

magnetic float switches

Functional description:

The magnetic float switch works according to the float principle and by using magnetic transmission (permanent magnet / reed contact).

A float with a built-in magnetic system is conducted along a non-magnetic guide tube. Due to the magnetic field of the permanent magnet, a reed contact (protective gas contact), located in the guide tube, will be activated, after a defined height has been reached. As a result the electric circuit will be closed or interrupted, depending on the switch function.

Depending on the number of preset switching functions and their intervals, the device will be equipped with one or more floats.

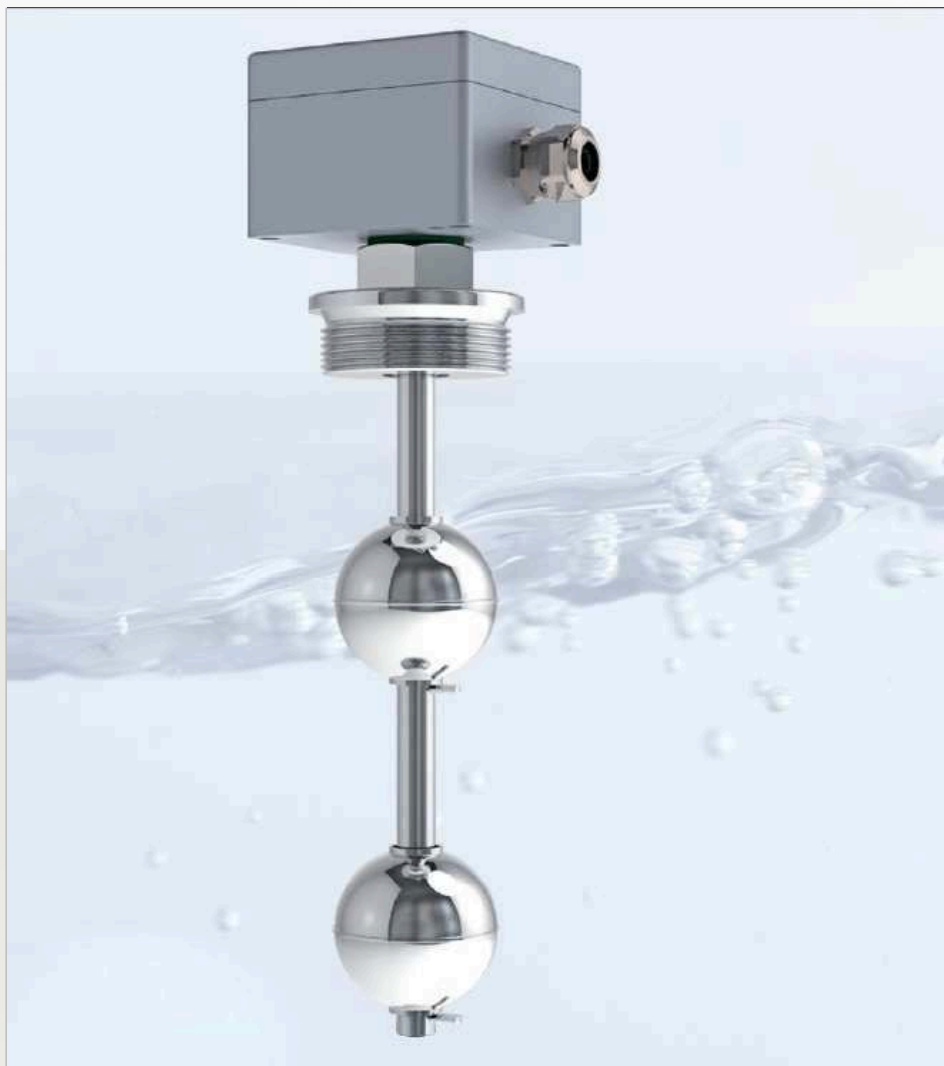
Application area:

Magnetic float switches are used for the monitoring of the filling level and the controlling of liquid media and they may be installed into vessels and tanks which meet the technical requirements, i.e. which are designed for the according operating parameters.

