

**ENDRESS**   
*Power Generators*

**Emergency power supply  
for a secure home**

[www.endress-generator.com](http://www.endress-generator.com)



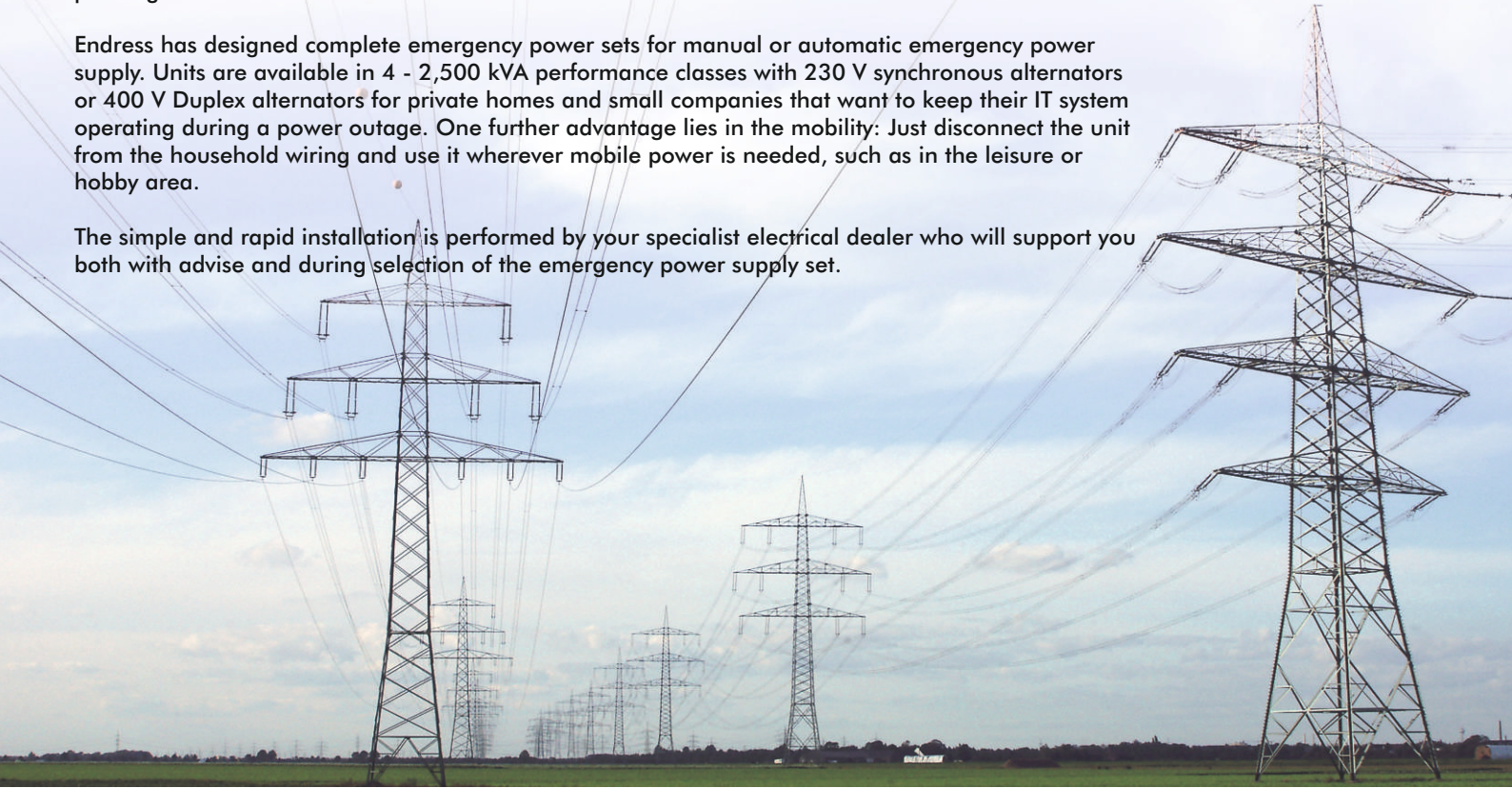


# Power failures are more frequent than ever before...

They are caused by natural catastrophies, snow chaos or ageing distribution networks. Whole locations "sit" in the dark even though permanent supply of electricity is a matter of course today. One quickly forgets how dependent one is when the power supply fails unexpectedly. Heating systems lie still, electrical devices which are part of our normal daily life simply do not function anymore. It goes well for those who have taken precautions and have secured the power supply to their home with an emergency power generator from ENDRESS.

