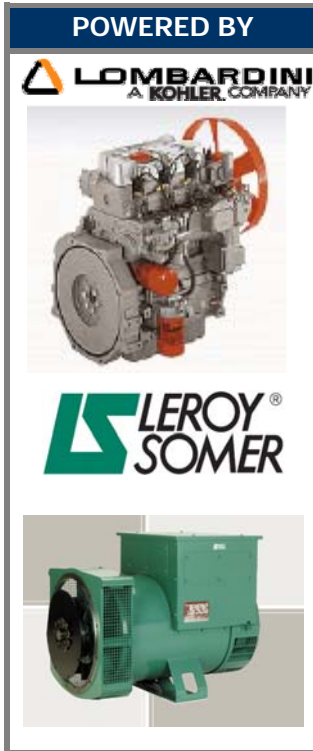


ENERMAX SERIES

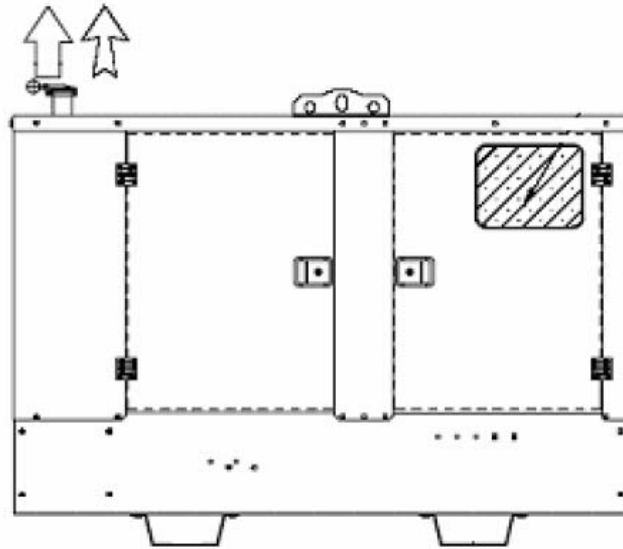
DIESEL GENERATOR
GROUPE ELECTROGENE DIESEL
GRUPO ELECTROGENO DIESEL
GRUPPO ELETTROGENO DIESEL

MODEL
 MODELE
 MODELO
 MODELLO

KL28TSX**



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 25,0	kVA 28
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	LTP	kVA 27,5	kVA 30,8
Continuous Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	PRP	kWe 20,0	kWe 22,5
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	LTP	kWe 22,0	kWe 25
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 4,2	l/h 4,6

ENGINE MOTEUR MOTOR MOTORE		KOHLER		KDI 2504 M	
PERFORMANCE PERFORMANCES PRESTACIONES PRESTAZIONI		1500 rpm		1800 rpm	
Continuous Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	PRP	kWm	23,1	kWm	26,4
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	LTP	kWm	25,4	kWm	29,0
Specific fuel consumption Consommation spécifique combustible Consumo específico de combustible Consumo specifico combustibile		g/kWh	25 % 266,9 50 % 233,9 75 % 228,7 100 % 229,8	g/kWh	25 % 277.7 50 % 237.4 75 % 228.8 100 % 224.7
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					Natural Naturel Natural Naturale
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					4 L
Total displacement Cylindrée totale Cilindrata total Cilindrata totale				cm ³	2.482
Bore x stroke Alésage x course Diámetro x carrera Alesaggio x corsa				mm	88.0 x 102.0
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 % / 5°C
Derating for altitude Déclassement pour altitude Declasamiento para altitud Declassamento per altitudine				0÷100 mt >100 mt	0 1%/100 mt

ALTERNATOR ALTERNATEUR ALTERNADOR ALTERNATORE		LEROY SOMER			
PERFORMANCE PERFORMANCES PRESTACIONES PRESTAZIONI		1500 rpm		1800 rpm	
Model Modèle Modelo Modello		LSA 42.3VS2		LSA 42.3VS2	
Continuous Power Puissance service continue Potencia servicio continuo Potenza servizio continuo		40 °C	kVA 27 kWe 21,6	KVA 33,8 kWe 28	
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza		40 °C	KVA 28,9 kVe 23,1	KVA 35,8 kWe 28,6	
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza		27 °C	KVA 30 kVe 24	KVA 37,5 kWe 30	
Efficiency Rendement Eficienza Efficienza			1/4 86,6 % 2/4 89,0 % 3/4 88,5 % 4/4 87,2 %	1/4 87,0 % 2/4 89,7 % 3/4 89,4 % 4/4 88,2 %	
Standard winding connections Liaison des bobinages Tipo de conexión Collegamento avvolgimenti			Y	YY	
Exciter brushless rotating exciter design with solid state Eccitatrice pivotante sans brosses avec pont de diodes pivotants Excitador puente de diodos sin escobillas rotantes Eccitatrice 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 %	
Insulation class Classe d' isolation Classe de aislamiento Classe di isolamento				H	
Enclosure Degré de protection mécanique Grado de protección mecánica Grado di protezione meccanica				IP 23	
Maximun overspeed Survitesse Régimen máximo 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 cortocircuito del 300%				(3 In) : 10 s	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	

LOGISTIC INFORMATION
INFORMATIONS LOGISTIQUES
INFORMATION LOGISTICA
INFORMAZIONI LOGISTICHE

	Integrated fuel tank capacity Capacité réservoir intégré Capacidad Tanque integrado Capacità Serbatoio integrato	Weight Poids Peso Peso	Dimensions Cotes d'encombrement Medidas externas Dimensioni d'ingombro			
	(L.)		(cm)			
	STD	EXTRA1	(kg)	L	W	H
SOUND PROOF VERSION VERSION INSONORISEE VERSION INSONORISADA VERSIONE INSONORIZZATA	75	ON REQUEST	660	170	75	140

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

GB	F	E	I
<ul style="list-style-type: none"> Lifting eye Vibration dampers Integrated banded fuel tank Battery Manual autostart control panel With DSE7310 Emergency stop button Sound proof canopy of galvanized steel with residential silencer Fork lift guides 	<ul style="list-style-type: none"> Crochet de levage Amortisseurs de vibrations Réservoir intégré avec bac de rétention Batterie Coffret de contrôle manuel autostart avec DSE7310 Bouton arrêt d'urgence Capote d'insonorisation d'acier galvanisé avec silencieux résidentiel Supports pour fourches 	<ul style="list-style-type: none"> 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 carretilla 	<ul style="list-style-type: none"> 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

ACP7310AUS

40A (400 V - 3 ph - 50Hz - 1500 rpm)
 80A (220 V - 3 ph - 60Hz - 1800 rpm)

