

SELECTION GUIDE

72 SERIES – LEVEL CONTROL RELAYS FOR CONDUCTIVE LIQUIDS

Level control relays and float switches with emptying or filling functions
for conductive liquids and the beverage sector



ABOUT US



Finder was founded in Italy in 1954. Since then it has been designing and manufacturing a wide range of electromechanical and electronic components for both the residential and industrial sectors.

Today, thanks to its global vision, Finder now distributes its products around the world through a network of 28 company-owned subsidiaries and more than 80 trade partnerships.

Finder is an international family made up of more than 1300 individuals, all united by the same values and passion for our products.



14 500

Different products to satisfy a myriad of applications. From products at the heart of automation to the control of machines, power, time, temperature, liquid level, light and much more.

OUR PRODUCTS CARRY MORE CERTIFICATIONS THAN ANY OTHER RELAY MANUFACTURER



FINDER IS AN ITALIAN BRAND WITH A WORLDWIDE PRESENCE

4

PRODUCTION PLANTS
IN EUROPE

28

SUBSIDIARIES

+80

OFFICIAL DISTRIBUTORS



Applications everywhere



Agriculture

- Level control for irrigation channels and systems
- Level control for water tanks, reservoirs or underground wells
- Level control for sewage tanks or mixing plants



Residential and commercial sectors

- Level control for pools, fountains and aquariums
- Flood control for laundries and utility rooms
- Submerged pump control



Food

- Condensation control for refrigerated cabinets
- Level control for the beverage sector
- Level control of drinking water tanks



Water treatment and distribution

- Control of filling and emptying of tanks
- Control of emptying and filling functions for treated drinking water
- Level control for sewage treatment plants
- Controlling the supply of hot water heated by solar energy



Level control relays for conductive liquids

Type 72.01 and 72.11

Are suitable for the level control of conductive liquids.
2 electrodes for control about a single level, or 3 electrodes for control between minimum and maximum limits.

- Emptying or filling functions
- Control about a single level or between Min./Max. limits
- LED indicator, of contact status
- 1 CO (SPDT) 16 A - 250 V AC
- Positive logic output
- Nominal voltage AC or DC
- Special version for low loads down to 5 V, 1 mA
- Reinforced insulation between supply/contacts/electrodes (6 kV - 1.2/50 μ s)
- 35 mm rail (EN 60715) mount

Function selector

LED

Sensitivity control



Type 72.01

LED



Type 72.11

CE EAC UL

	Type 72.01	Type 72.11
Filling function	✓	✓
Emptying function	✓	✓
Sensitivity	Adjustable 5...150 k Ω / 5...450 k Ω	Fixed 150 k Ω
Run-on time	0.5 - 7 seconds	Fixed 1 second
LED indicator	✓	✓
Contact configuration	1 CO (SPDT)	1 CO (SPDT)
Rated current/Maximum peak current	16/30 A	16/30 A
Nominal voltage AC (50/60 Hz)	24, 110...125, 230...240, 400 V	24, 110...125, 230...240 V
Nominal voltage DC	24 V	24 V
Insulation: supply/contacts/electrodes	6 kV	6 kV
Electrical life at rated load	100.000 cycles	100.000 cycles
Ambient temperature	- 20...+60°C	- 20...+60°C
Functions	FL = Level control by Filling, Long (7 s) run-on delay EL = Level control by Emptying, Long (7 s) run-on delay FS = Level control by Filling, Short (0.5 s) run-on delay ES = Level control by Emptying, Short (0.5 s) run-on delay	F = Level control by Filling, Run-on time fixed at 1 s E = Level control by Emptying, Run-on time fixed at 1 s

Examples types of liquids

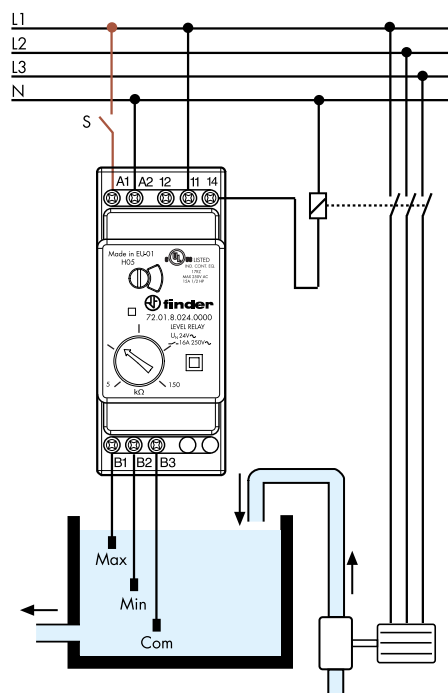
Suitable liquids

- potable water
- well water
- water (general use)
- rainwater
- sea water
- sewage
- wine
- liquid fertilizer
- milk, Beer, Coffee
- liquids with low-percentage alcohol

