Fischer Panda Vehicle Generators
Fischer Panda vehicle generators

- Compact
- Light
- Extremely quiet
- Water-cooled
- High performance
- Worldwide service network

The water-cooled diesel generators from Fischer Panda are renowned worldwide for being innovative, reliable and extremely quiet. The product range includes more than two hundred generators from 2.5 kW to 200 kW.

Fischer Panda generators feature an effective water-cooling system and a lightweight compact construction. This has made Fischer Panda a leader in Europe for mobile super-silent diesel generators. These highly proven generators supply power to electrical systems, drives and complete mobile energy systems.

Fischer Panda manufactures compact and quiet diesel generators for marine and vehicle applications. These are sold in more than eighty countries worldwide.

The company, based in Paderborn/Germany, was founded in 1977 under the name Icemaster GmbH and renamed as Fischer Panda GmbH in 2007.

Fischer Panda for mobile and stationary applications

Designed for use in special and diverse areas of the vehicle industry, Fischer Panda generators are installed in the smallest and tightest places available and can be found in numerous mobile applications worldwide.

**Touring**
- Luxury motor coaches
- Limousine coaches
- Holiday homes

**Emergency services**
- Command centres
- Border control & customs
- Mobile blood donor units

**Promotion**
- Mobile stages
- Trade show vehicles
- Formula 1 team vehicles

**Specialist services**
- Environmental monitoring
- Railway & track maintenance
- Tactical shelters

**Communications**
- Mobile broadcasting
- Relay and transmitter sites
- Commercial vehicles

**Recreational**
- Motorized RVs
- Expedition vehicles
- Off-grid and remote sites
The radiator must be installed where good access for fresh air circulation is guaranteed. The best location is horizontally on the roof of the vehicle. The radiator has an integrated expansion tank. A radiator can be fitted vertically on the vehicle when there is no space on the roof.

When sufficient clearance is available, the radiator may be mounted under the chassis. The air must be able to circulate correctly so warm air does not flow back over the radiator.

Super-silent sound insulation system

The most significant advantage of all Fischer Panda generators is the low sound level. Many parts are required to work together to achieve this result. A flow of cooling air is not required inside the capsule, this also helps maintain constant ambient temperatures. An efficient water-cooling system requires the radiator to be installed separately from the generator.

Fischer Panda generators up to 25 kW are housed in a fibreglass (GFK) sound insulation capsule with ‘3D’ sound insulation material as standard.

From 30 kW, the generator is housed in a stainless steel capsule (MPL). Depending on the size of the generator, the MPL sound-insulation capsule consists of 6 to 11 parts. MPL capsules are also available (at an additional cost) for generators from 6 kW to 25 kW.

Various versions of sound insulation material are available:

- **3D**: 3 layers, up to 25 mm thick
- **4DS**: up to 5 layers, up to 40 mm thick
- **6DS**: up to 6 layers, up to 60 mm thick

**Water-cooled exhaust silencer**

PVMV-N, PVK-U and PVK-UK generators (up to 25 kW) are fitted with an internal water-cooled exhaust silencer.

**Vehicle installation: roof-mounted radiator**

The radiator must be installed where good access for fresh air circulation is guaranteed. The best location is horizontally on the roof of the vehicle. The radiator has an integrated expansion tank.

**Vehicle installation: vertically mounted radiator**

A radiator can be fitted vertically on the vehicle when there is no space on the roof.

**Vehicle installation: chassis-mounted**

When sufficient clearance is available, the radiator may be mounted under the chassis. The air must be able to circulate correctly so warm air does not flow back over the radiator.
High performance AC windings from Fischer Panda

Single-phase windings
The 230 V 50 Hz, (120/240 V 60 Hz) single phase windings are standard for generators up to 25 kW. A three-phase version should be considered above 12 kW, as the Panda generator permits asymmetrical loads up to 50 % per phase. A Hybrid Power System should also be taken into consideration for small to middle range on-board power systems.

Three-phase windings
The 400 V AC 50 Hz, (208 V 60 Hz) three-phase winding has the highest level of efficiency and the best qualities. This winding can also supply single-phase AC with the appropriate phase distribution. A three-phase generator should always be chosen above 25 kW (from Panda 30).

Reliable and durable
The asynchronous generator delivers high standards regarding both operational security and life. The asynchronous generator is often the preferred choice when a high degree of safety and reliability is demanded.

