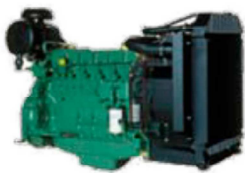


DIESEL/DIESEL
Water Cooled/Refroidis par eau

Powered by

**VOLVO
PENTA**



ALTERNATOR

**LEROY
SOMER**

mecc alte spa

STAMFORD
ALTERNATORS

MarelliMotori

STANDARD EQUIPMENT

STANDARD EQUIPMENT

- Standard lifting eye up to model V0176TSX
- Fully bunded fuel tank
- Integrated fuel tank
- Vibration dampers
- Exhaust gas silencer
- Air filter
- Manual control panel with circuit breaker
- Distribution panel with output sockets (option)
- 12V or 24V battery
- Soundproof canopy
- Forklift pockets

EQUIPEMENT STANDARD

- Crochet central de soulèvement standard jusqu'au modèle V0176TSX
- Bac de rétention
- Réservoir intégré
- Amortisseurs de vibration
- Silencieux d'échappement
- Filtre à air
- Démarrage manuel avec disjoncteur de protection
- Coffret de distribution avec prises (en option)
- Batterie 12 ou 24V
- Capotage superinsonorisé
- Supports pour fourches

ENERMAX series

1500 rpm - 50 Hz - cos ϕ 0,8 400/230V
1500 tr/min - 50 Hz - cos ϕ 0,8 400/230V

1800 rpm - 60 Hz - cos ϕ 0,8 voltage on request
1800 tr/min - 60 Hz - cos ϕ 0,8 voltage sous demande



VO 111 T SX



OPTIONAL ACCESSORIES - ACCESSOIRES EN OPTION



HOT GALVANIZED STEEL SOUNDPROOF CANOPY / CAPOTAGE D'INSONORISATION EN ACIER GALVANISÉ À CHAUD

▼ HEAVY DUTY BASE FRAME (OPTIONAL)/CHASSIS ULTRA ROBUSTE (OPTION)



VOLVO PENTA/ENERMAX SX SERIES														CONTROL PANEL												
MODEL	50 HZ		60 HZ		ENGINE TECHNICAL DATA										Standard panel	Automatic panel	dB A (+) 7 m	TANK I	SIZES cm			WEIGHT kg				
	KVA max	KVA cont	KVA max	KVA cont		Regulator	Cylinders	cm³	kWm PRP		Cons. 70% (l/h)		Aspiration													
									1500 rpm	1800 rpm	1500 rpm	1800 rpm														
THREE PHASE																										
V0101TSX*	95	85	97	86	TAD530GE	M	4	4760	74	75	13,6	14	T	MCP 120-22	ACP 7320	68	185	258	113	158	1500					
V0111TSX*	110	100	115	103	TAD531GE	M	4	4760	86	90	16	13,6	T	MCP 120-22	ACP 7320	68	185	258	113	158	1650					
V0151TSX*	145	130	151	135	TAD532GE	E	4	4760	114	118	19,8	21,4	T	MCP 120-22	ACP 7320	68	185	297	113	194	1850					
V0152TSX*	145	130	145	130	TAD730GE	M	6	7150	111	113	20,6	21	T	MCP 120-22	ACP 7320	68	185	297	113	194	1920					
V0176TSX*	165	150	172	155	TAD731GE	M	6	7150	133	138	23,4	24,8	T	MCP 120-22	ACP 7320	68	270	338	113	185	2400					
V0212TSX*	203	180	227	203	TAD732GE	E	6	7150	160	176	27,8	31,9	T	MCP 120-22	ACP 7320	68	450	383	123	210	3100					
V0227TSX*	223	200	252	226	TAD733GE	E	6	7150	177	195	30,9	35,8	T	ACP 7310	ACP 7320	68	450	383	123	210	3250					
V0276TSX*	275	250	287	255	TAD734GE	E	6	7150	216	220	39,1	40,8	T	ACP 7310	ACP 7320	68	450	383	123	210	3350					
V0301TSX*	310	280	314	285	TAD940GE	E	6	9360	240	246	39,6	41,7	T	ACP 7310	ACP 7320	68	450	383	165	210	3380					
V0351TSX*	341	315	383	345	TAD941GE	E	6	9360	279	294	45	50,2	T	ACP 7310	ACP 7320	68	450	383	165	210	3460					
V0352TSX*	341	315	369	335	TAD1341GE	E	6	12780	271	287	43,8	48,3	T	ACP 7310	ACP 7320	68	1000	425	200	213	3860					
V0362TSX*	385	350	440	400	TAD1342GE	E	6	12780	303	345	48,4	57,3	T	ACP 7310	ACP 7320	68	1000	425	200	213	3970					
V0412TSX*	418	380	450	410	TAD1343GE	E	6	12780	325	353	52,1	58,4	T	ACP 7310	ACP 7320	68	1000	425	200	213	4020					
V0462TSX*	450	410	500	455	TAD1344GE	E	6	12780	354	392	57,4	64,8	T	ACP 7310	ACP 7320	68	1000	425	200	213	4120					
V0502TSX*	500	450	500	455	TAD1345GE	E	6	12780	388	392	63,1	64,8	T	ACP 7310	ACP 7320	68	1000	425	200	213	4200					
V0511TSX*	500	455	564	506	TAD1640GE	E	6	16120	393	431	62,8	71,9	T	ACP 7310	ACP 7320	69	1000	485	200	230	4900					
V0601TSX*	560	500	645	573	TAD1641GE	E	6	16120	430	485	69,3	80	T	ACP 7310	ACP 7320	69	1000	485	200	230	5050					
V0651TSX*	600	550	690	625	TAD1642GE	E	6	16120	485	532	75,9	87,3	T	ACP 7310	ACP 7320	69	1000	485	200	230	5100					
V0700TSX*	700	630	761	685	TWD1643 GE	E	6	16120	536	585	87,7	95,3	T	ACP 7310	ACP 7320	70	1000	485	200	230	6000					

CONTROL PANELS

MCP 120 - 22/p. 91



ACP 7310/p. 92



ACP 7320 - AMF/p. 94



ACP 7320 - STS/p. 94



ACP 7320 - ATS/p. 94



ENERMAX SERIES

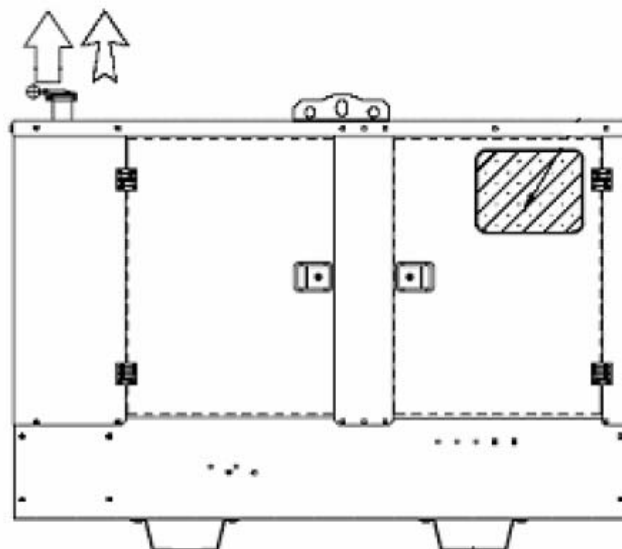
**DIESEL GENERATOR
GROUPE ELECTROGENE DIESEL
GRUPO ELECTROGENO DIESEL
GRUPPO ELETTROGENO DIESEL**

