



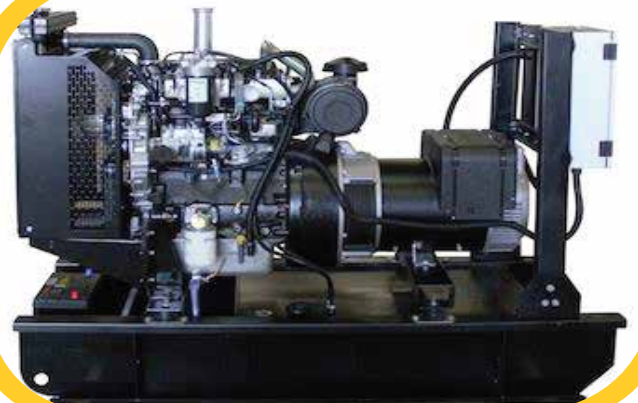
Tayseer Power Co.

Trade, Maintenance & Rental Of Elect. Generators



PERKINS GENERATOR

35 KVA (28 KW) (UK)



1100 Series 1103A-33G Diesel Engine – Electropak

35.4 kWm / 47.5 hp @ 1800 rpm

Building upon Perkins proven reputation within the power generation industry, the 1100 Series range of Electropak engines now fit even closer to customers needs.

In the world of power generation success is only gained by providing more for less. With the 1103A-33G Perkins has engineered even higher levels of reliability, yet lowered the cost of ownership.

1100A units are designed for territories that do not require compliance to EPA or EU emissions legislation. These units are able to meet TA luft legislation.



Specification		
Number of cylinders	3 vertical in-line	
Bore and stroke	105 x 127 mm	4.1 x 5 in
Displacement	3.3 litres	201 in ³
Aspiration	Naturally aspirated	
Cycle	4 stroke	
Combustion system	Direct injection	
Compression ratio	19.25:1	
Rotation	Anti-clockwise, viewed from flywheel	
Total lubricating capacity	8.3 litres	2.2 US gal
Cooling system	Water-cooled	
Total coolant capacity	10.2 litres	2.7 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.

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 **Perkins®**

THE HEART OF EVERY GREAT MACHINE

1100 Series 1103A-33G Diesel Engine – ElectropaK

35.4 kWm / 47.5 hp @ 1800 rpm

Features and benefits

Compact, efficient power

- 1100 Series is the result of an intensive period of customer research that has guided the development of the range
- The new 3.3 litre cylinder block ensures bore roundness is maintained under the pressures of operation. It also ensures combustion and mechanical noise is lowered
- A new cylinder head has re-established Perkins mastery of air control

Quality by design

- Product design and Class A manufacturing improvements enhance product reliability while maintaining Perkins legendary reputation for durability

Cost effective power

- Compact size and low noise
- Lower fuel consumption and oil use
- 500 hour service intervals
- **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

- Perkins actively pursues product support excellence by ensuring our distribution network invest in their territory – strengthening relationships and providing more value to you, our customer
- Through an experienced global network of distributors and dealers, fully trained engine experts deliver total service support around the clock, 365 days a year. They have a comprehensive suite of web based tools at their fingertips covering technical information, parts identification and ordering systems, all dedicated to maximising the productivity of your engine
- Throughout the entire life of a Perkins engine, we provide access to genuine OE specification parts and service. We give 100% reassurance that you receive the very best in terms of quality for lowest possible cost .. wherever your Perkins powered machine is operating in the world
- To find your local distributor: www.perkins.com/distributor

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THE HEART OF EVERY GREAT MACHINE

1100 Series 1103A-33G Diesel Engine – ElectropaK

35.4 kWm / 47.5 hp @ 1800 rpm

Technical information

Air inlet

- Mounted air filter

Fuel system

- Rotary type pump
- Next generation fuel filter

Lubrication system

- Wet sump with filler and dipstick
- Spin-on oil filter

Cooling system

- Thermostatically-controlled system with gear-driven circulation pump and belt-driven pusher fan
- Mounted radiator and piping

Electrical equipment

- 12 volt starter motor and 12 volt 65 amp alternator with DC output
- 12 volt shutdown solenoid energised to run

Flywheel and housing

- High inertia flywheel to SAE J620 size 10/11½
- SAE 3 flywheel housing

Mountings

- Front engine mounting bracket

Literature

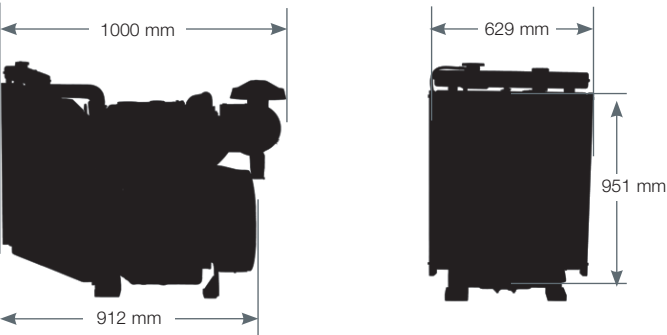
- Operation and Maintenance Manual (OMM)

General

- Woodward electronic governor (LCG2)
- A selection of optional items is available to enable the customer to prepare a specification precisely matched to the needs

1100 Series 1103A-33G Diesel Engine – ElectropaK

35.4 kWm / 47.5 hp @ 1800 rpm



Engine package weights and dimensions		
Length	1000 mm	39.3 in
Width	629 mm	24.7 in
Height	951 mm	37.4 in
Weight (dry)	412 kg	908 lb

1100 Series 1103A-33G Diesel Engine – ElectropaK

35.4 kWm / 47.5 hp @ 1800 rpm

Speed rpm	Type of operation	Typical generator output (Net)		Engine power			
				Gross		Net	
		kVA	kWe	kWm	hp	kWm	bhp
1800	Prime Power	34.9	27.9	33.2	44.5	32.2	43.2
	Standby (maximum)	38.2	30.6	36.5	48.9	35.4	47.5

The above ratings represent the engine performance capabilities to conditions specified in ISO 8528/1, ISO 3046/1:1986, BS5514/1. **Derating may be required for conditions outside these; consult Perkins Engines Company Limited.**

Generator powers are typical and are based on an average alternator efficiency and a power factor (cos. θ) of 0.8. **Fuel specification:** BS 2869: Part 2 1998 Class A2 or DIN EN 590. **Lubricating oil:** 15W40 to API CG4.

Rating definitions

Prime power: Variable load. Unlimited hours usage with an average load factor of 80% of the published prime power over each 24 hour period. A 10% overload is available for 1 hour in every 12 hours of operation. **Standby power:** Variable load. Limited to 500 hours annual usage, up to 300 hours of which may be continuous running. No overload is permitted.

Percent of prime power	Fuel consumption litres/hour temperate/tropical at 1800 rpm	
	UK g/hr	l/hr
Standby (maximum)	2.08	9.5
Prime power	1.89	8.6
75%	1.45	6.6
50%	1.07	4.9

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THE HEART OF EVERY GREAT MACHINE



PRO

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LINZ ELECTRIC,

azienda specializzata nella realizzazione degli alternatori, fa parte del gruppo Pedrollo, leader mondiale nella produzione di elettropompe e di prodotti elettromeccanici. La missione aziendale è quella di creare soluzioni originali ed innovative nella trasformazione dell'energia nel rispetto dello sviluppo sostenibile. La decennale esperienza dei progettisti unita ad una forte propensione per l'innovazione permette di soddisfare i clienti con prodotti affidabili e di elevate prestazioni. Caratteristica fondamentale dell'azienda è la flessibilità garantita dalla forte integrazione verticale dei processi produttivi: i principali componenti dei nostri prodotti tra cui avvolgimenti, componenti pressofusi, alberi, regolazioni elettroniche ed inverter sono interamente realizzati all'interno dei nostri stabilimenti.

LINZ ELECTRIC,

a firm specialising in the manufacturing of alternators, belongs to the Pedrollo group, world leader in the production of electric pumps and electromechanical products. The corporate mission is devising original and innovative solutions in energy transformation with a strong commitment to sustainable development. The decade-long experience of the engineers and a strong inclination for innovation leads to meeting the customers' needs by means of reliable and high-performing products. Main feature of Linz Electric S.r.l. is the flexibility assured by a complete vertical integration of all production processes: the most important components of our products like windings, die-cast aluminium parts, shafts, electronic regulators and inverters, are produced in our plants.

LINZ ELECTRIC,

empresa especializada en la fabricación de alternadores, forma parte del grupo Pedrollo, líder mundial en la producción de electrobombas y productos electromecánicos. La misión empresarial es crear soluciones originales e innovadoras para la transformación de energía, con un fuerte compromiso por el desarrollo sostenible. La experiencia decenal de los proyectistas y una fuerte tendencia a la innovación nos permiten satisfacer a nuestros clientes con productos confiables y de elevadas prestaciones. Característica fundamental de la empresa es la flexibilidad, garantizada por una fuerte integración vertical de los procesos productivos: los principales componentes de nuestros productos como los bobinados, fundición de aluminio, ejes, reguladores electrónicos e inverter, son totalmente realizados dentro de nuestros establecimientos.



