

GEIS

MLS

1140V Switchgear

GEIS Electrical Protection

Safer Smarter Greener



About GEIS

GEIS was established in 2019 following the spin-off of several businesses and assets that ABB had acquired from GE on July 1, 2018, including 3 manufacturing centers, Warehousing & Trading business at FTZ, China Technology Center.

- Components: Full range of circuit breakers up to 40.5kV: Medium voltage vacuum circuit breakers, LV circuit breakers: ACB, MCCB, MCB, RCD, RCBO: Control components.
- Equipment: MV switchgear (Air insulation and Gas Insulation Technology), LV switchgear, switchboard.
- Medium voltage distribution transformer.
- Medium voltage ATS system (Paralleling Switchgear).

After the separation, all the above product lines were rebranded as AEG for selected markets and GEIS for global markets. Moreover, GEIS has expanded its technological portfolio to include medium-voltage controls such as VFDs and soft starters, as well as ATS systems and EV chargers.



Quality is Built-in

Where Technology Meets Manufacturing Excellence for Customers

- Since 2000, we have been specializing in localizing world-class products and manufacturing technologies, developing strong expertise and a highly capable team.
- Vertical integrated Shanghai Manufacturing Center brought key manufacturing processes into a 75,000 m² facility, enabling high-quality, high-efficiency production and fostering innovation. A dedicated R&D team committed to developing products that meet global standards and serve diverse applications.
- Global expansion: GEIS's first Thailand facility makes it easier to serve customers worldwide.



GEIS deliver complete range of products for the evolving electrification needs:



SecoVac VCB



M-PACT Plus ACB



Elfa Series MCB/RCBO



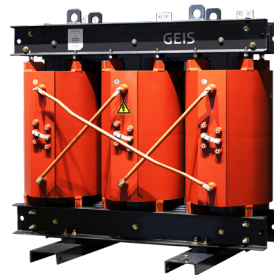
SolidDrive MV VFD



SecoGear MV Switchgear



RMU Gas Insulated Switchgear



WaveCast Transformer



MLS Switchgear



MLS 1140V Switchgear

Catalogue

A

Product Description

B

Applications

C

Functional Unit

D

Standard and certification

Product Description

MLS 1140V switchgear assemblies are FBA switchgear made of standardized modules. They are suitable for use in power supply/distribution system of 50 (60)Hz AC electricity with rated operational voltage AC1140V and rated operational current up to 6300A for such purposes as power

distribution, conversion, control and reactive compensation.

The product is compliant with IEC 61439-1 and IEC 61439-2 standards.



Key features

- Power Center**
 Main incoming cabinet of modular design with rated current up to 6300A
- Motor control center**
 Available in the forms of plug-in and withdrawable units for use in feeder and motor control loop
- Components**
 M-PACT Plus and M-PACT Air Circuit Breakers, up to 6400A, 150kA
 R+ and RC+ series Molded Case Circuit Breaker, up to 1600A, 150kA
- PMSky SCADA system**
 Whole electrical parameter monitoring, intelligent energy management, remote control
- Structure**
 The hinges of door panel have an opening angle of at least 120°
 IP rating can be IP30, IP40, IP31, IP41, IP42, IP55
- Safety and Reliability**
 Internal safety barriers separate the busbar compartment from the equipment compartment, the compartment can be up to Form 4b

