

SEONJIN HI-TECH

electrical engineering through loading
experiments become a leading company.

SEONJIN HI-TECH TIME LINE

2004
2009

- 2004. 09
CERTIFICATION OF UTILITY MODEL
REGISTRATION (Registration No. 0363874)
- 2005. 11
CERTIFICATION OF DESIGN
REGISTRATION (Registration No. 0400136)
- 2006. 04
CERTIFICATION OF PATENT (Certificate
No. 10-0572466)
- 2008. 06
CERTIFICATION OF UTILITY MODEL
REGISTRATION (Registration No.20-0400712)
- 2008. 09
ISO 9001 Certified (Certification No.QMS1354)
- 2009. 11
ISO 9001 Certified (Certification
No.kornE-093108)

2010
2012

- 2010. 04
Certified as Industrial R&D Center(The Korea
Industrial Technology Association)
- 2010. 08
CERTIFICATION OF PATENT (Certificate No. 10-0977184)
- Railway Vehicle Resistor
- 2011. 10
CERTIFICATION OF UTILITY MODEL REGISTRATION
(Registration No. 20-0460841)
- 2012. 04
Factory Expansion and Relocation (Danwon-gu, Ansan-si,
Gyeonggi-do)
- 2012. 05
CERTIFICATION OF PATENT (Certificate No. 10 -149906)

SEONJIN HI-TECH is founded in 2008, as a Resistor Manufacturing Company. Based on technology development with years of research and accumulated extensive field experiences, we are now grown up into the most competitive domestic cooperation for manufacturing and installing service of Resistor, Switchgear and Automatic Control Center. SEONJIN HI-TECH is also appreciated as one of the most reliable company with cutting-edge-technology, and quality management system. SEONJIN HI-TECH has been contributed to national key industry, and now growing as a leader of sustainable green business.

We, SEONJIN HI-TECH including all executives and employees , pledge to endeavor to provide best products and services for our customers.



2013
2014

2013. 01

CERTIFICATION OF PATENT
(Certificate No. 10-1225449)

2014. 01

CERTIFICATION OF PATENT
(Certificate No. 10-1351976)

2014. 05

Factory Expansion and Relocation (Galcheon-ri,
Hyangnam-eup, Hwaseong-si, Gyeonggi-do,
Republic of Korea)

2014. 10

Certificated as INNOBIZ company (Ministry of
SMEs and Startups)

2015
2019~

2015. 01

Trademark Registration (Registration No. 40-2015-002306)
Trademark Registration (Registration No. 40-2015-0002307)

2016. 12

Harmonic Filter Monitoring Device
RC Filter Resistor

2017. 04

Damping Resistor

2017. 07

CERTIFICATION OF PATENT (Certificate No. 10-2017-0089361)

2017. 09

CERTIFICATION OF PATENT (Certificate No. 10-2017-0128469)

2018. 04

Factory Expansion and Relocation (Goomooncheon-ri,
Hyangnam-eup, Hwaseong-si, Gyeonggi-do,
Republic of Korea)

2018. 05

CERTIFICATION OF PATENT (Certificate No. 10-1860760)

2019. 01

Inverter Harmonic Filter

SEONJIN HI-TECH

Resistor PRODUCT

- + DYNAMIC BRAKING RESISTOR [D.B.R]
- + HIGH RESISTANCE GROUNDING EQUIPMENT [H.R.G]
- + CRANE RESISTOR [C.R.R]
- + NEUTRAL GROUNDING RESISTOR [N.R.G]
- + LOAD BANK RESISTOR [L.D.R]
- + STARTING RESISTOR [S.T.R]
- + HARMONIC FILTER RESISTOR (R-CBANK)
- + EDGE WOUND RESISTOR



Product Introduction \

DYNAMIC BRAKING RESISTOR [D.B.R]

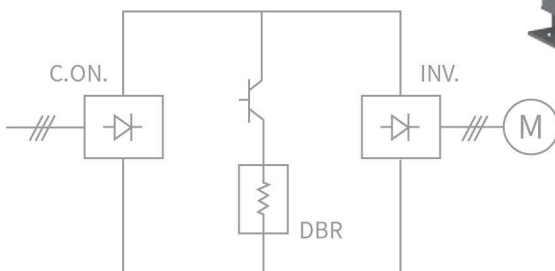
Product Information

D.B.R(Dynamic Braking Resistor) is used for the purpose of suppressing the voltage rise due to energy sucked into the inverter from the mechanical load, preventing damage to the power semiconductor element and absorbing the power regenerated in the inverter.

Feature

1. Fast Production Speed with standardized products.
2. Compact and light weighted enough to be installed in panel.
3. High allowable overload capacity, with cost-efficient product.