MODEL
MODELE
MODELO
MODELLO

PK 51 TSX



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 45	kVA 53,5
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	LTP	kVA 50	kVA 58,9
Continuous Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	PRP	kWe 36	kWe 42,8
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	LTP	kWe 40	kWe 47,1
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 7,4	l/h 8,7

ENGINE MOTEUR MOTOR MOTORE		PERKINS		1103A-33TG1	
PERFORMANCE PERFORMANCES PRESTACIONES PRESTAZIONI		1500 rpm		1800 rpm	
Continuous Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	PRP	kWm	41,3	kWm	48,9
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	LTP	kWm	45,6	kWm	53,9
Specific fuel consumption Consommation spécifique combustible Consumo específico de combustible Consumo specifico combustibile		g/kWh	50 % 227 75 % 218 100 % 215 110 % 221	g/kWh	50 % 235 75 % 221 100 % 215 110 % 217
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

ALTERNATOR ALTERNATEUR ALTERNADOR ALTERNATORE				LEROY SOMER	
PERFORMANCE PERFORMANCES PRESTACIONES PRESTAZIONI		1500 rpm		1800 rpm	
Model Modèle Modelo Modello		LSA 42.3M7		LSA 42.3M7	
Continuous Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	40 °C	kVA	45	KVA	53,5
		kWe	36	kWe	42,8
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	40 °C	KVA	48,2	KVA	56,7
		kWe	38,5	kWe	45,4
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	27 °C	KVA	50	KVA	59,8
		kWe	40	kWe	47,1
Efficiency Rendement Eficienza Efficienza		1/4	88,9 %	1/4	89,3 %
		2/4	90,8 %	2/4	91,4 %
		3/4	90,3 %	3/4	91,0 %
		4/4	89,1 %	4/4	89,8 %
Standard winding connections Liaison des bobinages Tipo de conexión Collegamento avvolgimenti		Y		YY	
Exciter Excitatrice Excitador Excitatrice	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 Distorsión 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 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 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		0	
		> 40 °C		3 % / 5°C	
Derating for altitude Déclassement pour altitude Declasamiento para altitud Declassamento per altitudine		0 ÷ 1500 m		0	
		1500 ÷ 2500 m		3% / 500 m	
		2500 ÷ 3000 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.)			(kg)	(cm)		
	STD	EXTRA1	EXTRA2		L	W	H
SOUND PROOF VERSION VERSION INSONORISEE VERSION INSONORISADA VERSIONE INSONORIZZATA	185	270	ON REQUEST	1200	230	113	171

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

GB	F	E	I
<ul style="list-style-type: none"> 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 	<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

ACP 7310 AUS

80A (400 V - 3 ph - 50Hz - 1500 rpm)
160A (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 ELECTRONICA DE 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/sous vitesse Niveau de combustible Rupture courroie Surcoulant 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 Sovracorrente 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**

1)		COMPLETE CONTROL PANEL FREE STANDING TYPE Equipment: control board, circuit breaker, battery charger, transfer switch, box key. COFFRET ELECTRIQUE COMPLET TYPE ARMOIRE SEPARÉ 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)		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)		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 SEPARÉ 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.

	DSE 7320	CONTROL BOARD CARTE ELECTRONIQUE DE CONTROL CARTA ELECTRONICA DE CONTROL SCHEDA ELETTRONICA DI CONTROLLO
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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 diesel 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 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.	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/restart – Auto – Manual – Start LCD display scroll Event log view Acoustic alarm	Fiche électronique de contrôle DSE7320 Disjoncteur de protection Chargeur de batterie Bouton poussoir arrête d'urgence	Ficha electrónica de control DSE7320 Interruptor magnetotermico Cargador de batería Botón de parada de emergencia	Scheda elettronica di controllo DSE7320 Interruttore magnetotermico Carica batteria Pulsante stop emergenza
DIGITAL MEASURING	MESURES NUMERIQUES	MEDIDAS DIGITALES	MISURAZIONI DIGITALI
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 %	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 %	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 %	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 Contavviamanti Livello carburante %
INDICATORS	INDICATEURS	INDICADORES	INDICATORI
Mains live Generator live Mains contactor closed Generator contactor closed Engine running	Présence secteur Présence tension générateur Inverseur secteur fermé Inverseur générateur fermé Moteur en marche	Presencia tensión de red Presencia tensión grupo Transferencial red cerrado Transferencial grupo cerrado Motor en marcha	Presenza tensione di rete Presenza tensione generatore Erogazione da rete Erogazione da gruppo Motore avviato
PROTECTIONS	PROTECTIONS	PROTECCIONES	PROTEZIONI
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	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 Surcoursant 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 frecuencia Sobre/bajo 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 Sovra/sotto voltaggio Sovra/sotto velocità Livello del carburante Rottura cinghia Sovracorrente Sovra/sotto tensione della batteria