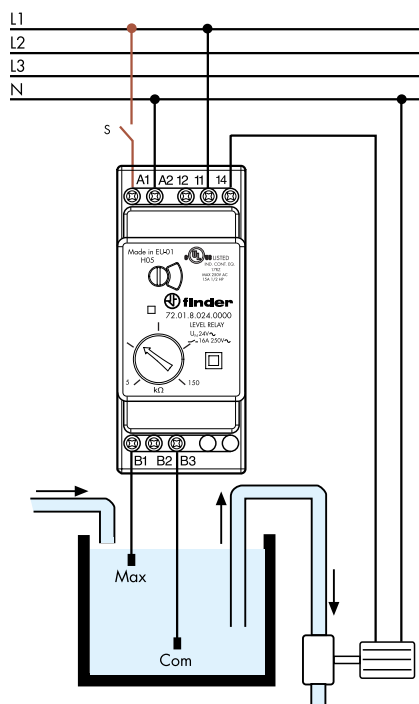
Un-suitable liquids

- demineralised water
- fuels
- oil
- liquids with high-percentage alcohol
- liquid gas
- paraffins
- ethylene glycol (aircraft wing defrosting)
- paint

Filling functions (FL/FS) Example with 3 electrodes



Emptying functions (EL/ES) Example with 2 electrodes



Product code	Description	Nominal voltage
72.01.8.024.0000	Sensitivity range adjustable (5...150)kΩ	24 V AC
72.01.8.024.0002	Sensitivity range adjustable (5...450)kΩ	24 V AC
72.01.8.125.0000	Sensitivity range adjustable (5...150)kΩ	110...125 V AC
72.01.8.240.0000	Sensitivity range adjustable (5...150)kΩ	230...240 V AC
72.01.8.240.0002	Sensitivity range adjustable (5...450)kΩ	230...240 V AC
72.01.8.240.5002	Sensitivity range adjustable (5...450)kΩ, for low loads	230...240 V AC
72.01.8.400.0000	Sensitivity range adjustable (5...150)kΩ	400 V AC
72.01.9.024.0000	Sensitivity range adjustable (5...150)kΩ	24 V DC
72.11.8.024.0000	Sensitivity fixed 150 kΩ	24 V AC
72.11.8.125.0000	Sensitivity fixed 150 kΩ	110...125 V AC
72.11.8.240.0000	Sensitivity fixed 150 kΩ	230...240 V AC
72.11.9.024.0000	Sensitivity fixed 150 kΩ	24 V DC

Probes and accessories for liquid level control for Types 72.01 and 72.11

A wide and diverse range of electrodes allow the Types 72.01 and 72.11 level control relays to work in many diverse applications. Normally 2 electrodes are used for the control about a single level, although 3 probes can be used for level control between "Minimum" and "Maximum" levels. It is possible to use the tank itself as the common electrode (terminal B3), if it is made of a conductive material. If two different levels are required to be set-up within the same tank, it is possible to do this by simply utilising two level control relays.





Type 072.01.06 - Cable length: 6 m (1.5 mm²)

Type 072.01.15 - Cable length: 15 m (1.5 mm²)

Suspended electrode for conductive liquids. Suitable for level monitoring in wells and reservoirs not under pressure. All materials used are compatible with food processing applications.



Type 072.02.06 - Cable length (blue colour): 6 m (1.5 mm²)

Suspended electrode for swimming pools with high levels of chlorine, or in salt-water pools with high levels of salinity.

High quality electrode material: stainless steel (AISI 316L) with high corrosion resistance.

Max. liquid temperature +100°C.



Type 072.31

Suspended electrode for wells and tanks.

High quality electrode material: stainless steel (AISI 316L) with high corrosion resistance.

Plastic parts made of polypropylene for good resistance to aqueous solutions of inorganic salts, acids, alkaline solutions, alcohol, some oils and washing solutions.

Physiologically harmless and therefore particularly suitable for use in the food and pharmaceutical sectors.

Max. liquid temperature +80°C.



