Technical information
TI 082R/09/en

Paddle limit switch
soliswitch FTE 33

Economical paddle level limit switch. Application in preparation machines for dry cement, plaster and flooring

Advantages at a glance
- Simple function
- Proven principle
- 42 V operating voltage
- IP 65 ingress protection
- 16 A / 3 pole input socket mounted on unit housing
- Push button: Paddle switch ON / OFF
- Yellow signal lamp: Full or off indication
- Double paddle
- Simple height setting of double paddle using split pin

Application areas
- The paddle level limit switch is used as a full indicator in supply systems, e.g. for dry cement application. Its construction is specially suited for building site application.
- Monitoring the maximum limit in mixing systems using prepared mixed dry cement.

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Operation and system construction

Measurement principle

The shaft and paddle are driven via a reduction gear using a synchronous motor. If the shaft-rotation reduces or is stopped by the material, the hinged motor in the housing moves from the rest to the switched position. When this position is reached, the motor is stopped and the externally connected load is switched off. A yellow signal lamp then also indicates this condition (= full alarm).
When the material is clear of the shaft, the motor returns to the rest position and the shaft starts rotating. The signal lamp goes out.
By pushing the green button (see "Display and operating level" on page 5) the motor and and the externally connected load are switched off. The yellow signal lamp indicates this condition (= off indication).
Forces that act on the paddle that go against, or even in the direction of, rotation are evened out by a slip clutch.

Measurement system

Complete level limit switch including a push button and signal lamp consisting of a height adjustable double-sided rotating paddle shaft with synchronous motor and slip clutch. Included in the system is an integrated 3 pole CEE unit socket.

Inputs

Measurement size

Filling height of solids

Measurement range

Variable: dependent on the position of the movable sensor paddle and free-flowing product.

Output

Output signal

Binary: a contact closes once the level limit has been reached.

Output circuit

Connectable load:
≤ 50 VAC, 10 A, 3 A on motor load

Switch output

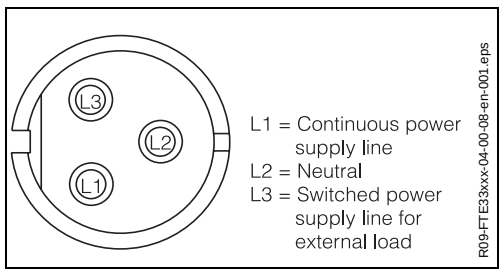
Potential free changeover contact

Switch time delay

Approx. 2 seconds

Power supply

Electrical connections



FTE 33 socket connections - View on CEE unit socket

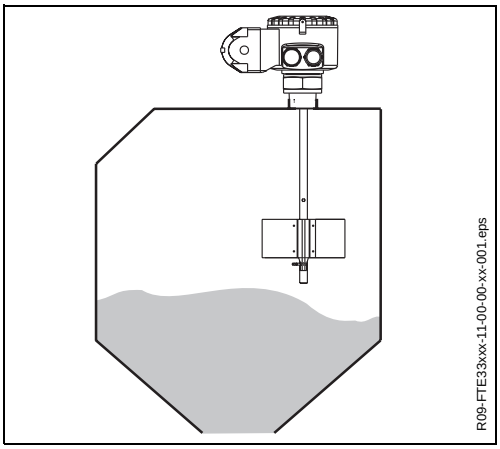
Cable entries:
CEE unit socket 16A / 3 pole

Power supply:
42 V AC, 50/60 Hz ± 10%

Power consumption:
P ≤ 3,5 VA

Installation conditions

Installation hints



Limit switch installation

Mounting location:
Vertically from the top, e. g. dry cement preparation machines.

Environmental conditions

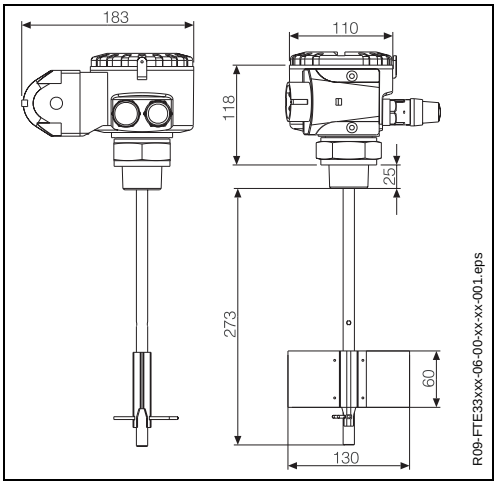
Ambient temperature	- 20 °C ... + 60 °C
Storage temperature	- 20 °C ... + 60 °C
Ingress protection	• IP 65 with closed cover • IP 20 with open cover
Vibration protection	IEC 654-3, dimension V.S.1 (v < 3 mm/s, 1 < f < 150 Hz)
EMC	To EN 61 326, Class B
Protection class	I
Over voltage protection category	II

