ULTRA SILENT Series

DIESEL GENERATOR
GROUPE ELECTROGENE DIESEL
GRUPO ELECTROGENO DIESEL
GRUPPO ELETTROGENO DIESEL

MODEL
MODELE
MODELO
MODELLO

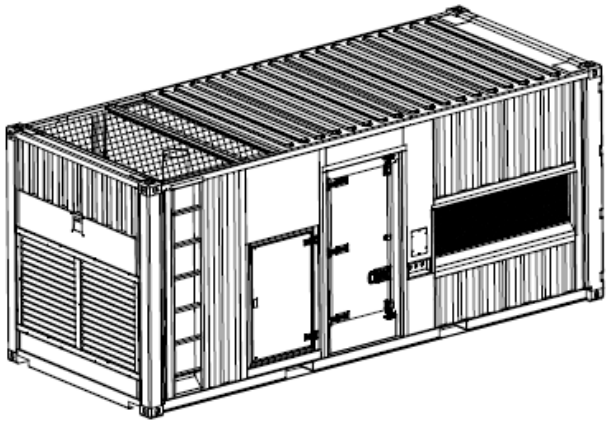
CU 1000 WB

POWERED BY

Cummins

meccalte

ULTRA SILENT 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	440/254
Continuous Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	PRP	kVA	**910**	kVA	**1040**
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	LTP	kVA	**1000**	kVA	**1145**
Continuous Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	PRP	kWe	728	kWe	832
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	LTP	kWe	800	kWe	916
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	117,4	l/h	133,3
Noise level Niveau de bruit Nivel de ruido Livello rumorosità	dB(A)@7m	61dB(A) at 0% of load			
Limit ambient temperature Limite de la température ambiante Limite de la temperatura ambiente Limite di temperatura ambientale		55°C minimum			

TECNOGEN SpA - postal address: strada Ponteriglio, 25 – 29010 Pontenure (PC)- ITALY
Tel **+39 0523 512440** - Fax **+39 0523 504453** – E-mail: **export@tecnogen.com** - Web site: **www.tecnogen.com**

ENGINE MOTEUR MOTOR MOTORE		CUMMINS		QST30G3	
PERFORMANCE PERFORMANCES PRESTACIONES PRESTAZIONI		**1500 rpm**		**1800 rpm**	
Continuous Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	PRP	kWm	817,6	kWm	907,6
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	LTP	kWm	897,6	kWm	994,6
Specific fuel consumption Consommation spécifique combustible Consumo especifico de combustibile Consumo specifico combustibile		g/kWh	25 % 215 50 % 198 75 % 195 100 % 194	g/kWh	25 % 222 50 % 198 75 % 192 100 % 193
Derating for temperature Déclassement pour temperature Declasamiento para temperatura Declassamento per temperatura		0÷40°C/1000 m >40°C	0 15%/10°C	0÷40°C/1650 m >40°C	0 15%/10°C
Derating for altitude Déclassement pour altitude Declasamiento para altitud Declassamento per altitudine		0÷2500 m/25°C >2500 m	0 10%/500 m	0÷2650 m/30°C >2650 m	0 8%/500 m
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 Suralimentée Sobrealimentado 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					12 L
Total displacement Cylindrée totale Cilindrata total Cilindrata totale				cm^3	30.500
Bore x stroke Alésage x course Diametro x carrera Alesaggio x corsa				mm	140 x 165
Compression ratio Rapport de compression Relación de compresión Rapporto di compressione					14.0
Engine electric system voltage Voltage système électrique moteur Voltaje sistema eléctrico motor Voltaggio sistema elettrico motore					24 V

ALTERNATOR ALTERNATEUR ALTERNADOR ALTERNATORE			MECC ALTE		
PERFORMANCE PERFORMANCES PRESTACIONES PRESTAZIONI		**1500 rpm**		**1800 rpm**	
Model Modèle Modelo Modello		ECO43-2SN/4		ECO43-2SN/4	
Continuous Power Puissance service continue Potencia servicio continuo Potenza servizio continuo	40 °C	kVA kWe	**930** 744	KVA kWe	**1060** 848
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	40 °C	KVA kWe	975 780	KVA kWe	1170 936
Stand-by Power Puissance service secours Potencia servicio emergencia Potenza servizio in emergenza	27 °C	KVA kWe	**1016** 813	KVA kWe	**1220** 976
Efficiency Rendement Eficienza Efficienza		2/4 3/4 4/4	94,4 % 95,7 % 95,4 %	2/4 3/4 4/4	94,7 % 95,8 % 95,8 %
Standard winding connections Liaison des bobinages Tipo de conexiòn Collegamento avvolgimenti			Y		YY
Exciter Eccitatrice Excitador Eccitatrice	**brushless** rotating exciter design with solid state pivotante **sans brosses** avec pont de diodes pivotants puente de diodos **sin escobillas** rotantes rotante **senza spazzole** con ponte di diodi rotanti				
Poles Poles Polos Poli					4
Phases Phases Fases Fasi					3 + N
Wires Fils Hilos Morsetti					12
Voltage reguletion Regulation Voltage Regulación voltaje Regolazione tensione					± 1%
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 21
Air Volume Volume d'air Volumen de aire Volume d'aria				50 Hz 60 Hz	90 m^3/min 108 m^3/min
Standard AVR model Modèle AVR standard Modelo AVR standard Modello AVR standard					**DER-1**
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		
	STD	*EXTRA1*	(kg)	(cm)		
	(L.)			L	W	H
SOUND PROOF CONTAINERIZED VERSION VERSION INSONORISEE EN CONTAINER VERSION INSONORISADA EN CONTENEDOR VERSIONE INSONORIZZATA IN CONTAINER	1430	ON REQUEST	13200	CONTAINER 20'		

