Алматы (7273)495-231 Ангарск (3955)60-70-56 Архангельск (8182)63-90-72 Астрахань (8512)99-46-04 Барнаул (3852)73-04-60 Белгород (4722)40-23-64 Благовещенск (4162)22-76-07 Брянск (4832)59-03-52 Владивосток (423)249-28-31 Владикавказ (8672)28-90-48 Владимир (4922)49-43-18 Волагоград (844)278-03-48 Вологград (844)278-03-48 Воролеж (473)204-51-73 Екатеринбург (343)384-55-89 Иваново (4932)77-34-06 Ижевск (3412)26-03-58 Иркутск (395)279-98-46 Казань (843)206-01-48 Калининград (4012)72-03-81 Калуга (4842)92-23-67 Кемерово (3842)65-04-62 Киров (8332)68-02-04 Коломна (4966)23-41-49 Кострома (4942)77-07-48 Краснодар (861)203-40-90 Красноларс (391)204-63-61 Курск (4712)77-13-04 Куран (3522)50-90-47 Липецк (4742)52-20-81

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Магнитогорск (3519)55-03-13 Москва (495)268-04-70 Мурманск (8152)59-64-93 Набережные Челны (8552)20-53-41 Нижний Новгород (831)429-08-12 Новокузнецк (3843)20-46-81 Ноябрьск (3496)41-32-12 Новосибирск (383)227-86-73 Омск (3812)21-46-40 Орел (4862)44-53-42 Оренбург (3532)37-68-04 Пенза (8412)22-31-16 Пенза (8412)25-98-37 Псков (8112)59-10-37 Пермь (342)205-81-47 Ростов-на-Дону (863)308-18-15 Рязань (4912)46-61-64 Самара (846)206-03-16 Саранск (8342)22-96-24 Санкт-Петербург (812)309-46-40 Саратов (845)249-38-78 Севастополь (8692)22-31-93 Симферополь (3652)67-13-56 Смоленск (4812)29-41-54 Сочи (862)225-72-31 Ставрополь (8652)20-65-13 Суррут (3462)77-98-35 Сыктывкар (8212)25-95-17 Тамбов (4752)50-40-97

Тверь (4822)63-31-35 Тольятти (8482)63-91-07 Томск (3822)98-41-53 Тула (4872)33-79-87 Тюмень (3452)66-21-18 Ульяновск (8422)24-23-59 Улан-Уда (3012)59-97-51 Уфа (347)229-48-12 Хабаровск (4212)92-98-04 Чебоксары (8352)28-53-07 Челябинск (351)202-03-61 Черповец (8202)49-02-64 Чита (3022)38-34-83 Якутск (4112)23-90-97 Ярославль (4852)69-52-93

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Технические характеристики на вибрационные реле уровня для твердых веществ и жидкостей DMS, DMT, VLS компании Delta Mobrey

Technical Datasheet

Vibrating Level Switch

Solids Level Measurement

Series: VLS

Key Features

- Adjustable sensitivity
- 1 ¹/₂" BSP or NPT threaded connection
- Side or top mounting
- Extension lengths to 20m
- Robust aluminium housing
- IP67 ingress protection
- AC or DC supply voltages
- Dust explosion protection

Series Overview

The Vibrating rod Level Switch (VLS) is the perfect solution for single point level switching in free flowing solids. For tanks, silos or hopper bins, and for a wide density range of solids from fine powders, grains to aggregates. A single rod design provides the solution to tuning forks which may become blocked or bridged.

The vibrating rod is energised and kept in resonance by an electronic circuit. When covered by material, the damping of the vibration is detected by the electronics which switch the output relay after a configurable time delay.

Configurable for low or high density solids, and for fail safe modes. Extended rod or cable options available.

Other products

Other products we can offer:

 Ultrasonic Level Transmitters and Control Unit for liquid level measurement











Product applications

- Powders
- Pellets
- Granulates
- Grains
- Flour
- Fly ash
- Cement and sand
- Coal, slag
- Aggregate

	Vibrating Level Switch				
Media density > 50 kg/m ³					
Process connection	1 ½" BSP or 1 ½" NPT				
Conduit connection	2 x Pg16 (BSPT model) or 2 x ½" NPT (NPT model)				
Output	1 SPDT relay, 8A at 250VAC				
Response time	Selectable 2 or 5 seconds				
Rod length	Standard 207mm				
Extended rod length	300mm to 3000mm				
Extended cable length	1000mm to 20,000mm				
Process temperature	Standard model: -30°C to 110°C (-22 to 230°F) With extension cable: -30°C to 80°C (-22 to 176°F) High temp model: -30 to 160°C (-22 to 320°F) ATEX models VLS***35A: refer to the table further below				
Ambient temperature	-30 to 60°C (-22 to 140°F)				
Medium pressure	25 bar maximum (extended cable 6 bar maximum)				
Power supply	Order code 1Z: 20 to 255Vac (50/60 Hz) and 20 to 255Vdc Order code 5A: 20 to 250Vac (50/60 Hz) and 20 to 50Vdc				
Housing material Rod material Housing rating Weight	Aluminium alloy, powder paint coated 316 stainless steel IP67 Approx. 2kg				
Approvals	ATEX II 1/2 D				

Temperature limitations for ATEX models VLS***35A

	VLS**435A		VLSK*(1/3)35A			VLSH**35A		
Process temperature (Tp) (EPL Da—category 1D)	+60°C	+70°C	+80°C +95°C ⁽¹⁾	+60°C	+70°C	+95°C	+110°C	+160°C
Process temperature (Ta) (EPL Db—category 2D)	+60°C	+50°C	+60°C	+60°C	+50°C	+60°C	+50°C	+35°C
Maximum surface temperature (process connection)	+85°C	+85°C	+95°C	+85°C	+85°C	+95°C	+95°C	+135°C
Maximum surface temperature T	+85°C	+85°C	+95°C	+85°C	+85°C	+95°C	+110°C	+160°C
T Class	Т90)°C	T100°C	Т90)°C	T100°C	T115°C	T170°C

1. The process temperature can reach +95C for a maximum period of one hour.

SENSITIVITY

The VLS will operate in bulk materials with density over 50 kg/m³. A switch setting allows adjusting of the sensitivity to Low for products with density less than 100 kg/m³ or High for products with density above this. **FAILSAFE**

The VLS can be set to failsafe high or failsafe low depending on the application.

TOP MOUNTING

Either in standard length or extended length, the VLS can be mounted from the top of a silo.

