

REGULATION



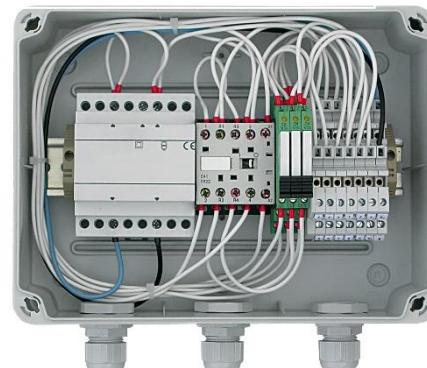
MONOZONE®

KIT RANGE

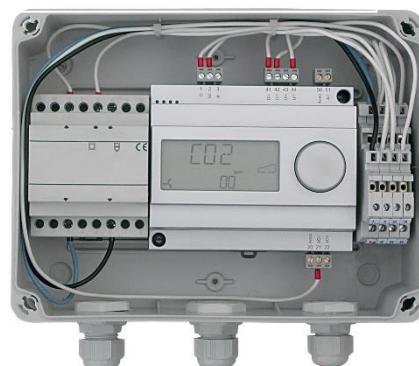
All or Little Ventilation
Proportional ventilation
Solutions compliant with RT2012
for office applications

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SYSTEM TOP®



SYSTEM DIVA®



APPLICATION

In order to meet the objectives set out in the Grenelle Environment Forum which recommends the implementation of VHEP (Very High Energy Performance) or Low Consumption buildings, CALADAIR offers ecological solutions compliant with the Heat Regulations RT2012.

Designed for buildings other than dwellings, these ecological solutions limit heat losses and guarantee air renewal suited to the actual occupancy requirements of the premises.

The objective of these solutions is to optimize the operation of buildings where occupancy is sometimes very low (meeting rooms, theatres, offices, etc.) and to thus obtain significant savings in energy consumption.

For this, CALADAIR has developed ecological solutions along two lines represented by the **SYSTEM TOP®** and **SYSTEM DIVA®** ranges, both designed for managing **MONOZONE®** building type.

Associated with controlling the actual occupancy rate of the building, detected either by a presence sensor or by a CO2 probe, or a combination of the two, the **SYSTEM TOP®** solution provides, depending on the type of premises, gains of 35% in the case of the "All or little" air renewal management system. The **SYSTEM DIVA®** solution achieves gains of up to 65% with its proportional ventilation mode. Besides the obvious energy economies, both of these systems also bring improvements in air quality and acoustic comfort.

These energy cost reduction principles come under the scope of the implementation of powerful ventilation systems meeting the recommendations of the Heat Regulations 2005. These specify that systems for modulating air flows must be the norm for non-residential rooms used intermittently (meeting rooms, theatres, offices, etc.).

Installing **SYSTEM TOP®** and **SYSTEM DIVA®** in these types of building reduces air flows and limits energy consumption:

	RT 2005 - AIR FLOW MODULATION FLOWS	CALADAIR ECOLOGICAL SOLUTIONS WITH AIR FLOW MODULATION		
		SINGLE FLOW RAT	SYSTEM DIVA®	SYSTEM TOP®
AIR FLOW REDUCTION	50%	0%	20% to 65%	10% to 35%

The minimum air flow corresponding to the unoccupied air flow will be of the order of 20% of the nominal air flow for a **MONOZONE®** application.

To optimize these reductions in air flows still more, it is possible to associate a stop function with the **SYSTEM TOP®** and **SYSTEM DIVA®** systems during periods of inoccupancy (nights, weekends, public holidays, variable daily inoccupancy times, etc.)

In **MONOZONE®** applications, this stop function is controlled either by a presence detector, a CO2 on-off probe or a timer. Where the stop is occasioned by the presence detector or by a CO2 on-off probe, a timer will need to ensure there is a purge phase before the premises are occupied again to re-establish an acceptable air quality.

CONSTRUCTION

SYSTEM TOP® and **SYSTEM DIVA®** units are factory-wired, configured and factory tested.

