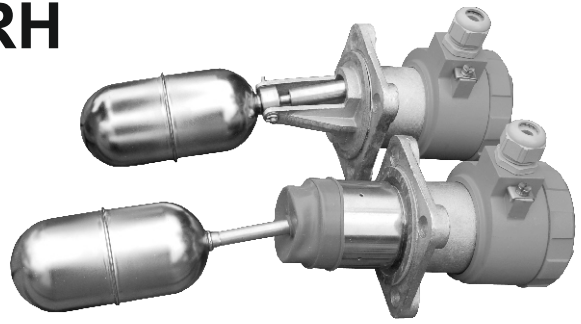


Level switch type ERH

- ✓ Explosion proof version
- ✓ Wetted parts material 316LSS
- ✓ Housing material: Aluminium or 316SS
- ✓ Housing protection IP66/68
- ✓ Nominal pressure 40bar
- ✓ Marine certificates (DNV-GL, LR, BV, PRS)

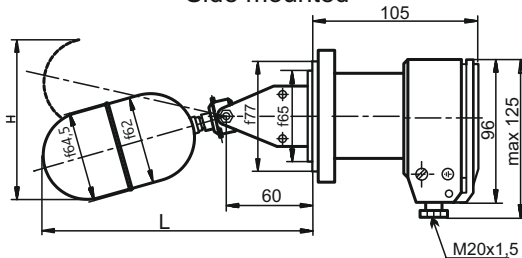


Application

Float level switches are used for point level detection of liquids in all type of vessels. Operation without external power, side or top mounting, wide temperature and pressure ranges, various process connections, stainless steel wetted parts, Ex version and marine certificates make it a universally applicable level switch. Level switches are available with floats in two sizes: R64.5 x 130mm or R52 x 162mm)

Type	IP	ATEX	DNV-GL	LR	BV	PRS	PZH
ERH-xx-04	IP66						
ERH-xx-06	IP66		•	•	•	•	•
ERH-xx-07	IP68		•	•	•	•	
ERH-xx-16	IP66	•	•	•	•	•	
ERH-xx-16.1	IP68	•	•	•			

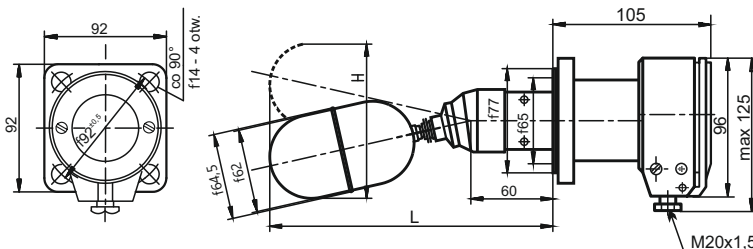
ERH-01-...
Side mounted



ERH-01-04, ERH-01-06, ERH-01-07
ERH-02-04, ERH-02-06, ERH-02-07

Symbol	H [mm]	L [mm]	Hysteresis [mm]
- 1	120	190	10
- 2	140	230	20
- 3	150	255	30

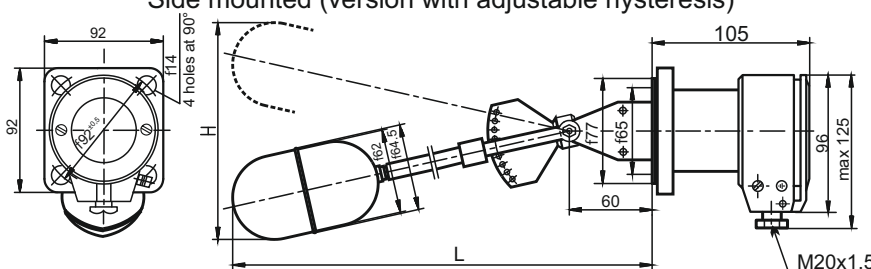
ERH-02-...
Side mounted (version with protection sleeve)



ERH-01-16, ERH-01-16.1
ERH-02-16, ERH-02-16.1

Symbol	H [mm]	L [mm]	Hysteresis [mm]
- 1	140	230	10
- 2	180	305	20
- 3	240	405	30

ERH-03-...
Side mounted (version with adjustable hysteresis)

