BRUNO GENERATORS

GX SERIES

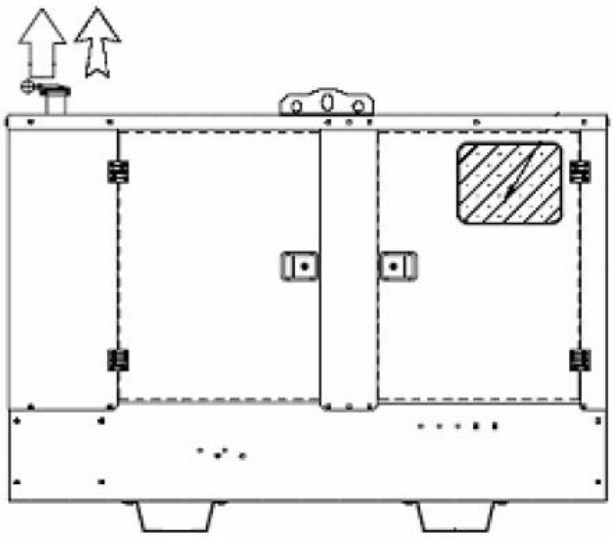
DI ESEL GENERATOR
GROUPE ELECTROGENE DI ESEL
GRUPO ELECTROGENO DI ESEL
GRUPPO ELETTROGENO DI ESEL

MODEL
MODELE
MODELO
MODELLO

GX71P

POWERED BY

SOUNDPROOF VERSION



GENERATING SET PERFORMANCE PERFORMANCES DU GROUPE PRESTACIONES DEL GRUPO PRESTAZIONI DEL GRUPPO		50 Hz		60 Hz	
Voltage Voltage Voltaje Tensione		V	400 / 230	V	220 / 127
Continuous Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	PRP	kVA	60	kVA	68
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	LTP	kVA	66	kVA	75
Continuous Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	PRP	kWe	48	kWe	54
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	LTP	kWe	53	kWe	60
Power factor Facteur de puissance Factor de potencia Fattore di potenza	cos φ		0,8		0,8
Fuel consumption Consommation combustible Consumo de combustible Consumo combustibile	70 %	l/h	9,3	l/h	11,0

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ENGINE MOTEUR MOTOR MOTORE		PERKINS		1103A-33TG2	
PERFORMANCE PERFORMANCES PRESTACIONES PRESTAZIONI		1500 rpm		1800 rpm	
Continuous Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	PRP	kWm	53,8	kWm	61,2
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	LTP	kWm	59,3	kWm	67,5
Specific fuel consumption Consommation spécifique combustible Consumo especifico de combustibile Consumo specifico combustibile		g/kWh	50 % 221 75 % 212 100 % 214 110 % 215	g/kWh	50 % 229 75 % 216 100 % 207 110 % 214
Diesel 4 Stroke – Injection type Diesel 4 temps – Type injection Diesel 4 tiempos – Tipo de inyeccion Diesel a 4 tempi – Tipo di iniezione					direct directe directa diretta
Aspiration type Type d'aspiration Tipo de aspiracion Tipo d'aspirazione					Turbocharged Suraalimentée sobrealimentato sovralimentata
Cooling system Refroidissement Sistema de refrigeracion Raffreddamento					Water Eau Agua Acqua
Speed governor Régulateur de tours Regulador Regolatore di giri					Mechanical Mécanique Mecanico Meccanico
Cylinders, numbers and arrangement Nombre et disposition des cylindres Cilindros, numero y disposicion Numero e disposizione dei cilindri					3 L
Total displacement Cylindrée totale Cilindrata total Cilindrata totale				cm^3	3.300
Bore x stroke Alésage x course Diametro x carrera Alesaggio x corsa				mm	105.0 x 127.0
Compression ratio Rapport de compression Relación de compresión Rapporto di compressione					17.25 :1
Engine electric system voltage Voltage système électrique moteur Voltaje sistema eléctrico motor Voltaggio sistema elettrico motore					12 V
Derating for temperature Déclassement pour temperature Declasamiento para temperatura Declassamento per temperatura				0 ÷ 25°C > 25 °C	0 2 % / 10°C
Derating for altitude Déclassement pour altitude Declasamiento para altitud Declassamento per altitudine				0 ÷ 1000 m > 1000m	0 1,5 % / 500 m

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ALTERNATOR ALTERNATEUR ALTERNADOR ALTERNATORE			LEROY SOMER		
PERFORMANCE PERFORMANCES PRESTACI ONES PRESTAZI ONI		1500 rpm		1800 rpm	
Model Modèle Modelo Modello		LSA 42.3L9		LSA 42.3L9	
Continuous Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	40 °C	kVA kWe	60 48	KVA kWe	69 55,2
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	40 °C	KVA kWe	63,6 50,9	KVA kWe	73,1 58,5
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	27 °C	KVA kWe	66 52,8	KVA kWe	75,9 60,7
Efficiency Rendement Eficienza Efficienza		1/4 2/4 3/4 4/4	90,6 % 92,1 % 91,6 % 90,5 %	1/4 2/4 3/4 4/4	90,8 % 92,6 % 92,2 % 91,1 %
Standard winding connections Liaison des bobinages Tipo de conexiòn Collegamento avvolgimenti		Y		YY	
Exciter Eccitatrice Excitador Eccitatrice	brushless rotating exciter design with solid state pivotante sans brosses avec pont de diodes pivotants puente de diodos sin escobillas rotantes rotante senza spazzole con ponte di diodi rotanti				
Poles Poles Polos Poli					4
Phases Phases Fases Fasi					3 + N
Wires Fils Hilos Morsetti					12
Voltage regulation Regulation Voltage Regulación voltaje Regolazione tensione					± 0,5 %
Waveform distortion Taux d'harmonique Distorciòn forma de onda Distorsione forma d'onda				IEC	< 2%
Insulation class Classe d' isolation Classe de aislamiento Classe di isolamento					H
Enclosure Degré de protection mécanique Grado de protecciòn mecanica Grado di protezione meccanica					IP 23
Maximun overspeed Survitesse Régimen màximo Velocità di fuga					2250 min
AVR model with 300% shortcircuit current Modèle AVR avec un courant de court-circuit du 300% Modelo AVR con una corriente de corto circuito del 300% Modello AVR con corrente di corto circuito del 300%				(3 In) : 10s	R 438 AREP
Derating for temperature Déclassement pour temperature Declasamiento para temperatura Declassamento per temperatura				0 ÷ 40°C > 40 °C	0 3 % / 5°C
Derating for altitude Déclassement pour altitude Declasamiento para altitud Declassamento per altitudine				0 ÷ 1500 m 1500 ÷ 2500 m 2500 ÷ 3000 m	0 3% / 500 m 4% / 500 m

BRUNO GENERATORS

LOGISTIC INFORMATION
INFORMATIONS LOGISTIQUES
INFORMATION LOGISTICA
INFORMAZIONI LOGISTICHE

	Integrated fuel tank capacity Capacité reservoir intergré Capacidad Tanque integrado Capacità Serbatoio integrato			Weight Poids Peso Peso	Dimensions Cotes d'encombrement Medidas externas Dimensioni d'ingombro		
	(L.)				(cm)		
	STD	EXTRA1	EXTRA2	(kg)	L	W	H
SOUND PROOF VERSION VERSION INSONORISEE VERSION INSONORISADA VERSIONE INSONORIZZATA	185	270	ON REQUEST	1220	230	113	171

GENSET STANDARD EQUIPMENT
EQUIPEMENT STANDARD GROUPE ELECTROGENE
EQUIPAMIENTO STANDARD GRUPO ELECTROGENO
EQUIPAGGIAMENTO STANDARD GRUPPO ELETTROGENO

GB	F	E	I
• Lifting eye • Vibration dampers • Integrated bunded fuel tank • Battery • Manual autostart control panel With DSE7310 • Emergency stop button • Sound proof canopy of galvanized steel with residential silencer • Fork lift guides	• Crochet de levage • Amortisseurs de vibrations • Réservoir intégré avec bac de rétention • Batterie • Coffret de contrôle manuel autostart avec DSE7310 • Bouton arrêt d'émergence • Capote d'insonorisation d'acier galvanisé avec silencieux résidentiel • Supports pour fourches	• Gancho central • Apagadores de vibracion • Tanque combustible integrado con bandeja para la recogida de líquidos • Bateria • Cuadro manual autostart con DSE7310 • Botón parada de emergencia • Cabina de insonorización de acero cincado con silenciador residencial • Supportes para carrettilla	• Gancio centrale di sollevamento • Antivibranti • Serbatoio integrato con vasca di raccolta liquidi • Batteria • Quadro manuale autostart con DSE7310 • Pulsante arresto di emergenza • Cabina di insonorizzazione di acciaio zincato con marmitta residenziale • Porta forche

MANUAL AUTOSTART CONTROL PANEL
COFFRET ELECTRIQUE MANUEL AUTOSTART
CUADRO ELECTRICO MANUAL AUTOSTART
QUADRO ELETTRICO MANUALE AUTOSTART

Q 7310 AUS

100A (400 V - 3 ph - 50Hz – 1500 rpm)
200A (220 V - 3 ph - 60Hz - 1800 rpm)

STANDARD EQUIPMENT:	EQUIPEMENT STANDARD:	EQUIPAMIENTO STANDARD:	EQUIPAGGIAMENTO STANDARD:
4 poles circuit breaker	Disjoncteur de protection 4 pôles	Interruptor magnetotermico 4 polos	Interruttore magnetotermico 4 poli
Electronic control board DSE 7310	Fiche électronique DSE 7310	Carta electronica DSE 7310	Scheda elettronica DSE 7310
Control panel box key	Clé pour serrure du coffret	Llave cuadro	Chiave quadro
Emergency Stop button	Interrupteur d'arrêt d'émergence	Botón de parada de emergencia	Pulsante di arresto di emergenza

DSE 7310

CONTROL BOARD
CARTE ELECTRONIQUE DE CONTROL
CARTA ELECTRONICA DE CONTROL
SCHEDA ELETTRONICA DI CONTROLLO

PROTECTIONS	PROTECTIONS	PROTECCIONES	PROTEZIONI
Low oil pressure	Basse pression huile moteur	Baja presión aceite	Bassa pressione olio
High engine temperature	Haute température moteur	Elevada temperatura motor	Alta temperatura motore
Low fuel level	Basse niveau combustible	Baja nivel carburante	Basso livello di carburante
Fail to start	Non démarrage	Falta de arranque	Mancato avviamento
Fail to stop	Non arrêt	Falta de parada	Mancato arresto
Emergency stop	Arrêt d'urgence	Parada de emergencia	Stop d'emergenza
Over/under generator frequency	Sur/sous générateu fréquence	Sobre/bajo generatore frecuencia	Sovra/sotto frequenza generatore
Over/under generator voltage	Sur/sous générateu voltage	Sobre/bajo generatore voltaje	Sovra/sotto voltaggio generatore
Over/under speed	Sur/sourvitesse	Sobre/bajo velocitad	Sovra/sotto velocità
Fuel level	Niveau de combustible	nivel de combustibile	Livello del carburante
Belt breakage	Rupture courroie	Ruptura correa	Rottura cinghia
Over current	Surcourant	Corriente maxima	Sovracorrente
Over/under battery voltage	Sur/sus la tension de batterie	Sobre/bajo voltaje de la batería	Sovra/sotto tensione della batteria
DIGITAL METERS	**VOYANT NUMERIQUE POUR**	**VISOR DIGITAL PARA**	**MISURATORE DIGITALE PER**
Generator volts (3 phases)	Voltmètre générateur (3 phases)	Voltimetro (3 fases)	Voltmetro tensione generatore (3 fasi)
Generator amperes (3 phases)	Ampèremètre générateur (3 phases)	Amperimetro (3 fases)	Amperometro generatore (3 fasi)
Generator frequency	Fréquencemètre générateur	Frecuencimetro	Frequenzimetro generatore
KW-meter	KW-mètre	KW- metro	KW- metro
kVA-meter	kVA- mètre	kVA- metro	kVA- metro
Cos φ- meter	Cos φ- mètre	Cos φ-metro	Cos φ-metro
Rpm meter	Tm mètre	Revolutiones por minuto metro	Gm metro
Gen set hours counter	Totalisateur d'heures de marche	Medida horas de marcha	Contaore di funzionamento gruppo
Battery Volts	Voltmètre batterie	Voltimetro batería	Voltmetro batteria

BRUNO GENERATORS

AUTOMATIC CONTROL PANEL
COFFRET ELECTRIQUE AUTOMATIQUE
CUADRO ELECTRICO AUTOMATICO
QUADRO ELETTRICO AUTOMATICO

1) Q 7320 ATS

COMPLETE CONTROL PANEL FREE STANDING TYPE
Equipment: control board, circuit breaker, battery charger, transfer switch, box key.

