Tautech

Total Solution

Emergency Ventilation (EMF / EML)

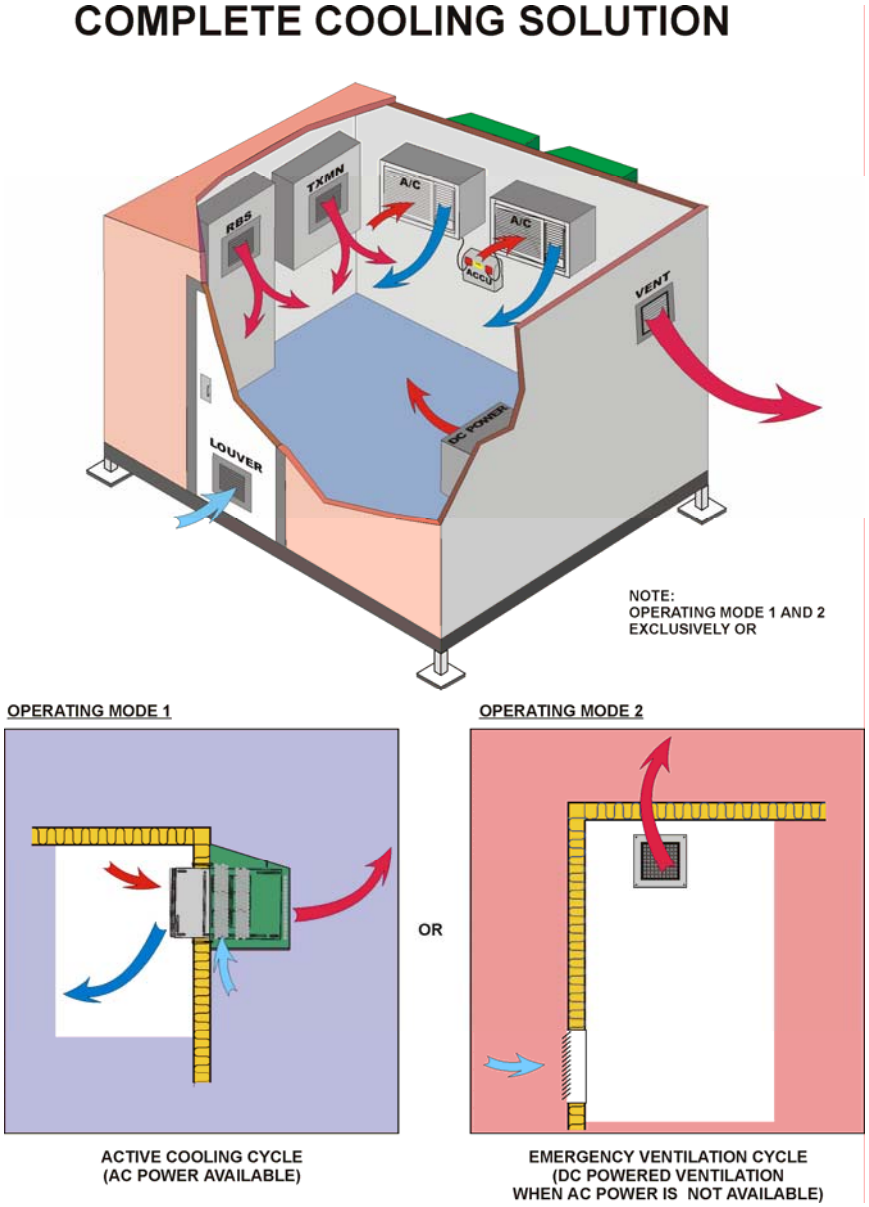
PRODUCT OVERVIEW

General:

Active cooling installations in equipment shelters rely on the availability of mains AC power supply for operation. DC stand-by power capacity is usually provided for 4 to 8 hours of equipment operation in the absence of mains AC power supply which will, under normal operating conditions, lead to temperature build-up inside the shelter up to equipment shut-down levels. The rate of temperature rise in typical GSM applications could be as high as one degree Celsius per minute which means that the full battery autonomy is in fact not available as up time because shut-down temperature levels are reached before the installed battery capacity is exhausted.