Type 072.51

Electrode holder suitable for metal tank with G3/8" fitting. The tank can be used as the common electrode and electrically wired to the common terminal B3 of the 72.01 / 11 relay by utilising the threaded part and fixing nut as a terminating point. The total length of the probe is obtained by connecting an appropriate number of 072.500 electrodes. High quality electrode material: stainless steel (AISI 316L) with high corrosion resistance.

Max. liquid temperature +100°C.



Type 072.53

Electrode holder with three poles, for overhead mounting in wells and tanks.

The total length of the probes is obtained by connecting an appropriate number of 072.500 electrodes.

High quality electrode material: stainless steel (AISI 303) with high corrosion resistance.

Max. liquid temperature +70°C.



Type 072.503

Electrode separator (for three pole electrode holder 072.53).

Use to avoid electrodes touching where otherwise they might sway due to their length.



Type 072.500 - Electrode - 475 mm long, M4 thread, stainless steel (AISI 316L)

Type 072.501 - electrode connector, M4 thread, stainless steel (AISI 316L).

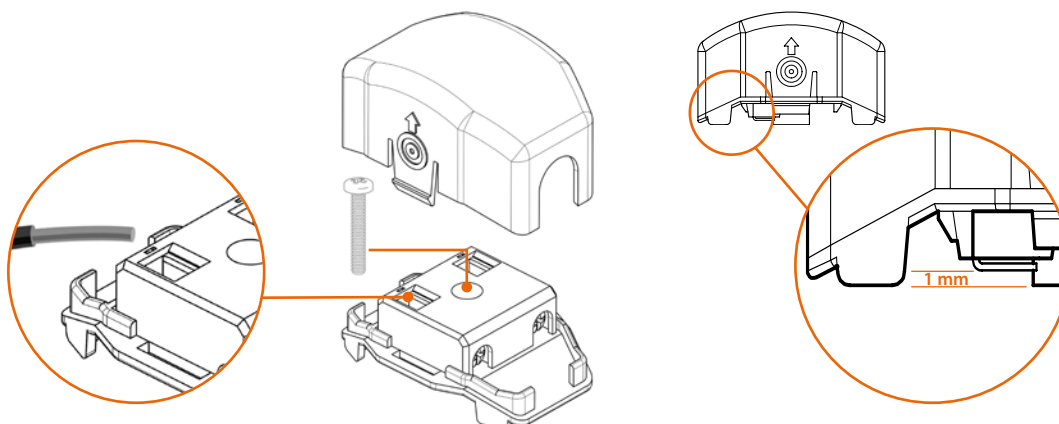
Multiple electrodes may be interconnected to provide required length.

Illustration of interconnection of electrodes.



Type 072.11

Floor water sensor, flood warning. Designed for the detection and signalling of the presence of floor surface water and for the detection of condensation (for example in refrigerated cabinets).



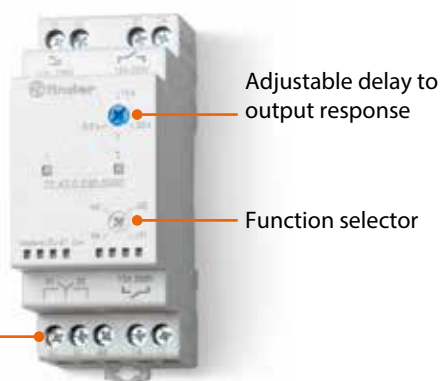


Priority change relay

Type 72.42

This relay is recommended to equalise the wear in equipment, such as pumps, compressors, air conditioning, etc., when the plant comprises two units, one of which is spare.

- 2 independent NO output, 12 A - 250 V AC
- 4 functions
- 2 independent control signals, insulated from supply
- Nominal voltage AC and DC
- 35 mm rail (EN 60715) mount



It is possible to activate both contacts, in the event of an alarm signal, via the external Start S2.