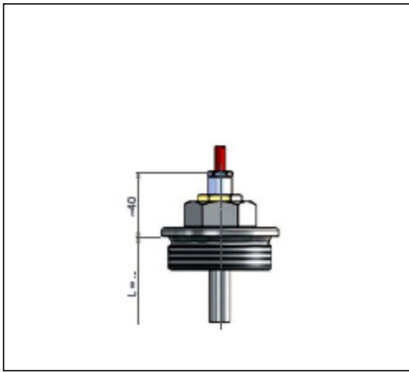
Due to the potential-free reed contacts the magnetic float switches form an ideal switching element in connection with PLC controlling.

Design limits:

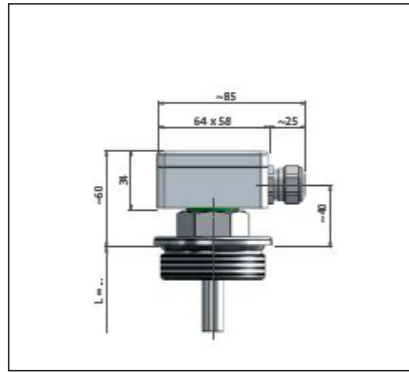
Specific gravity: $\geq 400 \text{ kg/m}^3$
Design pressure: -1 bar ... 150 bar
Design temperature: -50°C ... 250°C



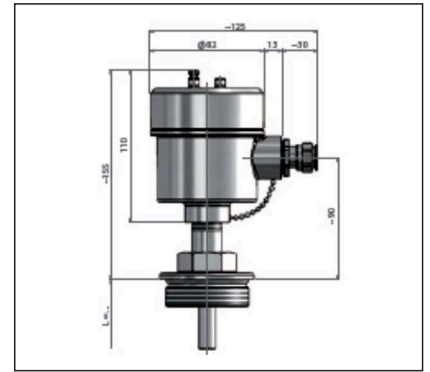
Electrical connection:



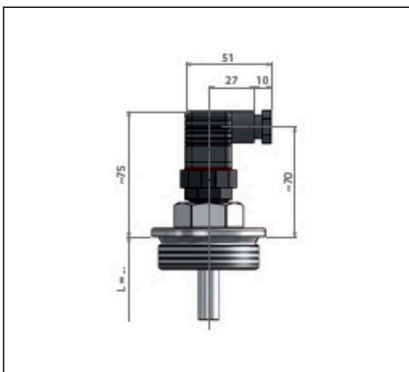
Connection type: K
 Material quality: according as cable type
 Cable entry: PG or metric
 Ingress protection class: IP 55 (optional IP 68)
 Ambient temperature: -40°C ... 200°C



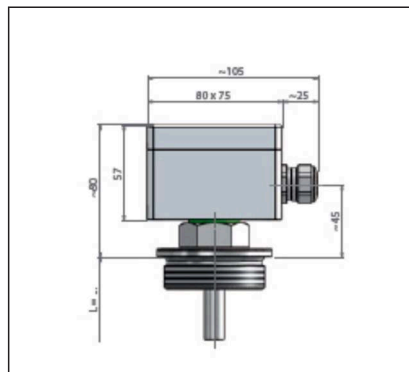
Connection type: ALE
 Material quality: aluminium coated RAL 7001
 Cable entry: M20 x 1.5
 Ingress protection class: IP 65
 Ambient temperature: -40°C ... 100°C



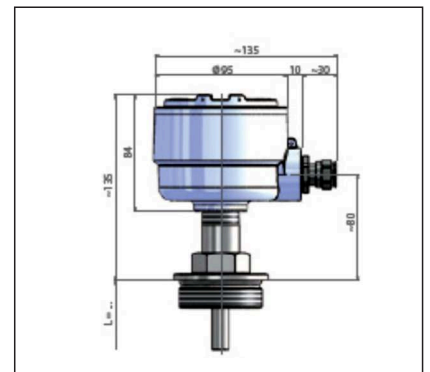
Connection type: AVA / AVDA (Exd)
 Material quality: stainless steel A4 (S.S. 316)
 Cable entry: M20 x 1.5
 Ingress protection class: IP 67 (Exd IP 68)
 Ambient temperature: -40°C ... 85°C



Connection type: ASH
 Material quality: PA
 Cable entry: M16
 Ingress protection class: IP 65
 Ambient temperature: -40°C ... 125°C



