

Air conditioning telecommunications shelters



AIR  BLUE
air conditioning

Air conditioning for telecommunications shelters.



Building on our experience in the sector of high precision climate control in technological environments and fixed network telephone switching centres, Air Blue has developed a new range of packaged air conditioners for mobile telephony shelter applications.



Air conditioning applications for mobile telephony shelters call for very high precision control of environmental parameters to assure optimum functionality of the delicate electronic equipment on the site, even in the presence of extreme climatic conditions.

Air Blue packaged air conditioners are designed and built specifically for mobile telephony shelters, 3 different types are available:

- DATA WALL for external installation.
- AIR TEL for indoor installation.
- DUAL TEL for split type installation.

Data Wall units are designed for external installation, a solu-

tion that allows maintenance personnel to perform all the necessary service operations without requiring access to the shelter.

The Air Tel units are extremely compact so that they easily fit into the frequently cramped spaces inside the shelter.

Low running costs

The use of compressors with high C.O.P. values, combined with generously sized condenser coils, mean that these mobile telephony shelter air conditioners offer very high overall energy efficiency.

In addition, the free-cooling system makes it possible to:

- exploit low ambient temperatures to cool the shelter interior;
- extend the compressor lifetime.

Free-cooling option

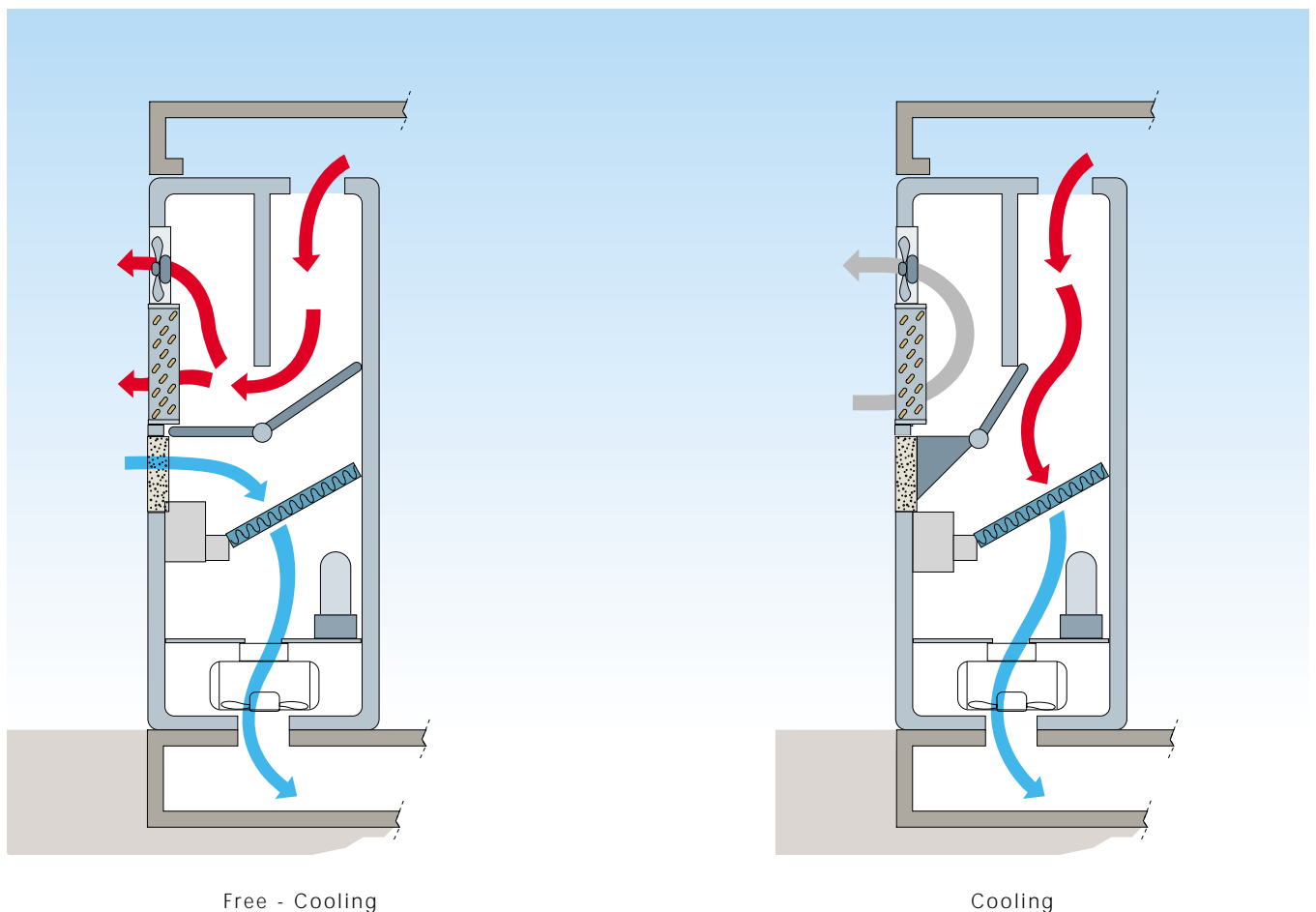
The free-cooling system allows significant savings in energy consumption and cost. The system is composed of a servo-controlled louver installed inside the appliance, operated by the microprocessor control.

