

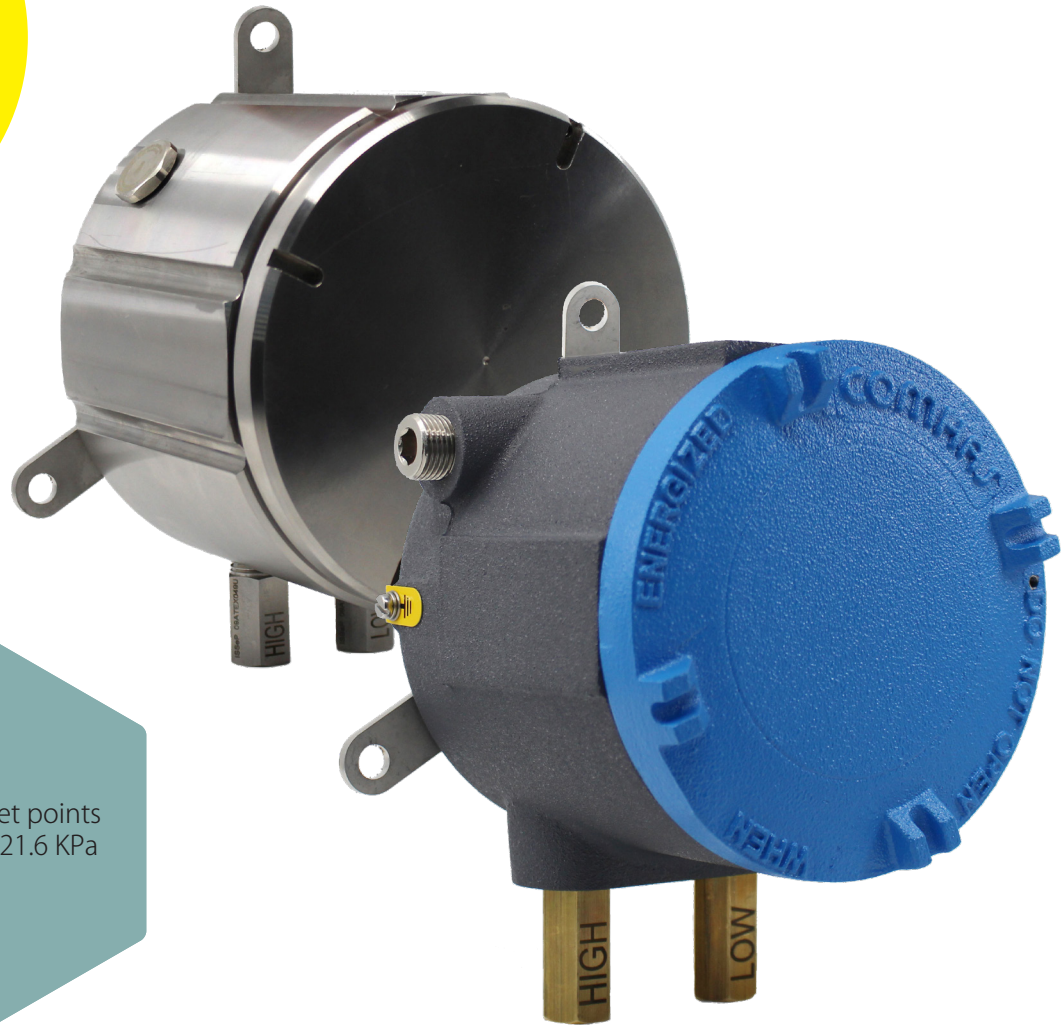
COMHAS

AT-101-1800 AT-102S-1800

Differential pressure switch
for low ranges ATEX/IECEX Exd

NEW

Now available
with Low DP
pressure ports.
Improved
response time.



