

ITALIAN GROUP, ITALIAN QUALITY 

COMPLETE CHP PROGRAMME 7 – 2,000 KW

ALTERNATORS FOR COGENERATION



AN INDUSTRIAL GROUP SPECIALIZED IN ENERGY FROM OVER 55 YEARS

SOGA ENERGY TEAM is a **multi-brand Italian group** operating in energy, motion and control since **1966** by engineering and manufacturing rotating electric machines and electronic systems, standing out for performances and reliability.

Our **range of alternators** is one of the most complete available on the market ranging from **1 kVA to 2,6 MW**. The high-end fields of application extend from power generation to CHP, wind, automotive, railway, military, marine, hybrid systems.

We are **100% Pure European Manufacturers**.

Our production is based in our factories in Northern-Italy and Croatia, where we combine our industrial craftsmanship with equipment and systems at the cutting edge of technology.

- 5** Brands
- 6** Production sites, with lean system
- 58** Years of expertise
- 300** Collaborators
- 850** Over 850 models up to 2,6 MW/50Hz in our catalogues (alternators and motors)
- 250.000** Units as yearly production capacity





QUALITY IS AN ATTITUDE RELIABILITY IS A FACT SUSTAINABILITY IS A MUST

SINCRO® is our brand dedicated to the production of **synchronous and asynchronous alternators**.

Since **1986** we have been co-operating on a worldwide scale with OEMs manufacturers of generating sets and engine driven welders. **Today**, we believe that energy must be increasingly focused on maximizing efficiency, alongside with the larger use of clean fuel powered systems as alternative to fossil sources.

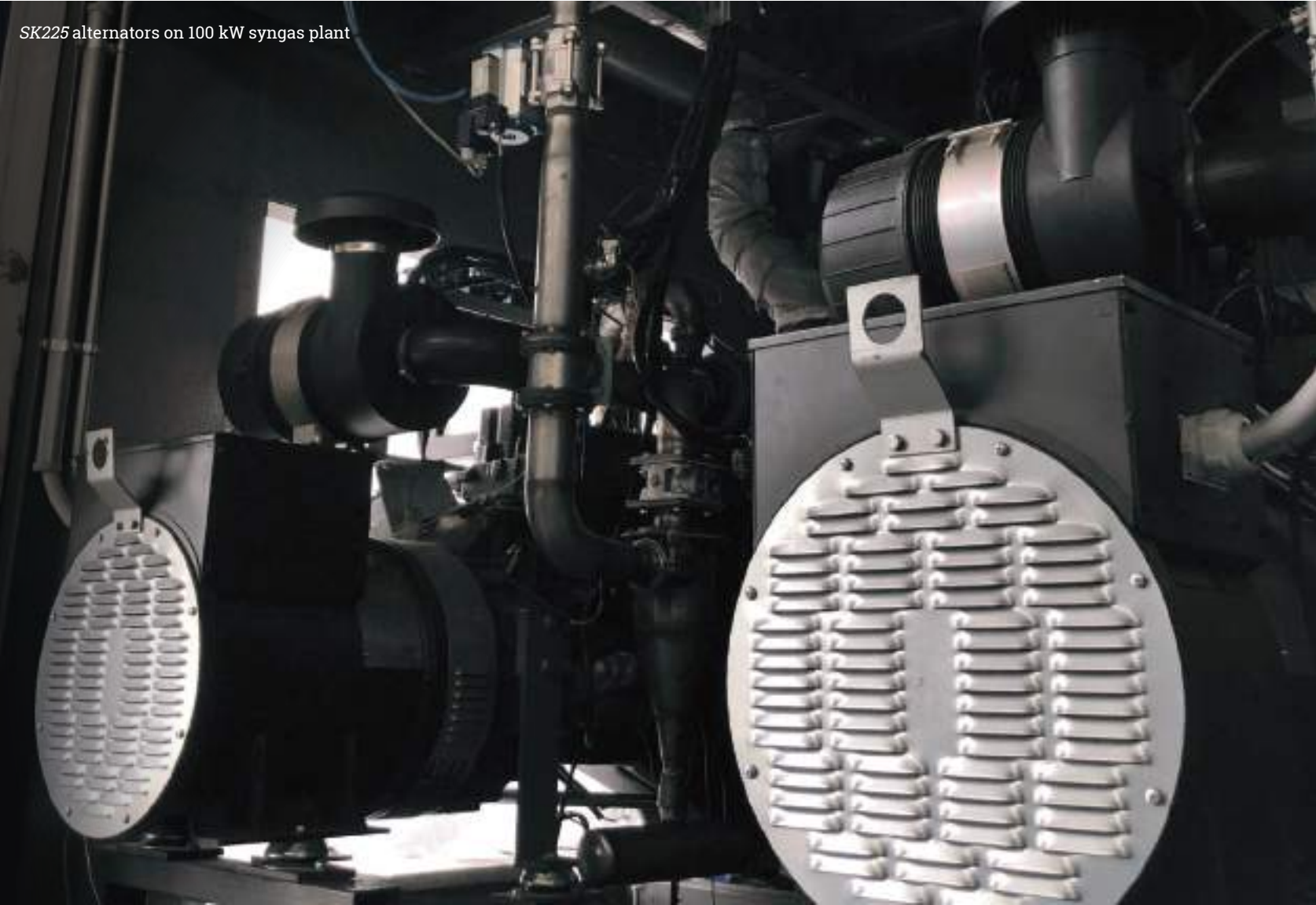
This is why, we have created a **business unit fully dedicated to CHP**. Our in-house **specialized technical & sales** team closely works with you in the development of alternators tailored upon your R&D guidelines, to meet your specific demands and match exactly your CHP needs. You can rely on our dedicated team for each stage of supply: from **first evaluation** and understanding of your requirements directly at your premises, to the **alternator engineering**, up to **after-sale** maintenance.

