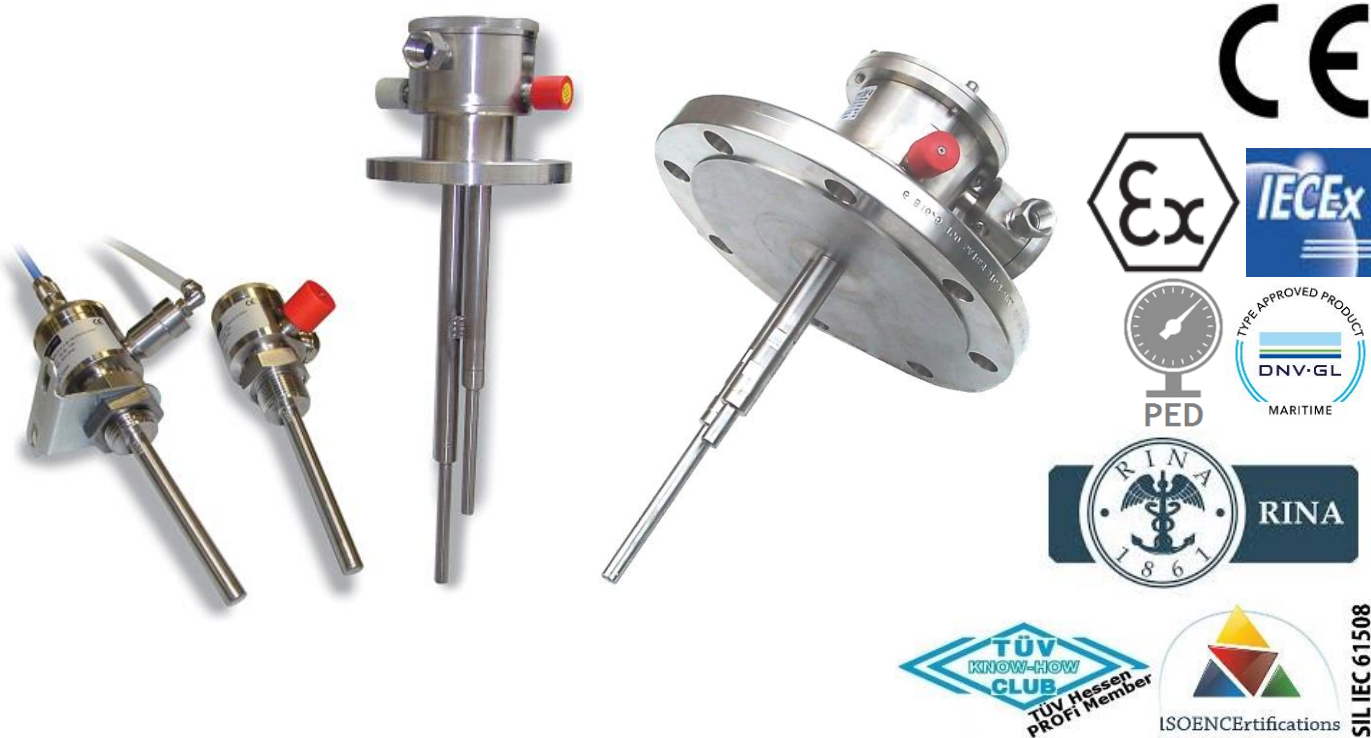


## SERIES ASL



ASL instrument is designed for marine and on-land applications for liquid detection, pump control, water ingress alarm systems, overfilling protection on liquids with or without foam.

ASL works on Valcom® proprietary principle of distributed acoustic waves in a metal rod.

If the rod is not covered by the liquid the acoustic waves are dispersed freely without any interference. If liquid covers the rod the emission of acoustic waves is muffled and this interference is picked up by the piezoelectric sensor and converted into an on-off signal. These instruments have no moving parts, no vibration, no optical or capacitive detectors.

They are pure static instruments offering the maximum reliability.

### APPLICATION FIELDS

- Systems in accordance to IMO and Coast Guard for high and overflow alarms on tankers;
- Water ingress detection on bulkcarriers;
- Pipes Overflow detection;
- System for high and low level detection in tanks, wells, etc.




**SCIGATE AUTOMATION (S) PTE LTD**  
 No.1 Bukit Batok Street 22 #01-01 Singapore 659592  
 Tel: (65) 6561 0488 Fax: (65) 6562 0588  
 Email: sales@scigate.com.sg Web: www.scigate.com.sg  
 Business Hours: Monday - Friday 8.30am - 6.15pm

## TECHNICAL FEATURES

### Electrical parameters

Supply: 12 ÷ 30 Vdc

Current output: ON-OFF 5 mA \ 13 mA

Frequency output: ON-OFF 1.2 kHz \ 3.8 kHz (± 30 %)

Relay output (NOT Ex): capacity: 1 A @ 30 Vdc  
max switching power: 30 W \ 2.5 VA

### Measurement performance

Repeatability: Vertical mounting < 3 mm  
Horizontal mounting < 1 mm

Action: Direct or reverse (by jumper)

