Zeus ECM

Air Handling Unit

TECHNICAL LEAFLET

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Air Handling Unit

The **Zeus** air handling units are suitable for cooling and heating commercial and industrial environments.
They are available in **6 horizontal models** and **6 vertical models**, with air flow from 5.000 to 25.000 m³/h.
Heating capacity **from 32 to 260 kW**, cooling capacity **from 17 to 160 kW**.

The units are made up of a extruded "anticorodal" aluminium section bar frame, connected by fibreglass-reinforced nylon joints.
The casing is made from 25 mm-thick double panelling filled with a layer of high-density polyurethane foam insulation that guarantees a very high degree of thermal insulation, minimising dispersions to the outside.
The metal plate used to make the panels is galvanised and pre-painted white C21 colour (only on the panel outside).
The metal plate used to make the panels is galvanised and pre-painted blue on the outside of the panel.

The Zeus ECM air handling units are equipped with fan motors of EC Plug-Fan type able to provide elevated performances in terms of high available static pressure and low power consumption.

Each unit can be **easily dismantled and reassembled on site**, changing the direction of air flow according to specific needs. The special construction allows the coil and the fan assembly to be easily inspected and removed.

Casing
Casing made of aluminium frame and sandwich panels with polyurethane foam insulation.
Panels and frames are suitable for supporting the required mechanical stresses and reducing both the thermal dispersion with respect to the installation environment and the risks of external surface condensation.
The standard degree of the unit protection is such that it is necessary to install them in closed or covered rooms, with temperatures in the installation environment that do not fall permanently below 0 °C.

Fan assembly
The units are supplied with electronic fans of plug fan type equipped with EC synchronous motors at a high energy efficiency.
The design of the impellers is of the backward curved blade type in order to minimize water leakages.
The fans allow the units to reach available static pressures up to 1000 Pa. Such high pressures may be required in the case of particularly complex multi-zone applications.
Fans are equipped with a pressure probe on the calibrated nozzle of the fan used in the case of control aimed at the target flow rate.

Coils
The coils are supported by a special load-bearing frame and is easily removable and reversible; the coil connection side can be reversed also on the construction site.
The coils are made of copper pipes and aluminium fins, and are made using:
- pipes with 10 mm of diameter for the sizes 50 - 80 - 110.
- pipes with 16 mm of diameter for the sizes 140 - 200 - 250.

The hydraulic connections are made of steel, with male gas threads.
Coils provided:
- 2-3-4 rows for heating only operation
- 3-4-6 rows for cooling operation

The coils are not suitable for use in corrosive atmosphere or in environments where aluminium may be subject to corrosion.

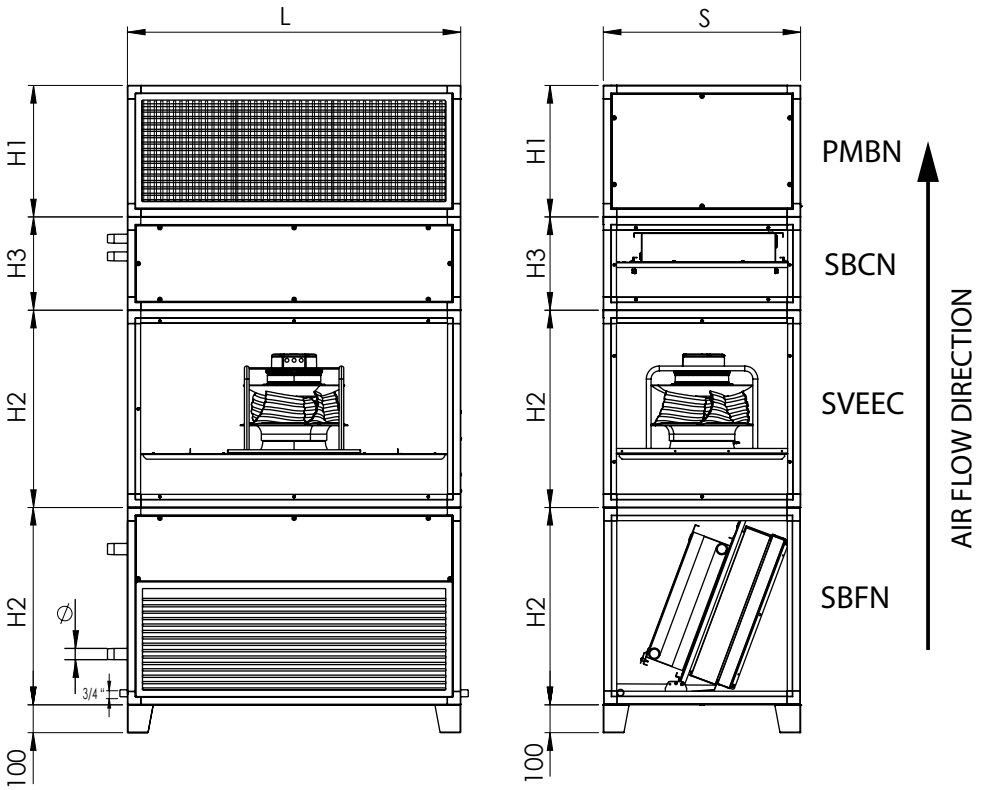
Filters
The units are fitted with synthetic filters in::
- class G3 according to EN 779 standard
- class F1 as regards to resistance to fire, according to DIN 53438 standard

