FUSTEQ SERIES

STAGE V EMISSION COMPLIANT

DIESEL GENERATOR
GROUPE ELECTROGENE DIESEL
GRUPO ELECTROGENO DIESEL
GRUPPO ELETTROGENO DIESEL

MODEL
MODELE
MODELO
MODELLO

FQ110K V

POWERED BY

KOHLER

LEROY SOMER

ULTRA SILENT VERSION

GENERATING SET PERFORMANCE PERFORMANCES DU GROUPE PRESTACIONES DEL GRUPO PRESTAZIONI DEL GRUPPO			50 Hz
Voltage Voltage Voltaje Tensione		V	400 / 230
Prime Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	PRP	kVA	**100,0**
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	LTP	kVA	**110,0**
Prime Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	PRP	kWe	80,0
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	LTP	kWe	88,0
Power factor Facteur de puissance Factor de potencia Fattore di potenza	cos φ		0,8
Fuel consumption Consommation combustible Consumo de combustible Consumo combustibile	70 %	l/h	14,6

ENGINE MOTEUR MOTOR MOTORE		KOHLER	KDI3404TCR SCR	
PERFORMANCE PERFORMANCES PRESTACIONES PRESTAZIONI		**1500 rpm**		
Prime Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	PRP	kWm	90,1	
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	LTP	kWm	99,1	
Specific fuel consumption Consommation spécifique combustible Consumo especifico de combustibile Consumo specifico combustibile		g/kWh	25% 242 50% 210 75% 203 100% 203	
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				Electronic Electronique Electronico Elettronico
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	3.400
Bore x stroke Alésage x course Diametro x carrera Alesaggio x corsa			mm	96 x 116
Compression ratio Rapport de compression Relación de compresión Rapporto di compressione				---
Engine electric system voltage Voltage système électrique moteur Voltaje sistema eléctrico motor Voltaggio sistema elettrico motore				12V
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% / 100m

ALTERNATOR ALTERNATEUR ALTERNADOR ALTERNATORE		LEROY SOMER	
PERFORMANCE **PERFORMANCES** **PRESTACIONES** **PRESTAZIONI**		**1500 rpm**	
Model Modèle Modelo Modello		LSA 44.3S5	
Prime Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	40 °C	kVA kWe	**100** 80
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	40 °C	KVA kWe	**106** 84,8
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	27 °C	KVA kWe	**110** 88
Efficiency Rendement Eficienza Efficienza		1/4 2/4 3/4 4/4	88,5 % 91,9 % 92,3 % 92,0 %
Standard winding connections Liaison des bobinages Tipo de conexiòn Collegamento avvolgimenti		Y	
Exciter Eccitatrice Excitador Eccitatrice	**brushless** rotating exciter design with solid state pivotante **sans brosses** avec pont de diodes pivotants puente de diodos **sin escobillas** rotantes rotante **senza spazzole** con ponte di diodi rotanti		
Poles Poles Polos Poli			4
Phases Phases Fases Fasi			3 + N
Wires Fils Hilos Morsetti			12
Voltage regulation Regulation Voltage Regulación voltaje Regolazione tensione			± 0,25 %
Insulation class Classe d' isolation Classe de aislamiento Classe di isolamento			H
Enclosure Degré de protection mécanique Grado de protecciòn mecanica Grado di protezione meccanica			IP 23
Maximun overspeed Survitesse Régimen màximo Velocità di fuga			2250 min
AVR model with **300%** shortcircuit **current** Modèle AVR avec un **courant** de court-circuit du **300%** Modelo AVR con una **corriente** de corto circuito del **300%** Modello AVR con **corrente** di corto circuito del **300%**		**(3 In) : 10s**	**D 350** 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 ÷ 1000 m 1000 ÷ 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 reservoir intergré Capacidad Tanque integrado Capacità Serbatoio integrato		Weight Poids Peso Peso	Dimensions Cotes d'encombrement Medidas externas Dimensioni d'ingombro		
	(L.)			(cm)		
	STD	EXTRA1	(kg)	L	W	H
SOUND PROOF VERSION VERSION INSONORISEE VERSION INSONORISADA VERSIONE INSONORIZZATA	300	ON REQUEST	2080	260	113	180
AdBlue tank (L.)	16					

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

GB	F	E	I
✓ Lifting eye ✓ Fully bunded fuel tank ✓ Integrated fuel tank ✓ Vibration dampers ✓ One or more electric fans controlled by Inverter VSi ✓ Manual autostart control panel **Q7310AUS** with circuit breaker ✓ Battery ✓ Ultra silent canopy ✓ Residential silencer ✓ Fork lift guides	✓ Crochet de levage ✓ Bac de rétention ✓ Réservoir intégré ✓ Amortisseurs de vibration ✓ Un ou plusieurs ventilateurs électriques commandés par Inverter Vsi ✓ Démarrage manuel autostart **Q7310AUS** avec disjoncteur de protection ✓ Batterie ✓ Capotage ultra-silencieux ✓ Silencieux résidentielle ✓ Supports pour fourches	✓ Gancho central ✓ Tanque del combustible con sistema de recolección de líquidos ✓ Tanque de combustible integrado ✓ Sistema de amortiguación anti-vibrante ✓ Uno o más ventiladores eléctricos controlados para Inverter Vsi ✓ Cuadro manual autostart **Q7310AUS** con interruptor magnetotérmico ✓ Batería ✓ Cabina ultra-silenciosa ✓ Silenciador residencial ✓ Supportes para carrettilla	✓ Gancio di sollevamento centrale ✓ Serbatoio con vasca di raccolta liquidi ✓ Serbatoio integrato ✓ Anti vibranti ✓ Una o più ventole elettriche controllate da tecnologia Inverter Vsi ✓ Quadro di comando manuale autostart **Q7310AUS** con interruttore magnetotermico ✓ Batteria ✓ Cabina ultra silenziosa ✓ Marmitta residenziale ✓ Porta forche

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

Q 7310 AUS

160A (400 V – 3 ph – 50Hz – 1500 rpm)

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

DSE 7310

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

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

BRUNO S.r.l. Address: **S.S.91 Km 0,600 - 83035 Grottaminarda (AV) - ITALY**
Tel: **+39 0825 421005 -** Fax: **+39 0825 426169 / 445130 -** E-mail: **export@brunogenerators.it -** Web: **www.brunogenerators.it**