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

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

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

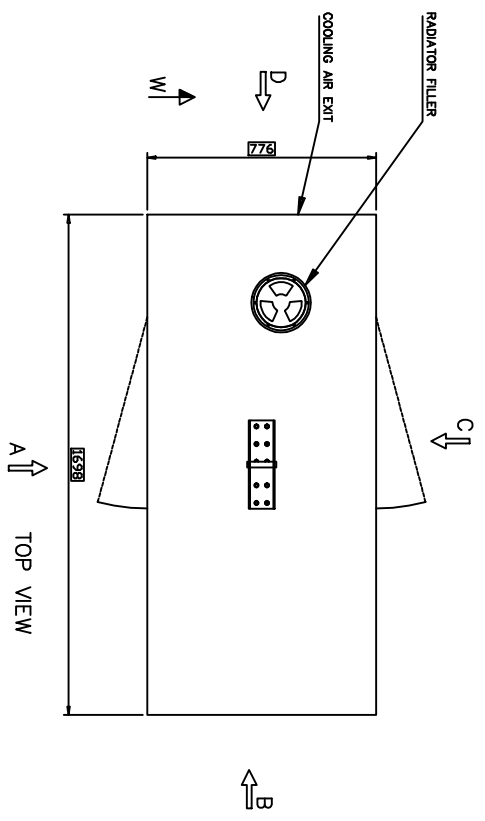
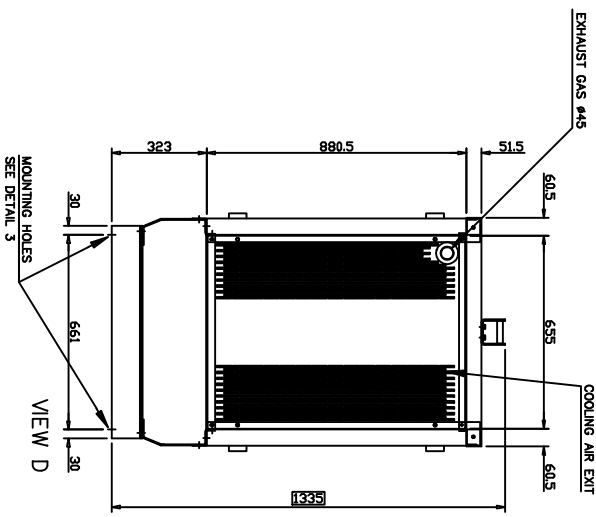
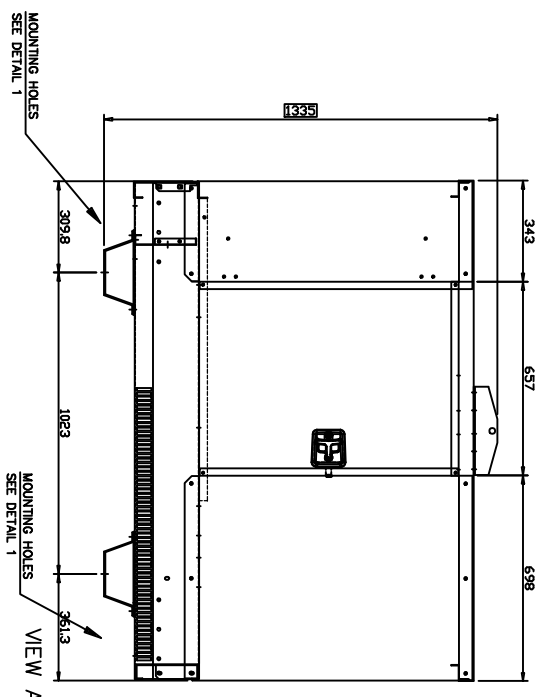
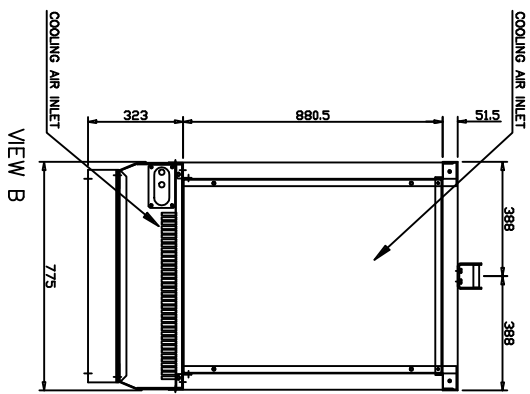
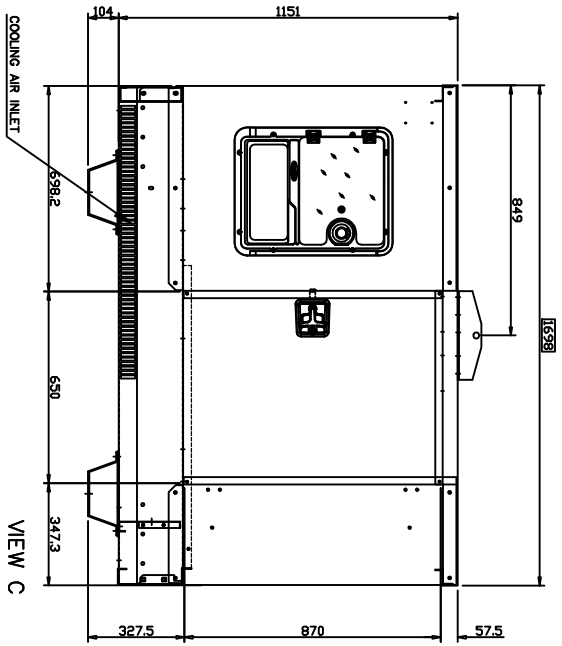
**AUTOMATIC CONTROL PANEL
COFFRET ELECTRIQUE AUTOMATIQUE
CUADRO ELECTRICO AUTOMATICO
QUADRO ELETTRICO AUTOMATICO**

<p>1) ACP 7320 ATS</p> 	<p>COMPLETE CONTROL PANEL FREE STANDING TYPE Equipment: control board, circuit breaker, battery charger, transfer switch, box key. COFFRET ELECTRIQUE COMPLET TYPE ARMOIRE SEPRE 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.</p>
<p>2) ACP 7320 AMF</p> 	<p>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.</p>
<p>3) ACP 7320 STS</p> 	<p>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 SEPRE Equipement : carte électronique de contrôle, disjoncteur de protection, chargeur de batterie, inverseur de source séparé, 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.</p>

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

GB	F	E	I
<p>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.</p>	<p>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.</p>	<p>La DSE7320 es una carta de control para arranque 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.</p>	<p>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.</p>
FEATURES	EQUIPEMENT	EQUIPMENT	EQUIPAGGIAMENTO
<p>Stop/reste – Auto – Manual – Start LCD display scroll Event log view Acoustic alarm</p>	<p>Fiche électronique de contrôle DSE7320 Disjoncteur de protection Chargeur de batterie Bouton poussoir arrête d'urgence</p>	<p>Ficha electrónica de control DSE7320 Interruptor magnetotermico Cargador de batería Boton de parada de emergencia</p>	<p>Scheda elettronica di controllo DSE7320 Interruttore magnetotermico Carica batteria Pulsante stop emergenza</p>
DIGITAL MEASURING	MESURES NUMERIQUES	MEDIDAS DIGITALES	MISURAZIONI DIGITALI
<p>Generator volts (3 phases) Generator amperes (3 phases) Generator frequency KW-meter kVA-meter Cos φ- meter Rpm meter Water temperature (optional) Oil pressure (optional) Gen set hours counter Mains volts Battery volts Mains frequency Charging voltage Start-counter Fuel level %</p>	<p>Voltmètre générateur (3 phases) Ampèremètre générateur (3 phases) Fréquencemètre générateur KW-mètre kVA- mètre Cos φ- mètre Tm mètre Température eau (facultatif) Pression huile (facultatif) Totalisateur d'heures de marche Voltmètre secteur Voltmètre batterie Fréquence réseau Tension de charge Compteur démarrages Niveau combustible %</p>	<p>Voltmetro (3 fases) Amperimetro (3 fases) Frecuencimetro KW- metro kVA- metro Cos φ-metro Revoluciones por minuto metro Termometro agua (opcional) Presión aceite (opcional) Medida horas de marcha Voltmetro tensión de red Voltmetro batería Frecuencia red Tensión de carga Numero de arranques Nivel carburante %</p>	<p>Voltmetro tensione generatore (3 fasi) Amperometro generatore (3 fasi) Frequenzimetro generatore KW- metro kVA- metro Cos φ-metro Gm metro Temperatura acqua (facoltativo) Pressione olio (facoltativo) Contaore di funzionamento gruppo Voltmetro tensione rete Voltmetro batteria Frequenza rete Tensione di carica Contavviamenti Livello carburante %</p>
INDICATORS	INDICATEURS	INDICADORES	INDICATORI
<p>Mains live Generator live Mains contactor closed Generator contactor closed Engine running</p>	<p>Présence secteur Présence tension générateur Inverseur secteur fermé Inverseur générateur fermé Moteur en marche</p>	<p>Presencia tensión de red Presencia tensión grupo Transferencial red cerrado Transferencial grupo cerrado Motor en marcha</p>	<p>Presenza tensione di rete Presenza tensione generatore Erogazione da rete Erogazione da gruppo Motore avviato</p>
PROTECTIONS	PROTECTIONS	PROTECCIONES	INDICAZIONI
<p>Low oil pressure High engine temperature Low fuel level Fail to start Fail to stop Emergency stop Over/under frequency Over/under voltage Over/under speed Fuel level Belt breakage Over current Over/under battery voltage</p>	<p>Bas pression huile moteur Haute température moteur Bas niveau combustible Non démarrage Non arrêt Arrêt d'urgence Sur/sous fréquence Sur/sous voltage Sur/sous vitesse Niveau de combustible Rupture courroie Surcourant Sur/sus la tension de batterie</p>	<p>Baja presión aceite Elevada temperatura motor Baja nivel carburante Falta de arranque Falta de parada Parada de emergencia Sobre/bajo frecuencia Sobre/bajo voltaje Sobre/bajo velocidad nivel de combustible Ruptura correa Corriente maxima Sobre/bajo voltaje de la batería</p>	<p>Bassa pressione olio Alta temperatura motore Basso livello di carburante Mancato avviamento Mancato arresto Stop d'emergenza Sovra/sotto frequenza Sovra/sotto voltaggio Sovra/sotto velocità Livello del carburante Rottura cinghia Sovraccorrente Sovra/sotto tensione della batteria</p>

