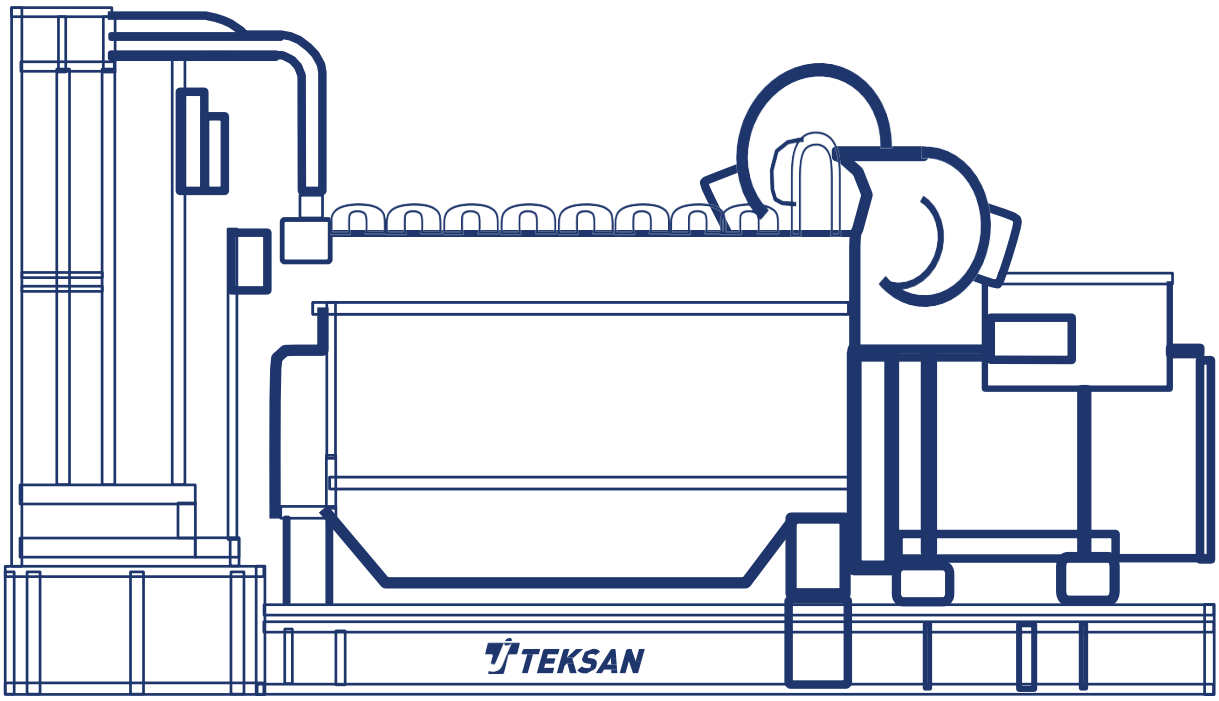


TJT4F49DW SUBMITTAL DOCUMENTS

TEKSAN

TEKSAN, which aims to deliver uninterrupted power solutions to the people through sustainable improvement and innovation, designs and installs high quality diesel, natural and biogas driven generator sets, mobile lighting towers, gasoline generators, cogeneration-trigeneration solutions and hybrid power systems that exceed the expectations of the customers.

For more than quarter century, thanks to its solid experience and engineering know-how, TEKSAN has been providing tailormade power solutions that can efficiently operate even under the most challenging conditions for major international projects such as constructions, telecommunications, data centers, shopping centers, hotels, residential buildings, supermarkets, sport centers, mining facilities, hospitals, research centers, educational institutions, and industrial plants all around the world.

Today, thanks to its high-quality generator sets approved with international quality certifications which are made of world's top engine brands coupled to well know alternators to meet projects' requirements of different output ranges, and fast and effective after-sales technical support and maintenance services in more than 130 countries with two factories and one R&D Center.

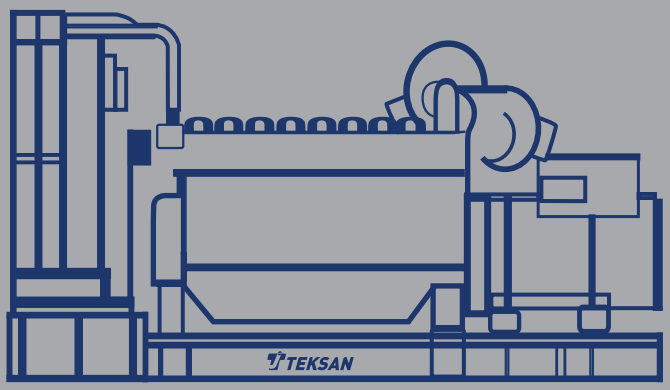
TEKSAN is always your reliable power solutions partner whenever and wherever you need.

TEKSAN USA, which is a subsidiary of TEKSAN Generator, aims to deliver uninterrupted power solutions to the people through sustainable improvement and innovation, designs and installs high quality diesel, natural and biogas driven generator sets, mobile lighting towers, gasoline generators, cogeneration-trigeneration solutions and hybrid power systems that exceed the expectations of the customers.

TJT4F49DW

Industrial Diesel Generator Sets

EPA Certified for Mobile / Stationary Prime Applications



Genset Standby Power Rating

Voltage	208/120V	480/277V	240/120V	Multi Voltage 208/120V	Multi Voltage 480/277V	Multi Voltage 240/120V
Phase	3	3	1	3	3	1
Pf	0,8	0,8	1	0,8	0,8	1
Alternator Model	LSA 42.3 M8	LSA42.3 M7	LSA 42.3 M8	LSA 42.3 L9		
Temp Rise	125 / 40 °C	125 / 40 °C	125 / 40 °C	125 / 40 °C		
Connection	12 Leads PS	12 Leads SS	12 Leads DD	Voltage Selector Switch		
Standby Power kW/kVA	43/54	43/54	34/34	43/54	43/54	39/39
Current	151A	66A	142A	151A	66A	163A
Prime Power kW/kVA	39/49	39/49	34/34	39/49	39/49	37/37
Current	135A	59A	142A	135A	59A	157A

Continuous Power

The maximum power which a generating set is capable of delivering continuously whilst supplying a constant electrical load. Average load can be 100%. The generator must not be overloaded.

Prime Power

The maximum power which a generating set is capable of delivering continuously whilst supplying a variable electrical load. Average load should be 70%. The generator can be overloaded 10% for 1 hour per 12 hrs.

Standby Power

The max power available during a variable electrical power sequence, under the stated operating conditions, for which a generating set is capable of delivering in the event of a utility power outage or under test conditions for up to 200 hrs of operation per year under average of 70% load. Overloading isn't permissible.

Certifications & Standards

The Generator set is designed and manufactured in a facility certified to **ISO9001:2015, ISO14001:2015, ISO45001-2018** and **ISO10002:2014 standards.**

The generator set, with its components, are **prototype tested,** factory-built and production tested per UL standards.

+1 224 404 1274 info@teksanus.com www.teksanus.com

TJT4F49DW

Industrial Diesel Generator Sets

TEKSAN

Application Data - Engine

Engine	
Manufacturer	Doosan
Model	D24
Number of Cylinders	4, Inline
Cubic Capacity	0.632 gallon
Bore x Stroke	3.54 in x 3.70 in
Aspiration	Turbocharged, air to air aftercooled
Combustion Ratio	17.0:1
Gross Engine Power - Standby	50 kW
Net Engine Power - Standby	48 kW
Gross Engine Power - Prime	45 kW
Net Engine Power - Prime	43 kW
Rated rpm	1800
Emission	Tier 4 Final

Electrical System	
Starting Motor Voltage	12V
Battery Charging Alternator	110A / 140A
Battery Qty, CCA Rating	100 Ah, 750CCA

Fuel System	
Fuel Injection	Bosch
Fuel Pump	Common Rail
Governor Type	ECU
Fuel Filter	Full flow, cartridge type

Fuel Consumption	
Standby Power (110% of Prime)	3.32 gal/h
Prime Power (100%)	2.99 gal/h
DEF Consumption	N/A

Cooling System	
Cooling Method	Fresh water forced circulation
Total Coolant Capacity	2.46 gallons
Water Pump	Centrifugal type driven by belt
Cooling Fan	Blower type, Ø18.11 (ATB 52°C)
Water temperature	230 °F (max.)

Lubrication System	
Oil Filter	Full flow, cartridge type
Total lubricating capacity	2.27 gallons
Lubricating Oil	10W30/40 (API CK-4 / ACEA E6)
Max Oil Temperature	275 °F at main oil gallery

Engineering Data	
Water Flow	22.46 gallons/min
Air Flow	15929.58 gallon/min
Exhaust Gas Temperature	1382 °F
Max. Intake Permission Restrictions	6.5 kPa dirty filter
Max. Exhaust Permission Restrictions	15 kPa

TJT4F49DW

Industrial Diesel Generator Sets

Application Data - Alternator

Manufacturer	Leroy Somer					
Type	4 Poles, Brushless					
Protection	IP 23					
Voltage Regulation	± 0.25%					
One Step Load Acceptance	100% of rated load					
Bearing	Single					
THD in Linear Load	< 5%					
Waveform: NEMA TIF	< 50					
Altitude	≤1000 meters					
Over Speed	2250 rpm					
AVR	D350					
Genset Voltage	208/120V	480/277V	240/120V	208/120V	480/277V	240/120V
Alternator Model	LSA42.3M8	LSA42.3M7	LSA42.3M8	LSA42.3L9		
Phase / Leads / Connection	3 / 12/ PS	3 / 12 / SS	1 / 12 / DD	Multi Voltage Selector - 3/3/1		
P.F.	0,8	0,8	1	0,8	0,8	1
Power @ Temp Rise 125/40 °C	56,5kVA	56,5kVA	34kVA	65kVA	75kVA	39kVA
Power @ Temp Rise 105/40 °C	51kVA	51kVA	31kVA	59kVA	68kVA	35,5kVA
Efficiency @ 100% load	90,30%	90,50%	87,10%	90,80%	90,90%	87,50%
skVA @ 30% Voltage Dip (P.F. = 0.6)	130kVA	150kVA	-	150kVA	200kVA	-

Application Data - Circuit Breaker

Genset Voltage	208/120V	480/277V	240/120V	Multi Voltage
ABB (80% Rated) Breaker Model	160A	80A	160A	160A

TJT4F49DW

Industrial Diesel Generator Sets

TEKSAN

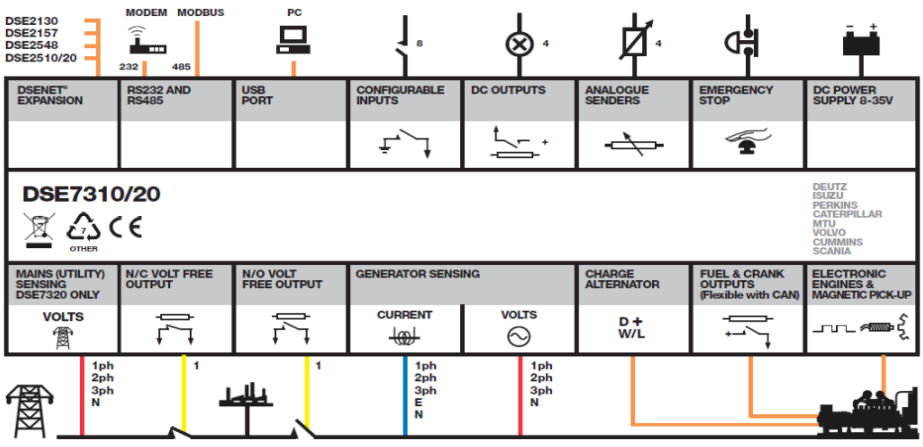
Control Panel

Manufacturer	DSE - Deep Sea Electronics
Model	7310 MKII
DC Supply	8 to 35V Continuous
Generator Voltage Range (Ph-Ph)	26V to 719V AC
Generator Frequency Range	3,5Hz to 75Hz
Standards	BS EN 61000-6-2, BS EN 61000-6-4, BS EN 60950, BS EN 60529 BS EN 60068-2-1, BS EN 60068-2-2 BS EN 60068-2-6, BS EN 60068-2-30 BS EN 60068-2-78, BS EN 60068-2-27

Key Features
License free PC software
4-Line back-lit LCD text display
Five key menu navigation
LCD Alarm Indication
DSENet expansion compatibility
Internal PLC editor
Protection disable feature
Data logging facility
Fully configurable via PC
Front panel configuration
Power safe mode
6 configurable DC outputs
2 configurable volt free relay outputs
6 configurable analogue/digital inputs
8 configurable digital inputs
Configurable 5 stage dummy load and load shedding outputs
Backed up real time clock
Fuel usage monitor and low fuel level alarms
Remote SCADA monitoring via DSE Configuration Suite PC Software
Advanced SMS messaging (additional external model required)
Start & Stop capability via SMS messaging
Configurable event log (250)
Multiple date and time scheduler

Protections
✓ Gen. Voltage – under / over
✓ Gen. Freq. – under / over
✓ Engine Speed – under / over
✓ Engine Oil Pressure – low
✓ Engine Temp – low / high
✓ Battery Voltage – low / high
✓ Weak Battery
✓ Fail to Start / Stop
✓ Charge Alternator Fail
✓ Over Current & Load (kW/kVAr)
✓ Unbalanced Load
✓ Independent Earth Fault
✓ Reverse Power
✓ Loss of Speed Signal

Instruments
✓ Gen. Voltage (L-L/L-N)
✓ Gen. Frequency
✓ Engine speed
✓ Oil Pressure
✓ Water Temperature
✓ Battery Voltage
✓ Run Time
✓ Phase Sequence
✓ Power monitoring (kWh/kVAh/kVArh)
✓ Power (kWh/kVAh/kVArh)
✓ Power Factor
✓ Generator Current
✓ Generator Load (%)
✓ Earth Current



