CLIMATIC
ENVIRONMENT
SOLUTIONS
AND EQUIPMENT






UPR
PRESSURISATION UNITS

Pressurisation units
for Marine and Oil & Gas applications

MADE IN FRANCE

www.ett-hvac.com

CONTENTS

General description

The **ETT** packaged unit is delivered ready to operate. Its full aluminium structure (frame and casing) ensures an excellent corrosion protection (20-year anti- corrosion guarantee).

Aluminium promotes the REFURBISHING of machines for a second life: Aluminium allows our machines to be refurbished for a second life, unlike a steel structure.

Our technical choices have a major impact on the environment

- **DECARBONATION:**

ETT is committed to an ambitious approach to reducing Greenhouse Gas Emissions:
  - Reducing the energy consumption of our machines
  - Fluid refrigerants with low GWP
  - Energy monitoring & AI
  - Adiabatic cooling
  - Development of machine retrofits

- **ALUMINIUM: PERFORMANCE AND DURABILITY!**
  - Lightweight: 3 times lighter than steel
  - Corrosion resistant and long lifespan
  - Thermal performance
  - 100% recyclable indefinitely
  - Facilitates the refurbishing of our machines

- **ECO-DESIGN:**

Our technologies are designed with sustainability in mind, reducing their environmental impact throughout their life cycle.

- **LOW-POLLUTION MANUFACTURING PROCESS:**
  - Selective sorting: 80% recovery rate
  - No paint or solvents

- **END OF MACHINE LIFE:**

In compliance with regulations, ETT is a member of the Ecologic eco-organisation for the end-of-life processing of machines, which are 98% recyclable.

EcoLogic

- **ETT CERTIFICATIONS**

- **CSR assessment: ECOVADIS Gold Medal** for our CSR approach

- **Iso 14001 & Iso 9001 certification** for our Quality and Environmental Management system

- **Certificate of competence for handling refrigerants**

- **Membership of the UN Global Compact**

- **Qualiopi certification** for our training centre

As a positive-impact company, ETT contributes to a more sustainable world through our decarbonising products and services.

CE In addition, each unit is delivered with an certificate of conformity to EU standards and complies with the following standards:

- Machinery Directive 2006/42/EC - Operator's safety
- Low Voltage Directive (LVD) 2014/35/EU - Electricity
- Electromagnetic Compatibility (EMC) Directive 2014/30/EU
- Regulation (EU) 2016/426 – Gas appliances
- Standard NF EN 60204 -1- Electrical appliances
- Standard EN 378-2 : 2017 – Safety and environmental requirements
- PED Directive 2014/68/EU (in accordance with Articles 2.10, 2.11, 3.4, 5a and 5d of Annex 1) - Pressure equipment
- EcoDesign regulations ErP UE 2281/2016
- ATEX Directive 2014/34/EU

