



Safety Precatutions:

- Installation, initial start-up and maintenance may only be performed by trained personnel! All applicable European and national regulations regarding installation of electrical equipment must be adhered to.
- The device may only be connected to supply power which complies with the specifications included in the technical data and on the serial plate!
- The device must be disconnected from all sources of power during installation and maintenance work!
- The device may only be operated under the conditions specified in the operating instructions!
- In areas exposed to explosion hazards always use Zener-barriers or ex-certificated isolating amplifiers!

Functions Description:

Bypass-magnetic level gauges combine in simple ways the optical display on site with a level control or measurement.

The magnet in the float turns at increasing level the magnet flaps of the magnet flap strip from white to red.

Technical Data:

Material:	Stainless steel 316L (1.4404), Stainless steel 304, Titanium, Hastelloy		
Pipe:	Standard: Ø60,3x2mm (others on request)		
Pressure:	Max. 250bar		
Temperature:	Max. 450°C		
Centre-to-centre distance (C):	up to 5500mm one-piece, longer versions segmented		
Magnet flap indicator:	Polycarbonate and aluminium / Perspex-glass, stainless steel		
Process connection:	DN15 - DN32 / PN16	B= 75mm	
	ANSI ½" - 1¼" 150# RF	B= 85mm	
	Stud for welding or thread ½" - 1"	B= 75mm	
	DN40- DN50 und ANSI 1½" - 2" and 1"-pipe	B= 130mm	
	(others on request)		
Cleanout drain:	¼", ½" or ¾" BSP or NPT ¼" or ½" with ball valve		
Gasket:	PTFE, Aramid, Graphite		
Ventilation:	¼", ½" or ¾", BSP or NPT, flange DN25 / PN16		
Float:	Density min. 0,38kg/dm³		

Technical Data (continued):

Length A:

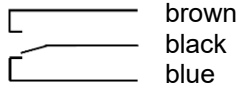
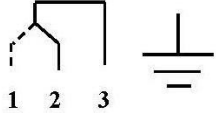
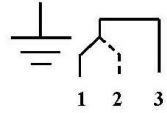
Density min. 0,94kg/dm ³	A= 210mm
Density min. 0,83kg/dm ³	A= 245mm
Density min. 0,72kg/dm ³	A= 295mm
Density min. 0,66kg/dm ³	A= 350mm

Type plate: Stainless steel

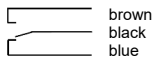
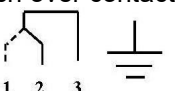
Certifications:

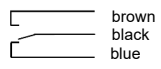
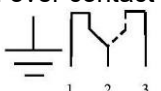
Material EN 10204 3.1
 Pressure tests
 GL or LRS-certificate
 NACE MR 01.75 / ISO 15156
 II 1/2 G c IIB T1 ...T4
 LCIE 08 ATEX 6015 X

Options: 4 - 20mA Output, HART-protocol, Profi- and Field-BUS-system

Type	HLS-15	HLS-Ha1	HLS-Ha2
			
Function	Switch over contact 	Switch over contact 	Switch over contact 
Contact type	bistable reed contact	Micro switch	bistable reed contact
Max. burden	2,5A (24V) / 60W / 60VA 250mA (230V) / 60W / 60VA	5A / 100W / 100VA	2,5A / 60W / 60VA
Voltage	24V / 230V	10 - 250V	10...230V
Temperature	-25...+95°C	-50...+380°C	-40...+180°C
Durability	1x 10 ⁹	1x 10 ⁷	1x 10 ⁸
Protection rate	IP66 / IP67 / IP68	IP67	IP66 / IP67
Connection	5m cable	M16-cable gland	M16- cable gland
Dimensions	65x25x15mm	95x65x54mm	95x65x54mm
Material	Plastics	AlSi	AlSi
Options	Temperature up to 130°C	M20-cable gland	-

Technical Data (continued):

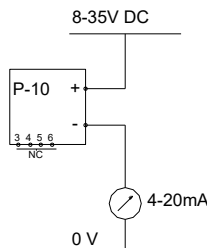
Type	HLS-25i	LMS-Ha1E
		
Function	Switch over contact 	Switch over contact 
Contact type	bistabiler Reedkontakt	Micro switch
Max. burden	0,25A / 1,3W / 1,3VA	0,5A / 1,3W
Voltage	10 - 30V	10 - 30V
Temperature	-40...+100°C	-50...+380°C
Durability	1x 10 ⁹	1x 10 ⁷
Protection rate	IP66 / IP67 / IP68	IP67
Connection	5m cabel	M20- cable gland blue
Dimensions	80x25x20mm	95x65x54mm
Material	Stainless Steel V4A	AlSi
Certifications	II 1GD Ex ia IIC T6 Ga II 1GD Ex ia IIIC T85°C IP66 / IP67 Da	EEx i "simple aparatus"