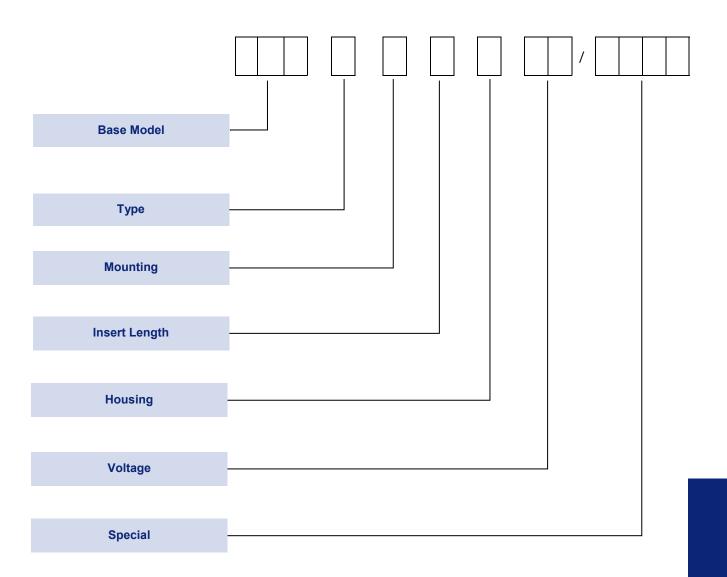
SIDE MOUNTING

Ideal for use as a failsafe high level switch. If used in low level applications it is advised to protect the probe from excessive loading exerted by the medium and from direct impact as the silo is being filled. A simple shield mounted above the probe is sufficient.

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.



Base Model	TABLE 1	
	Description	Code
	Vibrating Rod Level Switch	VLS

TABLE 2 /	
Description	Code
Standard model with 1 SPDT relay	к
High temperature model with 1 SPDT relay (excludes Extended Cable)	н

- W		ng

Туре

TABLE 3 /	
Description	Code
R 1 ½ " BSPT mounting	В
N 1 ¹ / ₂ " NPT mounting	Ν

Insertion Length

Note 1: Rod construction 3 & 4 requires the Enclosure code "9" Note 2: for any combination of special cable length but also a special rod length, please select "3" + Enclosure "9". Cable & rod length will be specified in the Engineering Special (last 4 digit of the code)

TABLE 4	
Description	Code
Standard length rod, 207mm insertion length	1
Extended rod, 300mm to 3000mm insertion length (with Encl. 9)	3
Cable extended, 1000 to 20,000mm insertion length (rod=std 207)	4

Housing

TABLE 5	
Description	Code
Aluminium Alloy housing, power coated	3
As code 3, with remote electronics (for safe area only)	9

Voltage	TABLE 6	/
	Description	Code
	20-255V ac / 20-255V dc, no hazardous area approval	1Z
	20-250V ac / 20-50V dc, ATEX Dust Certification II 1/2 D	5A
Special	TABLE 7	/
	Description	Code
	Extended length (rod or cable)	/****

Approvals

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

ATEX DIRECTIVE 2014/34/EU

Certificate No. BKI19ATEX0011

EN 60079-0, EN 60079-31

For Zone 20/21 models (Code VLS***35A/**** see tables 5 and 6)

(Ex) II 1/2 D Ex ta / tb IIIC T90°C...T170°C Da/Db

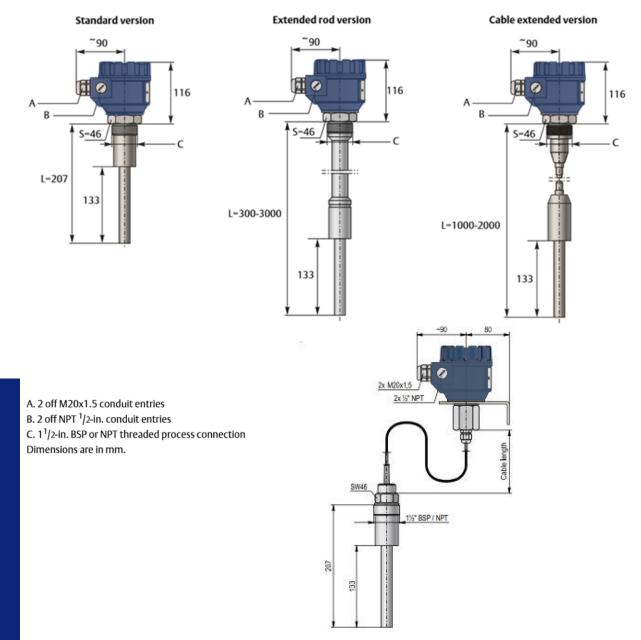
Many other options already designed and configured, for example:

- Stainless Steel sensor

- Special construction

Other options can also be designed to meet specific requirements of an application. Please contact us for further information.

Dimensional Drawings





FM00720 Page 6 of 6

Technical Datasheet



DMVT series Mini Vibrating Fork Level Switch

For Liquids

Key Features

- 2 wires technology
- BSP, NPT threaded connection or Flanged ANSI, EN,
- Side or top mounting
- Forks length up to 3000mm
- Compact construction
- IP65 ingress protection with connector / IP68 with cable
- Plastic covered wetted parts option
- ATEX Construction (available soon)

Series Overview

The **MINI** vibrating Fork Level Switch, offers a compact solution based on 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 reach and covers the forks, the Fork will change the vibration. 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 agressive medium.

Other products

Other products we can offer:

