Technical **Datasheet**

DMT series Vibrating Fork Level Switch

For Liquids



Key **Features**

- Adjustable sensitivity
- BSP, NPT threaded connection or Flanged ANSI, EN,
- Side or top mounting
- Forks length up to 3000mm
- Robust aluminium housing
- IP67 ingress protection
- Plastic covered wetted parts option
- ATEX Construction (available soon)

Series Overview

The vibrating **Fork** Level Switch, is a consolidated technology applied for single point level switching function of **liquids**.
This series of Level switch, together with our **ultrasonic** type of switches, complete the range of electronic instruments designed for the controls of liquids.

The operating principle is similar to the vibrating fork type for **solids**: the forks are kept in vibration by the electronic circuits. As the medium reaches and covers the forks, the vibrations of the fork will be dampened. The damping in the vibration is detected by the electronics which activate to switch the output relay, after a configurable time delay. The Fork will start to vibrate freely again, once the medium sets it free.

Forks can be also manufactured plastic coated, for use on aggressive mediums.

Other products

Other products we can offer:

- Ultrasonic compact level switch 003
- Mechanical level switches





Product **applications**

- Water
- Chemicals
- Fuels
- Hydrocarbons

How can we **help you?**

Delta Mobrey offers fast, efficient and knowledgeable support when and where you need it. Please visit our website at www.delta-mobrey.com to find your local support centre or call us on:
+44 (0)1252 729140

Vibrating Fork Level Switch
Series: DMT

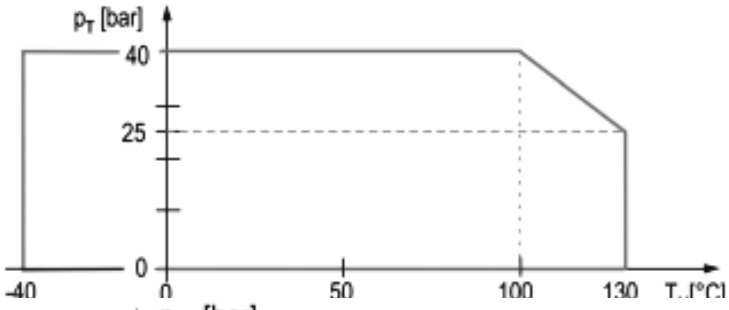
Vibrating Fork Level Switch	
Medium density	≥ 0.7 kg/dm^3
Medium viscosity	≤ 10,000 mm2/s (cSt) (0.1 ft²/s)
Process Temperature	-40 °C … +130 °C (-40 °F … +266 °F) refer to temperature diagram below
Ambient Temperature	-30 °C … +70 °C (-22 °F … +158 °F)
Process Pressure	max. 40 bar (580 psi g) for 1.4571 , max 6 bar for PP fange version (see table below)
Process connection	FIlanged connection. Please refer to the below pressure diagrams
Standard Fork length	Threaded BSP, NPT, Sanitary, ANSI/ISO flanges, Clamp/DIN 69mm
Extended rod for type	03...3000mm (in step of 100mm)
Special insertion lenght	300 to 3000mm (7,87in-10ft)
Wetted parts materials	1.4571 (AISI316Ti) or ECTFE/PFA coating
Conduit connection	2 x M20x1.5 plastic cable glands for Ø6 – Ø12 mm or 2x1/2”NPTF entries
Internal wiring	Terminal blocks for max 2.5mm2 wires
Electrical protection	Class I
Response time	≤ 0.5 seconds when immersed ; 3s—L density when free
Power supply	20-255 Vac or 20-60 Vdc
Power consumption	< 3W
Output	1 or 2 SPDT relay, 8A at 250VAC / 250Vac 6A
Housing material	Aluminium paint coated or plastic (PBT)
Housing Protection	IP67
Weight	1.3kg + 1.2kg/m extension (2.85lb + 0.8 lb/ft extension); 2.1Kg Exd version
State indication	Bi-color LED Green/Red)
Programmable function	High / Low via internal switch

PRESSURE / TEMPERATURE DIAGRAMS

(all metallic wetted parts)

Medium Pressure (Pt)

Medium Temperature (Tm)

