

The level of liquid present in a vessel is checked by the float being inside the main body, the chamber, of the Level Switch. When level rises up to the preset height, the float makes the output device trip (*trip on rise*); when level comes down again and exceeds the preset height, the float makes the output device come back to the initial position (*reset on fall*); between the *set* and *reset* heights there is always a gap, named *differential* : see below. The inverse function is available too : *Trip on fall* and *Reset on rise*. The output device can be electric or pneumatic, is snap action and is placed in the housing.

Differently from DA, the type DB is provided with inspection flanges, allowing to open the instrument and to clean it from possible residues of the liquid under control.

The Level Switches meet the PED and ATEX standards (page 37).

APPLICATIONS. Alarm for Max and Min level, control of pumps on vessels including simple water or chemical corrosive or toxic liquids, under pressures and temperatures also very high or very low; for liquids with specific gravity from 500kg/m³ up.

Body.

Materials : Carbon steel ASTM A106B, stainless AISI 304, or AISI 316.

Size : \varnothing_{outer} 4" (114,3mm), different thickness as per ASME standards.

Rating : ANSI 150, 300, 600, 1500, 2500 psi.

Bottom : The *Side-Side* Switches have drain hole $\frac{3}{4}$ " NPT-F threaded (upon request, $\frac{1}{2}$ " NPT-F or 1" NPT-F), with or without accessories (plugs, valves, etc).

Inspection flanges : \varnothing_{outer} 3" in the ratings ANSI 150÷600 psi (face RF)
 \varnothing_{out} 2½" in the ratings ANSI 1500÷2500 psi (face RJ).

Connections to vessel.

Materials : Carbon steel ASTM A105N, stainless AISI 304, or AISI 316.

- Flanges as per ANSI standards : 150÷2500 psi, and \varnothing 1÷2" (page 32).
- Flanges as per UNI/DIN stds : PN 10÷100, e DN 25÷100 (page 33).
- Sleeves, both threaded and socket welding.

Mounting : *Side-Side* or *Side-Bottom*.

Center-to-center distance M : As per Tab. 3; other distances, upon request.

Housing (page 34-35).

Aluminium cast, in electric or pneumatic version :

- With 1 or 2 microswitches SPDT with simultaneous action (page 9); size : \varnothing 155×200mm, flame-proof EEx dc IIC T6; 1 hole for electric connection : $\frac{3}{4}$ " NPT-F threaded (or $\frac{1}{2}$ " NPT-F) housing-holder height : 80mm for temperatures of -20/+180°C
145mm for higher or lower temperatures.
- With 1 pneumatic valve On/Off/Vent; \varnothing 125×180mm, water-proof; 3 holes for air connection $\frac{1}{4}$ " NPT-F : inlet, outlet and vent; housing-holder height : 70mm for temperatures of -20/+180°C
130mm for higher or lower temperatures.

Differential.

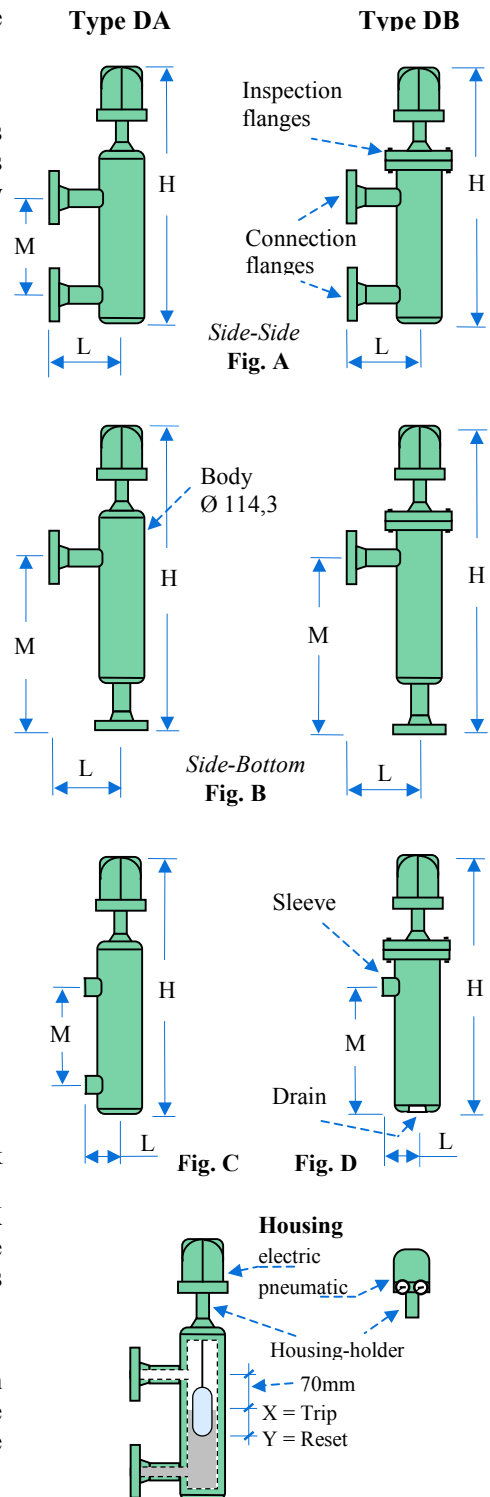
The Switch *trips* when level reaches the X height and *resets* when comes back to Y height (or on the contrary), as per the side sketch.

Usually the X point is fixed at 70mm below the top connection, and between X and Y there is a *differential* of about 30÷65mm (it changes on basis of the specific gravity of liquids); but, upon request, such heights and differentials can be made different too.