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

GB	F	E	I
✓ Cummins engine ✓ Cooling system with electric fans controlled by Inverter ✓ Fully bunded fuel tank ✓ Vibration dampers ✓ Manual autostart control panel **ACP7310AUS** with circuit breaker and hardwire busbars ✓ Air filter ✓ Fork lift guides ✓ Residential silencer	✓ Moteur Cummins ✓ Système de refroidissement avec ventilateurs électriques commandés par Inverter ✓ Bac de rétention ✓ Amortisseurs de vibration ✓ Démarrage manuel autostart **ACP7310AUS** avec disjoncteur de protection et bornier de puissance ✓ Filtre à air ✓ Supports pour fourches ✓ Silencieux résidentielle	✓ Motor Cummins ✓ Sistema de refrigeración con Ventiladores eléctricos controlados para Inverter ✓ Tanque del combustible con sistema de recolección de líquidos ✓ Sistema de amortiguación anti-vibrante ✓ Cuadro manual autostart **ACP7310AUS** con interruptor magnetotérmico y borne de potencia ✓ Filtre de aire ✓ Supportes para carrettilla ✓ Silenciador residencial	✓ Motore Cummins ✓ Sistema di raffreddamento con ventole elettriche controllate da tecnologia Inverter ✓ Serbatoio con vasca di raccolta liquidi ✓ Anti vibranti ✓ Quadro di comando manuale autostart **ACP7310AUS** con interruttore magnetotermico e morsettiera di potenza ✓ Filtro aria ✓ Porta forche ✓ Marmitta residenziale

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

ACP 7310 AUS

1600 A (400 V - 3 ph - 50Hz - 1500 rpm)
1600 A (440 V - 3 ph - 60Hz - 1800 rpm)

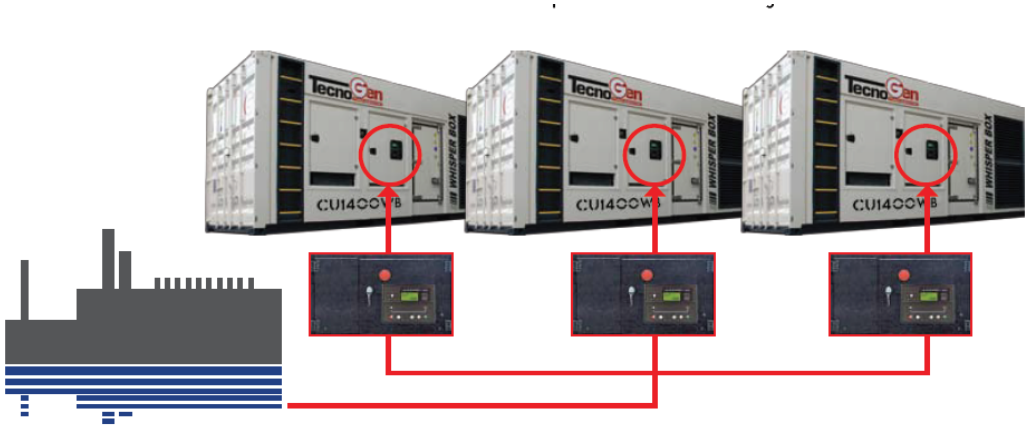
STANDARD EQUIPMENT:	**EQUIPEMENT STANDARD:**	**EQUIPAMIENTO STANDARD:**	**EQUIPAGGIAMENTO STANDARD:**
4 poles circuit breaker Electronic control board **DSE 7310** Control panel box key Emergency Stop button	Disjoncteur de protection 4 pôles Fiche électronique **DSE 7310** Clé pour serrure du coffret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

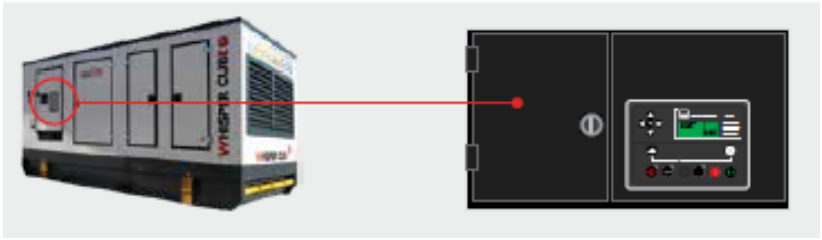
DSE 7310

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

PROTECTIONS	**PROTECTIONS**	**PROTECCIONES**	**PROTEZIONI**
Low oil pressure 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 générateu fréquence Sur/sous générateu voltage Sur/sourvitesse Niveau de combustible Rupture courroie Surcourant Sur/sus la tension de batterie	Baja presión aceite Elevada temperatura motor Baja nivel carburante Falta de arranque Falta de parada Parada de emergencia Sobre/bajo generatore frecuencia Sobre/bajo generatore voltaje Sobre/bajo velocitad nivel de combustibile 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	Voltimetro (3 fases) Amperimetro (3 fases) Frecuencimetro KW- metro kVA- metro Cos φ-metro Revolutiones por minuto metro Medida horas de marcha Voltimetro 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

SYNCHRONISING CONTROL PANEL AS OPTION
COFFRET DE SYNCHRONISATION EN OPTION
CUADRO ELECTRICO DE PARALELO OPCION
QUADRO ELETTRICO DI PARALLELO IN OPZIONE





1600A (400V - 3 ph - 50Hz - 1500 rpm)
1600A (440V - 3 ph - 60Hz - 1800 rpm)

