

ELECTRICAL COMPONENTS SDN BHD



Hybrid Var Compensators





Hybrid var compensators (HVC) are the ultimate answer to power quality problems caused by waveform distortions, low power factor, voltage variations, voltage fluctuations and load unbalance for a wide range of segments and applications. They are a high performance, compact, flexible, modular and cost-effective type of active power filters (APF) that provide an instantaneous and effective response to power quality problems in low or high voltage electric power systems. They enable longer equipment lifetime, higher process reliability, improved power system capacity and stability, and reduced energy losses, complying with most demanding power quality standards and grid codes.

Typical Applications



- Equipment using variable speed drives (VSD).
- Arcing devices: Electric arc furnaces (EAF), discharge-type lighting (fluorescent, sodium vapor and mercury vapor) and arc welders.
- Switch mode power supplies: Computers, TVs, battery chargers, LED lighting, PLCs, etc.
- UPS systems.
- Solar inverters and wind turbine generators.
- Modulated phase controllers, cycloconverters and thyristor-controlled AC voltage regulators.
- Saturable/rotating devices: Induction heaters, transformers, generators, reactors and motors.
- Installations with fast changing reactive power demand or highly dynamic loads like ball mills.
- Correction of leading power factor like in data centers allowing back-up generators operation
- Railway electrification systems: Trains & trams
- Loads with low power factor: Motors, cables, lightly loaded transformers, lighting, etc.

Comparison With Conventional Solutions

	Capacitor banks, reactor banks or passive harmonic filters	Hybrid var compensators
Response time	Contactor-based solutions take at least 30s to 40s to mitigate the problem and thyristor-based solutions 20ms to 30ms	• Real-time mitigation of power quality problems as the overall response time is less than 100µs
Output	 Depends on step sizes, cannot match load demand in real time Depends on grid voltage as capacitor units & reactors are used Steps inject extra capacitive reactive power in the system 	 Instantaneous, continuous, stepless and seamless Grid voltage fluctuation has no influence on the output No injection of extra capacitive reactive power
Harmonic filtering	One filter needed for eliminating each single harmonic order Characteristics affected by network impedance and unbalance	2nd to the 50th order simultaneously (odd and even) Unaffected by network impedance or unbalance
Power factor correction	Capacitor banks needed for inductive loads and reactor banks for capacitive loads. Problems in systems with mixed loads Not possible to guarantee unity power factor as they have steps, system will be having continuous over and undercompensation	Corrects simultaneously from -1 to +1 power factor of lagging (inductive) and leading (capacitive) loads Guaranteed unity power factor at all times without any over or undercompensation (stepless output)
Unbalance	Do not correct load unbalance	• Can correct by selecting the amount of load balancing
Design & sizing	Extensive harmonic studies needed to size the proper solution Usually oversized to better adjust to changing load demands Need to be designed taking into account system harmonics Custom-built for specific load and network conditions	Not required extensive studies as it is adjustable Mitigation capacity can be exactly what load demands Unaffected by harmonic distortion in the system Can adapt to load and network conditions & changes
Resonance	Parallel or series resonance can amplify currents in the system	No risk of harmonic resonance with the network
Transients	Caused by the switching of capacitor units or shunt reactors	Not created (no switching of passive components)
Overloading	Possible due to slow response and/or variation of loads	Not possible as current limited to max. RMS current
Footprint & installation	Medium to large footprint, especially if several harmonic orders Not simple installation, especially if loads upgraded frequently	Small footprint and simple installation as modules are compact in size. Existing switchgear can be used
Expansion	Limited and depends on load conditions and network topology	Simple (and not dependant) by adding modules
Maintenance & lifetime	Using components that need extensive maintenance like fuses, circuit breakers, contactors, reactors and capacitor units Switching, transients and resonance reduce lifetime	Simple maintenance and service life up to 15 years as there is no electro-mechanical switching and no risk of transients or resonance