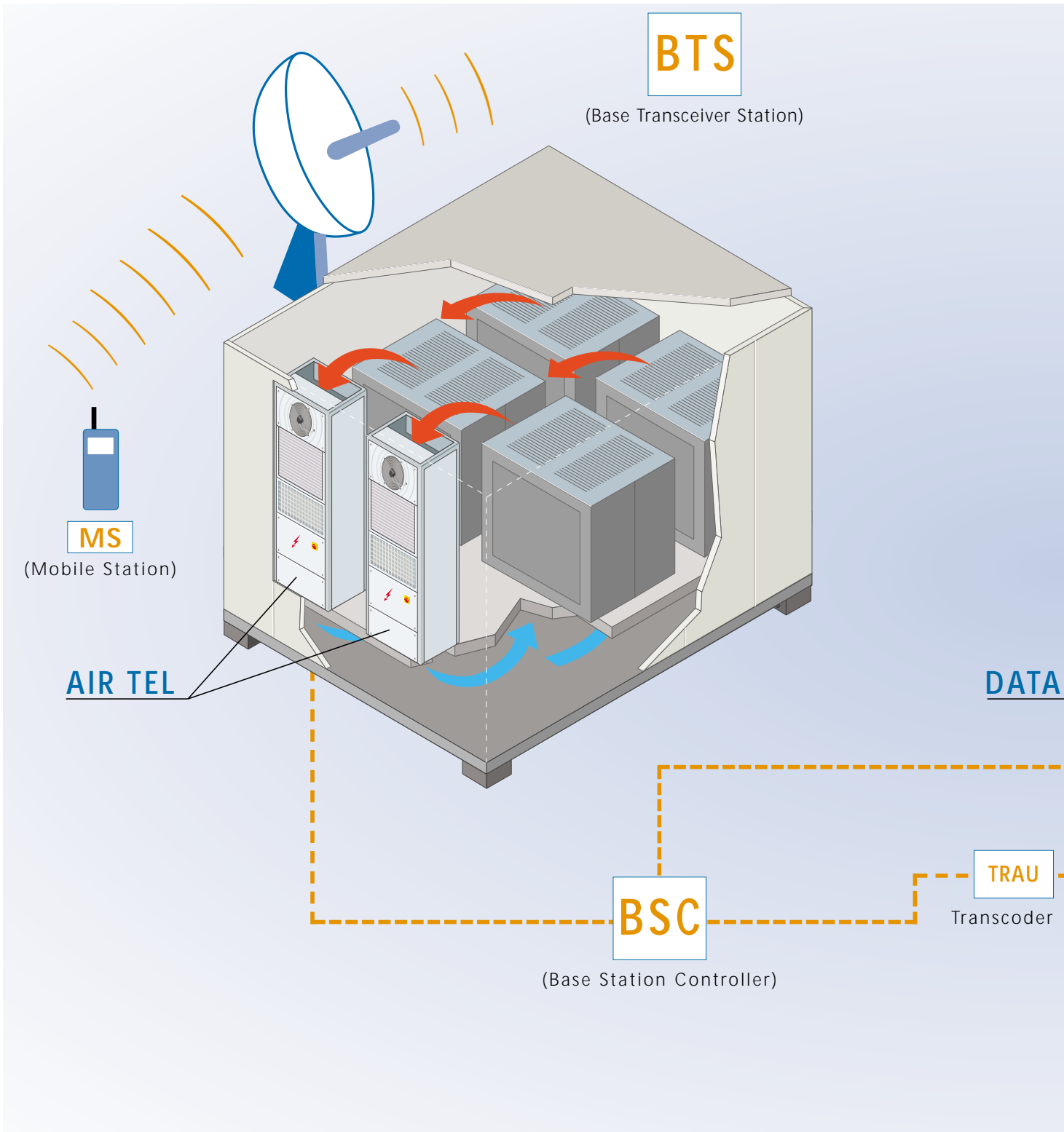
Free-cooling is activated when the difference between the internal temperature set-point and the ambient air temperature is greater than 10°C (user-programmable value).