- Ultrasonic compact level switch 003
- Compact vibrating fork level switches



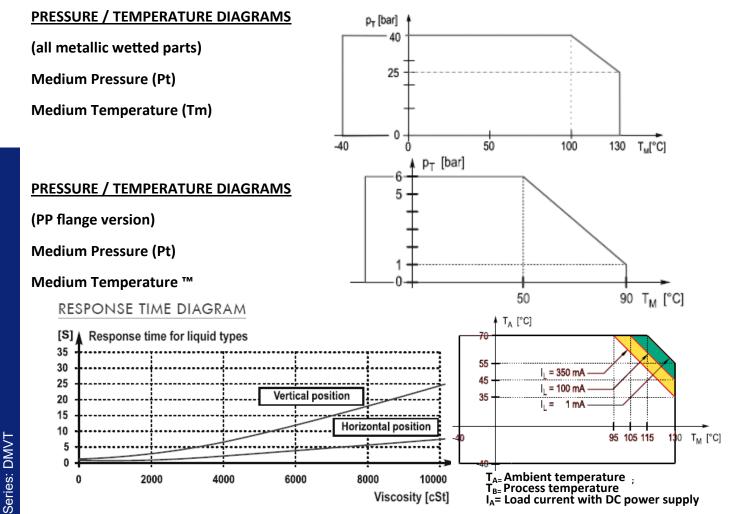




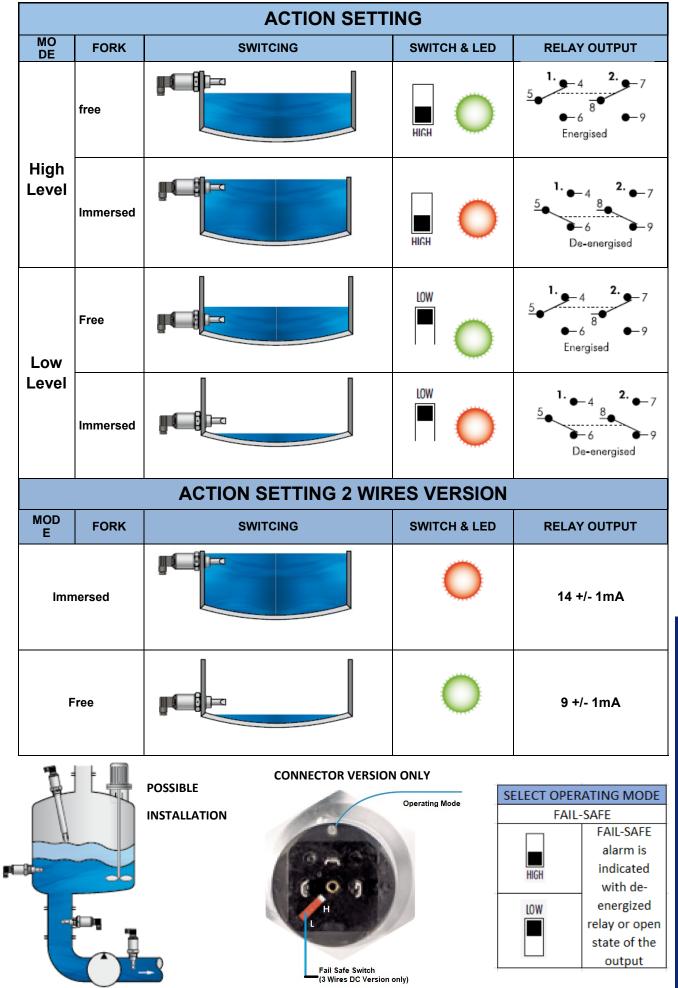
- Compact water treatments system
- Chemicals
- Fuels pumps & tanks
- Hydrocarbons



	Vibrating Fork Level Switch
Medium density	\geq 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	-40 °C +70 °C (-40 °F +158 °F) ; –25°C +70 °C with M12 connector
Process Pressure	max. 40 bar (580 psi g) for 1.4571 , max 6 bar for PP fange version (see table below)
Process connection	Flanged 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	033000mm (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	DIN or M12 connector; 3mt cable 2x0,5mm ² / 4x0,75mm ² / 5x0,5mm ²
Electrical protection	AC power supply Class I ; DC power supply : Class III
Response time	≤ 0.5 seconds when immersed ; 1s when free (see viscosity diagram)
Power supply	(2 wires) 20255 Vac or 1529 Vdc ;(3 wires) 1255Vdc
Power consumption	< 3W
Housing material	1.4571 Stainless Steel
Housing Protection	IP65 with DIN connector / IP67 with M12 connector / IP68 with cable
Weight	0.5kg + 1.1kg/m extension (2.85lb + 0.8 lb/ft extension);
State indication	Bi-color LED Green/Red (connector version only)
Programmable function	High / Low via internal switch (connector version only)
Output Signal : 2 wires DC	DC Current change : 14mA +/-1mA when immersed / 9mA +/-1mA when free
Output Signal : 2 wires AC	AC Output for serial connection: Voltage drop (in switched-off state) < 10.5V Residual current (in switched-ff state)< 6mA
	Current Load: max continuous 350mA AC13 ;
	min continuous 10mA 255V/25mA 24V
	Max impulse: 1.5A 40 ms
3 wires DC	Transistor switch: NPN/PNP output realized with different wiring
	Voltage drop in switches on state <4.5V
	Current load 350mA / U _{max} = 55V
	Residual current in switched off state <100 μ A



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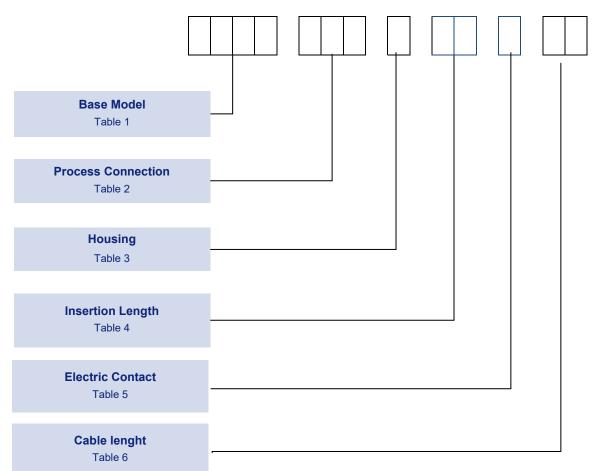


MINI-Vibrating Fork Level Switch Series: DMVT

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/dm³ density and with max 10⁴ mm²/s of viscosity.

Large variety of application 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 this product and the position of the forks is clearly marked on the hexagon for mounting.

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 allow 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 construction will be available soon.	Description	Code
	Stainless Steel forks with tumble polish	
	ECTFE coated fork, PTFA coated extension , PP or ECTFE coat-	DMVTT

ECTFE coated fork, PTFA coated extension , PP or ECTFE coated process connection	DMVTT	
Stainless Steel fork high polished	DMVTP	
Stainless Steel forks tumble polish, ATEX	DMVTG	
Stainless Steel fork high polished, ATEX	DMVTU	

Process Connection

TABLE 2				
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Description	Туре	Code
1" BSP mounting	DMVTB/P/G/U	FPB
1" NPT mounting	DMVTB/P/G/U	FNB
1- ¹ / ₂ " TRI-CLAMP (ISO2852) in St. Steel	DMVTB/P/G/U	NCB
2" TRI-CLAMP (ISO2852) in St. Steel	DMVTB/P/G/U	7CB
DN40 Pipe Coupling (DIN11851) in St. Steel	DMVTB/P/G/U	7DB
DN50 Pipe Coupling (DIN11851) in St. Steel	DMVTB/P/G/U	NDB
FLANGED DN40 PN10/16/25/40 in St. Steel	DMVTB/P/G/U	HKF
FLANGED DN50 PN40 / 25 in St. Steel	DMVTB/P/G/U	KKF
FLANGED 2" ANSI 600RF in St. Steel	DMVTB/P/G/U	KCF
FLANGED JIS 40K 50A in St. Steel	DMVTB/P/G/U	HJF
FLANGED DN40 PN10/16/25/40, St. St. ECTFE coated	DMVTT	нки
FLANGED DN50 PN40 / 25 St. St. ECTFE coated	DMVTT	KKV
FLANGED 2" ANSI 600RF St. St. ECTFE coated	DMVTT	KCV
FLANGED JIS 40K 50A St. St. ECTFE coated	DMVTT	HJV
FLANGED DN50 PN16 in PP	DMVTT	ККР
FLANGED 2" ANSI 150RF in PP	DMVTT	КСР
FLANGED JIS 10K 50A in PP	DMVTT	HJP

MINI-Vibrating Fork Level Switch Series: DMVT

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.

