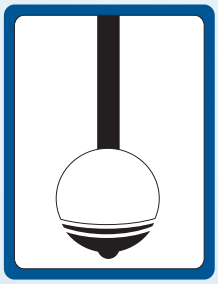
1003

MAGNETIC FLOAT SWITCHES



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Functional description

Functional description

This 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:	≥ 400 kg/m³
Design pressure:	-1 bar ... 150 bar
Design temperature:	-50°C ... 250°C

Magnetic Float Switches / Type key

Code 1

	Key 1 ... / ... / ... - **Electrical connection**		Key 2 ... / ... / ... - **Process connection material quality**		Key 3 ... / ... / ... - **Process connection**
ALE	Aluminium terminal box 64 x 58 x 34 mm	V[1]	Stainless steel	E[1]	Thread to electrical direction, G/BSP
ALF	Aluminium terminal box 80 x 75 x 57 mm	VP[1]	Stainless steel electropolished / Ra ca. 0,8µm	R[1]	Thread to float direction, G/BSP
ALG	Aluminium terminal box 100 x 100 x 81 mm		(not attestable)	ENPT[1]	Thread to electrical direction, NPT
ALDA[1]	Aluminium terminal box Ø 95 x 84 mm	TI[1]	Titanium	RNPT[1]	Thread to float direction, NPT
AVA	Stainless steel terminal box Ø 82 x 110 mm	HC[1]	Alloy C	EM[1]	Thread to electrical direction, metric
AVDA[1]	Stainless steel terminal box Ø 82 x 110 mm	ME	Brass	RM[1]	Thread to float direction, metric
APA	Polyester terminal box 80 x 75 x 55 mm	VEEC[1]	Stainless steel ECTFE coated	FE[1]	Flange according to EN
APB	Polyester terminal box 80 x 75 x 55 mm / Exm	VPFA[1]	Stainless steel PFA coated	FA[1]	Flange according to ANSI
ABA	ABS terminal box 80 x 82 x 55 mm	P	PVC	F[1]	Flange according to …
K	Connection cable	PP	Polypropylene	FS[1]	Flange according to drawing
K68	Connection cable IP 68 (≥ G 3/8“)	PF	PVDF	SO	Standard oval flange 80 x 50 mm
ASH	Connector Hirschmann DIN 43650	PA	Polyamide	OP[1]	Without process connection
ASHAA	Plastic connector HTS straight	ST	Steel	TC[1]	Try-Clamp according to ISO 2852
ASHAB	Plastic connector HTS angulate			BK[1]	Aseptic blind cone according to DIN 11851
ASHBA	Aluminium connector HTS straight			BKN[1]	Aseptic blind cone according to DIN 11851 with groove nut
ASHBB	Aluminium connector HTS angulate				
ASQ	Quick-On Connector			BKD[1]	Aseptic blind cone according to DIN 32676
ASMA	Connector M12 3-pins			BKND[1]	Aseptic blind cone according to DIN 32676 with groove nut
ASMB	Connector M12 8-pins				
ASC	Connector C091D 7-pins			GM[1]	Female thread G (only bypass chamber)
				NPTM[1]	Female thread NPT (only bypass chamber)
				GN[1]	Male thread G (only bypass chamber)
				NPTN[1]	Male thread NPT (only bypass chamber)
				SE[1]	Welding stub end (only bypass chamber)
				ERVE	Cutting ring union (only bypass chamber)

Code 2

	Key 1 ... - **Threaded connection**		Key 1 ... - **Try-Clamp / Aseptic cone**
...	Threaded connection size	...	Nominal size

Code 2

	Key 1.1 (only for flange) ... / ... / ... - **Flange connection**		Key 1.2 (only for flange) ... / ... / ... - **Flange connection**		Key 1.3 (only for flange) ... / ... / ... - **Flange connection**
...	Flange nominal bore	...	Flange pressure rating	...	Flange facing

Example

Code	1					2				3						4						5		
Key	1	/	2	/	3	-	1.1	/	1.2	/	1.3	-	1	/	2	/	3	/	4	-	1	/	2	/	3	/	4	-	1	/	2	/
Example	ALE	/	V	/	FE	-	80	/	16	/	B1	-	V	/	U	/	R22	/	TO	-	1	/	TFA2	/	TPAT	/	050	-	L1000	/	18	/

Black = not possible according to Atex / Blue = possible according to Atex Exia / Blue[1] = possible according to Atex Exia and Exd / Black[1] = possible according to Atex Exd

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Code 3

	Key 1 ... / ... / ... / ... - **Guide tube material quality**		Key 2 ... / ... / ... / ... - **Level switch function**		Key 3 ... / ... / ... / ... - **Level switch option**
V[1]	Stainless steel	U[1]	Change over*	R22[1]	Switch protective circuit with
VP[1]	Stainless steel electropolished / Ra ca. 0,8µm	S[1]	Normally open*		22 ohm / 0.21 W resistor
	(not attestable)	O[1]	Normally closed*	N[1]	Switch protective circuit according to
TI[1]	Titanium				NAMUR EN 60947
HC[1]	Alloy C		* Multiple selections possible e.g. ' OSS '	HT	High temperature version 180-250°C
M	Brass				
VEEC[1]	Stainless steel ECTFE coated				
VPFA[1]	Stainless steel PFA coated				
P	PVC				
PP	Polypropylene				
PF	PVDF				
PA	Polyamide				

Code 3

	Key 4 ... / ... / ... / ... - **Temperature switch function**
TS[1]	Temperature switch normally open*
TO[1]	Temperature switch normally closed*
TPS[1]	Temperature switch normally open*
TPO[1]	Temperature switch normally closed*
	* Multiple selections possible e.g. ' TSTO '

Code 4

	Key 1 ... / ... / ... / ... - **Number of probes**		Key 2 ... / ... / ... / ... - **Temperature probe**		Key 3 ... / ... / ... / ... - **Temperature control unit**
...	Number of temperature probes	TFA2[1]	Pt 100 Probe / 2-wire	TPAT[1]	TP5333A
		TFA3[1]	Pt 100 Probe / 3-wire	TPBT[1]	TP5333D Ex
		TFA4[1]	Pt 100 Probe / 4-wire	TDAT[1]	TD5335A
		TFB2[1]	Pt 1000 Probe / 2-wire	TDBT[1]	TD5335D Ex
		TFB3[1]	Pt 1000 Probe / 3-wire	PAATP[1]	TP5350AP / PROFIBUS® PA
		TFB4[1]	Pt 1000 Probe / 4-wire	PABTP[1]	TP5350BP Ex / PROFIBUS® PA
		TF[1]	Temperature probe (acc. to customers device)	PAATF[1]	TP5350AF / FOUNDATION™ Fieldbus
				PABTF[1]	TP5350BF Ex / FOUNDATION™ Fieldbus

Code 4

	Key 4 ... / ... / ... / ... - **Temperature measuring range**
050[1]	0°C ... 50°C / 4 ... 20 mA
100[1]	0°C ... 100°C / 4 ... 20 mA
150	0°C ... 150°C / 4 ... 20 mA
200	0°C ... 200°C / 4 ... 20 mA
000	..°C ... ..°C / 4 ... 20 mA

Example

	5				6					7				8				9				**Code**
	3	/	4	/	5	-	1	/	2	/	3	/	4	-	1	/	2	/	3	-	1	/	2	/	3	**Key**
						-	1		SV72	/	24	/	V	-						-	EXIAG	/	PED			**Example**

Black = not possible according to Atex / Blue = possible according to Atex Exia / Blue[1] = possible according to Atex Exia and Exd / Black[1] = possible according to Atex Exd

Magnetic Float Switches / Type key

Code 5

	Key 1 ... / ... / ... / ... / ... - **Length of instrument / Centre distance**		Key 2 ... / ... / ... / ... / ... - **Guide tube diameter (material quality)**		Key 3 ... / ... / ... / ... / ... - **Bypass chamber material quality**
L...[1]	Length of instrument in mm (Key 3 - 5 not applicable)	08[1]	Ø 08 mm (V / VP / M / P / PP)	V[1]	Stainless steel
M...[1]	Centre distance in mm (Chamber)	11[1]	Ø 11 mm (VEEC / VPFA)	VP[1]	Stainless steel electropolished / Ra ca. 0,8µm (not attestable)
		12[1]	Ø 12 mm (V / VP / M / TI / HC / PA / P / PP / PF)	TI[1]	Titanium
		14[1]	Ø 14 mm (V / VP / M / TI)	HC[1]	Alloy C
		16[1]	Ø 16 mm (V / VP / P / PP / PF)	AL[1]	Aluminium Silafont-35
		17[1]	Ø 17 mm (VEEC / VPFA)	VEEC[1]	Stainless steel ECTFE coated
		18[1]	Ø 18 mm (V / VP / TI / HC)	VPFA[1]	Stainless steel PFA coated
		20[1]	Ø 20 mm (P / PP / PF)	P	PVC
		40[1]	Ø 40 mm (V / VP)	PP	Polypropylene
				PF	PVDF

Code 5

	Key 4 ... / ... / ... / ... / ... - **Bypass chamber outside diameter**		Key 5 ... / ... / ... / ... / ... - **Bypass chamber wall thickness**
60[1]	Ø 60.30 mm (V / VP)	...	Bypass chamber wall thickness in mm
61[1]	Ø 60.33 mm (V / VP / TI / HC)		
63	Ø 63.00 mm (P / PP / PF)		
63[1]	Ø 63.50 mm (V / VP / VEEC / VPFA)		
64[1]	Ø 64.00 mm (AL)		
73[1]	Ø 73.03 mm (V / VP)		
88[1]	Ø 88.90 mm (V / VP)		
114[1]	Ø 114.30 mm (V / VP)		

Code 6

	Key 1 ... / ... / ... / ... - **Number of floats**		Key 2 ... / ... / ... / ... - **Float**		Key 3 ... / ... / ... / ... - **Inner bore of float**
...	Number of floats	...	Acc. to float table on page 106 - 109	...	Acc. to float table on page 106 - 109

Code 6

	Key 4 ... / ... / ... / ... - **Magnetic system**
...	Acc. to float table on page 106 - 109

Code 7

	Key 1 ... / ... / ... - **Additional design**		Key 2 ... / ... / ... - **Instruction for installation**		Key 3 ... / ... / ... - **Adjusting mechanism**
FG[1]	Guide tube in flexible design	GU[1]	Installation from bottom site	VE	Adjustable version with cutting ring union (only one time positioning possible on ATEX 94/9/EC applications)
NT	With test function	HH[1]	Process connection of displacer side-side		
WG[1]	Angled design	HV[1]	Process connection of displacer top side - bottom Vertical		
HFF	Hub float with pipe				
HSF	Hub float with wire (Code 5 key 3 - 5 not applicable)				
PSS	Pendular switch with float				
PSP	Pendular switch with paddle				

Example

Code	1					2					3					4					5		
Key	1	/	2	/	3	-	1.1	/	1.2	/	1.3	-	1	/	2	/	3	/	4	-	1	/	2	/
Example	ALE	/	V	/	FE	-	80	/	16	/	B1	-	V	/	U	/	R22	/	TO	-	1	/	TFA2	/

Code	4					5									
Key	1	/	2	/	3	/	4	-	1	/	2	/	3	/	4
Example	TPAT	/	050	-	L1000	/	18	/							

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Code 8

	Key 1 ... / ... / ... - **Length of cable**		Key 2 ... / ... / ... - **Connection cable**		Key 3 ... / ... / ... - **Connection cable option**
...	Length of cable in meter	PVC[1]	PVC connection cable	KA[1]	Shielded
		PVCB[1]	PVC connection cable with blue coating	KB[1]	Shielded / oil-resistant
		SIL[1]	Silicone connection cable	KC[1]	Shielded / oil-resistant / halogen-free
		PUR[1]	PUR connection cable	KD[1]	Oil-resistant
		RAD[1]	Radox connection cable	KE[1]	Oil-resistant / halogen-free
		FTEF[1]	Teflon strands	KF[1]	Halogen-free
		FPVC[1]	PVC strands		

Code 9

	Key 1 ... / ... / ... - **Approvals / 1**		Key 2 ... / ... / ... - **Approvals / 2**		Key 3 ... / ... / ... - **Approvals / 3**
EXIAG	Acc. to Exia, atmosphere gas	PEDII[1]	Acc. to PED97/23/EC category II	3A[1]	Approval 3A Sanitary Standard
EXIAGD	Acc. to Exia, atmosphere gas and dust	PEDIV[1]	Acc. to PED97/23/EC category IV	GL[1]	Approval Germanischer Lloyd
EXDG[1]	Acc. to Exd, atmosphere gas	PEDIVW[1]	Acc. to PED 97/23/EC, category IV and	BV[1]	Approval Bureau Veritas
EXDGD[1]	Acc. to Exd, atmosphere gas and dust		approval federal water act §19	ABS[1]	Approval American Bureau of Shipping
EXIADG[1]	Acc. to Exia and Exd, atmosphere gas	W[1]	Approval federal water act §19	GOST[1]	Approval GOST
EXIADGD[1]	Acc. to Exia and Exd, atmosphere gas and dust				

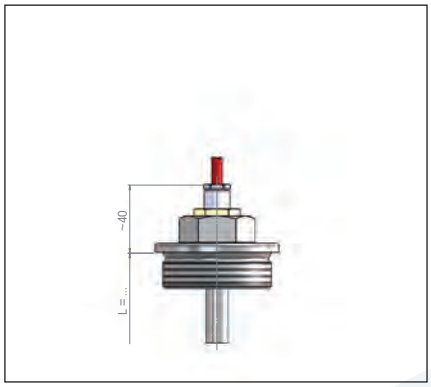
Example

5					6						7					8					9				**Code**
3	/	4	/	5	-	1	/	2	/	3	/	4	-	1	/	2	/	3	-	1	/	2	/	3	-	1	/	2	/	3	**Key**
					-	1		SV72	/	24	/	V	-												-	EXIAG	/	PED			**Example**

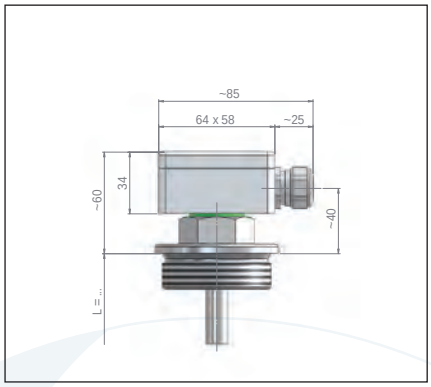
Black = not possible according to Atex / Blue = possible according to Atex Exia / Blue[1] = possible according to Atex Exia and Exd / Black[1] = possible according to Atex Exd

Magnetic Float Switches / Stainless steel

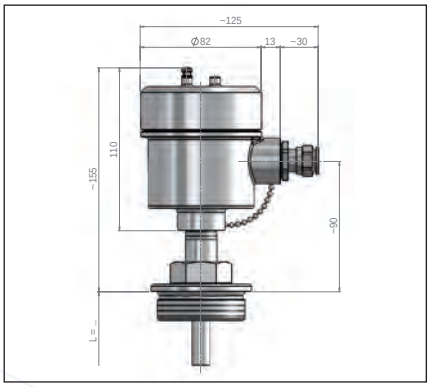
Electrical connection



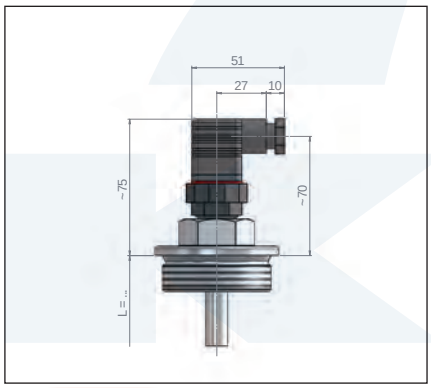
Connection type: K
Material quality: According as cable type
Cable entry: PG or metric
Ingress protection class: IP 55 (optional IP 68)
Ambine temperature: -40°C ... 200°C



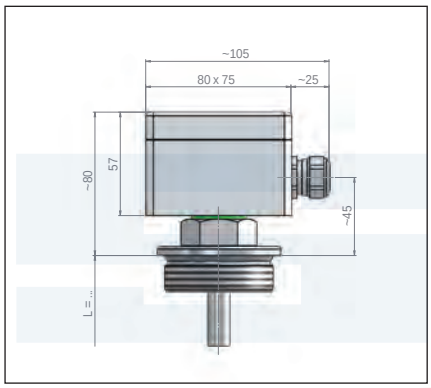
Connection type: ALE
Material quality: Aluminium coated RAL 7001
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -40°C ... 100°C



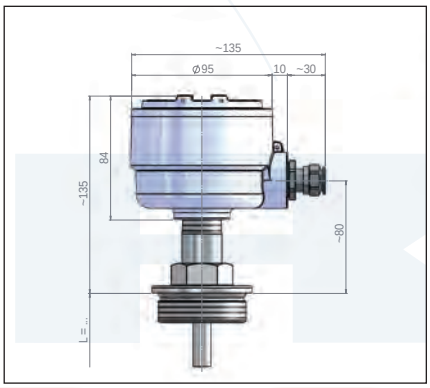
Connection type: AVA / AVDA (Exd)
Material quality: Stainless steel A4 (SS316)
Cable entry: M20 x 1.5
Ingress protection class: IP 67 / (Exd / IP68)
Ambient temperature: -40°C ... 85°C



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	Ex ia c IIC T6 - T3	II 2D	Ex tD A21 c IP6* T80°C - T190°C
II 2G	Ex d c IIC T6 - T4		

Liquid temperature Exia max. 180°C / Exd max. 120°C

Type of protection intrinsic safety Ex ia IIC switch bzw. temperature switch	I_i ≤ 100 mA		
Type of protection intrinsic safety Ex ia IIC temperature probe	U_i ≤ 28 V	I_i ≤ 100 mA	P_i ≤ 700 mW
Type of protection intrinsic safety Ex ia IIC with option /N (NAMUR EN 60947)	U_i ≤ 15 VDC	I_i ≤ 60 mA	
Type of protection „moulding“	U_N ≤ 250 VDC/AC	P_{SN} ≤ 50 W/VA	P_{FN} ≤ 700 mW
Type of protection „moulding“ with option /N (NAMUR EN 60947)	U_N ≤ 15 VDC	I_N ≤ 60 mA	
Type of protection „moulding“ with option /R22 (resistor)	U_N ≤ 250 VDC/AC	I_N ≤ 100 mA	

Further electrical connections page 110 - 111
Further process connection according to type key page 62
Further floats page 106 - 109

The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

* = The approval is dependent on the equipment combination

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Type	E/V/E-1/8-V/..-L../8-SVK27/10/A-../PVC	E/V/E-1/8-V/..-L../8-SV29/9/A-../SIL
Material quality:	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)
Electrical connection:	PVC connection cable	Silicon connection cable
Process connection:	G 1/8“	G 1/8“
Guide tube:	Ø 8 mm	Ø 8 mm
Length of instrument:	≤ 1000 mm	≤ 1000 mm
Float:	SVK27/10/A Ø 27 mm	SV29/9/A Ø 29 mm
Specific gravity:	≥ 800 kg/m³	≥ 900 kg/m³
Design pressure:	-1 bar ... 6 bar	-1 bar ... 35 bar
Design temperature:	-20°C ... 80°C	-30°C ... 180°C
Ingress protection class:	IP 55	IP 55
Mounting position:	Vertical +/-30°	Vertical +/-30°
Level switch function		
Function:	Normally open / S	Normally open / S
Switching capacity:	150 V / 0.5 A / 10 VA	150 V / 0.5 A / 10 VA
Maximal number of contacts:	3 pieces	3 pieces
Function:	Normally closed / O	Normally closed / O
Switching capacity:	150 V / 0.5 A / 10 VA	150 V / 0.5 A / 10 VA
Maximal number of contacts:	3 pieces	3 pieces
Function:	Change over / U	Change over / U
Switching capacity:	150 V / 0.5 A / 10 VA	150 V / 0.5 A / 10 VA
Maximal number of contacts:	2 pieces	2 pieces
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	-	-
Switching capacity:	-	-
Accuracy / Hysteresis:	-	-
Temperature / Grading:	-	-

Minimum measures

E/V/E-1/8-V/..-L../8-SVK27/10/A-../PVC
L1: ≥ 30 mm
U: 30 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 45 mm

Approvals / Certificates

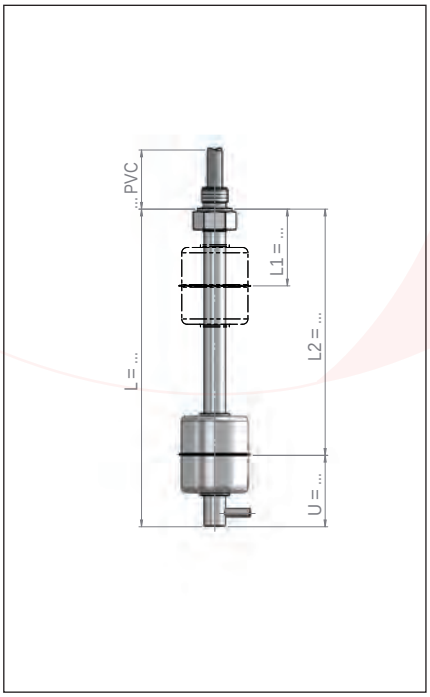
ATEX / PED / GOST / GL / BV / ABS / WHG / SIL1

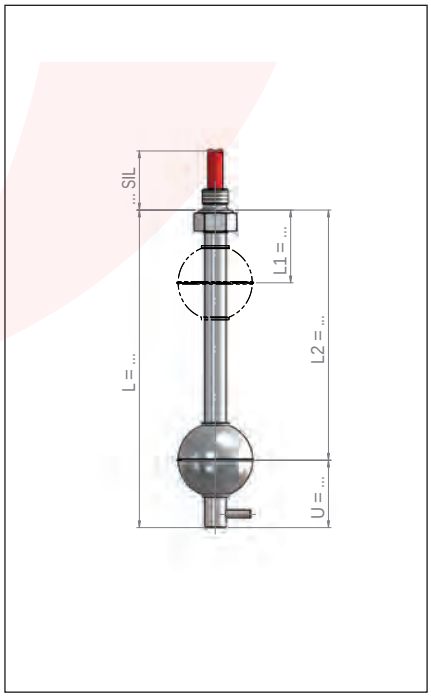
Minimum measures

E/V/E-1/8-V/..-L../8-SV29/9/A-../SIL
L1: ≥ 35 mm
U: 30 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 45 mm

Approvals / Certificates

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





The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

Magnetic Float Switches / Stainless steel

Type	K/V/E-3/8-V/..-L../12-SVK44/15/A-../PVC	K/V/E-3/8-V/..-L../12-SV52/15/A-../SIL
Material quality:	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)
Electrical connection:	PVC connection cable	Silicon connection cable
Process connection:	G 3/8“	G 3/8“
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 44 mm	SV52/15/A Ø 52 mm
Specific gravity:	≥ 800 kg/m³	≥ 680 kg/m³
Design pressure:	-1 bar ... 25 bar	-1 bar ... 30 bar
Design temperature:	-20°C ... 80°C	-30°C ... 180°C
Ingress protection class:	IP 55 (optional IP 68)	IP 55 (optional IP 68)
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:	5 pieces	5 pieces
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:	5 pieces	5 pieces
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:	4 pieces	4 pieces
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

E/V/E-3/8-V/..-L../12-SVK44/15/A-../PVC
L1: ≥ 50 mm
U: 45 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 70 mm

Approvals / Certificates

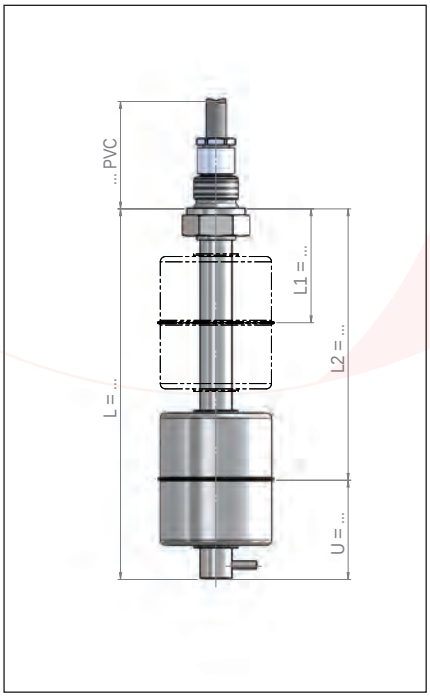
ATEX / PED / GOST / GL / BV / ABS / WHG / SIL1