Emergency mode

In the event of a power loss on the main power supply line the units switch to ventilation only mode using exclusively ambient air (by automatic opening of the louver).

Fan power is provided by a back up line connected to an uninterruptible power supply (UPS).



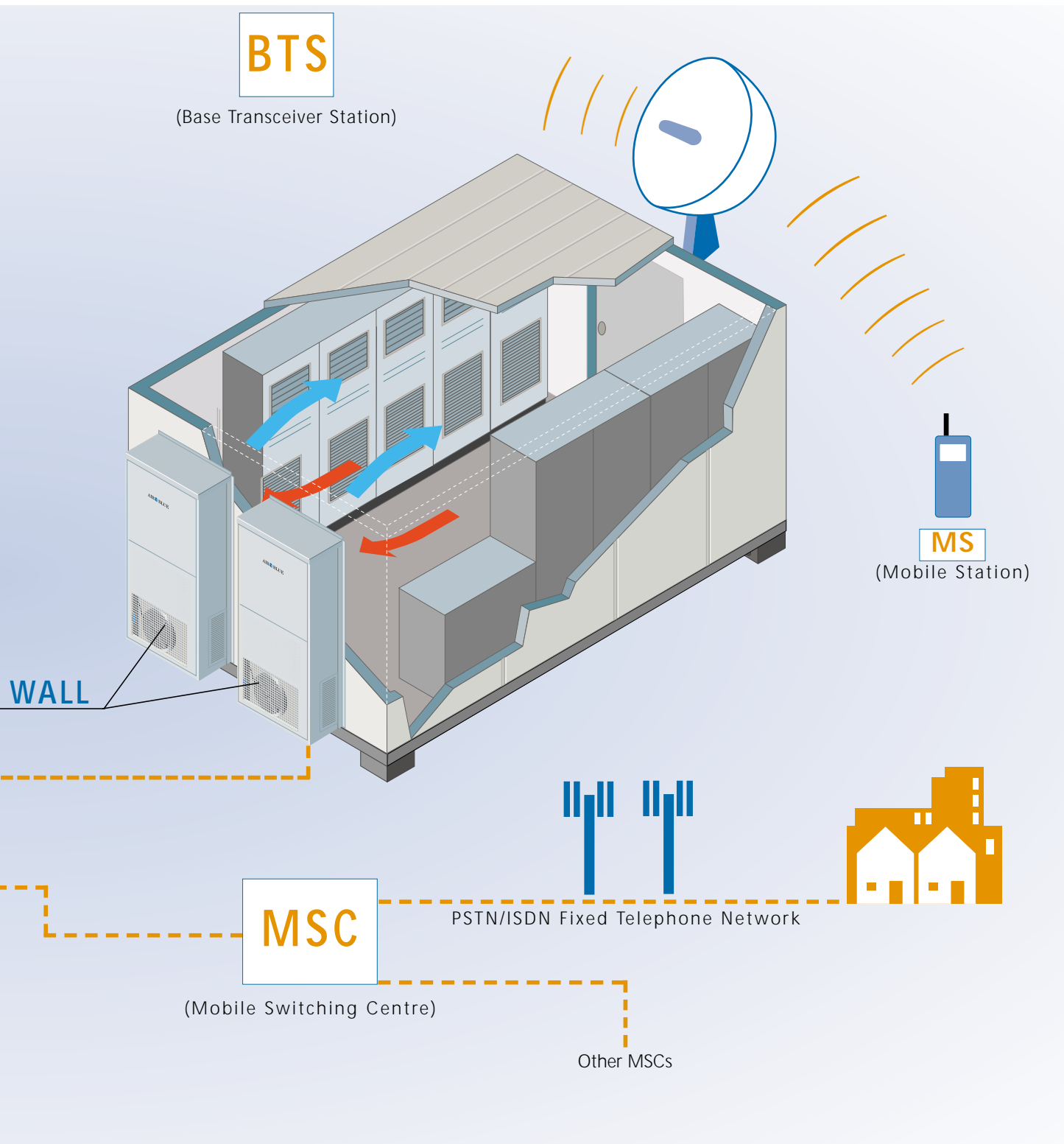


Remote monitoring

The use of a sophisticated microprocessor control system allows the units to interface with a dedicated remote supervision system which is able to monitor a large number of individual sites, providing reliable fault diagnostic information.