The filters are made from individual cells with a metal frame and galvanized protective mesh.
The filters are removed by default from the same side of the hydraulic connections; it is possible to reverse the side of the removal of the filters on the construction site indipendently of the hydraulic connections.
As proof of the utmost attention paid to air cleanliness and to protect the durability of indoor equipment, the units can be optionally equipped with additional ISO ePM_1 55% filters (Class F7).

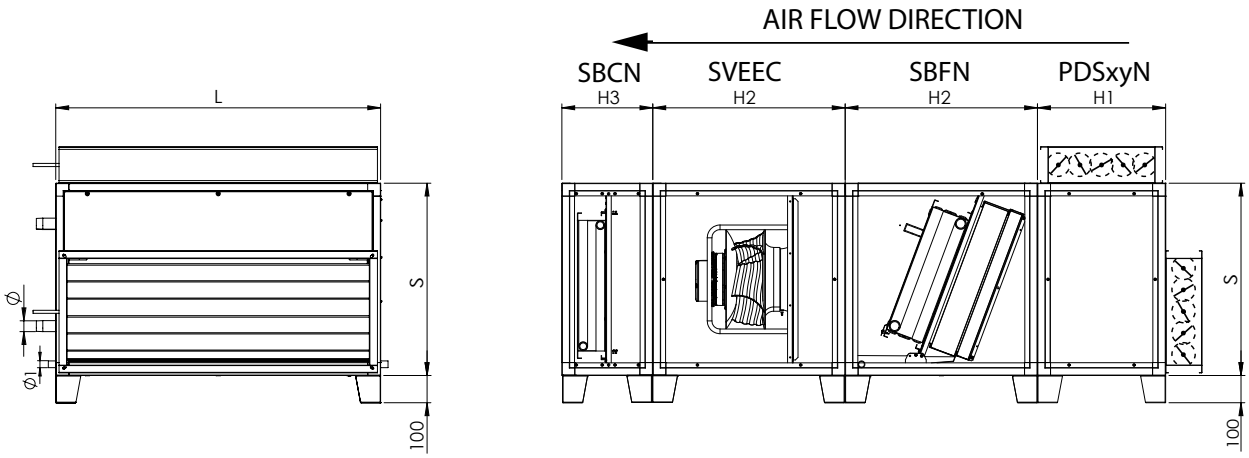
Electric heaters
The TZN 50, 80 and 110 units are available also into the version supplied with fitted electric heater.
The fitted electric heaters are of ON/OFF type with double stage. The accessory control panel allows the regulation of the two heater phases to reach the indoor temperature setpoint.
The heater has a rectangular section, with armoured leads and safety thermostats with automatic and manual reset. In any case, the opening of any safety thermostat causes the emergency shutdown of the heating element.