20-year guarantee against corrosion frame - casing

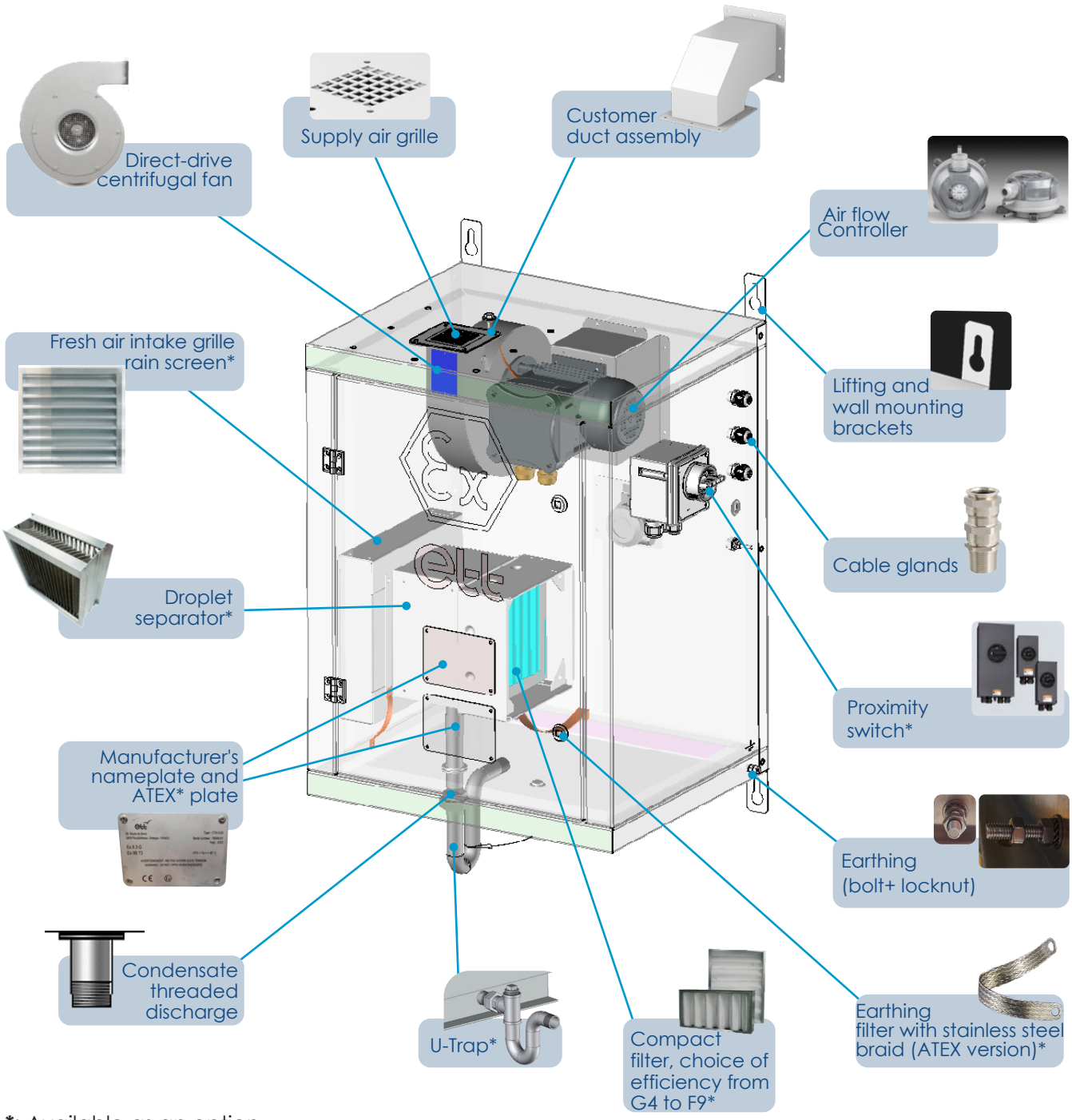
ENERGY SAVING

ENVIRONMENTAL ATTITUDE

SERVICE LINK

Specific features of the Pressurisation Unit range (UPR)

- Adapted to the requirements of the Oil & Gas market, this compact range uses a standard base while offering the many options required by energy and shelter companies.
- Available as standard in AG3 aluminium, it can also be built in AG4 Marine Aluminium or 316 L stainless steel (grade 1.4404).
- Maximum compactness to fit into the design of wall-mounted E-Houses.
- This range can be ATEX, Zone 1 or Zone 2 certified.
- Mainly designed for outdoor installation.



*: Available as an option.

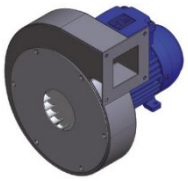
Unit description

AG3 ALUMINIUM FRAME AND CASING ASSEMBLY

- **Rigid, compact** and lightweight packaged unit, with perfect weather resistance and a 20-year anti corrosion warranty on the entire casing (depending on conditions of use).
- **Aluminium vertical walls and roof** AG3 grade (AG4 or 316 L stainless steel optional).
- **Access through** an hinged door for easy maintenance. The door is fitted with compression closures. Sealing is achieved by compression on a flexible lip seal, maintaining perfect elasticity over time.

AIR ASSEMBLY

- **Eco-concept filtration, 48 or 98 mm thick** easily removable – efficiency from ISO Coarse 65 % to e PM1 80 % according to ISO16890 (ISO Coarse 65% (G4) basic, up to ISO ePM1 80%(F9) according to EN 779: 2012). With clogging controlled by pressure switch (optional).
- **Supply air fan** compliant with EuP 2013/ErP 2021 directives (for non ATEX type).
- The EC or AC **motor** can be used for:



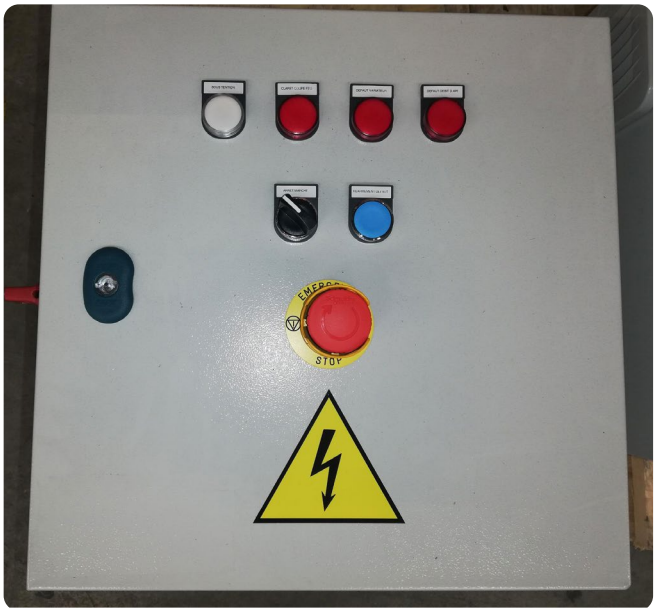
> Setting the maximum rotation speed to match the system's pressure drops and check the excess pressure.

CONTROL ASSEMBLY

The machine is regulated by controlling the flow of blown air and the excess pressure in the shelter.

2 control levels are possible:

- **Level 0:** Control of the machine is entirely **the responsibility of the customer,** who manages the flow rate and excess pressure using the means of his choice.
- **Level 1:** The machine is controlled by a variable speed drive (**supplied by ETT**) located in the control box (see image below, box dimensions 400 x 600 x 250 mm), and connected directly to an overpressure sensor (**supplied by ETT**) to be installed in the pressurised volume.



Example of installation

BUILT-IN PRESSURISATION UNIT AND OVERPRESSURE VALVE (OPTIONAL) ON 20' SHELTER

Main options

Frame - Casing	▪ AG4 aluminium frame (Marine) ▪ 316 L stainless steel frame ▪ Frame paintwork ▪ Specific nameplate ▪ Rain screen fresh air intake grille
Air treatment	▪ Filtration up to ISO ePM1 80%(F9) to EN 779 possible on request ▪ Droplet separator ▪ Preheating with electric coils
Electrics	Specific voltage: ▪ 230V – 50Hz ▪ 230V – 60Hz ▪ 400V – 50Hz ▪ 440V – 60Hz ▪ 690V – 50Hz ▪ 460V – 60Hz ▪ 480V – 60Hz
Control	▪ Control box and pressure sensor for level 1 regulation ▪ Pressure relief damper
Safety	▪ ATEX zones 1 and 2 certified machines
Installation	▪ Anti-vibration supports ▪ Threaded rods for support ▪ On-site commissioning ▪ Specific support for OFFSHORE applications
Documentary section	▪ Specific FAT ▪ Specific documentation

Technical characteristics of the Pressurisation Units (UPR)

	DESCRIPTION	UNIT	UPR 0.2	UPR 0.25	UPR 0.3	UPR 0.4
VENTILATION	**FLOW RATES**					
	Fresh air supply low rate	**m^3/h**	200	250	300	400
	Available supply pressure [1]	**Pa**	100	100	100	100
	Fresh air available pressure	**Pa**	0	0	0	0
GENERAL INFORMATION	**ELECTRICAL DATA***					
	Total installed electrical power [2] excluding auxiliaries	**kW**	0.18	0.18	0.37	0.37
	Total installed electrical current[2] excl. auxiliaries	**A**	0.62	0.62	01:24	01:24
	Starting current excluding auxiliaries	**A**	To be defined according to control configuration			
	OPERATING LIMITS					
	Maximum outside temperature	**°C**	+50	+ 50	+ 50	+ 50
	Minimum outside temperature	**°C**	-20	-20	-20	-20
	WEIGHTS AND DIMENSIONS					
	Machine weight (with options but without installation accessories)	**kg**	75	75	85	85
	Casing length (overall and without options)	**mm**	600	600	600	600
	Casing Width (overall and without options)	**mm**	500	500	500	500
	Casing Height (overall and without options)	**mm**	800	800	800	800