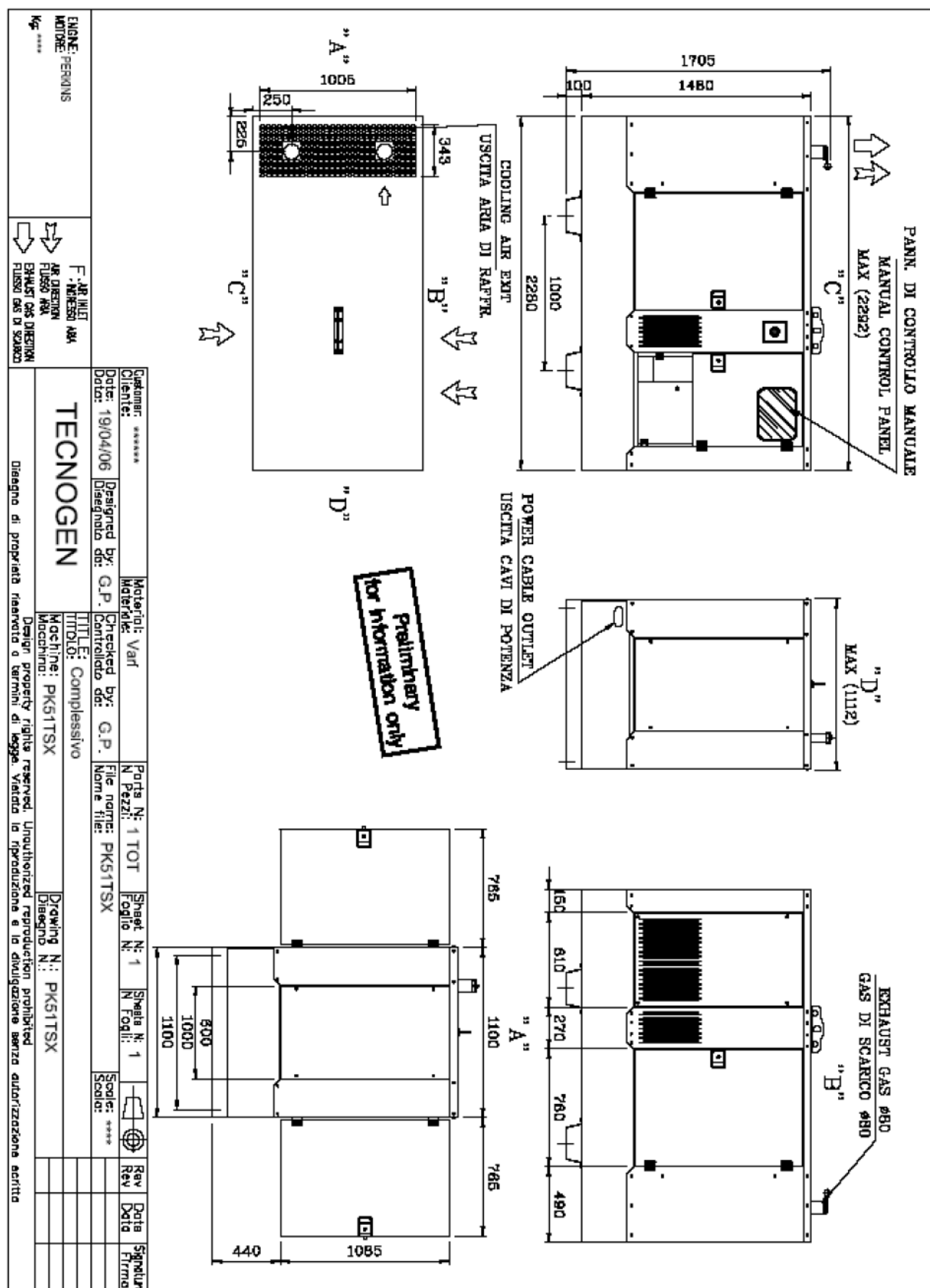
SOUNDPROOF CANOPY **CAPOTE D'INSONORISATION** **CAPOTA DE INSONORIZACION** **CABINA INSONORIZZATA**

GB	F	E	I
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.	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 résistants au feu et auto-extinguibles.	La capota insonorizzata TecnoGen 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-extinguentes.	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.

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 più 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 più 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 llave situado a l'externo Tappo gasolio con chiave posizionato all'esterno
8		Fully banded baase frame Réservoir amovible avec bague de retention Tanque integrado sfilable con el envase para recoger los líquidos 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'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
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

**SOUND PROOF VERSION DRAWING
DESSIN VERSION INSONORIZEE
DIBUJO VERSION INSONORISADA
DISEGNO VERSIONE INSONORIZZATA**



1100 Series 1103A-33TG1 Diesel Engine – Electropak

45.6 kWm at 1500 rpm
53.9 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-33TG1 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

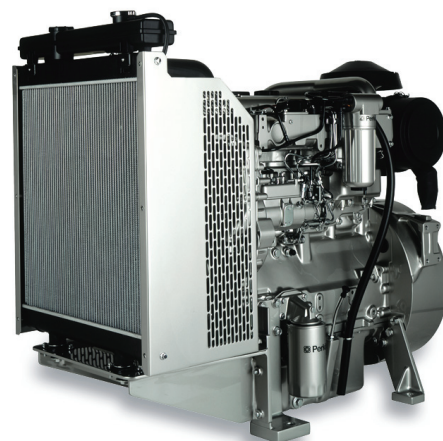
- Product design and Class A manufacturing improvements enhance product reliability while maintaining Perkins legendary reputation for durability

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	45.0	36.0	42.2	56.6	41.3	55.4
	Standby Power	49.6	39.7	46.5	62.4	45.6	61.2
1800	Prime Power	53.1	42.5	50.5	67.7	48.9	65.6
	Standby Power	58.7	46.9	55.6	74.6	53.9	72.3

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.

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 **Perkins®**

THE HEART OF EVERY GREAT MACHINE



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).

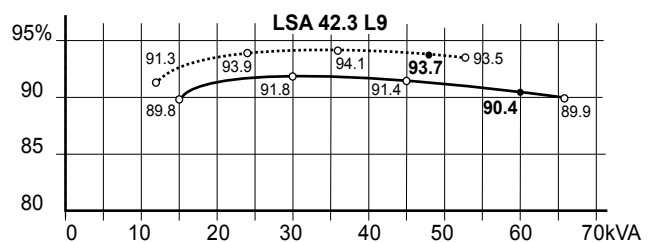
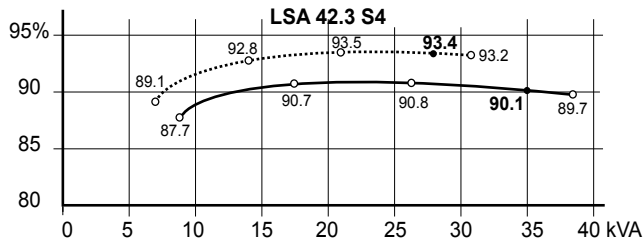
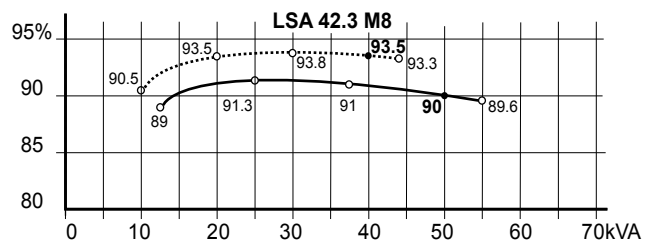
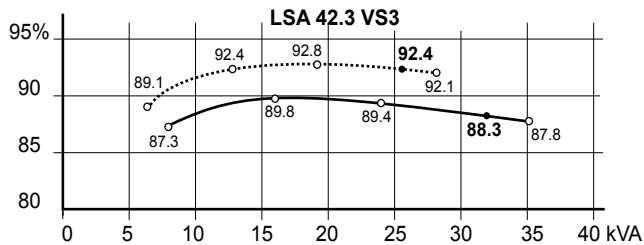
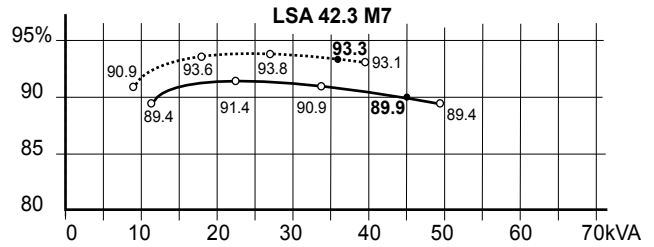
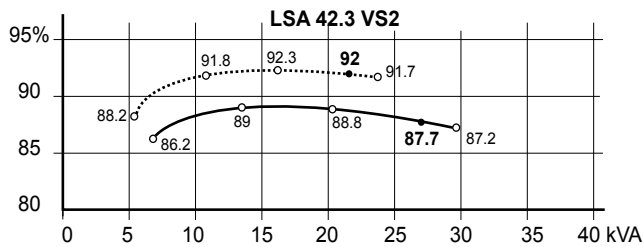
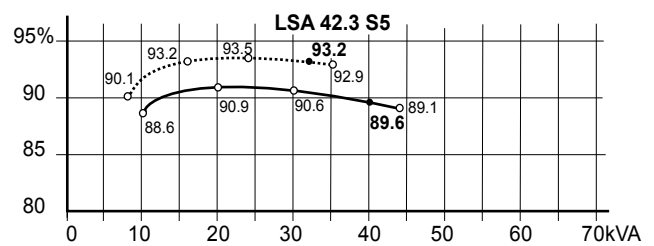
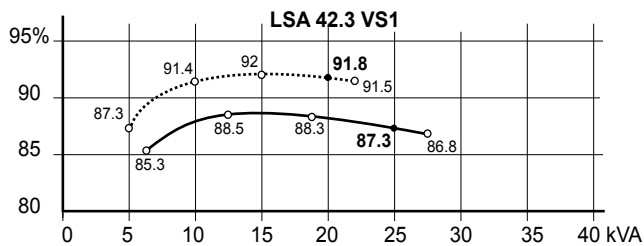
Ratings 50 Hz - 1500 R.P.M.

