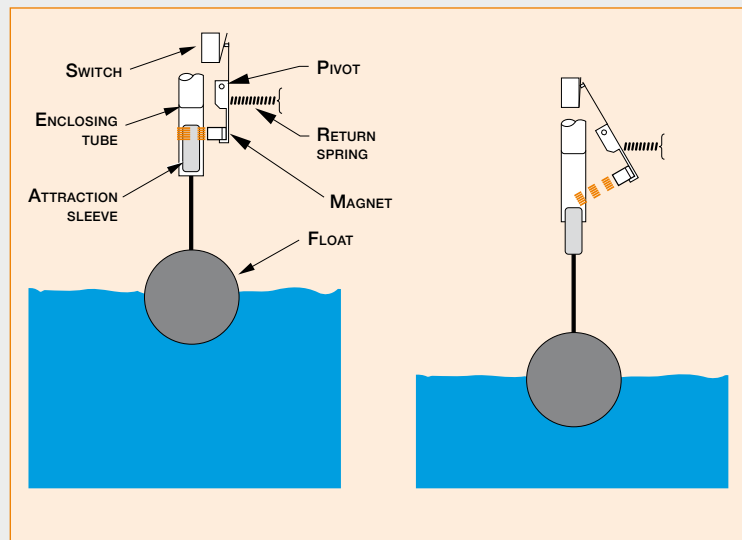


BUOYANCY



A permanent magnet is attached to a pivoted switch actuator. As the float/displacer rises following the liquid level, it raises the attraction sleeve into the field of the magnet, which then snaps against the non-magnetic enclosing tube, actuating the switch. The enclosing tube provides a static pressure boundary between the switch mechanism and the process. On a falling level, the float/displacer deactivates the switch.



T20 - T21**Liquid float level switch****DESCRIPTION**

Model T20 and T21 units are user-friendly, reliable float switches designed for top mounting to tanks or vessels. T20 units utilize a single switch mechanism and float. T21 units utilize two switch mechanisms and two separate floats when widely spaced actuating levels are required. T20 and T21 models are available for any type of open or closed vessel with either threaded or flanged type mounting and actuating depths up to 1219 mm (48 inches).

FEATURES

Carbon or stainless steel process connection materials (other materials available on request)

Flanged and threaded process connections

Process temperature up to +540 °C (+1000 °F)

Up to two switch levels (T21)

S.G. as low as 0.60 kg/dm³

Process pressure up to 41.3 bar (600 psi)

Standard anti-corrosive protection

Optional:

- NACE construction (MR-01-75)
- interface calibration
- special actuating levels
- special tank connections
- extreme temperature modifications
- class 1, Group B explosion proof electrical enclosure
- special exterior surface preparation and finish

Suited for SIL 2 loops (DPDT switch) (full FMEDA report available).

APPLICATIONS

Day tanks

Condensate receivers

Fuel storage tanks

Cooling towers

Flash tanks

Interface

AGENCY APPROVALS

	Ex d	Ex ia	Ex n	Ex t	XP	IS	NI	Other
ATEX	●	●						
CCOE	●							
CSA					●			
FM					●			
EAC (GOST)	●	●						
IEC	●	●						
Inmetro	●							
Korea	●							
NEPSI	●							
Marine	Lloyd's Register of Shipping (LRS)							
SIL	SIL 2 (1001)							
Other approvals are available; consult factory for more details.								

A10/15 - B10/15 - C10/15
Liquid displacer level switch



DESCRIPTION

Magnetrol® displacement type level switches offer the industrial user a wide choice of alarm and control configurations. Each unit utilizes a simple buoyancy principle and is well suited for simple or complex applications, such as foaming or surging liquids or agitated fluids, and usually costs less than other types of level switches.