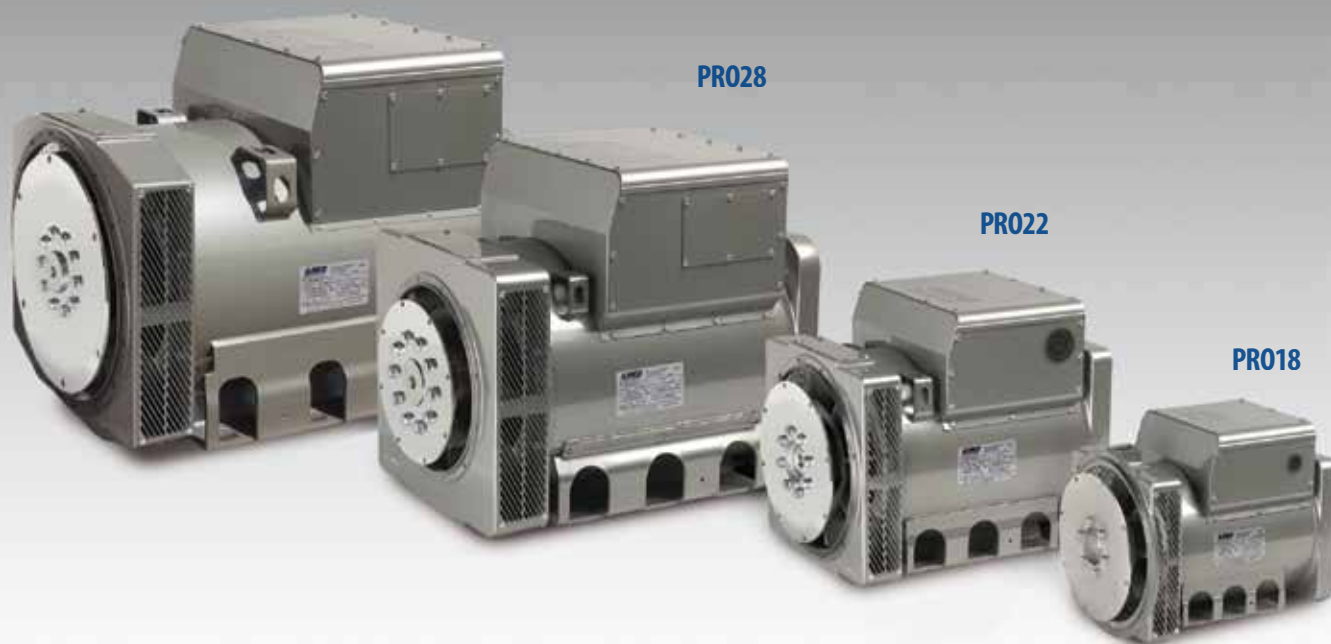
Gamma degli alternatori PRO - PRO alternators series - Gama de alternadores PRO

PR035

PR028

PR022

PR018



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 (PR018) o in ghisa (PR022, PR028 e PR035) 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 aluminium alloy which holds out against vibrations (PR018) or of cast iron (PR022, PR028 and PR035). 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 carcasa 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 (PR018) y fundición (PR022, PR028 y PR035). 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 (pag. 19).

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 (page 19).

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 (pag.19).

NORME DI RIFERIMENTO:

Gli alternatori della serie **PRO** 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 **PRO** 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 **PRO** 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

ACCOPIAMENTI:

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.

Acoplamiento:

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:

Estándar 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:

$\pm 1\%$ della tensione nominale da vuoto a pieno carico con $\cos\phi$ compreso tra 0.8 e 1 e velocità di rotazione costante.

Voltage accuracy:

$\pm 1\%$ of rated voltage, from no load to full load with $\cos\phi$ ranging from 0.8 to 1 and constant rotation speed.

Precision de la tension:

$\pm 1\%$ del valor nominal de tensión entre vacío y plena carga con $\cos\phi$ 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 equilibrada 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.

FUNZIONAMENTO MONOFASE:

E' possibile alimentare un carico monofase con una potenza pari al 40% della potenza nominale trifase se si utilizza una sola fase (collegamento a stella), oppure pari al 65% della potenza nominale trifase se si utilizza un collegamento a triangolo.

Single phase duty:

The single-phase output power is approximately 40% of the three-phase rated power in case of star connection (using phase voltage) or 65% of three-phase rated power in case of delta connection.

Funcionamiento monofásica:

La potencia monofásica que el alternador puede suministrar en servicio continuativo es del 65% del valor nominal del funcionamiento trifásico utilizando la tensión línea-línea, y del 40% del valor nominal si se utiliza la tensión de fase en la conexión en estrella.

REGOLATORE ELETTRONICO:

Gli alternatori della serie PRO sono dotati dei seguenti regolatori elettronici:

- HVR-11 su PRO18 e PRO22 con riferimento di tensione monofase
- HVR-30 su PRO28 e PRO35 con riferimento di tensione trifase

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. Il modello HVR-30, dotato di riferimento di tensione trifase, garantisce un'ottima regolazio-

ne anche nel caso di carichi fortemente squilibrati.

ELECTRONIC REGULATOR:

PRO series alternators are equipped with the following electronic regulators:

- HVR-11 on PRO18 and PRO22, with single phase sensing
- HVR-30 on PRO28 and PRO35, with three-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.

Model HVR-30 is a three phase sensing regulator with three voltage inlets, to assure the best regulation also in case of unbalanced load.

REGULADOR ELECTRONICO:

Los alternadores de la serie PRO poseen los siguientes reguladores electrónicos

- HVR-11 en PRO18 y PRO22, con referencia de tensión monofásica
- HVR-30 en PRO28 y PRO35, con referencia de tensión trifásica

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. El modelo HVR-30 posee tres entradas para ingreso de tensión de referencia trifásica, de manera de garantizar una buena regulación en el uso con cargas muy desequilibradas.

DISPOSITIVO DI PARALLELO

Su richiesta gli alternatori della serie PRO possono essere dotati di dispositivo di parallelo DP01 che consente un facile collegamento in parallelo di più alternatori evitando il manifestarsi di correnti di ricircolo tra gli stessi.

Parallel device:

On demand, PRO series alternators can be equipped with a parallel device DP01, that permits a parallel connection of generators of the same type, avoiding the circulation of current among them.

Dispositivo de paralelo:

Bajo pedido los alternadores de la serie PRO pueden ser equipados con un dispositivo de paralelo DP01, permitiendo con el mismo la entrada en paralelo de alternadores del mismo tipo, evitando la circulación de corriente entre generadores.

PR018

Alternatori sincroni trifase senza spazzole con regolazione elettronica - 4 poli

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

Alternadores síncronos trifásicos sin escobillas con regulación electrónica - 4 polos



POWER RANGE

PRO18S

50 Hz

20 ◀▶ 30

60 Hz

24 ◀▶ 36

PRO18M

50 Hz

35 ◀▶ 42

60 Hz

42 ◀▶ 50

PRO18L

50 Hz

50 ◀▶ 60

60 Hz

60 ◀▶ 72

Gli alternatori della serie **PR018** sono trifase a 4 poli senza spazzole, dotati di regolazione elettronica (AVR) con riferimento di tensione mono-fase. 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, e 2006/42/CE.

The alternators of **PR018** series are three phase, brushless, with electronic regulation (AVR) with single phase sensing.

They are produced in conformity with 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.

Los alternadores de la serie **PR018** son trifásicos sin escobillas, con regulación electrónica (AVR) con referencia de tensión monofásica.

Están contruidos en conformidad con 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.

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
PR018S A/4	20	18.5	23	24	22	27
PR018S B/4	25	23	28	30	27.5	34
PR018S C/4	30	28	34	36	33.5	38
PR018M D/4	35	32	39	42	38.5	47
PR018M E/4	42	39	47	50	47	55
PR018L F/4	50	45	55	60	54	66
PR018L G/4	60	55	65	72	66	78

TIPO - TYPE	Potenza resa Rating (kVA)		Mom. di inerzia Mom. of inertia (kgm ²)					Peso Weight (kg)		Volume aria Air volume (m ³ /min)	
	50 Hz	60 Hz	B2 SAE 7 ½	B2 SAE 8	B2 SAE 10	B2 SAE 11 ½	B3/B14	B2 SAE	B3/B14	50 Hz	60 Hz
PR018S A/4	20	24	0.205	0.213	0.231	0.250	0.197	131	133	12.6	14.7
PR018S B/4	25	30	0.239	0.248	0.265	0.284	0.231	144	146	12.5	14.6
PR018S C/4	30	36	0.279	0.288	0.306	0.325	0.272	159	161	12.3	14.3
PR018M D/4	35	42	0.321	0.330	0.347	0.365	0.313	180	181	12.1	14.2
PR018M E/4	42	50	0.375	0.384	0.401	0.419	0.367	206	206	12.0	14.0
PR018L F/4	50	60	0.445	0.456	0.477	0.498	0.436	240	235	11.8	14.2
PR018L G/4	60	72	0.534	0.547	0.572	0.598	0.523	271	260	11.7	14.0

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)
PR018S A/4	20	86.1	86.3	18.6	25.3	24	87.8	88.1	21.9	29.8
PR018S B/4	25	86.5	86.9	23.1	31.5	30	88.2	88.6	27.2	37.0
PR018S C/4	30	87.1	87.5	27.6	37.5	36	88.8	89.3	32.4	44.1
PR018M D/4	35	88.6	89.1	31.6	43.0	42	90.4	90.9	37.2	50.6
PR018M E/4	42	89.3	89.9	37.6	51.2	50	91.1	91.7	44.2	60.2
PR018L F/4	50	89.4	90.0	44.7	60.9	60	91.2	92.0	52.6	71.6
PR018L G/4	60	89.6	90.1	53.6	72.9	72	91.4	92.2	63	85.7