Simple assembly on your chp system, **full accessibility** to the relevant parts of the alternators, a **dedicated service** in case of need: these are keywords for SINCRO alternators.

Giving you **unstoppable efficient power 24/7** and **easy maintenance** is our mission.



SK225 alternators on 100 kW syngas plant



OUR COMPLETE PROGRAMME OF SOLUTIONS

MICRO CHP (up to 50 kW)



MINI & MEDIUM CHP (up to 2000 kW)



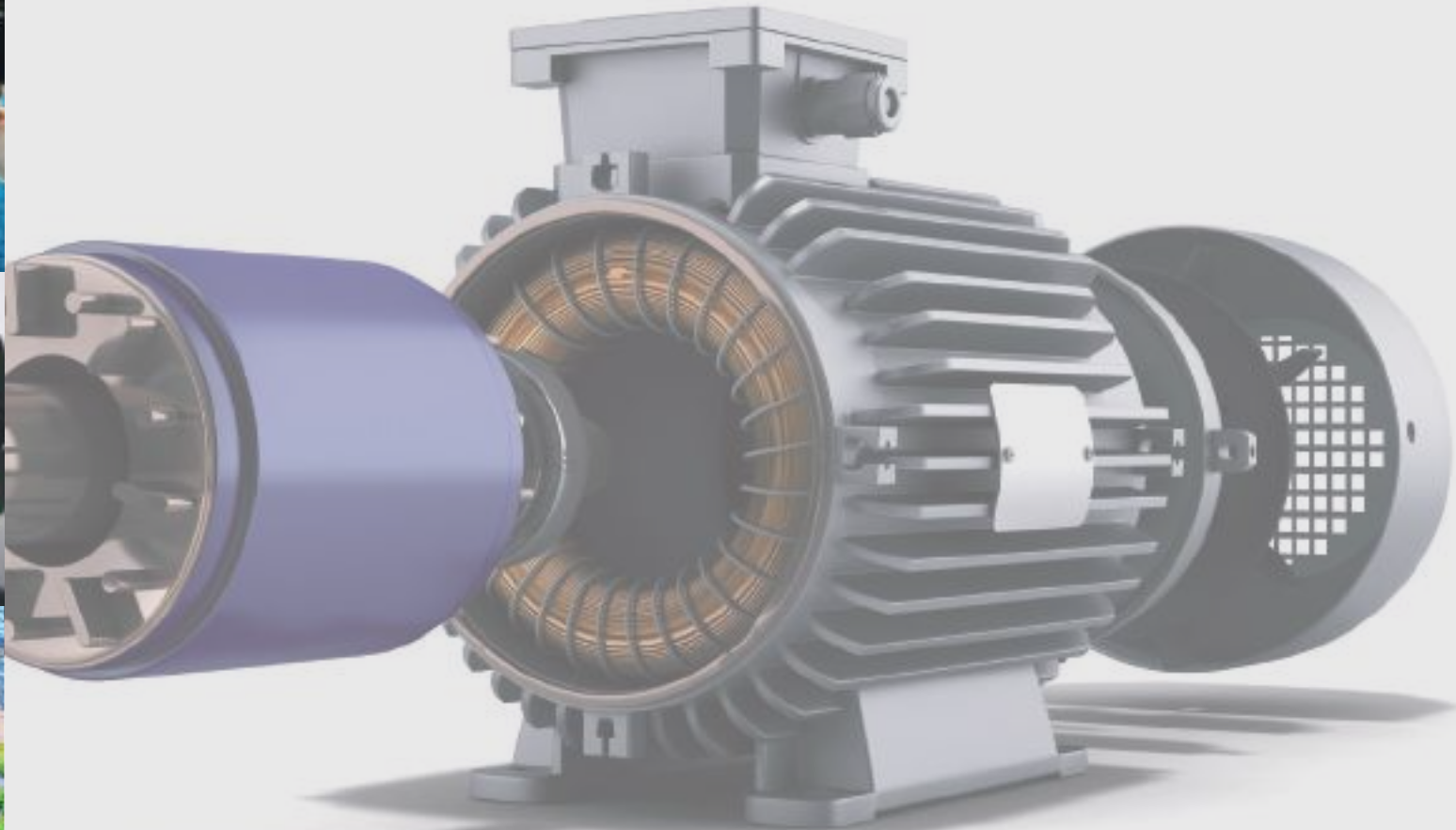
ASYNCHRONOUS		SYNCHRONOUS	
1 ASG 	2 AWG 	3 SWG 	4 SK160 
SYNCHRONOUS		PMG	
5 IB SK 		6 PMG PMG-K 	



Air cooled



Liquid cooled



¹

ALTERNATORS FOR MICRO CHP

ASYNCHRONOUS

AIR COOLED

ADVANTAGES IN CHP

- Easy parallel with the main
- Excellent wave form with low THD
- TEFC totally enclosed fan cooled housing ensuring strong protection against dust and water sprays
- Squirrel cage rotor: robust, stable, simple to maintain