Process conditions

Material temperature range	- 20 °C ... + 80 °C
Operational pressure range	0.5 bar ... 1.8 bar
Material condition	Solids - powder to fine grain size
Solids weight	≥ 100 g/l

Mechanical construction

Model/dimensions



Limit switch construction- dimensions in mm

Weight:
Approx. 1 kg

Materials:
- Housing, cover:
  Plastic PBT with 30% glass fibre
- Process connection:
  Plastic PBT with 30% glass fibre, alternatively stainless steel 1.4305
- Shaft:
  Stainless steel 1.4305
- Revolving sensors + paddle:
  Stainless steel 1.4305
- Unit socket:
  Plastic ABS
- O ring seal:
  NBR
- Shaft seal:
  NBR Perbunan

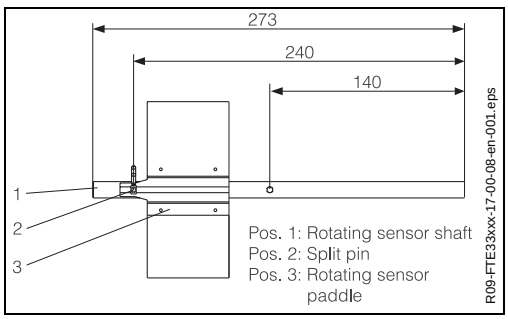
Shaft bearing

High power friction bearing - maintenance-free

Shaft rotation

Approx. 1 revolution per minute

Paddle



Height-adjustable rotating sensor paddle

Height-adjustable sensor paddle:
Using split pin and holes in the rotating sensor (pos. 1) the paddle (pos. 3) can be adjusted over a shaft length of 140 / 190 / 240 mm.

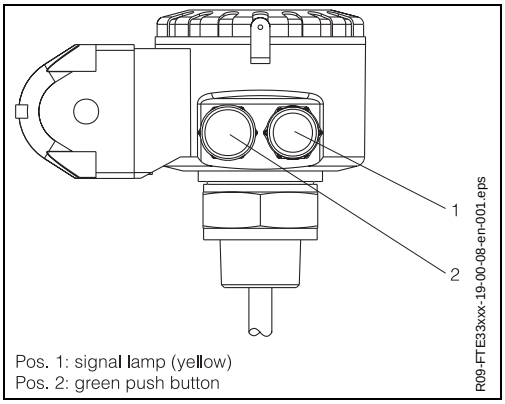
Process connection

Threaded boss - thread 1½"

Electrical connection

Connection using the CEE unit socket, 16 A / 3 pole according to DIN VDE 0623

Display and operating level



Display and operating elements

Display elements:
The signal lamp (pos. 1) indicates the limit switch condition.
- Signal lamp illuminates to show sensor is covered.
- Signal lamp not illuminated shows that the sensor is uncovered.

Operating elements:
Green push button (pos. 2) for switching the paddle switch on and off.
- Green push button pushed in: rotating sensor motor off, load off
- Green push button not pushed in: rotating sensot motor running, compressor on (AUTOMATIC condition)

Certification

CE

Regulations to:
- 89/336/EWG
- 73/23/EWG

How to order

Order code

Soliswitch FTE 33

Paddle level limit switch for use in machines for preparation of powder/fine grain sized dry cement, plaster and flooring. Density ≥ 100g/dm³; housing in fibre glass stengthened PBT, IP65 ingress protection

Certification
A Version for non-Ex areas

Power supply
A 42V 50/60 Hz

Process connection
A G 1½", PBT mounting boss
B G 1½", 1.4305 stainless steel boss

Model
1 Shaft length: 273 mm, 1.4305 stainless steel
Double paddle sensor, height adjustable, 1.4301 st. st.

Electrical connection
A Housing with mounted CEE 3-pin plug

Optional extras
1 On/off switch and signal lamp

Version
A Standard

FTE33L-								⇐ **Order code**

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