COFFRET ELECTRIQUE COMPLET TYPE ARMOIRE SEPARE DU GROUPE
Equipement : carte électronique de contrôle, disjoncteur de protection, chargeur de batterie, inverseur de source, clé coffret.

CUADRO ELECTRICO COMPLETO EN ARMARIO SEPARADO DEL GRUPO
Equipamiento: carta electronica de controllo, interruptor magnetotermico, cargador de bateria, transferencial, llave quadro.

QUADRO ELETTRICO COMPLETO SEPARATO DAL GRUPPO
Equipaggiamento: scheda elettronica di controllo, interruttore magnetotermico, carica batteria, telecommutazione e chiave quadro.

2) Q 7320 AMF

AMF CONTROL PANEL FITTED ON THE GEN-SET WITHOUT TRANSFER SWITCH
Equipment: control board, circuit breaker, battery charger, box key.

COFFRET ELECTRIQUE MONTE SUR LE GROUPE SANS INVERSEUR DE SOURCE
Equipement : carte électronique de contrôle, disjoncteur de protection, chargeur de batterie, clé coffret.

CUADRO ELECTRICO MONTADO SOBRE EL GRUPO SIN TRANSFERENCIAL
Equipamiento: carta electronica de controllo, interruptor magnetotermico, cargador de bateria, llave quadro.

QUADRO ELETTRICO MONTATO SUL GRUPPO ELETTROGENO SENZA TELECOMMUTAZIONE
Equipaggiamento: scheda elettronica di controllo, interruttore magnetotermico, carica batteria, chiave quadro.

3) Q 7320 STS

CONTROL PANEL FITTED ON THE GEN-SET WITH TRANSFER SWITCH SUPPLIED IN A SEPARATED BOX
Equipment: control board, circuit breaker, battery charger, box key, separate transfer switch.

COFFRET ELECTRIQUE MONTE SUR LE GROUPE + INVERSEUR DE SOURCE FOURNI DANS UN COFFRET SEPARE
Equipement : carte électronique de contrôle, disjoncteur de protection, chargeur de batterie, inverseur de source separé, clé coffret.

CUADRO ELECTRICO MONTADO SOBRE EL GRUPO CON TRANSFERENCIAL SEPARADO
Equipamiento: carta electronica de controllo, interruptor magnetotermico, cargador de bateria, llave quadro, transferencial separado.

QUADRO ELETTRICO MONTATO SUL GRUPPO ELETTROGENO CON TELECOMMUTAZIONE SEPARATA
Equipaggiamento: scheda elettronica di controllo, interruttore magnetotermico, carica batteria, chiave quadro, telecommutazione in armadio separato.

DSE 7320

CONTROL BOARD
CARTE ELECTRONIQUE DE CONTROL
CARTA ELECTRONICA DE CONTROL
SCHEDA ELETTRONICA DI CONTROLLO

GB	F	E	I
The DSE7320 is an Automatic Mains Failure Control Module designed to automatically start and stop diesel generating sets that include electronic and non electronic engines. The module also provides excellent genset monitoring and protection features.	La DSE7320 est une carte de contrôle projetée pour démarrer et arrêter automatiquement groupes électrogènes diesels avec moteurs électroniques et non électroniques. La carte représente un système excellent de contrôle et de protection du groupe électrogène.	La DSE7320 es una carta de control para arranquar y parar automáticamente grupos electrógenos diesel con motores electrónicos y no electrónicos. La carta constituye un excelente sistema de control y protección del grupo electrógeno.	La DSE7320 è una scheda di controllo progettata per avviare e arrestare automaticamente gruppi elettrogeni diesel con motori elettronici e non elettronici. La scheda costituisce un eccellente sistema di controllo e di protezione del gruppo elettrogeno.
FEATURES	EQUIPEMENT	EQUIPMENT	EQUIPAGGIAMENTO
Stop/reste – Auto – Manual – Start	Fiche électronique de contrôle DSE7320	Ficha electrónica de control DSE7320	Scheda elettronica di controllo DSE7320
LCD display scroll	Disjoncteur de protection	Interruptor magnetorermico	Interruttore magnetotermico
Event log view	Chargeur de batterie	Cargador de batería	Carica batteria
Acustic alarm	Bouton poussoir arrête d'émergence	Boton de parada de emergencia	Pulsante stop emergenza
DIGITAL MEASURING	MESURES NUMERIQUES	MEDIDAS DIGITALES	MISURAZIONI DIGITALI
Generator volts (3 phases)	Voltmètre générateur (3 phases)	Voltimetro (3 fases)	Voltmetro tensione generatore (3 fasi)
Generator amperes (3 phases)	Ampèremètre générateur (3 phases)	Amperimetro (3 fases)	Amperometro generatore (3 fasi)
Generator frequency	Fréquencemètre générateur	Frecuencimetro	Frequenzimetro generatore
KW-meter	KW-mètre	KW- metro	KW- metro
kVA-meter	kVA- mètre	kVA- metro	kVA- metro
Cos φ- meter	Cos φ- mètre	Cos φ-metro	Cos φ-metro
Rpm meter	Tm mètre	Revolutiones por minuto metro	Gm metro
Water temperature (optional)	Température eau (facultatif)	Termometro agua (opcional)	Temperatura acqua (facoltativo)
Oil pressure (optional)	Pression huile (facultatif)	Presión aceite (opcional)	Pressione olio (facoltativo)
Gen set hours counter	Totalisateur d'heures de marche	Medida horas de marcha	Contaore di funzionamento gruppo
Mains volts	Voltmètre secteur	Voltimetro tensión de red	Voltmetro tensione rete
Battery volts	Voltmètre batterie	Voltimetro batería	Voltmetro batteria
Mains frequency	Fréquence réseau	Frequencia red	Frequenza rete
Charging voltage	Tension de charge	Tensión de carga	Tensione di carica
Start-counter	Compteur démarrages	Numero de arranques	Contavviamenti
Fuel level %	Niveau combustible %	Nivel carburante %	Livello carburante %
INDICATORS	INDICATEURS	INDICADORES	INDICATORI
Mains live	Présence secteur	Presencia tensión de red	Presenza tensione di rete
Generator live	Présence tension générateur	Presencia tensión grupo	Presenza tensione generatore
Mains contactor closed	Inverseur secteur fermé	Transferencial red cerrado	Erogazione da rete
Generator contactor closed	Inverseur générateur fermé	Transferencial grupo cerrado	Erogazione da gruppo
Engine running	Moteur en marche	Motor en marcha	Motore avviato
PROTECTIONS	PROTECTIONS	PROTECCIONES	PROTEZIONI
Low oil pressure	Bas pression huile moteur	Baja presión aceite	Bassa pressione olio
High engine temperature	Haute température moteur	Elevada temperatura motor	Alta temperatura motore
Low fuel level	Bas niveau combustible	Baja nivel carburante	Basso livello di carburante
Fail to start	Non démarrage	Falta de arranque	Mancato avviamento
Fail to stop	Non arrêt	Falta de parada	Mancato arresto
Emergency stop	Arrêt d'urgence	Parada de emergencia	Stop d'emergenza
Over/under frequency	Sur/sous fréquence	Sobre/bajo frecuencia	Sovra/sotto frequenza
Over/under voltage	Sur/sous voltage	Sobre/bajo voltaje	Sovra/sotto voltaggio
Over/under speed	Sur/sous vitesse	Sobre/bajo velocitad	Sovra/sotto velocità
Fuel level	Niveau de combustible	nivel de combustibile	Livello del carburante
Belt breakage	Rupture courroie	Ruptura correa	Rottura cinghia
Over current	Surcourant	Corriente maxima	Sovracorrente
Over/under battery voltage	Sur/sus la tension de batterie	Sobre/bajo voltaje de la batería	Sovra/sotto tensione della batteria

BRUNO GENERATORS

SOUNDPROOF CANOPY
CAPOTE D'INSONORISATION
CAPOTA DE INSONORIZACION
CABINA INSONORIZZATA

GB	F	E	I
The Bruno Super Silent soundproof canopy has been designed with the aim of achieving the maximum noise level reduction and to provide a perfect cooling of the engine. The cooling airflow is forced through fixed circuits. The canopy is suitable for tropical ambient application. The exhaust gas silencer is residential type internally mounted. The canopy is completely built of hot galvanized carbon sheet steel. The sheets have a thickness 20/10. The structure is fully bolted, fixed by a special polyethylene sealing, completely free from electrical installation. All the panels can be easily removed. The cab is provided with doors of wide opening for easy access to generating set for the maintenance operations. The soundproofing materials are highly fire resistant and self-extinguishing.	La capote insonorisée Bruno Super Silent à été conçue pour atteindre le niveau de bruit le mineur possible et un refroidissement du moteur parfait. Le souffle d'air refroidissant est canalisé en circuits fixes. La capote est apte à être utilisée dans les ambiances tropicales. Le silencieux des gaz d'échappement, de type résidentiel, est mis à l'intérieur de la capote. La cabine est construite en acier galvanisé à chaud. Les tôles ont une épaisseur de 20/10. La structure est complètement boulonnée et fixée à travers des garnitures spéciales au polyéthylène. Tous les panneaux sont facilement amovibles. La cabine est dotée de portes avec grandes ouvertures qui permettent un accès facile au groupe électrogène pour les opérations de manutention. Les matériaux d'insonorisation sont fortement résistant au feu et auto-extinguibles.	La capota insonorizada Bruno Super Silent tiene sido planeada con el objetivo de alcanzar el menor nivel de rumorosidad posible y un perfecto enfriamiento del motor. El soplo de aire es canalizado en circuitos fijos. La cabina es apta a ser utilizada en ambientes tropicales. El silenciador de los gases de descargue, de tipo residencial, es colocado dentro de la cabina. La cabina es construida en acero cincado. Las chapas tienen un espesor de 20/10. La estructura es completamente bullonata y montada con sellos especiales de polietilene. Todos los paneles son fácilmente removibles. La cabina es dotada con puertas con amplias aberturas que permiten el fácil acceso al grupo electrógeno por las operaciones de manutención. Los materiales insonorizantes son muy resistentes al fuego y auto-exinguentes.	La cabina insonorizzata Bruno Super Silent è stata progettata allo scopo di raggiungere il minor livello di rumorosità possibile e un perfetto raffreddamento del motore. Il soffio d'aria raffreddante è canalizzato in circuiti fissi. La cabina è adatta ad essere utilizzata in ambienti tropicali. Il silenziatore dei gas di scarico, di tipo residenziale, è collocato all'interno della cabina. La cabina è costruita in acciaio zincato a caldo. Le lamiere hanno uno spessore di 20/10. La struttura è completamente bullonata e fissata tramite speciali sigilli al polietilene. Tutti i pannelli sono facilmente rimovibili. La cabina è dotata di porte con ampie aperture che consentono il facile accesso al gruppo elettrogeno per le operazioni di manutenzione. I materiali insonorizzanti sono altamente resistenti al fuoco e autoestinguenti.

