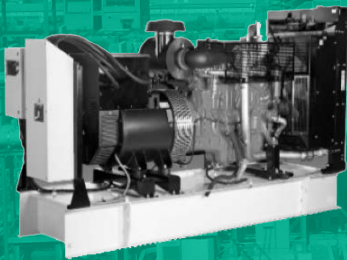


Model A

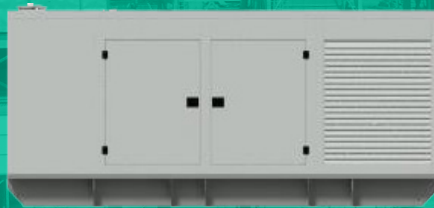
50Hz/60Hz switchable

320kW @ 50Hz 400V

345kW @ 60Hz 480V



Open



Canopy



Container

Model A

		Prime		Standby	
Genset model		Model A		Model A	
380 V	50Hz	400.0 kVA	320.0 kW	440.0 kVA	352.0 kW
400 V	50Hz	400.0 kVA	320.0 kW	440.0 kVA	352.0 kW
415 V	50Hz	400.0 kVA	320.0 kW	440.0 kVA	352.0 kW
Genset model		Model A		Model A	
380 V	60Hz	431.3 kVA	345.0 kW	500.0 kVA	400.0 kW
480 V	60Hz	431.3 kVA	345.0 kW	500.0 kVA	400.0 kW

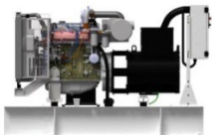
Ratings at 0.8pf

Prime: This rating is for the supply of continuous electrical power (at variable load) in lieu of commercially purchased power. There is no limitation on the annual hours of operation and 10% overload power can be supplied for one hour in twelve hours.

Standby: This rating is for the supply of continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted.

Engine	Scania	DC13-072A	DC13-072A
Number of cylinders		6 in-line	6 in-line
Cubic capacity	litre (cu inch)	12.7 (775.00)	12.7 (775.00)
Aspiration		Turbocharged	Turbocharged
Alternator		MeccAlte UK	MeccAlte UK
Frequency	Hz	50	60
Engine speed	rpm	1500	1800
Fuel consumption at full rating: Prime	litre /h (USgal /h)	78.58 (20.76)	92.13 (24.34)
Standby	litre /h (USgal /h)	88.19 (23.30)	103.00 (27.21)
Heat rejection to exhaust system (max)	kW (BTU /min)	271.00 (15423.97)	324.00 (18440.46)
Heat rejection to cooling system (max)	kW (BTU /min)	119.00 (6772.89)	143.00 (8138.85)
Total radiated heat (max)	kW (BTU /min)	31.00 (1764.37)	37.00 (2105.86)
Exhaust temperature (max)	deg C (deg F)	509.00 (948.20)	524.00 (975.20)
Radiator cooling air flow	cu m /min (cfm)	416.30 (14701.63)	710.18 (25080.01)
with max Restriction	mm (inch) H ₂ O	20.00 (0.79)	20.00 (0.79)
Combustion air flow (max)	cu m /min (cfm)	24.50 (865.22)	28.60 (1010.01)
Exhaust gas flow (max)	cu m /min (cfm)	72.00 (2542.68)	82.50 (2913.49)
with max allowable back pressure	mm (inch) H ₂ O	1000.00 (39.37)	1000.00 (39.37)

Note: Standard reference conditions: 25deg C (77deg F) air inlet temperature, 152.4m (500feet) above sea level, 60% relative humidity. All engine performance data based on the above mentioned maximum continuous ratings. Fuel consumption data at full load for diesel fuel with specific gravity of 0.85 and conforming to BS2869: 1998, class A2.

Model	Dimensions: mm (inch)	Weight: (kg)	Fuel tank: (L)
 Open	Length 3831 (150.8) Width 1194 (47.0) Height 2131 (83.9)	3250	940
 Canopy	Length 5000 (196.9) Width 1600 (63.0) Height 2100 (82.7)	4850	1020
 Container	Length 6060 (238.6) Width 2440 (90.1) Height 2590 (102.0)	5900	1020

Note: Above weights for Open/Canopy/Container are estimated figures, excluding fuel and options.

In line with our policy of continuous development, we reserve the right to change specification without notice.

Specification should be confirmed prior to purchase.

We have made every effort to provide accurate information. However we are not responsible for errors or omissions.



General information

Standard equipment

Scania Engine Management System, EMS

Unit injectors, PDE

Turbocharger

Fuel filter

Fuel pre-filter with water separator, for separate mounting

Oil filter, full flow

Centrifugal oil cleaner

Oil cooler, integrated in block

Oil filler, in valve cover

Deep front oil sump

Oil dipstick, in block

Magnetic drain plug for oil draining

Starter, 1-pole 6,0 kW (EMS controlled)

Alternator, 1-pole 100A (EMS controlled)

Flywheel, SAE 14

Silumin flywheel housing, SAE 1 flange

Front-mounted engine brackets

EGR system - **only DC13 071A**

Open crankcase ventilation

Operator's manual

For optional equipment, see 'Equipment list' at the end of this section.

Power Ratings

PRP, Prime power

For continuous operation at varying load. Max mean load factor of 70% of rated power over 24 h of operation. 1 hour/12 hours period of accumulated peak overload to 110%.

COP, Continuous operation

For continuous operation at a constant 80% load of rated PRP for an unlimited number of hours per year.

ESP, Maximum stand-by power

For operation under normal varying load during a power outage. Not overloadable. Max mean load factor of 70% of rated power over 24 h of operation. Not for applications intended for more than 200 h/year.

For more detailed information about power rating definitions see section 2.

Emission compliance

For detailed information about approved and certified engines, access SAIL at <http://sail.scania.com> to view or download the appropriate certificate.

Dual speed configuration

The engine speed can be switched between 1500 rpm (50 Hz) and 1800 rpm (60 Hz) via the Coordinator/EMS.

Note! that the default setting is 1500 rpm (50 Hz) from factory.

To manually change the nominal speed, see Electrical systems in the Installation manual or EMS CAN specifications on SAIL at <http://sail.scania.com>.



Basic data

General

Configuration and number of cylinders	6 in-line	
Working principle	4-stroke	
Bore x stroke	130 x 160	mm
Displacement	12.7	dm ³
Compression ratio	16.3:1 (DC13 072A, DC13 073A)	
.....	17.3:1 (DC13 071A)	
Firing order	1 - 5 - 3 - 6 - 2 - 4	
Piston speed		
at 1500 rpm	8.0	m/s
at 1800 rpm	9.6	m/s
Pistons	Steel pistons	
Camshaft	High position alloy steel	
Connection rods	I-section press forgings of alloy steel	
Crankshaft	Alloy steel with hardened and polished bearing surfaces	
Rotation, seen from flywheel end	Counter clockwise	
Total moment of inertia with flywheel		
SAE 14	3.11	kgm ²
Number of teeth on flywheel ring gear	158	
Weight approx. (excl. oil and coolant)	1050	kg

Lubrication system

Oil capacity (deep front oil sump with ladder frame)		
min	39	dm ³
max	45	dm ³
Oil capacity (deep front oil sump without ladder frame)		
min	30	dm ³
max	36	dm ³
Oil consumption	<0.3	g/kWh
Oil change intervals	500	h
Oil grade		
engines run on low-sulphur fuel	ACEA E3, E4, E5 or E7	
engines not run on low-sulphur fuel	Total Base Number (TBN) at least 12 (ASTM 2896)	
Oil pressure		
normal	3-6	bar
minimum permitted at idle speed	0.7	bar
Oil temperature		
normal	90-110	°C
Oil cleaner	Centrifugal	
filtration	5-7	Micron
Oil filter	Paper/Full flow	
Oil cooler	Water cooled/Full flow	

Injection system

Type	Unit injectors, PDE
Governor	Scania Engine Management System, EMS
Fuel filter	Paper filter element, 10 micro
Fuel pre-filter with water separator	Paper filter element, 30 micro



Cooling system

Coolant volume, excl. radiator.....	16	dm ³
Coolant temperature	90-95	°C
Number of thermostats	1	
Opening temperature	80/87	°C

Intake system

Permissible pressure drop in intake system with cleaned or new filter.....	30	mbar
Permissible pressure drop in intake system with blocked (dirty) filter	65	mbar

Electrical system, optional equipment

Type	1-pole, 24V, DC
Starter, standard equipment.....	1-pole, 24V, 6,0 kW
Alternator, standard equipment	1-pole, 28V, 100A



Technical data

DC13 072A, 365-449 kW / 410-500 kVA (order ref 02-12)

Emission compliance	Fuel injection system
Fuel optimized, non-compliant	Unit injectors, PDE

	1500 rpm (50 Hz)		1800 rpm (60 Hz)		Unit
	PRP	ESP	PRP	ESP	
Gross power	365	403	410	449	kW
	410	455	455	500	kVA
Gross torque	2324	2566	2175	2382	Nm
Spec. fuel consumption					
full load	183	186	191	195	g/kWh
3/4 load	184	183	187	187	g/kWh
1/2 load	186	185	192	190	g/kWh
Heat rejection					
to coolant	112	119	127	143	kW
to exhaust gas	235	271	287	324	kW
to charge air	61	75	84	98	kW
to surrounding air	28	31	33	37	kW
Air consumption	28	30	34	35	kg/min
Air temperature					
before charge air cooler	173	192	197	214	°C
after charge air cooler	44	48	49	50	°C
Pressure in intake manifold	1.9	2.2	2.0	2.1	Bar
Fall of pressure, charge air cooler	0.10	0.15	0.15	0.15	Bar
Exhaust flow	29	32	35	36	kg/min
Exhaust temperature	488	509	488	524	°C
Step load performance					
(According to class G2. See section 2 for more information.)	69	63	79	72	%
	257	257	328	328	kW

Cooling performance

Cooling package 1.3 m², fan Ø914, ratio 1:0.9

1500 rpm (50 Hz)						1800 rpm (60 Hz)					
PRP			ESP			PRP			ESP		
Air-on temp* (°C)	Airflow (kg/s)	Rest-riction (Pa)	Air-on temp* (°C)	Airflow (kg/s)	Rest-riction (Pa)	Air-on temp* (°C)	Airflow (kg/s)	Rest-riction (Pa)	Air-on temp* (°C)	Airflow (kg/s)	Rest-riction (Pa)
45	1.5	500	N/A	N/A	500	59	5.5	500	55	5.5	500
61	6	300	57	6	300	64	8.5	400	60	8.5	400
68	8.5	200	65	8.5	200	69	11	300	66	11	300
72	11.5	150	69	11.5	150	71	14	220	68	14	220

*Based on engine coolant temperature 105°C

Fan power losses (kW)

10	17
----	----



Basic dimensions

The basic dimensions are indicated with coordinates. The coordinate system is three dimensional and consists of three planes at straight angles to each other; x, y and z. The dimensions are indicated in mm from crankshaft centre.