SOUNDPROOF CANOPY CAPOTE D'INSONORISATION CAPOTA DE INSONORIZACION CABINA INSONORIZZATA			
GB	F	E	I
<p>The Tecnogen 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.</p>	<p>La capote insonorisée Tecnogen 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.</p>	<p>La capota insonorizada Tecnogen Super Silent tiene sido planeada con el objetivo de alcanzar el menor nivel de rumorosidad posible y un perfecto enfriamiento del motor. El sople 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-extinguentes.</p>	<p>La cabina insonorizzata Tecnogen 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.</p>
Our quality in 13 points Notre qualité résumée en 13 points Nuestra calidad en 13 puntos La nostra qualità in 13 punti			
1	<p>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 più basso</p>		
2	<p>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</p>		
3	<p>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 più facile controllo dello status operativo del gruppo</p>		
4	<p>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</p>		
5	<p>Galvanized bolts Boulons galvanisés Pernos cincados Bulloni zincati</p>		
6	<p>Emergency stop button Interrupteur d'arrêt d'urgence Botón parada de emergencia Pulsante arresto di emergenza</p>		
7	<p>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</p>		
8	<p>Fully banded baase frame Réservoir amovible avec bague de retention Tanque integrado sfilabile con el envase para recoger los líquidos Serbatoio integrato sfilabile con vasca raccolta liquidi</p>		
9	<p>Central lifting hook Crochet central d'enlèvement Gancho de elevación Gancio di sollevamento centrale</p>		
10	<p>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</p>		
11	<p>High serviceability level Haut niveau d'accessibilité pour la manutention Alto nivel de accesibilidad para la manutención Alto livello di accessibilità per la manutenzione</p>		
12	<p>Large cable entry area for easy installation Grande zone d'entrée 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</p>		
13	<p>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</p>		

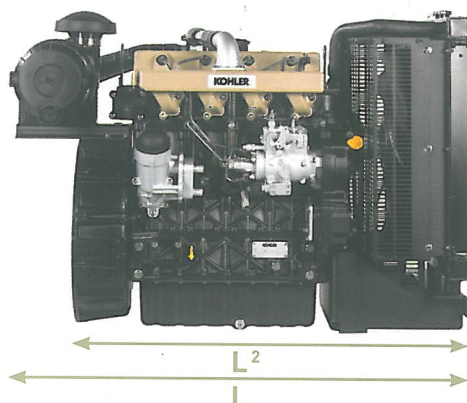
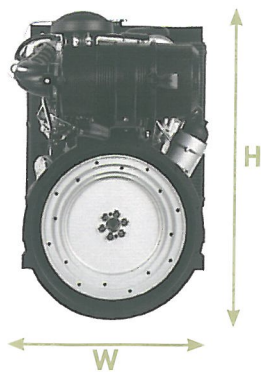


Preliminary
for information only

00	14-03-17	Emulsion	Descrizione	Modello	TV	ER	RB
E.M. Rev.	Disco		Il presente disegno è di proprietà IONEN che ne tutela i propri diritti a termini di legge, quindi non può essere prodotto o comunque è vietata senza autorizzazione Scrittura disegno	Modello	Reddito	Controllo	Approvato
<p>Legno SISTEMI AEROMECANICI</p>				Modello	LAYOUT GX22 L=1700		
<p>PONTENNE-PIACENZA-ITALY</p>				Modello	KL281SX		
Scala	1/1	Prezzo	1	Modello	E00-06-V1-30765		
Volume	15	Prezzo	1	Modello	T1117748		
Scala	1/1	Prezzo	1	Modello	1/1		

KOHLER® Diesel KDI

E-Pack for gensets



- » Fitting the smallest canopy ever in its power range
- » Best power density
- » Lowest fuel consumption
- » Minimum 500 hours oil change interval
- » The most environmentally friendly
- » Best comfort (low vibration & noise)
- » High reliability

STANDARD EQUIPMENT

Blowing fan
Fan guard
Radiator
Air cleaner

TECHNICAL DATA

Engine type	KDI1903M	KDI2504M	KDI2504TM	KDI3404TM	KDI3404TM CAC
n. of cilinder	3	4	4	4	4
Air intake	NATURAL	NATURAL	TURBO	TURBO	TURBO + CHARGE AFTER COOLER
Bore (mm)	88	88	88	96	96
Stroke (mm)	102	102	102	116	116
Engine displ. (cm³)	1861	2482	2482	3359	3359
Total lubrication system capacity (l)	8,9	11,5	11,5	15,6	15,6
Total coolant capacity (l)	6,8	7,6	7,7	8	7,7
Weight (incl. cooling syst.) (kg)	235	270	290	470	N/A
Governing standard	G2	G2	G2	G2	G2
Flywheel and housing	SAE 4/7" 1/2	SAE 4/7" 1/2	SAE 3/11" 1/2	SAE 3/11" 1/2	SAE 3/11" 1/2

DIMENSIONS

	KDI1903M	KDI2504M	KDI2504TM	KDI3404TM	KDI3404TM CAC
L - Length (mm)	897	1003	1100	1250	1250
L² - Length w/o air filter (mm)	720	826	933	1053	1053
H - Height (mm)	761	761	771	954	954
W - Width (mm)	528	528	583	713	713

50 Hz @1500 r.p.m.

POWER

	KDI1903M	KDI2504M	KDI2504TM-30	KDI2504TM-40 EU	KDI2504TM-40	KDI3404TM	KDI3404TM CAC
Stand-by Power (kW/HP)*	19,0 / 25,5	25,4 / 34,0	31,0 / 41,5	36,4 / 48,8	41,0 / 54,9	61,0 / 81,7	61,0 / 81,7
Prime power (kW/HP)*	17,3 / 23,1	23,1 / 30,9	28,2 / 37,8	33,1 / 44,3	37,3 / 49,9	55,4 / 74,3	55,4 / 74,3
Intermittent (Standby)(kVA)**	20,9	27,9	34,1	40,0	45,1	67,9	67,9
Continous (Prime) (kVA)**	19,0	25,4	31,0	36,4	41,0	61,7	61,7
Emission compliance	Stage IIIA	Stage IIIA	Stage IIIA	Stage IIIA	not emitted	not emitted	Stage IIIA

60 Hz @1800 rpm

POWER

	KDI1903M	KDI2504M	KDI2504TM	KDI3404TM CAC
Stand-by Power (kW/HP)*	20,5 / 27,5	29,0 / 38,9	36,4 / 48,8	68,0 / 91,1
Prime power (kW/HP)*	18,6 / 25,0	26,4 / 35,3	33,1 / 44,3	63,0 / 84,4
Intermittent (Standby)(kVA)**	22,6	31,9	40,0	75,7
Continous (Prime) (kVA)**	20,5	29,0	36,4	70,1
Emission compliance	Tier 3/Tier4 i ⁽¹⁾	Tier 3/Tier4 i ⁽¹⁾	Tier 3/Tier4 i ⁽¹⁾	Tier 3/Tier4 i ⁽¹⁾

* Engine power rated according to ISO 3046 rules, after running period in ambient conditions of 20°C and 1 Bar. Power levels drop by 1% every 100 m altitude and by 2% every 5°C above +25°C. Fuel specification EN590.

**Electrical power includes fan power absorption, typical alternator efficiency and a power factor (cos φ) of 0.8

Continous (Prime) power can be overloaded of 10% for 1 h every 12 hours operation
Intermittent (Standby) power cannot be overloaded.
(1) for stationary + emergency applications EPA compliant.

KOHLER® Engines

50 Hz @1500 r.p.m.

FUEL CONSUMPTION PRIME (GROSS)(g/kWh)	KDI1903M	KDI2504M	KDI2504TM-30	KDI2504TM-40 EU	KDI2504TM-40	KDI3404TM	KDI3404TM CAC
Fuel Consumption 100% load	234,6	229,8	226,8	228,7	225,0	224,8	219,6
Fuel Consumption 75% load	229,1	228,6	238,0	235,7	228,0	231,4	231,2
Fuel Consumption 50% load	234,6	233,9	252,9	252,2	235,0	249,6	248,0
Fuel Consumption 25% load	272,4	266,9	280,6	278,4	265,0	268,4	258,1
Fuel Consumption 10% load	428,6	416,4	420,9	398,4	376,0	358,0	352,8
Stand by Power							
HEAT BALANCE AND COOLING SYSTEM							
Heat dissipation (engine radiator) (kW/HP)	16,8 / 22,8	19,5 / 26,5	24,0 / 32,2	28,0 / 37,5	30,0 / 40,2	45,0 / 60,3	38,0 / 50,9
Heat dissipation (CAC) (kW)	/	/	/	/	/	/	12
Fan power consumption (kW)	0,6	0,6	0,9	1	1,1	1	1
Cooling air flow (m³/h)	1700	2100	4250	7200	7200	6120	6120
Coolant flow (l/min)	40	40	40	40	40	105	105
INLET AND EXHAUST DATA							
Max. Intake depression (mbar/kPa)	13 / 1,3	20 / 2,0	32 / 3,2	36 / 3,6	35	42 / 4,2	42 / 4,2
Combustion air volume (kg/h)	82	110	174	174	177	276	258
Max. exhaust gas temperature (C°)	540	520	455	530	530	650	650
Max. allowed backpressure (mbar)	50	70	80	80	80	90	90
Exhaust gas flow (kg/h)	87	116	180	182	185	291	272