Product Description

Product's suitable service conditions

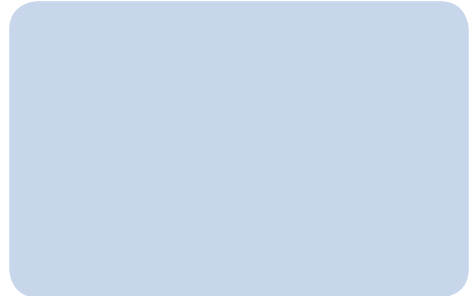
- $-5^{\circ}\text{C} \leq \text{ambient temperature} \leq +40^{\circ}\text{C}$, 24-hour average ambient temperature $< +35^{\circ}\text{C}$
- Atmospheric conditions: clean air of relative humidity $\leq 50\%$ at maximum acceptable temperature of $+40^{\circ}\text{C}$, or of greater relative humidity when ambient temperature is lower
- For example, the maximum acceptable value is 90% at $+20^{\circ}\text{C}$. In consideration of temperature variation, moderate condensate formed accidentally is acceptable
- The acceptable temperature range for transportation and storage is -25°C to $+55^{\circ}\text{C}$ and up to $+70^{\circ}\text{C}$ for a short while ($\leq 24\text{h}$)
- Altitude: $\leq 2000\text{m}$
- Pollution degree of environmental conditions: Grade 3 per IEC 61439-1
- If any electric component fails to meet the above operating conditions, the user should consult the manufacturer for a solution
- If the service conditions contradict the above-mentioned operating conditions, the user should inform and consult the manufacturer for a solution

Key electrical performance

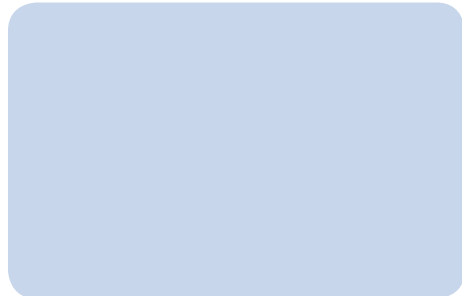
Rated operating voltage	Ue	up to 1140 V AC
Rated frequency	f	50 Hz
Rated insulation voltage	Ui	up to 1250V
Rated impulse withstand voltage	Uimp	8/12kV
Overvoltage category		III
Ambient air temperature		-5°C to $+40^{\circ}\text{C}$
Rated current of main busbars		Up to 6300A
Rated current vertical busbars MCC	Icw	Up to 1600A
Rated short time withstand current	Ipk	up to 50kA , 1s
Rated peak withstand current	Icc	up to 105kA
Rated conditinal short-circuit current		up to 50kA
Standards		IEC 61439-1 and IEC 61439-2

Applications

Power station
Substation
Switch station



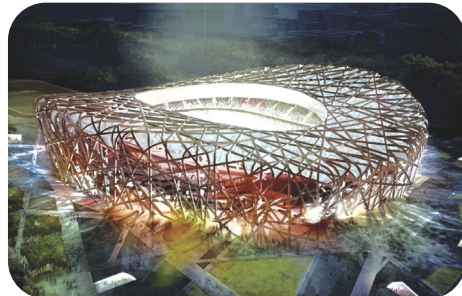
Petroleum and natural gas
Mining
Ship
Pulp & papermaking
Cement
Textile
Chemical engineering
Automobile
Petrochemical
Metallurgy
Data center



Air transportation
Port
Railway
Metro

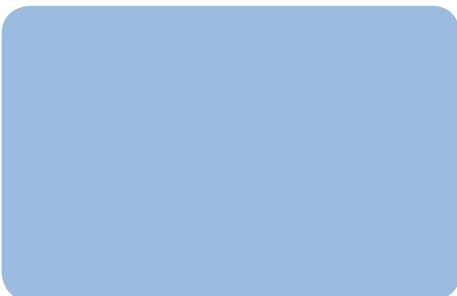
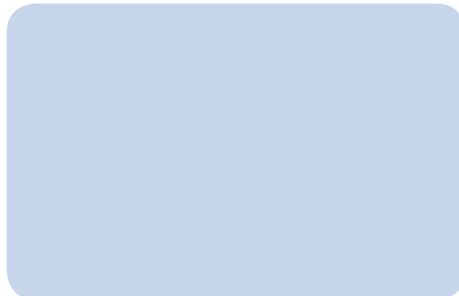
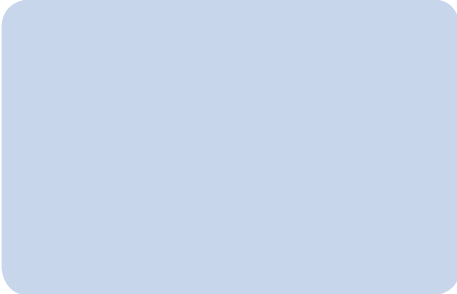