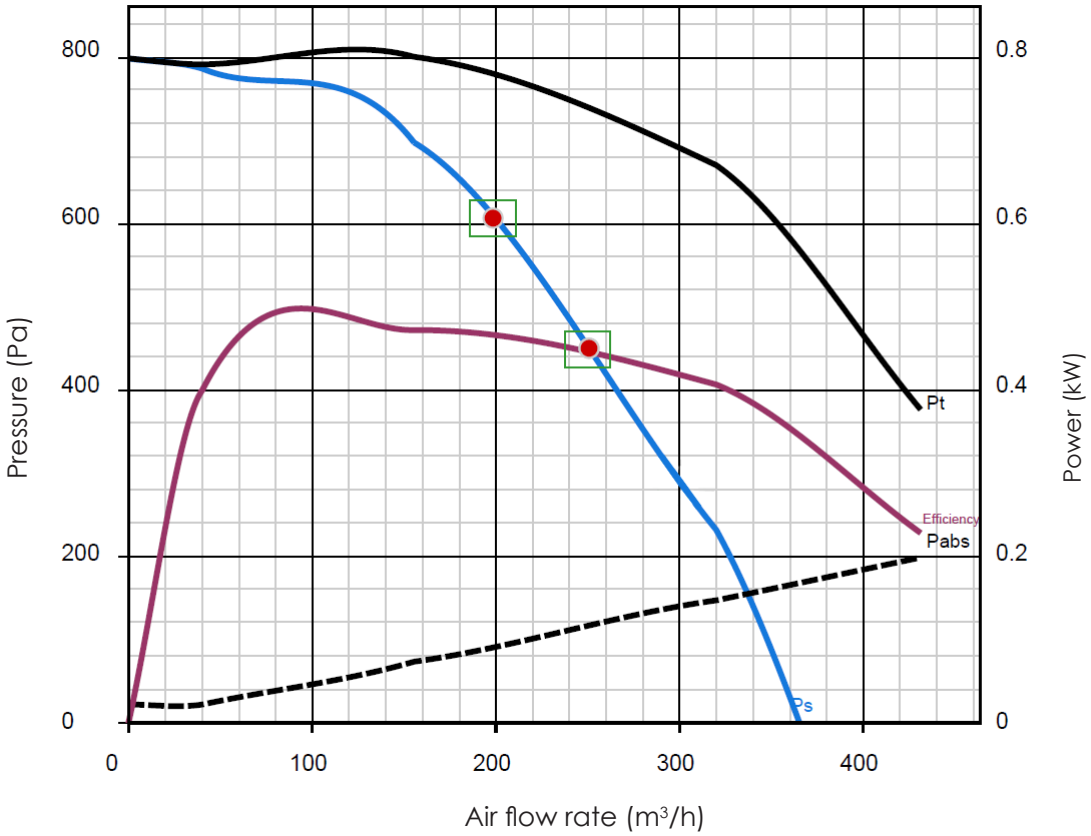
(*)The values supplied may change during project planning and must be confirmed before the purchase order is placed.

[1] Other pressures available on request.

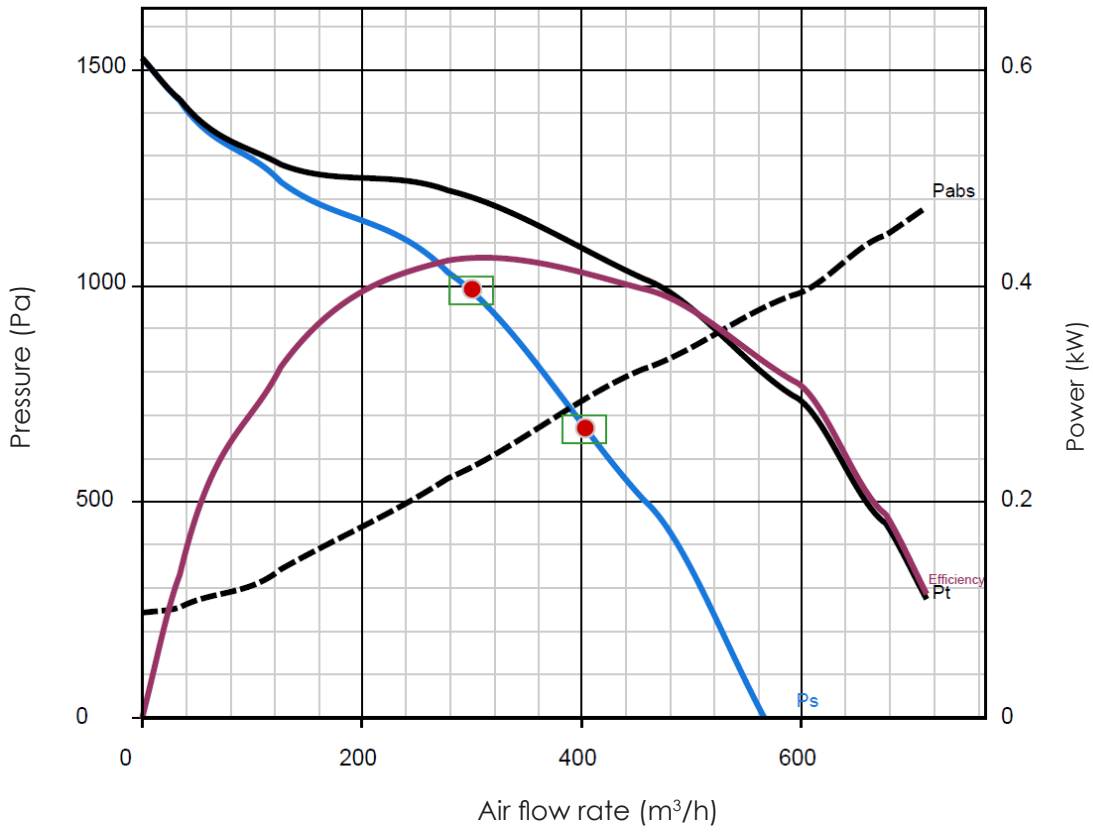
[2] Power to be used for power cable selection. 400V-50Hz Three-phase supply + earth without neutral (TT or TN power supply systems only). This switch must not be connected directly to an aluminium cable.