FEATURES

- Die-cast aluminium housing
- IM B34, SAE, J609a, J609b couplings
- IP54

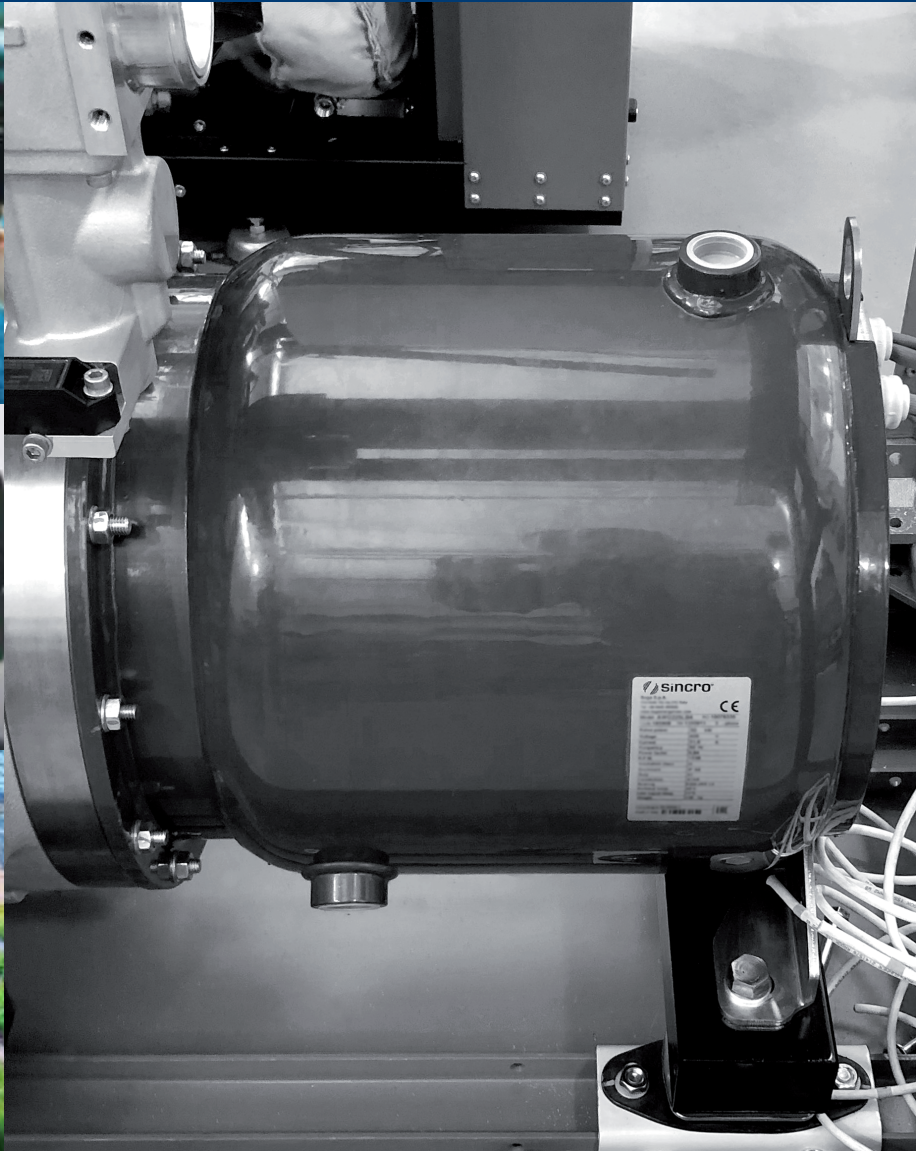
OPTIONS

- Customized executions
- 60Hz
- CSA/UL

4 POLES 3 PHASE

S1 40/105°C cl F				
model	kWe 400V 50 Hz	eff %	RPM	p.f.
ASG132 MA4-T	5,5	84	1532	0,78
ASG132 MB4-T	7,5	85	1530	0,78
ASG160 LA4-T	11	89	1530	0,8
ASG160 LB4-T	15	90	1528	0,8
ASG180 LA4-T	20	90,5	1528	0,81
ASG180 LB4-T	25	91	1527	0,82





2² ALTERNATORS FOR MICRO CHP ASYNCHRONOUS LIQUID COOLED

ADVANTAGES IN CHP

- Easy parallel with the main
- Liquid jacket for highest cooling result
- High efficiency
- Strong construction
- Easy assembling
- Low maintenance
- Durability

FEATURES

- Liquid-cooled technology
- Class H insulation
- Environment temperature 90°C max
- Liquid entry temperature 80°C max
- SAE coupling
- IP44