200-480VAC devices

200-480VAC devi		***	***	10.100	10.100	10.150	****
HVC WITH 1 MODULE	A2-50	A2-60	A2-75	A2-100 Electrical ratings	A2-120	A2-150	A2-200
Rated voltage		200-480VAC +/-109	% (auto sensing). Con	nection to higher volta		step-up transformer.	
Rated frequency	50/60Hz (auto sensing).						
Reactive power output at 415V using SVG module	-36 to +246kvar	-43 to +283kvar	-54 to +354kvar	-72 to +492kvar	-86 to +566kvar	-108 to +708kvar	-144 to +984kvar
Reactive power output at 415V using AHF module at 50%	-25 to +175kvar	-30 to +210kvar	-37.5 to +262.5kvar	-50 to +350kvar	-60 to +420kvar	-75 to +525kvar	-100 to +700kvar
Phase RMS current output at 415V using AHF module at 50%	35A	42A	53A	70A	85A	106A	141A
Neutral RMS current output at	150A	180A	225A	300A	360A	450A	600A
415V using AHF module at 50%	20 to 10401	42 +- + 2021	54 to 1.054loves	70 to 14001	00 to 1 5001	400 to 1700loses	444 to 10041
Reactive power output at high voltage (>1kV) with SVG and	-36 to +246kvar	-43 to +283kvar	-54 to +354kvar	-72 to +492kvar	-86 to +566kvar	-108 to +708kvar	-144 to +984kvar
transformer (415V secondary)							
Reaction / response time	Dogation	time <=0 mioresees	ada / Overall reaspana	Electrical features	anda (1 notwork avala	if working in selectabl	o modo)
Electrical system compatibility	Reaction	time <50 microsecor		e 3-wire and 3-phase		II WORKING III Selectabi	e mode).
Inverter topology				NPC inverter topology			
Switching frequency Controller	20kHz Real-time digital control with FFT.						
Harmonic filtering	1st to 50th harmonic order (odd and even harmonics). Fully selectable and programmable per harmonic order.						
Operation modes		All h	armonics / All harmon	ics but not fundament	al / Selectable harmo	nics.	
Power factor correction						ve) and lagging (induct) via reactive power in	
Voltage support Load balancing						ects displacement por	
	ŭ	Load balan	cing degree can be se	et from 0% to 100% of	the output current of	the module.	
Harmonic generation function Protection functions	Controlled & se		ection can be used for ent, overvoltage, unde			ponents of the electric	power system.
Stand-by & AutoStart	Stand-by stops					utomatic start after a	network failure.
Remote discrete control	,			Remote run/stop.			
Number of steps and size		6 capacitor bank sto	eps per module. One d	Capacitor bank steps		on 10layar to 200layar	
Protection		o capacitor bank ste		ded case circuit breal		BIT TORVAL TO ZOURVAL.	
Switching devices				rs or thyristor switch			
Reactors Capacitor units	Single	nhase canacitor units		ned reactors 5.67%, 6		cted internally in star o	r delta
Capacitor units	Olligie	priase capacitor driits	connected in star or	Connections	sapacitor units connec	cted internally in star o	r delta.
Digital inputs						for stand-by, trip or al	
Digital outputs Current transformers (CT)	o potential free of		ry ratio with 1A or 5A			Il can be used for capa v or better.	acitor bank steps.
CT location		(current transformer	s in the load side) and	closed loop (current t	ransformers in the su	ipply side) connections	
CT polarity Number of CTs required						ity from normal to inve	
Connection of parallel modules	Open loop connection: 3 CTs. Closed loop connection of 1 module: 3 CTs. Closed loop connection of several modules in parallel: 6 CTs. Unlimited scalability. Parallel operation of any rating combinations up to 7 modules per one HML Unlimited amount of HMls.						
	Orimitati	ed scalability. Paralle	operation of any rating	g combinations up to			
	CHIIIII			Interfaces	7 modules per one HN	Ml. Unlimited amount o	
HMI / display	Crimini	7" touch s	creen multilingual gra	Interfaces phical HMI (new langu	7 modules per one HN ages can be added or	VII. Unlimited amount on request).	
HMI / display Monitoring and reporting Communication capability	O'mining.	7" touch s	creen multilingual gra mote monitoring capal Eth	Interfaces phical HMI (new langu pilities. Reports data of nernet and Modbus TO	7 modules per one HN ages can be added or f power quality events P.	VII. Unlimited amount on request).	
HMI / display Monitoring and reporting	O'llining.	7" touch s	creen multilingual grap mote monitoring capal Ett Vi	Interfaces phical HMI (new langu pilities. Reports data concernet and Modbus TO a Ethernet or USB driv	7 modules per one HIM ages can be added or of power quality events CP.	VII. Unlimited amount on request).	
HMI / display Monitoring and reporting Communication capability	O'llinin	7" touch s	creen multilingual grap mote monitoring capal Ett Vi	Interfaces phical HMI (new langu pilities. Reports data of nernet and Modbus TO	7 modules per one HIM ages can be added or of power quality events CP.	VII. Unlimited amount on request).	
HMI / display Monitoring and reporting Communication capability Software update Enclosure IP class Enclosure material and colour		7" touch s On-site and re	icreen multilingual gra mote monitoring capal Ett Vi Mect	Interfaces phical HMI (new langu pilities. Reports data o nernet and Modbus TO a Ethernet or USB driv nanical features (mo IP20 Balvanized steel. Black	7 modules per one Hilb ages can be added or if power quality events CP. re. dule)	MI. Unlimited amount on request). s up to 30 days.	f HMIs.
HMI / display Monitoring and reporting Communication capability Software update Enclosure IP class Enclosure material and colour Cooling method		7" touch s On-site and re	icreen multilingual gra mote monitoring capal Ett Vi Mect	Interfaces hiterfaces	7 modules per one Hilb ages can be added or if power quality events CP. re. dule)	VII. Unlimited amount on request).	f HMIs.