DC13 072/073A

- 1 Air intake (Ø 101.6 mm)
- 2 Connection to charge air cooler
- 3 Connection from charge air cooler
- 4 Exhaust outlet
- 5 Coolant inlet (Ø 57 mm)
- 6 Coolant outlet (Ø 57 mm)
- 7 Coolant drain
- 8 Coolant bleed pipe (Ø 10 mm)
- 9 Fuel inlet (Ø 12 mm)
- 10 Fuel return (Ø 12 mm)
- 11 Oil filler, option
- 12 Oil filler
- 13 Oil dipstick
- 14 Oil drain plug
- 15 Battery connection + (M10)
- 16 Battery connection - (M10)
- 17 To cab heater (M18 x 1.5)
- 18 From cab heater (M18 x 1.5)
- 19 Static line (Ø 25 mm)

1	x	-581.4
	y	+304.6
	z	+647

2	x	-628.1
	y	+385.1
	z	+434

3	x	-1300.4
	y	-223.1
	z	+626

4	x	-827
	y	+304.6
	z	+647

5	x	-1176.7
	y	+330.7
	z	+24

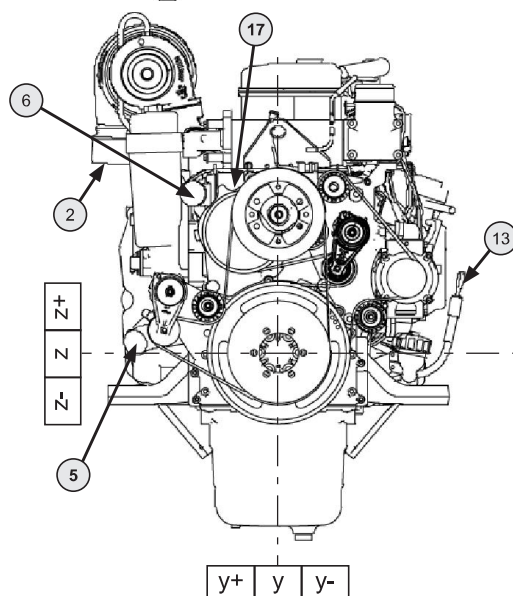
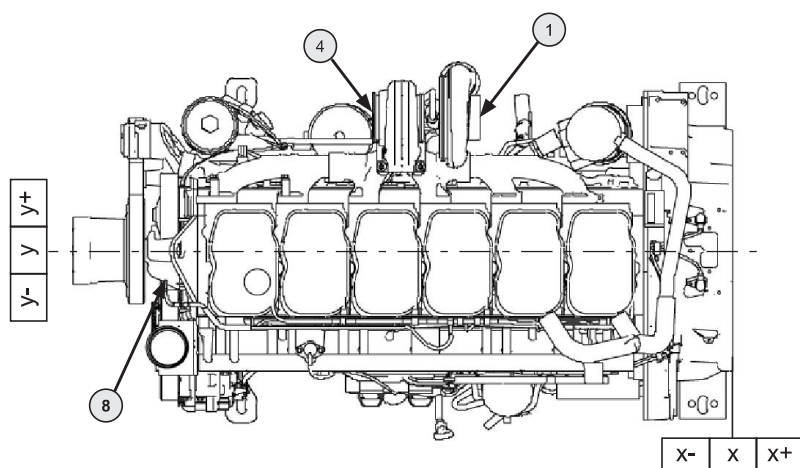
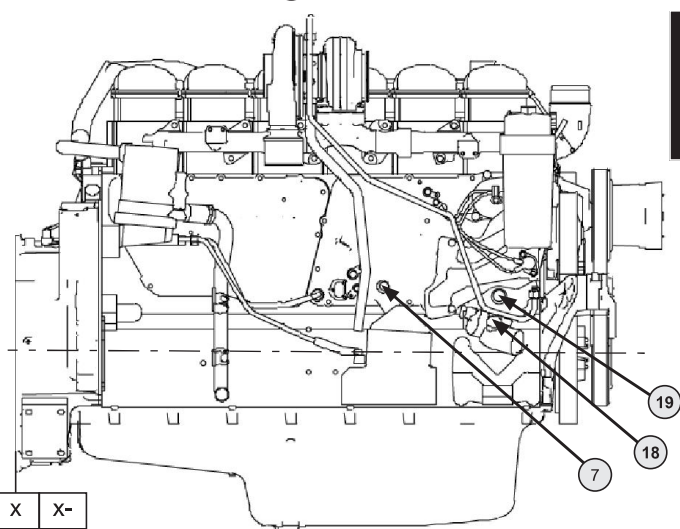
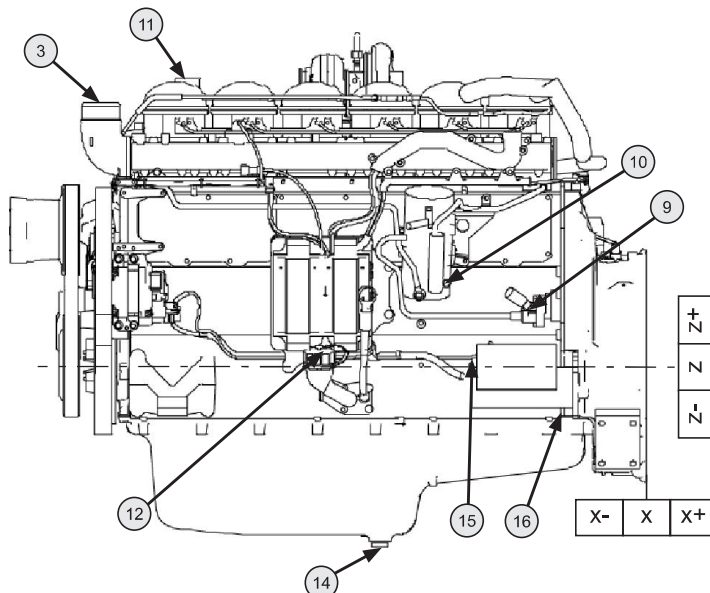
6	x	-1269.8
	y	+197.3
	z	+370.6

9	x	-303
	y	-213.8
	z	-137.1

10	x	-483.9
	y	-375.4
	z	+195.7

11	x	-1094.2
	y	-67
	z	+682

14	x	-634.5
	y	-58
	z	-431



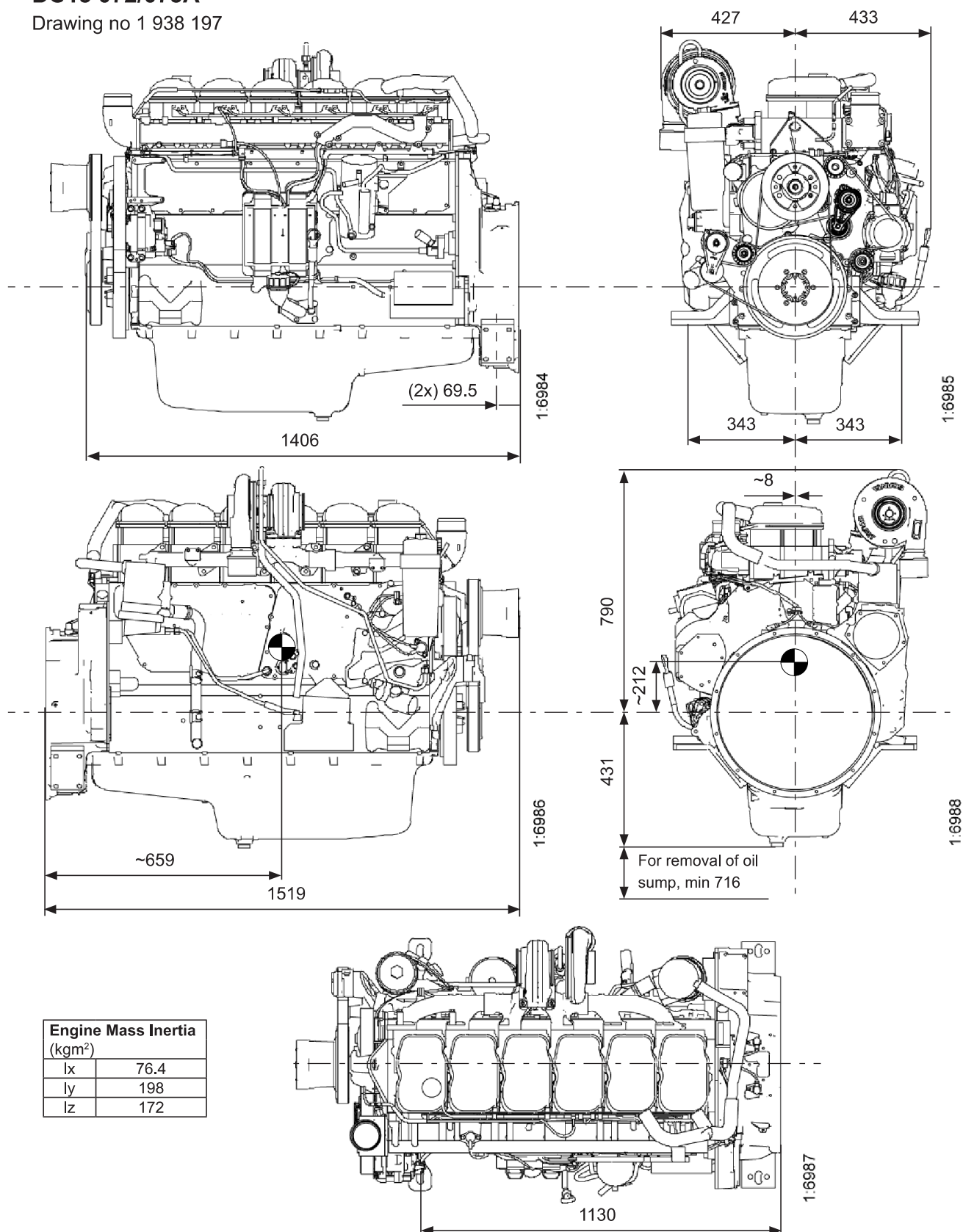


Dimensional drawings

All sketches are only intended as general sales information and must not be used for any installation purposes. The values for centre of gravity applies for engines with standard equipment including coolant. All dimensions are indicated in mm.

