Magnetic Float Switches 1003

Magnetic Float Switches 1003
Table of contents

Index

Table of contents **40**
Description and function **41**
Certificates / Approvals **42-43**
Magnetic Float Switches 1003
Stainless steel DN10 to DN500 44
Brass DN10 to DN500 45
Titanium DN10 to DN500 46
Alloy DN10 to DN500 47
PVC DN10 to DN500 48
PP DN10 to DN500 49
PVDF DN10 to DN500 50
Aceptic design / Electrolytically polished 51
Food design / Sanitary-Standard 3A 52
Brass and stainless steel with polyamide flange 53
Brass and stainless steel adjustable design 54
Stainless steel and brass in angled design for side installation 55
E-CTFE and PFA coated stainless steel design 56
Polyamide and stainless steel in flexible design 57
PP and PVDF in flexible design 58
Stainless steel and brass test function design 59
Stainless steel with bypass housing 60
Gunmetal and Aluminium with bypass housing 61
SNU-safety switch 62
For bulk material and viscous media 63
Spherical float with axial-magnetic system **64**
Immersion depth-diagram **65-67**
Spherical float with axial-magnetic system
Cylindrical float with axial-magnetic system **68**
Immersion depth-diagram **69-70**
Cylindrical float with axial-magnetic system
Type key **71-73**
Electrical connections **74-75**
Design process connections **76-78**
Contact functions / Temperature probe **79**
Cable / Materials **80**

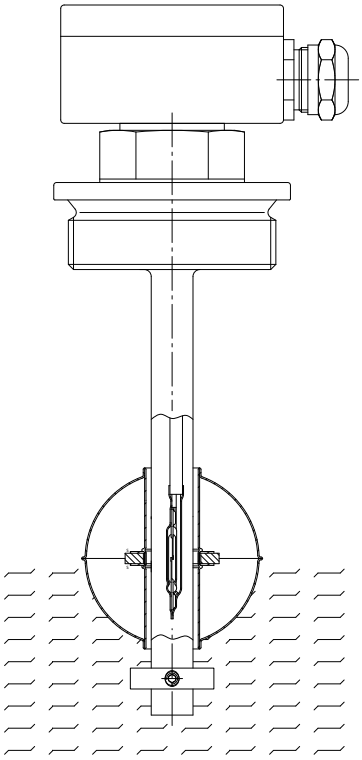
Instructions for instrument selection in the catalogue

So that the customer gets the best equipment solution according to his requirements, we recommend this simple procedure using the following pages:

- Define the dimension of the fitting or interface (e.g. thread G2“, DIN-flange DN25/PN16, etc.)
- Determine the electrical connection (e.g. terminal box, cable entry, plug, etc.)
- Find out the operating conditions, min. and max. operating pressure, temperature and specific gravity of the media at the max. operating temperature.
- With the size of the fitting and material of the instrument, a guide specification can be selected on pages 44 to 63.
- The full and final specification can now be generated by reference to the „type key“ on pages 71 to 73.
- With the type description and the technical operating conditions a price quotation can be made or the instrument can be ordered.
- Specification of the requested approval.

Magnetic Float Switches 1003
Description and function

Magnetic float switches work according to the float principle with magnetic transmission (permanent magnet / reed switch).
A magnet, which is built in the float actuates with its magnetic field, through the wall of the guide tube, one or more reed contacts.
By this way, volt-free opening, closing or change-over functions can be reached. Magnetic float switches are suitable for almost every liquid mediums e.g. full or empty detector, to control pumps or valves or to signal filling levels. By the volt-free reed contacts, the magnetic float switches are an ideal switching element in connection with PLC controls.



Additional installation / important notes

1. Contact protection
In the chapter 1011 you can find different contact protection relays. In connection with these instrument, the contacts of the magnetic float switches are only loaded by the smallest current and voltage.

2. Material
In the catalogue you find common materials such as stainless steel, brass, titanium, alloy, plastics or coatings. We also manufacture instruments in other materials on request.

3. Mounting note
The magnetic float switches can also be installed in the bottom of a container, e.g. type EVR-VS-L... -SV-1PVC changes to UEVR-VS-L... -SV-1PVC.

4. Definition of switching functions
The required switching functions will be produced on rising level on the defined level height.

5. Special designs
In this chapter 1003, you find approx. 50 versions as magnetic float switches can be constructed. As an innovative manufacturer we are always in the position to produce a customer-specific instrument, exactly as per your ideas.
Our performance and innovation readiness is always to see in connection with highest quality thoughts.
With the confidence of our customers we have become to a leading manufacturer of level control instruments. Together we have developed the best solutions. Progress by innovation is only possible by close customer bond.