CE EAC

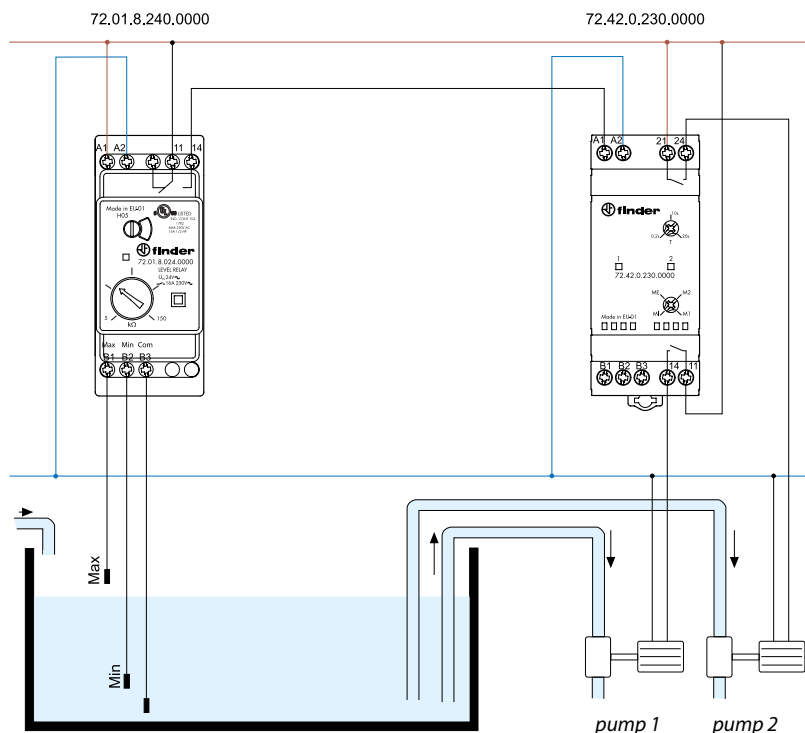
Type 72.42

Minimum impulse duration	50 ms
Power-on activation time	≤ 0.7 seconds
LED indicator	✓
Contact configuration	2 NO (DPDT)
Rated current/Max. peak current	12/20 A
Nominal voltage AC/DC	24, 110...240 V
Rated power in stand-by W	0.12 (24 V AC/DC) , 0.18 (110...240 V AC/DC)
Rated power with 2 active relays	1.1 W/1.7 VA (24 V AC/DC), 1.5 W/3.9 VA (110...240 V AC/DC)
Insulation: supply/contacts/electrodes	6 kV
Electrical life at rated load	100.000 cycles
Ambient temperature	- 20...+50°C
Functions	MI = Outputs alternate on successive applications of supply voltage ME = Outputs alternate on successive applications of control signal S1 M1/M2 = In case of a load malfunction, it is possible to force the operation of a specific output

Examples for the management of two pumps

Function (MI)

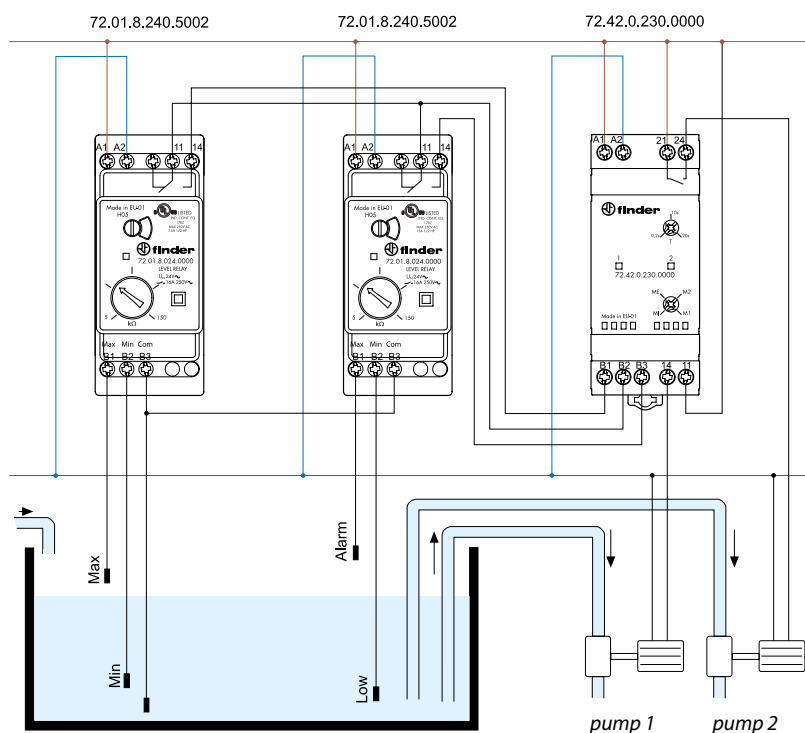
This shows the 72.42 Priority change relay working in conjunction with a single 72.01 level controller. Under normal conditions the liquid level is expected to remain within the range shown as Min to Max. In this case the function of the 72.42 will be to alternate the duty between both pumps, to even wear across both pumps. There is no provision to run both pumps simultaneously.