Since the majority of mobile telephony shelters are unmanned, this technology is particularly useful, making it possible to keep a constant check on the efficiency of the aircon systems and thereby minimizing the need for on-site inspections by maintenance personnel.

Air Blue works in partnership with its customers, offering the maximum flexibility in terms of technology and production; our design team is always available to develop systems that fit the specific needs of telecommunication network operators.



Like all our standard products, the quality of our dedicated solutions is guaranteed by our ISO 9000 certified company quality system.

Our flexible production regime means that we can meet the most exacting needs in terms of fast response times.

Pre- and post-sales services are provided by our extensive global dealer network.

for outdoor installation

Data Wall

Self-contained unit for external installation on wall of room to be cooled. Compact and easy to install, this model comes in 8 refrigerating capacities and three sizes.



Unit identification data:

	DataWall	30	CO	CV		
	a.	b.	c.	d.		
a.	<u>Unit series</u> Data Wall					
b.	<u>Size</u> 10, 15, 20, 25, 30, 35, 50, 55					
c.	<u>Version</u> CO: cooling only CH: cooling + heating					
d.	<u>Configurations</u>	EC	FC	CV	IN	
		no	yes	yes	yes	free cooling
		no	no	yes (48Vdc)	yes (inverter)	emergency ventilation

Specifications:

Basic unit, EC configuration

- Structure made from galvanised sheet metal with oven treated paint finish colour RAL 7035, other RAL colours or external aluminium panelling available on request.
- Scroll compressor
- Cooling section with expansion coil (freon), complete with stainless steel condensate tray
- Cooling section with reverse-blade centrifugal fans, statically and dynamically balanced with 230 V AC power supply; differential pressure switch checks presence of air flow
- Electric heating section (CH version)
- Condensing section featuring low-speed axial fans and on-off control
- Filtering section with maximum efficiency 85 % ASHRAE 52-76 (EU3 for eurovent 4/5)
- Refrigerant circuit with charging connection, drier filter, liquid indicator, thermostatic valve, fusible plug, high and low pressure switches
- Control thermostat
- Environment-friendly refrigerant R407C
- Factory tested

FC configuration

- Free-cooling section with modulating actuator
- Microprocessor for unit control; possibility of remote control of alarm conditions
- Possibility of controlling two units in master/slave configuration

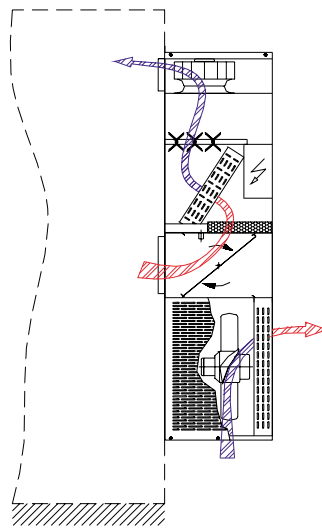
CV / IN configuration

- Emergency ventilation control in event of power failure; available with user fans powered at 48 V DC (CV) or 230 V AC by inverter 48 V DC – 230 V AC (IN)

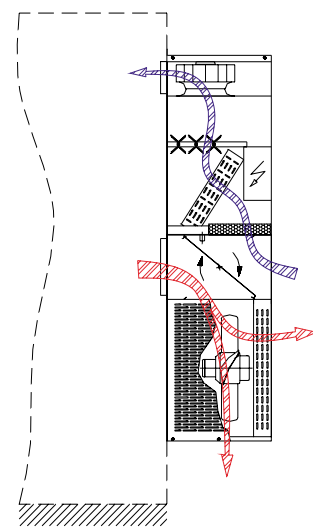
Accessories

- Continuous pressure adjustment of condensing fan speed
- Differential pressure switch for detection of filter wear
- Interface terminal (for FC / CV / IN) between microprocessor board and user; in a master/slave configuration, one terminal can display performance data of both units
- Free-cooling section featuring actuator with spring return (for FC / CV / IN)
- Relay for control of maximum and minimum supply voltage

Air flow direction



Mechanical operation
(all configurations)



Free-Cooling operation
(except base configurations)

