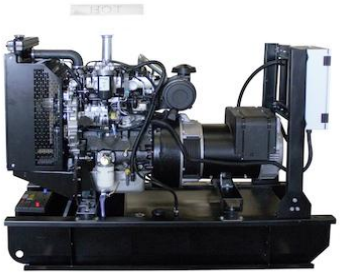
DESERT MACHINERY
آليات الصحراء

PERKINS GENERATOR

18 KVA (14 KW)

(UK)



400 Series 403A-15G2 ElectropaK

18 kWm / 24 hp @ 1800 rpm

The Perkins® 400 Series engine family continues to set new standards in the compact engine market. Developed alongside customers to fulfill their needs in the generator set, compressor, agricultural and general industrial markets.

These new ElectropaKs provide compact power, from a robust family of 3 and 4 cylinder diesel engines designed to provide economic and durable operation at prime and standby duties, hitting the key power nodes required by the power generation industry.

Specification		
Number of cylinders	3 vertical in-line	
Bore and stroke	84 x 90 mm	3.3 x 3.5 in
Displacement	1.496 litres	91.3 in^3
Aspiration	Naturally aspirated	
Cycle	4 stroke	
Combustion system	Indirect injection	
Compression ratio	22.5:1	
Rotation	Anti-clockwise, viewed on flywheel	
Total lubricating capacity	6.0 litres	1.58 US gal
Cooling system	Water cooled	
Total coolant capacity	6.0 litres	1.58 US gal

www.perkins.com

Photographs are for illustrative purposes only and may not reflect final specification.
All information in this document is substantially correct at time of printing and may be altered subsequently.
Final weight and dimensions will depend on completed specification.

Publication No. PN2009B/12/14 Produced in England

Perkins®

THE HEART OF EVERY GREAT MACHINE

400 Series 403A-15G2 ElectropaK

18 kWm / 24 hp @ 1800 rpm

Features and benefits

Powered by your needs

- The 403A-15G2 ElectropaK is a powerful but quiet 1.5 litre naturally aspirated 3-cylinder compact package

Compact, clean, efficient power

- Design features on the 400D range of ElectropaKs ensures clean rapid starting in all conditions whilst delivering impressive performance with low operating costs in a small, efficient package size

Lower operating costs

- Approved for operation on biodiesel* concentrations of up to 20%
- Oil and filter changes are 500 hours, dependent on load factor
- Engine durability and reliability, the warranty offering and ease of installation combine to drive down the cost of ownership
- Warranties and Service Contracts

  We provide one-year warranties for constant speed engines and two-year warranties for variable speed models, as standard. These are supported by multilevel Extended Service Contracts that can be bought additionally
  Discover more: www.perkins.esc

Product support

- With highly trained Perkins distributors in thousands of communities in over 180 countries, you are never far away from expert product knowledge, genuine parts and a range of advanced diagnostic technology for keeping your engine in peak condition
- To find your local distributor: www.perkins.com/distributor

*Subject to conformance with ASTM D6751 and EN14214

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Perkins®

THE HEART OF EVERY GREAT MACHINE

400 Series 403A-15G2 ElectropaK

18 kWm / 24 hp @ 1800 rpm

Technical information

Air inlet

- Mounted air filter

Fuel system

- Mechanically governed cassette type fuel injection pump
- Split element fuel filter

Lubrication system

- Wet steel sump with filler and dipstick
- Spin-on full-flow lub oil filter

Cooling system

- Thermostatically-controlled system with belt driven coolant pump and pusher fan
- Mounted radiator, piping and guards

Electrical equipment

- 12 volt starter motor and 12 volt 15 amp alternator with DC output
- Oil pressure and coolant temperature switches
- 12 volt shut-off solenoid energised to run
- Glow plug cold start aid and heater/starter switch

Flywheel and housing

- 1500 rpm
- High inertia flywheel to SAE J620 Size 190.5 mm (7½ in) Heavy
- Flywheel housing SAE 4 Long

Mountings

- Front and rear engine mounting bracket

Optional equipment

- Parts book

Option groups

A selection of optional items is available to enable you to prepare a specification precisely matched to your needs.

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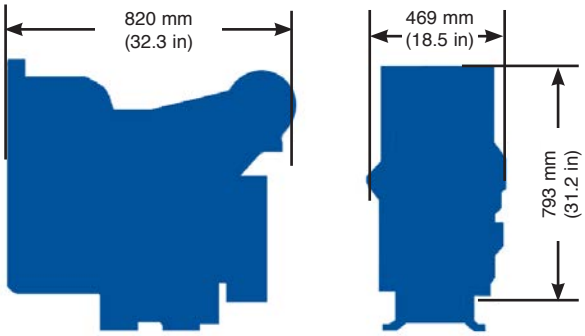
THE HEART OF EVERY GREAT MACHINE

400 Series 403A-15G2 ElectropaK

18 kWm / 24 hp @ 1800 rpm



Engine package weights and dimensions		
Length	820 mm	32.3 in
Width	469 mm	18.5 in
Height	793 mm	31.2 in
Weight (dry)	197 kg	434 lb

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THE HEART OF EVERY GREAT MACHINE

400 Series 403A-15G2 ElectropaK

18 kWm / 24 hp @ 1800 rpm

Speed rpm	Type of operation	Typical generator output (Net)		Engine power			
				Gross		Net	
		kVA	kWe	kWm	hp	kWm	hp
1800	Prime power	18	14	16	22	16	21
	Standby power	20	16	18	24	18	24

The above ratings represent the engine performance capabilities to conditions specified in ISO 8528/1, ISO 3046/1:1986, BS 5514/1. **Derating may be required for conditions outside these; consult Perkins Engines Company Limited.**

Generator powers are typical and are based on typical alternator efficiencies and a power factor (cos θ) of 0.8. **Fuel specification:** BS 2869: Part 2 1998 Class A2 or ASTM D975 D2.

Rating definitions: Prime power: Power available at variable load in lieu of a main power network. Overload of 10% is permitted for 1 hour in every 12 hours operation. **Standby (maximum):** Power available at variable load in the event of a main power network failure. No overload is permitted.

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Perkins®

THE HEART OF EVERY GREAT MACHINE

LINZ ELECTRIC
The Electric Generation

09-10

Panoramica prodotti
Products overview
Panorámica productos

LINZ ELECTRIC
The Electric Generation

Alternatori sincroni monofase
Single-phase synchronous alternators
Alternadores síncronos monofásicos

- **Compatto e facile da assemblare**
  Compact and easy to assemble
  Compacto y fácil de montar
- **Possibilità di montaggio verticale**
  Vertical assembly is possible
  Posibilidad de montaje vertical
- **Quadro accessori posteriore o superiore**
  Top or rear mounted control panel
  Cuadros accesorios posterior o superior
- **Alto rendimento**
  High efficiency
  Alto rendimiento

Alternatori sincroni monofase senza spazzole a condensatore - 2 poli
Single-phase brushless synchronous alternators with capacitor - 2 poles
Alternadores síncronos monofásicos sin escobillas a condensador - 2 polos

> SP 10

LINZ ELECTRIC
The Electric Generation

La serie SP 10 è costituita da alternatori monofase a 2 poli, senza spazzole, con avvolgimento ausiliario (caricato su un condensatore) che assicura la regolazione della tensione.

SP 10 series are single-phase 2 poles brushless alternators with auxiliary winding (loaded on a capacitor), regulating the voltage.

La serie **SP 10** está constituida por alternadores monofásicos de 2 polos, sin escobillas, con devanado auxiliar (cargado sobre un condensador) que asegura la regulación de la tensión.

Tipo Type	50 Hz - 3000 rpm - cosφ = 1					60 Hz - 3600 rpm - cosφ = 1				
	Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento %		Pot. assorbita Driving power Pot. entrada		Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento%		Pot. assorbita Driving power Pot. entrada	
	kVA	4/4	3/4	kW	HP	kVA	4/4	3/4	kW	HP
SP10S A	1.7	72.5	73.0	2.3	3.1	2	73.5	74.0	2.7	3.6
SP10S B	2.2	73.5	74.0	3.0	4.0	2.7	74.5	75.0	3.6	4.9
SP10S C	2.6	74.5	75.0	3.5	4.7	3.2	75.5	76.0	4.2	5.7
SP10S D	3	75.0	75.5	4.0	5.4	3.7	76.0	76.5	4.9	6.5
SP10S E	3.5	75.5	76.0	4.6	6.2	4.3	76.5	77.0	5.6	7.5
SP10M F	4.2	75.0	75.5	5.6	7.6	5	76.0	77.0	6.6	9.0
SP10M G	5	76.0	77.0	6.6	9.0	6	77.5	78.0	7.7	10.5

- **Possibilità di alimentare qualsiasi tipo di carico**
  Possibility to supply any type of load
  Posibilidad de alimentar cualquier tipo de carga
- **Compatto e facile da assemblare**
  Compact and easy to assemble
  Compacto y fácil de montar
- **Ampia scelta di accessori**
  Wide selection of accessories
  Amplia elección de accesorios
- **Alto rendimento**
  High efficiency
  Alto rendimiento

Alternatori sincroni monofase senza spazzole a condensatore - 2 poli
Single-phase brushless synchronous alternators with capacitor - 2 poles
Alternadores síncronos monofásicos sin escobillas a condensador - 2 polos

> E1C/2

La serie E1C/2 è costituita da alternatori monofase a 2 poli, senza spazzole, con avvolgimento ausiliario (caricato su un condensatore) che assicura la regolazione della tensione.