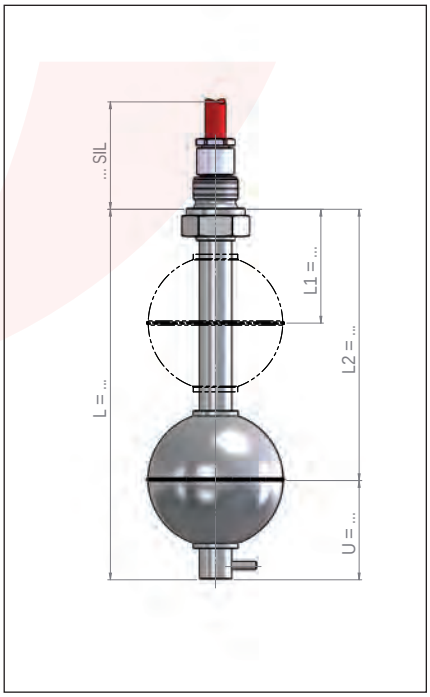
Minimum measures

E/V/E-3/8-V..-L../12-SV52/15/A-..SIL
L1: ≥ 55 mm
U: 45 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 70 mm

Approvals / Certificates

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





The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

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

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Type	ALE/V/R-1½-V/..-L../12-SVK44/15/A	ALE/V/R-2-V/..-L../12-SV52/15/A
Material quality:	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)
Electrical connection:	ALE Aluminium terminal box	ALE Aluminium terminal box
Process connection:	G 1½“	G 2“
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 44 mm	SV52/15/A Ø 52 mm
Specific gravity:	≥ 800 kg/m³	≥ 680 kg/m³
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)
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

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

Approvals / Certificates

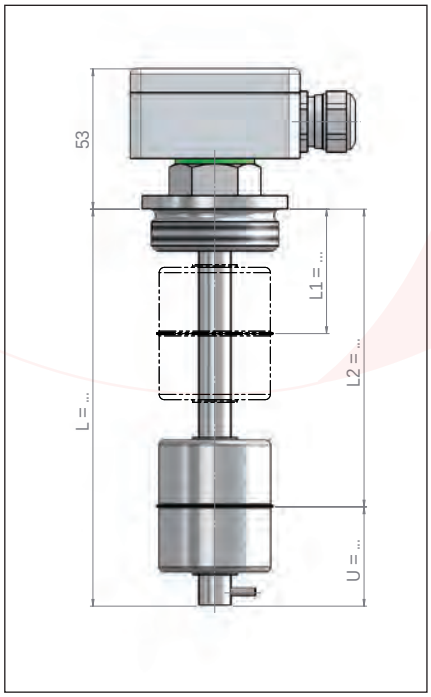
ATEX / PED / GOST / GL / BV / ABS / WHG / SIL1

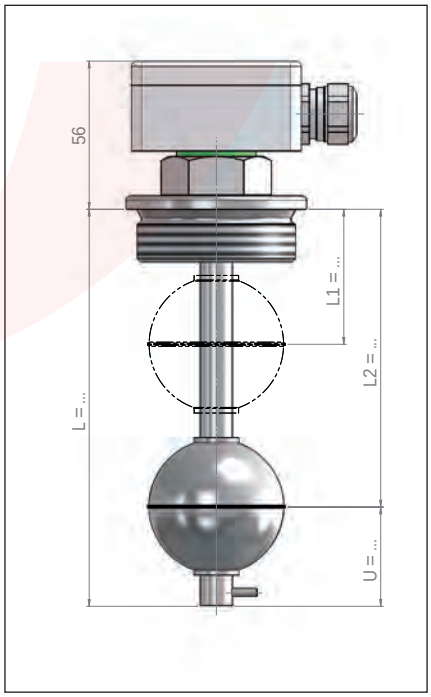
Minimum measures

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

Approvals / Certificates

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





The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

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

Magnetic Float Switches / Stainless steel

Type	ALE/V/FE-80/16/B1-V/..-L../18-SV72/24/V	ALE/V/FE-100/16/B1-V/..-L../18-SV98/23/A
Material quality:	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)
Electrical connection:	ALE Aluminium terminal box	ALE Aluminium terminal box
Process connection:	Flange EN DN 80 / PN 16 / Form B1	Flange EN DN 100 / PN 16 / Form B1
Guide tube:	Ø 18 mm	Ø 18 mm
Length of instrument:	≤ 6000 mm*	≤ 6000 mm*
Float:	SV72/24/V Ø 72 mm	SV98/23/A Ø 98 mm
Specific gravity:	≥ 620 kg/m³	≥ 570 kg/m³
Design pressure:	-1 bar ... 16 bar (depending on temperature)	-1 bar ... 16 bar (depending on temperature)
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)
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

ALE/V/FE-80/16/B1-V/..-L../18-SV72/24/V
L1: ≥ 60 mm
U: 60 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 90 mm

Approvals / Certificates

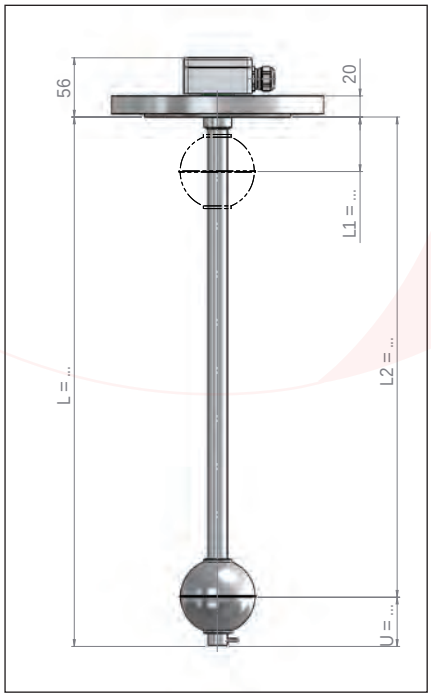
ATEX / PED / GOST / GL / BV / ABS / WHG / SIL1

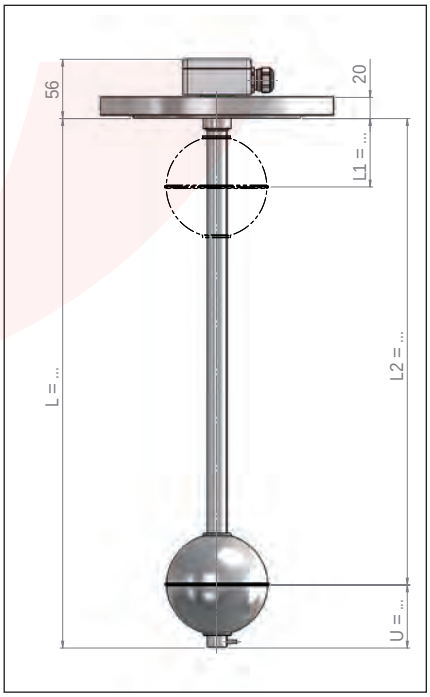
Minimum measures

ALE/V/FE-100/16/B1-V/..-L../18-SV98/23/A
L1: ≥ 80 mm
U: 70 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 115 mm

Approvals / Certificates

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





The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

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

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Type	ALE/V/FE-80/16/B1-V/..-L../16-SV72/24/V-FG	ALE/V/R-1-V/..-L../16-SV72/24/V-FG
Material quality:	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)
Electrical connection:	ALE Aluminium terminal box	ALE Aluminium terminal box
Process connection:	Flange EN DN 80 / PN 16 / Form B1	Flange EN DN 80 / PN 16 / Form B1
Guide tube:	Ø 16 mm	Ø 16 mm
Length of instrument:	≤ 15000 mm*	≤ 15000 mm*
Float:	SV72/24/V Ø 72 mm	SV72/24/V Ø 72 mm
Specific gravity:	≥ 620 kg/m³	≥ 620 kg/m³
Design pressure:	-1 bar ... 16 bar (depending on temperature)	-1 bar ... 16 bar (depending on temperature)
Design temperature:	-30°C ... 180°C	-30°C ... 180°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)
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

ALE/V/FE-80/16/B1-V/..-L../16-SV72/24/V-FG
L1: ≥ 60 mm
U: 60 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 90 mm

Approvals / Certificates

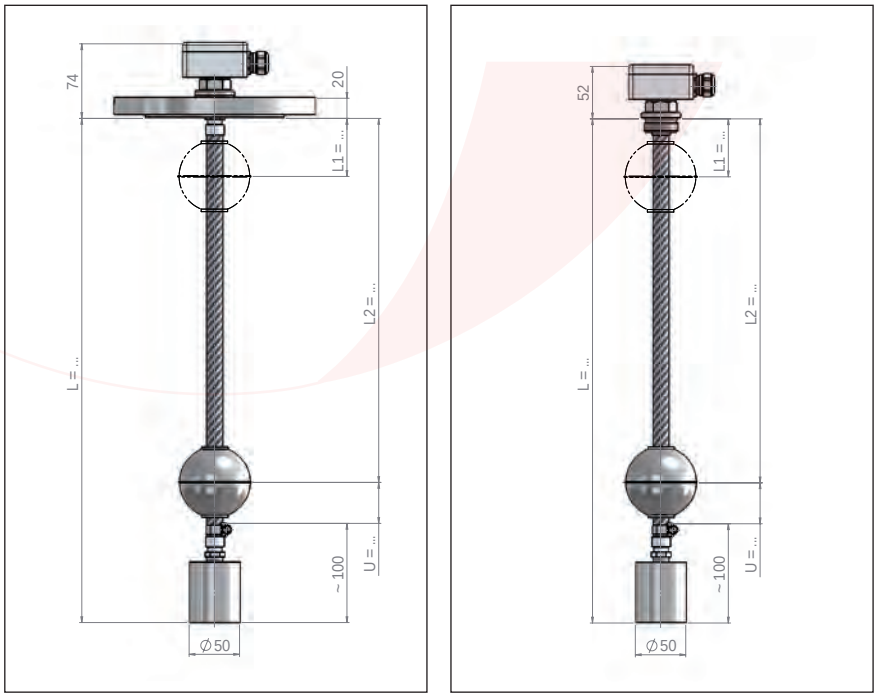
ATEX / PED / GOST / SIL1

Minimum measures

ALE/V/R-1-V/..-L../16-SV72/24/V-FG
L1: ≥ 60 mm
U: 60 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 90 mm

Approvals / Certificates

ATEX / PED / GOST / SIL1



The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

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

Magnetic Float Switches / Stainless steel - adjustable

Type	K/V/R-1/2-V/..-L../12-SVK44/15/A-../SIL-VE	ALE/V/R-2-V/..-L../12-SV52/15/A-VE
Material quality:	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)
Electrical connection:	Silicon connection cable	ALE Aluminium terminal box
Process connection:	G 1/2“	G 2“
Guide tube:	Ø 12 mm, adjustable	Ø 12 mm, adjustable
Length of instrument:	≤ 3000 mm	≤ 3000 mm
Float:	SVK44/15/A Ø 44 mm	SV52/15/A Ø 52 mm
Specific gravity:	≥ 800 kg/m³	≥ 680 kg/m³
Design pressure:	-1 bar ... 3 bar	-1 bar ... 3 bar
Design temperature:	-30°C ... 180°C	-30°C ... 180°C
Ingress protection class:	IP 55	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:	5 pieces	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:	5 pieces	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:	4 pieces	3 pieces (4 pieces with ALF terminal box)
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

K/V/R-1/2-V/..-L../12-SVK44/15/A-../SIL-VE
L1: ≥ 50 mm
U: 45 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 70 mm

Approvals / Certificates

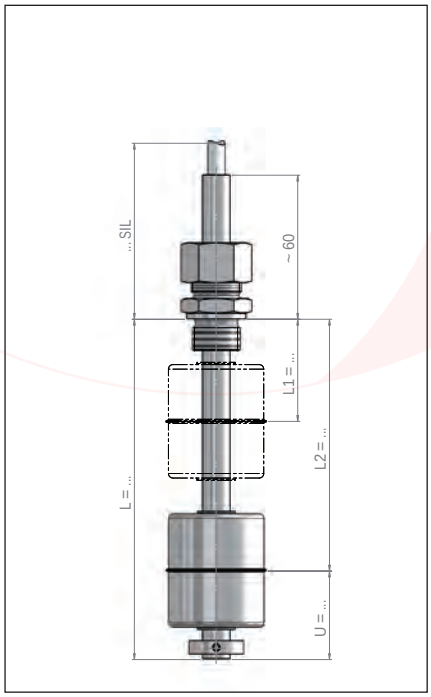
PED / SIL1

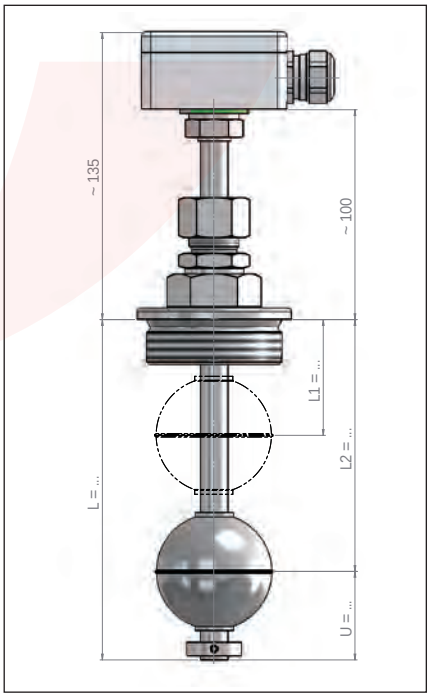
Minimum measures

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

Approvals / Certificates

PED / SIL1





The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

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Type	K/V/E-3/8-V/..-L../12-SVK44/15/A-WG-../PVC	ALE/V/R-2-V/..-L../12-SV52/15/A-WG
Material quality:	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)
Electrical connection:	PVC connection cable	ALE Aluminium terminal box
Process connection:	G 3/8“	G 2“
Guide tube:	Ø 12 mm (optional Ø 14 mm)	Ø 12 mm (optional Ø 14 mm)
Length of instrument:	≤ 3000 mm	≤ 3000 mm
Float:	SVK44/15/A Ø 44 mm	SV52/15/A Ø 52 mm
Specific gravity:	≥ 800 kg/m³	≥ 680 kg/m³
Design pressure:	-1 bar ... 25 bar	-1 bar ... 30 bar
Design temperature:	-20°C ... 80°C	-30°C ... 180°C (optional 250°C)
Ingress protection class:	IP 55	IP 55
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:	5 pieces	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:	5 pieces	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:	4 pieces	3 pieces (4 pieces with ALF terminal box)
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

K/V/E-3/8-V/..-L../12-SVK44/15/A-WG-../PVC
L1: ≥ 50 mm
U: 45 mm
C: ≥ 70 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 70 mm

Approvals / Certificates

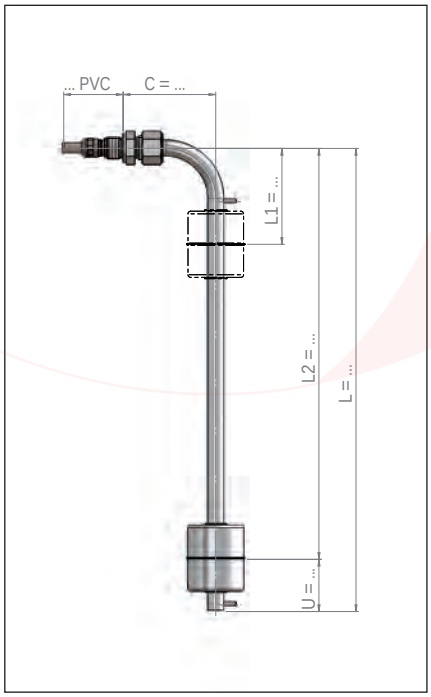
ATEX / PED / GOST / GL / BV / ABS / SIL1

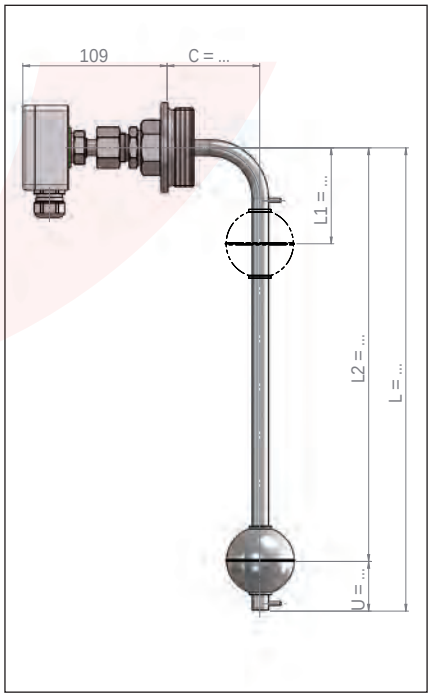
Minimum measures

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

Approvals / Certificates

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





The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

Magnetic Float Switches / Stainless steel - Displacer

Type	ALE/V/FE-25/16/B1-V/..-M../12/V/60/2-SVK44/15/A-HH	ALE/V/FE-25/16/B1-V/..-M../12/V/60/2-SVK44/15/A-HV
Material quality:	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)
Electrical connection:	ALE Aluminium terminal box	ALE Aluminium terminal box
Process connection:	Flange EN DN 25 / PN 16 / Form B1	Flange EN DN 25 / PN 16 / Form B1
Bypass chamber:	Ø 60.30 x 2.00 mm	Ø 60.30 x 2.00 mm
Centre distance:	≤ 1000 mm	≤ 1000 mm
Float:	SVK44/15/A Ø 44 mm	SVK44/15/A Ø 44 mm
Specific gravity:	≥ 800 kg/m³	≥ 800 kg/m³
Design pressure:	-1 bar ... 16 bar	-1 bar ... 16 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)
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

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

Approvals / Certificates

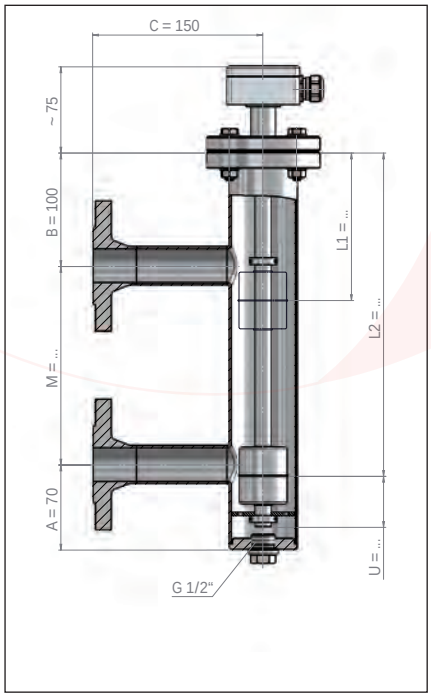
ATEX / PED / GOST / GL / BV / ABS / SIL1

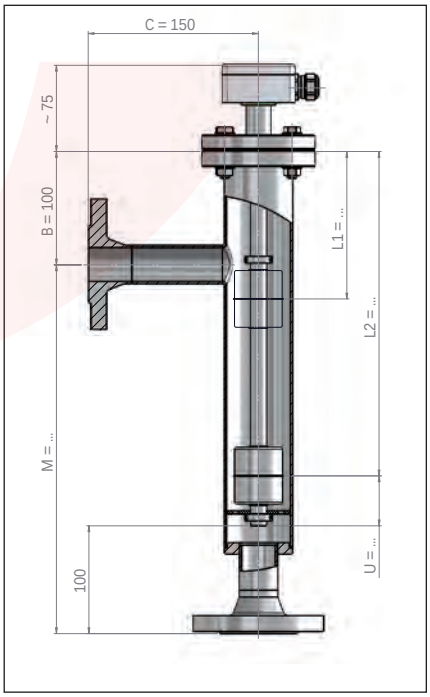
Minimum measures

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

Approvals / Certificates

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





The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

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Type	ASH/ST/ERVE-1/4-V/..-M55/12/AL/64/3.50-SB40/15/A-HH	ALE/ST/ERVE-1/4-V/..-M55/12/AL/64/3.50-SVK44/15/A-HH
Material quality:	Stainless steel / Aluminium / Buna	Stainless steel / Aluminium
Electrical connection:	Connector Hirschmann DIN 43650	ALE Aluminium terminal box
Process connection:	Cutting ring union / Ø 10 mm	Cutting ring union / Ø 10 mm
Bypass chamber:	Ø 64.00 x 3.50 mm, Aluminium	Ø 64.00 x 3.50 mm, Aluminium
Centre distance:	55 mm	55 mm
Float:	SB40/15/A Ø 40 mm	SVK44/15/A Ø 44 mm
Specific gravity:	≥ 700 kg/m³	≥ 800 kg/m³
Design pressure:	-1 bar ... 6 bar	-1 bar ... 6 bar
Design temperature:	-30°C ... 80°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:	1 piece	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:	1 piece	1 piece
Function:	Change over / U (only without temp. switch)	Change over / U
Switching capacity:	230 V / 0.5 A / 40 VA	230 V / 0.5 A / 40 VA
Maximal number of contacts:	1 piece	1 piece
Option temperature probe / Page 112		
Temperature probe:	-	Pt-100 / Pt-1000
Norm:	-	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

ASH/ST/ERVE-1/4-V/..-M55/12/V/64/3.50-SB40/15/A-HH
L1: ≥ 25 mm
U: -
Contact distance: -
Float distance: -

Approvals / Certificates

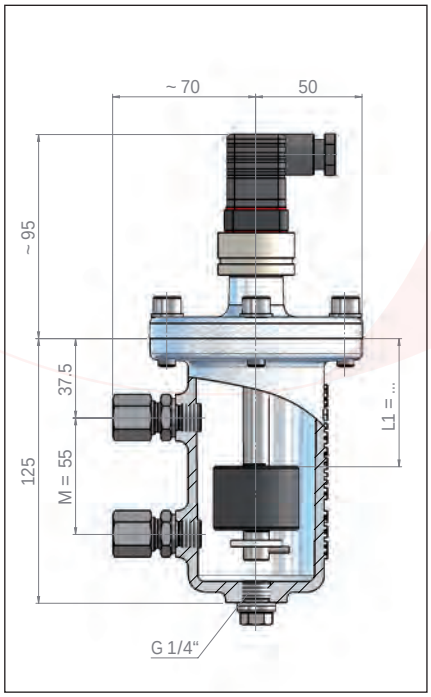
ATEX / PED / GOST / GL / BV / ABS / SIL1

