

Developing Technology for Tomorrow's Power Needs. **Denyo**

DCA-Series

SINGLE PHASE / THREE PHASE

**DIESEL GENERATING SETS
SOUNDPROOF TYPE**



SPECIFICATION TABLE

MODEL	SINGLE PHASE TYPE						THREE PHASE TYPE					
	DCA-10ESX-DA	DCA-18ESX-DA	DCA-25SPX-DA	DCA-13ESK-DA	DCA-15ESK-DA	DCA-25ESK-DA	DCA-35SPK-DA					

■ ALTERNATOR

Frequency (Hz)	50	60	50	60	50	60	50	60	50	60	50	60
Output Rating (KVA)	Continuous	8	10	14	18	20	25	10.5	13	12.5	15	20
(KVA)	Standby	8.8	10.8	15	19	22	27.5	11.5	14	13.5	16.5	22
No. of Phases	Single-Phase, 2 - Wire						3 - Phase, 4 - Wire					
Rated Voltage (V)	50Hz: 200/220 60Hz: 200/240						50 Hz: 190~220 or 380~440 60Hz:190~240 or 380~480					
Power Factor	1.0						0.8					
Voltage Regulation (%)	Within ± 1.0						Within ± 1.5					
Excitation	Brushless, Rotating Exciter (whit A.V.R.)											
Insulation	Class H			Class F			Class H			Class F		

■ ENGINE

Make & Model	Kubota D 1403-EB	Kubota V2203-EB	Kubota V3300-EBG	Kubota D1403-EB	Kubota D1703-EB	Kubota V2203-EB	Kubota V3300-EBG
Type	Inlined, Swirl Chamber Type						
Output Rating PS/rpm	13.9/1500	16.9/1800	25.0/1500	32.2/1800	35.3/1500	43.0/1800	13.9/1500
KW/min ⁻¹	10.2/1500	12.4/1800	18.4/1500	23.7/1800	26.2/1500	32.1/1800	10.2/1500
No. of Cylinders-Bore X Stroke mm	3 - 80 X 92.4	4 - 87 X 92.4	4 - 98 X 110	3 - 80 X 92.4	3 - 87 X 92.4	4 - 87 X 92.4	4 - 98 X 110
Piston Displacement (L)	1.393	2.197	3.318	1.393	1.647	2.197	3.318
Fuel	ASTM No. 2 Diesel Fuel or Equivalent						
Fuel Consumption (L/h)	2.3	2.9	3.6	4.6	5.1	6.3	2.4
Lube Oil Sump Capacity (L)	5.6	7.6	13.2		5.6		7.6
Coolant Capacity (L)	6.4	7.9	9.0		6.4		7.9
Battery Capacity (V-Ah)	12 - 60 X 1pc			12 - 95 X 1pc			12 - 95 X 1pc
Fuel Tank Capacity (L)	62			82			82

■ UNIT

Dimensions(mm)	Length	1390	1540	1900	1390	1390	1540	1900
	Width	650	650	860	650	650	650	860
	Height	900	900	990	900	900	900	990
Dry Weight	kg	503	591	890	503	516	591	890

■ SOUND LEVEL

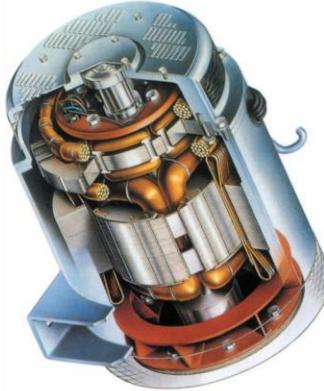
7m/dB (A) 1500/1800rpm (min ⁻¹)	60.0	62.2	61.7	65.7	60.5	63.4	59.1	61.7	60.2	63.0	61.7	65.7	60.5	63.4
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- Continuous output rating applies to operation under standard conditions as per JIS B8014.
- Standby output rating applies to intermittent or emergency operation for approximately 1 hour as per JIS B8014.
- Fuel consumption is based on operation at 75% load
- Sound level reflects high-speed no-load and is calculated by averaging the measurements at four points, each 7 meters from the source.
- Colors of products would be different from printed ones of catalogues.
- Specifications given herein are subject to change without notice

GENERAL CONSTRUCTION

The DCA Series generators are complete, stand alone, generating sets. All models consist of a Denyo alternator which is directly coupled to a diesel engine. The alternator and engine are set on a common skid base. Special vibration isolators are used to minimize vibrations during operation.