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

1) **Q 7320 ATS**

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

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

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

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

2) **Q 7320 AMF**

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

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

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

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

3) **Q 7320 STS**

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

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

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

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

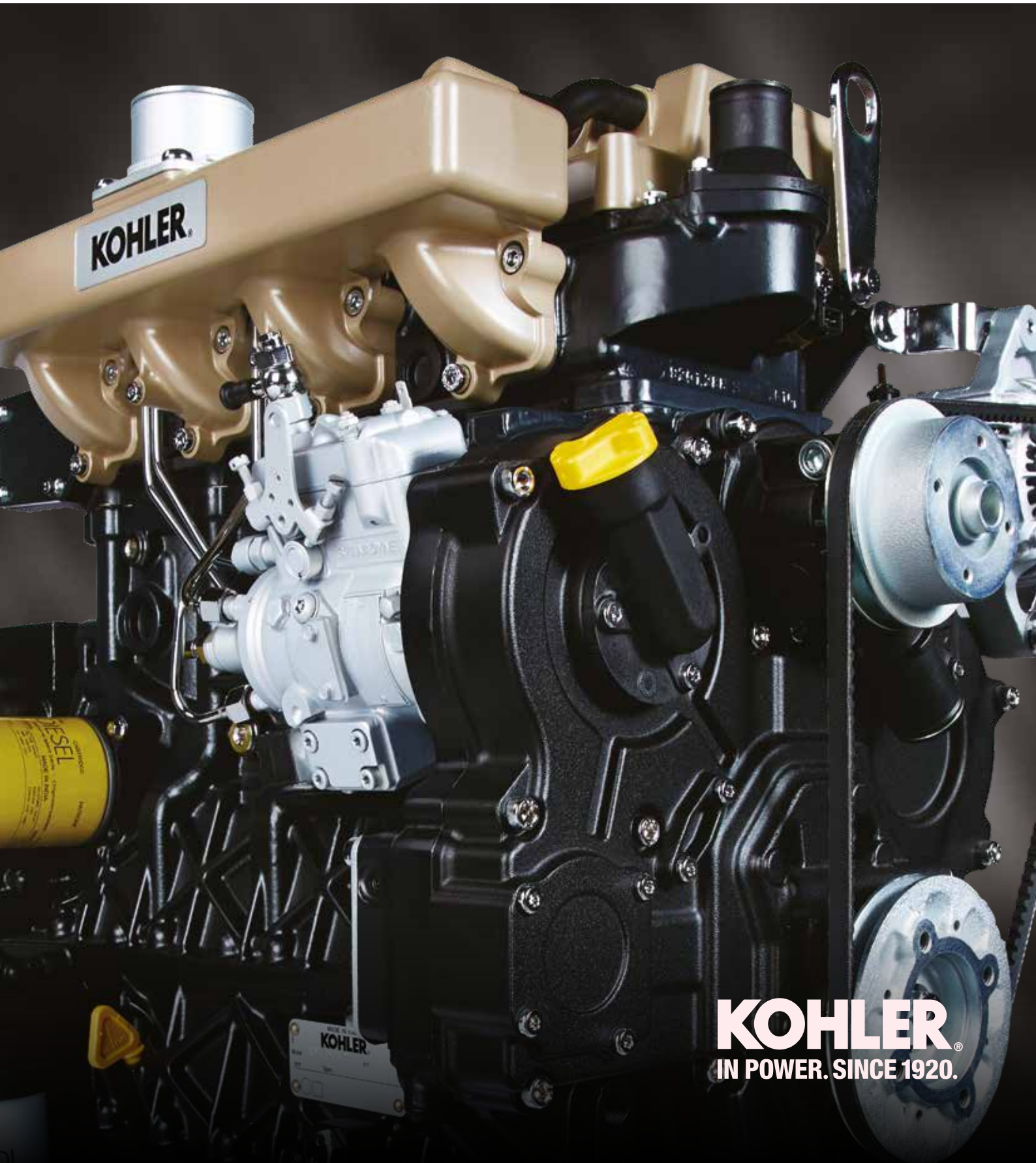
DSE 7320

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

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

KOHLER DIESEL ENGINES

Generator Ratings



LIQUID COOLED
DIESEL ENGINES

Freq.	Rpm	ENGINE MODEL	GROSS ENGINE POWER*		Given alternator efficiency %	ELECTRICAL POWER**				Flanging	Emission compliance
			Stand-by	Prime		Intermittent (Stand-by)		Continuous (Prime)			
			kW-hp	kW-hp		kVA	kW	kVA	kW		
50 Hz	1500	KDW702	5.5 - 7.5	5.0 - 6.8	80%	5.5	4.4	5.0	4.0	SAE 5 - 6.5”	-
		KDW702	-	5.0 - 6.8 #	82%	-	-	4.9 #	4.0 #	SAE 5 - 6.5”	EU Stage V
		KDW1003	8.5 - 11.6	7.7 - 10.5	85%	9.0	7.2	8.2	6.5	SAE 5 - 6.5”	-
		KDW1003	8.0 - 10.7	7.7 - 10.5	85%	8.1	6.5	7.8	6.2	SAE 5 - 6.5”	EU Stage V
		KDW1404	11.5 - 15.6	10.5 - 14.3	85%	12.2	9.8	11.2	8.9	SAE 5 - 6.5”	-
		KDW1404	11.0 - 14.7	10.5 - 14.3	85%	11.1	8.9	10.6	8.5	SAE 5 - 6.5”	EU Stage V
		KDW1603	15.5 - 21.1	14.1 - 19.2	86%	16.7	13.3	15.1	12.1	SAE 4 - 7.5”	-
		KDW1603	15.0 - 20.1	14.1 - 19.2	86%	15.4	12.3	14.4	11.5	SAE 4 - 7.5”	EU Stage V
		KDI 1903M	19.0 - 25.5	17.3 - 23.1	88%	20.9	16.7	19.0	15.2	SAE 4 - 7.5”	EU Stage IIIA
		KDI 1903M	-	18.9 - 25.3 #	88%	-	-	20.8 #	16.6 #	SAE 4 - 7.5”	EU Stage V
		KDW2204	19.5 - 26.5	17.7 - 24.1	88%	21.5	17.2	19.5	15.6	SAE 4 - 7.5”	EU Stage IIIA
		KDI 2504M	25.4 - 34.0	23.1 - 30.9	88%	27.9	22.4	25.4	20.3	SAE 4 - 7.5”	EU Stage IIIA
		KDW2204/T	26.0 - 35.4	23.6 - 32.1	88%	28.6	22.9	26.0	20.8	SAE 4 - 7.5”	EU Stage II
		KDI 2504TM-30	32.0 - 42.9	29.1 - 39.0	88%	35.2	28.2	32.0	25.6	SAE 3 - 11.5”	EU Stage IIIA
		KDI 2504TM-40-EU	36.9 - 49.4	33.5 - 45.0	88%	40.6	32.5	36.9	29.5	SAE 3 - 11.5”	EU Stage IIIA
		KDI 2504TM-40	41.0 - 54.9	37.3 - 50.0	88%	45.1	36.1	41.0	32.8	SAE 3 - 11.5”	-
		KDI 3404TM	61.0 - 81.7	55.5 - 74.3	89%	67.9	54.3	61.7	49.4	SAE 3 - 11.5”	-
		KDI 3404TM ◊	61.5 - 82.4	55.9 - 74.9	89%	68.4	54.7	62.2	49.8	SAE 3 - 11.5”	EU Stage IIIA
		KDI 1903TCR ◊	35.3 - 47.3	32.1 - 43.0	88%	36.6	29.3	33.1	26.5	SAE 3 - 11.5”	EU Stage V
		KDI 2504TCR ◊	47.1 - 63.1	42.8 - 57.4	88%	49.6	39.7	44.9	35.9	SAE 3 - 11.5”	EU Stage V
		KDI 3404TCR ◊	-	55.0 - 73.7 #	88%	-	-	57.8 #	46.2 #	SAE 3 - 11.5”	EU Stage V
		KDI 3404TCR SCR	100 - 134	90.9 - 121.8	92%	112.1	89.7	101.7	81.3	SAE 3 - 11.5”	EU Stage V
	3000	KDW702	11.0 - 15.0	10.0 - 13.6	85%	11.7	9.4	10.6	8.5	SAE 5 - 6.5”	Not emissioned / EU Stage V
		KDW1003	18.0 - 24.2	16.4 - 22.0	85%	19.1	15.3	17.4	13.9	SAE 5 - 6.5”	EU Stage V
		KDW1404	22.0 - 29.9	20.0 - 27.2	85%	23.4	18.7	21.3	17.0	SAE 5 - 6.5”	EU Stage IIIA
		KDW1404	-	18.9 - 25.3 #	85%	-	-	20.1 #	16.1 #	SAE 5 - 6.5”	EU Stage V
		KDW1603	26.7 - 36.3	24.3 - 33.0	86%	28.7	23.0	26.1	20.9	SAE 4 - 7.5”	EU Stage IIIA
		KDW2204	34.5 - 46.9	31.4 - 42.7	86%	37.6	29.7	34.2	27.0	SAE 4 - 7.5”	EU Stage IIIA
		KDW2204/T	44.3 - 60.2	40.3 - 54.8	86%	47.6	38.1	43.3	34.6	SAE 4 - 7.5”	EU Stage II

Freq.	Rpm	ENGINE MODEL	GROSS ENGINE POWER*		Given alternator efficiency %	ELECTRICAL POWER**				Flanging	Emission compliance	Max. Emission compliance available***
			Stand-by	Prime		Intermittent (Stand-by)		Continuous (Prime)				
			kW-hp	kW-hp		kVA	kW	kVA	kW			
60 Hz	1800	KDW702	6.5 - 8.8	5,9 - 8.0	80%	6.5	5.2	6.0	4.7	SAE 5 - 6.5”	Tier 2	Tier 4 F
		KDW1003	10.0 - 13.6	9.1 - 12.4	85%	10.6	8.5	9.7	7.7	SAE 5 - 6.5”	Tier 2	Tier 4 F
		KDW1404	13.5 - 18.4	12.3 - 16.7	85%	14.3	11.5	13.1	10.4	SAE 5 - 6.5”	Tier 2	Tier 4 F
		KDI 1903M	-	18.4 - 24.7 #	88%	-	-	20.2 #	16.2 #	SAE 4 - 7.5”	Tier 4 F	Tier 4 F
		KDW1603	18.5 - 25.2	16.8 - 22.9	86%	19.9	15.9	18.0	14.5	SAE 4 - 7.5”	Tier 2	Tier 2
		KDI 1903M	21.0 - 28.1	19.1 - 25.6	88%	23.1	18.5	21.0	16.8	SAE 4 - 7.5”	Tier 3	Tier 3
		KDW 2204	22.5 - 30.6	20.5 - 27.8	88%	24.8	19.8	22.5	18.0	SAE 4 - 7.5”	Tier 2	Tier 2
		KDI 2504M	29.5 - 39.5	26.8 - 35.9	88%	32.5	26.0	29.5	23.6	SAE 4 - 7.5”	Tier 3	Tier 3
		KDW 2204/T	31.5 - 42.8	28.6 - 38.9	88%	34.7	27.7	31.5	25.2	SAE 3 - 11.5”	Tier 2	Tier 2
		KDI 2504TM	36.4 - 48.8	33.1 - 44.3	88%	40.0	32.0	36.4	29.1	SAE 4 - 7.5”	Tier 3	Tier 3
		KDI 1903TCR ◊	37.0 - 49.6	33.6 - 45.1	88%	40.7	32.6	37.0	29.6	SAE 4 - 7.5”	Tier 4 F	Tier 4 F
		KDI 2504TCR ◊	47.1 - 63.1	42.8 - 57.4	88%	51.8	41.4	47.1	37.7	SAE 3 - 11.5”	Tier 4 F	Tier 4 F
		KDI 3404TCR ◊	55.4 - 74.2	50.4 - 67.5	89%	61.6	49.3	56.0	44.8	SAE 3 - 11.5”	Tier 4 F	Tier 4 F
		KDI 3404TM ◊	70.0 - 93.8	63.6 - 85.2	89%	77.9	62.3	70.8	56.6	SAE 3 - 11.5”	Tier 3	Tier 3
	3600	KDW702	11.7 - 16.0	10.6 - 14.5	85%	12.2	9.9	11.0	9.0	SAE 5 - 6.5”	Tier 2	Tier 2
		KDW1003	18.0 - 24.5	16.4 - 22.3	85%	19.1	15.3	17.4	13.9	SAE 5 - 6.5”	Tier 2	Tier 4 F
		KDW1404	24.5 - 33.3	22.3 - 30.3	85%	26.0	20.8	23.7	18.9	SAE 5 - 6.5”	Tier 3	Tier 3

◊ Equipped with charged air after cooler

Prime Power no overload

For more information, contact your KOHLER source of supply.
Kohler Co. reserves the right to make modifications without prior notice.

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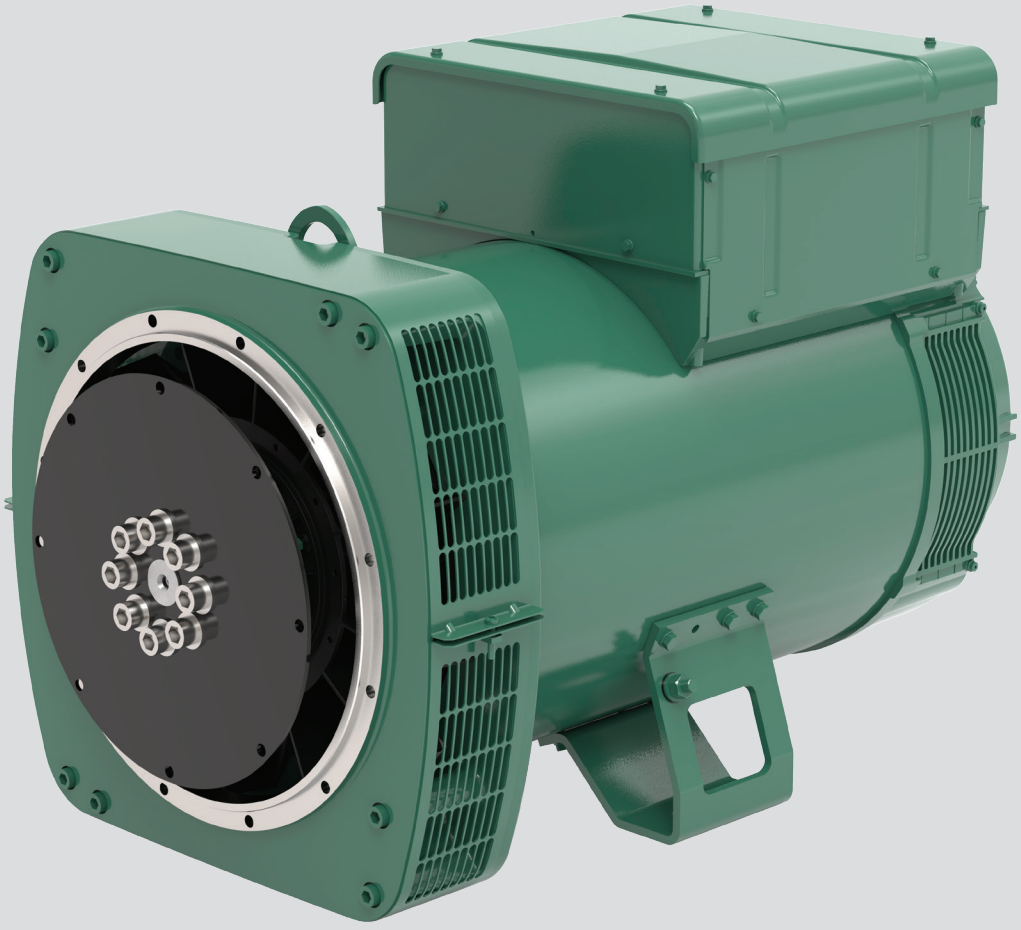


LSA 44.3

Low Voltage Alternator - 4 pole

70 to 200 kVA - 50 Hz / 88 to 250 kVA - 60 Hz
Electrical and mechanical data

LEROY-SOMER™

Nidec
All for dreams

Specially adapted to applications

The LSA 44.3 alternator is designed to be suitable for typical generator applications, such as: backup, prime power, cogeneration, marine applications, rental, telecommunications, etc.