TJT4F49DW

Industrial Diesel Generator Sets

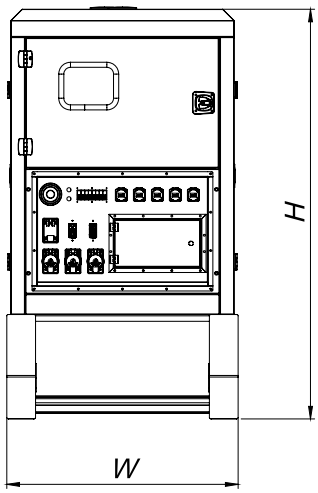
Dimensions, Weight & Sound Data

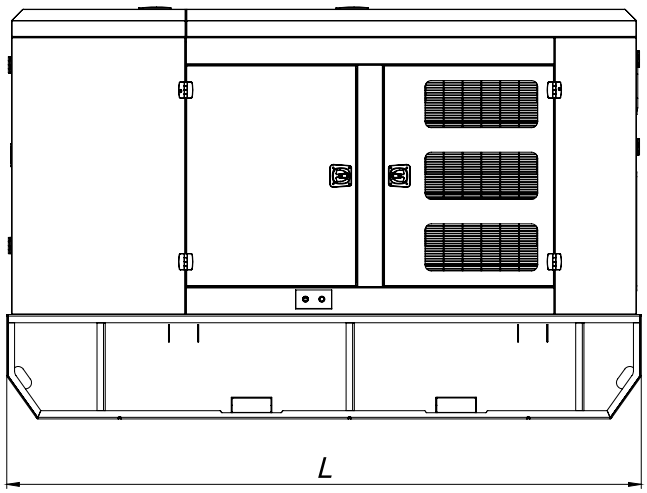
Enclosed Genset Data

L (inches)	W (inches)	H (inches)	Weight (lbs)
110.2"	44.5"	70"	4700

Integral Base Tank / DEF Tank

Sound Level	Run Time	Tank Capacity	DEF Capacity
66dBA*	24h	71gal /270lt	NO DEF



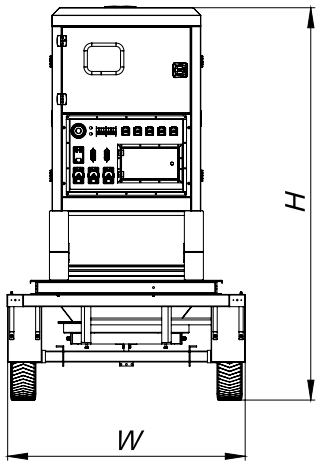


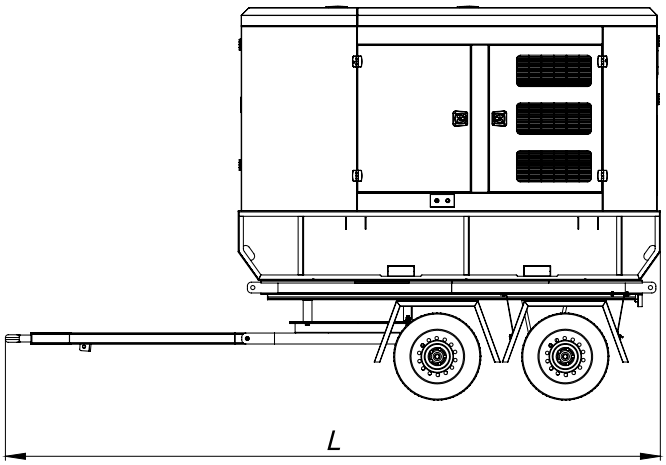
Genset w / Trailer Data

L (inches)	W (inches)	H (inches)	Weight (lbs)
170"	90"	95"	6200

Integral Base Tank / DEF Tank

Sound Level	Run Time	Tank Capacity	DEF Capacity
66dBA*	24h	71gal /270lt	NO DEF





*All measurements are approximate and for estimation purposes only. Weights are without fuel in tank. Sound levels measured at 23ft (7m) and does not account for ambient site conditions.

TJT4F49DW

Industrial Diesel Generator Sets

Standard Features & Accessories

General
☐ Galvennealed Steel Enclosure
☐ Heavy Duty Base Frame (110% Fluids Containtment)
☐ Integrated 24h Double Wall Fuel Tank
☐ Fork pockets and transportation tie downs
☐ Rust Prevention Hardware (Latches/Hinges)
☐ Single Top Lifting Hook (Genset only)
☐ Locable Fuel Filling Cap on Enclosure
☐ Jacket Water Heater w/Isolation Valves
☐ DOC Catalysts / Silencer Mounted
☐ 3 Way Fuel Connection Valve
☐ Oil & Coolant Drain Extension
☐ Vibration Isolation Mounts

Electrical
☐ Three Position Voltage Selector Switch
☐ Main Line CB
☐ Battery Charger
☐ Voltage Adjust Rheostat
Convenience Panel
☐ (3)-50A 125/250VAC 3P4W Twist Lock CS6369
☐ 2-20A 120VAC Duplex GFCI Nema 5-20R
☐ Thumb Screw Terminals for 2-Wire Remote Start
☐ 15A 120VAC Male Receptacle Shore Power Connection
☐ (5)-400A Rated Female Cam Style Locking Receptacles
☐ (5)-400A Rated Lug Connection
☐ Emergency Stop Switch

Optional Accessories

General
☐ DOT Approved Trailer
☐ Trailer Mounted Spare Tire
☐ Trailer Mounted Tool Box
☐ Battery Disconnect Switch
☐ Crankcase Ventilation Filter

Electrical
☐ Low Fuel Level Switch & Alarm
☐ Fuel Level Monitoring via Controller
☐ Low Coolant Switch & Alarm
☐ Paralelling Controller Upgrade
☐ Motor Operated Breaker

DISTRIBUTED BY:

+1 224 404 1274 info@teksanus.com www.teksanus.com

TEKSAN USA

TIER4F

RENTAL SOLUTIONS

WHENEVER YOU NEED POWER, WE ARE ALWAYS WITH YOU... SINCE 1994!

Since 1994, Teksan has been delivering high quality tailormade solutions that are designed accordingly to your requirements with strong after-sales technical support and maintenance services anytime and anywhere you need uninterrupted power supply. When your company is moving further ahead rapidly on the road to success, you always feel our continuous support as your reliable power solutions partner.

Because Teksan is a member of your family...

WE DELIVER POWER TO THE WORLD

TEKSAN

2 factories
60.000 sqm+
TOTAL PRODUCTION AREA

15.000 gensets
ANNUAL PRODUCTION CAPACITY

800+ employees

THE STRUCTURE OF A **POWERFUL** FUTURE

With our vision of being a global brand that makes a difference in the energy sector and our mission of being a reliable and innovative solution partner for a sustainable life, we keep producing power solutions for different sectors in more than 140 countries of the world and shape the future with our corporate values that at all times carry us forward!

HIGH PERFORMANCE
TEKSAN RENTAL DIESEL GENSETS

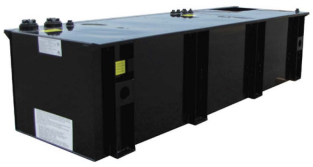
- Gensets in different sizes from 36kVA up to 702kVA PRP at 60Hz, 3Ph
- Engine mounted radiator with vertical air discharge
- Starter motor and charge alternator
- Fuel tank equipped with 3 way valve for external fuel tank
- Set mounted digital controller, with convenience panel
- Heavy duty steel base frame with integral fuel tank, forklift pockets
- Enhanced product safety for generating sets and users (safe connection points, circuit breakers, forklift points,etc…)
- Easy and safe access for service operations
- Improved performance against extreme environmental conditions
- ISO 8528-5 standard,provides a high starting and loading capacity for critical applications best in noise levels. Thanks to the robust enclosure (sound proof canopy or container)
- Convenient quick connect powerlocks and busbar connection
- Long service and maintenance intervals with maximum engine running time

QUICK-COUPLING FUEL CONNECTION

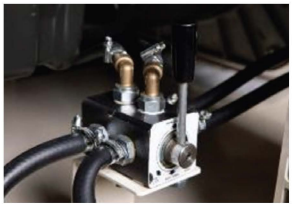
CONVENIENCE PANEL

UP TO 24 HOURS FUEL TANK

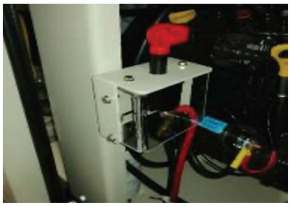
Our specific designed fuel tank provides with up to 24+ hours running time along as well as easy access and hassle free fuel filling.



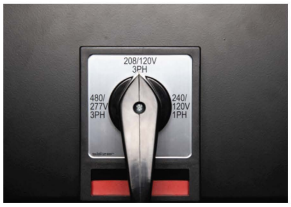
3-WAY VALVE



BATTERY ISOLATOR SWITCH



VOLTAGE SELECTOR SWITCH



WE DELIVER POWER TO THE WORLD

TEKSAN

USABILITY

- Dedicated accesses
- Quick connect powerlocks and busbar
- Radiator access door

DURABILITY

- Large and strong bunded frame (retention fuel tank capacity for 110% of generator liquids, up to 24+ hours autonomy fuel tank)
- Strong and compact design
- Double impregnation alternator
- Waterproof wiring and connectors

SAFETY

- Door retainers
- Large engine access doors with anti-opening lock system to avoid opening during transport
- Water and dust proof control power box integrating electronic and electric devices

HANDLING

- Integrated single top lifting point
- Lifting points on the base frame

MAINTENANCE

- Enclosure doors with increased insulation thickness and high acoustic performance who designed to facilitate the access to engine and alternator
- Fuel pre filter
- Manual oil drain pump
- Door access for an easy cleaning of the radiator
- External fuel filling (quick couplink)
- Three way fuel valve

1 CONVENIENCE PANEL
2 TOW EYE
3 CONTROL PANEL
4 SOUND AND WEATHER PROOF ENCLOSURE
5 RADIATOR FILLING
6 HOT AIR OUTLET
7 EXHAUST OUTLET
8 ACOUSTIC ENCLOSURE DOORS
9 EXTERNAL FUEL QUICK CONNECTORS
10 TRAILER MOINTING HOLES
11 FORKLIFT POCKETS
12 AEROACUSTIC AIR IN TAKE POCKETS

60Hz RENTAL TIER 4F

60 Hz GENSET MODEL	480/277V AC		208/120V-3PH		240/120V-1PH		MANUFACTURER	ENGINE MODEL	GENERATOR MODEL	EMISSION CLASS	AFTERTREATMENT UNITS	DIMENSIONS (inches)			Total Weight of Genset (lbs)	Fuel Tank Capacity (gal)	Fuel Tank Capacity (h)	Fuel Consumption (gal/h) 100%)	DEF Tank Capacity (gal)	DEF Tank Capacity (hour) (100%)
	STAND-BY kVA	PRIME kVA	STAND-BY kVA	PRIME kVA	STAND-BY kVA	PRIME kVA						WIDTH	LENGTH	HEIGHT						
TJT4F36DW	41	36	40	36	28	28	DOOSAN	D18	LSA 42.3 S5	TIER 4F	DOC	44,5	110,2	66,5	2862	71	27	2,6	N/A	N/A
TJT4F49DW	54	49	54	49	39	37	DOOSAN	D24	LSA42.3L9	TIER 4F	DOC	44,5	110,2	66,5	2981	71	22	3,2	N/A	N/A
TJT4F92DW	102	92	102	92	76	73	DOOSAN	D34	LSA44.3M6	TIER 4F	DOC+SCR	44,5	122,0	80,7	4626	159	29	5,4	7,93	14,6
TJT4F66JD	73	66	73	66	52	52	JOHN DEERE	4045HFG04_68	LSA 44.3 S3	TIER 4F	DOC+SCR	44,5	122,0	80,7	4373	159	46	3,4	5,63	41,0
TJT4F78JD	86	78	86	78	65	62	JOHN DEERE	4045HFG04_80	LSA 44.3 S5	TIER 4F	DOC+SCR	44,5	122,0	80,7	4454	159	39	4,0	5,63	32,4
TJT4F97JD	107	97	107	97	81	77	JOHN DEERE	4045HFG04_99	LSA 44.3 M8	TIER 4F	DOC+SCR	44,5	122,0	80,7	4600	159	32	5,0	7,95	37,0
TJT4F128JD	141	128	141	128	95	95	JOHN DEERE	4045HFG06_128	LSA44.3L10	TIER 4F	DOC+SCR	47,2	133,9	88,6	4837	185	28	6,6	7,95	30,3
TJT4F196JD	216	196	216	196	164	149	JOHN DEERE	6068HFG05_192	LSA46.3S5	TIER4F	DOC+SCR	55,1	155,5	93,5	6216	277	27	10,4	7,95	23,8
TJT4F248JD	272	248	272	248	200	189	JOHN DEERE	6068HFG06_240	LSA 46.3 M8*	TIER4F	DOC+SCR	65,0	189,0	96,5	8023	415	35	11,9	14,85	37,8
TJT4F325JD	358	325	358	325	231	231	JOHN DEERE	6090HFG06_326	LSA 46.3 L11	TIER4F	DOC+SCR	65,0	189,0	96,5	9116	415	26	15,9	14,85	33,5
TJT4F510JD	560	510	560	510	TBA	TBA	JOHN DEERE	6136CG440_505	LSA 47.3 M7	TIER 4F	DOC+SCR	78,7	213,8	100,4	11014	608	25	24,6	14,85	12,9
TJT4F625V	690	625	690	625	TBA	TBA	VOLVO PENTA	TWD1672GE	LSA47.3L10	TIER4F	SCR	78,7	213,8	100,4	13285	608	18	34,3	42,27	17,4
TJT4F700V	770	700	770	700	TBA	TBA	VOLVO PENTA	TWD1673GE	LSA49.3M6	TIER4F	SCR	78,7	213,8	100,4	13647	608	16	38,3	42,27	17,2

* Stand-by

TEKSAN

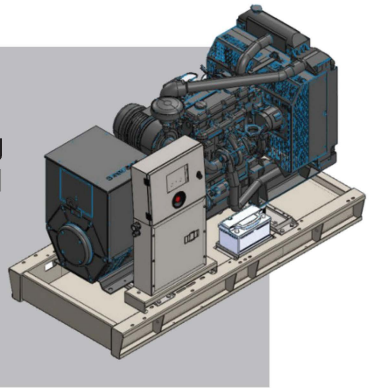
ALWAYS AT YOUR SERVICE...

- Management of the service records on servers for proactive after sales services,
- Remote Monitoring and Management System,
- Call Center support.

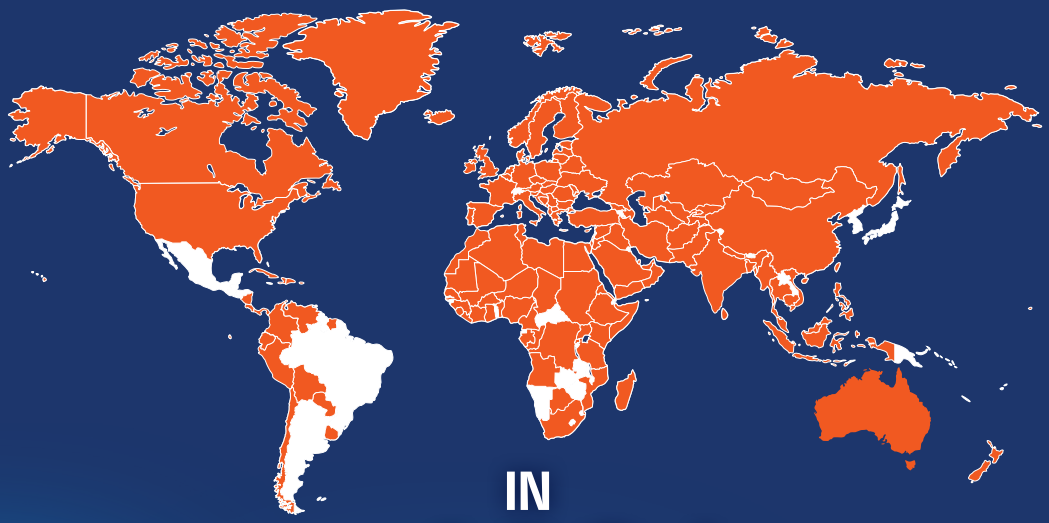
UNIQUE AFTER SALES SERVICES AND TECHNICAL SUPPORT SOLUTIONS FOR YOUR PROJECTS;

- Free of charge site and power identification with our business partners or Teksan After Sales Services.
- Technical support and consultancy,
- Assembly and disassembly,
- Installation, commissioning,
- General maintenance services,
- Emergency calls,
- Modification, repair, revision*,
- Periodical maintenance services.