DC13 072/073A

Drawing no 1 938 197

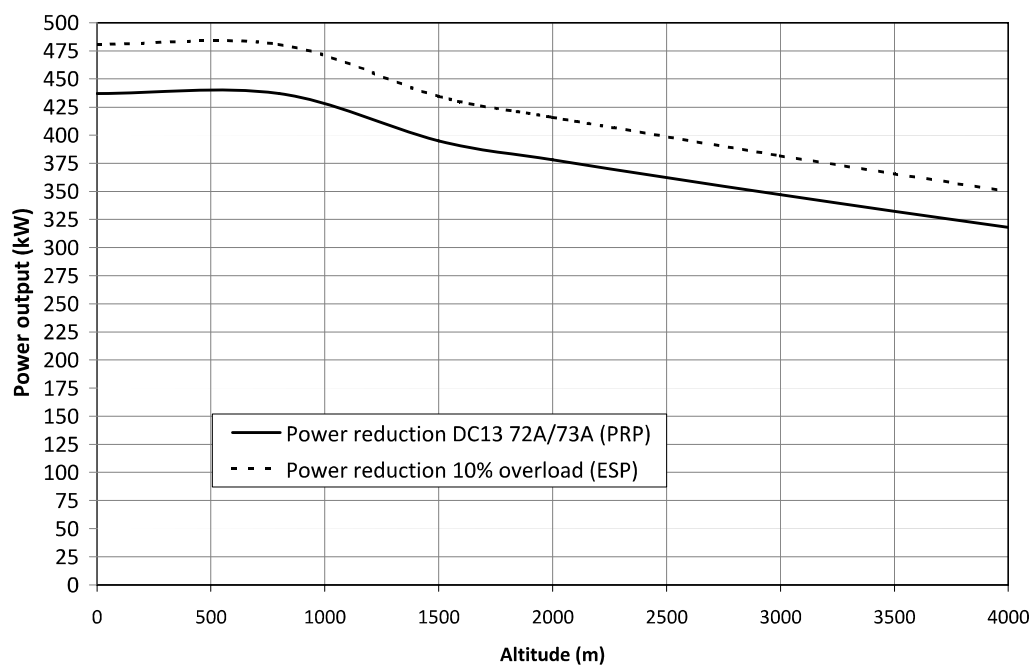


Engine Mass Inertia (kgm ²)	
lx	76.4
ly	198
lz	172



DC13 072/073A

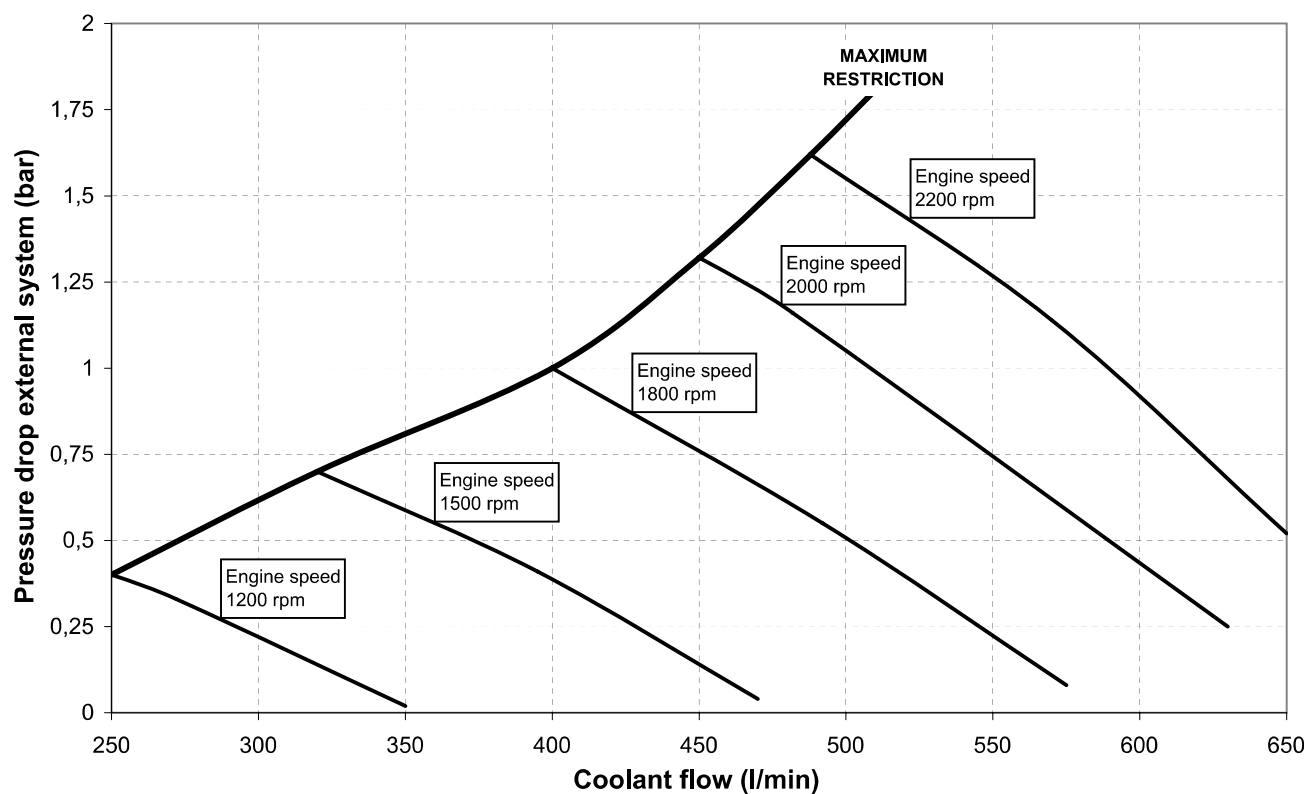
The graph below shows the maximum power output for DC13 072/073A depending on altitude. Lower power outputs that do not reach the maximum power curve will have an output reduction due to air properties with approximately 1.5% per 1000 metres above sea water level.





Coolant flow

The coolant flow depends on the pressure drop in the external system according to the graph below.
Valid for all DC13.





Exhaust noise

The table below presents unsilenced exhaust noise measured 1 m after the turbocharger at maximum power. Most important overall frequency range for exhaust noise is 50-500 Hz. Noise at higher frequencies is generally not induced by the engine gas pulsations but by the exhaust system itself, for example turbulent and whistle noise.

Engine size	Power (kW)	Engine speed (rpm)	Sound level (dB(A))	1/3 octave band (Hz)
D13	257-316	1500	115	80 + 160
		1800	117	100 + 200
	331-405	1500	118	80 + 160
		1800	120	100 + 200

Engine sound power level

The engine sound power level measurements are performed according to ISO 3744 with 10 microphones placed in a hemispherical pattern with the engine in the centre. There has been one exception concerning the radius of the hemisphere and that is that it has been limited by the dimensions of the test cell to 2 m, which is less than what is recommended in ISO 3744.

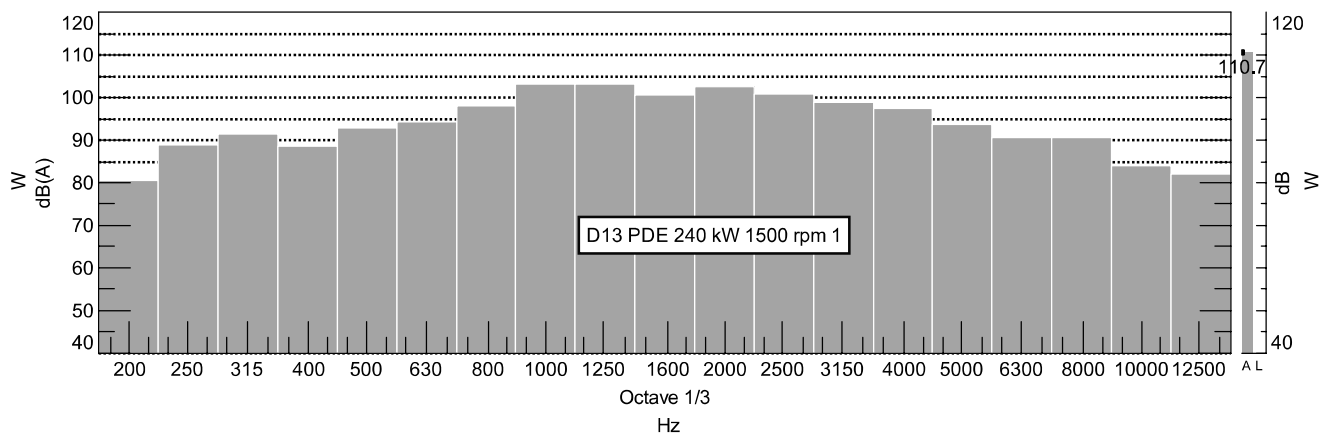
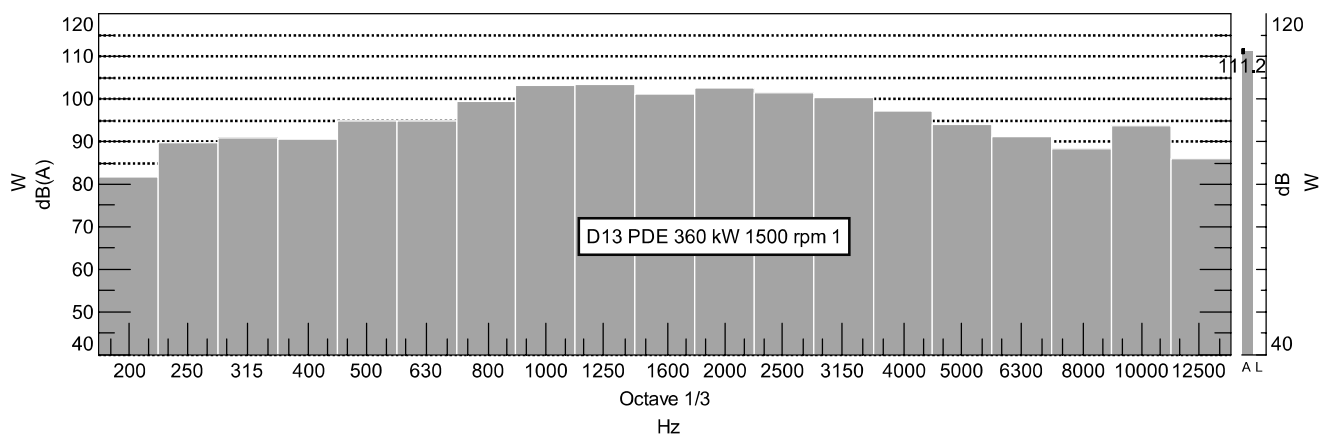
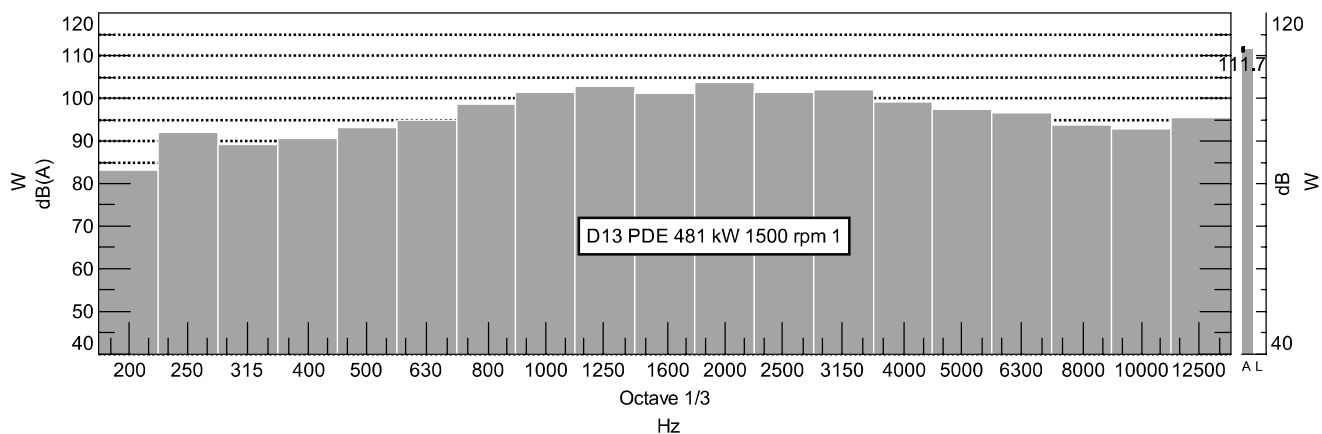
The sound power level measurements are made with the following test parameters:

Frequency range: 0-16384 Hz
Frequency resolution: 1 Hz
Engine speed: 1500 rpm and 1800 rpm

The results of the sound power level measurements are presented on the following pages in several 1/3 octave band charts in dB(A). The bar furthest to the right in every chart shows the total level of all 1/3 octave band in dB(A).

