energised condition. When level changes state the relay de-energises. Thus, besides level alarm condition, the operator gets an alarm even in case of mains failure or the instrument failure. This imparts a better overall reliability of operation.

Maximum fail safe mode means the relay de-energises when the level exceeds the desired or when mains supply fails.

Minimum fail-safe mode means the relay de-energises when the level drops below the desired level or when mains supply fails.

NOTE: THE CONTACTS SHOWN ON THE LOGIC CARD PANEL IS FOR FAIL SAFE LOW MODE. THE CONTACTS WOULD CHANGE WHEN THE FAIL SAFE MODE IS CHANGED.

ELECTRICAL CONNECTION TO JAYCEEFORK

Please refer the connection diagram for the electrical connection. Appropriate mains voltage should be connected to the terminals of the instruments as specified. The connectors are suitable for 1.5 sq.mm cable cross section.

The JAYCEEFORK does not need any calibration/setting. The switching delay can be set as per the process requirement, between 2 sec and 20 secs.

MAINTENANCE

The JAYCEEFORK need no maintenance.

However, if the material has built up tendency, over a period of time, tines should be cleaned whenever need occurs.

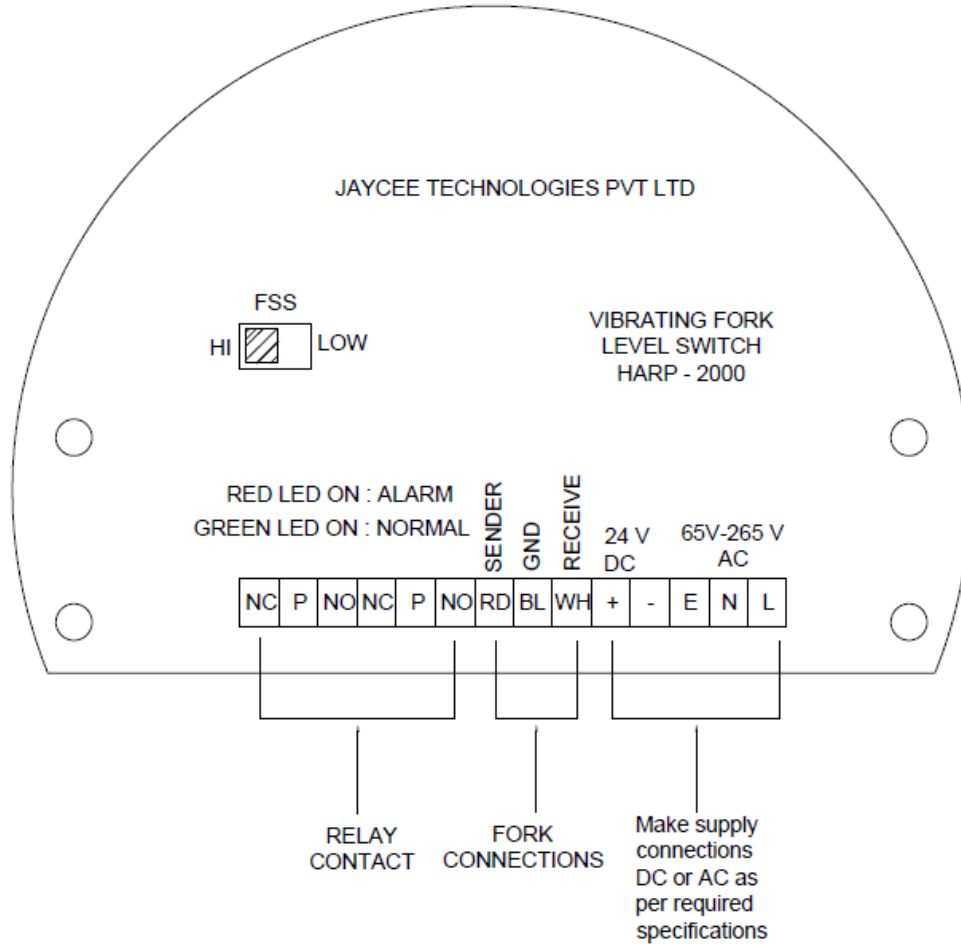
Ensure that the cable glands and the housing lid are sealed to prevent ingress of moisture.

FAULT FINDING PROCEDURE

If the instrument fails, Please observe following points:

- Check the mains supply connection - is it connected as per specifications?
- Check the FSH and FSL mode – is the mode selected as per the required logic?

Connection Diagram:-



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