Tayseer Power Co.

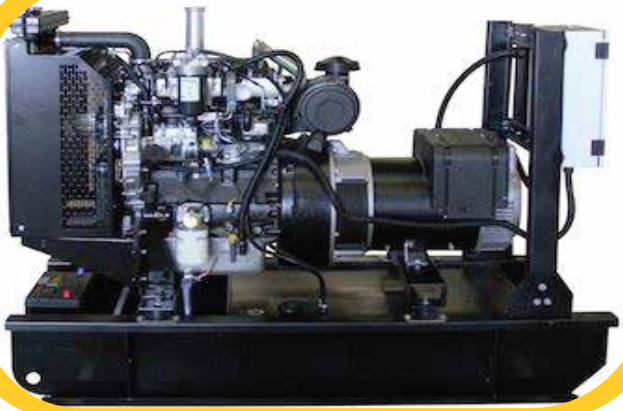
Trade, Maintenance & Rental Of Elect. Generators

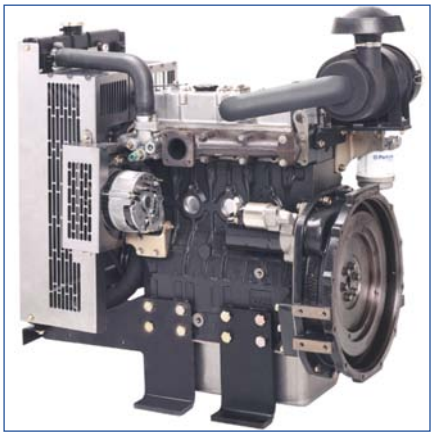
Perkins | LS | ComAp | Cummins

LINZ ELECTRIC | LEROY SOMER | DSE

PERKINS GENERATOR

24/26 KVA (19/21 KW) (UK)





The 400 Series engine family continues to set new standards in the compact engine market. Developed alongside customers to fulfill their needs in the Genset, 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.

400 Series

404D-22G

Diesel Engine - ElectropaK

20.3 kWm @ 1500 rev/min
23.9 kWm @1800 rev/min
33.4 kWm @ 3000 rev/min

Powered by your needs

- The 404D-22G ElectropaK is a powerful but quiet 2.2 litre naturally aspirated 4-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

- The compact package Size makes Installation and transportation easier and more cost effective
- Operating and maintenance costs are reduced through excellent fuel and oil economy
- Service intervals are set at 500 hours as standard and Perkins provides comprehensive warranty cover for two years, with three years on major engine components. A low usage warranty package is also available

Long-term Power Solution

- The 400D range of ElectropaKs has been designed to fully comply with stringent EU and EPA emissions regulations, providing an emissions compliant power solution for the future

World-class Product Support

- At Perkins we are constantly researching, developing and investing in our products and services. Total worldwide support is provided through a network of distributors and service outlets, providing access to over 50,000 parts and exchange units 24 hours a day, 365 days a year. This support is enhanced by TIPSS (The Integrated Parts and Service System). TIPSS enables customers to electronically specify and order parts as well as service 400 Series engines with online guides and service tools

Emissions statement

- Certified against the requirements of EU2007 (EU 97/68/EC Stage II) and EPA Interim Tier 4 (EPA 40 CFR Part 1039 Interim Tier 4) legislation for non-road mobile machinery, powered by constant speed engines

Engine Speed	Type of Operation	Typical Generator Output (Net)		Engine Power			
				Gross		Net	
		kVA	kWe	kWm	bhp	kWm	bhp
1500	Prime Power	20.0	16.0	18.7	25.1	18.4	24.6
	Standby Power	22.1	17.7	20.6	27.6	20.3	27.2
1800	Prime Power	24.0	19.2	22.0	29.5	21.6	29.0
	Standby Power	26.6	21.3	24.3	32.6	23.9	32.1
3000	Prime Power	33.6	26.9	31.2	41.8	30.2	40.8
	Standby Power	37.2	29.7	34.4	46.1	33.4	44.8

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.
Photographs are for illustrative purposes only and may not reflect final specification.