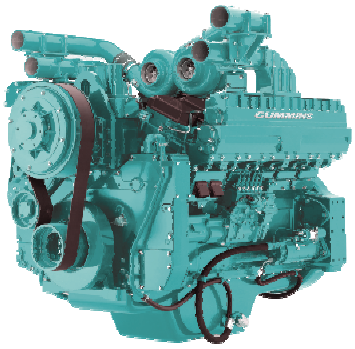
The synchronising control panel **SCP8610** allows the synchronisation between multiple generating sets with load sharing	Le coffret de commande **SCP8610** permet le parallèle entre plus groupes électrogènes et la répartition de la charge	El cuadro eléctrico **SCP8610** permite el paralelo entre más grupos electrógenos con la división de la carga	Il quadro di parallelo **SCP8610** permette il parallelo tra più gruppi elettrogeni e la ripartizione del carico

DSE8610

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

CONTROLS	COMMANDES	CONTROLES	COMANDI
Stop/reset – Manual – Auto – Start LCD Display Scroll Lamp test / Mute Circuit breaker control	Stop / reset – Manuel – Auto – Démarrage Sélection display LCD Test lampes / Muet Commande disjoncteur de protection	Stop / reset – Manual – Auto – Arranque Selección display LCD Prueba lámparas / Mudo Contrôle interruptor magnetotérmico	Stop / reset – Manuale – Auto – Avviamento Selezione display LCD Test lampade / Muto Controllo interruttore magnetotermico

QST30-G3



> Specification sheet

Our energy working for you.™

Description

The QST30 Quantum series utilises sophisticated electronics and premium engineering to provide outstanding performance levels from its compact 30 litre, V12 configuration. In fact, the QST30-Series delivers more power and torque in a smaller package than any other diesel engine on the market.

CE	This engine has been built to comply with CE certification.
ISO 9001	This engine has been designed in facilities certified to ISO9001 and manufactured in facilities certified to ISO9001 or ISO9002.

Features

Coolpac Integrated Design - Products are supplied complete with cooling package and air cleaner kit for a complete power package. Each component has been specifically developed and rigorously tested for G-Drive products, ensuring high performance, durability and reliability.

Quantum Electronic Fuel System and Controls – Quantum electronics provide superior performance, efficiency and diagnostics. The electronic fuel pumps deliver up to 1100 bar injection pressure and eliminate mechanical linkage adjustments.

Holset HX82 Turbocharging – Utilises exhaust energy with greater efficiency for improved emissions and fuel consumption.

Service and Support - G-Drive products are backed by an uncompromising level of technical support and after sales service, delivered through a world class service network.

1500 rpm (50 Hz Ratings)

Gross Engine Output			Net Engine Output			Typical Generator Set Output					
Standby	Prime	Base	Standby	Prime	Base	Standby (ESP)		Prime (PRP)		Base (COP)	
kWm/BHP			kWm/BHP			kWe	kVA	kWe	kVA	kWe	kVA
895/1200	806/1080	634/850	866/1161	786/1054	614/823	800	1000	728	910	584	730

1800 rpm (60 Hz Ratings)

Gross Engine Output			Net Engine Output			Typical Generator Set Output					
Standby	Prime	Base	Standby	Prime	Base	Standby (ESP)		Prime (PRP)		Base (COP)	
kWm/BHP			kWm/BHP			kWe	kVA	kWe	kVA	kWe	kVA
1007/1350	910/1220	731/980	963/1291	876/1175	697/935	900	1125	823	1029	655	819

Our energy working for you.™

www.cumminsgdrive.com

(01/08) (GDSS135)

General Engine Data

Type	4 cycle, in line, Turbocharged and after-cooled
Bore mm	140.0mm (5.51 in.)
Stroke mm	165.1mm (6.5 in.)
Displacement Litre	30.5 litre (1860 in.^{3})
Cylinder Block	Cast iron, 50°V 12 cylinder
Battery Charging Alternator	35 amps
Starting Voltage	24-volt, negative ground
Fuel System	Direct injection
Fuel Filter	Spin on fuel filters with water separator
Lube Oil Filter Type(s)	Spin on full flow filter
Lube Oil Capacity (l)	40.7
Flywheel Dimensions	0/18

Coolpac Performance Data

Cooling System Design	Jacket Water After Cooled
Coolant Ratio	50% ethylene glycol; 50% water
Coolant Capacity (l)	114.0
Limiting Ambient Temp.**	51.0
Fan Power	42.9
Cooling System Air Flow (m^3/s)**	17.6
Air Cleaner Type	Dry replaceable element with restriction indicator

** @ 13 mm H^20

Ratings Definitions

Emergency Standby Power (ESP):
Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

Limited-Time Running Power (LTP):
Applicable for supplying power to a constant electrical load for limited hours. Limited-Time Running Power (LTP) is in accordance with ISO 8528.

Prime Power (PRP):
Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

Base Load (Continuous) Power (COP):
Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) in accordance with ISO 8528, ISO 3046, AS 2789, DIN6271 and BS 5514.

Weight & Dimensions

Length	Width	Height	Weight (dry)
mm	mm	mm	kg
2621	1448	2021	3437

Fuel Consumption 1500 (50 Hz)

%	kWm	BHP	L/ph	US gal/ph
Standby Power				
100	895	1200	204	53.9
Prime Power				
100	806	1080	184	48.5
75	604	810	139	36.6
50	403	540	94	24.7
25	201	270	51	13.4
Continuous Power				
100	634	850	146	38.4

Fuel Consumption 1800 (60 Hz)

%	kWm	BHP	L/ph	US gal/ph
Standby Power				
100	1007	1350	228	60.2
Prime Power				
100	910	1220	207	54.6
75	683	915	154	40.6
50	455	610	106	27.9
25	228	305	59	15.7
Continuous Power				
100	731	980	165	43.5

Cummins G-Drive Engines

Asia Pacific
10 Toh Guan Road
#07-01
TT International Tradepark
Singapore 608838
Phone 65 6417 2388
Fax 65 6417 2399

Europe, CIS, Middle East and Africa
Manston Park Columbus Ave
Manston Ramsgate
Kent CT12 5BF. UK
Phone 44 1843 255000
Fax 44 1843 255902