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)



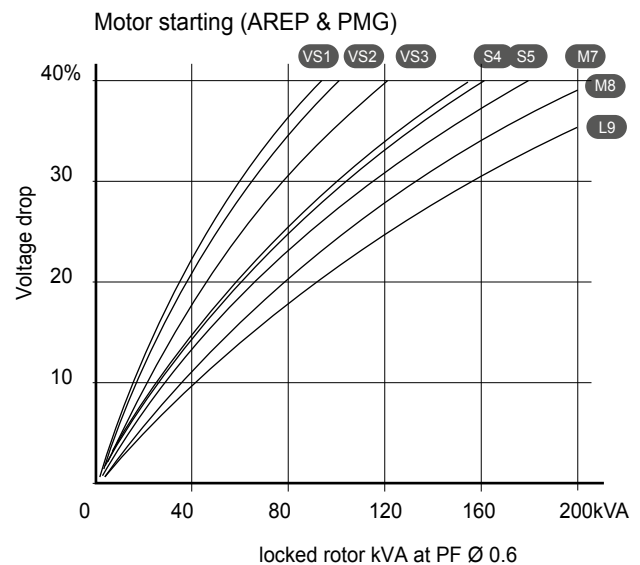
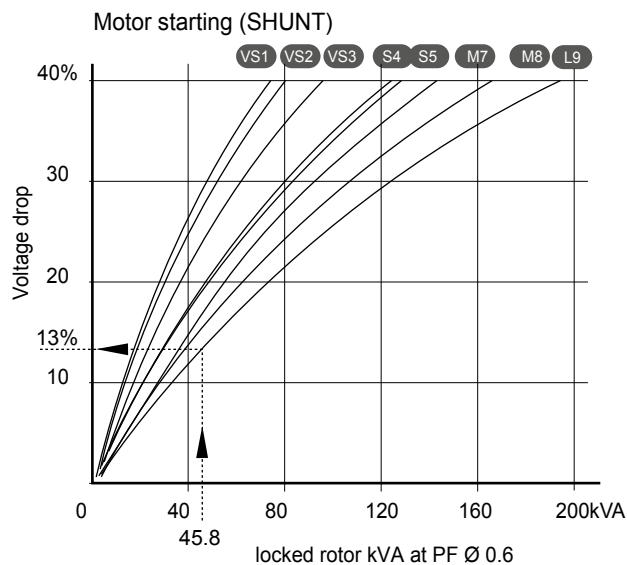
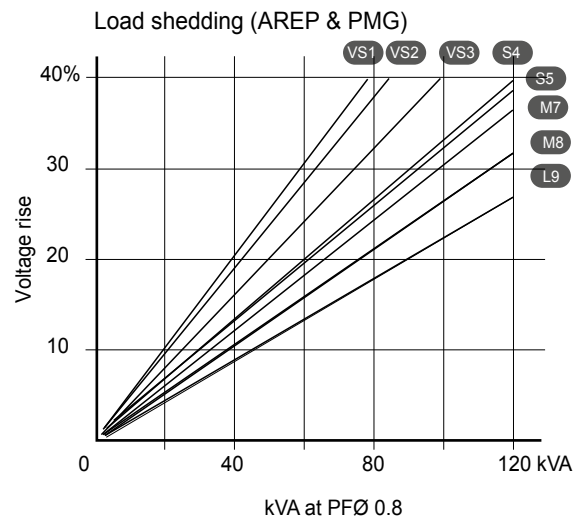
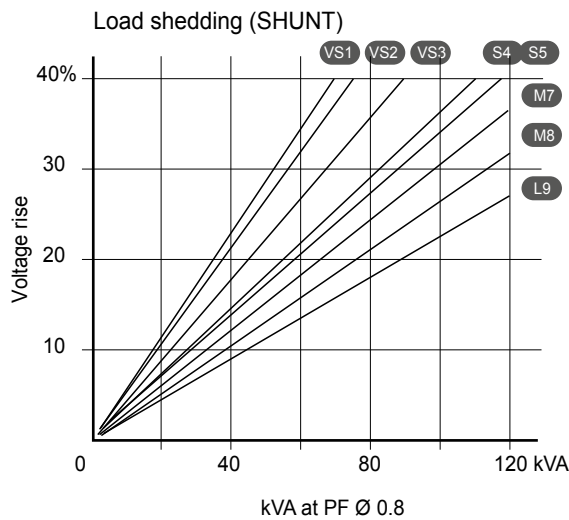
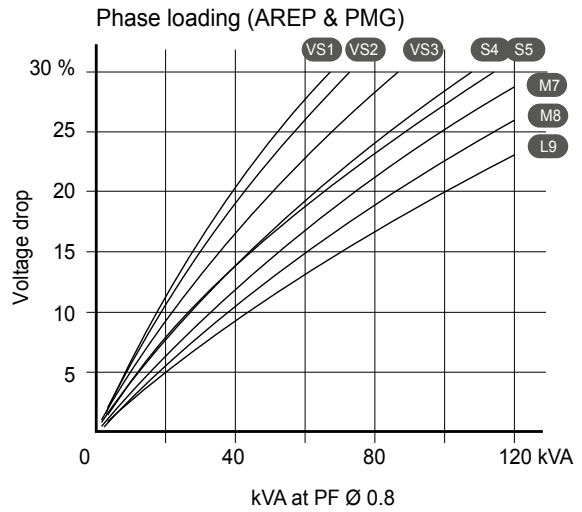
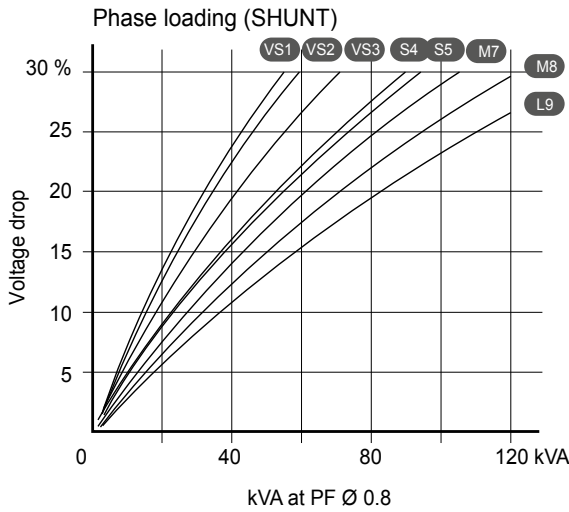
Reactances (%). Time constants (ms) - Class H / 400 V