60 Hz @1800 r.p.m.

FUEL CONSUMPTION PRIME (GROSS)(g/kWh)	KDI1903M	KDI2504M	KDI2504TM	KDI3404TM CAC
Fuel Consumption 100% load	233,6	224,7	226,6	239,3
Fuel Consumption 75% load	235,6	228,8	236,5	250,0
Fuel Consumption 50% load	245,1	237,4	256,8	243,7
Fuel Consumption 25% load	295,0	277,7	299,8	272,8
Fuel Consumption 10% load	495,2	450,3	470,7	440,1
Stand by Power				
HEAT BALANCE AND COOLING SYSTEM				
Heat dissipation (engine radiator) (kW/HP)	16,7 / 22,4	21,6 / 28,9	28,0 / 37,5	43,0 / 57,6
Heat dissipation (CAC) (kW)	/	/	/	14,3
Fan power consumption (kW)	0,7	1	1,1	1,5
Cooling air flow (m³/h)	2050	5100	8600	7308
Coolant flow (l/min)	50	50	50	125
INLET AND EXHAUST DATA				
Max. Intake depression (mbar/kPa)	24 / 2,4	22 / 2,2	30 / 3	42 / 4,2
Combustion air volume (kg/h)	100,8	135	195	312,6
Max. exhaust gas temperature (C°)	550	550	475	650
Max. allowed backpressure (mbar)	85	85	80	90
Exhaust gas flow (kg/h)	105	141	202	328,9

KOHLER Engines

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EMERSON[™]
Industrial Automation



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 $\leq 95\%$, 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).

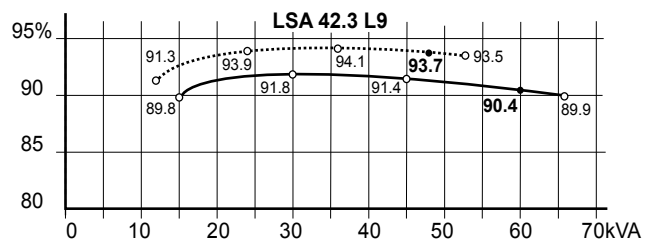
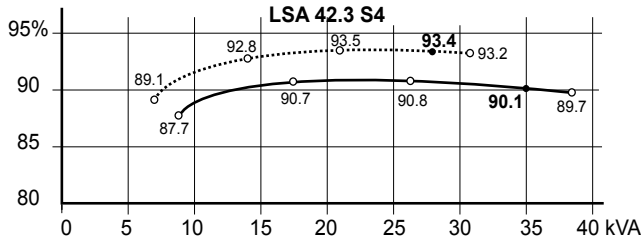
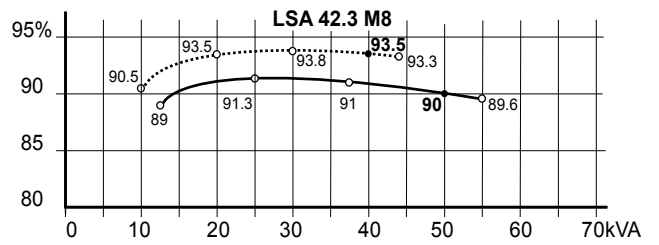
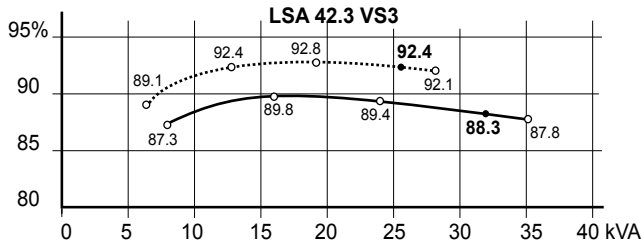
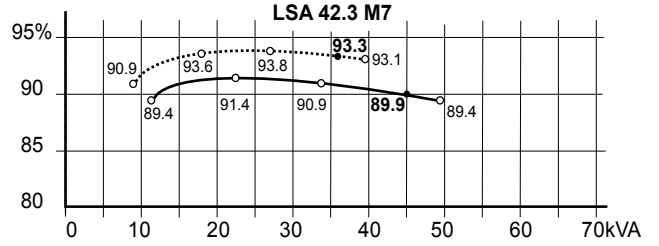
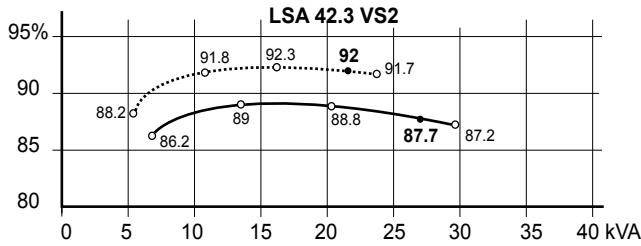
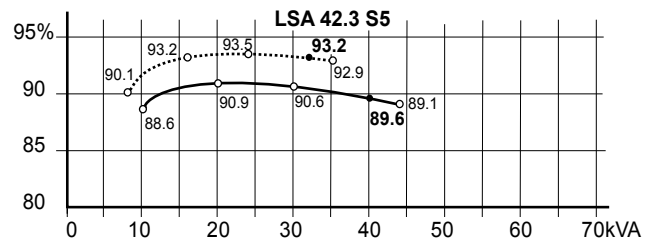
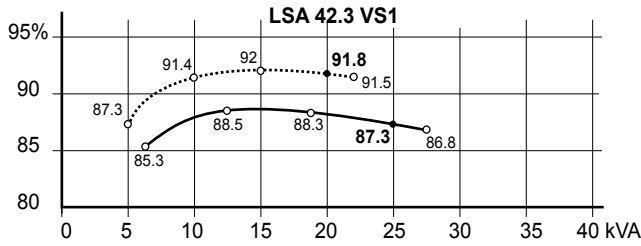
Ratings 50 Hz - 1500 R.P.M.