Endress has designed complete emergency power sets for manual or automatic emergency power supply. Units are available in 4 - 2,500 kVA performance classes with 230 V synchronous alternators or 400 V Duplex alternators for private homes and small companies that want to keep their IT system operating during a power outage. One further advantage lies in the mobility: Just disconnect the unit from the household wiring and use it wherever mobile power is needed, such as in the leisure or hobby area.

The simple and rapid installation is performed by your specialist electrical dealer who will support you both with advise and during selection of the emergency power supply set.



## ENDRESS - leading in mobile power generators

### Futuristic technology through in-house development and production.

Decades of experience in the development and manufacturing of generators, guarantee highest quality and absolute reliability. With a power output of up to 2,500 kVA, Endress has every need covered. Innovative special devices for fire brigades, disaster control, and emergency services or the fulfilment of special requirements in the project business, belong likewise to the program as floodlight installations and generators for the emergency power supply.



### Important note:

It does not matter which variant of an emergency power generator you decide to buy the installation in the house and the feed into the power network may only be performed by an approved specialist electrical company. This guarantees safe and proper installation. The company will also be glad to advise you when selecting the correct emergency power supply. Tell your energy supplier about your plan and be sure of your power supplier's terms and conditions in the general terms and conditions document. The regulations vary state by state.

## Simple options for emergency power supply

There are a number of options for creating a simple but efficient emergency power supply. We wish to show you some practical tips and ways for you to secure your building against a power cut.

# 1

## Emergency power supply with **manual** switchover

In this variant a power generator is connected to the supply distributor installed in the house if there is a power failure and is started manually.

- + Economically favourable acquisition costs
- + Simple installation by an electrician
- Emergency power supply operation is only achieved if the power generator is started in response to a power failure
- Security of supply is not guaranteed



An example of a manual emergency power supply

# 2

## Emergency power supply with **automatic** switchover

In this variant an installed power generator is started and stopped automatically if there is a power failure. You do not have to be at home in order to protect your house if there is a power failure.

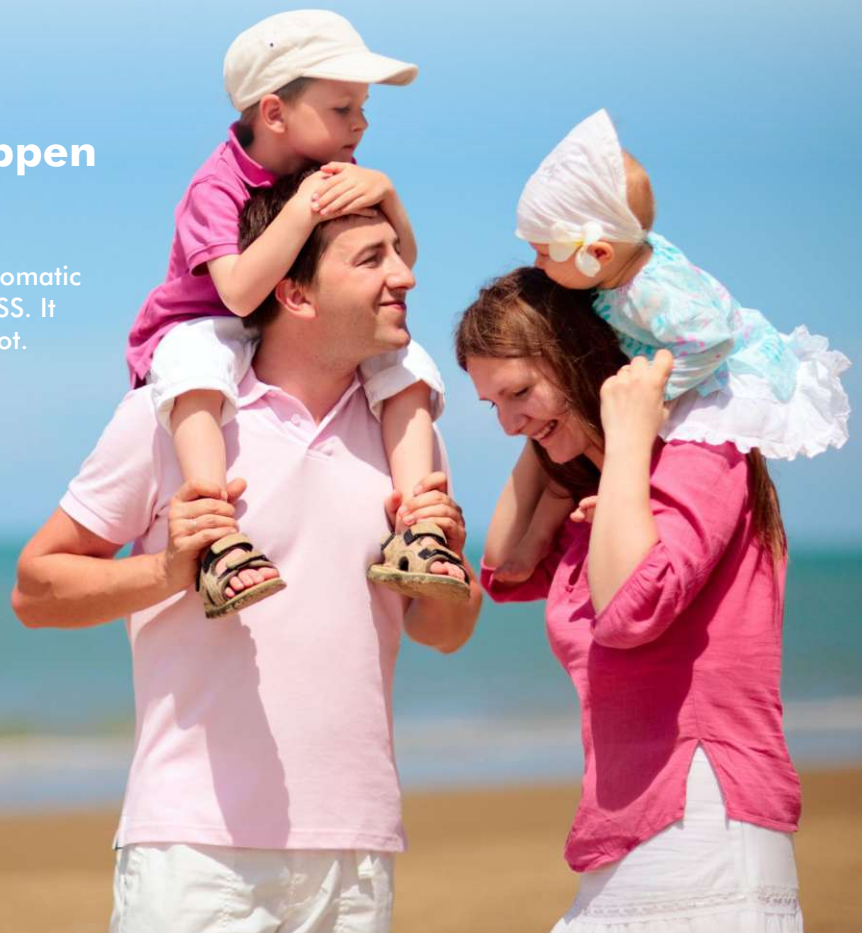
- + Automatic Start-Stop operation in the case of a power failure
- + Simple installation by an electrician
- + Security of supply guaranteed
- Acquisition costs somewhat higher than for manual operation



