

Датчики уровня

Liquiphant M FTL51B, FTL51C, FTL51K

Технические характеристики

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Liquiphant FTL51B - digital, simple and safe

Point level switch for all liquid media



Benefits:

- Universal measuring principle for limit detection – proven vibronic technology
- Developed according IEC 61508 for highest safety – SIL2/3 applications (3rd party approved)
- Periodic proof testing is quickly and simple organized with guided wizards via the SmartBlue-App or via a test button or magnetic pin from outside. Via digital communication you can initiate the device for a fast and easy testing of the safety loop.
- **Heartbeat Technology** allows safe, continuous diagnostics and a simple verification, without process interruption
- Centralized asset management with easy online access to all device information thanks to digital communication
- Second line of defense to protect the environment

Specs at a glance

- **Process temperature** -50 °C...+150 °C (-58 °F...+302 °F)
- **Process pressure / max. overpressure limit** Vacuum...100 bar
Vacuum...1450 psi
- **Min. density of medium** 0.5 g/cm³ (0.4 g/cm³ optional)

Field of application: The Liquiphant FTL51B is specialized for the process industry and developed to be used directly in SIL2 and SIL3 applications. You conduct periodic proof tests according to SIL or WHG mobile with an intuitive wizard. At the end you receive an automated documentation. Liquiphant measures reliably and is not affected by changing media properties, flow, turbulences, gas bubbles, foam, vibrations or build-up. The device is easy to use, has a digital connection and gives real-time data at hand.

Features and specifications

Point Level / Liquids

Measuring principle

Vibration Liquids

Characteristic / Application

Compact vibronic device with an optional pipe extension up to 6 m (19.7 ft);

Modular housing concept;

Wide range of certificates

Specialities

Heartbeat Technology,

Bluetooth® Operation and maintenance SmartBlue App,

LED Module,

RFID TAG for easy identification,

Second line of defense,

Ambient temperature down to -50°C (-60°C optional),

Temperature spacer for high process temperature,

Plug and play functionalities

Supply / Communication

19...253V AC / 2-wire,

10...55V / DC-PNP 3-wire,

9...20V DC with relay DPDT,

19...253V AC or 19...55V DC with relay DPDT,

2-wire NAMUR,

2-wire PFM,

4-20mA HART

Ambient temperature

-60 °C...+70 °C

(-51 °F...+158 °F)

Process temperature

-50 °C...+150 °C

(-58 °F...+302 °F)

Point Level / Liquids**Process pressure / max. overpressure limit**

Vacuum...100 bar

Vacuum...1450 psi

Min. density of medium0.5 g/cm³(0.4 g/cm³ optional)

Main wetted parts

316L

Alloy

Process connection

Threads:

G3/4A, G1A, R3/4", R1, NPT3/4, NPT1

Flanges:

DN25...DN100

ASME 1"...4"

JIS 25A...100A

Process connection hygienic

Tri-Clamp ISO2852

Sensor length

Up to 6 m (19.7 ft)

Communication

2-wire direct load

HART

DC-PNP 3-wire

Relays

NAMUR

PFM

Bluetooth® wireless technology

Certificates / Approvals

ATEX, IEC Ex, CSA, NEPSI, KC, JPN Ex, INMETRO, UK Ex

Point Level / Liquids

Safety approvals

Overfill protection WHG
SIL2/ SIL 3 according to IEC 61508

Design approvals

EN 10204-3.1
NACE MR0175, MR0103
ASME B31.3 Process Piping
AD2000
CRN
AD 2000

Marine approval

ABS/ LR/ BV/ DNV

Options

Heavy duty stainless steel housing

Components

FTL325P Interface PFM
FTL325N Interface NAMUR

Density

Measuring principle

Vibration Density

Product Headline

Vibronic point level switch with optional extension tube for liquid applications in hazardous areas .
Reliable measurement values not affected by: changing media properties, gas bubbles, foam, build-up, flow or turbulences.

Characteristic / Application

Compact vibronic device with an optional pipe extension up to 6 m (19.7 ft),
Modular housing concept,
Wide range of certificates

Density**Ambient temperature**

-60 °C...+70 °C
(-51 °F...+158 °F)

Process temperature

-50 °C...+150 °C
(-58 °F...+302 °F)

Process pressure

Vacuum...100 bar
Vacuum...1450 psi

Wetted parts

316L
Alloy

Sensor length

Up to 6 m (19.7 ft)

Certificates / Approvals

ATEX, IEC Ex, CSA, NEPSI, KC, JPN Ex, INMETRO

Specialities

Heartbeat Technology,
Bluetooth® Operation and maintenance SmartBlue App,
LED Module,
RFID TAG for easy identification,
Second line of defense,
Ambient temperature down to -50°C (-60°C optional),
Temperature spacer for high process temperature,
Plug and play functionalities