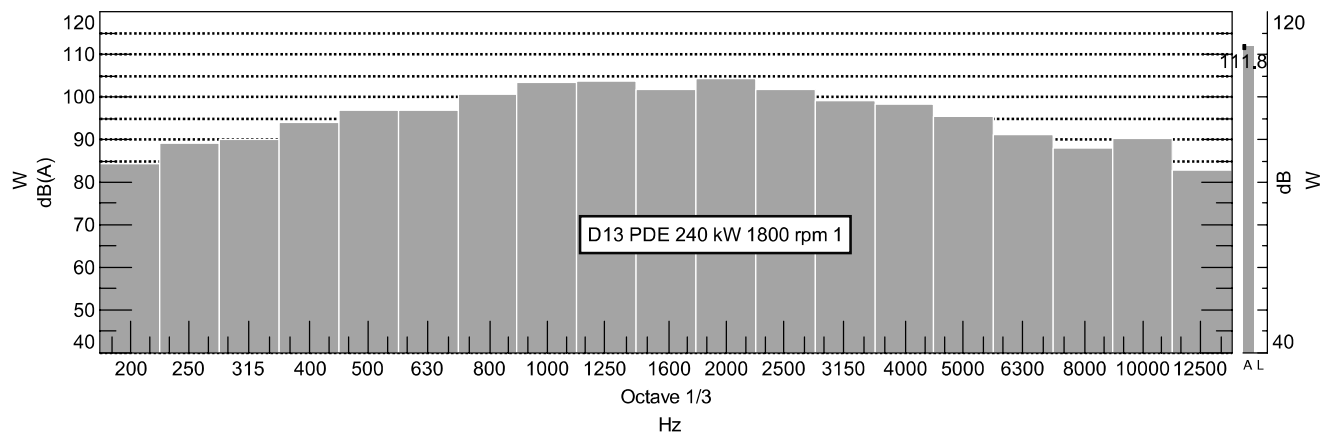
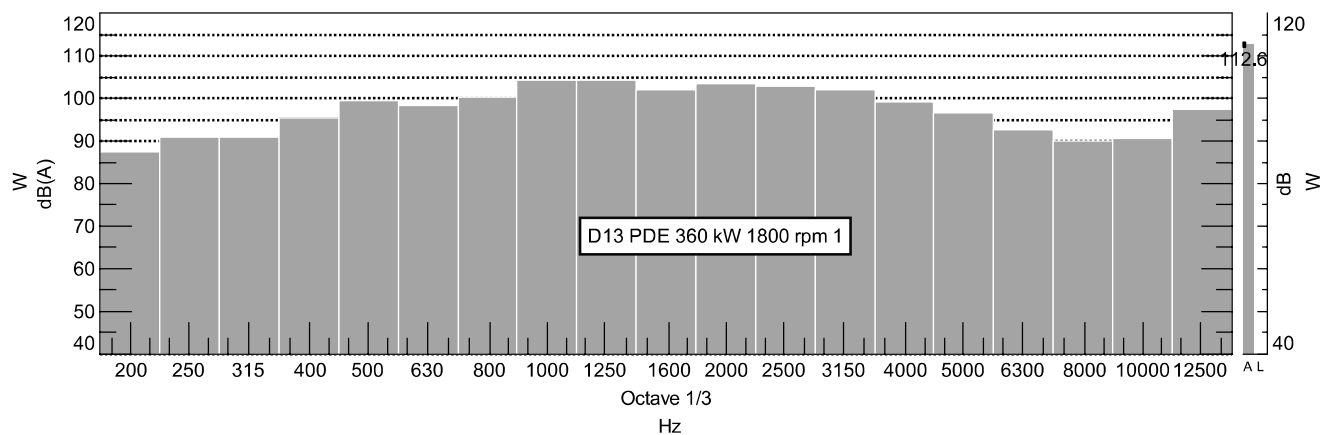
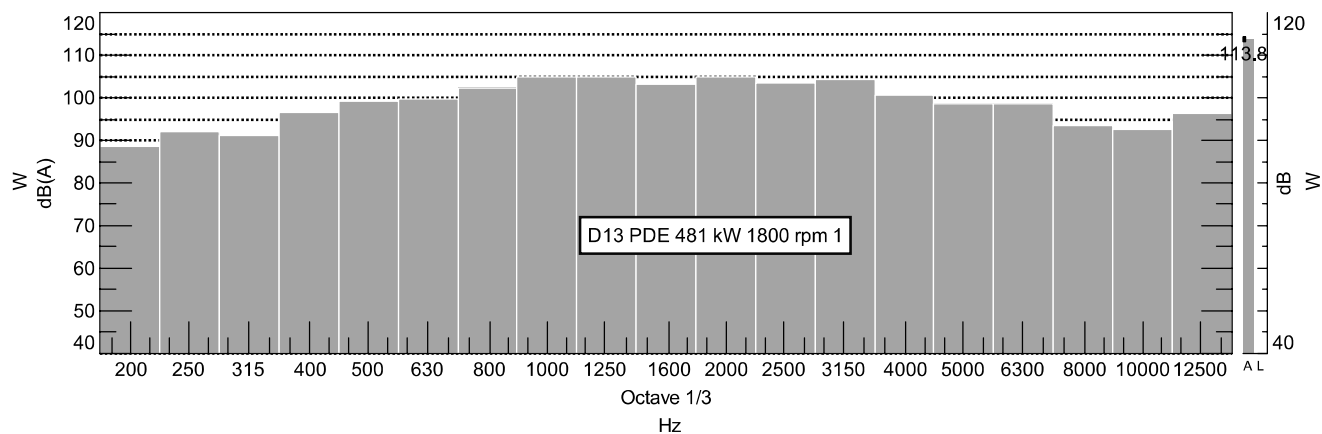


DC13 PDE, 1500 rpm





DC13 PDE, 1800 rpm



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issue 010 date 21/03/2014

Electrical Characteristics			Issue 010 Date 21/03/2014									
Frequency		Hz	50				60					
Voltage (parallel star)		V	380	400	415	440	415	440	460	480		
Rated power class H		kVA	400	400	400	370	420	450	480	480		
		kW	320	320	320	296	336	360	384	384		
Rated power class F		kVA	370	370	370	342	383	410	440	440		
		kW	296	296	296	274	306	328	352	352		
Regulation with		DER1	±0.5% with any power factor and speed variations between -5% +30%									
Insulation class			H									
Execution			Brushless									
Stator winding			12 ends									
Rotor			with damping cage									
Efficiencies class H	4/4	%	94.1	94.2	94	93.8	94.4	94.8	95.1	95.2		
(see graph. for details)	3/4	%	94.2	94.4	94.1	93	94.5	94.9	95.2	95.3		
	2/4	%	93.3	93.5	93.3	93.1	93.3	93.8	94	94.2		
	1/4	%	89.1	89.3	89.2	89	90.4	90.6	90.8	91		
Reactances (f. l.cl. F)	Xd	%	333.0	277.0	185.0	115.0	406.0	365.0	333.0	277		
	Xd'	%	27.4	22.5	20.4	18.6	29.7	28.5	27.4	22.5		
	Xd''	%	16.2	14.2	12.1	10.4	19.2	18.1	16.2	14.2		
	Xq	%	121.0	112	104.0	97.0	145.0	131.0	121.0	112		
	Xq'	%	121.0	112	104.0	97.0	145.0	131.0	121.0	112		
	Xq''	%	29.4	28.2	26.7	24.2	31.7	30.6	29.4	28.2		
	X ₂	%	19.7	18.5	17.2	15.6	21.8	20.4	19.7	18.5		
	X ₀	%	3.70	3.5	3.10	2.70	4.10	3.90	3.70	3.5		
Short Circuit Ratio	Kcc		0.30	0.36	0.55	0.90	0.24	0.27	0.30	0.36		
Time Constants	Td'	sec.	0.16									
	Td''	sec.	0.019									
	Tdo'	sec.	2.55									
	Tα	sec.	0.017									
Short Circuit Current Capacity		%	>300				>350					
Excitation at no load		Amp.	0.7	0.8	0.9	1.1	0.5	0.6	0.7	0.8		
Excitation at full load		Amp.	3.4	3.6	3.7	3.8	3.1	3.3	3.4	3.5		
Overload (long-term)		%	1 hour in a 6 hours period 110% rated load									
Overload per 20 sec.		%	300									
Stator Winding Resistance (20°C)		Ω	0.018									
Rotor Winding Resistance (20°C)		Ω	4.488									
Exciter Resistance (20 °C)		Ω	Rotor : 0,317				Stator : 8,85					
Heat dissipation at f.l.cl.H		W	20064	19703	20426	19565	19932	19747	19785	19361		
Telephone Interference			THF < 2%				TIF < 40					
Radio interference			EN61000-6-3, EN61000-6-1. For others standards apply to factory									
Waveform Distors.(THD) at f. load	LL/LN	%	2,6 / 2,6									
Waveform Distors.(THD) at no load	LL/LN	%	2,9 / 2,9									
Mechanical characteristics												
Protection			IP 23 (other protection on request)									
DE bearing			6322									
NDE bearing			6318.2RS									
Weight of wound stator assembly		kg	327									
Weight of wound rotor assembly		kg	211									
Weight of complete generator		kg	1040									
Maximun overspeed		rpm	2250									
Unbalanced magnetic pull at f.l.cl.F		kN/mm	5									
Cooling air requirement		m³/min	54				64.8					
Inertia Constant (H)		sec.	0.176				0.212					
Noise level at 1m/7m		dB(A)	94 / 82				98 / 88					