E1C/2 series are single-phase 2 poles brushless alternators with auxiliary winding (loaded on a capacitor), regulating the voltage.

La serie **E1C/2** está constituida por alternadores monofásicos de 2 polos, sin escobillas, con devanado auxiliar (cargado sobre un condensador) que asegura la regulación de la tensión.

Tipo Type	50 Hz - 3000 rpm - cosφ = 1					60 Hz - 3600 rpm - cosφ = 1				
	Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento %		Pot. assorbita Driving power Pot. entrada		Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento%		Pot. assorbita Driving power Pot. entrada	
	kVA	4/4	3/4	kW	HP	kVA	4/4	3/4	kW	HP
E1C10S B	2.2	73.0	73.5	3.0	4.1	2.7	74.0	74.5	3.6	5.0
E1C10S D	3	74.5	75.0	4.0	5.5	3.7	75.5	76.0	4.9	6.7
E1C10S E	3.5	75.0	75.5	4.7	6.4	4.3	76.0	76.5	5.7	7.5
E1C10S F	4.2	75.0	75.5	5.6	7.6	5	76.0	77.0	6.6	9.0
E1C10S G	5	76.0	77.0	6.6	9.0	6	77.5	78.0	7.7	10.5
E1C10M H	6	77.5	78.0	7.8	10.5	7.25	79.0	79.5	9.2	12.5
E1C10M I	7	79.0	80.0	8.9	12.1	8.5	80.5	81.0	10.5	14.3
E1C11M A	8	79.0	80.0	10.2	13.8	9.75	79.5	80.5	12.2	16.7
E1C11M B	10	79.5	80.5	12.6	17.1	12.5	80.0	81.0	15.6	21.3
E1C11M C	12	80.0	81.0	15.0	20.5	15	80.5	81.5	18.6	25.4
E1C13M D/2	15	80.5	81.5	18.6	25.0	18	81.5	82.0	22.0	29.6
E1C13M E/2	18	81.0	81.4	22.3	29.8	22	82.1	82.6	26.8	36.0

- **Innovativo sistema di diodi rotanti**
  Innovative rotating diode system
  Nuevo sistema de diodos rotativos
- **Basso contenuto armonico**
  Low harmonic content
  Bajo contenido armónico
- **Alto rendimento**
  High efficiency
  Alto rendimiento

Alternatori sincroni monofase senza spazzole a condensatore - 4 poli
Single-phase brushless synchronous alternators with capacitor - 4 poles
Alternadores síncronos monofásicos sin escobillas a condensador - 4 polos

> E1C/4

LINZ ELECTRIC
The Electric Generation

La serie E1C/4 è costituita da alternatori monofase a 4 poli, senza spazzole, con avvolgimento ausiliario (caricato su un condensatore) che assicura la regolazione della tensione. Questa serie è stata ottimizzata per l'utilizzo in torri di illuminazione con lampade a luce bianca a vapori di mercurio od alogene.

E1C/4 series are single-phase 4 poles brushless alternators with an auxiliary winding (loaded on a capacitor), regulating the voltage. This series has been designed for application in tower lights with metal halide or halogen lamps.

La serie **E1C/4** está constituida por alternadores monofásicos de 4 polos, sin escobillas, con devanado auxiliar (cargado sobre un condensador) que asegura la regulación de la tensión. Dicha serie ha sido proyectada especialmente para torres faro con lámparas a vapor de mercurio o halógena.

Tipo Type		50 Hz - 1500 rpm - cosφ = 1					60 Hz - 1800 rpm - cosφ = 1				
		Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento %		Pot. assorbita Driving power Pot. entrada		Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento%		Pot. assorbita Driving power Pot. entrada	
		kVA	4/4	3/4	kW	HP	kVA	4/4	3/4	kW	HP
E1C13S	A/4	5.5	77.0	78.0	7.1	9.5	7	78.0	78.5	9.0	12.1
E1C13S	B/4	7	78.0	79.0	9.0	12.0	8.5	79.0	80.0	10.8	14.5
E1C13S	C/4	8	79.0	80.0	10.1	13.5	9.75	80.0	80.5	12.2	16.4
E1C13S	D/4	9	79.5	80.0	11.3	15.2	11	80.0	81.0	13.8	18.5
E1C13M	E/4	11.5	80.0	81.0	14.4	19.3	14	81.0	81.5	17.3	23.2
E1C13M	F/4	12.5	81.5	82.0	15.3	20.5	15	81.5	82.5	18.4	24.7

- **Compatto e facile da assemblare**
  Compact and easy to assemble
  Compacto y fácil de montar
- **Elevata precisione della tensione**
  High voltage accuracy
  Alta precisión de la tensión
- **AVR con protezioni incorporate**
  AVR with built in protections
  AVR con protecciones incorporadas

Alternatori sincroni monofase con regolazione elettronica (AVR) - 2 poli
Single-phase synchronous alternators with electronic regulation (AVR) - 2 poles
Alternadores síncronos monofásicos y regulación electrónica (AVR) - 2 polos

> SPE-E1E

LINZ ELECTRIC
The Electric Generation

La serie SPE-E1E è costituita da alternatori monofase a 2 poli con spazzole e regolazione elettronica.

SPE-E1E series are single-phase 2 poles alternators with brushes and electronic regulation.

La serie SPE-**E1E** está constituida por alternadores monofásicos de 2 polos con escobillas y regulación electrónica.

Tipo Type	50 Hz - 3000 rpm - cosφ = 1					60 Hz - 3600 rpm - cosφ = 1				
	Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento %		Pot. assorbita Driving power Pot. entrada		Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento%		Pot. assorbita Driving power Pot. entrada	
	kVA	4/4	3/4	kW	HP	kVA	4/4	3/4	kW	HP
SPE10M F	3.5	75.0	75.5	4.6	6.2	4.2	75.3	75.8	5.6	7.5
SPE10M G	4.5	76.0	77.0	5.9	7.9	5.4	77.5	78.0	7.0	9.3
E1E10M H	6	77.0	78.0	7.8	10.4	7.2	79.0	79.5	9.1	12.2
E1E10L I	7	79.0	80.0	8.9	11.9	8.4	80.5	81.0	10.4	14.0
E1E11M A	8	79.5	80.5	10.0	13.4	9.75	80.0	81.0	12.2	16.4
E1E11M B	10	80.0	81.0	12.5	16.8	12	80.4	81.3	14.9	20.0
E1E13S C	13	82.0	82.5	15.8	21.2	15.6	82.4	82.9	18.9	25.3
E1E13M D	15	82.8	83.2	18.1	24.3	18	83.3	83.8	21.6	29.0
E1E13M E	18	83.0	83.5	21.7	29.0	21.5	83.6	84.0	25.7	34.5

LINZ ELECTRIC
The Electric Generation

Alternatori sincroni trifase
Three-phase synchronous alternators
Alternadores síncronos trifásicos

- **Possibilità di alimentare qualsiasi tipo di carico**
  Possibility to supply any type of load
  Posibilidad de alimentar cualquier tipo de carga
- **Compatto e facile da assemblare**
  Compact and easy to assemble
  Compacto y fácil de montar
- **Alta capacità di avviamento**
  High starting capacity
  Alta capacidad de arranque
- **Alto rendimento**
  High efficiency
  Alto rendimiento

Alternatori sincroni trifase con spazzole - 2/4 poli
Three-phase synchronous alternators with brushes - 2/4 poles
Alternadores síncronos trifásicos con escobillas -2/4 polos

> E1S

LINZ ELECTRIC
The Electric Generation

La serie E1S è costituita da alternatori trifase a 2 o 4 poli con spazzole e regolazione compound.

E1S series are three-phase 2 or 4 poles alternators with brushes and compound regulation.

La serie **E1S** está constituida por alternadores trifásicos de 2 o 4 polos con escobillas y regulación compound.