Monitoring and reporting Communication capability Software update Enclosure IP class Enclosure material and colour Cooling method Losses Noise level (ISO 3746)	Fc 60dB	7" touch s On-site and re	creen multilingual gra mote monitoring capal Ett Vi. Mecl ervice automatically co	Interfaces oblighted by the control of the control	7 modules per one Hilb ages can be added or if power quality events ;P. re. dule) c. ns adjusted by modul	wll. Unlimited amount on request). Is up to 30 days. Ide temperature via PW	f HMIs. M. 68dB
Monitoring and reporting Communication capability Software update Enclosure IP class Enclosure material and colour Cooling method Losses Noise level (ISO 3746) Dimensions WxHxD	Fc 60dB 225x850x500mm	7" touch s On-site and re orced air by easy to se 60dB 225x850x500mm	mote monitoring capal mote monitoring capal Ett Vi Mect ervice automatically co	Interfaces hical HMI (new langu publities. Reports data c terret and Modbus TC a Ethernet or USB driv annical features (mo IP20 Balvanized steel. Blaci ntrolled DC cooling fa <2.3% 64dB 225x850x500mm	7 modules per one Hilb ages can be added or if power quality events: P. re. dule) 6. c. ns adjusted by modul 65dB 225x850x500mm	wll. Unlimited amount on request). s up to 30 days. le temperature via PW 67dB 225x1150x500mm	M. 68dB 225x1150x500mm
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HMI / display Monitoring and reporting Communication capability Software update Enclosure IP class Enclosure material and colour Cooling method Losses Noise level (ISO 3746) Dimensions WxHxD Weight Temperature (without derating) Humidity Attitude (without derating) Needed airflow for the module Ventilation requirements Main circuit fuses Cable entry	60dB 225x850x500mm 70kg 350 m³/h	7" touch s On-site and re orced air by easy to se 60dB 225x850x500mm 70kg +5°C tc 350 m³/h 300r	ecreen multilingual grap mote monitoring capal Ett Vi. Mecl ervice automatically co 64dB 225x850x500mm 70kg Ins +40°C. Maximu 400 m³/h nm free space below a NH00 gL/gG 100A	Interfaces biblies. Reports data cr printer and Modbus TC a Ethernet or USB driv nanical features (mo il P20 Balvanized steel. Blaci ntrolled DC cooling fa <2.3% 64dB 225x850x500mm 70kg stallation and operat um 85% RH, non-conc Up to 1000m. 450 m³/h and above the module NH00 gL/gG 125A Top or bottom. dards and certificat	7 modules per one Hilbages can be added or if power quality events P. ve. dule) 6. c.	wll. Unlimited amount on request). Is up to 30 days. Ide temperature via PW 67dB 225x1150x500mm 110kg +5°C to	M. 68dB 225x1150x500mm 110kg +40°C.
HMI / display Monitoring and reporting Communication capability Software update Enclosure IP class Enclosure material and colour Cooling method Losses Noise level (ISO 3746) Dimensions WxHxD Weight Temperature (without derating) Humidity Altitude (without derating) Needed airflow for the module Ventilation requirements Main circuit fuses Cable entry Electrical safety	60dB 225x850x500mm 70kg 350 m³/h	7" touch s On-site and re orced air by easy to se 60dB 225x850x500mm 70kg +5°C tc 350 m³/h 300r	ecreen multilingual grap mote monitoring capal Ett Vi Mect ervice automatically co 64dB 225x850x500mm 70kg Ins x+40°C. Maximu 400 m³/h mm free space below a NH00 gL/gG 100A	Interfaces hical HMI (new langu publities. Reports data c nernet and Modbus TC a Ethernet or USB driv antical features (mo IP20 Balvanized steel. Blaci ntrolled DC cooling fa <2.3% 64dB 225x850x500mm 70kg tallation and operat with 1000m. 450 m³/h and above the module NH00 gL/gG 125A Top or bottom. dards and certificat EN 50178	7 modules per one Hilb ages can be added or if power quality events P. ive. dule) 65dB 225x850x500mm 70kg ion +5°C to +30°C. ensing. 500 m³/h required for air ventila NH00 gL/gG 160A	wll. Unlimited amount on request). Is up to 30 days. Ide temperature via PW 67dB 225x1150x500mm 110kg +5°C to	M. 68dB 225x1150x500mm 110kg +40°C.
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HMI / display Monitoring and reporting Communication capability Software update Enclosure IP class Enclosure material and colour Cooling method Losses Noise level (ISO 3746) Dimensions WxHxD Weight Temperature (without derating) Humidity Attitude (without derating) Needed airflow for the module Ventilation requirements Main circuit fuses Cable entry Electrical safety Electromagnetic compatibility Third party approvals	60dB 225x850x500mm 70kg 350 m³/h	7" touch s On-site and re orced air by easy to se 60dB 225x850x500mm 70kg +5°C tc 350 m³/h 300r	ecreen multilingual grap mote monitoring capal Ett Vi. Mecl ervice automatically co evice automatically co 64dB 225x850x500mm 70kg Ins 9+40°C. Maximu 400 m³/h mm free space below a NH00 gL/gG 100A Star Emissions: EN/IEC	Interfaces bibliate in the control of the control o	7 modules per one Hilbages can be added or if power quality events P. ve. dule) 6 cons adjusted by modul 65dB 225x850x500mm 70kg 70kg 60 1500 m³/h required for air ventili. NH00 gL/gG 160A ions EN/IEC 61000-6-2.	wll. Unlimited amount on request). Is up to 30 days. Ide temperature via PW 67dB 225x1150x500mm 110kg +5°C to	M. 68dB 225x1150x500mm 110kg +40°C.
Monitoring and reporting Communication capability Software update Enclosure IP class Enclosure material and colour Cooling method Losses Noise level (ISO 3746) Dimensions WxHxD Weight Temperature (without derating) Humidity Altitude (without derating) Needed airflow for the module Ventilation requirements Main circuit fuses Cable entry Electrical safety Electromagnetic compatibility Third party approvals	60dB 225x850x500mm 70kg 350 m³/h	7" touch s On-site and re orced air by easy to se 60dB 225x850x500mm 70kg +5°C tc 350 m³/h 300r	ecreen multilingual grap mote monitoring capal Ett Vi. Mecl ervice automatically co evice automatically co 64dB 225x850x500mm 70kg Ins 9+40°C. Maximu 400 m³/h mm free space below a NH00 gL/gG 100A Star Emissions: EN/IEC	Interfaces hical HMI (new langu publities. Reports data c ternet and Modbus TC a Ethernet or USB driv anical features (mo IP20 Balvanized steel. Blaci ntrolled DC cooling fa <2.3% 64dB 225x850x500mm 70kg tallation and operat with the series of the series of the series MHO gL/gG 125A Top or bottom. dards and certificat EN 50178 61000-6-4. Immunity: CE, UL (pending) 2.5kV/1min	7 modules per one Hilbages can be added or if power quality events P. ve. dule) 6 cons adjusted by modul 65dB 225x850x500mm 70kg 70kg 60 1500 m³/h required for air ventili. NH00 gL/gG 160A ions EN/IEC 61000-6-2.	wll. Unlimited amount on request). Is up to 30 days. Ide temperature via PW 67dB 225x1150x500mm 110kg +5°C to	M. 68dB 225x1150x500mm 110kg +40°C.