Adjustment and control system
The units are equipped with external user-installer interface terminal block, where are reported all power connections and regulation signal of the fan assembly.
On demand (optional) it is possibile to add different types of controls, such as the air flow rate/pressure regulator or the complete regulation electric control panel.
In case of electric panel assembly, the units are fully equipped with the necessary electronics and sensors for operational use, such as:
- control board
- optional T-MB2 wall control
- ventilation, electric heater, IAQ electrostatic filter management
- management of valves with actuator 24 Vac of floating 3-point type
- management of valves with actuator 230 Vac of ON/OFF type
- management of 4 pipe installation with a simultaneously presence of fluid (Dead zone)
- operating logic setting for continuous ventilation or simultaneous to the valves opening
- possibility to connect by free contacts the occupancy sensor or window sensor wiring
- possibility of fan interlock with water probe (T3 probe) within the heating coil section

Vertical version (left connections)



AIR FLOW DIRECTION (left connections)



Model		TZN 50	TZN 80	TZN 110	TZN 140	TZN 200	TZN 250
L	mm	1250	1900	1900	2560	2580	2780
S	mm	740	740	870	870	1150	1270
H2	mm	740	740	870	870	1150	1270
H3	mm	350	350	350	350	400	450
H1	mm	490	490	590	590	810	810

RATED TECHNICAL DATA

Model			TZN 50	TZN 80	TZN 110	TZN 140	TZN 200	TZN 250
Minimum flow rate		m^3/h	3400	5700	8000	10750	15600	18800
Maximum air flow in cooling operating mode		m^3/h	4750	8000	11150	15050	21800	26250
Maximum air flow in heating operating mode		m^3/h	5350	9000	12500	16900	24500	29500
Fan maximum static pressure	Minimum flow rate	Pa	1350	1200	1000	1250	1000	1200
	Cooling maximum air flow	Pa	1200	980	650	1050	400	650
	Heating maximum air flow	Pa	1000	800	450	900	50	300
EC fan								
Power supply		V/n°/Hz	400 3N 50/60HZ					
Maximum power absorption 50 Hz-60 Hz		kW / kW	2,5 / 2,5	3,4 / 3,4	3,5 / 3,5	6,8 / 6,8	6,8 / 6,8	9,2 / 9,2
Maximum current		A / A	3,9 / 3,9	5,2 / 5,2	5,4 / 5,4	10,4 / 10,4	10,4 / 10,4	14,2 / 14,2
Nr° Fan (EC version)		n°	1	1	1	2	2	2
Hydronic coil - dimensions								
H coil pad		mm	500	500	700	660	960	1080
L coil pad		mm	940	1590	1580	2240	2240	2410
Front area		m^2	0,47	0,8	1,11	1,48	2,15	2,61
Diameter of 2 row headers		Ø	1"	1"	1" 1/4	1" 1/2	1" 1/2	2"
Diameter of 3 row headers		Ø	1"	1" 1/4	1" 1/2	1" 1/2	2"	2"
Diameter of 4 row headers		Ø	1"	1" 1/4	1" 1/2	1" 1/2	2"	2" 1/2
Diameter of 6 row headers		Ø	1" 1/4	1" 1/2	1" 1/2	1" 1/2	2"	2" 1/2
Condensate discharge diameter		Ø	3/4 M	3/4 M	3/4 M	3/4 M	3/4 M	3/4 M
Hydronic coil - Rated Performance								
Rated air flow		m^3/h	4400	7400	10400	14000	20200	24500
		l/s	1222	2056	2889	3889	5611	6806
3 row coil maximum cooling emission (1)	Total	kW	17	28,9	40	54,4	78,8	101,6
	Sensible	kW	14	23,8	32,8	41,6	60,2	75,5
4 row coil cooling emission (1)	Total	kW	20,8	35,5	50,5	72,1	104,4	126,5
	Sensible	kW	16,4	28	39,4	51,1	74	89,6
6 row coil cooling emission (1)	Total	kW	26,7	45,5	63,9	92,5	134	160,9
	Sensible	kW	19,4	33	46	62,7	90,8	109,1
2 row coil heating emission (2)		kW	32,4	54,4	76,1	98,9	142,4	171,6
3 row coil heating emission (2)		kW	42,4	71,2	99,7	129,1	186,9	226,3
4 row coil heating emission (2)		kW	49,8	83,7	117,1	151,3	219,1	263,2
Electric heater								
Heating emission / electrical absorption		kW	14	20	22	-	-	-
Electric heater current absorbed		A	20,5	29	32	-	-	-