Fischer Panda warrants the rotor, often the most sensitive part of other generator systems, with a lifetime guarantee. Furthermore, the asynchronous generator continues to be the best suited for water-cooling as the copper winding is the only component producing heat via the stator. The electrical generator is warranted with a 5-year guarantee against corrosion.

“Perfect Power” iSeries generators with variable speed

The Panda iSeries generators have been especially designed to be compact, quiet and powerful with up to 30 % weight and space savings! They are ideal for superyacht owners looking for a night generator with low operating sound levels and vibrations. The generators are characterised by their modern, innovative and environmentally friendly inverter technology. iSeries generators using parallel inverters can be connected in parallel without any additional cables and synchronised.

The speed of the diesel engine is adjusted according to the user’s changing power requirements while the output voltage always remains constant from the inverter. Variable speed control considerably reduces exhaust emissions and fuel consumption in comparison with a traditional generator with a fixed speed. The maximum speed of the engine is 2800 RPM. The electric load is provided with a constant output voltage of 230 V / 50 Hz or 400 V / 50 Hz via an inverter.

• Highly efficient - maximum energy
• Variable speed - load-dependent
• Meets latest emission standards
• Modular design ensures installation flexibility
• Extremely stable voltage and frequency
• Optional CAN SAE J1939 Interface

“All the benefits of the asynchronous generator:
• Overload protection
• Water-cooled
• Short-circuit stability
• Highest operating protection
• High protection rating
• Brushless
• Perfect sine wave
• No rotating costs
• No diodes
• Precise control
• No signal noise
• Highly efficient

“Compact Power” generators

Premium Line: Fischer Panda generators with xControl

The “xControl” management system offers an easy to operate system, a modern and simple system architecture and a modern communication interface. It replaces the current VCS control on Fischer Panda asynchronous generators. Modern data communications and energy systems require that the generator is able to integrate with an existing control and regulation system. With the “xControl”, Fischer Panda offers an extremely powerful and user-friendly generator control system. Through intelligent communication of three main system components (digital panel, connection box and control unit), a reliable operation of the generator is ensured.

“Hybrid Power” generators (AC indirect)

AGT-DC Line: Fischer Panda battery charging generators

Fischer Panda battery charging generators produce direct current and generally function as part of a Hybrid Power System. Battery levels are monitored and automatically charged by the generator. An inverter supplies energy to the 230 V consumers on-board. These systems are ideal for typically varying power demands which do not require a generator to constantly run throughout the day.
Fischer Panda Panels for ease of use and operation

Fischer Panda panels allow the generator to be operated from another location within the vehicle. Options are available for connecting panels in parallel or with a slave panel. The generator can then be operated from two locations for even more flexibility. A panel can be installed in the cabin and another panel can be fitted in the installation area. Important operating information is also displayed.

Fischer Panda generators with innovative control

Innovative, flexible and reliable – these are the attributes of the new generator control from Fischer Panda for „Perfect Power“ iSeries generators and „Compact Power“ xSeries generators up to 30 kW.

In the age of modern data communications and energy systems, it is more and more important that the generator is able to integrate into an existing control and regulation systems. Fischer Panda offers an extremely powerful and user-friendly generator control system:

- Plug & Play - reduced installation effort
- Modular system - easy to expand
- Logging and display of operational data - complete control at all times
- Comprehensive event logging - long-term service
- Digital panel - easy to use and multilingual
- Communications interface - integration in other control systems
- Self-test of all functions - safe and reliable system
- Automatic start - remote control of generator
- Optional CAN SAE J1939

Perfect sine wave

The Panda combines all the advantages of the asynchronous generator with the voltage control of a synchronous generator. Asynchronous Panda generators supply a particularly clean sine wave and have achieved the best results during numerous tests in this category. This is essential for the smooth running of sensitive electronic devices such as air conditioners, charging devices, laser printers etc.

Voltage stability with patented Voltage Control System (VCS) tolerance ± 3V

Fischer Panda generators have used their own patented electronic Voltage Control System (VCS) for controlling generator and engine. The engine speed is progressively controlled. This ensures that the output voltage of the asynchronous generator has a tolerance of ± 3V.