Our quality in 13 points
Notre qualité résumée en 13 points
Nuestra calidad en 13 puntos
La nostra qualità in 13 punti

1	Internal residential silencer for lower sound levels Silencieux interne pour un niveau bas de bruit Silenciador interno para un nivel de rumorosidad más bajo Silenziatore interno per un livello di rumorosità piú basso
2	Integrated fuel tank of different sizes Réservoirs de combustible disponibles, sur demande, de capacité supérieure Tanques integrados disponibles, como opción, de capacidad superior Serbatoi integrati disponibili, su richiesta, di capacità superiore
3	Control panel viewing window to easily check status of generating set Fenêtre de visualisation du panneau de contrôle pour un contrôle plus facile du status opérationnel du groupe Ventana de visualización del panel de control por un más fácil control del estatus operativo del grupo Finestra di visualizzazione del pannello di controllo per un piú facile controllo dello status operativo del gruppo
4	Lockable access doors for extra safety and security Porte d'accès avec serrure pour une sûreté majeure Puertas de acceso con cerradura para una mayor seguridad Porte di accesso con serratura per una maggiore sicurezza
5	Galvanized bolts Boulons galvanisés Pernos cincados Bulloni zincati
6	Emergency stop button Interrupteur d'arrêt d'urgence Botón parada de emergencia Pulsante arresto di emergenza
7	Fuel tank cap with external key Bouchon gasoil avec clé positionne a l'extérieur Tapo gasoleo con llare situado a l'externo Tappo gasolio con chiave posizionato all'esterno
8	Fully bunded baase frame Réservoir amovible avec bague de retention Tanque integrado sfilabile con el envase para recoger los liquidos Serbatoio integrato sfilabile con vasca raccolta liquidi
9	Central lifting hook Crochet central d'enlèvement Gancho de elevación Gancio di sollevamento centrale
10	Doors location convenient to controls and service area Placement des portes pour rendre les contrôles plus faciles Colocación de las puertas para facilitar los controles Collocazione delle porte per facilitare i controlli
11	High serviceability level Haut niveau d'accessibilité pour la manutention Alto nivel de accesibilidad para la manutención Alto livello di accessibilità per la manutenzione
12	Large cable entry area for easy installation Grande zone d'entré des câbles pour une installation plus facile Amplia área de entrada cables para una instalación fácil Ampia area di entrata cavi per una facile installazione
13	Galvanized metal steel sheet pre-treated prior to powder coating Tôles en acier galvanisé pré-traitées avant le vernissage à poudre Chapas de acero cincado pre-tratadas antes de la pintura a polvo Lamiere di acciaio zincato pre-trattate prima della verniciatura a polvere

1100 Series 1103A-33TG2 Diesel Engine – ElectropaK

59.3 kWm at 1500 rpm
67.5 kWm at 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-33TG2 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.

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
- 2 year warranty

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

Engine Speed (rev/min)	Type of Operation	Typical Generator Output (Net)		Engine Power			
				Gross		Net	
		kVA	kWe	kWm	bhp	kWm	bhp
1500	Prime Power	60.0	48.0	55.0	73.8	53.8	72.1
	Standby Power	66.0	52.8	60.5	81.1	59.3	79.5
1800	Prime Power	68.1	54.5	63.3	84.9	61.2	82.1
	Standby Power	75.1	60.1	69.6	93.3	67.5	90.5

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.

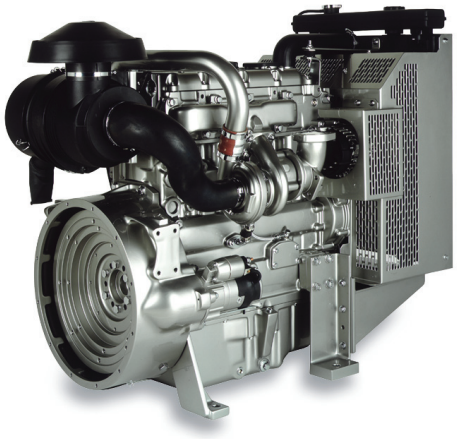
Photographs are for illustrative purposes only and may not reflect final specification.

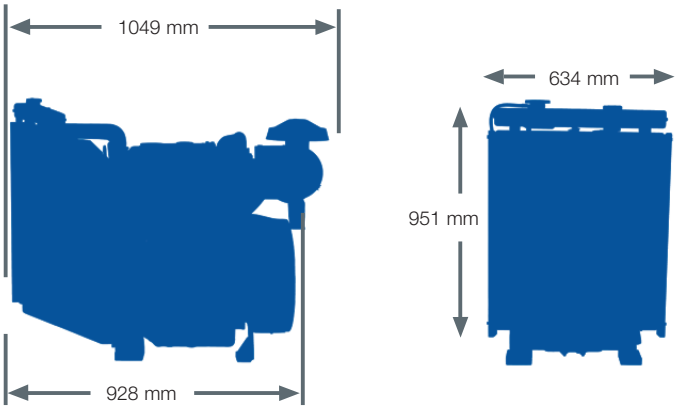
Publication No. PN1782/09/12 Produced in England

Perkins®
THE HEART OF EVERY GREAT MACHINE

1100 Series 1103A-33TG2 Diesel Engine – ElectropaK

59.3 kWm at 1500 rpm
67.5 kWm at 1800 rpm





Standard ElectropaK specification

Air inlet
- Mounted air filter

Fuel system
- Rotary type pump
- Ecoplus 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
- User's Handbook

Optional equipment
- Woodward electronic governor (LCG2)
- Workshop manual
- Parts book

Option groups
A selection of optional items is available to enable the customer to prepare a specification precisely matched to the needs.

Fuel Consumption				
Engine Speed	1500 rev/min		1800 rev/min	
	UK g/hr	l/hr	UK g/hr	l/hr
Standby	3.3	15.4	4.0	18.2
Prime Power	3.0	13.9	3.6	16.6
75% of Prime Power	2.2	10.4	2.7	12.5
50% of Prime Power	1.5	7.2	1.9	8.8

General data

Number of cylinders ..... 3 vertical in-line
Bore and stroke.....105 x 127 mm
Displacement ..... 3.3 litres
Aspiration .....Turbocharged
Cycle.....4 stroke
Combustion system.....Direct injection
Compression ratio 17.25:1
Rotation.....Anti-clockwise viewed from flywheel
Cooling system.....Water-cooled
Total lubrication system capacity..... 7.9 litres
Total coolant capacity ..... 10.2 litres
Dimensions – Length ..... 1049 mm
Width ..... 634 mm
Height ..... 951 mm
Dry weight (approx)..... 420 kg

Final weight and dimensions will depend on completed specification

Publication No. PN1782/09/12 Produced in England

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Perkins®
THE HEART OF EVERY GREAT MACHINE

EMERSON
Industrial Automation

LEROY SOMER

Low Voltage alternators - 4 pole
LSA 42.3

25 to 60 kVA - 50 Hz / 31.5 to 75 kVA - 60 Hz

Electrical and mechanical data

4802 en - 2014.01 / e

Low Voltage alternators 4 pole 3-phase PARTNER

LSA 42.3

25 to 60 kVA - 50 Hz / 31.5 to 75 kVA - 60 Hz

SPECIALLY ADAPTED TO APPLICATIONS

The LSA 42.3 alternator is designed to be suitable for typical generator applications, such as: backup, marine applications, rental, telecommunications, etc.

COMPLIANT WITH INTERNATIONAL STANDARDS

The LSA 42.3 alternator conforms to the main international standards and regulations:

- IEC 60034, NEMA MG 1.22, ISO 8528-3, CSA / UL on request, marine regulations, etc.

It can be integrated into a CE marked generator.
The LSA 42.3 is designed, manufactured and marketed in an ISO 9001 environment and ISO 14001.

TOP OF THE RANGE ELECTRICAL PERFORMANCE

- Class H insulation.
- Standard 12 wire re-connectable winding, 2/3 pitch, type no. 6.
- Voltage range:
  - 50 Hz: 220 V - 240 V and 380 V - 415 V (440 V)
  - 60 Hz: 208 V - 240 V and 380 V - 480 V
- High efficiency and motor starting capacity.
- Other voltages are possible with optional adapted windings:
  - 50 Hz: 440 V (no. 7), 500 V (no. 9), 690 V (n°10)
  - 60 Hz: 380 V and 416 V (no. 8), 600 V (no. 9)
- R 791 interference suppression conforming to standard EN 55011 group 1 class B standard for European zone (CE marking).

REINFORCED MECHANICAL STRUCTURE USING FINITE ELEMENT MODELLING

- Compact rigid assembly to better withstand generator vibrations.
- Steel frame.
- Aluminium flanges and shields.
- Two-bearing and single-bearing versions designed to be suitable for commercially-available heat engines.
- Half-key balancing two bearing.
- Permanently greased bearings (20 000h).
- Direction of rotation : clockwise and anti-clockwise (without derating).

EXCITATION AND REGULATION SYSTEM SUITED TO THE APPLICATION

Excitation system				Regulation options				
Voltage regulator	**SHUNT**	**AREP**	**PMG**	Current transformer for paralleling	Mains paralleling	3-phase sensing	3-phase sensing for mains paralleling unbalanced	Remote voltage potentiometer
R220	**Std**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
R438	**-**	**Std**	**Std**	**C.T.**	**R726***	**R731***	**R734***	√
R450	**Option**	**Option**	**Option**	**C.T.**	**R726***	**R731***	**R734***	√
D510C*	**Option**	**Option**	**Option**	**C.T.**	**included**	**included**	**contacter factory**	√

* Steel terminal box mounting only

√: Possible mounting

COMPACT AND DESIGN TERMINAL BOX

- Easy access to the AVR (lid) and to the connections.
- 8 way terminal block for reconnecting the voltage.
- Predrilled holes for cable gland.
- Steel terminal box in option.

PROTECTION SYSTEM SUITED TO THE ENVIRONMENT

- The LSA 42.3 is IP 23.
- Standard winding protection for clean environments with relative humidity ≤ 95%, including indoor marine environments.
- Options:
  - filters on air inlet : derating 5%,
  - filters on air inlet and air outlet (IP 44) : derating 10%,
  - winding protection for harsh environments and relative humidity greater than 95%,
  - space heaters,
  - thermal protection for stator windings,
  - height fixing : H = 225 mm (option) with the order.