Thanks to our experienced engineering teams and technological infrastructure, we can meet your revision demands for all engine types and brands.



WE ARE YOUR EVERLASTING COMPANY



IN

140+

COUNTRIES

USA BRANCH OFFICE

+1 224 404 1274

www.teksanus.com

info@teksanus.com

TURKEY HEADQUARTER

+90 444 8576

www.teksan.com

info@teksan.com

TEKSAN USA

ENGINE DATASHEET

TEKSAN

Doosan Infracore

Generator Engine D24

Frequency	Rpm	Gross Engine Output Standby / Prime kWm (ps)	Net Engine Output Standby / Prime kWm (ps)	Emission
50 Hz	1500	48(65) / 43(59)	46(63) / 41(56)	Stage V (DOC+DPF)
60 Hz	1800	50(78) / 45(61)	48(75) / 43(58)	Tier 4 Final (DOC only)

◈ General Engine Data

• Engine Type	In-line, 4-cycle
• Number of cylinders	4
• Displacement	2.392 liter
• Bore x Stroke	90 x 94 mm
• Compression ratio	17.0 : 1
• Firing order	1 - 3 - 4 - 2
• Aspiration	Turbocharged and air-to-air aftercooled
• Combustion System	Direct injection
• Rotation	Counter clockwise viewed from Flywheel
• Clutch	SAE#4 - 10" (SAE J620)
• Dry weight	266 kg (with aftertreatment)
	331 kg (with powerpack)
• Valve System Type	Over head valve
• Number of Valves	Intake 2, exhaust 2 per cylinder
	Hydraulic Valve Lash Adjust

◈ Engineering Data

• Water flow	75 liters/min @1,500 rpm
	85 liters/min @1,800 rpm
• Heat rejection	
- to coolant	8.9 kcal/sec @1,500 rpm
	9.1 kcal/sec @1,800 rpm
- to CAC	1.3 kcal/sec @1,500 rpm
	1.4 kcal/sec @1,800 rpm
• Air flow	2,780 liter/min @1,500 rpm
	3,130 liter/min @1,800 rpm
• Exhaust gas temp	750 °C↓ @1,500 rpm & 1800 rpm
• Max. permission restrictions	
- Intake system	3.0 kPa clean filter
	6.5 kPa dirty filter
- Exhaust system	15 kPa max.

◈ Electrical System

• Alternator	12V x 110A / 12V x 140A
• Voltage regulator	Built-in type IC regulator
• Starting motor	12V x 2.5kW
• Battery voltage	12V
• Battery capacity	100 Ah, 750CCA (recommended)
• Starting Aid	Glow plug

◈ Cooling System

• Cooling method	Fresh water forced circulation
• Water capacity	4.0 liters (engine only)
	9.3 liters (with powerpack)
• Water pump	Centrifugal type driven by belt
• Cooling fan	Blower type, Ø440 (ATB 52℃)
• Water temperature	110℃ (max.)

◈ Fuel System

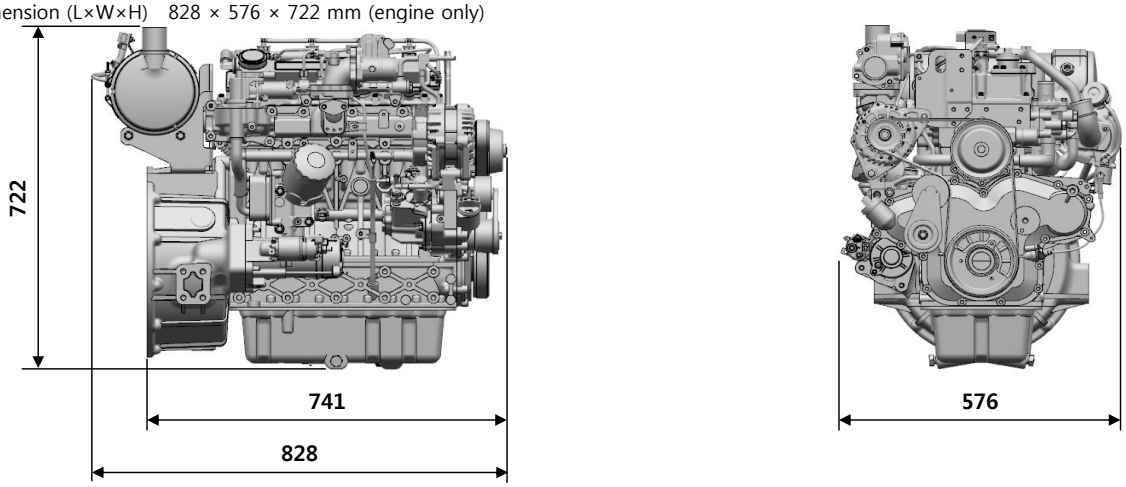
• Injection pump	Bosch Common-rail Pump
• Governor	Controlled by ECU
• Fuel filter	Full flow, cartridge type
• Used fuel	Diesel fuel oil
• Diesel consuption	211 g/kWh @1,500 rpm
(g/kWh)	214 g/kWh @1,800 rpm

◈ Lubrication System

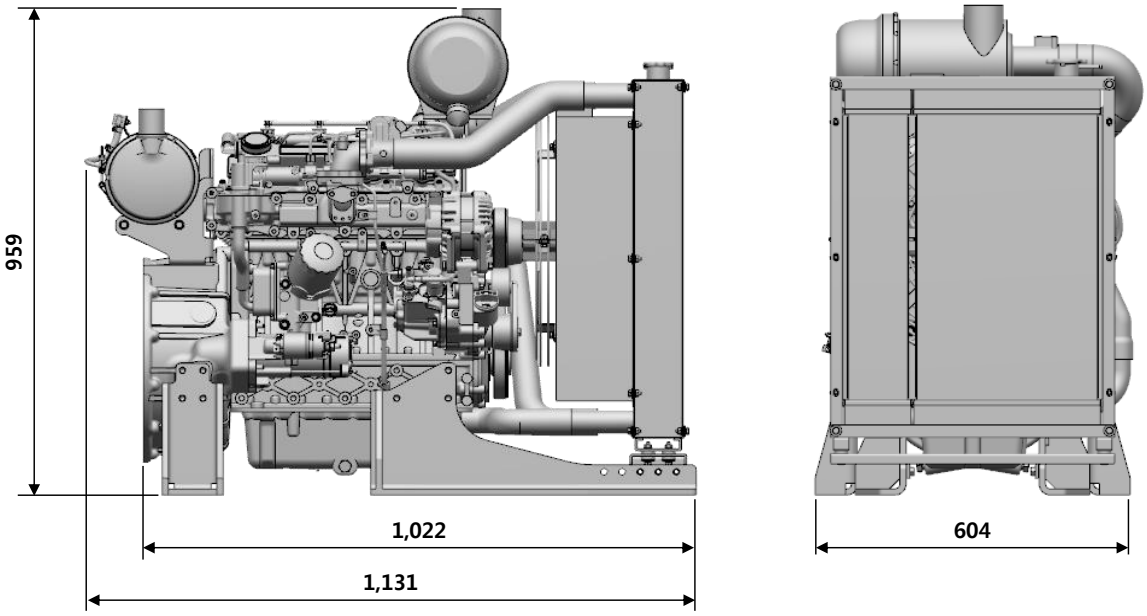
• Oil filter	Full flow, cartridge type
• Oil pan capacity	High level 8.6 liters
	Low level 4.5 liters
• Angularity limit	35 deg all around
• Lubrication oil	10W30/40 (API CK-4 / ACEA E6)
• Maximum oil temp	135℃ at main oil gallery
• Lub oil pressure	Idle Speed : Min 100 kPa

◈ Engine Dimension

• Dimension (L×W×H) 828 × 576 × 722 mm (engine only)



• Dimension (L×W×H) 959 × 604 × 1,131 mm (with powerpack)



Ratings Definitions

The power ratings of Emergency Standby and Prime are in accordance with ISO 8528.
Fuel Stop power in accordance with ISO 3046.
Electric power (kWe) must be considered cooling fan loss, alternator efficiency, altitude derating and ambient temperature.

STANDBY POWER RATING is applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. A standby rated engine should be sized for a maximum of an 80% average load factor and 200 hours of operation per year. This includes less than 25 hours per year at the Standby Power rating.

PRIME POWER RATING is available for an unlimited number of hours per year in variable load application. Variable load should not exceed a 70% average of the Prime Power rating during any operating period of 24 hours. The Total operating time at 100% Prime Power shall not exceed 500 hours per year. A 10% overload capability is available for a period of 1 hour withing a 12 hour period of operation. Total operating time at the 10% overload power shall not exceed 25 hours per year.

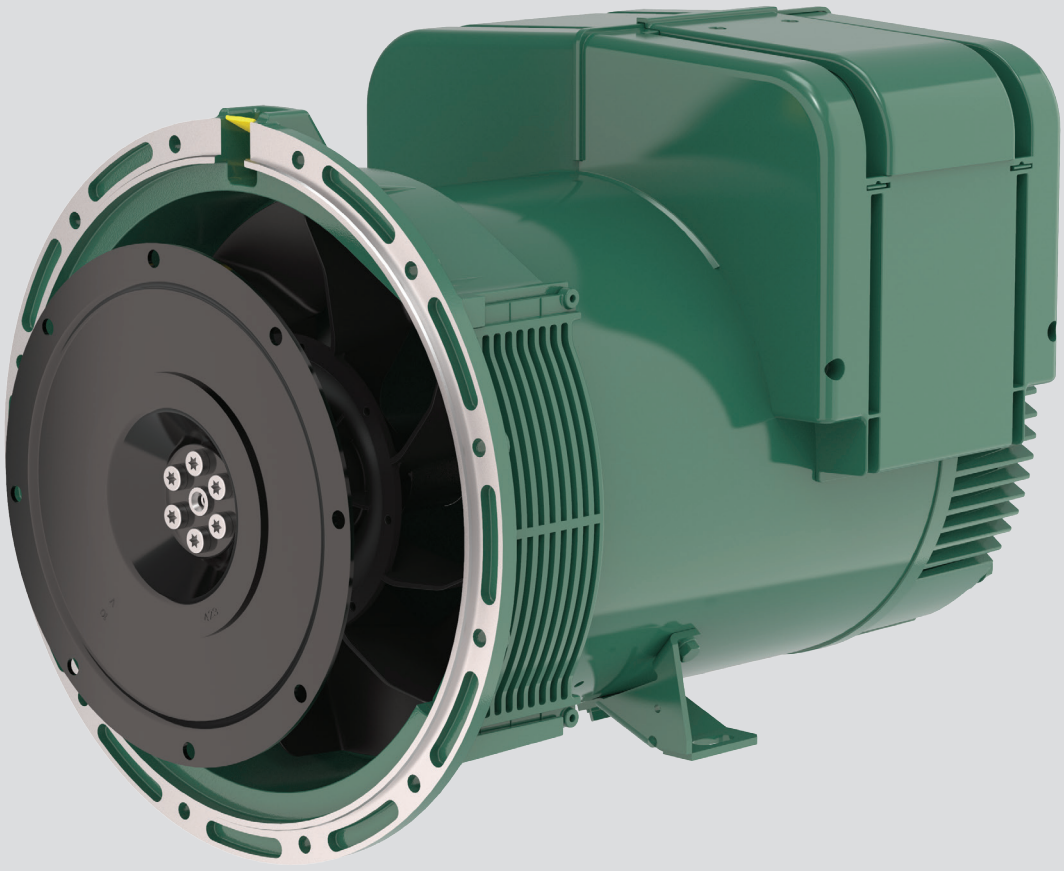
◈ Conversion Table

in. = mm x 0.0394	hp = PS x 0.98635	kW = 0.2388 kcal/s
PS = kW x 1.3596	lb = kg x 2.20462	lb/PS.h = g/kW.h x 0.00162
psi = kg/cm2 x 14.2233	lb/ft = N.m x 0.737	cfm = m3/min x 35.336
in3 = lit. x 61.02	U.S. gal = lit. x 0.264	

Doosan Infracore Co., Ltd.
28th Floor, Doosan Tower, 275, Jangchungdan-ro, Jung-gu, Seoul, Republic of Korea (04563)
Tel : +82 2 3398 8893 / Fax : +82 2 3398 8898
E-mail : enginesales@doosan.com
Website : www.doosaninfracore.com

ALTERNATOR DATASHEET

TEKSAN



LSA 42.3

Low Voltage Alternator - 4 pole

25 to 60 kVA - 50 Hz / 31.5 to 75 kVA - 60 Hz
Electrical and mechanical data

LEROY-SOMER™

Nidec
All for dreams

The best of performance

Nidec Leroy-Somer LSA 42.3 alternator has been designed to offer you the best power generation performances. With its meticulous design and optimized architecture, the LSA 42.3 strikes the perfect balance between compactness, reliability, performance and longevity.
Whatever your application, the LSA 42.3 will meet your needs and will adapt to all situations.

Standards

Nidec Leroy-Somer LSA 42.3 alternator meets all key international standards and regulations, including IEC 60034, NEMA MG 1.32-33, ISO 8528-3, CSA C22.2 n°100-14 and UL 1446 (UL 1004 on request). Also compliant with IEC 61000-6-2, IEC 61000-6-3, IEC 61000-6-4, VDE 0875G, VDE 0875N and EN 55011, group 1 class A for European zone.
Nidec Leroy-Somer LSA 42.3 alternator can be integrated in EC marked generator set, and bears EC and CMIM markings.
It is designed, manufactured and marketed in an ISO 9001 and ISO 14001 quality assurance environment.

Electrical characteristics and performances

- Class H insulation
- 2/3 pitch winding, standard 12-wire (6) reconnectable
- Voltage range:
  - 50 Hz: 220V - 240V and 380V - 415V (440V)
  - 60 Hz: 208V - 240V and 380V - 480V
- High efficiency and motor starting capacity
- Other voltages are possible with optional adapted windings:
  - 50 Hz: 440V (no. 7), 500V (no. 9), 550V (no. 22), 600V (no. 23), 690V (no. 10)
  - 60 Hz: 380V and 416V (no. 8), 600V (no. 9), 690V (no. 22)

Excitation and regulation system

Excitation system				Regulation options		
AVR	**SHUNT**	**AREP** (option)	**PMG** (option)	**C.T. Current transformer for paralleling**	**Mains paralleling**	**Remote voltage potentiometer**
R220	Standard					
D350	Option	Standard	Standard	√*		√
D550**	Option	Option	Option	√*	√	√

*: only with AREP or PMG
**: steel terminal box mounting only

3-phase sensing is included as a standard with digital regulators.