Fan curves

MODELS 0.2/ 0.25



MODELS 0.3/ 0.4



Connections

OPTIONS FOR SUPPLY AIR CONNECTION

Machine fitted with square duct

Machine fitted with circular duct

ARRANGEMENTS

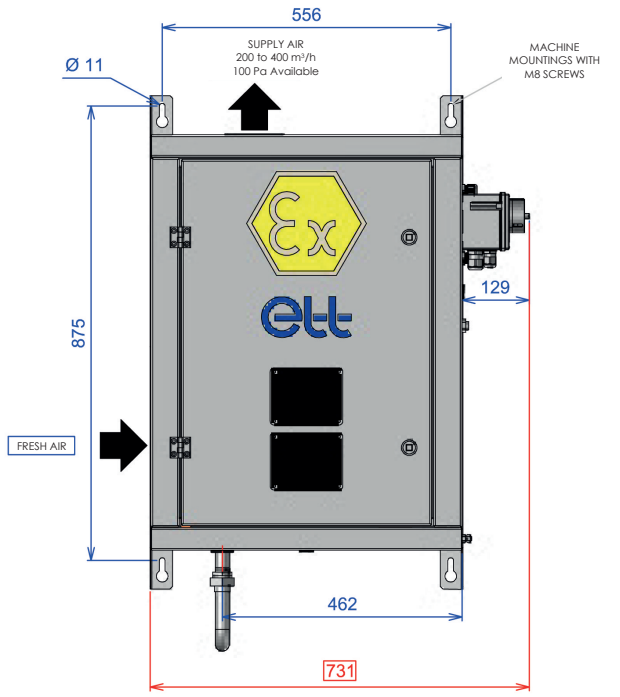
Standard: air intake on the left
as shown in the picture below.

Optional: air intake on the right
as shown in the picture below.

