



Totally Focused. Totally Independent.

Technical Specification

EC047LV 4 B



The world's largest
independent producer of
alternators 1 – 5,000kVA

All electrical and mechanical data contained in this document is provided for reference only and represents typical values under optimal operating conditions. Actual performances may be subjected to cumulative tolerances or variances due to materials, construction or other specific operating and loading conditions, in accordance with IEC 60034.

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Regulations and Certifications

The alternators are designed, built and tested in accordance with **ISO 9001**, within a certified quality management system. The entire range meets the most common international specifications, including:

- ▶ CEI 2-3, IEC 34-1, EN 60034-1, VDE 0530
- ▶ BS 4999-5000, NF 51.111, NEMA MG 1-2011
- ▶ ISO 8528-3

In addition, they comply with specific regulations for particular markets, such as:

- ▶ UL 1446, UL 1004-4, UL 1004-B
- ▶ CAN/CSA-C22.2 No14-95 / No100-95

The ECP and ECO series comply with EEC directives **2006/42/EC (Machinery Directive)**, **2014/35/EC (Low Voltage Directive)**, **2014/30/EC (Electromagnetic Compatibility Directive)**, **2011/65/EC (RoHS 2)** and **2015/863 (RoHS 3)**.

Windings and performance

All alternators are equipped with **reduced pitch windings (2/3)**. This configuration allows:

- ▶ The elimination of triple harmonics in the voltage waveform
- ▶ Reduction of neutral currents in parallel operation

All models, except the **ECP3 series**, are equipped with an aluminum or copper **cushioning cage** to ensure greater stability during load transients.

- ▶ 12 reconnectable wires:
 - 50 Hz - from 380 V to 440 V and from 220/110 V to 240/120 V (with possible derating)
 - 60 Hz - from 380 V to 480 V and from 220/110 V to 240/120 V (with possible derating)
- ▶ 6 reconnectable wires:
 - 50 Hz - from 380 V to 440 V and from 220 V to 240 V (with possible derating)
 - 60 Hz - from 380 V to 480 V and from 220 V to 240 V (with possible derating)

Winding configurations	Standard		Special (dedicated)			
	12 reconnectable wires	6 reconnectable wires	380 V and 600 V 60 Hz	690V 50/60Hz	220-240V 1ph 50Hz	220-240V 1ph 60Hz
ECP3 to ECO38 & (NPE)	●	○	○	○	○	○
ECO40 to ECO46	○	●	○	○	○ *	○ *
ECO47	● 4 wires		○	○	-	-
THD (Total Harmonic Distortion)	Typically <3.5% at full load L-L	Typically <3.0% at full load L-L	Typically <3.5% at full load L-L	Typically <3.5% at full load L-L	Typically <4.5% at full load L-N	Typically <4.5% at full load L-N
Interference suppression	VDE 0875 G/N/K, EN61000-6-3, EN61000-6-2, others available on request					

* Only up to ECO40 series ● Standard ○ Optional

Insulating Materials and Electrical Performance

- ▶ **Insulation Class:** H on the entire range
- ▶ **Efficiency:** High efficiency as standard
- ▶ **Motor Start:** Inrush current >300% for 20 seconds
- ▶ **THD (Total Harmonic Distortion):**
 - <3.5% L-L typical (three-phase windings)
 - <4.5% L-N typical (single-phase windings)

Winding protection

Winding protection is crucial to ensure the longevity of the generator based on environmental conditions and electrical stress.

Protection Level	Standard	Standard+	Grey	Grey+	Total+	V-Type
Treated Components	Active parts	Exciter stator	Main stator + exciter	Stator + Exciter	Stator + Exciter + Rotor	Complete system
Type of Treatment	Impregnation resin only	Resin + Grey paint EG43	Grey paint EG43	Stator (EG43) + Exciter (Black severe ep.)	Black protection (stators) + EG43 (rotating parts)	Double VPI, Anti-Corona Wire, Double Layer Black
Series/Typical Application	ECP3, ECP4 (Standard Use)	ECP28, 30, 32	Marine Applications / NPE, ECO, HCP	Harsh industrial environments	Extreme/abusive conditions	Harsh Environments (Extended Warranty)

Detail of specific treatments

- ▶ **Grey paint EG43:** Standard protection against moisture and contaminants.
- ▶ **Black Protection:** Advanced physical barrier against chemicals and high humidity.
- ▶ **V-Type Treatment:** Includes vacuum impregnation (VPI), internal stator insulation, and corona-resistant materials for maximum reliability.

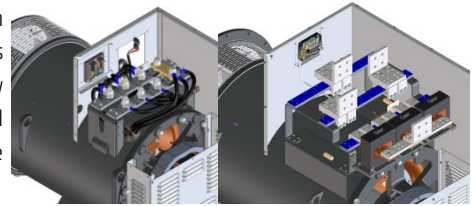
For more information visit: [Insulation_System_Guide](#)

Construction

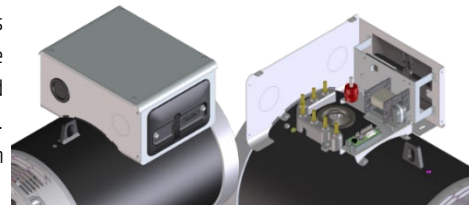
The robust mechanical structure withstands up to 5G in any direction and 9G vertically, and its design allows easy access to connections and components during routine maintenance checks. The mechanical design used the most advanced FEM techniques. The materials used are: DD12 steel for the frame, C45 steel for the shaft and cast iron or die-cast aluminum for the end brackets: the fans are made of die-cast aluminum and nylon reinforced with fiberglass, UL compliant materials. The rotors are dynamically balanced according to ISO 1940-1 grades 6.3 (up to series 32) or 2.5 (series 34 onwards).

Terminals and terminal blocks

Easy access to the regulators is ensured by a pull-out drawer or drop-down panel to allow for safer adjustment. Large terminal blocks allow easy access of power cables, in the higher power ranges ECO43 and ECO46 terminals allow convenient choice of power cable or busbar connection with input and connection versatility. Current transformers are available as an option on the ECO 40, 43, 46 and 47 series with single or dual output.

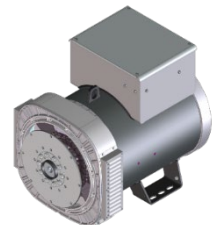


A new AVR panel has been installed on the Type-C family. The terminal blocks have been redesigned in a special "L" configuration, specifically to facilitate connections with customers; With this type of terminal block, a second terminal block can be positioned in order to obtain 12 terminals available. Current transformers are available as an option on the ECO38 series with single or dual output.



Protection for the environment

In addition to the protection on the windings themselves, alternators can have a higher degree of protection. The standard level is IP23 but the following solutions are also available: IP23 DP with ingress filters, IP23 with terminal box only in IP45, IP43 and IP45. Downgrades may apply. For more information visit: [Bulletin_IP](#)

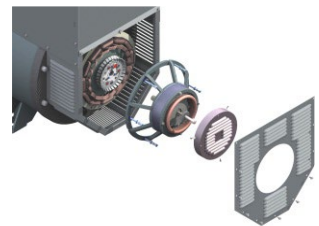


Optional PMG

The MeccAlte PMG is optionally available factory-fitted on ECP28, ECP30, ECP32, ECP34 and ECO38; Alternatively, only the preparation for future mounting is optional.



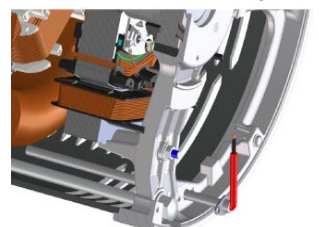
On the ECO 40, 43 and 46 series it is optionally available factory-fitted or retrofitted. On the ECO47 the PMG is standard.