Circuit Diagram



CRANE RESISTOR [C.R.R]

Product Information

[C.R.R] is connected to the secondary side of the winding-type induction motor used in the crane to start the motor and control the speed, and the torque value varies depending on the purpose and control method.



FRAME	FRAME [mm]
1F	325
2F	525
3F	725
4F	925
5F	1125
6F	1325
7F	1525



FRAME	FRAME [mm]
1F	377
2F	577
3F	777
4F	977
5F	1177
6F	1377
7F	1577

PURPOSE	CONTROL METHOD	CONTROL TORQUE	MANEUVER TORQUE
HOIST	2'ND[2 nd resistor control]	3, 4, 5	100%
	S[S.C Brake control]	4, 5, 6	Load Down 50%
	E[E.C Brake control]	4, 5, 6	Load UP 135%
			Load Down 35%
	D[Dynamic control]	3, 4, 5	Load UP 135%
			Load Down 50%
	T[Thyristor control]	3, 4, 5	Load UP 120%
Load Down 40%			
C [Customized control]	5, 6, 7	Load UP 200%	
Travelling Traversing	2'ND[2 nd resistor control]	3, 4, 5	100%
	P[Plugging control]	4, 5, 6	50%
	T[Thyristor control]	3, 4, 5	Stop 40%
			Load up 50%
	C[Customized control]	5, 6, 7	100%
			50%

STARTING RESISTOR [S.T.R]

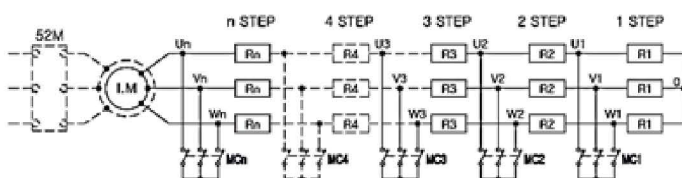
Product Information

[S.T.R] is designed to start a wound type induction motor, and it can be started while maintaining a constant starting current by connecting a resistor through the secondary slip ring of the motor and reducing the resistance value. External structure of [S.T.R] can be offered as either integrated product or prefabricated product – external case with panel which contains resistor and electrical contactor.

Feature

1. Metal MC-TYPE STARTING RESISTOR.
Metal MC-TYPE STARTING RESISTOR is economical product because the structure is simple and maintenance is easy by using an electromagnetic contactor to short the section of the resistor.
2. Metal CAM STARTING RESISTOR
Metal CAM STARTING RESISTOR is manually to start motor, which makes a section short circuit of resistor by using mechanical CAM.
3. Liquid-type Resistor
 - The electrode is inserted and operated inside electrolyte, preventing spark generation.
 - Resistor can do stepless resistance value change, enabling motor to operate smoothly.
 - Cooler is needed for motor velocity control to offset heat generation.

Circuit Diagram



NEUTRAL GROUNDING RESISTOR [N.G.R]

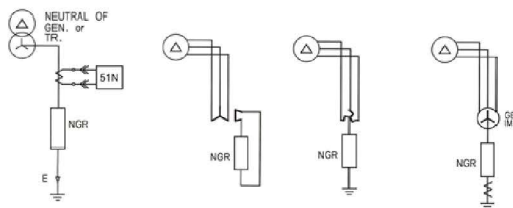
Product Information

[N.G.R] is a resistor connected between the neutral point and ground of a transformer or generator. It is a resistor to limit the ground fault current in case of a ground fault in the 3-phase current system.

Feature

1. Prevents insulation breakdown of equipment and lines due to abnormal voltage generation in ground faults.
2. Easy to detect fault circuit, by using CT and OCGR
3. Suppress induction distribution in communication line, in the case of ground fault.
4. Prevents a sudden load change in case of generator ground fault.

Circuit Diagram



Rated Voltage (kV)	Rated Current (A)	Rated Operating Temperature	Temperature Rise Limit	Width mm	Depth mm	Height mm
3.3/	100	10 / 30	350 / 750	680	445	630
	200	10 / 30		680	535	630
	400	10 / 30		680	625	870
6.6/	100	10 / 30		680	535	630
	200	10 / 30		680	625	950
	400	10 / 30		680	715	1190
11.6/	100	10 / 30		705	800	1200
	200	10 / 30		705	900	1200
	400	10 / 30		705	900	1560
22.9/	100	10 / 30		705	1020	1560
	200	10 / 30		705	900	1920
	400	10 / 30		705	1400	19209

HIGH RESISTANCE GROUNDING EQUIPMENT [H.R.G]