TIPO - TYPE	Potenza resa Rating (kVA)		Reattanze e costanti di tempo / Reactances and time constants							Resist.avv. princ. Main Wind. resistance	
	50 Hz	60 Hz	pcc	Xd	X'd	X''d	Xq	T'do	T'd	T''d	(Ω a 20 °C)
			-	(%)	(%)	(%)	(%)	(ms)	(ms)	(ms)	
PR018S A/4	20	24	0.57	242	19	9	133	103	7	5	0.460
PR018S B/4	25	30	0.57	240	20	9	134	101	8	5	0.246
PR018S C/4	30	36	0.58	243	19	8	135	125	10	5	0.234
PR018M D/4	35	42	0.58	240	18	7	133	147	11	6	0.152
PR018M E/4	42	50	0.60	253	20	8	141	180	14	8	0.128
PR018L F/4	50	60	0.62	255	20	7	146	188	14	9	0.105
PR018L G/4	60	72	0.63	260	21	7	148	195	15	9	0.082

PRO22

Alternatori sincroni trifase senza spazzole con regolazione elettronica - 4 poli

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

Alternadores síncronos trifásicos sin escobillas con regulación electrónica - 4 polos



POWER RANGE

PRO22S

50 Hz

63 ◀▶ 100

60 Hz

76 ◀▶ 120

PRO22M

50 Hz

130 ◀▶ 150

60 Hz

156 ◀▶ 180

Gli alternatori della serie **PRO22** sono trifase a 4 poli senza spazzole, dotati di regolazione elettronica (AVR) con riferimento di tensione monofase. 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, e 2006/42/CE.

*The alternators of **PRO22** series are three phase, brushless, with electronic regulation (AVR) with single phase sensing. They are produced in conformity with 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.*

*Los alternadores de la serie **PRO22** son trifásicos sin escobillas, con regulación electrónica (AVR) con referencia de tensión monofásica. Están contruidos en conformidad con 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.*

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
PRO22S B/4	63	59	71	76	70.5	85.5
PRO22S C/4	85	79	96	102	95	115
PRO22S D/4	100	93	113	120	111.5	135.5
PRO22M E/4	130	121	147	156	145	176
PRO22M F/4	150	139.5	169.5	180	167.5	203.5

TIPO - TYPE	Potenza resa Rating (kVA)		Mom. di inerzia Mom. of inertia (kgm ²)				Peso Weight (kg)		Volume aria Air volume (m ³ /min)	
	50 Hz	60 Hz	B2	B2	B2	B3/B14	B2 SAE	B3/B14	50 Hz	60 Hz
			SAE 10	SAE 11 ½	SAE 14					
PRO22S B/4	63	76	0.662	0.681	0.830	0.599	280	291	18.2	21.3
PRO22S C/4	85	102	0.857	0.876	1.025	0.794	341	343	18.0	21.1
PRO22S D/4	100	120	0.995	1.014	1.163	0.932	379	381	17.9	20.8
PRO22M E/4	130	156	1.223	1.242	1.391	1.160	454	456	17.6	20.7
PRO22M F/4	150	180	1.388	1.407	1.556	1.324	499	501	17.5	20.4

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
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	Potenza resa Rating (kVA)		Reattanze e costanti di tempo / Reactances and time constants								Resist.avv. princ. Main Wind. resistance	
	50 Hz	60 Hz	pcc	Xd	X'd	X''d	Xq	T'do	T'd	T''d	(Ω a 20 °C)	
			-	(%)	(%)	(%)	(%)	(ms)	(ms)	(ms)		
PRO22S B/4	63	76	0.48	302	19	9.5	191	236	20	12	0.104	
PRO22S C/4	85	102	0.45	300	19	9.5	202	258	21	11	0.056	
PRO22S D/4	100	120	0.47	298	18	9	194	277	22	11	0.044	
PRO22M E/4	130	156	0.45	295	19	8.5	195	298	23	10	0.028	
PRO22M F/4	150	180	0.44	290	18	8.5	193	310	23	10	0.024	

PRO28

Alternatori sincroni trifase senza spazzole con regolazione elettronica - 4 poli (riferimento trifase)

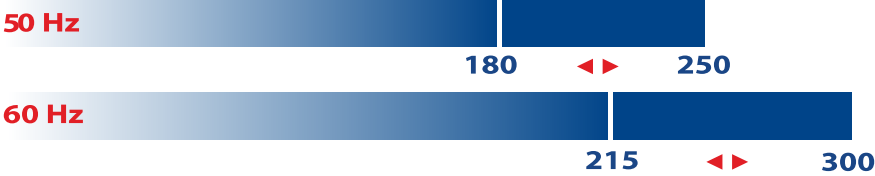
Three-phase brushless synchronous alternators with electronic regulation - 4 poles (three-phase sensing)

Alternadores síncronos trifásicos sin escobillas con regulación electrónica - 4 polos (referencia trifásica)



POWER RANGE

PRO28S



PRO28M



PRO28L



Gli alternatori della serie **PRO28** sono trifase a 4 poli senza spazzole, dotati di regolazione elettronica (AVR) con riferimento di tensione trifase. 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, e 2006/42/CE.

*The alternators of **PRO28** series are three phase, brushless, with electronic regulation (AVR) with three phase sensing.*

They are produced in conformity with 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.

*Los alternadores de la serie **PRO28** son trifásicos sin escobillas, con regulación electrónica (AVR) con referencia de tensión trifásica.*

Están contruidos en conformidad con 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.

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
PRO28S B/4	180	160	200	215	190	240
PRO28S C/4	210	180	230	250	215	275
PRO28S D/4	250	210	280	300	250	335
PRO28M E/4	300	250	325	360	300	390
PRO28M F/4	350	300	375	420	360	450
PRO28L G/4	400	360	420	480	430	500

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	B2	B3/B14	B2 SAE	B3/B14	50 Hz	60 Hz
			SAE 11 ½	SAE 14					
PRO28S B/4	180	215	2.261	2.407	2.092	603	608	32.0	38.0
PRO28S C/4	210	250	2.503	2.649	2.335	650	655	31.0	37.0
PRO28S D/4	250	300	2.832	2.979	2.664	735	740	30.5	36.5
PRO28M E/4	300	360	3.248	3.394	3.079	813	818	30.0	36.0
PRO28M F/4	350	420	3.871	4.017	3.702	930	935	29.0	35.0
PRO28L G/4	400	480	4.885	5.032	4.737	1042	1047	28.0	34.0

TIPO - TYPE	50 Hz - 1500 rpm - cosφ = 0,8 - S1					60 Hz - 1800 rpm - cosφ = 0,8 - S1				
	Potenza resa Rating (kVA)	Rendimento Efficiency (%)		Potenza assorbita Driving power		Potenza resa Rating (kVA)	Rendimento Efficiency (%)		Potenza assorbita Driving power	
		4/4	3/4	kW	HP		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	Potenza resa Rating (kVA)		Reattanze e costanti di tempo / Reactances and time constants							Resist.avv. princ. Main Wind. resistance	
	50 Hz	60 Hz	pcc	Xd	X'd	X''d	Xq	T'do	T'd	T''d	(Ω a 20 °C)
			-	(%)	(%)	(%)	(%)	(ms)	(ms)	(ms)	
PRO28S B/4	180	215	0.39	350	19.0	10.0	215	1800	110	16	0.0220
PRO28S C/4	210	250	0.41	335	19.0	9.5	213	1820	112	15	0.0186
PRO28S D/4	250	300	0.38	350	18.0	10.0	212	1850	115	14	0.0138
PRO28M E/4	300	360	0.39	352	18.5	9.0	210	1850	116	14	0.0106
PRO28M F/4	350	420	0.40	340	18.0	8.5	212	1870	115	13	0.0080
PRO28L G/4	400	480	0.41	330	18.0	9.0	210	1910	116	14	0.0061

PR035

Alternatori sincroni trifase senza spazzole con regolazione elettronica - 4 poli (riferimento trifase)

Three-phase brushless synchronous alternators with electronic regulation - 4 poles (three-phase sensing)

Alternadores síncronos trifásicos sin escobillas con regulación electrónica - 4 polos (referencia trifásica)



POWER RANGE

PRO35S

50 Hz

450 ◀▶ 550

60 Hz

540 ◀▶ 660

PRO35M

50 Hz

620 ◀▶ 725

60 Hz

744 ◀▶ 870

Gli alternatori della serie **PRO35** sono trifase a 4 poli senza spazzole, dotati di regolazione elettronica (AVR) con riferimento di tensione trifase. 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, e 2006/42/CE.

*The alternators of **PRO35** series are three phase, brushless, with electronic regulation (AVR) with three phase sensing.*

They are produced in conformity with 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.

*Los alternadores de la serie **PRO35** son trifásicos sin escobillas, con regulación electrónica (AVR) con referencia de tensión trifásica.*

Están contruidos en conformidad con 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.