Low Voltage alternators 4 pole 3-phase PARTNER

LSA 42.3

25 to 60 kVA - 50 Hz / 31.5 to 75 kVA - 60 Hz

General characteristics

Insulation class	H		Excitation system	SHUNT	AREP or PMG
Winding pitch	2/3 (wdg 6)		AVR type	R 220	R 438
Number of wires	12		Voltage regulation (*)	± 0.5 %	± 0.5 %
Protection	IP 23		Short-circuit current	-	300% (3 IN): 10 s
Altitude	≤ 1000 m		Totale Harmonic distortion THD (**) in no-load ..... : < 2% according to IEC		
Overspeed	2250 min^{-1}		Totale Harmonic distortion THD (**) on linear load : < 4% according to IEC		
Air flow	0.10m^3/s, 50 Hz - 0.13m^3/s, 60 Hz		Waveform: NEMA = TIF (**)		< 50

(*) Steady state. (**) Total harmonic distortion between phases, no-load or on-load (non-distorting).

Ratings 50 Hz - 1500 R.P.M.

kVA / kW - P.F. = 0.8

Duty/T°C		Continuous duty/40°C					Continuous duty/40°C					Stand-by/40°C					Stand-by/27°C				
Class/T°K		H/125°K					F/105°K					H/150°K					H/163°K				
Phase		3 ph.				1 ph.	3 ph.				1 ph.	3 ph.				1 ph.	3 ph.				1 ph.
Y		380V	400V	415V	440V	ΔΔ	380V	400V	415V	440V	ΔΔ	380V	400V	415V	440V	ΔΔ	380V	400V	415V	440V	ΔΔ
Δ		220V	230V	240V		230V	220V	230V	240V		230V	220V	230V	240V		230V	220V	230V	240V		230V
YY					220V					220V					220V					220V	
42.3 VS1	kVA		**25**		24.5	15		**22.8**		22.3	13.7		**26.5**		26	15.9		**27.5**		27	16.5
	kW		***20***		*19.6*	*12*		***18.2***		*17.9*	*10.9*		***21.2***		*20.8*	*12.7*		***22***		*21.6*	*13.2*
42.3 VS2	kVA		**27**		26	16.2		**24.6**		23.6	14.7		**28.9**		27.6	17.3		**30**		28	18
	kW		***21.6***		*20.8*	*13*		***19.7***		*18.9*	*11.8*		***23.1***		*22.1*	*13.9*		***24***		*22.9*	*14.4*
42.3 VS3	kVA		**32**		30	19.2		**29.1**		27.3	17.5		**34**		31.8	20.4		**35.2**		33.0	21.1
	kW		***25.6***		*24*	*15.4*		***23.3***		*21.8*	*14*		***27.1***		*25.4*	*16.3*		***28.2***		*26.4*	*16.9*
42.3 S4	kVA		**35**		30.6	22		**32**		27.9	20		**37.1**		32.5	23.3		**38.5**		33.7	24.2
	kW		***28***		*24.5*	*17.6*		***25.5***		*22.3*	*16*		***29.7***		*26*	*18.7*		***30.8***		*27.0*	*19.4*
42.3 S5	kVA		**40**		35	25		**36.4**		31.9	22.8		**42.4**		37.1	26.5		**45**		38.5	28.1
	kW		***32***		*28*	*20*		***29.1***		*25.5*	*18.2*		***33.9***		*29.7*	*21.2*		***36***		*30.8*	*22.5*
42.3 M7	kVA		**45**		39	27		**41**		35.5	24.6		**48.2**		41.3	28.9		**50**		42.9	30
	kW		***36***		*31.2*	*21.6*		***32.8***		*28.4*	*19.7*		***38.5***		*33.1*	*23.1*		***40***		*34.3*	*24*
42.3 M8	kVA		**50**		43	30		**45.5**		39.1	27.3		**53**		45.6	31.8		**55**		47.3	33
	kW		***40***		*34.4*	*24*		***36.4***		*31.3*	*21.8*		***42.4***		*36.5*	*25.4*		***44***		*37.8*	*26.4*
42.3 L9	kVA		**60**		51.6	36		**54.6**		47.0	32.8		**63.6**		54.7	38.2		**66**		56.8	40
	kW		***48***		*41.3*	*28.8*		***43.7***		*37.6*	*26.2*		***50.9***		*43.8*	*30.5*		***52.8***		*45.4*	*32*

Ratings 60 Hz - 1800 R.P.M.

kVA / kW - P.F. = 0.8

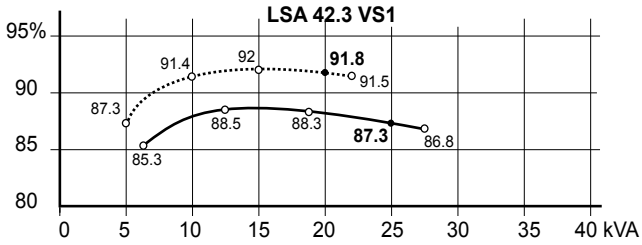
Duty/T°C		Continuous duty/40°C					Continuous duty/40°C					Stand-by/40°C					Stand-by/27°C				
Class/T°K		H/125°K					F/105°K					H/150°K					H/163°K				
Phase		3 ph.				1 ph.	3 ph.				1 ph.	3 ph.				1 ph.	3 ph.				1 ph.
Y		380V	416V	440V	480V	ΔΔ	380V	416V	440V	480V	ΔΔ	380V	416V	440V	480V	ΔΔ	380V	416V	440V	480V	ΔΔ
Δ		220V	240V			240V	220V	240V			240V	220V	240V			240V	220V	240V			240V
YY			208V	220V	240V			208V	220V	240V			208V	220V	240V			208V	220V	240V	
42.3 VS1	kVA	29.1	31.3	31.5	**31.5**	18.9	26.5	28.4	28.7	**28.7**	17,2	30.8	33.1	33.4	**33.4**	19,8	32	34.4	34.7	**34.7**	20,8
	kW	*23.3*	*25*	*25.2*	***25.2***	*15.1*	*21.2*	*22.8*	*22.9*	***22.9***	*13,7*	*24.7*	*26.5*	*26.7*	***26.7***	*15,9*	*25.6*	*27.5*	*27.7*	***27.7***	*16,6*
42.3 VS2	kVA	29.9	31.9	33.8	**33.8**	19.2	26.9	29	30.7	**30.7**	17,5	31.4	33.8	35.8	**35.8**	20,2	32.5	35.1	37.5	**37.5**	21,1
	kW	*23.7*	*25.5*	*27*	***27***	*15.4*	*21.5*	*23.2*	*24.6*	***24.6***	*14,0*	*25.1*	*27.1*	*28.6*	***28.6***	*16,2*	*26*	*28.1*	*30*	***30***	*16,9*
42.3 VS3	kVA	34.5	38	40	**40**	22.8	31.4	34.6	36.4	**36.4**	20,7	36.6	40.3	42.4	**42.4**	23,9	38	41.8	44	**44**	25,1
	kW	*27.6*	*30.4*	*32*	***32***	*18.2*	*25.1*	*27.7*	*29.1*	***29.1***	*16,6*	*29.3*	*32.2*	*33.9*	***33.9***	*19,1*	*30.4*	*33.4*	*35.2*	***35.2***	*20,0*
42.3 S4	kVA	37.5	40.3	42.9	**43.8**	24.2	33.4	36.6	39.0	**39.8**	22,0	39	42.7	45.4	**46.4**	25,4	40.4	44.3	47.2	**48.1**	26,6
	kW	*30*	*32.2*	*34.3*	***35***	*19.3*	*26.8*	*29.3*	*31.2*	***31.9***	*17,6*	*31.2*	*34.1*	*36.4*	***37.1***	*20,3*	*32.3*	*35.4*	*37.7*	***38.5***	*21,2*
42.3 S5	kVA	42	46	49	**50**	27.6	38.2	41.9	44.6	**45.5**	25,1	44.5	50	51.9	**53**	29,0	46.2	50.6	53.9	**55**	30,4
	kW	*33.6*	*36.8*	*39.2*	***40***	*22.1*	*30.6*	*33.5*	*35.7*	***36.4***	*20,1*	*35.6*	*40*	*41.6*	***42.4***	*23,2*	*37*	*40.5*	*43.1*	***44***	*24,3*
42.3 M7	kVA	46	50	53.5	**56.5**	30	41.9	45.5	48.7	**51.4**	27,3	48.8	53	56.7	**59.9**	31,5	50.6	55	58.9	**62.5**	33,0
	kW	*36.8*	*40*	*42.8*	***45.2***	*24*	*33.5*	*36.4*	*38.9*	***41.1***	*21,8*	*39*	*42.4*	*45.4*	***47.9***	*25,2*	*40.5*	*44*	*47.1*	***50***	*26,4*
42.3 M8	kVA	51.5	56.5	59.5	**62.5**	33.9	46.9	51.4	54.1	**57**	30,8	54.6	60	63.1	**66.3**	35,6	56.7	62.5	65.5	**68.8**	37,3
	kW	*41.2*	*45.2*	*47.6*	***50***	*27.1*	*37.5*	*41.1*	*43.3*	***45.5***	*24,7*	*43.7*	*48*	*50.5*	***53***	*28,5*	*45.3*	*50*	*52.4*	***55***	*29,8*
42.3 L9	kVA	59	65	69	**75**	39	53.7	59.2	62.8	**68.3**	35,5	62.5	68.9	73.1	**79.5**	41,0	64.9	71.5	75.9	**82.5**	42,9
	kW	*47.2*	*52.0*	*55.2*	***60***	*31.2*	*43.0*	*47.3*	*50.2*	***54.6***	*28,4*	*50.0*	*55.1*	*58.5*	***63.6***	*32,8*	*51.9*	*57.2*	*60.7*	***66.0***	*34,3*

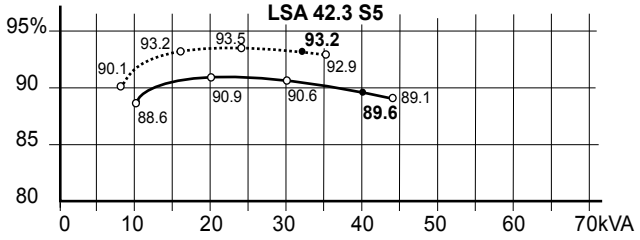
Low Voltage alternators 4 pole 3-phase PARTNER

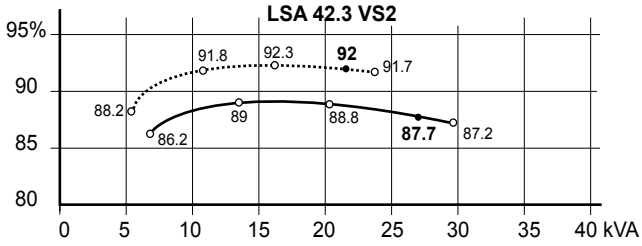
LSA 42.3

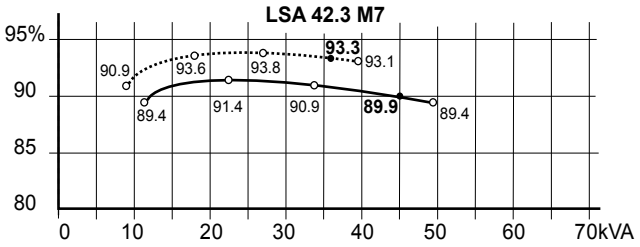
25 to 60 kVA - 50 Hz / 31.5 to 75 kVA - 60 Hz