Protection system and options

- The LSA 42.3 is IP 23
- Complete 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%
  - Reinforced winding protection for harsh environments and relative humidity greater than 95%
  - Space heater
  - Thermal protection for stator windings
  - Shaft height: H = 225 mm (to be specified when ordering)

Mechanical construction

- Compact rigid assembly to better withstand generator vibrations
- Steel frame and terminal box
- Aluminum flanges and shields
- Two-bearing and single-bearing versions designed to be suitable for commercially-available heat engines
- Half-key balancing two-bearing
- Greased for life bearings (20 000h)
- Direction of rotation: clockwise and anti-clockwise (without derating)

Terminal box design

- Easy access to the voltage regulator (lid) and to the connections
- 8-way terminal block for reconnecting the voltage
- Predrilled holes for cable gland

General characteristics

Insulation class	H
Winding pitch	2/3 (wind. 6)
Number of wires	12
Protection	IP 23
Altitude	≤ 1000 m
Overspeed	2250 R.P.M.
Air flow	0.10 m^3/s (50 Hz) - 0.13 m^3/s (60 Hz)

Excitation system	SHUNT	AREP / PMG
AVR type	R220	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 :	< 4%	
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

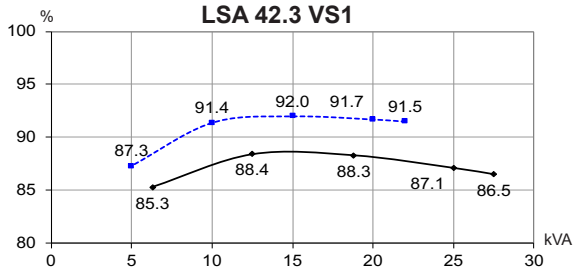
Duty/T°C		Continuous duty/40°C					Continuous duty/40°C					Stand-by/40°C					Stand-by/27°C				
Class/T°K		H/125°K					F/105°K					H/150°K					H/163°K				
Phase		3 ph.				1 ph.	3 ph.				1 ph.	3 ph.				1 ph.	3 ph.				1 ph.
Y		380V	**400V**	415V	440V	ΔΔ	380V	**400V**	415V	440V	ΔΔ	380V	**400V**	415V	440V	ΔΔ	380V	**400V**	415V	440V	ΔΔ
Δ		220V	**230V**	240V		230V	220V	**230V**	240V		230V	220V	**230V**	240V		230V	220V	**230V**	240V		230V
YY			**200V**		220V			**200V**		220V			**200V**		220V			**200V**		220V	
LSA 42.3 VS1	kVA	25	**25**	25	24.5	15	23	**23**	23	22.5	13.5	26.5	**26.5**	26.5	26	16	27.5	**27.5**	27.5	27	16.5
	kW	*20*	***20***	*20*	*19.5*	*12*	*18.5*	***18.5***	*18.5*	*18*	*11*	*21*	***21***	*21*	*21*	*13*	*22*	***22***	*22*	*21.5*	*13*
LSA 42.3 VS2	kVA	27	**27**	27	26	16	24.5	**24.5**	24.5	23.5	14.5	28.5	**28.5**	28.5	27.5	17	30	**30**	30	28.5	17.5
	kW	*21.5*	***21.5***	*21.5*	*21*	*13*	*19.5*	***19.5***	*19.5*	*19*	*11.5*	*23*	***23***	*23*	*22*	*13.5*	*24*	***24***	*24*	*23*	*14*
LSA 42.3 VS3	kVA	32	**32**	32	30	19	29	**29**	29	27.5	17.5	34	**34**	34	32	20	35	**35**	35	33	21
	kW	*25.5*	***25.5***	*25.5*	*24*	*15*	*23*	***23***	*23*	*22*	*14*	*27*	***27***	*27*	*25.5*	*16*	*28*	***28***	*28*	*26.5*	*17*
LSA 42.3 S4	kVA	35	**35**	35	30.5	22	32	**32**	32	28	20	37	**37**	37	32.5	23.5	38.5	**38.5**	38.5	33.5	24
	kW	*28*	***28***	*28*	*24.5*	*17.5*	*25.5*	***25.5***	*25.5*	*22.5*	*16*	*29.5*	***29.5***	*29.5*	*26*	*19*	*31*	***31***	*31*	*27*	*19*
LSA 42.3 S5	kVA	40	**40**	40	35	25	36.5	**36.5**	36.5	32	23	42.5	**42.5**	42.5	37	26.5	45	**45**	45	38.5	27.5
	kW	*32*	***32***	*32*	*28*	*20*	*29*	***29***	*29*	*25.5*	*18.5*	*34*	***34***	*34*	*29.5*	*21*	*36*	***36***	*36*	*31*	*22*
LSA 42.3 M7	kVA	45	**45**	45	39	27	41	**41**	41	35.5	24.5	48	**48**	48	41.5	28.5	50	**50**	50	43	29.5
	kW	*36*	***36***	*36*	*31*	*21.5*	*33*	***33***	*33*	*28.5*	*19.5*	*38.5*	***38.5***	*38.5*	*33*	*23*	*40*	***40***	*40*	*34.5*	*23.5*
LSA 42.3 M8	kVA	50	**50**	50	43	30	45.5	**45.5**	45.5	39	27.5	53	**53**	53	45.5	32	55	**55**	55	47.5	33
	kW	*40*	***40***	*40*	*34.5*	*24*	*36.5*	***36.5***	*36.5*	*31*	*22*	*42*	***42***	*42*	*36.5*	*25.5*	*44*	***44***	*44*	*38*	*26.5*
LSA 42.3 L9	kVA	60	**60**	60	52	36	55	**55**	55	47.5	33	64	**64**	64	55	38	66	**66**	66	57	39.5
	kW	*48*	***48***	*48*	*42*	*29*	*44*	***44***	*44*	*38*	*26.5*	*51*	***51***	*51*	*44*	*30.5*	*53*	***53***	*53*	*46*	*31.5*

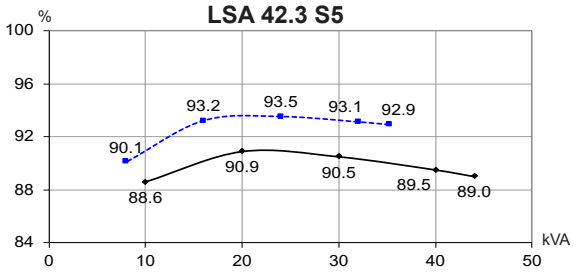
Ratings 60 Hz - 1800 R.P.M.

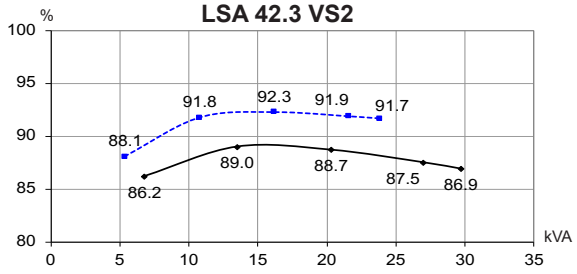
kVA / kW - P.F. = 0.8

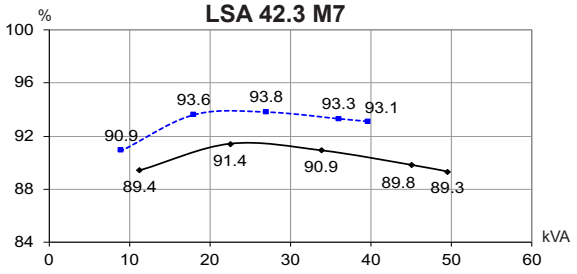
Duty/T°C		Continuous duty/40°C					Continuous duty/40°C					Stand-by/40°C					Stand-by/27°C				
Class/T°K		H/125°K					F/105°K					H/150°K					H/163°K				
Phase		3 ph.				1 ph.	3 ph.				1 ph.	3 ph.				1 ph.	3 ph.				1 ph.
Y		380V	416V	440V	**480V**	ΔΔ	380V	416V	440V	**480V**	ΔΔ	380V	416V	440V	**480V**	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 42.3 VS1	kVA	29	31.5	31.5	**31.5**	18.9	26.5	28.5	28.5	**28.5**	17	30.5	33.5	33.5	**33.5**	20	32	34.5	34.5	**34.5**	20.8
	kW	*23*	*25*	*25*	***25***	*15*	*21*	*23*	*23*	***23***	*13.5*	*24.5*	*27*	*27*	***27***	*16*	*25.5*	*27.5*	*27.5*	***27.5***	*16.5*
LSA 42.3 VS2	kVA	30	32	34	**34**	19.2	27.5	29	31	**31**	17.5	32	34	36	**36**	20.5	33	35	37.5	**37.5**	21.1
	kW	*24*	*25.5*	*27*	***27***	*15.5*	*22*	*23*	*25*	***25***	*14*	*25.5*	*27*	*29*	***29***	*16.5*	*26.5*	*28*	*30*	***30***	*17*
LSA 42.3 VS3	kVA	34.5	38	40	**40**	23	31.5	34.5	36.5	**36.5**	21	36.5	40.5	42.5	**42.5**	24.5	38	42	44	**44**	25.5
	kW	*27.5*	*30.5*	*32*	***32***	*18.5*	*25*	*27.5*	*29*	***29***	*17*	*29*	*32.5*	*34*	***34***	*19.5*	*30.5*	*33.5*	*35*	***35***	*20.5*
LSA 42.3 S4	kVA	37.5	40.5	43	**44**	24	34	37	39	**40**	22	40	43	45.5	**46.5**	25.5	41.5	44.5	47.5	**48.5**	26.5
	kW	*30*	*32.5*	*34.5*	***35***	*19*	*27*	*29.5*	*31*	***32***	*17.5*	*32*	*34.5*	*36.5*	***37***	*20.5*	*33*	*35.5*	*38*	***39***	*21*
LSA 42.3 S5	kVA	42	46	49	**50**	27.5	38	42	44.5	**45.5**	25	44.5	49	52	**53**	29	46	51	54	**55**	30.5
	kW	*33.5*	*37*	*39*	***40***	*22*	*30.5*	*33.5*	*35.5*	***36.5***	*20*	*35.5*	*39*	*42*	***42***	*23*	*37*	*41*	*43*	***44***	*24.5*
LSA 42.3 M7	kVA	46	50	53.5	**56.5**	30	42	45.5	48.5	**51**	27.5	49	53	57	**60**	32	51	55	59	**62.5**	33
	kW	*37*	*40*	*43*	***45***	*24*	*33.5*	*36.5*	*39*	***41***	*22*	*39*	*42*	*46*	***48***	*25.5*	*41*	*44*	*47*	***50***	*26.5*
LSA 42.3 M8	kVA	51.5	56.5	59.5	**62.5**	34	47	51	54	**57**	31	55	60	63	**66.5**	36	57	62.5	65.5	**69**	37.5
	kW	*41*	*45*	*48*	*50*	*27*	*37.5*	*41*	*43*	***46***	*25*	*44*	*48*	*50*	***53***	*29*	*46*	*50*	*52*	***55***	*30*
LSA 42.3 L9	kVA	59	65	69	**75**	39	54	59	63	**68**	35.5	63	69	73	**80**	41.5	65	72	76	**82.5**	43
	kW	*47*	*52*	*55*	***60***	*31*	*43*	*47*	*50*	***54***	*28.5*	*50*	*55*	*58*	***64***	*33*	*52*	*58*	*61*	***66***	*34.5*

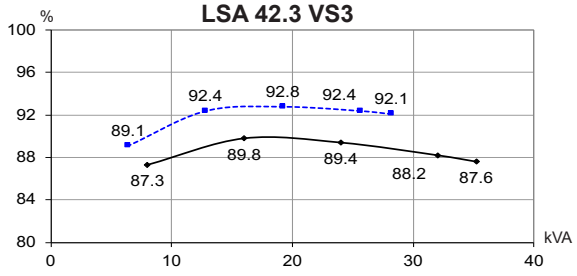
Efficiencies 400 V - 50 Hz (— P.F.: 0.8) (--- P.F.: 1)

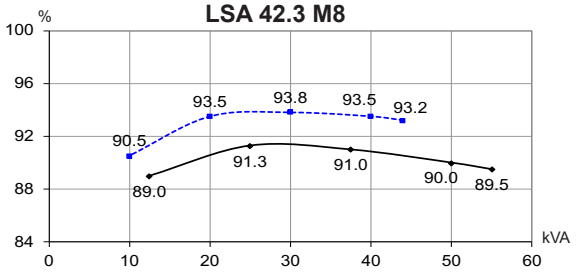


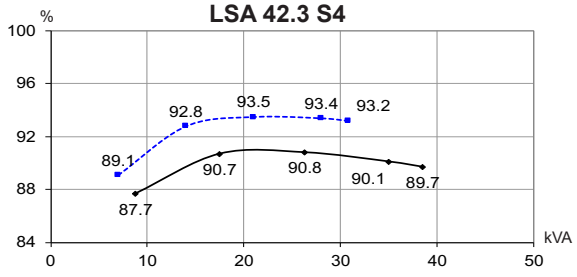


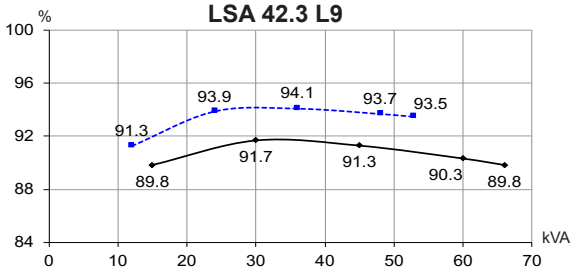












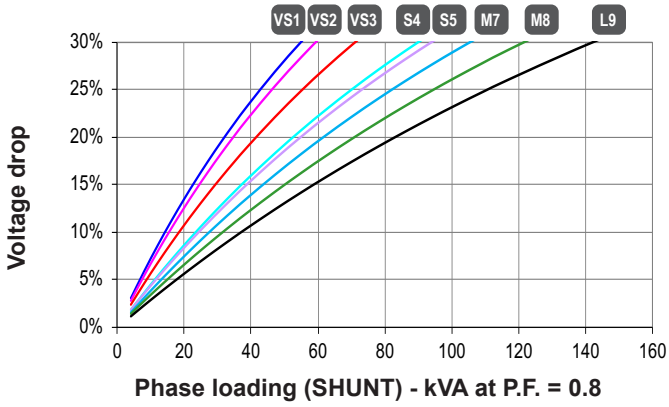
Reactances (%). Time constants (ms) - Class H / 400 V