HMI / display Monitoring and reporting Communication capability Software update Enclosure IP class Enclosure material and colour Cooling method Losses Noise level (ISO 3746) Dimensions WxHxD Weight Temperature (without derating) Humidity Altitude (without derating) Needed airflow for the module Ventilation requirements Main circuit fuses Cable entry Electrical safety Electromagnetic compatibility Third party approvals Power frequency voltage test Impulse withstand voltage Short-circuit current	60dB 225x850x500mm 70kg 350 m³/h	7" touch s On-site and re orced air by easy to se 60dB 225x850x500mm 70kg +5°C tc 350 m³/h 300r	ecreen multilingual grap mote monitoring capal Ett Vi Mecl ervice automatically co ervice automatically co 64dB 225x850x500mm 70kg Ins +40°C. Maximu 400 m³/h nm free space below a NH00 gL/gG 100A Star Emissions: EN/IEC	Interfaces bibliate in the control of the control o	7 modules per one Hill ages can be added or if power quality events P. ve. dule) 6. c. s. adjusted by modul 65dB 225x850x500mm 70kg 600 +5°C to +30°C. lensing. 500 m³/h required for air ventili. NH00 gL/gG 160A 6018 EN/IEC 61000-6-2.	wll. Unlimited amount on request). Is up to 30 days. Ide temperature via PW 67dB 225x1150x500mm 110kg +5°C to	M. 68dB 225x1150x500mm 110kg +40°C.
HMI / display Monitoring and reporting Communication capability Software update Enclosure IP class Enclosure material and colour Cooling method Losses Noise level (ISO 3746) Dimensions WxHxD Weight Temperature (without derating) Humidity Attitude (without derating) Needed airflow for the module Ventilation requirements Main circuit fuses Cable entry Electrical safety Electromagnetic compatibility Third party approvals Power frequency voltage test Impulse withstand voltage Short-circuit current Power circuit protection	Foc 60dB 225x850x500mm 70kg 350 m³/h NH00 gL/gG 63A	7" touch s On-site and re orced air by easy to se 60dB 225x850x500mm 70kg +5°C tc 350 m³/h 300r NH00 gL/gG 80A	creen multilingual grap mote monitoring capal Ett Vi Mect crevice automatically co et 4dB 225x850x500mm 70kg Ins x+40°C. Maximu 400 m³/h nm free space below a NH00 gL/gG 100A Star Emissions: EN/IEC Elect 65kA m neral design rule is to	Interfaces whical HMI (new langu publities. Reports data ce ternet and Modbus TC a Ethernet or USB driv anical features (no) BP20 calvanized steel. Blaci ntrolled DC cooling fa 22.3% 64dB 225x850x500mm 70kg tallation and operat 450 m²/h and above the module NH00 gL/gG 125A Top or bottom. dards and certificat EN 50178 61000.6-4. Immunity. tce, UL (pending). tcell (L (pending). tcell (25 kW/Imin 6kV ns (3 seconds) / 143k select the protection I	7 modules per one Hilb ages can be added or if power quality events P. ve. dute) 65dB 225x850x500mm 70kg on +5°C to +30°C. ensing. 500 m³/h required for air ventils NH00 gL/gG 160A ions EN/IEC 61000-6-2. cle) A peak. evel 1.3 times the nor	MI. Unlimited amount on request). Is up to 30 days. The temperature via PW 67dB 225x1150x500mm 110kg +5°C to 750 m³/h ation. NH00 gL/gG 200A	M. 68dB 225x1150x500mm 110kg +40°C. 1000 m³/h NH00 gL/gG 250A
HMI / display Monitoring and reporting Communication capability Software update Enclosure IP class Enclosure material and colour Cooling method Losses Noise level (ISO 3746) Dimensions WxHxD Weight Temperature (without derating) Humidity Altitude (without derating) Needed airflow for the module Ventilation requirements Main circuit fuses Cable entry Electrical safety Electromagnetic compatibility Third party approvals Power frequency voltage test Impulse withstand voltage Short-circuit current	Foc 60dB 225x850x500mm 70kg 350 m³/h NH00 gL/gG 63A	7" touch s On-site and re orced air by easy to se 60dB 225x850x500mm 70kg +5°C tc 350 m³/h 300r NH00 gL/gG 80A	creen multilingual grap mote monitoring capal Ett Vi Mect ervice automatically co 64dB 225x850x500mm 70kg Ins +40°C. Maximu 400 m³/h nm free space below a NH00 gL/gG 100A Star Emissions: EN/IEC Elect 65kA m neral design rule is to g to local regulations,	Interfaces hical HMI (new langu publities. Reports data c ternet and Modbus TC a Ethernet or USB driv annical features (mo IP20 Balvanized steel. Blaci ntrolled DC cooling fa <2.3% 64dB 225x850x500mm 70kg tallation and operat tallation and operat with several cooling fa 450 m³/h and above the module NH00 gL/gG 125A Top or bottom. dards and certificat EN 50178 61000-6-4. Immunity: CE, UL (pending). 2.5kV/1min 6kV select the protection 1 66mm² Cu conductor	7 modules per one Hilbages can be added or if power quality events P. ve. dute) (c. ns adjusted by module) (c. ns adjusted by module) (d. ns adjusted by module) (d. ns adjusted by module) (e. ns adjusted by mod	MI. Unlimited amount on request). Is up to 30 days. The temperature via PW 67dB 225x1150x500mm 110kg +5°C to 750 m³/h ation. NH00 gL/gG 200A	M. 68dB 225x1150x500mm 110kg +40°C. 1000 m³/h NH00 gL/gG 250A
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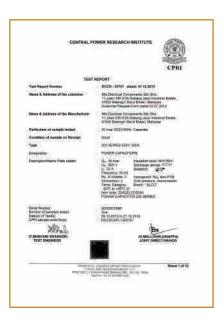
500-690VAC devices