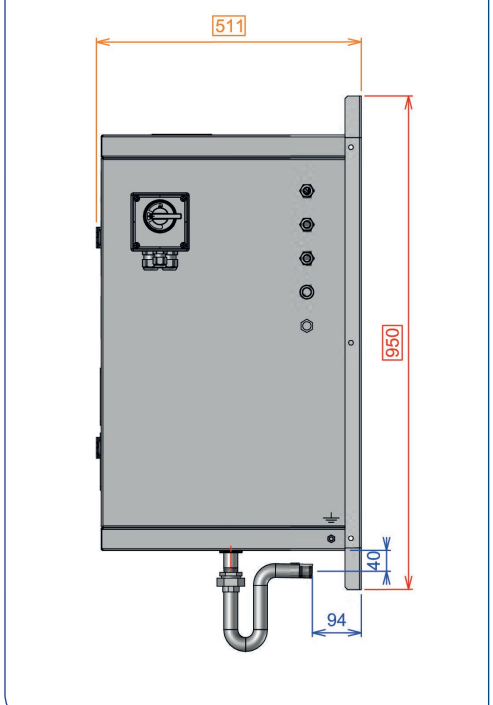
Pressurisation unit Drawings

AIR INTAKE ON THE LEFT

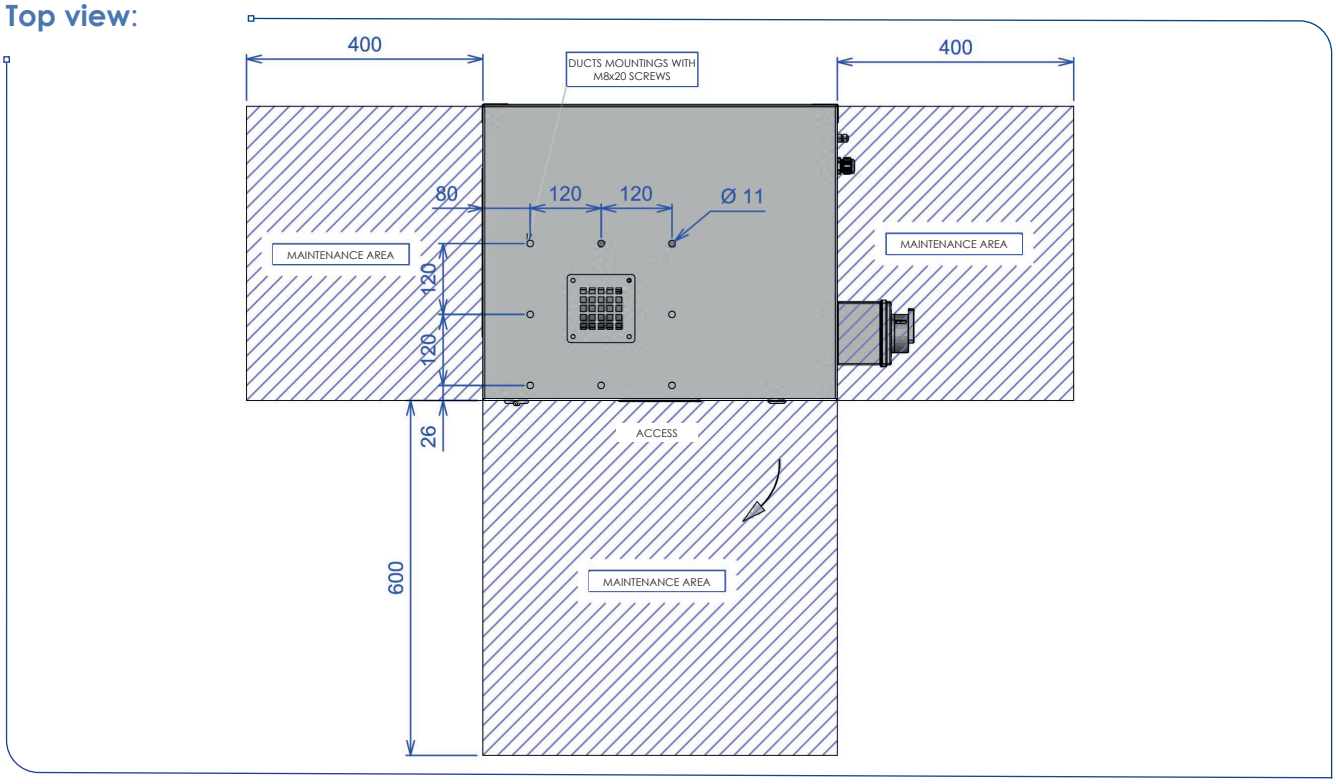
Front view:



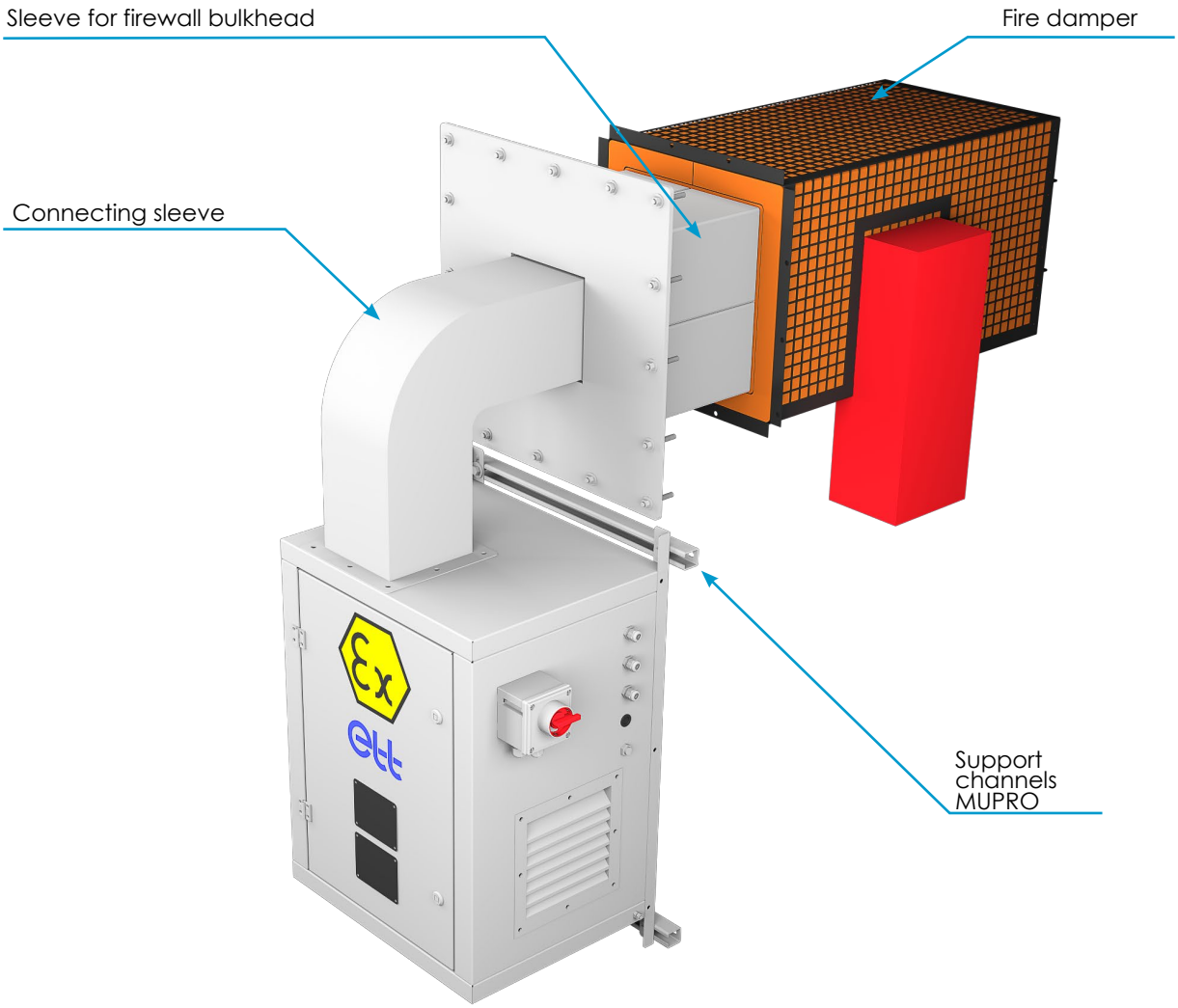
Side view:



Top view:



Installation accessories (in customer's scope)



ATEX regulations

Reminder of the ATEX Directive

IECEx	IEC60079-0 EQUIPMENT CLASSIFICATION				ZONES	
USE	EQUIPMENT GROUP	EPL = Equipment Protection Level = (Level of protection for equipment)	PROTECTION LEVEL	IF ATEX PRESENT	COMPLIANT WITH NF EN 16079-10	
Mines susceptible to firedamp	I	M1 Maximum content of mine gas	Very high	Live		
		M2 Below a certain value	High	Power off		
Explosive atmospheres due to the presence of gas	II A B C	1 G	Very high	Live	0	
		2 G (1)	High		1	
		3 G	Normal		2	
Explosive atmospheres due to the presence of dust	III A B C	1 D	Very high		20	IP6X
		2 D (2)	High		21	IP6X
		3 D	Normal		22	IP5X

Ex	DIRECTIVE 2014/34/EU EQUIPMENT CLASSIFICATION				ZONES	
USE	ATEX GROUP	CATEGORY	PROTECTION LEVEL	IF ATEX PRESENT	COMPLIANT WITH NF EN 16079-10	
Mines susceptible to firedamp	I	M1 Maximum content of mine gas	Very high	Live		
		M2 Below a certain value	High	Power off		
Surface industries	II	1 G	Very high	Live	0	
		2 G (1)	High		1	
		3 G	Normal		2	
		1 D	Very high		20	IP6X
		2 D (2)	High		21	IP6X
		3 D	Normal		22	IP5X

(1) can be installed in zones 1 and 2
(2) can be installed in zones 21 and 22

I: Methane

IIA: Propane
IIB: Ethylene
IIC: Hydrogen, Acetylene

IIIA: Suspended combustible particles
IIIB: Non-conductive dusts (electrical resistivity > 10^3 Ω m)
IIIC: Conductive dusts