Electric Contact

Note 1: MINI version of switches, are designed for OEMs application and offers a wider range of output signals, to meet the requirement of several type of receivers normally used in compact constructions

Note 2: ATEX construction will be available soon

Description	Туре	Code
Standard short length 69mm	DMVTB/T/P/G/U	00
Standard long length 125mm	DMVTB/T/P/G/U	01
Standard extended length 200mm	DMVTB/G	02
Customized length 0.23000 mm (in steps of 100mm)	DMVTB/T/P/G/U	XX

TABLE 5

Description	Type of output	Code
2 wires AC DIN Connector	AC output for serial connection	1
2 wires AC DIN Cable	AC output for serial connection	2
3 wires DC DIN Connector	NPN ; PNP Transistor output	3
3 wires DC DIN Cable	NPN ; PNP Transistor output	4
2 wires DC DIN Connector	Dc Current change	6
2 wires DC DIN Cable	Dc Current change	7
2 wires DC DIN Connector, Exia G	Dc Current change	8
2 wires DC DIN Cable, Exia G	Dc Current change	9
2 wires DC M12 Connector	Dc Current change	К
2 wires DC M12 Connector, Exia G	Dc Current change	L
3 wires DC M12 Connector	NPN ; PNP Transistor output	М

Cable Length

Note 1:

()

Description	Туре	Code
Standard cable length 3 mt	DMVTB/T/P/G/U	00
Special length over 3 mt up to 30 mt	DMVTB/T/P/G/U	XX

Approvals

EUROPEAN DIRECTIVES

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

TABLE 4

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

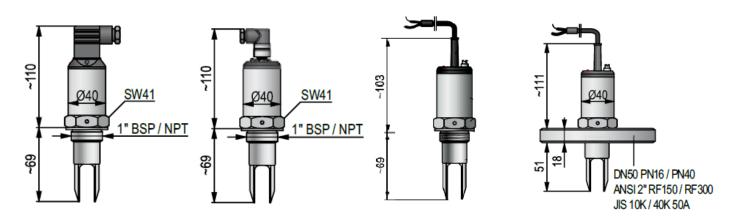
Special Engineering

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

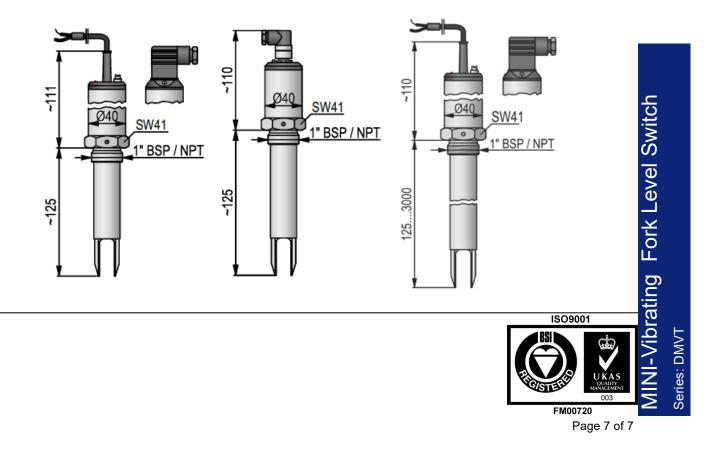
Dimensional Drawings

Standard lengths 69mm with DIN connector, M12 connector, cable outlet

Flanged version and standard fork lenght



125mm Fork length and extended version 300 to 3000mm



Technical Datasheet



DMVS series Mini-Vibrating Fork Level Switch

For Solids

Key Features

- 2 wires technology
- BSP, NPT threaded connection or Flanged ANSI, EN,
- Side or top mounting
- Forks length up to 3000mm
- Compact construction
- IP65 ingress protection with connector / IP68 with cable
- Plastic covered wetted parts option
- ATEX Construction (available soon)

Series Overview

The **MINI** vibrating Fork Level Switch, offers a compact solution based on consolidated technology applied for single point level switching function of **solids**.

This series of Level switch, complete the range of instruments for the controls of solids, together with the Vibrating Rod type that are designed to granules starting from 0.05 kg/dm3 density. The operating principle is similar. The forks are kept in vibration by

the electronic circuits. As the medium reach and covers the forks, the Fork will change the vibration (or stop). 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 agressive medium.

Other products

Other products we can offer:

- Ultrasonic compact level switch 003
- Compact vibrating fork level switches





Product applications

- Powders
- Pellets
- Granulates
- Grains
- Flour
- Fly ash
- Cement and sand
- Coal, slag
- Aggregate

	Vibrating Fork Level Switch		
Medium density	\geq 0.7 kg/dm ³		
Medium viscosity	≤ 10,000 mm2/s (cSt) (0.1 ft²/s)		
Process Temperatur	e -40 °C +130 °C (-40 °F +266 °F) refer to temperature diagram below		
Ambient Temperatur	re -40 °C +70 °C (-40 °F +158 °F) ; –25°C +70 °C with M12 connector		
Process Pressure	max. 40 bar (580 psi g) for 1.4571 , max 6 bar for PP fange version (see table below)		
Process connection	Flanged connection. Please refer to the below pressure diagrams Threaded BSP, NPT, Sanitary, ANSI/ISO flanges, Clamp/DIN		
Standard Fork lengt			
Extended rod for typ			
Special insertion len			
Wetted parts materia			
Conduit connection	DIN or M12 connector ; 3mt cable 2x0,5mm ² / 4x0,75mm ² / 5x0,5mm ²		
Electrical protection			
Response time	≤ 0.5 seconds when immersed ; 1s when free (see viscosity diagram)		
Power supply	(2 wires) 20255 Vac or 1529 Vdc ;(3 wires) 1255Vdc		
Power consumption	< 3W		
Housing material	1.4571 Stainless Steel		
Housing Protection	IP65 with DIN connector / IP67 with M12 connector / IP68 with cable		
Weight	0.5kg + 1.1kg/m extension (2.85lb + 0.8 lb/ft extension);		
State indication	Bi-color LED Green/Red (connector version only)		
Programmable funct	High / Low via internal switch (connector version only) DC Current change : 14mA +/-1mA when immersed / 9mA +/-1mA when free		
Output Signal : 2 wir	AC Output for serial connection: Voltage drop (in switched-off state) < 10.5V		
Output Signal : 2 wir	res AC Residual current (in switched-ff state) < 6mA		
	Current Load: max continuous 350mA AC13 ;		
	min continuous 10mA 255V/25mA 24V		
	Max impulse: 1.5A 40 ms		
	Transistor switch: NPN/PNP output realized with different wiring		
3 wii	res DC Voltage drop in switches on state <4.5V		
	Current load 350mA / U _{max} = 55V		
	Residual current in switched off state <100 μ A		

PRESSURE / TEMPERATURE DIAGRAMS

(all metallic wetted parts)

Medium Pressure (Pt)

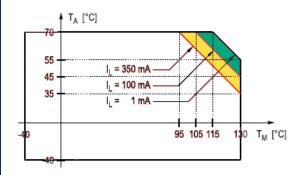
Medium Temperature (Tm)

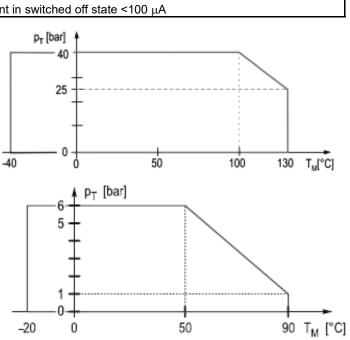
PRESSURE / TEMPERATURE DIAGRAMS

(PP flange version)

Medium Pressure (Pt)