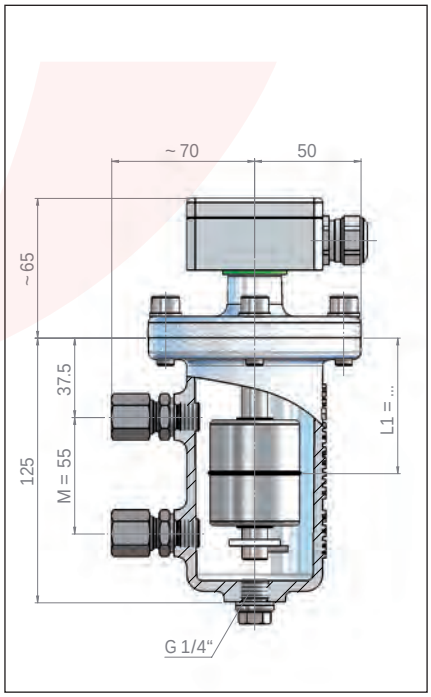
Minimum measures

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

Approvals / Certificates

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





The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

Magnetic Float Switches / Stainless steel - with oval flange

Type	ASH/PA/SO-V/..-L../12-SB40/15/A	ASH/V/SO-V/..-L../12-SVK44/15/A
Material quality:	Stainless steel / Polyamide / Buna	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)
Electrical connection:	Connector Hirschmann DIN 43650	Connector Hirschmann DIN 43650
Process connection:	Standard oval flange 80 x 50 mm, Polyamide	Standard oval flange 80 x 50 mm
Guide tube:	Ø 12 mm (optional Ø 14 mm)	Ø 12 mm (optional Ø 14 mm)
Length of instrument:	≤ 5000 mm	≤ 5000 mm*
Float:	SB40/15/A Ø 40 mm	SVK44/15/A Ø 44 mm
Specific gravity:	≥ 700 kg/m³	≥ 800 kg/m³
Design pressure:	-0 bar ... 0,5 bar	-1 bar ... 1 bar
Design temperature:	-10°C ... 80°C	-30°C ... 180°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:	2 pieces	2 pieces
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:	2 pieces	2 pieces
Function:	Change over / U (only without temp. switch)	Change over / U (only without temp. switch)
Switching capacity:	230 V / 0.5 A / 40 VA	230 V / 0.5 A / 40 VA
Maximal number of contacts:	1 piece	1 piece
Option temperature probe / Page 112		
Temperature probe:	-	-
Norm:	-	-
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

ASH/PA/SO-V/..-L../12-SB40/15/A
L1: ≥ 50 mm
U: 50 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 45 mm

Approvals / Certificates

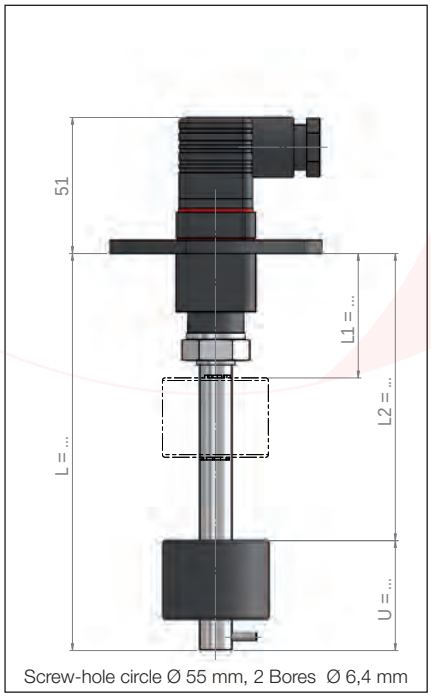
PED / BV / SIL1

Minimum measures

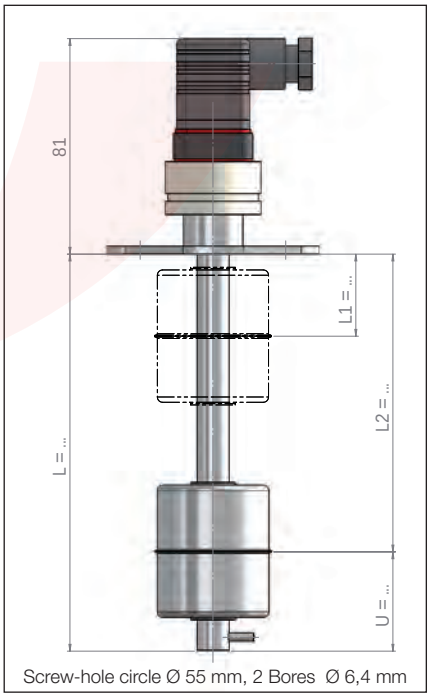
ASH/V/SO-V/..-L../12-SVK44/15/A
L1: ≥ 35 mm
U: 45 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 70 mm

Approvals / Certificates

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



Screw-hole circle Ø 55 mm, 2 Bores Ø 6,4 mm



Screw-hole circle Ø 55 mm, 2 Bores Ø 6,4 mm

The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

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

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Type	K/V/E-3/8-V/..-L../16-SV3A80/23/V-../SIL-3A	AVA/V/BKN-..-V/..-L../16-SV3A80/23/V-3A
Material quality:	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)**	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)**
Electrical connection:	Silicon connection cable	Stainless steel terminal box
Process connection:	G 3/8“	Aseptic blind cone acc. to DIN 11851 w. groove nut
Guide tube:	Ø 16 mm	Ø 16 mm
Length of instrument:	≤ 5000 mm*	≤ 5000 mm*
Float:	SV3A80/23/V Ø 80 mm	SV3A80/23/V Ø 80 mm
Specific gravity:	≥ 750 kg/m³	≥ 750 kg/m³
Design pressure:	-1 bar ... 40 bar	-1 bar ... 6 bar (depending on temperature)
Design temperature:	-30°C ... 180°C	-30°C ... 180°C (optional 250°C)
Ingress protection class:	IP 55 (optional IP 68)	IP 67
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:	5 pieces	5 pieces
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:	5 pieces	5 pieces
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:	4 pieces	4 pieces
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

K/V/E-3/8-V/..-L../16-SV3A80/23/V-../SIL-3A
L1: ≥ 50 mm
U: 55 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 100 mm

Approvals / Certificates

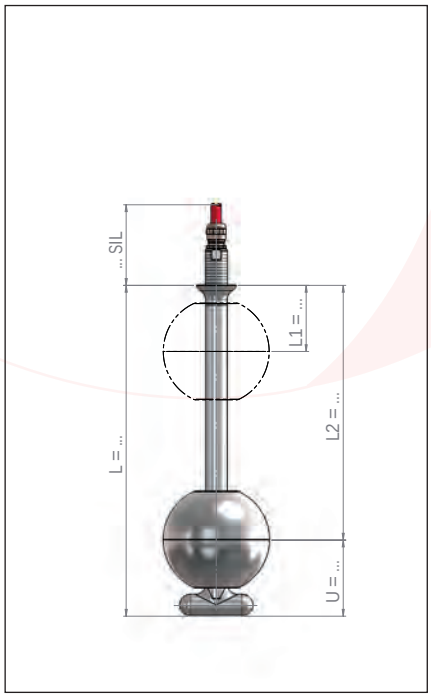
ATEX / PED / GOST / WHG / 3A / SIL1

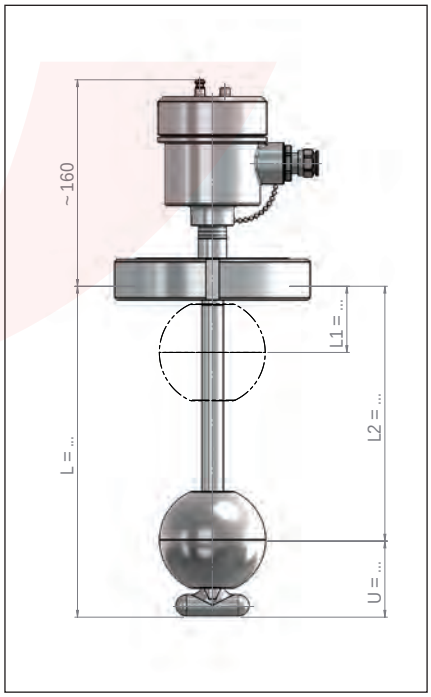
Minimum measures

AVA/V/BKN-..-V/..-L../16-SV3A80/23/V-3A
L1: ≥ 50 mm
U: 55 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 100 mm

Approvals / Certificates

ATEX / PED / GOST / WHG / 3A / SIL1





The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

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

** = Ra ≤ 0.4µm for all wetted parts

Magnetic Float Switches / Stainless steel - with hub float

Type	ALE/V/R-2-V/..-L../12-HFF-ZVSS50/120	ALE/V/R-2-V/..-L../12-HSF-ZVSS50/120
Material quality:	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)
Electrical connection:	ALE Aluminium terminal box	ALE Aluminium terminal box
Process connection:	G 2“	G 2“
Schwimmergestänge:	12 x 1 mm	-
Length of guide tube:	≤ 500 mm	≤ 3000 mm
Float:	ZVSS50/120 Ø 50 mm	ZVSS50/120 Ø 50 mm
Specific gravity:	≥ 800 kg/m³	≥ 800 kg/m³
Design pressure:	-1 bar ... 16 bar	-1 bar ... 16 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:	1 piece	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:	1 piece	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:	1 piece	1 piece
Option temperature probe / Page 112		
Temperature probe:	-	-
Norm:	-	-
Option temperature switch / Page 112		
Function:	-	-
Switching capacity:	-	-
Accuracy / Hysteresis:	-	-
Temperature / Grading:	-	-

Minimum measures

ALE/V/R-2-V/..-L../12-HFF-ZVSS50/120
L1: -
U: -
Contact distance: -
Float distance: -

Approvals / Certificates

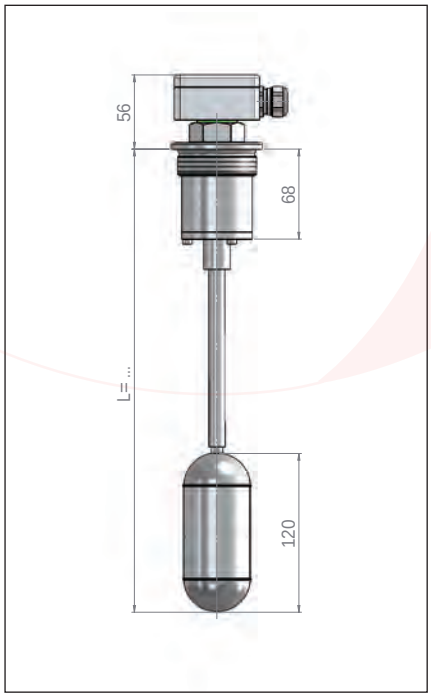
ATEX / PED / GOST / SIL1

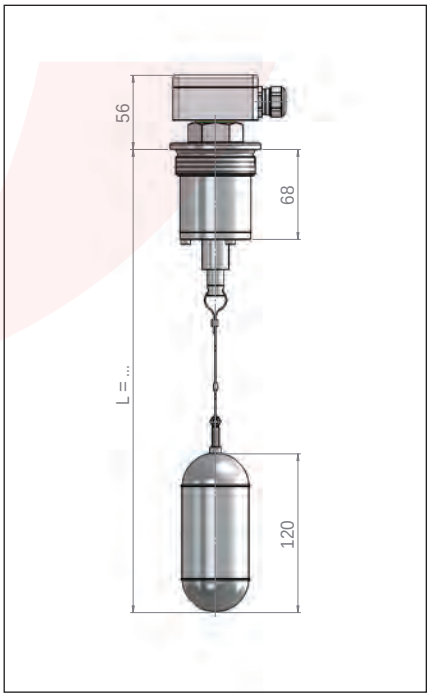
Minimum measures

ALE/V/R-2-V/..-L../12-HSF-ZVSS50/120
L1: -
U: -
Contact distance: -
Float distance: -

Approvals / Certificates

ATEX / PED / GOST / SIL1





The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

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Type	ALE/V/R-1½-V/..-L../12-PSS-ZVSS42/100	ALE/V/R-1½-V/..-L../12-PSP
Material quality:	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)
Electrical connection:	ALE Aluminium terminal box	ALE Aluminium terminal box
Process connection:	G 1½“	G 1½“
Guide tube:	-	-
Length of instrument:	≤ 3000 mm	≤ 3000 mm
Float:	ZVSS42/100 Ø 42 mm	Paddle 100 x 40 mm
Specific gravity:	≥ 1000 kg/m³	-
Design pressure:	-1 bar ... 3 bar	-1 bar ... 3 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:	1 piece	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:	1 piece	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:	1 piece	1 piece
Option temperature probe / Page 112		
Temperature probe:	-	-
Norm:	-	-
Option temperature switch / Page 112		
Function:	-	-
Switching capacity:	-	-
Accuracy / Hysteresis:	-	-
Temperature / Grading:	-	-

Minimum measures

ALE/V/R-1½-V/..-L../12-PSS-ZVSS42/100
L‘: ≥ 150 mm
U: -
Contact distance: -
Float distance: -

Approvals / Certificates

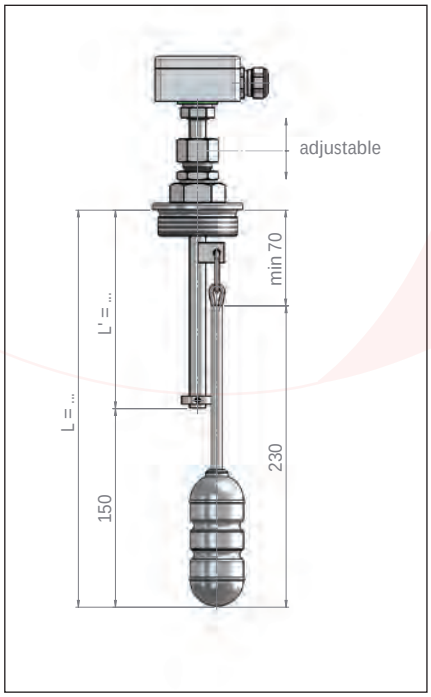
PED / SIL1

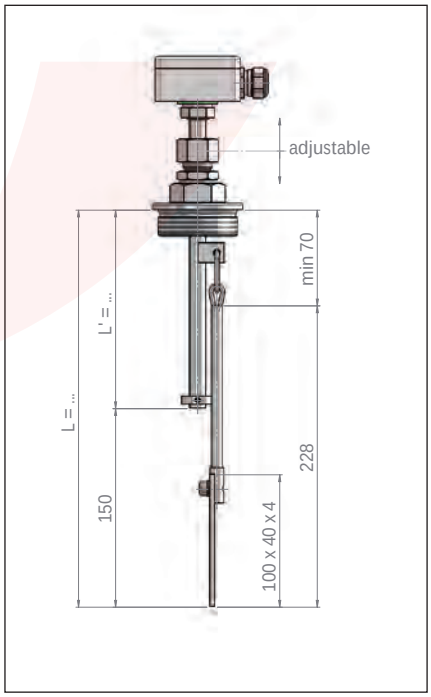
Minimum measures

ALE/V/R-1½-V/..-L../12-PSP
L‘: ≥ 150 mm
U: -
Contact distance: -
Float distance: -

Approvals / Certificates

PED / SIL1

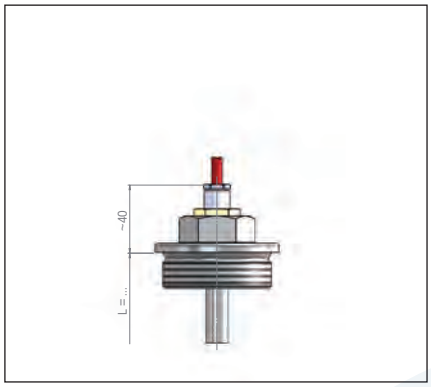




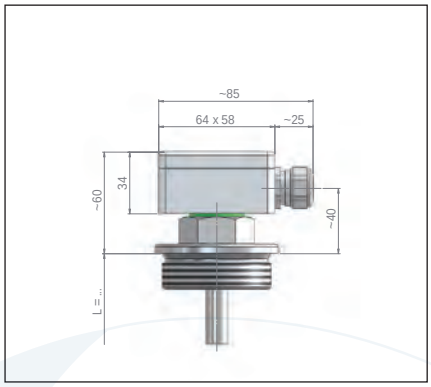
The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

Magnetic Float Switches / Brass

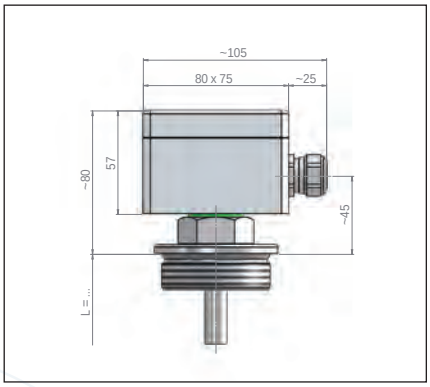
Electrical connection



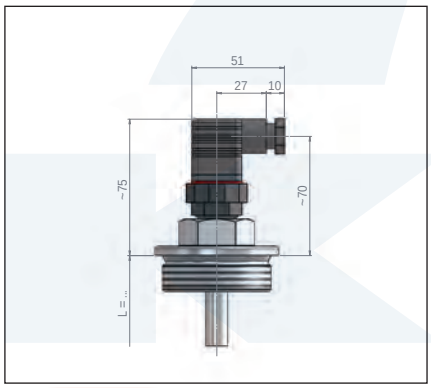
Connection type: K
Material quality: According as cable type
Cable entry: PG or metric
Ingress protection class: IP 55 (optional IP 68)
Ambient temperature: -40°C ... 200°C



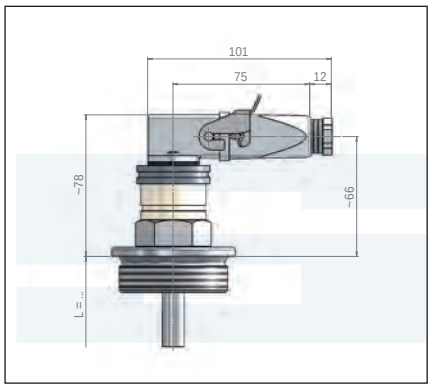
Connection type: ALE
Material quality: Aluminium coated RAL 7001
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -40°C ... 100°C



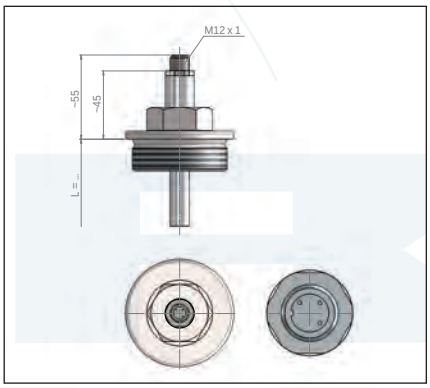
Connection type: ALF
Material quality: Aluminium coated RAL 7001
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -40°C ... 100°C



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



Connection type: ASHAB / ASHBB (Aluminium)
Material quality: Plastic / Aluminium
Cable entry: PG11
Ingress protection class: IP 65
Ambient temperature: -10°C ... 80°C



Connection type: ASMA / ASMB (8-pins)
Material quality: Brass / PA
Cable entry: PG9
Ingress protection class: IP 67
Ambient temperature: -25°C ... 90°C

Approvals / Certificates

Further electrical connections page 110 - 111
Further process connection according to type key page 62
Further floats page 106 - 109

The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

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Type	K/ME/E-1/8-ME/..-L../8-SVK27/10/A-../PVC	K/ME/E-1/8-ME/..-L../8-SV29/9/A-../SIL
Material quality:	Brass (Float Stainless steel)	Brass (Float Stainless steel)
Electrical connection:	PVC connection cable	Silicon connection cable
Process connection:	G 1/8“	G 1/8“
Guide tube:	Ø 8 mm	Ø 8 mm
Length of instrument:	≤ 1000 mm	≤ 1000 mm
Float:	SVK27/10/A Ø 27 mm	SV29/9/A Ø 29 mm
Specific gravity:	≥ 800 kg/m³	≥ 900 kg/m³
Design pressure:	-1 bar ... 6 bar	-1 bar ... 6 bar
Design temperature:	-10°C ... 80°C	-10°C ... 150°C
Ingress protection class:	IP 55	IP 55
Mounting position:	Vertical +/-30°	Vertical +/-30°
Level switch function		
Function:	Normally open / S	Normally open / S
Switching capacity:	150V / 0.5A / 10VA	150V / 0.5A / 10VA
Maximal number of contacts:	3 pieces	3 pieces
Function:	Normally closed / O	Normally closed / O
Switching capacity:	150V / 0.5A / 10VA	150V / 0.5A / 10VA
Maximal number of contacts:	3 pieces	3 pieces
Function:	Change over / U	Change over / U
Switching capacity:	150V / 0.5A / 10VA	150V / 0.5A / 10VA
Maximal number of contacts:	2 pieces	2 pieces
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	-	-
Switching capacity:	-	-
Accuracy / Hysteresis:	-	-
Temperature / Grading:	-	-

Minimum measures

K/ME/E-1/8-ME/..-L../8-SVK27/10/A-../PVC
L1: ≥ 30 mm
U: 30 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 50 mm

Approvals / Certificates

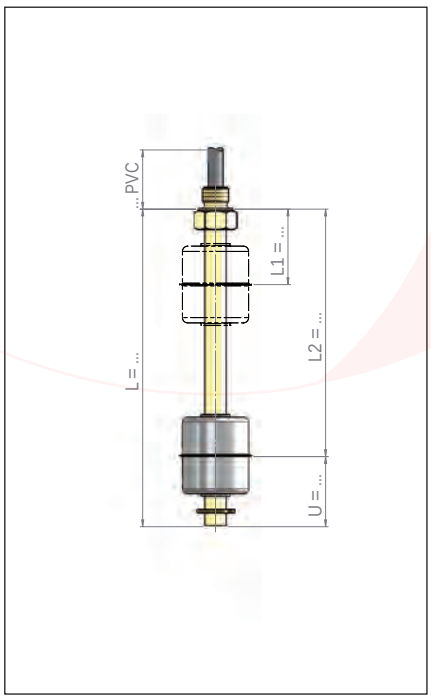
PED / SIL1

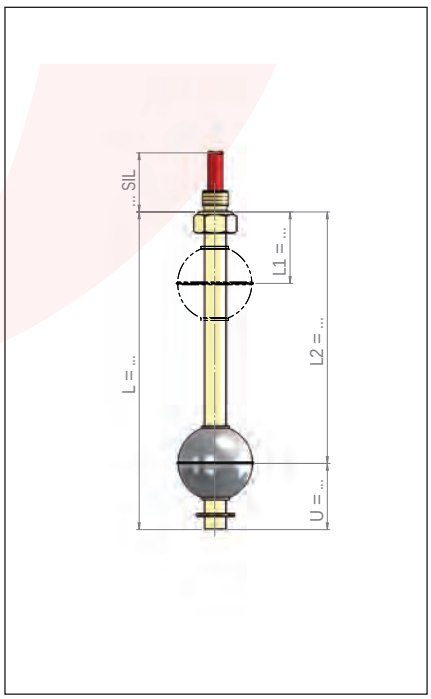
Minimum measures

K/ME/E-1/8-ME/..-L../8-SV29/9/A-../SIL
L1: ≥ 35 mm
U: 30 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 45 mm

Approvals / Certificates

PED / SIL1





The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

Magnetic Float Switches / Brass

Type	K/ME/E-3/8-ME/..-L../12-SVK44/15/A-../PVC	K/ME/E-3/8-ME/..-L../12-SV52/15/A-../SIL
Material quality:	Brass (Float Stainless steel)	Brass (Float Stainless steel)
Electrical connection:	PVC connection cable	Silicon connection cable
Process connection:	G 3/8“	G 3/8“
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 44 mm	SV52/15/A Ø 52 mm
Specific gravity:	≥ 800 kg/m³	≥ 680 kg/m³
Design pressure:	-1 bar ... 16 bar	-1 bar ... 16 bar
Design temperature:	-10°C ... 80°C	-10°C ... 180°C
Ingress protection class:	IP 55 (optional IP 68)	IP 55 (optional IP 68)
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:	5 pieces	5 pieces
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:	5 pieces	5 pieces
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:	4 pieces	4 pieces
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

K/ME/E-3/8-ME/..-L../12-SVK44/15/A-../PVC
L1: ≥ 50 mm
U: 45 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 70 mm