### Environmental Conditions

Ambient temperature: -40 ÷ +85 °C  
Ex T6, T85 °C: -40 °C ≤ Tamb ≤ 40 °C  
Ex T5, T100 °C: -40 °C ≤ Tamb ≤ 55 °C





Process temperature: -40 ÷ +85 °C  
Finned body T1: -60 ÷ +150 °C  
Finned body T2: -200 ÷ +450 °C

Storage temperature: -40 ÷ +90 °C

Ingress protection degree: AISI 316 Housing: up to IP68  
Other Housings: IP66

## APPROVALS

### Type approvals

Directive 2014/34/EU (ATEX)  II 1G Ex ia IIC T6, T5 Ga and  II 1D Ex ia IIIC T85 °C, T100 °C Da or  
 II 1G Ex ia IIC T6, T5 Ga or  
 II 1/2G Ex ia IIC T6, T5 Ga/

Directive 2014/68/EU (PED) Up to Category II, for fluids in Group 1

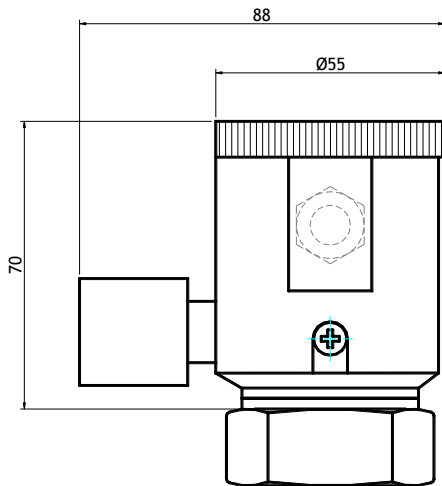
Directive 2014/30/EU (EMC) Adequate level of electromagnetic compatibility


IECEX Ex ia IIC T6, T5 Ga and IIIC T85 °C, T100 °C Da or  
Ex ia IIC T6, T5 Ga or  
Ex ia IIC T6, T5 Ga/Gb

Functional Safety SIL2 PFH [Hours<sup>-1</sup>] = 9.8174·10<sup>-8</sup>  
SFF = 80.00 % DC = λ<sub>DD</sub> / (λ<sub>DD</sub> + λ<sub>DU</sub>) = 84.78 %

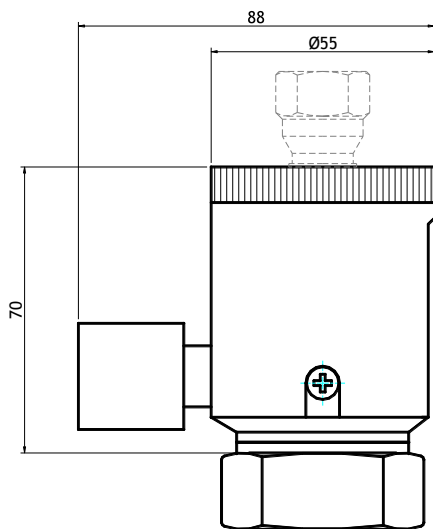
Marine type approval In compliance with applicable requirements of DNV GL and RINA approval systems


## HOUSING MATERIAL AND TYPE



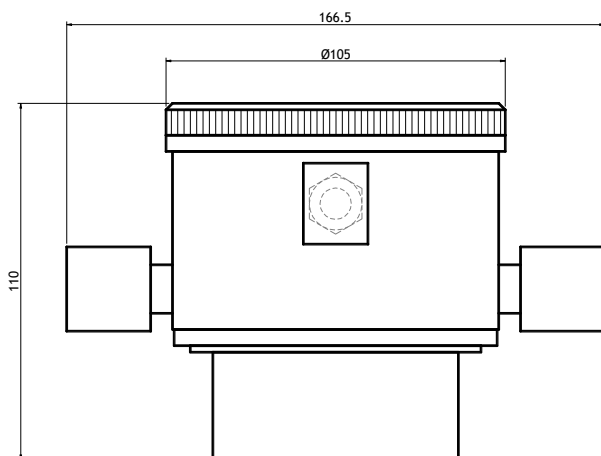
- Material: AISI 316 (Ø 55)
- Zone:  II 1GD
- EPL: Ga, Da
- Protection Degree: IP68
- Code: A01 (without PT)  
A02 (with PT)


- Material: Titanium (Ø 55)
- Protection Degree: IP66
- Code: T01 (without PT)  
T02 (with PT)




- Material: AISI 316 (Ø 55)
- Zone:  II 1GD
- EPL: Ga, Da
- Protection Degree: IP68
- Code: A03 (without PT)  
A04 (with PT)