An example of an automatic emergency power supply

## ENDRESS keeps an eye on things - also when you happen not to be at home...

You can secure your own home with a fully automatic emergency power supply solution from ENDRESS. It does not matter whether you are at home or not.





## General information about emergency power

### Petrol, diesel or gas? What is a suitable emergency power supply?

#### Petrol

- + Economically favourable acquisition costs for the emergency power generator
- + Small, light and mobile power generator due to the model of the engine
- In the case of a power failure the local filling station can also not pump any petrol

#### Diesel

- + Diesel fuel is somewhat more economical to use
- Units are large and heavy due to the model of the engine
- Limited mobility
- High acquisition costs
- In the case of a power failure the local filling station can also not pump any petrol

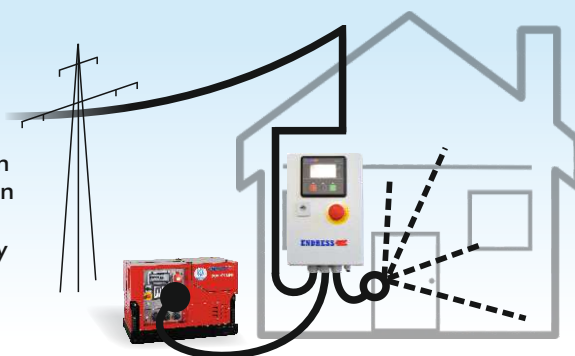
#### Natural gas / LPG

- + Operation selectively possible with LPG or natural gas
- + Residue-free combustion
- + Very economic fuel costs
- + No accumulation of resins on the carburettor when unused for longer periods of time
- Limited mobility when using natural gas

### Scheme for an emergency power supply installation

Both variants (manual or automatic) should be installed by your electrician in such a way that the generator is located with the power feed installation between the power grid and your house network.

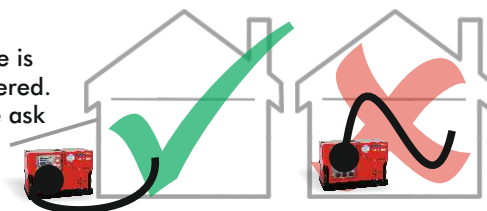
In the case of a power failure the energy supply can now be taken over by the generator. There is absolutely no difference from your point of view - ENDRESS comfort at the highest levels of safety.



Scheme for an emergency power supply installation

### Installation location for a generator

Also when it sounds quite tempting - a generator must not be run inside a closed building! The installation location must always be selected in such a way that there is adequate cooling air present and exhaust gases can escape into the open unhindered. Installation within buildings is only permissible in specially provided rooms. Please ask your district chimney sweep for advice if you have any questions. When installed outside, the generator should be fitted with some form of protection against the weather in order to prevent moisture getting in.



Installation location for a generator

### Feed into the power network 1~ (230V) or 3~ (400V) - which variant is the correct one for me?

This is a question which only you can answer. If you need a power feed in an emergency with 400V (for example a cooker connection, workshop machines, etc) a 3~ supply is a correct criterion for you.

There are some things to take into consideration concerning feed into the power network. 3~ networks may only be supplied by a generator which is fitted with phase correction or a phase checking system in order to avoid any asymmetric load (overload on a phase). This could damage attached power consumers (for example televisions, computers). Our generators from the DUPLEX model series are fitted as standard with an electronic phase control system which allows feed into a house network - your advantage from choosing ENDRESS!