(1) Air 27 °C 50% UR - Water 7-12 °C
(2) Air 20 °C - Water 70-60 °C. For the SBCN sections the highest inlet temperature allowed is 60 °C.

Weight (kg)

Model	Rows	SBFN cooling coil section	SBCN heating coil section	SVEEC fan section	Plenum sections
TZN 50	2	92	72	85	40
	3	95	76		
	4	100	80		
	6	108	-		
TZN 80	2	132	106	125	55
	3	140	114		
	4	145	118		
	6	158	-		
TZN 110	2	159	125	156	65
	3	167	133		
	4	177	143		
	6	195	-		
TZN 140	2	208	167	210	85
	3	224	184		
	4	240	200		
	6	272	-		
TZN 200	2	300	237	260	120
	3	320	257		
	4	345	283		
	6	390	-		
TZN 250	2	354	280	335	140
	3	381	307		
	4	409	333		
	6	470	-		

Water content (litres)

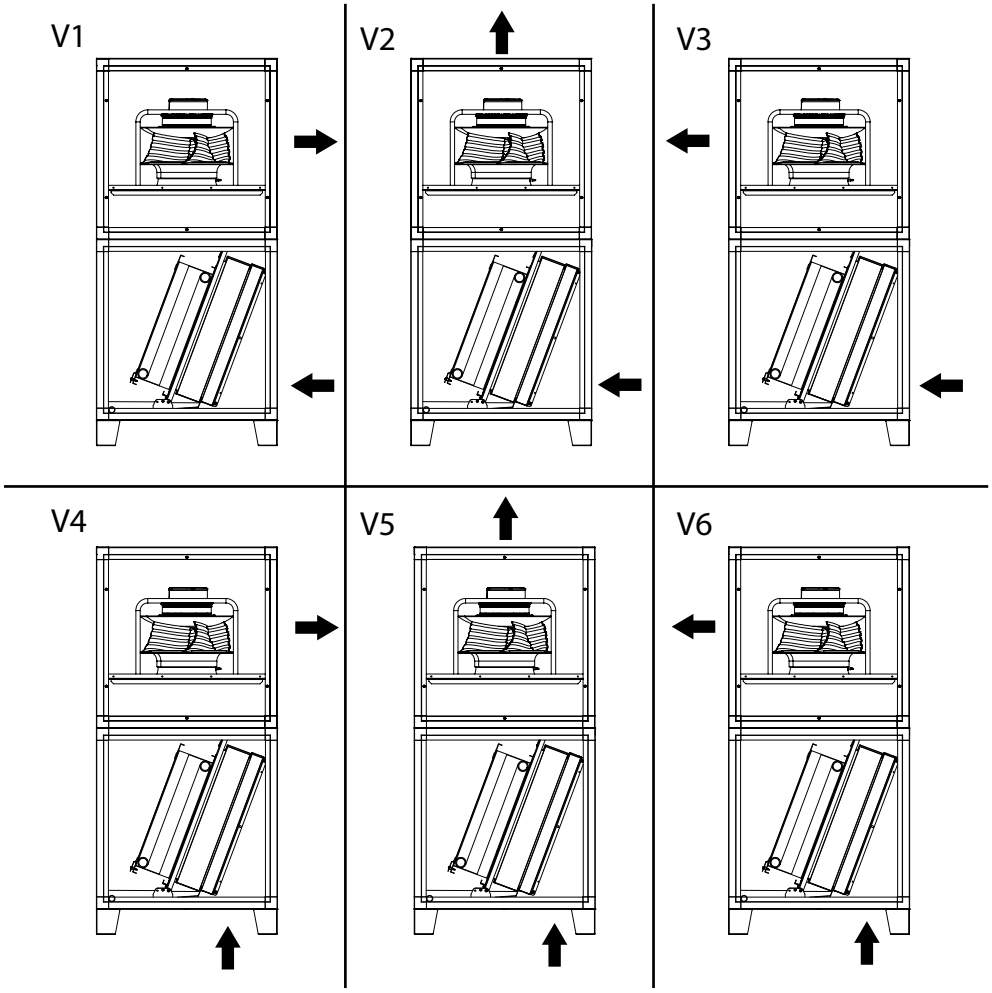
Model	Coil (rows)			
	2	**3**	**4**	**6**
TZN 50	3,2	4,6	6,2	8,2
TZN 80	5,3	7,7	10,2	14,8
TZN 110	7,2	10,7	14,3	20,9
TZN 140	10,2	15,3	20,4	30,4
TZN 200	15,3	22,5	29,4	44,5
TZN 250	18,4	27,5	37,5	55,6