Publication No. 1912/11/08 Produced in England

400 Series

404D-22G

Standard ElectropaK Specification

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

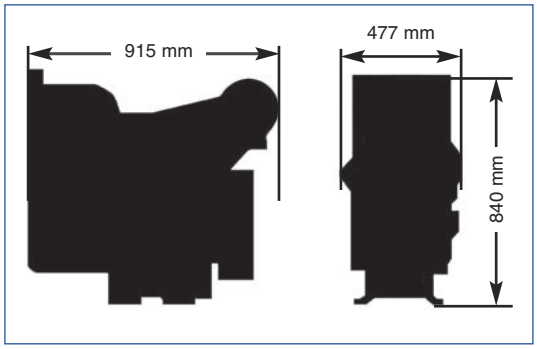
Cooling System
- Thermostatically-controlled system with belt driven coolant pump and pusher fan
- Mounted radiator, piping and guards

Electrical Equipment
- 12 volt starter motor and 12 volt 65 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
- 1500/1800 rev/min
- High inertia flywheel to SAE J620 Size 7½ Heavy
- Flywheel housing SAE 4 Long
- 3000 rev/min
- High inertia flywheel to SAE J620 Size 7½ Light
- Flywheel housing SAE 4 Short

Mountings
- Front and rear engine mounting bracket

Optional Equipment
- Workshop manual
- Parts book



Fuel Consumption				
Engine Speed	1800 rev/min		1500 rev/min	
	g/kWh	l/hr	g/kWh	l/hr
Standby	235	4.7	244	4.1
Prime power	233	4.3	237	3.7
75% of prime power	240	3.3	238	2.7
50% of prime power	262	2.4	258	2.0

General Data

Number of cylinders	4
Cylinder arrangement	Vertical in-line
Cycle	4 stroke
Aspiration	Naturally aspirated
Combustion system	Indirect injection
Compression ratio	23.3:1
Bore and Stroke	84 x 100 mm
Displacement	2.216 litres
Direction of rotation	Anti-clockwise viewed on flywheel
Cooling system	Water cooled
Total coolant capacity	7.0 litres
Total Lubrication system capacity	10.6 litres
Length	915 mm
Width	477 mm
Height	840 mm
Total weight (dry)	242 kg

Final weight and dimensions will depend on completed specification.

Perkins®

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Distributed by

Publication No. 1912/11/08 Produced in England

Gamma degli alternatori SL - *SL alternators series - Gama de alternadores SL*

I punti di forza - *Strengths - Los puntos fuertes*

- Alto rendimento
  High efficiency
  Alto rendimiento
- Compattezza e resistenza meccanica
  Compactness and mechanical strenght
  Compacidad y resistencia mecánica
- Eccellente forma d'onda
  Excellent wave form
  Excelente forma de onda
- Design esclusivo
  Exclusive design
  Diseño exclusivo

Caratteristiche Tecniche
Technical particulars - Características técnicas

CARATTERISTICHE MECCANICHE:
La cassa è realizzata in acciaio, lo scudo L.A. in ghisa, lo scudo L.O.A. è realizzato in lega di alluminio resistente alle vibrazioni e l'albero in acciaio ad alta resistenza. Il rotore è particolarmente robusto per resistere alla velocità di fuga dei motori di trascinamento ed è dotato di una gabbia di smorzamento che permette un buon funzionamento anche con carichi monofase distorcenti e squilibrati. I cuscinetti sono lubrificati a vita.

Mechanical features:
Casing is made of steel, drive end side cover made of cast iron while non drive end side cover is made of alluminium alloy which holds out against vibrations. The shaft is made of high-tensile steel. The rotor is particularly sturdy to hold out against the runaway speed of the drive motors. It is equipped with a damping cage which allows satisfactory operation even with single-phase, distorted loads. Bearings have lifelong lubrication.

Características mecánicas:
La carcaza es de acero, la brida del lado acoplamiento (L.A.) es de fundición, la brida del lado opuesto al acoplamiento (L.O.A.) es de aleación de aluminio de alta resistencia a las vibraciones . Eje en acero de alta resistencia. Rotor robusto, apto para resistir la velocidad de fuga del motor, posee además jaula de amortiguamiento que permite un buen funcionamiento de la máquina aun con cargas de alta distorsión.
Rodamientos lubricados de por vida.

CARATTERISTICHE ELETTRICHE:

Gli isolamenti sono realizzati con materiali in classe H sia nello statore che nel rotore e gli avvolgimenti sono tropicalizzati. Il lamierino magnetico utilizzato è del tipo a basse perdite. La regolazione della tensione avviene mediante un regolatore elettronico alimentato da un avvolgimento ausiliario isolato dal principale. L'avvolgimento di erogazione è del tipo a 12 terminali e permette la realizzazione dei collegamenti riportati nello schema elettrico .

Electric characteristics:

Insulation is obtained with H class material for both stator and rotor and the windings are tropicalized. Low-loss lamination is used. Voltage is adjusted by means of an electronic regulator, fed by an auxiliary winding isolated from the main one. The main winding with 12 terminals allows to obtain the connection shown in the Electric diagram .