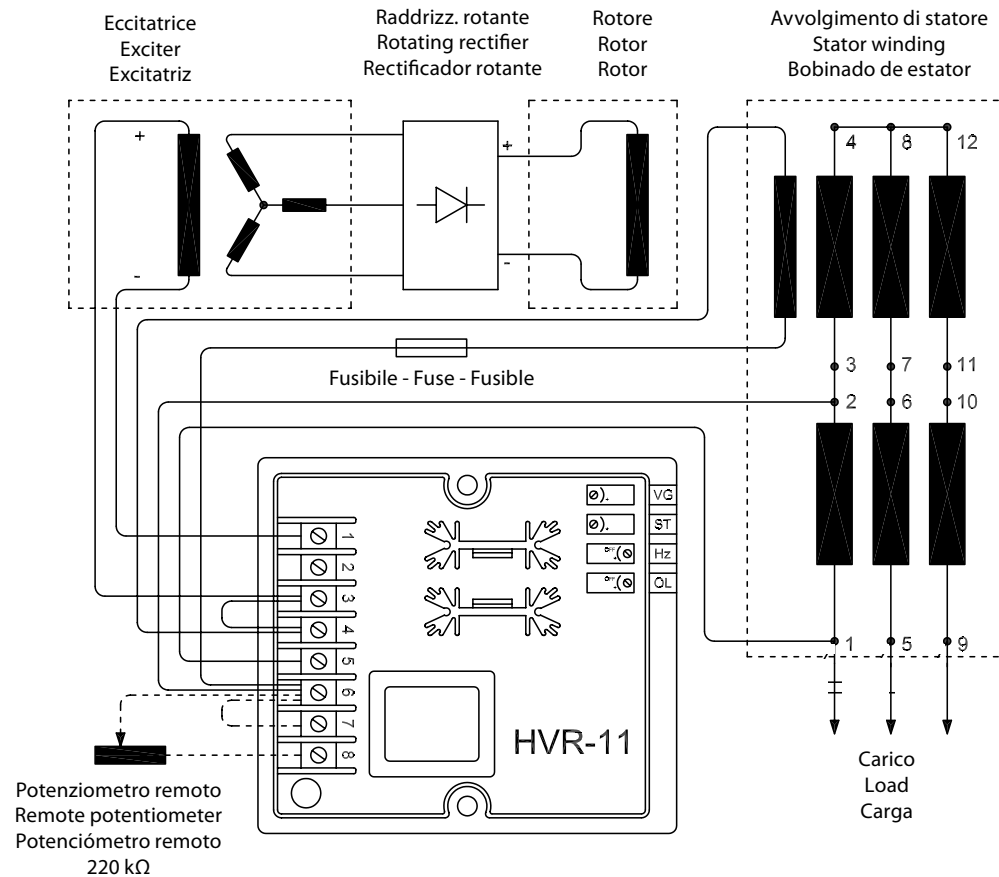
TIPO - TYPE	Potenza resa / Rating (kVA)					
	50 Hz			60 Hz		
	Cl. H T. amb 40°C	Cl. F T. amb 40°C	Stand by Cl. H T. amb 27°C	Cl. H T. amb 40°C	Cl. F T. amb 40°C	Stand by Cl. H T. amb 27°C
PRO35S B/4	450	405	495	540	485	590
PRO35S C/4	500	450	550	600	540	660
PRO35S D/4	550	495	605	660	590	725
PRO35M E/4	620	555	680	744	665	815
PRO35M F/4	680	610	745	816	730	890
PRO35M G/4	725	650	795	870	780	950

TIPO - TYPE	Potenza resa Rating (kVA)		Mom. di inerzia Mom. of inertia (kgm ²)			Peso Weight (kg)		Volume aria Air volume (m ³ /min)	
	50 Hz	60 Hz	B2	B2	B3/B14	B2 SAE	B3/B14	50 Hz	60 Hz
			SAE 14	SAE 18					
PRO35S B/4	450	540	8.742	9.088	8.188	1255	1265	54.7	65.6
PRO35S C/4	500	600	9.530	9.875	8.975	1340	1340	54.4	65.3
PRO35S D/4	550	660	9.983	10.345	9.403	1340	1350	54.3	65.2
PRO35M E/4	620	744	10.639	10.985	10.085	1485	1495	54.0	64.8
PRO35M F/4	680	816	12.017	12.363	11.463	1630	1635	53.6	64.3
PRO35M G/4	725	870	12.589	12.951	12.009	1640	1645	53.0	63.6

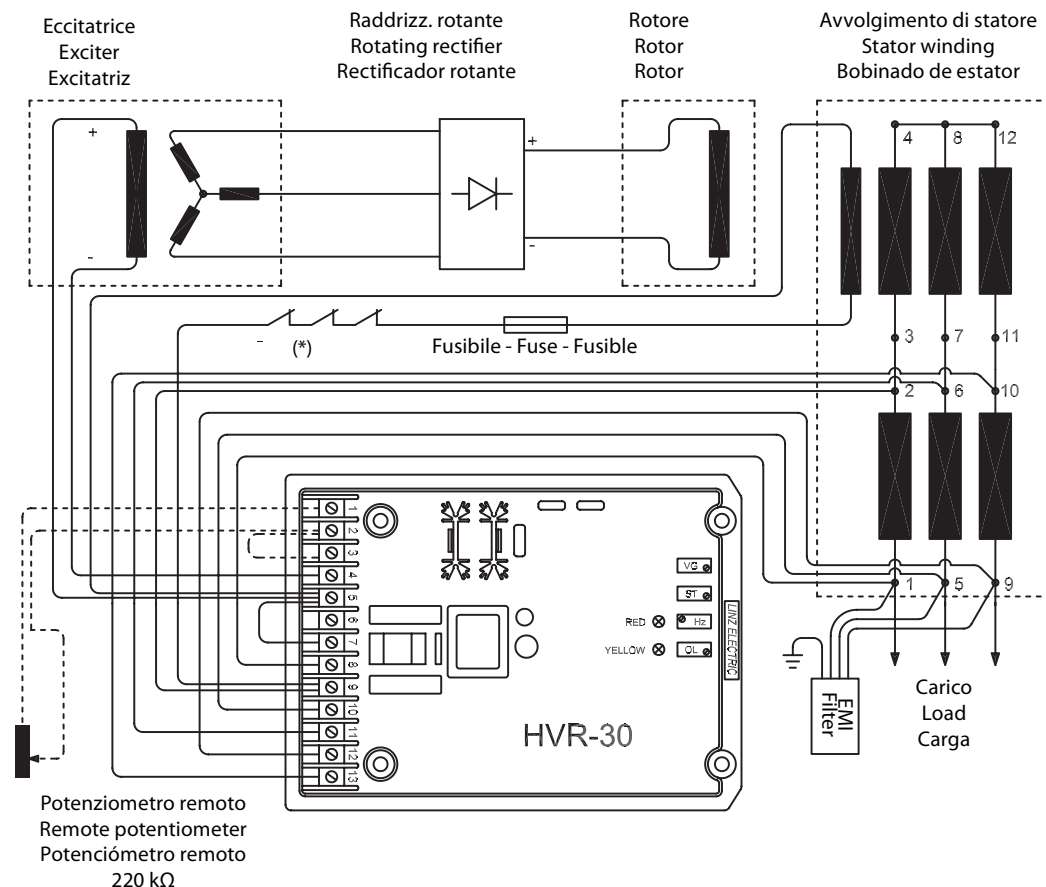
TIPO - TYPE	50 Hz - 1500 rpm - cosφ = 0,8 - S1					60 Hz - 1800 rpm - cosφ = 0,8 - S1				
	Potenza resa Rating (kVA)	Rendimento Efficiency (%)		Potenza assorbita Driving power		Potenza resa Rating (kVA)	Rendimento Efficiency (%)		Potenza assorbita Driving power	
		4/4	3/4	kW	HP		4/4	3/4	kW	HP
PRO35S B/4	450	94.2	94.7	382	513	540	95.2	95.5	454	609
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

TIPO - TYPE	Potenza re0sa		Reattanze e costanti di tempo / Reactances and time costants							Resist.avv. princ.	
	Rating (kVA)		pcc	Xd	X'd	X''d	Xq	T'do	T'd	T''d	Main Wind. resistance
	50 Hz	60 Hz									
PRO35S B/4	450	540	0.33	348	19	13	207	2156	118	12	0.0057
PRO35S C/4	500	600	0.34	338	17.5	12	209	2230	115	11	0.0049
PRO35S D/4	550	660	0.32	359	17	11	210	2298	109	10	0.0047
PRO35M E/4	620	744	0.33	348	17.5	11	213	2344	118	10	0.0045
PRO35M F/4	680	816	0.34	338	18	10	214	2425	129	9	0.0035
PRO35M G/4	725	870	0.35	329	19	10	215	2500	145	9	0.0033