The generator and electrical components are fully enclosed in a solid-steel, weatherproof, canopy. Noise suppression is achieved using highly effective sound insulating materials.



DENOY'S ADVANCED BRUSH-LESS GENERATOR

DESIGN:

The patented brush-less generator is a rotating-field, self-ventilated, single-bearing, 4-pole synchronous alternator, complete with damper (amortisseur) windings for minimal voltage deviations and to minimize the generator's effect on magnetic/radio waves. This unique design ensures minimum wave-form distortion, minimum reactance and maximum efficiency, which produces high-quality electricity.

EXCITER: Brush-less rotating exciter, 3-phase full wave rectified with silicon diodes, designed for maximum motor starting.

ROTOR: With fitted parts and windings; dynamically balanced and permanently aligned to the engine by flexible disc coupling.

COOLING: Direct-drive centrifugal ventilating fan, for ample air flow and noise suppression

PERFORMANCE FEATURES

HIGH-PERFORMANCE

The Denyo generating system guarantees the following levels of performance:

- **TEMPERATURE RISE:** 100°C temperature rise at 40°C ambient (IEC 114).
- **INSULATION:** Class H (IEC 114)
- **VOLTAGE REGULATION:** Within $\pm 1.5\%$.
- **FREQUENCY REGULATION:** Within 5.0% through no-load to full-load.

VOLTAGE WAVEFORM:

Deviation Factor of open-circuit terminal voltage does not exceed 0.06 Telephone Influence Factor (TIF) is less than 50.

ELECTROMAGNETIC INTERFERENCE LEVEL:

(Attenuated to meet most commercial requirements.)

INSULATION RESISTANCE:

Higher than 3 Mega-ohms, measured between armature windings and earth, field control circuit and earth.

DIELECTRIC STRENGTH:

All winding insulation can withstand voltage of 50 or 60Hz, and minimum 150V for one minute.

The innovative excitation system* fitted on all models, in conjunction with the AVR and advanced brush-less generator, provides fast voltage regulation in response to load variations, enabling use soon after startup. This system provides output stability during load variations.

* U.S. Patent No. 4,287,988

- Synchronous brush-less alternator for minimal wear.

- Designed to function in all climatic conditions.

Will safely power the most sensitive load, such as thyristors, inverters and computer systems, without the risk of damage to these loads, thanks to the high level/electrical characteristic of the generator's output.

UNSURPASSED FLEXIBILITY

ECONOMICAL PERFORMANCE

DESIGN:

The patented brush-less generator is a rotating-field, self-ventilated, single-bearing, 4-pole synchronous alternator, complete with damper (amortisseur) windings for minimal voltage deviations and to minimize the generator's effect on magnetic/radio waves. This unique design ensures minimum wave-form distortion, minimum reactance and maximum efficiency, which produces high-quality electricity.

With the DCA Series, the standby power rating can be used continuously for 1 hour in every 8 hours of continuous operation. This extra power performance of Denyo generators means you can get the job done, without the inconvenience of using another generator.

50Hz/60Hz OPERATION

- The DCA Series can be operated at either 50Hz or 60Hz by simply adjusting the engine speed using the throttle control knob on the control panel.

TRANSPORTABILITY

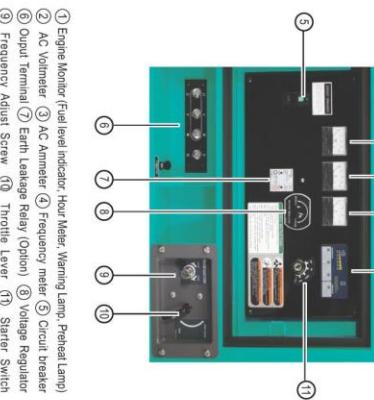
MAINTENANCE MADE SIMPLER

MONITORING GENERATOR PERFORMANCE

AUTO FUEL AIR EXTRACTOR

DENOY GENERATORS: DESIGNED TO BE TOTALLY USER-FRIENDLY

DCA-13ESK-DA



AUTO-PROTECTION

To protect the generator from malfunctions, a warning lamp and an in-built emergency system to detect low oil pressure, high water temperature and charging failure, are standard. If these abnormalities are detected, the warning lamp will light up and the engine will come to an emergency stop. There is also an emergency shut-down in the event of AC overload, with the use of circuit breaker.

For a particular job, you may need that extra power from your generator. With the DCA Series, the standby power rating can be used continuously for 1 hour in every 8 hours of continuous operation. This extra power performance of Denyo generators means you can get the job done, without the inconvenience of using another generator.