Características eléctricas:

Los aislantes son en clase H tanto en el rotor como en el estator. Los bobinados están tropicalizados. La lámina magnética es del tipo a bajas pérdidas. La regulación de la tensión se produce a través de un regulador electrónico alimentado por un bobinado auxiliar aislado galvánicamente del bobinado principal. Los bobinados de suministro son del tipo a 12 terminales que permiten las conexiones indicadas en el esquema eléctrico .

NORME DI RIFERIMENTO:

Gli alternatori della serie **SL** sono costruiti in conformità a quanto previsto dalle norme EN 60034-1, EN 60204-1, EN61000-6-2, EN61000-6-4, EN 55014-1, EN 55011 ed alle direttive 2006/95/CE, 2004/108/CE, 2006/42/CE.

Reference standards:

*The **SL** series alternators are manufactured pursuant to the provisions of the EN 60034-1, EN 60204-1, EN61000-6-2, EN61000-6-4, EN 55014-1, EN 55011 standards and 2006/95/CEE, 2004/108/CEE, 2006/42/CEE directives.*

Normas de referencia:

*Los alternadores de la gama **SL** han sido fabricados en conformidad con lo previsto por las normas EN 60034-1, EN 60204-1, EN61000-6-2, EN61000-6-4, EN 55014-1, EN 55011 y a las directivas 2006/95/CEE, 2004/108/CEE, 2006/42/CEE.*

CONDIZIONI DI UTILIZZO:

I dati sulle prestazioni riportati nel presente catalogo sono dichiarati per un funzionamento ad un altitudine non superiore ai 1000 m s.l.m. e con temperatura ambiente fino a 40°C. Per utilizzi in condizioni diverse consultare la tabella di sotto riportata.

Operating conditions:

The performance datas reported in the present catalogue are valid for operation at an altitude not exceeding 1000 m a.s.l. and ambient temperature not exceeding 40°C. If operation takes place in different conditions, consult the table below.

Condiciones de uso:

Los datos sobre las prestaciones mencionados en el presente catálogo se refieren al funcionamiento a una altitud no superior a los 1000 m s.n.m. y con temperatura ambiente de hasta 40°C. Para usos en condiciones distintas, consultar la tabla que se muestra a continuación.

Variazione di potenza con la temperatura e l'altitudine
Power variation according to temperature and altitude

ALTITUDINE ALTITUDE m	Temperatura ambiente Ambient temperature				
	25 °C	40 °C	45 °C	50 °C	55 °C
< 1000	1.09	1	0.96	0.93	0.91
1000 - 1500	1.01	0.96	0.92	0.89	0.87
1500 - 2000	0.96	0.91	0.87	0.84	0.83
2000 - 3000	0.9	0.85	0.81	0.78	0.76

ACCOPPIAMENTI:

Sono previsti tutti gli standard di accoppiamento ai motori primi presenti nel mercato.

Couplings:

All the motor coupling standards available on the market are supported.

Acoplamientos:

Están previstos todos los tipos de acoplamiento a los principales motores presentes en el mercado.

GRADO DI PROTEZIONE:

Standard IP 23.

Drip proof:

Standard IP 23.

Grado de protección:

Estándard IP 23.

MORSETTIERA E SCATOLA MORSETTI:

La scatola morsetti è realizzata in lamiera e contiene la morsettiera principale ed il regolatore elettronico di tensione. Gli ingombri della scatola morsetti sono tali da consentire un facile accesso per il collegamento dei terminali sulla morsettiera. Un'apposita apertura laterale permette di raggiungere il potenziometro del regolatore e di effettuare le operazioni di taratura della tensione senza dover aprire la scatola morsetti.

Terminal board and terminal box:

Terminal box is made of sheet steel; it contains the main terminal board and the automatic voltage regulator. The dimensions of the terminal box allows

an easy access for connecting the terminals on the terminal board. A lateral opening allows to reach the potentiometer on the regulator and set the voltage without opening the terminals box.

Bornera y caja de bornes:
La caja de bornes es de chapa; en ella son alojados la bornera principal y el regulador electrónico de tensión.
Las dimensiones de la misma permiten un fácil acceso para la conexión de los terminales.
Con una especial abertura lateral se accede a los trimmers del regulador para las operaciones de ajuste de la tensión del alternador sin necesidad de abrir la caja de bornes.

SOVRACCARICHI:
Sono consentiti sovraccarichi pari al 10% della potenza nominale per 1 ora ogni 6 ore.
Il sovraccarico breve può essere anche molto elevato (3 volte la corrente nominale).

