PT. GUNA ERA MANUFAKTURA

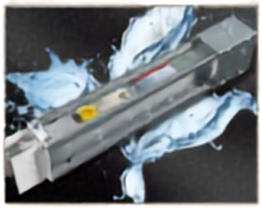
PRODUCT BROCHURE

BUSDUCT

INTELLIGENT SOLUTION FOR MEDIUM AND LOW VOLTAGE POWER TRANSMISSION

PT GUNA ERA MANUFAKTURA
Jl. Jati Raya BlokJ2No.1-3NewtonTechno Park, Lippo Cikarang, Bekasi,17550,Indonesia
T +62 (21) 8990-7620
F +62 (21) 8990-7959
E gem.info@senzo.id
W www.gae.id/GEM

CORE TECHNOLOGY

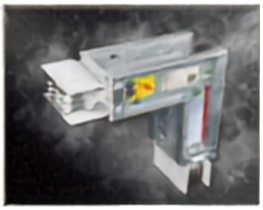


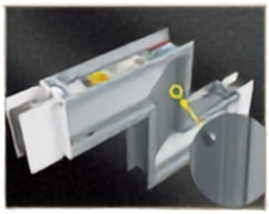
Super strong protective performance

The shell is made of ≥3mm aluminum-magnesium alloy with drainage holes, sealing rubber strips, and special waterproof sealing material. Its protection rating reaches IP66, effectively preventing dust and water accumulation that may cause busbar failures.

Super strong salt spray resistance performance

The shell surface uses 80μm electrostatic powder coating, providing a smooth, uniform, and attractive finish without blisters or cracks. It also offers excellent corrosion resistance and can withstand a 2000-hour salt spray test.



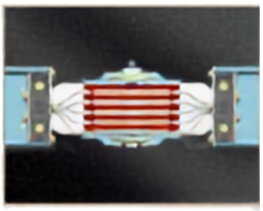


Riveting assembly process

The product is assembled using an automatic riveting production line with one-piece forming. Compared with traditional bolted assembly, it provides better strength, toughness, sealing, safety, and more consistent quality control.

Anti misalignment process

The connector features mechanical anti-misconnection protection to prevent installation errors. Its movable docking design also enables electrical isolation during maintenance for improved safety.

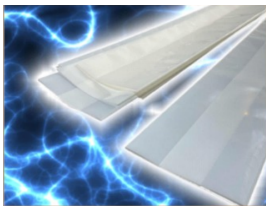


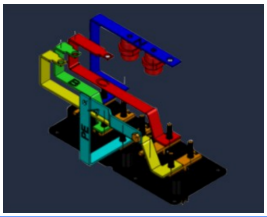
Anti expansion process

The docking conductor provides ±8mm expansion compensation, reducing deformation caused by thermal expansion and maintaining busbar mechanical strength, electrical continuity, current capacity, and short-circuit performance.

Super strong insulation performance

Insulation uses 188μm DuPont MYLAR polyester film with molded multi-layer wrapping. At least three wrapping layers provide six insulation layers between phases, significantly improving busway electrical safety.





Super conductive performance

The conductor uses T1/T2 electrolytic copper with ≥99.97% copper content, ≥98% conductivity, and ≤0.0177Ω·mm²/m resistivity. The plug-box conductor uses a one-piece shaped copper connection without overlapping joints, improving conductivity and safety.

Super strong fire resistance perform

The fire-resistant busway uses a double-layer shell filled with lightweight alumina silicate fiber and mica tape insulation. With heat resistance up to 950–1200°C, the system provides fire resistance of up to 210 minutes.

GRMC DENSE BUSBAR DUCT

GRMC series bus duct is a new type of high protection dense bus duct developed by our company, which is suitable for indoor power distribution in various environments. The product has the characteristics of small volume, compact structure, exquisite appearance, high protection level, good heat dissipation performance, convenient installation, low energy loss, maintenance-free, etc., which is the best choice of comprehensive performance for power distribution and transportation. transportation.

Parameter	GRMC Dense Busbar Duct
Housing material	3 mm aluminium-magnesium alloy (with heat sink structure)
Conductor material	T1/T2 electrolytic copper
Rated working voltage	AC690/1000
Rated insulation voltage	AC800/1000
Frequency (Hz)	50/60
Protection class (IP)	Busbar trunking unit IP66, plug-in box IP54
Electrical insulation resistance (MΩ)	220
Electrical gap (mm)	210
Creepage distance (mm)	216
Rated current (A)	400~1250 / 1600~3150 / 4000~6300
Rated short-time withstand current (kA)	35 / 85 / 100
Rated peak short-circuit current (kA)	73.5 / 187 / 220
Temperature rise (rated load 40°C)	Busbar <70, busbar connection <70, shell cover <55
Heat resistance rating	Grade not less than B, heat-resistant temperature >130°C
Dielectric properties	3750 V/min without flashover or breakdown

GRNH FIRE-RESISTANT BUSBAR DUCT

GRNH fire-resistant busbar trunking is a type of fire-resistant busbar trunking developed by our company based on the characteristics of dense busbar trunking structure and our independently developed fire prevention technology. It is mainly used in generator circuits, fire protection circuits, important control circuits, and distribution places with high fire-resistant requirements. The product has the characteristics of high temperature resistance (950 °C–1100 °C or above), long fire resistance time, and strong corrosion resistance, while meeting the needs of fire sprinkler in case of fire.