Approvals / Certificates

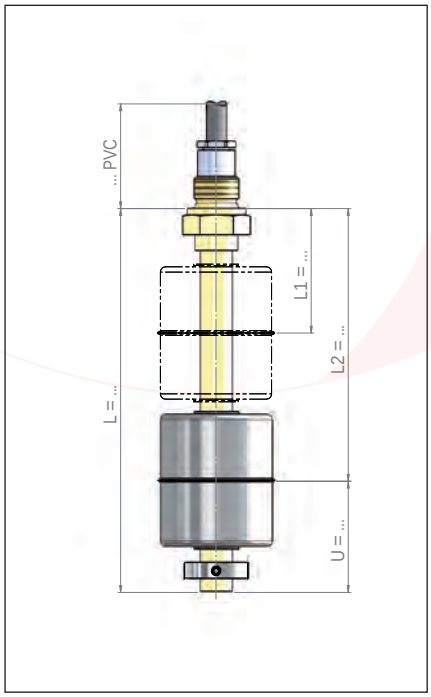
PED / SIL1

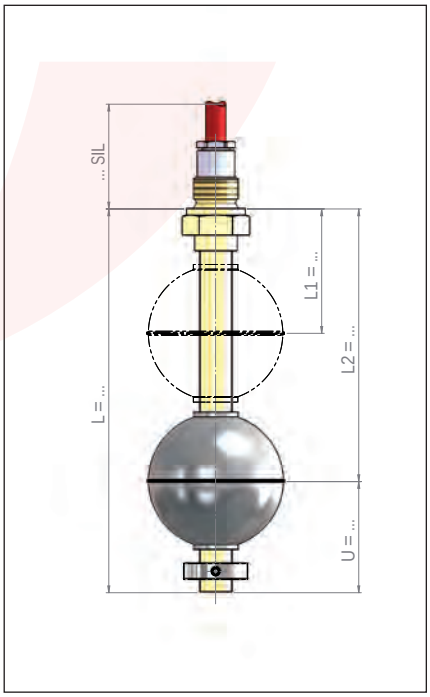
Minimum measures

K/ME/E-3/8-ME/..-L../12-SV52/15/A-../SIL
L1: ≥ 55 mm
U: 45 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 70 mm

Approvals / Certificates

PED / SIL1





The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

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Type	ALE/ME/R-1½-ME/..-L../12-SVK44/15/A	ALE/ME/R-2-ME/..-L../12-SV52/15/A
Material quality:	Brass (Float Stainless steel)	Brass (Float Stainless steel)
Electrical connection:	ALE Aluminium terminal box	ALE Aluminium terminal box
Process connection:	G 1½“	G 2“
Guide tube:	Ø 12 mm	Ø 12 mm
Length of instrument:	≤ 5000 mm	≤ 5000 mm
Float:	SVK44/15/A Ø 44 mm	SV52/15/A Ø 52 mm
Specific gravity:	≥ 800 kg/m³	≥ 680 kg/m³
Design pressure:	-1 bar ... 16 bar	-1 bar ... 16 bar
Design temperature:	-10°C ... 180°C	-10°C ... 180°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)
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

ALE/ME/R-1½-ME/..-L../12-SVK44/15/A
L1: ≥ 65 mm
U: 45 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 70 mm

Approvals / Certificates

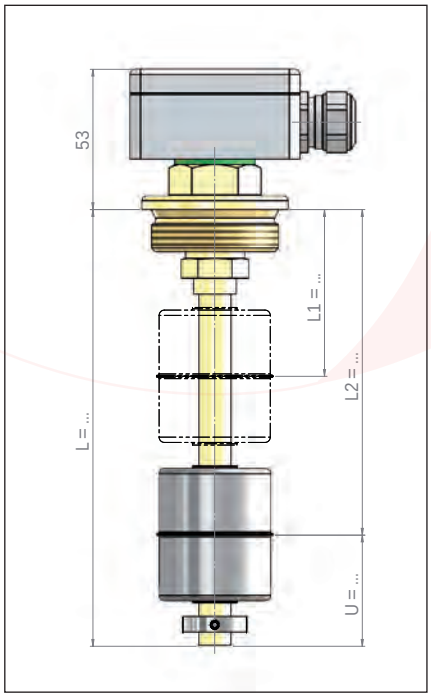
PED / SIL1

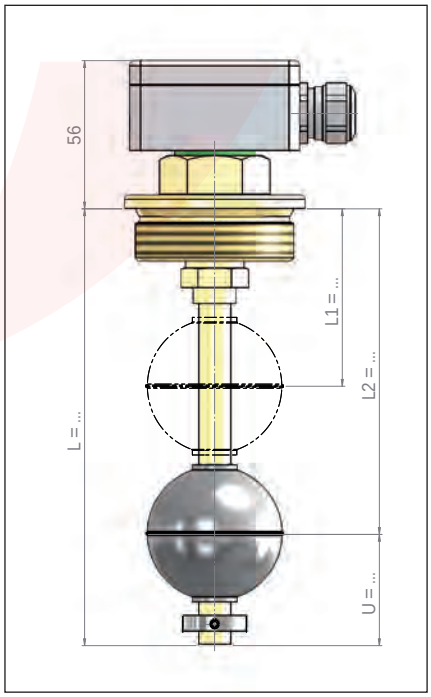
Minimum measures

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

Approvals / Certificates

PED / SIL1

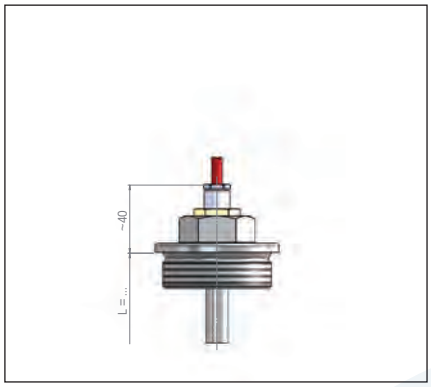




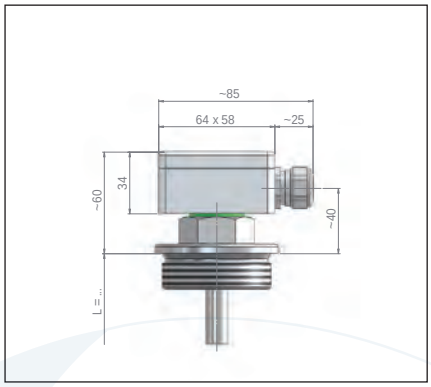
The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

Magnetic Float Switches / Polyamide - flexible

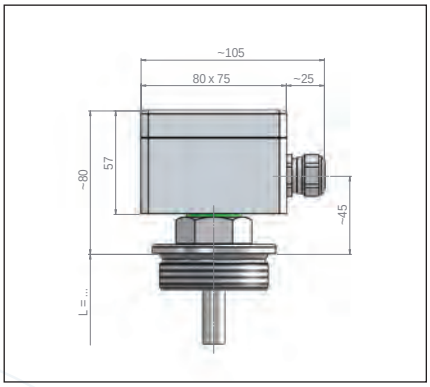
Electrical connection



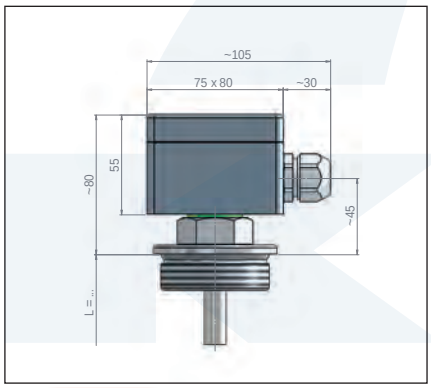
Connection type: K
Material quality: According as cable type
Cable entry: PG or metric
Ingress protection class: IP 55 (optional IP 68)
Ambient temperature: -40°C ... 200°C



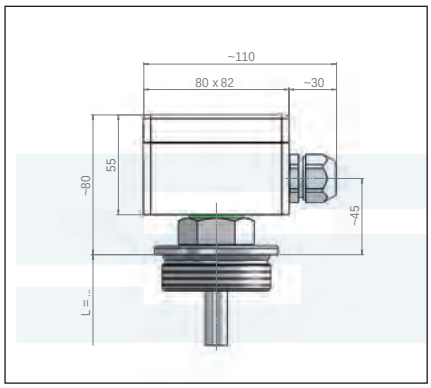
Connection type: ALE
Material quality: Aluminium coated RAL 7001
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -40°C ... 100°C



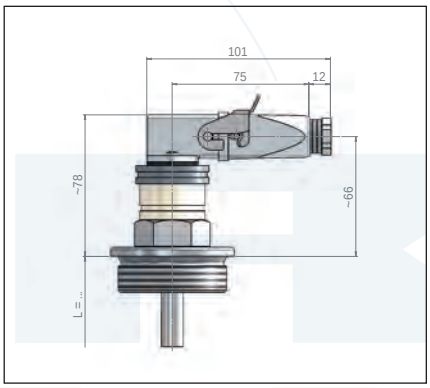
Connection type: ALF
Material quality: Aluminium coated RAL 7001
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -40°C ... 100°C



Connection type: APA / APB (Ex)
Material quality: Polyester
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -10°C ... 100°C



Connection type: ABA
Material quality: ABS
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -10°C ... 80°C



Connection type: ASHAB / ASHBB (Aluminium)
Material quality: Plastic / Aluminium
Cable entry: PG11
Ingress protection class: IP 65
Ambient temperature: -10°C ... 80°C

Approvals / Certificates

SIL

Further electrical connections page 110 - 111
Further process connection according to type key page 62
Further floats page 106 - 109

The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

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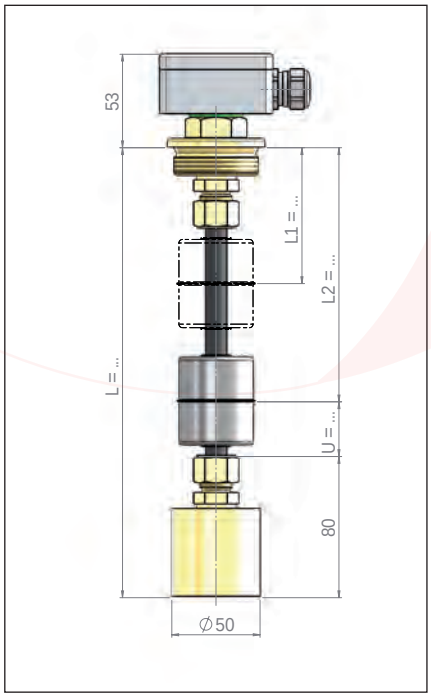
Type	ALE/ME/R-1½-PA/..-L../12-SVK44/15/A-FG	ALE/ME/R-2-PA/..-L../12-SV52/15/A-FG
Material quality:	Polyamide / Brass / Stainless steel	Polyamide / Brass / Stainless steel
Electrical connection:	ALE Aluminium terminal box	ALE Aluminium terminal box
Process connection:	G 1½“	G 2“
Guide tube:	Ø 12 mm	Ø 12 mm
Length of instrument:	≤ 5000 mm	≤ 5000 mm
Float:	SVK44/15/A Ø 44 mm	SV52/15/A Ø 52 mm
Specific gravity:	≥ 800 kg/m³	≥ 680 kg/m³
Design pressure:	-1 bar ... 1 bar	-1 bar ... 1 bar
Design temperature:	-10°C ... 80°C	-10°C ... 80°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)
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

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

Approvals / Certificates

SIL

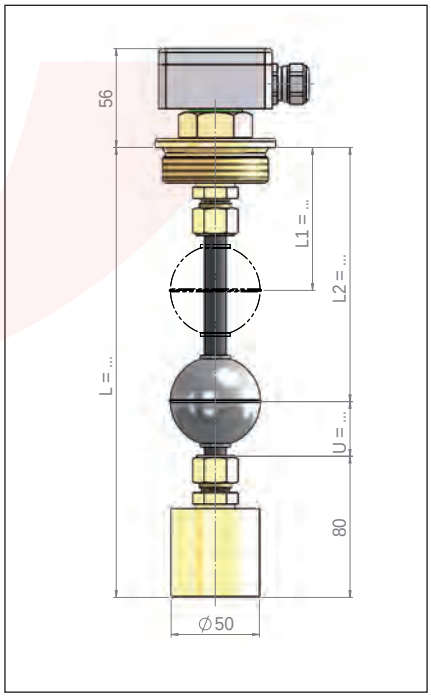


Minimum measures

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

Approvals / Certificates

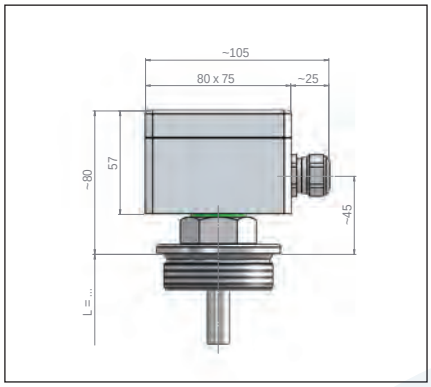
SIL



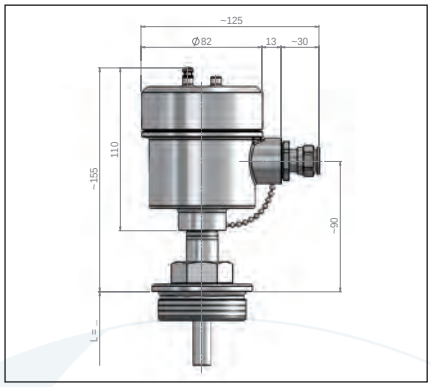
The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

Magnetic Float Switches / with test function

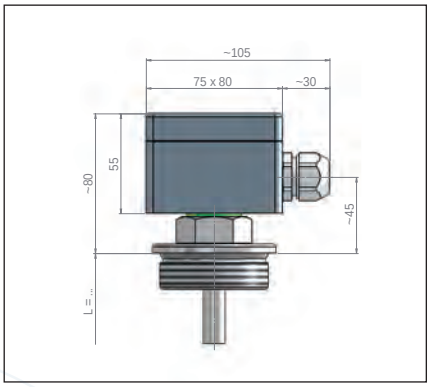
Electrical connection



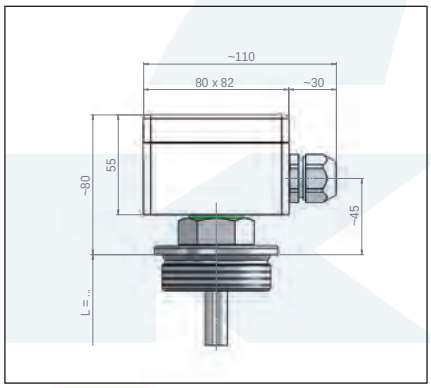
Connection type: ALF
Material quality: Aluminium coated RAL 7001
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -40°C ... 100°C



Connection type: AVA / AVDA (Exd)
Material quality: Stainless steel A4 (SS316)
Cable entry: M20 x 1.5
Ingress protection class: IP 67 / (Exd / IP68)
Ambient temperature: -40°C ... 85°C



Connection type: APA
Material quality: Polyester
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -10°C ... 100°C



Connection type: ABA
Material quality: ABS
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -10°C ... 80°C

Approvals / Certificates

ATEX*

II 1/2G Ex ia c IIC T6 - T3 II 2D Ex tD A21 c IP6* T80°C - T190°C

Liquid temperature Exia max. 180°C / Exd max. 120°C

Type of protection intrinsic safety Ex ia IIC switch bzw. temperature switch	I_i ≤ 100 mA		
Type of protection intrinsic safety Ex ia IIC temperature probe	U_i ≤ 28 V	I_i ≤ 100 mA	P_i ≤ 700 mW
Type of protection intrinsic safety Ex ia IIC with option /N (NAMUR EN 60947)	U_i ≤ 15 VDC	I_i ≤ 60 mA	

Further electrical connections page 110 - 111
Further process connection according to type key page 62
Further floats page 106 - 109

The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

* = The approval is dependent on the equipment combination

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Type	AVA/V/FE-80/16/B1-V/..-L../18-SV72/24/V-NT	ABA/ME/R-1½-ME/..-L../14-SVK44/15/A-NT
Material quality:	1.4404 / 1.4435 / 1.4571 (316L / 316Ti)	Brass (Float Stainless steel)
Electrical connection:	AVA Stainless steel terminal box	ABS terminal box
Process connection:	Flange EN DN 80 / PN 16 / Form B1	G 1½“
Guide tube:	Ø 18 mm	Ø 14 mm
Length of instrument:	≤ 6000 mm	≤ 5000 mm
Float:	SV72/24/V Ø 72 mm	SVK44/15/A Ø 44 mm
Specific gravity:	≥ 620 kg/m³	≥ 800 kg/m³
Design pressure:	-1 bar ... 16 bar (depending on temperature)	-1 bar ... 16 bar
Design temperature:	-30°C ... 180°C	-10°C ... 100°C
Ingress protection class:	IP 67	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	4 pieces
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	4 pieces
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	3 pieces
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

AVA/V/FE-80/16/B1-V/..-L../18-SV72/24/V-NT
L1: ≥ 60 mm
U: 60 mm
Contact distance: ≥ 90 mm
Float distance: ≥ 90 mm
each switching point 1 float

Approvals / Certificates

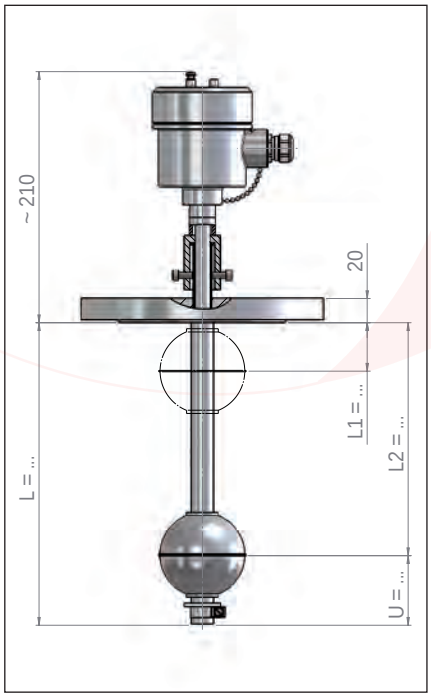
ATEX / PED / GOST / GL / BV / ABS / WHG / SIL1

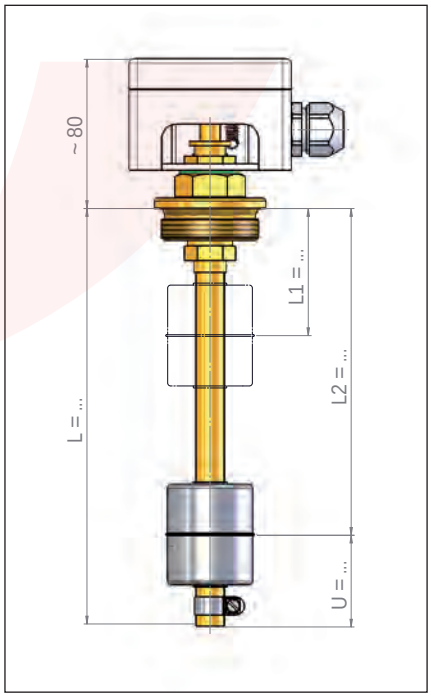
Minimum measures

ABA/ME/R-1½-ME/..-L../14-SVK44/15/A-NT
L1: ≥ 65 mm
U: 45 mm
Contact distance: ≥ 70 mm
Float distance: ≥ 70 mm
each switching point 1 float

Approvals / Certificates

PED / SIL1

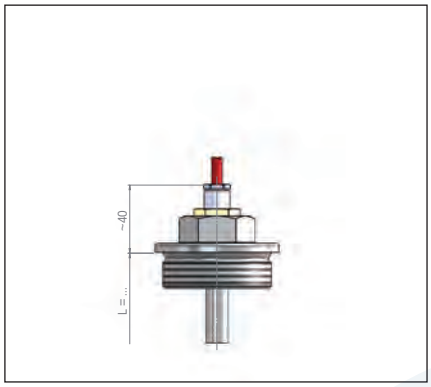




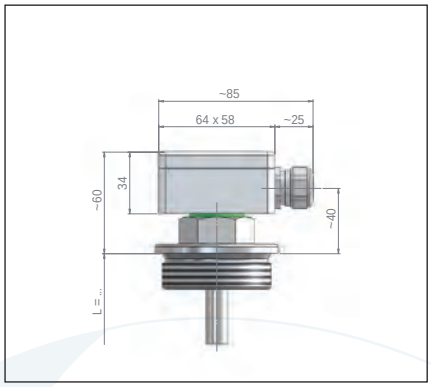
The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

Magnetic Float Switches / Titanium

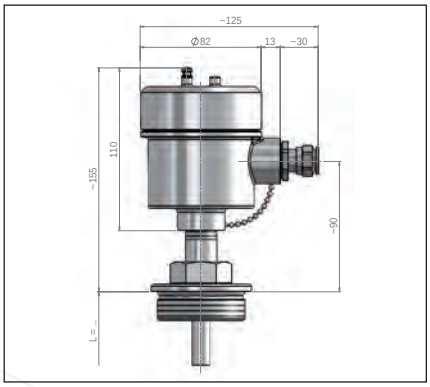
Electrical connection



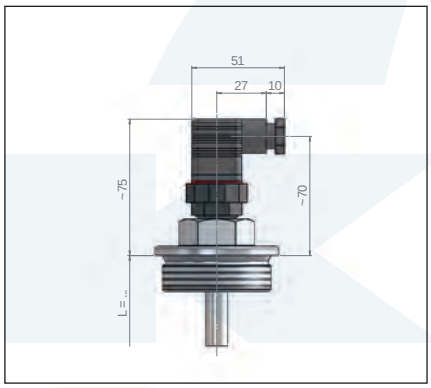
Connection type: K
Material quality: According as cable type
Cable entry: PG or metric
Ingress protection class: IP 55 (optional IP 68)
Ambient temperature: -40°C ... 200°C



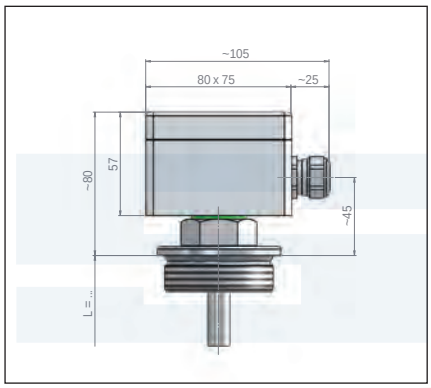
Connection type: ALE
Material quality: Aluminium coated RAL 7001
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -40°C ... 100°C



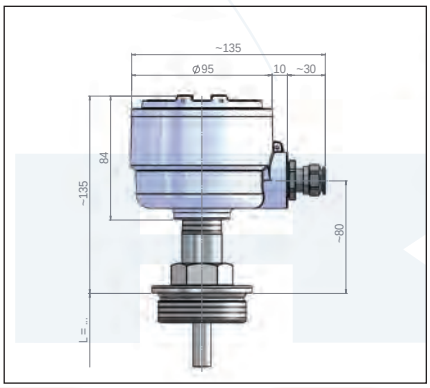
Connection type: AVA / AVDA (Exd)
Material quality: Stainless steel A4 (SS316)
Cable entry: M20 x 1.5
Ingress protection class: IP 67 / (Exd / IP68)
Ambient temperature: -40°C ... 85°C



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	Ex ia c IIC T6 - T3	II 2D	Ex tD A21 c IP6* T80°C - T190°C
II 2G	Ex d c IIC T6 - T4		

Liquid temperature Exia max. 180°C / Exd max. 120°C

Type of protection intrinsic safety Ex ia IIC switch bzw. temperature switch	I_i ≤ 100 mA		
Type of protection intrinsic safety Ex ia IIC temperature probe	U_i ≤ 28 V	I_i ≤ 100 mA	P_i ≤ 700 mW
Type of protection intrinsic safety Ex ia IIC with option /N (NAMUR EN 60947)	U_i ≤ 15 VDC	I_i ≤ 60 mA	
Type of protection „moulding“	U_N ≤ 250 VDC/AC	P_{SN} ≤ 50 W/VA	P_{FN} ≤ 700 mW
Type of protection „moulding“ with option /N (NAMUR EN 60947)	U_N ≤ 15 VDC	I_N ≤ 60 mA	
Type of protection „moulding“ with option /R22 (resistor)	U_N ≤ 250 VDC/AC	I_N ≤ 100 mA	

Further electrical connections page 110 - 111
Further process connection according to type key page 62
Further floats page 106 - 109