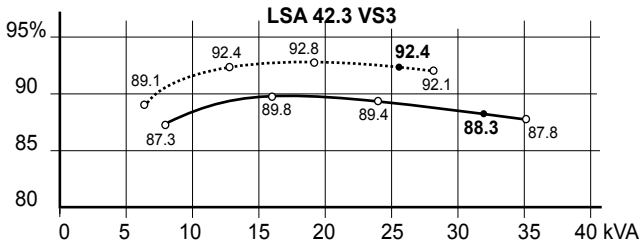
Efficiencies 50 Hz (— P.F.: 0.8) (····· P.F.: 1)

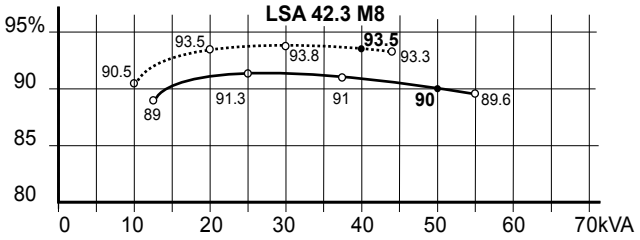


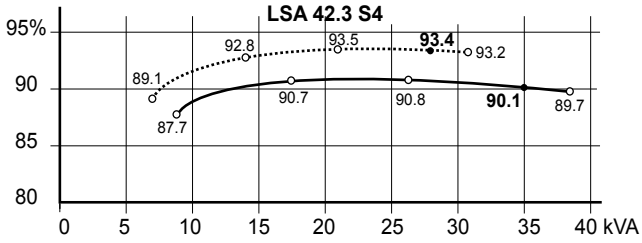


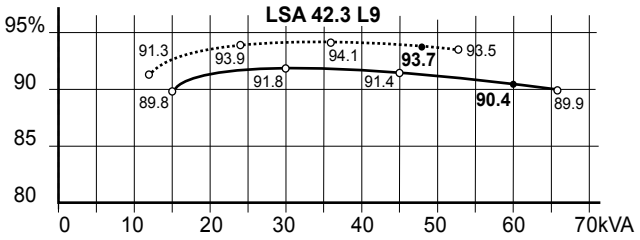












Reactances (%). Time constants (ms) - Class H / 400 V

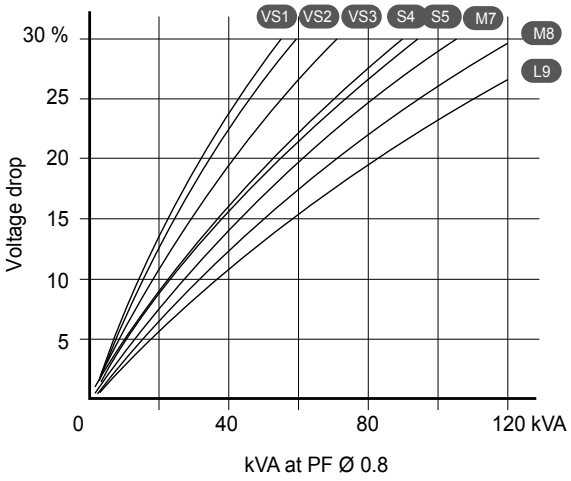
		VS1	VS2	VS3	S4	S5	M7	M8	L9
Kcc	Short-circuit ratio	0.54	0.51	0.48	0.53	0.46	0.43	0.47	0.44
Xd	Direct-axis synchro. reactance unsaturated	240	249	261	229	262	275	264	283
Xq	Quadrature-axis synchro. reactance unsaturated	144	149	156	137	157	165	158	169
T'do	No-load transient time constant	733	759	803	880	880	914	931	962
X'd	Direct-axis transient reactance saturated	16.3	16.4	16.2	13.0	14.8	15.0	14.1	14.7
T'd	Short-circuit transient time constant	50	50	50	50	50	50	50	50
X"d	Direct-axis subtransient reactance saturated	8.1	8.2	8.1	6.5	7.4	7.5	7.0	7.3
T"d	Subtransient time constant	5	5	5	5	5	5	5	5
X"q	Quadrature-axis subtransient reactance saturated	11.5	11.6	11.5	9.2	10.6	10.7	10.1	10.5
Xo	Zero sequence reactance unsaturated	0.78	0.46	0.88	0.73	0.23	0.25	0.84	0.43
X2	Negative sequence reactance saturated	9.88	9.91	9.82	7.89	9.02	9.12	8.61	8.93
Ta	Armature time constant	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0

Other class H/400 V data

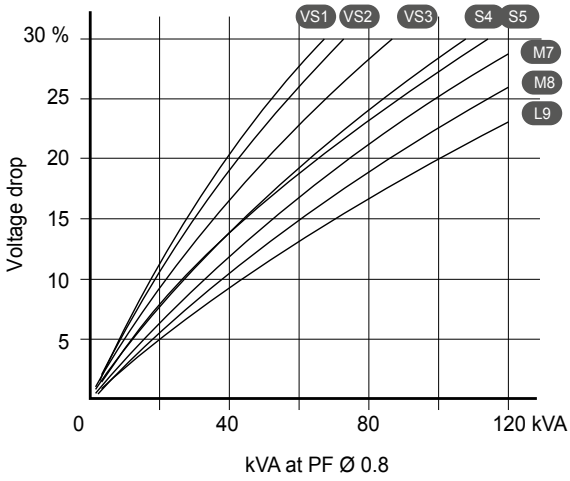
io (A)	No-load excitation current (SHUNT/AREP)	0.55/0.85	0.52/0.8	0.51/0.79	0.49/0.75	0.49/0.75	0.46/0.71	0.5/0.78	0.5/0.77
ic (A)	On-load excitation current (SHUNT/AREP)	1.74/2.66	1.72/2.63	1.77/2.71	1.54/2.36	1.73/2.66	1.75/2.68	1.86/2.86	2.04/3.13
uc (V)	On-load excitation voltage (SHUNT/AREP)	29.6/19.2	29.2/18.9	29.9/19.3	26/16.8	29.1/18.8	29/18.8	30.6/19.8	32.8/21.2
ms	Response time (ΔU = 20% transient)	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms
kVA	Start (ΔU = 20% cont. or (ΔU = 30% trans.) SHUNT	51.7	56	67.7	92	92	103.5	115	138
kVA	Start (ΔU = 20% cont. or (ΔU = 30% trans.) AREP	59.6	64.3	76.1	93.1	93.1	103.2	104.9	116.8
%	Transient ΔU (on-load 4/4) SHUNT - P.F.: 0.8 $_{LAG}$	16.3	16.3	16.2	14.3	15.4	15.5	15	15.3
%	Transient ΔU (on-load 4/4) AREP - P.F.: 0.8 $_{LAG}$	13.8	13.8	13.7	12.2	13.1	13.2	12.8	13
W	No-load losses	719	713	762	861	861	879	1029	1120
W	Heat dissipation	2894	3017	3371	3055	3704	4022	4396	5091

Transient voltage variation 400V - 50 Hz

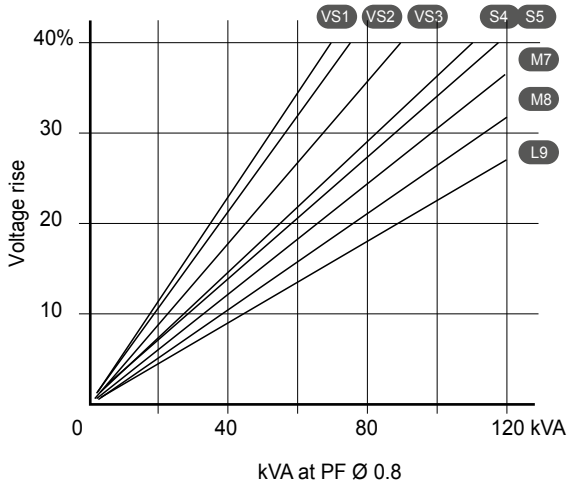
Phase loading (SHUNT)



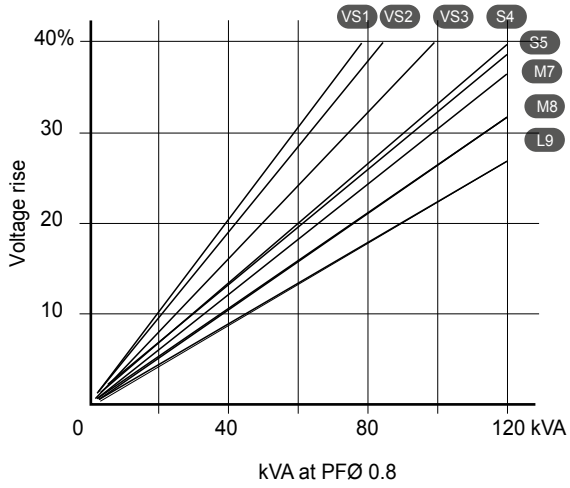
Phase loading (AREP & PMG)



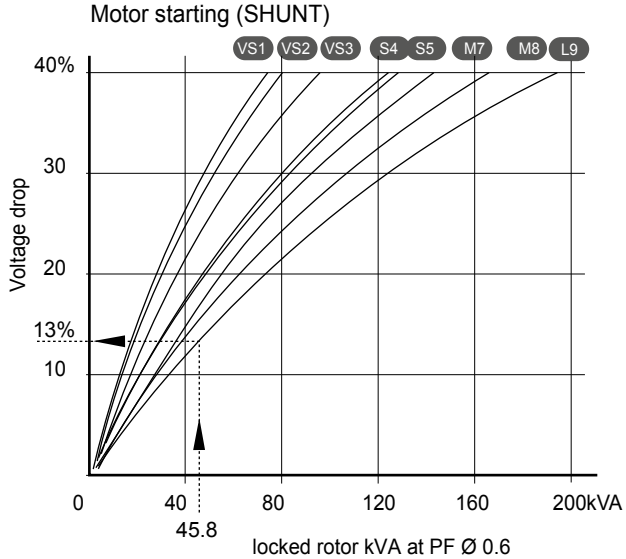
Load shedding (SHUNT)



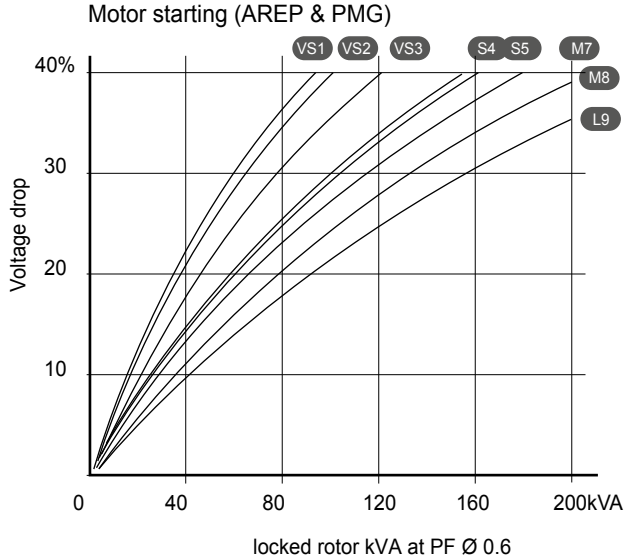
Load shedding (AREP & PMG)



Motor starting (SHUNT)



Motor starting (AREP & PMG)



1) For a PF with a Ø other than 0.6, multiply the kVA by K = Sin Ø / 0.8
Example of calculation for a PF with a Ø other than 0.6: motor starting kVA calculated at PF Ø 0.4 = 40 kVA ► Sin Ø 0.4 = 0.9165 ► K = 1.145 ► corrected kVA = 45.8 kVA ► Corresponding voltage drop for L9 = 13 %.