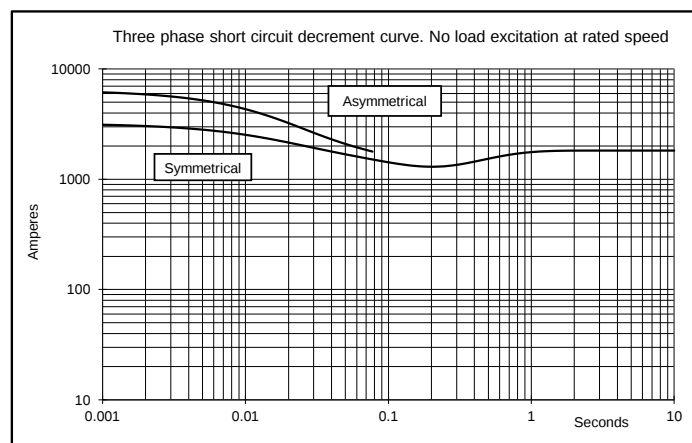
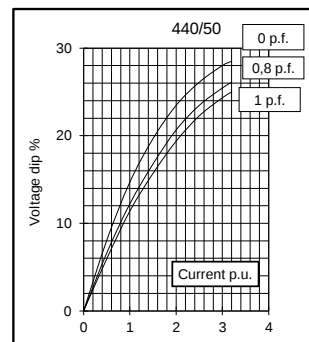
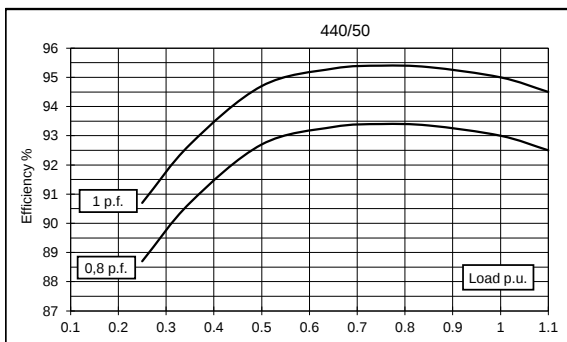
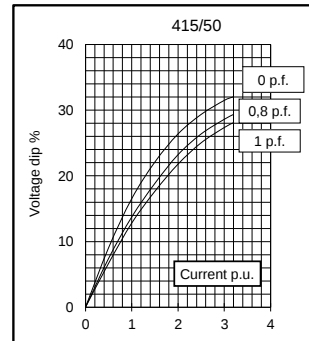
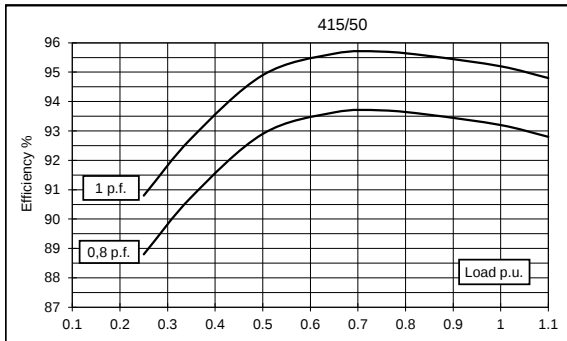
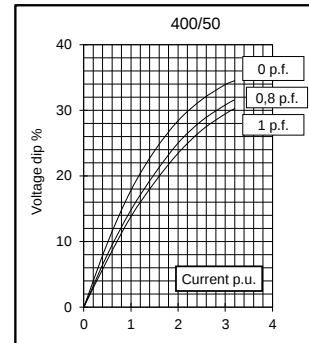
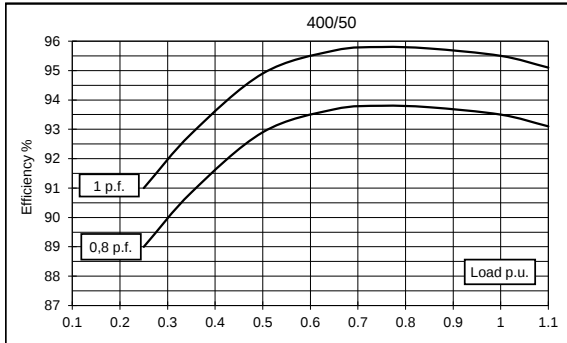
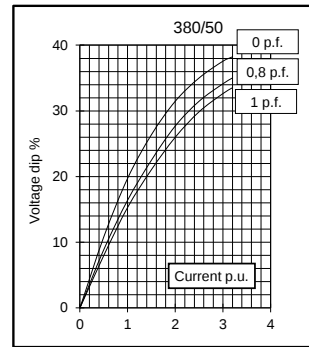
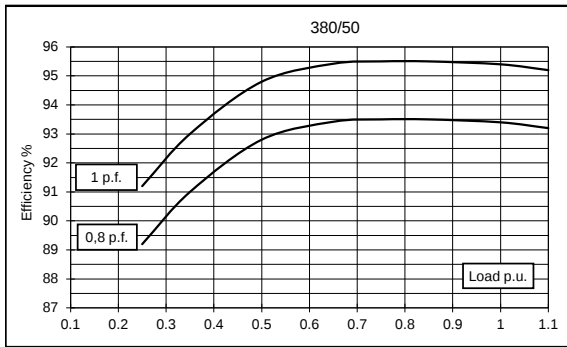
All technical data are to be considered as a reference and they can be modified without any notice.

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50 Hz



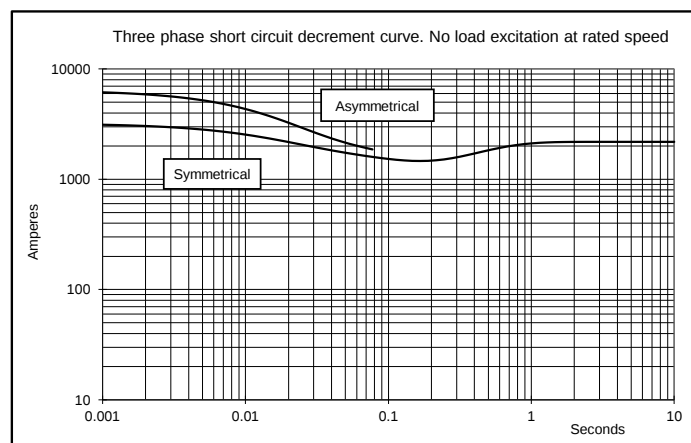
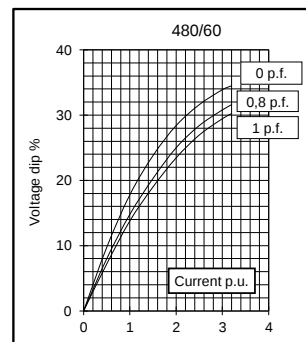
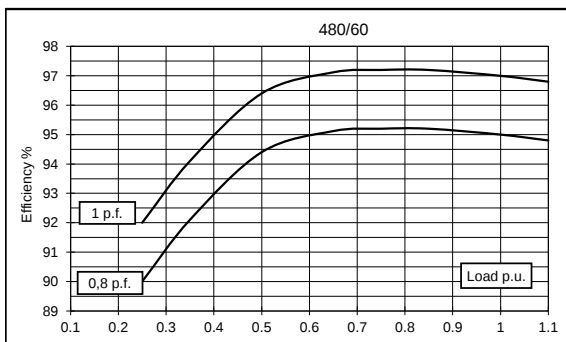
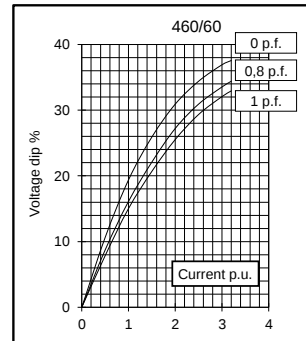
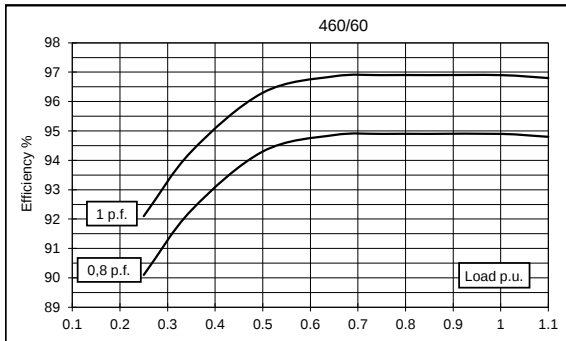
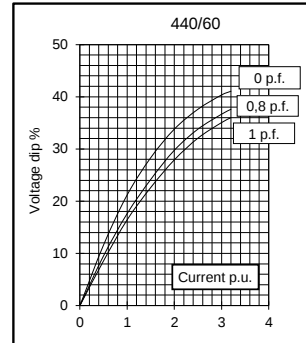
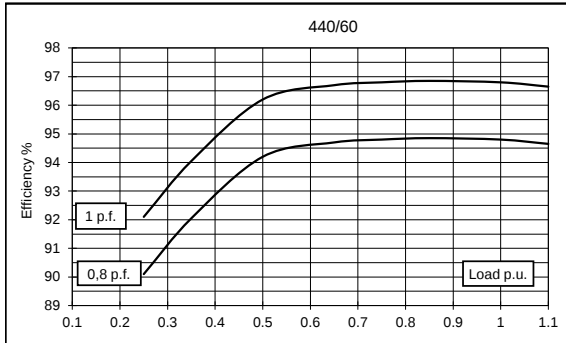
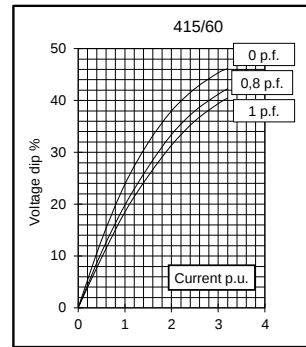
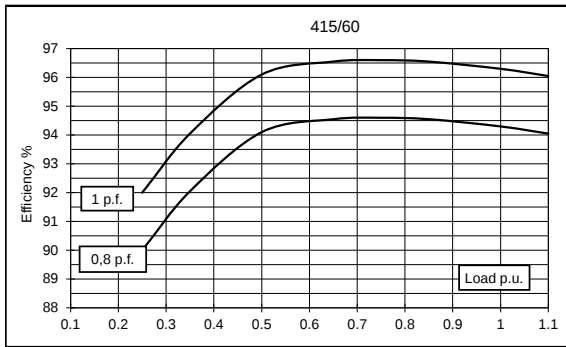
All technical data are to be considered as a reference and they can be modified without any notice.

ALTERNATOR MA5014A

Document : DS022A/3

issue 007 date : 21/03/2014

60 Hz



All technical data are to be considered as a reference and they can be modified without any notice

DSE7410/20 MKII

AUTO START & AUTO MAINS FAILURE CONTROL MODULES

DSE7420 MKII

DSE7410 MKII



KEY FEATURES

- 4-Line back-lit LCD text display
- Multiple Display Languages
- Five key menu navigation
- LCD alarm indication
- Heated display option available
- Customisable power-up text and images
- DSENet expansion compatibility
- Data logging facility upto 20 parameters
- Internal PLC editor
- Protections disable feature
- Fully configurable via PC using USB, RS232, RS485 and ethernet communication
- Front panel configuration with multi-level PIN protection
- Power save mode
- 3 phase generator sensing and protection
- 3 phase mains (utility) sensing and protection (DSE7420 MKII only)
- Automatic load transfer control (DSE7420 MKII only)
- Generator current and power monitoring (kW, kvar, kVA, pf)
- Mains current and power monitoring (kW, kvar, kVA, pf) (DSE7420 MKII only)
- kW and kvar overload and reverse power alarms
- Over current protection
- Unbalanced load protection
- Independent earth fault protection
- Breaker control via fascia buttons
- Fuel and start outputs configurable when using CAN
- 6 configurable DC outputs
- 2 configurable volt-free relay outputs
- 6 configurable analogue/digital inputs
- Support for 0 V to 10 V & 4 mA to 20 mA sensors
- Support for 3 kΩ resistive sensors
- 8 configurable digital inputs
- Configurable 5 stage dummy load and load shedding outputs
- CAN, MPU and alternator frequency speed sensing in one variant
- Real time clock
- Manual and automatic fuel pump control
- Engine pre-heat and post-heat functions
- Engine run-time scheduler
- Engine idle control for starting & stopping
- Fuel usage monitor and low fuel level alarms
- Simultaneous use of RS232, RS485 & ethernet communication ports
- True dual mutual standby using RS232 or RS485 for accurate hours balancing.
- MODBUS RTU & TCP support with configurable MODBUS pages.
- SNMP GET, SET and TRAP support built in.
- Advanced SMS messaging (additional external modem required)
- Start & stop capability via SMS messaging
- 3 configurable maintenance alarms

- Compatible with a wide range of CAN engines, including tier 4 engine support
- J1939-75 support & CAN alarm ignore function
- Uses DSE Configuration Suite PC Software for simplified configuration
- Licence-free PC software
- IP65 rating (with supplied gasket) offers increased resistance to water ingress
- Modules can be integrated into building management systems (BMS) using MODBUS RTU & TCP
- Configurable CAN parameters to read and display CAN information from external CAN devices.