The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

* = The approval is dependent on the equipment combination

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Type	K/TI/E-3/8-TI/..-L../12-STIK44/14/A-../PVC	K/TI/E-3/8-TI/..-L../12-STI52/14/A-../SIL
Material quality:	Titanium	Titanium
Electrical connection:	PVC connection cable	Silicon connection cable
Process connection:	G 3/8“	G 3/8“
Guide tube:	Ø 12 mm (optional Ø 14 mm)	Ø 12 mm (optional Ø 14 mm)
Length of instrument:	≤ 5000 mm	≤ 5000 mm
Float:	STIK44/14/A Ø 44 mm	STI52/15/A Ø 52 mm
Specific gravity:	≥ 750 kg/m³	≥ 650 kg/m³
Design pressure:	-1 bar ... 15 bar	-1 bar ... 24 bar
Design temperature:	-10°C ... 80°C	-10°C ... 150°C
Ingress protection class:	IP 55 (optional IP 68)	IP 55 (optional IP 68)
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:	5 pieces	5 pieces
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:	5 pieces	5 pieces
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:	4 pieces	4 pieces
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

K/TI/E-3/8-TI/..-L../12-STIK44/14/A-../PVC
L1: ≥ 50 mm
U: 45 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 70 mm

Approvals / Certificates

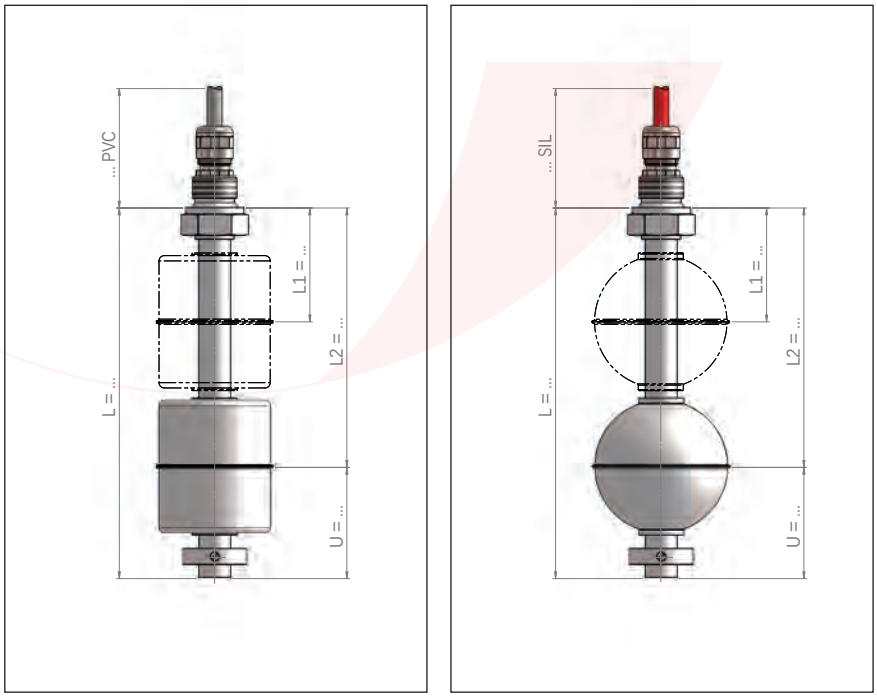
ATEX / PED / GOST / WHG / SIL1

Minimum measures

K/TI/E-3/8-TI/..-L../12-STI52/14/A-../SIL
L1: ≥ 55 mm
U: 45 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 70 mm

Approvals / Certificates

ATEX / PED / GOST / WHG / SIL1



The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

Magnetic Float Switches / Titanium

Type	ALE/TI/R-1½-TI/..-L../12-STIK44/14/A	ALE/TI/R-2-TI/..-L../12-STI52/14/A
Material quality:	Titanium	Titanium
Electrical connection:	ALE Aluminium terminal box	ALE Aluminium terminal box
Process connection:	G 1½“	G 2“
Guide tube:	Ø 12 mm (optional Ø 14 mm)	Ø 12 mm (optional Ø 14 mm)
Length of instrument:	≤ 5000 mm	≤ 5000 mm
Float:	STIK44/14/A Ø 44 mm	STI52/15/A Ø 52 mm
Specific gravity:	≥ 750 kg/m³	≥ 650 kg/m³
Design pressure:	-1 bar ... 15 bar	-1 bar ... 24 bar
Design temperature:	-10°C ... 150°C	-10°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)	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)
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

ALE/TI/R-1½-TI/..-L../12-STIK44/14/A
L1: ≥ 50 mm
U: 45 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 70 mm

Approvals / Certificates

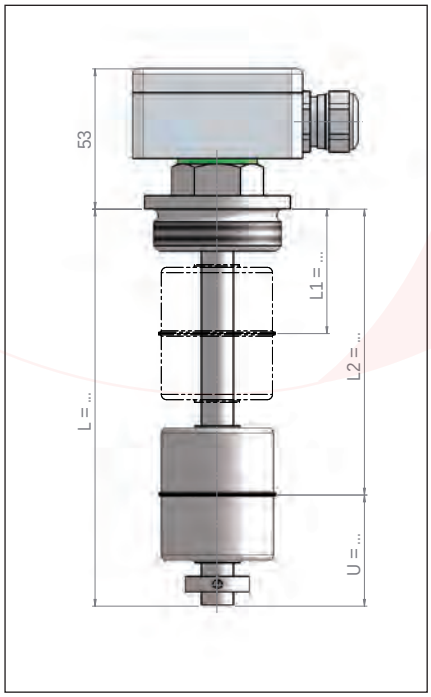
ATEX / PED / GOST / WHG / SIL1

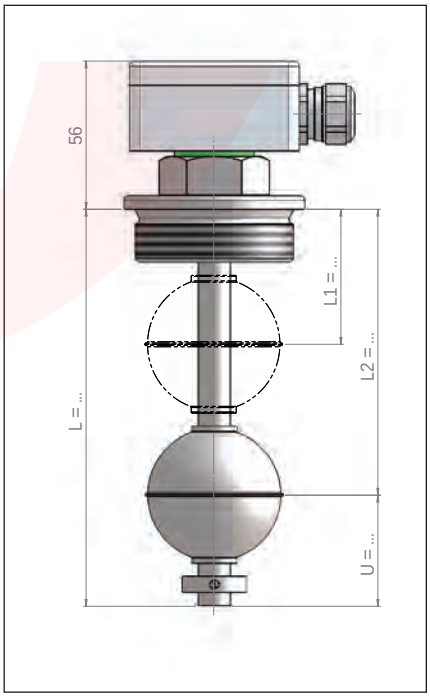
Minimum measures

ALE/TI/R-2-TI/..-L../12-STI52/14/A
L1: ≥ 55 mm
U: 45 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 70 mm

Approvals / Certificates

ATEX / PED / GOST / WHG / SIL1





The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

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Type	ALE/TI/FE-65/16/B1-TI/..-L../12-STI52/14/A	ALE/TI/FE-100/16/B1-TI/..-L../18-STI80/24/A
Material quality:	Titanium	Titanium
Electrical connection:	ALE Aluminium terminal box	ALE Aluminium terminal box
Process connection:	Flange EN DN 65 / PN 16 / Form B1	Flange EN DN 100 / PN 16 / Form B1
Guide tube:	Ø 12 mm (optional Ø 14 mm)	Ø 18 mm
Length of instrument:	≤ 5000 mm	≤ 6000 mm
Float:	STI52/14/A Ø 52 mm	STI80/24/A Ø 80 mm
Specific gravity:	≥ 660 kg/m³	≥ 600 kg/m³
Design pressure:	-1 bar ... 16 bar (depending on temperature)	-1 bar ... 16 bar (depending on temperature)
Design temperature:	-10°C ... 150°C	-10°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)	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)
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

ALE/TI/FE-65/16/B1-TI/..-L../12-STI52/14/A
L1: ≥ 55 mm
U: 45 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 70 mm

Approvals / Certificates

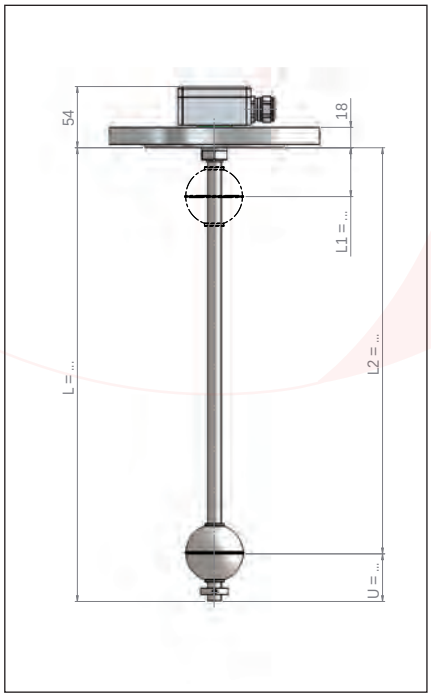
ATEX / PED / GOST / WHG / SIL1

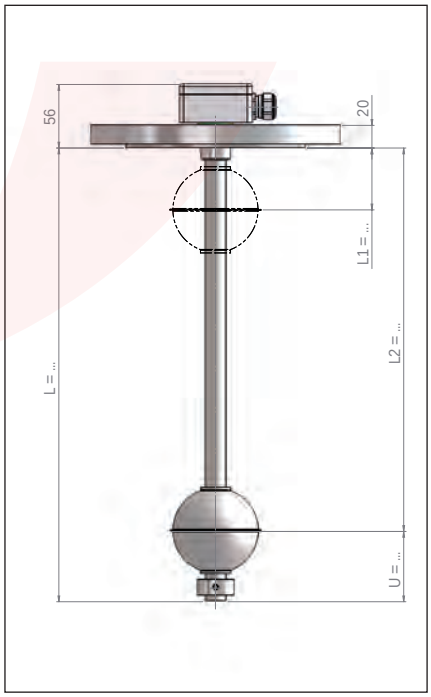
Minimum measures

ALE/TI/FE-100/16/B1-TI/..-L../18-STI80/24/A
L1: ≥ 70 mm
U: 60 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 95 mm

Approvals / Certificates

ATEX / PED / GOST / WHG / SIL1

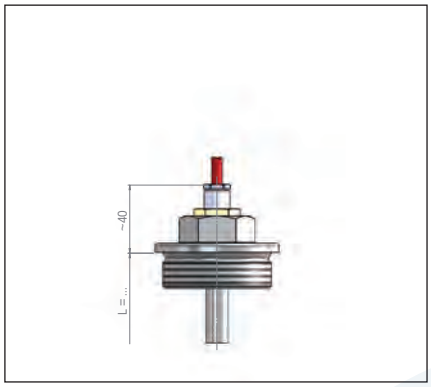




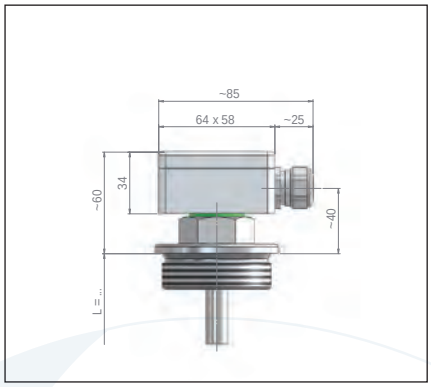
The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

Magnetic Float Switches / Alloy C

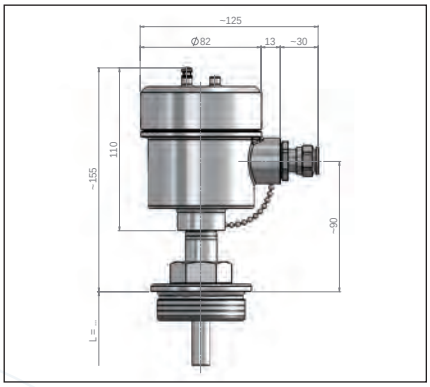
Electrical connection



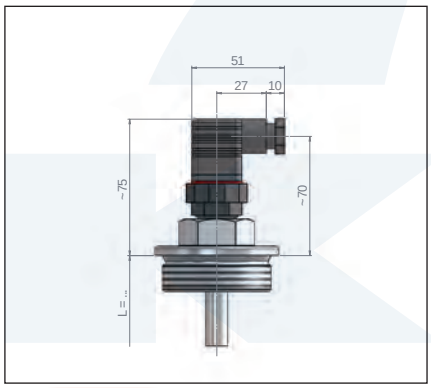
Connection type: K
Material quality: According as cable type
Cable entry: PG or metric
Ingress protection class: IP 55 (optional IP 68)
Ambient temperature: -40°C ... 200°C



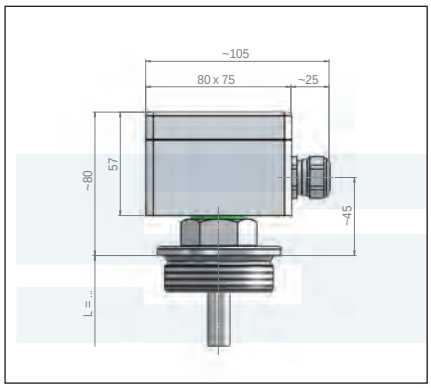
Connection type: ALE
Material quality: Aluminium coated RAL 7001
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -40°C ... 100°C



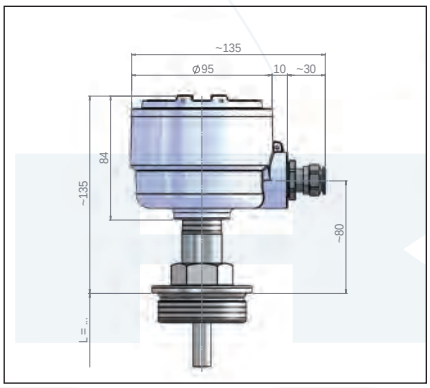
Connection type: AVA / AVDA (Exd)
Material quality: Stainless steel A4 (SS316)
Cable entry: M20 x 1.5
Ingress protection class: IP 67 / (Exd / IP68)
Ambient temperature: -40°C ... 85°C



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	Ex ia c IIC T6 - T3	II 2D	Ex tD A21 c IP6* T80°C - T190°C
II 2G	Ex d c IIC T6 - T4		

Liquid temperature Exia max. 180°C / Exd max. 120°C

Type of protection intrinsic safety Ex ia IIC switch bzw. temperature switch	I_i ≤ 100 mA		
Type of protection intrinsic safety Ex ia IIC temperature probe	U_i ≤ 28 V	I_i ≤ 100 mA	P_i ≤ 700 mW
Type of protection intrinsic safety Ex ia IIC with option /N (NAMUR EN 60947)	U_i ≤ 15 VDC	I_i ≤ 60 mA	
Type of protection „moulding“	U_N ≤ 250 VDC/AC	P_{SN} ≤ 50 W/VA	P_{FN} ≤ 700 mW
Type of protection „moulding“ with option /N (NAMUR EN 60947)	U_N ≤ 15 VDC	I_N ≤ 60 mA	
Type of protection „moulding“ with option /R22 (resistor)	U_N ≤ 250 VDC/AC	I_N ≤ 100 mA	

Further electrical connections page 110 - 111
Further process connection according to type key page 62
Further floats page 106 - 109

The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

* = The approval is dependent on the equipment combination

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Type	K/HC/E-3/8-HC/..-L../12-SHC52/15/A-../SIL	ALE/HC/FE-80/16/B1-HC/..-L../18-SHC72/24/V
Material quality:	Alloy C	Alloy C
Electrical connection:	Silicon connection cable	ALE Aluminium terminal box
Process connection:	G 3/8“	Flange EN DN 80 / PN 16 / Form B1
Guide tube:	Ø 12 mm	Ø 18 mm
Length of instrument:	≤ 3000 mm	≤ 6000 mm
Float:	SHC52/15/A Ø 52 mm	SHC72/24/V Ø 72 mm
Specific gravity:	≥ 1260 kg/m³	≥ 820 kg/m³
Design pressure:	-1 bar ... 55 bar	-1 bar ... 16 bar (depending on temperature)
Design temperature:	-40°C ... 180°C	-40°C ... 200°C
Ingress protection class:	IP 55 (optional IP 68)	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:	5 pieces	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:	5 pieces	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:	4 pieces	3 pieces (4 pieces with ALF terminal box)
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

K/HC/E-3/8-HC/..-L../12-SHC52/15/A-../SIL
L1: ≥ 55 mm
U: 45 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 70 mm

Approvals / Certificates

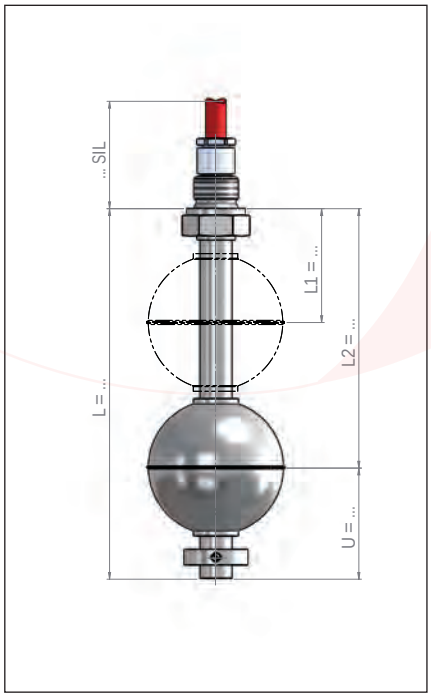
ATEX / PED / GOST / WHG / SIL1

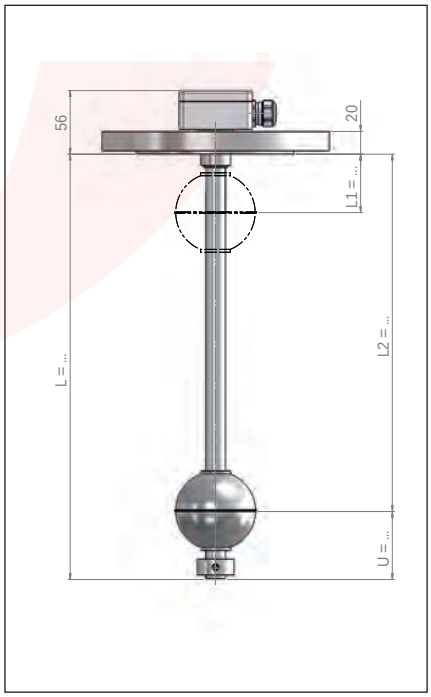
Minimum measures

ALEHCFE-80/16/B1-HC..-L../18-SHC72/24/V
L1: ≥ 60 mm
U: 60 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 90 mm

Approvals / Certificates

ATEX / PED / GOST / WHG / SIL1

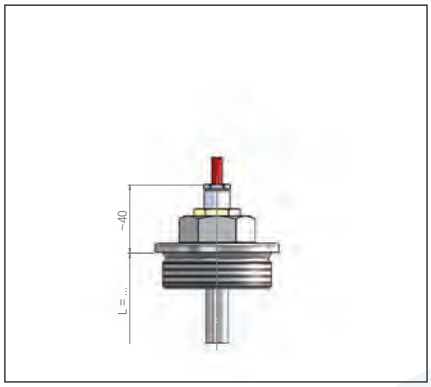




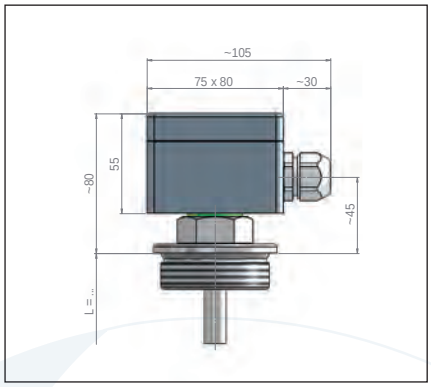
The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

Magnetic Float Switches / PVC

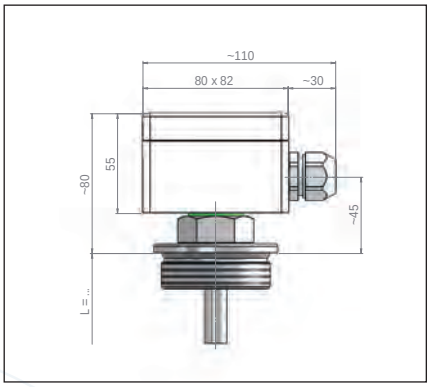
Electrical connection



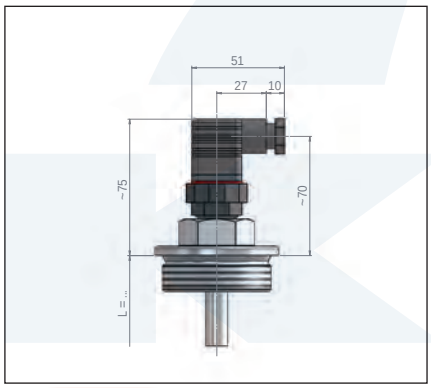
Connection type: K
Material quality: According as cable type
Cable entry: PG or metric
Ingress protection class: IP 55 (optional IP 68)
Ambient temperature: -40°C ... 200°C



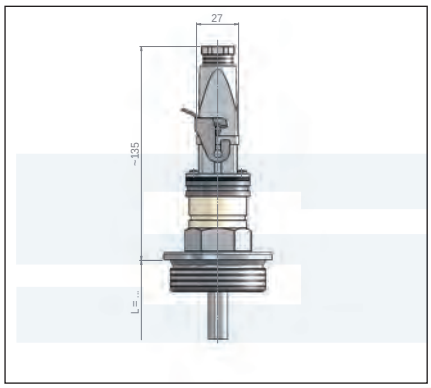
Connection type: APA / APB (Ex)
Material quality: Polyester
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -10°C ... 100°C



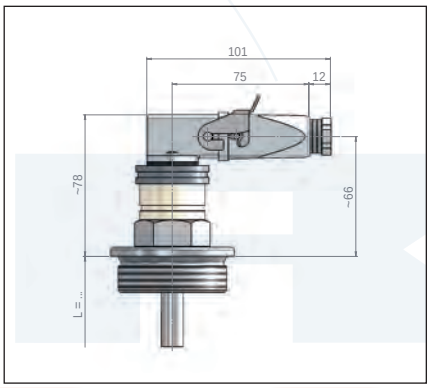
Connection type: ABA
Material quality: ABS
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -10°C ... 80°C



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



Connection type: ASHAA / ASHBA (Aluminium)
Material quality: Plastic / Aluminium
Cable entry: PG11
Ingress protection class: IP 65
Ambient temperature: -10°C ... 80°C



Connection type: ASHAB / ASHBB (Aluminium)
Material quality: Plastic / Aluminium
Cable entry: PG11
Ingress protection class: IP 65
Ambient temperature: -10°C ... 80°C

Approvals / Certificates

TÜV SÜD · DIBt WHG §19 · SIL

Further electrical connections page 110 - 111
Further process connection according to type key page 62
Further floats page 106 - 109

The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

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Type	K/P/E-3/8-P/..-L../12-SPK42/14/A-../PVC	K/P/E-1-P/..-L../16-SPK54/22/A-../PVC
Material quality:	PVC	PVC
Electrical connection:	PVC connection cable	PVC connection cable
Process connection:	G 3/8“	G 1“
Guide tube:	Ø 12 mm	Ø 16 mm
Length of instrument:	≤ 3000 mm	≤ 3000 mm
Float:	SPK42/14/A Ø 42 mm	SPK54/22/A Ø 54 mm
Specific gravity:	≥ 800 kg/m³	≥ 750 kg/m³
Design pressure:	-1 bar ... 1 bar	-1 bar ... 1 bar
Design temperature:	-15°C ... 60°C	-15°C ... 60°C
Ingress protection class:	IP 55	IP 55 (optional IP 68)
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:	5 pieces	5 pieces
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:	5 pieces	5 pieces
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:	4 pieces	4 pieces
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

K/P/E-3/8-P/..-L../12-SPK42/14/A-../PVC
L1: ≥ 50 mm
U: 40 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 65 mm