The entire AVR range is fully compatible with MAUX and PMG systems, minimizing spare parts management and inventory flexibility, as one AVR adapts to all applications. The PMG delivers the same amount of kVA as the MAUX.

Anti-condensation heater

Our entire range can be equipped with anti-condensation heaters of adequate power and sized to the alternator. The voltage for heaters must be specified when ordering. New cylindrical cartridge heaters are available on request and can be retrofitted.



Accessories

Additional optional can be mounted on our alternator series, such as PTC or PT100 thermistors on both windings and bearings, anti-condensation heaters, high and low profile terminal blocks (on most series), parallel devices, current and voltage transformers, air filters, IP43 and IP45 protections and many more. For more information visit: [C-type-accessories](#)

Excitation and regulation systems

All ECP/ECO series are equipped with MAUX auxiliary winding to power the digital controller.

DxR

Both the DSR and DER1 are available for PC connection via the DxR2 USB interface and DxR TERMINAL software to query/download alarms and settings for analysis or for cloning other controllers. DER2 has a built-in USB connection and can be connected to your PC without any optional connection card. Through the DxR connection, other settings such as LAMS, synchronous external control based on digital RAM, and soft start can be achieved. Simple analog potentiometers are available for the most common adjustments.

MxK

The digital controllers of the MxK series (M2K, M2Ks, M3K, M3Ks, M3KSHD) are configurable via the MeccAlte App for PC or mobile devices, using the USB2MxK (USB) or MxKconnect (Wi-Fi) accessories. The M3KSHD model integrates a USB port for direct connection to the PC, without the need for optional cards. The M2Ks, M3Ks and M3KSHD models also support CAN Bus communication (SAE J-1939) for integration with MeccAlte GC controllers. Software-accessible features include LAMS, external voltage control ($\pm 10V$), soft start, and PID autotuning. The controller records up to 64 alarms in E2PROM memory and provides the current status via A ALARMS address. There are analog potentiometers for VOLT, STAB, AMP, and DROOP (the latter on M3K, M3Ks, and M3KSHD models only). The M3KSHD includes High Dynamic Response (HDR) for a quick rush of excitement. All MxK regulators are equipped with protections against over/under excitation, overcurrent, V/f, short circuit and power overvoltage.

Regulator	M2K	M2Ks	M3K	M3Ks	M3KsHD	DSR	DER1	DER2
ECP3 to ECO38 & (NPE)	●	○	○	○	○	○	○	○
ECO40 to ECO46	○	○	●	○	○	○	○	○
ECO47	○	○	○	○	●	○	○	○
Parallel operation	-	-	√	√	√	√	√	√
Network Parallel	-	-	√	√	√	√	√	√
Reference 3 phase (rms)	-	-	√	√	√	-	√	√
Accuracy	+/-0.5%	+/-0.5%	+/-0.5%	+/-0.5%	+/-0.5%	+/-1%	+/-0.5%	+/-0.5%
Remote voltage control	√	√	√	√	√	√	√	√
Alarm log	√	√	√	√	√	√	√	√
Analog and digital configurable	√	√	√	√	√	√	√	√
LAMS (Load Acceptance V/f)	√	√	√	√	√	√	√	√
APO (Active Protection Output)	-	-	-	-	√	√	√	√
Soft start	√	√	√	√	√	√	√	√
High Dynamic Response	-	-	-	-	√	-	-	√
USB connection without external cards	-	-	-	-	√	-	-	√

● Standard ○ Optional √ Available

Derating coefficients

Altitude (meters)	Ambient temperature (Celsius)							
	25	40	45	50	55	60	65	70
≤ 1000	1.07	1	0.96	0.93	0.91	0.89	0.85	0.82
$> 1000 \leq 1500$	1.01	0.96	0.92	0.89	0.87	0.84	0.81	0.77
$> 1500 \leq 2000$	0.96	0.91	0.87	0.84	0.83	0.79	0.77	0.73
$> 2000 \leq 3000$	0.90	0.85	0.81	0.78	0.76	0.73	0.71	0.68
$> 3000 \leq 4000$	0.84	0.78	0.75	0.73	0.70	0.68	0.66	0.62
$> 4000 \leq 5000$	0.78	0.72	0.69	0.67	0.65	0.62	0.59	0.56
$> 5000 \leq 6000$	0.70	0.65	0.63	0.61	0.58	0.55	0.53	0.50

Notes on short-circuit curves

The coefficients indicated must be used to correct the values of the three-phase short-circuit curves as a function of the nominal voltage.

The indicated coefficient must be used to correct the values of the three-phase short-circuit curves as a function of the type of short-circuit voltage.

50 Hz		60 Hz			3 Steps	2 L-L phases	1 L-N phase
Voltage	Factor	Voltage	Factor				
380	0.93x	415	0.85x	Instant	1x	0.87x	1.30x
400	1x	440	0.90x	Minimum	1x	1.80x	3.20x
415	1.04x	460	0.95x	Supported	1x	1.50x	2.50x
440	1.10x	480	1x	Maximum duration	20 s	10 s	4 s

All curves are shown for star connection in series or parallel at 400V 50 Hz or 480V 60 Hz. If the unit is reconnected from series to star parallel, the additional coefficient is 2x. From the star series to the delta series, it is 1.72x. From star in series to parallel triangle, it is 3.44x.

A smaller generator can be selected for a given engine starting service, as it has lower subtransient reactance values for nonlinear loads. The entire range from 6.5 to 3400 kVA is capable of delivering a sustained short-circuit current of >300% for up to 20 seconds.

MeccAlte Tools

This section provides direct access to professional tools developed to support alternator selection, sizing and configuration. These tools ensure solutions that are aligned with the electrical and mechanical requirements of each project.

Key features

With a data-driven approach, you can optimize performance and reduce scaling risks:

- ▶ **Targeted Selection:** Identify the ideal alternator based on load profiles and operating conditions.
- ▶ **Power Calculations:** performs the sizing of the engine and alternator respecting the electrical constraints.
- ▶ **Parameter Verification:** Controls engine starting capability and handling of unbalanced and distorted loads.
- ▶ **PMG Configuration:** Configure permanent magnet alternators for AC/DC outputs or battery chargers.

For more information visit: [MeccAlte Tools](#)

General characteristics

Pole number	4	Insulation class	H
Phase number	3	Protection class	IP23
Number of wires	4	NDE Bearing type	6226
Execution	Brushless	DE Bearing type	6232
Regulator type	M3Ks-HD	Maximum Overspeed	2250
Winding pitch	2/3	Altitude	0-1000
Code voltage reference	T0405P3	Balancing	ISO1940-1