Technical data

Refrigerant		R407C							
Model		10	15	20	25	30	35	50	55
Power supply									
Standard	V / ph / Hz	230/1/50				400/3+N/50			
With emergency ventilation	V / ph / Hz + Vdc	250/1/50+48				400/3+N/50+48			
Refrigerant capacity									
Total (1)	kw	3,8	4,7	6,0	7,0	8,6	10,3	13,1	14,8
Sensible (1)	kw	3,8	4,6	6,0	6,7	8,6	10,3	13,1	14,1
Total (2)	kw	4,0	5,0	6,4	7,4	9,0	10,9	13,7	15,4
Sensible (2)	kw	4,0	4,7	6,3	6,8	9,0	10,6	13,2	14,2
Total (3)	kw	4,2	5,3	6,8	7,9	9,7	11,6	14,7	16,7
Sensible (3)	kw	4,1	4,9	6,5	6,9	9,4	11,0	13,6	14,6
Compressor									
Power engaged (1)	kW	1,3	1,8	2,3	2,7	3,0	3,7	4,5	5,2
Absorbed nominal current (1)	A	6,1	8,1	10,4	12,3	5,4	6,7	8,4	9,2
Power engaged (2)	kW	1,3	1,7	2,2	2,7	3,0	3,8	4,5	5,2
Absorbed nominal current (2)	A	6,1	8,0	10,2	12,1	5,4	6,8	8,4	9,2
Power engaged (3)	kW	1,3	1,7	2,2	2,6	3,0	3,8	4,5	5,2
Absorbed nominal current (3)	A	6,1	7,9	10,1	11,9	5,3	6,8	8,4	9,3
Maximum absorbed current	A	7,4	11,4	14,8	17,3	7,0	10,0	12,4	13,5
Break-away current	A	35	47	61	76	46	50	66	74
Air-handling fan									
With standard power									
Number	/	1	1	2	2	1	1	2	2
Air capacity	m3/h	1350	1350	2300	2300	3050	3050	4250	4250
Residual pressure	Pa	20	20	20	20	20	20	20	20
Power engaged	kW	0,22	0,22	0,44	0,44	0,41	0,41	0,82	0,82
Absorbed nominal current	A	1,0	1,0	2,0	2,0	2,0	2,0	4,0	4,0
With 48 Vdc power									
Number	/	1	1	2	2	1	1	2	2
Air capacity	m3/h	1350	1350	2300	2300	3050	3050	4250	4250
Residual pressure	Pa	20	20	20	20	20	20	20	20
Power engaged (48 V dc)	kW	0,11	0,11	0,21	0,21	0,58	0,58	1,16	1,16
Absorbed nominal current	A	2,5	2,5	5,0	5,0	12	12	24	24
Condensing fan									
Nominal air capacity	m3/h	1850	1850	4200	4200	4200	3850	5150	4800
Power engaged	kW	0,13	0,13	0,29	0,29	0,29	0,29	0,40	0,40
Absorbed nominal current	A	0,6	0,6	1,3	1,3	1,3	1,3	1,8	1,8
Electric heating									
Capacity	kW	1,5	1,5	3,0	3,0	3,0	3,0	5,0	5,0
Operating steps	n°	1	1	1	1	1	1	1	1
Air filter efficiency									
		EU3	EU3	EU3	EU3	EU3	EU3	EU3	EU3
Sound pressure (4)									
	dBA	52	53	54	54	55	56	59	59
Dimensions									
Length	mm	750	750	900	900	900	900	1000	1000
Width	mm	450	450	500	500	500	500	550	550
Height	mm	1370	1370	1700	1700	1700	1700	2100	2100
Net weight									
	kg	95	98	135	145	150	165	220	230

(1) Evaporator inlet air +22° C, 50% RH, external air +35° C

(1) Evaporator inlet air +24° C, 50% RH, external air +35° C

(1) Evaporator inlet air +26° C, 50% RH, external air +35° C

(4) Sound pressure level measured at 5 m in free field

Self-contained unit for flush wall installation in room to be cooled. Compact and easy to install, this model comes in 8 refrigerating capacities and three sizes.



Unit identification data:

	Air Tel	60	UNDER	CO	CV
	a.	b.	c.	d.	e.
a.	Unit series <u> </u> Air Tel				
b.	Size <u> </u> 40, 50, 60, 55, 70, 100, 120, 150				
c.	Air Delivery <u> </u> OVER: Upward air delivery		UNDER: Downward air delivery		
d.	Version <u> </u> CO: cooling only		CH: cooling + heating		
e.	Configurations	EC	FC	CV	IN
		no	yes	yes	yes
		no	no	yes (48Vdc)	yes (inverter)
					free cooling
					emergency ventilation

Specifications:

Basic unit, EC configuration

- Models 40, 50 and 60 have structure made from galvanised sheet metal with paint finish colour RAL 7035
Models 55, 70, 100, 120 and 150 have profiles in aluminium and panels made from galvanised sheet metal with paint finish colour RAL 7035
- Scroll compressor
- Cooling section with freon expansion coil, complete with stainless steel condensate tray
- Cooling section with backward curved blades centrifugal fans, statically and dynamically balanced with possibility of 230 V AC power supply, a differential low-pressure switch installed in the airflow checks the pressure drop.
- Upflow (OVER type) and downflow (UNDER type) air delivery
- Electric heating section (CH version)
- Condensing section featuring cross-flow (models 40-50-60) or backward curved blades centrifugal fans (models 55-70-100-120-150) and on-off control
- Filtering section with maximum efficiency 85 % ASHRAE 52-76 (EU3 for eurovent 4/5)
- Refrigerant circuit with charging connection, drier filter, liquid indicator, thermostatic valve, fusible plug, high and low pressure switches
- Control thermostat
- Environment-friendly refrigerant R407C
- Factory tested

FC configuration

- Free-cooling section with modulating actuator
- Microprocessor for unit control; possibility of remote control of alarm conditions
- Possibility of controlling two units in master/slave configuration

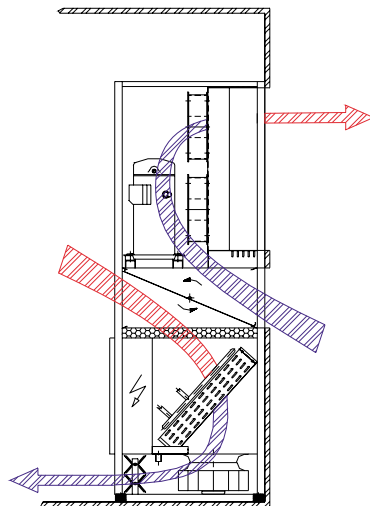
CV / IN configuration

- Emergency ventilation control in event of power failure; available with user fans powered at 48 V dc (CV) or 230 V ac by inverter 48 V DC – 230 V AC (IN)

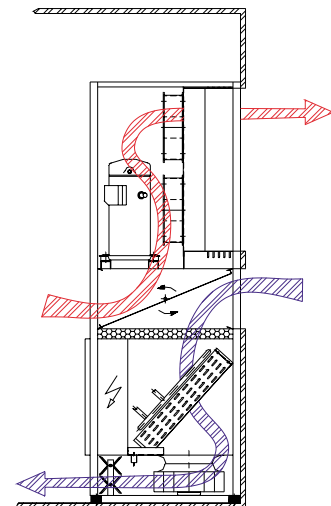
Accessories

- Continuous pressure adjustment of condensing fan speed
- Differential pressure switch for detection of filter wear
- Interface terminal (for FC / CV / IN) between microprocessor board and user; in a master/slave configuration, one terminal can display performance data of both units
- Free-cooling section featuring actuator with spring return (for FC / CV / IN)
- Relay for control of maximum and minimum supply voltage

Air flow direction (AirTel under)



Mechanical operation
(all configurations)



Free-Cooling operation
(except base configuration)