Approvals / Certificates

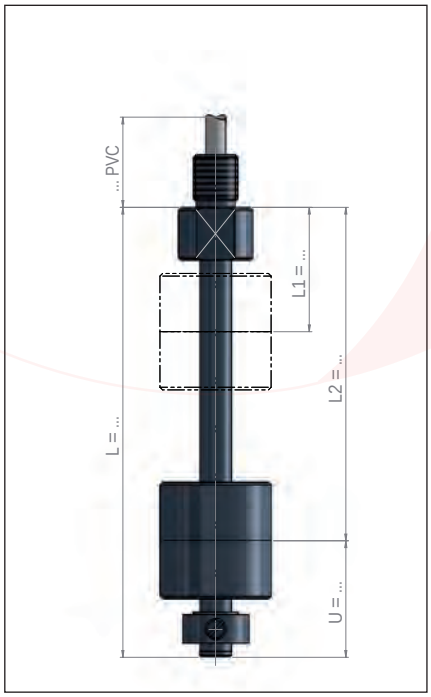
PED / WHG / SIL1

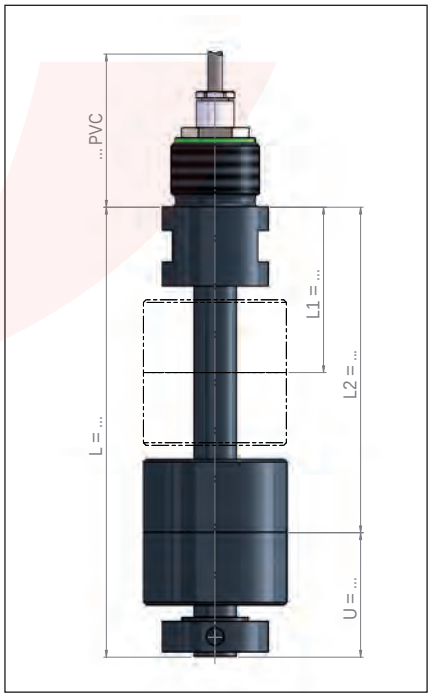
Minimum measures

K/P/E-1-P/..-L../16-SPK54/22/A-../PVC
L1: ≥ 65 mm
U: 50 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 75 mm

Approvals / Certificates

PED / WHG / SIL1

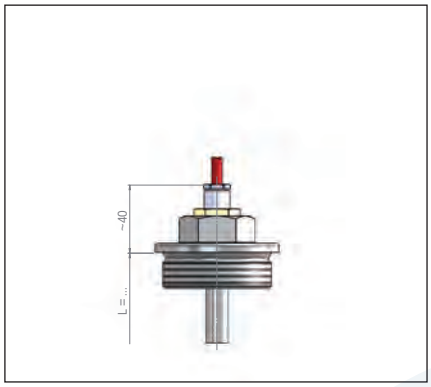




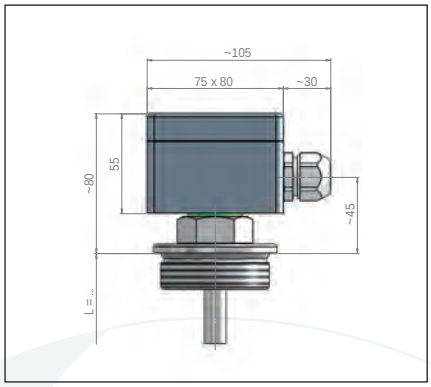
The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

Magnetic Float Switches / Polypropylene

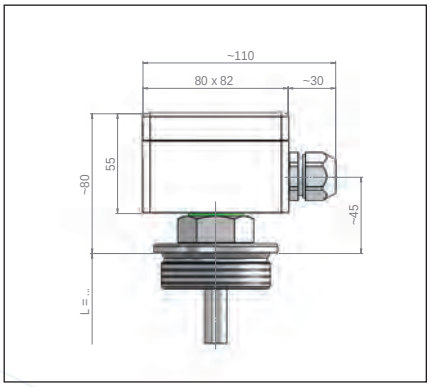
Electrical connection



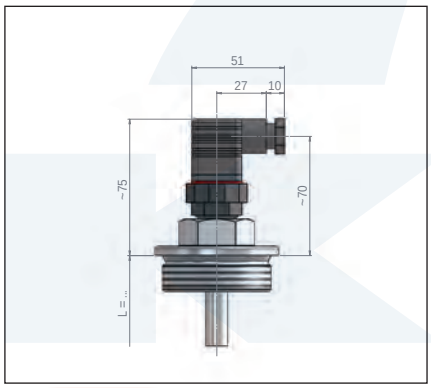
Connection type: K
Material quality: According as cable type
Cable entry: PG or metric
Ingress protection class: IP 55 (optional IP 68)
Ambient temperature: -40°C ... 200°C



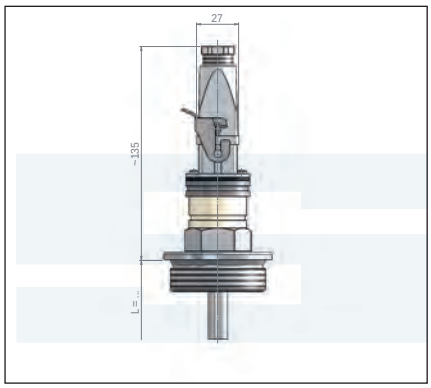
Connection type: APA / APB (Ex)
Material quality: Polyester
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -10°C ... 100°C



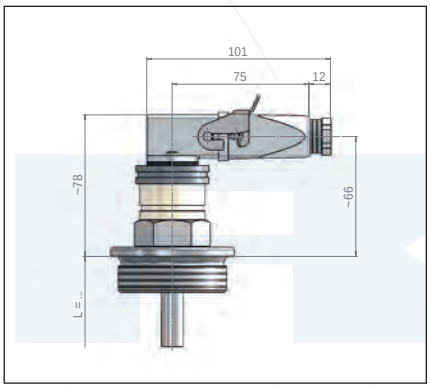
Connection type: ABA
Material quality: ABS
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -10°C ... 80°C



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



Connection type: ASHAA / ASHBA (Aluminium)
Material quality: Plastic / Aluminium
Cable entry: PG11
Ingress protection class: IP 65
Ambient temperature: -10°C ... 80°C



Connection type: ASHAB / ASHBB (Aluminium)
Material quality: Plastic / Aluminium
Cable entry: PG11
Ingress protection class: IP 65
Ambient temperature: -10°C ... 80°C

Approvals / Certificates

TÜV SÜD · DIBt WHG §19 · SIL

Further electrical connections page 110 - 111
Further process connection according to type key page 62
Further floats page 106 - 109

The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

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Type	K/PP/E-1/8-PP/..-L60/8-SPPK25/9/A-../PVC	K/PP/E-3/8-PP/..-L../12-SPPK44/13/A-../PVC
Material quality:	Polypropylene	Polypropylene
Electrical connection:	PVC connection cable	PVC connection cable
Process connection:	G 1/8“	G 3/8“
Guide tube:	Ø 8 mm	Ø 12 mm
Length of instrument:	60 mm	≤ 3000 mm
Float:	SPPK25/9/A Ø 25 mm	SPPK44/13/A Ø 44 mm
Specific gravity:	≥ 800 kg/m³	≥ 700 kg/m³
Design pressure:	-1 bar ... 1 bar	-1 bar ... 1 bar
Design temperature:	-10°C ... 80°C	-10°C ... 80°C
Ingress protection class:	IP 55	IP 55
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:	1 piece	5 pieces
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:	1 piece	5 pieces
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:	1 piece	4 pieces
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

K/PP/E-1/8-PP/..-L60/8-SPPK25/9/A-../PVC
L1: 12 mm
U: 32 mm
Contact distance: -
Float distance: -

Approvals / Certificates

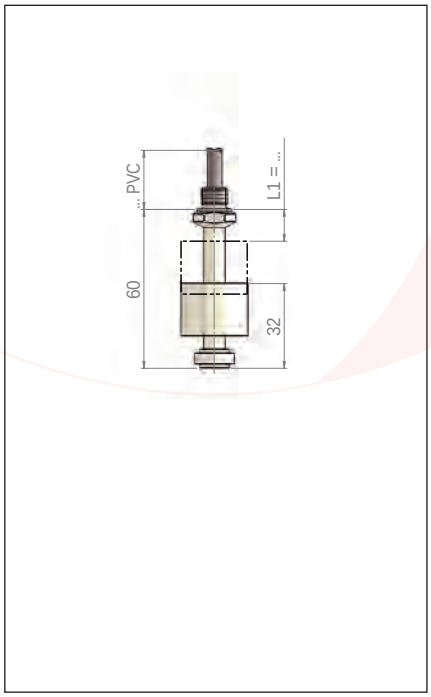
PED / WHG / SIL1

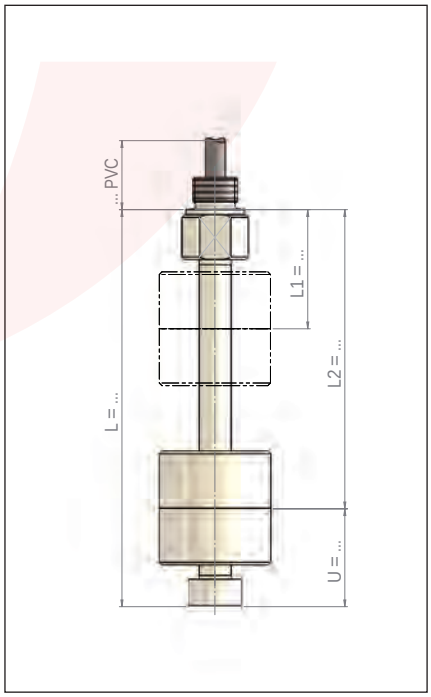
Minimum measures

K/PP/E-3/8-PP/..-L../12-SPPK44/13/A-../PVC
L1: ≥ 50 mm
U: 40 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 65 mm

Approvals / Certificates

PED / WHG / SIL1





The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

Magnetic Float Switches / Polypropylene

Type	K/PP/E-1-PP/..-L../16-SPPK56/21/A-../PVC	K/PP/E-1-PP/..-L../20-SPPK80/24/A-../PVC
Material quality:	Polypropylene	Polypropylene
Electrical connection:	PVC connection cable	PVC connection cable
Process connection:	G 1“	G 1“
Guide tube:	Ø 16 mm	Ø 20 mm
Length of instrument:	≤ 3000 mm	≤ 6000 mm
Float:	SPPK56/21/A Ø 56 mm	SPPK80/24/A Ø 80 mm
Specific gravity:	≥ 600 kg/m³	≥ 500 kg/m³
Design pressure:	-1 bar ... 1 bar	-1 bar ... 1 bar
Design temperature:	-10°C ... 80°C	-10°C ... 80°C
Ingress protection class:	IP 55 (optional IP 68)	IP 55 (optional IP 68)
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:	5 pieces	5 pieces
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:	5 pieces	5 pieces
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:	4 pieces	4 pieces
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

K/PP/E-1-PP/..-L../16-SPPK56/21/A-../PVC
L1: ≥ 65 mm
U: 50 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 75 mm

Approvals / Certificates

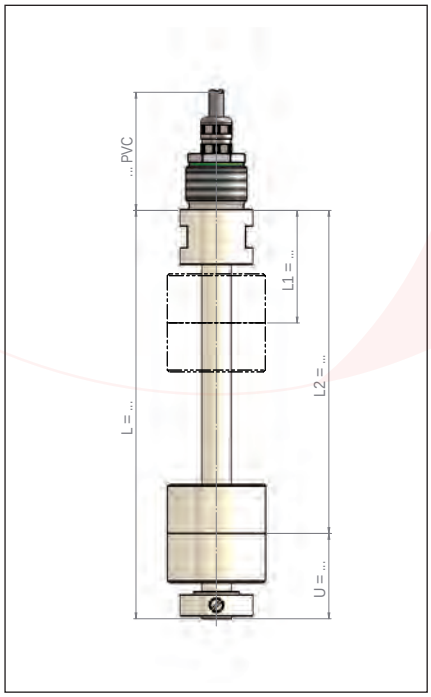
PED / WHG / SIL1

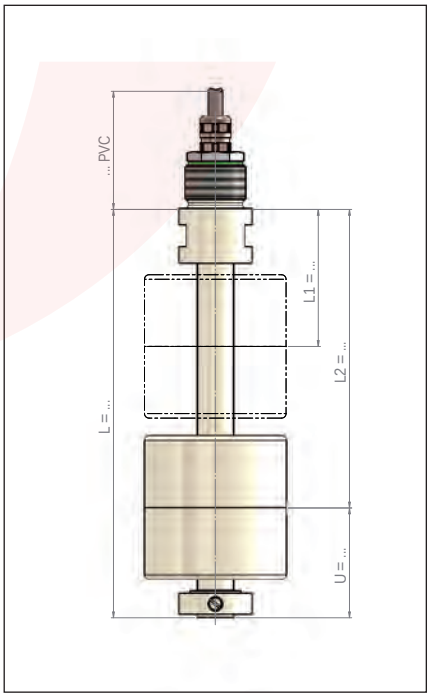
Minimum measures

K/PP/E-1-PP/..-L../20-SPPK80/24/A-../PVC
L1: ≥ 80 mm
U: 65 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 100 mm

Approvals / Certificates

PED / WHG / SIL1





The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

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Type	APA/PP/R-2-PP/..-L../16-SPPK56/21/A-FG	APA/PP/FE-65/10/A-PP/..-L../16-SPPK56/21/A-FG
Material quality:	Polypropylene	Polypropylene
Electrical connection:	Polyester terminal box	Polyester terminal box
Process connection:	G 2“	Flange EN DN 65 / PN 10 / Form A
Guide tube:	Ø 16 mm	Ø 16 mm
Length of instrument:	≤ 3000 mm	≤ 3000 mm
Float:	SPPK56/21/A Ø 56 mm	SPPK56/21/A Ø 56 mm
Specific gravity:	≥ 600 kg/m³	≥ 600 kg/m³
Design pressure:	-1 bar ... 1 bar	-1 bar ... 1 bar
Design temperature:	-10°C ... 80°C	-10°C ... 80°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:	5 pieces	5 pieces
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:	5 pieces	5 pieces
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:	4 pieces	4 pieces
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

APA/PP/R-2-PP/..-L../16-SPPK56/21/A-FG
L1: ≥ 65 mm
U: 50 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 75 mm

Approvals / Certificates

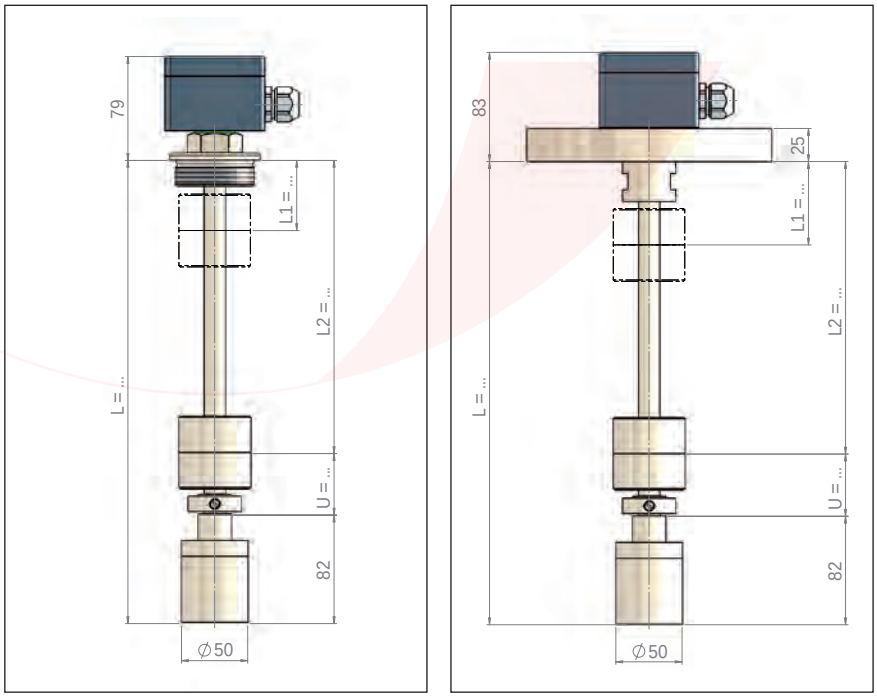
SIL

Minimum measures

APA/PP/FE-65/10/A-PP/..-L../16-SPPK56/21/A-FG
L1: ≥ 65 mm
U: 50 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 75 mm

Approvals / Certificates

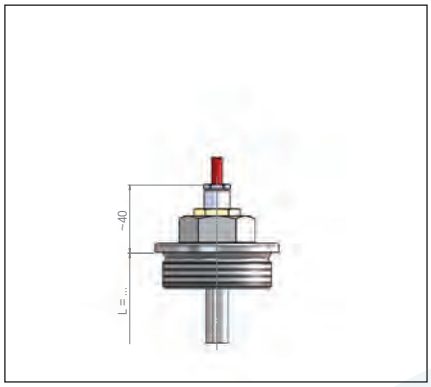
SIL



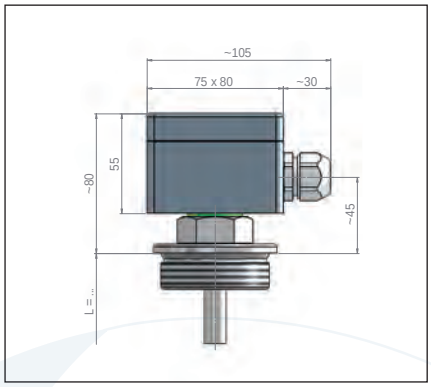
The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

Magnetic Float Switches / PVDF

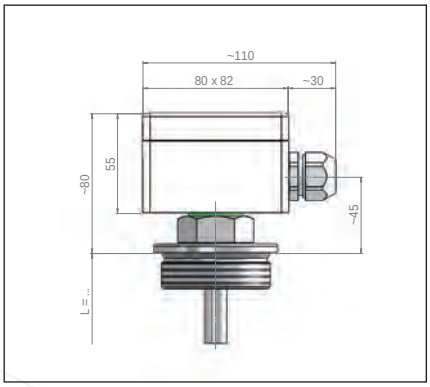
Electrical connection



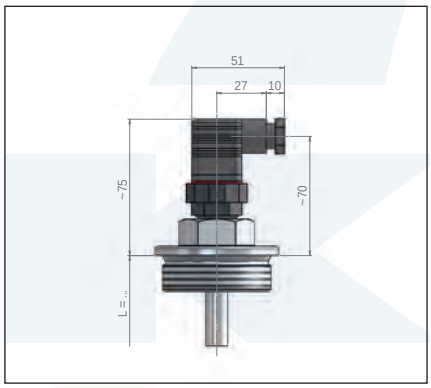
Connection type: K
Material quality: According as cable type
Cable entry: PG or metric
Ingress protection class: IP 55 (optional IP 68)
Ambient temperature: -40°C ... 200°C



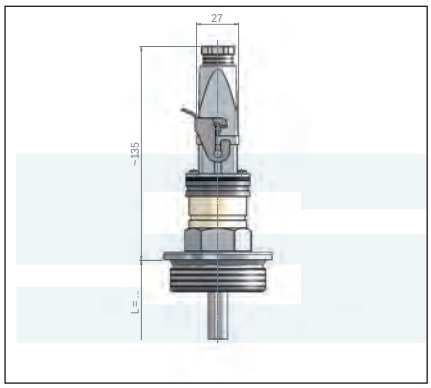
Connection type: APA / APB (Ex)
Material quality: Polyester
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -10°C ... 100°C



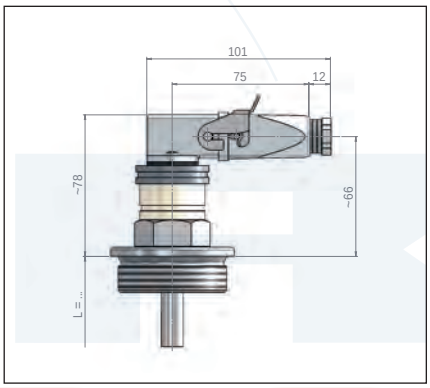
Connection type: ABA
Material quality: ABS
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -10°C ... 80°C



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



Connection type: ASHAA / ASHBA (Aluminium)
Material quality: Plastic / Aluminium
Cable entry: PG11
Ingress protection class: IP 65
Ambient temperature: -10°C ... 80°C



Connection type: ASHAB / ASHBB (Aluminium)
Material quality: Plastic / Aluminium
Cable entry: PG11
Ingress protection class: IP 65
Ambient temperature: -10°C ... 80°C

Approvals / Certificates

TÜV SÜD · DIBt WHG §19 · SIL

Further electrical connections page 110 - 111
Further process connection according to type key page 62
Further floats page 106 - 109

The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

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Type	K/PF/E-3/8-PF/..-L../12-SPFK44/13/A-../SIL	K/PF/E-1-PF/..-L../16-SPFK56/21/A-../SIL
Material quality:	PVDF	PVDF
Electrical connection:	Silicon connection cable	Silicon connection cable
Process connection:	G 3/8“	G 1“
Guide tube:	Ø 12 mm	Ø 16 mm
Length of instrument:	≤ 3000 mm	≤ 3000 mm
Float:	SPFK44/13/A Ø 44 mm	SPFK55/21/A Ø 55 mm
Specific gravity:	≥ 850 kg/m³	≥ 800 kg/m³
Design pressure:	-1 bar ... 1 bar	-1 bar ... 1 bar
Design temperature:	-10°C ... 100°C	-10°C ... 100°C
Ingress protection class:	IP 55	IP 55 (optional IP 68)
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:	5 pieces	5 pieces
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:	5 pieces	5 pieces
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:	2 pieces	2 pieces
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

K/PF/E-3/8-PF/..-L../12-SPFK44/13/A-../SIL
L1: ≥ 50 mm
U: 55 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 70 mm

Approvals / Certificates

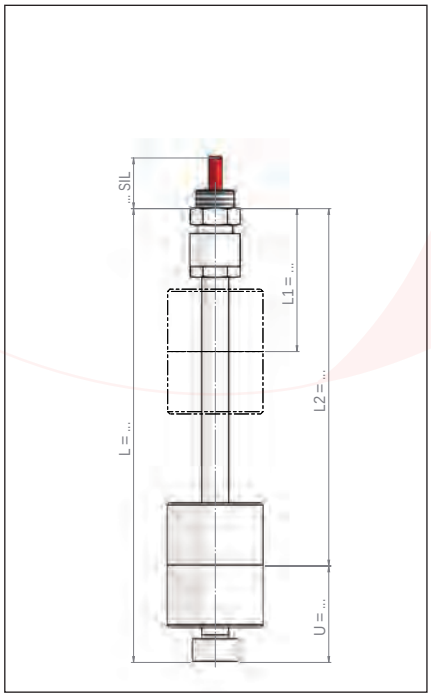
PED / WHG / SIL1

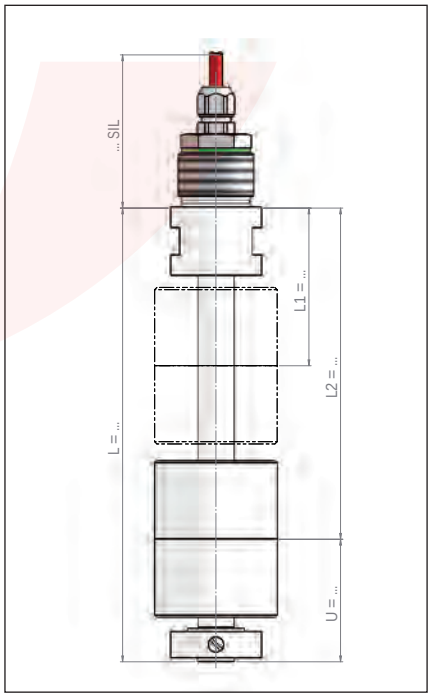
Minimum measures

K/PF/E-1-PF/..-L../16-SPFK56/21/A-../SIL
L1: ≥ 65 mm
U: 60 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 90 mm