Compliant with international standards

The LSA 44.3 alternator conforms to the main international standards and regulations: IEC 60034, NEMA MG 1.32-33, ISO 8528-3, CSA C22.2 n°100-14, UL 1446 (UL 1004 on request), marine regulations, etc.
It can be integrated into a EC marked generator.
The LSA 44.3 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 or 52)
  - 60 Hz: 380 V and 416 V (no. 8), 600 V (no. 9)
- Complies with EN 61000-6-3, EN 61000-6-2, EN 55011, group 1 class B for European zone (EC marking)

Reinforced mechanical structure using finite element modelling

- Compact rigid assembly to better withstand generator vibrations
- Steel frame and terminal box
- Aluminium/cast iron 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** (option)	**PMG** (option)	**C.T.** Current transformer for paralleling	Mains paralleling	3-phase sensing	Remote voltage potentiometer
R250	**Standard**	**-**	**-**	**-**	**-**	**-**	√
D350	**-**	**Standard**	**Standard**	√	**-**	√	√
D550	**Option**	**Option**	**Option**	√	√	√	√

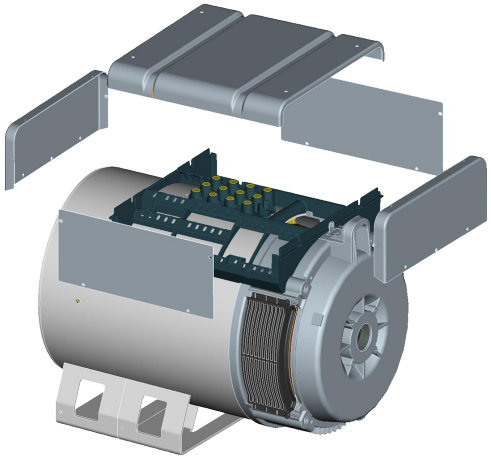
√ : Possible option

Compact and design terminal box

- Easy access to the AVR (lid) and to the connections
- Terminal block for reconnecting the voltage

Protection system suited to the environment

- The LSA 44.3 is IP 23
- Standard winding protection for clean environments with relative humidity ≤ 95%, including indoor marine environments
- Options:
  - Filters on air inlet: derating 5%
  - Filters on air inlet and air outlet (IP 44) : derating 10%
  - Space heaters
  - Thermal protection for stator windings
  - Winding protection for harsh environments and relative humidity greater than 95%
  - Shaft height: H = 225 mm on demand
  - Cable outlet at right



General characteristics

Insulation class	H
Winding pitch	2/3 (wdg 6)
Number of wires	12
Protection	IP 23
Altitude	≤ 1000 m
Overspeed	2250 min^{-1}
Air flow	0.25m^3/s, 50 Hz - 0.30m^3/s, 60 Hz
Air flow (***)	0.29m^3/s, 50 Hz - 0.34m^3/s, 60 Hz

(***) Only for LS 44.3 L12, VL13 & VL14

Excitation system	SHUNT	AREP / PMG
AVR type	R250	D350
Voltage regulation (*)	± 0.5%	± 0.25%
Short-circuit current	-	300% (3 IN): 10 s
Total Harmonic Distortion THD (**) in no-load .....:	< 2%	
Total Harmonic Distortion THD (**) on linear load ..:	< 5%	
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	
LSA 44.3 S2	kVA	70	**70**	70	63	42	64	**64**	64	57	38	74	**74**	74	67	45	77	**77**	77	69	46
	kW	*56*	*56*	*56*	*50*	*33.5*	*51*	*51*	*51*	*46*	*30.5*	*59*	*59*	*59*	*54*	*36*	*62*	*62*	*62*	*55*	*37*
LSA 44.3 S3	kVA	80	**80**	80	72	48	73	**73**	73	66	44	85	**85**	85	76	51	88	**88**	88	79	53
	kW	*64*	*64*	*64*	*58*	*38.5*	*58*	*58*	*58*	*53*	*35*	*68*	*68*	*68*	*61*	*41*	*70*	*70*	*70*	*63*	*42*
LSA 44.3 S4	kVA	90	**90**	90	81	54	82	**82**	82	74	49	95	**95**	95	86	57	100	**100**	100	89	59
	kW	*72*	*72*	*72*	*65*	*43*	*66*	*66*	*66*	*59*	*39*	*76*	*76*	*76*	*69*	*46*	*80*	*80*	*80*	*71*	*47*
LSA 44.3 S5	kVA	100	**100**	100	90	60	91	**91**	91	82	55	106	**106**	106	95	64	110	**110**	110	99	66
	kW	*80*	*80*	*80*	*72*	*48*	*73*	*73*	*73*	*66*	*44*	*85*	*85*	*85*	*76*	*51*	*88*	*88*	*88*	*79*	*53*
LSA 44.3 M6	kVA	125	**125**	125	113	67	114	**114**	114	103	61	133	**133**	133	120	71	138	**138**	138	124	74
	kW	*100*	*100*	*100*	*90*	*54*	*91*	*91*	*91*	*82*	*49*	*106*	*106*	*106*	*96*	*57*	*110*	*110*	*110*	*99*	*59*
LSA 44.3 M8	kVA	135	**135**	135	122	73	123	**123**	123	111	66	143	**143**	143	129	77	150	**150**	150	134	80
	kW	*108*	*108*	*108*	*98*	*58*	*98*	*98*	*98*	*89*	*53*	*114*	*114*	*114*	*103*	*62*	*120*	*120*	*120*	*107*	*64*
LSA 44.3 L10	kVA	150	**150**	150	135	80	137	**137**	137	123	73	159	**159**	159	143	85	165	**165**	165	149	88
	kW	*120*	*120*	*120*	*108*	*64*	*110*	*110*	*110*	*98*	*58*	*127*	*127*	*127*	*114*	*68*	*132*	*132*	*132*	*119*	*70*
LSA 44.3 L12	kVA	165	**165**	165	138	88	150	**150**	150	126	80	175	**175**	175	150	93	182	**182**	182	157	97
	kW	*132*	*132*	*132*	*110*	*70*	*120*	*120*	*120*	*101*	*64*	*140*	*140*	*140*	*120*	*74*	*146*	*146*	*146*	*126*	*78*
LSA 44.3 VL13	kVA	180	**180**	180	171	90	164	**164**	164	156	82	191	**191**	191	181	95	200	**200**	200	188	99
	kW	*144*	*144*	*144*	*137*	*72*	*131*	*131*	*131*	*125*	*66*	*153*	*153*	*153*	*145*	*76*	*160*	*160*	*160*	*150*	*79*
LSA 44.3 VL14	kVA	192	**200**	200	192	100	175	**182**	182	175	91	204	**212**	212	204	106	211	**220**	220	211	110
	kW	*154*	*160*	*160*	*154*	*80*	*140*	*146*	*146*	*140*	*73*	*163*	*170*	*170*	*163*	*85*	*169*	*176*	*176*	*169*	*88*

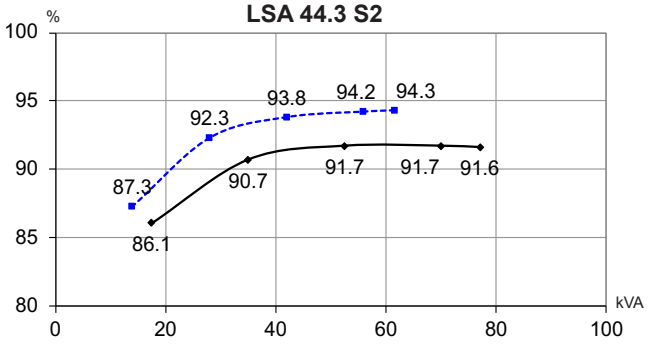
Ratings 60 Hz - 1800 R.P.M.

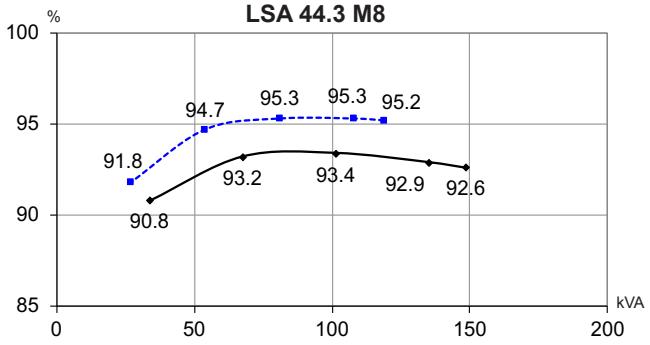
kVA / kW * - P.F. = 0.8

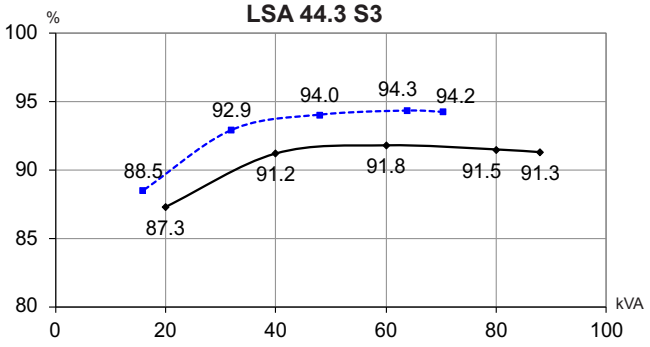
Duty/T°C		Continuous duty/40°C					Continuous duty/40°C					Stand-by/40°C					Stand-by/27°C				
Class/T°K		H/125°K					F/105°K					H/150°K					H/163°K				
Phase		3 ph.				1 ph.	3 ph.				1 ph.	3 ph.				1 ph.	3 ph.				1 ph.
Y		380V	416V	440V	480V	ΔΔ	380V	416V	440V	480V	ΔΔ	380V	416V	440V	480V	ΔΔ	380V	416V	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	
LSA 44.3 S2	kVA	69	76	80	**88**	46	63	69	73	**80**	42	73	81	85	**93**	49	76	84	88	**97**	51
	kW	*55*	*61*	*64*	*70*	*37*	*50*	*55*	*58*	*64*	*33.5*	*58*	*65*	*68*	*74*	*39*	*61*	*67*	*70*	*78*	*41*
LSA 44.3 S3	kVA	79	87	92	**100**	52	72	79	84	**91**	47	84	92	98	**106**	55	87	96	101	**110**	57
	kW	*63*	*70*	*74*	*80*	*42*	*58*	*63*	*67*	*73*	*37.5*	*67*	*74*	*78*	*85*	*44*	*70*	*77*	*81*	*88*	*46*
LSA 44.3 S4	kVA	89	98	103	**113**	59	81	89	94	**103**	54	94	104	109	**120**	63	98	108	113	**124**	65
	kW	*71*	*78*	*82*	*90*	*47*	*65*	*71*	*75*	*82*	*43*	*75*	*83*	*87*	*96*	*50*	*78*	*86*	*90*	*99*	*52*
LSA 44.3 S5	kVA	99	108	115	**125**	65	90	99	105	**114**	59	105	114	122	**133**	69	109	119	127	**138**	72
	kW	*79*	*86*	*92*	*100*	*52*	*72*	*79*	*84*	*91*	*47*	*84*	*91*	*98*	*106*	*55*	*87*	*95*	*102*	*110*	*58*
LSA 44.3 M6	kVA	124	135	143	**156**	76	113	123	130	**142**	69	131	143	152	**165**	81	136	149	157	**172**	84
	kW	*99*	*108*	*114*	*125*	*61*	*90*	*98*	*104*	*114*	*55*	*105*	*114*	*122*	*132*	*65*	*109*	*119*	*126*	*138*	*67*
LSA 44.3 M8	kVA	134	146	155	**169**	81	122	133	141	**154**	74	142	155	164	**179**	86	147	161	171	**186**	89
	kW	*107*	*117*	*124*	*135*	*65*	*98*	*106*	*113*	*123*	*59*	*114*	*124*	*131*	*143*	*69*	*118*	*129*	*137*	*149*	*71*
LSA 44.3 L10	kVA	148	163	172	**188**	95	135	148	157	**171**	86	157	173	182	**199**	101	163	179	189	**207**	105
	kW	*118*	*130*	*138*	*150*	*76*	*108*	*118*	*126*	*137*	*69*	*126*	*138*	*146*	*159*	*81*	*130*	*143*	*151*	*166*	*84*
LSA 44.3 L12	kVA	165	179	189	**206**	105	150	163	172	**187**	96	175	190	200	**218**	111	182	197	208	**227**	116
	kW	*132*	*143*	*151*	*165*	*84*	*120*	*130*	*138*	*150*	*77*	*140*	*152*	*160*	*174*	*89*	*146*	*158*	*166*	*182*	*93*
LSA 44.3 VL13	kVA	180	195	210	**225**	113	164	177	191	**205**	102	191	207	223	**239**	119	200	215	231	**250**	124
	kW	*144*	*156*	*168*	*180*	*90*	*131*	*142*	*153*	*164*	*82*	*153*	*166*	*178*	*191*	*95*	*160*	*172*	*185*	*200*	*99*
LSA 44.3 VL14	kVA	200	215	230	**250**	125	182	196	209	**228**	114	212	228	244	**265**	133	220	237	253	**275**	136
	kW	*160*	*172*	*184*	*200*	*100*	*146*	*157*	*167*	*182*	*91*	*170*	*182*	*195*	*212*	*106*	*176*	*190*	*202*	*220*	*109*

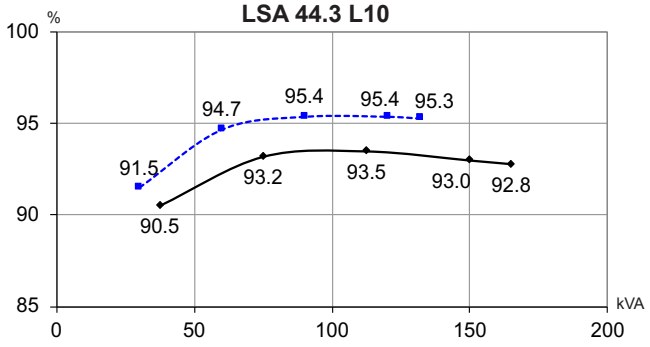
* Values are rounded-off and are subject to change without notice by the manufacturer.