Medium Temperature ™

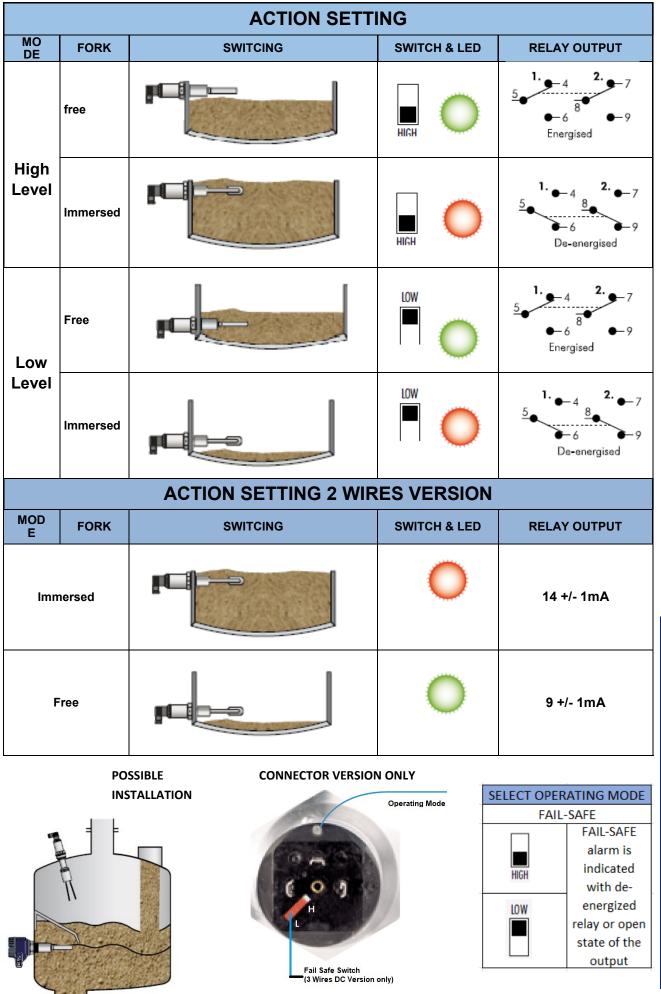




T_{A=} Ambient temperature ;

T_{B=} Process temperature

 $\mathbf{I}_{A}\text{=}\mathbf{Load}\ \text{current}\ \text{with}\ \text{DC}\ \text{power}\ \text{supply}$



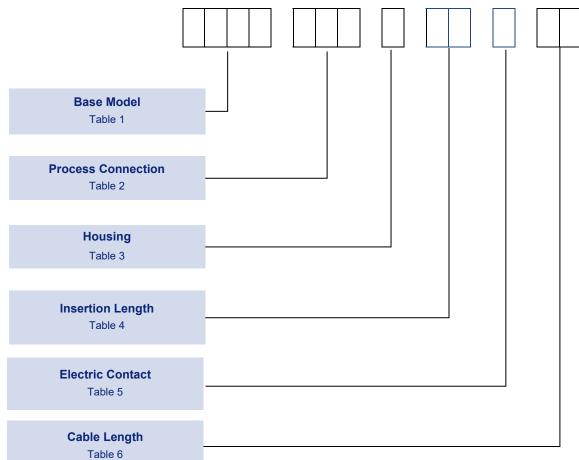
MINI-Vibrating Fork Level Switch Series: DMVS

Page 3 of 7

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 solids with minimum 0.01 kg/dm3 density.

Depend by the type of solids to be measured, 2 different type of forks are available:

Type ${\bm L}$ for powder or small granules or type ${\bm G}$ with welded forks for large granules.

This instrument can be mounted in any position, but ideally it is recommended to mount the device vertically (at the top) of the vessel, to detect light, free flowing solids. 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.

The position of the forks is clearly marked on the hexagon for mounting

Internal switch allow 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.

Series: DMVS

Base Model	TABLE 1		
lote : ATEX construction will be available soon.	Description	(Code
	Vibrating Fork Level Switch for powder/light solids	D	MVSL
	Vibrating Fork Level Switch for granular		MVSB
	Vibrating Fork Level Switch for powder/light solids	ATEX D	MVSG
	Vibrating Fork Level Switch for powder/light solids	ATEX D	MVSU
Process Connection	TABLE 2]
Note 1: only for material code D,E,H,L.	Description	Туре	Code
	1" BSP mounting	DMVSL/G	FPB
	1" NPT mounting	DMVSL/G	FNB
	1- ¹ / ₂ " BSP	DMVSB/U	NPB
	1- ¹ / ₂ " NPT	DMVSB/U	NNB
	NON-STD FLANGE FROM DN40 in St. Steel	DMVSG/B/G/U	ХХВ
	FLANGED DN50 PN40 / 25 in St. Steel	DMVSG/B/G/U	KKF
	FLANGED 2" ANSI 600RF in St. Steel DMVSG/B/		KCF
	FLANGED JIS 40K 50A in St. Steel	DMVSL / DMVSG	HJF
	FLANGED DN50 PN16 in PP	DMVSL / DMVSG	ККР
	FLANGED 2" ANSI 150RF in PP	DMVSL / DMVSG	КСР
	FLANGED JIS 10K 50A in PP	DMVSL / DMVSG	HJP
Insertion Length	TABLE 4		
Note 1: Shortest forks 69mm and I 25mm are available only for	Description	Туре	Code
Stainless Steel, standard polished orks. Type D	Standard short length 125mm SS material	DMVSL	01
ny other construction start from	Standard long length 200mm	DMVSL	02
200mm length.	Customized length 0.33000 mm (in steps of 100mm) DMVSL		XX
	Standard short length 137mm SS material	DMVSG	01
	Standard long length 175mm	DMVSG	02
	Standard long length 300mm	DMVSG	03
	Customized length 0.43000 mm (in steps of 100mn	n) DMVSG	XX

Electric Contact

Note 1: MINI version of switches, are designed for OEMs application and offers a wider range of output signals, to meet the requirement of several type of receivers normally used in compact constructions

Note 2: ATEX construction, will be available soon

TABLE 5

Description	Type of output	Code
2 wires AC DIN Connector	AC output for serial connection	1
2 wires AC DIN Cable	AC output for serial connection	2
3 wires DC DIN Connector	NPN ; PNP Transistor output	3
3 wires DC DIN Cable	NPN ; PNP Transistor output	4
2 wires DC DIN Connector	Dc Current change	6
2 wires DC DIN Cable	Dc Current change	7
2 wires DC DIN Connector, Exia G	Dc Current change	8
2 wires DC DIN Cable, Exia G	Dc Current change	9
2 wires DC M12 Connector	Dc Current change	К
2 wires DC M12 Connector, Exia G	Dc Current change	L
3 wires DC M12 Connector	NPN ; PNP Transistor output	М

Cable Length

TABLE 4		

Description	Туре	Code
Standard cable length 3 mt	DMVTB/T/P/G/U	00
Special length over 3 mt up to 30 mt	DMVTB/T/P/G/U	XX

Approvals

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

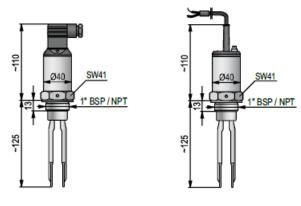
CE

Special Engineering

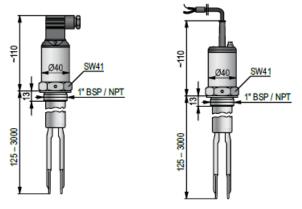
Not listed options or special constructions can also be designed to meet specific requirements of an application. Please contact us for further information.