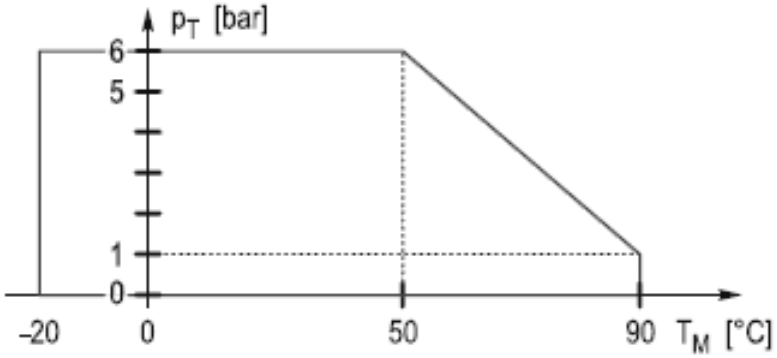


PRESSURE / TEMPERATURE DIAGRAMS

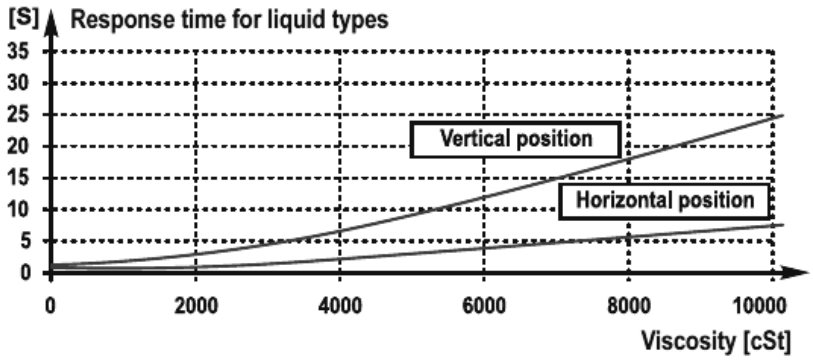
(PP flange version)

Medium Pressure (Pt)

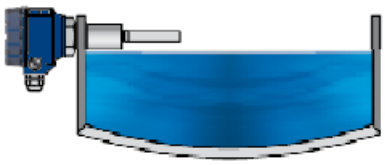
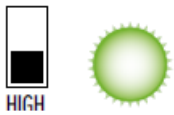
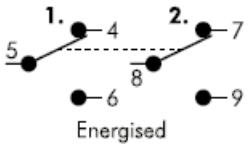
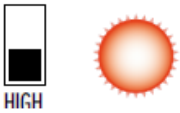
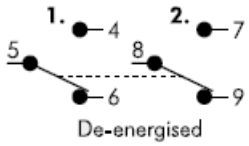
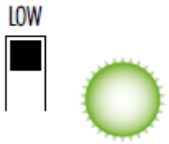
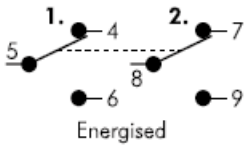
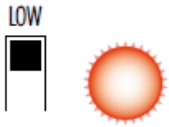
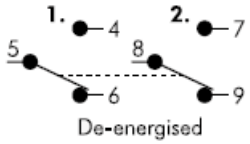
Medium Temperature (Tm)