6. Manufacturing of bolts or float stoppers
Magnetic float switches will be equipped, depending on design, not with float limiting rings (float stoppers) but with welded bolts.

7. Temperature contacts and temperature probes
Technical data about temperature contacts and temperature probes you find on page 79.

Magnetic Float Switches 1003
Certificates / Approvals

Certificates

SCHWEIZERISCHER VEREIN FÜR QUALITÄTS- UND MANAGEMENTSYSTEME
Certified according to ISO 9000 rev. 2000

SWISS TECHNICAL SERVICES AG
Approval as production factory, welding examination and procedure qualification incl. restamping certificate for the production of pressure tanks according to SVTI-regulation 501, 201

Approvals

The company Heinrich Kübler AG can manufacture magnetic float switches to most national and industrial approvals. Therefore a wide range of instruments with approvals requirements can be produced according to customer's requests.

TECHNISCHER ÜBERWACHUNGSVEREIN DEUTSCHLAND (PED)
Approval as production factory for manufacture of pressure tanks according to AD HP 0, PED Pressure Equipment Directive 97/23/EG

SOCIETE NATIONALE DE CERTIFICATION ET D'HOMOLOGATION (ATEX)
Approval for the production of Magnetic Float Switches according to EU-Directive 94/9/EG

DEUTSCHES INSTITUT FÜR BAUTECHNIK DIBT (WHG)
Approval according to water regime law WHG

GERMANISCHER LLOYD (Building of ships)
Approval for the production of Magnetic Float Switches according to GL-regulations

BUREAU VERITAS (Building of ships)
Approval for the production of Magnetic Float Switches according to BV-regulations

REGISTRO ITALIANO NAVALE (Building of ships)
Approval for the production of Magnetic Float Switches according to RINA-regulations

3A - Sanitary Standards (Dairy equipment)
Approval for the production of Magnetic Float Switches according to 3A-regulations

Magnetic Float Switches 1003
Approvals

As an innovative manufacturer of instruments for level control, we can offer to our customers systems according to different directives. The types of approval, applications and limits of use can be taken from the following specifications.

Approvals

Ex

A large number of magnetic float switches from our standard range, or to customer requests, can be built according to the EU-Directive 94/9/EG with the protection types EEx ia IIC T3 to T6, EEx d T4 to T6 or dust Ex/D. By the combination of the instruments with the type key the catalogue shows with the Ex hexagonal logo which components can be used for Ex-instruments.

Temperatures of media:

EEx ia-instruments	
T3	180 °C
T4	130 °C
T5	95 °C
T6	80 °C

EEx d-instruments	
T4	120 °C
T5	95 °C
T6	80 °C

Electrical limit values:

Depending on applications
Type apparent on type plate, installation and operating manual

PED

Under the Pressure Equipment Directive 97/23/EG, any pressure vessel or instrument used within a pressurised system at 0,5 bar or above, has to conform to various categories. Depending on the design data or customer needs, manufacture of instruments is to either of the categories below.

Category II	
Module	A1

Category IV	
Module	B+D

WHG

The WHG-approval prescribes us, how safety overflow switches must be built for the storage of water-endangering liquids in containers and tanks. We have the possibility of building a large range of level sensors to the standard WHG §19.

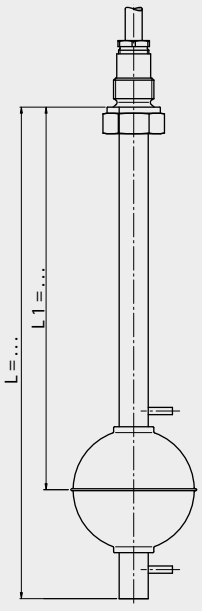
GL / BV / RINA

Magnetic Float Switches for use in shipping can be manufactured to GL (Germanischer Lloyd), BV (Bureau Veritas) or RINA (Registro Italiano Navale) standards in large variety of design possibilities complete with controllers.