Latin America
Rua Jati, 310, Cumbica
Guarulhos, SP 07180-900
Brazil
Phone 55 11 2186 4552
Fax 55 11 2186 4729

Mexico
Cummins S. de R.L. de C.V.
Eje 122 No. 200 Zona Industrial
San Luis Potosí, S.L.P. 78090
Mexico
Phone 52 444 870 6700
Fax 52 444 870 6811

North America
1400 73rd Avenue N.E.
Minneapolis, MN 55432
USA
Phone 1 763 574 5000
USA Toll-free 1 877 769 7669
Fax 1 763 574 5298

Our energy working for you.™

www.cumminsgdrive.com

(01/08) (GDSS135)

ECO43N

4 POLE

MECCALTE spa - Via Roma, 20 - 36051 CREAZZO (VI) ITALIA
Tel. +39 0444/396111 - Fax +39 0444/396166 - e-mail : info@meccalte.it
web site: www.meccalte.com

CHARACTERISTICS

INDUSTRIAL RATINGS — ambient 40°C

Type	KVA - cosφ 0.8 - 3 Phase continuous							Efficiency		
50 Hz	CL. H (ΔT= 125°C)				CL. F (ΔT= 105°C)			η % CL H (ΔT= 125°C)		
Series Star Y Parallel Star YY Series Delta Δ Parallel Delta ΔΔ	760 380 440 220	800 400 460 230	830 415 480 240	IP45 400 V	760 380 440 220	800 400 460 230	830 415 480 240	2/4	3/4	4/4
ECO43-1SN/4	800	**800**	800	620	730	**730**	730	93,9	95,3	95,1
ECO43-2SN/4	930	**930**	930	730	850	**850**	850	94,4	95,7	95,4
ECO43-1LN/4	1100	**1100**	1100	850	1000	**1000**	1000	94,8	96	95,8
ECO43-2LN/4	1300	**1300**	1300	1000	1200	**1200**	1200	95	96,2	96
ECO43-VL/4	1400	**1400**	1330	1070	1280	**1280**	1210	95,3	96,4	96,2

60 Hz	CL. H (ΔT= 125°C)				CL. F (ΔT= 105°C)			Efficiency η % CL. H (ΔT= 125°C)		
Series Star Y Parallel Star YY Series Delta Δ Parallel Delta ΔΔ	880 440 508 254	920 460 530 265	960 480 554 277	IP45 480 V	880 440 508 254	920 460 530 265	960 480 554 277	2/4	3/4	4/4
ECO43-1SN/4	960	960	**960**	750	870	870	**870**	94,4	95,6	95,3
ECO43-2SN/4	1060	1116	**1116**	876	969	1020	**1020**	94,7	95,8	95,8
ECO43-1LN/4	1260	1320	**1320**	1020	1145	1200	**1200**	95,1	96,1	96
ECO43-2LN/4	1482	1560	**1560**	1200	1368	1440	**1440**	95,2	96,5	96,4
ECO43-VL/4	1700	1700	**1700**	1290	1540	1540	**1540**	95,4	96,7	96,6

STANDBY RATINGS

Type	KVA Temp. Rise / Ambient °C			KVA Temp. Rise / Ambient °C		
	50 Hz			60 Hz		
	163° / 27°	150° / 40°	125° / 27°	163° / 27°	150° / 40°	125° / 27°
ECO43-1SN/4	874	840	840	1050	1008	1008
ECO43-2SN/4	1016	975	975	1220	1170	1170
ECO43-1LN/4	1201	1150	1150	1442	1380	1380
ECO43-2LN/4	1420	1358	1358	1704	1630	1630
ECO43-VL/4	1520	1470	1470	1824	1765	1765

Type	J (Kgm^2) B3-B14 Form	Weight (Kg)	Air Volume		Noise dB(A)			
					50 Hz		60 Hz	
			50 Hz (m^3/min)	60 Hz (m^3/min)	1m	7m	1m	7m
ECO43-1SN/4	17,019	1870	90	108	95	84	99	89
ECO43-2SN/4	18,666	2090						
ECO43-1LN/4	21,521	2395						
ECO43-2LN/4	25,111	2660						
ECO43-VL/4	26,101	2950						

ACCESSORIES

REGULATOR				PARALLEL DEVICE	THERMAL PROTECTION			HEATERS	MECHANICAL PROTECTION		
DSR	DER-1	SR7/2	UVR6		PTC	BIMET. DEVICE	PT100		IP21	IP23	IP45
☐	●	☐	☐	●	☐	☐	☐	☐	●	☐	☐