Ratings 50Hz

kVA / kW @ Temp. Rise / Ambient °C - 0.8 PF

	STANDBY-163/27				STANDBY-150/40				H-125/40				F-105/40				B-80/40				
Series	380V	400V	415V	440V	380V	400V	415V	440V	380V	400V	415V	440V	380V	400V	415V	440V	380V	400V	415V	440V	
Parallel Star YY	190V	200V	208V	220V	190V	200V	208V	220V	190V	200V	208V	220V	190V	200V	208V	220V	190V	200V	208V	220V	
Series Delta Δ	220V	230V	240V	254V	220V	230V	240V	254V	220V	230V	240V	254V	220V	230V	240V	254V	220V	230V	240V	254V	
Parallel Delta ΔΔ	110V	115V	120V	127V	110V	115V	120V	127V	110V	115V	120V	127V	110V	115V	120V	127V	110V	115V	120V	127V	
ECO47LV 1S4 B	kVA	3128	3300	3128	2994	2998	3162	2998	2868	2898	3056	2898	2773	2606	2750	2606	2494	2318	2444	2318	2218
	kW	2502	2640	2502	2395	2398	2530	2398	2294	2318	2445	2318	2218	2085	2200	2085	1995	1854	1955	1854	1774
ECO47LV 2S4 B	kVA	3334	3510	3334	3190	3194	3362	3194	3056	3088	3250	3088	2955	2778	2924	2778	2658	2470	2600	2470	2362
	kW	2668	2808	2668	2552	2555	2690	2555	2445	2470	2600	2470	2364	2222	2339	2222	2126	1976	2080	1976	1890
ECO47LV 2M4 B	kVA	3590	3780	3590	3436	3440	3622	3440	3292	3325	3500	3325	3182	3000	3150	3000	2862	2660	2800	2660	2544
	kW	2872	3024	2872	2749	2752	2898	2752	2634	2660	2800	2660	2546	2400	2520	2400	2290	2128	2240	2128	2035
ECO47LV 1L4 B	kVA	4236	4460	4236	4054	4060	4274	4060	3884	3924	4130	3924	3755	3530	3716	3530	3378	3138	3304	3138	3002
	kW	3389	3568	3389	3243	3248	3419	3248	3107	3139	3304	3139	3004	2824	2973	2824	2702	2510	2643	2510	2402

Ratings 60Hz

kVA / kW @ Temp. Rise / Ambient °C - 0.8 PF

	STANDBY-163/27				STANDBY-150/40				H-125/40				F-105/40				B-80/40				
Series	415V	440V	460V	480V	415V	440V	460V	480V	415V	440V	460V	480V	415V	440V	460V	480V	415V	440V	460V	480V	
Parallel Star YY	208V	220V	230V	240V	208V	220V	230V	240V	208V	220V	230V	240V	208V	220V	230V	240V	208V	220V	230V	240V	
Series Delta Δ	240V	254V	265V	277V	240V	254V	265V	277V	240V	254V	265V	277V	240V	254V	265V	277V	240V	254V	265V	277V	
Parallel Delta ΔΔ	120V	127V	133V	138V	120V	127V	133V	138V	120V	127V	133V	138V	120V	127V	133V	138V	120V	127V	133V	138V	
ECO47LV 1S4 B	kVA	3416	3622	3788	3960	3274	3472	3630	3794	3164	3355	3508	3667	2846	3018	3156	3300	2530	2684	2806	2932
	kW	2733	2898	3030	3168	2619	2778	2904	3035	2531	2684	2806	2934	2277	2414	2525	2640	2024	2147	2245	2346
ECO47LV 2S4 B	kVA	3640	3860	4036	4212	3488	3700	3868	4034	3372	3575	3738	3900	3034	3216	3362	3508	2696	2860	2990	3120
	kW	2913	3088	3229	3370	2791	2960	3094	3227	2698	2860	2990	3120	2426	2573	2690	2806	2157	2288	2392	2496
ECO47LV 2M4 B	kVA	3920	4158	4346	4536	3758	3984	4164	4346	3631	3850	4025	4200	3268	3464	3622	3780	2904	3080	3220	3360
	kW	3136	3326	3477	3629	3006	3188	3331	3477	2905	3080	3220	3360	2614	2770	2898	3024	2323	2464	2576	2688
ECO47LV 1L4 B	kVA	4626	4906	5128	5352	4434	4702	4914	5128	4285	4543	4750	4956	3856	4088	4274	4458	3426	3634	3798	3964
	kW	3701	3925	4102	4282	3547	3762	3931	4102	3428	3634	3800	3965	3085	3270	3419	3566	2741	2907	3038	3171

Reactance & Time constants- Class H / 400V

Unsaturated (ref. EN60034-4)			ECO47LV 1S4 B	ECO47LV 2S4 B	ECO47LV 2M4 B	ECO47LV 1L4 B
X_d	Direct-axis synchronous reactance	%	340,5	382,9	312,4	380,4
X'_d	Direct-axis transient reactance	%	32,1	39,2	30,4	36,8
X''_d	Direct-axis subtransient reactance	%	14,88	15,7	11,3	12,75
X_q	Quadrature-axis synchronous reactance	%	180,3	201,3	168,5	203,4
X'_q	Quadrature-axis transient reactance	%	180,3	201,3	168,5	203,4
X''_q	Quadrature-axis subtransient reactance	%	47,2	52,6	45,6	54,5
X₂	Negative-sequence reactance	%	31,04	34,15	28,45	33,63
X₀	Zero sequence reactance	%	7,7	8,5	6,6	5,9
Saturated						
X_d	Direct-axis synchronous reactance	%	282,6	317,8	259,3	315,7
X'_d	Direct-axis transient reactance	%	26,6	32,5	25,2	30,5
X''_d	Direct-axis subtransient reactance	%	12,4	13,1	9,3	10,6
X_q	Quadrature-axis synchronous reactance	%	149,6	167,1	139,9	168,8
X'_q	Quadrature-axis transient reactance	%	149,6	167,1	139,9	168,8
X''_q	Quadrature-axis subtransient reactance	%	39,2	43,7	37,8	45,2
X₂	Negative-sequence reactance	%	25,08	28,04	23,55	27,9
X₀	Zero sequence reactance	%	7,7	8,5	6,6	5,9
K_{cc}	Short circuit ratio		0,35	0,31	0,39	0,32
T'_d	Transient time constant	sec	0,275	0,273	0,271	0,267
T''_d	Subtransient time constant	sec	0,033	0,032	0,03	0,026
T'_{do}	Open circuit time constant	sec	7,8	7,7	7,5	7,3
T_a	Armature time constant	sec	0,037	0,036	0,034	0,031

Additional information - Class H / 400V

I_o	Excitation current at no load	A	1,1	1,1	1,1	1,1
I_c	Excitation current at full load	A	4,8	5,0	5,0	5,0
Overload						
Overload per 20 sec. PRP or 10 sec. COP			300			
Heat dissipation		W	123267	136842	116667	130511
Telephone Harmonic Factor - THF		%	<2	<2	<2	<2
Waveform Distors.(THD) full load LL/LN		%	3,3 / 2,9	3,4 / 3,3	3,3 / 2,5	3,3 / 2,9
Waveform Distors.(THD) no load LL/LN		%	2,5 / 2,4	2,9 / 2,8	2,7 / 2,5	2,7 / 2,6