Function (ME)

This shows the 72.42 Priority change relay working in conjunction with two 72.01 level controllers. Under normal conditions the liquid level is expected to remain within the range shown as Min to Max. In this case the function of the 72.42 will be to alternate the duty between both pumps, to even wear across both pumps. Should the liquid level rise above the Alarm level then the function of the 72.42 will call for the simultaneous operation of both pumps, by virtue of the signal to terminal B3 from the Alarm/Low level controller.

Note: due to the low level of 72.42 control signals, it is suggested to use level controller 72.01.8.240.5002 because of its superior low load switching capability.



Product code	Description	Nominal voltage
72.42.0.024.0000	Priority change relay	24 V AC/DC
72.42.8.230.0000	Priority change relay	110...240 V AC/DC



Float switch for clean/white water

Type 72.A1

Float switch with 2 watertight chambers, suitable for automatic pumping, professional plumbing systems and waste water. Counterweight (230 g) with cable grip, included.

- Resistant to high pressures
- Emptying or filling functions
- Cable length 5 m, 10 m, 15 m or 20 m
- Cable material: NEOPRENE H07 RN F approved (TÜV)
(Available in PVC - no agency approvals).

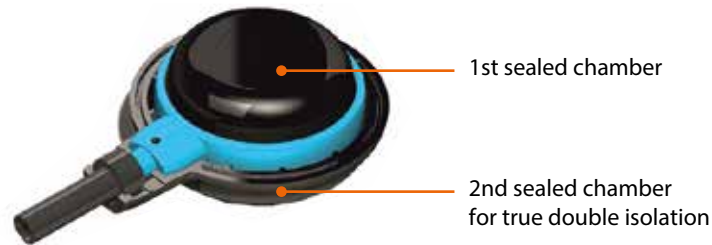


CE EAC

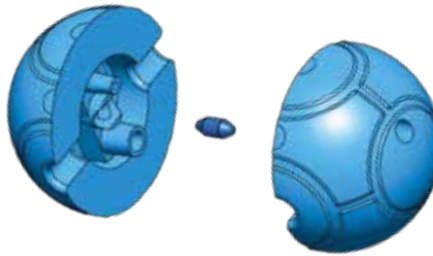


Type 72.A1.0000.xxxx

Contact configuration	1 CO (SPST)
Rated current	10 A (8 A)
Rated voltage	250 V AC
Protection degree	IP 68
Max liquid temperature	+ 50 °C
Max depth	40 m
Functions	emptying, filling
Cable material	PVC - H07 RN F
Body material	Polypropylene

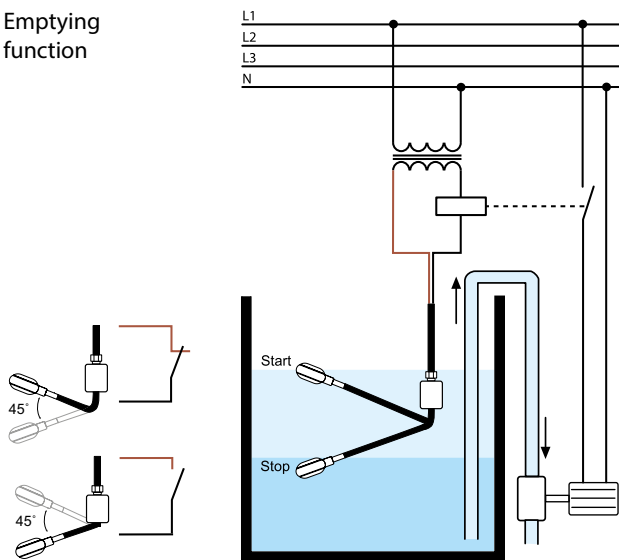


Counterweight (230 g)
for Type 72.A1.
Included in the package.