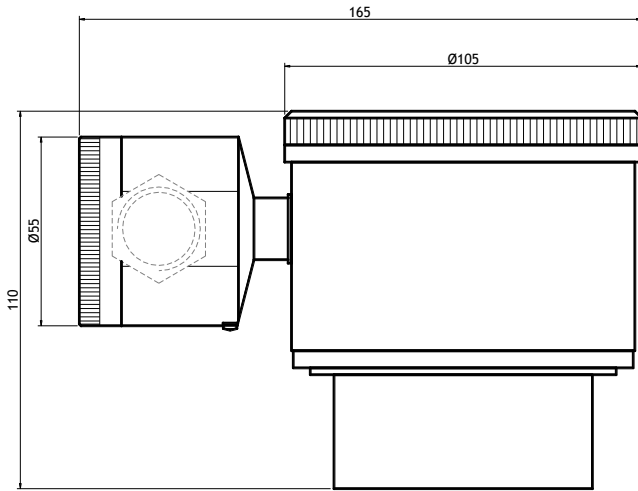
- Material: Titanium (Ø 55)
- Protection Degree: IP66
- Code: T03 (without PT)  
T04 (with PT)



- Material: AISI 316 (Ø 100)
- Zone:  II 1GD
- EPL: Ga, Da
- Protection Degree: IP68
- Code: A05 (without PT)

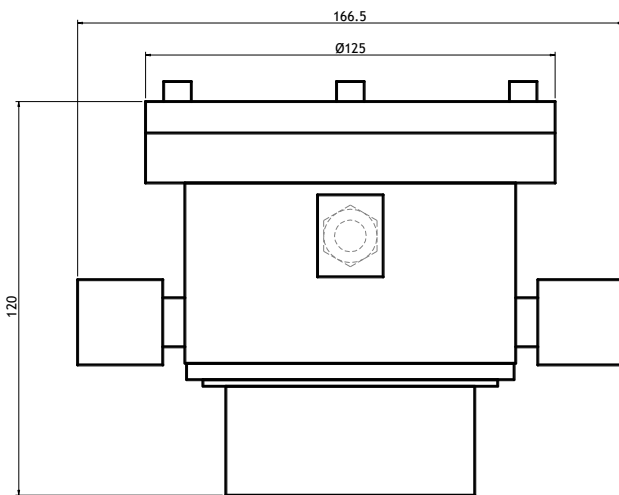
- Material: AISI 316 (Ø 100)
- Zone:  II 1GD
- EPL: Ga, Da
- Protection Degree: IP68
- Code: A06 (with PT)

## HOUSING MATERIAL AND TYPE



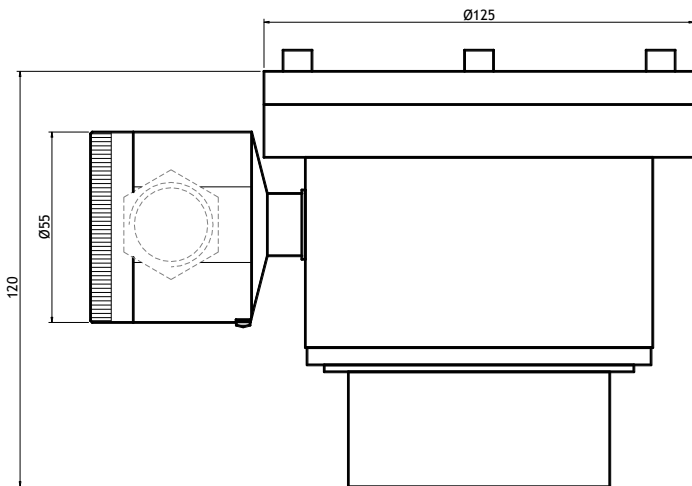
- Material: AISI 316 (Ø 100)
- Zone:  $\text{Ex}$  II 1G
- EPL: Ga
- Protection Degree: IP66
- Code: A07 (without PT)

- Material: AISI 316 (Ø 100)
- Zone:  $\text{Ex}$  II 1G
- EPL: Ga
- Protection Degree: IP66
- Code: A08 (with PT)



- Material: AISI 316 (Ø 100)
- Zone:  $\text{Ex}$  II 1G
- EPL: Ga
- Protection Degree: IP66
- Code: A09 (without PT)

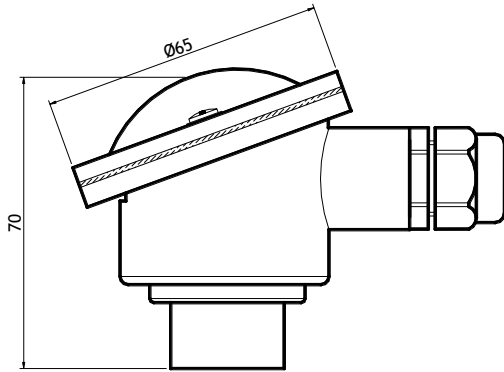
- Material: AISI 316 (Ø 100)
- Zone:  $\text{Ex}$  II 1G
- EPL: Ga
- Protection Degree: IP66
- Code: A10 (with PT)



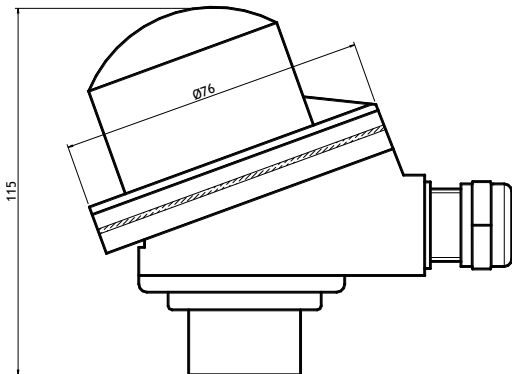
- Material: AISI 316 (Ø 100)
- Zone:  $\text{Ex}$  II 1G
- EPL: Ga
- Protection Degree: IP66
- Code: A11 (without PT)