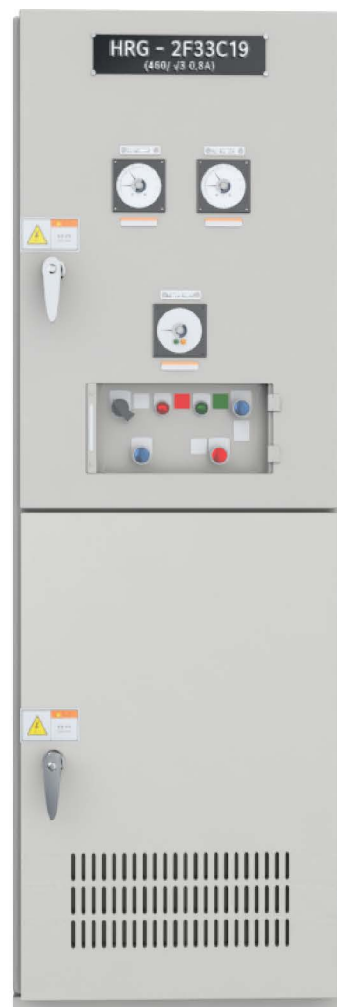
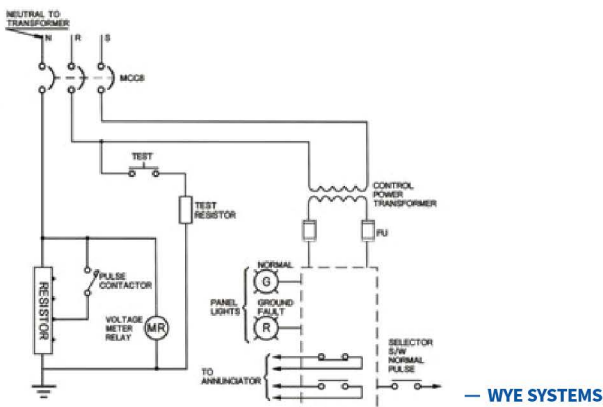
Product Information

[H.R.G] complements the disadvantages of the neutral grounding method. In case of a ground fault, [H.R.G] limits the current to a minimum level and alarms on the system about the ground fault. [H.R.G] can be installed in the area, where damage occurs due to to blackout, because it can be used without system power failure in case of ground fault.

Feature

1. Preventive maintenance is possible as it can be detected in advance when a short circuit occurs.
2. In the case of complete ground fault, the current detector can be used to locate the fault without system blackout.
3. Reduces the temporary over voltage that may appear in case of an arcing ground fault.
4. System can be operated without problem in the case of short circuit.
5. Accurate fault point identification by tracking ground fault current

Circuit diagram





LOAD BANK RESISTOR [L.D.R]

Product Information

[L.B.R] is used for actual load test of generators, inverters, UPS, industrial electronic devices.

Feature

1. Free capacity selection in various level, by drawing TAPs for each capacity
2. Manual mode/ Auto mode , both are possible
3. Stable even in continuous operation by using a resistor with little change in load capacity.
4. Versatile actual load test and characteristic test are possible
5. All kind of systems can be configured, as the clients requires.



Product Introduction \

HARMONIC FILTER RESISTOR (R-C BANK)

Product Information

Long-term, repeated use of power converters causes distorted waveforms and harmonic currents. This might cause the high temperature, noise generation, device malfunction, communication interference. (R-C BANK) is used on High-Voltage RLC filter, to prevent this situation



Feature

1. Consist of High-Voltage Non-Inductive Resistor.



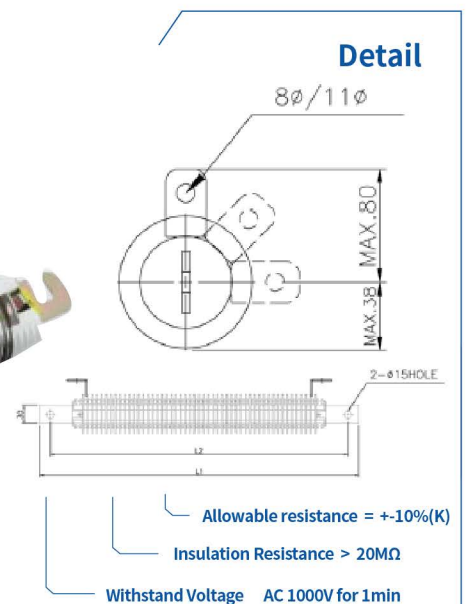
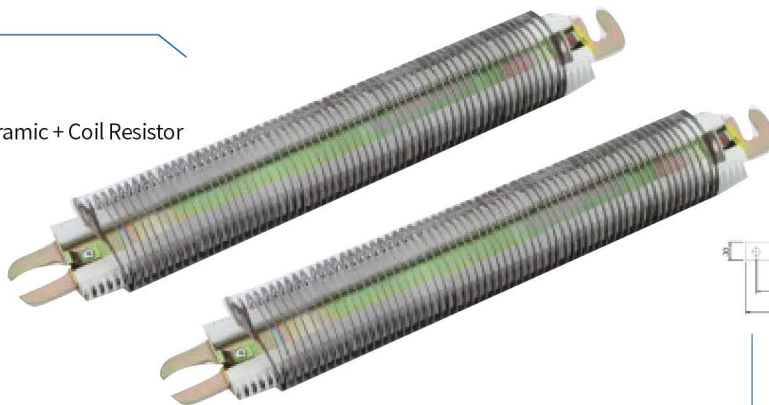
Edge Wound Resistor