FEATURES

Narrow or wide level ranges achieved through multiple switch mechanism capability

Maximum process temperature: +260 °C (500 °F)

Maximum process pressure: 55.1 bar (800 psi)

S.G. as low as 0.4 kg/dm³

Displacers adjustable at any point along the suspension cable

Anti-surge design eliminates the possibility of switch short cycling

Standard 3 m (10 ft) of suspension cable, included for all models

Field adjustable set point and switch differential

Wide choice of displacer materials

Wide choice of housings and switch mechanisms

Standard anti-corrosive protection

Optional:

- NACE construction (MR-01-75)

- proof-er® ground check

- floating-roof models

- high pressure models

- models for interface

Suited for SIL 2 loops (DPDT switch) (full FMEDA report available).

APPLICATIONS

Foaming or surging liquids – Paints – Agitated fluids – Varnishes – Sewage handling – Heavy oils
 – Dirty liquids – Liquids with solids

AGENCY APPROVALS

	Ex d	Ex ia	Ex n	Ex t	XP	IS	NI	Other
ATEX	•	•						
CCOE	•							
CSA					•			
FM					•			
EAC (GOST)	•	•						
IEC	•	•						
Inmetro	•							
Korea	•							
NEPSI	•							
Marine	Lloyd's Register of Shipping (LRS)							
SIL	SIL 2 (1oo1)							
TÜV/DIBt	WHG § 63, overfill prevention							
Other approvals are available; consult factory for more details.								



TUFFY® T3

Side mounting level control



DESCRIPTION

The Tuffy® liquid level switch is a float-actuated device designed for horizontal mounting in a tank or vessel through threaded or flanged pipe connections. The compact size allows for installation in small vessels, while its many features provide a variety of application uses. The single switch mechanism is available in SPDT or DPDT forms on units designed for adjustable, narrow or wide differential and interface service.

FEATURES

Maximum process temperature: +400 °C (+750 °F)
 Minimum process temperature: -55 °C (-65 °F)
 Maximum process pressure: 181 bar (2630 psi)
 S.G. as low as 0.4 kg/dm³.
 Wetted parts in 316/316L (1.4401/1.4404) or Hastelloy C (2.4819)
 Available as: - flanged
 - threaded
 - flanged or sealed cage mounted
 Suited for SIL 2 loops (DPDT switch) (full FMEDA report available)

MODELS

Narrow differential switch (for alarm functions):
 - standard pressure (up to 50 bar (720 psi))
 - high pressure (up to 150 bar (2160 psi))
 Wide adjustable differential switch (for control functions)
 Interface switch (detection of interface level between liquids)
 External cages
 Compact versions:
 - pneumatic narrow differential switch
 - electric narrow differential switch

APPLICATIONS

Sour service (NACE)
 High/low alarm
 Single pump control
 Day storage tanks
 Corrosive processes
 Process vessels
 Boiler low water cut-off
 Interface level
 Installations in hazardous area

AGENCY APPROVALS

	Ex d	Ex ia	Ex n	Ex t	XP	IS	NI	Other
ATEX	•	•						
CSA					•			
FM					•			
EAC (GOST)	•	•						
IEC	•	•						
NEPSI	•							
SIL	SIL 2 (1001)							
TÜV/DIBt	WHG § 63, overfill prevention							
Other approvals are available; consult factory for more details.								

T62 - T64 - T67**Side mounting
liquid float level switch****DESCRIPTION**

Side-mounting controls mount horizontally to any tank or vessel through a threaded or flanged pipe connection. Standard models are normally equipped with a single switch mechanism for high or low level alarm or control applications. Tandem models with two switch mechanisms are available for two-level stage applications, providing the operating functions of two separate instruments such as high and low level alarm.