50Hz/60Hz OPERATION

- The sturdy weatherproof steel canopy on a heavy-duty steel skid base allows easy handling by a forklift.
- The balance point lifting hook (lug) fitted on the roof of each machine facilitates easy transportation using a crane.
- All models are modular designed, so that generators can be stacked, thereby making the best use of your valuable storage area.

DENYO AC GENERATOR MODEL FA

VOLTASE GANDA / MULTIPLE VOLTAGES

Untuk model FA-3 sampai dengan FA-5 hanya dengan mengubah terminal penghubung dapat memilih single phase 110/220 V.

In the case of models FA-3 through FA-5, two combinations of single-phase voltages are obtainable merely by changing the terminal connections – 110/220.

TERPERCAYA / RELIABILITY

Produk lebih tahan lama karena dihasilkan dari design yang modern dan menggunakan komponen yang berkualitas. Outstandingly long life resulting from advanced design and superior components.

MUDAH DIGUNAKAN / EASY OPERATION

Struktur sederhana sehingga mudah untuk digunakan. Sumber tenaga listrik mudah diperoleh dengan menghidupkan generator menggunakan alat pemutar jenis apapun.

Rational structure provides for simplified operation. Power can be easily obtained by driving the generator with any type of revolving device.

MINIM PERAWATAN / MINIMUM MAINTENANCE

Konstruksi bebas gangguan, kokoh dan dilengkapi dengan lapisan pelincir sehingga membuat produk ini minim perawatan, cukup dengan mengganti sikat arang sesuai kebutuhan.

Trouble-free rugged construction with sealed-in lubrication requires only a minimum of maintenance—merely replace carbon brushes periodically.

KEGUNAAN LAIN / OTHER PURPOSE

Selain cocok digunakan untuk alat listrik rumah tangga, juga dapat digunakan untuk pemanas ruangan, penerangan dan tenaga penggerak.

Suitable not only for operating home electric appliances but also for heating, lighting and motive power.

SERBAGUNA / MULTIPURPOSE

DI PEGUNUNGAN / IN THE MOUNTAINS

Sumber tenaga listrik untuk tempat tinggal, pedesaan, lokasi penggerajian, alat-alat kehutanan, mesin perkebunan, alat komunikasi serta alat pengamatan cuaca.

Power source for lodges, chain saws forestry equipment, farm machines, communications, weather observation.

DI PERAIRAN / SEA SERVICE

Sumber tenaga listrik untuk rumah yang berada di kepulauan, mercu suar, kapal laut, perahu nelayan serta instalasi dipelabuhan.

Power source for island homes, lighthouses, ships, fishing boats, port installation.

DI PERKOTAAN / IN THE CITY

Sumber tenaga listrik darurat untuk rumah sakit, gedung, hotel, pusat perbelanjaan, bioskop serta bangunan umum lainnya.

Emergency power source for hospitals, buildings, hotels, department stores, theaters, and other public buildings.

KONSTRUKSI / CONSTRUCTION

Sumber tenaga listrik untuk lokasi pembuatan film dan televisi serta olahraga yang dilakukan pada malam hari.

Power source for movie and TV location, sport night

MODEL / DESIGN

Telah dipatenkan model generator tanpa carbon brush dengan kumparan putar, berventilasi, satu poros (as), 4 kutup alternator lengkap dengan gulungan untuk meminimalkan penyimpangan voltase dan memperkecil pengaruh generator pada gelombang magnetik/radio. Model ini mampu meminimalkan gelombang distorsi namun sangat efisien dalam menghasilkan arus listrik yang lebih stabil.

The patented brush-less generator is rotating-field, self-ventilated, single-bearing, 4-pole synchronous alternator, complete with damper (amortisseur) winding for minimal voltage deviations and to minimize the generator's effect on magnetic/radio waves. This unique design ensures minimum reactance and maximum efficiency, which produces high-quality electricity.

PEMBANGKIT / EXCITER

Pembangkit putaran brush-less, 3 phase gelombang penuh dengan diode silicon, didesign untuk mempermudah menghidupkan motornya.

Brush-less rotating exciter, 3-phase full wave rectified with silicon diodes, designed for maximum motor starting.

KENAIKAN TEMPERATUR / TEMPERATURE RISE

Temperatur naik 100C pada suhu ruang 40C.
1000C temperature rise at 400 ambient (IEC 114).