Dimensional Drawings

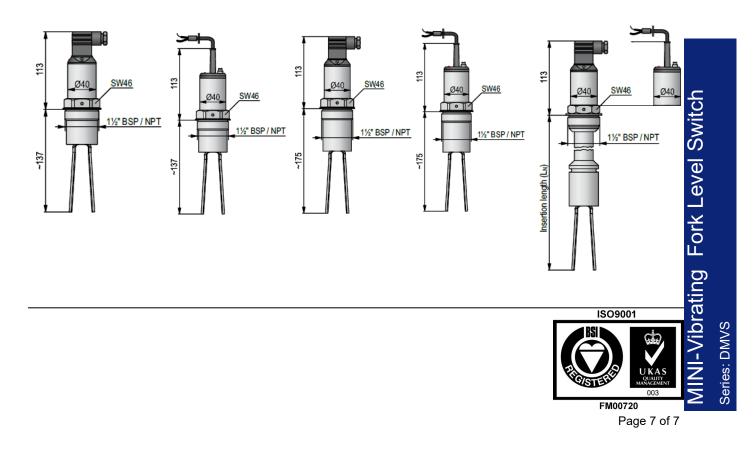
Light solid version fork type "L" with standard lengths 125mmwith DIN connector, M12 connector, cable outlet



Light solid version fork type "L" with extension from 125mm to 30000mm with DIN connector, M12 connector, cable outlet



Light solid version fork type "G" with standard lengths 125mmwith DIN connector, M12 connector, cable outlet Light solid version fork type "G" with extension from 125mm to 30000mm with DIN connector, M12 connector, cable outlet



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





delta-mobrey



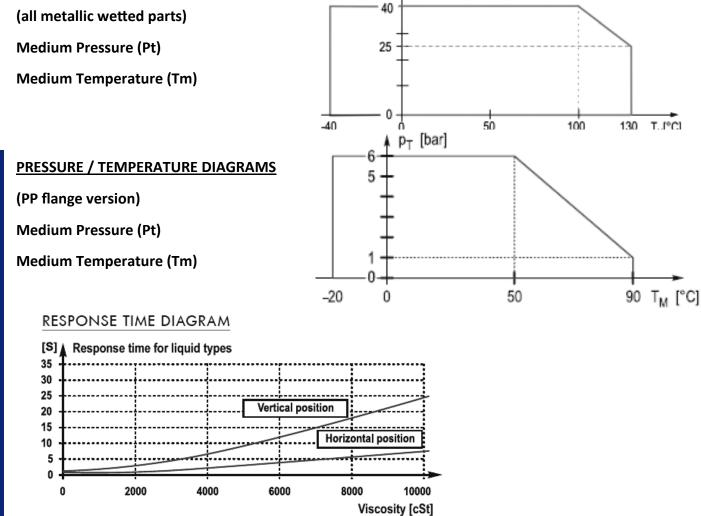
Product applications

- Water
- Chemicals
- Fuels
- Hydrocarbons

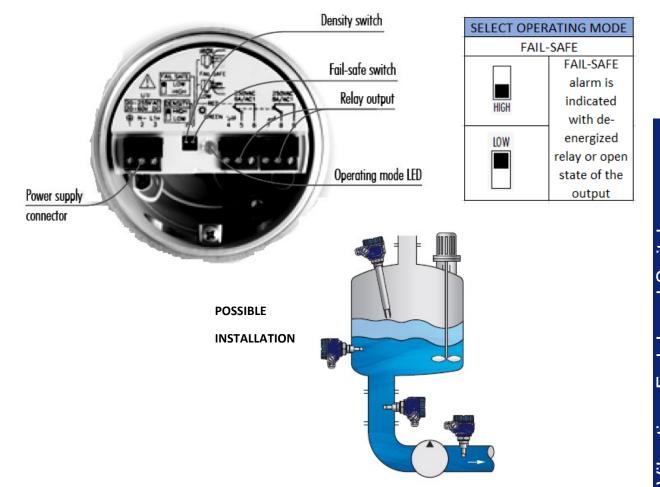
Vibrating Fork Level Switch		
Medium density	≥ 0.7 kg/dm ³	
Medium viscosity	≤ 10,000 mm2/s (cSt) (0.1 ft²/s)	
Process Temperature	-40 °C +130 °C (-40 °F +266 °F) refer to temperature diagram below	
Ambient Temperature	-30 °C … +70 °C (-22 °F … +158 °F)	
Process Pressure	max. 40 bar (580 psi g) for 1.4571 , max 6 bar for PP fange version (see table below)	
Process connection	Fllanged connection. Please refer to the below pressure diagrams	
Standard Fork length	Threaded BSP, NPT, Sanitary, ANSI/ISO flanges, Clamp/DIN	
Ũ	69mm	
Extended rod for type	033000mm (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	

p_T [bar]

PRESSURE / TEMPERATURE DIAGRAMS



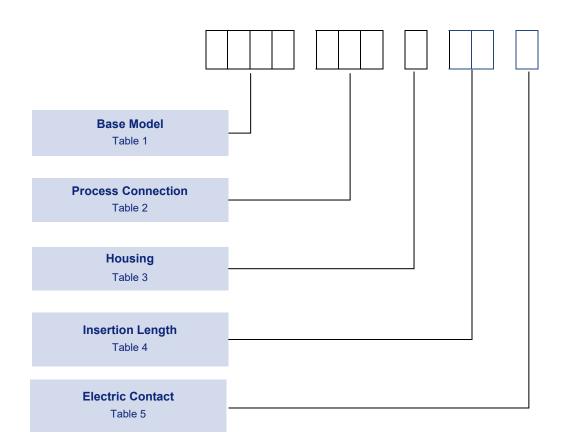
	ACTION SETTING					
MODE	MODE FORK SWITCING		SWITCH & LED	RELAY OUTPUT		
	free		HIGH	1. 4 2. 7 5 - 6 - 9 Energised		
High Level	Immersed		Нібн	1 4 2 7 $5 - 8$ $-6 - 9$ De-energised		
Low	Free		LOW	1 4 2 7 5 8 9 Energised		
Level	Immersed			1 4 5 - 6 De-energised		



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/dm³ density and with max 10⁴ mm²/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 Mode	Base	Μ	od	е
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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						
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Description	Туре	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	нкν
FLANGED DN50 PN40 / 25 St. St. ECTFE coated	DMTT	KKV
FLANGED 2" ANSI 600RF St. St. ECTFE coated	DMTT	кси
FLANGED JIS 40K 50A St. St. ECTFE coated	DMTT	HJV
FLANGED DN50 PN16 in PP	DMTT	KKP
FLANGED 2" ANSI 150RF in PP	DMTT	КСР
FLANGED JIS 10K 50A in PP	DMTT	HJP