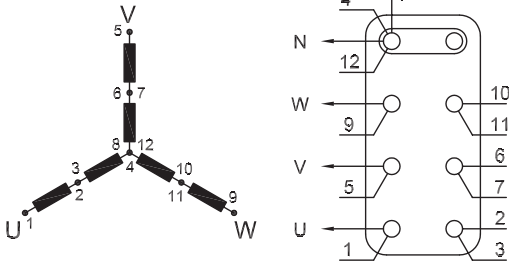
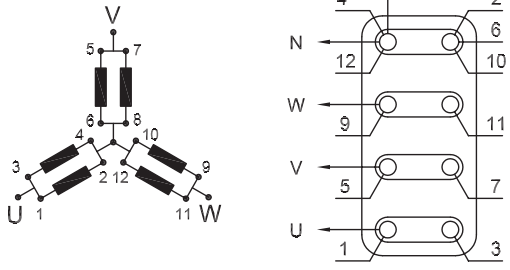
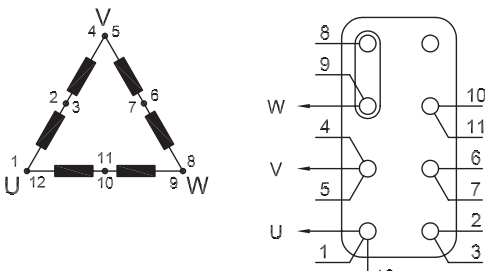
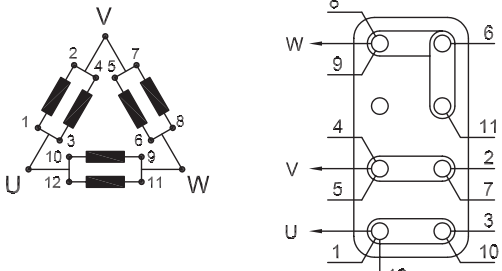
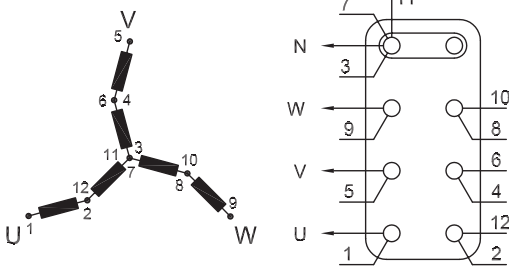
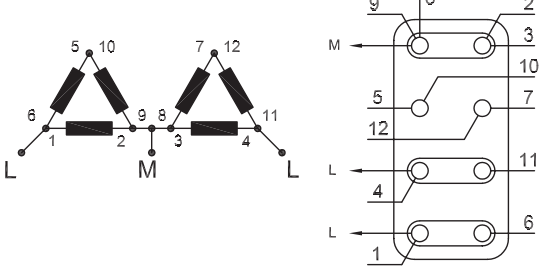
PRO18 PRO22

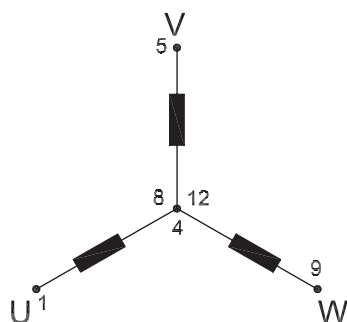


PRO28 PRO35



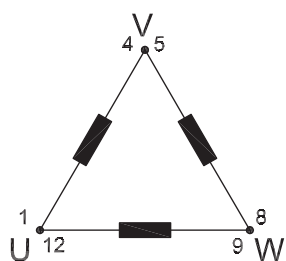
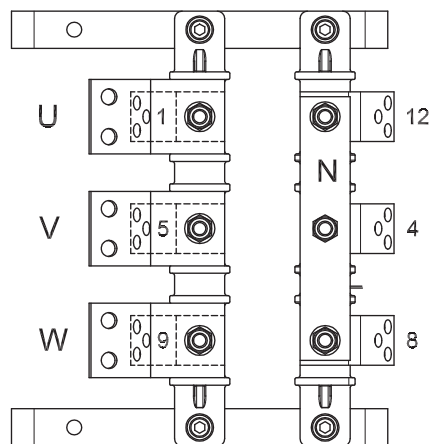
(*) Protettore termico a richiesta - Thermal protector on demand - Protectores térmicos a pedido

	
Collegamento stella serie + neutro Star series 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 series 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)



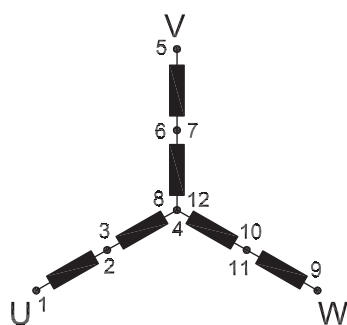
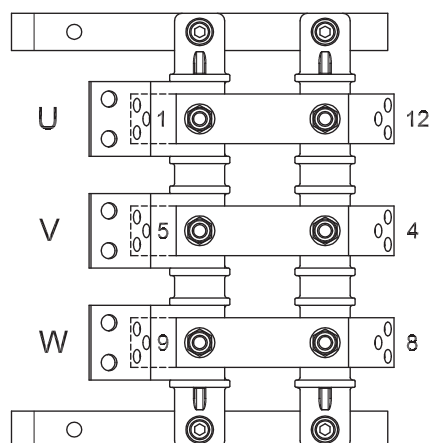
Collegamento stella + neutro
Star connection + neutral
Conexión estrella + neutro

230 / 400 V - 50 Hz
276 / 480 V - 60 Hz



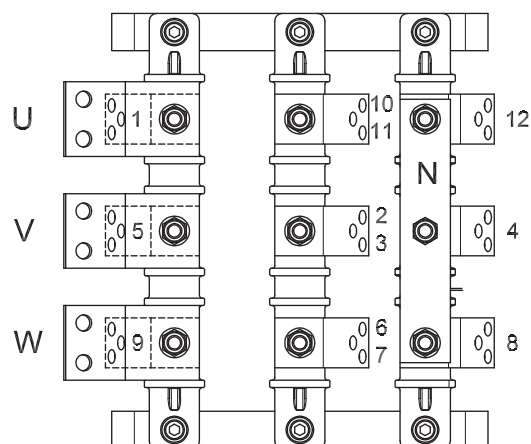
Collegamento triangolo
Delta connection
Conexión triángulo

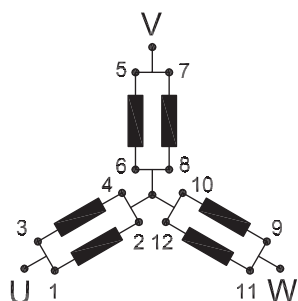
230 V a 50 Hz
276 V a 60 Hz



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

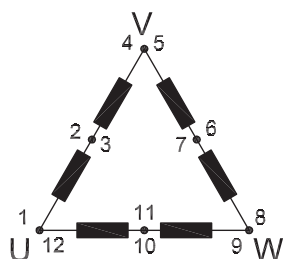
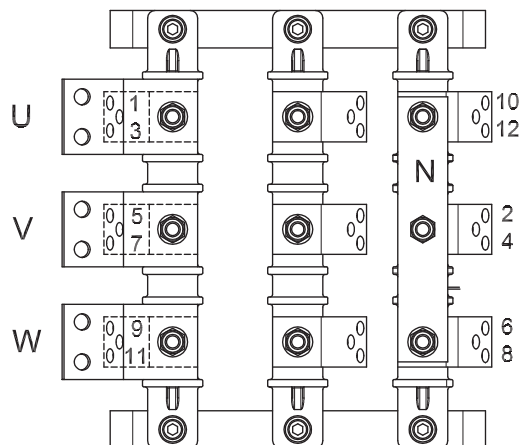
230 / 400 V - 50 Hz
276 / 480 V - 60 Hz





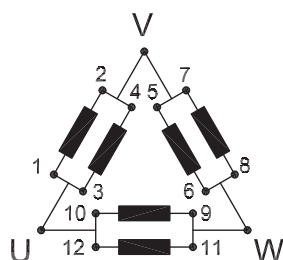
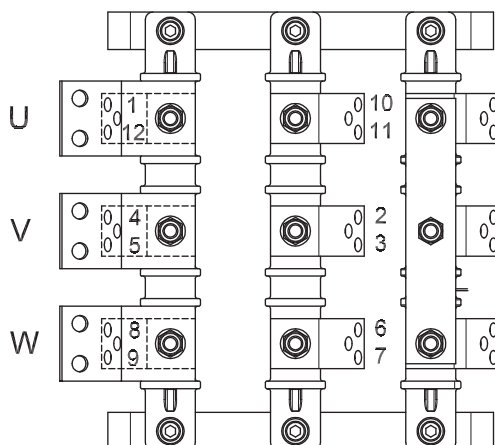
Collegamento stella parallelo + neutro
Star connection parallel + neutral
Conexión paralelo estrella + neutro

200/115 V a 50Hz
240/138 V a 60Hz



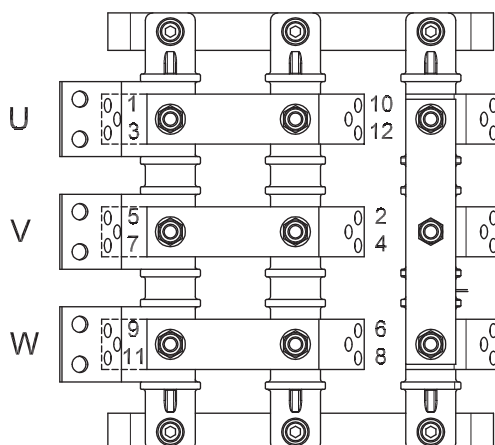
Collegamento triangolo serie
Delta serie connection
Conexión serie triángulo