● = Standard
☐ = Optional

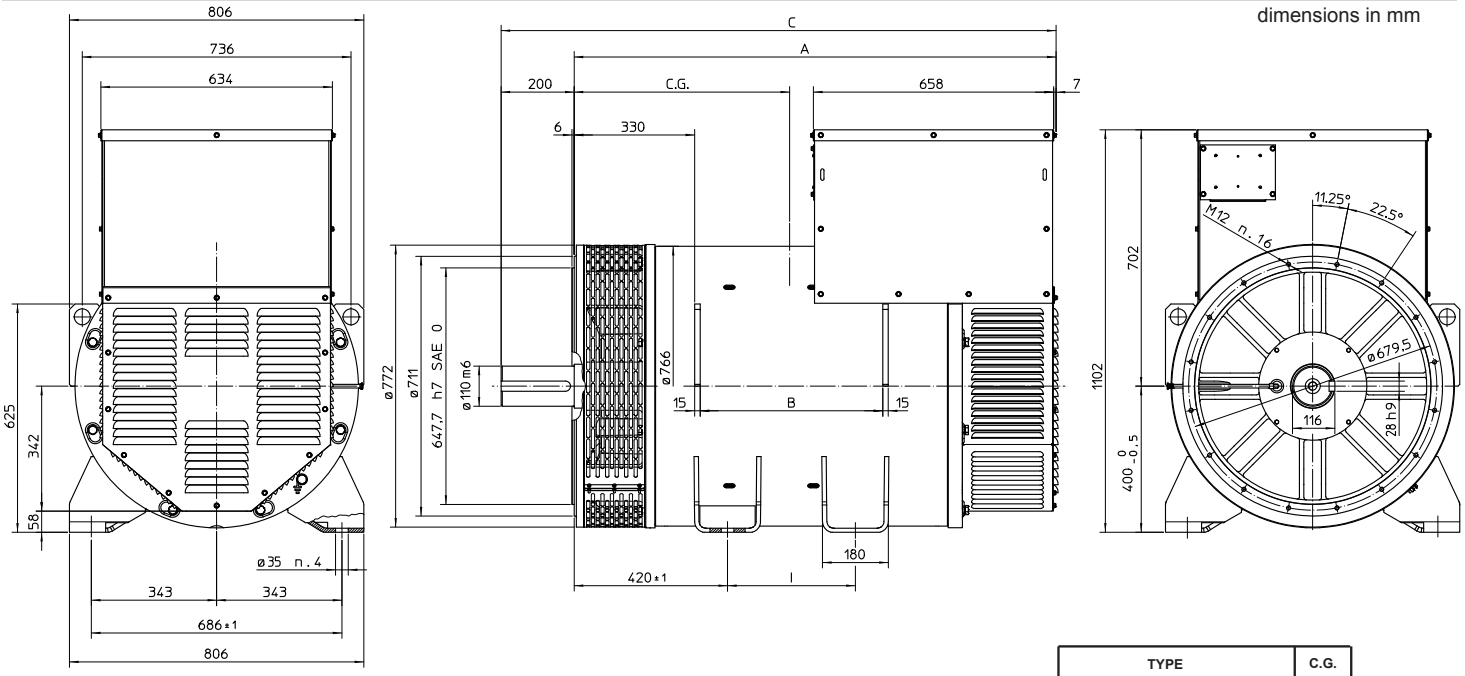
Rating

Available for models SN and LN

INSULATION SYSTEM

OVERALL DIMENSIONS B3-B14 FORM

dimensions in mm

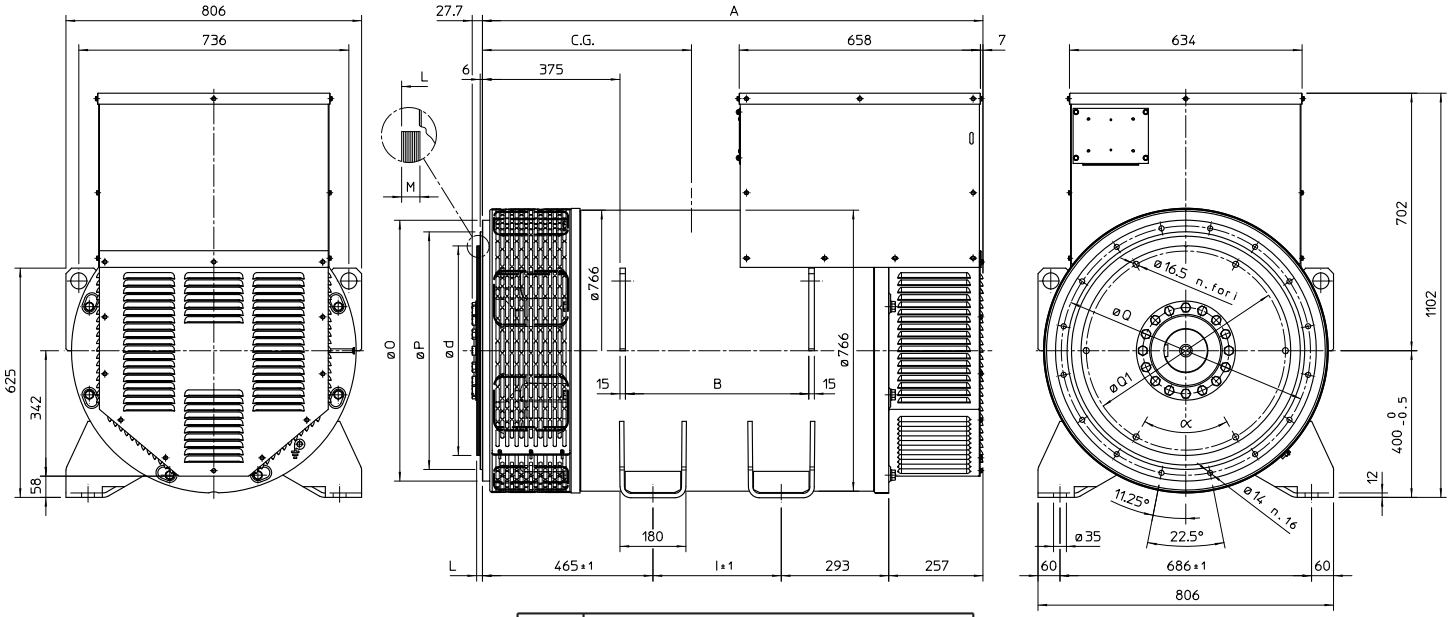


TYPE	A	B	C	I
ECO 43 - SN	1320	500	1520	350
ECO 43 - LN	1520	700	1720	550
ECO 43 - VL	1600	780	1800	550

TYPE	C.G.
ECO 43 - 1SN/4	604
ECO 43 - 2SN/4	614
ECO 43 - 1LN/4	670
ECO 43 - 2LN/4	714
ECO 43 - VL/4	756

OVERALL DIMENSIONS MD35 FORM

dimensions in mm



SAE N.	DISC COUPLING					
	d	L	M	Q1	N. FORI	α
18	571,5	15,7	10	542,92	6	60°
21	673,1	0	12	641,35	12	30°

SAE N.	FLANGE		
	O	P	Q
0	711	647,7	679,5
00	883	787,4	850,9

TYPE	A	B	I
ECO 43 - SN	1365	500	350
ECO 43 - LN	1565	700	550
ECO 43 - VL	1645	780	550

TYPE	C.G.
ECO 43 - 1SN/4	630
ECO 43 - 2SN/4	654
ECO 43 - 1LN/4	720
ECO 43 - 2LN/4	760
ECO 43 - VL/4	796

DSECONTROL®
MONITORING WITH INTELLIGENCE.