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

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



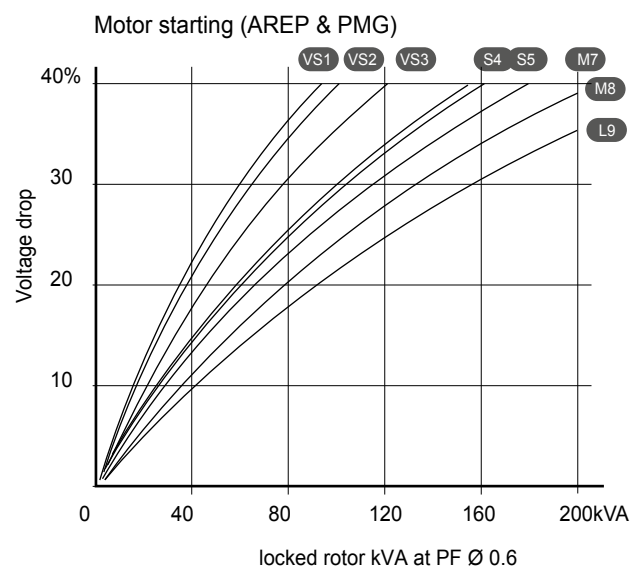
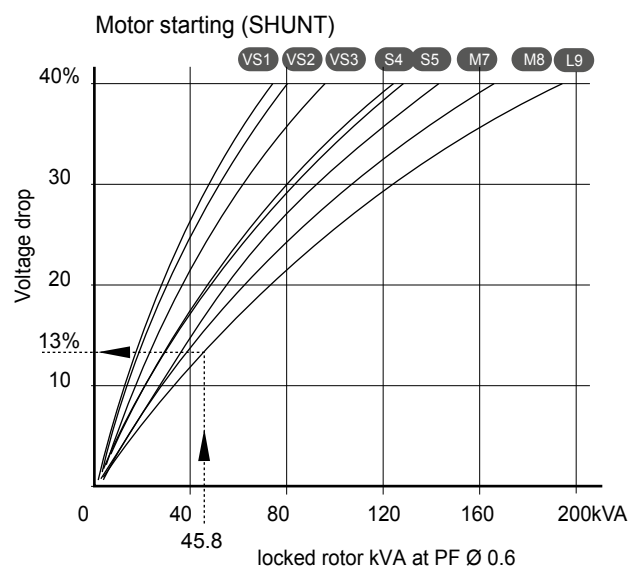
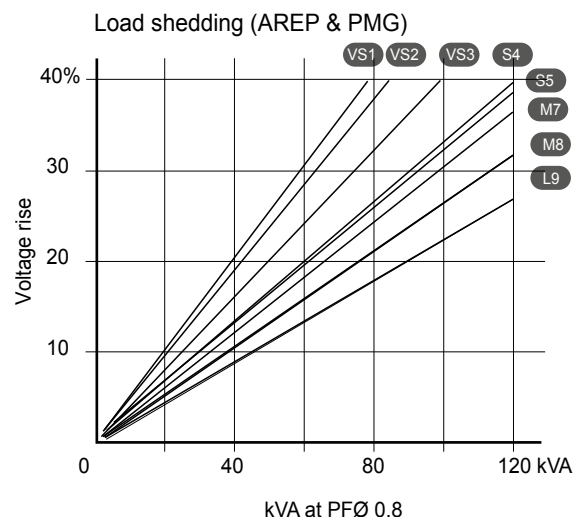
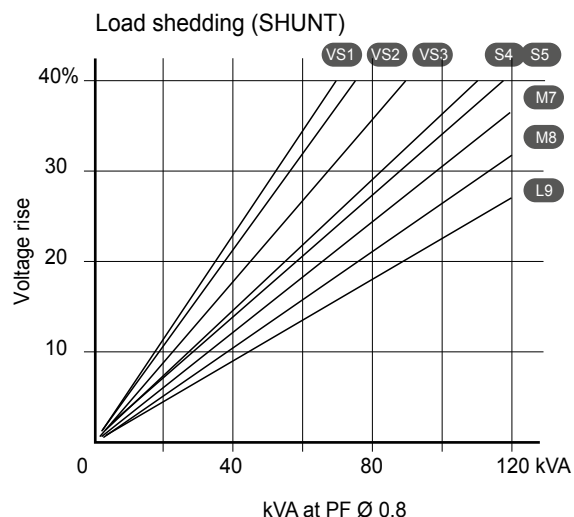
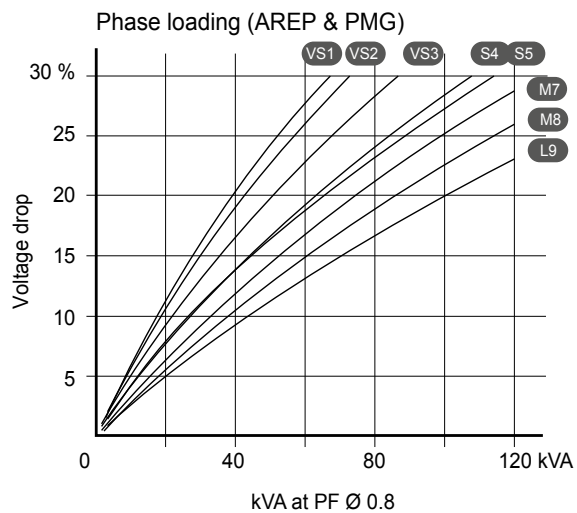
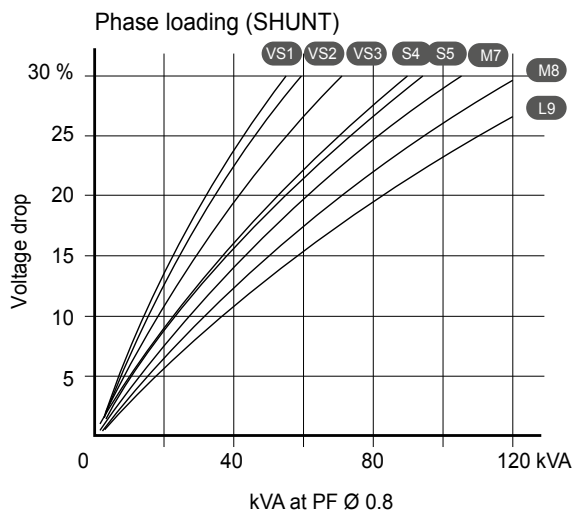
Reactances (%). Time constants (ms) - Class H / 400 V

		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 ($\Delta U = 20\%$ transient)	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms
kVA	Start ($\Delta U = 20\%$ cont. or ($\Delta U = 30\%$ trans.) SHUNT	51.7	56	67.7	92	92	103.5	115	138
kVA	Start ($\Delta U = 20\%$ cont. or ($\Delta U = 30\%$ 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



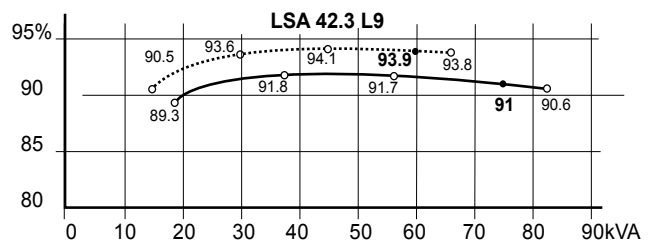
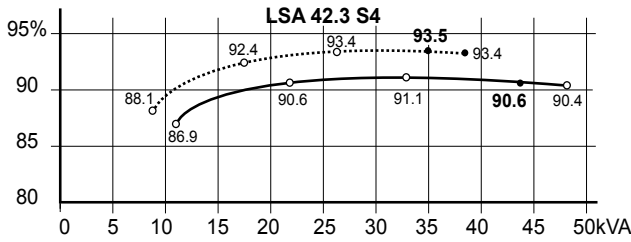
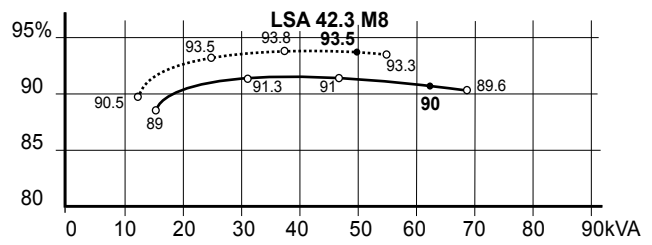
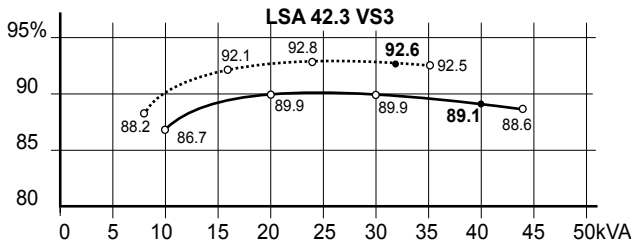
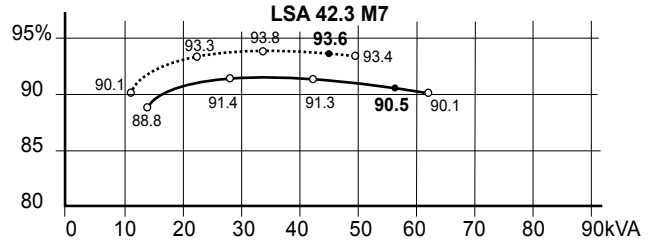
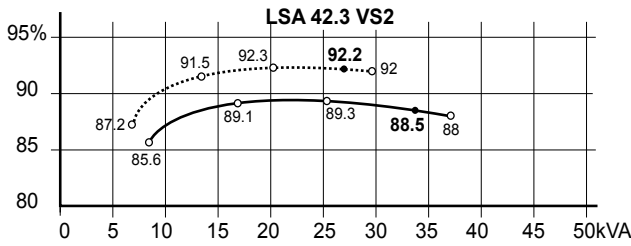
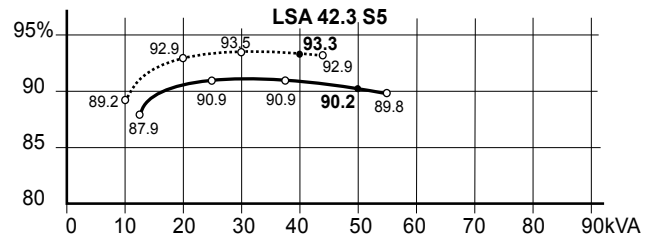
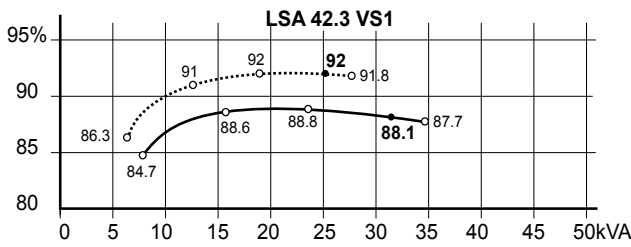
1) For a PF with a \varnothing other than 0.6, multiply the kVA by $K = \sin \varnothing / 0.8$

Example of calculation for a PF with a \varnothing other than 0.6: motor starting kVA calculated at PF \varnothing 0.4 = 40 kVA

► $\sin \varnothing 0.4 = 0.9165$ ► $K = 1.145$ ► 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 $(230/U)^2$.