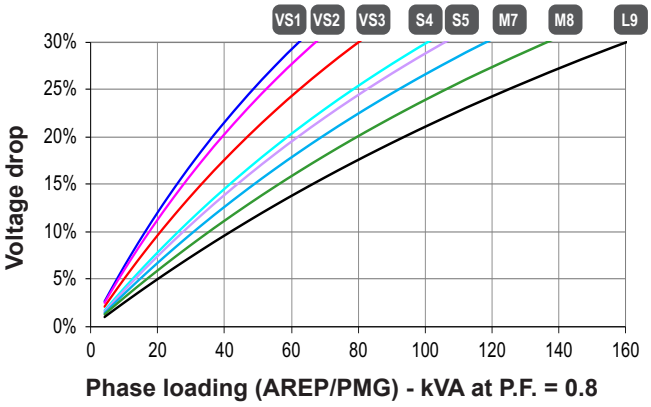
		VS1	VS2	VS3	S4	S5	M7	M8	L9
Kcc	Short-circuit ratio	0.54	0.51	0.48	0.53	0.46	0.43	0.47	0.44
Xd	Direct-axis synchronous reactance unsaturated	240	249	261	229	262	275	264	283
Xq	Quadrature-axis synchronous reactance unsaturated	122	127	133	117	133	140	134	144
T'do	No-load transient time constant	733	759	803	880	880	914	931	962
X'd	Direct-axis transient reactance saturated	16.3	16.4	16.2	13	14.8	15	14.1	14.7
T'd	Short-circuit transient time constant	50	50	50	50	50	50	50	50
X"d	Direct-axis subtransient reactance saturated	8.1	8.2	8.1	6.5	7.4	7.5	7.0	7.3
T"d	Subtransient time constant	5	5	5	5	5	5	5	5
X"q	Quadrature-axis subtransient reactance saturated	11.5	11.6	11.5	9.2	10.6	10.7	10.1	10.5
Xo	Zero sequence reactance	0.68	0.68	0.67	0.54	0.62	0.62	0.59	0.61
X2	Negative sequence reactance saturated	9.88	9.91	9.82	7.89	9.02	9.12	8.61	8.93
Ta	Armature time constant	8	8	8	8	8	8	8	8

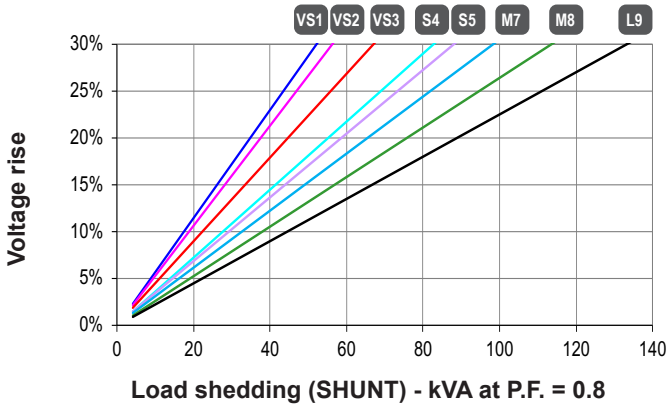
Other class H/400 V data

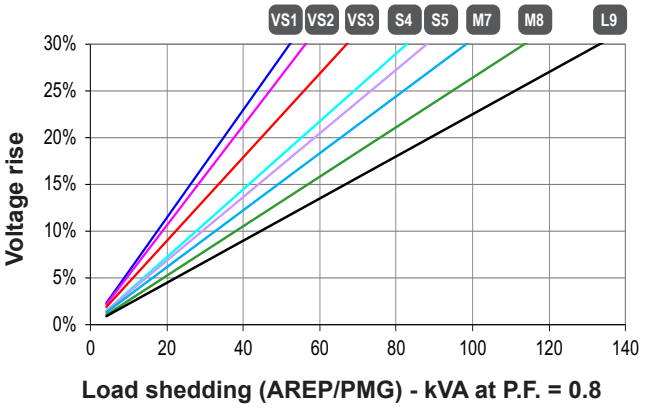
io (A)	No-load excitation current (SHUNT/AREP)	0.55/0.85	0.52/0.8	0.51/0.79	0.49/0.75	0.49/0.75	0.46/0.71	0.5/0.78	0.5/0.77
ic (A)	On-load excitation current (SHUNT/AREP)	1.77/2.72	1.75/2.68	1.8/2.76	1.55/2.38	1.76/2.7	1.77/2.71	1.9/2.91	2.07/3.18
uc (V)	On-load excitation voltage (SHUNT/AREP)	30.2/19.3	29.8/19	30.4/19.5	26.2/16.8	29.4/18.8	29.4/18.8	31.1/19.9	33.3/21.3
ms	Response time (ΔU = 20% transient)	500	500	500	500	500	500	500	500
kVA	Start (ΔU = 20% cont. or (ΔU = 30% trans.) SHUNT	53	57	68	93	93	104	122	137
kVA	Start (ΔU = 20% cont. or (ΔU = 30% trans.) AREP	64	68	82	112	111	124	138	154
%	Transient ΔU (on-load 4/4) SHUNT - P.F.: 0.8 $_{LAG}$	16.3	16.3	16.2	14.3	15.4	15.5	15	15.3
%	Transient ΔU (on-load 4/4) AREP - P.F.: 0.8 $_{LAG}$	14.7	14.7	14.6	13	14	14	13.6	13.9
W	No-load losses	719	713	762	861	861	879	1029	1120
W	Heat dissipation	2938	3058	3414	3072	3736	4050	4438	5134

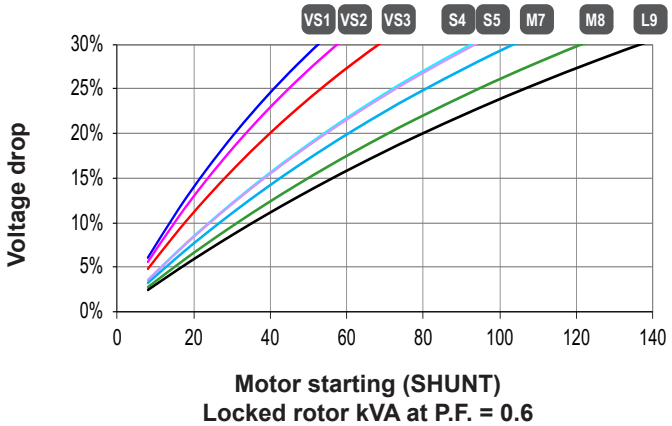
Transient voltage variation 400V - 50 Hz

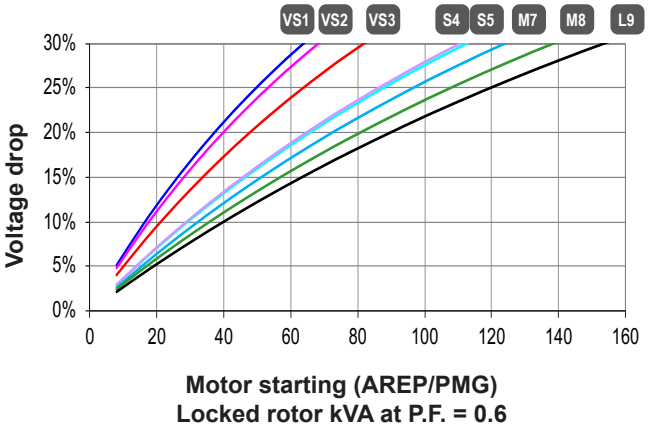






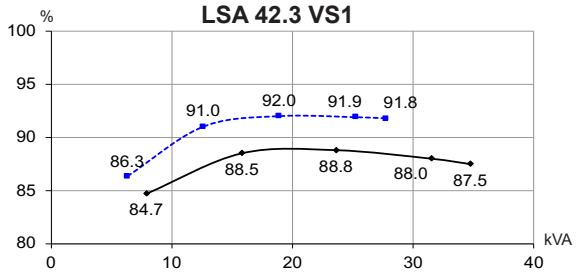


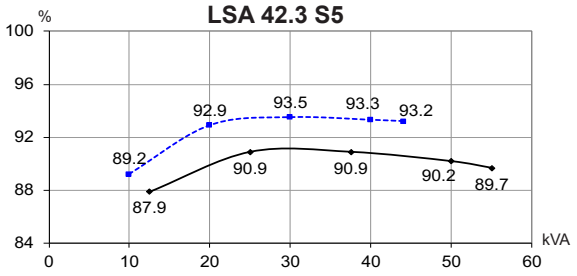


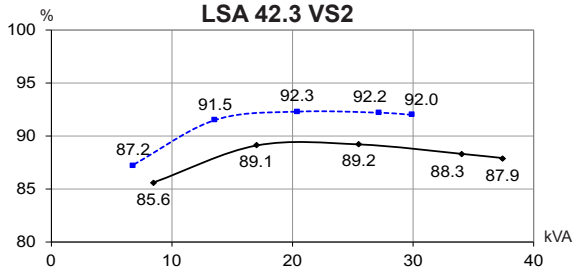


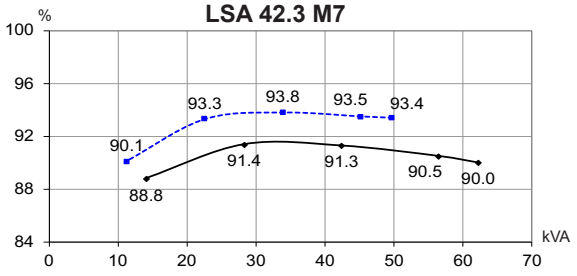
1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by K = Sine P.F. / 0.8
2) For voltages other than 400V (Y), 230V (Δ) at 50 Hz, then kVA must be multiplied by $(400/U)^2$ or $(230/U)^2$.

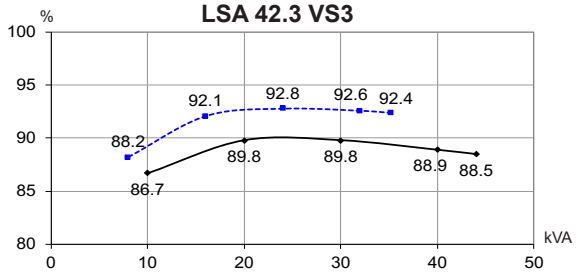
Efficiencies 480 V - 60 Hz (— P.F.: 0.8) (--- P.F.: 1)

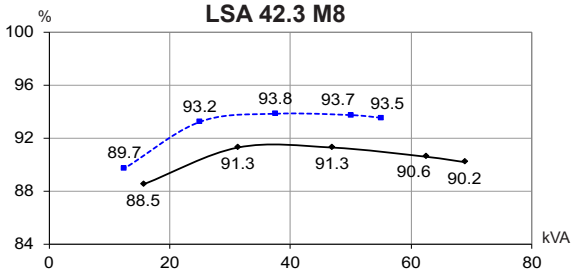


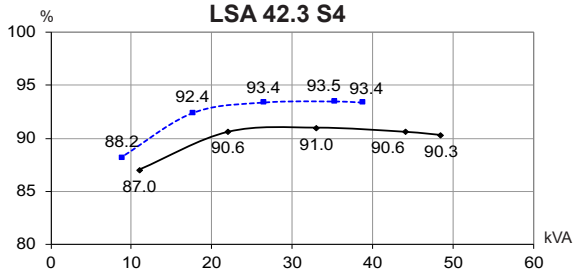


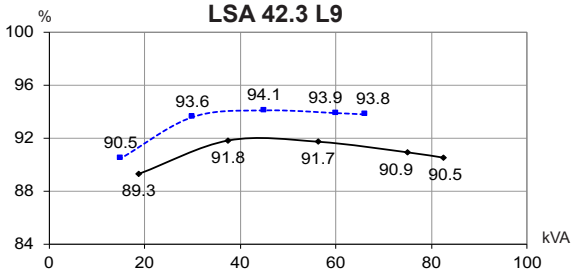












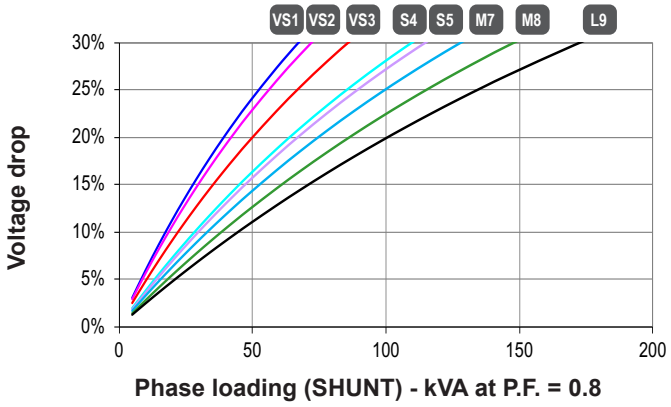
Reactances (%). Time constants (ms) - Class H / 480 V

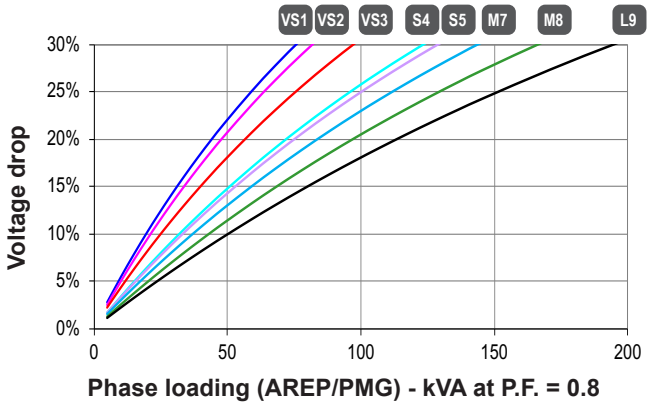
		VS1	VS2	VS3	S4	S5	M7	M8	L9
Kcc	Short-circuit ratio	0.52	0.48	0.46	0.51	0.44	0.41	0.45	0.42
Xd	Direct-axis synchronous reactance unsaturated	252	261	272	240	273	287	275	294
Xq	Quadrature-axis synchronous reactance unsaturated	128	133	138	122	139	146	140	150
T'do	No-load transient time constant	733	759	803	880	880	914	931	962
X'd	Direct-axis transient reactance saturated	17.2	17.2	16.9	13.6	15.5	15.7	14.7	15.3
T'd	Short-circuit transient time constant	50	50	50	50	50	50	50	50
X"d	Direct-axis subtransient reactance saturated	8.6	8.6	8.4	6.8	7.7	7.8	7.3	7.6
T"d	Subtransient time constant	5	5	5	5	5	5	5	5
X"q	Quadrature-axis subtransient reactance saturated	12.1	12.1	12	9.7	11	11.2	10.5	10.9
Xo	Zero sequence reactance	0.71	0.71	0.7	0.56	0.64	0.65	0.61	0.63
X2	Negative sequence reactance saturated	10.37	10.4	10.24	8.27	9.39	9.55	8.97	9.3
Ta	Armature time constant	8	8	8	8	8	8	8	8