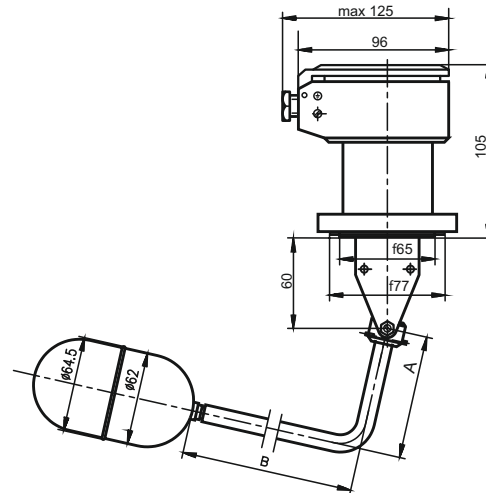
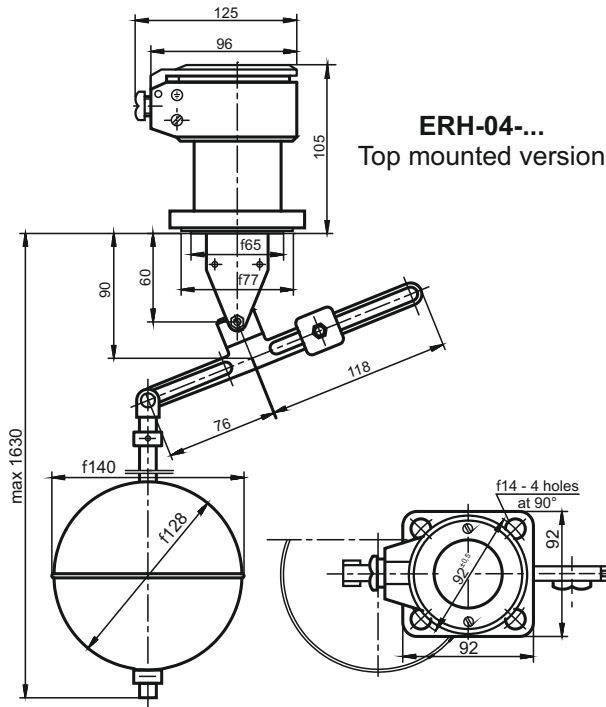


ERH-03-04, ERH-03-06, ERH-03-07

Symbol	H [mm]	L [mm]	Hysteresis [mm]
- 1	680	510	100...400
- 2	450	380	50...250

ERH-03-16, ERH-03-16.1

H [mm]	L [mm]	Hysteresis [mm]
680	510	50...400

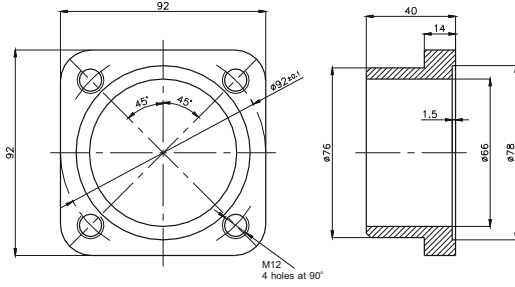
ERH-01-...-4-... / ERH-02-...-4-...
 Top mounted version

Technical data

Parameters		ERH-01-	ERH-02-	ERH-03-	ERH-04-
Hysteresis	ERH-xx-04, -06, -07	10, 20, 30 mm		50...250 mm	32...1350 mm
	ERH-xx-16, -16.1			100...400 mm	
Repeatability		±15%		±15%...±2% depending on the range	
Min. medium density		0,60 g/cm ³			
Max. process pressure	ERH-xx-04, -06, -16	4,0 MPa			1,6 MPa
	ERH-xx-07, -16.1	0,2 MPa			
Max. medium temperature	ERH-xx-04, -06	250°C			
	ERH-xx-16	100°C			
	ERH-xx-07, -16.1	70°C			
Ambient temperature		-25...+70°C			
Ingress Protection	ERH-xx-04, -06, -16	IP66			
	ERH-xx-07, -16.1	IP68			
Weight	ERH-xx-yy	1,8 kg	2,0 kg	2,1 kg	3,0 kg
	ERH-xxK-yy	2,6 kg	2,8 kg	2,9 kg	3,8 kg
	1m of cable	0,2 kg			
Explosion-proof	ERH-xx-16, -16.1	Ex II 1/2G c Ex de IIBT4 Ga/Gb			
Application		Liquids without contaminations by solid suspensions			Liquids without contaminations and contaminated by solid suspensions
Electric parameters	ERH-xx-04, -06, -07	AC15* U ≤ 230V; (50...60)Hz; I ≤ 10A; durability of contacts ≥ 3x10 ⁵ DC13** U ≤ 220V; I < 0,6A; durability of contacts ≥ 0,3x10 ⁵ Minimum voltage and switching current 10V; 20mA Cross section of connecting cables: one-wire 1...2,5mm ² multi-wire 0,75...1,5mm ²			
	ERH-xx-16, -16.1	AC15* U ≤ 230V (50...60)Hz; I ≤ 2,5A; durability of contacts ≥ 0,85x10 ⁵ DC13** U ≤ 220V; I < 0,3A; durability of contacts ≥ 0,3x10 ⁵ Minimum voltage and switching current 10V; 20mA Cross section of connecting cables: one-wire 1mm ² multi-wire 1mm ²			