Accordance to company of a control of the control o	HVC WITH 1 MODULE	A2-50-E	A2-60-E	A2-75-E	A2-100-E	A2-120-E
Selection consideration of the Vision of the			101/10 - 1/4001	Electrical ratings		
According to provide calculated 6000 and 200 in 4000 and 200 i	Rated voltage	500-69	00VAC +/-10% (auto sensing)		through suitable step-up transf	former.
states years and color of SUV 40 to +2886cor		60 to 1420la or	70 to 1400larar	. 07	120 to 1940later	142 to 1002later
And provided and State of the Control of the Contro		-60 to +420kVai	-72 to +492kVal	-90 to +630kVal	-120 to +040kVal	-143 to +903kVal
The Part of the Comment of the Comme	Reactive power output at 690V	-40 to +280kvar	-50 to +350kvar	-60 to +420kvar	-80 to +560kvar	-100 to +700kvar
related BMS Convent output at 150% 150% 150% 150% 150% 150% 150% 150%	Phase RMS current output at	35A	42A	53A	70A	85A
An expert or counted at light or separate content and separate content separa	Neutral RMS current output at	150A	180A	225A	300A	360A
Pacificin Flaguence is an experience of the control	Reactive power output at high	-60 to +420kvar	-72 to +492kvar	-90 to +630kvar	-120 to +840kvar	-143 to +983kvar
Reaction tries - 50 microseconds (Overal response time - 100 microseconds (I releasts cycle if working in seerclaide mode). Griffiched system compatibility 3-lawes 2-wire (50 GMOVIC) modules and system ex work (50 GMOVIC) modules and system ex work (50 GMOVIC). Sheef NFC, herefit topicity, (1617). The street of the s	voltage (>1kV) with SVG and transformer (690V secondary)					
Services a parken compatibility 3-places 2 wine (600-6000/C modules) and 3 planes 4 wine (600-5000/C modules) whether by requiring whether the property (607) 200-12 200-12 200-12 200-12 200-12 200-12 200-12 200-13 200-14 200-1	D 4: / 4:	Desetion time 45	2		. (d. maturali, avala if vocalina in	
Asked NPC inverted topology which in prayments or the property of the property	<u> </u>	Reaction time < 50				selectable mode).
Interest President (1997) Figure 1997 Figu	Inverter topology					
terremotic intering personal modes All harmonics and foundamental / Selectable harmonics order. Power factor correction Optimized species and continuously adjustable power factor correction. Social programment of the personal	Switching frequency				,	
An harmonics / All harmonics but not fundamenta / Secutable harmonics. Optimized, selepties and continuously displated power flactor correction, policy organization of bodies in support of the policy of the poli	Controller			Real-time digital control with FF	T.	
Commented corrections Optimized, stepoes and continuously adjustable power factor correction, leading (capacitive) colleges support Reduction of voletage variations (alse and aveils) and militage of voltage for the process of the section of the section of voltage for the process of the section of the sect	Harmonic filtering	1st to 50th				nic order.
Reduction of voltage ventions (sags and sevels) and mitigation of voltage fluctuations (fileder) via reache power impeted). Reduction of via the property of the cologist current of the model. Controlled & selectable fluminosis (mich can be used for valdating the performance of different components of the electric current of the model. Controlled & selectable fluminosis (mich can be used for valdating the performance of different components of the electric current of the model. Controlled & selectable fluminosis (mich can be used for valdating the performance of different components of the electric current of el	_ '	0.15.1				
Negative sequence current injected to balance fundamental current on the system (referently connected displacement power factor). Local balancing degrees can be set from 16 to 100% of the output current of the model. Sound-by 500 to 100 t						
Load balancing degree can be set from 0% to 100% of the output current of the module. Controlled & selectable manners legetion can be useff or vaidable the performance of different components of the electric power system. Trained-by & Justicio functions. Controlled & selectable manners legetion can be useful or vaidable. Diveourant, overnotable, undernotable, covertemperature and rippic circul overload. Stand-by a store of the controlled of the controlle						
Controlled & selectable harmonic rejection can be used for wilddring the performance of different components of the electric power system. Trocket for functions Sum-by stops the QSTs if required components of current is below a certain limit. AutoStart allows automatic start after a network failure. Remote discrete control Remote stops and size Sum-by stops the QSTs if required components on current is below a certain limit. AutoStart allows automatic start after a network failure. Remote stops are stops and size Sum-by stops the QSTs if required components on the stop are modified. Remote stops are stop are modified. Remote stop are stop are modified. Remote stop are stop are modified. Remote stop are stop a	Load balancing	rvegauve sequence				ament power lactor).
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Scapeator bank steps per module. One digatal output can switch a step rated between 16kvar to 200kvar. Protection	Remote discrete control			Remote run/stop.		
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Digital outputs 5 potential free outputs D Foreign (1977) F	Digital inputs	3 potential fre	e inputs 15-48VDC or up to 2		ammed as trigger for stand-by	trip or alarm.
Open loop (current transformers in the load side) and closed loop (current transformers in the supply side) connections possible.	Digital outputs					
To positry If one or more CTs are connected with inversed polarity, it is possible to change the load current polarity from normal to inversed in the FMI. Unlimited connection of Serveral mobiles in parallet CMS.	Current transformers (CT)		Any primary ratio with 1A	or 5A secondary (5A preferred).	Class 1 accuracy or better.	
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Mil / alpay Thouch screen multilingual graphical HM (new languages can be added on request).	Connection of parallel modules	Orinimited Scala	bility. I araller operation or any		badies per one riivii. Oriiirriitea t	annount of Filvila.
Ethernet and Modulus TCP. We Ethernet or USB drive. Modulus Peas	HMI / display		7" touch screen multilingu		s can be added on request).	
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Maximum 85% RH, non-condensing. Without derating. Without derating. Up to 1000m.	Cooling method	67dB 225x1150x500mm	67dB 225x1150x500mm	Galvanized steel. Black. ally controlled DC cooling fans a <2.8% 67dB 225x1150x500mm 120kg	67dB 225x1150x500mm	68dB 225x1150x500mm