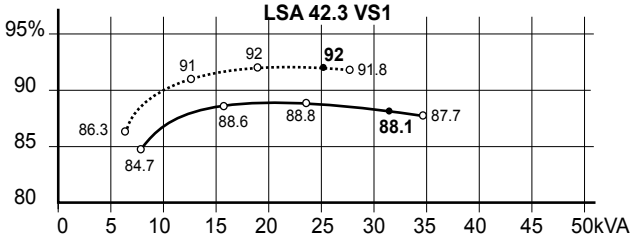
2) For a voltage U other than 400 V (Y) , 230 V ( ) at 50 Hz, multiply the kVA by $(400/U)^2$ or $(230/U)^2$.

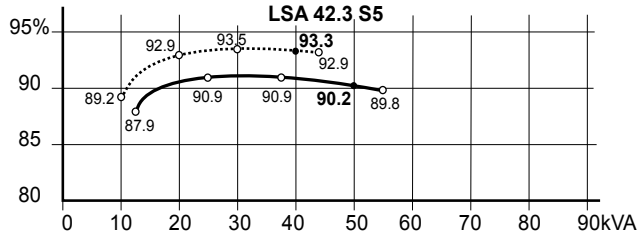
Low Voltage alternators 4 pole 3-phase PARTNER

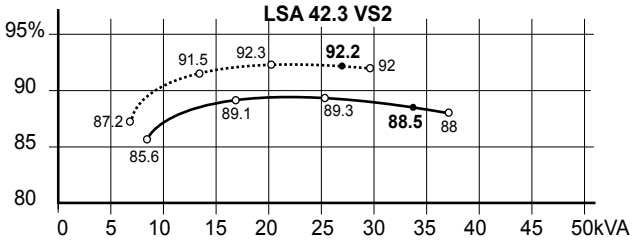
LSA 42.3

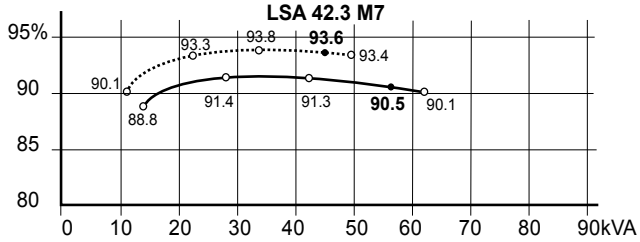
25 to 60 kVA - 50 Hz / 31.5 to 75 kVA - 60 Hz

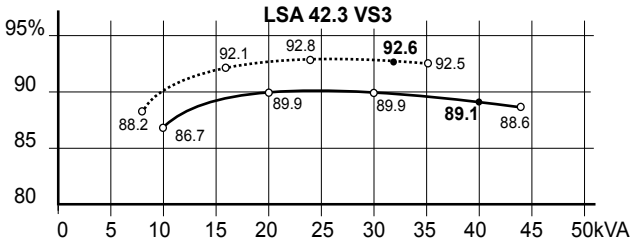
Efficiencies 60 Hz (— P.F.: 0.8) (····· P.F.: 1)

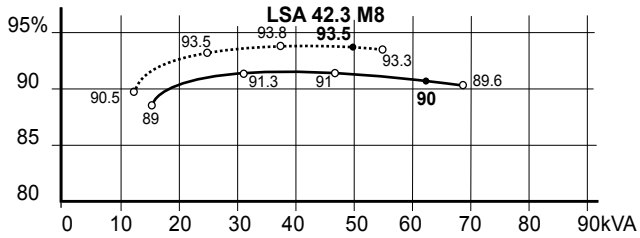


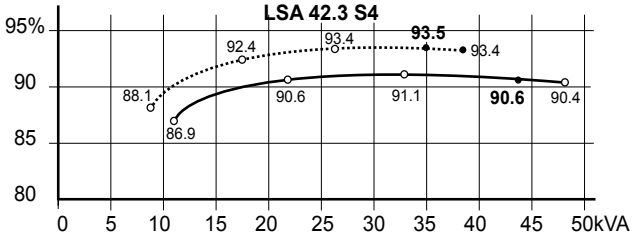


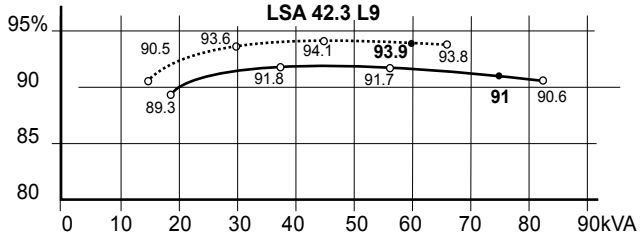












Reactances (%). Time constants (ms) - Class H / 480 V

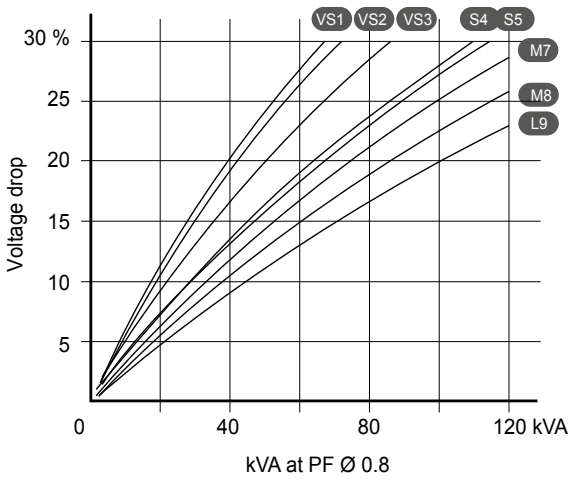
		VS1	VS2	VS3	S4	S5	M7	M8	L9
Kcc	Short-circuit ratio	0.52	0.49	0.46	0.51	0.44	0.41	0.45	0.42
Xd	Direct-axis synchro. reactance unsaturated	252	260	272	239	273	287	275	294
Xq	Quadrature-axis synchro. reactance unsaturated	151	156	163	143	163	172	165	176
T'do	No-load transient time constant	733	759	803	880	880	914	931	962
X'd	Direct-axis transient reactance saturated	17.2	17.1	16.9	13.5	15.5	15.7	14.7	15.3
T'd	Short-circuit transient time constant	50	50	50	50	50	50	50	50
X"d	Direct-axis subtransient reactance saturated	8.6	8.5	8.4	6.7	7.7	7.8	7.3	7.6
T"d	Subtransient time constant	5	5	5	5	5	5	5	5
X"q	Quadrature-axis subtransient reactance saturated	12.1	12.1	12.0	9.6	11.0	11.2	10.5	10.5
Xo	Zero sequence reactance unsaturated	0.46	0.83	0.31	0.26	0.69	0.05	0.97	0.86
X2	Negative sequence reactance saturated	10.37	10.35	10.24	8.22	9.39	9.55	8.97	9.30
Ta	Armature time constant	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0

Other class H/480 V data

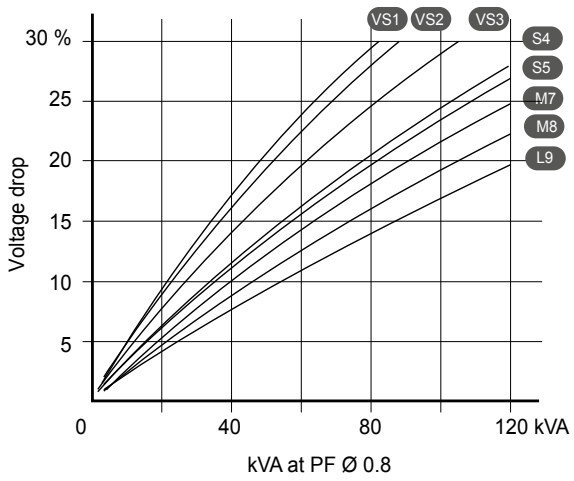
io (A)	No-load excitation current (SHUNT/AREP)	0.55/0.85	0.52/0.8	0.51/0.79	0.49/0.75	0.49/0.75	0.46/0.71	0.5/0.77	0.5/0.77
ic (A)	On-load excitation current (SHUNT/AREP)	1.76/2.69	1.73/2.65	1.77/2.72	1.54/2.36	1.73/2.66	1.75/2.68	1.84/2.82	1.99/3.06
uc (V)	On-load excitation voltage (SHUNT/AREP)	30.2/19.3	29.7/19	30.3/19.4	26.4/16.9	29.4/18.8	29.5/18.8	30.9/19.7	32.9/21.1
ms	Response time (ΔU = 20% transient)	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms
kVA	Start (ΔU = 20% cont. or (ΔU = 30% trans.) SHUNT	63.3	68.1	82	111.8	111.8	124.7	146.9	165.6
kVA	Start (ΔU = 20% cont. or (ΔU = 30% trans.) AREP	71.4	76.9	92.6	121.8	121.6	133.8	137.9	152.2
%	Transient ΔU (on-load 4/4) SHUNT - P.F.: 0.8 $_{LAG}$	16.8	16.8	16.6	14.7	15.8	15.9	15.4	15.7
%	Transient ΔU (on-load 4/4) AREP - P.F.: 0.8 $_{LAG}$	14.1	14.1	14.0	12.5	13.4	13.5	13.0	13.3
W	No-load losses	1021	1016	1087	1229	1229	1258	1462	1591
W	Heat dissipation	3389	3505	3914	3597	4312	4709	5120	5917

Transient voltage variation 480V - 60 Hz

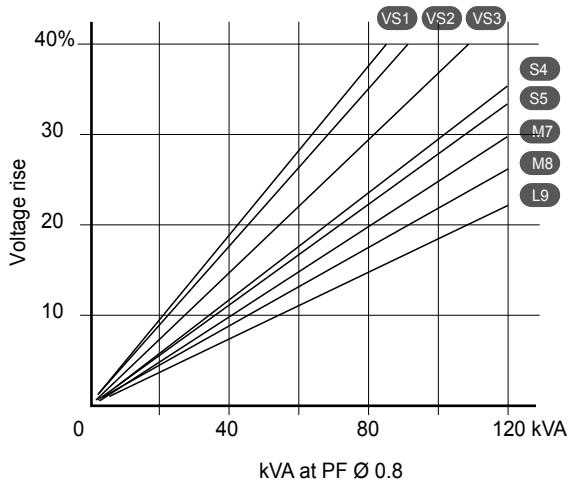
Phase loading (SHUNT)



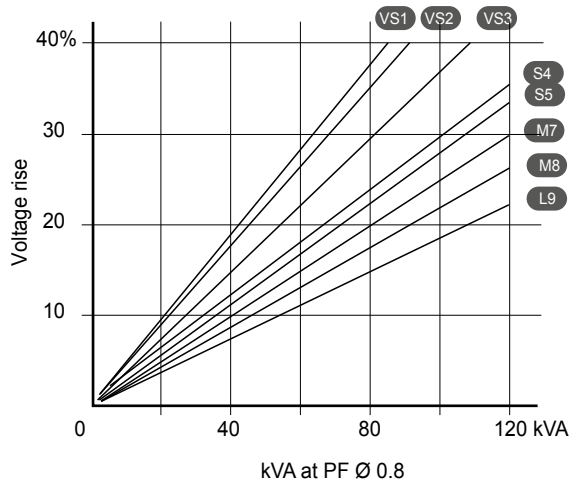
Phase loading (AREP & PMG)