KEY BENEFITS

- Automatically transfers between mains (utility) and generator (DSE7420 MKII only) for convenience.
- Hours counter provides accurate information for monitoring and maintenance periods
- User-friendly set-up and button layout for ease of use
- Multiple parameters are monitored & displayed simultaneously for full visibility
- The module can be configured to suit a wide range of applications for user flexibility
- PLC editor allows user configurable functions to meet user specific application requirements.

SPECIFICATIONS

DC SUPPLY

CONTINUOUS VOLTAGE RATING

8 V to 35 V Continuous
5 V for up to 1 minute

CRANKING DROPOUTS

Able to survive 0 V for 100 mS, providing supply was at least 10 V before dropout and supply recovers to 5 V. This is achieved without the need for internal batteries. LEDs and backlight will not be maintained during cranking.

MAXIMUM OPERATING CURRENT

510 mA at 12 V, 240 mA at 24 V

MAXIMUM STANDBY CURRENT

330 mA at 12 V, 160 mA at 24 V

CHARGE FAIL/EXCITATION RANGE

0 V to 35 V

GENERATOR & MAINS (UTILITY) VOLTAGE RANGE

15 V to 415 V AC (Ph to N)
26 V to 719 V AC (Ph to Ph)

FREQUENCY RANGE

3.5 Hz to 75 Hz

MAGNETIC PICKUP VOLTAGE RANGE

+/- 0.5 V to 70 V

FREQUENCY RANGE

10,000 Hz (max)

INPUTS

DIGITAL INPUTS A TO H
Negative switching

ANALOGUE INPUTS A, B, E & F

Configurable as:
Negative switching digital input
0 V to 10 V sensor
4 mA to 20 mA sensor
Resistive sensor

ANALOGUE INPUTS C & D

Configurable as:
Negative switching digital input
Resistive sensor

OUTPUTS

OUTPUT A & B (FUEL & START)

15 A DC at supply voltage

OUTPUTS C & D

8 A AC at 250 V AC (Volt-free)

AUXILIARY OUTPUTS E, F, G, H, I & J

2 A DC at supply voltage

DIMENSIONS

OVERALL

245 mm x 184 mm x 51 mm
9.6" x 7.2" x 2.0"

PANEL CUT-OUT

220 mm x 160 mm
8.7" x 6.3"

MAXIMUM PANEL THICKNESS

8 mm
0.3"

STORAGE TEMPERATURE RANGE

-40°C to +85 °C
-40 °F to +185 °F

OPERATING TEMPERATURE RANGE

NON-HEATED DISPLAY VARIANT

-30°C to +70 °C
-22 °F to +158 °F

HEATED DISPLAY VARIANT

-40 °C to +70 °C
-40 °F to +158 °F

RELATED MATERIALS

TITLE

DSE7410 MKII & DSE7420 MKII Installation Instructions
DSE7410 MKII & DSE7420 MKII Operator Manual
DSE7410 MKII & DSE7420 MKII Configuration Suite PC Manual

PART NO.

053-191
057-263
057-262

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DSE7410/20 MKII

AUTO START & AUTO MAINS FAILURE CONTROL MODULES

The DSE7410 MKII is an Auto Start Control Module and the DSE7420 MKII is an Auto Mains (Utility) Failure Control Module suitable for a wide variety of single, diesel or gas, gen-set applications.

Monitoring an extensive number of engine parameters, the modules will display warnings, shutdown and engine status information on the back-lit LCD screen, illuminated LEDs, remote PC and via SMS text alerts (with external modem).

The DSE7420 MKII will also monitor the mains (utility) supply. The modules include USB, RS232, RS485 and Ethernet ports as well as dedicated DSENet® terminals for system expansion.

Both modules are compatible with electronic (CAN) and non-electronic (magnetic pick-up/alternator sensing) engines and offer an extensive number of flexible inputs, outputs and extensive engine protections so the system can be easily adapted to meet the most demanding industry requirements.

The extensive list of features includes enhanced event and performance monitoring, remote communications & PLC functionality.

Dual mutual standby is now available on both the DSE7410 MKII & DSE7420 MKII using RS232 or RS485 communications. This provides for a simpler and more convenient installation with more advanced features such as true hours balancing.

The modules also feature SNMP functionality for connection to SNMP systems.

The modules can be easily configured using the DSE Configuration Suite PC software. Selected front panel editing is also available.

ENVIRONMENTAL TESTING STANDARDS

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

ELECTRICAL SAFETY

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

TEMPERATURE

BS EN 60068-2-1
Ab/Ae Cold Test -30 °C
BS EN 60068-2-2
Bb/Be Dry Heat +70 °C

VIBRATION

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

HUMIDITY

BS EN 60068-2-30
Db Damp Heat Cyclic 20/55 °C
at 95% RH 48 Hours
BS EN 60068-2-78
Cab Damp Heat Static 40 °C
at 93% RH 48 Hours

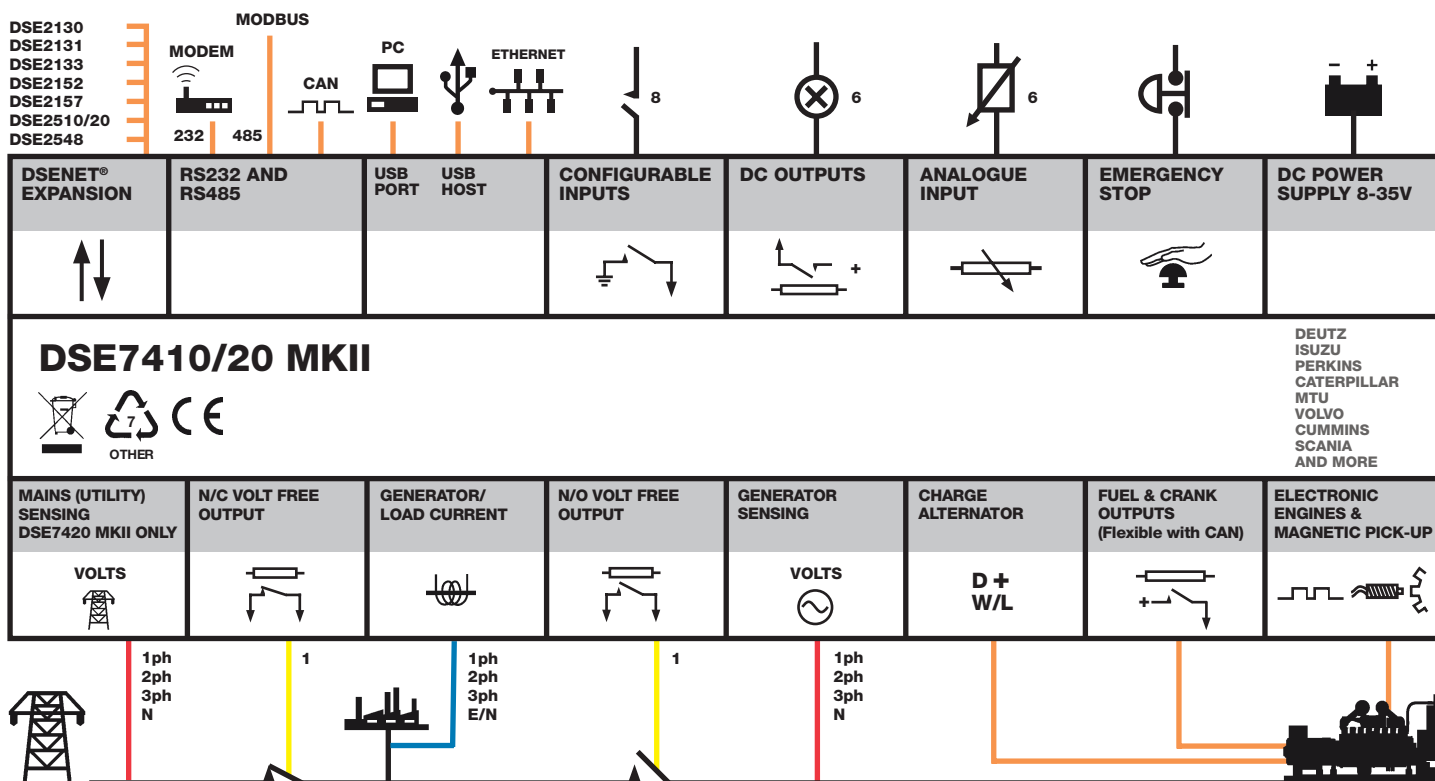
SHOCK

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

DEGREES OF PROTECTION PROVIDED BY ENCLOSURES

BS EN 60529
IP65 - Front of module when installed into the control panel with the supplied sealing gasket.

COMPREHENSIVE FEATURE LIST TO SUIT A WIDE VARIETY OF GEN-SET APPLICATIONS



DSE8610

SYNCHRONISING AUTO START LOAD SHARE CONTROL MODULE

FEATURES



The DSE8610 is an easy to use Synchronising Auto Start Control Module suitable for use in a multi-generator loadshare system, designed to synchronise up to 32 generators including electronic and non-electronic engines.

The DSE8610 monitors the generator and indicates operational status and fault conditions, automatically starting or stopping the engine on load demand or fault condition.

System alarms are annunciated on the LCD screen (multiple language options available), illuminated LED and audible sounder.

The event log will record 250 events to facilitate easy maintenance. An extensive number of fixed and flexible monitoring, metering and protection features are included as well as comprehensive communication and system expansion options.

Using the DSE PC Configuration Suite Software allows easy alteration of the operational sequences, timers and alarms. With all communication ports capable of being active at the same time, the DSE8610 is ideal for a wide variety of demanding load share applications.