In applications where the environmental conditions do not preclude it, a solution is to use a DC powered ventilation system to limit the build-up of internal equipment shelter temperature under such emergency conditions. This system is not intended as a temperature control mechanism but should rather be seen as a measure to relieve the build-up of excessively high equipment shelter temperatures in the absence of active cooling.

Emergency ventilation has specific relevance in high earnings potential sites where downtime should be kept to an absolute minimum and also in the case where sites are fed off low reliability mains AC power supplies and frequent power interruptions occur. This solution can be applied as a general installation standard except at those sites where the air-borne dust levels (eg. grain silo sites) places prohibitive maintenance requirements on the intake filter system, in excessively high wind force applications or in the immediate coastal belt where the equipment shelter has to be a totally closed environment not to counteract dehumidification objectives of the shelter.



The effectiveness of the emergency ventilation installation of a given capacity is a function of the equipment heat dissipation level at such a site, the ambient temperature at the time (day/night, summer/winter) when emergency ventilation is called for and the condition of the intake louver filter. The characteristics of the associated control system also contributes to the extent to which it will achieve.

Emergency ventilation is intended for minimum necessary operating duty since it has direct bearing on the frequency of filter maintenance that is required and will, despite filtration of the intake air, bring about higher site maintenance demands in terms of the cleaning out of shelters. It is for this reason that operation is limited exclusively to those periods when the site mains AC power supply is completely down (all phases) and the site has

reached a preset high internal temperature justifying fan operation. A more advanced control system can, in addition to the above consideration, also be used to fall back to equipment shelter ventilation when, although AC power is available to the active cooling plant, the internal temperature reaches an excessively high level. This could be seen as a cooling equipment fail condition and should not be implemented without interlocking it to the fire detection scheme.

Shelter air-conditioning installations are generally dimensioned at the nominal 3,5; 5 and 7kW level to meet the specific heat load requirements of a site with adequate active cooling capacity. Emergency ventilation requirements of the lower 3,5 and 5kW cooling capacity installations can, depending on the specified performance, as a rule be met with the EMF204 (200mm dia fan) assembly while for the higher capacity 7kW class installations the EMF254 (250mm dia fan) assembly is recommended. Both the EMF204 and EMF254 are used with the same intake louver arrangement.

Emergency Ventilation should not be confused with the Free Cooling principle where the motive is to capitalise on low ambient temperatures in order to save energy through ventilation rather than to operate active cooling plant. Given the harsh environmental conditions found in Africa in terms of free dust and generally high ambient temperatures, Free Cooling is seldom a viable option.

Application:

Stand-by Emergency Ventilation in small telecommunications or control room environments including:

- φ Radio Base Stations
- φ Remote Subscriber Switches
- φ Transmission Systems
- φ Server Rooms
- φ Industrial Control Rooms

Features:

- Proven design with large installation base;
- Available in 24 or 48V DC version;
- Integral exterior flange and self-draining louver design allows for superior weather sealing;
- Brushless DC fan motor offers extended life expectancy;
- Flush louver design allows for installation without obstructing exterior door mechanism;
- Moderate DC power drain and no inrush current on start up due to electronic commutation design;
- Vibration free operation;
- 3CR12 steel housing material;
- Flexibility on shelter wall thickness for installations into up to 150 and 254mm walls;
- No tools required for filter maintenance.

Tautech

Total Solution

Emergency Ventilation (EMF / EML)

Product Variants:

MODEL	EMF204/ EML204S	EMF254/ EML204S
Application	Recommended for installations with total active cooling capacity of 5kW and less.	Recommended for installations with total active cooling capacity of 7kW and less.

Fan motor design life: >60 000h

Extractor fan shutter type: Gravity blades Aluminum

Control System: Offered separately

Specifications:

Main Dimensions: (Over flange)
EMF204: 330 x 330 x 220mm
EMF254: 385 x 385 x 220mm
EML204S: 400 x 535 x 170mm

Standard Colours
Exterior components: Appliance White, Traffic Green RAL7032

(Other colours on order)

Interior components: Appliance White

Pitch of louver blades:
EMF204: 17mm
EMF254: 17mm
EML204S: 19mm

Extractor fan power cord length: 4,5m

Type of fan: 9-Blade axial design

Fan motor type: DC brushless (Electronic commutation)

Fan motor bearings: Ball type maintenance free

Fan motor approvals: UL, VDE, CSA

Ratings:

Rated Voltage:
Nom 24V type: 16-28V DC
Nom 48V type: 36-57V DC

Rated Current:
EMF204 24V type: 2,6A
EMF204 48V type: 1,1A
EMF254 24V type: 5,0A
EMF254 48V type: 2,6A
(For Ah power dimensioning only consider actual running time.)