Supermarket
Shopping mall
Hospital
Large infrastructure and
civil work



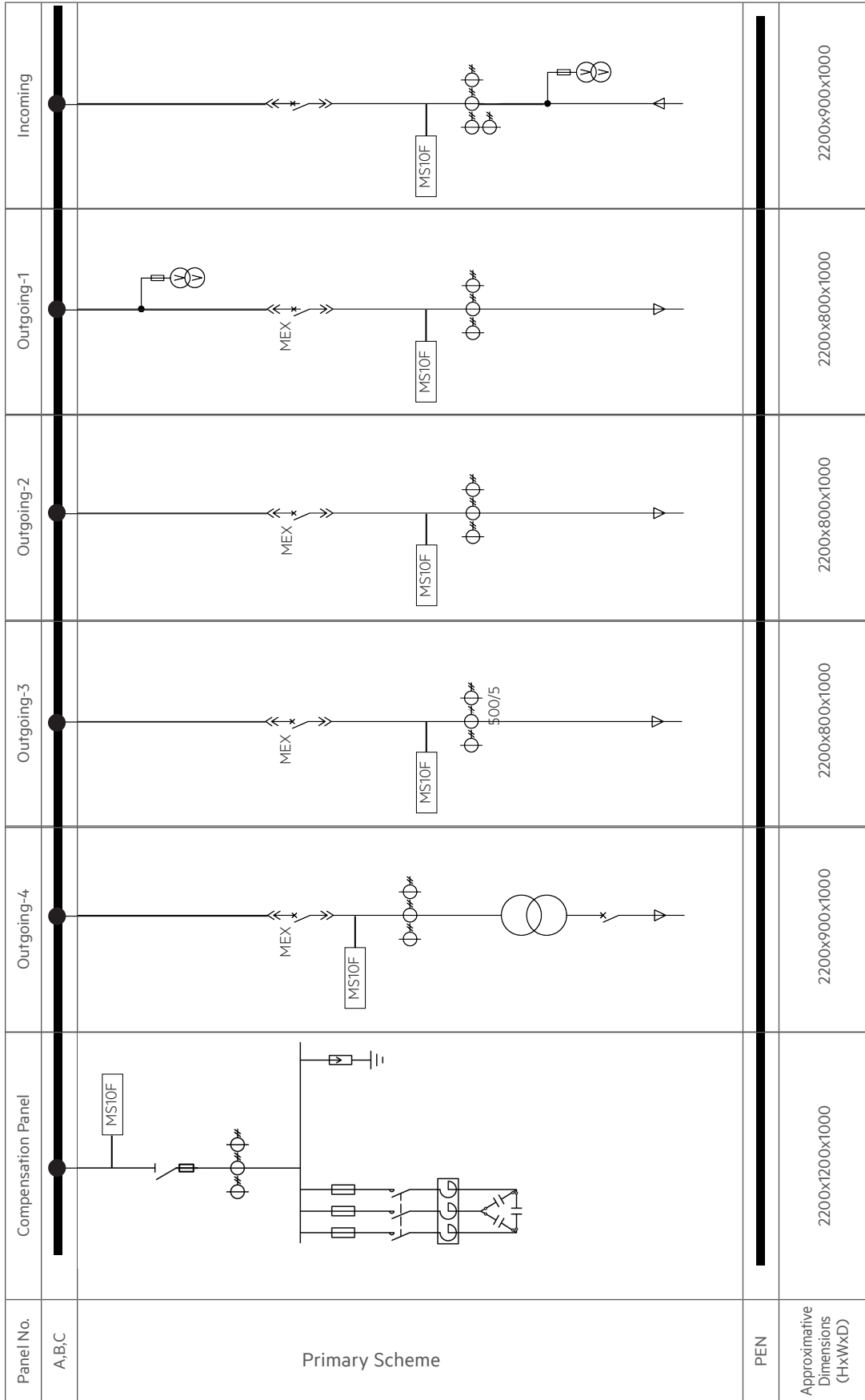
Applications

Applications



Applications

Typical Single Line Diagram



Functional Unit

Incoming Panel

The AC 1140V Incoming Panel is designed to receive and distribute electrical power in industrial systems, particularly in mining, heavy industry, port, and large-scale infrastructure applications. The panel serves as the primary interface between the upstream power supply and downstream distribution equipment, ensuring safe, reliable, and efficient power intake.

This panel is engineered for operation at a rated voltage of 1140V AC, typically at 50/60 Hz, and is suitable for systems requiring high-capacity power distribution with enhanced protection and control features.



Rated operating voltage	U _e	up to 1140 V AC
Rated frequency	f	50 Hz
Rated insulation voltage	U _i	up to 1250V
Rated impulse withstand voltage	U _{imp}	8/12kV
Overvoltage category		III
Ambient air temperature		-5 °C to + 40°C
Rated current vertical busbars		Up to 6300A
Rated short time withstand current	I _{cw}	Up to 50kA, 1s
Rated peak withstand current	I _{pk}	up to 105kA
Rated conditinal short-circuit current	I _{cc}	up to 50kA
Modularity		1E=25mm
Maximum stacking density		72E
Standard module size		8E up to 32E
Degree of protection		IP41, IP42, IP55
Internal separation		Form 3a/3b4a/4b
Degree of protection		IP41, IP42, IP55
Approximative Dimensions	mm	2200x900x1000
Approximative Weight	kg	570
Standards		IEC 61439-1 and IEC 61439-2

Outgoing Panel