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Adain circuit fuses NH00 gL/gG 63A NH00 gL/gG 80A NH00 gL/gG 100A NH00 gL/gG 125A NH00 gL/gG 160A Aable entry Standards and certifications Electrical safety Emissions: EN/EC 61000-6-4. Immunity: EN/IEC 61000-6-2. CE, UL (pending). Electrical features (cubicle) Cower frequency voltage test mpulse withstand voltage Short-circuit current Cower circuit protection According to local regulations, 16mm² Cu conductor is the minimum recommended. According to local regulations, 16mm² Cu conductor is the minimum recommended. Mechanical features (cubicle) According to local regulations, 16mm² Cu conductor is the minimum recommended. Mechanical features (cubicle) Free-standing cubicle. Free-stand	Cooling method .osses Voise level (ISO 3746) Dimensions WxHxD Weight Femperature (without derating) Humidity	67dB 225x1150x500mm	67dB 225x1150x500mm 120kg	Galvanized steel. Black. ally controlled DC cooling fans a <2.8% 67dB 225x1150x500mm 120kg Installation and operation +5°C to +40°C. daximum 85% RH, non-condens	67dB 225x1150x500mm 120kg	68dB 225x1150x500mm
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CE, UL (pending). Cover frequency voltage test 2.5kV/min	Cooling method Losses Voise level (ISO 3746) Dimensions WxHxD Weight Femperature (without derating) Humidity Withtude (without derating) Weeded airflow for the module Ventilation requirements Main circuit fuses Cable entry	67dB 225x1150x500mm 120kg 350 m³/h	67dB 225x1150x500mm 120kg M 350 m³/h 300mm free space b	Galvanized steel. Black. ally controlled DC cooling fans a	67dB 225x1150x500mm 120kg ing. 450 m³/h uired for air ventilation. NH00 gL/gG 125A	68dB 225x1150x500mm 120kg 500 m³/h
Electrical features (cubicle) 2.5kV/1min mpulse withstand voltage 6kV short-circuit current 65kA rms (3 seconds) / 143kA peak. Power circuit protection MCCB or fuse-switch. General design rule is to select the protection level 1.3 times the nominal current of the device. According to local regulations, 16mm² Cu conductor is the minimum recommended. Mechanical features (cubicle) Free-standing cubicle. IP20 to IP42 for indoor installation (other classes or outdoor installation cubicles on request). Galvanized steel, light grey RAL7035 (other materials or colours on request). Gooling method Forced air or heat exchanger. Cooling method Forced air or heat exchanger. Top or bottom. Handle without lock, lock with key, electrical lock or special safety lock. MVC WITH FEW MODULES Electrical ratings Rated voltage S00-690VAC +/-10% (auto sensing). Connection to higher voltages through suitable step-up transformer. Any output is possible. Unlimited parallel operation of any rating combination of modules.	Cooling method Losses Noise level (ISO 3746) Dimensions WxHxD Weight Temperature (without derating) Humidity Altitude (without derating) Needed airflow for the module Ventilation requirements Main circuit fuses Cable entry	67dB 225x1150x500mm 120kg 350 m³/h	67dB 225x1150x500mm 120kg M 350 m³/h 300mm free space b NH00 gL/gG 80A	Galvanized steel. Black. ally controlled DC cooling fans a	67dB 225x1150x500mm 120kg ing. 450 m³/h uired for air ventilation. NH00 gL/gG 125A	68dB 225x1150x500mm 120kg 500 m³/h
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mpulse withstand voltage fishort-circuit current fishar ms (3 seconds) / 143kA peak. MCCB or fuse-switch. General design rule is to select the protection level 1.3 times the nominal current of the device. According to local regulations, 16mm² Cu conductor is the minimum recommended. Mechanical features (cubicle) Mounting arrangement Free-standing cubicle. IP20 to IP42 for indoor installation (other classes or outdoor installation cubicles on request). Galvanized steel, light grey RAL 7035 (other materials or colours on request). Galvanized steel, light grey RAL 7036 (other materials or colours on request). Galvanized steel, light grey RAL 7036 (other materials or colours on request). Forced air or heat exchanger. Cable entry Top or bottom. Handle without lock, lock with key, electrical lock or special safety lock. MVC WITH FEW MODULES Electrical ratings Rated voltage 500-690VAC +/-10% (auto sensing). Connection to higher voltages through suitable step-up transformer. Any output is possible. Unlimited parallel operation of any rating combination of modules.	Cooling method .osses Noise level (ISO 3746) Dimensions WxHxD Weight Temperature (without derating) Humidity Mittude (without derating) Needed airflow for the module //entilation requirements Main circuit fuses Cable entry Electrical safety Electromagnetic compatibility	67dB 225x1150x500mm 120kg 350 m³/h	67dB 225x1150x500mm 120kg M 350 m³/h 300mm free space b NH00 gL/gG 80A	Galvanized steel. Black. ally controlled DC cooling fans a <2.8% 67dB 225x1150x500mm 120kg Installation and operation +5°C to +40°C. taximum 85% RH, non-condens Up to 1000m. 400 m³/h below and above the module req NH00 gL/gG 100A Top or bottom. Standards and certifications EN 50178 N/IEC 61000-6-4. Immunity: EN CE, UL (pending).	67dB 225x1150x500mm 120kg ing. 450 m³/h uired for air ventilation. NH00 gL/gG 125A	68dB 225x1150x500mm 120kg 500 m³/h
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According to local regulations, 16mm² Cu conductor is the minimum recommended. Mechanical features (cubicle)	Cooling method Losses Losses Losse (ISO 3746) Dimensions WxHxD Weight Temperature (without derating) Humidity Wititude (without derating) Needed airflow for the module Ventilation requirements Main circuit fuses Lable entry Electrical safety Electromagnetic compatibility Third party approvals	67dB 225x1150x500mm 120kg 350 m³/h	67dB 225x1150x500mm 120kg M 350 m³/h 300mm free space b NH00 gL/gG 80A	Galvanized steel. Black. ally controlled DC cooling fans a	67dB 225x1150x500mm 120kg ing. 450 m³/h uired for air ventilation. NH00 gL/gG 125A	68dB 225x1150x500mm 120kg 500 m³/h
Mechanical features (cubicle) Free-standing cubicle. Free-standing	Cooling method Losses L	67dB 225x1150x500mm 120kg 350 m³/h NH00 gL/gG 63A	67dB 225x1150x500mm 120kg M 350 m³/h 300mm free space b NH00 gL/gG 80A Emissions: El	Galvanized steel. Black. ally controlled DC cooling fans a	67dB 225x1150x500mm 120kg ing. 450 m³/h uired for air ventilation. NH00 gL/gG 125A NH00 gL/gG 125A	68dB 225x1150x500mm 120kg 500 m³/h NH00 gL/gG 160A
Advanting arrangement Free-standing cubicle. Inclosure IP class IP20 to IP42 for indoor installation cubicles on request). Galvanized steel, light grey RAL7035 (other naterials or colours on request). Panel thickness and treatment 2mm. Epoxy powder coating. Cooling method Forced air or heat exchanger. Top or bottom. Handle without lock, lock with key, electrical lock or special safety lock. INC WITH FEW MODULES Electrical ratings Rated voltage 500-690VAC +/-10% (auto sensing). Connection to higher voltages through suitable step-up transformer. Any output is possible. Unlimited parallel operation of any rating combination of modules.	Cooling method Losses L	67dB 225x1150x500mm 120kg 350 m³/h NH00 gL/gG 63A	67dB 225x1150x500mm 120kg M 350 m³/h 300mm free space b NH00 gL/gG 80A Emissions: El	Galvanized steel. Black. ally controlled DC cooling fans a	ing. 450 m³/h uired for air ventilation. NH00 gL/gG 125A	68dB 225x1150x500mm 120kg 500 m³/h NH00 gL/gG 160A