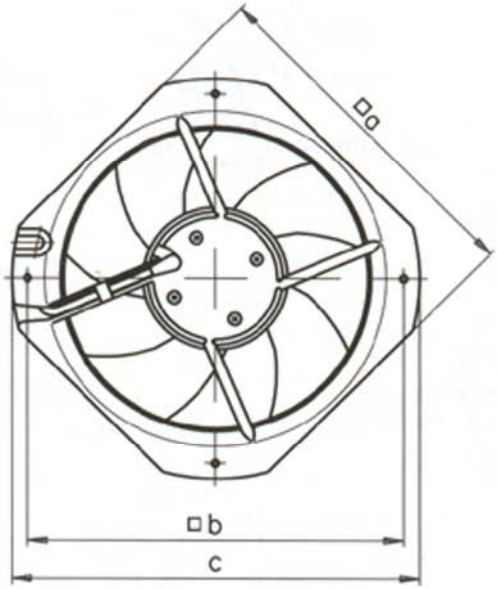
Rated air movement at nominal voltage against 20Pa:
EMF204/EML204S: 970m³/h
EMF254/EML204S: 1 820m³/h

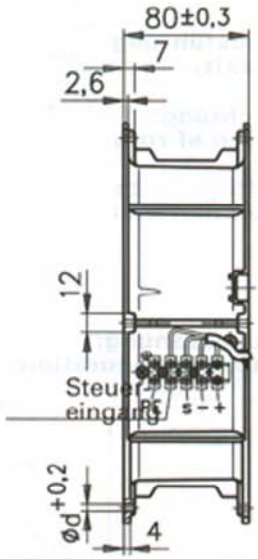
Tautech (Pty) Limited
PO Box 55699
ARCADIA
0007

Tel: +27 12 329-2614
info@tautech.co.za

EC Axialventilatoren ø 200 - Kompaktausführung, 24/48 VDC

EC Axial Fans ø 200 - Compact version, 24/48 VDC





"V" →
Förderrichtung
Direction of air flow

Typ/	Motor/	a	b	c	d
200	M1G 074-BF	225	240	260	4,5
250	M1G 074-BF	280	295	320	5,4

Typ **Type**	Spannung Voltage	Spannungsbereich Voltage range	Luftfördermenge Air volume	Drehzahl Speed	Leistungsaufn. Power input	Stromaufnahme Current	Geräuschpegel Noise level	Zul. Umgeb.temp. Max. amb. temp.
	VDC	VDC	m^3/h	min^{-1}	W	A	dBA	°C
W1G 200 - HH77 - 52	24	16 - 28	1000	2800	45	2,2	61	60
W1G 200 - HH01 - 52	48	36 - 56	1000	2800	45	1,1	61	60
W1G 250 - HH35 - 52	24	16 -28	1850	2650	95	4,5	68	60
W1G 250 - HH73 - 52	48	36 -56	1850	2650	95	2,25	68	60

Drehrichtung: **Direction of rotation:**	Linksdrehend auf Rotorseite gesehen	Counterclockwise, seen from rotor side
Elektrischer Anschluß: **Connection leads:**	Mit Klemmleiste	With terminal strip
Oberflächenschutz: **Surface protection:**	Gehäuse Aluminium Druckguß; Rotor mit Metallflügeln schwarz lackiert	Aluminium die-cast housing Rotor with metal blades painted black
Lagerung: **Bearings:**	Wartungsfreie Kugellager	Maintenance-free ball bearings
Förderrichtung: **Direction of air delivery:**	"V" über Streben blasend	"V" blowing over struts

Zubehör:
Accessories:

für/ W.. 200
Typ/ 78128-2-4039

für/ W.. 250
Typ/ 09418-2-4039

Typ/	a	b	c	d	e
200	240	6,4	220	208	5,4
250	295	6,4	275,5	270	6,4