Overloads:
A 10% overload for 1 hour every 6 hours is normally accepted. Short overloads can be very high (3 times the rated current).

Sobrecargas:
Son permitidas sobrecargas del 10% de la potencia nominal por 1 hora cada 6 horas. La sobrecarga breve admisible es de 3 veces el valor nominal.

PRECISIONE DELLA TENSIONE:
±1% della tensione nominale da vuoto a pieno carico con cosφ compreso tra 0.8 e 1 e velocità di rotazione costante.

Voltage accuracy:
±1% of rated voltage, from no load to full load with cosφ *ranging from 0.8 to 1 and constant rotation speed.*

Precision de la tension:
±1% del valor nominal de tensión entre vacío y plena carga con cosφ *entre 0.8 y 1, y velocidad de rotación constante al valor de tarjeta.*

FORMA D'ONDA DELLA TENSIONE:
La forma d'onda della tensione concatenata a vuoto o con un carico trifase equilibrato e non deformante, è sinusoidale con un contenuto armonico inferiore al 3%.

Output voltage waveform:
The waveform of the no-load line voltage or applying a balanced linear three-phase load is sinusoidal with an harmonical residual less than 3%.

Forma de onda de tension:
La distorsión harmónica de la tensión de salida en vacío o con carga trifásica equlibrada lineal es menor del 3%.

AVVIAMENTO DI MOTORI ASINCRONI:
E' possibile avviare 1 HP per ogni kVA del generatore.

Asynchronous motor starting:
1 HP for each kVA of the alternator can be started.

Arranque de motores asincronos:
Es posible arrancar 1HP de motor por cada kVA de generador.

CORRENTE DI CORTO CIRCUITO:
La corrente permanente in caso di corto circuito trifase simmetrico è superiore al 250% della corrente nominale.

Short circuit current:
In case of three-phase symmetric short circuit, the permanent current exceeds the rated current by 250%.

Corriente de corto circuito:
La corriente permanente de corto circuito trifásico simétrico es superior al 250% del valor nominal.

REGOLATORE ELETTRONICO:
Gli alternatori della serie SL sono dotati del regolatore elettronico HVR-11 con riferimento di tensione monofase.

I regolatori elettronici sono costruiti con componenti elettronici di ultima generazione e che garantiscono prestazioni ed affidabilità elevate.
Entrambi i modelli sono dotati di trimmer per la regolazione del valore della tensione, trimmer per il controllo di stabilità della regolazione, trimmer per la taratura della protezione di bassa frequenza e trimmer per la regolazione della protezione di sovraccarico.

ELECTRONIC REGULATOR:
SL series alternators are equipped with electronic regulator HVR-11 with single phase sensing
Our electronic regulators are made with state-of-the-art electronic components that assure high performances and reliability. They are equipped with an output voltage regulator trimmer, a stability control trimmer, a low frequency protection trimmer and an overload protection trimmer.

REGULADOR ELECTRONICO:
Los alternadores de la serie SL poseen el regulador electrónico HVR-11 con referencia de tensión monofásica
Los reguladores electrónicos están realizados con componentes electrónicos de última generación, con lo cual se permite obtener altas prestaciones y confiabilidad. Los dos modelos tienen un trimmer para la regulación de la tensión de salida, trimmer para el control de la estabilidad, trimmer para tarar el umbral de protección de baja frecuencia y trimmer para tarar la protección de sobrecarga.

SLS18 - Alternatori sincroni monofase senza spazzole con regolazione elettronica - 4 poli

SLS18 - Single-phase brushless synchronous alternators with electronic regulation - 4 poles

SLS18 - Alternadores síncronos monofásicos sin escobillas con regulación electrónica - 4 polos

TIPO - TYPE	Potenza resa / Rating (kVA)					
	50 Hz			60 Hz		
	Cl. H T. amb 40°C	Cl. F T. amb 40°C	Stand by Cl. H T. amb 27°C	Cl. H T. amb 40°C	Cl. F T. amb 40°C	Stand by Cl. H T. amb 27°C
SLS18 MC	10	9	11	12	11.2	13.7
SLS18 MD	15	13.7	16	18	16.5	19.5