		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 $\cos \phi$ other than 0.6, multiply the kVA by $K = \sin \phi / 0.8$

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

► $\sin \phi = 0.4 = 0.9165$ ► $K = 1.145$ ► corrected kVA = 45.8 kVA ► Corresponding voltage drop for L9 = 13 %.

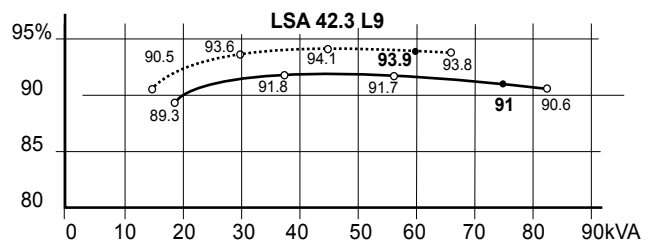
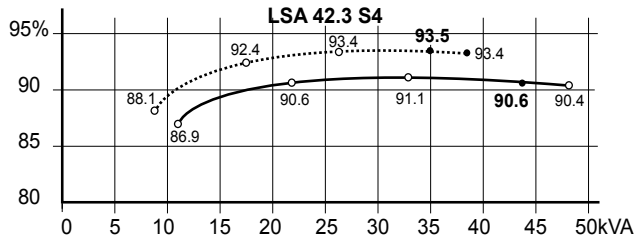
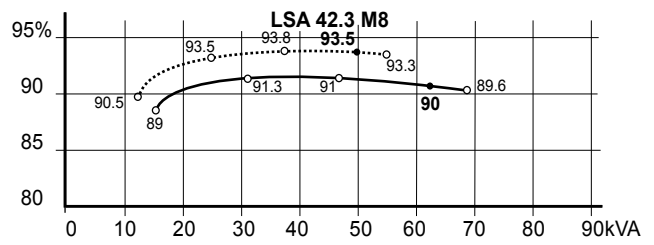
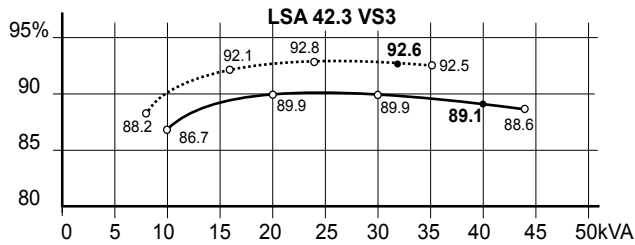
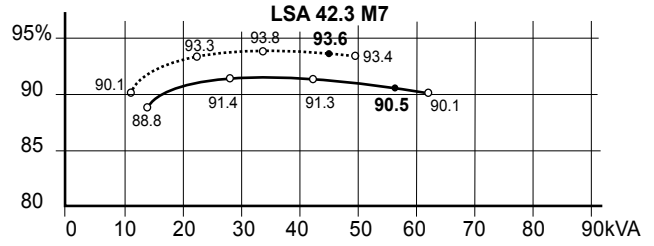
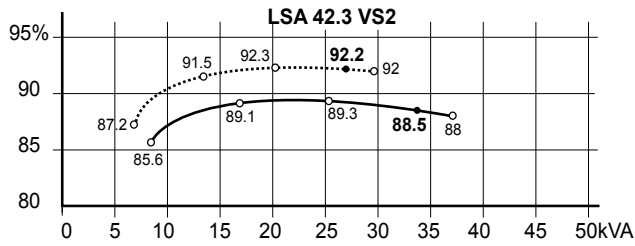
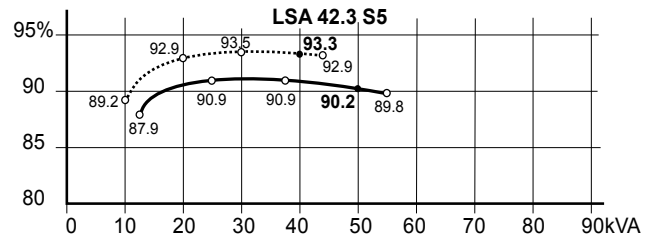
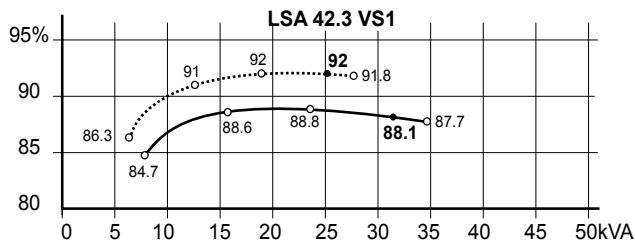
2) For a voltage U other than 400 V (Y) , 230 V () at 50 Hz, multiply the kVA by $(400/U)^2$ or $(230/U)^2$.

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)