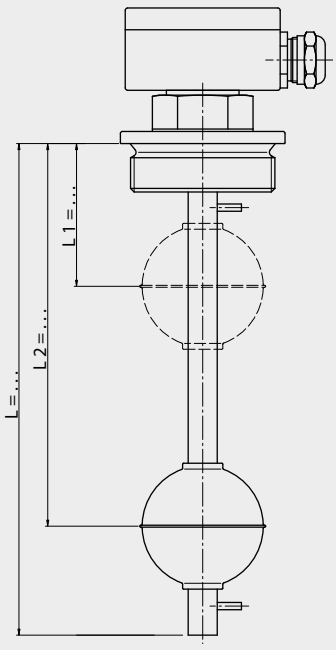
Magnetic Float Switches 1003
Titanium DN10 to DN500

Technical data	
Guide tube diameter:	8 mm length to 1000 mm 10 mm length to 2000 mm 12 mm length to 5000 mm 14 mm length to 5000 mm 18 mm length to 6000 mm
Connection sizes / guide tube:	Thread BSP 1/8" ... Ø8 ... 14 mm Thread BSP 1/2" ... Ø18 mm Flange DIN DN50 ... Ø8 ... 14 mm Flange DIN DN80 ... Ø18 mm Thread NPT 1/8" ... Ø8 ... 14 mm Thread NPT 1/2" ... Ø18 mm Flange ANSI 2" ... Ø8 ... 14 mm Flange ANSI 3" ... Ø18 mm
Contacts:	U - change over S - normally open O - normally closed
Temperature contacts:	TO ... °C normally closed TS ... °C normally open
Temperature probe:	PT- 100 (optional with control unit) PT-1000 (optional with control unit)
Float:	See float table pages 64-70
Approvals:	See approvals pages 42-43
Operating parameters:	Temperature: -10 °C ... +150 °C Pressure: -1 ... 22 bar Specific gravity: ≥400 kg/m³

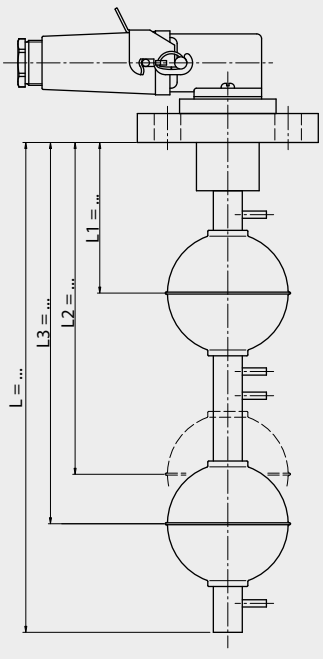
Thread with cable type E ..



Thread with terminal box type A ..



Flange with plug type AS .. F

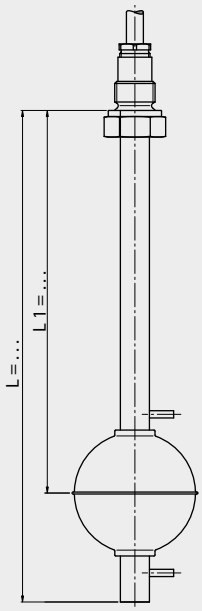


Type combination see type key Magnetic Float Switches

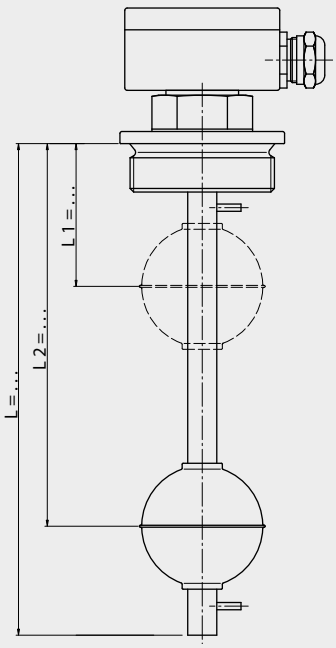
Magnetic Float Switches 1003
Alloy DN10 to DN500

Technical data	
Guide tube diameter:	10 mm length to 2000 mm 12 mm length to 5000 mm 14 mm length to 5000 mm 18 mm length to 6000 mm
Connection sizes / guide tube:	Thread BSP ⅜" ... Ø8 ... 14 mm Thread BSP ½" ... Ø18 mm Flange DIN DN50 ... Ø10 ... 14 mm Flange DIN DN80 ... Ø18 mm Thread NPT ⅜" ... Ø8 ... 14 mm Thread NPT ½" ... Ø18 mm Flange ANSI 2" ... Ø10 ... 14 mm Flange ANSI 3" ... Ø18 mm
Contacts:	U - change over S - normally open O - normally closed
Temperature contacts:	TO ... °C normally closed TS ... °C normally open
Temperature probe:	PT- 100 (optional with control unit) PT-1000 (optional with control unit)
Float:	See float table pages 64-70
Approvals:	See approvals pages 42-43
Operating parameters:	Temperature: -30 °C ... +200 °C Pressure: -1 ... 55 bar Specific gravity: ≥500 kg/m³