Product Information

Edge Wound Resistor is wound with a ribbon wire and has excellent heat dissipation effect when a load is applied. This product is suitable for high-power load resistor, brake resistor, welding machine and inverter.

Feature

Consist of Ceramic + Coil Resistor



MODEL	Power consumption		Resistance Range		Tolerance
	With Fan In Free Air	With Fan In Free Air	EWS	EWF	
EWS/EWF 400	600W	400W	0.02 ~ 0.25	0.26 ~ 3.3	±5%(J) ±10%(K)
EWS/EWF 600	1000W	600W	0.029 ~ 0.28	0.39 ~ 4.95	
EWS/EWF 800	1.3kW	800kW	0.039 ~ 0.5	0.51 ~ 6.6	
EWS/EWF 1000	1.6kW	1kW	0.051 ~ 0.63	0.64 ~ 8.2	
EWS/EWF 1200	2kW	1.2kW	0.061 ~ 0.75	0.76 ~ 9.9	
EWS/EWF 1400	2.3kW	1.4kW	0.071 ~ 0.88	0.89 ~ 11.5	
EWS/EWF 1600	2.6kW	1.6kW	0.081 ~ 1	1.10 ~ 13.2	

MODEL	size (mm)	
	L1	L2
EWS/EWF 400	240	205
EWS/EWF 600	310	275
EWS/EWF 800	380	345
EWS/EWF 1000	450	415
EWS/EWF 1200	520	485
EWS/EWF 1400	590	555
EWS/EWF 1600	660	625

SEONJIN HI-TECH

Voltage-Switchgear PRODUCTS

- + Extra High Voltage-Switchgear Cubicle
- + High Voltage-Switchgear Cubicle
- + Low Voltage Switchgear Cubicle
- + Motor Control Cubicle
- + Distribution Panelboard

EXTRA HIGH VOLTAGE-SWITCHGEAR CUBICLE

Product Information

The EXTRA HIGH VOLTAGE-SWITCHGEAR CUBICLE is high quality product, which is designed in accordance with KEC standard, and KEMC standard. It equipped with sufficient bus capacity, safe and durable power equipment, circuit breaker with excellent blocking function and proper protection relay.



Feature

1. Customized design and production in accordance with domestic standards, international standards and user specifications
2. Designed as compartment structure, so that the bus compartment and each major equipment compartment were shielded from each other, to minimize the damage in the event of an accident
3. Designed for easy maintenance

ITEM	Bases		
	IEC, BS	ESB	JEM
Standards	IEC, BS	ESB	JEM
Rated Voltage [KV]	24	25.8	23
Rated Bus Current [A]	630, 1250		
Rated Short-time Current (1s) [KA]	8, 12.5, 20, 25, 31.5		
Rated Impulse Withstand Voltage(Maximum Value)& Rated Withstand Voltage(Virtual Value)	Voltage	22.9KV(24/25.8KV)	
	BIL [KV]	125	
	WithstandVoltage [KV]	50	

HIGH VOLTAGE-SWITCHGEAR CUBICLE

Product Information

The HIGH VOLTAGE-SWITCHGEAR CUBICLE is a high quality product, which is designed in accordance with IEC standard, and KEMC standard. It equipped with sufficient bus capacity, safe and durable power equipment, circuit breaker with excellent blocking function and proper protection relay.



Feature

1. Customized design and production in accordance with domestic standards, international standards and user specifications
2. Designed as compartment structure, so that the bus compartment and each major equipment compartment were shielded from each other, to minimize the damage in the event of an accident
3. Designed for easy maintenance.