1800 differential
pressure switch
now available from
Comhas as
single instrument
Atex/IECEX
approved

9 models for set points
from 18 Pa to 21.6 KPa

Repeatability $\pm 2\%$

ATEX

CE 0080

II 2G Ex db IIC T5, T6 Gb -60°C ≤ Ta ≤ +50°C (T6)
-60°C ≤ Ta ≤ +60°C (T5)

II 2D Ex tb IIIC T75 °C Db
Certificate: INERIS 21 ATEX 0033 X

IECEX

Ex db IIC T5, T6 Gb -60°C ≤ Ta ≤ +50°C (T6)
-60°C ≤ Ta ≤ +60°C (T5)

Ex tb IIIC T75°C Db
Certificate: IECEX INE 21.0064X

Specifications

Service:	air and compatible clean and dry gases.
Wetted materials:	consult factory (silicon rubber diaphragm).
Stability:	± 1% f.s. year
Temperature limits:	-30 to 180°F (-34 to 82,2°C): for 1823-00: -20 to 180°F (-28,9 to 82,2°C) Case: -76 to 140°F (-60 to 60°C)* T5 (-60 to 50°C) T6
Response time:	pls see paragraph 3
Pressure limits:	see table 2
Switch:	SPDT type
Ripeatability:	± 2%.
Electrical rating:	15A @ 120-480 Vac, 60 Hz, Resistive 1/8 HP @ 125 Vac, 1/4 HP @ 250 Vac, 60 Hz. Derate to 10 A for operation at high cycles rates.
Electrical wiring:	3 screw type, common, normally open and normally closed.
Set point adjustment:	internal.
Mounting orientation:	diaphragm in vertical position.
Housing material:	alluminium (optional stainless steel).
Finishing:	Grey - texture epoxy coat RAL7015 (aluminum case) Blue - RAL 5015 (top cover)
Process connections:	1/8" female NPT brass (stainless steel optional).
Electrical connection:	2 x 1/2" NPT F standard (supplied without cable gland).
Enclosure rating:	IP66 (IP 65 for versions VS1-VS2-VL1)
Dimensions:	see drawing below.
Weight:	from 4,8 to 15,5 Kg

* Operating ambient temperature is defined also according to the options and pressure instrument choosed.

CAUTION FOR USE ONLY WITH AIR OR COMPATIBLE GASES!
CONTACT FACTORY FOR USE WITH GASES,
OTHER THAN AIR AND NITROGEN.

IMPORTANT NOTES FOR INSTALLATION:

Cables must be fitted through 1/2" NPT cable gland or Atex/IECEx conduit (not supplied with instrument).

Make sure after cabling to close tight cover and cable gland, in order to keep IP66 rating (only without venting valve).

Open cover only after de-energising instrument.

Attention: check local safety rules and warnings on unit and manual for a correct use of the instrument in hazardous area.

1. Model configuration

CODE	AT-101 AT-102 (only for stainless steel material version)			-	1823	-		-					
Enclosure extension	Enclosure without extension	N											
	Enclosure with extension	n/a											
Case material	Aluminum		A										
	Stainless steel (AT-102)		S										
Dwyer model	1823				1823								
Ranges	0.08 - 0.22 inch W.C. (18 - 56 Pa) (Suggested VL0 or VL1)							00					
	0.15 - 0.5 inch W.C. (38 - 127 Pa) (Suggested VL0 or VL1)							0					
	0.3 - 1.0 inch W.C. (76 - 254 Pa) (Suggested VL0 or VL1)							1					
	0.5 - 2.0 inch W.C. (127 - 508 Pa) (Suggested VL0 or VL1)							2					
	1.5 - 5.0 inch W.C. (381 - 1270 Pa) (Suggested VL0 or VL1)							5					
	2.0 - 10 inch W.C. (0,5 - 2,5 KPa)							10					
	3 - 22 inch W.C. (0,76 - 5,6 KPa)							20					
	5 - 44 inch W.C. (1,27 - 11,17 KPa) (only VS1-VS2-VL1)							40					
	9 - 85 inch W.C. (2,28 - 21,6 KPa) (only VS2)							80					
Cover	Blind								B				
	Glass window								n/a				
Pressure port / venting valve material	Brass								1				
	Stainless steel								2				
* Pressure port/venting valve (check table 2 based on max static pressure)	STD pressure port 1/8" F NPT / no venting valve										VS0		
	LD pressure port 1/8" F NPT / no venting valve										VL0		
	STD pressure port 1/8" F NPT / STD venting valve										VS1		
	STD pressure port 1/8" F NPT / LD venting valve										VS2		
	LD pressure port 1/8" F NPT / LD venting valve										VL1		
Cable entry	1/2" NPT ANSI/ASME B1.20.1											12	

n/a: NOT AVAILABLE

* STD pressure ports (flame arrestors) create higher delay in response time therefore suggested only for model bigger than 1823-5 (please see table 3).