The AC 1140V Outgoing Panel is designed to distribute power from the main switchboard to downstream loads such as motors, transformers, and auxiliary systems. It provides reliable control, protection, and isolation for individual feeders in industrial power distribution networks.

The outgoing panel ensures safe and efficient delivery of power while maintaining high performance under demanding industrial conditions.



Rated operating voltage	Ue	up to 1140 V AC
Rated frequency	f	50 Hz
Rated insulation voltage	Ui	up to 1250V
Rated impulse withstand voltage	Uimp	8/12kV
Overvoltage category		III
Ambient air temperature		-5 °C to + 40°C
Rated current vertical busbars		Up to 1600A
Rated short time withstand current	Icw	Up to 50kA, 1s
Rated peak withstand current	Ipk	up to 105kA
Rated conditinal short-circuit current	Icc	up to 50kA
Modularity		1E=25mm
Maximum stacking density		72E
Standard module size		8E up to 32E
Degree of protection		IP41, IP42, IP55
Internal separation		Form 3a/3b4a/4b
Degree of protection		IP41, IP42, IP55
Approximative Dimensions	mm	2200x800x1000
Approximative Weight	kg	470
Standards		IEC 61439-1 and IEC 61439-2

Functional Unit

Outgoing Panel for transformer

The AC 1140V Transformer Outgoing Panel is designed to supply and protect distribution transformers from a switchboard. It ensures reliable power delivery from the main busbar to stepdown or step-up transformers while providing comprehensive protection, control, and monitoring functions.

This panel integrates AC 1140V air circuit breaker, transformer, and outgoing circuit breaker into one switchgear, providing both upstream and downstream protection while reducing the size of the switchgear, and is widely used in industrial power distribution systems where transformers are connected downstream of switchgear.