Components

Density Computer FML621

Measuring range

Density range: 0.3 to 2 g/cm³

Density

Other approvals and certificates

Overfill protection WHG

SIL2/ SIL 3 according to IEC 61508

Vibronic

Point level detection

Liquiphant FTL51C

Point level switch for liquids with highly corrosion-resistant coating



Benefits:

- Use in safety systems requiring functional safety to SIL2/SIL3 in accordance with IEC 61508/IEC 61511-1
- Different plastic coating (PFA) and enamel coating for applications with aggressive medias
- International explosion protection certificates and overfill protection certificate (WHG)
- No calibration required, easy to start up
- No mechanically moving parts: no maintenance, no wear, long operating life.
Monitoring of fork for damage: guaranteed function
- Second line of defense to protect the environment
- Variety of standardized process connections for all applications

Specs at a glance

- **Process temperature** -50 °C...+150 °C (-58 °F...+302 °F) up to 230 °C / 450°F on request
- **Process pressure / max. overpressure limit** Vacuum...40 bar (Vacuum...580 psi)
- **Min. density of medium** 0.5g/cm³ (0.4g/cm³ optional)

Field of application: Liquiphant FTL51C is a point level switch with extension tube and highly corrosion resistant coating. For use in hazardous areas with all international certificates. Useable in all industries. FTL51 offers functional safety SIL2/SIL3. With the second line of defense highest degree of safety and availability of the device can be guaranteed. Reliable measurement values, not affected by: changing

media properties, flow, turbulences, gas bubbles, foam, vibrations or build-up.

Features and specifications

Point Level / Liquids

Measuring principle

Vibration Liquids

Characteristic / Application

High protection against aggressive media by using antistatic coating
Modular housing concept
wide range of process connections
Analogue and bus interfaces
Extensive certificate range (e.g.Ex,WHG)
pipe extension up to 3m (6m option)

Specialities

Foam detection
Detect a density change
second line of defense

Supply / Communication

PROFIBUS PA
19...253V AC, 2-wire
10...55V DC-PNP, 3-wire
DPDT, 19...253V AC, 10...55V DC
8/16mA, 11...36V DC
NAMUR
PFM, 2-wire
NAMUR with testbutton

Ambient temperature

-50 °C...+70 °C
(-58 °C...+158 °F)

Point Level / Liquids**Process temperature**

-50 °C...+150 °C
(-58 °F...+302 °F)
up to 230 °C / 450°F on request

Process pressure / max. overpressure limit

Vacuum...40 bar
(Vacuum...580 psi)

Min. density of medium

0.5g/cm³ (0.4g/cm³ optional)

Main wetted parts

ECTFE
PFA (Edlon)
PFA (Rubyred)
PFA (conductive)
Enamel

Process connection

Flange:
DN25...DN100,
ASME 1"...3",
JIS RF10 K 50

Process connection hygienic

FDA conform with PFA (Edlon)

Sensor length

ECTFE, PFA 130mm, 148mm...3000mm
(ECTFE, PFA 5.12", 5.83"...118")
Enamel 130mm, 148mm...1200mm
(Enmal 5.12", 5.83"...47.24")

Point Level / Liquids**Communication**

PROFIBUS PA

19...253V AC

10...55V DC-PNP

19...253V AC bzw 10...55V DC

8/16mA, 11...36V DC

NAMUR

PFM

Certificates / ApprovalsATEX, FM, CSA C/US, IEC Ex, TIIS, INMETRO, NEPSI

Safety approvalsSIL2/ SIL3

Design approvalsEN 10204-3.1

Marine approvalGL/ ABS/ DNV

OptionsHeavy duty stainless steel housing mainly for the oil and gas industry

Components

FTL325P/FTL375P Interface PFM

FTL325N/FTL375N Interface NAMUR

Density**Measuring principle**Vibration Density

Density

Characteristic / Application

Liquiphant M Density
with Density Computer FML621
Temperature and pressure measurement
High protection against aggressive media by using antistatic coating
Modular housing concept
Wide range of process connections
Pipe extension up to 3 m (6 m option)

Supply / Communication

Transmitter power supply (MUS)

Ambient temperature

-50...80°C
-50...60°C for hazardous applications

Process temperature

0...80 °C (validity of accuracy data)
-50...0°C / 80...150 °C (with reduced technical data)

Process pressure

0...25 bar
>25...40 bar (with reduced technical data)

Wetted parts

ECTFE, PFA and Enamel

Sensor length

115...3000 mm
(depends by the covering)

Output

Pulse

Certificates / Approvals

ATEX, FM, CSA C/US, IEC Ex, TIIS, INMETRO, NEPSI

Density

Specialities

Commissioning with ReadWin2000

Components

Density Computer FML621

Measuring range

Density range: 0.3 to 2 g/cm³

Other approvals and certificates

SIL2/ SIL3

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