OPTIONS

- Customized executions
- 60Hz
- CSA/UL
- Windings encapsulation
- Greaser

2 POLES 3 PHASE

S1 cl H				
model	kWe 400V 50 Hz	eff %	RPM	p.f.
AWG160 LB2	20	93	3066	0,83
AWG160 LC2	25	93,6	3064	0,84



Encapsulation of windings
for higher performance



Greaser for easy
maintenance

4 POLES 3 PHASE

S1 cl H				
model	kWe 400V 50 Hz	eff %	RPM	p.f.
AWG160 SB4	7	90	1543	0,77
AWG160 MB4	10	91	1540	0,78
AWG160 LB4	15	91,4	1537	0,78
AWG225 SB4	20	92	1532	0,8
AWG225 MB4	25	93	1530	0,8
AWG225 LB4	30	94	1527	0,81
AWG225 WB4	35	94	1525	0,82



3

ALTERNATORS FOR MICRO CHP SYNCHRONOUS LIQUID COOLED

NEW
UP TO
80 KVA

ADVANTAGES IN CHP

- High IP protection IP44
- Highly silent
- Low maintenance
- Durability

OPTIONS

- Customized executions
- 60Hz

FEATURES

- Liquid cooled technology
- Digital AVR
- Environment temperature 80° C max
- Liquid entry temperature 80°C max
- SAE or IM B34 couplings

4 POLES 3 PHASE

S1 cl F			
model	kVA 400V 50 Hz	RPM	p.f.
SWG225 MA4	45	1500	0,8
SWG225 MB4	55	1500	0,8
SWG225 LA4	65	1500	0,8
SWG225 LB4	80	1500	0,8



MICRO CHP
UP TO 50 kW



4⁴ ALTERNATORS FOR MICRO CHP SYNCHRONOUS AIR COOLED



4 POLES 3 PHASE | BRUSHLESS/AVR

S1 40/105°C cl F						
model	400V 50 Hz			480V 60 Hz		
	kWe	KVA	eff %	kWe	KVA	eff %
SK160 CB	8,8	11	83,4	10,6	13,2	84,4
SK160 MA	11	13,8	84,6	13,2	16,5	85,6
SK160 MB	12,6	15,7	86,1	15,1	18,9	87,3
SK160 LA	15,8	19,7	87,5	18,9	23,6	88,1
SK160 LB	18,9	23,7	87,7	22,7	28,4	88,3
SK160 WA	22,7	28,4	87,9	27,2	34,1	88,5
SK160 WB	25,2	31,5	88	30,2	37,8	88,7

ADVANTAGES IN CHP

- CHP OPTIMIZED for continuous duty
- Supercompactness
- Strong construction
- Easy assembly
- Full reliability
- Simple maintenance
- Durability

FEATURES

- Class H insulation, Class F temperature rise
- Digital regulator
- Auxiliary AVR power supply
- APD Advanced Parallel Device + Transformer
- 3 x PT100
- 2/3 winding pitch
- Single bearing
- Tropicalization
- IP23

OPTIONS

- Customized executions
- Remote voltage potentiometer
- PT100 on bearing
- Space heaters
- Winding protection for harsh environments and relative humidity over 95%
- Special voltage
- CSA/UL

IB alternators
on 50 kW syngas plant



MICRO CHP
UP TO 50 kW



ALTERNATORS FOR MINI & MEDIUM CHP SYNCHRONOUS AIR COOLED



ADVANTAGES IN CHP

- CHP OPTIMIZED for continuous duty
- Great compactness for space saving
- Easy assembly
- Full reliability
- Simple maintenance
- Durability

FEATURES

- Class H insulation, Class F temperature rise
- Digital regulator
- APD Advanced Parallel Device + Transformer
- 3 x PT100
- 2/3 winding pitch
- Single bearing
- Tropicalization
- IP23