FEATURES

Carbon or stainless steel body materials (other materials available on request)

Flanged and threaded process connections

Process temperature up to +540 °C (+1000 °F)

Up to two switch levels (T67)

S.G. as low as 0.50 kg/dm³

Process pressure up to 82.7 bar (1200 psi)

Field adjustable level differentials from 32 mm (1.25") up to 409 mm (16.12")

Standard anti-corrosive protection

Optional:

- NACE construction (MR-01-75)
- interface calibration
- special actuating levels
- code compliance construction
- special tank connections
- extreme temperature modifications
- Class 1, Group B explosion proof electrical enclosure
- special exterior surface preparation and finish

APPLICATIONS

Foaming or surging liquids

Varnishes

Sewage handling

Heavy oils

Paints

Liquids with solids

AGENCY APPROVALS

	Ex d	Ex ia	Ex n	Ex t	XP	IS	NI	Other
ATEX	•	•						
CCOE	•							
CSA					•			
FM					•			
EAC (GOST)	•	•						
IEC	•	•						
Inmetro	•							
Korea	•							
NEPSI	•							

Other approvals are available; consult factory for more details.

B40

High pressure / high temperature liquid float level switch



DESCRIPTION

The B40 liquid level switch is specifically designed and constructed for high pressure, high temperature service conditions. This type level switch is a completely self-contained unit designed for side mounting to a tank or vessel with welded or flanged pipe connections.

FEATURES

Cr Mo (Chrome - molybdenum), carbon steel or stainless steel welded float cages

Process temperature up to +540 °C (+1000 °F). Consult factory for higher temperatures.

Single switch level

S.G. as low as 0.65 kg/dm³

Process pressure up to 207 bar @ +540 °C (3000 psi @ +1000 °F)

Standard anti-corrosive protection

Optional:

- special tank connections
- extreme temperature modifications
- Class 1, Group B explosion proof electrical enclosure

Suited for SIL 2 loops (DPDT switch) (full FMEDA report available)

APPLICATIONS

Accumulators

Flash tanks

Receivers

Knock-out drums

Flare pots

Storage tanks

Scrubbers

Separators

AGENCY APPROVALS

	Ex d	Ex ia	Ex n	Ex t	XP	IS	NI	Other
ATEX	●							
CCOE	●							
CSA					●			
FM					●			
EAC (GOST)	●	●						
IEC	●	●						
Inmetro	●							
Korea	●							
NEPSI	●							
SIL	SIL 2 (1001)							
Other approvals are available; consult factory for more details								

EXTERNAL CAGE**Liquid float / displacer level switch****DESCRIPTION**

External cage type level switches are completely self-contained units designed for side mounting to a tank or vessel with threaded or flanged pipe connections. These switches are engineered to customer specifications.

FEATURES

Carbon or stainless steel welded float cages (other materials available on request)

Process temperature up to +400 °C (+750 °F)

Up to three switch levels

Standard anti-corrosive protection

Sealed/Flanged cages:

- S.G. as low as 0.40 kg/dm³
- process pressure up to 138 bar (2000 psi) for floats
- process pressure up to 345 bar (5000 psi) for displacers

Optional:

- NACE construction (MR-01-75)
- interface calibration
- customized installation dimensions
- special actuating levels
- code compliance construction
- special tank connections
- extreme temperature modifications
- Class 1, Group B explosion proof electrical enclosure
- special exterior surface preparation and finish

SIL 2 suitable (full FMEDA report available)

APPLICATIONS

Foaming or surging liquids – Paints – Agitated fluids – Varnishes – Sewage handling – Heavy oils
– Dirty liquids – Liquids with solids

AGENCY APPROVALS

	Ex d	Ex ia	Ex n	Ex t	XP	IS	NI	Other
ATEX	●	●						
CCOE	●							
CSA					●			
FM					●			
EAC (GOST)	●	●						
IEC	●	●						
Inmetro	●							
Korea	●							
NEPSI	●							
Marine	Lloyd's Register of Shipping (LRS)							
SIL	SIL 2 (1001)							
Other approvals are available; consult factory for more details								

EXTERNAL CAGES for buoyancy devices

As with our electronic products our buoyancy products can also be mounted in (custom designed) external cages. It will again depend on process connection, process condition, customer specification, ... how the external cage will be designed. Below are some typical examples. Many other designs are possible, consult the factory for more details.