Rated operating voltage	Ue	up to 1140 V AC
Rated frequency	f	50 Hz
Rated insulation voltage	Ui	up to 1250V
Rated impulse withstand voltage	Uimp	8/12kV
Overvoltage category		III
Ambient air temperature		-5 °C to + 40°C
Rated current vertical busbars		Up to 1600A
Rated short time withstand current	Icw	Up to 50kA, 1s
Rated peak withstand current	Ipk	up to 105kA
Rated conditinal short-circuit current	Icc	up to 50kA
Modularity		1E=25mm
Maximum stacking density		72E
Standard module size		8E up to 32E
Degree of protection		IP41, IP42, IP55
Internal separation		Form 3a/3b4a/4b
Degree of protection		Dry type transformer
Approximative Dimensions	mm	2200x800x1000
Approximative Weight	kg	750
Standards		IEC 61439-1 and IEC 61439-2

Compensation Panel

The Power Factor Compensation Panel is designed to improve system power factor, reduce reactive power demand, and enhance overall energy efficiency in industrial and commercial electrical networks. The panel utilizes vacuum contactors for switching capacitor banks, ensuring reliable and transient-free operation, especially in high-current and voltage applications.

This solution is particularly suitable for systems with frequent switching operations or high inrush currents, which conventional contactors may not provide sufficient performance or lifespan.



Electrical data

Rated operating voltage	U _e	up to 1140 V AC
Rated frequency	f	50/60 Hz
Rated insulation voltage	U _i	up to 1250V
Rated impulse withstand voltage	U _{imp}	8/12kV
Overvoltage category		IV
Ambient air temperature		-5 °C to + 40°C
Rated current horizontal busbars		Up to 6300A
Humidity	l _{cw}	< 90%

Capacitor data

Rated voltage		1200VAC
Maximum allowable current		2.2×I _n
Surge current		200×I _n
Capacitance tolerance		±5%
Dielectric		Polypropylene Film
Filler		Resin
Service life		130000h

Reactor data

Rated voltage		1200VAC
Inductance difference		±5%
Withstand voltage (winding)		3kV/1min
Insulation class		T50/H
Linearity		1.2×I _n

Reactive power controller data

Control output		Route 24
Display		LCD
Measurement accuracy		Current and voltage accuracy ± 1%
Protection grade		Front panel IP54, back IP20

Approximative Dimensions	mm	2200x1200x1000
Approximative Weight	kg	1130

Functional Unit

Cubicle structure

Enclosure's

The cabinet body is made of 2mm thick Al-Zn coated steel sheet. Various subsections and functional units are assembled with Grade 8.8 self-tapping screws using E=25mm modulus holes. The framework and enclosure should be made of a material of adequate strength and rigidity and capable of withstanding certain mechanical stress, electrical stress and thermal stress. The material should be capable of withstanding the dampness that might be encountered during the product's normal service. The door panels are made of 1.5mm thick quality steel sheet and all doors are hinged to the framework and punched holes for mounting locks. The hinges have an opening angle of at least 120°. The door surface should be sprayed a coat of epoxy powder of standard color RAL7035. Other steel parts such as hinges and mounting plates should be electrogalvanized. The entire framework is compliant to IEC 61439-2:2011 in corrosion resistance tests such as salt spray test and damp heat test and in ascension test.

Busbar system

The main busbar can be a three phase four wire system or five wire system and fixed to a subsection by insulation support. The main busbar system can be installed at the rear or in the upper part of the cabinet. Dual busbar structure is used for systems with a rated current of 4000A or above. The control cabinet's vertical busbar can have a rated current up to 1600A and be equipped with 3-pole and 4-pole systems. Internal safety barriers separate the busbar compartment from the equipment compartment to prevent operators from coming into contact with dangerous live parts. The highest compartment can be up to Form 4b. The protection circuit consists of separate protective conductors and conductive structures. Protective conductor PE lines are set up along the full length of the cabinet and vertical branch earthing busbars with main earth point and earthing mark are also set up. The protective conductors, the shells of all electric components installed inside the cabinet, metal parts and the cabinet body are connected together and securely earthed.