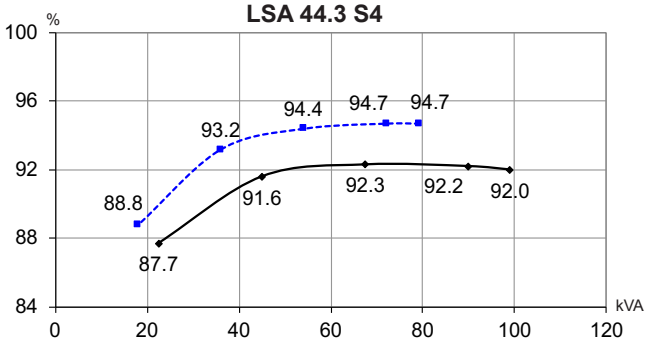
Efficiencies 400 V - 50 Hz (— P.F.: 0.8) (····· P.F.: 1)

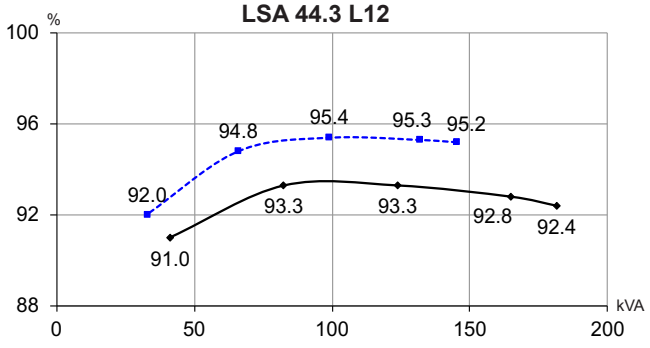


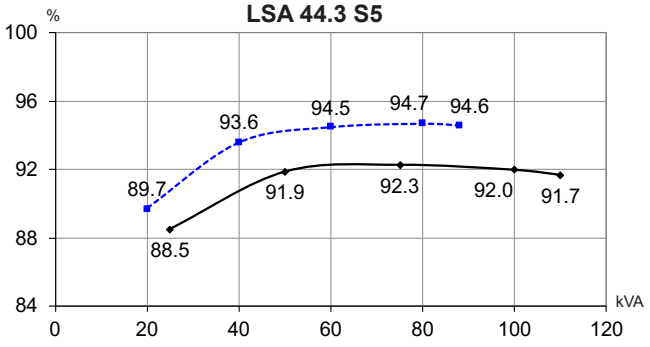


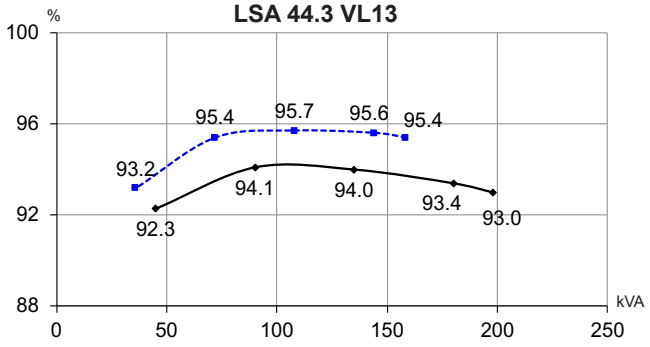


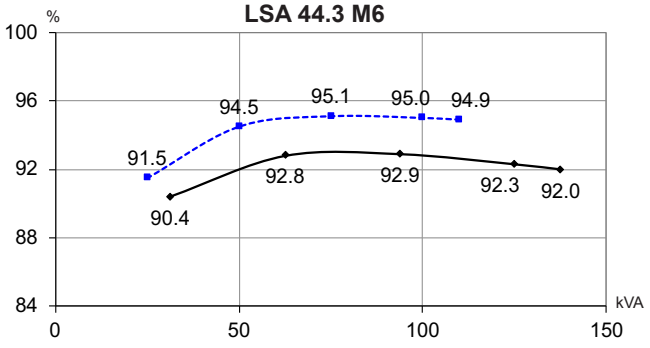


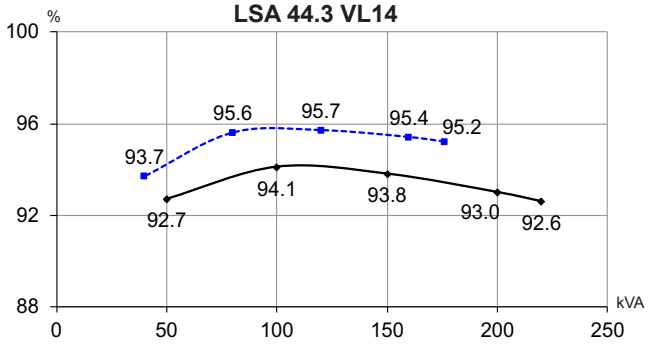




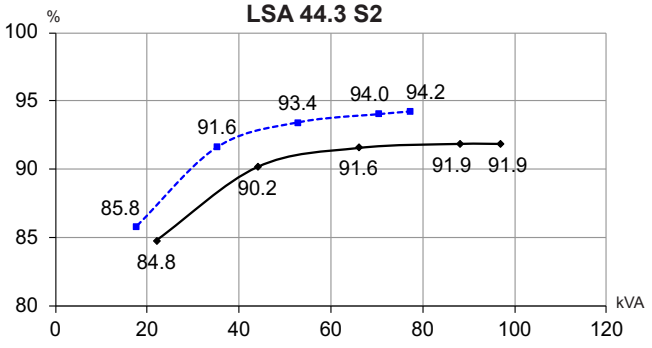


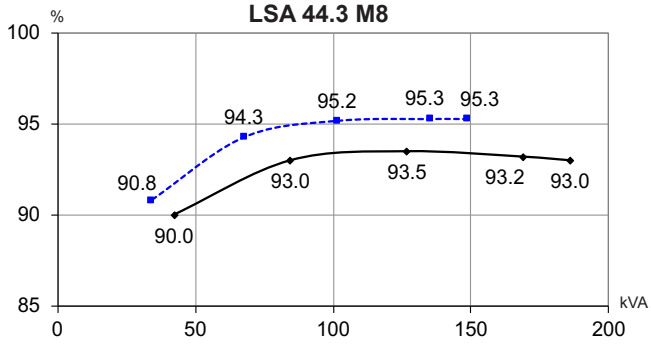


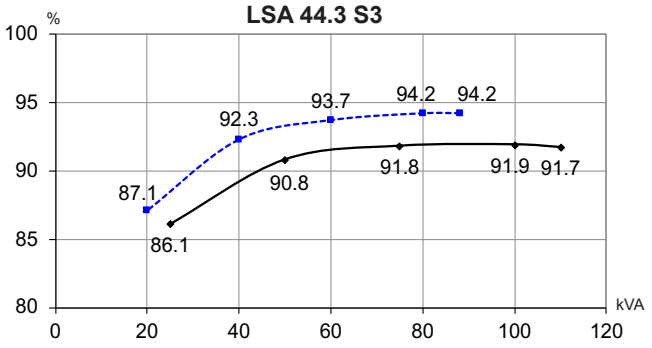


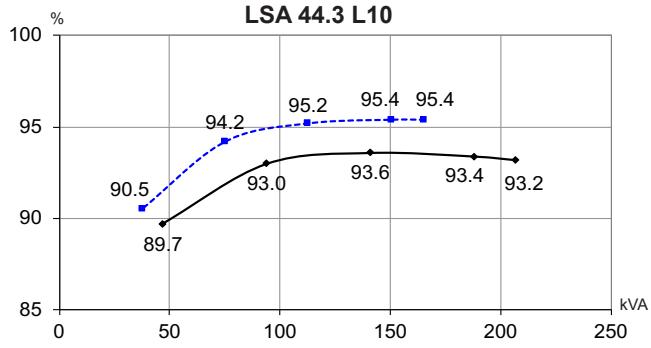


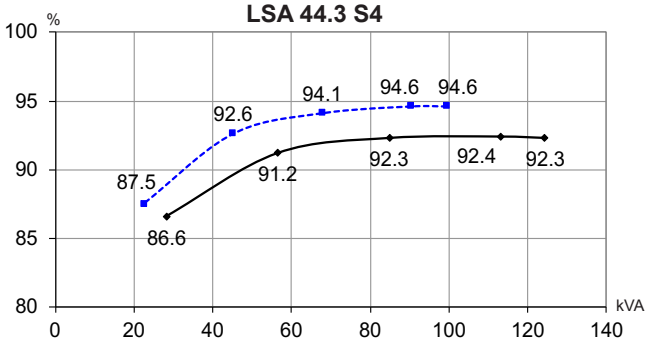
Efficiencies 480 V - 60 Hz (— P.F.: 0.8) (····· P.F.: 1)