Technical data

Refrigerant		R407C								
Model		40	50	60	55	70	100	120	150	
Power supply										
Standard	V / ph / Hz	230/1/50			400/3+N/50					
With emergency ventilation	V / ph / Hz + Vdc	230/1/50+48			400/3+N/50+48					
Refrigerant capacity										
Total (1)	kw	3,8	4,8	5,7	5,1	6,5	8,9	10,8	13,2	
Sensible (1)	kw	3,8	4,8	5,6	5,0	6,5	8,9	10,8	13,2	
Total (2)	kw	4,0	5,0	6,2	5,4	6,9	9,5	11,2	13,8	
Sensible (2)	kw	4,0	5,0	5,6	5,2	6,9	9,5	11,2	13,7	
Total (3)	kw	4,3	5,4	6,5	6,1	7,6	10,2	12,0	14,8	
Sensible (3)	kw	4,3	5,3	5,8	5,5	7,1	10,2	11,8	14,1	
Compressor										
Power engaged (1)	kW	1,3	1,8	2,2	1,7	2,2	3,1	3,8	4,5	
Absorbed nominal current (1)	A	6,1	8,1	10,4	8,1	10,4	5,4	6,7	8,4	
Power engaged (2)	kW	1,3	1,7	2,2	1,7	2,2	3,1	3,8	4,5	
Absorbed nominal current (2)	A	6,1	8,0	10,2	8,0	10,2	5,4	6,8	8,4	
Power engaged (3)	kW	1,3	1,7	2,2	1,7	2,2	3,1	3,8	4,5	
Absorbed nominal current (3)	A	6,1	7,9	10,1	7,9	10,1	5,3	6,8	8,4	
Maximum absorbed current	A	7,4	11,4	14,8	11,4	14,8	7,0	10,0	12,4	
Break-away current	A	35	47	61	47	61	46	50	66	
Air-handling fan										
With standard power										
Number	n°	1	1	1	1	1	2	2	2	
Air capacity	m3/h	1500	1450	1450	1500	2100	3600	4000	4200	
Residual pressure	Pa	20	20	20	20	20	20	20	20	
Power engaged	kW	0,22	0,22	0,22	0,22	0,22	0,82	0,82	0,82	
Absorbed nominal current	A	1,0	1,0	1,0	1,0	1,0	4,0	4,0	4,0	
With 48 Vdc power										
Number	n°	1	1	1	1	1	2	2	2	
Air capacity	m3/h	1500	1450	1450	1500	2100	3600	4000	4200	
Residual pressure	Pa	20	20	20	20	20	20	20	20	
Power engaged (48 V dc)	kW	0,11	0,11	0,11	0,58	0,58	1,2	1,2	1,2	
Absorbed nominal current	A	2,5	2,5	2,5	12	12	24	24	24	
Condensing fan										
Number	n°	2	2	2	1	1	2	2	2	
Nominal air capacity	m3/h	2900	2900	2800	2350	2350	4500	4500	4500	
Max. residual pressure	Pa	20	20	20	130	130	160	150	150	
Power engaged	kW	0,27	0,27	0,27	0,27	0,27	0,54	0,54	0,54	
Absorbed nominal current	A	1,2	1,2	1,2	1,2	1,2	2,4	2,4	2,4	
Electric heating										
Capacity	kW	3,0	3,0	3,0	3,0	3,0	5,0	5,0	5,0	
Operating steps	n°	1	1	1	1	1	1	1	1	
Air filter efficiency										
		EU3	EU3	EU3	EU3	EU3	EU3	EU3	EU3	
Sound pressure (4)										
	dBA	53	55	56	54	55	56	58	58	
Dimensions										
Length	mm	600	600	600	600	600	1000	1000	1000	
Width	mm	455	455	455	650	650	650	650	650	
Height	mm	1650	1650	1650	1950	1950	1950	1950	1950	
Net weight										
	kg	90	93	100	165	165	290	310	310	

(1) Evaporator inlet air +22° C, 50% RH, external air +35° C

(1) Evaporator inlet air +24° C, 50% RH, external air +35° C

(1) Evaporator inlet air +26° C, 50% RH, external air +35° C

(4) Sound pressure level measured at 5 m in free field

for split type installation

Dual Tel

Split unit comprising indoor direct expansion ventilation unit, for horizontal or vertical installation, and outdoor refrigeration unit. Characterised by its compact size and the precision of temperature control in equipment rooms, this model comes in three refrigerating powers in a single size.



Indoor evaporating unit



Outdoor condensing unit

Unit identification data:

	Dual Tel	30	CO	CV
	a.	b.	c.	d.
a. Unit series	Dual Tel			
b. Size	55, 75, 85			
c. Version	CO: cooling only		CH: cooling + heating	
d. Configurations	EC	FC	CV	
	no	yes	yes	free cooling
	no	no	yes (48Vdc)	emergency ventilation

Specifications:

Indoor evaporating unit

Basic unit

- Main structure made from aluminium sections, sheet metal panelling with oven treated paint finish colour RAL 7035 (other RAL colours available)
- Cooling section with expansion coil (freon), complete with thermostatic expansion valve and stainless steel condensate tray
- Refrigerant line shut-off valves
- Centrifugal fans forward-blade fans, statically and dynamically balanced with 230 V AC power supply; differential pressure switch checks presence of air flow
- Electric heating section (CH version)
- Filtering section with maximum efficiency 85 % ASHRAE 52-76 (EU3 for eurovent 4/5)
- Control thermostat

FC configuration

- Free-cooling section with modulating actuator (supplied separately)
- Microprocessor for unit control; possibility of remote control of alarm conditions
- Possibility of controlling two units in master/slave configuration

CV configuration

- Emergency ventilation control in event of power failure; available with fans powered at 48 V DC