2 POLI - 2 POLES - 2 POLOS

Tipo Type	50 Hz - 3000 rpm - cosφ = 0.8					60 Hz - 3600 rpm - cosφ = 0.8				
	Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento %		Pot. assorbita Driving power Pot. entrada		Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento%		Pot. assorbita Driving power Pot. entrada	
	kVA	4/4	3/4	kW	HP	kVA	4/4	3/4	kW	HP
E1S10M G	5.5	78.5	79.0	5.6	7.6	7	79.0	80.0	7.1	9.6
E1S10M H	7	80.5	81.0	6.9	9.5	8.5	81.0	82.0	8.4	11.4
E1S10L I	9	82.5	83.0	8.7	11.8	11	82.5	83.0	10.7	14.5
E1S11M A	10	82.0	82.2	9.75	13.3	12.5	82.5	82.7	12.2	16.5
E1S11M AS	11.5	83.0	83.2	11.1	15.0	14	83.5	83.7	13.4	18.2
E1S11M B	13.5	83.5	83.7	13.0	17.6	16.5	84.0	84.3	15.7	21.4
E1S13S C/2	16	85.0	85.5	15.0	20.4	19.2	85.5	85.7	18.7	25.4
E1S13M D/2	22	86.0	86.5	20.5	28.0	26.4	86.5	86.7	25.0	34.0
E1S13M E/2	27	87.0	87.5	25.0	34.0	32.4	87.5	88.0	29.2	39.7

4 POLI - 4 POLES - 4 POLOS

Tipo Type	50 Hz - 1500 rpm - cosφ = 0.8					60 Hz - 1800 rpm - cosφ = 0.8				
	Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento %		Pot. assorbita Driving power Pot. entrada		Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento%		Pot. assorbita Driving power Pot. entrada	
	kVA	4/4	3/4	kW	HP	kVA	4/4	3/4	kW	HP
E1S13S A/4	8	81.0	81.3	7.9	10.7	9.6	81.4	81.8	9.4	12.8
E1S13S B/4	10	83.0	83.5	9.6	13.1	12	83.5	84.0	11.5	15.6
E1S13M D/4	13	84.8	85.4	12.3	16.7	16	85.0	85.5	15.1	20.5
E1S13M E/4	16	85.8	86.3	14.9	20.3	19	86.3	86.7	17.6	24.0
E1S13M F/4	20	86.0	86.2	18.6	25.3	24	86.5	86.8	22.2	30.2

- **Possibilità di alimentare qualsiasi tipo di carico**
  Possibility to supply any type of load
  Posibilidad de alimentar cualquier tipo de carga
- **Compatto e facile da assemblare**
  Compact and easy to assemble
  Compacto y fácil de montar
- **Alta capacità di avviamento**
  High starting capacity
  Alta capacidad de arranque
- **Alto rendimento**
  High efficiency
  Alto rendimiento

Alternatori sincroni trifase con spazzole con regolazione mista - 2 poli
Three-phase synchronous alternators with brushes and mixed regulation - 2 poles
Alternadores síncronos trifásicos con escobillas y regulación mixta -2 polos

> E1S KE

LINZ ELECTRIC
The Electric Generation

La serie E1S KE è costituita da alternatori trifase a 2 poli con spazzole e regolazione mista compound ed elettronica (AVR).

E1S KE series are three-phase 2 poles alternators with brushes and mixed compound and electronic regulation (AVR).

La serie **E1S KE** está constituida por alternadores trifásicos de 2 polos con escobillas y regulación mixta compound y electrónica (AVR).

Tipo Type	50 Hz - 3000 rpm - cosφ = 0.8					60 Hz - 3600 rpm - cosφ = 0.8				
	Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento %		Pot. assorbita Driving power Pot. entrada		Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento%		Pot. assorbita Driving power Pot. entrada	
	kVA	4/4	3/4	kW	HP	kVA	4/4	3/4	kW	HP
E1S10M G KE	**4.5**	**78.5**	**79.0**	**4.6**	**6.2**	**5.4**	**79.0**	**80.0**	**5.6**	**7.6**
E1S10M H KE	**5.5**	**80.5**	**81.0**	**5.4**	**7.2**	**7**	**81.0**	**82.0**	**6.9**	**9.4**
E1S10L I KE	**7**	**82.5**	**83.0**	**6.7**	**9.0**	**8.5**	**82.5**	**83.0**	**8.3**	**11.3**
E1S11M A KE	**9**	**82.0**	**82.2**	**8.8**	**11.8**	**11**	**82.5**	**82.7**	**10.7**	**14.6**
E1S11M AS KE	**10**	**83.0**	**83.2**	**9.6**	**12.2**	**12.5**	**83.5**	**83.7**	**11.5**	**15.6**
E1S11M B KE	**11.5**	**83.5**	**83.7**	**11.0**	**14.8**	**14**	**84.0**	**84.3**	**13.4**	**18.3**

- **Compatto e resistente meccanicamente**
  Compact and mechanically durable
  Robusto y compacto
- **Minima manutenzione**
  Minimum maintenance
  Mínimo mantenimiento
- **Alto rendimento**
  High efficiency
  Alto rendimiento

Alternatori sincroni trifase senza spazzole - 2/4 poli
Three-phase brushless synchronous alternators - 2/4 poles
Alternadores síncronos trifásicos sin escobillas -2/4 polos

> E1X

LINZ ELECTRIC
The Electric Generation

La serie E1X è costituita da alternatori trifase a 2 o 4 poli senza spazzole, con eccitatrice, che possono essere dotati di tre diversi tipi di regolazione della tensione.

E1X series are three phase brushless alternators with exciter that can be equipped with three different voltage regulation systems.

La serie **E1X** está constituida por alternadores trifásicos de 2 o 4 polos sin escobillas, con excitatriz y diferentes sistemas de regulación.

E1X E	**con regolazione elettronica -** with electronic regulation - con regulación electrónica
E1X K	**con regolazione compound -** with compound regulation - con regulación compound
E1X KE	**con regolazione mista compound/elettronica (sistema brevettato)** with compound/electronic regulation (patented system) con regulación electrónica/compound (patentado)

2 POLI - 2 POLES - 2 POLOS

Tipo Type	50 Hz - 3000 rpm - cosφ = 0.8					60 Hz - 3600 rpm - cosφ = 0.8				
	Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento %		Pot. assorbita Driving power Pot. entrada		Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento%		Pot. assorbita Driving power Pot. entrada	
	kVA	4/4	3/4	kW	HP	kVA	4/4	3/4	kW	HP
E1X13S A/2	8	80.2	80.4	8.0	10.9	10	80.6	80.7	9.9	13.5
E1X13S B/2	10	81.5	81.6	9.8	13.3	12.5	82.0	82.3	12.2	16.6
E1X13S C/2	12.5	83.1	83.3	12.0	16.3	15	83.4	83.5	14.4	19.6
E1X13M D/2	16	85.0	85.3	15.0	20.4	19.5	85.5	85.7	18.2	24.8
E1X13M E/2	22	86.0	86.2	20.5	27.9	26	86.2	86.4	24.1	32.8

4 POLI - 4 POLES - 4 POLOS

Tipo Type	50 Hz - 1500 rpm - cosφ = 0.8					60 Hz - 1800 rpm - cosφ = 0.8				
	Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento %		Pot. assorbita Driving power Pot. entrada		Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento%		Pot. assorbita Driving power Pot. entrada	
	kVA	4/4	3/4	kW	HP	kVA	4/4	3/4	kW	HP
E1X13S A/4	6.5	80.9	81.0	6.4	8.7	8	81.0	81.3	7.9	10.7
E1X13S B/4	8	82.8	83.0	7.7	10.5	10	83.0	83.3	9.6	13.1
E1X13S C/4	10	84.4	84.5	9.5	12.9	12	84.6	85.0	11.3	15.4
E1X13M E/4	14	85.8	86.0	13.1	17.8	17	86.0	86.2	15.8	21.5
E1X13M F/4	16	86.0	86.4	14.9	20.2	19	86.4	86.5	17.6	24.0

- **Compatto e resistente meccanicamente**
  Compact and mechanically durable
  Robusto y compacto
- **Eccellente forma d'onda**
  Excellent wave form
  Excelente forma de onda
- **Minima manutenzione**
  Minimum maintenance
  Mínimo mantenimiento
- **Alto rendimento**
  High efficiency
  Alto rendimiento

Alternatori sincroni trifase senza spazzole con AVR - 4 poli
Three-phase brushless synchronous alternators with AVR - 4 poles
Alternadores síncronos trifásicos sin escobillas con AVR - 4 polos

> PRO

IP 23

LINZ ELECTRIC
The Electric Generation

Gli alternatori della serie PRO sono trifase a 4 poli senza spazzole, dotati di regolatore elettronico (AVR) con riferimento di tensione monofase (PRO18 - 22) e trifase (PRO28 - 35).