#### 230V 1~

The 1~ alternator must have a clean tolerance in the frequency and voltage. Be very sure when making a purchase that it is a quality product since cheaper suppliers often use lower quality components which can damage your power consumers!



Professional GT-Line

#### 400V 3~

Only ENDRESS DUPLEX alternators have a control system for individual phases **included as standard without additional cost** already included in the system and thus prevent damage to your power consumers.



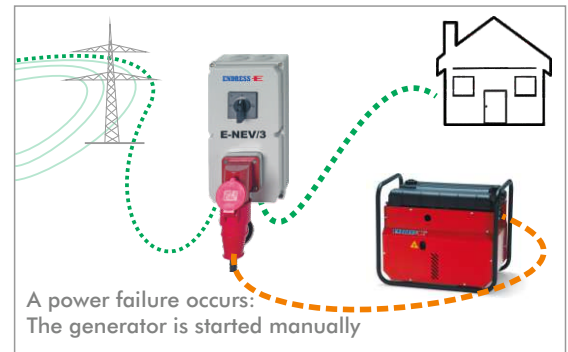
DUPLEXplus-Line

## Manual mobile emergency power supply the safety solution for everyone

ENDRESS offers a broad program of different generators which are suitable for manual provision of an emergency power supply for your building. In the case of manual provision of an emergency power supply there is no automatic switchover when a power failure occurs. If the mains network is no longer available it is necessary to start and stop the generator manually as well as to create the switchover between the mains network and your power network.

You can achieve secure an emergency power supply for your building in just four steps:

- 1 Discuss your plans with your electrician or your electrical engineering company.
- 2 Selection of a generator suitable for your needs from the ENDRESS product program:  
All generators can be used for providing a 230V 1~ supply  
All generators with DUPLEX technology can be used for providing a 400V 3~ supply
- 3 Selection of a suitable supply distributor E-NEV  
The E-NEV must fit to the selected generator. One can obtain some assistance from our product catalogue in the area "Accessories" on the respective product page or ask your electrician.
- 4 Commission your electrician or electrical engineering company with the task of procuring your emergency power generator and of installation at your house.



Scheme for a manual emergency power supply

### The ENDRESS supply distributor E-NEV

- Manual switchover between the mains network and the generator
- Installation takes place by electricians between the mains network line and the junction box in the building (or on a special line for power consumers authorised to use emergency power)
- Secure switchover is secured through physical separation of both networks
- Can be ordered in two variants:
  - E-NEV/1 for feed into the power network of 1~ 230V with 16A or 32A
  - E-NEV/3 for feed into the power network of 3~ 400V with 16A or 32A
- The E-NEV can be used with all generators in the ENDRESS product range and therefore represents manual provision of an emergency power supply in the simplest possible way



Model	E-NEV/1-16	E-NEV/1-32	E-NEV/3-16	E-NEV/3-32
Order no.	162 300	162 301	162 303	162 304
Voltage	230V	230V	400V	400V
Current	16A	32A	16A	32A

### Recommended generators 230V 1~

Model	ESE 406 YS-GT ISO Di	ESE 406 HS-GT	ESE 606 HS-GT
Fuel	Diesel	Petrol	Petrol
Alternator	Synchronous	Synchronous	Synchronous
Cont. output kVA / kW	3,2/2,9	4,2/3,9	6,0/5,5
Rated voltage	230V 1~	230V 1~	230V 1~
Rated current	13,9A 1~	18,3A 1~	26,1A 1~
Suitable E-NEV	E-NEV/1-16	E-NEV/1-16	E-NEV/1-32

### Recommended generators 400V 3~

Model	ESE 606 DSG-GT	ESE 1006 DSG-GT ES	ESE 1306 DSG-GT ES	ESE 1408 DHG ES
Fuel	Petrol	Petrol	Petrol	Petrol
Alternator	DUPLEX	DUPLEX	DUPLEX	DUPLEX
Cont. output kVA / kW	6,0/4,8	10,0/8,0	12,0/9,6	14,0/11,2
Rated voltage	400V 3~	400V 3~	400V 3~	400V 3~
Rated current	8,7A 3~	14,4A 3~	17,3A 3~	20,2A 3~
Suitable E-NEV	E-NEV/3-16	E-NEV/3-32	E-NEV/3-32	E-NEV/3-32

**Double use with plug-and-run from ENDRESS!**  
Emergency power supply operation or mobile generator - it is your choice. The clever plug-and-run solution from ENDRESS offers you all options.