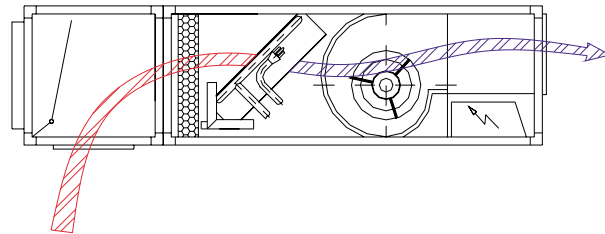
Outdoor condensing unit

- Structure made from galvanised sheet metal with oven treated paint finish colour RAL 7035 (other RAL colours available)
- Scroll compressor
- 6-pole axial fans with on-off control
- Refrigerant circuit with charging connection, drier filter, liquid indicator, fusible plug, high and low pressure switches and circuit shut-off valves

Accessories

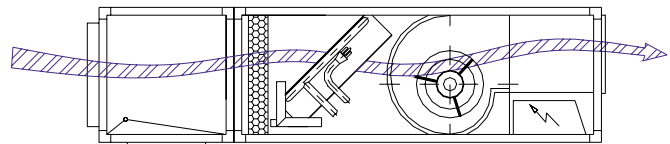
- Continuous pressure adjustment of condensing fan speed
- Differential pressure switch for detection of filter wear
- Interface terminal (for FC / CV) between microprocessor board and user; in a master/slave configuration, one terminal can display performance data of both units
- Free-cooling section featuring actuator with spring return (for FC / CV)

Air flow direction



Mechanical operation
(FC / CV configuration)

Free-Cooling operation
(FC / CV configurations)



Technical data

Refrigerant		R407C		
Model		55	75	85
Power supply				
Standard	V / ph / Hz	230/1/50		
With emergency ventilation	V / ph / Hz + Vdc	230/1/50+48		
Refrigerant capacity				
Total (1)	kw	4,8	6,3	7,4
Sensible (1)	kw	4,8	6,3	7,4
Total (2)	kw	5,0	6,6	7,7
Sensible (2)	kw	5,0	6,6	7,7
Total (3)	kw	5,4	7,0	8,3
Sensible (3)	kw	5,4	7,0	8,3
Compressor				
Power engaged (1)	kW	1,8	2,2	2,7
Absorbed nominal current (1)	A	8,1	10,4	12,3
Power engaged (2)	kW	1,7	2,2	2,6
Absorbed nominal current (2)	A	8,0	10,2	12,1
Power engaged (3)	kW	1,7	2,2	2,6
Absorbed nominal current (3)	A	7,9	10,1	11,9
Maximum absorbed current	A	11,4	14,8	17,3
Break-away current	A	47	61	76
Air-handling fan				
With standard power				
Number	n°	1	2	2
Air capacity	m3/h	1700	2100	2500
Residual pressure	Pa	25	25	25
Power engaged	kW	0,30	0,60	0,60
Absorbed nominal current	A	2,3	4,6	4,6
With 48 Vdc power				
Number	n°	1	2	2
Air capacity	m3/h	1700	2100	2500
Residual pressure	Pa	25	25	25
Power engaged (48 V dc)	kW	0,78	0,88	1,00
Absorbed nominal current	A	16,0	18,4	21,0
Condensing fan				
	n°	1	1	1
Nominal air capacity	m3/h	3000	3000	3000
Power engaged	kW	0,14	0,14	0,14
Absorbed nominal current	A	0,62	0,32	0,62
Electric heating				
Capacity	kW	1,5	1,5	1,5
Operating steps	n°	1	1	1
Air filter efficiency				
		EU3	EU3	EU3
Sound pressure outdoor unit (4)				
	dBA	42	43	43
Dimensions: indoor unit with free cooling section				
Length	mm	1285	1285	1285
Width	mm	1100	1100	1100
Height	mm	345	345	345
Net weight				
	kg	86	96	96
Dimensions: outdoor unit				
Length	mm	870	870	870
Width	mm	400	400	400
Height	mm	700	700	700
Net weight				
	kg	86	90	91

(1) Evaporator inlet air +22° C, 50% RH, external air +35° C

(1) Evaporator inlet air +24° C, 50% RH, external air +35° C

(1) Evaporator inlet air +26° C, 50% RH, external air +35° C

(4) Sound pressure level measured at 5 m in free field

BLUE  **BOX**

G R O U P

BLUE BOX Condizionamento
AIR BLUE Air Conditioning
BLUE FROST Refrigeration

are trademarks of the

BLUE BOX GROUP

BLUE BOX GROUP s.r.l.

Via E. Mattei, 20
35028 Piove di Sacco PD Italy
Tel. +39.049.9716300
Fax. +39.049.9704105