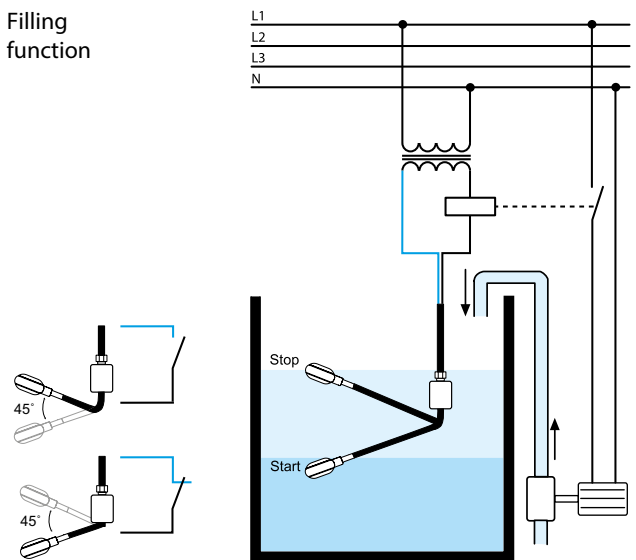
Easy to install.
Direct fixing to the cable
to allow adjustment
of the level and to
ensure the appropriate
excursion of the float
- even in the case of
turbulent water.

Emptying function



When black and brown wires are used, the circuit opens
when the float is down and closes when the float is up.

Filling function



When black and blue/grey wires are used, the circuit opens
when the float is up and closes when the float is up.

Product code	Description
72.A1.0.000.0501	Float switch, cable length 5 m in neoprene (H07 RN F)
72.A1.0.000.1001	Float switch, cable length 10 m in neoprene (H07 RN F)
72.A1.0.000.1501	Float switch, cable length 15 m in neoprene (H07 RN F)
72.A1.0.000.2001	Float switch, cable length 20 m in neoprene (H07 RN F)
72.A1.0.000.0500	Float switch, cable length 5 m in PVC
72.A1.0.000.1000	Float switch, cable length 10 m in PVC
72.A1.0.000.1500	Float switch, cable length 15 m in PVC
72.A1.0.000.2000	Float switch, cable length 20 m in PVC



Float switch for liquid foodstuff and potable water

Type 72.A1 - ACS

Float switch with 2 watertight chambers, for liquid foodstuff and potable water. Supplied with counterweight in stainless steel AISI 316.

Made from non-toxic materials suitable for permanent immersion in drinking water.

Ideal for:

- aqueducts
- drinking water fountains
- drinks and food products
- aquariums - fish hatcheries - swimming pools.

This version permits use in water with:

- Sodium Chloride - Salt Water: max 50%
- Sodium Hydrate - Caustic Soda: max 40%
- Sodium Hypochlorite - Bleach: max 15%

- Emptying or filling functions
- Cable length 5 m, 10 m, 15 m or 20 m



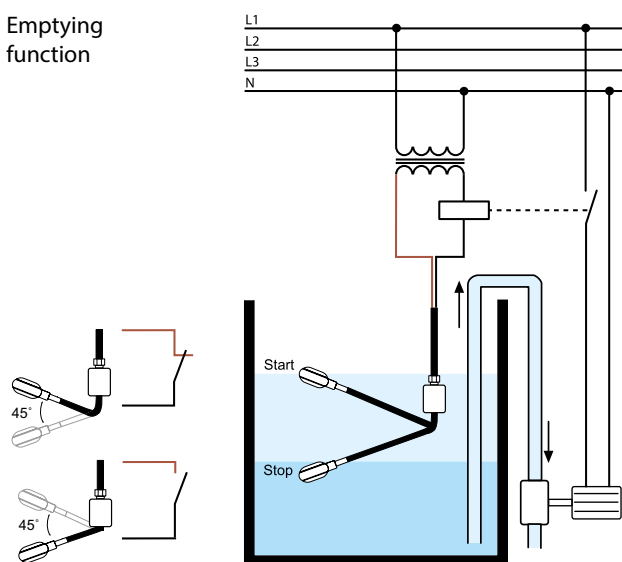
CE ACS

Type 72.A1.0000.xx02

Contact configuration	1 CO (SPST)
Rated current	10 A (8 A)
Rated voltage	250 V AC
Protection degree	IP 68
Max liquid temperature	+ 40 °C
Max depth	40 m
Functions	emptying, filling
Cable material	PVC ACS Certified version + AD8
Body material	Polypropylene