230 V a 50 Hz
276 V a 60 Hz

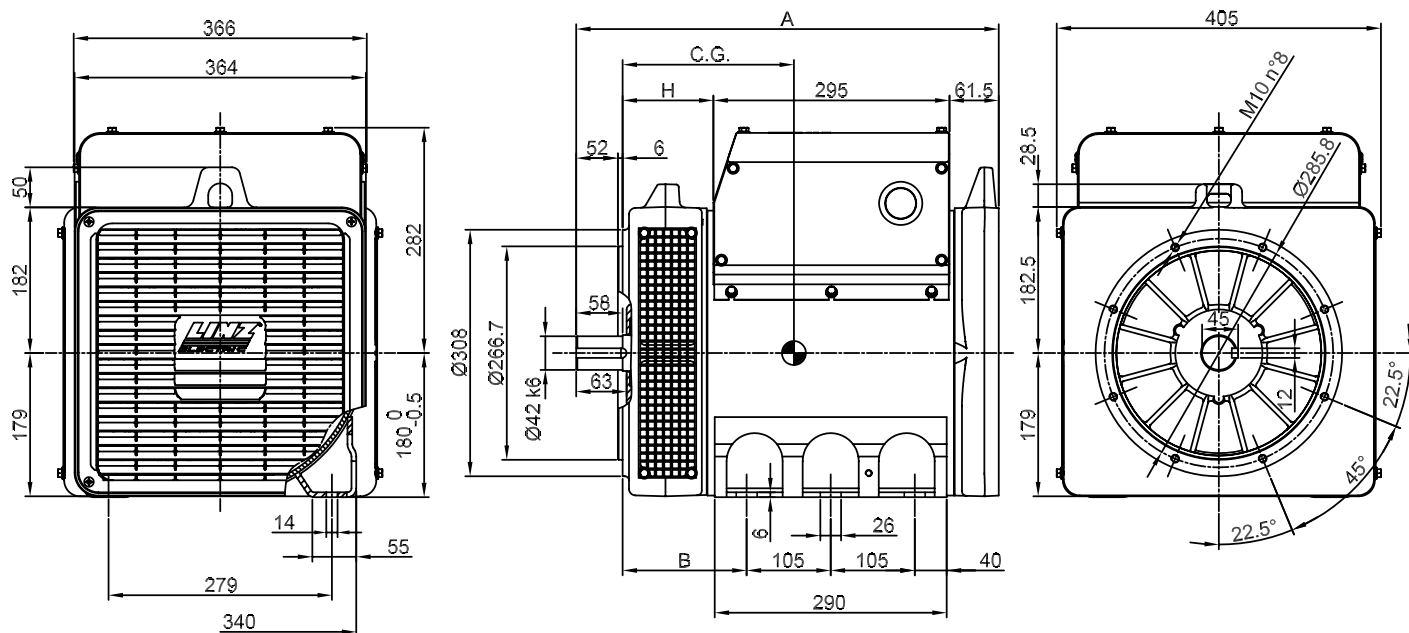


Collegamento triangolo parallelo
Delta parallel connection
Conexión paralelo triángulo

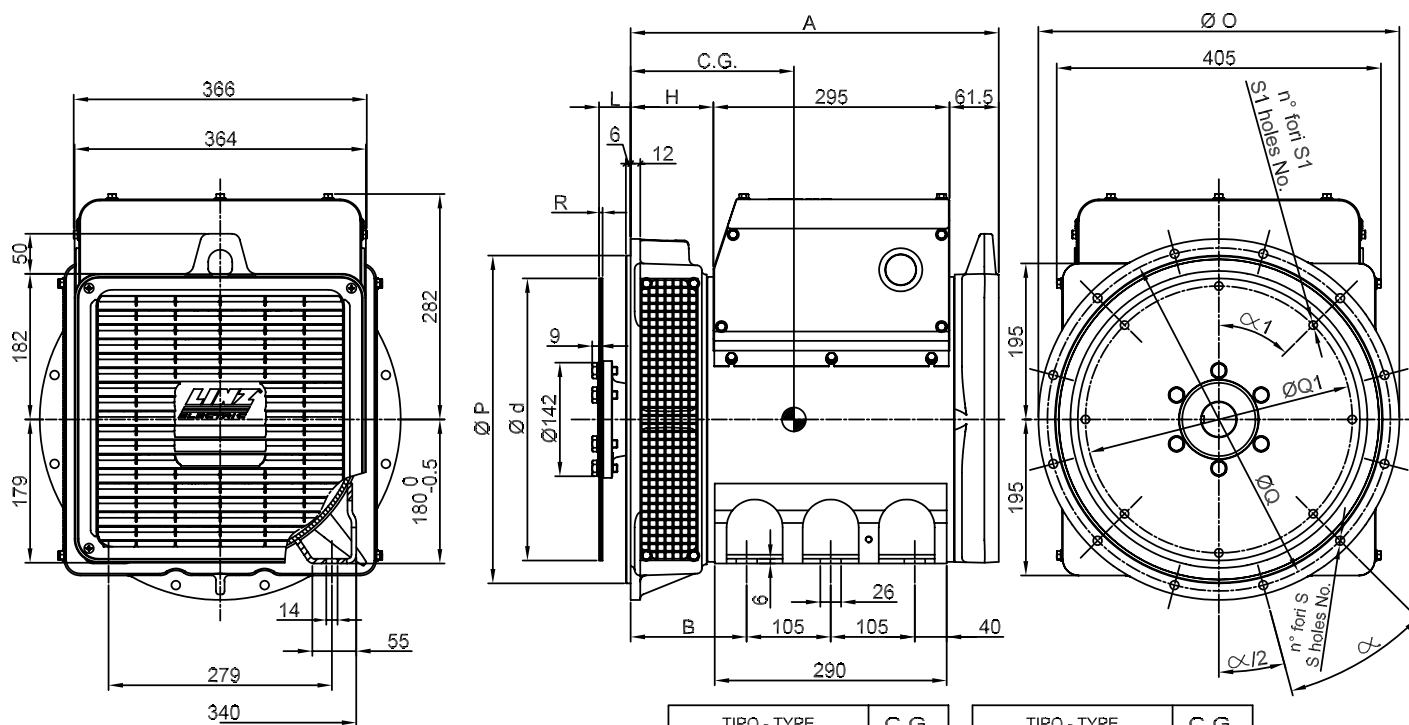
115 V a 50 Hz
138 V a 60 Hz



FORMA - FORM B3/B14



FORMA - FORM MD35



FORMA - FORM		A	B	H
B3/B14	PRO18S	528	155	113.5
	PRO18M	598		183.5
	PRO18L	710	260	295.5
MD35	PRO18S	460	145	103.5
	PRO18M	530		173.5
	PRO18L	642	250	285.5

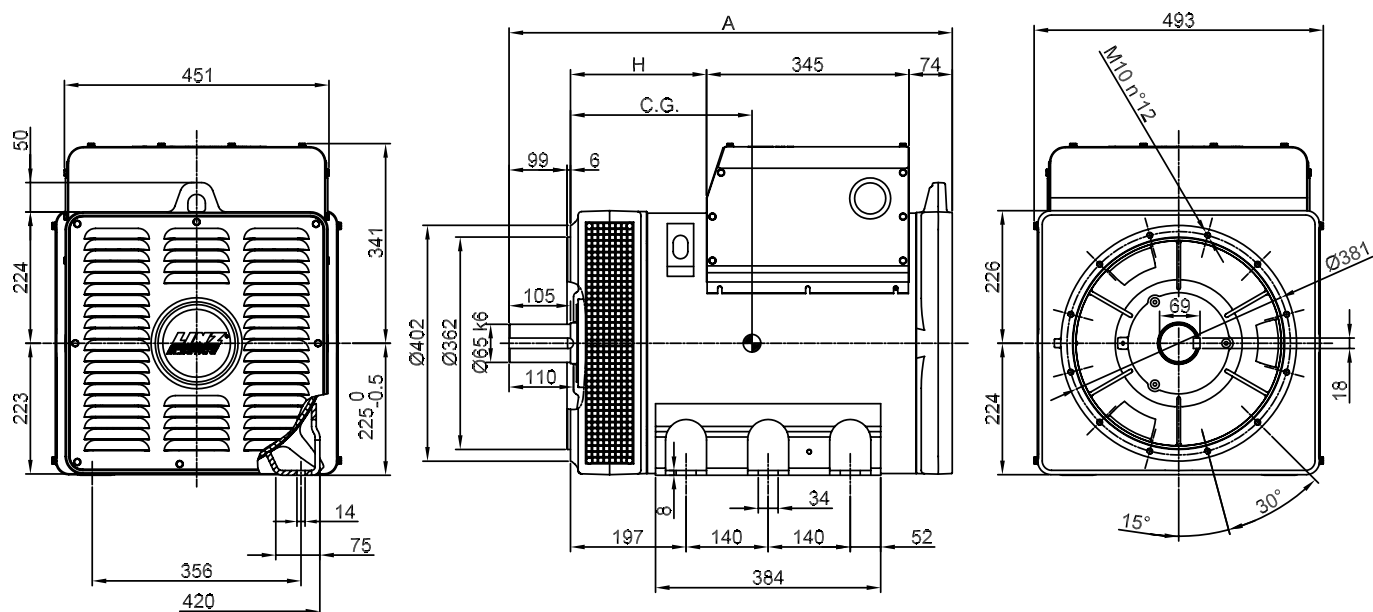
TIPO - TYPE	C.G.
PRO18S A/4 B3/B14	213
PRO18S B/4 B3/B14	217
PRO18S C/4 B3/B14	224
PRO18M D/4 B3/B14	247
PRO18M E/4 B3/B14	259
PRO18L F/4 B3/B14	298
PRO18L G/4 B3/B14	315