Reactance & Time constants- Class H / 480V

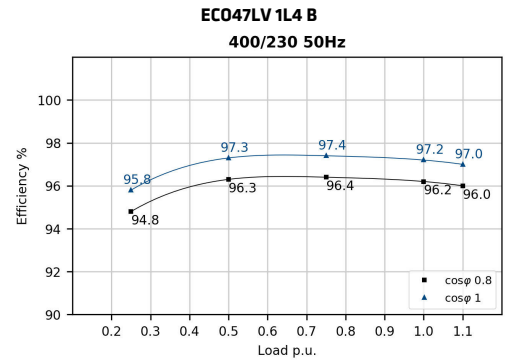
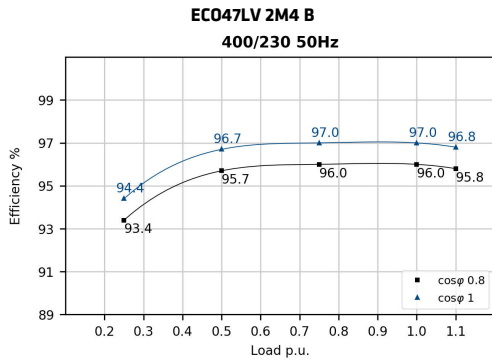
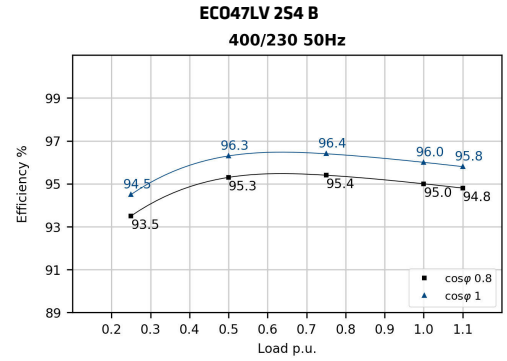
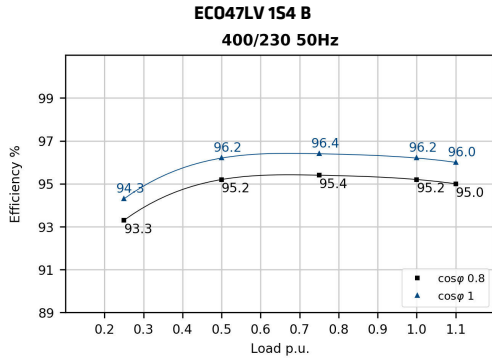
Unsaturated (ref. EN60034-4)			ECO47LV 1S4 B	ECO47LV 2S4 B	ECO47LV 2M4 B	ECO47LV 1L4 B
X_d	Direct-axis synchronous reactance	%	340,5	382,9	312,4	380,4
X'_d	Direct-axis transient reactance	%	32,1	39,2	30,4	36,8
X''_d	Direct-axis subtransient reactance	%	14,88	15,7	11,3	12,75
X_q	Quadrature-axis synchronous reactance	%	180,3	201,3	168,5	203,4
X'_q	Quadrature-axis transient reactance	%	180,3	201,3	168,5	203,4
X''_q	Quadrature-axis subtransient reactance	%	47,2	52,6	45,6	54,5
X₂	Negative-sequence reactance	%	31,04	34,15	28,45	33,63
X₀	Zero sequence reactance	%	7,7	8,5	6,6	5,9
Saturated						
X_d	Direct-axis synchronous reactance	%	282,6	317,8	259,3	315,7
X'_d	Direct-axis transient reactance	%	26,6	32,5	25,2	30,5
X''_d	Direct-axis subtransient reactance	%	12,4	13,1	9,3	10,6
X_q	Quadrature-axis synchronous reactance	%	149,6	167,1	139,9	168,8
X'_q	Quadrature-axis transient reactance	%	149,6	167,1	139,9	168,8
X''_q	Quadrature-axis subtransient reactance	%	39,2	43,7	37,8	45,2
X₂	Negative-sequence reactance	%	25,08	28,04	23,55	27,9
X₀	Zero sequence reactance	%	7,7	8,5	6,6	5,9
K_{cc}	Short circuit ratio		0,35	0,31	0,39	0,32
T'_d	Transient time constant	sec	0,275	0,273	0,271	0,267
T''_d	Subtransient time constant	sec	0,033	0,032	0,03	0,026
T'_{do}	Open circuit time constant	sec	7,8	7,7	7,5	7,3
T_a	Armature time constant	sec	0,037	0,036	0,034	0,031

Additional information - Class H / 480V

I_o	Excitation current at no load	A	1,1	1,1	1,1	1,1
I_c	Excitation current at full load	A	4,8	5,0	5,0	5,0
Overload						
Overload per 20 sec. PRP or 10 sec. COP			300			
Heat dissipation		W	144679	153872	132723	148063
Telephone Interference Factor - TIF			<40	<40	<40	<40
Waveform Distors.(THD) full load LL/LN		%	3,3 / 2,9	3,4 / 3,3	3,3 / 2,5	3,3 / 2,9
Waveform Distors.(THD) no load LL/LN		%	2,5 / 2,4	2,9 / 2,8	2,7 / 2,5	2,7 / 2,6

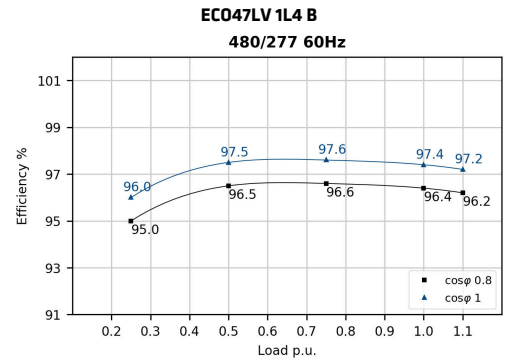
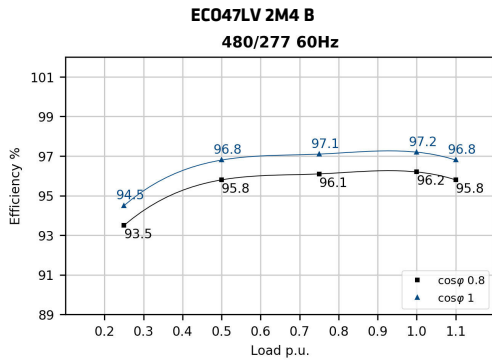
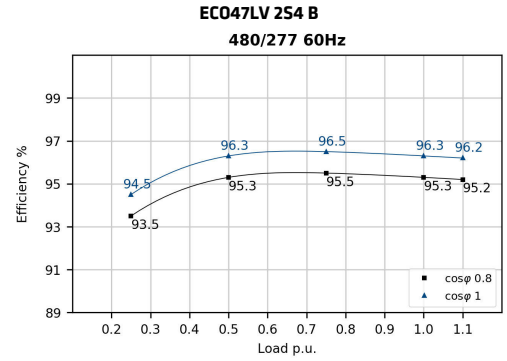
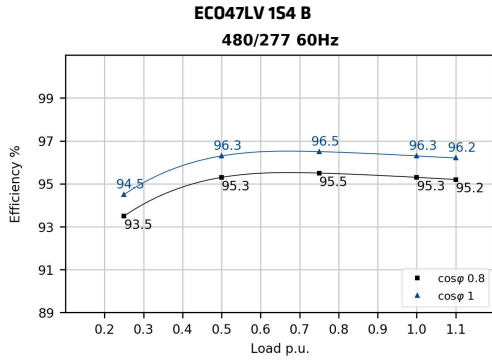
Efficiencies @ 50Hz

Models		380V 50Hz					400V 50Hz					415V 50Hz					440V 50Hz				
		0.25	0.5	0.75	1	1.1	0.25	0.5	0.75	1	1.1	0.25	0.5	0.75	1	1.1	0.25	0.5	0.75	1	1.1
ECO47LV 1S4 B	%	93,3	95,1	95,5	95,1	95,0	93,3	95,2	95,4	95,2	95,0	93,2	95,4	95,3	95,0	94,9	93,2	95,0	95,2	95,0	94,8
ECO47LV 2S4 B	%	93,4	95,1	95,3	94,9	94,8	93,5	95,3	95,4	95,0	94,8	93,5	95,1	95,4	95,0	94,9	93,3	94,9	95,2	94,8	94,7
ECO47LV 2M4 B	%	93,3	95,6	95,9	95,9	95,6	93,4	95,7	96,0	96,0	95,8	93,4	95,7	95,9	96,0	95,7	93,2	95,5	95,8	95,8	95,4
ECO47LV 1L4 B	%	94,7	96,2	96,3	96,0	95,9	94,8	96,3	96,4	96,2	96,0	94,8	96,3	96,3	96,1	95,9	94,7	96,2	96,2	96,1	96,0