OPTIONS

- Customized executions
- Double bearing
- Remote voltage potentiometer
- PT100 on bearing
- Regreasable bearings
- Space heaters
- Filters on air inlet (5% derating)
- IP44 on air inlet and outlet (10% derating)
- Winding protection for harsh environments and relative humidity over 95%
- Special voltage
- CSA/UL

Digital DBL AVR + APD



4 POLES 3 PHASE | BRUSHLESS/AVR

S1 40/105°C cl F							
model	400V 50 Hz			480V 60 Hz			AVR POWER SUPPLY
	kWe	KVA	eff %	kWe	KVA	eff %	
IB4 SA	15,8	19,7	84,8	18,9	23,6	88,1	AUX
IB4 SB	18,9	23,7	87,7	22,7	28,4	88,3	AUX
IB4 MA	22,7	28,4	87,9	27,2	34,1	88,3	AUX
IB4 MB	28,5	35,6	87,6	34,2	42,7	88,3	AUX
IB4 LA	31	38,7	90,7	37,2	46,4	91,3	AUX
SK225 SM	48	60	89,6	57,5	72	90,1	PMG ON REQUEST
SK225 MS	59	74	90,3	70,5	88	90,8	PMG ON REQUEST
SK225 MR	62,5	78	90,7	74,5	93	91,3	PMG ON REQUEST
SK225 MM	68,8	86	91,1	82,5	103	91,6	PMG ON REQUEST
SK225 MN	73,5	92	91,5	88	110	92	PMG ON REQUEST
SK225 ML	80,8	101	91,5	96,8	121	92	PMG ON REQUEST
SK225 LS	92	115	91,9	110,5	138	92,4	PMG ON REQUEST
SK225 LM	103	129	91,9	125	156	92,5	PMG ON REQUEST
SK250 SL	117	146	91,6	141	176	91,6	PMG ON REQUEST
SK250 MS	132	165	92	157,5	197	91,9	PMG ON REQUEST
SK250 MM	146,5	183	92,6	176	220	92,4	PMG ON REQUEST
SK250 ML	168,8	211	92,6	201,5	252	92,7	PMG ON REQUEST
SK250 LS	183,2	229	92,8	220	275	92,8	PMG ON REQUEST
SK250 LM	201	251	92,9	241,5	302	92,9	PMG ON REQUEST

S1 40/105°C cl F							
model	400V 50 Hz			480V 60 Hz			AVR POWER SUPPLY
	kWe	KVA	eff %	kWe	KVA	eff %	
SK250 LL	220	275	93,1	264	330	93,1	PMG ON REQUEST
SK315 SS	256,8	321	93,2	308	385	93,8	PMG ON REQUEST
SK315 SM	293,5	367	93,7	352	440	94,1	PMG ON REQUEST
SK315 SL	329,5	412	94,1	396	495	94,5	PMG ON REQUEST
SK355 MS	366,5	458	94,5	440	550	94,8	PMG ON REQUEST
SK355 MM	418	522	94,6	501,5	627	94,9	PMG ON REQUEST
SK355 LS	440	550	94,8	528	660	95,1	PMG ON REQUEST
SK355 LM	477	596	94,9	572	715	95,2	PMG ON REQUEST
SK355WL	528	660	95,1	631	789	95,3	PMG ON REQUEST
SK400 SD	589,5	737	95	703	879	95,4	PMG
SK400 SE	663	829	95,2	791	989	95,6	PMG
SK400 SF	737	921	95,4	879	1099	95,7	PMG
SK400 SG	810,5	1013	95,5	967	1209	95,8	PMG
SK450 ME	958	1197	95,9	1143	1429	96,2	PMG
SK450 MF	1106	1382	96,1	1319	1649	96,4	PMG
SK450 MG	1179	1474	96,2	1403	1753	96,5	PMG
SK450 LE	1327	1658	96,4	1583	1979	96,7	PMG
SK500 MA	1381	1727	95,8	1649	2061	96,2	PMG
SK500 MB	1474	1842	96,3	1759	2198	96,7	PMG
SK500 MC	1695	2118	96,5	2022	2528	96,8	PMG
SK500 MD	1916	2395	96,7	2287	2858	97	PMG