TIPO - TYPE	C.G.
PRO18S A/4 MD35	204
PRO18S B/4 MD35	208
PRO18S C/4 MD35	215
PRO18M D/4 MD35	238
PRO18M E/4 MD35	250
PRO18L F/4 MD35	289
PRO18L G/4 MD35	306

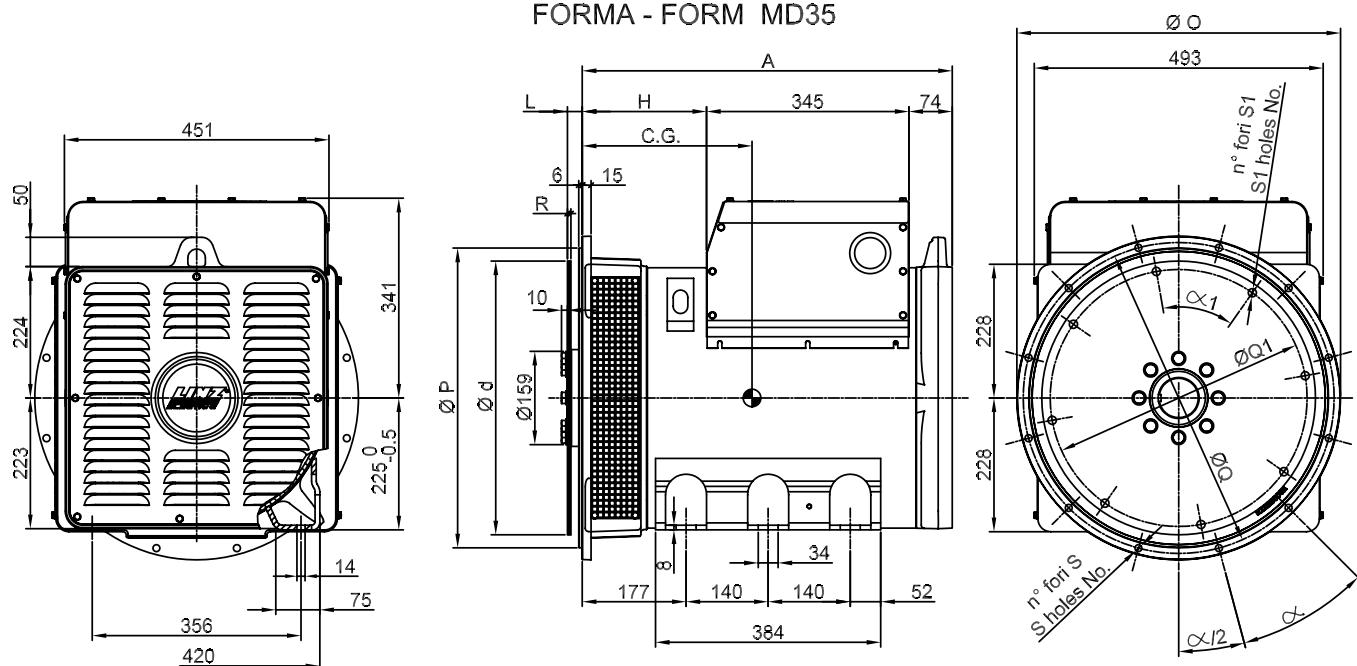
SAE N.	FLANGIE - FLANGES - BRIDAS					
	Ø O	Ø P	Ø Q	n. fori holes No.	S	α
5	356	314.3	333.4	8	11	45°
4	402	362	381	12		30°
3	451	409.6	428.6	12		30°
2	490	447.7	466.7	12		30°

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°	

FORMA - FORM B3/B14



FORMA - FORM MD35



FORMA - FORM		A	H
B3/B14	PRO22S	756	232
	PRO22M	886	362
MD35	PRO22S	631	212
	PRO22M	761	342

TIPO - TYPE	C.G.
PRO22S A/4 B3/B14	293
PRO22S B/4 B3/B14	297
PRO22S C/4 B3/B14	309
PRO22S D/4 B3/B14	322
PRO22M E/4 B3/B14	368
PRO22M F/4 B3/B14	385

TIPO - TYPE	C.G.
PRO22S A/4 MD35	279
PRO22S B/4 MD35	282
PRO22S C/4 MD35	294
PRO22S D/4 MD35	307
PRO22M E/4 MD35	353
PRO22M F/4 MD35	370

SAE N.	FLANGIE - FLANGES - BRIDAS					
	Ø O	Ø P	Ø Q	n. fori holes No.	S	α
3	451	409.6	428.6	12	12	30°
2	490	447.68	466.7			
1	552	511.18	530.2			

SAE N.	GIUNTI A DISCO - COUPLING DISCS- JUNTAS A DISCOS						
	L	Ø d	Ø Q1	n. fori holes No.	S1	α1	R
1 1/2	39.6	352.42	333.37	8	10.5	45°	6
14	25.4	466.72	438.15	8	14	45°	

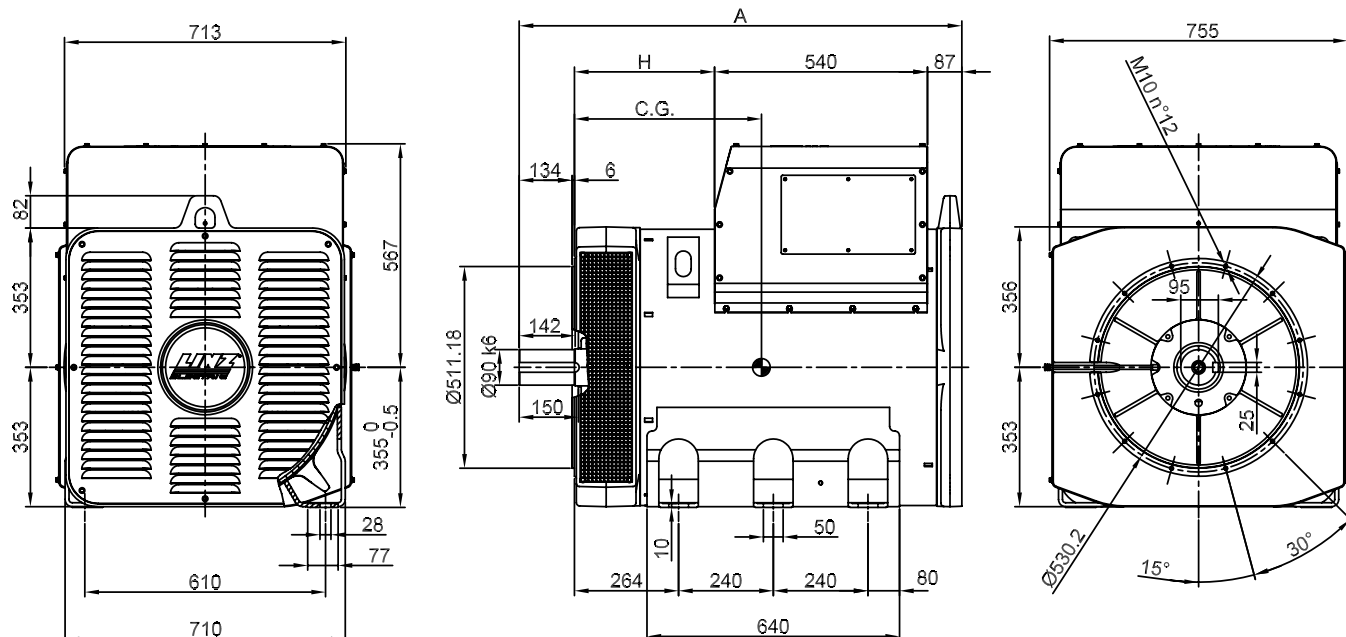
FORMA - FORM		A	B	H
B3/B14	PRO 28S	922	225	267
	PRO 28M	1072		417
	PRO 28L	1137	325	482
MD35	PRO 28S	817	225	267
	PRO 28M	967		417
	PRO 28L	1032	325	482