ITEM	Bases			
	IEC, BS		ESB	JEM
Standards	IEC, BS		ESB	JEM
Rated Voltage [KV]	3.6/7.2/12(15)/17.5		4.76/7.2/15	3.45/6.9/11.5
Rated Bus Current [A]	400, 600, 800, 1200, 1500, 2000, 2500, 3150			
Rated Short-time Current (1s) [KA]	8, 12.5, 20, 25, 31.5, 40			
Rated Impulse Withstand Voltage(Maximum Value)& Rated Withstand Voltage(Virtual Value)	Voltage	7.2KV	12KV	15KV(17.5KV)
	BIL [KV]	60	75	95
	WithstandVoltage [KV]	20	35	45

LOW VOLTAGE-SWITCHGEAR CUBICLE

Product Information

LOW VOLTAGE-SWITCHGEAR CUBICLE is a high quality product, which is designed in accordance with IEC standard, and KEMC standard. It equipped with sufficient bus capacity, safe and durable power equipment, circuit breaker with excellent blocking function and proper protection relay. ACB and MCCB can embedded in the LOW VOLTAGE-SWITCHGEAR

Feature

1. Customized design and production in accordance with domestic standards, international standards and user specifications
2. Designed as compartment structure, so that the bus compartment and each major equipment compartment were shielded from each other, to minimize the damage in the event of an accident
3. Designed for easy maintenance.



ITEM		Bases	
Standards		IEC	JIS, JEC, JEM
Phases & Wires		3Φ 3W, 3Φ 4W	3Φ 3W, 3Φ 4W
Rated Insulation Voltage [V]		AC 690V	AC 660
Rated Using Voltage [V]		380, 440, 460	380, 440, 460
Rated Frequency [HZ]		50/60	50/60
Rated Bus Current [A]		630,1250, 2000, 3150, 4000, 5000	630,1250, 2000, 3150, 4000, 5000
Rated Short-time Current (1s) [KA]		25, 50, 65	25, 50, 65
Control circuit Voltage [V]		DC 110, AC 110, 220	DC 110, AC 110, 220
Common Frequency Withstand Voltage (1min) [V]	Main Circuit	AC 2500	AC 2200
	Control circuit	AC 1500	AC 1500

Product Introduction \

MOTOR CONTROL CUBICLE

Product Information

MOTOR CONTROL CUBICLE can be designed and produced in a various type according to facility characteristics or customer's requirements. MCC is designed in consideration of safety and ease of maintenance with good looking external design.

Feature

1. Easy maintenance and inspection.
2. Excellent additional expansion and change of facilities
3. Easy to replace parts



Rated Insulation Voltage		AC 690V
Rated Control circuit Voltage		AC100V/110V, 200/220V
Rated Bus Current	Horizontal Bus	600 ~ 3000A
	Vertical Bus	300 ~ 600A
Rated Bus Short- time Current (1 s)		25, 50, 65
Cabinet	Structure	Indoor
	Size [mm]	Width xDepthxHeight *600x600x2350



Distribution Panel Board

Product Information

Distribution Panel Board is designed with excellent safety, to be suitable for the purpose of the facility in consideration of the conditions of the installation site. DPB has simple structure, through standardization of each part.



Feature

1. Compact size
2. Cost-efficient with standardized parts
3. High productivity can be achieved through simple assembly procedure.
4. Easy maintenance and inspection.

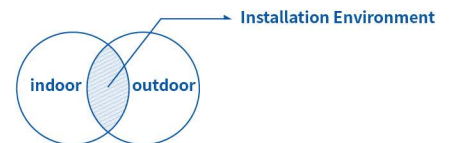
Customer Order

Various and economical products can be Designed to meet customer order requests.



Installation Environment

Various installation environments such as indoor and outdoor use.



Industrial Complex

suitable for overcrowded large cities or industrial parks.