The alternators of **PRO** series are three phase, brushless, with electronic regulator (AVR) with single phase sensing **(PRO18 - 22)** and three phase sensing **(PRO28 - 35).**

Los alternadores de la serie **PRO** son trifásicos sin escobillas, con regulación electrónica (AVR) con referencia de tensión monofásica **(PRO18 - 22)** y trifásica **(PRO28 - 35).**

Tipo Type		50 Hz - 1500 rpm - cosφ = 0.8					60 Hz - 1800 rpm - cosφ = 0.8				
		Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento %		Pot. assorbita Driving power Pot. entrada		Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento%		Pot. assorbita Driving power Pot. entrada	
		kVA	4/4	3/4	kW	HP	kVA	4/4	3/4	kW	HP
PRO18S	A/4	20	86.1	86.3	18.6	25.3	24	87.8	88.1	21.9	29.8
PRO18S	B/4	25	86.5	86.9	23.1	31.5	30	88.2	88.6	27.2	37.0
PRO18S	C/4	30	87.1	87.5	27.6	37.5	36	88.8	89.3	32.4	44.1
PRO18M	D/4	35	88.6	89.1	31.6	43.0	42	90.4	90.9	37.2	50.6
PRO18M	E/4	42	89.3	89.9	37.6	51.2	50	91.1	91.7	44.2	60.2
PRO18L	F/4	50	89.4	90.0	44.7	60.9	60	91.2	92.0	52.6	71.6
PRO18L	G/4	60	89.6	90.1	53.6	72.9	72	91.4	92.2	63	85.7

Tipo Type		50 Hz - 1500 rpm - cosφ = 0.8					60 Hz - 1800 rpm - cosφ = 0.8				
		Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento %		Pot. assorbita Driving power Pot. entrada		Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento%		Pot. assorbita Driving power Pot. entrada	
		kVA	4/4	3/4	kW	HP	kVA	4/4	3/4	kW	HP
PRO22S	B/4	63	90.1	90.4	55.9	76.1	76	90.4	90.6	67.3	91.5
PRO22S	C/4	85	90.3	90.6	75.3	102.5	102	90.6	90.8	90.1	122.6
PRO22S	D/4	100	90.6	90.9	88.3	120.1	120	90.9	91.1	105.6	143.7
PRO22M	E/4	130	92.3	92.5	112.7	153.3	156	92.5	92.7	134.9	183.6
PRO22M	F/4	150	92.6	92.8	129.6	176.3	180	92.8	93.0	155.2	211.2

Tipo Type		50 Hz - 1500 rpm - cosφ = 0.8					60 Hz - 1800 rpm - cosφ = 0.8				
		Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento %		Pot. assorbita Driving power Pot. entrada		Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento%		Pot. assorbita Driving power Pot. entrada	
		kVA	4/4	3/4	kW	HP	kVA	4/4	3/4	kW	HP
PRO28S	B/4	180	92.0	92.4	157	213	215	92.7	93.1	186	252
PRO28S	C/4	210	92.3	92.7	182	248	250	92.9	93.3	215	293
PRO28S	D/4	250	92.7	93.1	216	294	300	93.2	93.6	258	350
PRO28M	E/4	300	92.9	93.3	258	351	360	93.3	93.7	309	420
PRO28M	F/4	350	93.7	93.9	299	407	420	94.0	94.2	357	486
PRO28L	G/4	400	93.8	94	341	464	480	94.2	94.4	408	555

Tipo Type		50 Hz - 1500 rpm - cosφ = 0.8					60 Hz - 1800 rpm - cosφ = 0.8				
		Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento %		Pot. assorbita Driving power Pot. entrada		Pot. resa Rating Pot. salida	Rendimento% Efficiency % Rendimiento%		Pot. assorbita Driving power Pot. entrada	
		kVA	4/4	3/4	kW	HP	kVA	4/4	3/4	kW	HP
PRO35S	B/4	450	93.5	94.0	385	516	540	94.2	94.7	459	615
PRO35S	C/4	500	94.9	95.4	421	566	600	95.9	96.2	501	672
PRO35S	D/4	550	95.0	95.5	463	622	660	95.9	96.5	551	739
PRO35M	E/4	620	95.1	95.5	522	700	744	95.9	96.4	621	833
PRO35M	F/4	680	95.2	95.7	571	767	816	96.1	96.7	679	912
PRO35M	G/4	725	95.3	95.8	609	817	870	96.2	96.6	723	971

LINZ®
ELECTRIC
The Electric Generation

Saldatrici/alternatori
Welders/alternators
Soldadoras/alternadores

- **Grande semplicità di utilizzo**
  User friendly
  Simple de utilizar
- **Concepita per uso hobbistico**
  Designed for "do it yourself use"
  Proyectada para el uso hobbistico

Saldatrici AC / alternatori monofase senza spazzole - 2 poli
AC welders / single-phase brushless alternators - 2 poles
Soldadoras AC / alternadores monófasicos sin escobillas - 2 polos

> SPW10
MINIWELD

LINZ ELECTRIC
The Electric Generation

La serie SPW10 "MINIWELD" è costituita da saldatrici AC/alternatori monofase a due poli, senza spazzole e con eccitazione a condensatore.
E' studiata per tutte quelle applicazioni in cui sono necessari un generatore monofase ed una saldatrice a corrente alternata in grado di utilizzare i più comuni diametri di elettrodi di tipo rutile, acido ed inox.

The **SPW10 "MINIWELD"** series is comprised of AC welders/2 pole single-phase brushless alternators with capacitor exciting.
It has been conceived for all those applications where a single-phase generator and an alternate current welder, compatible with the most common diameters of rutile, acid and inox electrodes, are required.

La serie **SPW10 "MINIWELD"** son soldadoras AC/alternadores monofásicos, dos polos, sin escobillas y con excitación a condensador.
Ha sido estudiada para todas aquellas aplicaciones donde sea necesario utilizar un generador monófasico, y una soldadora en corriente alternada para los tipos más comunes de electrodos de tipo rútil. ácido e inox.

Dati tecnici saldatrice - Welder technical characteristics - Datos técnicos soldadora		
		SPW10 120AC
Tensione a vuoto - No load voltage - Tensión en vacío	Vac	**52**
Campo di regolazione - Regulation range - Campo de regulación	Aac	**60÷120**
Corrente massima al 40% - Max. Current at 40% - Corriente máxima al 40%	Aac	**120**
Corrente massima al 60% - Max. Current at 60% - Corriente máxima al 60%	Aac	**75**
Diametro elettrodi (rutile, acido, inox) Electrode diameter (rutile, acid,inox) - Diámetro electrodos (rútil, acido,inox)	mm	**1.5÷3.25**

Dati tecnici alternatore - Alternator technical characteristics - Datos técnicos alternador			
		SPW10 120AC	
Frequenza - Frequency - Frecuencia	Hz	**50**	**60**
Giri al minuto - Revolutions per minute - Revoluciones por minuto	rpm	**3000**	**3600**
Potenza monofase - Single phase power - Potencia monofásica	kVA	**3.5**	**4.2**
Tensione - Voltage - Tensión	Vac	**230**	**120/240**
Fattore di potenza - Power factor - Factor de potencia		**1**	**1**
Potenza max assorbita - Max driving power - Potencia máxima absorbida	kW	**4.7**	**5.6**
Peso - Weight - Peso	kg	**27.3**	

- **Studiata per severe condizioni di lavoro**
  Designed for working in harsh environments
  Proyectada para duras condiciones de trabajo
- **Elevato ciclo di servizio**
  High duty cycle
  Alto ciclo de servicio
- **Quadro in acciaio**
  Steel panel
  Cuadro en acero

Saldatrici AC / alternatori monofase senza spazzole - 2 poli
AC welders / single-phase brushless alternators - 2 poles
Soldadoras AC / alternadores monófasicos sin escobillas - 2 polos

> E1W AC

LINZ ELECTRIC
The Electric Generation

La serie E1W AC è costituita da saldatrici AC/alternatori monofase a due poli, senza spazzole e con eccitazione a condensatore.
E' studiata per tutte quelle applicazioni in cui sono necessari un generatore monofase ed una saldatrice a corrente alternata in grado di utilizzare i più comuni diametri di elettrodi di tipo rutile, acido ed inox.

The **E1W AC** series is comprised of AC welders/2 pole single-phase brushless alternators with capacitor exciting. It has been conceived for all those applications where a single-phase generator and an alternate current welder, compatible with the most common diameters of rutile, acid and inox electrodes, are required.

La serie **E1W AC** son soldadoras AC/alternadores monofásicos, dos polos, sin escobillas y con excitación a condensador.
Ha sido estudiada para todas aquellas aplicaciones donde sea necesario utilizar un generador monófasico, y una soldadora en corriente alternada para los tipos más comunes de electrodos de tipo rútil, ácido e inox.

Dati tecnici saldatrice - Welder technical characteristics - Datos técnicos soldadora				
		E1W10 150AC	**E1W10 200AC**	**E1W11 220AC**
Tensione a vuoto - No load voltage - Tensión en vacío	Vac	**55**	**52**	**52**
Campo di regolazione - Regulation range - Campo de regulación	Aac	**40÷150**	**40÷200**	**40÷220**
Corrente massima al 35% - Max. Current at 35% - Corriente máxima al 35%	Aac	**150**	**200**	**220**
Corrente massima al 60% - Max. Current at 60% - Corriente máxima al 60%	Aac	**120**	**160**	**180**
Diametro elettrodi (rutile, acido, inox) Electrodes diameter (rutile, acid, inox) - Diámetro electrodos (rútil. acido. inox)	mm	**1.5÷4**	**1.5÷4**	**1.5÷5**

Dati tecnici alternatore - Alternator technical characteristics - Datos técnicos alternador							
		E1W10 150AC		**E1W10 200AC**		**E1W11 220AC**	
Frequenza - Frequency - Frecuencia	Hz	**50**	**60**	**50**	**60**	**50**	**60**
Giri al minuto - Revolutions per minute - Revoluciones por minuto	rpm	**3000**	**3600**	**3000**	**3600**	**3000**	**3600**
Potenza monofase - Single phase power - Potencia monofásica	kVA	**4**	**4.8**	**6**	**7.2**	**10**	**12**
Tensione - Voltage - Tensión	Vac	**230**	**120 / 240**	**230**	**120 / 240**	**230**	**120 / 240**
Fattore di potenza - Power factor - Factor de potencia		**1**	**1**	**1**	**1**	**1**	**1**
Potenza max assorbita - Max driving power - Potencia máx, absorbida	kW	**5.5**	**6.3**	**8**	**9.5**	**12.5**	**15**
Peso - Weight - Peso	kg	**36.1**		**40.5**		**60.1**	