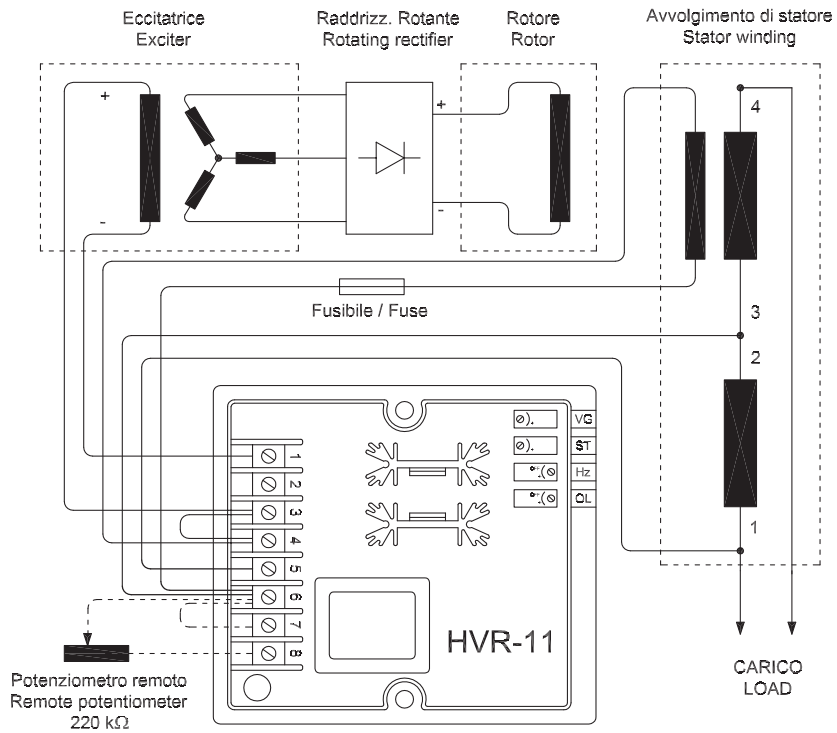
TIPO - TYPE	Potenza resa Rating (kVA)		Mom. di inerzia Mom. of inertia (kgm²)				Peso Weight (kg)	Volume aria Air volume (m³/min)	
	50 Hz	60 Hz	B2 SAE 7 ½	B2 SAE 8	B2 SAE 10	B2 SAE 11 ½	B2 SAE	50 Hz	60 Hz
SLS18 MC	10	12	0.203	0.207	0.212	0.219	112.8	11.2	11.8
SLS18 MD	15	18	0.231	0.263	0.232	0.239	120.5	11.5	12.1

TIPO - TYPE	50 Hz - 1500 rpm - cosφ = 0,8 - S1					60 Hz - 1800 rpm - cosφ = 0,8 - S1				
	Pot. resa Rating	Rendimento Efficiency (%)		Potenza assorbita Driving power		Pot. resa Rating	Rendimento Efficiency (%)		Potenza assorbita Driving power	
	(kVA)	4/4	3/4	(kW)	(HP)	(kVA)	4/4	3/4	(kW)	(HP)
SLS18 MC	10	81.4	81.8	9.8	13.2	12	81.8	82.5	11.7	15.7
SLS18 MD	15	93.6	84	14.4	19.3	18	84.1	84.6	17.1	23

Schema Elettrico

Electric Scheme

Esquema Eléctrico



SLT18 - Alternatori sincroni trifasi senza spazzole con regolazione elettronica - 4 poli

SLT18 - Three-phase brushless synchronous alternators with electronic regulation - 4 poles

SLT18 - Alternadores síncronos trifásicos sin escobillas con regulación electrónica - 4 polos

TIPO - TYPE	Potenza resa / Rating (kVA)					
	50 Hz			60 Hz		
	Cl. H T. amb 40°C	Cl. F T. amb 40°C	Stand by Cl. H T. amb 27°C	Cl. H T. amb 40°C	Cl. F T. amb 40°C	Stand by Cl. H T. amb 27°C
SLT18 MC	15	14	18	18	17	21
SLT18 MD	20	18.5	23	24	22.5	27.5

TIPO - TYPE	Potenza resa Rating (kVA)		Mom. di inerzia Mom. of inertia (kgm²)				Peso Weight (kg)	Volume aria Air volume (m³/min)	
	50 Hz	60 Hz	B2 SAE 7 ½	B2 SAE 8	B2 SAE 10	B2 SAE 11 ½	B2 SAE	50 Hz	60 Hz
SLT18 MC	18	18	0.203	0.207	0.212	0.219	114	12.7	14.8
SLT18 MD	20	24	0.231	0.263	0.232	0.239	122	12.6	14.7