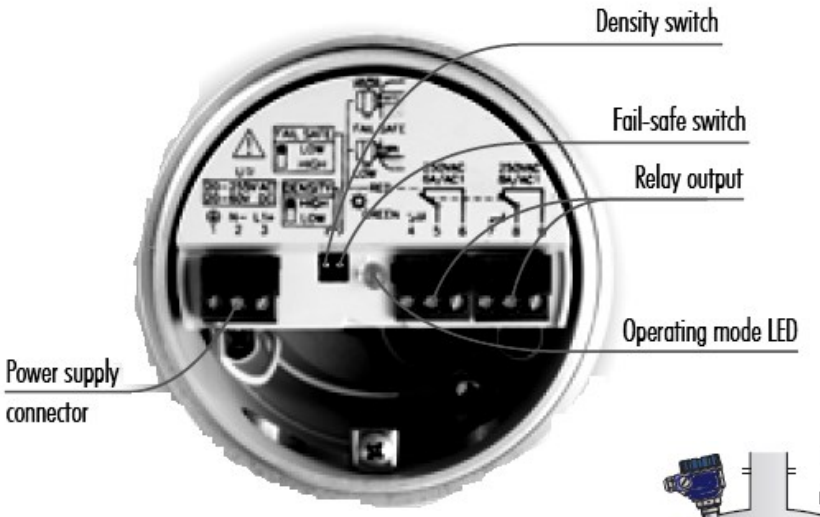


RESPONSE TIME DIAGRAM



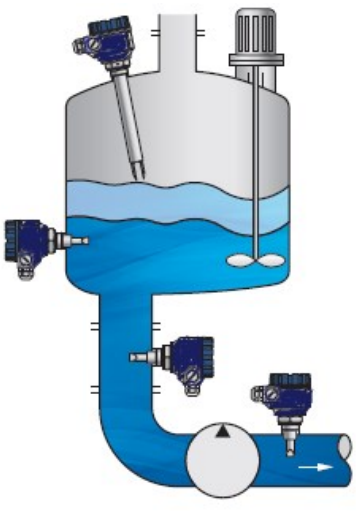
ACTION SETTING

MODE	FORK	SWITCING	SWITCH & LED	RELAY OUTPUT
High Level	free			
	Immersed			
Low Level	Free			
	Immersed			



SELECT OPERATING MODE	
FAIL-SAFE	
	FAIL-SAFE alarm is indicated with de-energized relay or open state of the output
	

POSSIBLE INSTALLATION

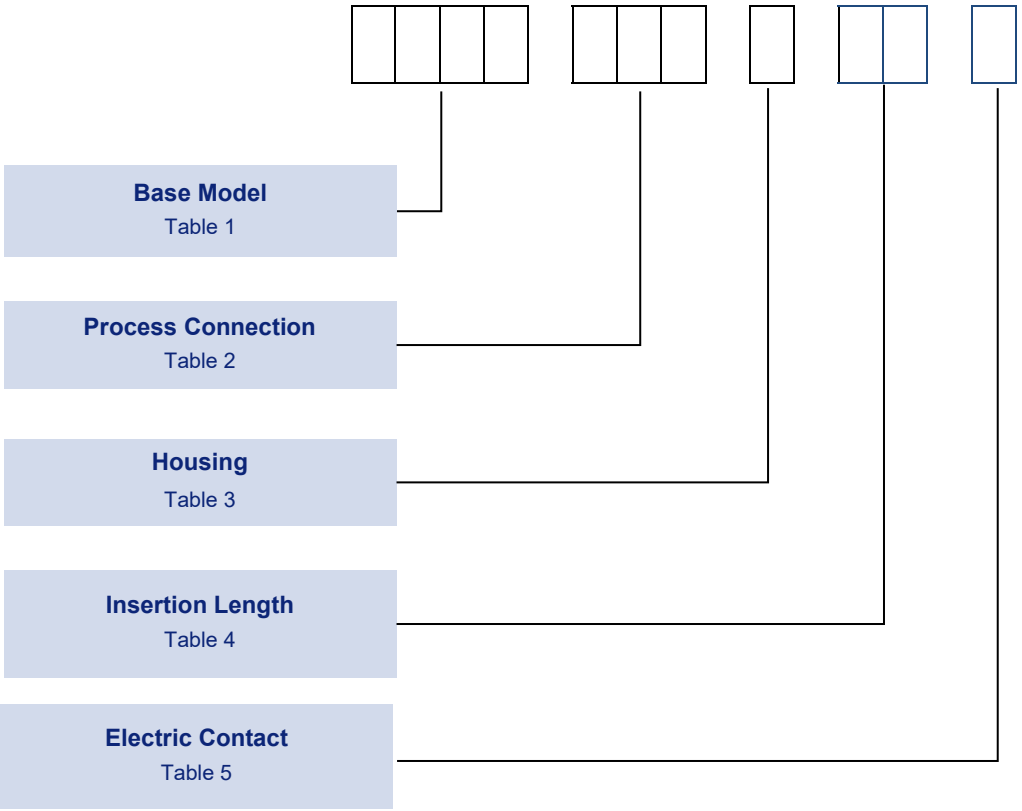


Vibrating Fork Level Switch
Series: DMT

How to order

Vibrating Level Switches can be configured by selecting codes representing the desired features from the tables that follow.

The table below, describes how the model code is built up. For assistance in configuring a transmitter that best suits your needs, please contact your local sales office.