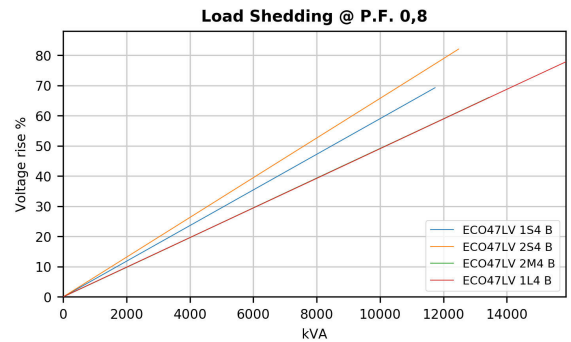
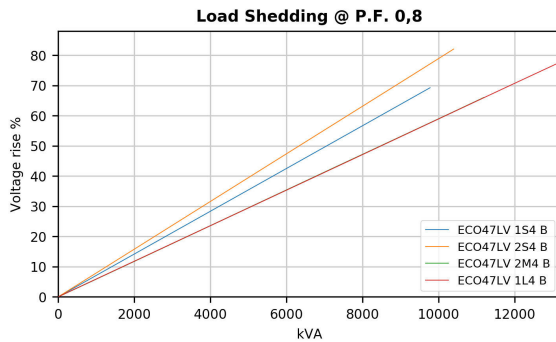
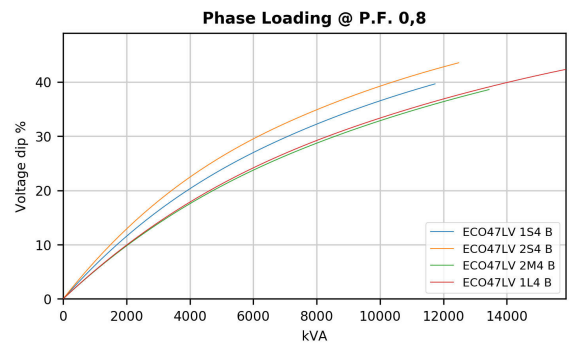
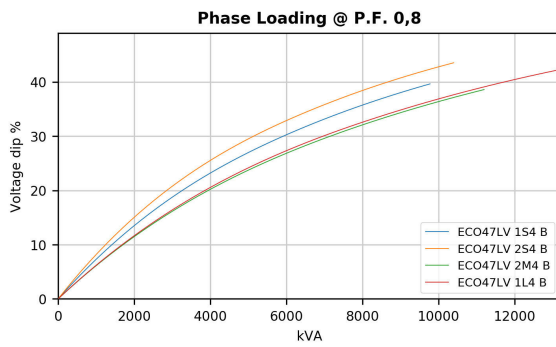
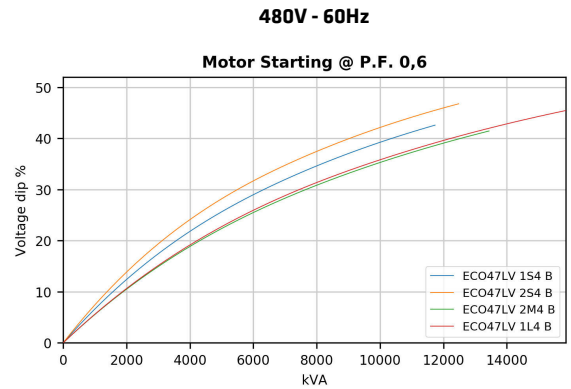
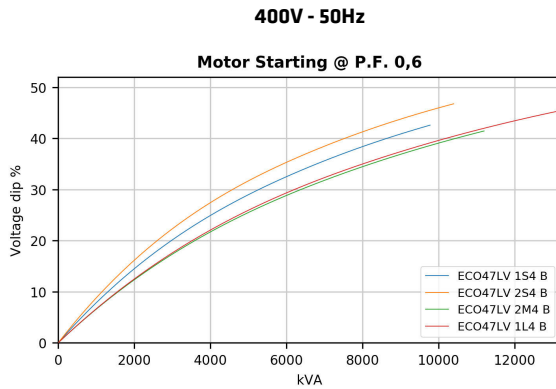


Efficiencies @ 60Hz

Models		415V 60Hz					440V 60Hz					460V 60Hz					480V 60Hz					
		0.25	0.5	0.75	1	1.1	0.25	0.5	0.75	1	1.1	0.25	0.5	0.75	1	1.1	0.25	0.5	0.75	1	1.1	
ECO47LV 1S4 B	%	93,4	95,3	95,3	95,1	95,0	93,4	95,2	95,3	95,3	95,2	93,3	95,1	95,2	95,1	95,0	93,5	95,3	95,5	95,3	95,2	95,2
ECO47LV 2S4 B	%	93,4	95,2	95,2	95,0	94,8	93,3	95,1	95,3	95,1	95,0	93,4	95,2	95,4	95,2	95,1	93,5	95,3	95,5	95,3	95,2	95,2
ECO47LV 2M4 B	%	93,4	95,2	95,2	95,0	94,8	93,3	95,6	95,8	95,8	95,6	93,4	95,7	95,9	95,7	93,5	95,8	96,1	96,2	95,8	95,8	
ECO47LV 1L4 B	%	94,9	96,4	96,5	96,2	96,1	95,0	96,5	96,5	96,3	96,1	94,9	96,4	96,5	96,2	96,1	95,0	96,5	96,6	96,4	96,2	96,2



Transients voltage



In order to scale transient curves as a function of a power factor or voltage if not indicated, please proceed as follows:

Power Factor coefficient corrector (PFCC), to be used on power factor 0.6 curves:

$$PFCC = \sin(\text{ARCCos}(PF_{\text{new}})) / 0.8$$

Example. The PFCC at power factor 0.3 is 1.192 [$PFCC = \sin(\text{ARCCos}(0.3)) / 0.8$]. This means that the voltage fall at a given power at pf 0.3 is equivalent to the one that can be read on the pf 0.6 curve if the load is considered 1.192 times bigger (19% higher value.).

In this example, a 100 kVA load insertion at pf 0.3 is equivalent in voltage fall to a 119kVA load insertion at pf 0.6.

Voltage coefficient corrector (VCC):

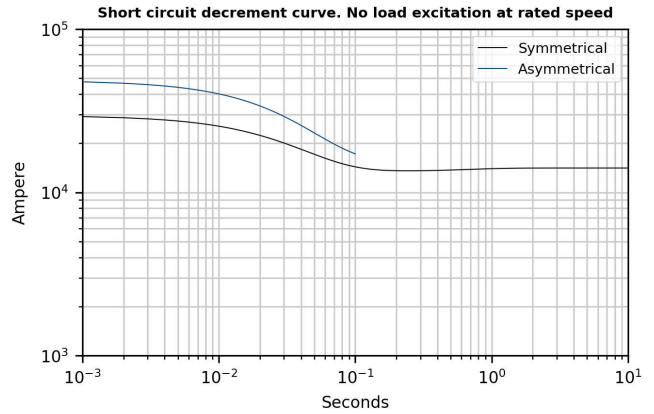
$$VCC = (400/V_{\text{new}})^2 \text{ if } 50 \text{ Hz}; VCC = (480/V_{\text{new}})^2 \text{ if } 60 \text{ Hz}$$

Example. VCC at 415V 60 Hz is 1.338 [$VCC = (480/415)^2$]. This means that the voltage fall at a given power at 415V is equivalent to the one that can be read on the power factor 0.6 curve if the load is considered 1.338 times bigger (33% higher value.).