MINI & MEDIUM CHP
UP TO 2000 KW



6 ALTERNATORS FOR MICRO CHP PERMANENT MAGNETS AIR COOLED

ADVANTAGES IN CHP

- High efficiency
- Compact and light construction for space saving
- High power/weight ratio
- Easy assembly
- Low maintenance

FEATURES

- Variable speed
- 16 / 18 poles
- NdFeB magnets radial flux
- SAE, J609b couplings
- IP20 / IP23

OPTIONS

- Customized executions
- PT100 and thermal sensors
- Hall speed sensors
- Loose rectifier bridge
- CSA/UL

3 PHASE

S1 40/125°C cl H						
model	1000 RPM kWe	eff %	2000 RPM kWe	eff %	3000 RPM kWe	eff %
PMG140K/18-25	1,3	85,7	3,2	87,6	5	88,7
PMG140K/18-40	2,4	90,3	5,7	91,2	9	91,7
PMG140K/18-50	3	90,9	7	91,8	11	92,3
PMG140K/18-80	4,3	91,9	10	92,5	16	92,9
PMG160K/16-125	10	91,9	23	92	37	92
PMG160K/16-205	17,5	92,4	41	92,6	65	93

PMG160K



PMG140K

ADVANTAGES IN CHP

- High efficiency
- Easy assembly
- Low maintenance

FEATURES

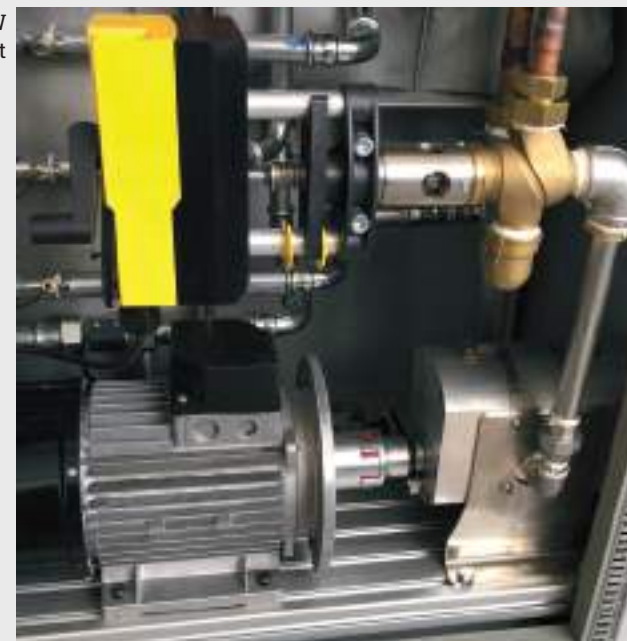
- Variable speed
- Modularity
- 8 / 12 / 18 poles
- NdFeB magnets radial flux
- B3, B5, B14, B3/B5, B3/B14, J609a, J609b couplings
- IP54 / IP55