Plug connector for mobile use or emergency power supply operation on the building

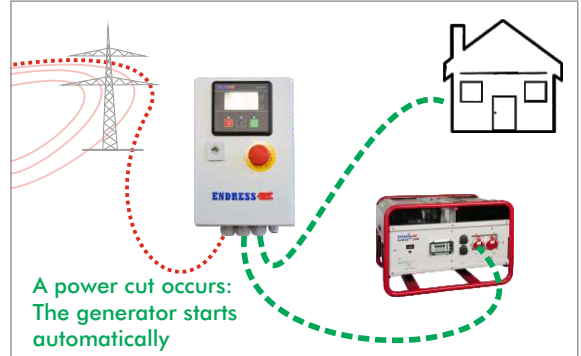
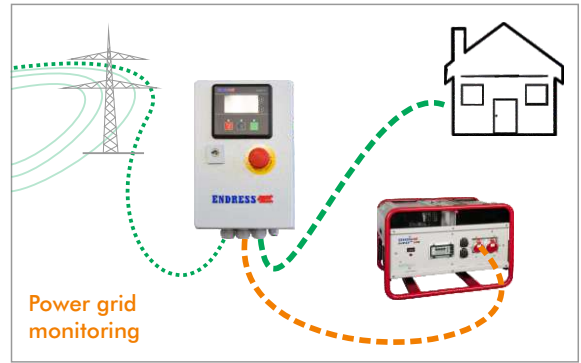
# Automatic mobile emergency power supply the safety solution with comfort

The comfortable variant for a emergency power supply is fitting out of your building with an ENDRESS emergency power supply system E-ATS which, together with an ENDRESS generator, offers the perfect solution for one's own home, commerce and industry.

The E-ATS permanently monitors the power grid. If a power cut is registered then the building is automatically separated from the power grid and the connected generator begins to supply the power.

The E-ATS recognizes when the power grid begins to supply energy again . Switching back to the power grid only takes place, however, if the network again has a stable frequency and voltage. This prevents damage to your power consumers.

The E-ATS, in combination with a mobile generator, offers a secure and reliable solution for your building installation.



Scheme for an automatic emergency power supply

## The E-ATS is fitted out as standard with

- the automatic control panel E-MCS 5.0 for monitoring the power grid and controlling of the attached generator
- switchover protection integrated in the stable metal housing IP54
- all junction blocks for 3~ or 1~ feed in of power to the house
- an adequately dimensioned charger for charging the battery on the generator
- key for the housing
- a firmly cabled control line to the alternator 7 metres long
- a plug-and-run plug connector for the ENDRESS generator
- a temperature-dependent choke control



## Selection of a suitable generator:

We are making it very easy for you: All generators which are prepared for operation with an automatic emergency power supply have the E-ATS as an option. To do this please check on the respective product side in our product catalogue in the area "Options".

### Recommended generators 230V 1~

Model	ESE 406 HS-GT ES	ESE 606 HS-GT ES	ESE 1206 HS-GT ES
Fuel	Petrol	Petrol	Petrol
Alternator	Synchronous	Synchronous	Synchronous
Cont. output kVA / kW	4,2/3,9	6,0/5,5	10,0/9,1
Rated voltage	230V 1~	230V 1~	230V 1~
Rated current	18,3A 1~	26,1A 1~	43,5A 1~

### Recommended generators 400V 3~

Model	ESE 606 DSG-GT ES	ESE 1006 DSG-GT ES	ESE 1306 DSG-GT ES	ESE 1408 DHG ES
Fuel	Petrol	Petrol	Petrol	Petrol
Alternator	DUPLEX	DUPLEX	DUPLEX	DUPLEX
Cont. output kVA / kW	6,0/4,8	10,0/8,0	12,0/9,6	14,0/11,2
Rated voltage	400V 3~	400V 3~	400V 3~	400V 3~
Rated current	8,7A 3~	14,4A 3~	17,3A 3~	20,2A 3~

**Double use with plug-and-run from ENDRESS!**  
Emergency power supply operation or mobile generator - it is your choice. The clever plug-and-run solution from ENDRESS offers you all options.