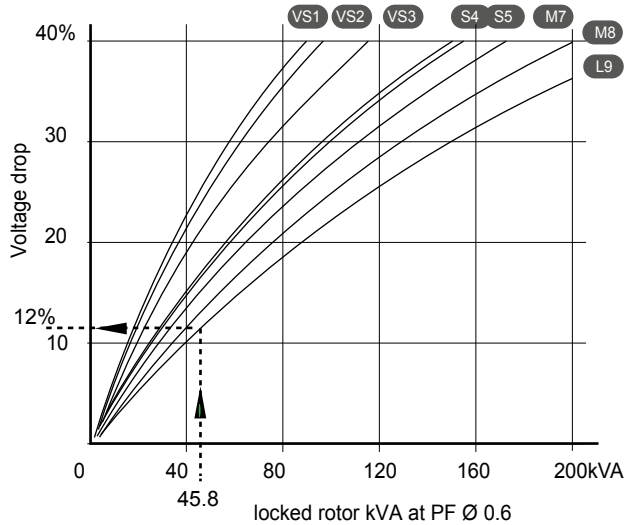
Load shedding (SHUNT)



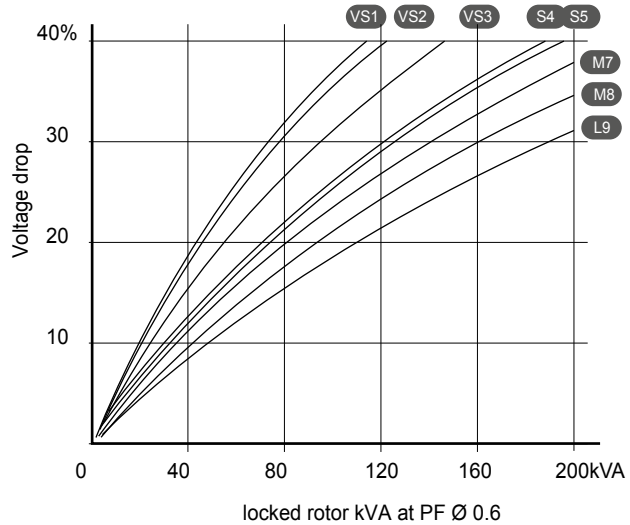
Load shedding (AREP & PMG)



Motor starting (SHUNT)



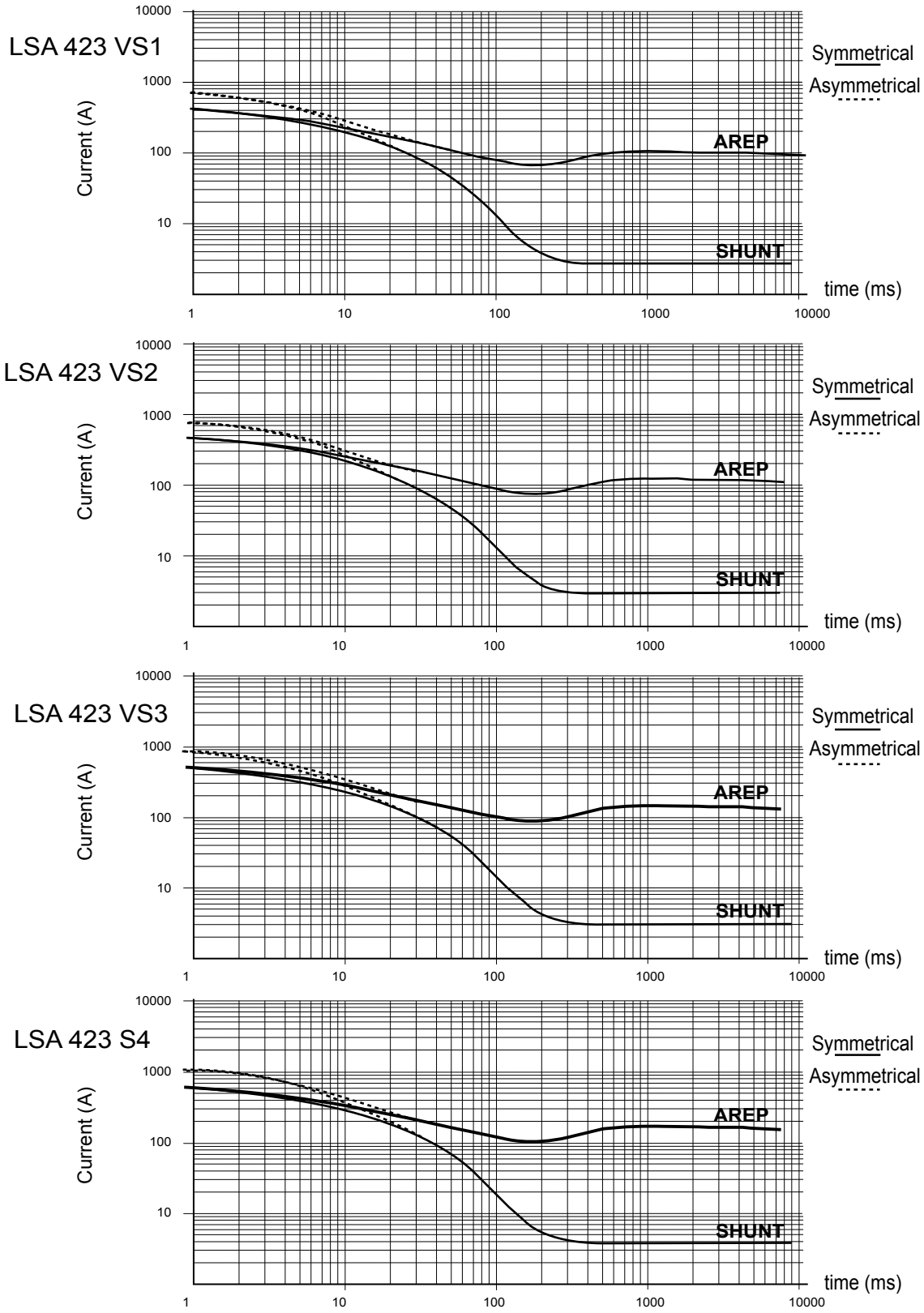
Motor starting (AREP & PMG)



1) For a PF with a Ø other than 0.6, multiply the kVA by K = Sin Ø / 0.8
Example of calculation for a PF with a Ø other than 0.6: motor starting kVA calculated at PF Ø 0.4 = 40 kVA ► Sin Ø 0.4 = 0.9165 ► K = 1.145 ► corrected kVA = 45.8 kVA ► Corresponding voltage drop for L9 = 12 %.

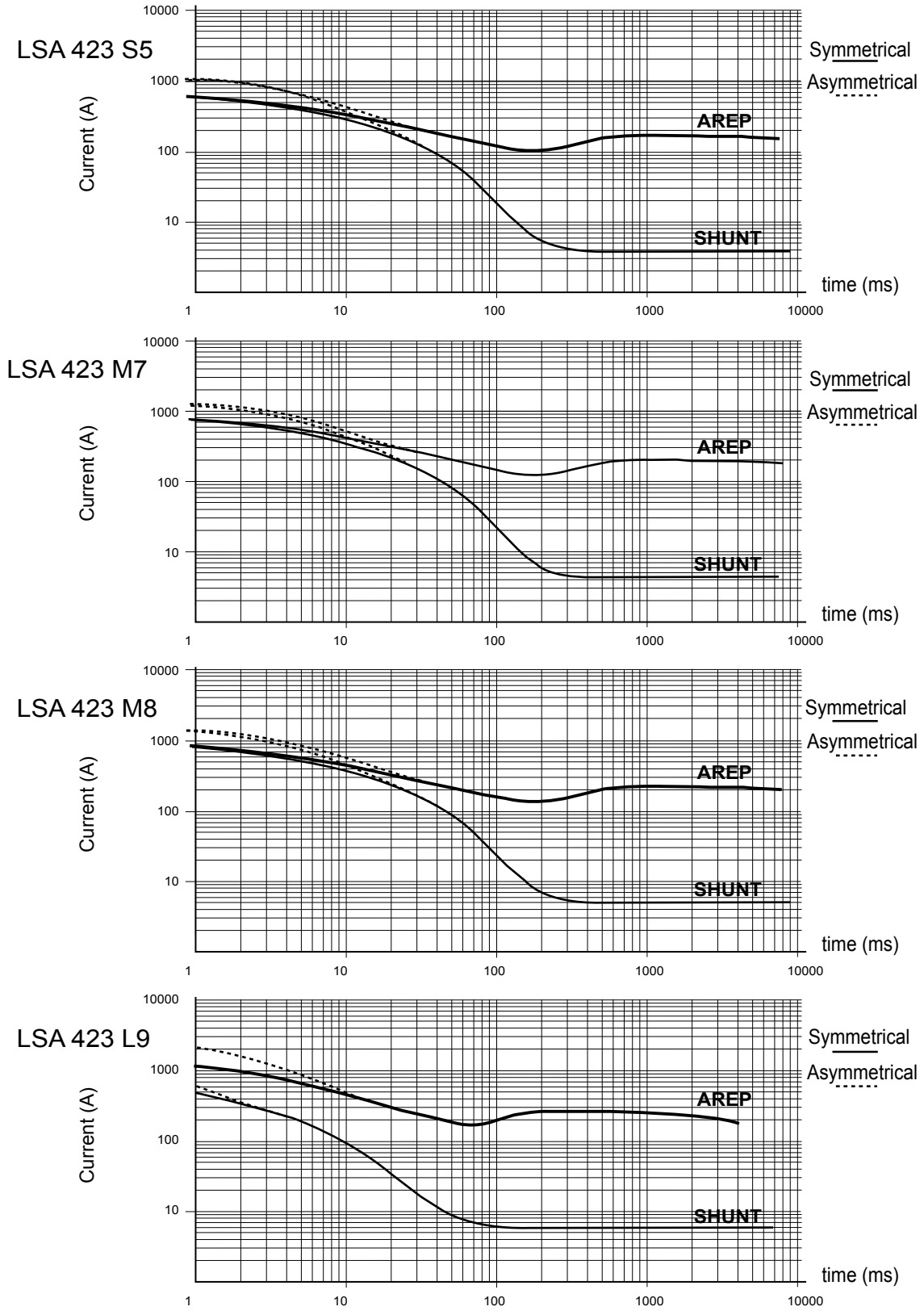
2) For a voltage U other than 480 V (Y), 277 V ( ), 240 V (YY) at 60 Hz, multiply the kVA by $(480/U)^2$ or $(277/U)^2$ or $(240/U)^2$.