SAEJ1939 CANBus Module for xControl / iControl

The Fischer Panda FP Bus provides 100 % SAEJ1939 functionality. This allows the generator to be integrated into a higher level control system. The generator can be remotely started and stopped. All electrical data can be accessed via the bus: voltage, current, frequency and power. Monitoring information such as cooling, exhaust and oil temperatures etc. can also be accessed.
Professional solutions from Fischer Panda

Generators for all types of commercial and recreational vehicle applications

Different types of generators are available to provide you with an ideal power solution for your vehicle:

**Hybrid AC energy**

Fischer Panda battery charging generators produce direct current and generally function as part of a Hybrid Power System. Battery levels are monitored and automatically charged by the generator. An inverter supplies energy to the 230 V consumers on-board. These systems are ideal for varying power demands, and do not require a generator to constantly run throughout the day.

**AC energy direct**

Fischer Panda AC generators are designed for continuous operation. They produce alternating current directly while running. Not only for operating domestic electrical appliances and electric cooking, they are the right choice for operating demanding consumers such as air-conditioning and compressors. They also produce a very clean sine wave, ideal for sensitive electronic equipment.

**DC generators**

- Longer lifespan for generator
- Reduced maintenance costs
- Reduced environmental impact
- Reduced exhaust emissions
- Reduced fuel consumption
- Less noise on board & outside
- Longer battery life
- Smaller battery bank possible
- Up to 30 % smaller and lighter
- Automatic start as standard (optional manual start)

**Battery-powered systems**

- 12 V / 24 V / 48 V DC

**Battery AGT-DC Hybrid**

Vehicle battery charging generators

- 12 V / 24 V / 48 V
- (other voltages on request)

**Asynchronous generators**

- Suited for typical power applications requiring continuous power and higher starting capabilities
- Voltage tolerance ±3 V
- 3000 rpm - 50 Hz - 230 V
- 3000 rpm - 50 Hz - 400 V
- 3600 rpm - 60 Hz - 120 / 240 V
- 3600 rpm - 60 Hz - 208 V AC

**Panda Premium Line**

Asynchronous vehicle generators with voltage control

- Voltage tolerance ±3 V
- 3000 rpm - 50 Hz - 230 V
- 3000 rpm - 50 Hz - 400 V

**Panda xSeries Premium Line**

Asynchronous vehicle generators with voltage control

- Voltage tolerance ±3 V
- 3000 rpm - 50 Hz - 230 V
- 3000 rpm - 50 Hz - 400 V
- 50 Hz - 400 V
- 60 Hz - 120 / 240 V (up to 15000i)
- 60 Hz - 230 V
- variable speed - load dependent

**Inverter generators**

- Suited for applications requiring continuous power and high starting capabilities with a very stable voltage supply
- Voltage tolerance ±3 V
- 50 Hz - 230 V
- 50 Hz - 400 V
- 50 Hz - 400 V
- 60 Hz - 120 / 240 V
- 60 Hz - 230 V

**Power for domestic electrical consumers**

- Hybrid Power: Powerful battery-charging generators. Ideal for battery systems which may be required to power larger consumers for short periods during the day
- Advanced Generator Technology (AGT) only from Fischer Panda

- 230 V / (120 / 240 V) AC

**Professional solutions from Fischer Panda**

Fischer Panda offers a wide range of generators and inverter systems designed for continuous operation. They are suitable for applications requiring continuous power and high starting capabilities, with a very stable voltage supply. Fischer Panda’s AGT DC Hybrid generators, an advanced technology offering various benefits such as longer lifespan, reduced maintenance costs, and lower environmental impact, are ideal for battery systems that may require additional power during short periods. Fischer Panda’s AC generators are designed for alternating current output, providing a clean sine wave ideal for sensitive electronic equipment. For battery-powered systems, Fischer Panda offers the AGT-DC Hybrid, providing a powerful charging solution that can be customized to meet specific needs. Fischer Panda’s inverter generators are suited for applications requiring continuous power and high starting capabilities, ensuring a stable voltage supply. Fischer Panda’s professional solutions are designed with features like longer lifespan, reduced maintenance costs, reduced environmental impact, reduced exhaust emissions, reduced fuel consumption, less noise on board, longer battery life, smaller battery bank, up to 30% smaller and lighter, automatic start, and optional manual start. Fischer Panda also offers hybrid power solutions, providing a powerful charging system that can be used for battery systems requiring additional power during short periods. Fischer Panda’s AGT DC Hybrid generators are not only powerful but also offer advanced technology features like longer battery life, smaller battery bank, up to 30% smaller and lighter, automatic start, and optional manual start. Fischer Panda’s professional solutions are designed for a wide range of applications, from domestic electrical consumers to commercial and recreational vehicles, ensuring a reliable power solution for any need.
Fischer Panda generators are available in different versions to suit your individual requirements.