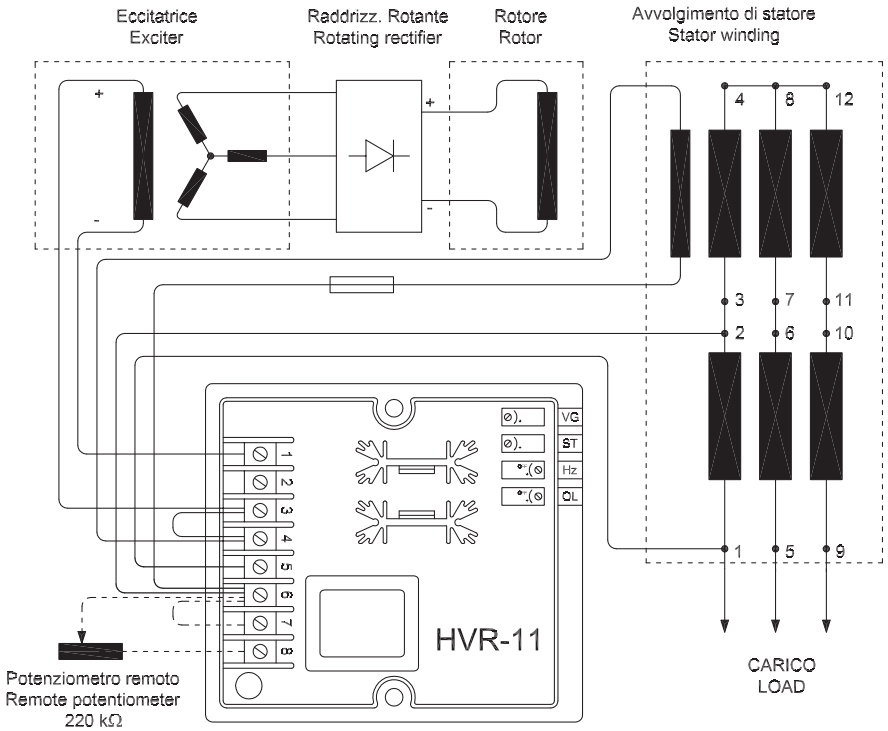
TIPO - TYPE	50 Hz - 1500 rpm - cosφ = 0,8 - S1					60 Hz - 1800 rpm - cosφ= 0,8 - S1				
	Pot. resa Rating	Rendimento Efficiency (%)		Potenza assorbita Driving power		Pot. resa Rating	Rendimento Efficiency (%)		Potenza assorbita Driving power	
	(kVA)	4/4	3/4	(kW)	(HP)	(kVA)	4/4	3/4	(kW)	(HP)
SLT18 MC	15	85.6	86.0	14.0	18.8	18	87.4	87.4	16.5	22.0
SLT18 MD	20	86.1	86.3	18.6	25.0	24	87.8	88.1	21.9	29.4

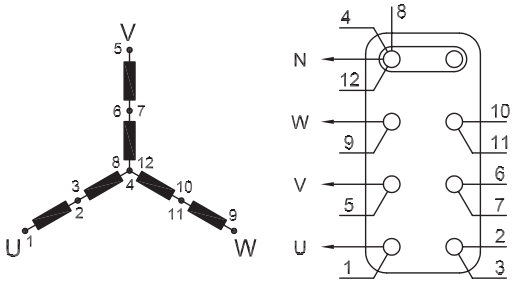
TIPO - TYPE	Potenza resa Rating (kVA)		Reattanze e costanti di tempo / Reactances and time costants								Resist.avv. princ. Main Wind. resistance
			ρcc	Xd	X'd	X"d	Xq	T'do	T'd	T"d	
	50 Hz	60 Hz	-	(%)	(%)	(%)	(%)	(ms)	(ms)	(ms)	(Ω a 20 °C)
SLT18 MC	15	18	0.63	237	18	8	131	99	6	5	0.620
SLT18 MD	20	24	0.57	242	19	9	133	103	7	5	0.460

Schema Elettrico

Electric Scheme

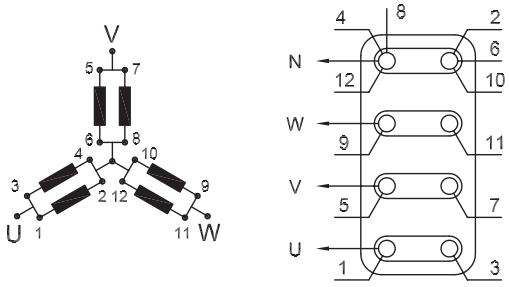
Esquema Eléctrico





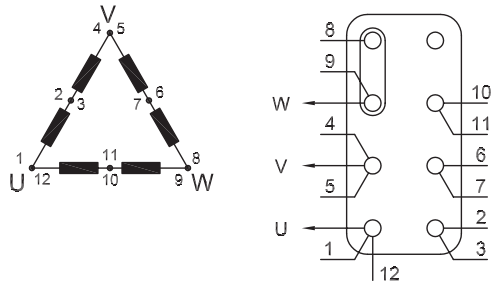
Collegamento stella serie + neutro
Star serie connection + neutral
Conexión serie estrella + neutro