OPTIONS

- Customized executions
- CSA/UL



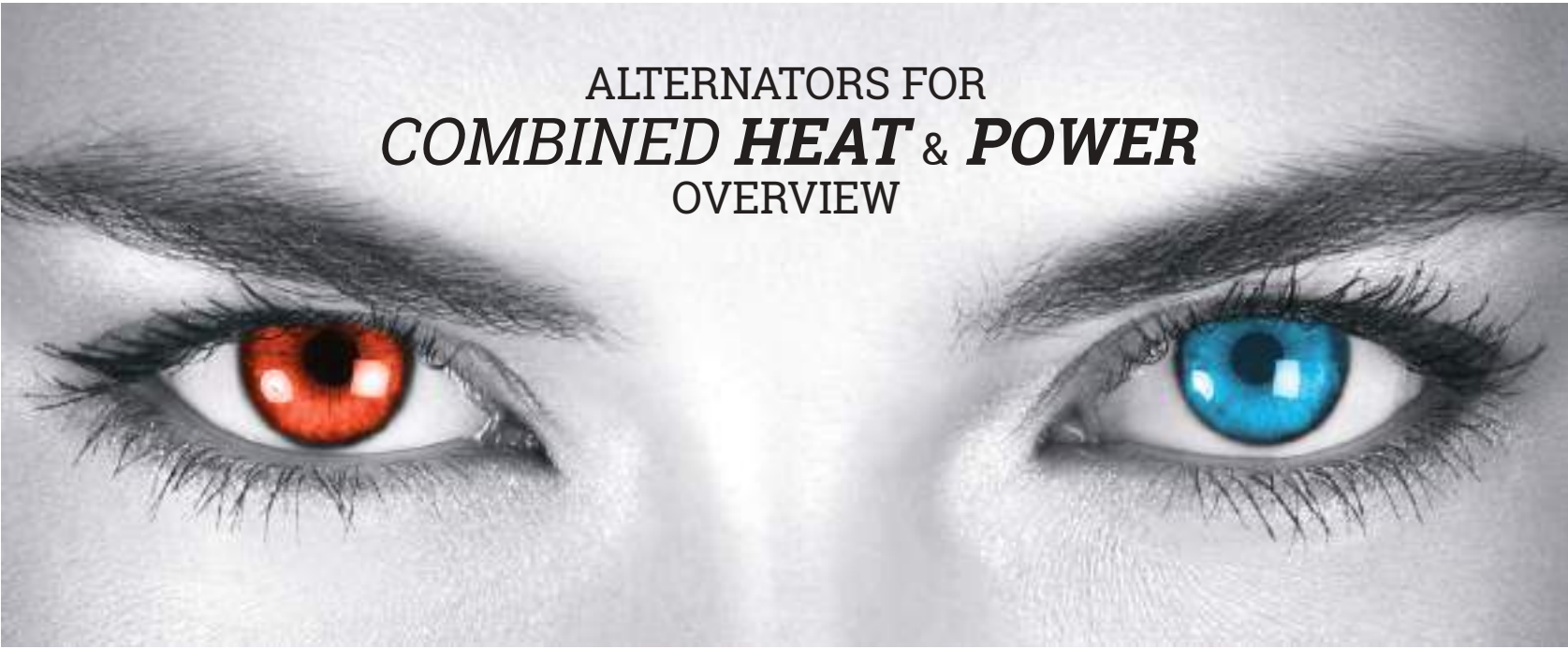
PMG90 on 3 kW
micro-chp gas unit



3 PHASE

S1 40/125°C cl H							
model	modules	1000 RPM kWe	eff %	2000 RPM kWe	eff %	3000 RPM kWe	eff %
PMG90 S	1	0,5	84,5	1,1	86,5	1,75	89,5
	2	1,1	85,5	2,4	87,5	3,8	90,5
PMG90 L	3	1,7	86	3,7	88	5,8	91
PMG112	1	1	89	2,5	90	3,7	91
	2	2	90	5	91	7,4	92
	3	3	91	7,5	92	11	93
	4	4	92	10	93	14,8	94

S1 40/125°C cl H							
model	modules	1000 RPM kWe	eff %	2000 RPM kWe	eff %	3000 RPM kWe	eff %
PMG160 M	3	7,5	90	16,5	91	26	92
PMG160 L	4	10	91	22	91	35	92
	5	13	91,5	28	92	44	92,5
	6	16	92	34	93	54	93,5
	7	18	93	40	93,5	64	94



ALTERNATORS FOR *COMBINED **HEAT** & **POWER*** OVERVIEW

ISO 9001:2015 and ISO 14001:2015
We work for quality and sustainability every day



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