Fischer Panda generators are of compact construction and highly suited for applications with limited space available. They are available for installation inside the vehicle and for mounting externally on the chassis. The modular versions PVMV-N, PVM-NE and PVK-U have been designed to be installed with an external radiator. The most effective cooling is usually achieved using a cooling system with a roof-mounted radiator.

Panda PVMV-N
Vehicle generator with sound insulation capsule, integrated water-cooled vertically mounted pre-silencer and main silencer.

- Designed for external mounting
  - Assembly bolts pre-fitted to housing
  - Metal capsule with a heavy-duty cover
  - Wide access hatch for easier access
  - Water-cooled exhaust silencer inside capsule
  - No additional exhaust silencer required
  - Requires external radiator

- Complete programme
  - Integrated fuel tank
  - Vertically or horizontally mounted radiator
  - Suitable for external mounting
  - Sound insulation capsule
  - Water-cooled exhaust silencer inside capsule
  - No additional exhaust silencer required
  - Integrated radiator and cooling system

Panda PVM-NE
The PVM-NE is the standard version for generators above 30 kW. The PVM-NE is similar to the PVMV-N, however the silencer is not water-cooled and is externally mounted on the capsule.

- Best choice when space is available inside vehicle
  - Easy to install
  - Requires external radiator
  - Suitable for internal installation

- Complete water-cooled silencer inside capsule
- Also suited for keel cooling in ships
- Glass-reinforced plastic (GRP) capsule standard for models up to 12 kW
- Stainless steel capsule (MPL) for models from 15 kW and above

Panda PVK-U
Vehicle generators with internal water-cooled silencer for mounting externally on the vehicle chassis. This generator type is ideal for installing on trucks with limited space between axles. The heavy-duty housing is also suitable for expedition vehicles.

- Designed for external mounting
  - Assembly bolts pre-fitted to housing
  - Metal capsule with a heavy-duty cover
  - Wide access hatch for easier access
  - Water-cooled exhaust silencer inside capsule
  - No additional exhaust silencer required
  - Requires external radiator

- Complete programme
  - Integrated fuel tank
  - Vertically or horizontally mounted radiator
  - Suitable for external mounting
  - Sound insulation capsule
  - Water-cooled exhaust silencer inside capsule
  - No additional exhaust silencer required
  - Integrated radiator and cooling system

Panda PVK-UK
Vehicle generator “Compact Construction” with integrated cooling system for mounting externally on the vehicle chassis.

- Designed for external mounting
  - Assembly bolts pre-fitted to housing
  - Metal capsule with a heavy-duty cover
  - Wide access hatch for easier access
  - Sound insulation capsule
  - Water-cooled exhaust silencer inside capsule
  - No additional exhaust silencer required
  - Integrated radiator and cooling system

Panda PSC
Self-Contained generators are complete “turnkey” units fitted with an integrated cooling system, fuel tank and electrical cabinet.

- Complete programme
  - Integrated fuel tank
  - Vertically or horizontally mounted radiator
  - Suitable for external mounting
  - Sound insulation capsule
  - Water-cooled exhaust silencer inside capsule
  - No additional exhaust silencer required
  - Integrated radiator and cooling system

The generator must be installed in a well-ventilated area because heat is absorbed by the silencer. An additional silencer is not necessary. The generator is housed within a sound insulation capsule.

- Suitable for internal installation
- Requires external radiator
- Easy to install
## Technical data for Fischer Panda vehicle generators