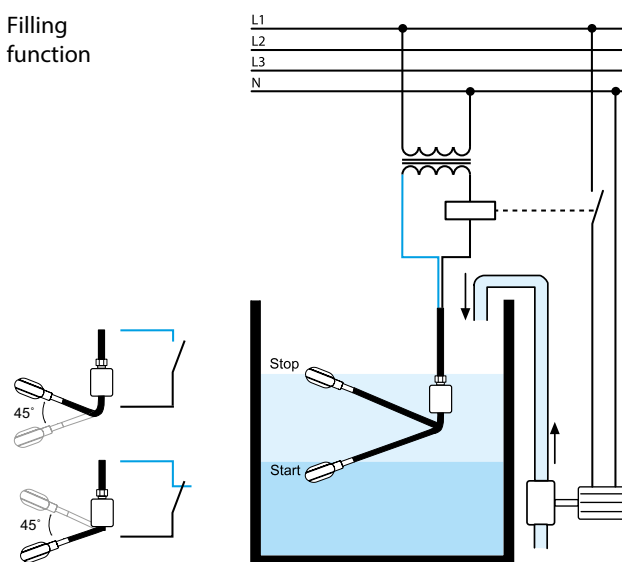


Emptying function



When black and brown wires are used, the circuit opens when the float is down and closes when the float is up.

Filling function



When black and blue/grey wires are used, the circuit opens when the float is up and closes when the float is up.

Product code	Description
72.A1.0.000.0502	Float switch, cable length 5 m, ACS
72.A1.0.000.1002	Float switch, cable length 10 m, ACS
72.A1.0.000.1502	Float switch, cable length 15 m, ACS
72.A1.0.000.2002	Float switch, cable length 20 m, ACS



Float switch for black water

Type 72.B1

Float switch with 3 watertight chambers, for black water systems, drainage plants and pumping stations. Supplied with fixing kit.

- Resistant to high pressures
- Emptying or filling functions
- Cable length 5 m, 10 m, 15 m or 20 m
- Cable material: NEOPRENE H07 RN F approved (TÜV)
(Available in PVC - no agency approvals).



CE EAC



Type 72.B1.0000.xxxx

Contact configuration	1 CO (SPST)
Rated current	10 A (8 A)
Rated voltage	250 V AC
Protection degree	IP 68
Max liquid temperature	+ 50 °C
Max depth	20 m
Functions	emptying, filling
Cable material	PVC - H07 RN F
Body material	Polypropylene



1st sealed chamber: a float switch within a second chamber for true double isolation

2nd sealed chamber with metallic ballast to hold the 72.B1 submersed

3rd airtight chamber: allows tipping anytime and in any circumstances

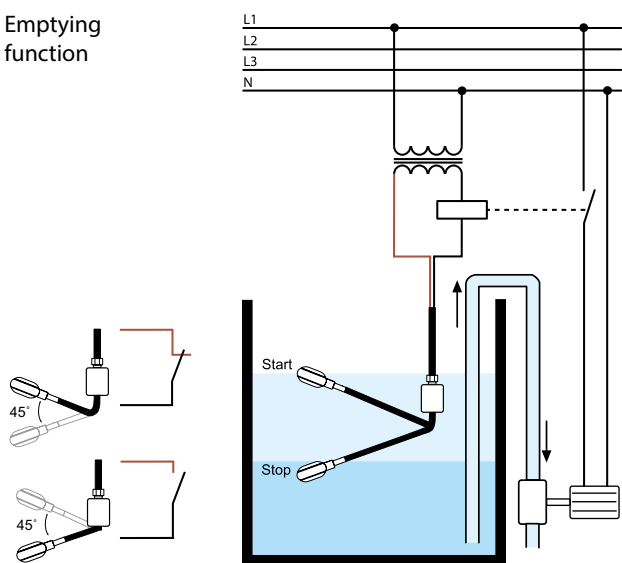


Fixing KIT for Type 72.B1.
Included



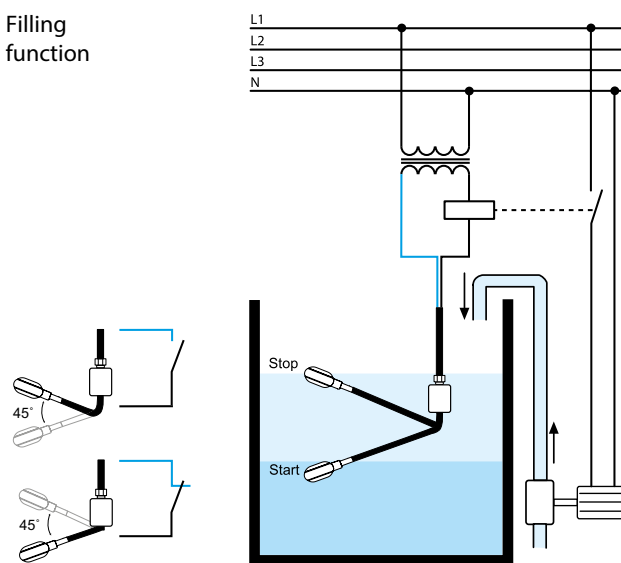
Allows the cable to be fixed to any type of pipe, preserving it from deterioration or damage

Emptying function



When black and brown wires are used, the circuit opens when the float is down and closes when the float is up.