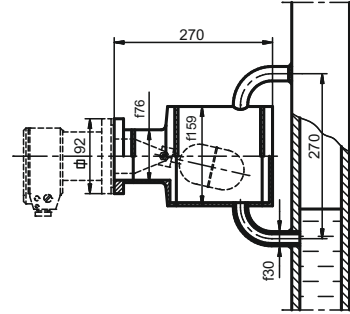
Category of usage: * acc. to PN-EN 60947-5-1, Electromagnet control (>72VA); ** acc. to PN-EN 60947-5-1, Electromagnet control

Accessories

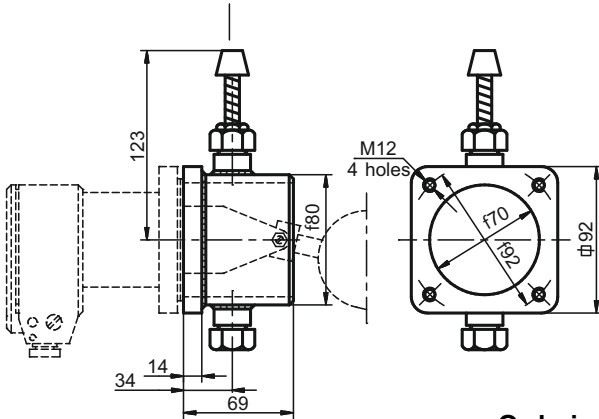
Counterflange type ER2-1646



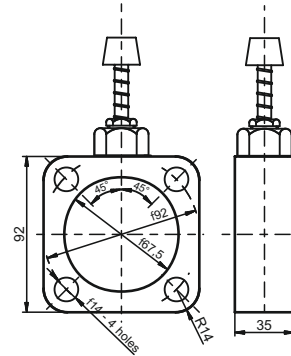
Assembly chamber ER3-1631



Tester ER3-1495



Tester ER3-1560



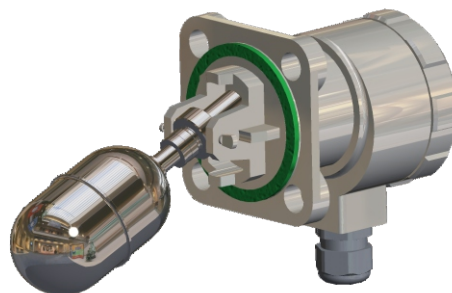
Ordering procedure

Model	Code	Description	
ERH		Level switch	
Constructional version	-01	Standard version	
	-02	Version for contaminated liquids with protection sleeve	
	-03	Version with adjustable hysteresis	
	-04	Top mounting version	
Version/certificate	-04	IP66, standard version	
	-04K	IP66, standard version, SS version	
	-06	IP66, marine approval, hygienic approval	
	-06K	IP66, marine approval, hygienic approval, SS version	
	-07	Submersible version IP68	
	-07K	Submersible version IP68, SS version	
	-16	IP66, explosion proof version	
	-16K	IP66, explosion proof version, SS version	
	-16.1	Submersible version IP68, explosion proof version	
	-16.1K	Submersible version IP68, explosion proof version, SS version	
Floating arm length/hysteresis	Options for ERH-01 and ERH-02 only	-1	Hysteresis h=10mm
		-2	Hysteresis h=20mm
		-3	Hysteresis h=30mm
		-4-0	Floating arm length A=125mm, B=125mm
		-4-1	Floating arm length A=185mm, B=80mm
		-4-2	Floating arm length A=250mm, B=125mm
		-4-3	Floating arm length A=140mm, B=120mm
		-4-4	Floating arm length A=100mm, B=120mm
		-4-5	Floating arm length A=120mm, B=80mm
		-4-6	Floating arm length A=150mm, B=80mm
	-4-Y	Floating arm length on request (please specify A and B)	
	Options for ERH-03 only	-1	Adjustable hysteresis min 100mm, max 400mm
		-2	Adjustable hysteresis min 50mm, max 250mm
		for ERH-03-16 and ERH-03-16.1 hysteresis min 50mm, max 400mm	
Cable	-1	Without cable	
	-2	With cable L= ...m (standard 3m, other length on request,)	