**Perfect Power**® Series generators

### Generator nominal performance

<table>
<thead>
<tr>
<th>Model / type</th>
<th>Generator type</th>
<th>Engine type</th>
<th>Sound level [dBA] ( 7m / 3m / 1m)</th>
<th>Dimensions (excl. fittings) L x W x H (mm)</th>
<th>Weight incl. capsule (kg)</th>
<th>Weight incl. capsule (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panda 16x</td>
<td>+3 V</td>
<td>Kubota</td>
<td>170 ±3 V</td>
<td>720 x 400 x 440</td>
<td>420</td>
<td>420</td>
</tr>
<tr>
<td>Panda 18x</td>
<td>+3 V</td>
<td>Kubota</td>
<td>220 ±3 V</td>
<td>860 x 490 x 450</td>
<td>560</td>
<td>560</td>
</tr>
<tr>
<td>Panda 24x</td>
<td>+3 V</td>
<td>Kubota</td>
<td>270 ±3 V</td>
<td>1000 x 530 x 480</td>
<td>680</td>
<td>680</td>
</tr>
<tr>
<td>Panda 30x</td>
<td>+3 V</td>
<td>Kubota</td>
<td>320 ±3 V</td>
<td>1200 x 590 x 490</td>
<td>840</td>
<td>840</td>
</tr>
<tr>
<td>Panda 40x</td>
<td>+3 V</td>
<td>Kubota</td>
<td>370 ±3 V</td>
<td>1400 x 640 x 510</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>Panda 80x</td>
<td>+3 V</td>
<td>Kubota</td>
<td>420 ±3 V</td>
<td>1700 x 710 x 540</td>
<td>1200</td>
<td>1200</td>
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<tr>
<td>Panda 120x</td>
<td>+3 V</td>
<td>Kubota</td>
<td>470 ±3 V</td>
<td>2000 x 760 x 550</td>
<td>1400</td>
<td>1400</td>
</tr>
<tr>
<td>Panda 150x</td>
<td>+3 V</td>
<td>Kubota</td>
<td>520 ±3 V</td>
<td>2300 x 810 x 570</td>
<td>1600</td>
<td>1600</td>
</tr>
<tr>
<td>Panda 200x</td>
<td>+3 V</td>
<td>Kubota</td>
<td>570 ±3 V</td>
<td>2600 x 860 x 580</td>
<td>1800</td>
<td>1800</td>
</tr>
<tr>
<td>Panda 250x</td>
<td>+3 V</td>
<td>Kubota</td>
<td>620 ±3 V</td>
<td>2900 x 910 x 600</td>
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<tr>
<td>Panda 300x</td>
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<td>Kubota</td>
<td>670 ±3 V</td>
<td>3200 x 960 x 610</td>
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</tr>
</tbody>
</table>

### Compact Power: Panda / xSeries generators - 3000 rpm - 50 Hz

<table>
<thead>
<tr>
<th>Model / type</th>
<th>Generator type</th>
<th>Engine type</th>
<th>Sound level [dBA] ( 7m / 3m / 1m)</th>
<th>Dimensions (excl. fittings) L x W x H (mm)</th>
<th>Weight incl. capsule (kg)</th>
<th>Weight incl. capsule (kg)</th>
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<td>+3 V</td>
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<td>720 x 400 x 440</td>
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<tr>
<td>Panda 1200x</td>
<td>+3 V</td>
<td>Kubota</td>
<td>220 ±3 V</td>
<td>860 x 490 x 450</td>
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<td>560</td>
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<tr>
<td>Panda 1500x</td>
<td>+3 V</td>
<td>Kubota</td>
<td>270 ±3 V</td>
<td>1000 x 530 x 480</td>
<td>680</td>
<td>680</td>
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<tr>
<td>Panda 2000x</td>
<td>+3 V</td>
<td>Kubota</td>
<td>320 ±3 V</td>
<td>1200 x 590 x 490</td>
<td>840</td>
<td>840</td>
</tr>
<tr>
<td>Panda 2500x</td>
<td>+3 V</td>
<td>Kubota</td>
<td>370 ±3 V</td>
<td>1400 x 640 x 510</td>
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<td>1000</td>
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<tr>
<td>Panda 3000x</td>
<td>+3 V</td>
<td>Kubota</td>
<td>420 ±3 V</td>
<td>1600 x 690 x 540</td>
<td>1200</td>
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<td>Panda 3500x</td>
<td>+3 V</td>
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<td>470 ±3 V</td>
<td>1800 x 740 x 550</td>
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<tr>
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<tr>
<td>Panda 4500x</td>
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<td>Kubota</td>
<td>570 ±3 V</td>
<td>2200 x 840 x 580</td>
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<td>1800</td>
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</tbody>
</table>