Approvals / Certificates

PED / WHG / SIL1

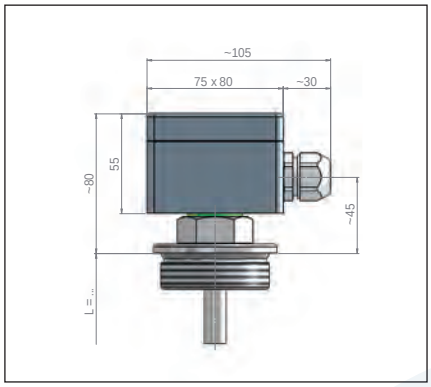




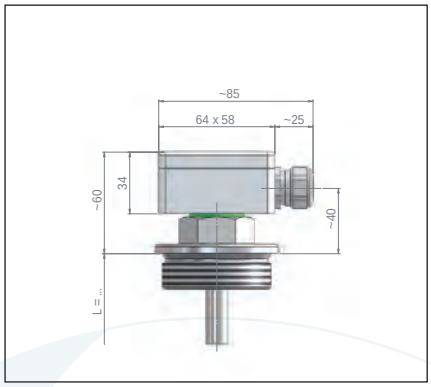
The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

Magnetic Float Switches / Stainless steel - ECTFE coated

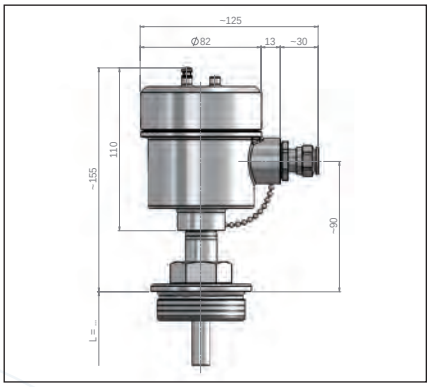
Electrical connection



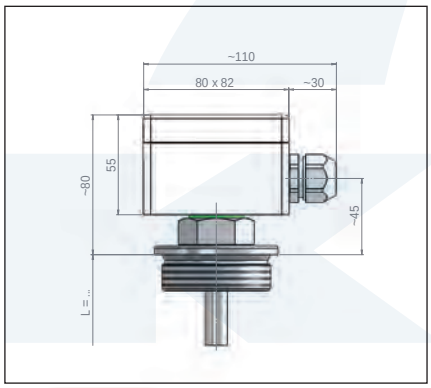
Connection type: APA / APB (Ex)
Material quality: Polyester
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -10°C ... 100°C



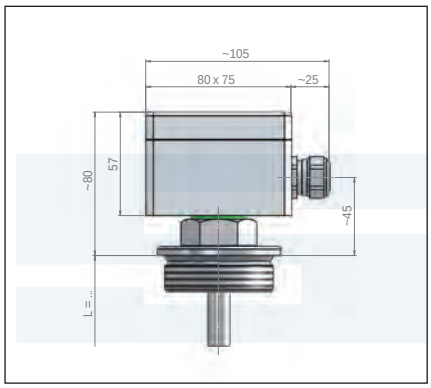
Connection type: ALE
Material quality: Aluminium coated RAL 7001
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -40°C ... 100°C



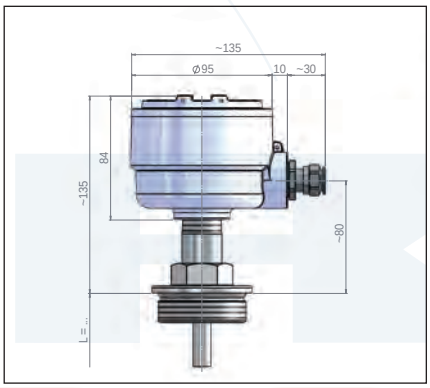
Connection type: AVA / AVDA (Exd)
Material quality: Stainless steel A4 (SS316)
Cable entry: M20 x 1.5
Ingress protection class: IP 67 / (Exd / IP68)
Ambient temperature: -40°C ... 85°C



Connection type: ABA
Material quality: ABS
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -10°C ... 80°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	Ex ia c IIC T6 - T3	II 2D	Ex tD A21 c IP6* T80°C - T190°C
II 2G	Ex d c IIC T6 - T4		

Liquid temperature Exia max. 180°C / Exd max. 120°C

Type of protection intrinsic safety Ex ia IIC switch bzw. temperature switch	I_i ≤ 100 mA		
Type of protection intrinsic safety Ex ia IIC temperature probe	U_i ≤ 28 V	I_i ≤ 100 mA	P_i ≤ 700 mW
Type of protection intrinsic safety Ex ia IIC with option /N (NAMUR EN 60947)	U_i ≤ 15 VDC	I_i ≤ 60 mA	
Type of protection „moulding“	U_N ≤ 250 VDC/AC	P_{SN} ≤ 50 W/VA	P_{FN} ≤ 700 mW
Type of protection „moulding“ with option /N (NAMUR EN 60947)	U_N ≤ 15 VDC	I_N ≤ 60 mA	
Type of protection „moulding“ with option /R22 (resistor)	U_N ≤ 250 VDC/AC	I_N ≤ 100 mA	

Further electrical connections page 110 - 111
Further process connection according to type key page 62
Further floats page 106 - 109

The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

* = The approval is dependent on the equipment combination

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Type	AVA/VEEC/FE-50/16/B1-VEEC/..-L../11-SVEECAK45/14/A	AVA/VEEC/FE-80/16/B1-VEEC/..-L../17-SVEECA73/23/V
Material quality:	Stainless steel ECTFE coated	Stainless steel ECTFE coated
Electrical connection:	AVA Stainless steel terminal box	AVA Stainless steel terminal box
Process connection:	Flange EN DN 50 / PN 16 / Form B1	Flange EN DN 80 / PN 16 / Form B1
Guide tube:	Ø 11 mm	Ø 17 mm
Length of instrument:	≤ 3000 mm	≤ 3000 mm
Float:	SVEECAK45/14/A Ø 45 mm	SVEECA73/23/V Ø 73 mm
Specific gravity:	≥ 950 kg/m³	≥ 750 kg/m³
Design pressure:	-1 bar ... 16 bar (depending on temperature)	-1 bar ... 16 bar (depending on temperature)
Design temperature:	-30°C ... 150°C	-30°C ... 150°C
Ingress protection class:	IP 67	IP 67
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:	3 pieces	5 pieces
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:	3 pieces	5 pieces
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
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

AVA/VEEC/FE-50/16/B1-VEEC/..-L../11-SVEECAK45/14/A
L1: ≥ 65 mm
U: 70 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 80 mm

Approvals / Certificates

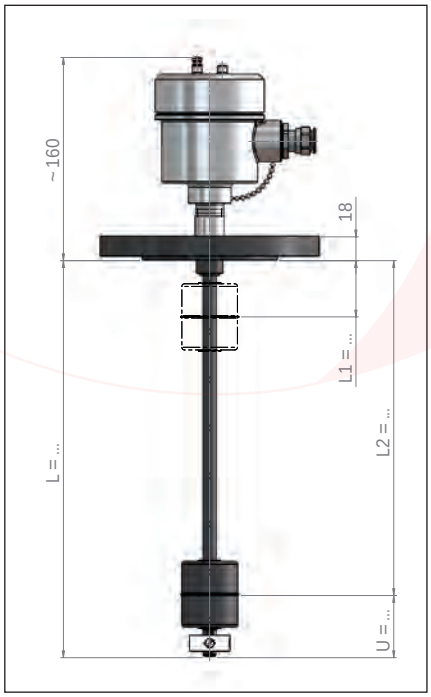
ATEX / PED / GOST / BV / WHG / SIL1

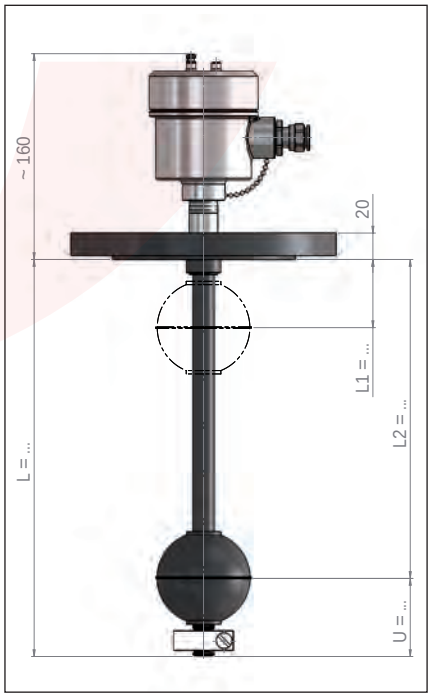
Minimum measures

AVA/V/EEC/FE-80/16/B1-VEEC/..-L../19-SVEECA73/23/V
L1: ≥ 70 mm
U: 70 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 105 mm

Approvals / Certificates

ATEX / PED / GOST / BV / WHG / SIL1

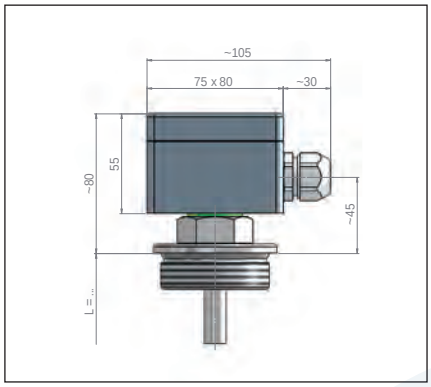




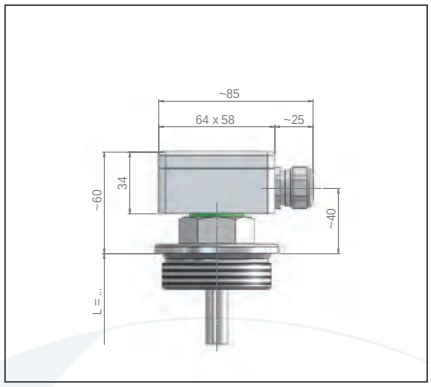
The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

Magnetic Float Switches / Stainless steel - PFA coated

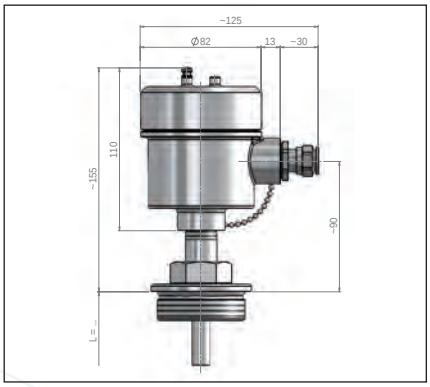
Electrical connection



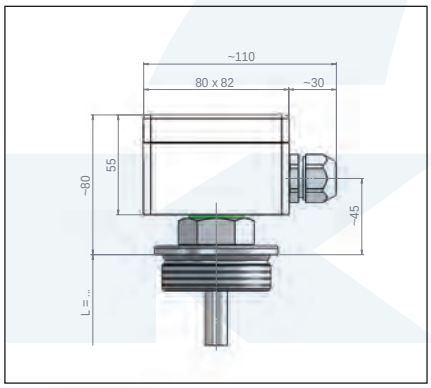
Connection type: APA / APB (Ex)
Material quality: Polyester
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -10°C ... 100°C



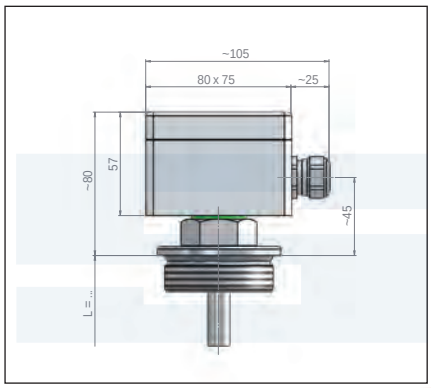
Connection type: ALE
Material quality: Aluminium coated RAL 7001
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -40°C ... 100°C



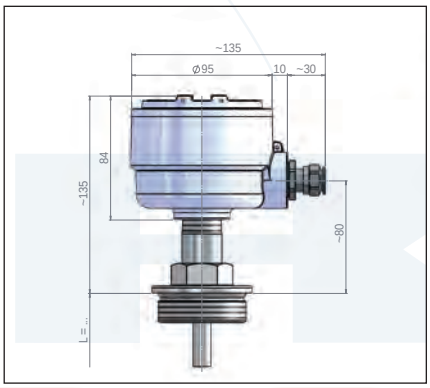
Connection type: AVA / AVDA (Exd)
Material quality: Stainless steel A4 (SS316)
Cable entry: M20 x 1.5
Ingress protection class: IP 67 / (Exd / IP68)
Ambient temperature: -40°C ... 85°C



Connection type: ABA
Material quality: ABS
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -10°C ... 80°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	Ex ia c IIC T6 - T3	II 2D	Ex tD A21 c IP6* T80°C - T190°C
II 2G	Ex d c IIC T6 - T4		

Liquid temperature Exia max. 180°C / Exd max. 120°C

Type of protection intrinsic safety Ex ia IIC switch bzw. temperature switch	I_i ≤ 100 mA		
Type of protection intrinsic safety Ex ia IIC temperature probe	U_i ≤ 28 V	I_i ≤ 100 mA	P_i ≤ 700 mW
Type of protection intrinsic safety Ex ia IIC with option /N (NAMUR EN 60947)	U_i ≤ 15 VDC	I_i ≤ 60 mA	
Type of protection „moulding“	U_N ≤ 250 VDC/AC	P_{SN} ≤ 50 W/VA	P_{FN} ≤ 700 mW
Type of protection „moulding“ with option /N (NAMUR EN 60947)	U_N ≤ 15 VDC	I_N ≤ 60 mA	
Type of protection „moulding“ with option /R22 (resistor)	U_N ≤ 250 VDC/AC	I_N ≤ 100 mA	

Further electrical connections page 110 - 111
Further process connection according to type key page 62
Further floats page 106 - 109

The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

* = The approval is dependent on the equipment combination

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Type	AVA/VPFA/FE-50/16/B1-VPFA/..-L../11-SVPFAKA45/14/A	AVA/VPFA/FE-80/16/B1-VPFA/..-L../17-SVPFAA73/23/V
Material quality:	Stainless steel PFA coated	Stainless steel PFA coated
Electrical connection:	AVA Stainless steel terminal box	AVA Stainless steel terminal box
Process connection:	Flange EN DN 50 / PN 16 / Form B1	Flange EN DN 80 / PN 16 / Form B1
Guide tube:	Ø 11 mm	Ø 17 mm
Length of instrument:	≤ 3000 mm	≤ 3000 mm
Float:	SVPFAKA45/14/A Ø 45 mm	SVPFAA73/23/V Ø 73 mm
Specific gravity:	≥ 1000 kg/m³	≥ 800 kg/m³
Design pressure:	-1 bar ... 16 bar (depending on temperature)	-1 bar ... 16 bar (depending on temperature)
Design temperature:	-30°C ... 180°C (optional 250°C)	-30°C ... 180°C (optional 250°C)
Ingress protection class:	IP 67	IP 67
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:	3 pieces	5 pieces
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:	3 pieces	5 pieces
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
Option temperature probe / Page 112		
Temperature probe:	Pt-100 / Pt-1000	Pt-100 / Pt-1000
Norm:	IEC 751 Kl.B	IEC 751 Kl.B
Option temperature switch / Page 112		
Function:	Normally closed or normally open	Normally closed or normally open
Switching capacity:	Page 112	Page 112
Accuracy / Hysteresis:	Page 112	Page 112
Temperature / Grading:	Page 112	Page 112

Minimum measures

AVA/VPFA/FE-50/16/B1-VPFA/..-L../11-SVPFAKA45/14/A
L1: ≥ 65 mm
U: 70 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 80 mm

Approvals / Certificates

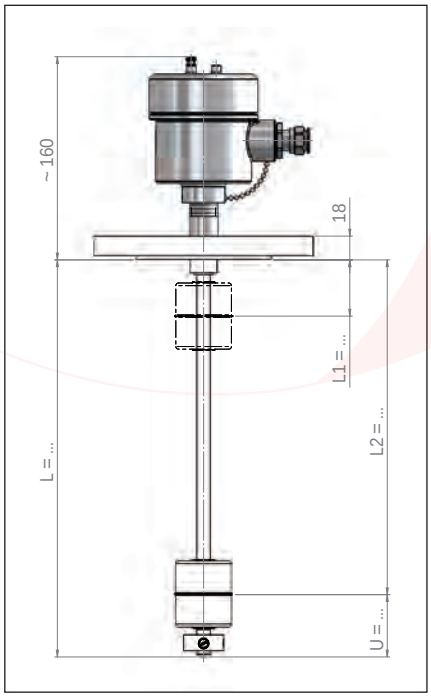
ATEX / PED / GOST / SIL1

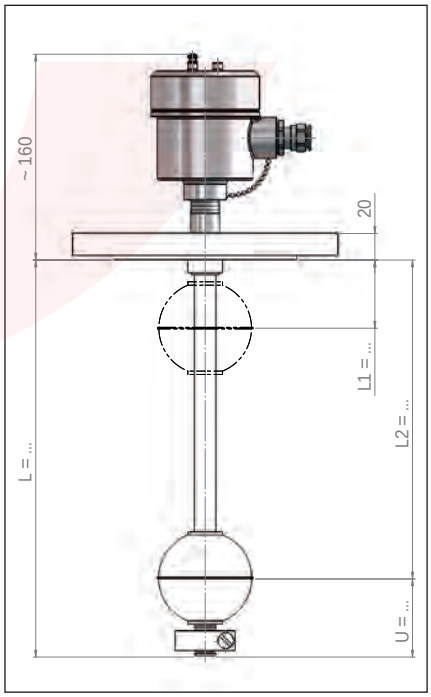
Minimum measures

AVA/VPFA/FE-80/16/B1-VPFA/..-L../19-SVPFAA73/23/V
L1: ≥ 70 mm
U: 70 mm
Contact distance: ≥ 20 mm
Float distance: ≥ 105 mm

Approvals / Certificates

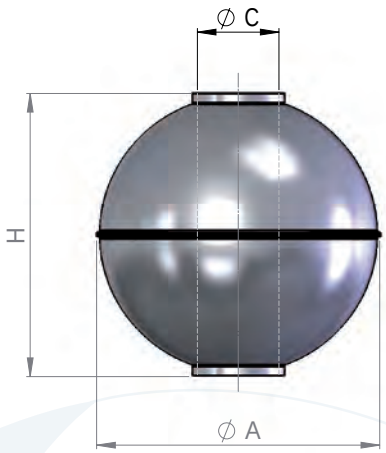
ATEX / PED / GOST / SIL1





The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

Magnetic Float Switches / Ball float



Type	Material quality	ø A	H	ø C	Min. Specific gravity	Min. / Max. Design pressure	Min. / Max. Design temperature	Min. L1	Min. U	Min. Float distance	Weight
		mm	mm	mm	kg/m³	bar	°C	mm	mm	mm	g
SV29/9/A	Stainless steel	29	28	9,4	900	-1 ... 35	-156 ... 200	35	30	45	7
SV42/9/A	Stainless steel	42	42	9,4	650	-1 ... 15	-156 ... 200	45	40	60	19
SV52/15/A	Stainless steel	52	52	15	680	-1 ... 30*	-156 ... 250	55	45	70	35
SVS52/15/A	Stainless steel	52	52	15	750	-1 ... 50*	-156 ... 250	55	45	70	40
SV62/15/A	Stainless steel	62	62	15	630	-1 ... 25*	-156 ... 250	60	50	80	60
SV72/15/V	Stainless steel	72	71,5	15	530	-1 ... 25*	-156 ... 250	65	50	90	83
SV/82/15/A	Stainless steel	82	81	15	400	-1 ... 25*	-156 ... 250	70	55	100	88
SV72/24/V	Stainless steel	72	70	24,4	620	-1 ... 25*	-156 ... 250	60	60	90	86
SV80/23/A	Stainless steel	80	75	23	630	-1 ... 25*	-156 ... 250	70	60	95	114
SV3A80/23/V	Stainless steel	80	73	23	750	-1 ... 40*	-156 ... 250	50	55	100	145
SV98/23/A	Stainless steel	98	96	23	570	-1 ... 25*	-156 ... 250	80	70	115	222
STI29/9/A	Titanium	29	28	9,4	700	-1 ... 15	-10 ... 150	35	30	45	6
STIS44/12/V	Titanium	44	44	12	780	-1 ... 100*	-10 ... 250	50	40	60	25
STI52/14/A	Titanium	52	52	14	650	-1 ... 24	-10 ... 150	55	45	70	35
STIS52/15/V	Titanium	52	52	15	780	-1 ... 150*	-10 ... 250	55	45	70	42
STI62/14/V	Titanium	62	62	14	450	-1 ... 25	-10 ... 150	60	50	80	41
STI82/14/V	Titanium	82	80	14	500	-1 ... 16	-10 ... 150	70	55	100	108
STI80/24/A	Titanium	80	76	24	600	-1 ... 16	-10 ... 150	70	60	95	103
SHC52/15/A	Alloy C	52	52	15	1260	-1 ... 55*	-196 ... 250	55	45	70	68
SHC62/15/V	Alloy C	62	62	15	700	-1 ... 25*	-196 ... 250	60	50	80	65
SHC82/15/V	Alloy C	82	81	15	500	-1 ... 16*	-196 ... 250	70	55	100	95
SHC72/24/V	Alloy C	72	70	24,4	830	-1 ... 25*	-196 ... 250	60	60	90	116
SHC80/23/V	Alloy C	80	75	23	730	-1 ... 18*	-196 ... 250	70	60	95	125
SHC98/23/V	Alloy C	98	96	23	550	-1 ... 16*	-196 ... 250	80	70	115	208
SVEECA53/14/A	ECTFE coated	53	53	14	900	-1 ... 40	-78 ... 150	70	70	80	49
SVEECB53/14/A**	ECTFE coated	53	53	14	900	-1 ... 40	-78 ... 150	70	70	80	49
SVEECA73/23/V	ECTFE coated	73	71	23	750	-1 ... 25	-78 ... 150	70	70	105	105
SVEECB73/23/V**	ECTFE coated	73	71	23	750	-1 ... 25	-78 ... 150	70	70	105	105
SVPFAA53/14/A	PFA coated	53	53	14	950	-1 ... 40*	-100 ... 250	70	70	80	52
SVPFAB53/14/A**	PFA coated	53	53	14	950	-1 ... 40*	-100 ... 250	70	70	80	52
SVPFAA73/23/V	PFA coated	73	71	23	800	-1 ... 25*	-100 ... 250	70	70	105	110
SVPFAB73/23/V**	PFA coated	73	71	23	800	-1 ... 25*	-100 ... 250	70	70	105	110

The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

* = Design temperature 200°C, higher temperatures after calculating / ** = acc. to Atex (conductive)

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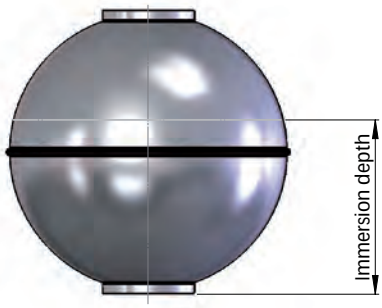
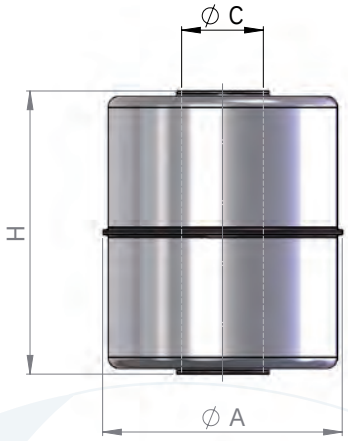


