

## POWER SUPPLY AND AC MODULE WEK2

The **self-sufficient power supply and air conditioning module WEK2** is a combined energy supply system and intended to be installed on the outside of vehicles or cabin units.



Its five main functions are:

- supplying the electric consumer with electric power (400/230V 50Hz a/c) in the container
- supplying the electric consumer with electric power (24 d/c) in the container
- distributing the power and fusing the cabin consumer (a/c d/c distribution)
- charging the FM battery (internal / external)
- air conditioning the container inside temperature at varying outside temperatures to a degree safe for the built-in equipment. The difference between outside and inside temperature should not exceed 15K.

### Power supply mode

Cabin supply by the power supply and AC module via integrated interstage transformers connected to an electrical mains.



## POWER SUPPLY AND AC MODULE WEK2

### Balance of performance

#### Technical data:

|   |                 |                  |                |
|---|-----------------|------------------|----------------|
| temperature difference rating absolute  | 6.00 kW         | cabin supply     | approx. 6.0 kW |
| temperature difference rating sensitive | 4.00 kW         |                  |                |
| compressor power                        | approx. 4.50 kW | electric heating | 3.0 kW         |
| re-circulating air fan                  | approx. 0.37 kW | fuel heating     | 5.0 kW         |
| condenser fan                           | approx. 2.20 kW |                  |                |
| fresh air fan                           | approx. 0.37 kW |                  |                |

| mains infeed case (CEE 32A 5Ph)                 | Voltage  | cooling mode    | heating mode   |
|---|----------|-----------------|----------------|
| supply cabin interstage transformer 1           | 400V a/c | 6.00 kW         | 6.00 kW        |
| heating fresh air module                        | 230V a/c | 0.00 kW         | 3.00 kW        |
| power compressor                                | 400V a/c | 4.50 kW         | 0.00 kW        |
| condenser fan                                   | 400V a/c | 2.20 kW         | 0.00 kW        |
| magnetic clutch                                 | 24V d/c  | 0.06 kW         | 0.00 kW        |
| circulating air fan transformer module          | 230V a/c | 0.43 kW         | 0.43 kW        |
| fresh air /circulating air fan fresh air module | 24V a/c  | 0.50 kW         | 0.50 kW        |
| <b>Total</b>                                    |          | <b>13.69 kW</b> | <b>9.93 kW</b> |

### Performance

Capacity: The unit supplies the performance parameters at these ambient conditions:

|                     |  |
|---------------------|--|
| AC power            | <b>6 kW sensitive,<br/>4 kW absolute</b> |
| ambient temperature | -32°C to +49°C                           |
| sea level           | < 3000m MSL                              |
| air humidity        | 0% ... 90%                               |

Heating period: The temperature variation when heated starting at -32°C to + 5°C is approx. 1 hour

Cooling period: The temperature variation when cooled down starting at 49°C with  $\Delta t = 15K$  is approx. 1.5 hours

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### Technical description

The **WEK2** mainly consists of these components:

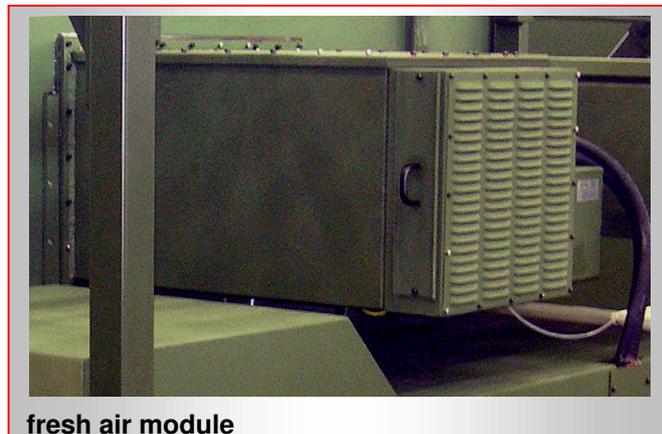
#### 1. Air conditioning power module



air conditioning module (easy to maintain due to pull-out system)

#### 2. Fresh air module

The fresh air module is a unit built on to the outside of the cabin and connected to the power unit by coolant hoses. Fresh air is added to the circulating air and also cooled/heated.



fresh air module

#### 3. Interstage transformer

An interstage transformer consisting of 3 toroidal transformers takes over the supply to the cabin. It also guarantees a safe electric separation for the cabin supply according to EN60950.

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### 4. a/c - d/c distributor

The a/c - d/c distributor serves to switch on and protect the cabin consumer.

### 5. Primary power supply

The primary power supply transforms the a/c current of the connected mains to 28V d/c for the supply of the d/c consumer in the cabin. The d/c part is buffered by an FM battery 100Ah.

### 6. FM battery

The necessary electrical components for the use of the air conditioning, electric engines, fan and electric heating are protectively insulated, which makes direct supply from an external supply network acceptable according to EN60950. For the electrical consumer in the cabin a potential-free mains (TNS network) is built up via an interstage transformer box with 6 kV test voltage.

A further system component of the **WEK2** is the compressor, which supplies cooling power of up to 6 kW for the compensation of the heat available/arising in the cabin, and the condenser fan.

An electric heating of 3 kW is implemented in the fresh air module as well as a fuel heating of 5 kW.

A further module of the **WEK2** is an outside supply part with integrated lightning and over-voltage protection to supply the system from an external mains.