OTHER OPTIONS
B: buna-n diphragm.
SF: silicon free (included option "B").
BGAP: microswitch.
GOLD: gold contacts.
MIL: mil switch.

ACCESSORIES: Atex cable gland.

Dimensions may change without any advice.

2. Max static pressure admitted - Pressure ports and venting valve configuration

		Simplified scheme of pressure port / breathing device (venting valve)				Maximum pressure value with:	
						only one pressure port connected	both pressure ports connected
Code	VS0	PRESSURE PORTS	STD	Enclosure breathing device (venting valve)	None	10 kPa	10 kPa
	VL0		LD		None	10 kPa	10 kPa
	VS1		STD		STD	20 kPa	15 kPa
	VS2		STD		LD	40 kPa	20 kPa
	VL1		LD		LD	20 kPa	15 kPa

3. Time response graphs

NEW “LD” FLAME ARRESTORS

The use of flame arrestors introduce some time delay in switching of the relay especially for low range pressure switches. (1823-00 to 1823-5)

Comhas have developed a new Low pressure drop flame arrestor (LD series) that is suggested on 1823-00-/ 1823-0 / 1823-1 / 1823-2/ 1823-5 in place of STD series as this allow to have much faster response time of the switch

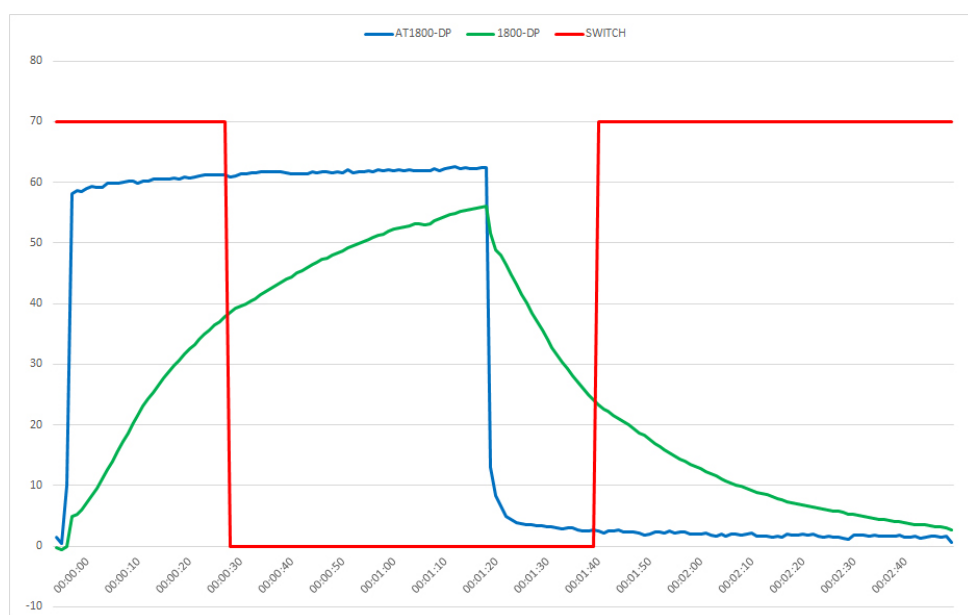
Following are some graphs with difference in response time between LD and STD series.