230/400V - 50Hz (277/480V - 60Hz)



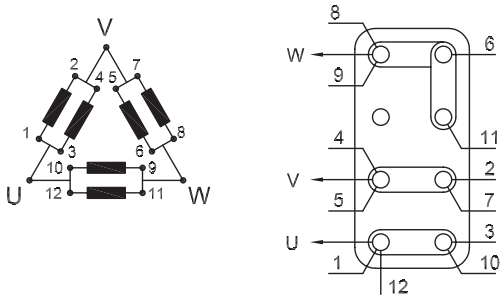
Collegamento stella parallelo + neutro
Star parallel connection + neutral
Conexión paralelo estrella + neutro

115/200V - 50Hz (138/240V - 60Hz)



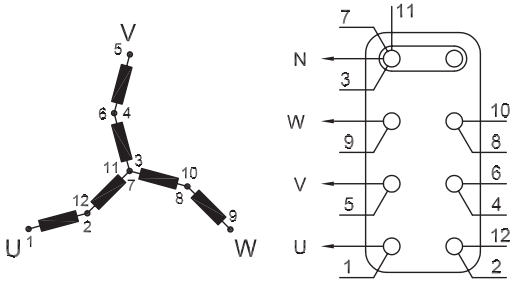
Collegamento triangolo serie
Delta serie connection
Conexión serie triángulo + neutro

230V - 50Hz (277V - 60Hz)



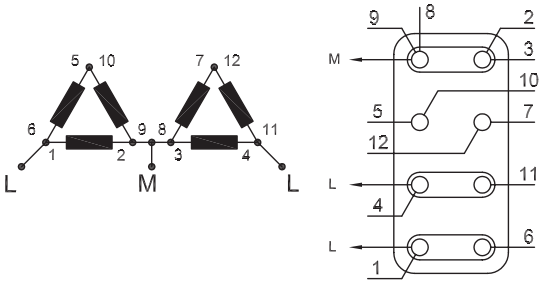
Collegamento triangolo parallelo
Delta parallel connection
Conexión paralelo triángulo + neutro

115V - 50Hz (138V - 60Hz)



Collegamento zig - zag + neutro
Zig - zag connection + neutral
Conexión zig - zag + neutro

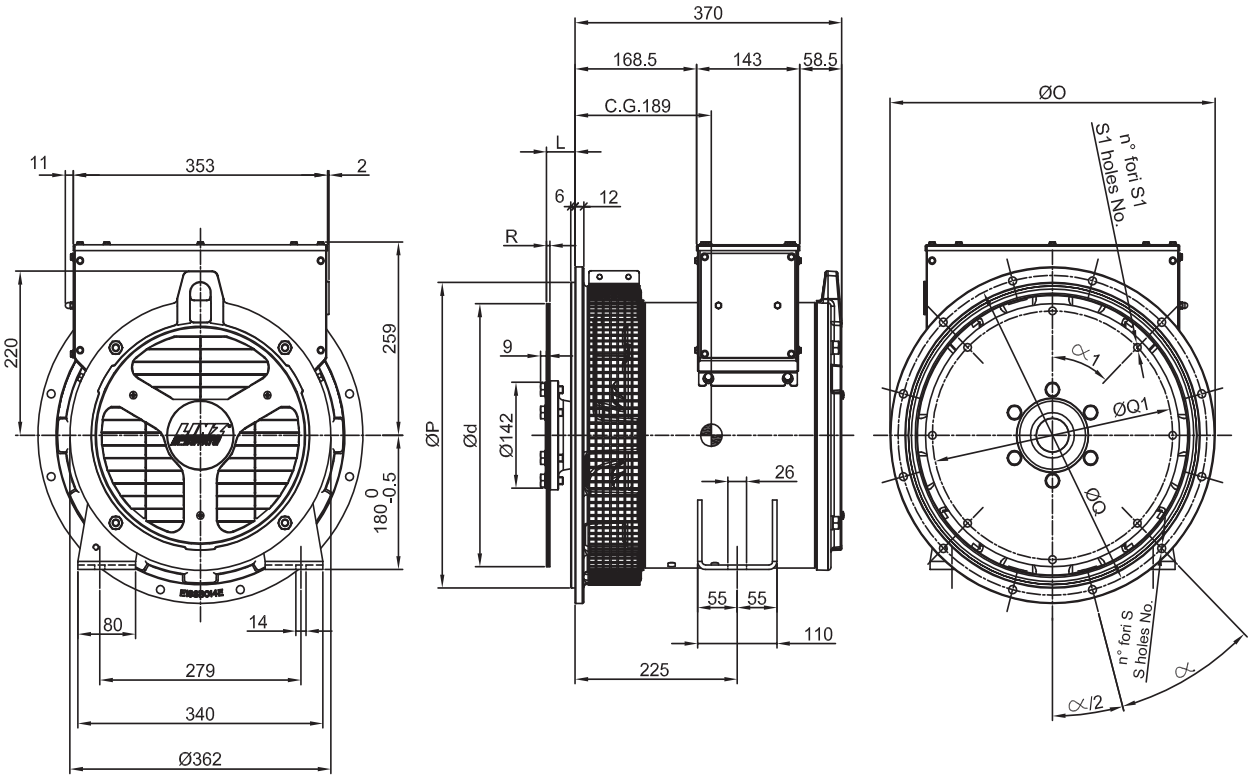
200/346V - 50Hz (240/415V - 60Hz)