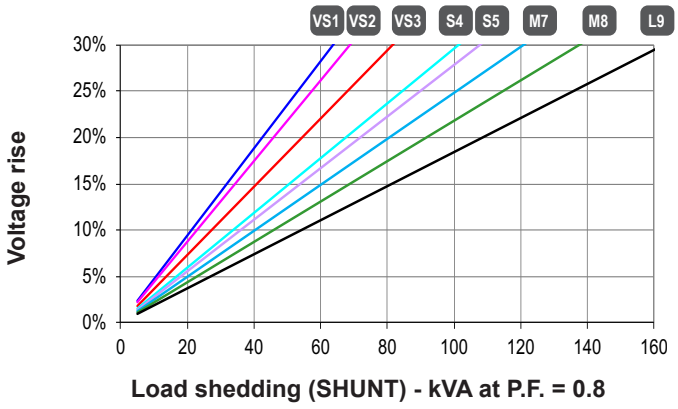
Other class H/480 V data

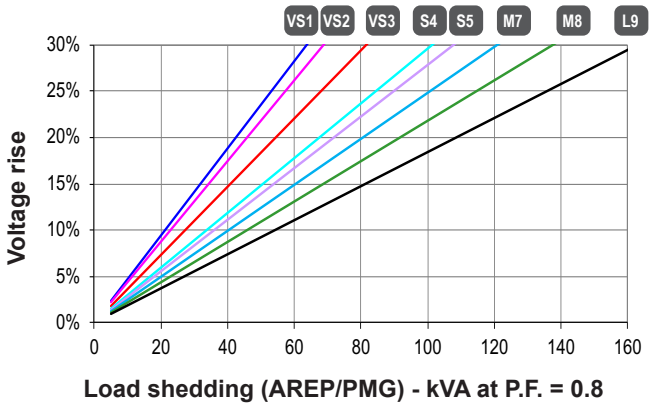
io (A)	No-load excitation current (SHUNT/AREP)	0.55/0.85	0.52/0.8	0.51/0.79	0.49/0.75	0.49/0.75	0.46/0.71	0.5/0.77	0.5/0.77
ic (A)	On-load excitation current (SHUNT/AREP)	1.79/2.74	1.76/2.71	1.8/2.76	1.56/2.39	1.75/2.69	1.77/2.71	1.87/2.87	2.02/3.1
uc (V)	On-load excitation voltage (SHUNT/AREP)	30.8/19.7	30.3/19.4	30.8/19.7	26.7/17.1	29.8/19	29.8/19.1	31.3/20	33.3/21.3
ms	Response time (ΔU = 20% transient)	500	500	500	500	500	500	500	500
kVA	Start (ΔU = 20% cont. or (ΔU = 30% trans.) SHUNT	63	68	82	112	112	125	147	170
kVA	Start (ΔU = 20% cont. or (ΔU = 30% trans.) AREP	76	82	99	135	134	150	177	202
%	Transient ΔU (on-load 4/4) SHUNT - P.F.: 0.8 $_{LAG}$	16.8	16.8	16.6	14.7	15.8	15.9	15.4	15.7
%	Transient ΔU (on-load 4/4) AREP - P.F.: 0.8 $_{LAG}$	15.1	15.1	15	13.3	14.3	14.4	13.9	14.2
W	No-load losses	1021	1016	1087	1229	1229	1258	1462	1590
W	Heat dissipation	3431	3568	3954	3640	4343	4737	5160	5960

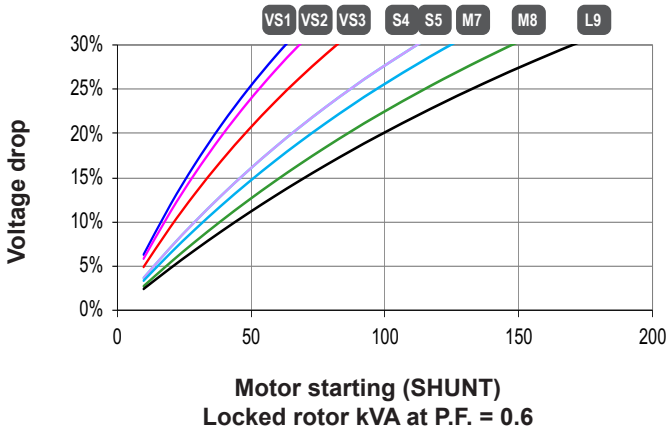
Transient voltage variation 480V - 60 Hz

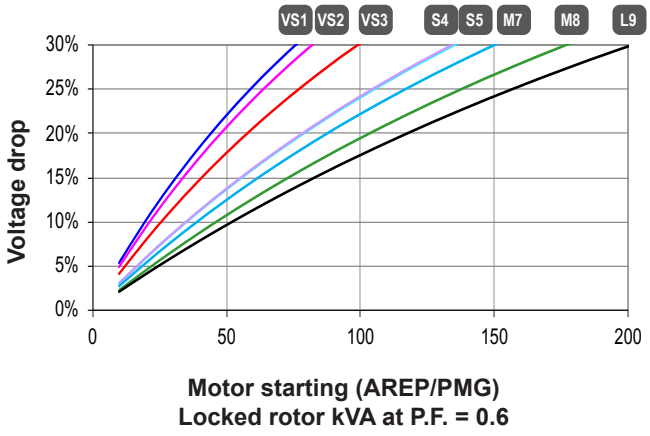










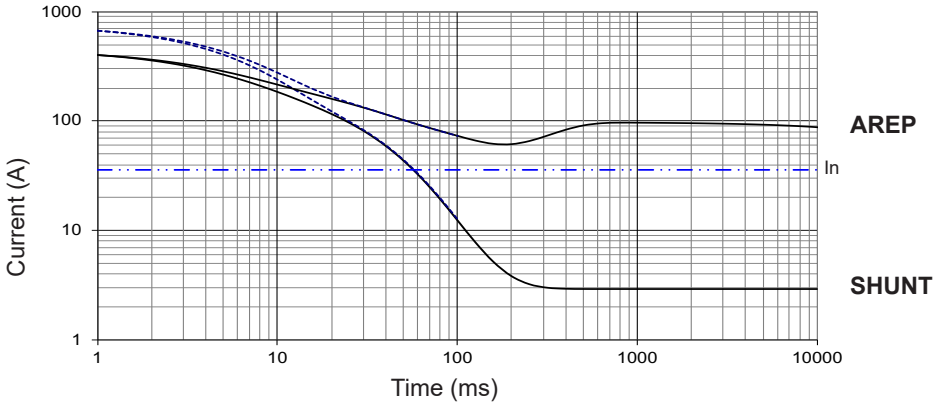


1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by K = Sine P.F. / 0.8
2) For voltages other than 480V (Y), 277V (Δ), 240V (YY) at 60 Hz, then kVA must be multiplied by $(480/U)^2$ or $(277/U)^2$ or $(240/U)^2$.

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

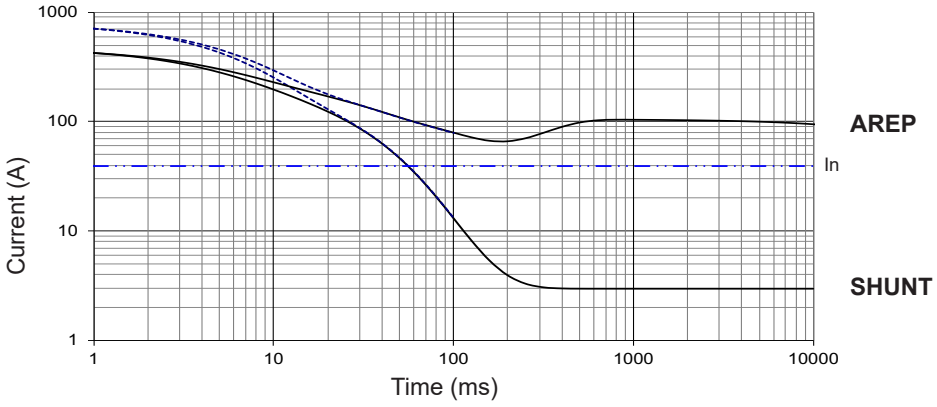
LSA 42.3 VS1

Symmetrical ——
Asymmetrical - - -



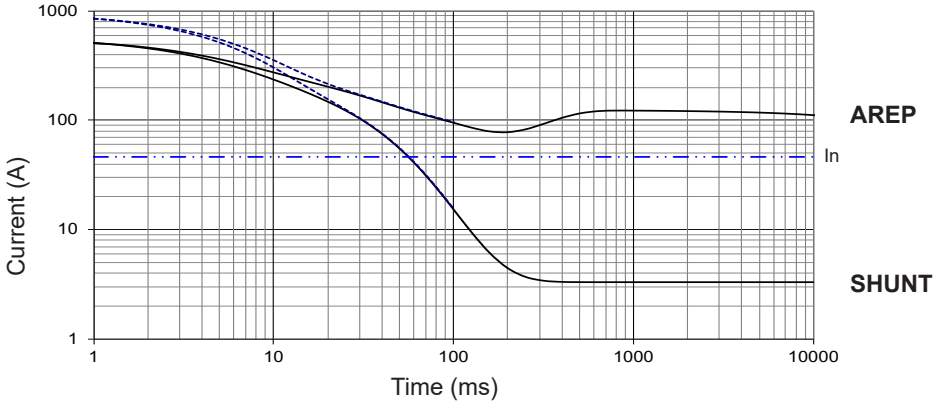
LSA 42.3 VS2

Symmetrical ——
Asymmetrical - - -



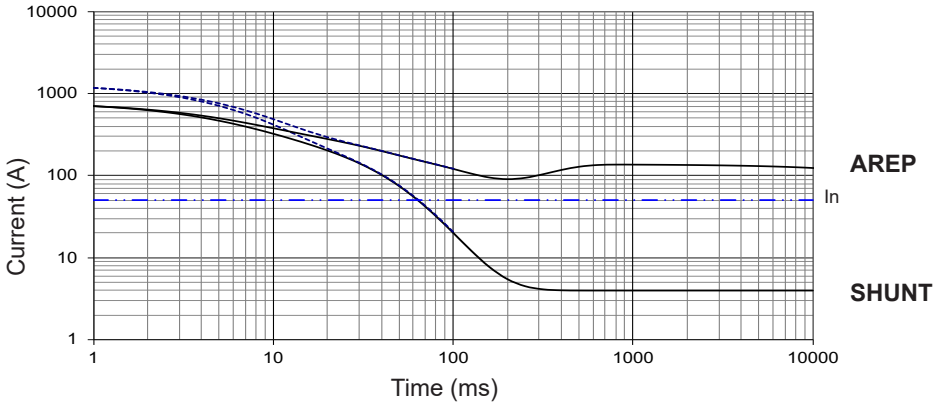
LSA 42.3 VS3

Symmetrical ——
Asymmetrical - - -



LSA 42.3 S4

Symmetrical ——
Asymmetrical - - -

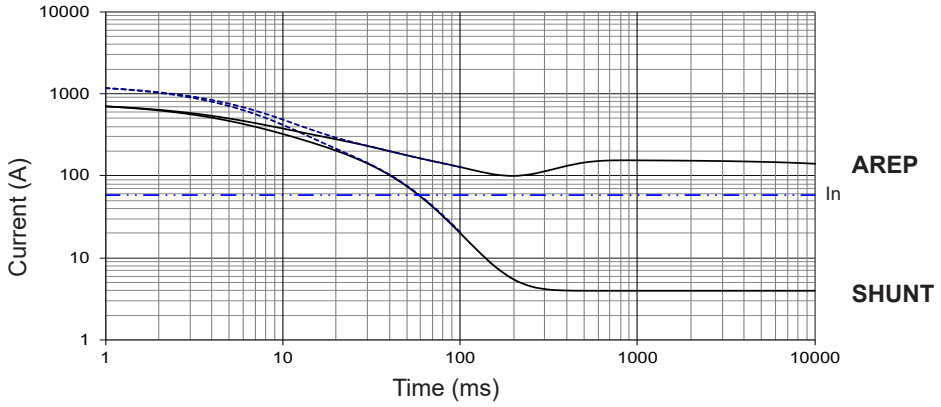


Influence due to connection
Curves shown are for star (Y) connection.
For other connections, use the following multiplication factors:
- Series delta : current value x 1.732 - Parallel star : current value x 2