A true "PLUG & PLAY" product, they are made up of :

- IP65 Perspex box fitted with cable glands with knock-outs
- Configured regulator (**SYSTEM DIVA®** only)
- 230-24V AC (40VA) transformer of enough size to power the components of the system
- Connection of the 24V system components (probes, etc.)
- ⇒ 230V power supply



SYSTEM TOP®



SYSTEM DIVA®



KIT MONOZONE
SYSTEM TOP & SYSTEM DIVA

GENERAL MONOZONE® KIT



CONSTITUTION OF A MONOZONE® KIT

A building used in **MONOZONE®** mode refers to a ventilation system which adjusts the extraction fan, or the blower fan and the extraction fan when using a double flow system, according to the occupancy rate.

Depending on the solution chosen, in compliance with RT 2012, CALADAIR offers two ecological solutions: either the **SYSTEM TOP®** which uses a 2-air flow ventilation system, or the **SYSTEM DIVA®** which uses proportional ventilation.

The tables below enable you to put together a **MONOZONE® - SYSTEM DIVA® KIT**, or a **MONOZONE® - SYSTEM TOP® KIT** with the necessary components:



KIT MONOZONE
SYSTEM TOP & SYSTEM Diva

DIVA® SYSTEM		EXTRACTION fan for the zone		AIR SUPPLY fan for the zone	
		Motor fan motor built in Single phase	Motor fan pulley belt transmission three-phase	Motor fan motor built in Single phase	Motor fan pulley belt transmission three-phase
SYSTEM DIVA® Signal unit					
RESC Signal regulator 0-10					
VEC Speed controller command 0-10 (repeat of RES signal)		OR			OR
010V CO₂ probe (duct or ambient conditions) HR 010V humidity probe (duct or ambient conditions) PT1000 Ambient temperature probe	 or 	 or 			
CVFMI - CVFTI Speed controller unit with switch					
TOP® SYSTEM		EXTRACTION fan and system for the zone		AIR SUPPLY fan and system for the zone	
		Motor fan motor built in Single phase	Motor fan pulley belt transmission three-phase	Motor fan motor built in Single phase	Motor fan pulley belt transmission three-phase
SYSTEM TOP® Signal unit					
CATM D or MAC2	 or 			 or 	
CO₂ on-off probe (duct or ambient conditions) Presence detector On-off RH Hygrostat (duct or ambient conditions) ⁽¹⁾	 or 	OR	 or 	OR	
CVFMI - CVFTI Speed controller unit with switch or CDA two-speed motor (DALHANDER or separate coil)		 or 			 or 

(1) If ambient hygrostat selected (On/Off RH SA) then the **SYSTEM TOP®** unit is not necessary.

REGULATION



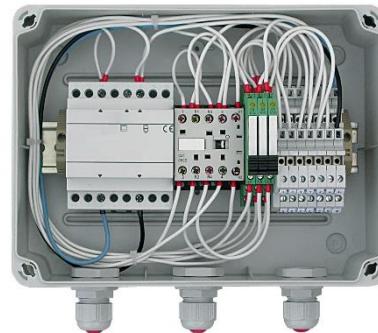
MULTIZONES[®] KIT RANGE

All or Little Ventilation
Proportional ventilation
Solutions compliant with RT2012
for office applications

SYSTEM TOP[®]



SYSTEM DIVA[®]





APPLICATION

In order to meet the objectives set out in the Grenelle Environment Forum which recommends the implementation of VHEP (Very High Energy Performance) or Low Consumption buildings, CALADAIR offers ecological solutions compliant with the Heat Regulations RT2012.

Designed for buildings other than dwellings, these ecological solutions limit heat losses and guarantee air renewal suited to the actual occupancy requirements of the premises.

The objective of these solutions is to optimize the operation of buildings where occupancy is sometimes very low (meeting rooms, theatres, offices, etc.) and to thus obtain significant savings in energy consumption.

For this, CALADAIR has developed ecological solutions along two lines represented by the **SYSTEM TOP®** and **SYSTEM DIVA®** ranges, both designed for managing **MULTIZONES®** building type.

Associated with controlling the actual occupancy rate of the building, detected either by a presence sensor or by a CO₂ probe, or a combination of the two, the **SYSTEM TOP®** solution provides, depending on the type of premises, gains of 45% in the case of the "All or little" air renewal management system. The **SYSTEM DIVA®** solution achieves gains of up to 70% with its proportional ventilation mode. Besides the obvious energy economies, both of these systems also bring improvements in air quality and acoustic comfort.

These energy cost reduction principles come under the scope of the implementation of powerful ventilation systems meeting the recommendations of the Heat Regulations 2005. These specify that systems for modulating air flows must be the norm for non-residential rooms used intermittently (meeting rooms, theatres, offices, etc.).