Cities



Industrial parks

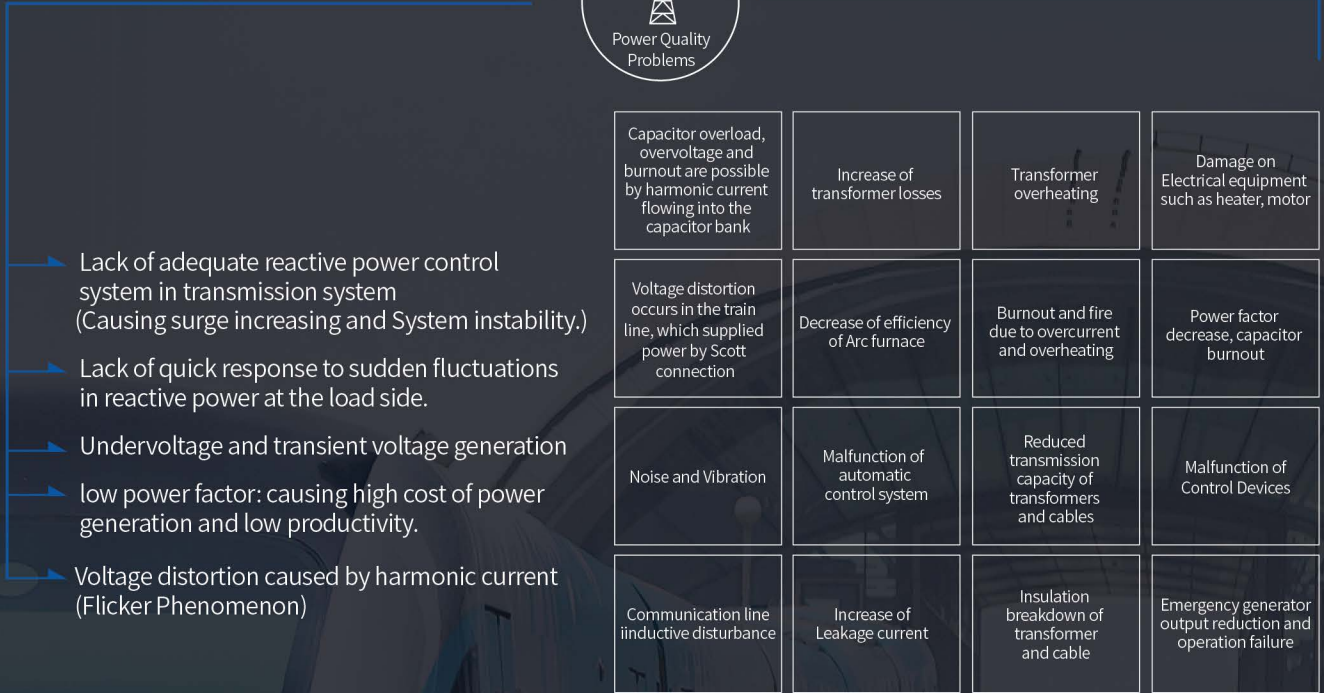
SEONJIN HI-TECH

Power Quality Improvement

- + Dynamic Braking Resistor (Passive Filter)
- + SVC: Static Var Compensator
- + SVG: Static Var Generator

Power Quality Improvement.

Ideally, power quality should be symmetrical, stable, and equipped with a sine wave. However, these days, as the use of high switching power devices increase and load fluctuations become more frequent, the following problems are affecting power quality.



SEONJIN TECHNOLOGY

Passive harmonic filter

Passive Filter

- HG-HLDB
- HG-Matrix
- MP-sine wave

Passive harmonic filter SVC: Static Var Compensator

Instantaneous reactive power compensator SVG: Static Var Generator



Improve by installing appropriate devices below to receiving line or distribution line

System insulation protection

Suppression of increase in instantaneous voltage peak value due to voltage distortion caused by harmonics

Harmonic power waste suppression

Suppression of abnormal heating of devices and wasted harmonic power which are caused by the presence of unnecessary harmonic currents in the system

National Policy

Industrial development requires improvement in the quality and quantity of electric power. By suppressing harmonic currents in the national power grid., power supply capacity can be expanded.

Product Introduction \

Passive Harmonic Filter

HG-HLDB

Passive filter conforming to the technical standards for electrical equipment

To manage the power quality to meet the technical standards for electrical equipment of Korea Electric Power Corporation, we applied a customized passive filter through simulation technical review to improve the followings.

- Meets technical standards IEE-519 1992 : Improving total harmonic distortion rate and equipment unbalance
- Improving Voltage unbalance- improving Flicker phenomenon
- Improving Power Factor