Plug connector for mobile use or emergency power supply operation on the building

## Automatic stationary emergency power supply with gas generators the safety solution for frugal people

Automatic stationary emergency power supply with gas generators the safety solution for frugal people

One further alternative for an automatic emergency power supply are the generators which are fitted with a gas engine. These devices can optionally be run on natural gas (NG) or liquefied gas (LPG).

The ENDRESS gas generators are already fitted with a built-in automatic emergency power supply which is controlled over the on-board computer (E-MCS 5.0).

### The following arguments offer reasons for operation of a gas generator:

- ⊕ Very quiet running of the engine and very low noise pollution through improved combustion
- ⊕ Gas burns virtually residue-free
- ⊕ Significantly less fouling of the engine when running on gas and therefore more maintenance-friendly than using petrol or diesel
- ⊕ If there is already a natural gas connection in the house, no further gas tank is needed
- ⊕ Natural gas and liquefied gas are more economic to use than petrol or diesel
- ⊕ The supply of petrol or diesel is endangered if there is a power failure! Many filling stations cannot pump fuel if they are no longer fed with power from the power grid. Natural gas and liquefied gas can still be supplied, however.
- ⊕ Secure operation over the gas pressure reducer and overpressure safety valve



ESE 808 GF

### Our generators are fitted out as standard with

- the automatic control panel E-MCS 5.0
- switchover protection integrated in the housing (no separate installation required)
- an FI protection switch
- overload protection
- switch off in the case of a lack of oil
- a standard connection for propane gas bottles or a house connection for a natural gas line

Calculations have shown that operation of a gas generator can be **less operating costs** than as generator running on petrol **with up to 40%**



Generous maintenance openings



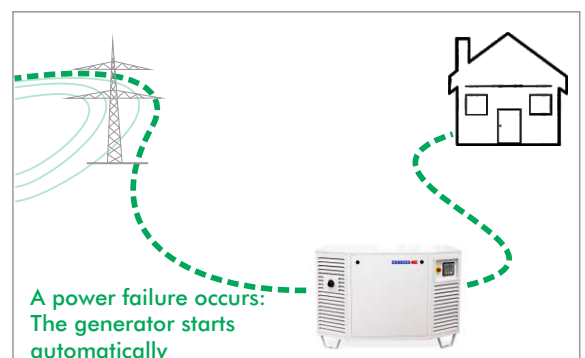
Integral emergency power supply



E-MCS 5.0

## Gas generators for emergency power supply

<b>Model</b>	<b>ESE 808 GF</b>
Order no.	8080103
Alternator	Synchronous IP23
Rated output running on LPG	8,0 kW
Rated output running on NG	7,0 kW
Rated voltage	230V 1~
Rated current	35A 1~
Frequency	50 Hz



Scheme for automatic emergency power supply using a gas generator



## Automatic stationary emergency power supply for commercial applications

### the safety application for large power consumers

ENDRESS power supply installations provide a constant power supply and are therefore versatile in use, such as for irrigation, conveyor belts, cranes, pile driving, as well as for construction sites and as a mobile power source.

Together they take over the power supply together with the automatic control unit in the case of faults arising or the mains supply failing.

The system voltage is monitored fully automatically, and when the power fails in one or more phases, the engine starts itself and the load is passed over to the consumers. Manual operation is also possible.

In this area ENDRESS offers oil and water-cooled plant and uses high quality components such as engines from Deutz, Yanmar or Volvo.

We offer a complete solution for your emergency power supply needs in the power output range 15 - 2.500 kVA, in an open

### Our generators are fitted out as standard with

- the automatic control panel E-MCS 6.0
- an adequately dimensioned battery charger
- main switch ON/OFF
- main fuse
- EMERGENCY-STOP switch
- FI protection device
- cooling agent preheating system
- liquid collecting tray
- crane loading lug
- 3-pole line circuit breaker
- terminal strip for power take-off



Closed construction



Open construction