Accessories	/ER3-1560-1	Testing equipment (material: St3S)	
	/ER3-1560-2	Testing equipment (material: 316Lss)	
	/ER3-1495	Testing equipment to weld in a tank	
	/ER2-1646-1	Counter flange (material: St3S)	
	/ER2-1646-2	Counter flange (material: 316Lss)	
	/ER3-1631	Assembly chamber	
	/DN80	Process connection flange DN80	
	/ANSI 3"	Process connection flange ANSI 3" 150LB	

Float level switch ERH-SMALL

Features

- 4 Small in-tank dimensions
- 4 Standard flanged mounting 92x92
- 4 High reliability switching
- 4 Several options e.g. fully stainless steel, IP66/IP68, ATEX



Description

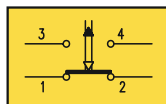
The limit level signalling or two-term liquid level control in the open or closed pressure tanks. The level switches can operate in neutral liquids, or aggressive ones not acting on stainless steel (316 SS).

Technical data

Minimum S.G.	0,70 g/cm ³
Maximum pressure	4,0 MPa
- for operation at full submersion	0,2 MPa
Operating temperature	80°C
- for operation at full submersion	70°C
Ambient temperature	-25 °C...+ 70°C
Electric rating	
- standard versions	400 V AC; 10A 220 V DC; 0,6A
- Ex versions	230 V AC; 2,5A 220 V DC; 0,3A
Hysteresis	20mm
- Ex versions	15mm
Protection enclosure	IP66
- for operation at full submersion	IP68
Wetted parts material	316L SS
Housing material	Al alloy or 316 SS (see table)
Weight	1,8kg or 2,6kg (fully SS)

Microswitches

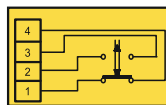
Electrical diagram standard version:
ERH-01-06- and -07



Microswitch **83 140**
(silver plated contacts)



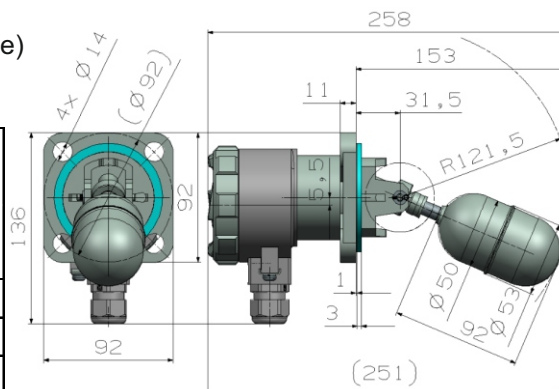
Electrical diagram Ex version:
ERH-01-16- and -16.1-



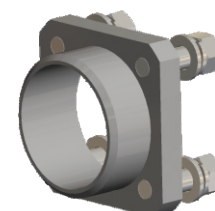
Microswitch Ex version
ER3-1536



Dimensions



For mounting ERH-SMALL we suggest to use the counter flanges (optional equipment):
 - **ER2-1646-1** (carbon steel)
 - **ER2-1646-2** (stainless steel)
 Screws and nuts in set.