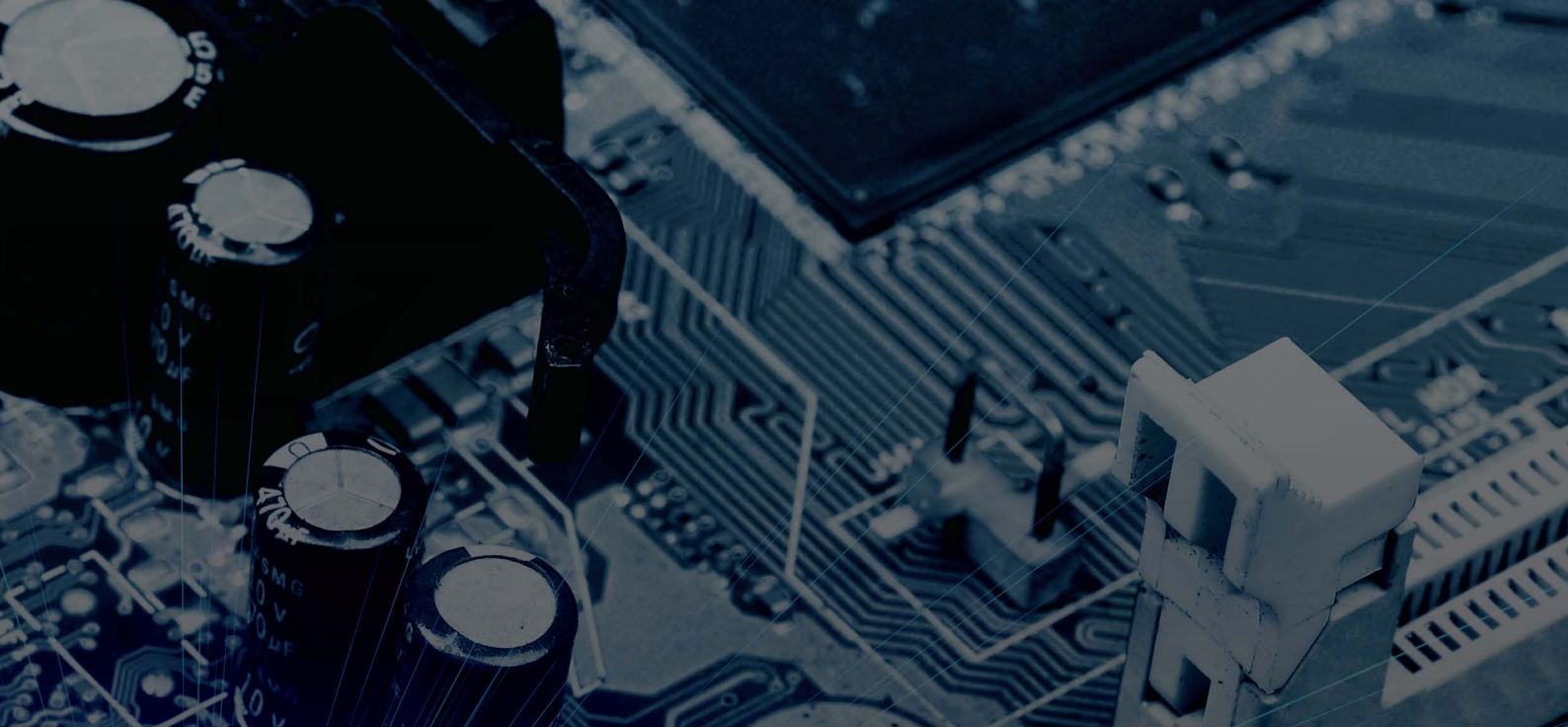
HG-Matrix

Low-pass harmonic filter

HG-Matrix passive harmonic filter improves system stability and power quality by limiting THD (Total Harmonic Distortion) less than 5% of load current (generally less than 3% in average). To do this, HG-Matrix actively generate and superimpose the reverse harmonics of the reverse phase and the same amplitude by detecting the harmonics generated from the bottom.

- Meets technical standards IEE-519 1992
- Prevention of malfunction of overcurrent circuit breaker
- Improving Power Factor
- Improving the efficiency and reliability of power reception facilities
- Extending equipment life



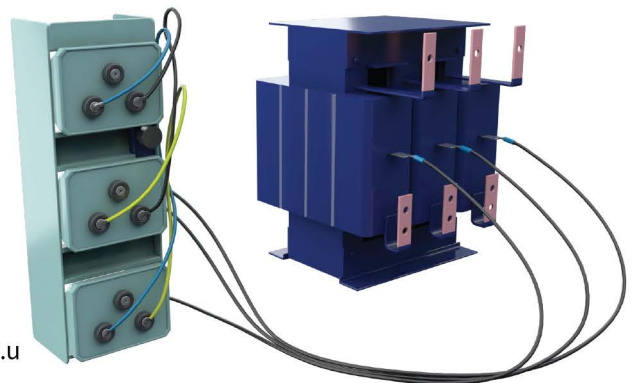


HG-Matrix

Transient voltage suppression filter

Suppressing transient abnormal voltage, caused by the time differential term dv/dt

- Extending life of motor and feed cable
- Maximum 1km cable feed supply
- Reducing 20% of Common Mode Current
- Suppressing and protecting terminal voltage lower than 1.5p.u

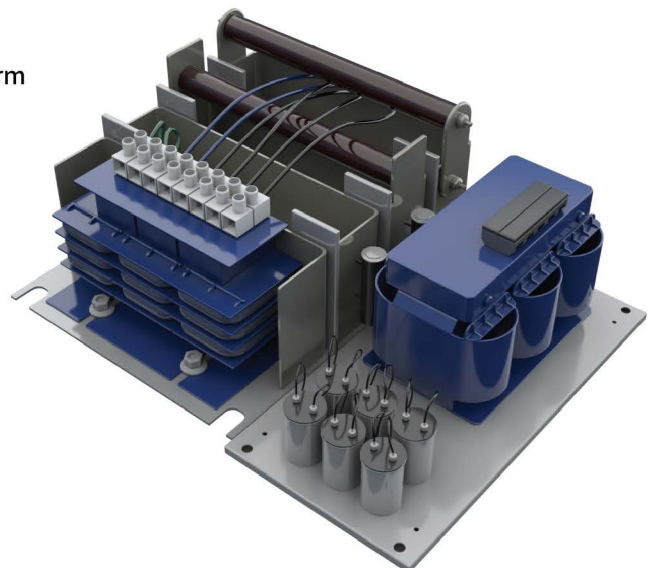


MP-sine wave

Low-pass harmonic filter

Convert ASD square wave output voltage to sine wave form

- Minimize side effects of time differential term dv/dt
- Assist to drive motor in accordance with the part 30&31 of NEMA MG1 standard.
- Reduction Common Mode Current
- Extending equipment life of motor and feed cable by reducing noise, vibration, heat dissipation.