Vibrating Fork Level Switch Series: DMT

Housing	TABLE 3		
Note 1: The Enclosure is associa- ted to the configuration of the Forks .	Description		Code
FURS.	Aluminium Alloy housing, IP67 power coated, water- proof	DMTB/T/P	с
	Aluminium Alloy housing, IP67, powder coated ATEX Flameproof	DMTG/U	Н
	Plastic, PBT fiberglass reinforced	DMTB/T/P	w
Insertion Length Note 1: Shortest forks 69mm and	TABLE 4		
125mm are available only for Stainless Steel, standard polished forks. Type B/P	Description	Туре	Code
Any other construction start from 200mm length.	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 0.23000 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 applica-	Description	Туре	Code
tion in field.	1 SPDT relay 250Vac 8A	DMTB/T/P/G/U	0
Note 2: ATEX construction, will be available soon	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
Compliant to EMC direct	patibility Directive (EMC) 2014/30/EU		

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

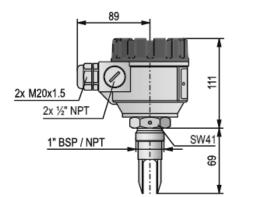
Special Engineering

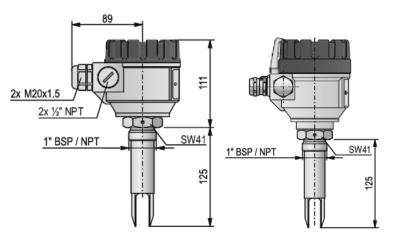
Not listed options or special constructions can also be designed to meet specific requirements of an application. Please contact us for further information.

Dimensional Drawings

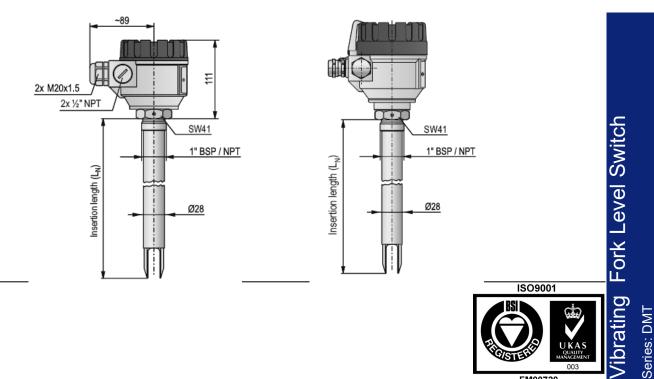
Standard lengths 69mm in weatherproof version

Standard long lengths 125mm in weatherproof and Flameproof version





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



FM00720

Technical Datasheet



DMS series Vibrating Fork Level Switch For Solids

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 for solids, is a consolidated technology applied for single point level switching function of **solids**. This series of Level switch, completes the range of instrumentation for the controls of solids, together with the Vibrating Rod type that are designed to control granules starting from 0.05 kg/dm³ density.

The operating principle is similar. The forks are kept in vibration by the electronic circuits. As the medium reaches and covers the forks, the vibration will be damped (or stop). The damping of the vibration is detected by the electronics which 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 manufactured with plastic coated for use on aggressive mediums.

Other products

Other products we can offer:

- Vibrating Rod Level Switch
- Rotating Paddle Level Switch





Product applications

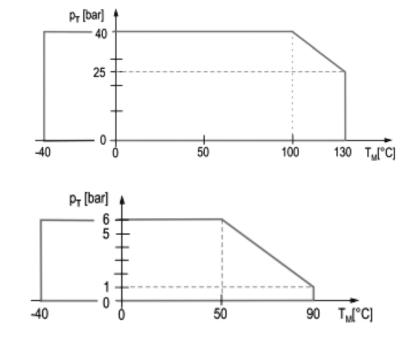
- Powders
- Pellets
- Granulates
- Grains
- Flour
- Fly ash
- Cement and sand
- Coal, slag
- Aggregate

PRESSURE / TEMPERATURE DIAGRAMS

(all metallic wetted parts)

Medium Pressure (Pt)

Medium Temperature (Tm)

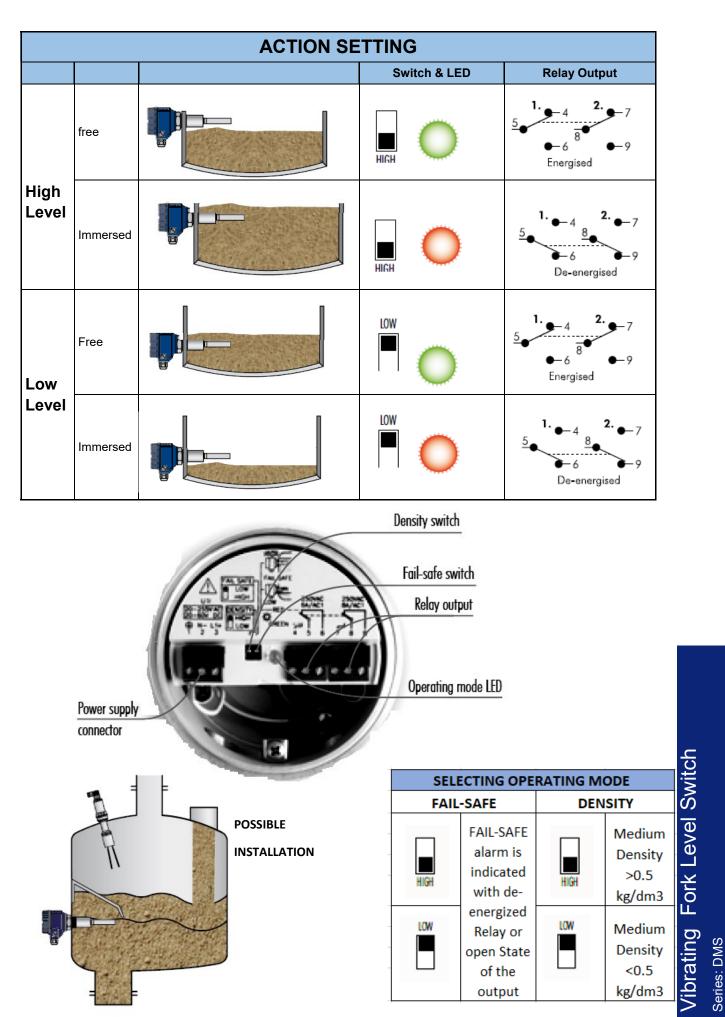


PRESSURE / TEMPERATURE DIAGRAMS

(PP flange version)

Medium Pressure (Pt)

Medium Temperature (Tm)

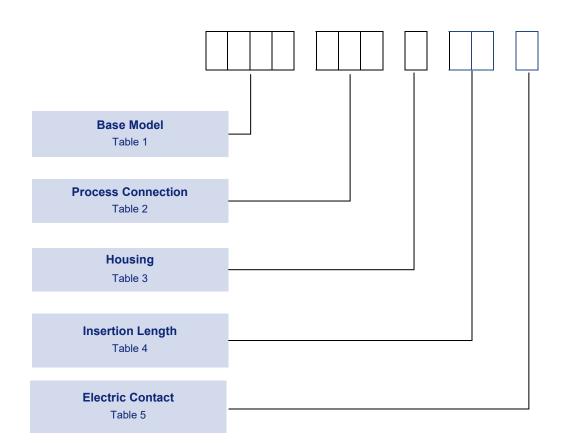


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How to order

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 suitable for solids with a minimum of 0.01 kg/dm3 density. Depending on the type of solids to be measured, 2 different type of forks are available: Type **L** for powder or small granules or type **G** with welded forks for large granules. This instrument can be mounted in any position, but ideally, it is recommended to mount the device vertically (at the top) of the vessel, to detect light, free flowing solids. It can also be mounted on the side of the container. However, it is suggested to select a position where the forks are easily freed from the medium or protected from the deposit of solids.