IP20 to IP42 for indoor installation (other classes or outdoor installation cubicles on request). Galvanized steel, light grey RAL7035 (other materials or colours on request). Galvanized steel, light grey RAL7035 (other materials or colours on request). 2mm. Epoxy powder coating. Porced air or heat exchanger. Top or bottom. Handle without lock, lock with key, electrical lock or special safety lock. WC WITH FEW MODULES Electrical ratings Rated voltage 500-690VAC +/-10% (auto sensing). Connection to higher voltages through suitable step-up transformer. Any output is possible. Unlimited parallel operation of any rating combination of modules.	Cooling method Losses L	67dB 225x1150x500mm 120kg 350 m³/h NH00 gL/gG 63A	67dB 225x1150x500mm 120kg M 350 m³/h 300mm free space b NH00 gL/gG 80A Emissions: El	Galvanized steel. Black. ally controlled DC cooling fans a	ing. 450 m³/h uired for air ventilation. NH00 gL/gG 125A NH00 nured for air ventilation.	68dB 225x1150x500mm 120kg 500 m³/h NH00 gL/gG 160A
Galvanized steel, light grey RAL7035 (other materials or colours on request). 2mm. Epoxy powder coating. 2ooling method Forced air or heat exchanger. 2able entry Top or bottom. Handle without lock, lock with key, electrical lock or special safety lock. 4VC WITH FEW MODULES Electrical ratings Rated voltage 500-690VAC +/-10% (auto sensing). Connection to higher voltages through suitable step-up transformer. Any output is possible. Unlimited parallel operation of any rating combination of modules.	Cooling method Losses Losses Losse (150 3746) Dimensions WxHxD Weight Temperature (without derating) Humidity Wititude (without derating) Reeded airflow for the module Ventilation requirements Main circuit fuses Cable entry Electrical safety Electromagnetic compatibility Third party approvals Power frequency voltage test Impulse withstand voltage Short-circuit current Cover circuit protection Earthing	67dB 225x1150x500mm 120kg 350 m³/h NH00 gL/gG 63A	67dB 225x1150x500mm 120kg M 350 m³/h 300mm free space b NH00 gL/gG 80A Emissions: El	Galvanized steel. Black. ally controlled DC cooling fans a	ing. 450 m³/h uired for air ventilation. NH00 gL/gG 125A NH00 nured for air ventilation.	68dB 225x1150x500mm 120kg 500 m³/h NH00 gL/gG 160A
Panel thickness and treatment 2mm. Epoxy powder coating. 2mm. Epoxy powder coating. Forced air or heat exchanger. Top or bottom. 2mm. Epoxy powder coating. Forced air or heat exchanger. Top or bottom. 2mm. Epoxy powder coating. Top or heat exchanger. Top or bottom. 2mm. Epoxy powder coating. Top or heat exchanger. Top or bottom. 2mm. Epoxy powder coating. Top or heat exchanger. Electrical lock or special safety lock. Electrical ratings Rated voltage 500-690VAC +/-10% (auto sensing). Connection to higher voltages through suitable step-up transformer. Any output is possible. Unlimited parallel operation of any rating combination of modules.	Cooling method Losses Losses Losses Losse (ISO 3746) Dimensions WxHxD Weight Temperature (without derating) Humidity Littude (without derating) Leeded airflow for the module Leetilation requirements Lain circuit fuses Cable entry Electrical safety Electromagnetic compatibility Third party approvals Power frequency voltage test Impulse withstand voltage Short-circuit current Down circuit protection Earthing Mounting arrangement	67dB 225x1150x500mm 120kg 350 m³/h NH00 gL/gG 63A	67dB 225x1150x500mm 120kg M 350 m³/h 300mm free space b NH00 gL/gG 80A Emissions: El	Galvanized steel. Black. ally controlled DC cooling fans a	67dB 225x1150x500mm 120kg ing. 450 m³/h uired for air ventilation. NH00 gL/gG 125A //EC 61000-6-2.	68dB 225x1150x500mm 120kg 500 m³/h NH00 gL/gG 160A
Forced air or heat exchanger. Top or bottom. Door locking system Handle without lock, lock with key, electrical lock or special safety lock. WC WITH FEW MODULES Electrical ratings Rated voltage 500-690VAC +/-10% (auto sensing). Connection to higher voltages through suitable step-up transformer. Any output is possible. Unlimited parallel operation of any rating combination of modules.	Cooling method Losses Noise level (ISO 3746) Dimensions WxHxD Weight Temperature (without derating) Humidity Altitude (without derating) Needed airflow for the module Ventilation requirements Main circuit fuses Cable entry Electrical safety Electromagnetic compatibility Third party approvals Power frequency voltage test impulse withstand voltage Short-circuit current Power circuit protection Earthing Mounting arrangement Enclosure IP class	67dB 225x1150x500mm 120kg 350 m³/h NH00 gL/gG 63A	67dB 225x1150x500mm 120kg M 350 m³/h 300mm free space b NH00 gL/gG 80A Emissions: El 6:e-switch. General design rule According to local regulati	Galvanized steel. Black. ally controlled DC cooling fans a	ing. 450 m³/h uired for air ventilation. NH00 gL/gG 125A 3//EC 61000-6-2. aak. 1.3 times the nominal current te minimum recommended.	68dB 225x1150x500mm 120kg 500 m³/h NH00 gL/gG 160A
Top or bottom. Noor locking system Handle without lock, lock with key, electrical lock or special safety lock. HAVC WITH FEW MODULES Electrical ratings Rated voltage 500-690VAC +/-10% (auto sensing). Connection to higher voltages through suitable step-up transformer. Any output is possible. Unlimited parallel operation of any rating combination of modules.	Cooling method Losses Noise level (ISO 3746) Dimensions WxHxD Weight Temperature (without derating) Humidity Altitude (without derating) Needed airflow for the module Ventilation requirements Main circuit fuses Cable entry Electrical safety Electromagnetic compatibility Third party approvals Power frequency voltage test Impulse withstand voltage Short-circuit current Power circuit protection Earthing Mounting arrangement Enclosure IP class Enclosure material and colour	67dB 225x1150x500mm 120kg 350 m³/h NH00 gL/gG 63A	67dB 225x1150x500mm 120kg M 350 m³/h 300mm free space b NH00 gL/gG 80A Emissions: El 6:e-switch. General design rule According to local regulati	Galvanized steel. Black. ally controlled DC cooling fans a	ing. 450 m³/h uired for air ventilation. NH00 gL/gG 125A 3//EC 61000-6-2. aak. 1.3 times the nominal current te minimum recommended.	68dB 225x1150x500mm 120kg 500 m³/h NH00 gL/gG 160A
Handle without lock, lock with key, electrical lock or special safety lock. HVC WITH FEW MODULES Electrical ratings Rated voltage 500-690VAC +/-10% (auto sensing). Connection to higher voltages through suitable step-up transformer. Any output is possible. Unlimited parallel operation of any rating combination of modules.	Cooling method Losses Noise level (ISO 3746) Dimensions WxHxD Weight Temperature (without derating) Humidity Altitude (without derating) Needed airflow for the module Ventilation requirements Main circuit fuses Cable entry Electrical safety Electromagnetic compatibility Third party approvals Power frequency voltage test impulse withstand voltage Short-circuit current Power circuit protection Earthing Mounting arrangement Enclosure IP class	67dB 225x1150x500mm 120kg 350 m³/h NH00 gL/gG 63A	67dB 225x1150x500mm 120kg M 350 m³/h 300mm free space b NH00 gL/gG 80A Emissions: El 6:e-switch. General design rule According to local regulati	Galvanized steel. Black. ally controlled DC cooling fans a	ing. 450 m³/h uired for air ventilation. NH00 gL/gG 125A 3//EC 61000-6-2. aak. 1.3 times the nominal current te minimum recommended.	68dB 225x1150x500mm 120kg 500 m³/h NH00 gL/gG 160A