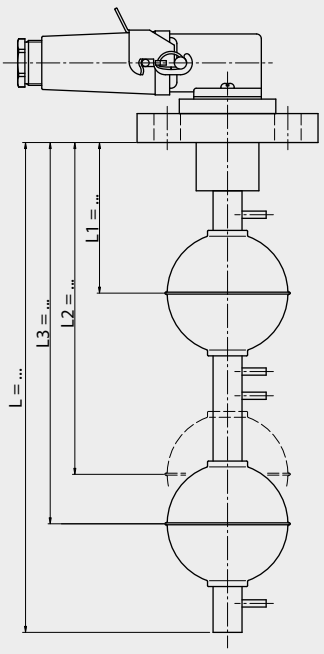
Thread with cable type E ...



Thread with terminal box type A ...



Flange with plug type AS ... F



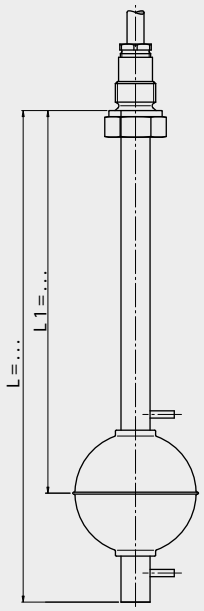
Type combination see type key Magnetic Float Switches

Magnetic Float Switches 1003
PVC DN10 to DN500

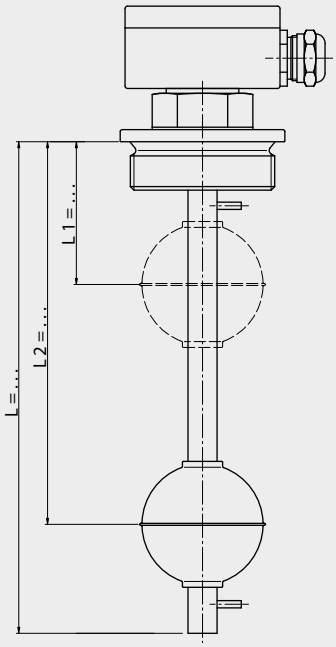
Technical data

Guide tube diameter:	8 mm length to 800 mm 12 mm length to 800 mm	16 mm length to 4000 mm 20 mm length to 5000 mm
Connection sizes / guide tube:	Thread R1/8" ... Ø8 ... 12 mm Thread BSP ½"... Ø16 mm Thread BSP 1" ... Ø20 mm Flange DIN DN50 ... Ø8 ... 12 mm Flange DIN DN65 ... Ø16 mm Flange DIN DN80 ... Ø20 mm	Thread NPT 3/8" ... Ø8 ... 12 mm Thread NPT ½". Ø16 mm Thread NPT 1" ... Ø20 mm Flange ANSI 2" ... Ø8 ... 12 mm Flange ANSI 2½" ... Ø16 mm Flange ANSI 3" ... Ø20 mm
Contacts:	U - change over S - normally open O - normally closed	
Temperature contacts:	TO ... °C normally closed TS ... °C normally open	
Temperature probe:	PT- 100 (optional with control unit) PT-1000 (optional with control unit)	
Float:	See float table pages 64-70	
Approvals:	See approvals pages 42-43	
Operating parameters:	Temperature: -10 °C ... +60 °C Pressure: -1 ... +1 bar Specific gravity: ≥500 kg/m³	

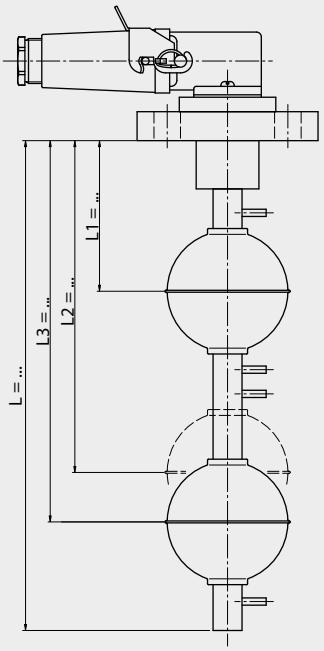
Thread with cable type E ...



Thread with terminal box type A ...



Flange with plug type AS ... F



Type combination see type key Magnetic Float Switches