KEY LOAD SHARE FEATURES:

- Peak lopping/sharing (with DSExx60)
- Sequential set start
- Manual voltage/frequency adjustment
- R.O.C.O.F. and vector shift protection
- Generator load demand
- Automatic hours run balancing
- Mains (Utility) de-coupling
- Mains (Utility) de-coupling test mode
- Dead bus sensing
- Bus failure detection
- Direct governor and AVR control
- Volts and frequency matching
- kW and kV Ar load sharing
- Dead bus synchronising

ENVIRONMENTAL TESTING STANDARDS

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

ELECTRICAL SAFETY

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

TEMPERATURE

BS EN 60068
Ab/Ae Cold Test -30°C
BS EN 60068-2-2
Bb/Be Dry Heat +70°C

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 EN 60068-2-30
Db Damp Heat Cyclic 20/55°C @ 95% RH
48 Hours
BS EN 60068-2-78
Cab Damp Heat Static 40°C @ 93% RH
48 Hours

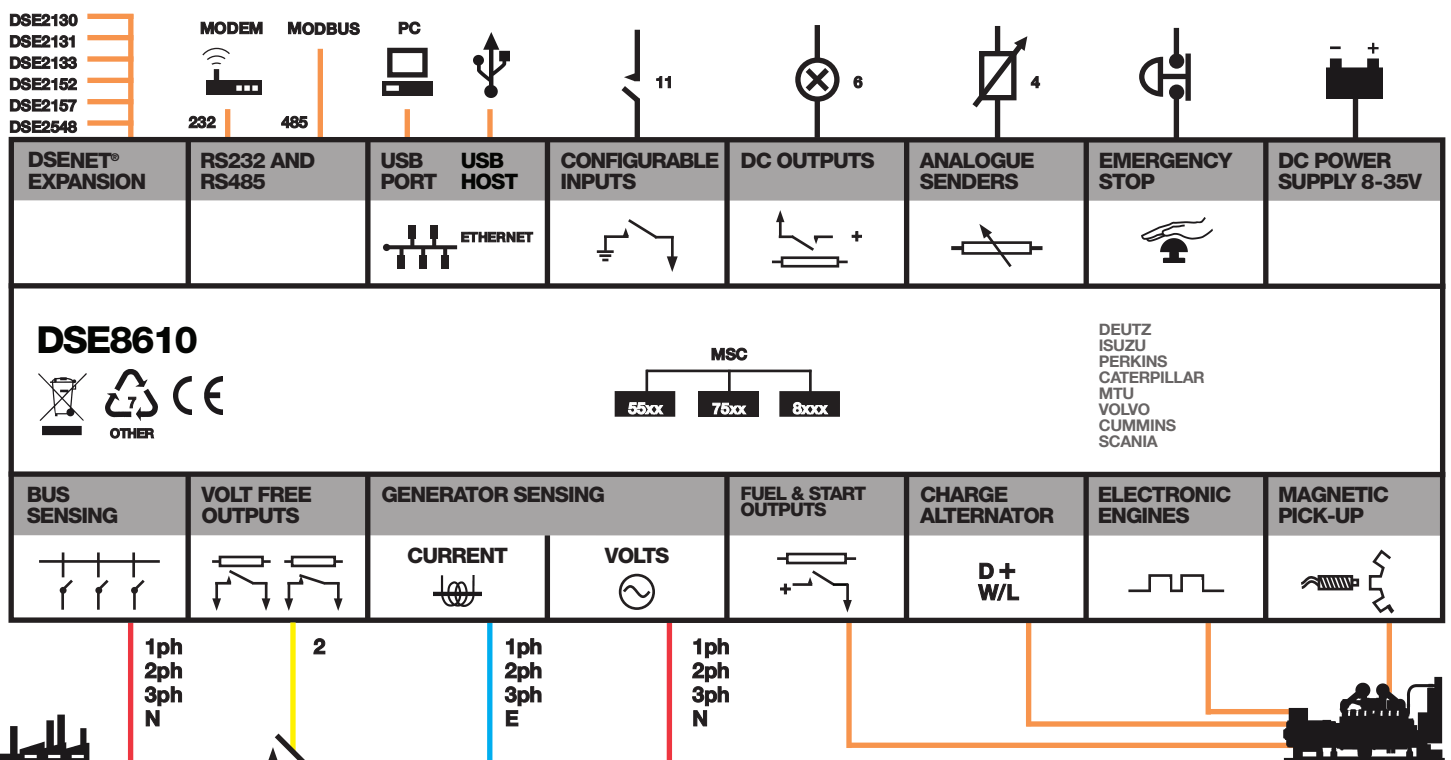
SHOCK

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

DEGREES OF PROTECTION PROVIDED BY ENCLOSURES

BS EN 60529
IP65 - Front of module when installed into the control panel with the supplied sealing gasket.

COMPREHENSIVE FEATURE LIST TO SUIT A WIDE VARIETY OF LOAD SHARE APPLICATIONS



DSE8610

SYNCHRONISING AUTO START LOAD SHARE CONTROL MODULE

FEATURES



KEY FEATURES

- Comprehensive synchronising & loadsharing capabilities
- Built-in governor and AVR control
- Base load (kW export) functionality
- Positive & negative kVAr export control
- Mains (utility) de-coupling protection
- Generator power (kW, kV Ar, kV A & pf) monitoring
- Overload (kW & kV Ar) protection
- Reverse power (kW & kV Ar) protection
- Unbalanced load protection
- Independent earth fault protection
- Advanced integral PLC editor
- 11 Configurable inputs
- 8 Configurable outputs
- Configurable flexible sensor inputs
- DSENet® expansion compatibility
- User configurable RS232, RS485 and Ethernet communications
- Remote SCADA monitoring via various DSE software applications
- MODBUS RTU & TCP support
- User configurable MODBUS pages
- Advanced SMS control and fault messaging (additional GSM modem required)
- Easy access diagnostic pages including modem diagnostic pages
- Data logging and trending
- CAN, MPU and Frequency speed sensing
- Tier 4 CAN engine support
- "Protections disabled" feature
- Front panel editing with PIN protection
- Fully configurable using DSE Configuration Suite PC software via USB
- 4 Line back-lit LCD text display
- LED and LCD alarm indication
- Configurable display languages
- USB connectivity
- Customisable status screens
- Five key menu navigation
- 3 Configurable maintenance alarms
- Multiple date and time run scheduler
- Manual fuel pump control
- Fuel usage monitor and low fuel level protection
- Charge alternator failure protection
- Load switching (load shedding and dummy load control)
- Configurable event log (250)
- Backed up real time clock

KEY BENEFITS

- Compatible in load share systems containing DSE5500, DSE7500 and DSE8600 series. Contact DSE for further details
- 132 x 64 pixel ratio display for clarity
- Real-time clock provides accurate event logging
- Ethernet communication, provides built in advanced remote monitoring.
- Can be integrated into building management systems (BMS) and programmable logic control (PLC)
- Increased input and output expansion capability via DSENet®
- Licence-free PC software
- IP65 rating (with supplied gasket) offers increased resistance to water ingress
- Advanced Internal PLC editor allows user configurable functions to meet specific application requirements.

EXPANSION DEVICES

- DSE124 CAN/MSC Extender
- DSE2130 Input Expansion Module
- DSE2131 Ratio-metric Input Expansion Module
- DSE2133 RTD & Thermo-couple Expansion Module
- DSE2152 Ratio-metric Output Expansion Module
- DSE2157 Output Expansion Module
- DSE2548 LED Expansion Module

RELATED MATERIALS

TITLE

DSE8610 Installation Instructions
DSE8610 Operator Manual
DSE8600 PC Configuration Suite Manual
DSE8660 Date Sheet

PART NO'S

053-069
057-115
057-119
055-086

SPECIFICATION

DC SUPPLY

CONTINUOUS VOLTAGE RATING
8 V to 35 V continuous

CRANKING DROPOUTS

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

MAXIMUM OPERATING CURRENT

460 mA at 12 V, 245 mA at 24 V

MAXIMUM STANDBY CURRENT

375 mA at 12 V, 200 mA at 24 V

CHARGE FAIL/EXCITATION RANGE

0 V to 35 V

OUTPUTS

OUTPUT A (FUEL)

15 A DC at supply voltage

OUTPUT B (START)

15 A DC at supply voltage

OUTPUTS C & D

8 A AC at 250 V AC (Volt free)

AUXILIARY OUTPUTS E,F,G,H,I & J

2 A DC at supply voltage

GENERATOR & BUS

VOLTAGE RANGE

15 V to 333 V AC (L-N)

FREQUENCY RANGE

3.5 Hz to 75 Hz

MAGNETIC PICK-UP

VOLTA GE RANGE

+/- 0.5 V to 70 V

FREQUENCY RANGE

10,000 Hz (max)

BUILT-IN GOVERNOR CONTROL

MINIMUM LOAD IMPEDANCE

1000Ω

Fully isolated

GAIN VOLTAGE

0 V to 10 V DC

Fully isolated

OFFSET VOLTAGE

+/- 10 V DC

Fully isolated

BUILT-IN AVR CONTROL

MINIMUM LOAD IMPEDANCE

1000Ω

Fully isolated

GAIN VOLTAGE

0 V to 10 V DC

Fully isolated

OFFSET VOLTAGE

+/- 10 V DC

Fully isolated

DIMENSIONS

OVERALL

240 mm x 181 mm x 42 mm

9.4" x 6.8" x 1.6"

PANEL CUTOUT

220 mm x 160 mm

8.7" x 6.3"

MAXIMUM PANEL THICKNESS

8 mm

0.3"

OPERATING TEMPERATURE RANGE

-30 °C to +70 °C

STORAGE TEMPERATURE RANGE

-40 °C to +85 °C

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DSE8660

AUTO TRANSFER SWITCH & MAINS CONTROL MODULE

FEATURES



The DSE8660 is an easy-to-use single or multi-mains controller with automatic transfer switch capability. Designed to synchronise single or multiple DSE8610s and DSE8680s with single or multiple mains (utility) supplies, the DSE8660 will automatically control the change over from mains (utility) to generator supply or run generators in synchronisation with the mains (utility) to provide no-break, peak lopping and peak shaving power solutions.

The module can indicate operational status and fault conditions on the LCD screen (multiple languages available), by illuminated LED, audible sounder and SMS messaging.

Comprehensive communications are also available via RS232, RS485 & Ethernet for remote PC control and monitoring, and integration into building management systems. The comprehensive event log will record up to 250 events to facilitate maintenance.

An extensive number of fixed and flexible monitoring and protection features are included. Easy alteration of the sequences, timers and alarms can be made using the DSE PC Configuration Suite Software. Selected configuration is also available via the module's front panel.

With all communication ports capable of being active at the same time, the DSE8xxx Series is ideal for a wide variety of demanding load share applications.