DSE7310 & DSE7320

AUTO START & AUTO MAINS FAILURE CONTROL MODULES (COMMUNICATIONS & EXPANSION)

The DSE7310 and DSE7320 are control modules for single gen-set applications. The modules have been developed from the successful DSE5310 and DSE5320 Series and incorporate a number of advanced features to meet the most demanding on-site applications.

The DSE7310 is an Automatic Start Control Module and the DSE7320 is an Auto Mains (Utility) Failure Control Module. Both modules have been designed to start and stop diesel and gas generating sets that include electronic and non-electronic engines. The DSE7320 includes the additional capability of being able to monitor a mains (utility) supply.

Both modules include USB, RS232 and RS485 ports as well as dedicated DSENet® terminals for expansion device connectivity.

The modules are simple to operate and feature a user-friendly menu layout for improved clarity. Enhanced features include a real time clock for enhanced event and performance monitoring, ethernet communications for low cost monitoring, mutual standby (DSE7310 only) to reduce engine wear and tear and preventative maintenance features to detect engine part faults prior to a major problem occurring.

FEATURES

- Backed up real time clock
- 132 x 64 pixel LCD display
- Configurable display languages
- Five-key menu navigation
- Fully configurable via PC software
- LED and LCD alarm indication
- Engine exercise mode
- Configurable start & fuel outputs
- kWh monitoring
- Automatic load transfer
- Eight configurable digital inputs
- Six configurable outputs
- Configurable timers and alarms
- Modbus RTU
- Magnetic pick-up
- Selected front panel programming
- Multiple date and time exercise scheduler
- SMS messaging (additional external modem required)
- Power save mode
- User selectable RS232 & RS485 communications
- DSENet® compatible
- Ethernet communications via DSE860/865
- Multiple date and time maintenance scheduler
- Configurable display pages
- Programmable load shedding/acceptance
- Preventative maintenance
- kW overload protection
- Unbalanced load protection
- Flexible sender input
- Configurable SCADA output page
- True dual mutual standby with load balancing timer (DSE7310 only)
- Fan control for additional cooling
- 'Protections Disabled' facility
- Fuel usage monitoring and low fuel alarm
- Support for up to three remote display units
- Automatic sleep mode
- Easy access, configurable diagnostics page shows summary of output states
- Improved programmable event log (250) showing date and time
- Manual fuel pump control
- 3 alternative configurations
- Multiple date and time scheduler
- 3 Programmable Maintenance alarms with comms alert
- Customisable status screens
- Low fuel level alarm delay
- Charge alternator fail warning and shutdown alarms with user programmable delay
- Independent Earth fault trip
- Sleep mode
- Load switching (Load shedding and dummy load outputs)
- Manual speed trim (on CAN engines that support this feature)
- Additional display screens to help with modem diagnostics
- Security levels – PC software has password system to control access to PC software features
- Operator configurable virtual LEDs visible in SCADA

NEW FEATURES

- Additional programmable logic
- Improved modem diagnostics
- Remote control sources (10) can be accessed via SCADA
- Additional electrical trip options
- Additional start delay functions
- Oil pressure values from additional engines
- Front panel editing of scheduler
- Displays kW as % of rated kW setting

SPECIFICATION

DC SUPPLY

CONTINUOUS VOLTAGE RATING
8V to 35V Continuous

CRANKING DIP PROTECTION
Able to survive 0V for 50mS, providing supply was at least 10V before dropout and supply recovers to 5V. This is achieved without the need for internal batteries

CHARGE FAIL/ EXCITATION
0V to 35V fixed power source 2.5W

MAXIMUM STANDBY CURRENT
160mA at 12V 80mA at 24V

MAXIMUM OPERATING CURRENT
340mA at 12V 160mA at 24V

ALTERNATOR INPUT

RANGE
15V - 333V (L-N) 50Hz - 60Hz
(Minimum 15V AC Ph-N)

ACCURACY
1% of full scale true RMS sensing

SUPPORTED TOPOLOGIES
3 phase 4 wire
3 phase 3 wire
3 phase 4 wire Delta
Single phase 2 wire
2 phase 3 wire L1 & L2
2 phase 3 wire L1 & L3

MAINS/UTILITY INPUT (DSE7320 ONLY)

RANGE
15V - 333V (L-N) 50Hz - 60Hz
(Minimum 15V AC Ph-N)

ACCURACY
1% of full scale true RMS sensing

SUPPORTED TOPOLOGIES
3 phase 4 wire
3 phase 3 wire
3 phase 4 wire Delta
Single phase 2 wire
2 phase 3 wire L1 & L2
2 phase 3 wire L1 & L3

CT'S

BURDEN
0.5VA

PRIMARY RATING
1A - 8000A (user selectable)

SECONDARY RATING
1A or 5A secondary (user selectable)

ACCURACY OF MEASUREMENT
1% of full load rating

RECOMMENDATIONS
Class 1 required for instrumentation
Protection class required if using for protection

Continued on page 2

SPECIFICATION

MAGNETIC PICKUP

VOLTAGE RANGE
+/- 0.5V minimum (during cranking) to 70V peak

FREQUENCY RANGE
10,000 Hz (max)