— upstream pressure ports
— downstream pressure ports

1823-00-STD



1823-00-LD



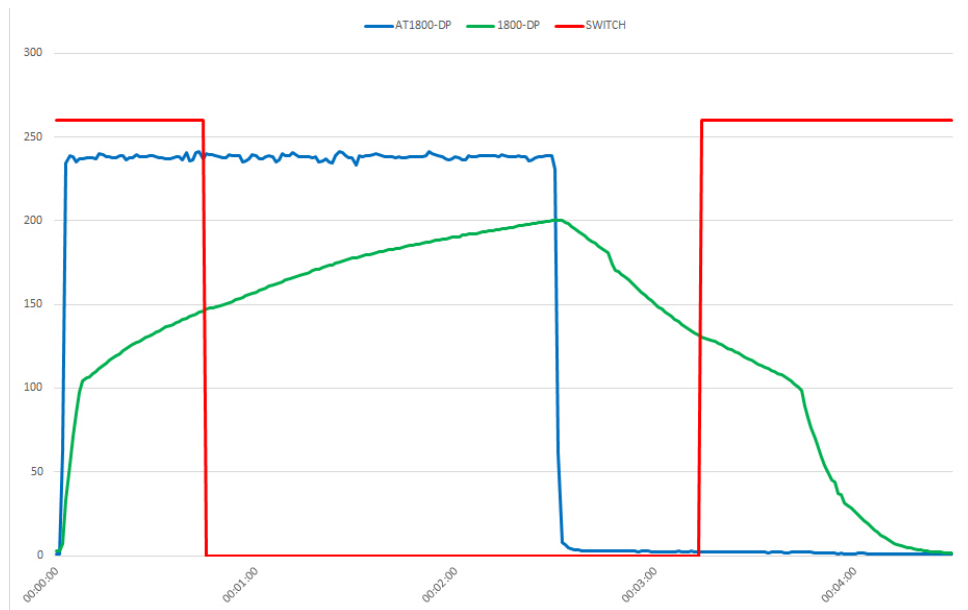
1823-0-STD



1823-0-LD



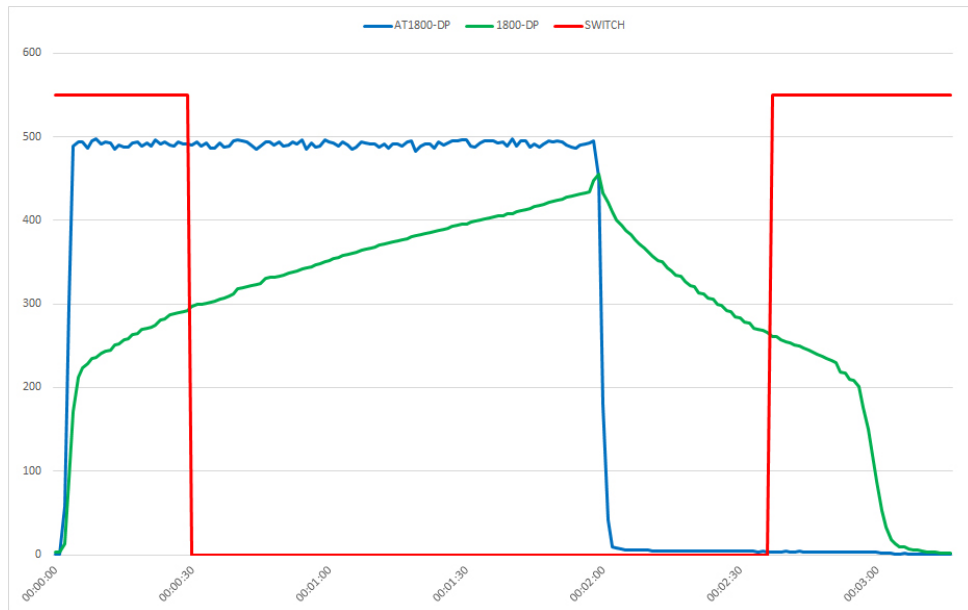
1823-1-STD



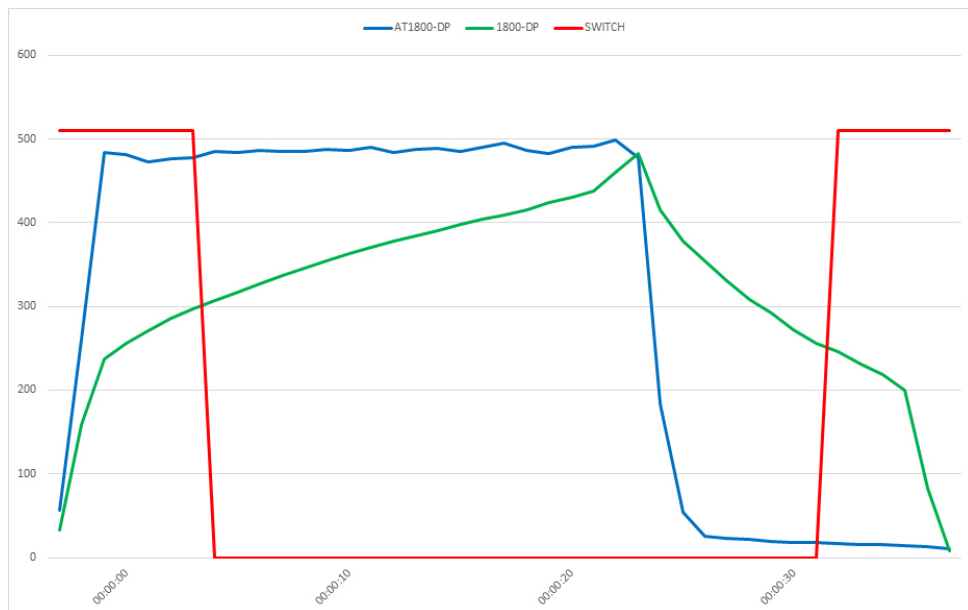
1823-1-LD



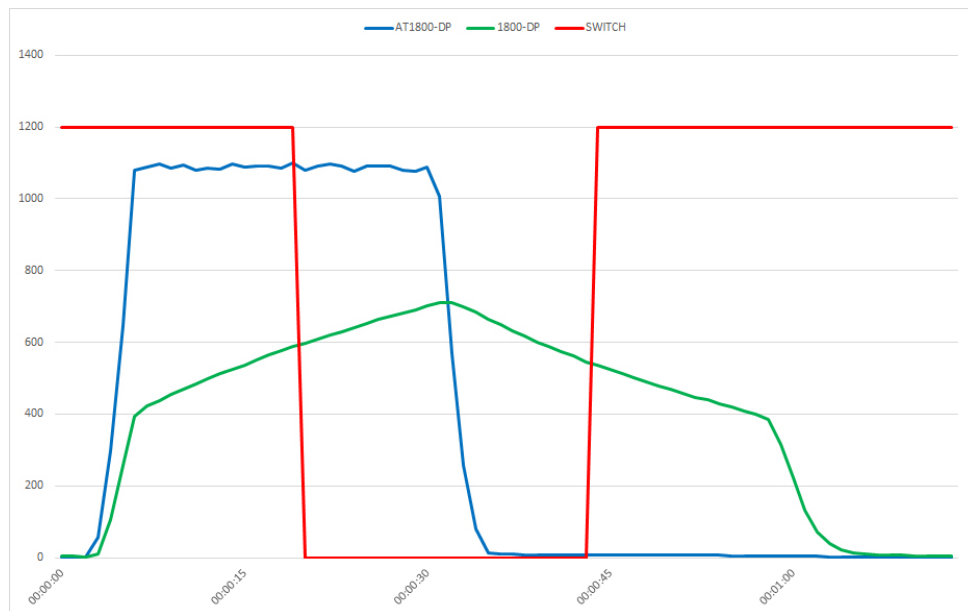
1823-2-STD



1823-2-LD



1823-5-STD