Rated voltage 500-690VAC +/-10% (auto sensing). Connection to higher voltages through suitable step-up transformer. Any output is possible. Unlimited parallel operation of any rating combination of modules.	Cooling method Losses Noise level (ISO 3746) Dimensions WxHxD Weight Femperature (without derating) Humidity Altitude (without derating) Needed airflow for the module Ventilation requirements Main circuit fuses Cable entry Electrical safety Electromagnetic compatibility Third party approvals Power frequency voltage test impulse withstand voltage Short-circuit current Power circuit protection Earthing Mounting arrangement Enclosure IP class Enclosure material and colour Panel thickness and treatment	67dB 225x1150x500mm 120kg 350 m³/h NH00 gL/gG 63A	67dB 225x1150x500mm 120kg M 350 m³/h 300mm free space b NH00 gL/gG 80A Emissions: El 6:e-switch. General design rule According to local regulati	Galvanized steel. Black. ally controlled DC cooling fans a	ing. 450 m³/h uired for air ventilation. NH00 gL/gG 125A 3//EC 61000-6-2. aak. 1.3 times the nominal current te minimum recommended.	68dB 225x1150x500mm 120kg 500 m³/h NH00 gL/gG 160A
Rated voltage 500-690VAC +/-10% (auto sensing). Connection to higher voltages through suitable step-up transformer. Any output is possible. Unlimited parallel operation of any rating combination of modules.	Cooling method .osses .osses .Voise level (ISO 3746) .Dimensions WxHxD .Weight Femperature (without derating) .Humidity .Wittude (without derating) .Weeded airflow for the module .Ventilation requirements .Wain circuit fuses .Cable entry	67dB 225x1150x500mm 120kg 350 m³/h NH00 gL/gG 63A	67dB 225x1150x500mm 120kg M 350 m³/h 300mm free space b NH00 gL/gG 80A Emissions: El 6e-switch. General design rule According to local regulati Galvanized steel, light	Galvanized steel. Black. ally controlled DC cooling fans a	ing. 450 m³/h uired for air ventilation. NH00 gL/gG 125A NH00 gL/gG 125A MIEC 61000-6-2. 28ak. 1.3 times the nominal current the minimum recommended. 29) Installation cubicles on request).	68dB 225x1150x500mm 120kg 500 m³/h NH00 gL/gG 160A
Rated voltage 500-690VAC +/-10% (auto sensing). Connection to higher voltages through suitable step-up transformer. Any output is possible. Unlimited parallel operation of any rating combination of modules.	Cooling method Losses Voise level (ISO 3746) Dimensions WxHxD Weight Femperature (without derating) Humidity Wittude (without derating) Needed airflow for the module Ventilation requirements Main circuit fuses Cable entry Electrical safety Electromagnetic compatibility Third party approvals Power frequency voltage test Impulse withstand voltage Short-circuit current Power circuit protection Earthing Mounting arrangement Enclosure IP class Enclosure material and colour Zanel thickness and treatment Cooling method Cable entry Door locking system	67dB 225x1150x500mm 120kg 350 m³/h NH00 gL/gG 63A	67dB 225x1150x500mm 120kg M 350 m³/h 300mm free space b NH00 gL/gG 80A Emissions: El 6e-switch. General design rule According to local regulati Galvanized steel, light	Galvanized steel. Black. ally controlled DC cooling fans a	ing. 450 m³/h uired for air ventilation. NH00 gL/gG 125A NH00 gL/gG 125A MIEC 61000-6-2. 28ak. 1.3 times the nominal current the minimum recommended. 29 installation cubicles on request).	68dB 225x1150x500mm 120kg 500 m³/h NH00 gL/gG 160A
RMS current output Any output is possible. Unlimited parallel operation of any rating combination of modules.	Cooling method Losses Losses Losses Losse (ISO 3746) Dimensions WxHxD Weight Temperature (without derating) Humidity Vititude (without derating) Lee ded airflow for the module Lee the comparation of the comparation of the lee t	67dB 225x1150x500mm 120kg 350 m³/h NH00 gL/gG 63A	67dB 225x1150x500mm 120kg M 350 m³/h 300mm free space b NH00 gL/gG 80A Emissions: El 6e-switch. General design rule According to local regulati Galvanized steel, light	Galvanized steel. Black. ally controlled DC cooling fans a	ing. 450 m³/h uired for air ventilation. NH00 gL/gG 125A NH00 gL/gG 125A MIEC 61000-6-2. 28ak. 1.3 times the nominal current the minimum recommended. 29 installation cubicles on request).	68dB 225x1150x500mm 120kg 500 m³/h NH00 gL/gG 160A
	Cooling method Losses Losses Losses Losse Voice level (ISO 3746) Dimensions WxHxD Weight Temperature (without derating) Humidity Wititude (without derating) Reeded airflow for the module Pentilation requirements Main circuit fuses Lable entry Electrical safety Electromagnetic compatibility Third party approvals Power frequency voltage test mpulse withstand voltage Short-circuit current Power circuit protection Earthing Mounting arrangement Enclosure IP class Enclosure material and colour Panel thickness and treatment Cooling method Lable entry Door locking system HVC WITH FEW MODULES	67dB 225x1150x500mm 120kg 350 m³/h NH00 gL/gG 63A MCCB or fus	67dB 225x1150x500mm 120kg M 350 m³/h 300mm free space b NH00 gL/gG 80A Emissions: El 6e-switch. General design rule According to local regulati Galvanized steel, light	Galvanized steel. Black. ally controlled DC cooling fans a	67dB 225x1150x500mm 120kg ing. 450 m³/h uired for air ventilation. NH00 gL/gG 125A ing. NH00 gL/gG 125A ing. ing. ing. ing. 450 m³/h uired for air ventilation. NH00 gL/gG 125A ing. ing. ing. ing. ing. ing.	68dB 225x1150x500mm 120kg 500 m³/h NH00 gL/gG 160A of the device.
	Cooling method Losses Losses Losses Losse (ISO 3746) Dimensions WxHxD Veight Temperature (without derating) Lumidity Wititude (without derating) Lumidity Wititude (without derating) Leeded airflow for the module Leeded airflow for the module Leetilation requirements Lain circuit fuses Cable entry Electromagnetic compatibility Third party approvals Leeting approvals Leeting Leet	67dB 225x1150x500mm 120kg 350 m³/h NH00 gL/gG 63A	67dB 225x1150x500mm 120kg M 350 m³/h 300mm free space b NH00 gL/gG 80A Emissions: El e-switch. General design rule According to local regulati Galvanized steel, light Handle without local	Galvanized steel. Black. ally controlled DC cooling fans a	ing. 450 m³/h uired for air ventilation. NH00 gL/gG 125A Seak. 1.3 times the nominal current eminimum recommended. District of colours on request). in stallation cubicles on request). in special safety lock.	68dB 225x1150x500mm 120kg 500 m³/h NH00 gL/gG 160A of the device.

It is extremely important for us to know that all points along our sourcing, manufacturing and distribution network comply with the most rigorous industry standards. Below you will find details of our certifications.













independent european certification



The management of

ELECTRICAL COMPONENTS SDN. BHD.

No 11 & 12, Jalan SS 13/3A, Subang Jaya Industrial Estate, 47500 Subang Jaya, Selangor, Malaysia

has been assessed and certified by independent european certification in respect of their Quality Management System and found to be meeting the requirements of:

ISO 9001:2015

Certification is hereby granted providing the rules and conditions relating to the certification are observed at all times and reference should be made to the Company's Documented Information for any exclusions

Certification Scope:

Design and Manufacture of Capacitors

Date of First Issue

Date of Revision

Valid Until:

21st October 2009

30th August 2018

21st October 2021

Certificate Number:

EAC Number

19

601128

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