Ordering

Code	Wetted parts	Housing	Protection	ATEX Certificate
ERH-01-06-SMALL	316L	Al alloy	IP66	
ERH-01-06-K-SMALL	316L	316	IP66	
ERH-01-07-SMALL	316L	Al alloy	IP68	
ERH-01-07-K-SMALL	316L	316	IP68	
ERH-01-16-SMALL	316L	Al alloy	IP66	☑
ERH-01-16-K-SMALL	316L	316	IP66	☑
ERH-01-16.1-SMALL	316L	Al alloy	IP68	☑
ERH-01-16.1-K-SMALL	316L	316	IP68	☑

* ATEX II 1/2G c Ex de IIB T4 Ga/Gb

Order example

Fully stainless steel level switch with IP68 housing protection degree, including stainless steel counter flange: **ERH-01-07-K-SMALL + ER2-1646-2**

Bilge level switch ERH-11-20

Features

- 4 Designed for dirty liquids
- 4 High reliability switching
- 4 Several options e.g. protective casing, test devices and other
- 4 Fully stainless steel (316L)
- 4 Protection class IP68
- 4 Marine approval DNV-GL



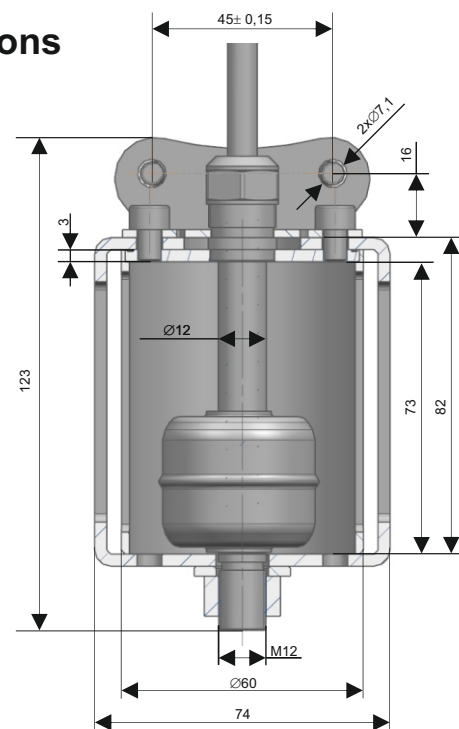
Description

The ERH-11-20 switches are designed for general purpose on ships - especially for bilges and other places with difficult conditions - and in other industries. These switches are resistant to mechanical damage thanks to their solid housing. The 3mm thick housing is much stronger as that of competing switches. This ensures long service life.

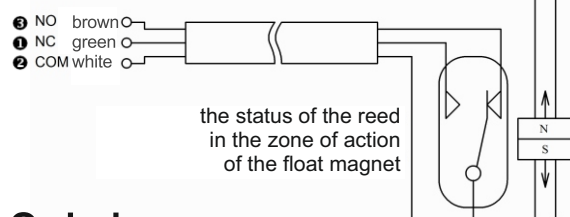
Technical data

Minimum S.G.	0,70 g/cm ³
Maximum pressure	1,2 MPa
Temperature	-25 °C...+ 80°C
Switching point	approx. in the middle of the switch pipe
Electric rating	230 V AC; 100VA; 1A 223 V DC; 50W; 0,5A
Realized functions	open, close, change-over
Electrical connection	cable 3m (standard)
Installation type	cable up (with test device) cable up or down (others)
Protection class	IP68
Material	316L SS

Dimensions



Electric diagram



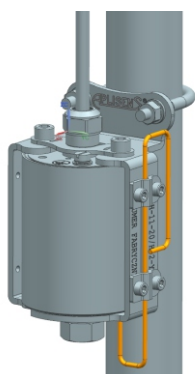
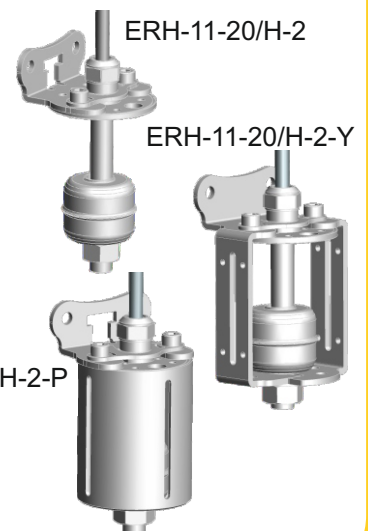
Ordering

ERH-11-20	Bilge level switch with mountain bracket	
	/H-2	Switching point approx. in the middle of switching pipe & electric connector with cable 3m *
	Additional options	
	-Y	With yoke / shackle
	-P	With protection of float
	-YP/Tester	With protection of float and test device