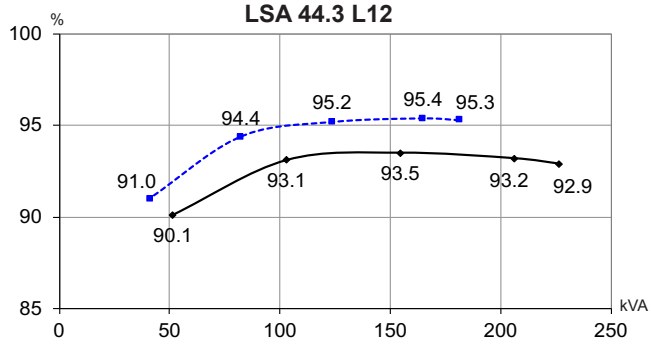


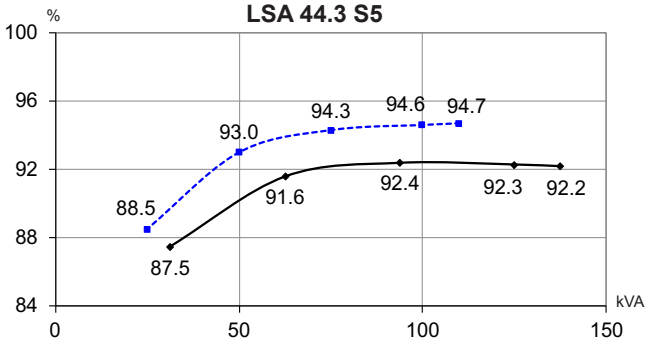


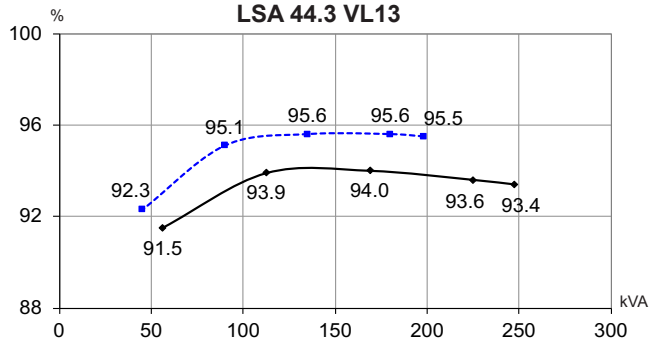


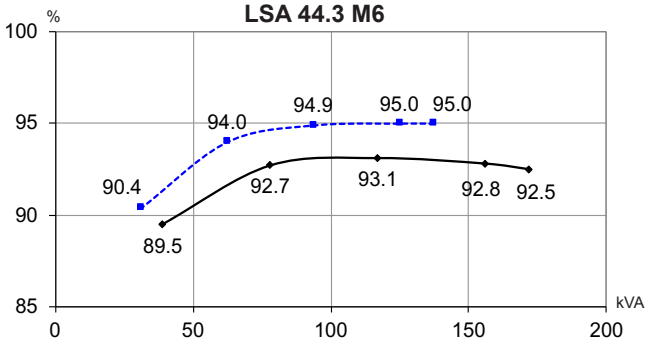


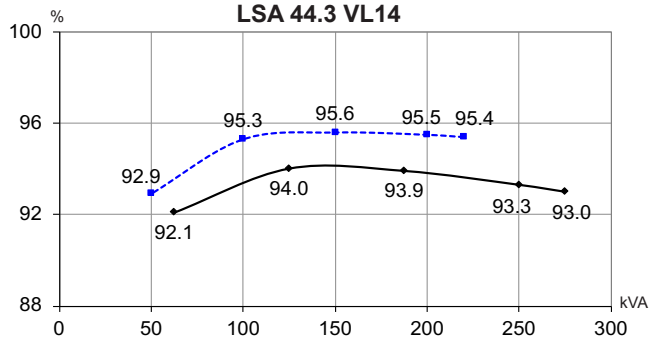












Reactances (%). Time constants (ms) - Class H / 400 V

		S2	S3	S4	S5	M6	M8	L10	L12	VL13	VL14
Kcc	Short-circuit ratio	0.68	0.59	0.61	0.55	0.45	0.44	0.49	0.44	0.37	0.33
Xd	Direct-axis synchro. reactance unsaturated	239	273	258	287	329	323	305	335	343	381
Xq	Quadrature-axis synchro. reactance unsaturated	121	139	131	146	167	165	155	171	175	194
T'do	No-load transient time constant	2308	2308	2211	2211	2154	2112	2077	2077	2025	2025
X'd	Direct-axis transient reactance saturated	10.3	11.8	11.6	12.9	15.2	15.3	14.6	16.1	16.9	18.8
T'd	Short-circuit transient time constant	100	100	100	100	100	100	100	100	100	100
X"d	Direct-axis subtransient reactance saturated	6.2	7	7	7.7	9.1	9.1	8.8	9.6	10.1	11.3
T"d	Subtransient time constant	10	10	10	10	10	10	10	10	10	10
X"q	Quadrature-axis subtransient reactance saturated	13.2	15.1	14.5	16.1	18.6	18.3	17.4	19.1	19.7	21.9
Xo	Zero sequence reactance	0.43	0.49	0.48	0.54	0.63	0.63	0.61	0.67	0.7	0.78
X2	Negative sequence reactance saturated	9.74	11.13	10.75	11.95	13.89	13.78	13.11	14.42	14.96	16.62
Ta	Armature time constant	15	15	15	15	15	15	15	15	15	15

Other class H / 400 V data

io (A)	No-load excitation current SHUNT	0.75	0.75	0.73	0.73	0.66	0.62	0.67	0.67	0.78	0.78
io (A)	No-load excitation current AREP	0.97	0.97	0.94	0.94	0.85	0.81	0.86	0.86	0.78	0.78
ic (A)	On-load excitation current SHUNT	2.07	2.33	2.11	2.31	2.47	2.37	2.45	2.71	3.17	3.53
ic (A)	On-load excitation current AREP	2.67	3	2.71	2.98	3.18	3.05	3.15	3.49	3.17	3.53
uc (V)	On-load excitation voltage SHUNT	23.1	25.8	26.5	28.9	30.6	29.3	29.9	32.7	16.2	17.9
uc (V)	On-load excitation voltage AREP	18.6	20.7	21.3	23.2	24.5	23.5	24	26.3	16.2	17.9
ms	Response time (ΔU = 20% transient)	500	500	500	500	500	500	500	500	500	500
kVA	Start (ΔU = 20% cont. or ΔU = 30% trans.) SHUNT*	184	184	292	293	310	334	371	379	487	487
kVA	Start (ΔU = 20% cont. or ΔU = 30% trans.) AREP*	222	221	344	344	366	400	414	414	545	545
%	Transient ΔU (on-load 4/4) SHUNT - P.F.: 0.8 $_{LAG}$	13.3	14.5	11.6	12.4	13.8	13.8	13.4	14.3	13	13.9
%	Transient ΔU (on-load 4/4) AREP - P.F.: 0.8 $_{LAG}$	11.8	12.9	10.4	11.1	12.3	12.3	12	12.7	11.6	12.4
W	No-load losses	2174	2174	2396	2396	2387	2478	2894	2946	2670	2670
W	Heat dissipation	5025	5892	6073	6935	8254	8251	8914	10236	10165	11933

* P.F. = 0.6

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

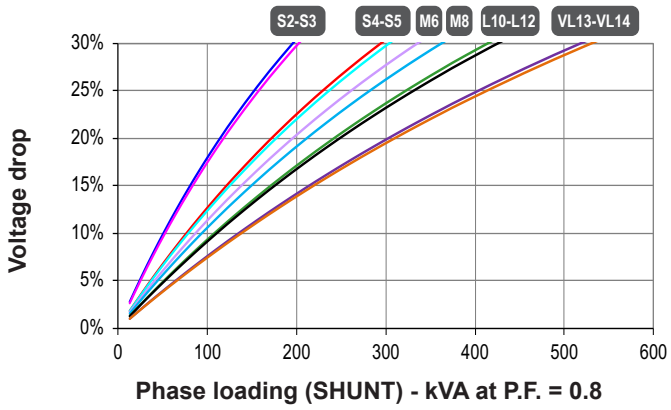
		S2	S3	S4	S5	M6	M8	L10	L12	VL13	VL14
Kcc	Short-circuit ratio	0.65	0.57	0.58	0.53	0.43	0.42	0.47	0.43	0.36	0.32
Xd	Direct-axis synchro. reactance unsaturated	250	284	270	299	342	337	318	349	358	397
Xq	Quadrature-axis synchro. reactance unsaturated	127	145	137	152	174	172	162	178	182	202
T'do	No-load transient time constant	2308	2308	2211	2211	2154	2112	2077	2077	2025	2025
X'd	Direct-axis transient reactance saturated	10.8	12.3	12.2	13.5	15.8	15.9	15.3	16.8	17.6	19.6
T'd	Short-circuit transient time constant	100	100	100	100	100	100	100	100	100	100
X"d	Direct-axis subtransient reactance saturated	6.5	7.3	7.3	8.1	9.5	9.5	9.2	10	10.6	11.7
T"d	Subtransient time constant	10	10	10	10	10	10	10	10	10	10
X"q	Quadrature-axis subtransient reactance saturated	13.9	15.7	15.1	16.7	19.3	19.1	18.1	19.9	20.5	22.8
Xo	Zero sequence reactance	0.45	0.51	0.5	0.56	0.66	0.66	0.63	0.7	0.73	0.81
X2	Negative sequence reactance saturated	10.2	11.59	11.25	12.44	14.44	14.37	13.7	15	15.59	17.32
Ta	Armature time constant	15	15	15	15	15	15	15	15	15	15

Other class H / 480 V data

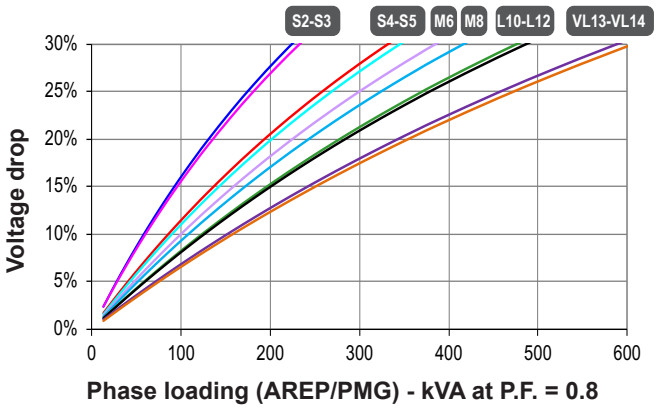
io (A)	No-load excitation current SHUNT	0.75	0.75	0.73	0.73	0.66	0.62	0.67	0.67	0.77	0.77
io (A)	No-load excitation current AREP	0.97	0.97	0.94	0.94	0.85	0.81	0.86	0.86	0.77	0.77
ic (A)	On-load excitation current SHUNT	2.08	2.31	2.13	2.32	2.47	2.38	2.44	2.68	3.21	3.56
ic (A)	On-load excitation current AREP	2.67	2.98	2.75	2.99	3.18	3.06	3.14	3.45	3.21	3.56
uc (V)	On-load excitation voltage SHUNT	23.5	26	27	29.4	31	29.7	30.3	33	16.6	18.3
uc (V)	On-load excitation voltage AREP	18.8	20.8	21.7	23.6	24.9	23.9	24.3	26.5	16.6	18.3
ms	Response time (ΔU = 20% transient)	500	500	500	500	500	500	500	500	500	500
kVA	Start (ΔU = 20% cont. or ΔU = 30% trans.) SHUNT*	220	222	352	351	374	403	465	466	589	587
kVA	Start (ΔU = 20% cont. or ΔU = 30% trans.) AREP*	265	265	422	423	446	481	541	544	708	706
%	Transient ΔU (on-load 4/4) SHUNT - P.F.: 0.8 $_{LAG}$	13.7	14.9	12	12.7	14.1	14.2	13.8	14.7	13.3	14.3
%	Transient ΔU (on-load 4/4) AREP - P.F.: 0.8 $_{LAG}$	12.2	13.2	10.7	11.4	12.6	12.6	12.3	13	11.9	12.7
W	No-load losses	3188	3188	3501	3501	3506	3639	4217	4308	3928	3928
W	Heat dissipation	6152	7047	7349	8241	9669	9747	10581	11988	12155	14140

* P.F. = 0.6

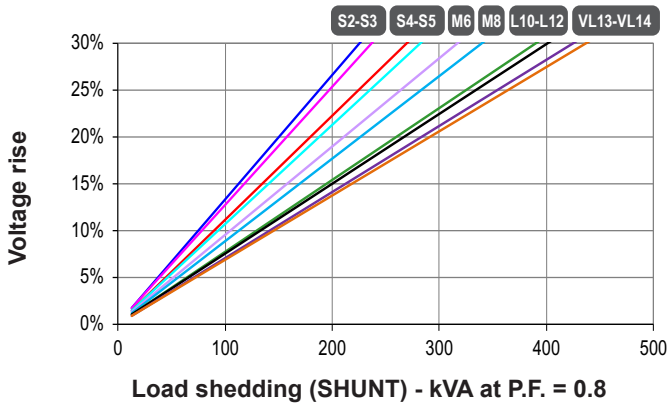
Transient voltage variation 400V - 50 Hz



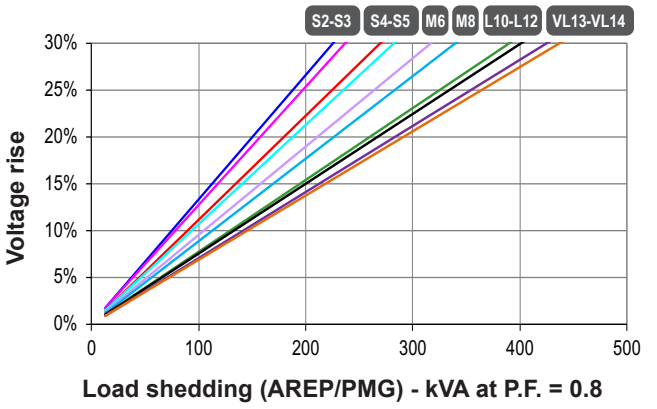
Phase loading (SHUNT) - kVA at P.F. = 0.8