Max. temperature limits for the supply of the SBFN and SBCFN sections

T_{max} coil power supply	TZN 50	TZN 80	TZN 110	TZN 140	TZN 200	TZN 250
2R	80 °C	80 °C	80 °C	80 °C	80 °C	60 °C
3R	80 °C	80 °C	80 °C	80 °C	80 °C	60 °C
4R	70 °C	70 °C	70 °C	70 °C	70 °C	60 °C
6R	60 °C	60 °C	60 °C	60 °C	60 °C	50 °C

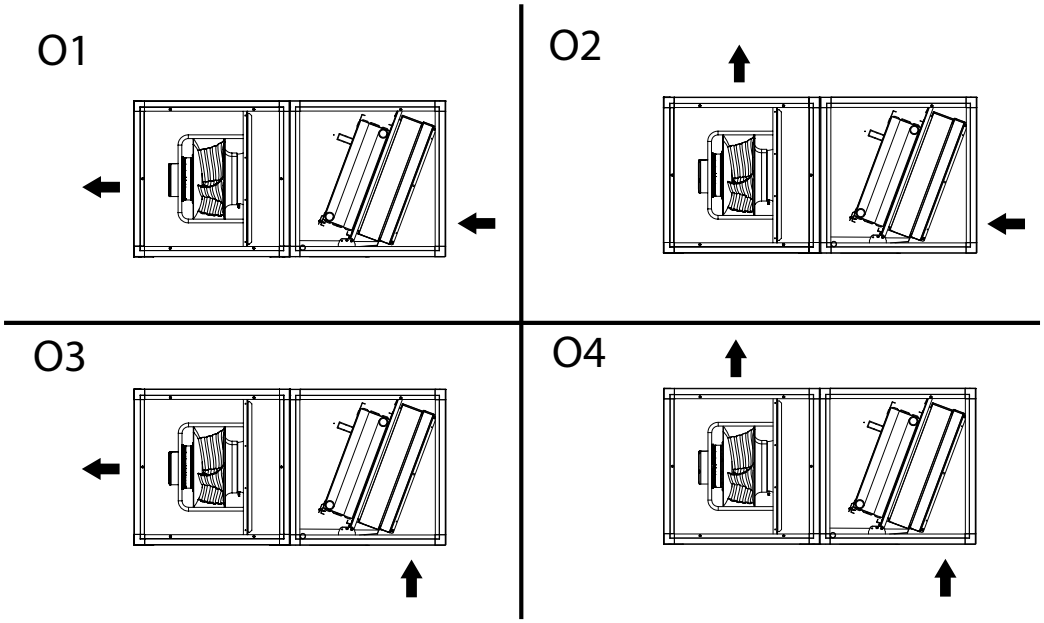
Vertical installation

Air intake and outlet position (with standard connections on the left)



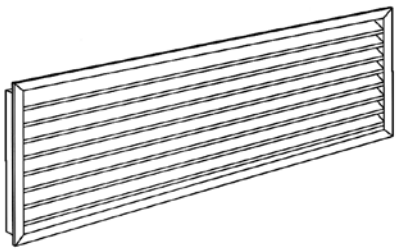
Horizontal installation

Air intake and outlet position (with standard connections on the left)