3-phase short-circuit curves at no load and rated speed (star connection Y)



Influence due to connection
Curves shown are for star (Y) connection.
For other connections, use the following multiplication factors:
- Series delta : Current value x 1.732 - Parallel star : Current value x 2

3-phase short-circuit curves at no load and rated speed (star connection Y)



Influence due to short-circuit
Curves are based on a three-phase short-circuit.
For other types of short-circuit, use the following multiplication factors

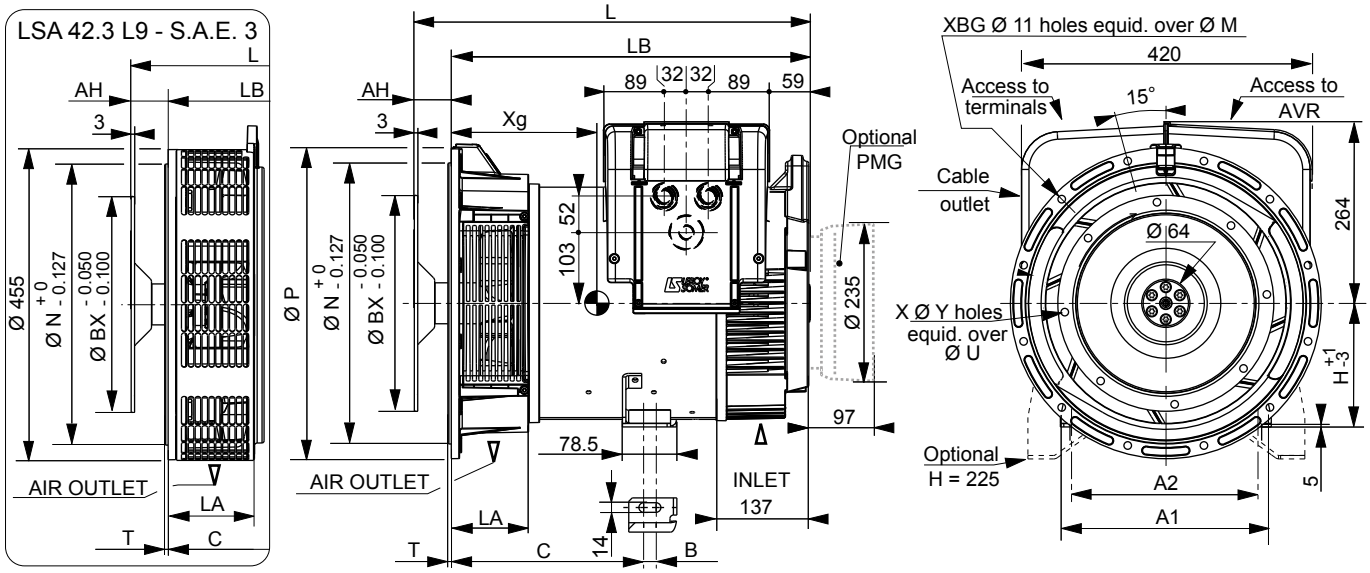
	3-phase	2-phase L/L	1-phase L/N
Instantaneous (max.)	1	0.87	1.3
Continuous	1	1.5	2.2
Maximum duration (AREP/PMG)	10 sec.	5 sec.	2 sec.

Low Voltage alternators 4 pole 3-phase PARTNER

LSA 42.3

25 to 60 kVA - 50 Hz / 31.5 to 75 kVA - 60 Hz

Single bearing dimensions

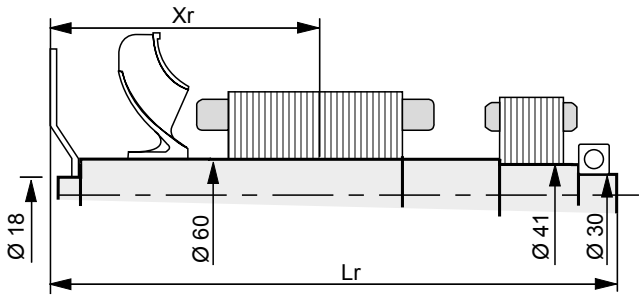


Dimensions (mm) and weight (kg)					H = 180 (Standard)				*H = 225 (Option)*			
	L	LB	Xg	Masse (kg)	C	B	A1	*A2*	*C*	*B*	*A1*	*A2*
LSA 42.3 VS1	565	503	237	117	260	18	307	279	*299*	*23*	*400*	*356*
LSA 42.3 VS2	565	503	242	122	260	18	307	279	*299*	*23*	*400*	*356*
LSA 42.3 VS3	565	503	252	133	260	18	307	279	*299*	*23*	*400*	*356*
LSA 42.3 S4	610	548	275	165	260	18	307	279	*312.5*	*23*	*400*	*356*
LSA 42.3 S5	610	548	275	165	260	18	307	279	*312.5*	*23*	*400*	*356*
LSA 42.3 M7	650	588	287	181	260	18	307	279	*312.5*	*23*	*400*	*356*
LSA 42.3 M8	650	588	295	186	260	18	307	279	*312.5*	*23*	*400*	*356*
LSA 42.3 L9	662	622	310	187	260	18	307	279	*312.5*	*23*	*400*	*356*

Coupling			
Flange	**2**	**3**	**4**
Flex plate			
11 1/2	x	x	-
10	x	x	x
8	-	x	x
7 1/2	-	x	x

Flange (mm)						
S.A.E.	**P**	**N**	**M**	**XBG**	**T**	**LA**
4	406	361.95	381	12	6	122
3	452	409.58	428.62	12	5	112.5
2	490	447.675	466.725	12	6	111

Flex plate (mm)					
S.A.E.	BX	U	X	Y	AH
11 1/2	352.42	333.38	8	11	39.6
10	314.32	295.28	8	11	53.8
8	263.52	244.48	6	11	62
7 1/2	241.3	222.25	8	9	30.2

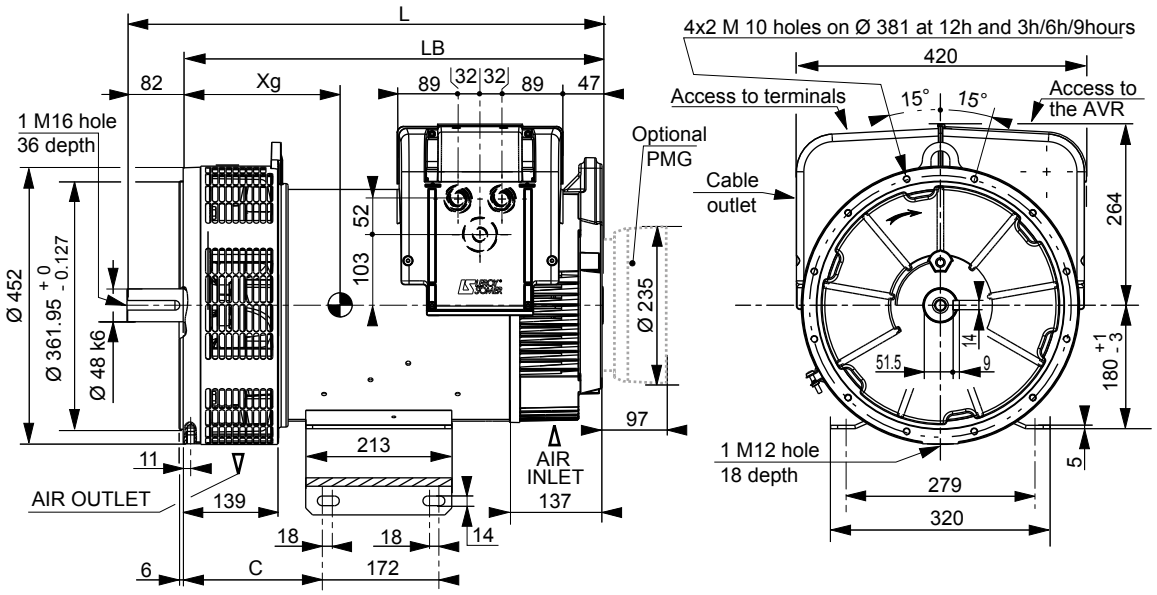


Torsional analysis data

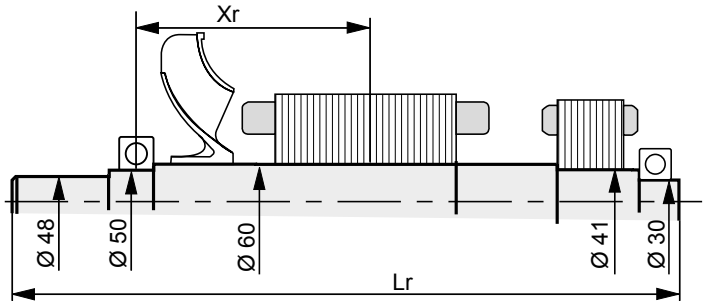
Centre of gravity: Xr (mm), Rotor length: Lr (mm), Weight: M (kg), Moment of inertia: J (kgm²): (4J = MD²)																
	Flex plate S.A.E. 7 1/2				Flex plate S.A.E. 8				Flex plate S.A.E. 10				Flex plate S.A.E. 11 1/2			
Type	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J
LSA 42.3 VS1	279	526.2	45.36	0.2209	277	558	45.68	0.2246	274	549.8	46.13	0.2363	272	535.6	46.62	0.2843
LSA 42.3 VS2	282	526.2	47.36	0.2337	280	558	47.68	0.2374	277	549.8	48.13	0.2491	274	535.6	48.62	0.2611
LSA 42.3 VS3	287	526.2	51.41	0.2592	286	558	51.73	0.2629	283	549.8	52.18	0.2746	281	535.6	52.67	0.2866
LSA 42.3 S4	310	571.2	61.49	0.317	308	603	61.81	0.3207	306	594.8	62.26	0.3324	304	580.6	62.75	0.3444
LSA 42.3 S5	310	571.2	61.49	0.317	308	603	61.81	0.3207	306	594.8	68.18	0.3645	304	580.6	62.75	0.3444
LSA 42.3 M7	325	611.2	67.41	0.3491	323	643	67.73	0.3528	321	634.8	68.18	0.3645	319	620.6	68.67	0.3765
LSA 42.3 M8	330	611.2	70.42	0.3683	328	643	70.74	0.372	326	634.8	71.18	0.3837	324	620.6	71.68	0.3957
LSA 42.3 L9	344	641.2	77.49	0.4141	342	673	77.81	0.4178	340	664.8	78.25	0.4295	338	650.6	78.75	0.4415

NOTE : Dimensions are for information only and may be subject to modifications. Contractuel 2D drawings can be downloaded from the Leroy-Somer site, 3D drawing files are available upon request.

Two bearing dimensions



Dimensions (mm) and weight (kg)						
Type	L	LB	P	C	Xg	Weight (kg)
LSA 42.3 VS1	610	528	406	189.25	242	129
LSA 42.3 VS2	610	528	406	189.25	247	134
LSA 42.3 VS3	610	528	406	189.25	257	145
LSA 42.3 S4	655	573	406	202.75	280	170
LSA 42.3 S5	655	573	406	202.75	280	170
LSA 42.3 M7	695	613	406	202.75	292	185
LSA 42.3 M8	695	613	406	202.75	300	190
LSA 42.3 L9	725	643	455	202.75	314	207



Torsional analysis data

Centre of gravity: Xr (mm), Rotor length: Lr (mm), Weight: M (kg), Moment of inertia: J (kgm²): (4J = MD²)				
Type	Xr	Lr	M	J
LSA 42.3 VS1	238	603	45.18	0.2135
LSA 42.3 VS2	240	603	47.18	0.2263
LSA 42.3 VS3	245	603	51.23	0.2518
LSA 42.3 S4	267	648	61.31	0.3096
LSA 42.3 S5	267	648	61.31	0.3096
LSA 42.3 M7	281	688	67.23	0.3417
LSA 42.3 M8	286	688	70.23	0.3609
LSA 42.3 L9	299	718	77.29	0.4066

NOTE : Dimensions are for information only and may be subject to modifications. Contractuel 2D drawings can be downloaded from the Leroy-Somer site, 3D drawing files are available upon request.

Contact

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