VOLTAGE REGULATION / REGULASI VOLTASE

Sekitar $\pm 1,5\%$
Within $\pm 1.5\%$

DAYA TAHAN ISOLASI / INSULATION RESISTANCE

Besar dari 3 Mega-ohm, diukur antara gulungan dynamo dengan tanah.
Higher than 3 Mega-ohms, measured Between Armature windings and earth, Field control circuit and earth.

KEKUATAN BAHAN LISTRIK / DIELECTRIC STRENGTH

Semua isolasi dapat menahan voltase 50 atau 60 Hz dan minimum 1500V untuk 1 menit.
All winding insulation can withstand Voltage of 50 or 60 Hz, and minimum 1500V for one minute

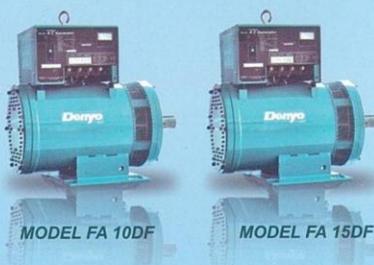
Sistem pembangkit listrik yang inovatif (untuk semua model) dalam hubungannya dengan AVR dan generator brush-less, dengan cepat menghasilkan sistem arus voltase untuk mengantisipasi variasi arus listrik saat mesin dihidupkan. Sistem ini menghasilkan arus listrik yang stabil selama terjadinya variasi.

*The innovative excitation system *Fitted all models, in conjunction with the AVR and advance brush-less generator, provides fast voltage regulation in response to load enabling use soon after startup. This system provides output stability during load variations.*



DENYO AC GENERATOR MODEL FA

GENERATORS FA 3/5, FA 10DF/15DF



SPECIFICATION

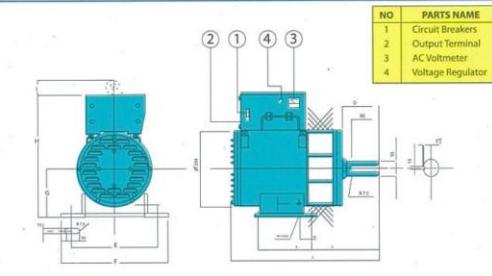
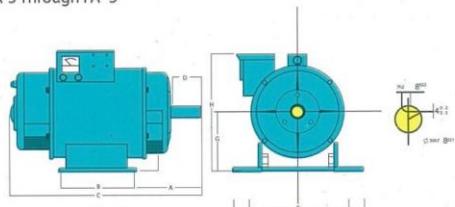
Single - Phase, Two - Wire

Generator Model	FA - 3	FA - 5	FA - 10DF	FA - 15DF
Type	Rotating-field, protection type synchronous generator			
Excitation	--		Brushless type (with AVR)	
Continuous Duty Rating	3 KVA	5KVA	10.0 KVA	15 KVA
Voltage	220 V		380 V	
Current	13.5/27 A	22.7 A/45.5 A	15.2 A	22.8 A
Frequency			50 Hz	
No. of Poles			4	
Winding Connection			Star	
Speed			1500	
Power Factor	1		0.8	
Phase	1 (2 wires)		3 (4 wires)	
Cooling System			Self-ventilation	



Denyo Model FA (Kopel)

General Dimension (unit : mm)
FA-3 Through FA- 5



UNIT

Dimension (mm)	Type	FA-3	FA-5	FA-10DF	FA-15DF
	A	157	170	225	225
B	190	225	250	250	250
C	490	530	620	620	620
D	70	70	110	110	110
E	260	290	340	340	340
F	338	365	420	420	420
G	153	161	200	200	200
H	278	300	570	570	570
I	-	-	70	70	70
Dry Weight	Kg	60	86	160	160

Terminal Connections
FA-3 Through FA- 5



DENYO AC GENERATOR MODEL D

LENGKAP, KOKOH, STABIL DAN TERUJI

Dengan kegunaan ganda untuk pengelasan dan juga sebagai pembangkit listrik.
Memiliki kemampuan dua mesin yang digabungkan menjadi satu.
Sebagai alat las/pembangkit listrik, mesin ini dapat digunakan untuk mengelas pipa, alat berat serta sebagai sumber tenaga bagi alat listrik dan penerangan.

COMPACT, ROBUST, PROVEN ARC STABILITY!

Double your utilization... with a welder that's also generator!
The performance of two machines in one!
Welder / generator can be used to weld pipes or heavy steelwork, and also as a power supply for electric power tools, and illumination.