1823-5-LD

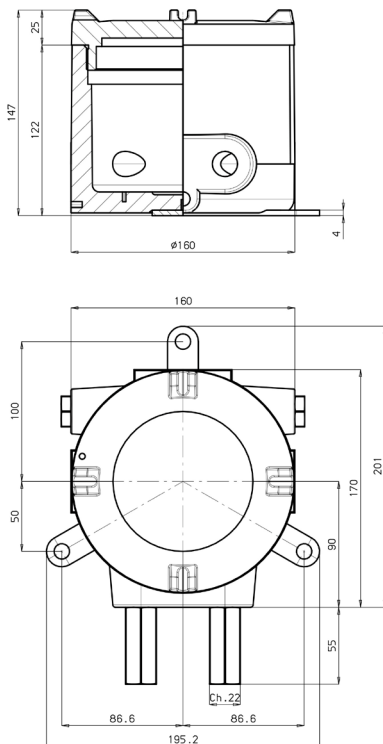


Dimension

Aluminum case

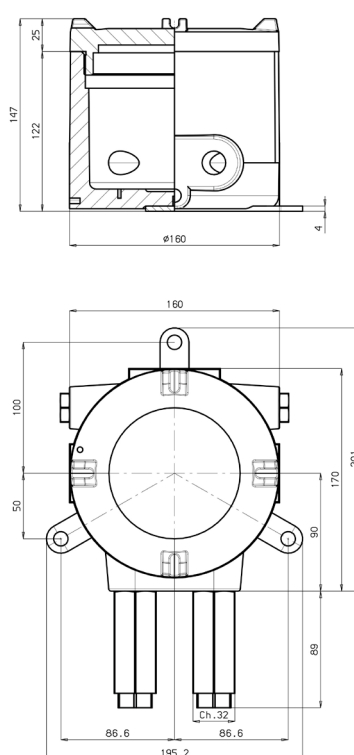
VS0

STD pressure port/no venting valve



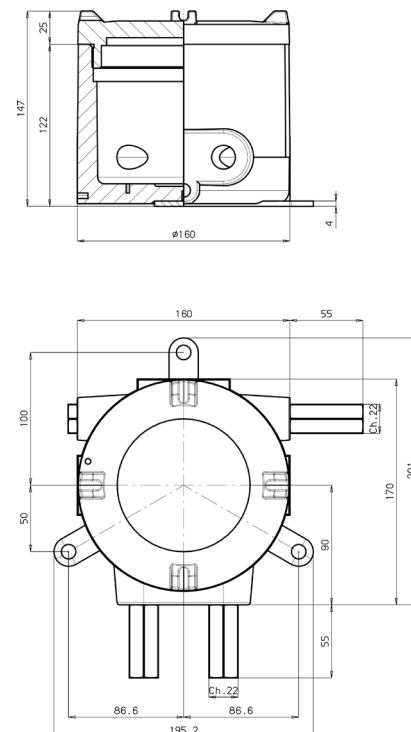
VLO

LD pressure port/no venting valve



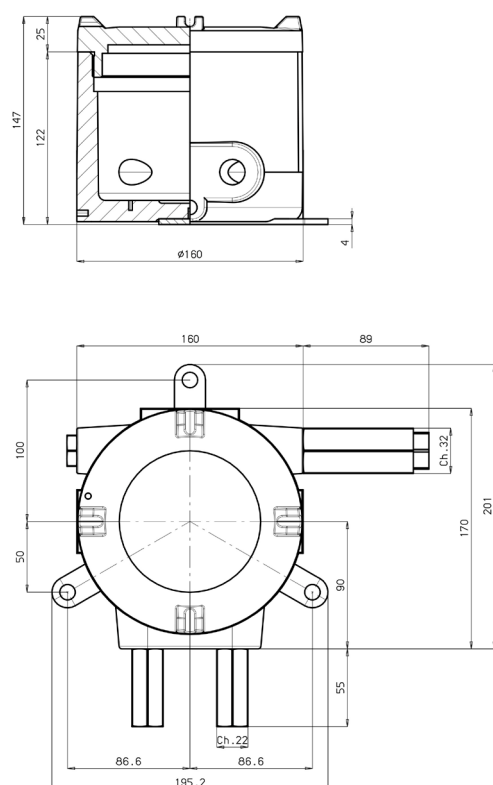
VS1

STD pressure port/STD venting valve