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



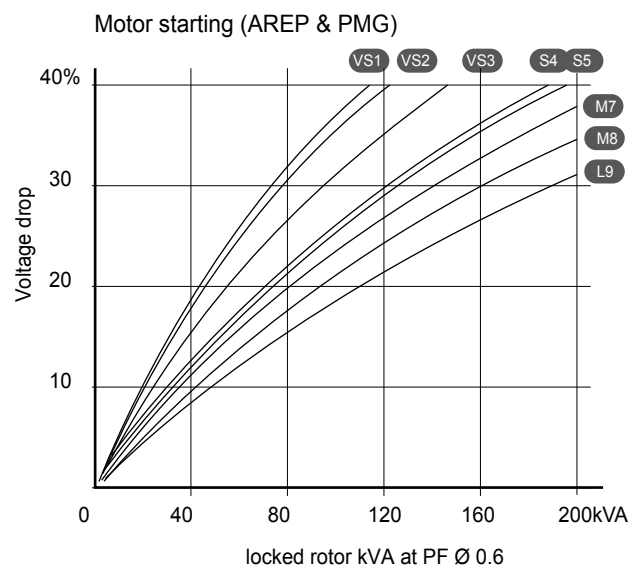
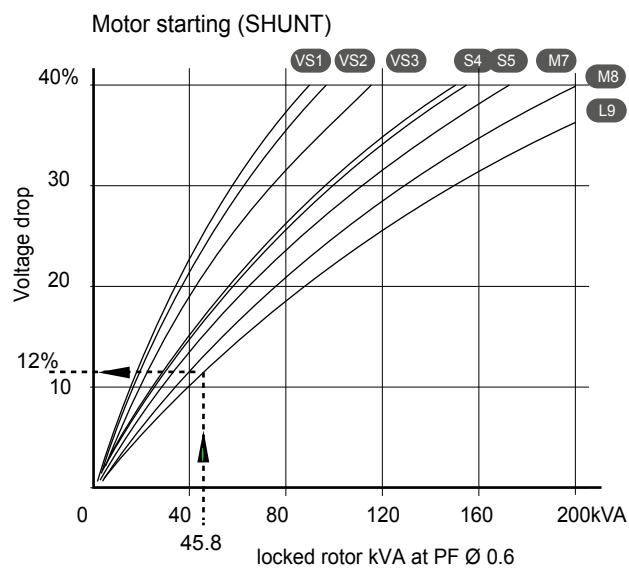
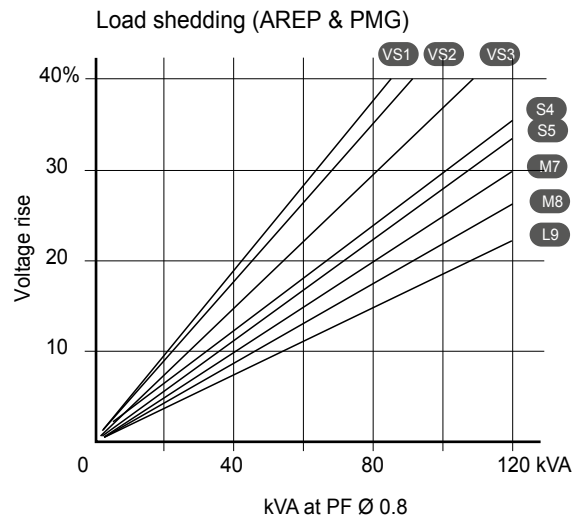
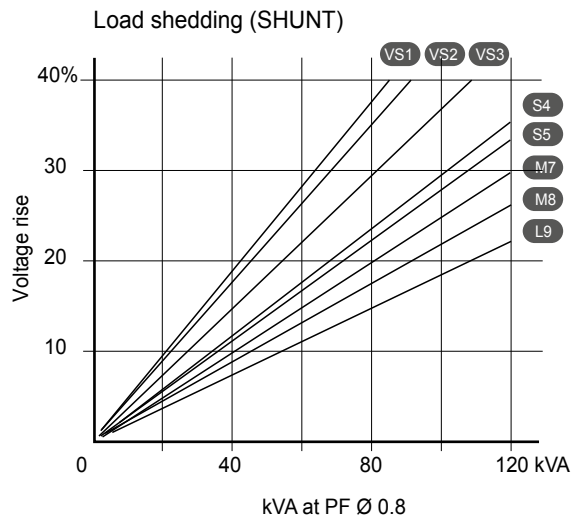
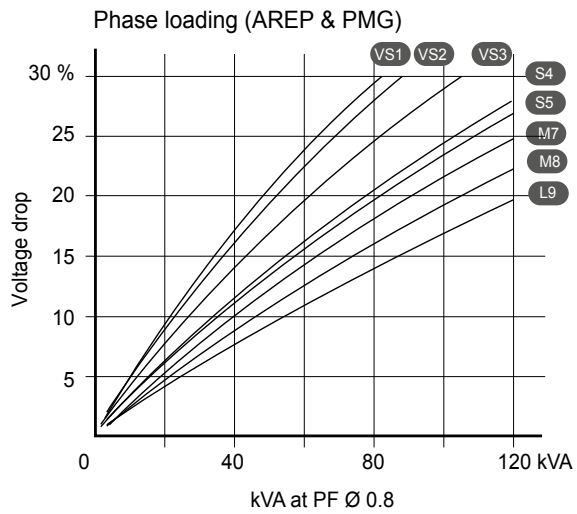
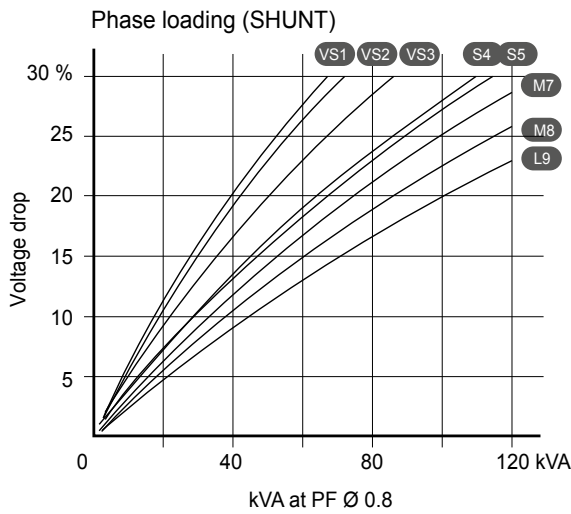
Reactances (%). Time constants (ms) - Class H / 480 V

		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 ($\Delta U = 20\%$ transient)	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms
kVA	Start ($\Delta U = 20\%$ cont. or ($\Delta U = 30\%$ trans.) SHUNT	63.3	68.1	82	111.8	111.8	124.7	146.9	165.6
kVA	Start ($\Delta U = 20\%$ cont. or ($\Delta U = 30\%$ 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