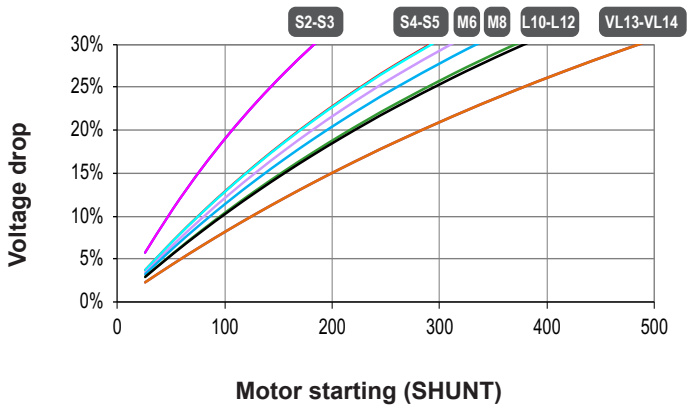
Phase loading (AREP/PMG) - kVA at P.F. = 0.8



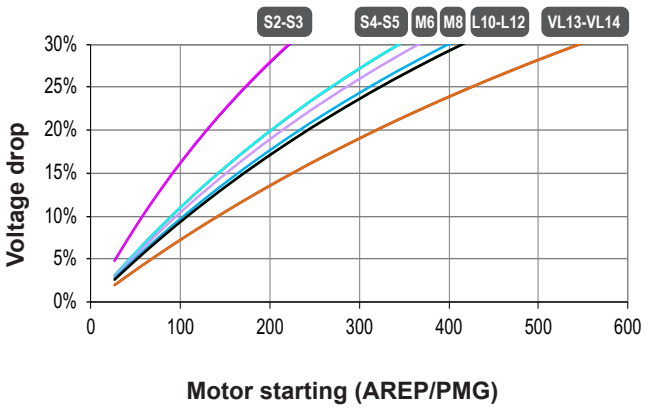
Load shedding (SHUNT) - kVA at P.F. = 0.8



Load shedding (AREP/PMG) - kVA at P.F. = 0.8



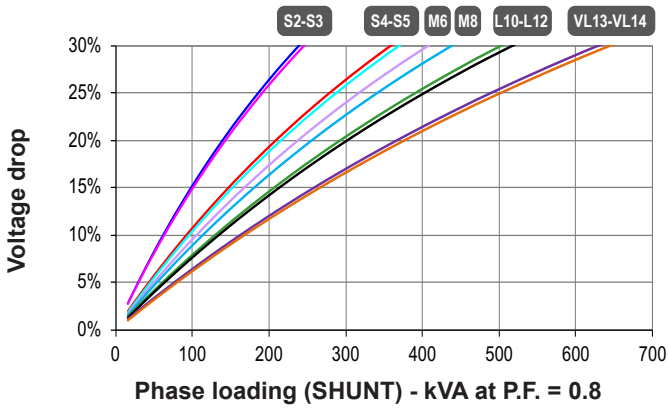
Motor starting (SHUNT)
Locked rotor kVA at P.F. = 0.6



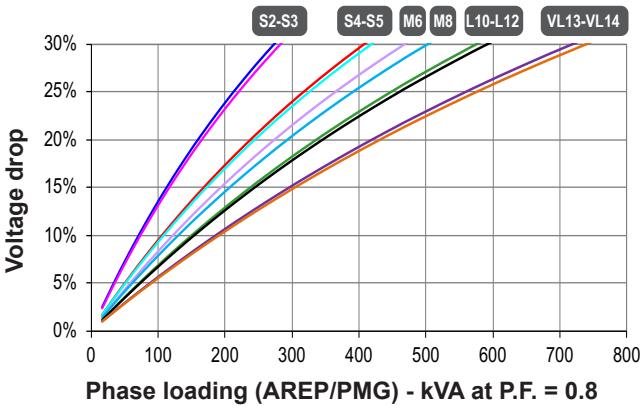
Motor starting (AREP/PMG)
Locked rotor kVA at P.F. = 0.6

1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by K = Sine P.F. / 0.8
2) For voltages other than 400V (Y), 230V (Δ) at 50 Hz, then kVA must be multiplied by $(400/U)^2$ or $(230/U)^2$.

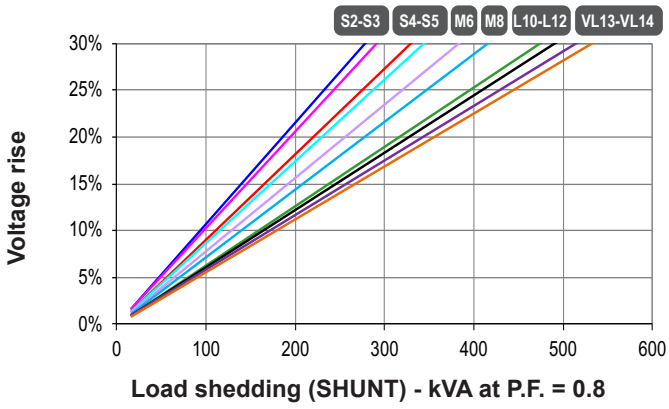
Transient voltage variation 480V - 60 Hz



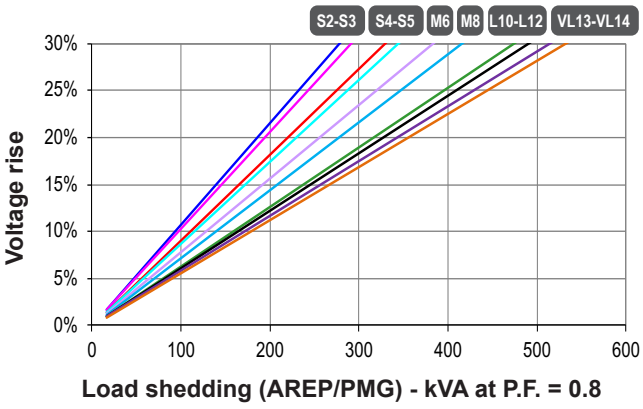
Phase loading (SHUNT) - kVA at P.F. = 0.8



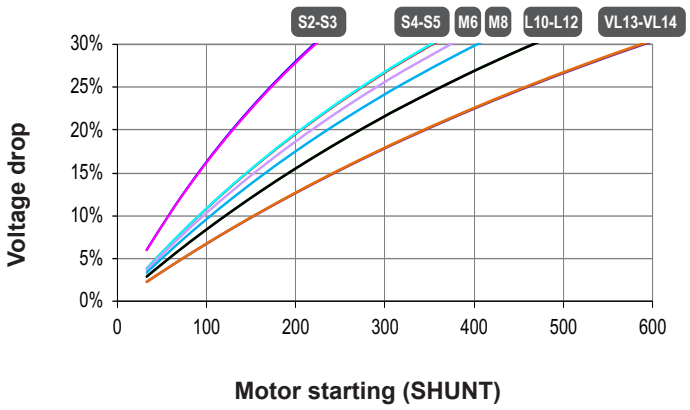
Phase loading (AREP/PMG) - kVA at P.F. = 0.8



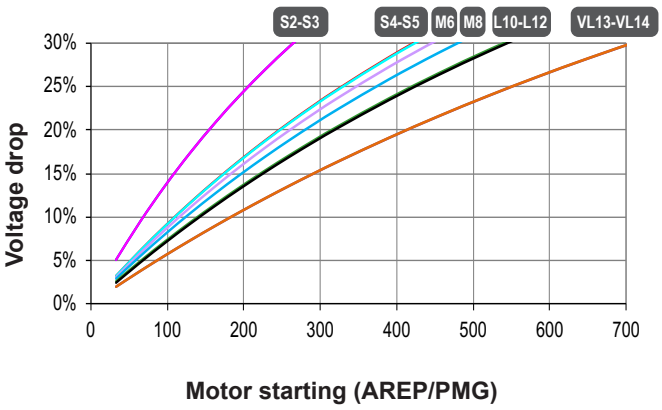
Load shedding (SHUNT) - kVA at P.F. = 0.8



Load shedding (AREP/PMG) - kVA at P.F. = 0.8



Motor starting (SHUNT)
Locked rotor kVA at P.F. = 0.6



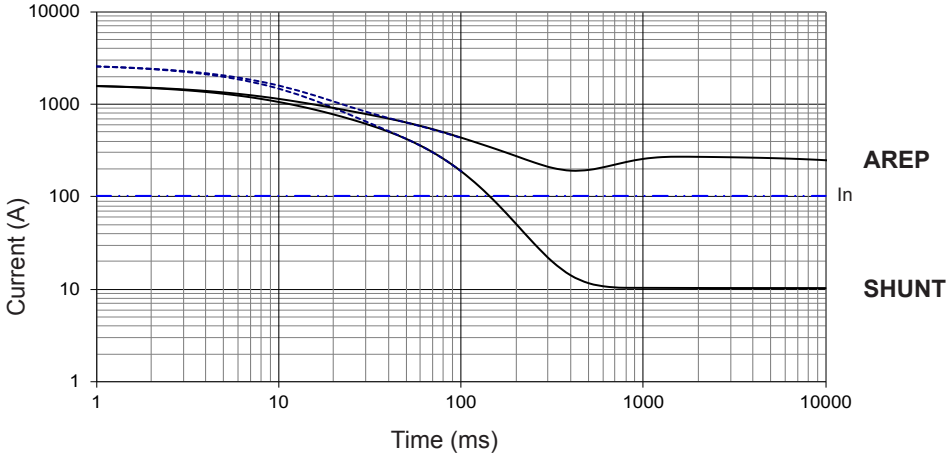
Motor starting (AREP/PMG)
Locked rotor kVA at P.F. = 0.6

1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by K = Sine P.F. / 0.8
2) For voltages other than 480V (Y), 277V (Δ), 240V (YY) at 60 Hz, then kVA must be multiplied 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)