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

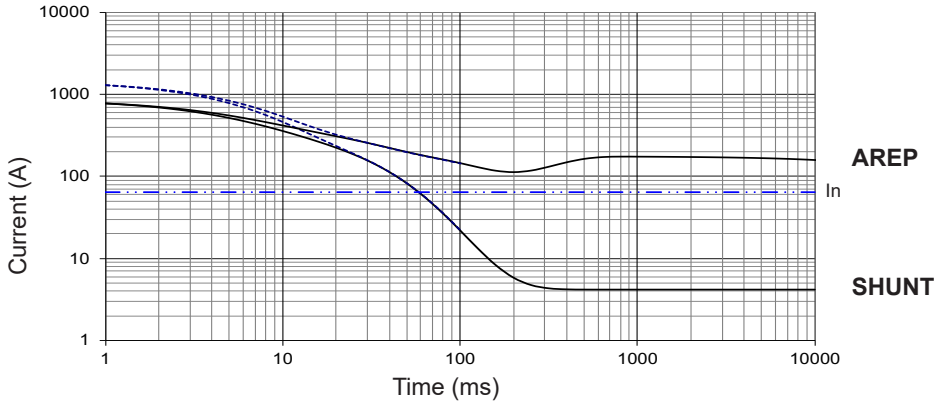
LSA 42.3 S5

Symmetrical ——
Asymmetrical - - -



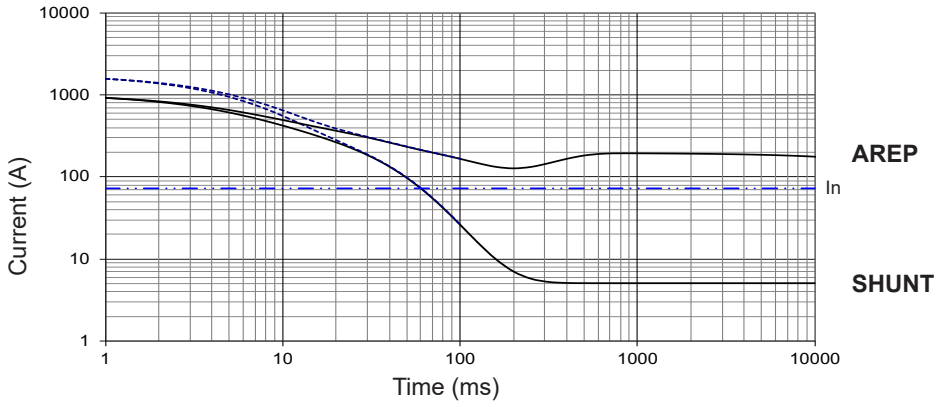
LSA 42.3 M7

Symmetrical ——
Asymmetrical - - -



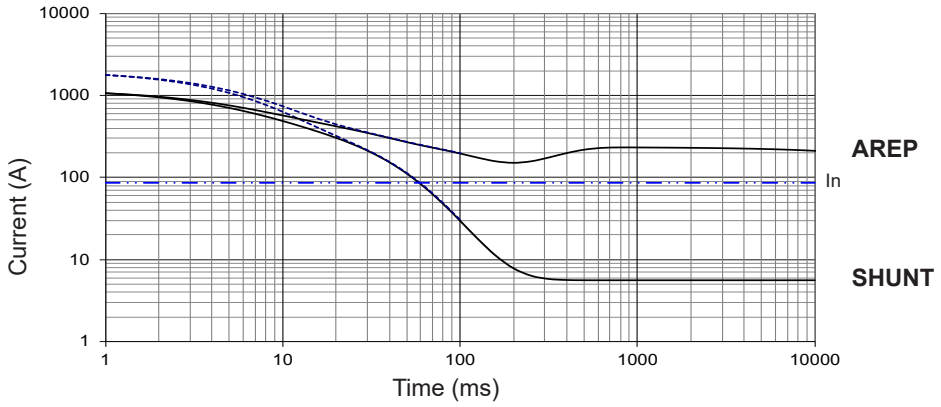
LSA 42.3 M8

Symmetrical ——
Asymmetrical - - -



LSA 42.3 L9

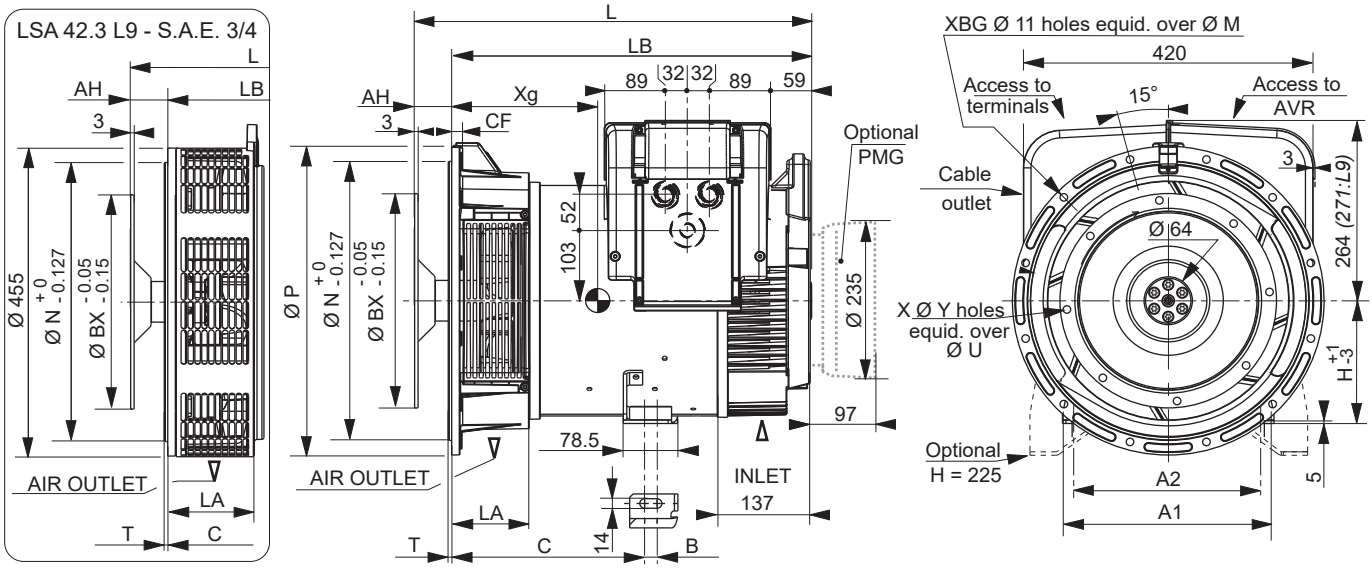
Symmetrical ——
Asymmetrical - - -



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					H = 180 (Standard)				*H = 225 (Option)*			
Type	L without PMG maxi*	LB	Xg	Weight (kg)	C	B	A1	A2	*C*	*B*	*A1*	*A2*
LSA 42.3 VS1	565	503	237	117	260	18	307	279	*299*	*23*	*400*	*356*
LSA 42.3 VS2	565	503	242	122	260	18	307	279	*299*	*23*	*400*	*356*
LSA 42.3 VS3	565	503	252	133	260	18	307	279	*299*	*23*	*400*	*356*
LSA 42.3 S4	610	548	275	165	260	18	307	279	*312.5*	*23*	*400*	*356*
LSA 42.3 S5	610	548	275	165	260	18	307	279	*312.5*	*23*	*400*	*356*
LSA 42.3 M7	650	588	287	181	260	18	307	279	*312.5*	*23*	*400*	*356*
LSA 42.3 M8	650	588	295	186	260	18	307	279	*312.5*	*23*	*400*	*356*
LSA 42.3 L9**	680	618	310	187	260	18	307	279	*312.5*	*23*	*400*	*356*
LSA 42.3 L9***	703	641	300	195	283	18	307	279	*335.5*	*23*	*400*	*356*

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

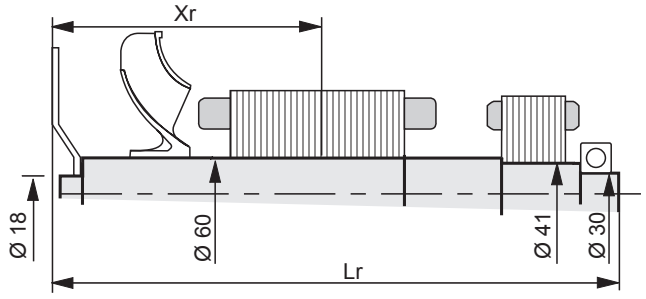
* L maxi = LB + AH maxi ** S.A.E. 3 *** S.A.E. 4

Flange (mm)							
S.A.E.	P	N	M	XBG	T	LA	CF
4	406/455*	361.95	381	12	5*/6	122/128.3*	15/16*
3	452	409.58	428.62	12	5	105.3*/112.5	12
2	490	447.675	466.725	12	6	111	12

* Specific dimension LSA 42.3 L9

Flex plate (mm)					
S.A.E.	BX	U	X	Y	AH
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
7 ½	241.3	222.25	8	9	30.2

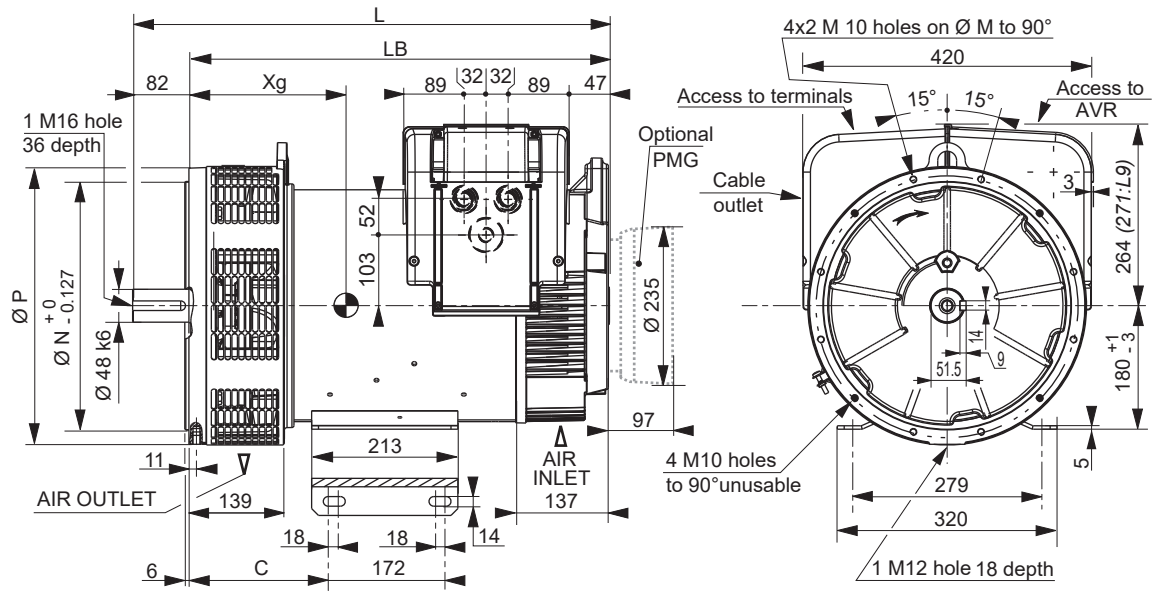
Torsional analysis data



Centre of gravity: Xr (mm), Rotor length: Lr (mm), Weight: M (kg), Moment of inertia: J (kgm²): (4J = MD²)																
Flex plate	S.A.E. 7 ½				S.A.E. 8				S.A.E. 10				S.A.E. 11 ½			
Type	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J
LSA 42.3 VS1	279	526.2	45.36	0.2209	277	558	45.68	0.2246	274	549.8	46.13	0.2363	272	535.6	46.62	0.2883
LSA 42.3 VS2	282	526.2	47.36	0.2337	280	558	47.68	0.2374	277	549.8	48.13	0.2491	274	535.6	48.62	0.2611
LSA 42.3 VS3	287	526.2	51.41	0.2592	286	558	51.73	0.2629	283	549.8	52.18	0.2746	281	535.6	52.67	0.2866
LSA 42.3 S4	310	571.2	61.49	0.317	308	603	61.81	0.3207	306	594.8	62.26	0.3324	304	580.6	62.75	0.3444
LSA 42.3 S5	310	571.2	61.49	0.317	308	603	61.81	0.3207	306	594.8	68.18	0.3645	304	580.6	62.75	0.3444
LSA 42.3 M7	325	611.2	67.41	0.3491	323	643	67.73	0.3528	321	634.8	68.18	0.3645	319	620.6	68.67	0.3765
LSA 42.3 M8	330	611.2	70.42	0.3683	328	643	70.74	0.372	326	634.8	71.18	0.3837	324	620.6	71.68	0.3957
LSA 42.3 L9	344	641.2	77.49	0.4141	342	673	77.81	0.4178	340	664.8	78.25	0.4295	338	650.6	78.75	0.4415

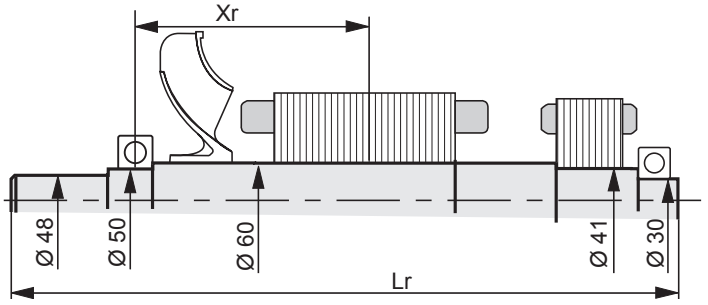
NOTE : Dimensions are for information only and may be subject to modifications. Contractual 2D drawings can be downloaded from the Leroy-Somer site, 3D drawing files are available upon request.
The torsional analysis of the transmission is imperative. All values are available upon request.

Two-bearing dimensions



Dimensions (mm) and weight								
Type	L without PMG	LB	N	M	P	C	Xg	Weight (kg)
LSA 42.3 VS1	610	528	361.95	381	406	189.25	242	129
LSA 42.3 VS2	610	528	361.95	381	406	189.25	247	134
LSA 42.3 VS3	610	528	361.95	381	406	189.25	257	145
LSA 42.3 S4	655	573	361.95	381	406	202.75	280	170
LSA 42.3 S5	655	573	361.95	381	406	202.75	280	170
LSA 42.3 M7	695	613	361.95	381	406	202.75	292	185
LSA 42.3 M8	695	613	361.95	381	406	202.75	300	190
LSA 42.3 L9	725	643	409.58	428.62	455	202.75	314	207

Torsional analysis data



Centre of gravity: Xr (mm), Rotor length: Lr (mm), Weight: M (kg), Moment of inertia: J (kgm²): (4J = MD²)				
Type	Xr	Lr	M	J
LSA 42.3 VS1	238	603	45.18	0.2135
LSA 42.3 VS2	240	603	47.18	0.2263
LSA 42.3 VS3	245	603	51.23	0.2518
LSA 42.3 S4	267	648	61.31	0.3096
LSA 42.3 S5	267	648	61.31	0.3096
LSA 42.3 M7	281	688	67.23	0.3417
LSA 42.3 M8	286	688	70.23	0.3609
LSA 42.3 L9	299	718	77.29	0.4066

NOTE : Dimensions are for information only and may be subject to modifications. 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.

LEROY-SOMER™

www.leroy-somer.com/epg

Connect with us at:

Nidec

All for dreams

Moteurs Leroy-Somer SAS. Headquarters: Bd Marcellin Leroy, CS 10015, 16915 Angoulême Cedex 9, France. Share Capital: 38,679,664 €, RCS Angoulême 338 567 258.

4802 en - 2022.12 / w

CONTROLLER DATASHEET

TEKSAN

DSEGenset®

DSE7310/20 MKII

AUTO START & AUTO MAINS FAILURE CONTROL MODULES

KEY FEATURES

- Configurable power-up mode
- MPU fail delay
- Enhanced graphical user interface
- Drag & drop advanced PLC editor
- MSC ID within PLC GenComm override
- 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
- Internal PLC editor
- Protections disable feature
- Fully configurable via PC using USB, RS232 & RS485 communication
- Front panel configuration with PIN protection
- Power save mode
- 3 phase generator sensing and protection
- 3 phase mains (utility) sensing and protection (DSE7320 MKII only)
- Automatic load transfer control (DSE7320 MKII only)
- Generator current and power monitoring (kW, kvar, kVA, pf)
- Mains current and power monitoring (kW, kvar, kVA, pf) (DSE7320 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
- 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 and RS485 communication ports
- True dual mutual standby using RS232 or RS485 for accurate engine hours balancing.
- MODBUS RTU support with configurable MODBUS pages.
- 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
- 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

KEY BENEFITS

- Automatically transfers between mains (utility) and generator (DSE7320 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.

RELATED MATERIALS

TITLE	PART NO.
DSE7310 MKII & DSE7320 MKII Installation Instructions	053-181
DSE7310 MKII & DSE7320 MKII Operator Manual	057-253
DSE7310 MKII & DSE7320 MKII Configuration Suite PC Manual	057-243

SPECIFICATIONS

DC SUPPLY

CONTINUOUS VOLTAGE RATING
8 V to 35 V Continuous
5 V for upto 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 & F
Configurable as:
Negative switching digital input
0 V to 10 V sensor
4 mA to 20 mA sensor
Resistive sensor

ANALOGUE INPUTS B, C, D & E
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
-30°C to +70°C
-22 °F to +158 °F

HEATED DISPLAY VARIANT
-40 °C to +70 °C
-40 °F to +158 °F

DEEP SEA ELECTRONICS LTD
Highfield House, Hunmanby Industrial Estate, Hunmanby YO14 0PH
TELEPHONE +44 (0) 1723 890099
EMAIL sales@deepseaelectronics.com **WEBSITE** www.deepseaelectronics.com

DEEP SEA ELECTRONICS INC USA
3230 Williams Avenue, Rockford, IL 61101-2668 USA
TELEPHONE +1 (815) 316 8706
EMAIL usasales@deepseaelectronics.com **WEBSITE** www.deepseaelectronics.com

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

055-203/12/20 (2) US

DSEGenset®

DSE7310/20 MKII

AUTO START & AUTO MAINS FAILURE CONTROL MODULES

The DSE7310 MKII is an Auto Start Control Module and the DSE7320 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 DSE7320 MKII will also monitor the mains (utility) supply. The modules include USB, RS232 and RS485 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 DSE7310 MKII & DSE7320 MKII using RS232 or RS485 communications. This provides for a simpler and more convenient installation with more advanced features such as true engine hours balancing.