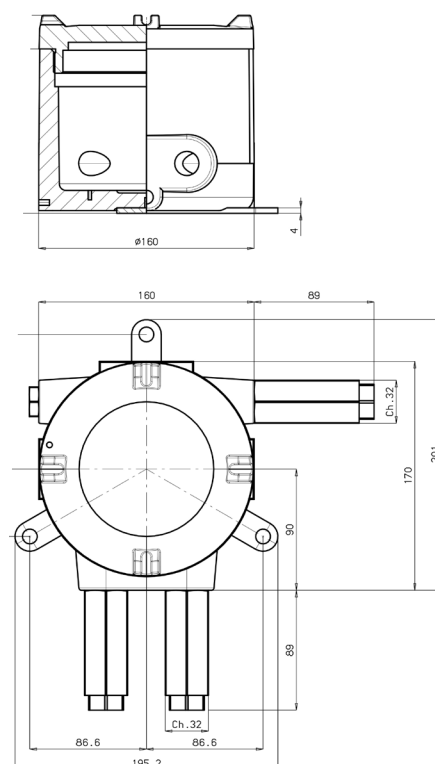
VS2

STD pressure port/LD venting valve



VL1

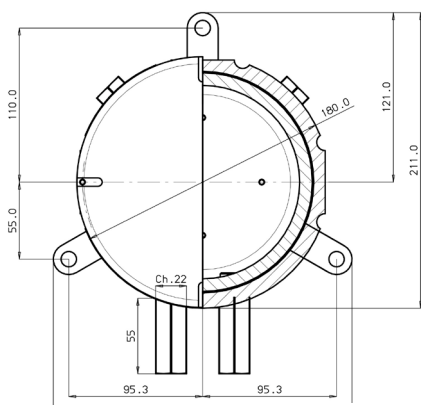
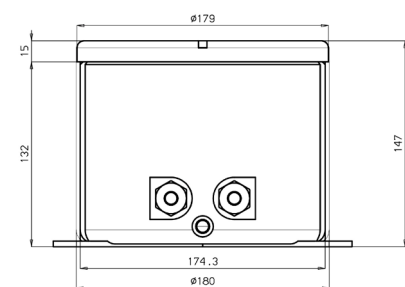
LD pressure port/LD venting valve



Stainless steel case

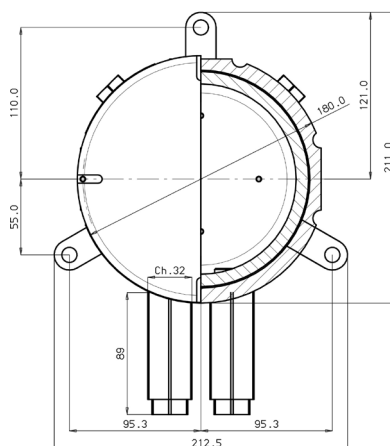
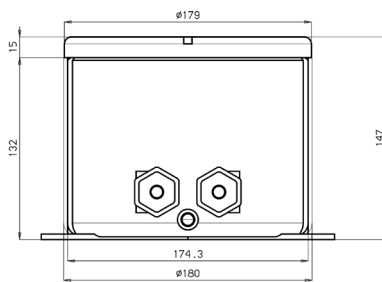
VS0

STD pressure port/no venting valve