### Fischer Panda „Hybrid Power“: Panda AGT-DC battery charging generators

<table>
<thead>
<tr>
<th>Model / type</th>
<th>Generator type</th>
<th>Engine type</th>
<th>Sound level [dBA] ( 7m / 3m / 1m)</th>
<th>Dimensions (excl. fittings) L x W x H (mm)</th>
<th>Weight incl. capsule (kg)</th>
<th>Weight incl. capsule (kg)</th>
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</thead>
<tbody>
<tr>
<td>AGT-DC 1200-12</td>
<td>+3 V</td>
<td>Kubota</td>
<td>170 ±3 V</td>
<td>720 x 400 x 440</td>
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<tr>
<td>AGT-DC 1200-24</td>
<td>+3 V</td>
<td>Kubota</td>
<td>220 ±3 V</td>
<td>860 x 490 x 450</td>
<td>560</td>
<td>560</td>
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<tr>
<td>AGT-DC 1500-12</td>
<td>+3 V</td>
<td>Kubota</td>
<td>270 ±3 V</td>
<td>1000 x 530 x 480</td>
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<tr>
<td>AGT-DC 1500-24</td>
<td>+3 V</td>
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<td>320 ±3 V</td>
<td>1200 x 590 x 490</td>
<td>840</td>
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<tr>
<td>AGT-DC 1800-12</td>
<td>+3 V</td>
<td>Kubota</td>
<td>370 ±3 V</td>
<td>1400 x 640 x 510</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>AGT-DC 1800-24</td>
<td>+3 V</td>
<td>Kubota</td>
<td>420 ±3 V</td>
<td>1600 x 690 x 540</td>
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<tr>
<td>AGT-DC 2100-12</td>
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<td>470 ±3 V</td>
<td>1800 x 740 x 550</td>
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<tr>
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<td>520 ±3 V</td>
<td>2000 x 790 x 570</td>
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</tr>
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</table>

*For inverter generators, output performance is calculated with a Cos Phi factor 0.8 up to 40 °C ambient temperature, otherwise calculate with factor 1.0 up to 50 °C.

*For asynchronous generators (up to and including Panda 1500x), the kW is calculated with Cos Phi 0.85 for a short starting performance of inductive consumers. Otherwise it should be calculated with factor 1.0. Generators above and including Panda 16 are calculated with an optional start performance with compensation or starting current booster, otherwise it should be calculated with a factor of 1.
### Roof-mounted radiators from Fischer Panda

#### RD-D: Roof radiators DC

<table>
<thead>
<tr>
<th>Radiator</th>
<th>Weight (dry)</th>
<th>Approximate dimensions (L x W x H) mm</th>
<th>Article no.</th>
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</thead>
<tbody>
<tr>
<td>RD 1.2</td>
<td>24 V</td>
<td>18 705 x 390 x 310</td>
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<td>RD 2.2</td>
<td>24 V</td>
<td>29 930 x 515 x 321</td>
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<tr>
<td>RD 3.2</td>
<td>24 V</td>
<td>32 1055 x 515 x 312</td>
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<tr>
<td>RD 3.2 Trop</td>
<td></td>
<td>40 1055 x 515 x 361</td>
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#### RD-A: Roof radiators AC

<table>
<thead>
<tr>
<th>Radiator</th>
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<tr>
<td>RD 3.3 Trop</td>
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<tr>
<td>RD 4.2</td>
<td>230 V / 50 Hz</td>
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<td>230 V / 50 Hz</td>
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<tr>
<td>RD 6 / 2.2</td>
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<td>67 1405 x 630 x 414</td>
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<tr>
<td>RD 6 / 2.2 Dual</td>
<td></td>
<td>104 1405 x 640 x 493</td>
<td>0005742</td>
</tr>
<tr>
<td>RD 7.2</td>
<td>400 V / 50 Hz</td>
<td>858 x 940 x 502</td>
<td>0000418</td>
</tr>
<tr>
<td>RD 7.2 Dual</td>
<td></td>
<td>1011 x 920 x 597</td>
<td>0005730</td>
</tr>
</tbody>
</table>

#### RV-D: Side-/underneath radiators DC

<table>
<thead>
<tr>
<th>Radiator</th>
<th>Weight (dry)</th>
<th>Approximate dimensions (L x W x H) mm</th>
<th>Article no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RV 1.2</td>
<td>24 V</td>
<td>13 620 x 330 x 214</td>
<td>0000448</td>
</tr>
<tr>
<td>RV 2.2</td>
<td>24 V</td>
<td>21 750 x 450 x 224</td>
<td>0000451</td>
</tr>
<tr>
<td>RV 3.2</td>
<td>24 V</td>
<td>24 880 x 450 x 224</td>
<td>0000449</td>
</tr>
<tr>
<td>RV 3.2 Trop</td>
<td></td>
<td>30 920 x 450 x 254</td>
<td>0000452</td>
</tr>
</tbody>
</table>