ATEX marking

Ex II 2G
Ex II 2G

Marking by type of protection

EX d IIB T4 Gb
EX tb IIIC T125° Db

G = gas

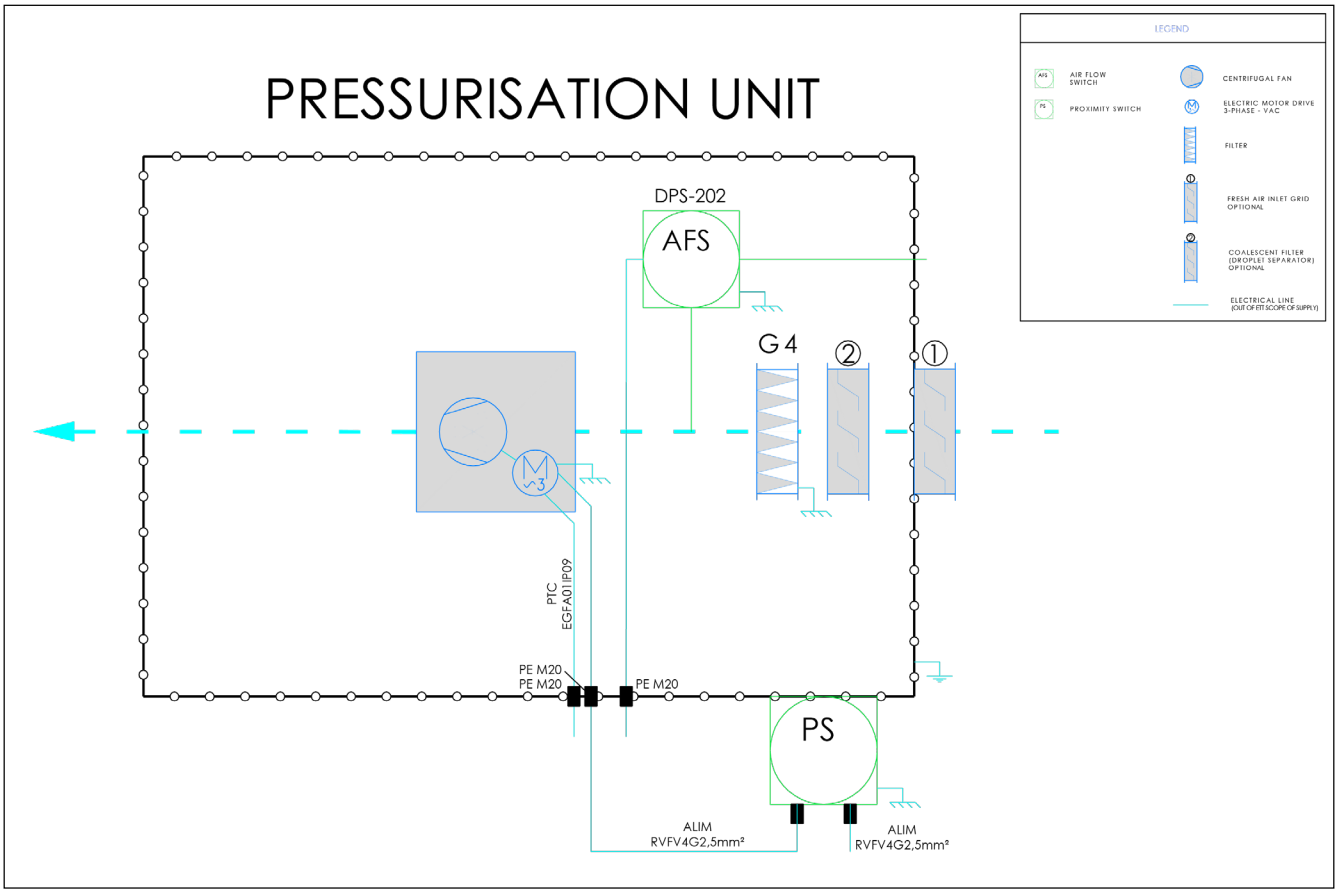
Temperature classes	T1	T2	T3	T4	T5	T6
Maximum surface temperature	450°C	300°C	200°C	135°C	100°C	85°C

D = dust

Temperature class	T 125°C
Maximum external surface temperature (motor)	125°C

NOTE: Foreign certifications such as CU TR 012/2011 on request Ex

P&ID - General



REFERENCES

PROJECT N° 15582
– PRESSURISATION UNIT 200 m³/h

PROJECT N° 16549
– PRESSURISATION UNIT 250 m³/h

PROJECT N° 16549
– PRESSURISATION UNIT 400 m³/h

Certifications

All our machines can be certified on request

Acronyms

UPR Pressurisation unit

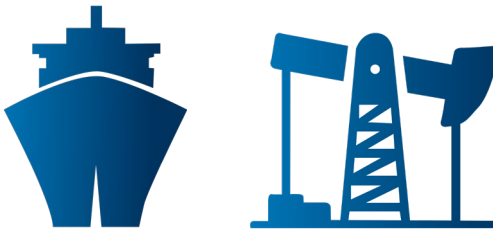
ETT Energie Transfert Thermique

FAT Factory Acceptance Test

HVAC Heating, Ventilation, Air-Conditioning

CVC Heating, Ventilation, Air-Conditioning

P&ID Piping & Instrument Diagram



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