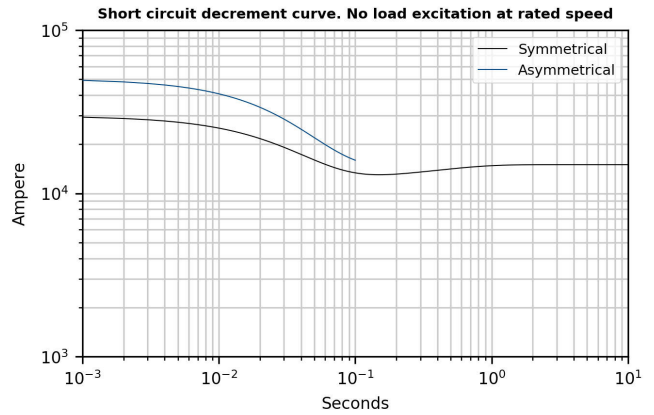
In this example, a 100 kVA load insertion at 415V is equivalent in voltage fall to a 133kVA load insertion at 480V.

50Hz Short circuit decrement curves - No load excitation at rated speed

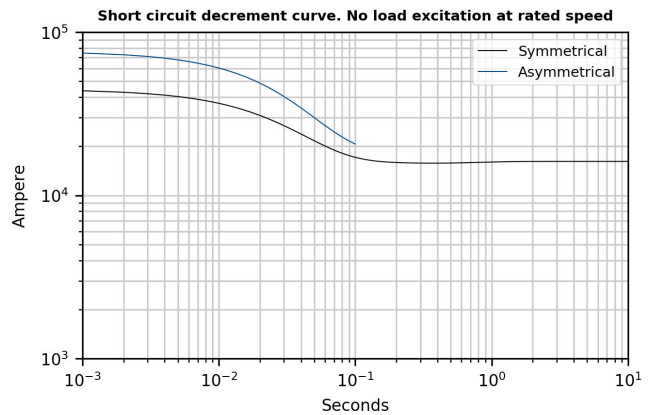
ECO47LV 1S4 B



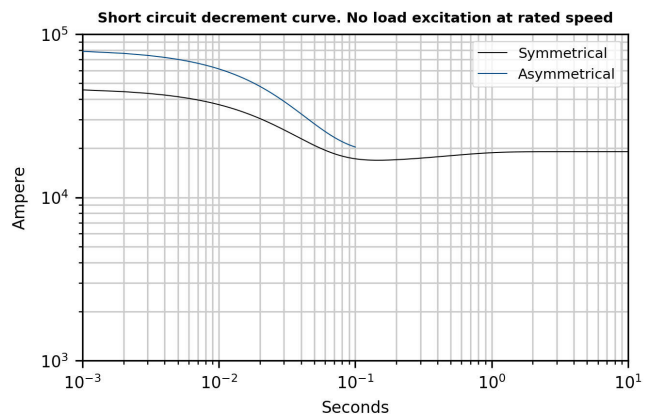
ECO47LV 2S4 B



ECO47LV 2M4 B



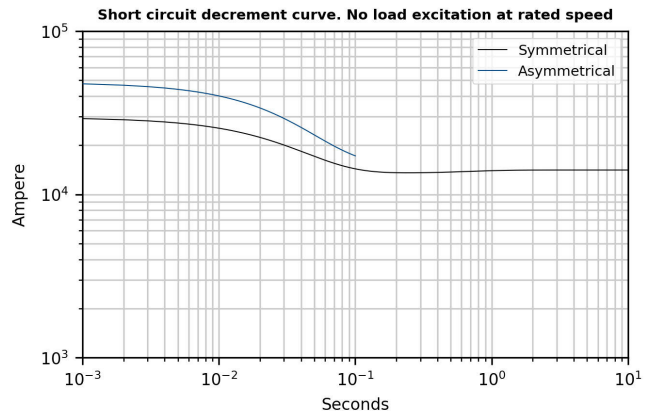
ECO47LV 1L4 B