#### RV-A: Side-/underneath radiators AC

<table>
<thead>
<tr>
<th>Radiator</th>
<th>Weight (dry)</th>
<th>Approximate dimensions (L x W x H) mm</th>
<th>Article no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RV 3.3</td>
<td>230 V / 50 Hz</td>
<td>30 880 x 450 x 210</td>
<td>0005839</td>
</tr>
<tr>
<td>RV 3.3 Trop</td>
<td></td>
<td>33 920 x 450 x 259</td>
<td>0005817</td>
</tr>
<tr>
<td>RV 5.2</td>
<td>230 V / 50 Hz</td>
<td>32 580 x 610 x 356</td>
<td>0005793</td>
</tr>
<tr>
<td>RV 13.160</td>
<td>230 V / 50 Hz</td>
<td>52 601 x 690 x 441</td>
<td>0005799</td>
</tr>
<tr>
<td>RV 6/2.2</td>
<td>230 V / 50 Hz</td>
<td>63 1280 x 555 x 322</td>
<td>0005808</td>
</tr>
<tr>
<td>RV 6/2.2 Dual</td>
<td></td>
<td>81 1280 x 556 x 378</td>
<td>0005801</td>
</tr>
<tr>
<td>RV 14.120</td>
<td>400 V / 50 Hz</td>
<td>48 690 x 780 x 355</td>
<td>0022884</td>
</tr>
<tr>
<td>RV 14.160</td>
<td>400 V / 50 Hz</td>
<td>55 690 x 780 x 407</td>
<td>0005814</td>
</tr>
<tr>
<td>RV 7.2</td>
<td>400 V / 50 Hz</td>
<td>63 800 x 1000 x 416</td>
<td>0000428</td>
</tr>
<tr>
<td>RV 7.2 Dual</td>
<td></td>
<td>78 940 x 800 x 438</td>
<td>0005798</td>
</tr>
<tr>
<td>RV 8.2</td>
<td>400 V / 50 Hz</td>
<td>80 1012 x 1100 x 396</td>
<td>0005786</td>
</tr>
</tbody>
</table>

**Note:** No value = on request. Fischer Panda GmbH reserves the right to change technical information without prior notice.
Fischer Panda power for rail and locomotive applications

- Auxiliary power and charging
- Maintenance wagon equipment
- Accommodation carriage systems

Fischer Panda generators are installed on a variety of railway applications providing battery charging for the locomotives, powering equipment used by maintenance wagons or supplying power to accommodation carriages.

Generators provide power to each of four accommodation carriages on board the luxury Danube Express, supplying electrical systems for air-conditioning, en suite showers and cabin lighting. The quiet supply of power is also of importance during overnight stops in cities. The operation of locomotive engines at night are often restricted due to noise levels.

The generators are also used as auxiliary power sources supplying power for tasks which are usually powered by idling the locomotive’s engine such as cabin heating or preventing cooling systems from freezing in winter weather. AC generators are also used on maintenance wagons to power tools, compressors, pumps and floodlighting during track repair and replacement.

The generator’s low profile is ideal for mounting externally underneath the wagon. The heavy-duty sound shield provides additional protection if the generator is installed externally.

Parallel power from Fischer Panda generators

Load transfer for Fischer Panda generators with xControl

The xControl PD-A (Parallel Device) module allows two Fischer Panda xControl AC generators to be connected in parallel. Electrical loads can be switched from one generator to another (uninterrupted) or their outputs can be combined (load sharing).

The PD-A is connected to each generator’s data bus. The generators are set to “parallel-mode” via the xControl display menu. The PD-A monitors both generators and synchronizes their output. The load is switched from one generator to the other when their outputs are synchronized. Both single and three phase generators can be connected in parallel using the PD-A module.

Parallel “Perfect Power - iSeries” generators

Optional available parallel inverters can be used to easily connect several iSeries generators of different types in parallel. Extra cables or additional cabinets are not required. Each generator is fully independent and can be individually operated.

- Several generators (even if they have different outputs) can be easily connected
- Load-Sharing: generators are equally loaded when operating in parallel (generators operate with output of smallest generator)
- Ideal for applications which may benefit from installing smaller generators to improve weight distribution

Fischer Panda xControl Generator

xControl PD-A module

Radiator mounted separately on wagon roof

FMG Parallel Inverter

Fischer Panda iSeries generator

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PMGi Parallel Inverter

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PMGi Parallel Inverter

Radiator mounted separately on wagon roof

External Fischer Panda DC generator with side-mounted radiator.
Fischer Panda power for isolated and unmanned applications

- Ideal for remote communication and monitoring
- Extremely long service interval (up to 1500 hours)
- Fully automatic operation and monitoring
- Hybrid Systems: combine with battery, solar and wind power

Fischer Panda generators are ideal for remote communication and monitoring sites. Their compact and robust design makes them suitable for operating in remote areas and exposed locations. These sites are often unmanned and operate for prolonged periods, requiring only routine maintenance schedules and refueling.