The position of the forks is clearly marked on the hexagon for mounting.

The internal switch allow 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 the alarm condition or not.

Series: DMS

Base Model	TABLE 1	
Note: ATEX construction will be available soon.	Description	Code
	Vibrating Fork Level Switch for powder/light solids	DMSL

Vibrating Fork Level Switch for granular	DMSB
Vibrating Fork Level Switch for powder/light solids ATEX	DMSG
Vibrating Fork Level Switch for granular ATEX	DMSU

Process Connection

TABLE 2				
Description	Туре	Code		
1" BSP mounting	DMSL/ DMSG	FPB		
1" NPT mounting	DMSL / DMSG	FNB		
1- ¹ / ₂ " BSP	DMSB / DMSU	NPB		
1- ¹ / ₂ " NPT	DMSB / DMSU	NNB		
NON-STD FLANGE FROM DN40 in St. Steel	DMSL/B/G/U	ХХВ		
FLANGED DN50 PN40 / 25 in St. Steel	DMSL/B/G/U	KKF		
FLANGED 2" ANSI 600RF in St. Steel	DMSL/B/G/U	KCF		
FLANGED JIS 40K 50A in St. Steel	DMSL/B/G/U	HJF		
FLANGED DN50 PN16 in PP	DMSL/B/G/U	KKP		
FLANGED 2" ANSI 150RF in PP	DMSL/B/G/U	КСР		
FLANGED JIS 10K 50A in PP	DMSL/B/G/U	HJP		

Housing

TABLE 3

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

		_
Description		Code
Aluminium Alloy housing, IP67 power coated, water- proof	LDMSL / DMSG	с
Aluminium Alloy housing, IP67, powder coated ATEX Flameproof	DMSG / DMSU	Н
Plastic, PBT fiberglass reinforced	DMSL / DMSG	w

Vibrating Fork Level Switch Series: DMS

Insertion Length

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

Description	Туре	Code
Standard short length 125mm SS material	DMSL	01
Standard long length 200mm	DMSL	02
Customized length 0.33000 mm (in steps of 100mm)	DMSL	ХХ
Standard short length 137mm SS material	DMSG	01
Standard long length 175mm	DMSG	02
Standard long length 300mm	DMSG	03
Customized length 0.43000 mm (in steps of 100mm)	DMSG	ХХ

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	Туре	Code
1 SPDT relay 250Vac 8A	DMSL / DMSG	0
2 SPDT relay: 1x250Vac 8A; 1x250Vac 6A	DMSL / DMSG	1
1 SPDT relay 250Vac 8A / Exd	DMSL / DMSG	2

Approvals

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EUROPEAN DIRECTIVES

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

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

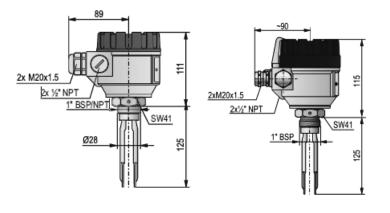
Pressure Equipment Directive (PED) 2014/68/EU: This product is outside the scope of the PED directive

Series: DMS

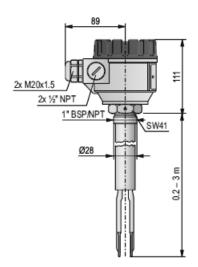
Not listed options or special constructions can also be designed to meet specific requirements of an application. Please contact us for further information.

Dimensional Drawings

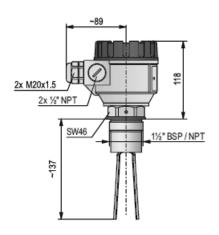
Light solid version fork type "L" with standard lengths 125mm in weatherproof and Ex version



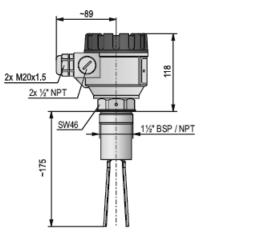
Light solid version fork type "L" with extension 200 to 3000mm



Light solid version fork type "G" with standard lengths 125mm



Light solid version fork type "G" with extension 200 to 3000mm



ISO9001



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Series: DMS

Алматы (7273)495-231 Ангарск (3955)60-70-56 Архангельск (8182)63-90-72 Астрахань (8512)99-46-04 Барнаул (3852)73-04-60 Белгород (4722)40-23-64 Благовещенск (4162)22-76-07 Брянск (4832)59-03-52 Владивосток (423)249-28-31 Владикавказ (8672)28-90-48 Владимир (4922)49-43-18 Волагоград (844)278-03-48 Вологград (844)278-03-48 Воролеж (473)204-51-73 Екатеринбург (343)384-55-89 Иваново (4932)77-34-06 Ижевск (3412)26-03-58 Иркутск (395)279-98-46 Казань (843)206-01-48 Калининград (4012)72-03-81 Калуга (4842)92-23-67 Кемерово (3842)65-04-62 Киров (8332)68-02-04 Коломна (4966)23-41-49 Кострома (4942)77-07-48 Краснодар (861)203-40-90 Краснодар (861)203-40-90 Краснодар (391)204-63-61 Курск (4712)77-13-04 Курган (3522)50-90-47 Липецк (4742)52-20-81

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Саратов (845)249-38-78 Севастополь (8692)22-31-93 Симферополь (3652)67-13-56 Смоленск (4812)29-41-54 Сочи (862)225-72-31 Ставрополь (8652)20-65-13 Сургут (3462)77-98-35 Сыктывкар (8212)25-95-17 Тамбов (4752)50-40-97

Пермь (342)205-81-47

Рязань (4912)46-61-64

Самара (846)206-03-16

Саранск (8342)22-96-24

Ростов-на-Дону (863)308-18-15

Санкт-Петербург (812)309-46-40

Тверь (4822)63-31-35 Тольятти (8482)63-91-07 Томск (3822)98-41-53 Тула (4872)33-79-87 Тюмень (3452)66-21-18 Ульяновск (8422)24-23-59 Улан-Уда (3012)59-97-51 Уфа (347)229-48-12 Хабаровск (4212)92-98-04 Чебоксары (8352)28-53-07 Челябинск (351)202-03-61 Черповец (8202)49-02-64 Чита (3022)38-34-83 Якутск (4112)23-90-97 Ярославль (4852)69-52-93

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