* other lengths of cable upon the order

Order example

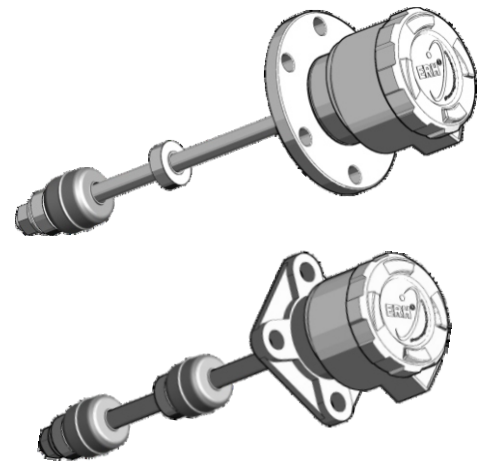
Bilge level switch with mountain bracket, cable 3m, protection of float and tester: **ERH-11-20/H-2-YP/Tester**





Magnetic level switch ERH-xx-20

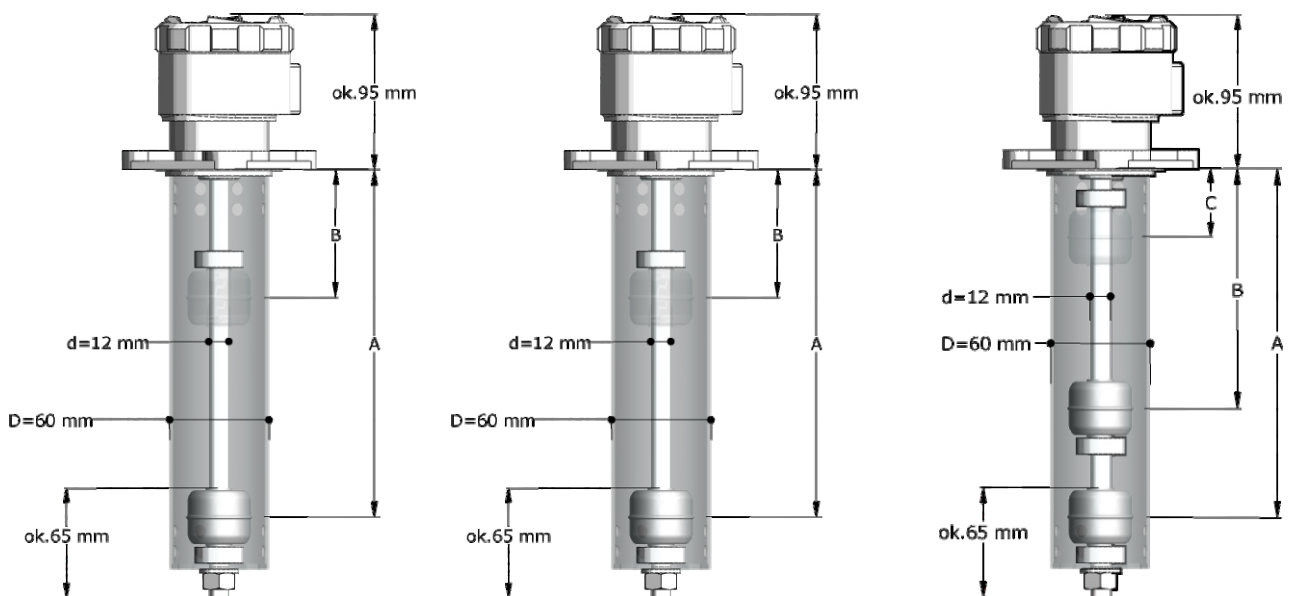
Level signalling of the medium having minimum density 0,70 g/cm³. The basic version, mounted from the top, is available with 92x92mm flange connector, head made from aluminium alloy and M20x1,5 cable gland with casing protection degree IP68. Other versions of mechanic or threaded flange connectors according to the ordering code. There is also a possibility of ordering the level switch with connector according to the requirements, e. g. with flange acc. to DIN or ANSI standard. The level switch can also be ordered in version fully made from acidproof steel, with additional cover protecting the float, made from stainless steel, with additional cover protecting the float, as well as with certified cable of optional length. The level switch has DNV GL Marine approval.