Application & Construction

The Vibrating Fork level switch is applicable on liquids with minimum 0.7 kg/dm^3 density and with max 10^4 mm^2/s of viscosity.
Large varieties of applications are possible. From the level detection to overfill or dry-run pump protection.
Water industry, Chemical and Petrochemical industry on aggressive fluids.
With the main precaution to keep the forks away from obstacles, rotating devices (mixers) and vibrations, there are no particular precautions to be considered for a correct installation of these vibrating forks level switches. This instrument can be mounted in any position. It can be also mounted on the side of the container, but it is suggested to select a position where the forks are easily freed from the medium or protected from the deposit of solids mixed with the liquid.
Internal switch allows an easy configuration of the functionality to set the instrument according to the application: detecting the level of process or the density or the process.
The instrument has a standard immersion probe, but several different length are available, according to the installation requirement.
A led indicates the status of the instrument - if the device is in alarm condition or not.

Base Model

TABLE 1

Note: ATEX contruction will be available soon

Description	Code
Stainless Steel forks with tumble polish	**DMTB**
ECTFE coated fork, PTFA coated extension , PP or ECTFE coated process connection	**DMTT**
Stainless Steel fork high polished	**DMTP**
Stainless Steel forks tumble polish, ATEX	**DMTG**
Stainless Steel fork high polished, ATEX	**DMTU**

Process Connection

TABLE 2

Description	Type	Code
1“ BSP mounting	DMTB/P/G/U	**FPB**
1“ NPT mounting	DMTB/P/G/U	**FNB**
1- $^1/_2$ “ BSP	DMTG/U	**NPB**
1- $^1/_2$ “ NPT	DMTG/U	**NNB**
2“ BSP	DMTG/U	**7PB**
2“ NPT	DMTG/U	**7NB**
1- $^1/_2$ “ TRI-CLAMP (ISO2852)	DMTB/P/G/U	**NCB**
2“ TRI-CLAMP (ISO2852)	DMTB/P/G/U	**7CB**
DN40 Pipe Coupling (DIN11851)	DMTB/P	**7DB**
DN50 Pipe Coupling (DIN11851)	DMTB/P	**NDB**
FLANGED DN40 PN10/16/25/40 in St. Steel	DMTB	**HKF**
FLANGED DN50 PN40 / 25 in St. Steel	DMTB	**KKF**
FLANGED 2” ANSI 600RF in St. Steel	DMTB	**KCF**
FLANGED JIS 40K 50A in St. Steel	DMTB	**HJF**
FLANGED DN40 PN10/16/25/40, St. St. ECTFE coated	DMTT	**HKV**
FLANGED DN50 PN40 / 25 St. St. ECTFE coated	DMTT	**KKV**
FLANGED 2” ANSI 600RF St. St. ECTFE coated	DMTT	**KCV**
FLANGED JIS 40K 50A St. St. ECTFE coated	DMTT	**HJV**
FLANGED DN50 PN16 in PP	DMTT	**KKP**
FLANGED 2” ANSI 150RF in PP	DMTT	**KCP**
FLANGED JIS 10K 50A in PP	DMTT	**HJP**

Housing

TABLE 3

Note 1: The Enclosure is associated to the configuration of the Forks .

Description		Code
Aluminium Alloy housing, IP67 power coated, waterproof	DMTB/T/P	**C**
Aluminium Alloy housing, IP67, powder coated ATEX Flameproof	DMTG/U	**H**
Plastic, PBT fiberglass reinforced	DMTB/T/P	**W**

Insertion Length

TABLE 4

Note 1: Shortest forks 69mm and 125mm are available only for Stainless Steel, standard polished forks. Type B/P
Any other construction start from 200mm length.

Description	Type	Code
Standard short length 69mm	DMTB/T/P/G/U	**00**
Standard long length 125mm	DMTB/T/P/G/U	**01**
Standard extended length 200mm	DMTB/T/P/G/U	**02**
Customized length 0.2…..3000 mm (in steps of 100mm)	DMTB/T/P/G/U	**XX**

Electric Contact

TABLE 5

Note 1: Vibrating fork level switches, offers the typical range of output signals as normally required for application in field.