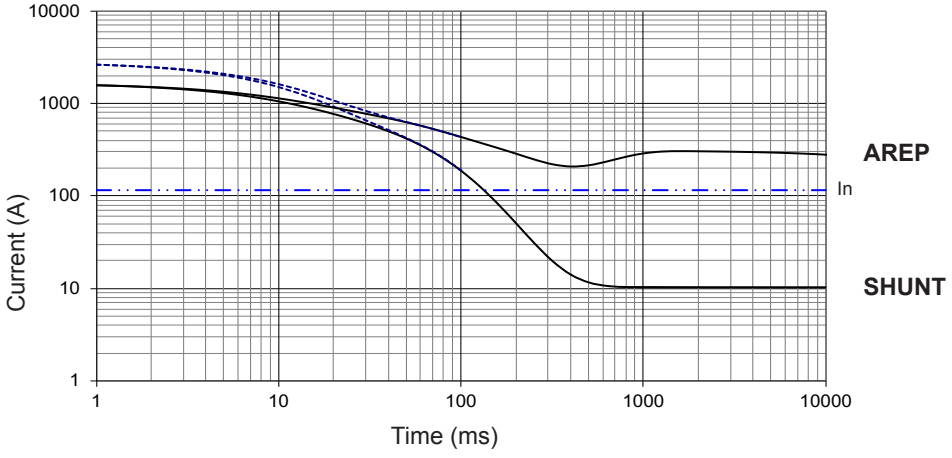
LSA 44.3 S2

Symmetrical ——
Asymmetrical - - -



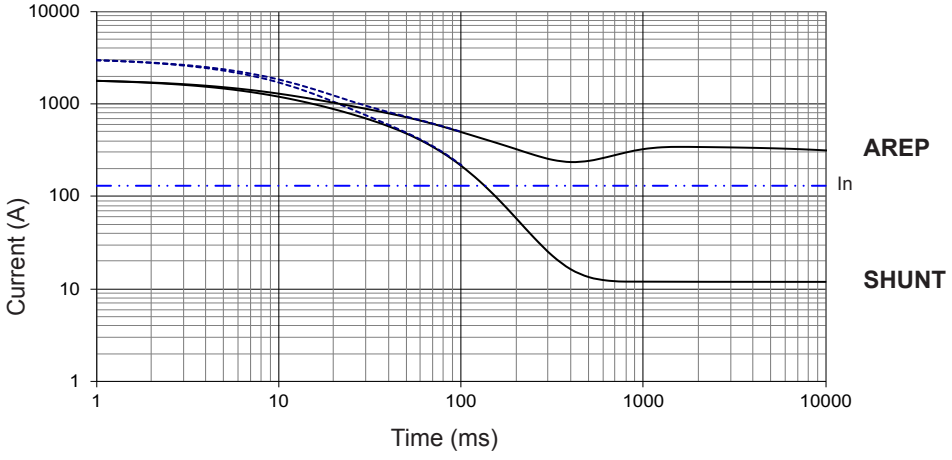
LSA 44.3 S3

Symmetrical ——
Asymmetrical - - -



LSA 44.3 S4

Symmetrical ——
Asymmetrical - - -

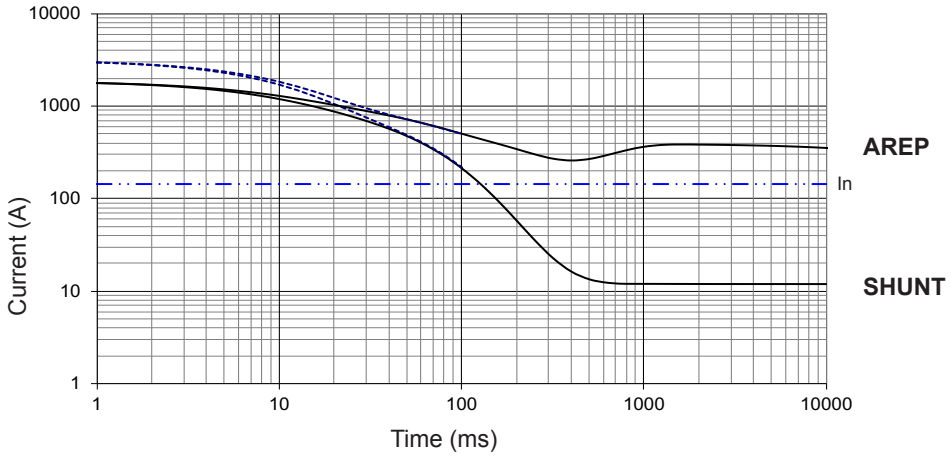


Influence due to connection
Curves shown are for star (Y) connection.
For other connections, use the following multiplication factors:
- Series delta : current value x 1.732 - Parallel star : current value x 2

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

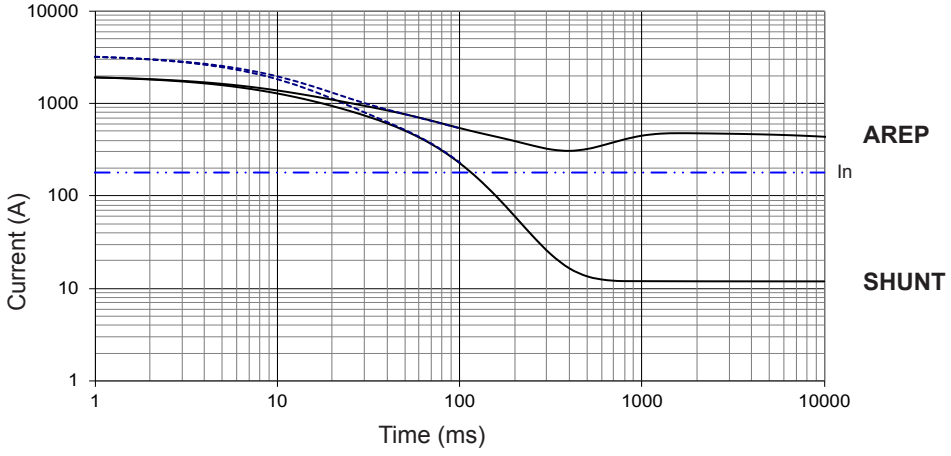
LSA 44.3 S5

Symmetrical ——
Asymmetrical - - -



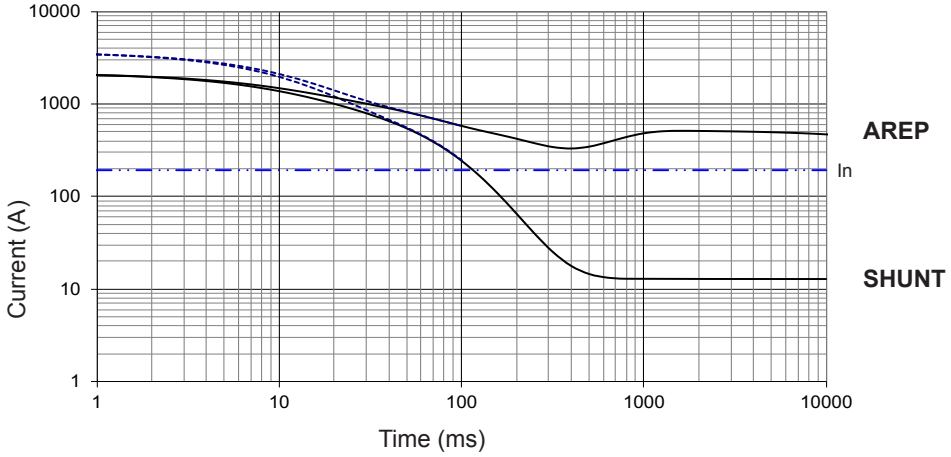
LSA 44.3 M6

Symmetrical ——
Asymmetrical - - -



LSA 44.3 M8

Symmetrical ——
Asymmetrical - - -



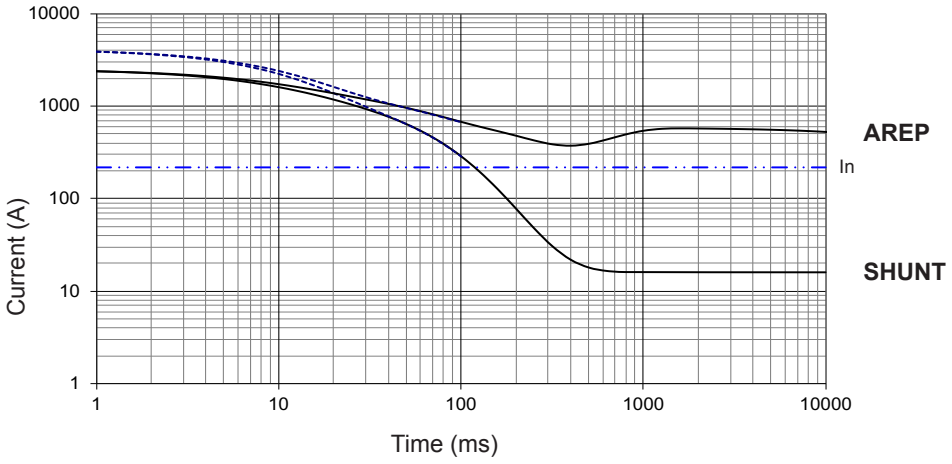
Influence due to short-circuit
Curves are based on a three-phase short-circuit.
For other types of short-circuit, use the following multiplication factors.

	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.

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

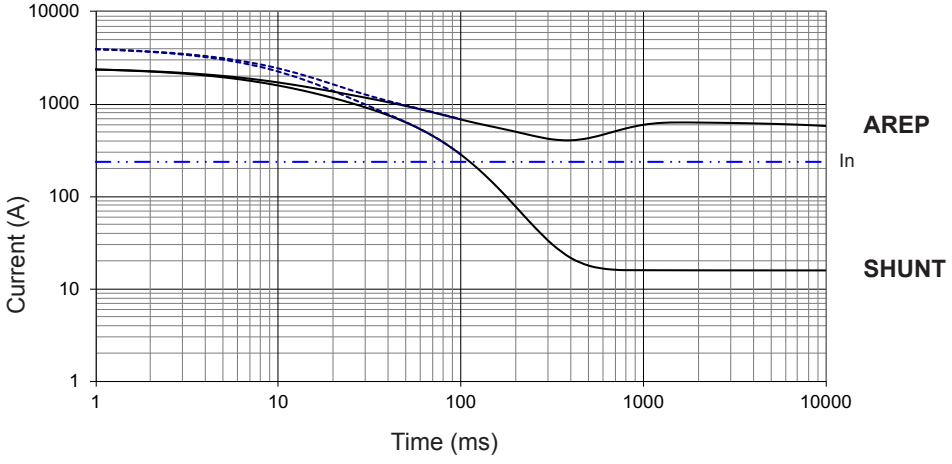
LSA 44.3 L10

Symmetrical ——
Asymmetrical - - -



LSA 44.3 L12

Symmetrical ——
Asymmetrical - - -

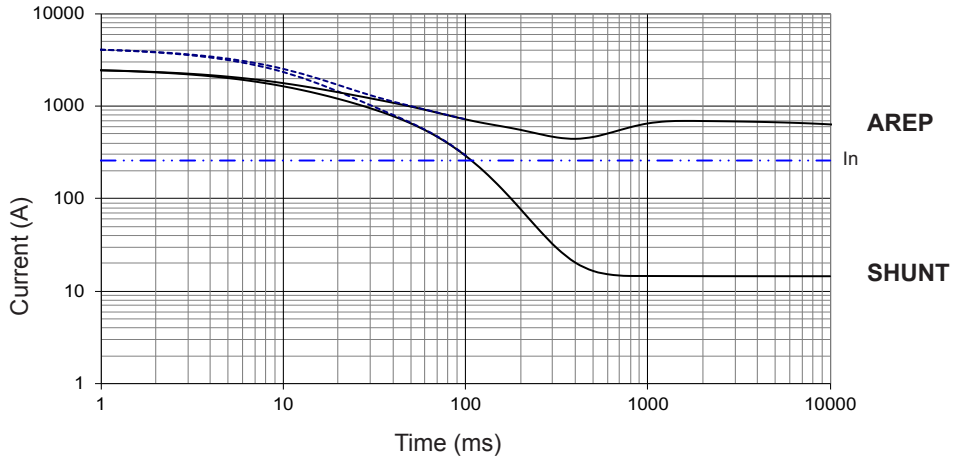


Influence due to connection
Curves shown are for star (Y) connection.
For other connections, use the following multiplication factors:
- Series delta : current value x 1.732 - Parallel star : current value x 2