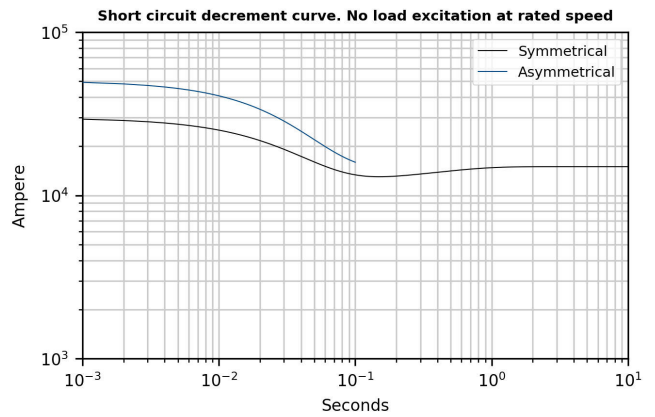
*Please refer to tables at page 6

60Hz Short circuit decrement curves - No load excitation at rated speed

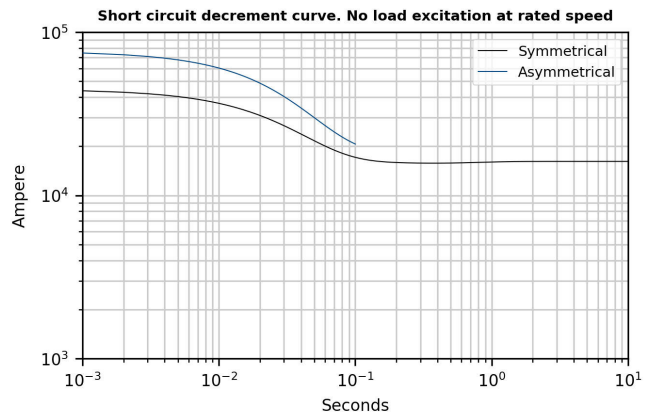
ECO47LV 1S4 B



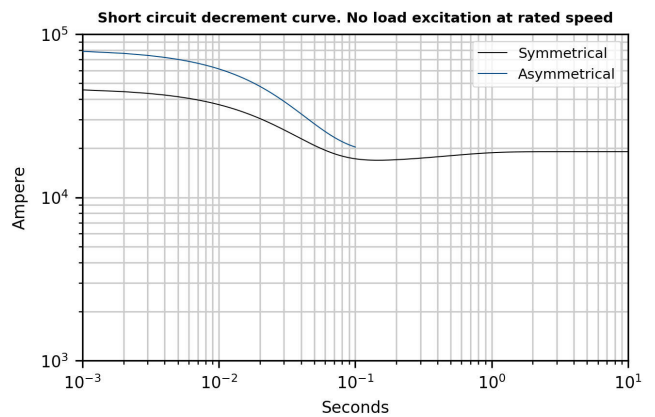
ECO47LV 2S4 B



ECO47LV 2M4 B



ECO47LV 1L4 B

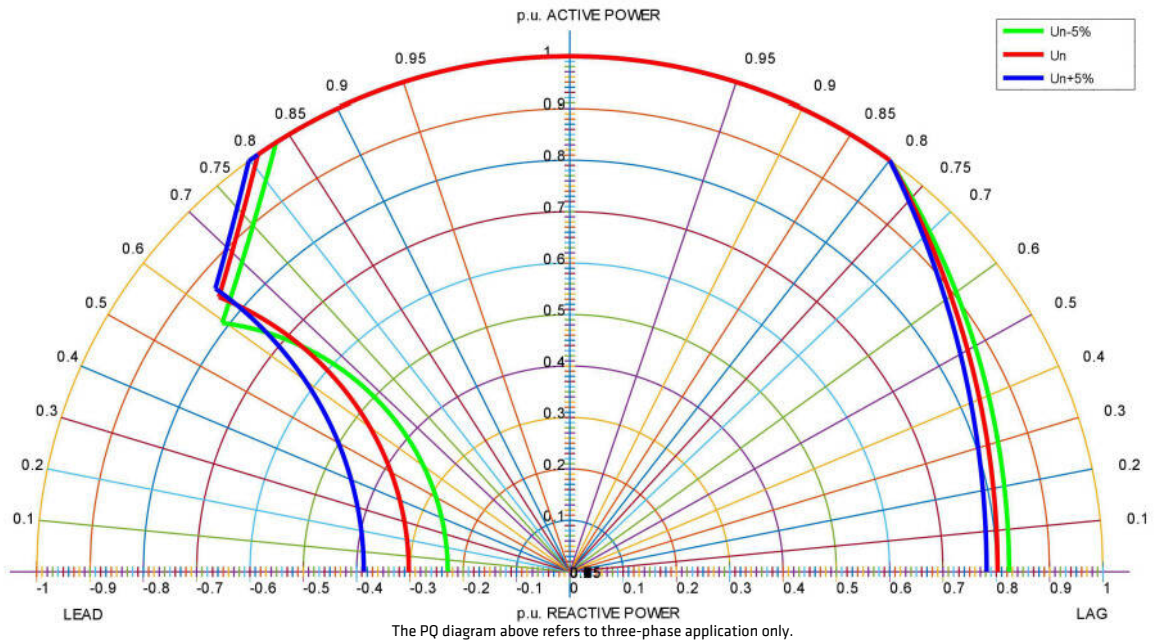


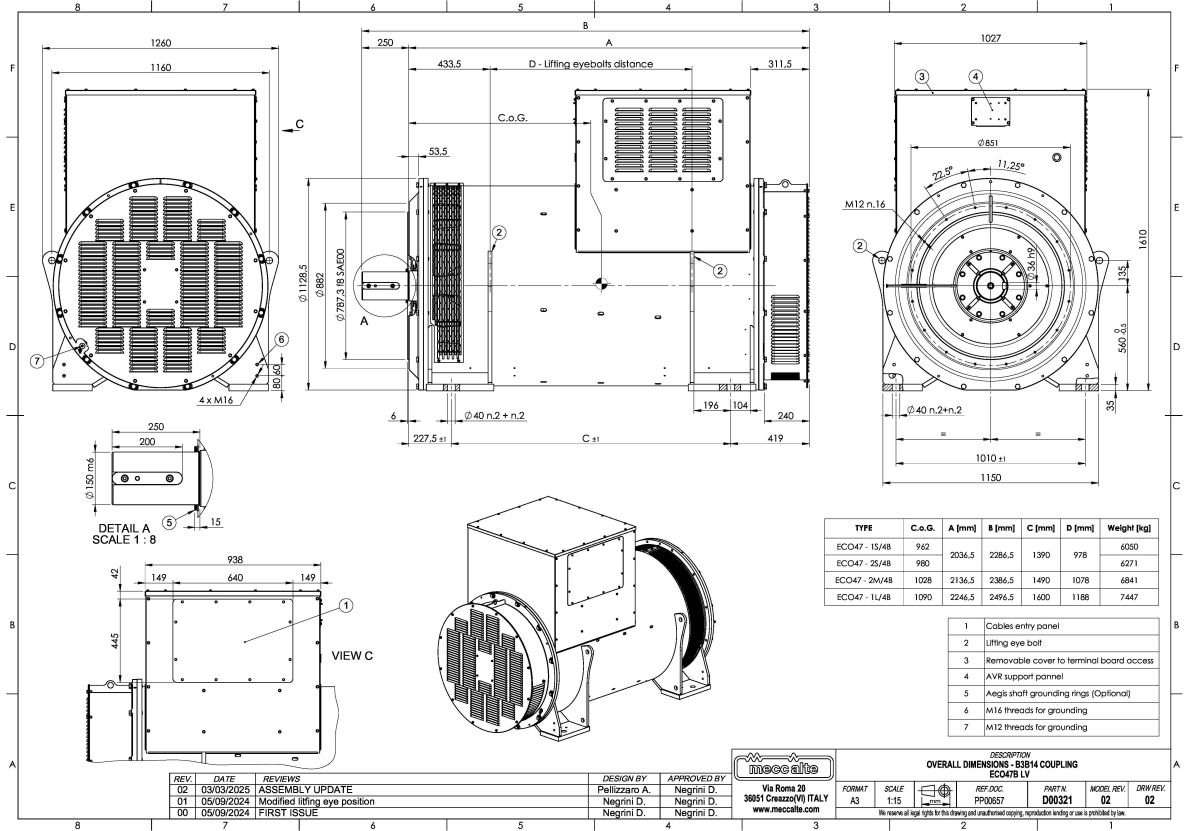
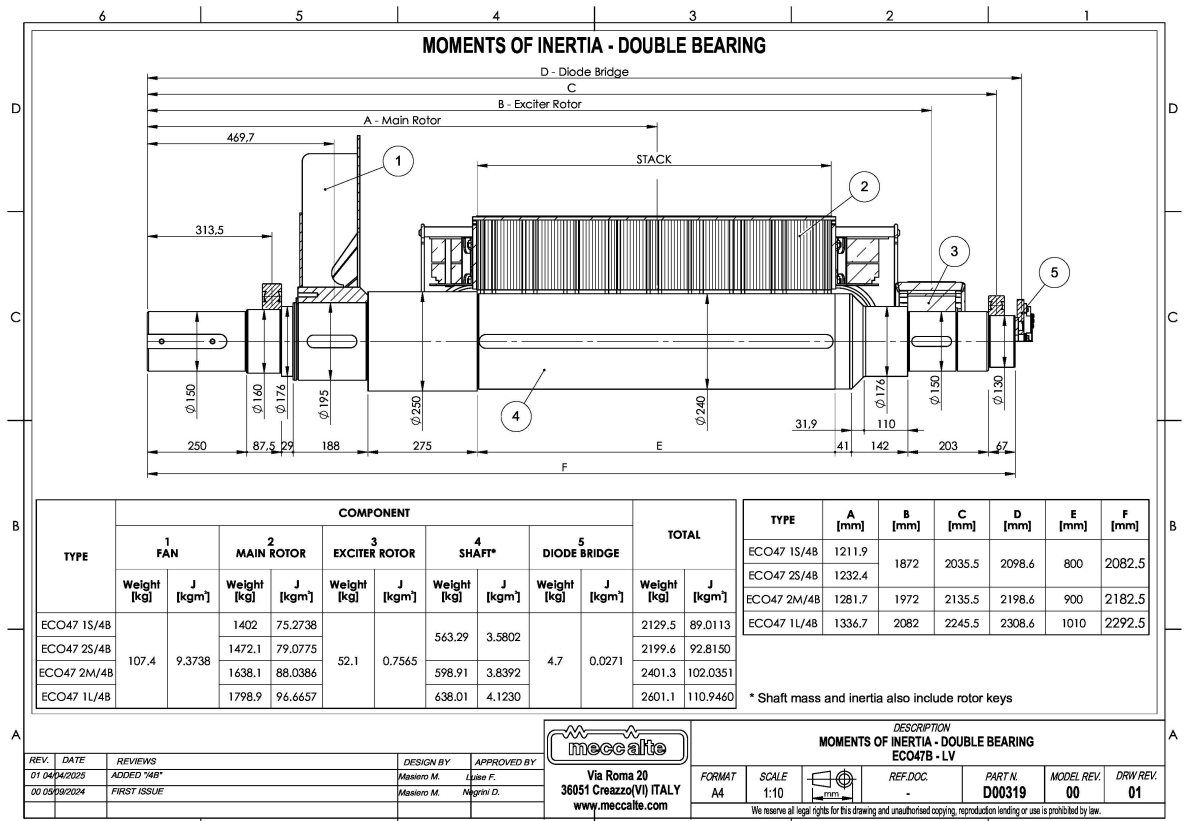
*Please refer to tables at page 6