- **Perfezione nella saldatura**
  Welding perfection
  Optima calidad de soldadura
- **Elevato ciclo di servizio**
  High duty cycle
  Alto ciclo de servicio
- **Regolazione elettronica della tensione**
  Electronic voltage regulation
  Regulación electrónica de la tensión
- **Quadro in acciaio**
  Steel panel
  Cuadro en acero

Saldatrici DC / alternatori monofase o trifase con spazzole - 2 poli
DC welders / single-phase or three-phase alternators with brushes - 2 poles
Soldadoras DC / alternadores monófasicos o trifásicos con escobillas - 2 polos

> E1W10 DC

LINZ ELECTRIC
The Electric Generation

La serie E1W10 DC è costituita da saldatrici DC/alternatori monofasi o trifasi a 2 poli con spazzole e regolazione elettronica/compound. E' studiata per tutte quelle applicazioni in cui sono necessari un generatore monofase o trifase ed una saldatrice a corrente continua, in grado di utilizzare i più comuni diametri di elettrodi di tipo rutile, basico, cellulosico ed inox, garantendo una qualità professionale della saldatura.

The **E1W10 DC** series is comprised of DC welders/2 pole single-phase or three-phase alternators with brushes and electronic/compound regulation.
It has been conceived for all those applications where a single-phase or three-phase generator and a direct current welder, compatible with the most common diameters of rutile, basic, cellulosic and inox electrodes, capable of providing a professional welding quality are required.

La serie **E1W10 DC** son soldadoras DC/alternadores monofásicos o trifásicos, dos polos, con escobillas y regulación electrónica/compound.
Ha sido estudiada para todas aquellas aplicaciones donde sea necesario utilizar un generador monófasico o trifásico, y una soldadora en corriente continua para los tipos más comunes de electrodos de tipo rútil, básico, celulósico e inox, obteniendo una óptima calidad de soldadura.

Dati tecnici saldatrice - Welder technical characteristics - Datos técnicos soldadora					
		E1W10 160DC	**E1W10 160MDC**	**E1W10 220DC**	**E1W10 220MDC**
Tensione a vuoto - No load voltage - Tensión en vacío	Vdc	**75**	**75**	**72**	**72**
Campo di regolazione - Regulation range - Campo de regulación	Adc	**30÷160**	**30÷160**	**40÷220**	**40÷220**
Corrente massima al 35% - Max. Current at 35% - Corriente máxima al 35%	Adc	**160**	**160**	**220**	**220**
Corrente massima al 60% - Max. Current at 60% - Corriente máxima al 60%	Adc	**120**	**120**	**170**	**170**
Tensione Saldatura - Welding Voltage - Tensión de soldadura	Vdc	**21÷27**	**21÷27**	**21÷29**	**21÷29**
Diametro elettrodi (rutile, basico, cellulosico, inox) Electrodes diameter (rutile, basic, cellulosic, inox) Diámetro electrodos (rútil, básico, celulósico, inox)	mm	**1÷3.2**	**1÷3.2**	**1÷4**	**1÷4**

Dati tecnici alternatore - Alternator technical characteristics - Datos técnicos alternador									
		E1W10 160DC		**E1W10 160MDC**		**E1W10 220DC**		**E1W10 220MDC**	
Frequenza - Frequency - Frecuencia	Hz	**50**	**60**	**50**	**60**	**50**	**60**	**50**	**60**
Giri al minuto - Revolutions per minute Revoluciones por minuto	rpm	**3000**	**3600**	**3000**	**3600**	**3000**	**3600**	**3000**	**3600**
Potenza monofase - Single-phase power - Potencia monofásica	kVA	**2**	**2.4**	**3.5**	**4.2**	**3.2**	**3.8**	**5**	**6**
Potenza trifase - Three-phase power - Potencia trifásica	kVA	**5**	**6**	/	/	**8**	**9.6**	/	/
Tensione - Voltage - Tensión	Vac	**230 /400**	**127/220**	**230**	**120/240**	**230/400**	**127/220**	**230**	**120/240**
Fattore di potenza - Power factor - Factor de potencia		**0.9**	**0.9**	**0.9**	**0.9**	**0.9**	**0.9**	**0.9**	**0.9**
Potenza max assorbita - Max driving power Potencia máxima absorbida	kW	**5.6**	**6.7**	**4**	**4.8**	**8.8**	**10.6**	**5.6**	**6.8**
Peso - Weight - Peso	kg	**35**		**35**		**44.1**		**44.1**	

- **Perfezione nella saldatura**
  Welding perfection
  Optima calidad de soldadura
- **Elevato ciclo di servizio**
  High duty cycle
  Alto ciclo de servicio
- **Quadro in acciaio**
  Steel panel
  Cuadro en acero

Saldatrici DC / alternatori trifase con spazzole e compound - 2 poli
DC welders / three-phase alternators with brushes and compound - 2 poles
Soldadoras DC / alternadores trifásicos con escobillas y compound - 2 polos

> E1W10 DC-K

La serie E1W10 DC - K è costituita da saldatrici DC/alternatori monofasi o trifasi a 2 poli con spazzole e regolazione compound. E' studiata per tutte quelle applicazioni in cui sono necessari un generatore monofase o trifase ed una saldatrice a corrente continua, in grado di utilizzare i più comuni diametri di elettrodi di tipo rutile, basico, cellulosico ed inox, garantendo una qualità professionale della saldatura.

The **E1W10 DC - K** series is comprised of DC welders/2 pole single-phase or three-phase alternators with brushes and compound regulation. It has been conceived for all those applications where a single-phase or three-phase generator and a direct current welder, compatible with the most common diameters of rutile, basic, cellulosic and inox electrodes, capable of providing a professional welding quality are required.

La serie **E1W10 DC - K** son soldadoras DC/alternadores monofásicos o trifásicos, dos polos, con escobillas y regulación compound. Ha sido estudiada para todas aquellas aplicaciones donde sea necesario utilizar un generador monófasico o trifásico, y una soldadora en corriente continua para los tipos más comunes de electrodos de tipo rútil, básico, celulósico e inox, obteniendo una óptima calidad de soldadura.

Dati tecnici saldatrice - Welder technical characteristics - Datos técnicos soldadora		
		E1W10 220DC- K
Tensione a vuoto - No load voltage - Tensión en vacío	Vdc	**72**
Campo di regolazione - Regulation range - Campo de regulación	Adc	**40÷220**
Corrente massima al 35% - Max. Current at 35% - Corriente máxima al 35%	Adc	**220**
Corrente massima al 60% - Max. Current at 60% - Corriente máxima al 60%	Adc	**170**
Tensione Saldatura - Welding Voltage - Tensión de soldadura	Vdc	**21÷29**
Diametro elettrodi (rutile, basico, cellulosico, inox) Electrodes diameter (rutile, basic, cellulosic, inox) Diámetro electrodos (rútil, básico, celulósico, inox)	mm	**1÷4**

Dati tecnici alternatore - Alternator technical characteristics - Datos técnicos alternador			
		E1W10 220DC-K	
Frequenza - Frequency - Frecuencia	Hz	**50**	**60**
Giri al minuto - Revolutions per minute Revoluciones por minuto	rpm	**3000**	**3600**
Potenza monofase - Single-phase power - Potencia monofásica	kVA	**4**	**4.8**
Potenza trifase - Three-phase power - Potencia trifásica	kVA	**10**	**12**
Tensione - Voltage - Tensión	Vac	**230/400**	**127/220**
Fattore di potenza - Power factor - Factor de potencia		**0.8**	**0.8**
Potenza max assorbita - Max driving power Potencia máxima absorbida	kW	**9.6**	**11.7**
Peso - Weight - Peso	kg	**47.8**	

- **Saldatrice ed alternatore regolati con AVR**
  Alternator/welder with AVR
  Alternador/soldadora regulada con AVR
- **Perfezione nella saldatura**
  Welding perfection
  Optima calidad de soldadura
- **Elevato ciclo di servizio**
  High duty cycle
  Alto ciclo de servicio

Saldatrici DC / alternatori trifase senza spazzole - 2/4 poli
DC welders / three-phase brushless alternators - 2/4 poles
Soldadoras DC / alternadores sin escobillas - 2/4 polos

> E1W13 DC

La serie E1W13 DC è costituita da saldatrici DC/alternatori trifasi a 2 o 4 poli, senza spazzole, con eccitatrice e regolazione elettronica. E' studiata per tutte quelle applicazioni in cui sono necessari un generatore trifase ed una saldatrice a corrente continua, in grado di utilizzare i più comuni diametri di elettrodi di tipo rutile, basico, cellulosico ed inox, garantendo una qualità professionale della saldatura.