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

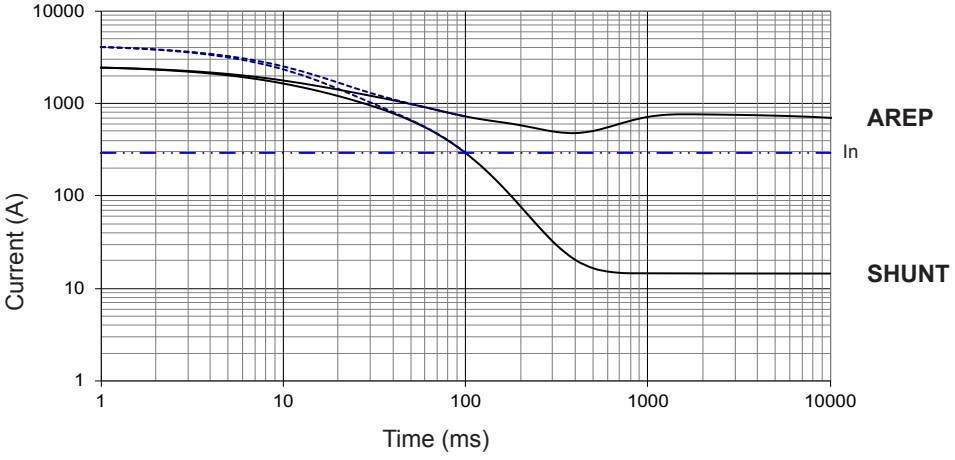
LSA 44.3 VL13

Symmetrical ——
Asymmetrical - - -



LSA 44.3 VL14

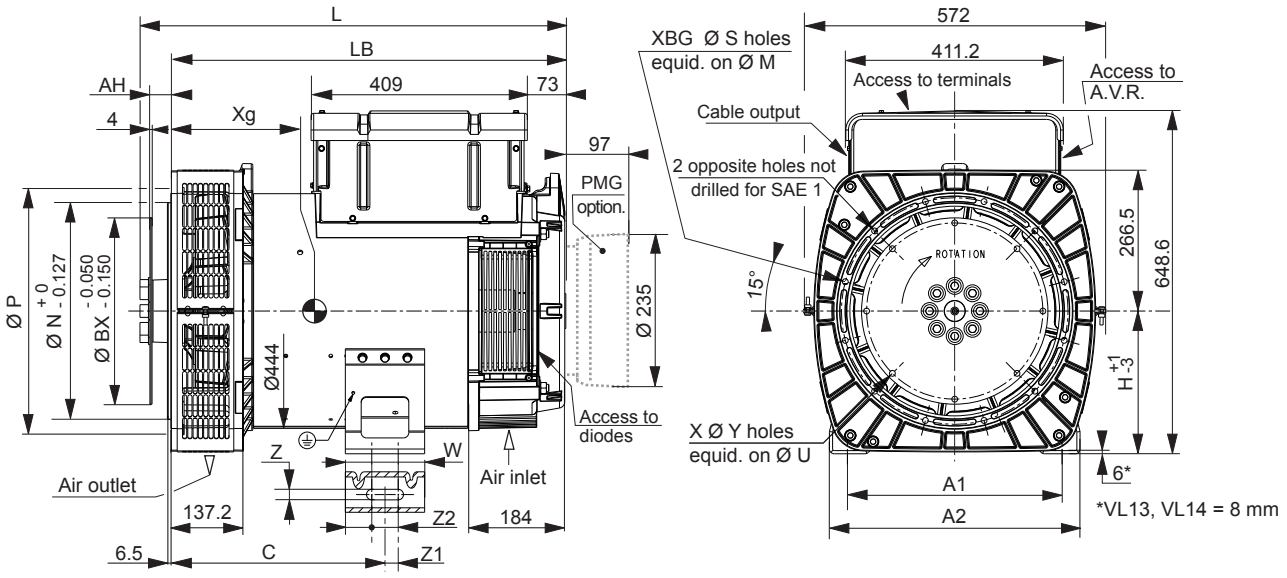
Symmetrical ——
Asymmetrical - - -



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				
Type	L without PMG maxi*	LB	Xg	Weight (kg)
LSA 44.3 S2	758	677	313	295
LSA 44.3 S3	758	677	313	295
LSA 44.3 S4	758	677	329	332
LSA 44.3 S5	758	677	329	332
LSA 44.3 M6	828	747	353	368
LSA 44.3 M8	828	747	365	398
LSA 44.3 L10	868	787	383	433
LSA 44.3 L12	868	787	383	433
LSA 44.3 VL13	953	872	416	554
LSA 44.3 VL14	953	872	416	554

* L maxi = LB + AH maxi + 19

Shaft height (mm)			
	Standard	*Option*	
H	**270**	*225**	*280***
	Feet length		
C	405	*332.5*	*429*
A1	406	*356*	*457*
A2	474	*474*	*541*
Z	20	*14.5*	*20*
Z1	25	*20*	*25*
Z2	50	*40*	*50*
W	150	*120*	*150*

* Not available for VL13 and VL14
** Available only for VL13 and VL14

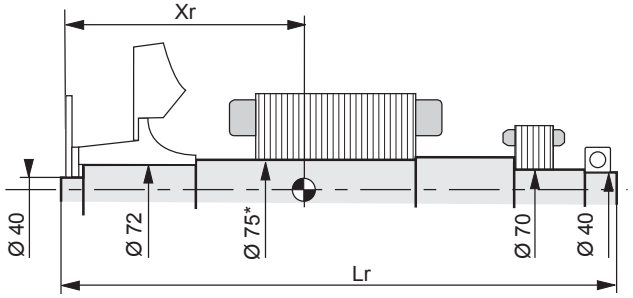
Coupling				
Flange	**1**	**2**	**3**	**4**
Flex plate				
14	x	-	-	-
11 ½	x	x	x	-
10	x	x	x	x
8	-	-	x	x

Flange (mm)					
S.A.E.	P	N	M	S	XBG
4	400	361.95	381	11	12
3	445	409.58	428.62	11	12
2	485	447.68	466.72	11	12
1	560.5*	511.18	530.23	12	10

* VL13 and VL14 = 550 mm

Flex plate (mm)					
S.A.E.	BX	U	X	Y	AH
14	466.72	438.15	8	14	25.4
11 ½	352.42	333.38	8	11	39.6
10	314.32	295.28	8	11	53.8
8	263.52	244.48	6	11	62

Torsional analysis data

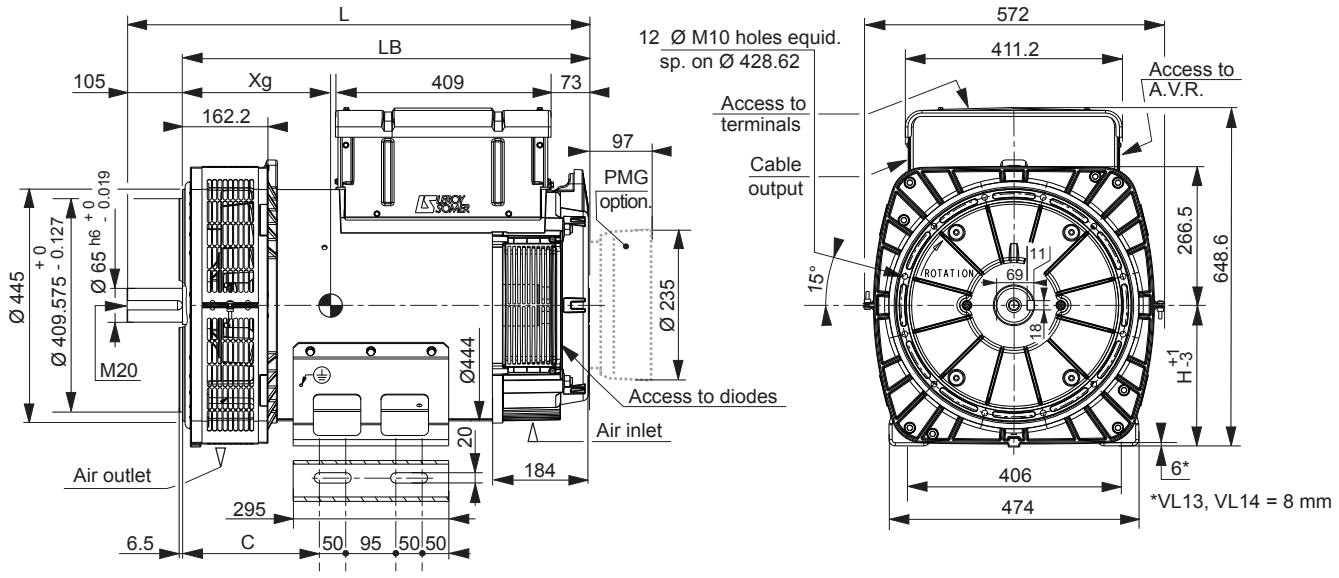


*VL13, VL14 = Ø 85 mm

Centre of gravity: Xr (mm), Rotor length: Lr (mm), Weight: M (kg), Moment of inertia: J (kgm²): (4J = MD²)																
Flex plate	S.A.E. 8				S.A.E. 10				S.A.E. 11 1/2				S.A.E. 14			
Type	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J
LSA 44.3 S2	362	729	121	0.855	353	729	121	0.868	322	729	127	0.883	318	729	123	1.007
LSA 44.3 S3	362	729	121	0.855	353	729	121	0.868	322	729	127	0.883	318	729	123	1.007
LSA 44.3 S4	383	729	139	1.013	372	729	139	1.026	359	729	138	1.041	337	729	141	1.165
LSA 44.3 S5	383	729	139	1.013	372	729	139	1.026	359	729	138	1.041	337	729	141	1.165
LSA 44.3 M6	408	799	154	1.129	399	799	154	1.142	386	799	153	1.157	364	799	156	1.281
LSA 44.3 M8	418	799	165	1.236	410	799	165	1.249	397	799	165	1.264	373	799	168	1.388
LSA 44.3 L10	438	839	181	1.371	429	839	181	1.384	417	839	180	1.399	397	839	183	1.523
LSA 44.3 L12	437	839	181	1.381	428	839	181	1.394	416	839	181	1.409	396	839	184	1.533
LSA 44.3 VL13	473	922.4	224	1.739	465	914	224	1.753	451	899	224	1.769	436.5	906	231	1.899
LSA 44.3 VL14	473	922.4	224	1.739	465	914	224	1.753	451	899	224	1.769	436.5	906	231	1.899

NOTE : Dimensions are for information only and may be subject to modifications. Contractual 2D drawings can be downloaded from the Leroy-Somer site, 3D drawing files are available upon request.
The torsional analysis of the transmission is imperative. All values are available upon request.

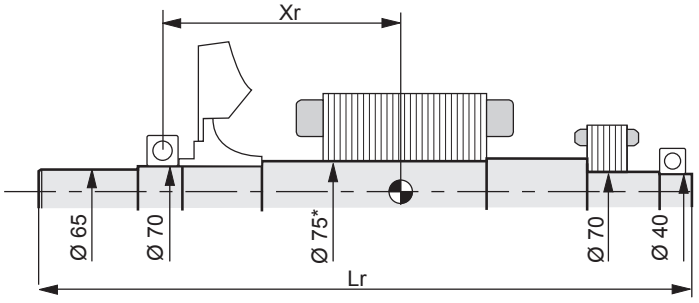
Two bearing dimensions



Dimensions (mm) and weight						
Type	L without PMG	LB	Xg	C	H*	Weight (kg)
LSA 44.3 S2	807	702	333	260	270	301
LSA 44.3 S3	807	702	333	260	270	301
LSA 44.3 S4	807	702	350	260	270	338
LSA 44.3 S5	807	702	350	260	270	338
LSA 44.3 M6	877	772	373	260	270	374
LSA 44.3 M8	877	772	385	260	270	404
LSA 44.3 L10	917	812	403	260	270	439
LSA 44.3 L12	917	812	393	260	270	439
LSA 44.3 VL13	1002	897	422	285	270	555
LSA 44.3 VL14	1002	897	422	285	270	555

* H options: 225 mm, not available for VL13 and VL14, or 280 mm, available only for VL13 and VL14. Drawing available upon request.

Torsional analysis data



*VL13, VL14 = Ø 85 mm

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 44.3 S2	309	793	117	0.825
LSA 44.3 S3	309	793	117	0.825
LSA 44.3 S4	329	793	135	0.988
LSA 44.3 S5	329	793	135	0.988
LSA 44.3 M6	353	863	149	1.096
LSA 44.3 M8	363	863	161	1.203
LSA 44.3 L10	383	903	176	1.346
LSA 44.3 L12	382	903	177	1.356
LSA 44.3 VL13	409	988	219.5	1.706
LSA 44.3 VL14	409	988	219.5	1.706

NOTE : Dimensions are for information only and may be subject to modifications. Contractual 2D drawings can be downloaded from the Leroy-Somer site, 3D drawing files are available upon request.
The torsional analysis of the transmission is imperative. All values are available upon request.

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Moteurs Leroy-Somer SAS. Siège : Bd Marcellin Leroy, CS 10015, 16915 Angoulême Cedex 9, France.
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