Installing **SYSTEM TOP®** and **SYSTEM DIVA®** in these types of building reduces air flows and limits energy consumption:

RT 2005 - AIR FLOW MODULATION REFERENCE BASELINE		SINGLE FLOW RATE	CALADAIR ECOLOGICAL SOLUTIONS WITH AIR FLOW MODULATION	
			SYSTEM DIVA®	SYSTEM TOP®
AIR FLOW REDUCTION	50%	0%	20% to 65%	10% to 45%

In principle, the minimum air flow corresponding to the inoccupancy air flow will be of the order of 10% for a **MULTIZONES®** application.

To optimize these reductions in air flows still more, it is possible to associate a stop function with the **SYSTEM TOP®** and **SYSTEM DIVA®** systems during periods of inoccupancy (nights, weekends, public holidays, variable daily inoccupancy times, etc.) Where the building is managed in so-called **MULTIZONES®** mode, the stoppage is governed by a timer which also controls the restart, which also has to include an appropriate purge phase. This purge phase runs before the start of every occupancy phase.

Lastly, the **SYSTEM TOP®** and **SYSTEM DIVA®** units are compatible with humidity and temperature management with the option to mix systems depending on how the areas of the building are allocated.

CONSTRUCTION

SYSTEM TOP® and **SYSTEM DIVA®** units are factory-wired,

configured and tested. A true "PLUG & PLAY" product, they are made up of:

- IP65 Perspex box fitted with cable glands with knock-outs.
- Configured regulator (**SYSTEM DIVA®** only).
- 230-24V AC (40VA) transformer of sufficient size to power the components of the system.
- Connection of the 24V system components (probes, servomotors, etc.)
- ⇒ 230V power supply.



SYSTEM TOP®



SYSTEM DIVA®

KIT MULTIZONES
SYSTEM TOP & SYSTEM DIVA



CONSTITUTION OF A MULTIZONE® KIT

A building with a **MULTIZONES®** exploitation mode corresponds to the ventilation system managing different zones (whose occupation is irregular: meeting room, closed office, waiting room...) from a blowing and recovery fan, with variable air flow and constant pressure.

In order to make sure this building is in total conformity with the RT 2012, CALADAIR offers two ecological solutions: or the **TOP SYSTEM®** that ensures double air flow ventilation or **DIVA SYSTEM®** that develops a proportional ventilation.

The tables below ables you to constitute a **MULTIZONES® KIT – DIVA SYSTEM®** or a **MULTIZONES® KIT – TOP SYSTEM®** with the necessary components :

DIVA		EXTRACTION		SOUFFLAGE	
SYSTEM® Proportional ventilation	Motor fan MONO incorporated	Fan & network zone	Motor fan pulley belt	Ventilateur & réseau de la zone	Motor fan pulley belt
SYSTEM DIVA® Box signal	 1 PER ZONE		 1 PER ZONE		
LOBBY® Regulation box - Constant pressure					
CO ₂ 010V probe (girdle or atmosphere) Humidity probe HR010V (duct or atmosphere) Room temperature probe PT1000	 or 1 PER ZONE		 or 1 PER ZONE		
Circular register + Servomotor + Flow rate regulation	 + 1 PER ZONE		 + 1 PER ZONE	 + 1 PER ZONE	 + 1 PER ZONE
TOP SYSTEM®		EXTRACTION Fan & network zone		SOUFFLAGE Fan and network zone	
2 flow rates ventilation	Motor fan MONO incorporated	OR	Motor fan pulley belt	Motor fan MONO incorporated	Motor fan pulley belt
SYSTEM TOP® Box signal	 1 PER ZONE		 1 PER ZONE		
LOBBY® Self-regulating unit for constant pressure installations					
Sonde CO ₂ TOR (gaine ou ambiance) DéTECTEUR de Présence Bouche Alize vision ⁽¹⁾ Sonde humidité HR TOR (gaine ou ambiance)	   1 PER ZONE	OR	 1 PER ZONE		
Circular register double flow rate + Servomoteur + Flow rate regulation Or Double flow rate register thermal motor + Flow rate regulator Or Air ventilation Alize Elec ⁽²⁾ Double flow	   1 PER ZONE		 + 1 PER ZONE	   1 PER ZONE	 + 1 PER ZONE

(1) Only for extraction application - (2) In this case, the flow rate regulator is not necessary