Outer finish.

Switches in carbon steel have the standard painting so realized : first coat in epoxy resin, and outer coat in **green** polyurethane resin; suitable for corrosive marine environments and tropical climates. Switches in stainless steel are polished and left bare.

Upon request, special versions can be produced too (page 12).



Tab. 3	M (mm)		H (mm)			L (mm)	
	DA, DB	DA	DA	DB	DA	DA, DB	DA
	Ansi 150÷600	Ansi 1500-2500	Ansi 150÷600	Ansi 150÷600	Ansi 1500-2500	Ansi 150÷600	Ansi 1500-2500
Fig. A	178	178	660	710	750	195	220
Fig. B	350	400	730	780	800	195	220
Fig. C	178	178	660	710	660	90	115
Fig. D	250	300	630	680	680	90	115

CONNECTIONS to vessel of DA, DB :

Mounting :	By means of :	Rating :	Diameter :
LL Side-Side	F Flanges ANSI with RF face ⁽¹⁾	15 ANSI 150 psi	Flanges or Sleeves :
LF Side-Bottom	J " " " RJ (Ring Joint)	30 ANSI 300	C 1"
	N Sleeves, female threaded NPT-F ⁽¹⁾	60 ANSI 600	D 1½"
	P " " male threaded NPT-M	M5 ANSI 1500 ⁽²⁾	E 2"
	S " " socket welding	D5 ANSI 2500 ⁽²⁾	

M □ □ □ Center-to-center distance between connections (mm) : those in Tab. 3 are standard

BODY and CONNECTIONS in :

- AC** Carbon steel ⁽¹⁾
- A4** Stainless steel AISI 304
- A6** " " AISI 316

Flanges are available in UNI/DIN too, as per page 33.
Upon request, body can be in Hastelloy, Teflon, PVC, etc.

OPTIONS on body bottom (drain) :

- NN** Side-Bottom mounting : no accessory is possible.
- A•** Side-Side mounting : with hole, threaded ½" NPT-F
- B•** " " " " ¾" NPT-F ⁽¹⁾
- C•** " " " " 1" NPT-F
- N** " " with threaded hole, no accessory
- T** " " with plug, same material as body
- R** " " with valve " " "
- S** " " with valve + plug " " "

HOUSING (page 34-35) :

Electric or pneumatic output :

- Number of electric outputs : 1 or 2 microswitches SPDT with simultaneous action
- A••** Microswitch, dust-proof 6A – 24Vdc, silver contact ⁽¹⁾ ⁽²⁾
- B••** " " " " 6A res – 5A ind – 30Vdc, silver contact ⁽⁴⁾
- Q••** " " " " 1mA–5Vdc(min value), 1A–125Vac(max), gold contact ⁽⁵⁾
- R••** " " sealed in inert gas, 3A res–1,5A ind–30Vdc, silver contact ⁽⁶⁾
- Z••** " " " " 1mA–5Vdc(min), 0,5A–30Vdc(max), gold contact ⁽⁷⁾
- 1 PA•** 1Pneumatic valve ON-OFF : opens air when level rises, with 2 manometers ⁽¹⁾
- 1 PC•** " " " " closes " " " with 2 manometers

Hole for electric connection :

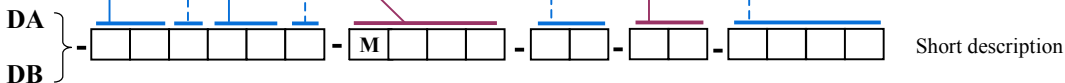
- A•** Threaded ½" NPT-F for cable-gland (not supplied)
- B•** " ¾" NPT-F, " " (not supplied) ⁽¹⁾

Housing-holder :

- S** For standard temperatures, –20/+180°C
- H** For high temperatures, +181/+450°C, with fins
- L** For low temperatures, –21/–60°C, without fins

- 3 ways : On/Off/Vent
- Usage pressures : 1÷5,5Bar / 15÷80psi
- PA↔PC : page 34.

Upon request, special versions can be produced too (as per page 12 too).



In addition to the above Short description, *Domizi Snc* need also the following information, absolutely necessary.

Fluid :	upper :	.....	Specific gravity of fluid :	upper :	.....	kg/m ³
	lower :	.....	" " " "	lower :	.....	kg/m ³
Temperature :	Minimum	..... °C	Operating	..... °C	Maximum	..... °C
Pressure :	Minimum	..... bar (*)	Operating	..... bar (*)	Maximum	..... bar (*)
Instrument function :	.....		Other :	.....	

(*) Simplify : 15bar ~ 15atm ~ 15kg/cm² ~ 15KPa ~ 1,5Mpa

⁽¹⁾ – It is the standard option.
⁽²⁾ – The inspection flanges on DB would be out of acceptable proportions in comparison with chamber, and so for such high pressures we suggest to adopt DA.
⁽³⁾ – Micro A : also 6A resistive – 250Vac; temperatures of : –25/+85°C.
⁽⁴⁾ – Micro B : also 15A resistive – 3A inductive – 250Vac; temperatures of : –25/+80°C.
⁽⁵⁾ – Micro Q : also 1A – 125Vac, but is recommended for very low electric loads (e.g. insulating barriers with few mA and V); temperatures of : –55/+85°C.
⁽⁶⁾ – Micro R : also 1A resistive – 0,8A inductive – 220Vac; temperatures of : –55/+150°C.
⁽⁷⁾ – Micro Z : recommended for very low electric loads (e.g. insulating barriers with few mA and V); temperatures of : –55/+150°C.