Connection type: ALF
 Material quality: aluminium coated RAL 7001
 Cable entry: M20 x 1.5
 Ingress protection class: IP 65
 Ambient temperature: -40°C ... 100°C



Connection type: ALDA (Exd)
 Material quality: aluminium coated RAL 9006
 Cable entry: M20 x 1.5
 Ingress protection class: IP 68
 Ambient temperature: -40°C ... 100°C

Approvals / Certificates:



ATEX*
 II 1/2G Exia c IIC T6 - T3 II 2D ExtDA21 c IP6* T80°C - T190°C
 II 1/2G Exd c IIC T6 - T4
 Liquid temperature Ex ia max. 180°C / Ex d max. 120°C
 Type of protection intrinsic safety Ex ia IIC switch bzw. temperature switch li ≤ 100 mA
 Type of protection intrinsic safety Ex ia IIC temperature probe Ui ≤ 28 V li ≤ 100 mA Pi ≤ 700 mW
 Type of protection intrinsic safety Ex ia IIC with option/N (NAMUR EN 60947) Ui ≤ 15 VDC li ≤ 60 mA
 Type of protection "moulding" UN ≤ 250 VDC/AC P_{SN} ≤ 50 W/VA P_{FN} ≤ 700 mW
 Type of protection "moulding" with option/N (NAMUR EN 60947) UN ≤ 15 VDC I_N ≤ 60 mA
 Type of protection "moulding" with option/R22 (resistor) UN ≤ 250 VDC/AC I_N ≤ 100 mA

* = The approval is dependent on the equipment combination

MAGNETIC FLOAT SWITCHES

Type:	ALE/V/R-1½ -V/...-L .../12-SVK44/15/A	ALE/V/R-2-V/...-L .../12-SV52/15/A
Material:	316L / 316Ti (optional other materials)	316L / 316Ti (optional other materials)
Electrical connection:	ALE aluminium terminal box	ALE aluminium terminal box
Process connection:	G 1" ½ (optional flanged)	G 2" (optional flanged)
Guide tube:	Ø 12 mm (optional Ø 14 mm)	Ø 12 mm (optional Ø 14 mm)
Length of instrument:	≤ 5000 mm*	≤ 5000 mm*
Float:	SVK44/15/A Ø 44mm	SVK52/15/A Ø 52 mm
Specific gravity:	≥ 800 kg/m ³	≥ 680 kg/m ³
Design pressure:	-1 bar ... 25 bar	-1 bar ... 30 bar
Design temperature:	-30°C ... 180°C (optional 250°C)	-30°C ... 180°C (optional 250°C)
Ingress protection class:	IP 65	IP 65
Mounting position:	Vertical +/-30°	Vertical +/-30°
Level switch function		
Function:	Normally open / S	Normally open / S
Switching capacity:	230 V / 1.0 A / 100 VA	230 V / 1.0 A / 100 VA
Maximal number of contacts:	4 pieces (5 pieces with ALF terminal box)	4 pieces (5 pieces with ALF terminal box)
Function:	Normally closed / O	Normally closed / O
Switching capacity:	230 V / 0.5 A / 40 VA	230 V / 0.5 A / 40 VA
Maximal number of contacts:	4 pieces (5 pieces with ALF terminal box)	4 pieces (5 pieces with ALF terminal box)
Function:	Change over / U	Change over / U
Switching capacity:	230 V / 0.5 A / 40 VA	230 V / 0.5 A / 40 VA
Maximal number of contacts:	3 pieces (4 pieces with ALF terminal box)	3 pieces (4 pieces with ALF terminal box)

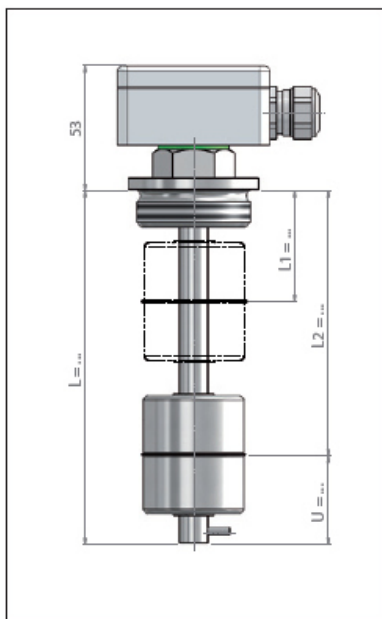
* ATEX design = if length of instrument ≥ 4000 mm please choose different material quality for guide tube and float