OUTPUTS

OUTPUT A (FUEL)
15 Amp DC at supply voltage

OUTPUT B (START)
15 Amp DC at supply voltage

OUTPUTS C & D
8 Amp 250V (Volt free)

AUXILIARY OUTPUTS E,F,G,H
2 Amp DC at supply voltage

DIMENSIONS

OVERALL
240mm x 181.1mm x 41.7mm
9.4" x 7.1" x 1.6"

PANEL CUT-OUT
220mm x 160mm
8.7" x 6.3"
Max panel thickness 8mm (0.3")

ENVIRONMENTAL TESTING STANDARDS

ELECTRICAL SAFETY
BS EN 60950
Safety of Information Technology Equipment, including Electrical Business Equipment

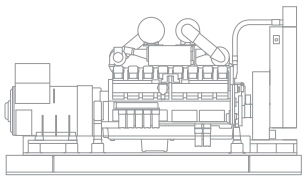
ELECTRO MAGNETIC COMPATIBILITY
BS EN 61000-6-2
EMC Generic Immunity Standard for the Industrial Environment
BS EN 61000-6-4
EMC Generic Emission Standard for the Industrial Environment

TEMPERATURE (OPERATING)
BS EN 60068
Test Ab to +70ºC 60068-2-2 Hot
Test Ab to -30ºC 60068-2-1 Cold

VIBRATION
BS EN 60068-2-6
Ten sweeps in each of three major axes
5Hz to 8Hz @ +/-7.5mm, 8Hz to 500Hz @ 2gn

HUMIDITY
BS 2011 part 2.1 60068-2-30
Test Cb Ob Cyclic
93% RH @ 40ºC for 48 hours

SHOCK
BS EN 60068-2-27
Three shocks in each of three major axes
15gn in 11mS



ELECTRONIC ENGINE CAPABILITY

BENEFITS

- 132 x 64 pixel ratio makes information easy to read
- Real time clock provides accurate event logging
- PC software is license free
- Set maintenance periods can be configured to maintain optimum engine performance
- Ethernet communications provides advanced remote monitoring at low cost
- Modules can be integrated into building management systems
- Preventative maintenance avoids expensive engine down time
- Advanced PCB layout ensures high reliability
- Robust design
- Extensive performance monitoring

OPERATION

The modules are operated via the START, STOP, AUTO and MANUAL soft touch membrane buttons on the front panel. The DSE7320 also has a TEST button. Both modules include load switch buttons. The main menu system is accessed using the five navigation buttons to the left of the LCD display.

CONFIGURATION

The modules can be configured using the front panel buttons or by using the DSE Configuration Suite PC software and a USB lead.

COMMUNICATIONS

The DSE7310 & DSE7320 have a number of different communication capabilities.

SMS Messaging

When the module detects an alarm condition, it has the ability to send an SMS message to a dedicated mobile number (s), notifying an engineer of the exact time, date and reason why the engine failed (GSM Modem and SIM Card required).

Remote Communications

When the module detects an alarm state, it dials out to a PC notifying the user of the condition (Modem required).

Remote Control

The module can be controlled remotely using either a GSM Modem, Ethernet via DSE860/865 or via RS485. Using a modem allows the module to be controlled from any distance. Using RS485 limits the distance to 1km (0.6 miles).

Building Management

The module has been designed to be integrated into new and existing building management systems, using RS485.

PC Software

The module has the ability to be configured and monitored from a remote PC, using the PC software and a USB lead.

INPUTS & OUTPUTS

Analogue inputs are provided for oil pressure, coolant temperature and fuel level. These connect to conventional engine mounted resistive sensor units to provide accurate monitoring and protection facilities. They can also be configured to interface with digital switch type inputs for low oil pressure and high coolant temperature shutdowns. Eight user configurable digital inputs are also included, plus one flexible sender.

Outputs are provided for fuel solenoid, start solenoid and six additional configurable outputs. On these configurable outputs a range of different functions, conditions or alarms can be selected.

INSTRUMENTATION

The modules provide advanced metering facilities, displaying the information on the LCD display. The information can be accessed using the five-key menu navigation to the left of the display.

7310	7320
Generator Instruments Volts, Hz, Amps, kW, kVA, Pf, kWh, kVAr, kVArh, KVAh	**Generator Instruments** Volts, Hz, Amps, kW, kVA, Pf, kWh, kVAr, kVArh, KVAh
Engine Instruments RPM, Oil Pressure, Coolant Temperature, Hours Run, Charging Voltage, Battery Volts.	**Engine Instruments** RPM, Oil Pressure, Coolant Temperature, Hours Run, Charging Voltage, Battery Volts.
Electronic Engines Enhanced Instrumentation and Engine ECU diagnostics via electronic engine interface.	**Electronic Engines** Enhanced instrumentation and Engine ECU diagnostics via electronic engine interface.
	Mains/Utility Instruments Volts, Frequency, Amps (optional when CT's are fitted load side of the line)

DSENET®

DSENet® is a collection of expansion modules that have been created to work with DSENet® compatible control modules. DSENet® allows up to 20 different expansion devices to be used at a time. The expansion modules available are:

- DSE2157 Relay Output Expansion Module
- DSE2130 Input Expansion Module
- DSE2548 Annunciator Module Remote Display Module
- DSE2510 Remote Display
- DSE2520 Remote Display

EVENT LOG

The module includes a comprehensive event log that shows the most recent 250 alarm conditions and the date and time that they occurred. This function assists the user when fault finding and maintaining a generating set.