DENYO AC GENERATOR MODEL D



D 250/3



D 300/10



Denyo DC Welder (Kopel)

PENJELASAN / FEATURES

MUDAH DIBAWA DAN DISESUAIKAN PENGGUNAANNYA /TRANSPORTABILITY AND ADAPTABILITY

Dapat diangkut dengan mobil jip atau truk dan digerakkan dengan tenaga putaran (kopel) untuk penggunaan dilapangan. Juga tersedia suku cadang dan informasi yang dibutuhkan untuk modifikasi.

Can be carried by jeeps or trucks and driven by power torque output for use in the field. The parts and information necessary for modification are available.

KEUNGGULAN KARAKTERISTIK /SUPERIOR ARC CHARACTERISTICS

Lengkungannya membuat proses pengelasan lebih mudah. Para ahli kami yang berpengalaman dan didukung oleh teknologi maju berhasil menciptakan suatu lengkungan yang bagus sehingga operator pemula dapat mengoperasikannya dengan hasil yang memuaskan.

The arc is what makes or breaks a welder! Our abundant expertise and advanced technology have created a superb arc that allows even inexperienced operators to obtain favorable result.

TAHAN LAMA / LONG SERVICE LIFE

Design yang canggih dan penggunaan komponen berkualitas membuat produk lebih tahan lama.

Outstandingly long life resulting from advanced design and durable

KARAKTERISTIK SUMBER TENAGA AC YANG STABIL /STABLE AC POWER SUPPLY CHARACTERISTICS

Dengan menggunakan alat pengubah arus, variasi voltase dengan beban satu-phase hampir semuanya dapat dialihkan sehingga mesin ini mampu digunakan untuk beban yang lebih besar.

Through the use of a reactor current transformer, voltages variations with single-phase loads have been almost entirely eliminated. So much wider range of loads can be used.

KEAMANAN DESIGN / SAFETY DESIGN

Sumber arus untuk pengelasan dan untuk listrik AC mempunyai sirkuit terpisah; untuk pengelasan menggunakan daya DC, sehingga kecelakaan akibat sengatan listrik hampir tidak mungkin terjadi.

Welding power supply and AC power supply have independent circuits, and furthermore the welder is D.C. So there is virtually no worry of accident due to electrical shock.

PERAWATAN / IMPROVED MAINTENANCE

Menggunakan tipe medan putar sehingga menghasilkan peningkatan dalam hal perawatan mesin dibanding tipe sebelumnya.

Use of rotating field type result vastly improved maintenance characteristics compared to previous type (e.g. jw type).

GENERATORS D 250/3, D 300/10

SPECIFICATION TABLES

MODEL TYPE	MODEL TYPE	D 300 - 10 BRUSH TYPE
ARUS LAS	RATED CURRENT	DC 220 A
VOLTASE	RATED VOLT	28,8 V
LAMA PEMBEBANAN	DUTY CYCLE	50 %
TENAGA RATA-RATA	RATED OUTPUT	6,3 KW
ARUS	CURRENT RANGE	50A - 250A
PUTARAN YANG DIIZINKAN	RATED ROTATION SPEED	3000 RPM
TENAGA LISTRIK	OUTPUT RATING	10 KVA
VOLTASE	VOLTAGE	380 V / 220 V
AMPER	AMPERE	-15,2 A
JENIS PASE	PHASE	3 PHASE, 4 WIRE
FREKUensi	FREQUENCY	50 Hz
FAKTOR TENAGA	POWER FACTOR	0,8
BERAT	WEIGHT	175 KG
MODEL - 250/3		
ROTATING - FIELD TYPE, BRUSH - LESS		
ARUS LAS	RATED CURRENT	DC 220 A
VOLTASE	RATED VOLT	28,8 V
LAMA PEMBEBANAN	DUTY CYCLE	50 %
TENAGA RATA-RATA	RATED OUTPUT	6,3 KW
ARUS	CURRENT RANGE	50A - 250A
PUTARAN YANG DIIZINKAN	RATED ROTATION SPEED	3000 RPM
KAWAT LISTRIK	WELDING ROD	Ø 2,6 - Ø 5,0 mm
TENAGA LISTRIK	OUTPUT RATING	AC 3 KW
VOLTASE	VOLTAGE	220 V
AMPER	AMPERE	13,6 A
JENIS PASE	PHASE	1 PHASE, 2 WIRE
FREKUensi	FREQUENCY	50 Hz
FAKTOR TENAGA	POWER FACTOR	1
DIMENSI	DIMENSION	582 x 394 x 587 mm
BERAT	WEIGHT	135 KG