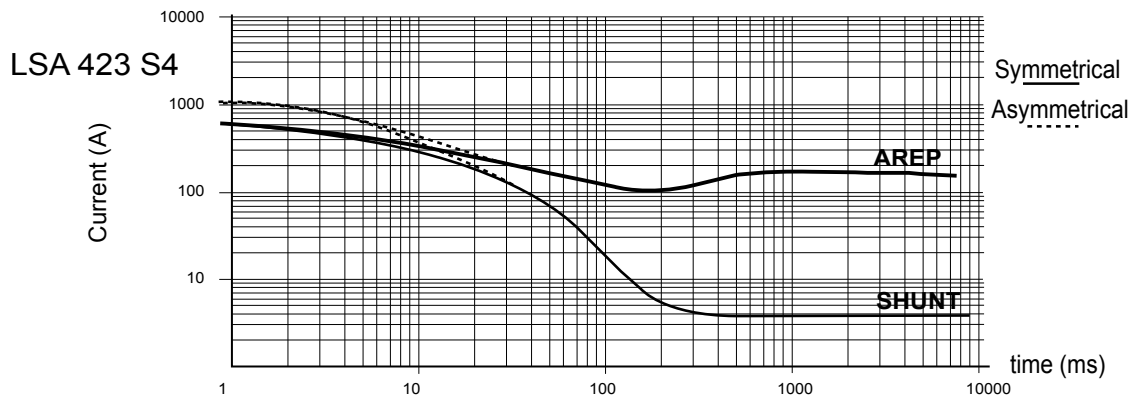
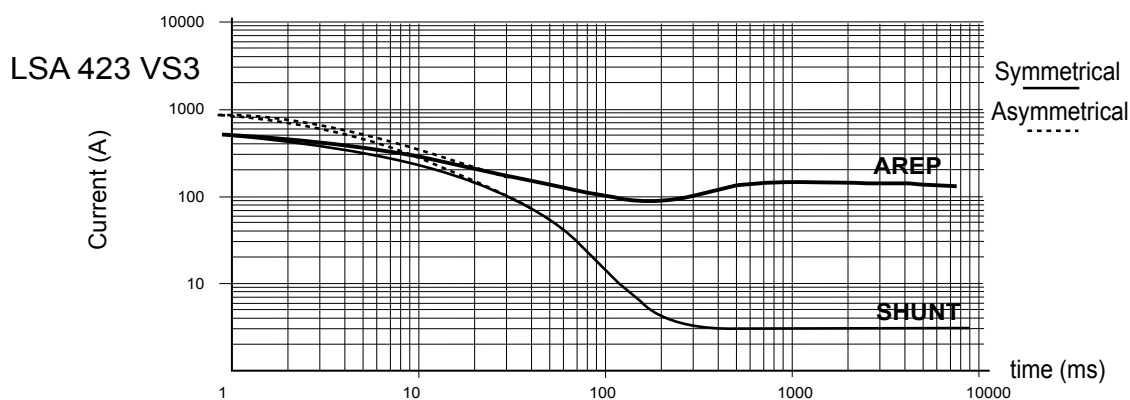
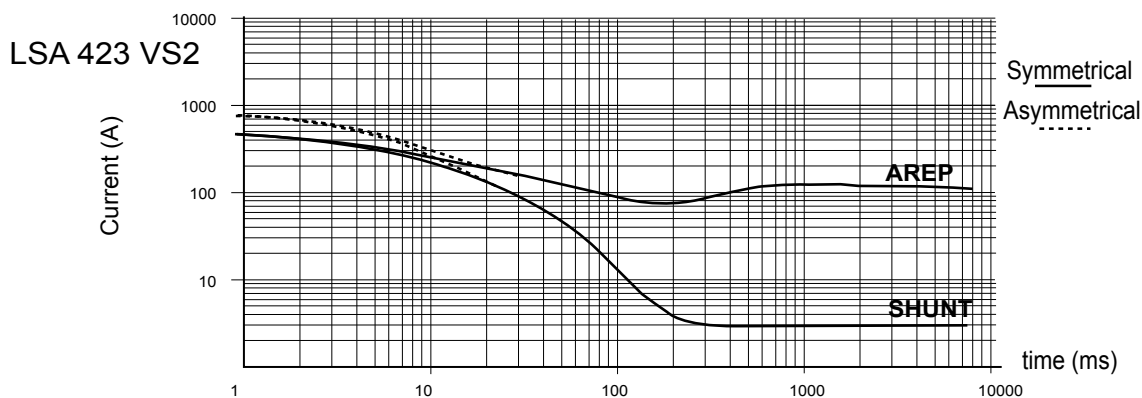
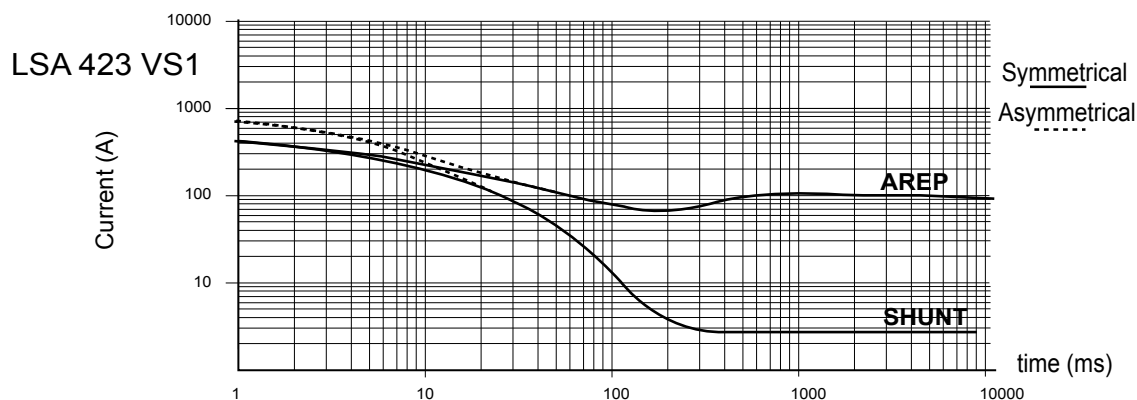
1) For a PF with a ϕ other than 0.6, multiply the kVA by $K = \sin \phi / 0.8$

Example of calculation for a PF with a ϕ other than 0.6: motor starting kVA calculated at PF ϕ 0.4 = 40 kVA

► $\sin \phi 0.4 = 0.9165$ ► $K = 1.145$ ► 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)