- Material: AISI 316 (Ø 100)
- Zone:  $\text{Ex}$  II 1G
- EPL: Ga
- Protection Degree: IP66
- Code: A12 (with PT)

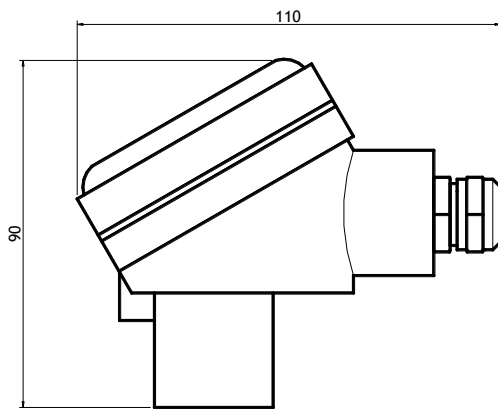
## HOUSING MATERIAL AND TYPE



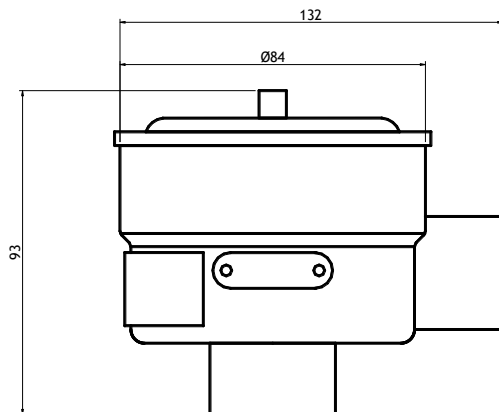
- Material: Aluminum
- Zone:  $\text{Ex}$  II 1/2G
- EPL: Ga/Gb
- Protection Degree: IP66
- Code: D01



- Material: Aluminum
- Zone:  $\text{Ex}$  II 1/2G
- EPL: Ga/Gb
- Protection Degree: IP66
- Code: D02



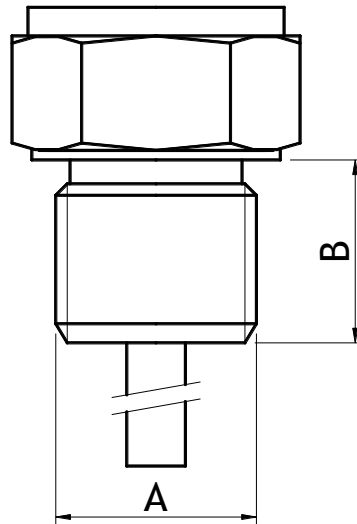
- Material: Aluminum
- Zone:  $\text{Ex}$  II 1/2G
- EPL: Ga/Gb
- Protection Degree: IP66
- Code: D03



- Material: Aluminum
- Zone:  $\text{Ex}$  II 1/2G
- EPL: Ga/Gb
- Protection Degree: IP66
- Code: D04

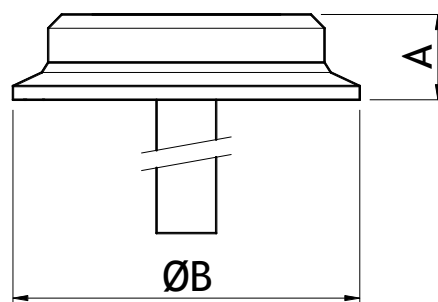
## PROCESS CONNECTIONS

### Standard screws



Code	A	B [mm]	Ex. Ch.
S01	1/2" G-M	20	41
S02	1/2" NPT-M	20	41
S03	3/4" G-M	22	41
S04	3/4" NPT-M	21	41
S05	1" G-M	22	41
S07	1" NPT-M	24.5	41
S08	1" 1/2 G-M	20	46
S10	2" G-M	25	41
M2	M27x1.5	22	41