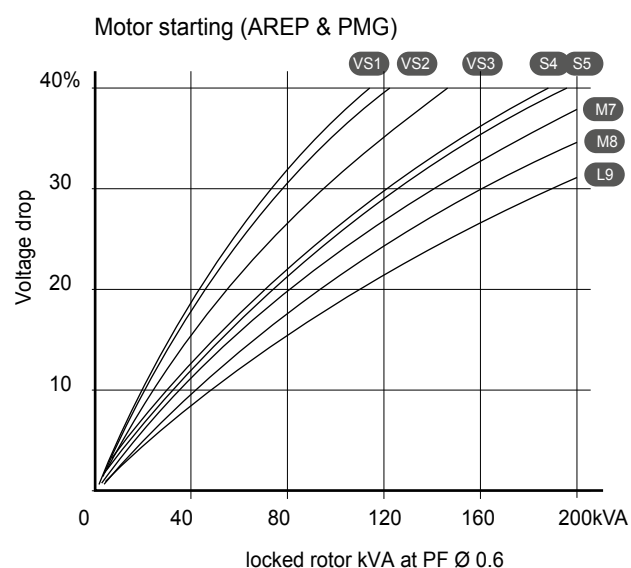
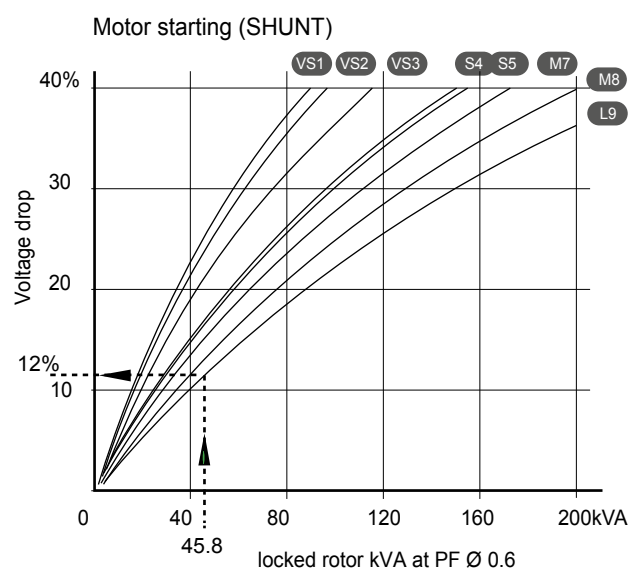
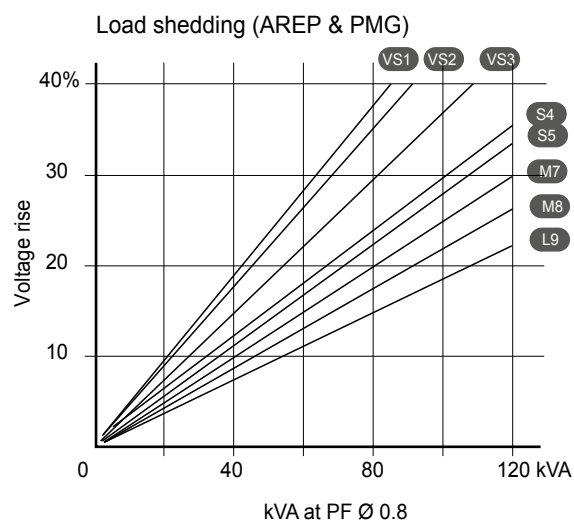
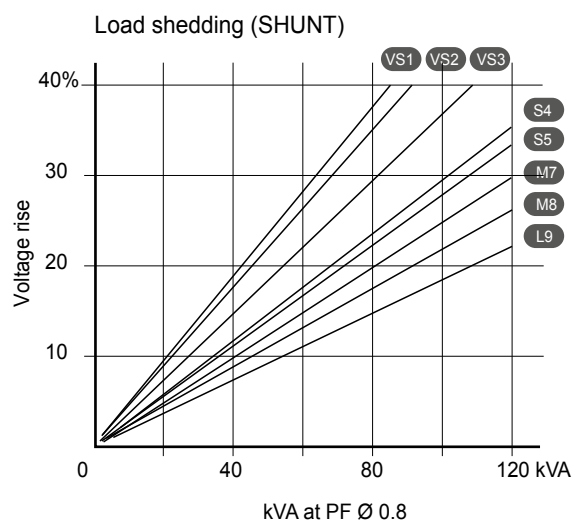
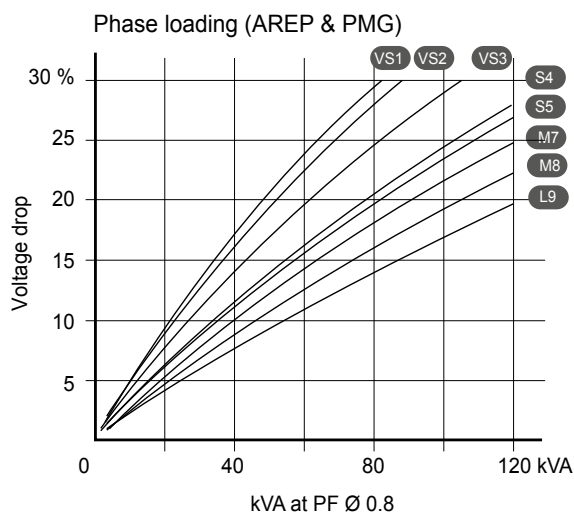
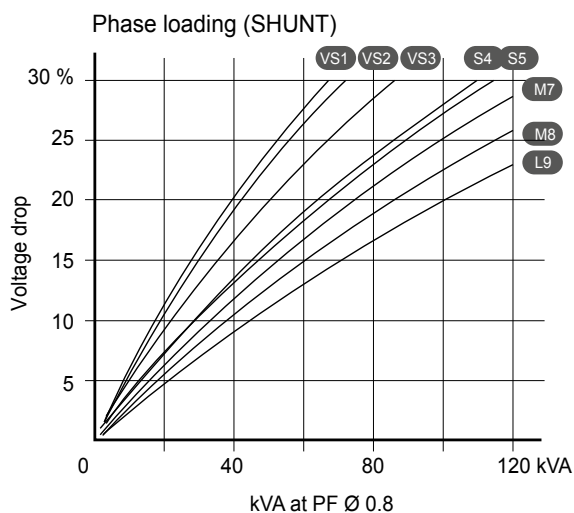
Reactances (%). Time constants (ms) - Class H / 480 V

		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)	30.2/16.3	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



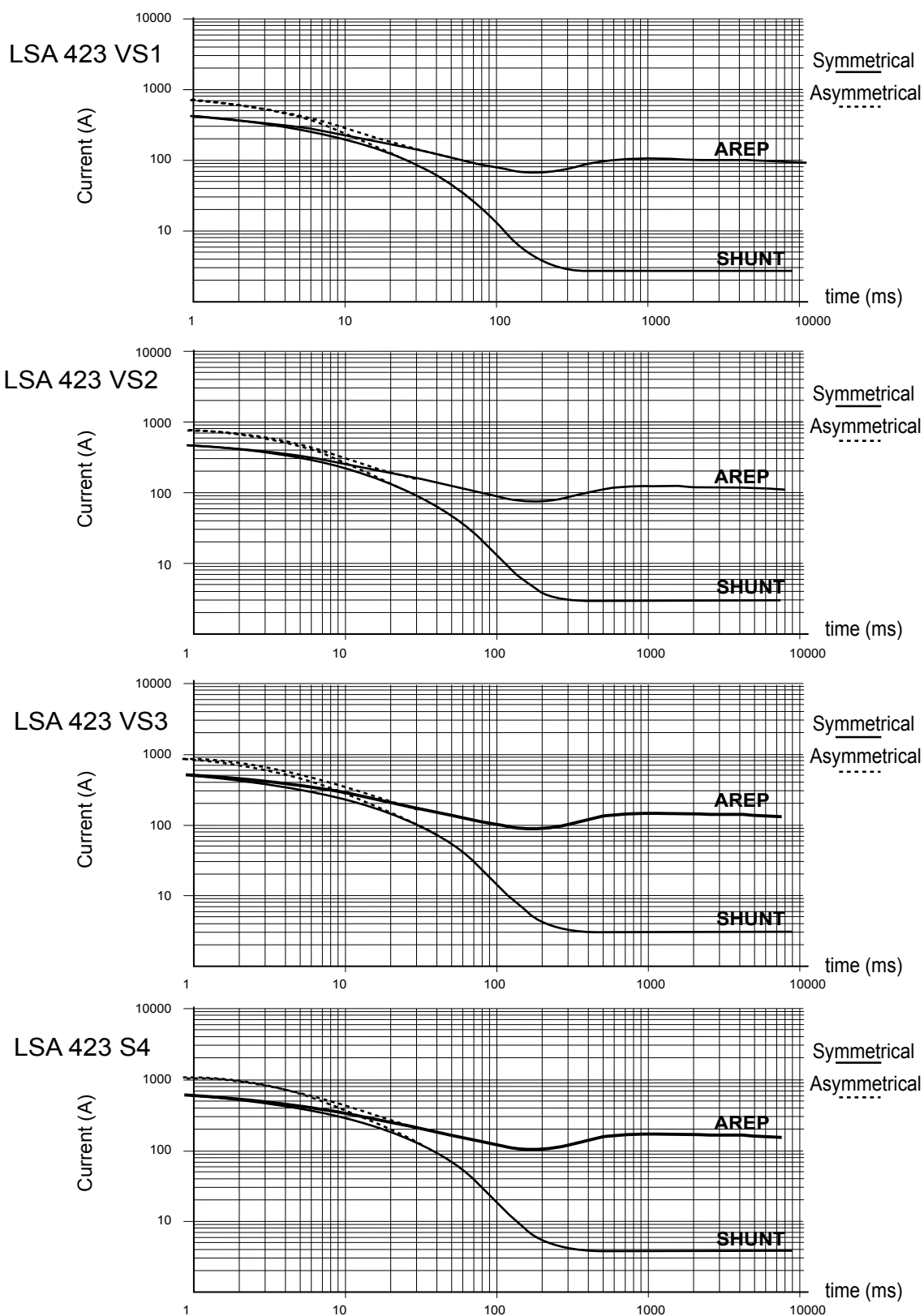
1) For a PF with a $\cos \phi$ other than 0.6, multiply the kVA by $K = \sin \phi / 0.8$