KEY LOAD SHARE FEATURES (WITH DSE8x10) :

- Peak lopping/shaving
- Sequential set start
- Manual voltage/frequency adjustment
- R.O.C.O.F. and vector shift protection
- Generator load demand
- Automatic hours run balancing
- Mains (Utility) de-coupling
- Mains (Utility) de-coupling test mode
- Bus failure detection
- Volts and frequency matching.
- kW & kV Ar load sharing

ENVIRONMENTAL TESTING STANDARDS

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

ELECTRICAL SAFETY

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

TEMPERATURE

BS EN 60068-2-1
Ab/Ae Cold Test -30°C
BS EN 60068-2-2
Bb/Be Dry Heat +70°C

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 EN 60068-2-30
Db Damp Heat Cyclic 20/55°C @ 95% RH 48 Hours
BS EN 60068-2-78
Cab Damp Heat Static 40°C @ 93% RH 48 Hours

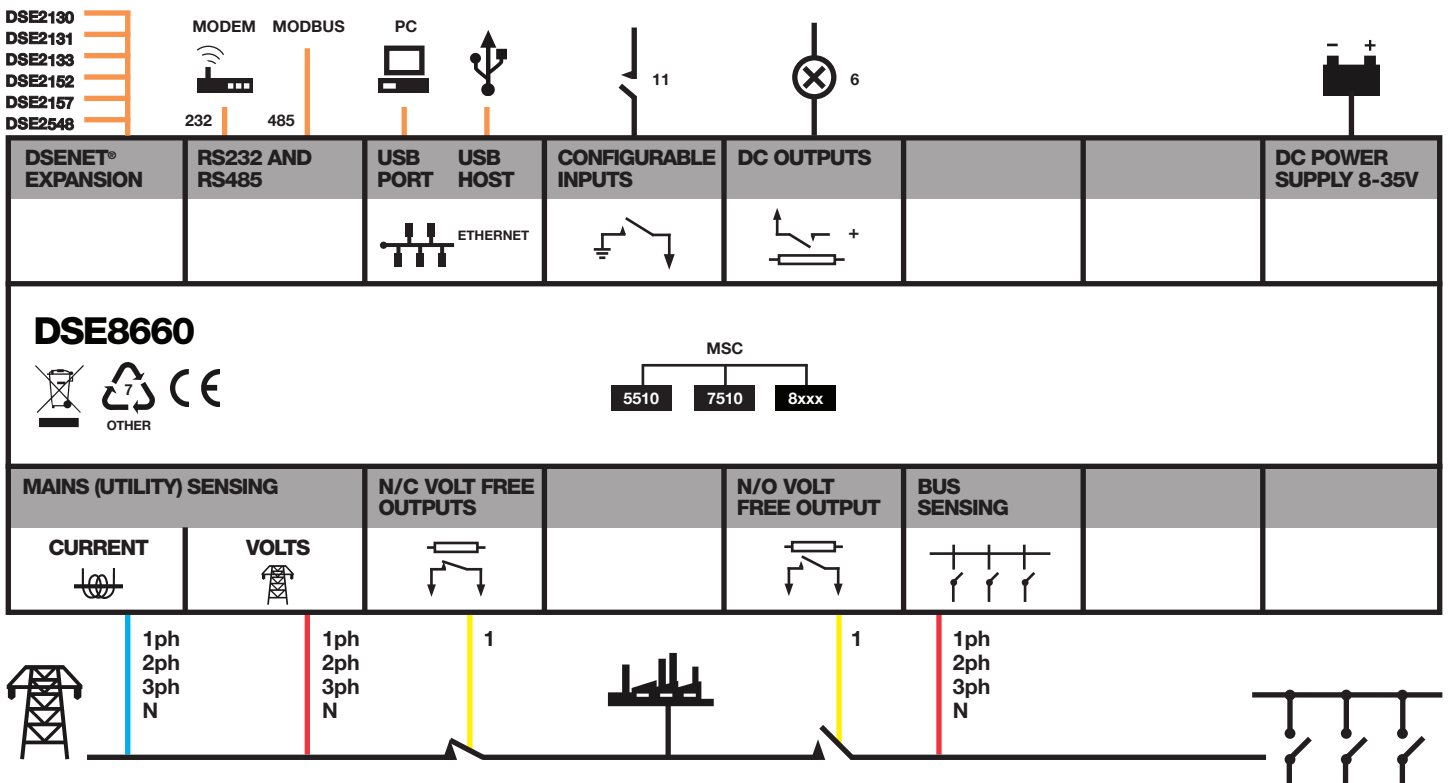
SHOCK

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

DEGREES OF PROTECTION PROVIDED BY ENCLOSURES

BS EN 60529
IP65 - Front of module when installed into the control panel with the supplied sealing gasket.

COMPREHENSIVE FEATURE LIST TO SUIT A WIDE VARIETY OF LOAD SHARE APPLICATIONS



DSE8660

AUTO TRANSFER SWITCH & MAINS CONTROL MODULE

FEATURES



KEY FEATURES

- Mains (utility) failure detection
- Mains (utility) power monitoring (kW, kV Ar, kV A and pf)
- Comprehensive synchronising and loadsharing capabilities
- Base load (kW export) functionality
- Positive & negative kVar export control
- Peak lopping & shaving functionality
- Mains (utility) kW export protection
- Mains (utility) de-coupling protection
- Advanced integral PLC editor
- User configurable RS232, RS485 & Ethernet communications
- MODBUS RTU & TCP support
- User configurable MODBUS pages
- Advanced SMS control and fault messaging (additional GSM modem required)
- DSENet expansion compatible
- Data logging and trending
- 4-Line back-lit LCD text display
- Multiple display languages

- Five key menu navigation
- Front panel editing with PIN protection
- Customisable status screens
- Configurable inputs (11)
- Configurable outputs (8)
- Configurable timers and alarms
- Multiple entry scheduler
- Configurable event log (250)
- Easy access diagnostic pages
- LED and LCD alarm indication
- USB connectivity
- Backed up real time clock
- Fully configurable via DSE Configuration Suite PC Software

KEY BENEFITS

- A single flexible solution for multiple applications
- Compatible with DSE5510, DSE7510 & DSE8x10 series of modules
- 132 x 64 pixel ratio display for clarity
- Real-time clock provides accurate event logging
- Ethernet communication provides built in advanced remote monitoring.

- Can be integrated into building management systems (BMS) and programmable logic control (PLC)
- Increased input and output expansion capability via DSENet®
- Licence-free PC software
- IP65 rating (with supplied gasket) offers increased resistance to water ingress
- Advanced Internal PLC editor allows user configurable functions to meet specific application requirements.

EXPANSION DEVICES

- DSE124 CAN/MSX Extender
- DSE2130 Input Expansion Module
- DSE2131 Ratiometric Input Expansion Module
- DSE2133 RTD & Thermocouple Expansion Module
- DSE2152 Analogue Output Expansion Module
- DSE2157 Output Expansion Module
- DSE2548 LED Expansion Module

SPECIFICATION

DC SUPPLY

CONTINUOUS VOLTAGE RATING
8 V to 35 V Continuous

CRANKING DROPOUTS

Able to survive 0 V for 50 mS, providing supply was at least 10 V before dropout and supply recovers to 5 V. This is achieved without the need for internal batteries. LEDs and backlight will not be maintained during cranking.

MAXIMUM OPERATING CURRENT

340 mA at 12 V, 160 mA at 24 V

MAXIMUM STANDBY CURRENT

160 mA at 12 V, 80 mA at 24 V

MAINS (UTILITY)

VOLTAGE RANGE
15 V to 333 V AC (L-N)

FREQUENCY RANGE
3.5 Hz to 75 Hz

BUS

VOLTAGE RANGE
15 V to 333 V AC (L-N)

FREQUENCY RANGE
3.5 Hz to 75 Hz

OUTPUTS

OUTPUTS C & D
8 A at 250 V AC (Volt free)

AUXILIARY OUTPUTS E,F,G,H, I & J
2 A DC at supply voltage

DIMENSIONS

OVERALL
240 mm x 181 mm x 42 mm
9.4" x 7.1" x 1.6"

PANEL CUT-OUT
220 mm x 160 mm
8.7" x 6.3"

MAXIMUM PANEL THICKNESS
8 mm
0.3"

OPERATING TEMPERATURE RANGE
-30°C to +70°C

STORAGE TEMPERATURE RANGE
-40°C to +85°C

RELATED MATERIALS

TITLE

DSE8660 Installation Instructions
DSE8660 Operator Manual
DSE8600 PC Configuration Suite Manual
DSE8610 Data Sheet
DSE8680 Data Sheet
DSE8700 Data Sheet
DSE8810 Data Sheet
DSE8860 Data Sheet

PART NO'S

053-070
057-120
057-119
055-083
055-091
055-090
055-116
055-139

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DSE8003 MKII

7" COLOUR MULTI-SET REMOTE OVERVIEW DISPLAY



KEY FEATURES

- Multiple modules (max 20) within the same load sharing system can be viewed on the 8003's front screen.
- Touch-screen enabled.
- RS232, RS485 and Ethernet communications.
- Audible alarm.
- Front panel mounting.
- Protected front panel configuration.
- Remote monitoring.
- System monitoring.
- Enhanced graphical user interface.
- Powerful processor for fast operating response times.

KEY BENEFITS

- Compatible with DSE86XX MKII load share modules.
- Data communication link allows remote system management.
- 800 x 480 pixels for high screen resolution.

SPECIFICATIONS

DC SUPPLY
CONTINUOUS VOLTAGE RATING
 8 V to 35 V continuous

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

MAXIMUM OPERATING CURRENT
 300 mA at 12V, 150 mA at 24V

OUTPUTS
ALARM OUTPUTS C & D
 2 A DC at supply voltage

DIMENSIONS
OVERALL
 310 mm x 160 mm x 40 mm
 12.2" x 6.3" x 1.5"

PANEL CUTOUT
 282 mm x 136 mm
 11.1" x 5.3"

OPERATING TEMPERATURE RANGE
 -30 °C to +70 °C
 -22 °F to +158 °F

STORAGE TEMPERATURE RANGE
 -40 °C to +85 °C
 -40 °F to +185 °F

RELATED MATERIALS

TITLE

DSE8003 MKII Installation Instructions
 DSE8005 SCADA Suite Manual
 DSE8610 MKII Data Sheet
 DSE8660 MKII Data Sheet

PART NO.

053-231
 057-128
 055-204
 055-169

DEEP SEA ELECTRONICS PLC UK

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Deep Sea Electronics Plc maintains a policy of continuous development and reserves the right to change the details shown on this data sheet without prior notice. The contents are intended for guidance only.

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Registered in England & Wales No.01319649
 VAT No.316923457

DSE8003 MKII

7" COLOUR MULTI-SET REMOTE OVERVIEW DISPLAY

The DSE8003 MKII is designed for use with the DSE86xx MKII load share control modules, giving a choice of display options suitable for a wide variety of applications. One (1) DSE8003 MKII module can be connected to multiple compatible modules via a data communication link up to a maximum distance of 1.2 km in length, using RS485.

The DSE8003 MKII features completely re-designed screen layouts and icons to provide comprehensive large screen graphs, charts, metering, power display and engine status information in a clear image and text format.

The DSE8003 MKII also features an improved processor for improved operating response times.

ENVIRONMENTAL TESTING STANDARDS

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

ELECTRICAL SAFETY

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

TEMPERATURE

BS EN 60068-2-1
Ab/Ae Cold Test -30°C
BS EN 60068-2-2
Bb/Be Dry Heat +70°C

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 EN 60068-2-30
Db Damp Heat Cyclic 20/55°C @ 95% RH
48 Hours
BS EN 60068-2-78
Cab Damp Heat Static 40°C @ 93% RH
48 Hours

SHOCK

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

DEGREES OF PROTECTION PROVIDED BY ENCLOSURES

BS EN 60529 IP65 - Front of module when installed into the control panel with the supplied sealing gasket.

COMPREHENSIVE FEATURE LIST TO SUIT A WIDE VARIETY OF LOAD SHARE APPLICATIONS