SVC: Static Var Compensator

SVC: Static Var Compensator is connected to the bus in parallel to detect the required capacitive or inductive load in the bus network. Based on detected values, SVC controls the line constant of the transmission system. As a result, It compensates for reactive power by controlling capacitive or inductive load. Thyristor method is used for control, which controls by combining reactor and capacitor.

Economical Advantage

- 01 — Plant productivity and capacity improvement
- 02 — Extend equipment life
- 03 — Reduce energy loss and cost
- 04 — Reduce power costs for power utilities and customers
- 05 — Minimize flicker effects and troubles in nearby factories
- 06 — Minimize malfunction of protective devices
- 07 — Improve the transmission efficiency of active power
- 08 — Improvement of Energy efficiency
- 09 — Reduce heat loss
- 10 — Reduce maintenance cost



Feature

- 1. Stabilization of voltage and relieving load unbalance by injecting inductive or capacitive reactive power.
- 2. Minimize flicker effects by quick responding to a sudden load fluctuation
- 3. Improving power factor by compensating reactive power.
- 4. Harmonic removal

field



Electric arc furnace



Mine



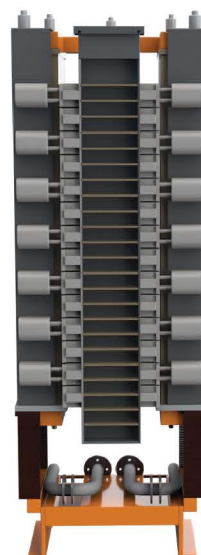
Large Crane in harbor



Machin tool with fluctuating load



Train Industry



SVG: Static Var Generator

Feature

1. Stabilization of voltage and relieving load unbalance by injecting inductive or capacitive reactive power.
2. Removing flicker through a fast reaction to a sudden load fluctuation by using Pulse Width Modulation control method.
3. Power factor improvement through reactive power compensation
4. The quick elimination of voltage distortion caused by harmonics by reacting within a short time with IGBT control.

SVG(Static Var Generator), also known as Instantaneous reactive power compensator or APFC(Active Power Factor Compensator), might be an ultimate solution for power quality problem, caused by low power factor and increased reactive power. SVG is high-performance, compact sized, flexible, modularized and cost effective type APFC which react quickly and immediately to power quality issues in low or high voltage power systems. By using highly-reliable IGBT devices, SVG can control reactive power in real time, with faster response time compare to SVC. It also adheres to the most stringent power quality standards and grid codes. By doing so SVG achieved expansion of equipment life, increase of process reliability, improvement of power system capacity and stabilization, decrease of energy loss. SVG is a power-electronics-based-device connected in parallel with a load requiring harmonic mitigation. When a load produces an inductive or capacitive current, the load current is delayed or a voltage is created. SVG detects phase angle differences then injects lead or lagging current into the power system in real time, making the phase angle of the current almost equal to the phase angle of the voltage to match the basic power factor.

Economical Advantage

- 01 — Plant productivity and capacity improvement
- 02 — Extends equipment life
- 03 — Reduces energy loss and cost
- 04 — Reduces power costs for power utilities and customers
- 05 — Minimizes flicker effects and troubles in nearby factories
- 06 — Minimizes malfunction of protective devices
- 07 — Improving the transmission efficiency of active power
- 08 — Improvement of Energy efficiency
- 09 — Reduces heat loss
- 10 — Reduces maintenance expenses



field



Electric arc furnace



Mine



Large Crane in harbor



Machin tool with fluctuating load



Train Industry



Wind energy and solar energy industry

Innovation

to the industrial
with SEONJIN HI-TECH



선진하이텍
SEONJIN HITECH

Head Quarter & Factory

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TEL. +82-31-8059-1387 | Fax. +82-31-8059-1397



Major Customer Companies

 삼성전자	 세명엔지니어링(주)	 한국철도	 국가철도공단
 삼성디스플레이	 대우건설		
 삼성물산	 Fuji Electric		
 삼성SDS		 선도전기주식회사	 한양전공(주) HANYANG ELECTRIC CO., LTD
 삼성중공업	 광명전기		 서전기전
			 디투엔지니어링



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