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



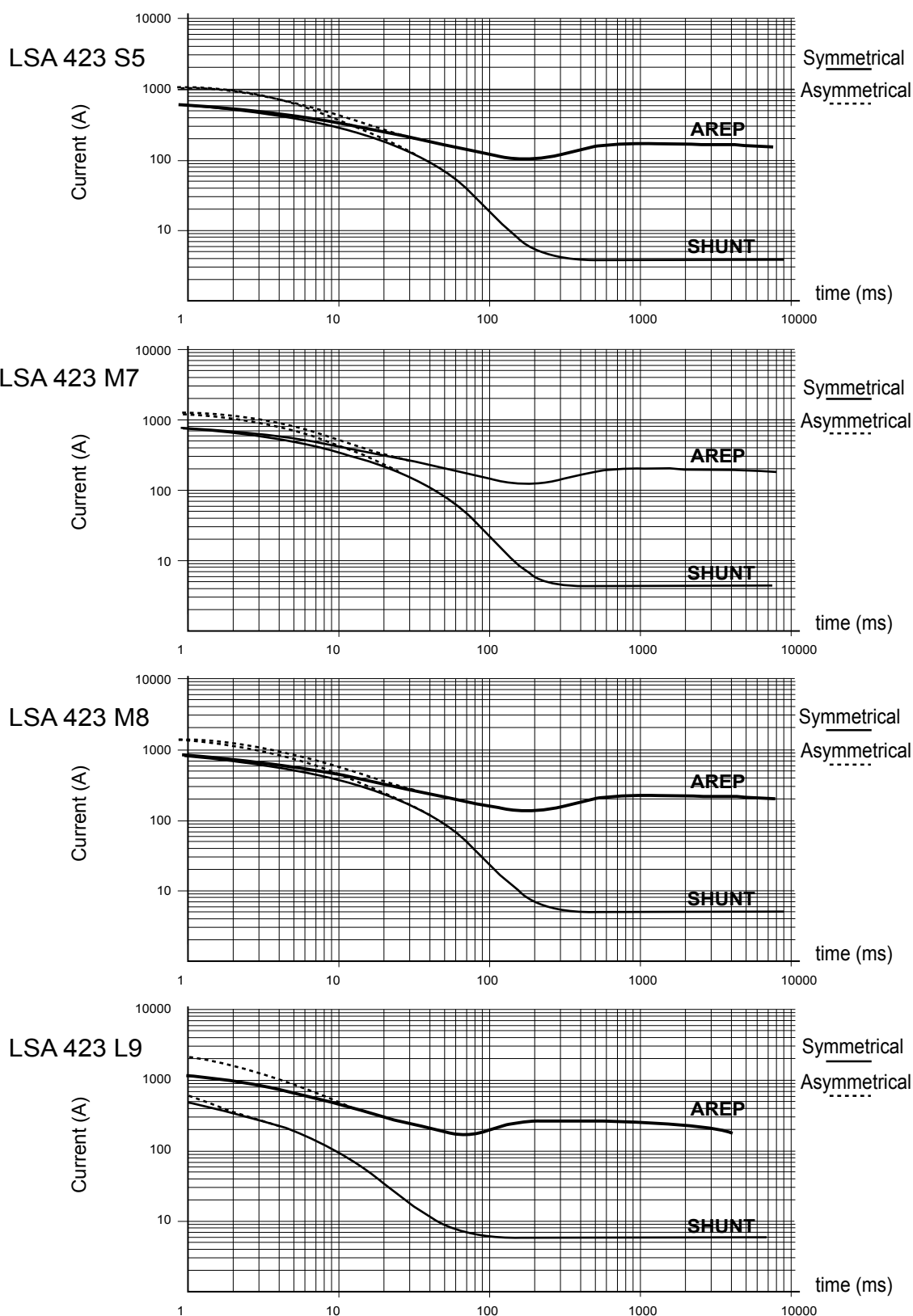
Influence due to connection

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)