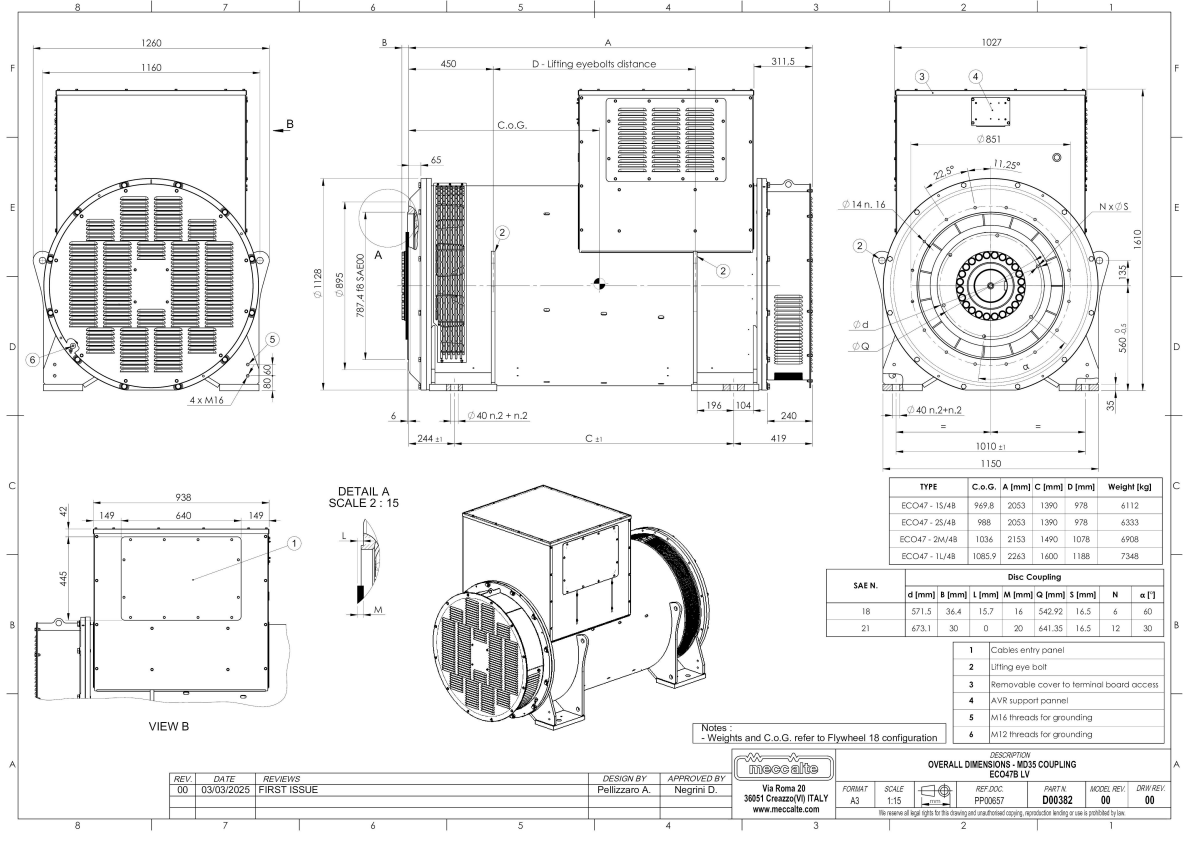
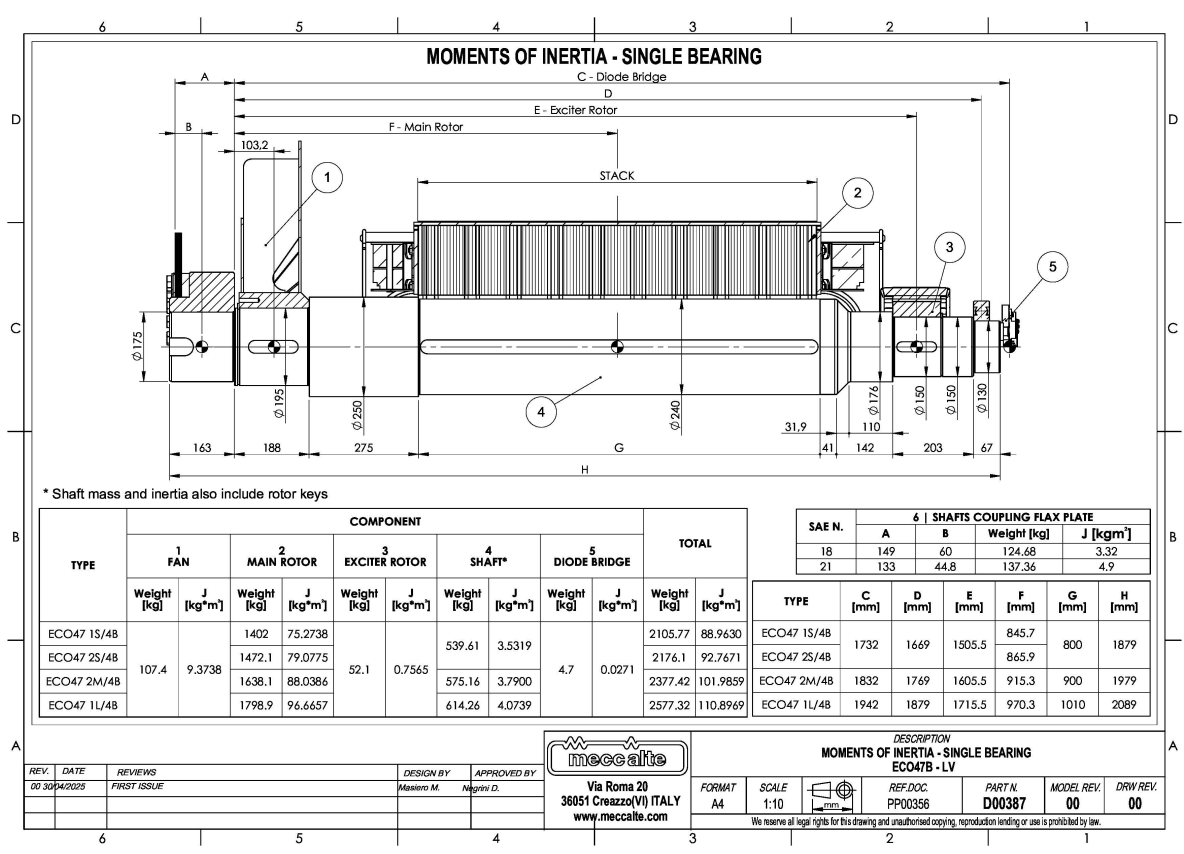
Additional Characteristics

Data	ECO47LV 1S4 B		ECO47LV 2S4 B		ECO47LV 2M4 B		ECO47LV 1L4 B		
	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	
Damper cage	Copper								
Single stator coil resistance (20°C)	Ω	0,00043		0,00044		0,00037		0,0005	
Rotor Winding Resistance (20°C)	Ω	1,1		1,2		1,4		1,5	
Stator Exciter Resistance (20°C)	Ω	13,0		13,0		13,0		13,0	
Rotor Exciter Resistance (20°C)	Ω	0,04		0,04		0,04		0,04	
Auxiliary Winding Resistance (20°C)	Ω	-		-		-		-	
Weight of complete generator	kg	6039,0		6239,0		6771,0		7415,0	
Unbalanced magnetic pull	kN/mm	12,2		12,9		14,0		17,0	
Air flow	m ³ /min	192,0	230,0	192,0	230,0	192,0	230,0	192,0	230,0
Noise level at 1m/7m	dB(A)	97/86	100/89	97/86	100/89	97/86	100/89	97/86	100/89

PQ Diagram







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