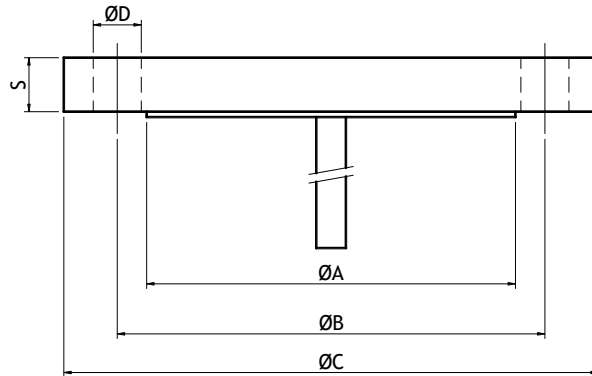
### Triclamp



Code	DN	A [mm]	B [mm]
T01	1" 1/2	15.5	50.4
T02	2"	15.5	64
T03	2" 1/2	15.5	77.4

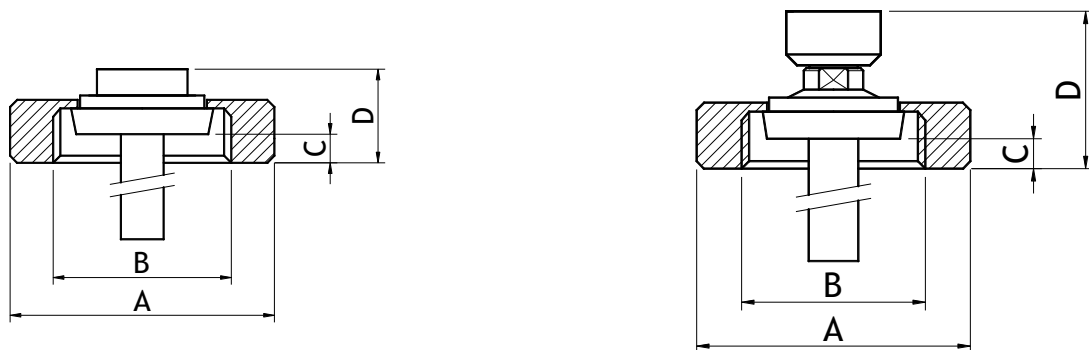
## PROCESS CONNECTIONS

### Standard flanges



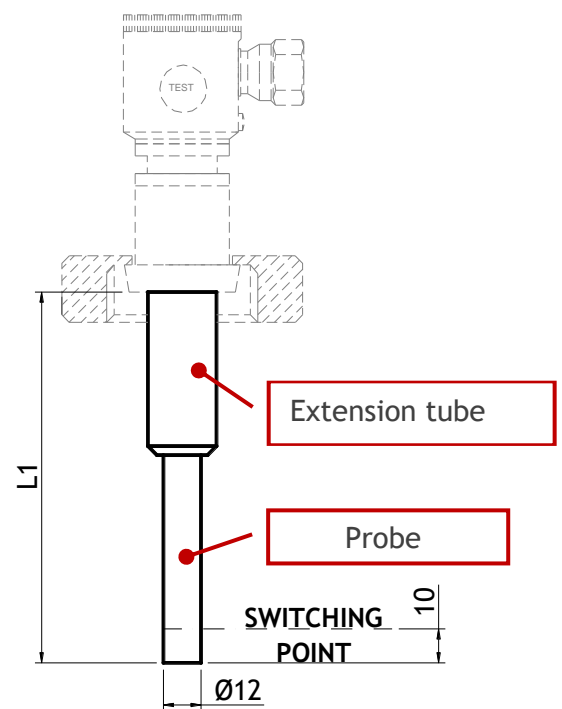
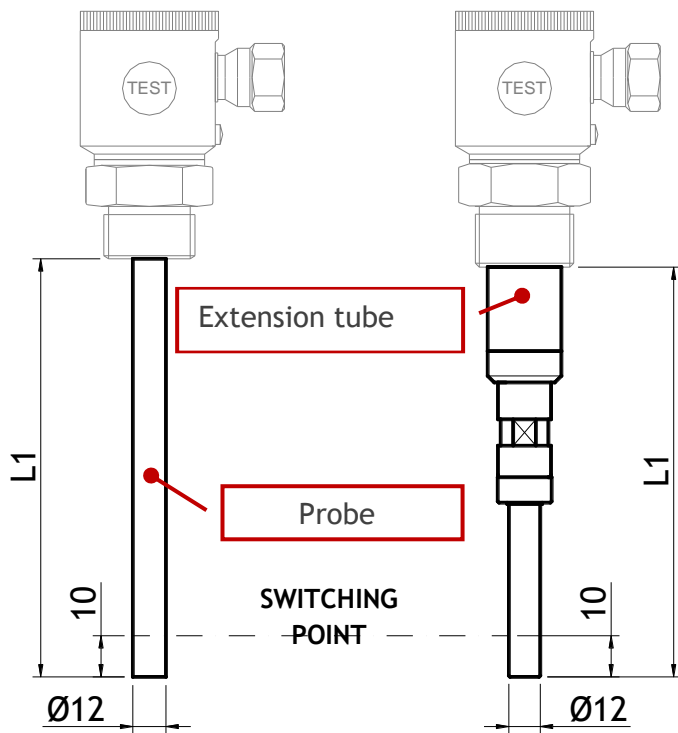
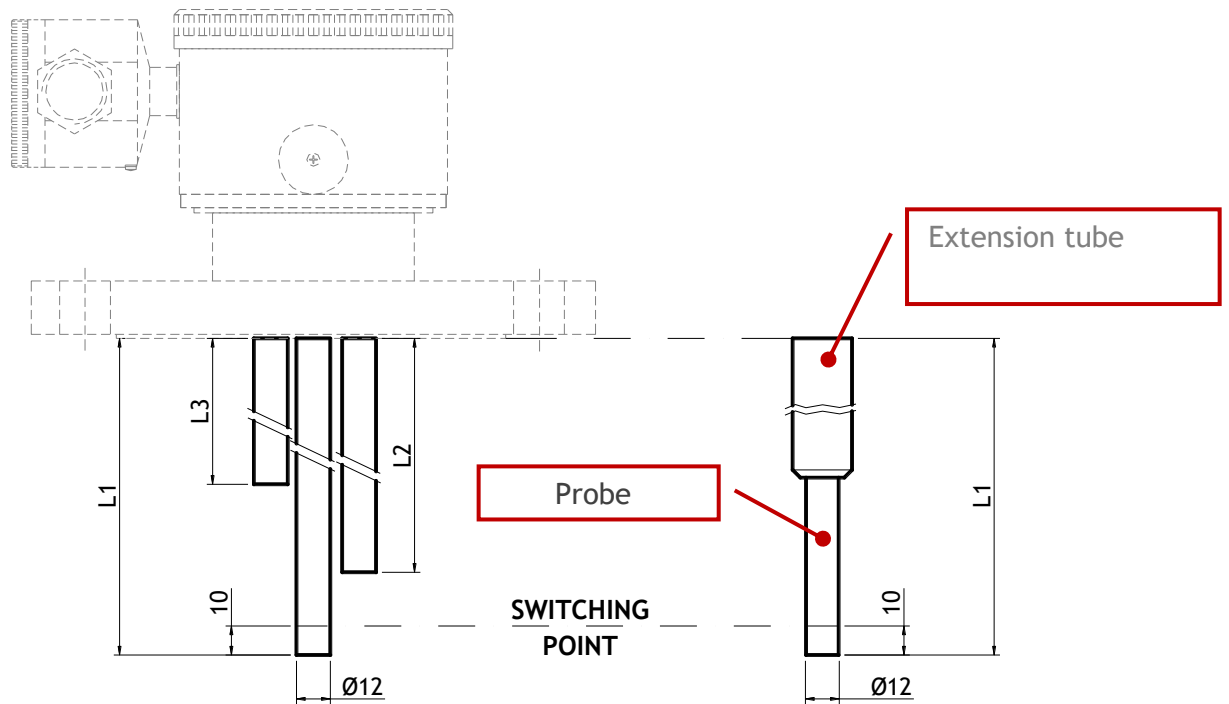
Code	DN	PN	ØA [mm]	ØB [mm]	ØC [mm]	ØD [mm]	S [mm]
F01	25	10/16	68	85	115	14	16
F02	25	40	68	85	115	14	18
F03	40	10/16	88	110	150	18	16
F04	40	40	88	110	150	18	16
F05	50	10/16	102	125	165	18	18
F06	50	40	102	125	165	18	20
F08	65	10/16	122	145	185	18	18
F10	80	10/16	138	160	200	18	20
F29	2"	ANSI 150	92	120.6	152.4	19	19
F30	2"	ANSI 300	92	127	165.1	19	22.2
F31	2"	ANSI 600	92	120.6	152.4	19	25.4
F34	3"	ANSI 150	127	152.4	190.5	19	23.8
F61	JIS 100A	5K	-	165	200	19	16
F62	JIS 50A	10K	-	120	155	19	16
F64	JIS 50A	20K	-	120	155	19	18