Type	HLS-25d	LMS-HaD
		
Function	Switch over contact 	Switch over contact 
Contact type	bistabile reed contact	Micro switch
Max. burden	2,5A (24V DC) / 60W 540mA (110V AC) / 60W 250mA (230V AC) / 60W	5A / 100W / 100VA
Voltage	24V DC 110V AC 230V AC	10 - 230V
Temperature	-25...+100°C	-50...+350°C
Durability	1x 10 ⁹	1x 10 ⁷
Protection rate	IP66 / IP67 / IP68	IP66 / IP67 / IP68
Connection	5m PVC-Kabel	3/4" NPT o. M20x1,5 max. 1,5mm ²
Dimensions	90x25x20mm	130x130x90mm
Material	Edelstahl V4A	Aluminium
Certifications	II 2GD Ex d IIC T6 Gb II 2GD Ex tb IIIC T85°C Db	II 2G Ex d IIC T3...T4 Gb II 2D Ex tb IIIC T135°... T200°C Db
Options		Stainless steel housing, 2x change over contact

Technical Data (continued):

Reed contact chain P-10

With the reed contact chain P-10 the actual level of the tank can be detected as 4 - 20mA signal.

Type	Standard		Ex i (intrinsically safe)	Ex d (pressure proof capsuled)
Certification			II 1G Ex ia II C T4...T6 Ga	II 2G Ex db IIC T5...T6 Gb II 2D Ex tb IIC T100°C ...T350°C Db
	12 - 30V DC			
Electrical Connection				
Temperature	-50...+350°C			
Accuracy	5mm			
Material	1.4404 (316L)			
Max. Length	5,5m			
Material connection head	ABS or Aluminium	Alum. or Stainless steel	Aluminium	
Protection rate	IP67		IP66/67 u. IP68	
Connection	M16x1,5	M20x1,5	3/4" NPT, M20x1,5	
Output	4 - 20mA / 2-wire			
Options				
	Higher temperature			
	Higher accuracy			
	Local display			
	M20x1,5	3/4" NPT, M20x1,5		
	HART			
	PROFIBUS			
	FIELDBUS			
	LC-Display			
	Output (V or Ohm)			
	Stainless steel housing			

Note.

For all electrical mounting contacts and reed contact chains observe the max. permissible operating temperatures. This maximum temperatures are based on the condition that **natural convection** is not limited by additional heat insulation or possible containment/housing.

CE Mark:

The device fulfills the legal requirements of applicable EU-guidelines

Intended Purpose:

Utilized media must be of low viscosity, any may not contain any solid matter or magnetic particles. Utilized media may not tend to become tacky, resinous, encrusted or to crystallize, thus assuring free movement of the float. Magnetic particles may accumulate at the float, resulting in erroneous level indication and other malfunctions.

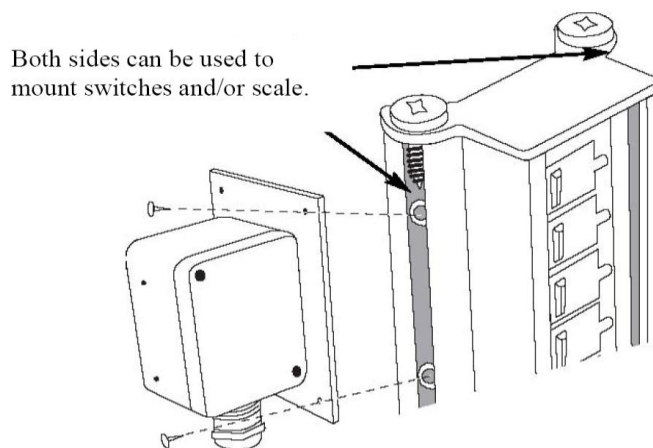
Use only original floats!

Mounting:

- Check center-to-center distance
- Remove the lower cover flange and seal
- Slide the float into the standpipe with the "Top" symbol pointing up
- Reinstall the sealing disc
- Securely tighten the lower cover flange screws with a 17mm open-end spanner or ring spanner
- Tighten the 13mm drain screw, making sure that it seals properly
- If included, close the discharge stopcock before filling

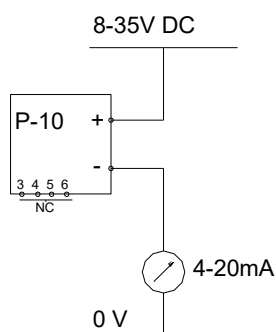
- Using suitable seals, mount the device to the tank in a stress-free fashion with appropriate nuts and screws
- Fill the tank
- Aerate the POINTER with the vent plugs if necessary
- Tighten the upper vent plug
- Check for leaks after filling

- Pressure-tests may only be operated with removed floats

Mounting of limit switches:

Elektrical Connection:

The power supply 8-35V will be attached to the +-clamp, on the ---clamp the 4-20mA signal will be put out.



Note: The clamps 3, 4, 5 and 6 are used for internal use of the manufacturer.

Maintenance:

- MAGTOP magnetic flap indicators are maintenance-free to a great extent

If cleaning should become necessary:

- Depressurize the system, or close the shut-off valves
- **Observe safety precautions for tanks containing hazardous or hot liquids!**
- Loosen the upper vent screw before emptying
- Empty via the drain screw or the discharge stopcock
- Carefully remove the lower flange, making sure that the float does not fall out of the standpipe
- Clean as required
- Reassemble as described under "Installation" above
- Inspect flange seal and replace if necessary