Type	Specific gravity kg/m³											
	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
	Immersion depth in mm											
SV29/9/A						20,3	18,5	17,2	16,2	15,3	14,6	14,0
SV42/9/A				31,1	27,4	25,0	23,1	21,6	20,4	19,4	18,5	17,7
SV52/15/A				38,6	34,1	31,1	28,8	27,0	25,5	24,2	23,1	22,2
SVS52/15/A					38,6	34,5	31,7	29,6	27,8	26,4	25,1	24,1
SV62/15/A				40,8	36,7	33,7	31,4	29,2	27,9	26,6	25,4	24,4
SV72/15/V			51,1	44,8	40,5	37,3	34,8	32,8	31,0	29,6	28,3	27,2
SV/82/15/A	61,3	50,3	44,1	39,7	36,5	33,9	31,8	30,1	28,6	27,3	26,2	25,2
SV72/24/V				50,5	45,2	41,4	38,6	36,2	34,3	32,7	31,3	30,1
SV80/23/A				56,2	49,9	45,6	42,3	39,7	37,5	35,7	34,1	32,8
SV3A80/23/V					54,5	49,7	46,0	43,1	40,7	38,7	37,0	35,5
SV98/23/A			75,8	65,2	58,6	53,8	50,1	47,1	44,5	42,4	40,5	38,9
STI29/9/A				21,9	19,3	17,5	16,3	15,2	14,4	13,7	13,1	12,6
STIS44/12/V					34,0	30,0	27,5	25,6	24,0	22,7	21,7	20,7
STI52/14/A				39,1	34,4	31,3	29,0	27,1	25,6	24,3	23,3	22,3
STIS52/15/V					40,9	36,1	33,0	30,6	28,8	27,2	25,9	24,8
STI62/14/V		41,9	36,2	32,5	29,7	27,6	25,9	24,5	23,2	22,2	21,3	20,5
STI82/14/V		60,1	51,2	45,7	41,7	38,6	36,1	34,0	32,3	30,8	29,5	28,3
STI80/24/A			60,4	51,8	46,6	42,8	39,9	37,5	35,6	33,9	32,4	31,2
SHC52/15/A										40,7	37,5	35,1
SHC62/15/V				48,0	42,0	38,1	35,2	33,0	31,1	29,5	28,2	27,0
SHC82/15/V		53,5	46,5	41,8	38,3	35,6	33,3	31,5	29,9	28,6	27,4	26,3
SHC72/24/V						53,0	48,1	44,5	41,8	39,5	37,6	36,0
SHC80/23/V				62,5	54,0	48,9	45,1	42,2	39,8	37,8	36,1	34,6
SHC98/23/V			70,7	61,8	55,9	51,5	48,0	45,2	42,8	40,7	39,0	37,4
SVEECA53/14/A						39,6	36,7	33,0	30,9	29,2	27,7	26,5
SVEECB53/14/A**						39,6	36,7	33,0	30,9	29,2	27,7	26,5
SVEECA73/23/V				59,8	51,5	46,5	43,0	40,2	37,9	36,0	34,4	33,0
SVEECB73/23/V**				59,8	51,5	46,5	43,0	40,2	37,9	36,0	34,4	33,0
SVPFAA53/14/A							37,7	34,6	32,3	30,4	28,9	27,6
SVPFAB53/14/A**							37,7	34,6	32,3	30,4	28,9	27,6
SVPFAA73/23/V					54,4	48,7	44,8	41,8	39,3	37,3	35,6	34,1
SVPFAB73/23/V**					54,4	48,7	44,8	41,8	39,3	37,3	35,6	34,1

The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

* = Design temperature 200°C, higher temperatures after calculating / ** = acc. to Atex (conductive)

Magnetic Float Switches / Cylindrical float



Type	Material quality	ø A	H	ø C	Min. Specific gravity	Min. / Max. Design pressure	Min. / Max. Design temperature	Min. L1	Min. U	Min. Float distance	Weight
		mm	mm	mm	kg/m³	bar	°C	mm	mm	mm	g
SVK27/10/A	Stainless steel	27	31	10	800	-1 ... 6	-156 ... 200	30	30	45	7,8
SVK44/15/A	Stainless steel	44	52	15	800	-1 ... 25*	-156 ... 250	50	45	70	43
STIK44/14/A	Titanium	44	52	14	750	-1 ... 15	-10 ... 150	50	45	70	37
SHCK44/15/V	Alloy C	44	52	15	1000	-1 ... 45*	-196 ... 250	50	45	70	52
SB18/11/A	NBR	18	25	11	800	-1 ... 6	-20 ... 80	15	40	40	2,5
SB20/9/A	NBR	19,5	20	8,4	850	-1 ... 6	-20 ... 80	15	35	35	3,3
SB23/9/A	NBR	23	25	8,4	800	-1 ... 6	-20 ... 80	15	40	40	5
SB25/9/A	NBR	25	14	9	800	-1 ... 6	-20 ... 80	15	30	30	3,5
SB30/13/A	NBR	30	45	13	700	-1 ... 6	-20 ... 80	20	65	60	14
SB40/15/A	NBR	40	30	15	700	-1 ... 6	-20 ... 80	25	50	45	17
SB50/20/A	NBR	50	45	20	700	-1 ... 6	-20 ... 80	30	70	60	41
SPK42/14/A	PVC	42	44	14	800	-1 ... 1	-15 ... 60	50	40	65	32
SPK54/22/A	PVC	54	55	22	750	-1 ... 1	-15 ... 60	65	50	75	64
SPK78/25/A	PVC	78	80	25	600	-1 ... 1	-15 ... 60	80	65	100	164
SPPK28/8/A	PP	28	29	8	800	-1 ... 1	-10 ... 80	35	35	45	9
SPPK44/13/A	PP	44	43	13	700	-1 ... 1	-10 ... 80	50	40	65	25
SPPK44/21/A	PP	44	69	21	800	-1 ... 1	-10 ... 80	50	55	90	45
SPPK56/21/A	PP	56	54	21	600	-1 ... 1	-10 ... 80	65	50	75	50
SPPK80/24/A	PP	80	79	24	500	-1 ... 1	-10 ... 80	80	65	100	126
SPFK44/13/A	PVDF	44	55	13	850	-1 ... 1	-10 ... 100	50	55	70	46
SPFK56/21/A	PVDF	56	69	21	800	-1 ... 1	-10 ... 100	65	60	90	90
SPFK80/24/A	PVDF	80	79	24	700	-1 ... 1	-10 ... 100	80	65	100	192
SVEECKA45/14/A	ECTFE coated	45	53	14	950	-1 ... 25	-78 ... 150	70	70	80	54
SVEECKB45/14/A**	ECTFE coated	45	53	14	950	-1 ... 25	-78 ... 150	70	70	80	54
SVPFAKA45/14/A	PFA coated	45	53	14	1000	-1 ... 25*	-100 ... 250	70	70	80	57
SVPFAKB45/14/A**	PFA coated	45	53	14	1000	-1 ... 25*	-100 ... 250	70	70	80	57

The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

* = Design temperature 200°C, higher temperatures after calculating / ** = acc. to Atex (conductive)

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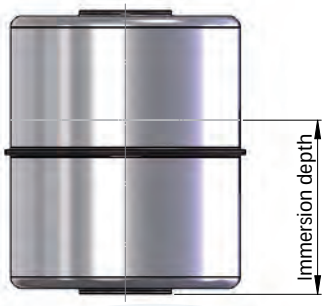


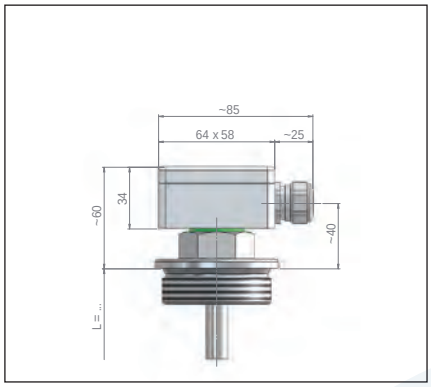
	Specific gravity kg/m³											
Type	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
	Immersion depth in mm											
SVK27/10/A					23,6	21,0	18,9	17,2	15,8	14,6	13,5	12,6
SVK44/15/A					44,5	39,5	35,6	32,3	29,6	27,4	25,4	23,7
STIK44/14/A					37,6	33,4	30,0	27,3	25,0	23,1	21,5	20,0
SHCK44/15/V							43,0	39,1	35,9	33,1	30,7	28,7
SB18/11/A					19,6	17,4	15,7	14,3	13,1	12,1	11,2	10,5
SB20/9/A						15,2	13,6	12,4	11,3	10,5	9,7	9,1
SB23/9/A					17,4	15,4	13,9	12,6	11,6	10,7	9,9	9,3
SB25/9/A					10,2	9,1	8,2	7,4	6,8	6,3	5,9	5,5
SB30/13/A				34,8	30,5	27,1	24,4	22,2	20,3	18,8	17,4	16,3
SB40/15/A				22,5	19,7	17,5	15,7	14,3	13,1	12,1	11,1	10,5
SB50/20/A				35,5	31,1	27,6	24,9	22,6	20,7	19,1	17,8	16,6
SPK42/14/A					32,5	28,9	26,0	23,6	21,7	20,0	18,6	17,3
SPK54/22/A					41,9	37,2	33,5	30,5	27,9	25,8	23,9	22,3
SPK78/25/A			63,8	54,6	47,8	42,5	38,3	34,8	31,9	29,4	27,3	25,5
SPPK28/8/A					24,1	21,4	19,3	17,5	16,0	14,8	13,8	12,8
SPPK44/13/A				29,0	25,4	22,6	20,3	18,5	16,9	15,6	14,5	13,5
SPPK44/21/A					56,0	49,7	44,8	40,7	37,3	34,4	32,0	29,8
SPPK56/21/A			43,6	37,4	32,7	29,1	26,2	23,8	21,8	20,1	18,7	17,5
SPPK80/24/A		58,8	49,0	42,0	36,7	32,7	29,4	26,7	24,5	22,6	21,0	19,6
SPFK44/13/A						41,5	37,4	34,0	31,1	28,7	26,7	24,9
SPFK56/21/A					58,9	52,4	47,1	42,8	39,3	36,2	33,7	31,4
SPFK80/24/A				64,0	56,0	49,8	44,8	40,7	37,3	34,4	32,0	29,9
SVEECKA45/14/A							41,6	37,8	34,7	32,0	29,7	27,7
SVEECKB45/14/A**							41,6	37,8	34,7	32,0	29,7	27,7
SVPFAKA45/14/A							43,9	39,9	36,6	33,8	31,4	29,3
SVPFAKB45/14/A**							43,9	39,9	36,6	33,8	31,4	29,3

The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

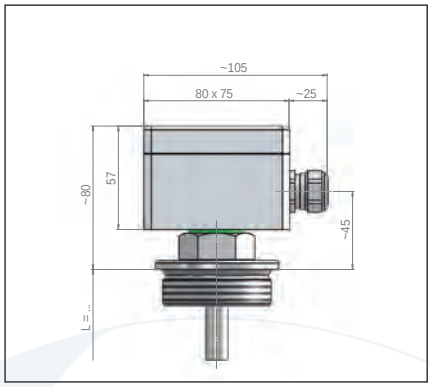
* = Design temperature 200°C, higher temperatures after calculating / ** = acc. to Atex (conductive)

Magnetic Float Switches / Electrical connection

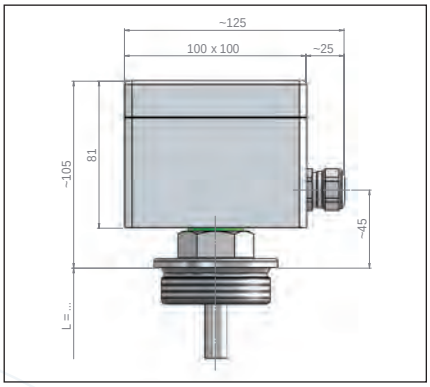
Electrical connection



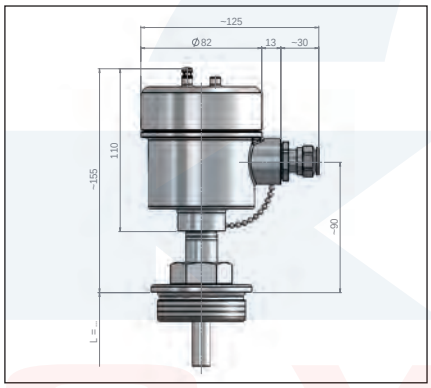
Connection type: ALE
Material quality: Aluminium coated RAL 7001
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -40°C ... 100°C
Maximal number of contact clamps: 8



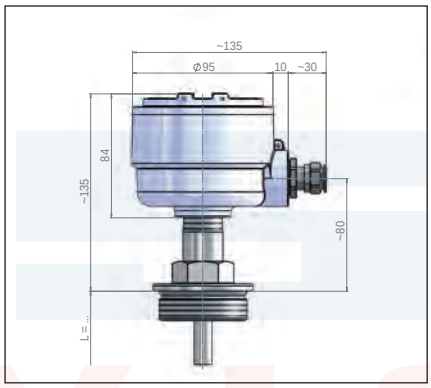
Connection type: ALF
Material quality: Aluminium coated RAL 7001
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -40°C ... 100°C
Maximal number of contact clamps: 12



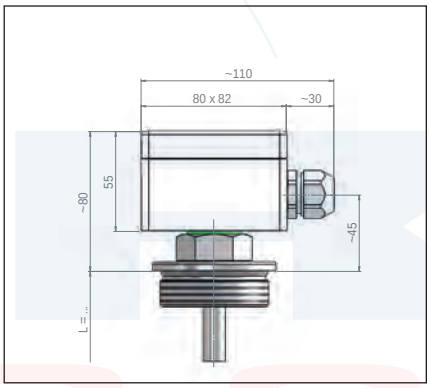
Connection type: ALG
Material quality: Aluminium coated RAL 7001
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -40°C ... 100°C
Maximal number of contact clamps: 24



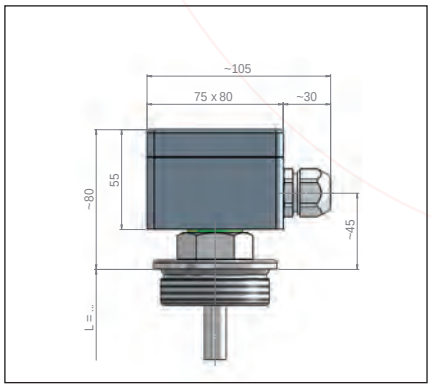
Connection type: AVA / AVDA (Exd)
Material quality: Stainless steel A4 (SS316)
Cable entry: M20 x 1.5
Ingress protection class: IP 67 / (Exd / IP68)
Ambient temperature: -40°C ... 85°C
Maximal number of contact clamps: 12



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
Maximal number of contact clamps: 8



Connection type: ABA
Material quality: ABS
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -10°C ... 80°C
Maximal number of contact clamps: 12



Connection type: APA / APB (Ex)
Material quality: Polyester
Cable entry: M20 x 1.5
Ingress protection class: IP 65
Ambient temperature: -10°C ... 100°C
Maximal number of contact clamps: 12

The magnetic float switches are based on a modular design and can be arranged individually.
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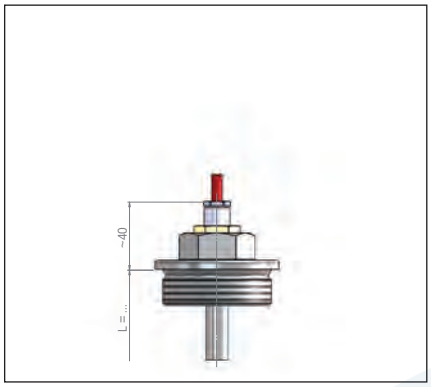
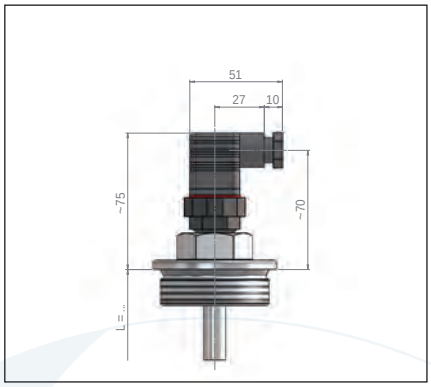
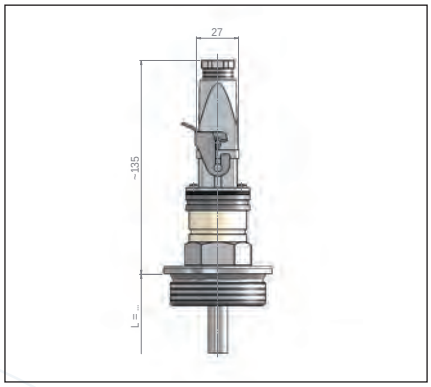
Electrical connection



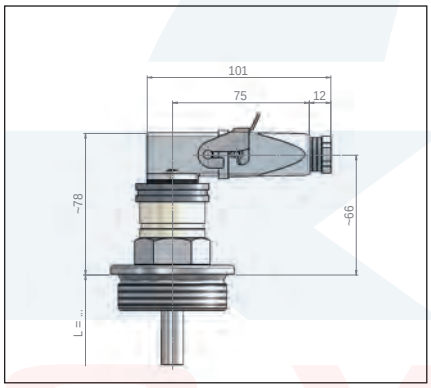
Connection type: K
Material quality: According as cable type
Cable entry: PG or metric
Ingress protection class: IP 55 (optional IP 68)
Ambient temperature: -40°C ... 200°C
Maximal number of contact clamps: -



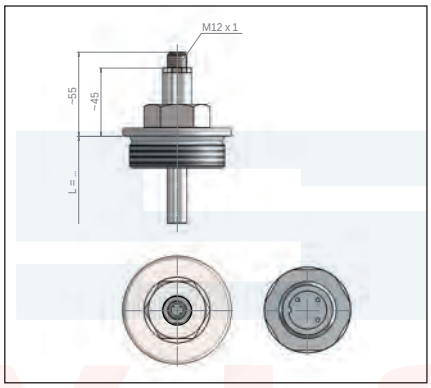
Connection type: ASH
Material quality: PA
Cable entry: M16
Ingress protection class: IP 65
Ambient temperature: -40°C ... 125°C
Maximal number of contact clamps: 3



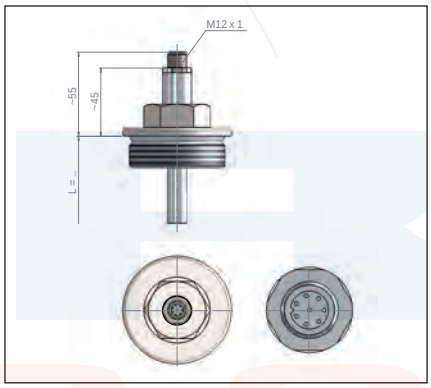
Connection type: ASHAA / ASHBA (Aluminium)
Material quality: Plastic / Aluminium
Cable entry: PG11
Ingress protection class: IP 65
Ambient temperature: -10°C ... 80°C
Maximal number of contact clamps: 6



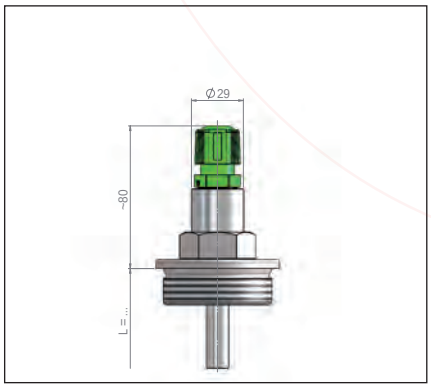
Connection type: ASHAB / ASHBB (Aluminium)
Material quality: Plastic / Aluminium
Cable entry: PG11
Ingress protection class: IP 65
Ambient temperature: -10°C ... 80°C
Maximal number of contact clamps: 6



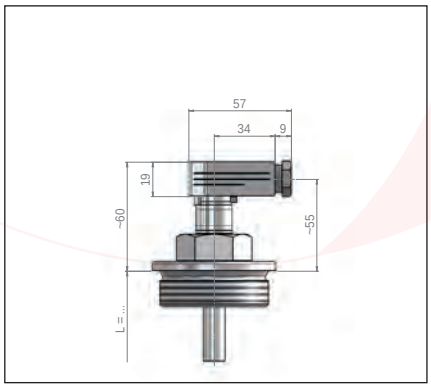
Connection type: ASMA
Material quality: Brass / PA
Connector: M12
Ingress protection class: IP 67
Ambient temperature:-25°C ... 90°C
Maximal number of contact clamps: 3



Connection type: ASMB
Material quality: Brass / PA
Connector: M12
Ingress protection class: IP 67
Ambient temperature: -25°C ... 90°C
Maximal number of contact clamps: 8



Connection type: ASQ
Material quality: PA
Cable entry: PG11
Ingress protection class:IP 67
Ambient temperature: -25°C ... 85°C
Maximal number of contact clamps: 4



Connection type: ASC
Material quality: Zinc cast
Cable entry: PG9
Ingress protection class: IP 65
Ambient temperature: -10°C ... 125°C
Maximal number of contact clamps: 7

The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

Magnetic Float Switches / Temperature sensor

Temperature switch

Type:	TO	TS
Function:	Normally closed	Normally open
Switching capacity:	230 V / 0.5 A / 40 VA	230 V / 0.5 A / 40 VA
Temperature / Grading:	50°C ... 160°C / 5 K	80°C ... 160°C / 5 K
Accuracy:	± 5 K	± 5 K
Hysteresis:	30 K ± 15 K	30 K ± 15 K
Guide tube:	≥ Ø 11 mm	≥ Ø 11 mm

Temperature switch - Pepi

Type:	TPO	TPS
Function:	Normally closed	Normally open
Switching capacity:	230 V / 0.5 A / 40 VA	230 V / 0.5 A / 40 VA
Temperature / Grading:	30°C ... 120°C / 5 K	30°C ... 120°C / 5 K
Accuracy:	± 3 K	± 3 K
Hysteresis:	± 1 K	± 1 K
Guide tube:	≥ Ø 11 mm	≥ Ø 11 mm

Temperature probe

Type:	TFA	TFB
Probe:	Pt 100	Pt 1000
Nominal response temperature:	-70°C ... 400°C	-70°C ... 400°C
Tolerance class:	B	B
Performance:	Acc. to IEC 751	Acc. to IEC 751
Connection:	2- / 3- or 4-wire	2- / 3- or 4-wire
Guide tube:	≥ Ø 8 mm	≥ Ø 8 mm

Connection cable

Type	Material quality	Max. Ambient temperature
PVC	PVC connection cable	-20°C ... 80°C
PVCB	PVC connection cable with blue coating	-20°C ... 80°C
SIL	Silicon connection cable	-60°C ... 180°C
PUR	PUR connection cable	-40°C ... 80°C
RAD	Radox connection cable	-35°C ... 120°C
FTEF	Teflon strands	-65°C ... 200°C
FPVC	PVC strands	-5°C ... 70°C

The magnetic float switches are based on a modular design and can be arranged individually.
Type key page 62 - 65

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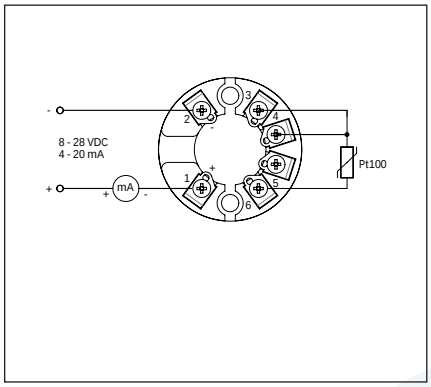
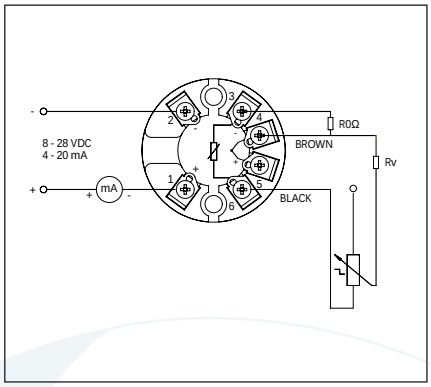
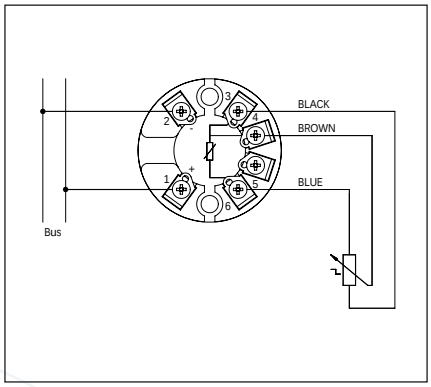
Connection diagram



Control unit TD5333..



Control unit TD5335..



Control unit TP5350..

Some further data according to chapter Control Units 1011