### Welding Nuts



Code	A [mm]	B [mm]	C [mm]	D [mm]
G01	25	63	8	21
G02	40	78	8	21
G03	50	92	8	22

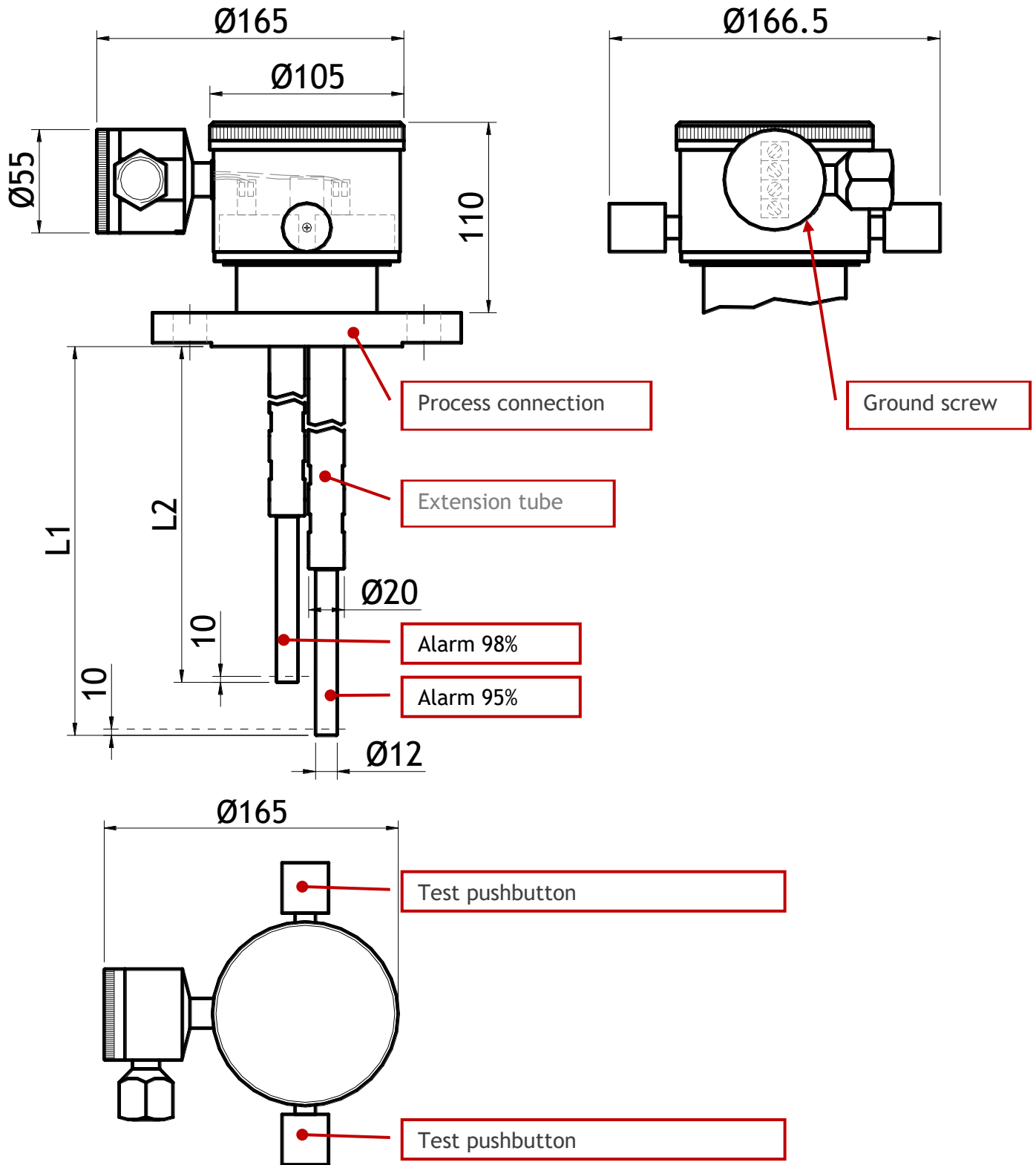
## PROBE AND EXTENSION TUBE



Switching point is fixed at 10 mm above the bottom part of the probe  
Extension tube available Ø20, Ø22 and Ø28



## DIMENSIONAL DRAWINGS



## ORDERING CODE

**ASL** Ultrasonic level switch

**01 Number of alarms**

- S Single
- D Double
- T Triple

**02 Probe length L1**

- \_\_\_ if 27 mm < L1 < 999 mm then \_\_\_ = 027 ÷ 999 Example 056 = 56 mm
- A\_\_ if 1000 mm < L1 < 1999 mm then A\_\_ = A00 ÷ A99 Example A42 = 1420 mm ÷ 1429 mm
- B\_\_ if 2000 mm < L1 < 2999 mm then B\_\_ = B00 ÷ B99 Example B42 = 2420 mm ÷ 2429 mm
- Z\_\_ On request
- N00 Not present

**03 Probe length L2**

- \_\_\_ if 27 mm < L1 < 999 mm then \_\_\_ = 027 ÷ 999 Example 056 = 56 mm
- A\_\_ if 1000 mm < L1 < 1999 mm then \_\_\_ = A00 ÷ A99 Example A42 = 1420 mm ÷ 1429 mm
- B\_\_ if 2000 mm < L1 < 2999 mm then \_\_\_ = B00 ÷ B99 Example B42 = 2420 mm ÷ 2429 mm
- Z\_\_ On request
- N00 Not present

**04 Probe length L3**

- \_\_\_ if 27 mm < L1 < 999 mm then \_\_\_ = 027 ÷ 999 Example 056 = 56 mm
- A\_\_ if 1000 mm < L1 < 1999 mm then A\_\_ = A00 ÷ A99 Example A42 = 1420 mm ÷ 1429 mm
- B\_\_ if 2000 mm < L1 < 2999 mm then B\_\_ = B00 ÷ B99 Example B42 = 2420 mm ÷ 2429 mm
- Z\_\_ On request
- N00 Not present

**05 Housing material and type**

(See tables on pages 3-4-5)

**06 Process connection**

(See tables on pages 6-7)

**07 Process gasket material**

- D FKM Viton
- E FEP Seal
- G PTFE
- N None

**08 Wetted parts material**

- A AISI 316
- D AISI 316 Mo > 2.5 %
- Q Titanium
- I Hastelloy B
- K Hastelloy C

**09 Extension tube**

- X\_\_ Pipe Ø 20 mm (X 01 < X\_\_ < X 06)
- X\_\_ Pipe Ø 22 mm (X 07 < X\_\_ < X 12)
- X\_\_ Pipe Ø 28 mm (X 13 < X\_\_ < X 18)
- Z\_\_ On request
- N00 None

Examples are shown in below table



	L < 1 mt	L < 2 mt	L < 3 mt	L < 4 mt	L < 5 mt	L < 6 mt
Ø 20 mm	X 01	X 02	X 03	X 04	X 05	X 06
Ø 22 mm	X 07	X 08	X 09	X 10	X 11	X 12
Ø 28 mm	X 13	X 14	X 15	X 16	X 17	X 18