Note 2: ATEX construction, will be available soon

Description	Type	Code
1 SPDT relay 250Vac 8A	DMTB/T/P/G/U	**0**
2 SPDT relay: 1x250Vac 8A; 1x250Vac 6A	DMTB/T/P/G/U	**1**
1 SPDT relay 250Vac 8A / Exd	DMTG/U	**4**
2 SPDT relay: 1x250Vac 8A; 1x250Vac 6A / Exd	DMTG/U	**5**

Approvals

CE

EUROPEAN DIRECTIVES

Electromagnetic Compatibility Directive (EMC) 2014/30/EU
Compliant to EMC directive

Low Voltage Directive (LVD) 2014/35/EU
Compliant to LVD directive

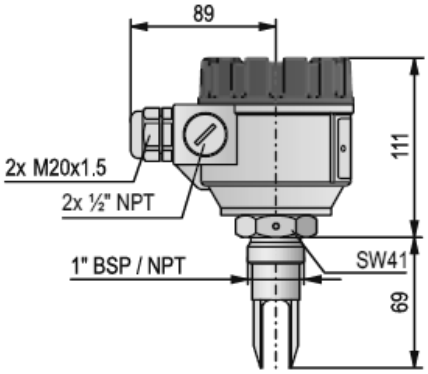
Pressure Equipment Directive (PED) 2014/68/EU:
This product is outside the scope of the PED directive

Special Engineering

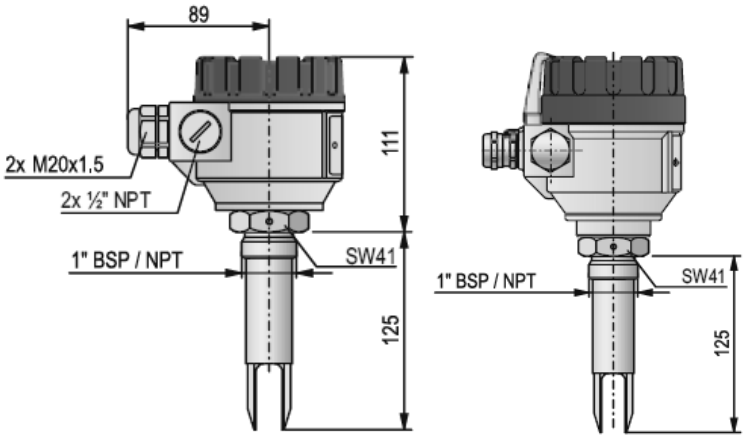
Not listed options or special constructions can also be designed to meet specific requirements of an application. Please contact us for further information.

Dimensional Drawings

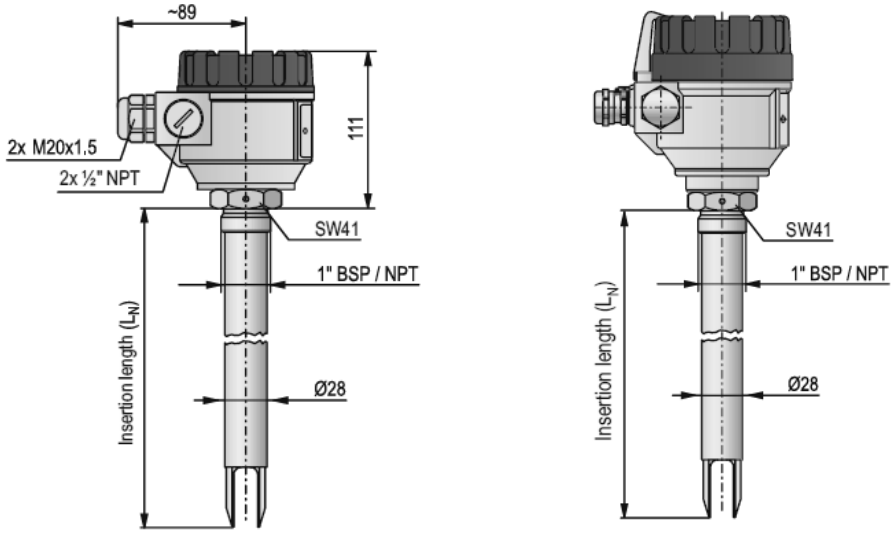
Standard lengths 69mm in weatherproof version



Standard long lengths 125mm in weatherproof and Flameproof version



Extended forks version 300 to 3000mm in weatherproof and Flameproof version



In the interest of development and improvement Delta Mobrey Ltd, reserves the right to amend, without notice, details contained in this publication. No legal liability will be accepted by Delta Mobrey Ltd for any errors, omissions or amendments.

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