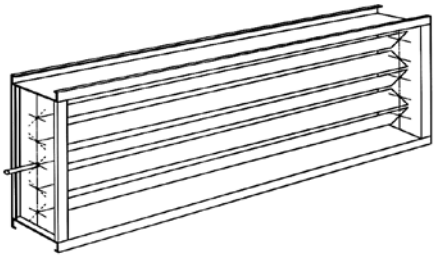


SBFN sections

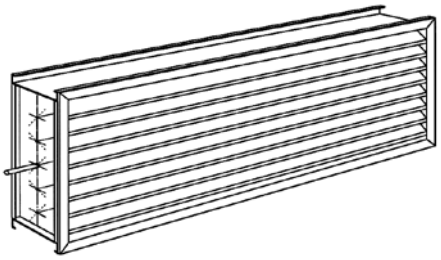
GASF **Aluminium inlet grid**



SRASF **Galvanized inlet damper**

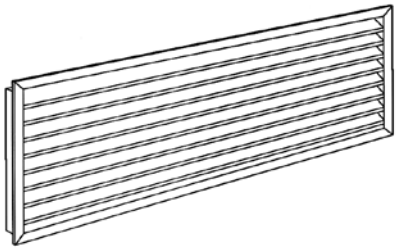


SRAGF **Galvanized inlet damper with inlet grid**

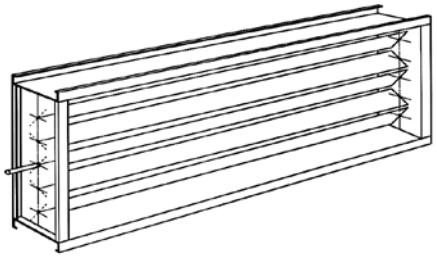


SBCN and SBCFN sections

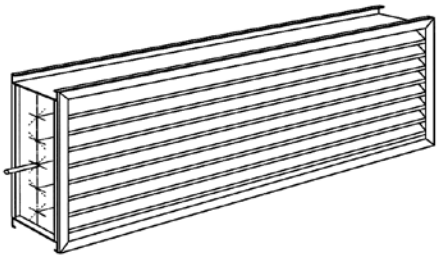
GASC **Aluminium inlet grid**



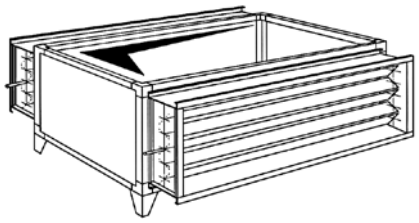
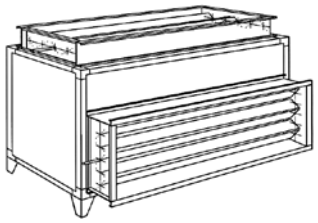
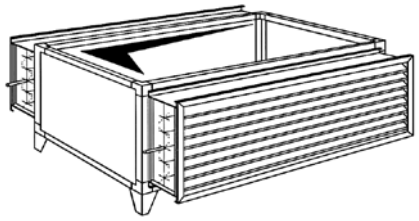
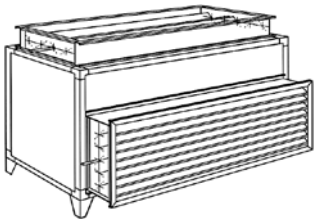
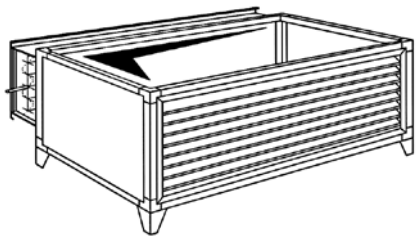
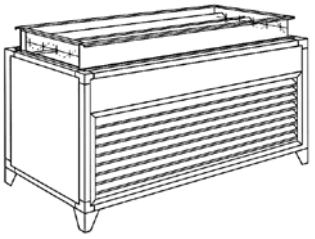
SRASC **Galvanized inlet damper**



