



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:	Ø60,3x2mm		
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 aluminum / 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	
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:

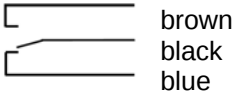
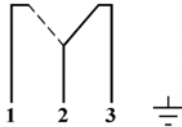
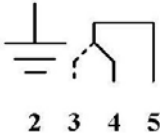
Density min. 0,94kg/dm ³	A= 210mm
Density min. 0,83kg/dm ³	A= 245mm
Density min. 0,72kg/dm ³	A= 295mm
Density min. 0,66kg/dm ³	A= 350mm

Type plate: Stainless steel

Certifications:

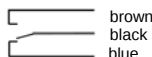
Material EN 10204 3.1
 Pressure tests
 GL or LRS-certifikate
 NACE MR 01.75 / ISO 15156
 II 1/2 G c IIB T1 ...T4
 LCIE 08 ATEX 6015 X

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

Type	104450	LMS-Ha1	LMS-Ha2
			
Function	Switch over contact 	Switch over contact 	Switch over contact 
Contact type	bistabile reed contact	Micro switch	bistabile reed contact
Max. burden	0,8A / 40W / 60VA	2A / 40W / 100VA	0,8A / 60W / 40VA
Voltage	10 - 230V	10 - 230V	10 - 230V
Temperature	-25...+75°C	-50...+380°C	-40...+150°C
Durability	1x 10 ⁹	1x 10 ⁷	1x 10 ⁸
Protection rate	IP67	IP67	IP65
Connection	5m cable	M16-cable gland	M16- cable gland
Dimensions	86x26x14mm	95x65x54mm	100x75x40mm
Material	PA6 grey	AlSi	AlSi
Options	Temperature up to 130°C	M20-cable gland	-

Technical Data (continued):

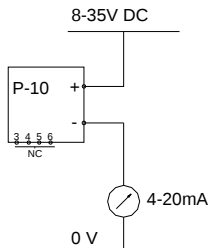
Type	610045 Eexi	LMS-Ha1E
		
Function	Switch over contact 	Switch over contact 
Contact type	bistabile reed contact	Micro switch
Max. burden	0,6A / 45W / 45VA	0,5A / 20W / 30VA
Voltage	10 - 24V	10 - 24V
Temperature	-25...+85°C	-50...+380°C
Durability	1x 10 ⁹	1x 10 ⁷
Protection rate	IP67	IP65
Connection	5m cable	M20- cable gland blue
Dimensions	98x25x19mm	95x65x54mm
Material	Aluminum	AlSi
Certifications	II 2G EEx ia II C T6 II 2D IP67 100°C	EEx i "simple apparatus"
Options	10m cable	
Temperature up to 140°C		

Typ	610045 Eexm	LMS-HaD
		
Function	Switch over contact 	Switch over contact 
Contact type	bistabile reed contact	Micro switch
Max. burden	0,6A / 45W / 45VA	2A / 40W / 100VA
Voltage	10 - 230V	10 - 230V
Temperature	-25...+85°C	-40...+300°C
Durability	1x 10 ⁹	1x 10 ⁷
Protection rate	IP67	IP65
Connection	5m cable	¾" NPT max. 1,5mm ²
Dimensions	98x25x19mm	115x90x85mm
Material	Aluminum	Aluminum
Certifications	II 2G EEx m IIC T6 II 2D IP67 100°C	II 2G EEx d IIC T6 EEx d I 150°C
Options	10m cable	M20x1,5

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	EEx i (intrinsically safe)	EEx d (pressure proof capsuled)
Certification		EEx ia II C T1..T6 ATEX II 1 GD	II 2G EEx d IIC T6 EEx d I 150°C
Power supply	8 - 35V DC	8 - 30V DC	8 - 30V DC
Electrical Connection			
Temperature	-40...+150°C	-40...+120°C	-40...+120°C
Accuracy	5mm	5mm	5mm
Material	RVS 316L	RVS 316L	RVS 316L
Max. Length	5,5m	5,5m	5,5m
Material connection head	ABS	ABS	Aluminum
Protection rate	IP67	IP67	IP65
Connection	M16x1,5	M16x1,5	½" NPT
Output	4 - 20mA / 2-wire	4 - 20mA / 2-wire	4 - 20mA / 2-wire
Options			
	Higher temperature	Higher temperature	Higher temperature
	Higher accuracy	Higher accuracy	Higher accuracy
	Local display	Local display	Local display
	M20x1,5	M20x1,5	¾" NPT, M20x1,5
	HART	HART	HART
	PROFIBUS	PROFIBUS	PROFIBUS
	FIELD BUS	FIELD BUS	FIELD BUS



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!

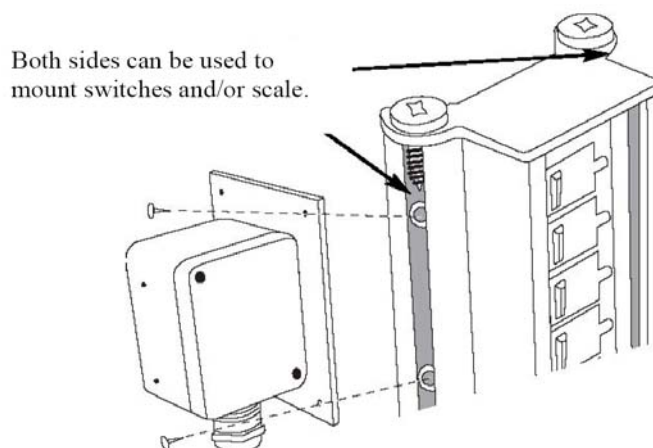
Mounting:

- 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

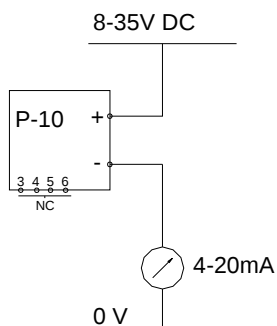
- Pressure-tests may only be operated with removed floats

Mounting of limit switches:



Elektrical Connection:

The power supply 8-35V DC 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