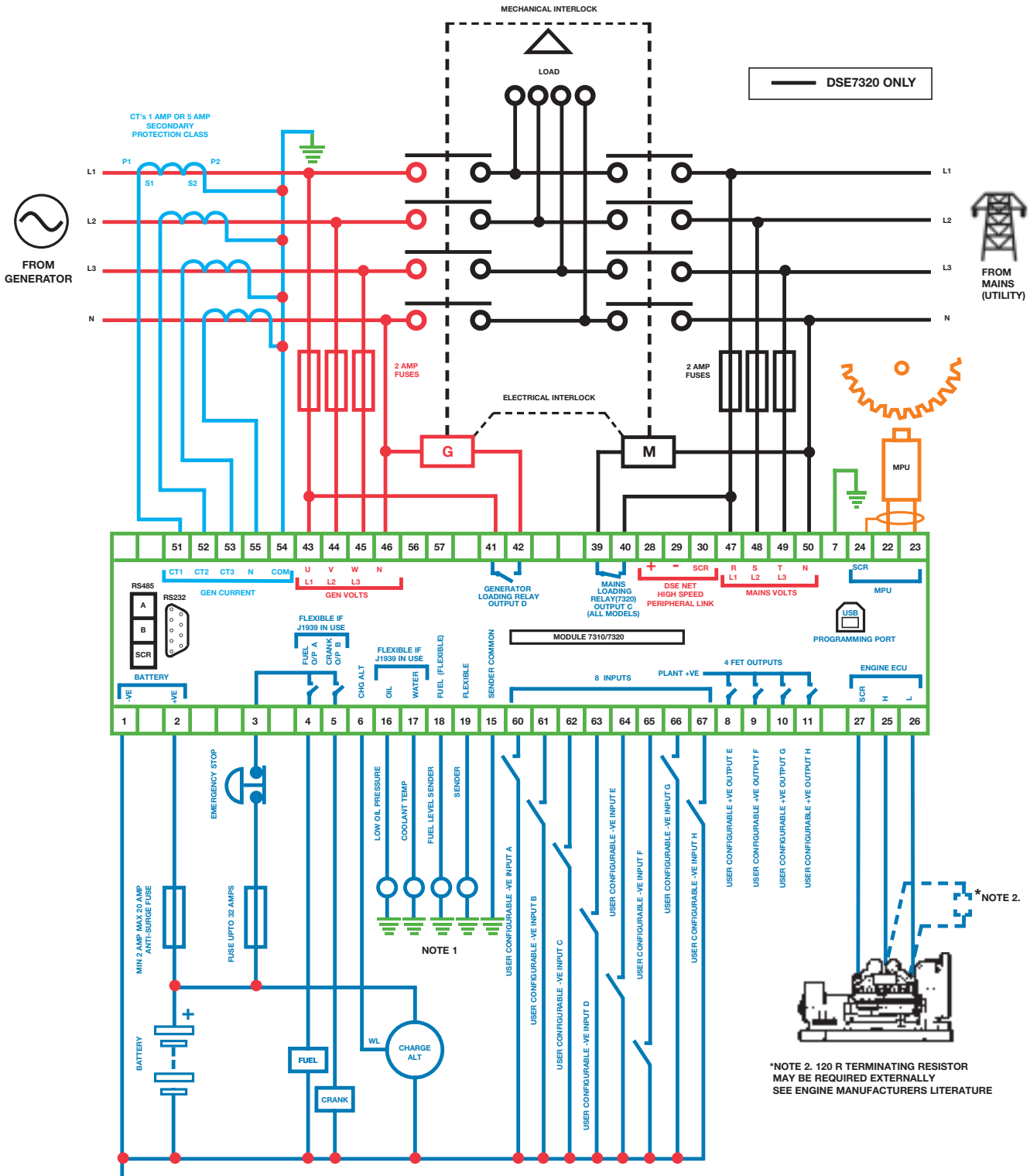
ELECTRONIC ENGINE COMPATABILITY

- CAT
- Cummins
- Deutz
- John Deere
- MTU
- Perkins
- Scania
- Volvo
- IVECO
- Generic
- Plus additional manufacturers

RELATED MATERIALS

TITLE	PART NO'S
DSE7xxx Manual	057-074
DSE72xx/73xx PC Software Manual	057-077
DSE2130 Data Sheet	053-060
DSE2157 Data Sheet	053-061
DSE2548 Data Sheet	053-062
DSE860/865 Data Sheet	055-071
DSE2510/20 Data Sheet	055-074

DSE7310 & DSE7320



*NOTE 2. 120 R TERMINATING RESISTOR MAY BE REQUIRED EXTERNALLY SEE ENGINE MANUFACTURERS LITERATURE

BATTERY NEGATIVE MUST BE GROUNDED

TERMINALS SUITABLE FOR 22-16 AWG (0.6mm - 1.3mm) FIELD WIRING

TIGHTENING TORQUE = 0.8Nm (7lb-in)

NOTE 1
THESE GROUND CONNECTIONS MUST BE ON THE ENGINE BLOCK, AND MUST BE TO THE SENDER BODIES. THE GROUND WIRE TO TERMINAL 15 MUST NOT BE USED TO PROVIDE A GROUND CONNECTION TO ANY OTHER DEVICE

DEEP SEA ELECTRONICS PLC
Highfield House
Hunmanby Industrial Estate
Hunmanby, North Yorkshire
YO14 0PH England

TELEPHONE
+44 (0)1723 890099

FACSIMILE
+44 (0)1723 893303

EMAIL
sales@deepseaplc.com

WEBSITE
www.deepseaplc.com

Registered in England & Wales No.01319649

VAT No.316923457

DEEP SEA ELECTRONICS INC
3230 Williams Avenue
Rockford
IL 61101-2668 USA

TELEPHONE
+1 (815) 316 8706

FACSIMILE
+1 (815) 316 8708

EMAIL
sales@deepseausa.com

WEBSITE
www.deepseausa.com

YOUR LOCAL DISTRIBUTOR.

055-051/10/09 (5)