The **E1W13 DC** series is comprised of DC welders/three-phase 2 or 4 pole brushless alternators with exciter and electronic regulation. It has been conceived for all those applications where a three-phase alternator and a direct current welder, compatible with the most common diameters of rutile, basic, cellulosic and inox electrodes, capable of providing professional welding quality, are required.

La serie **E1W13 DC** son soldadoras DC/alternadores trifásicos. 2 o 4 polos, sin escobillas, con excitatriz y regulación electrónica. Ha sido estudiada para todas aquellas aplicaciones donde sea necesario utilizar un generador monófasico o trifásico, y una soldadora en corriente continua para los tipos más comunes de electrodos de tipo rútil, básico, celulósico e inox, obteniendo una óptima calidad de soldadura.

Dati tecnici saldatrice - Welder technical characteristics - Datos técnicos soldadora					
		2 POLI 2 POLES 2 POLOS	4 POLI - 4 POLES - 4 POLOS		
		E1W13S/2 300DC	**E1W13S/4 200DC**	**E1W13M/4 250DC**	**E1W13M/4 300DC**
Tensione a vuoto - No load voltage - Tensión en vacío	Vdc	**80**	**80**	**80**	**80**
Campo di regolazione - Regulation range - Campo de regulación	Adc	**35÷300**	**35÷200**	**35÷250**	**35÷300**
Corrente massima al 35% - Max. Current at 35% Corriente máxima al 35%	Adc	**300**	**200**	**250**	**300**
Corrente massima al 60% - Max. Current at 60% Corriente máxima al 60%	Adc	**240**	**160**	**195**	**230**
Tensione Saldatura - Welding Voltage - Tensión de soldadura	Vdc	**21÷32**	**21÷28**	**21÷30**	**21÷32**
Diametro elettrodi (rutile, basico, cellulosico, inox) Electrode diameter (rutile, basic, cellulosic, inox) Diámetro electrodos (rútil, básico, celulósico, inox)	mm	**1÷5(6)**	**1÷4**	**1÷5**	**1÷5(6)**
Potenza max assorbita - Max driving power Potencia máxima absorbida	kW	**12.4**	**7.3**	**9.7**	**12.2**

Dati tecnici alternatore - Alternator technical characteristics - Datos técnicos alternador									
		2 POLI 2 POLES 2 POLOS		4 POLI - 4 POLES - 4 POLOS					
		E1W13S/2 300DC		**E1W13S/4 200DC**		**E1W13M/4 250DC**		**E1W13M/4 300DC**	
Frequenza - Frequency - Frecuencia	Hz	**50**	**60**	**50**	**60**	**50**	**60**	**50**	**60**
Giri al minuto - Revolutions per minute - Revoluciones por minuto	rpm	**3000**	**3600**	**1500**	**1800**	**1500**	**1800**	**1500**	**1800**
Potenza monofase - Single phase power - Potencia monofásica	kVA	**4**	**4.8**	**3**	**3.6**	**4.5**	**5.5**	**3.5**	**4.2**
Potenza trifase - Three-phase power - Potencia trifásica	kVA	**8.5**	**10.2**	**7**	**8.5**	**11**	**13.2**	**8**	**9.6**
Tensione - Voltage - Tensión	V	**230/400**	**127/220**	**230/400**	**127/220**	**230/400**	**127/220**	**230/400**	**127/220**
Fattore di potenza - Power factor - Factor de potencia		**0.8**	**0.8**	**0.8**	**0.8**	**0.8**	**0.8**	**0.8**	**0.8**
Potenza max assorbita - Max driving power Potencia máxima absorbida	kW	**8**	**9.5**	**6.6**	**8**	**10.4**	**12.5**	**7.8**	**9.4**
Peso - Weight - Peso	kg	**85**		**88.5**		**108**		**112**	

- **Alternatore brushless ad alto rendimento**
  High efficiency brushless alternator
  Alternador sin escobillas de alto rendimiento
- **Alternatore e saldatrice utilizzabili simultaneamente**
  Alternator and welder can be used simultaneously .
  Alternador y soldadora utilizables simultaneamente
- **Struttura totalmente in acciaio**
  Whole structure in steel
  Estructura totalmente en acero

Saldatrici DC / alternatori trifase senza spazzole - 4 poli
DC welders / three-phase brushless alternators - 4 poles
Soldadoras DC / alternadores sin escobillas - 4 polos

> PROW 18

LINZ ELECTRIC
The Electric Generation

La serie PROW 18 è costituita da saldatrici DC/alternatori trifasi a 4 poli, senza spazzole, con eccitatrice e regolazione elettronica.

• SALDATRICE. Le macchine della serie PROW 18 sono dotate di saldatrice DC con raddrizzatore trifase a tiristori. La loro potenza e la varietà delle regolazioni possibili permettono di ottenere le migliori prestazioni di saldatura con qualsiasi tipo di elettrodo rivestito e di operare su una vasta gamma di metalli.

• ALTERNATORE. Le macchine della serie PROW 18 sono dotate di un alternatore trifase brushless con eccitatrice e regolazione elettronica.

The **PROW 18** series is comprised of DC welders/three-phase 4 pole brushless alternators with exciter and electronic regulation.

• WELDER. The **PROW 18** series machines are equipped with a DC welder with three-phase thyristors rectifier. The power and variety of regulations offered by the machines make it possible to obtain an optimum welding performance with any kind of coated electrode and to operate on a wide range of metals.

• ALTERNATOR. The **PROW 18** series machines are equipped with a three-phase brushless alternator with an electronic regulator.

La serie **PROW 18** son soldadoras DC/alternadores, a cuatro polos, sin escobillas, con excitatriz y regulación electrónica.

• SOLDADORA. La parte soldadora de esta serie posee un rectificador trifásico a tiristores. La generosidad de potencia y su sistema de control, permiten obtener óptimas prestaciones de soldadura con todos los tipos de electrodos revestidos.

• ALTERNADOR. La serie **PROW 18** están contruidas sobre la base de un generador brushless trifásico con excitatriz y regulación electrónica.

Dati tecnici saldatrice - Welder technical specifications - Datos técnicos soldadora			
		PROW18 400DC	**PROW18 500DC**
Tensione a vuoto - No load voltage - Tensión en vacío	Vdc	**72**	**72**
Campo di regolazione - Regulation range - Campo de regulación	Adc	**35÷400**	**35÷500**
Corrente massima al 35% - Max. current at 35% - Corriente máxima al 35%.	Adc	**400**	**500**
Corrente massima al 60% - Max. current at 60% - Corriente máxima al 60%.	Adc	**310**	**390**
Tensione Saldatura - Welding Voltage - Tensión de soldadura	Vdc	**20÷36**	**20÷40**
Diametro elettrodi (rutile, basico, cellulosico, inox) Electrode diameter (rutile, basic, cellulosic, inox) Diámetro electrodos (rútil, básico, celulósico, inox)	mm	**1÷6**	**1÷8**
Potenza max assorbita - Max driving power - Potencia máxima absorbida	kW	**19**	**26**

Dati tecnici alternatore - Alternator technical specifications - Datos técnicos alternador					
		PROW18 400DC		**PROW18 500DC**	
Frequenza - Frequency - Frecuencia	Hz	**50**	**60**	**50**	**60**
Giri al minuto - Revolutions per minute - Revoluciones por minuto	rpm	**1500**	**1800**	**1500**	**1800**
Potenza monofase - Single phase power - Potencia monofásica	kVA	**5**	**6**	**6.5**	**7.8**
Potenza trifase - Three-phase power - Potencia trifásica	kVA	**13**	**15.6**	**16**	**19.2**
Tensione - Voltage - Tensión	Vac	**230 / 400**	**127 / 220**	**230 / 400**	**127 / 220**
Fattore di potenza - Power factor - Factor de potencia		**0.8**	**0.8**	**0.8**	**0.8**
Potenza max assorbita - Max driving power - Potencia máxima absorbida	kW	**11.6**	**14**	**14**	**16.8**
Peso - Weight - Peso	kg	**210**		**226**	

- **Sorgente di saldatura in alta frequenza ad alto rendimento**
  High frequency welder power source with high efficiency
  Fuente de soldadura en alta frecuencia y de alto rendimiento
- **Perfezione nella saldatura**
  Welding perfection
  Óptima calidad de soldadura
- **Alternatore e saldatrice utilizzabili simultaneamente**
  Alternator and welder can be used simultaneously .
  Alternador y soldadora utilizables simultáneamente

Saldatrici DC in alta frequenza / alternatori monofase o trifase - 2 poli
High frequency DC welders / single-phase or three-phase alternator - 2 poles
Soldadoras DC en alta frecuencia / alternadores monofásicos o trifásicos - 2 polos

> HFW10

La serie HFW10 è costituita da una saldatrice DC in alta frequenza (a magneti permanenti) e da un alternatore indipendente monofase senza spazzole a condensatore o trifase con spazzole e regolazione elettronica.

The **HFW10** series machines are equipped with a high frequency DC welder (with permanent magnets) and separated single-phase brushless alternator or three-phase alternators with brushes and electronic regulation.

Las máquinas **HFW10** están constituidas por una soldadora DC en alta frecuencia (con imanes permanentes). y un alternador independiente monofásico brushless a condensador o trifásico con escobillas y regulación electrónica.