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 ºC
BS EN 60068-2-2
Bb/Be Dry Heat +70 ºC

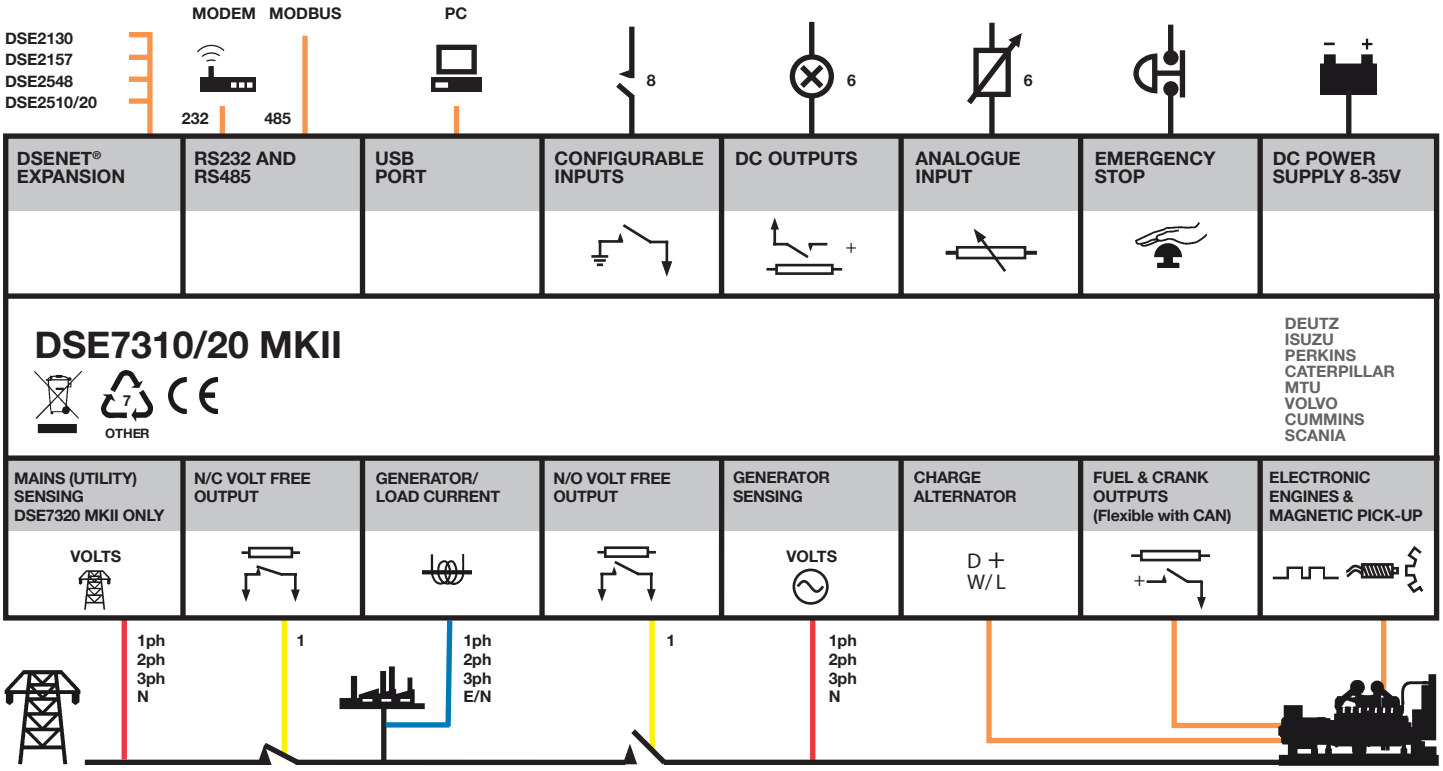
VIBRATION
BS EN 60068-2-6
Ten sweeps in each of three major axes
5 Hz to 8 Hz at +/-7.5 mm,
8 Hz to 500 Hz at 2 gn

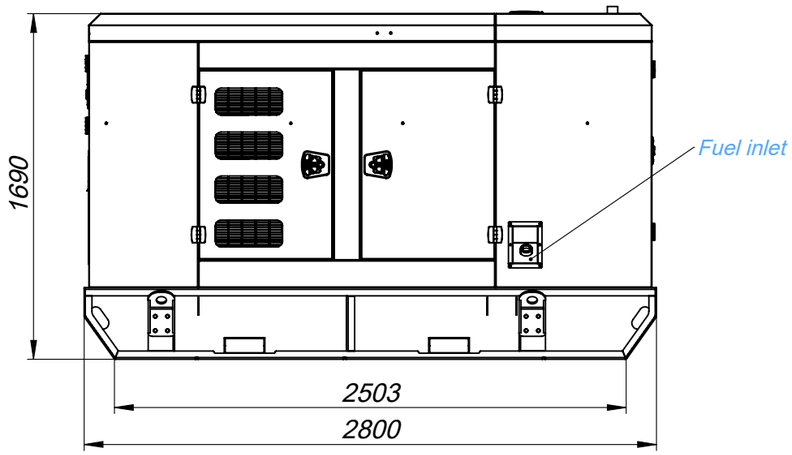
HUMIDITY
BS EN 60068-2-30
Db Damp Heat Cyclic 20/55 ºC
at 95% RH 48 Hours
BS EN 60068-2-78
Cab Damp Heat Static 40 ºC
at 93% RH 48 Hours

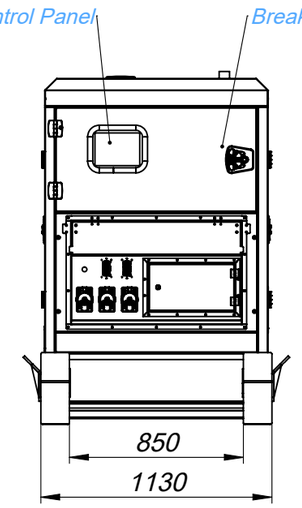
SHOCK
BS EN 60068-2-27
Three shocks in each of three major axes
15 gn in 11 mS

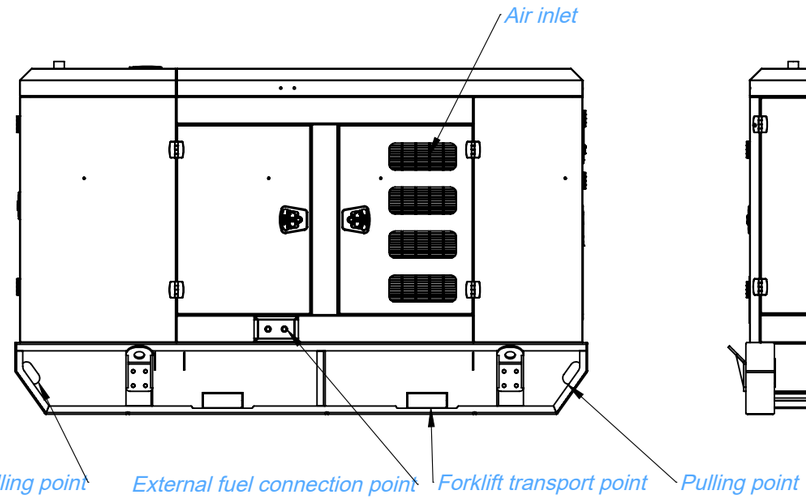
DEGREES OF PROTECTION PROVIDED BY ENCLOSURES
BS EN 60529
IP65 - Front of module when installed into the control panel with the supplied sealing gasket.

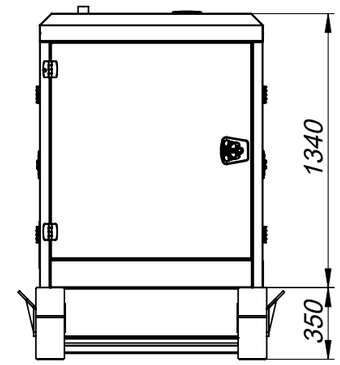
COMPREHENSIVE FEATURE LIST TO SUIT A WIDE VARIETY OF GEN-SET APPLICATIONS

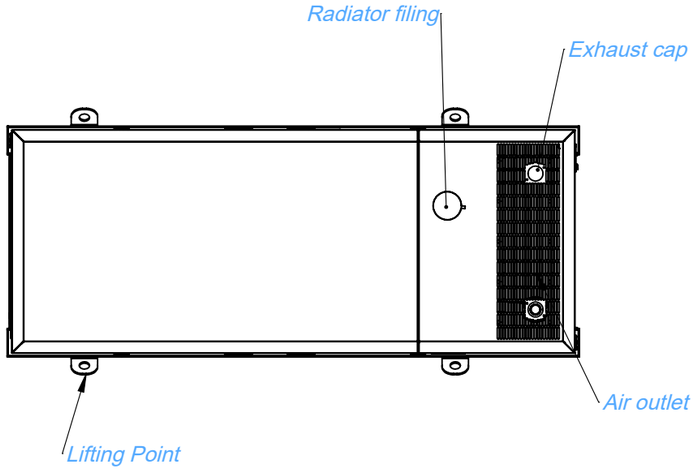


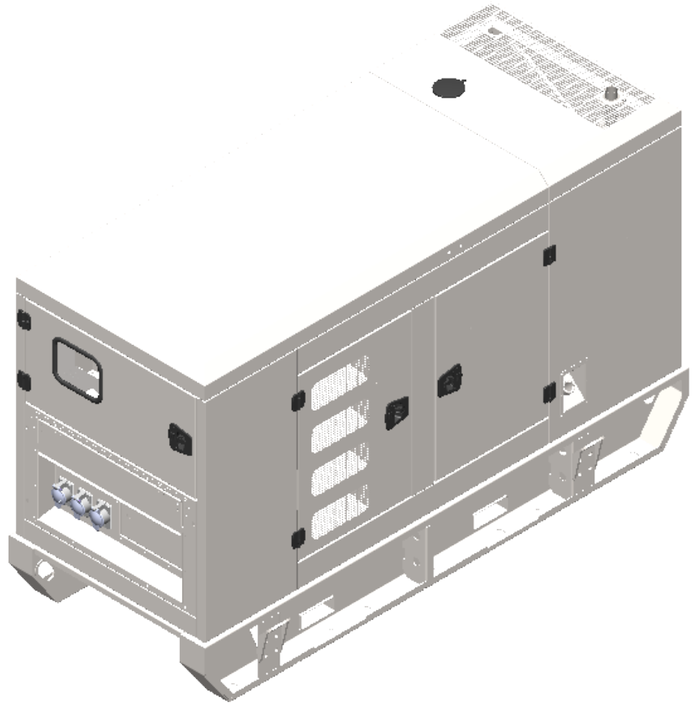


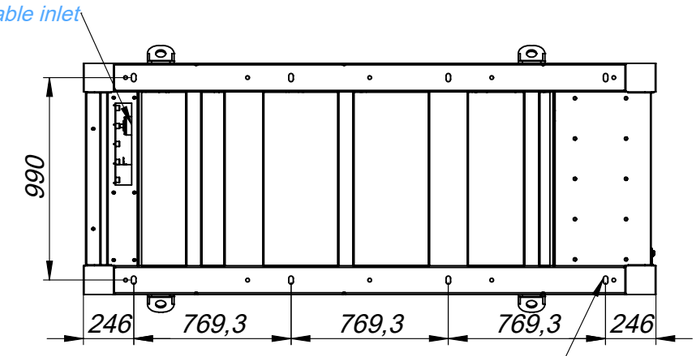












Please do not take measures on the drawings.

TEKSAN	Tolerances ISO 2768		Name	Date	Document No	SM-220275879
		Drawn	Yasin Parlak	21-02-2022		
		Checked	-	-	Part Code	-
_	1. Projection Method	Approval	-	-		
		Paper Size A3	Scale 1:30	Order No 4021390-30-40	Rev. No R00(G)	Title Jeneratör Seti-Dizel-Kabinli-

Certificate of Registration

nqa global assurance

This is to certify that the Quality Management System of

Teksan Jeneratör Elektrik Sanayi ve Ticaret A.Ş.

Yenidoğan Mahallesi, Edebali Caddesi No:12 Sancaktepe , İstanbul , Turkey

(Central function listed above. See appendix for additional locations)

applicable to

Design, manufacture,testing, installation and after sales service of generator sets and trade, customs clearance, management and administrative activities, and associated production and services,utilizing the requirements of ISO10002 customer satisfaction

has been assessed and registered by NQA against the provisions of

ISO 9001:2015

This registration is subject to the company maintaining a quality management system, to the above standard, which will be monitored by NQA

Managing Director

Certificate No:	10942
ISO Approval Date:	20 March 2001
Reissued:	5 April 2022
Valid Until::	23 May 2025
EAC Code:	19,29,31

UKAS MANAGEMENT SYSTEMS 0015

Certificate of Registration

This is to certify that the Management System of

Teksan Jeneratör Elektrik Sanayi ve Ticaret A.Ş.

Yenidoğan Mahallesi, Edebali Caddesi No:12 Sancaktepe , İstanbul , Turkey

applicable to

Design, manufacture,testing, installation and after sales service of generator sets and trade, customs clearance, management and administrative activities

has been assessed and registered by NQA against the provisions of

ISO 10002:2018 Quality management - Customer satisfaction- Guidelines for complaints handling in Organizations

This unaccredited registration is subject to the company maintaining a quality management system, to the above standard, which will be monitored by NQA

Certificate No:	10942-CS
ISO Approval Date:	23 February 2017
Reissued:	8 April 2022
Valid Until:	23 May 2025

Managing Director

Certificate of Registration

nqa global assurance

This is to certify that the Environmental Management System of

Teksan Jeneratör Elektrik Sanayi ve Ticaret A.Ş.

Yenidoğan Mahallesi, Edebali Caddesi No:12 Sancaktepe , İstanbul , Turkey

applicable to

Design, manufacture, testing, installation and after sales service of generator sets and trade, customs clearance, management and administrative activities and associated production and services

has been assessed and registered by NQA against the provisions of

ISO14001 : 2015

This registration is subject to the company maintaining an environmental management system, to the above standard, which will be monitored by NQA

Managing Director

UKAS MANAGEMENT SYSTEMS 0015

Certificate No:	E980
ISO Approval Date:	17 November 2005
Reissued:	5 April 2022
Valid Until:	23 May 2025
EAC Code:	19,29,31

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2023 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: **Hyundai Doosan Infracore Co., Ltd**
(U.S. Manufacturer or Importer)

Certificate Number: PDICL02.4LEA-003

Effective Date: 10/06/2022

Expiration Date: 12/31/2023

Byron J. Bunker, Division Director
Compliance Division

Issue Date: 10/06/2022

Revision Date: N/A

Model Year: 2023
Manufacturer Type: Original Engine Manufacturer
Engine Family: PDICL02.4LEA

Mobile/Stationary Indicator: Both
Emissions Power Category: 37<=kW<56
Fuel Type: Diesel
After Treatment Devices: Diesel Oxidation Catalyst
Non-after Treatment Devices: Electronic/Electric EGR - Cooled

Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Parts 60 and 1039, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following engines, by engine family, more fully described in the documentation required by 40 CFR Parts 60 and 1039 and produced in the stated model year.

This certificate of conformity covers only those new compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Parts 60 and 1039 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Parts 60 and 1039.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Parts 60 and 1039. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Parts 60 and 1039.

This certificate does not cover engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

The actual engine power may lie outside the limits of the Emissions Power Category shown above. See the certificate application for details.