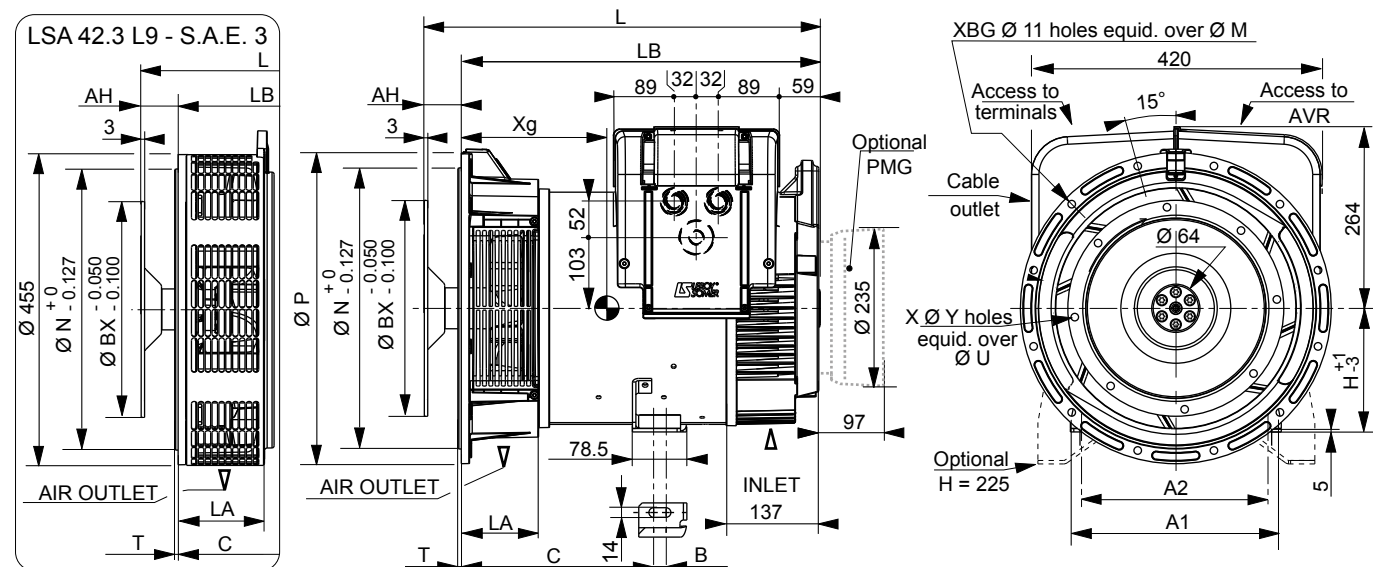
Influence due to short-circuit

Curves are based on a three-phase short-circuit.

For other types of short-circuit, use the following multiplication factors

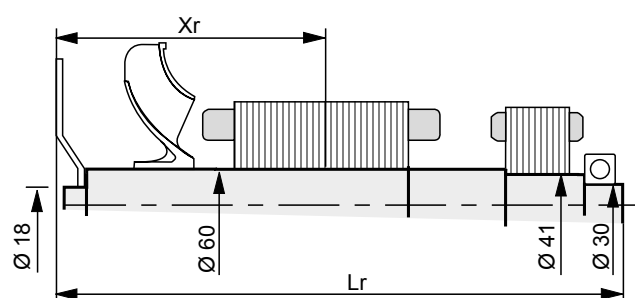
	3-phase	2-phase L/L	1-phase L/N
Instantaneous (max.)	1	0.87	1.3
Continuous	1	1.5	2.2
Maximum duration (AREP/PMG)	10 sec.	5 sec.	2 sec.

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 (kgm²): (4J = MD²)																
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.

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

Technical drawing of the AVR unit showing front, side, and top views with dimensions and labels.

Front View (Left):

- Overall width: 82
- Overall height: $\varnothing 452$
- Terminal block height: $\varnothing 361.95^{+0}_{-0.127}$
- Terminal block diameter: $\varnothing 48 \text{ k6}$
- AIR OUTLET (bottom left)
- 11 (bottom left)
- 139 (bottom left)
- 6 (bottom left)
- C (bottom left)

Side View (Middle):

- Overall width: 172
- Overall height: 103
- Terminal block height: 52
- Terminal block diameter: $\varnothing 235$
- AIR INLET (bottom right)
- 137 (bottom right)
- 14 (bottom right)
- 18 (bottom right)
- 18 (bottom right)
- 213 (bottom right)

Top View (Right):

- Overall width: 320
- Overall height: 264
- Terminal block height: 180 ± 3
- Terminal block diameter: $\varnothing 381$
- 4x2 M 10 holes on $\varnothing 381$ at 12h and 3h/6h/9hours
- Access to terminals (top left)
- Access to the AVR (top right)
- 15° (top left)
- 15° (top right)
- Cable outlet (top left)
- Optional PMG (top left)
- 1 M12 hole 18 depth (bottom left)
- 279 (bottom left)
- 320 (bottom left)
- 5 (bottom left)
- 51.5 (bottom left)
- 14 (bottom left)
- 9 (bottom left)

Technical drawing of a mechanical assembly showing a cross-section of a shaft with various components and dimensions. The drawing includes the following dimensions and labels:

- $\varnothing 48$: Diameter of the leftmost shaft section.
- $\varnothing 50$: Diameter of the shaft section after the first step.
- $\varnothing 60$: Diameter of the main shaft section.
- $\varnothing 41$: Diameter of the shaft section after the second step.
- $\varnothing 30$: Diameter of the rightmost shaft section.
- X_r : Horizontal distance from the center of the first step to the center of the second step.
- L_r : Total horizontal length of the assembly.

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

11

Contact



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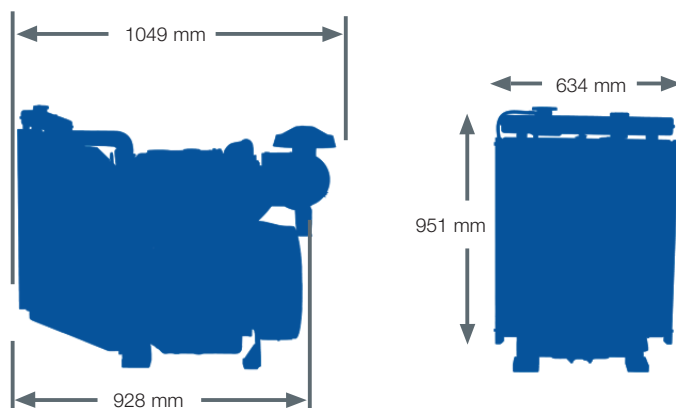
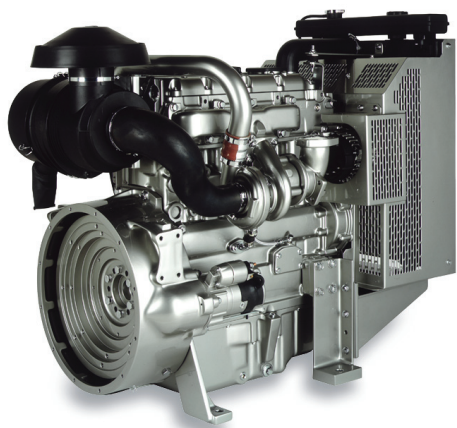
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Moteurs Leroy-Somer SAS - RCS 338 567 258 ANGOULÊME - Capital de 65 800 512 €

1100 Series 1103A-33TG1 Diesel Engine – Electropak

45.6 kWm at 1500 rpm

53.9 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

Fuel Consumption				
Engine Speed	1500 rev/min		1800 rev/min	
	UK g/hr	l/hr	UK g/hr	l/hr
Standby	2.6	12.0	3.1	14.3
Prime Power	2.3	10.7	2.8	12.9
75% of Prime Power	1.8	8.2	2.1	9.9
50% of Prime Power	1.2	5.7	1.5	7.1

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

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

All information in this document is substantially correct at time of printing and may be altered subsequently.
Publication No. PN1781/09/12 Produced in England
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Perkins Engines Company Limited

Peterborough PE1 5FQ

United Kingdom

Telephone +44 (0)1733 583000

Fax +44 (0)1733 582240

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THE HEART OF EVERY GREAT MACHINE