Dati tecnici saldatrice - Welder technical specifications - Datos técnicos soldadora					
		HFW10 B		**HFW10 MB**	
Giri al minuto - Revolutions per minute Revoluciones por minuto	rpm	**3000**	**3600**	**3000**	**3600**
Tensione a vuoto - No load voltage - Tensión en vacío	Vdc	**70**	**84**	**70**	**84**
Campo di regolazione - Regulation range -Campo de regulación	Adc	**50÷170**	**55÷200**	**50÷170**	**55÷200**
Corrente massima al 35% - Max. current at 35% - Corriente máxima al 35%.	Adc	**-**	**200**	**-**	**200**
Corrente massima al 50% - Max. current at 50% - Corriente máxima al 50%.	Adc	**170**	**170**	**170**	**170**
Corrente massima al 100% - Max. current at 100% - Corriente máxima al 100%.	Adc	**120**	**120**	**120**	**120**
Tensione Saldatura - Welding Voltage - Tensión de soldadura	Vdc	**20÷26**	**20÷28**	**20÷26**	**20÷28**
Diametro elettrodi (rutile, basico, cellulosico, inox) Electrode diameter (rutile, basic, cellulosic, inox) Diámetro electrodos (rútil, básico, celulósico, inox)	mm	**1÷4**	**1÷5**	**1÷4**	**1÷5**
Potenza max assorbita - Max driving power - Potencia máxima absorbida	kW	**4.5**	**6.3**	**4.5**	**6.3**

Dati tecnici alternatore - Alternator technical specifications - Datos técnicos alternador					
		HFW10 B 3~		**HFW10 MB 1~**	
Frequenza - Frequency - Frecuencia	Hz	**50**	**60**	**50**	**60**
Giri al minuto - Revolutions per minute - Revoluciones por minuto	rpm	**3000**	**3600**	**3000**	**3600**
Potenza trifase - Three-phase power - Potencia trifásica	kVA	**3.7**	**4.5**	**-**	**-**
Potenza monofase - Single phase power - Potencia monofásica	kVA	**1.7**	**2**	**5**	**6**
Tensione - Voltage - Tensión	V	**230/400**	**127/220**	**115/230**	**110/220**
Fattore di potenza - Power factor - Factor de potencia		**1**	**1**	**1**	**1**
Potenza max assorbita - Max driving power Potencia máxima absorbida	kW	**4.7**	**5.6**	**6.4**	**7.6**
Peso - Weight - Peso	kg	**32.7**	**32.7**	**37**	**37**

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Applicazioni speciali
Special applications
Aplicaciones especiales

- **Fusibile esterno contro inversione di polarità o cortocircuito**
  External fuse protection against reverse polarity or short circuit
  Fusible externo de protección contra inversión de polaridad y cortocircuito
- **Alta corrente di carica**
  High charging current
  Alta corriente de carga
- **Doppia protezione termica**
  Double thermal protection
  Doble protección térmica

Carica batterie a bassa tensione C.C.
Low voltage D.C. battery chargers
Cargador de baterías en baja tension C.C.

> E1 BC

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La serie E1 BC è costituita da carica batterie a 24 Vcc senza spazzole a condensatore (E1C BC) o con spazzole a regolazione elettronica (E1S BC).

E1 BC series are 24 Vdc battery chargers, brushless with capacitor (E1C BC) or with brushes and electronic regulation (E1S BC).

La serie **E1 BC** está constituida por carga baterías a 24 Vcc sin escobillas a condensador o con escobillas y regulación electrónica (E1S BC).

Sorgente monofase - 24 Vcc (ripple 48%)
Single-phase source - 24 Vdc (ripple 48%)
Fuente monofásica 24 Vcc (ripple 48%)

Tipo Type	50 Hz - 3000 rpm - cosφ = 1					60 Hz - 3600 rpm - cosφ = 1				
	Pot. resa Rating Pot. salida kVA	Idc (A)	Rendimento% Efficiency % Rendimiento %	Pot. assorbita Driving power Pot. entrada kW	HP	Pot. resa Rating Pot. salida kVA	Idc (A)	Rendimento% Efficiency % Rendimiento %	Pot. assorbita Driving power Pot. entrada kW	HP
E1C10S D BC70	1.7	70	71.0	2.4	3.2	1.7	70	72.0	2.4	3.2
E1C10M F BC130	3.1	130	72.0	4.3	5.8	3.7	150	72.5	5.1	6.8
E1C10M G BC160	3.8	160	72.0	5.3	7.1	4.6	190	72.5	6.4	8.6
E1C10M H BC200	4.8	200	72.0	6.8	9.1	5.5	230	73.0	7.6	10.2
E1C10M I BC230	5.5	230	72.5	7.6	10.2	5.5	230	73.5	7.5	10.0

Sorgente trifase - 28 Vcc (ripple 5%)
Three-phase source - 28 Vdc (ripple 5%)
Fuente trifásica 28 Vcc (ripple 5%)

Tipo Type	50 Hz - 3000 rpm - cosφ = 1					60 Hz - 3600 rpm - cosφ = 1				
	Pot. resa Rating Pot. salida kVA	Idc (A)	Rendimento% Efficiency % Rendimiento %	Pot. assorbita Driving power Pot. entrada kW	HP	Pot. resa Rating Pot. salida kVA	Idc (A)	Rendimento% Efficiency % Rendimiento %	Pot. assorbita Driving power Pot. entrada kW	HP
E1S10M G BC70	2.0	70	74	2.7	3.6	2	70	75.4	2.6	3.5
E1S10M H BC150	4.2	150	76.0	5.5	7.4	5	180	76.5	6.5	8.7
E1S10L I BC200	5.6	200	76.0	7.4	9.9	5.6	200	76.5	7.3	9.8

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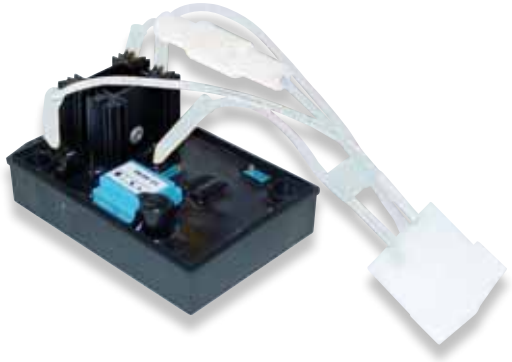
The Electric Generation

Elettronica
Electronic
Electrónica

Regolatore elettronico di tensione HVR-10
Electronic voltage regulator HVR-10
Regulador electrónico de tensión HVR-10

> HVR-10



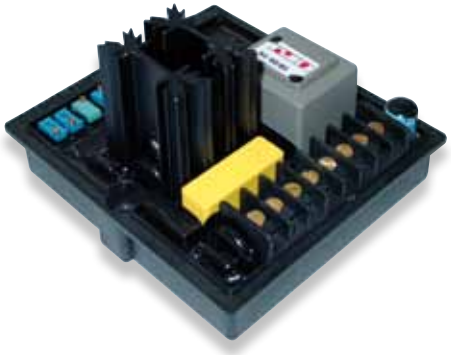
Il regolatore elettronico HVR-10 è costruito con componenti elettronici di ultima generazione, che permettono di ottenere in dimensioni contenute, tutte le funzioni richieste per il controllo di qualsiasi tipo di alternatore.
Le caratteristiche principali del regolatore sono le seguenti: errore statico di tensione contenuto entro il ±1% e protezione regolabile di sovraccarico;

The **HVR-10** electronic regulator is made with state-of-the-art electronic components which enable the user to obtain, in reduced dimensions, all the functions required to control any type of alternator.
Main features of this regulator are: voltage static error within the limit of ±1% and adjustable protection from overload.

El regulador electrónico **HVR-10** está realizado con componentes electrónicos de última generación, con lo cual se permite obtener en pequeñas dimensiones y sin compromisos, todas las funciones requeridas para el control de cualquier tipo de alternador.
Las características principales del regulador son las siguientes: error estático de tensión contenido en el ± 1% y protección regulable de sobrecarga.

Regolatore elettronico di tensione HVR-11
Electronic voltage regulator HVR-11
Regulador electrónico de tensión HVR-11

> HVR-11



Il regolatore elettronico HVR-11 è costruito con componenti elettronici di ultima generazione, che permettono di ottenere in dimensioni contenute, tutte le funzioni richieste per il controllo di qualsiasi tipo di alternatore.
Le caratteristiche principali del regolatore sono le seguenti: errore statico di tensione contenuto entro il ±1%; ampia regolazione disponibile sul controllo di stabilità; protezione regolabile del funzionamento a bassa frequenza; protezione regolabile di sovraccarico; ingresso predisposto per potenziometro remoto.

The **HVR-11** electronic regulator is made with state-of-the-art electronic components which enable the user to obtain, in reduced dimensions, all the functions required to control any type of alternator.
Main features of this regulator are: voltage static error within the limit of ±1%; wide stability control regulation; adjustable protection from low frequency operation; adjustable protection from overload; remote potentiometer.