Collegamento monofase
Single phase connection
Conexión monofasica

230V - 50Hz (276V - 60Hz)

FORMA - FORM MD35



SAE N.	FLANGIE - FLANGES - BRIDAS					
	Ø O	Ø P	Ø Q	n. fori holes No.	S	α
5	356	314.3	333.4	8	11	45°
4	402	362	381	12		30°
3	451	409.6	428.6	12		30°

SAE N.	GIUNTI A DISCO -COUPLING DISCS- JUNTAS A DISCOS						
	L	Ø d	Ø Q1	n. fori holes No.	S1	α1	R
6 1/2	30.2	215.9	200	6	9	60°	3
7 1/2	30.2	241.3	222.25	8	9	45°	
8	62	263.52	244.47	6	10.5	60	4.5
10	53.8	314.32	295.27	8	10.5	45°	
11 1/2	39.6	352.42	333.37	8	10.5	45°	

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

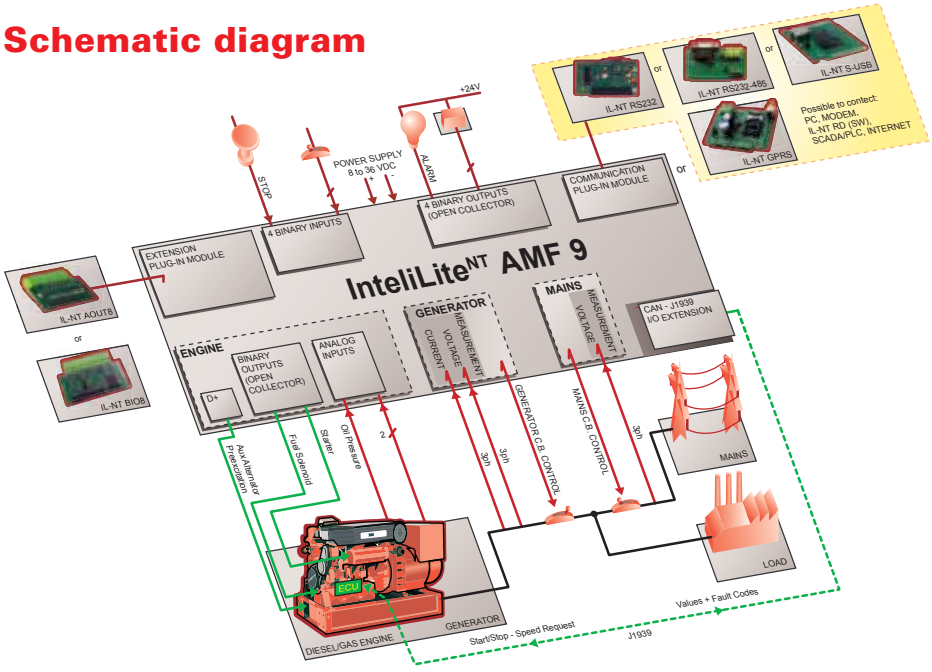
Communication interfaces
- Optional RS232, RS485
  (including Modem support)
  or USB plug-in interface
- Optional GSM modem via IL-NT GPRS

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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