IP rating

The cabinet roof is designed with multiple functions. The cabinet is available in multiple standard configurations including IP30 and IP40 (for ventilation roof type), and drip-proof IP31 and IP41 structures. These options can be easily combined for upgrading IP grade. For example, the product can be upgraded to IP42 model if the cabinet door is added a louver, or to IP55 model (for use in workplaces with high ingress protection requirements such as a power plant where electric precipitation is required) if the product is added a rubber sealing roof and an outer glass door.

When the withdrawable functional unit is in disconnected position, its enclosure's IP rating is IP2XD. When the withdrawable functional unit is in removed position, the IP rating inside the compartment and between dangerous live parts is IPXXB.

Power Center

The power center is divided into 3 functional areas: busbar compartment, equipment compartment and cable compartment. The busbar compartment located at the rear or upper part of the switch cabinet is for installing horizontal and vertical busbar system. The internal safety barrier separates the busbar compartment and equipment compartment and a separate partition may be used to separate the equipment compartment and the cable compartment. The busbar compartment can be installed up to two sets of main busbar systems as deemed necessary. Breakers of various specifications can be installed inside the compartment and in 3-pole or 4-pole configurations. Up to three air circuit breakers can be installed. The incoming cabinet can be equipped with Entelliguard™ or M-Pact series air circuit breakers and intelligent electronic release upon user's request for providing complete circuit protection and control functions including zone selective interlocking (ZSI), reduced energy let through (RELT), waveform capture, and communication for achieving acceptable selectivity, quick breaking capacity and high reliability. Cables can be connected to the switch cabinet directly or via prefabricated connectors; and control cables are connected to the terminal blocks.

Top-in top-out or bottom-in bottom-out options are available for use.

Standard and certification

Compliant with IEC 61439

Prüfbericht - Produkte
Test Report - Products

Prüfbericht-Nr.: Test report no.:	CN264KC0 001	Auftrags-Nr.: Order no.:	326148221	Seite 1 von 100 Page 1 of 100
Kunden-Referenz-Nr.: Client reference no.:	2086462	Auftragsdatum: Order date:	2026-01-12	
Auftraggeber: Client:	AEG ELECTRIC (SHANGHAI) CO., LTD. No.3, Lane 123, Huancheng East Road, Fengxian201401 Shanghai P.R. China			
Prüfgegenstand: Test item:	Switchgear Assemblies			
Bezeichnung / Typ-Nr.: Identification / Type no.:	MLS			
Auftrags-Inhalt: Order content:	Type test			
Prüfgrundlage: Test specification:	IEC 61439-2: 2020 & IEC 61439-1: 2020			
Wareneingangsdatum: Date of sample receipt:	2026-01-13			
Prüfmuster-Nr.: Test sample no.:	See the test report			
Prüfzeitraum: Testing period:	2026-01-13 - 2026-02-02			
Ort der Prüfung: Place of testing:	Shanghai Testing & Inspection Institute for Electrical Equipment (STIEE)			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shanghai) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von: tested by:	Felix Qi <i>Felix Qi</i>	genehmigt von: authorized by:	Cavan Huang <i>Cavan Huang</i>	
Datum: Date:	2026-03-09	Ausstellungsdatum: Issue date:	2026-03-09	
Stellung / Position:	Project Engineer	Stellung / Position:	Authorizer	
Sonstiges / Other:	N/A			
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:	Prüfmuster vollständig und unbeschädigt Test item complete and undamaged			
* Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet * Legend: P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

TÜV Rheinland (Shanghai) Co., Ltd. No.177, 178, Lane 777 West Guangzhong Road, Jing'an District, Shanghai, China
Mail: service-gc@tuv.com · Web: www.tuv.com

V1010230CNR

GEIS

GEIS Electric

Website: www.geis.tech

Hotline: +86 400-820-5234

This catalog may be subjected to revision without prior notice.

Version No.: GENCLVGA26V5