TIPO - TYPE	C.G.
PRO28S B/4	379
PRO28S C/4	393
PRO28S D/4	405
PRO28M E/4	451
PRO28M F/4	479
PRO28L G/4	513

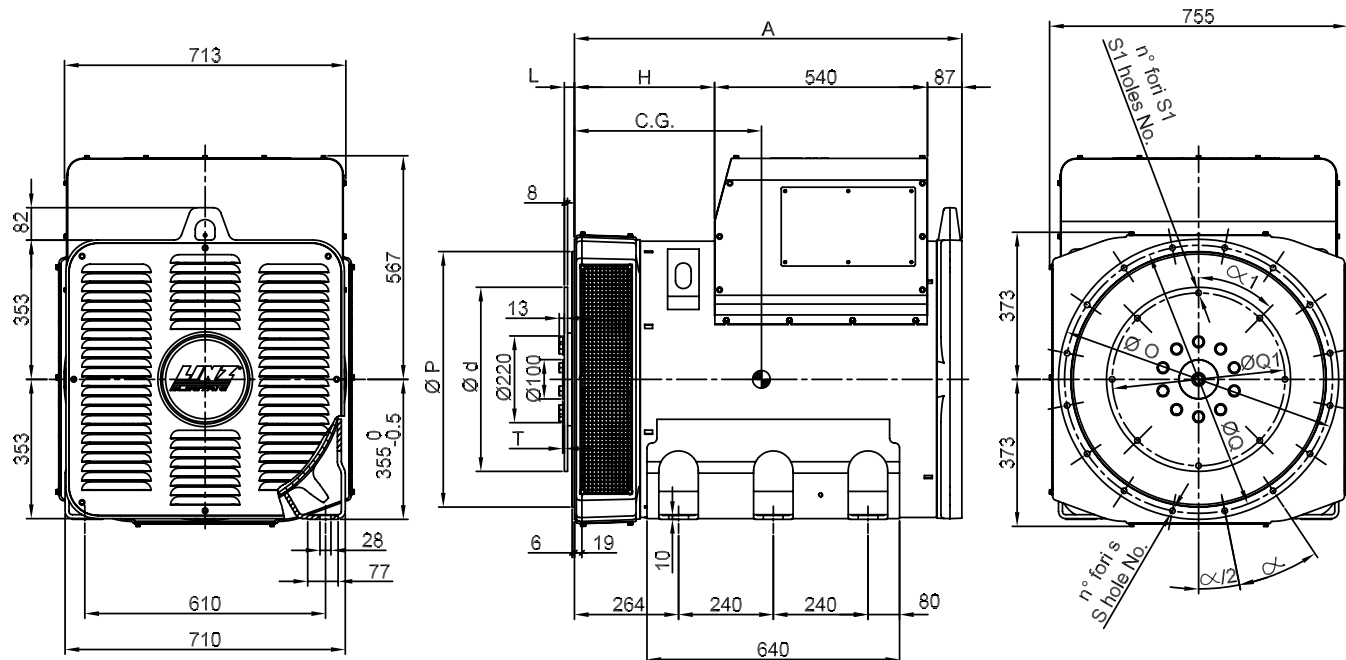
SAE N.	FLANGIE - FLANGES - BRIDAS					
	Ø O	Ø P	Ø Q	n. fori holes No.	S	α
3	451	409.6	428.6	12	12	30°
2	490	447.68	466.7			
1	552	511.18	530.2			

SAE N.	GIUNTI A DISCO -COUPLING DISCS- JUNTAS A DISCOS						
	L	Ø d	Ø Q1	n. fori holes No.	S1	α1	T
11 1/2	39.6	352.42	333.37	8	10.5	45°	0
14	25.4	466.72	438.15	8	14	45°	17.3

FORMA - FORM B3/B14



FORMA - FORM MD35

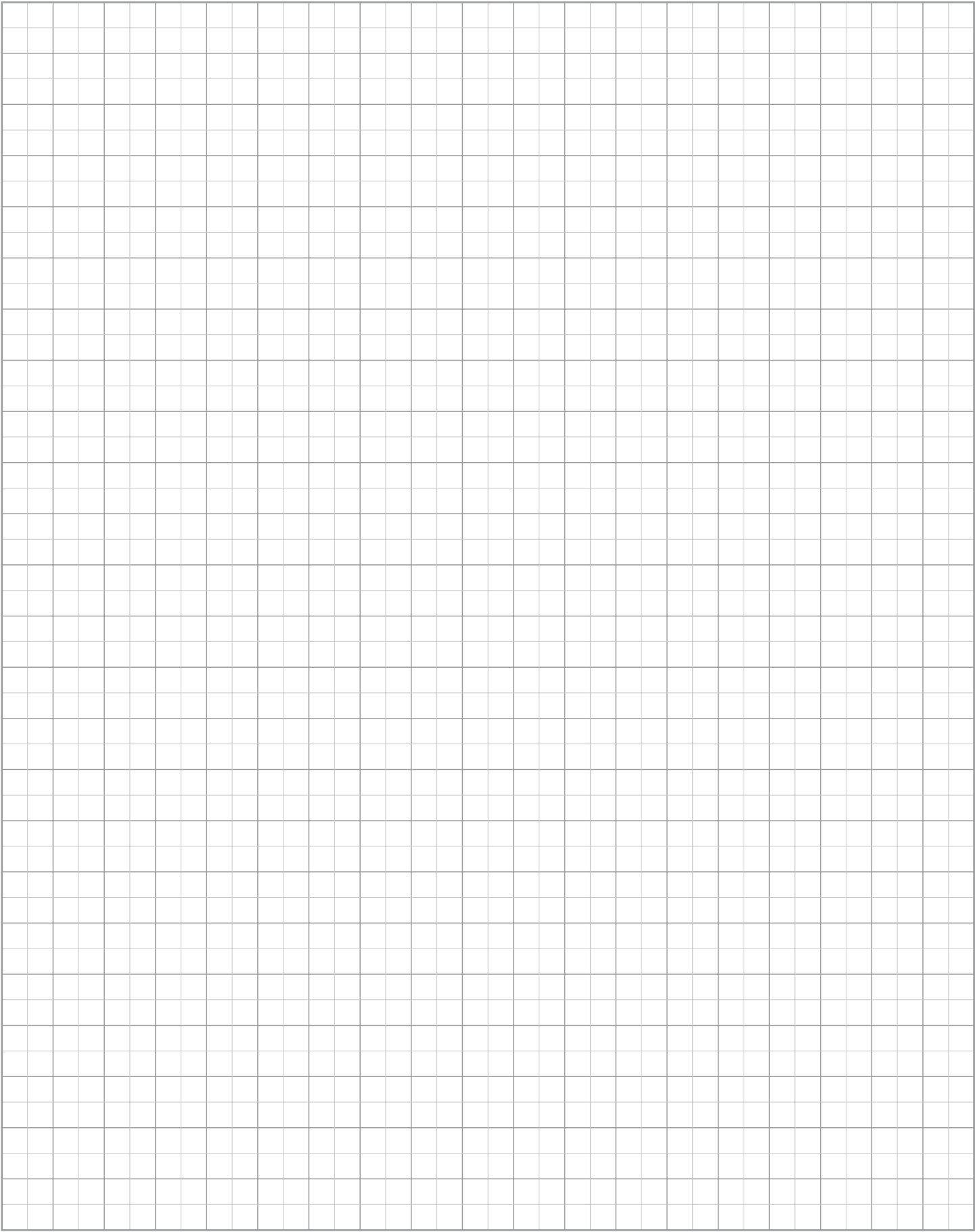


FORMA - FORM		A	H
B3/B14	PRO35S	1122	355
	PRO35M	1247	480
MD35	PRO35S	982	355
	PRO35M	1107	480

TIPO - TYPE	C.G.
PRO35S B/4	459
PRO35S C/4	472
PRO35S D/4	472
PRO35M E/4	510
PRO35M F/4	533
PRO35M G/4	533

SAE N.	FLANGIE - FLANGES - BRIDAS					
	Ø O	Ø P	Ø Q	n. fori holes No.	S	α
O	710	647.7	679.5	16	14	22.5°
1/2	650	584.2	619.2	12	14	30°
1	552	511.18	530.2	12	12	30°

SAE N.	GIUNTI A DISCO -COUPLING DISCS- JUNTAS A DISCOS						
	L	Ø d	Ø Q 1	n. fori holes No.	S1	α1	T
14	25.4	466.72	438.15	8	14	45°	4.3
18	15.7	571.5	442.92	6	17	60°	14





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InteliLite^{NT} AMF 9



SINGLE SET GEN-SET CONTROLLER

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



InteliLite^{NT} AMF 9 supports J1939 for all major brands:

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

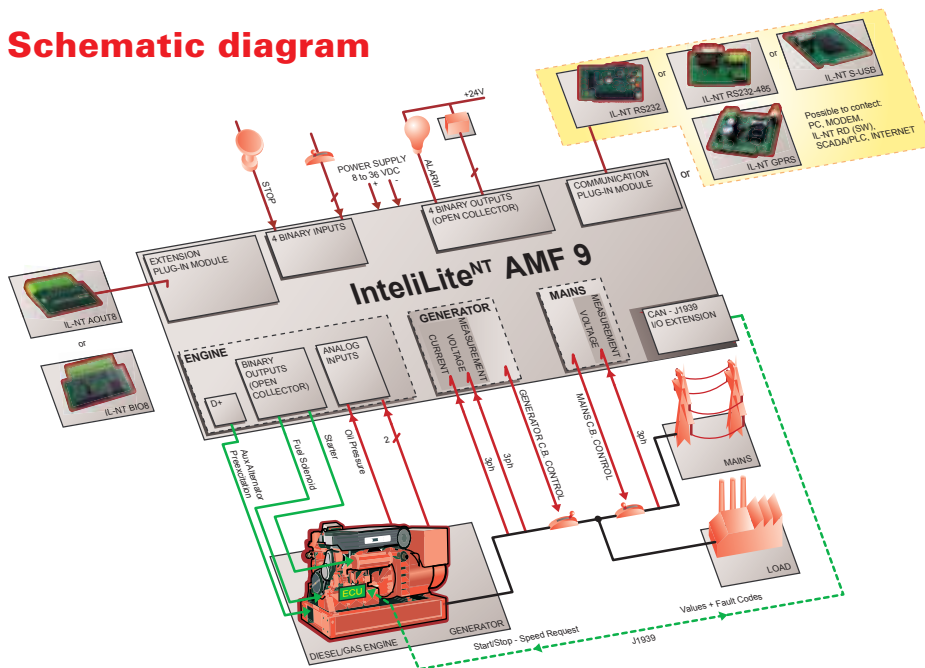
Features

- ▶ **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 x 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 x 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 IntelLite^{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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Czech Republic
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E-mail: info@comap.cz
Internet: www.comap.cz

LOCAL DISTRIBUTOR / PARTNER:



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