SRAGC **Galvanized inlet damper with inlet grid**

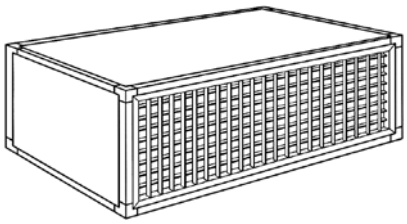


Return sections

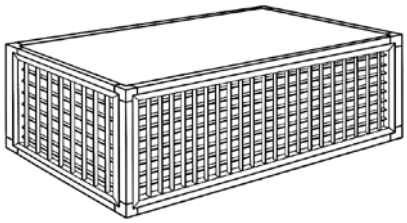
PDSVN	**Mixing section with 2 galvanized dampers** (vertical model)	
PDSON	**Mixing section with 2 galvanized dampers** (horizontal model)	
PDSGVN	**Mixing section with 2 galvanized dampers and inlet grid** (vertical model)	
PDSGON	**Mixing section with 2 galvanized dampers and inlet grid** (horizontal model)	
PGSVN	**Mixing section with galvanized damper and inlet grid** (vertical model)	
PGSON	**Mixing section with galvanized damper and inlet grid** (horizontal model)	

Supply sections

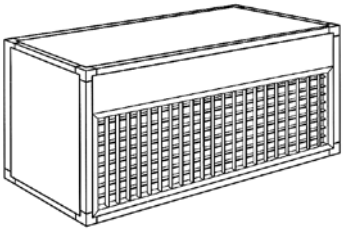
PMBN 1VV — **Supply section with outlet grid with double louvre set** (vertical model)



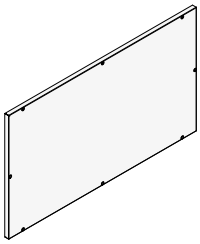
PMBN 3VV — **Supply section with 3 outlet grids with double louvre set** (vertical model)



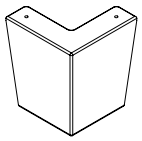
PMBN 1VO — **Supply section with outlet grid with double louvre set** (horizontal model)



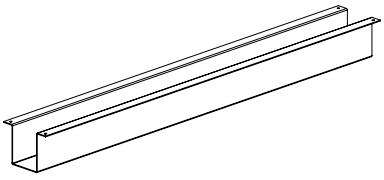
PC-TZN — **Blind panel for duct connection**



PAP-Z — **Supplementary feet kit for horizontal installation (mandatory)**



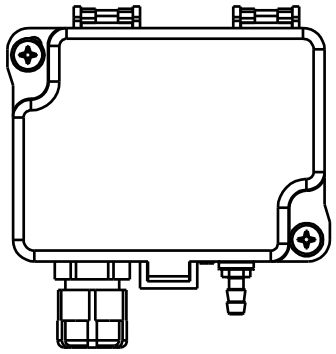
TZN 50-80-110



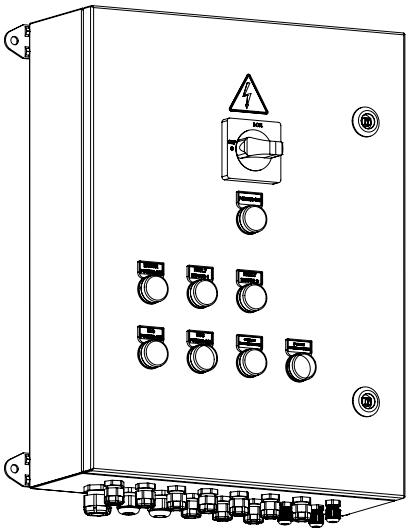
TZN 140-200-250

F70-Z — **ePM$_1$ 70% (F7) additional filters set**

Pressure transducer module
Regulation module for volumetric flow or pressure control



QCV-MB2-TZN-ECM control panel



T-MB2
To be used only with QCV-MB2-TZN-ECM regulation control panel

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Sabiana app

01/2025

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Sabiana 4 - Operative unit “via Zanella 27 - Corbetta (MI)”