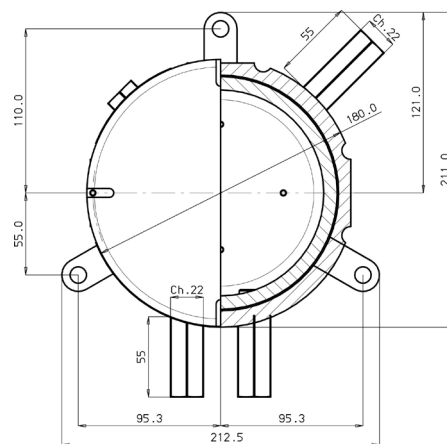
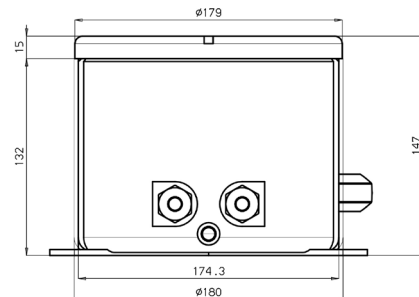
VL0

LD pressure port/no venting valve



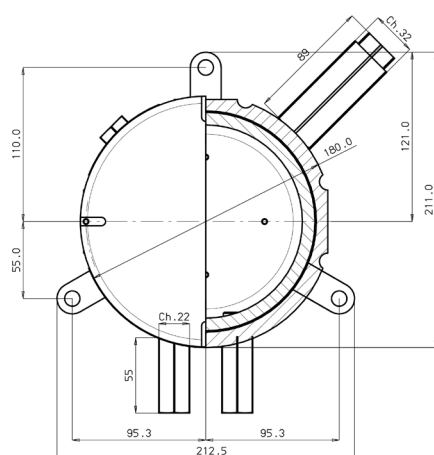
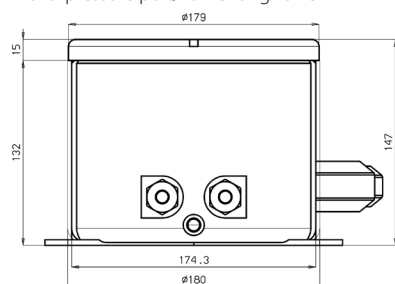
VS1

STD pressure port/STD venting valve



VS2

STD pressure port/LD venting valve



VL1

LD pressure port/LD venting valve