Minimum measures

ALE/V/R-1½ -V/...-L .../12-SVK44/15/A
 L1: ≥ 50 mm
 U: 45
 Contact distance: ≥ 20 mm
 Float distance: ≥ 70 mm

Approvals / Certificates

ATEX / PED / GOST / GL / BV / ABS / WHG / SIL1

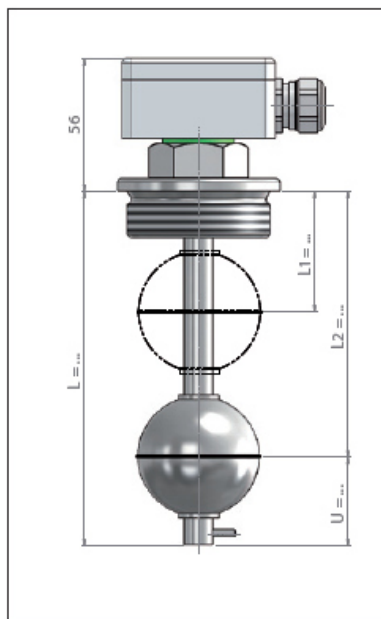


Minimum measures

ALE/V/R-2-V/...-L .../12-SV52/15/A
 L1: ≥ 55 mm
 U: 45
 Contact distance: ≥ 20 mm
 Float distance: ≥ 70 mm

Approvals / Certificates

ATEX / PED / GOST / GL / BV / ABS / WHG / SIL1



MAGNETIC FLOAT SWITCHES

Displacer type:	ALE/V/FE-25/16/B1-V/...-M.../12/V/60/2-SVK44/15/A-HH	ALE/ST/ERVE-1/4-V/...-M55/12/AL/64/3.50-SVK44/15/A-HH
Material:	316L / 316Ti	Stainless steel / Aluminium
Electrical connection:	ALE aluminium terminal box	ALE aluminium terminal box
Process connection:	Flange EN DN25 / PN16 / Form B1	Cutting ring union / Ø 10 mm
Bypass chamber:	Ø 60.3 mm x 2 mm	Ø 64 mm x 3.5 mm, Aluminium
Centre distance:	≤ 1000 mm	55 mm
Float:	SVK44/15/A Ø 44m	SVK44/15/A Ø 44m
Specific gravity:	≥ 800 kg/m ³	≥ 800 kg/m ³
Design pressure:	-1 bar ... 16 bar	-1 bar ... 6 bar
Design temperature:	-30°C ... 180°C (optional 250°C)	-30°C ... 150°C
Ingress protection class:	IP 65	IP 65
Mounting position:	Vertical +/-30°	Vertical +/-30°

Level switch function

Function:	Normally open / S	Normally open / S
Switching capacity:	230 V / 1.0 A / 100 VA	230 V / 1.0 A / 100 VA
Maximal number of contacts:	4 pieces (5 pieces with ALF terminal box)	1 piece
Function:	Normally closed / O	Normally closed / O
Switching capacity:	230 V / 0.5 A / 40 VA	230 V / 0.5 A / 40 VA
Maximal number of contacts:	4 pieces (5 pieces with ALF terminal box)	1 piece
Function:	Change over / U	Change over / U
Switching capacity:	230 V / 0.5 A / 40 VA	230 V / 0.5 A / 40 VA
Maximal number of contacts:	3 pieces (4 pieces with ALF terminal box)	1 piece

Minimum measures

ALE/V/FE-25/16/B1-V/...-M.../12/V/60/2-SVK44/15/A-HH
 L1: ≥ 130 mm
 U: 45
 Contact distance: ≥ 20 mm
 Float distance: ≥ 70 mm

Minimum measures

ALE/ST/ERVE-1/4-V/...-M55/12/AL/64/3.50-SVK44/15/A-HH
 L1: ≥ 45 mm

Approvals / Certificates

ATEX / PED / GOST / GL / BV / ABS / SIL1

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