Fischer Panda Hybrid DC generators provide powerful battery charging capabilities and can be integrated with wind and solar-based systems. The generator starts and stops automatically when the battery banks require recharging.

Fischer Panda AC generators are especially suited for applications which require even more continuous power such as providing extra coverage at large events. The iSeries generators with iControl are designed to allow longer periods between maintenance schedules when operating with lower loads.

Options and services are available to meet individual specifications and requirements. The generators are designed to be connected to an external fuel source within a container-based system. Generators with integrated fuel tank and electrical distribution are available on request.

Fischer Panda power for off-grid buildings

- Power for off-grid and remote buildings
- Co-generation (electric power and heating)
- Hybrid systems: combine with battery, solar and wind power

Fischer Panda vehicle generators can also be used for supplying power to off-grid or remotely located buildings such as mountain hostels, weekend homes or even alpine huts. The generator’s low space requirements and compact construction is suited for buildings where space is limited. Effective sound shielding reduces operating noise and low vibrations. The generator is easy to operate using a panel which also features an automatic start.

Power is available for larger consumers including electric cooking, boilers and even air-conditioning. Guests can also enjoy the comfort of being able to use domestic consumer appliances such as hair dryers and coffee makers.

The generator can also be used to form an effective Combined Heat and Power system (CHP) system. This uses heat from the exhaust and radiator to supply the water-heating system while the generator is running. The system’s overall efficiency is increased. Fuel supply may be an important factor in remote locations. Options for using alternative fuels are available on request. A higher degree of efficiency can be achieved if used in a hybrid system with battery, solar and wind power.

Overall efficiency can be increased when excess heat from engine (exhaust and cooling) is also used to heat water when electrical energy is generated.
Installation services and support from Fischer Panda

Installation kits
Fischer Panda supplies installation kits with all the necessary cables, hoses, connection pieces and accessories to ensure the system can be correctly installed inside the vehicle or externally on the chassis. Specific hose and cable lengths are available on request.

Custom services for special requirements
Fischer Panda offers extensive services for adapting generators for use with special equipment and commercial applications. This includes electro-magnetic hydraulic couplings for driving mechanical-hydraulic pumps and also mounting slides to provide access to the generator.

Powerful energy systems
Fischer Panda Generators form the backbone of our intelligent and innovative solutions whether you are upgrading an existing installation, connecting to another system or ensuring you have sufficient energy when a land power connection is not available.

Fischer Panda SOS-24/7 hotline
For urgent enquiries or generator failure outside our normal business hours, you can ring the Fischer Panda international switchboard on +49 5254 9202-767 (SOS on a key-operated telephone). Please leave your name, number and the purpose of your call on the answering phone / voice mail. This service is operated 24/7 by employees at Fischer Panda.

Global Service Directory
With a coordinated network of distributors, dealers and service stations, Fischer Panda has trained specialists and a worldwide dealer network ready to help, give advice and recommend the best service station depending on the location of your vehicle or yacht. The Global Service Directory can be downloaded from the company website at: http://www.fischerpanda.de/globalservice

Service kits
Fischer Panda Service Kits contain original parts which meet the required specifications and are suited for normal workshop servicing. Fischer Panda Service “Plus” Kits contain all the relevant spare parts for the first 600 hour service interval. Service Plus kits are supplied in a handy waterproof plastic box so all the items are protected during storage. The Fischer Panda Installation Guide can be downloaded from the company website at: http://www.fischerpanda.de/installation
Disclaimer:
The information contained here is to the best of our knowledge accurate at the date of publication. Please note that the data in this publication reflects the technical state at time of print. Dimensions apply for the sound insulation capsule only and do not include latches, fittings, etc. Additional room will need to be calculated for installation to include hoses, cables and capsule mountings. Additional components or alternators may also affect capsule dimensions. Due to our policy of continual product development, we reserve the right to alter technical specifications without notice. All performance data relates to air and water temperatures of 20°C. Performance reduction (approx. 1% per 100m height and approx 2% per 5°C air temperature and approx. 1% per 1°C water temperature above 20°C)

Stand: 2021/12