El regulador electrónico **HVR-11** está realizado con componentes electrónicos de última generación, con lo cual se permite obtener en pequeñas dimensiones y sin compromisos, todas las funciones requeridas para el control de cualquier tipo de alternador.
Las características principales del regulador son las siguientes: error estático de tensión contenido en el ± 1%; amplia regulación del control de estabilidad; protección regulable de baja frecuencia; protección regulable de sobrecarga; ingreso para potenciómetro remoto.

Regolatore elettronico di tensione HVR-30
Electronic voltage regulator HVR-30
Regulador electrónico de tensión HVR-30

> HVR-30

Il regolatore elettronico HVR-30 è costruito con componenti elettronici di ultima generazione, che permettono di ottenere in dimensioni contenute, tutte le funzioni richieste per il controllo di qualsiasi tipo di alternatore. Le caratteristiche principali del regolatore sono le seguenti: errore statico di tensione contenuto entro il ±1%; ampia regolazione disponibile sul controllo di stabilità; possibilità di ingresso trifase della tensione di riferimento; filtro anti disturbo radio incorporato; protezione regolabile del funzionamento a bassa frequenza; protezione regolabile di sovraccarico; ingresso predisposto per potenziometro remoto o controllo tramite segnale esterno in tensione.

The **HVR-30** electronic regulator is made with state-of-the-art electronic components which enable the user to obtain, in reduced dimensions, all the functions required to control any type of alternator. Main features of this regulator are: voltage static error within the limit of ±1%; wide stability control regulation; possibility of three phase inlet of reference voltage; incorporated radio filter; adjustable protection from low frequency operation; adjustable protection from overload; remote potentiometer inlet or control through an external signal.

El regulador electrónico **HVR-30** está realizado con componentes electrónicos de última generación, con lo cual se permite obtener en pequeñas dimensiones y sin compromisos, todas las funciones requeridas para el control de cualquier tipo de alternador. Las características principales del regulador son las siguientes: error estático de tensión contenido en el ± 1%; amplia regulación del control de estabilidad; posibilidad de ingreso trifásico de la tensión de referencia; filtro de radio interferencia incluido; protección regulable de baja frecuencia; protección regulable de sobrecarga; ingreso para potenciómetro remoto o control externo por tensión.

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CERTIFIED QUALITY MANAGEMENT SYSTEM
ISO 9001:2008
SINCERT DNV

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InteliLite[NT] AMF 9

SINGLE SET GEN-SET CONTROLLER

InteliLite[NT] AMF 9 supports J1939 for all major brands:

- Caterpillar
- Cummins
- Detroit Diesel
- Deutz
- GM
- Isuzu
- Iveco
- John Deere
- MAN
- MTU
- Perkins
- Scania
- Sisu
- VM Motori
- Volvo Penta and others

ComAp is a member of AMPS (The Association of Manufacturers of Power generating Systems).

ComAp products meet the highest standards, with every stage of production undertaken in accordance with the ISO certification obtained in 1998.

Description

The InteliLite[NT] AMF 9 is integrated controller for gen-sets operating in single standby mode.

The controller meets all requirements for Auto Mains Failure (AMF) applications including remote communication and internet control, user configuration and complete gen-set monitoring and protection.

InteliLite[NT] AMF 9 is easy to use with a simple intuitive user interface and graphic display. Unit is designed for quick and cost saving commissioning and bring seamless integration with the latest breed of EFI diesel engines from all major manufacturers. This offers a higher level of functionality with users able to display a comprehensive range of values from the EFI engine on standard analog gauges and true RMS measurement of electric values.

Benefits

- Less wiring and components
- Less engineering and programming
- Cost saving commissioning
- Remote monitoring reduced call-out costs of service engineers
- History 100+ records based on running hours
- Hybrid binary inputs and outputs module – simple way of extension the unit performance
- SMS on alarm/event
- Direct communication with EFI engines
- Perfect price/performance ratio

Features

3 phase AMF function
- Over/Under frequency
- Over/Under voltage

3 phase generator protections
- Over/Under frequency
- Over/Under voltage
- Over current

True RMS Voltage measurement
- 3 phase generator voltages:
  - Phase to neutral
    L1 – N, L2 – N, L3 – N
  - Phase to phase
    L1 – L2, L2 – L3, L3 – L1
- 3 phase mains voltages
- Voltage range 277 V p-n, 480 V p-p
- Maximal measured voltage 300 V p-n

True RMS current measurements
- 3 generator phase currents
- Current range 5 A
- Maximal measured current 10 A
- Ready for generators with
  3 ph 4 wires / 3 ph 3 wires
  / Split ph / Mono ph

Event and performance log
- Gen-set text alarm log
- Engine hours history log
- ECU text alarm log
- Test Run scheduler

Power measurements
- Apparent power per phase
- Total apparent power

User interface
- Graphic 128 × 64 pixels display
- 2 languages, user changeable from PC
- Setpoints adjustable via
  controller buttons or PC
- Buttons with mechanical feedback

Inputs and outputs
- 3 fully configurable analog inputs
- 4 binary inputs; 6 binary outputs
- D+ preexcitation terminal
- Optional 8 hybrid binary inputs/outputs
- Optional 8 analog gauge drive outputs,
  compatible with VDO, Datcon gauges

EFI engine support
- Cummins Modbus
- Engine specific J1939 for all major
  manufacturers (see table on page 1)
- Diagnostic messages in plain text

Engine protections
- Oil pressure protection
- Coolant temperature
- Fuel level

Active calls
- 1 channel
- SMS alarm
- Event SMS

Miscellaneous features
- Operation mode
  – AMF/MRS application switch
- Maintenance – service time counter
- Engine hours counter

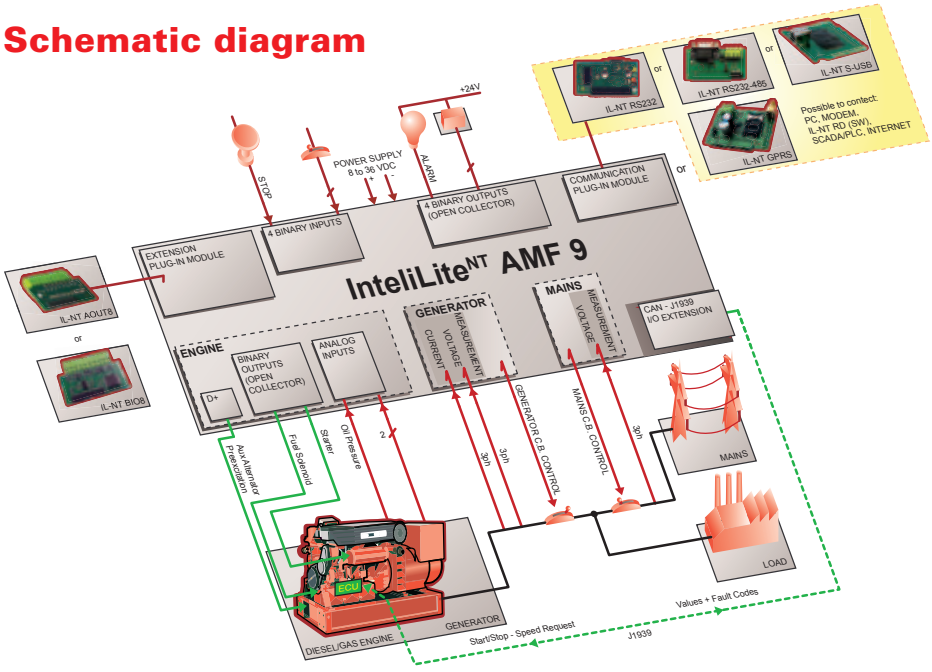
Communication interfaces
- Optional RS232, RS485
  (including Modem support)
  or USB plug-in interface
- Optional GSM modem via IL-NT GPRS

Mechanical and operation parameters
- Unit dimension 120 × 180 mm
- Sealed front face rated for IP65
- Hard plexiglass LCD cover
- Operation temperature:
  - -20 °C to +70 °C standard version
  - -40 °C to +70 °C low temperature ver.
- Power supply voltage 8–36 V
- Voltage drops shorter than
  50 ms do not affect operation

ANSI code	Protection
59	Overvoltage
27	Undervoltage
81H	Overfrequency
81L	Underfrequency
50+51	Overcurrent*
47	Phase rotation**
71	Gas (Fuel) level

** Shortcurrent only / ** Fixed setting*

Schematic diagram



Accessories and PC tools

- **IL-NT AOUT8** – Analog Outputs for PWM Gauges Module
- **IL-NT BIO8** – Binary Input/ Output (PWM) Module
- **IL-NT RD (SW)** – Remote Display Software for InteliLite^{NT} Controllers
- **IG-IB** – InternetBridge support
- **IL-NT GPRS** – GSM Modem/ Wireless Internet Module
- **IL-NT RS232** – RS232 Extension Board
- **IL-NT RS232-485** – Dual Port Extension Board
- **IL-NT S-USB** – Service USB Module
- **InteliMonitor** – PC Monitoring Tool
- **WinScope** – Special Graphical Controllers' Monitoring Software
- **LiteEdit** – PC Configuration and Monitoring Tool

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Customer satisfaction is our mission. We continuously develop the best people to succeed in our mission.