Filling function



When black and blue/grey wires are used, the circuit opens when the float is up and closes when the float is up.

Product code	Description
72.B1.0.000.0501	Float switch, cable length 5 m in neoprene (H07 RN F)
72.B1.0.000.1001	Float switch, cable length 10 m in neoprene (H07 RN F)
72.B1.0.000.1501	Float switch, cable length 15 m in neoprene (H07 RN F)
72.B1.0.000.2001	Float switch, cable length 20 m in neoprene (H07 RN F)
72.B1.0.000.0500	Float switch, cable length 5 m in PVC
72.B1.0.000.1000	Float switch, cable length 10 m in PVC
72.B1.0.000.1500	Float switch, cable length 15 m in PVC
72.B1.0.000.2000	Float switch, cable length 20 m in PVC



Float switch space saving

Type 72.C1

Suitable for all those situations where the lack of space precludes the use of a normal float switch

- Applications: - Immersion pump
 - Pumping tanks
 - Lifting systems
 - Clean or waste water wells
 - Clean, cloudy, industrial and chemical waters

- Magnetic opening and closing contact
- Particularly suitable for clean water emptying and filling applications



Type 72.C1.0.000.0201



Contact configuration	1 CO (SPST)
Rated current/Resistive (Inductive)	10 A (8 A)
Rated voltage	250 V AC
Minimum switching load	1200 m W (12 V /100 mA)
Breaking capacity DC1	6 A - 30 V DC
Protection degree	IP 68
Functions	emptying, filling
Max liquid temperature	50°C
Cable length	2 m

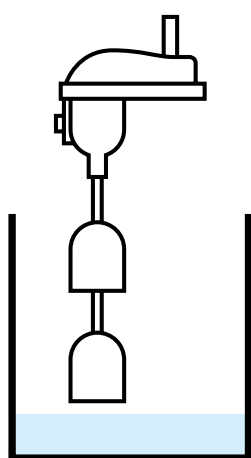
Supplied with wall or pipe fixing bracket



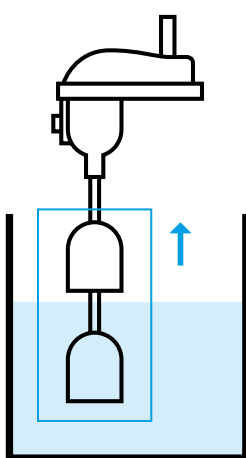
Example of application



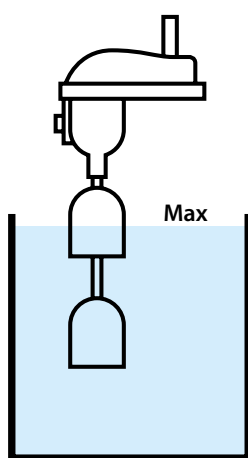
Functions emptying/filling



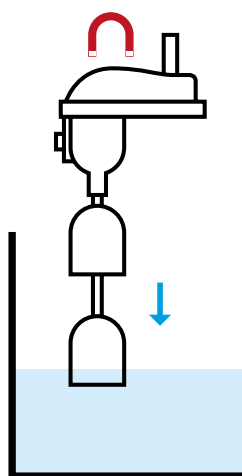
The tank fills



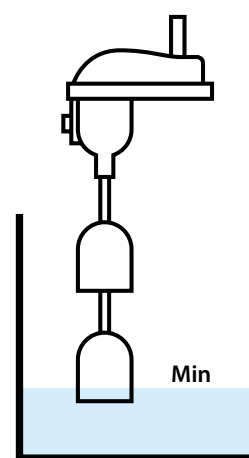
The water reaches the max level and it raises the whole floating body



High level starts the pump and the tank drains



The water reaches the minimum level and the weight of the floating body disengages the magnet



Low level stops the pump



FINDER S.p.A. sole proprietorship
Via Drubiaglio, 14 - 10040 ALMESE (TO) ITALY
tel +39 011 9346211 - export@findernet.com

findernet.com