Technical data

Min. medium density	0,70 g/cm ³	Ingress Protection	IP68
Max. process pressure	1,0 MPa	Material of the wet part	316L
Ambient temperature	-25°C...+ 60°C	Material of the dry part	aluminum alloy or 316
Medium temperature	-25°C...+ 80°C	Floating element	Ø40x35mm
Switching points	1,2 or 3	Protection tube	Ø60
Switching rate *	230 V AC; 100VA; 1A 230 V DC; 50W; 0,5A	Weight of the level switch **	0,3...8,5 kg
Hysteresis	10mm	Weight of the cable	0,15 kg/m

* maximum parameters of the reed relays apply to the loads of resistance character; for inductive loads such as relay coils, one should apply adequate protecting systems (detailed pieces of information in Operation Manual)
** it depends on the version



The dimensions A, B and C depend on the ordered version. For one signalling point: A min. 50mm, A max. 1000mm. For two signalling points: A min. 150mm, A max 1000mm; B min. 50mm, B max 900mm; (A – B) min. 100mm. For three signalling points: A min. 250mm, A max 1000mm; B min. 150mm, B max 900mm; C min. 50mm, C max 800mm; (A – B) min. 100mm, (B – C) min. 100mm.

Ordering procedure

ERH-02-20	Level switch with flange connector □92mm (4 holes Ø14/Ø92mm)
ERH-04-20	Level switch with flange connector Ø120mm (6 holes Ø12/Ø100mm)
ERH-06-20	Level switch with flange connector DN80PN40 (8 holes Ø18/Ø160mm)
ERH-09-20	Level switch with threaded connector 2" NPT
ERH-XX-20	Level switch with connector according to the order
	/A 1 switching point (give value A in mm)
	/A/B 2 switching points (give values A and B in mm) *
	/A/B/C 3 switching points (give values A, B and C in mm) *
	-1 Electric connector without cable
	-2 Electric connector with cable 3m length **
	-3 Electric connector ER2-1593 with cable 3m length **
	-K Fully stainless steel version ***
	-P With protection of float
ERH-11-20	Level switch with mounting clamp (mini version - fully stainless steel)
	/H 1 switching point approximately in the middle of tube length
	-2 Electric connector with cable 3m length **
	-Y With yoke / shackle
	-P With protection of float

* the dimensions A, B and C depend on the ordered version; for one signalling point: A min. 50mm, A max. 1000mm; for two signalling points: A min. 150mm, A max 1000mm; B min. 50mm, B max 900mm; (A – B) min. 100mm; for three signalling points: A min. 250mm, A max 1000mm; B min. 150mm, B max 900mm; C min. 50mm, C max 800mm; (A – B) min. 100mm, (B – C) min. 100mm

** other lengths of cable upon the order

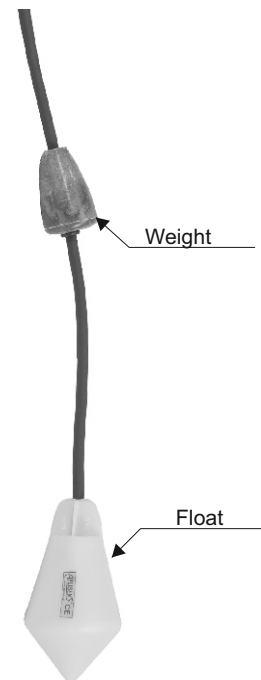
*** for controllers designed for operation in full submersion - we recommend selection of version options - fully stainless steel

Float level switch ERH-01-18

- ✓ **Min/max signalization**
- ✓ **Range change possible by changing weight position**
- ✓ **Direct control of low power pumps**
- ✓ **Chemical resistance to most common media**
- ✓ **High mechanical and electrical resistance**

Technical data

Minimal signalization range	350mm ±15%
Max. medium temperature	85°C
Max. pressure	0,35 MPa
Nominal current I_{nc}	20 A
Power supply	250V AC-50/60Hz
Contacts	filling - black – blue emptying - black – brown
Ambient temperature	-25...+80 °C
Ingress protection class	IP68
Cable length	10 or 20 m
Cable type	Neoprene HR HY H07RN8-F 3x1mm ²
Float material	Copolymer polypropylene
Additional accessories	Weight



Ordering procedure

ERH-01-18 / L = ... m/...

Cable length

Optional: weight