On substitution of "X" you have to insert the "WETTED PARTS MATERIAL" code (A, B, Q, I, K, D)

Example: Wetted Parts Material: Titanium Extension Tube Ø: 22 mm L < 3 mt → Code Q - Q09

## ORDERING CODE

### 10 Electrical connection

- 17 AISI 316 axial cable gland
- 19 AISI 316 cable gland PG9 IP67 (Housing A01 \ A02)
- 20 AISI 316 cable gland PG13 IP67 (Housing A01 \ A02)
- 29 Titanium cable gland PG9 IP67 (Housing A01 \ A02)
- 30 Titanium cable gland PG13 IP67 (Housing A01 \ A02)
- 31 Titanium cable gland PG16 - F (Housing T01 \ T02)
- 36 Nipple AISI 316 1/2" G - F (Housing A01 \ A02)
- 37 Nipple AISI 316 1/2" NPT - F (Housing A01 \ A02)
- 39 Nipple AISI 316 M 20 x 1.5 F (Housing A01 \ A02)
- 40 Nipple AISI 316 M 24 x 1.5 F (Housing A01 \ A02)
- 41 Nipple AISI 316 M 3/4" G - F (Housing A01 \ A02)
- 76 Brass g. PG 13.5 on 1/2" NPT - F (Housing D01 \ D02)
- 77 Nylon g. PG 13.5 on 1/2" NPT - F (Housing D01)
- 78 Nylon g. PG 13.5 on 1/2" NPT - F (Housing D01)





### 11 Type of cable for extension

- A\_\_ Cable PE 3 poli Ø 7.2 (-30 ÷ +60°C) L = \_\_ mt (A\_\_ = A01 ÷ A99)
- \_A\_ Cable PE 3 poli Ø 7.2 + RILSAN (-30 ÷ +60°C) L = \_\_ mt (\_A\_ = 0A1 ÷ 9A9)
- \_\_A Cable PE 3 poli Ø 7.2 (-30 ÷ +60°C) + PTFE L = \_\_ mt (\_\_A = 01A ÷ 99A)
- C\_\_ Cable TPR 6 poli Ø 6.8 (-40 ÷ +125°C) L = \_\_ mt (C\_\_ = C01 ÷ C99)
- \_C\_ Cable TPR 6 poli Ø 6.8 (-40 ÷ +80°C) + RILSAN L = \_\_ mt (\_C\_ = 0C1 ÷ 9C9)
- \_\_C Cable TPR 6 poli Ø 6.8 (-40 ÷ +125°C) + PTFE L = \_\_ mt (\_\_C = 01C ÷ 99C)
- N00 Without cable

### 12 Electrical output

- A Current output 2 wire on-off welded bridge pos. A (5 - 13 mA)
- B Current output 2 wire on-off jumper pos. A (5 - 13 mA)
- C Current output 2 wire on-off welded bridge pos. B (5 - 13 mA)
- D Current output 2 wire on-off jumper pos. B (13 - 5 mA)
- E Relay and current on-off welded bridge pos. A (13 - 5 mA)
- F Relay and current on-off jumper pos. A (13 - 5 mA)
- G Relay and current on-off welded bridge pos. B (13 - 5 mA)
- H Relay and current on-off jumper pos. B (13 - 5 mA)
- I Frequency output 2 wire on-off

### 13 Ex type approval

- C1 IECEx Ex ia IIC T6 \ T5 Ga, IIIC T85°C \ T100°C Da
- C2 IECEx Ex ia IIC T6 \ T5 Ga
- C3 IECEx Ex ia IIC T6 \ T5 Ga/Gb
- A1  II 1G Ex ia IIC T6, T5 Ga and  II 1D Ex ia IIIC T85°C, T100°C Da
- A2  II 1G Ex ia IIC T6, T5 Ga
- A5  II 1/2G Ex ia IIC T6, T5 Ga/Gb
- N0 No Ex certification

### 14 Marine type approval

- R RINA \ DNV
- N None

### 15 Options and accessories

- 22 PED Certificate
- 21 SIL Certificate
- M3 Test Magnet
- T1 Finned body T1: -60 ÷ +150°C
- T2 Finned body T2: -200 ÷ +450°C
- NN No options

## ACCESSORIES



Cod. M3 Test Magnet



Cod. HMI Alarm control panel



Cod. M9 Process connection with sliding nipple



Cod. T2 Finned body up to 450°C



Cod. TSU Galvanic isolation barrier



Cod. D1010 Analog Signal Converter and Trip Amplifiers



Cod. VCN Electrical connectors

### and MORE

- Pneumatic remote test
- 90° probe
- Wall mounting bracket



**SCIGATE AUTOMATION (S) PTE LTD**  
No.1 Bukit Batok Street 22 #01-01 Singapore 659592  
Tel: (65) 6561 0488 Fax: (65) 6562 0588  
Email: sales@scigate.com.sg Web: www.scigate.com.sg  
Business Hours: Monday - Friday 8.30am - 6.15pm