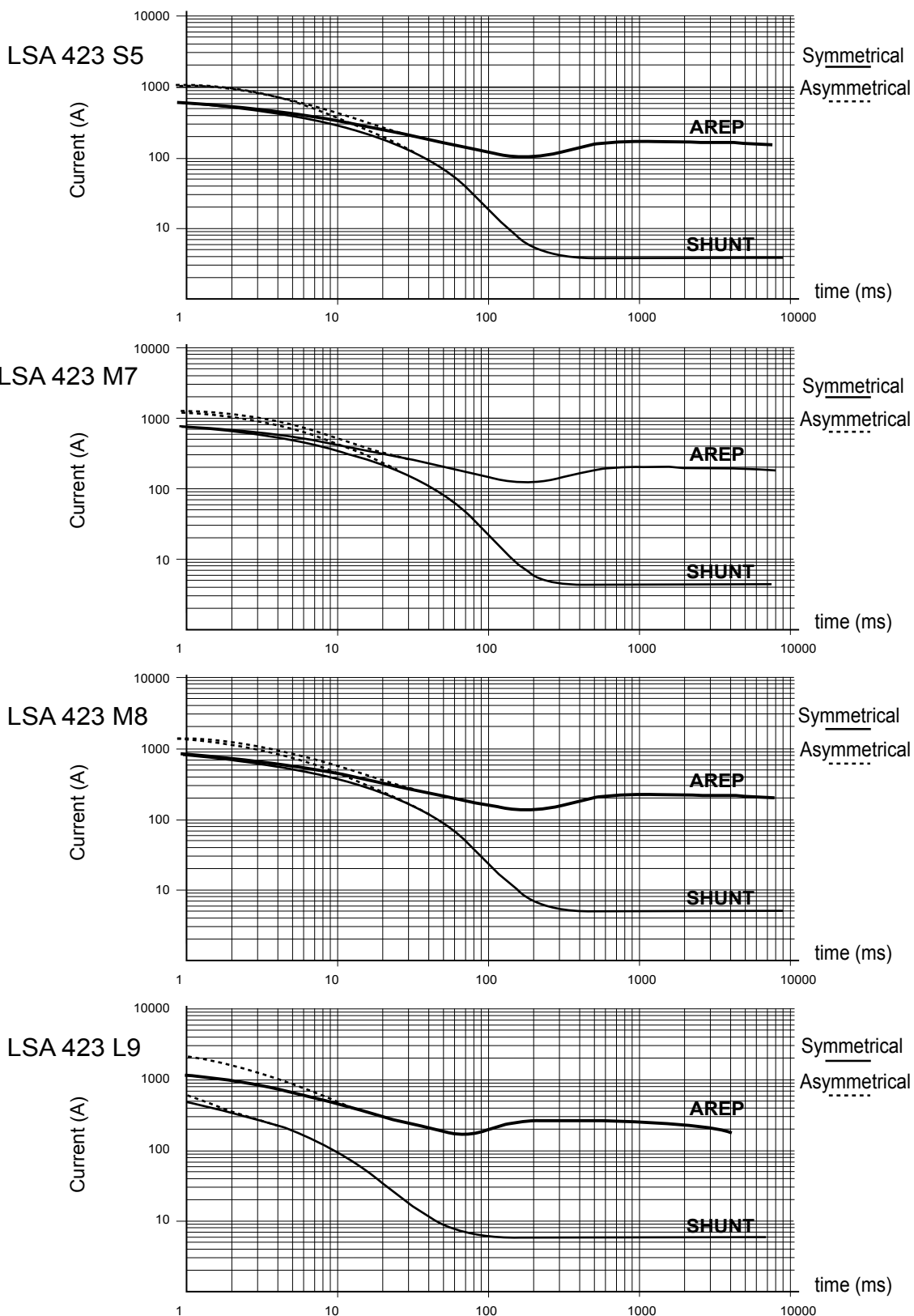
Influence due to connection

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

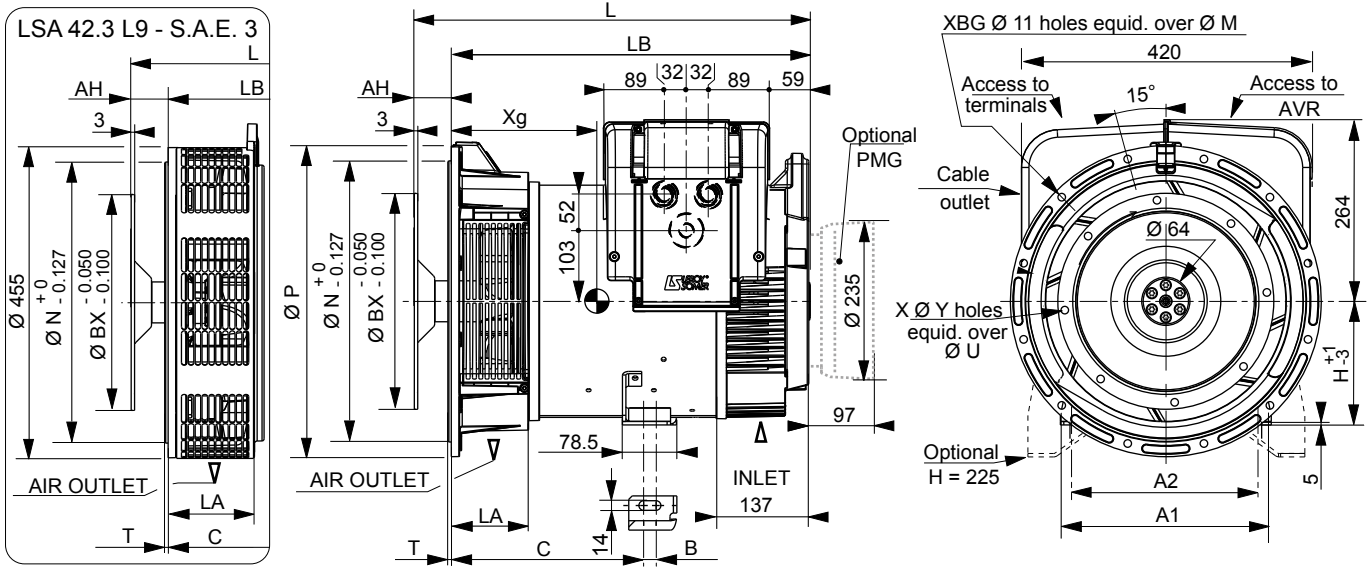
	3-phase	2-phase L/L	1-phase L/N
Instantaneous (max.)	1	0.87	1.3
Continuous	1	1.5	2.2
Maximum duration (AREP/PMG)	10 sec.	5 sec.	2 sec.

Low Voltage alternators 4 pole 3-phase *PARTNER*

LSA 42.3

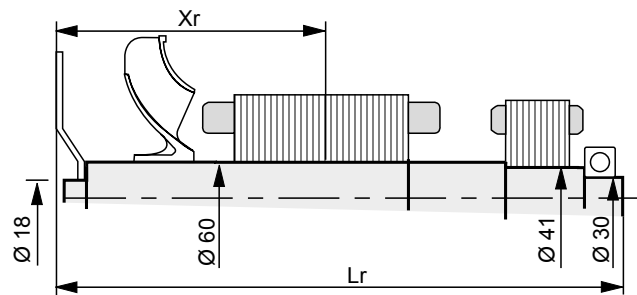
25 to 60 kVA - 50 Hz / 31.5 to 75 kVA - 60 Hz

Single bearing dimensions



Dimensions (mm) and weight (kg)	H = 180 (Standard)								H = 225 (Option)				Coupling			
	L	LB	Xg	Masse (kg)	C	B	A1	A2	C	B	A1	A2	Flange	2	3	4
LSA 42.3 VS1	565	503	237	117	260	18	307	279	299	23	400	356	Flex plate			
LSA 42.3 VS2	565	503	242	122	260	18	307	279	299	23	400	356	11 1/2	x	x	-
LSA 42.3 VS3	565	503	252	133	260	18	307	279	299	23	400	356	10	x	x	x
LSA 42.3 S4	610	548	275	165	260	18	307	279	312.5	23	400	356	8	-	x	x
LSA 42.3 S5	610	548	275	165	260	18	307	279	312.5	23	400	356	7 1/2	-	x	x
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				

Flange (mm)							Flex plate (mm)						
S.A.E.	P	N	M	XBG	T	LA	S.A.E.	BX	U	X	Y	AH	
4	406	361.95	381	12	6	122	11 1/2	352.42	333.38	8	11	39.6	
3	452	409.58	428.62	12	5	112.5	10	314.32	295.28	8	11	53.8	
2	490	447.675	466.725	12	6	111	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 (kgm ²): (4J = MD ²)																
Type	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			
	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

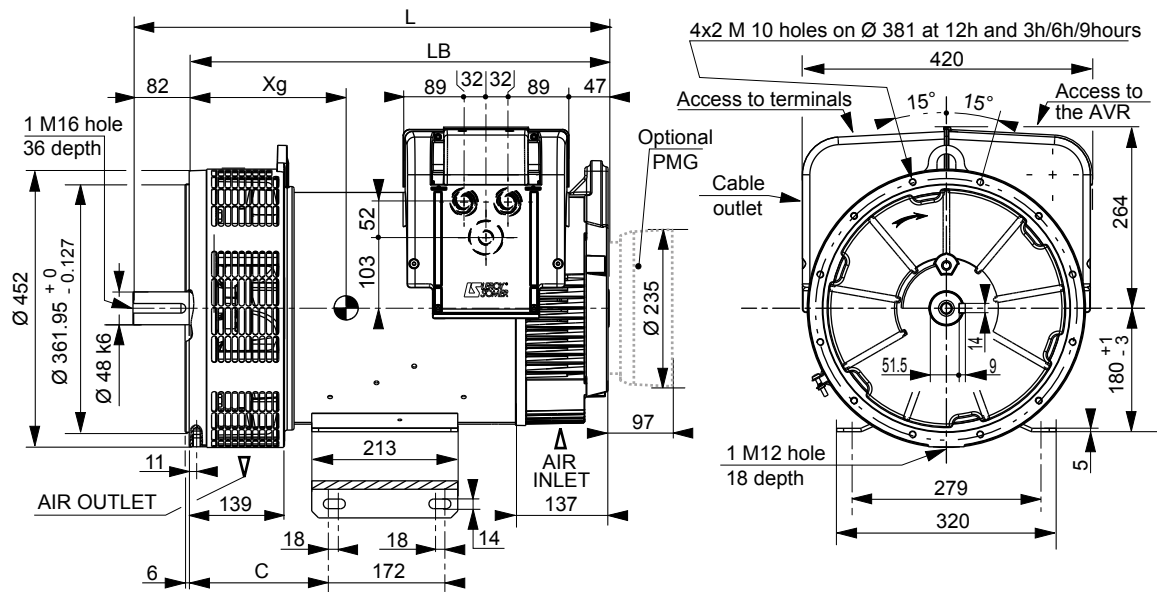
NOTE : Dimensions are for information only and may be subject to modifications. Contractuel 2D drawings can be downloaded from the Leroy-Somer site, 3D drawing files are available upon request.

Low Voltage alternators 4 pole 3-phase *PARTNER*

LSA 42.3

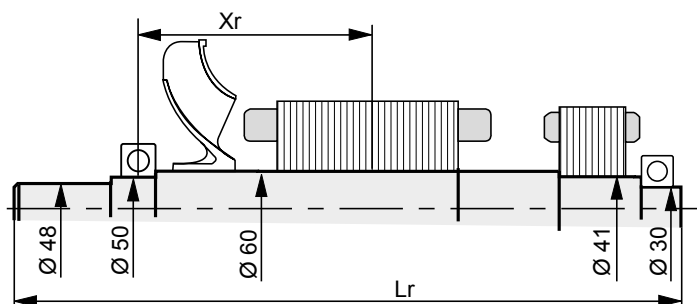
25 to 60 kVA - 50 Hz / 31.5 to 75 kVA - 60 Hz

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



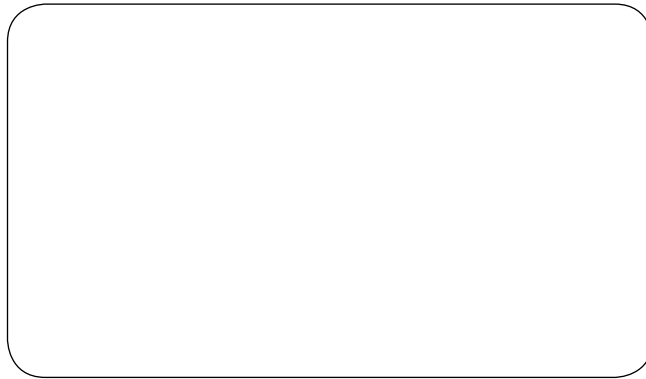
Torsional analysis data

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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