Parameter	GRNH Fire-Resistant Busbar Duct
Housing material	2 mm thick A3 cold rolled (double layer)
Conductor material	T1/T2 electrolytic copper
Rated working voltage	AC400/690
Rated insulation voltage	1000
Frequency (Hz)	50/60
Protection class (IP)	IP54/IP66
Refractory time (min)	60/120/180/210
Electrical insulation resistance (MΩ)	220
Electrical gap (mm)	210
Creepage distance (mm)	216
Rated current (A)	400~1250 / 600~4000
Rated short-time withstand current (kA)	30 / 80
Rated peak short-circuit current (kA)	63 / 176
Temperature rise (rated load 40°C)	Busbar <70, busbar connection <70, shell cover <55
Heat resistance rating	Grade not less than B, heat-resistant temperature >130°C
Dielectric properties	3750 V/min without flashover or breakdown

GRJZ POURING TYPE BUSBAR DUCT

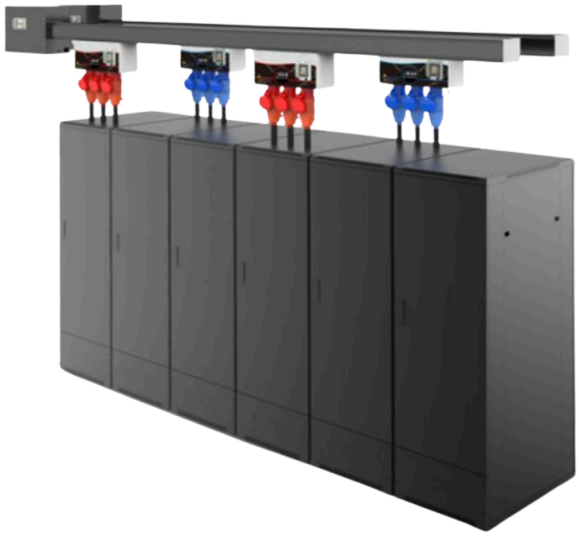
GRJZ cast away adopts high-performance insulating resin and many kinds of inorganic minerals to seal and cast the busbar directly into a shouder with strong protection performance, which is widely used in special environment or outdoor power distribution places such as ships, wharves, chemical industry, power plants, etc. The product has the characteristics of waterproof, explosion-proof and hydrolytic acid corrosion-resistant. The product has the characteristics of waterproof, explosion-proof, anti-hydraulic acid corrosion, etc. It can be upgraded to fire-resistant bus duct after adding fire-resistant structure.

Parameter	GRJZ Pouring Type Busbar Duct
Housing material	Epoxy resin
Conductor material	T1/T2 electrolytic copper
Rated working voltage	AC400/690
Rated insulation voltage	1000
Frequency (Hz)	50/60
Protection class (IP)	IP68
Rated impulse withstand voltage (kV)	8
Electrical insulation resistance (MΩ)	220
Electrical gap (mm)	28
Creepage distance (mm)	216
Rated current (A)	400~1250 / 1600~4000
Rated short-time withstand current (kA)	30 / 80
Rated peak short-circuit current (kA)	63 / 176
PE protection circuit effectiveness	<0.02
Dielectric properties	3750 V/min without flashover or breakdown

GRNH FIRE-RESISTANT BUSBAR DUCT

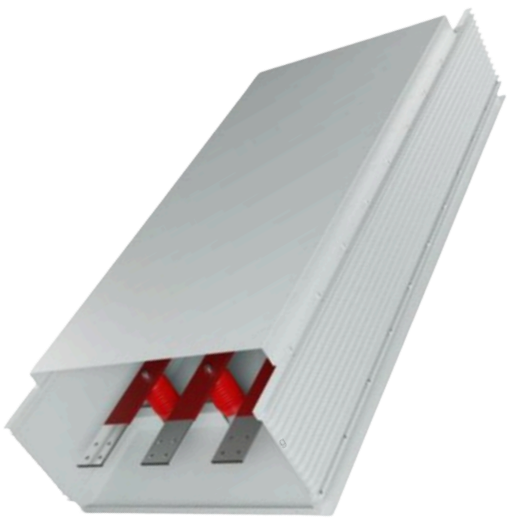
GRJZ busbar for data center is a precision power distribution busbar system with higher safety performance carefully developed by our company according to the characteristics of data center construction of artificial intelligence, large power supply load, high security level requirements, combined with the technical advantages of the data center industry. The product covers high-current busbar for distribution room feeder, intelligent small busbar for terminal equipment room distribution, and can be combined with our intelligent temperature measurement system and intelligent electric energy monitoring system to improve the configuration of more intelligent operation and maintenance monitoring system for the whole data room.

Parameter	Specification						
Environmental temperature	-5~+40°C, 24-hour average not exceeding 35°C						
Rated frequency (Hz)	50/60						
Rated insulation voltage (V)	1000/500						
Standard length (m)	3, 2.4, 1.2, 0.6 (customised upon request)						
Support point spacing (m)	15						
Plug-in box current (A)	10, 16, 20, 25, 32, 40, 50, 60, 80, 100						
Shell colour	Silver white (can be customised upon request)						
Protection class (IP)	IP54						
Rated current (A)	100	160	200	250	315	400	630
Short-time withstand current (kA)	20	20	20	20	20	20	30
Peak short-circuit current (kA)	40	40	40	40	40	40	63
Resistance at 20°C (mΩ/m)	0.318	0.318	0.257	0.182	0.158	0.122	0.084
Reactance at 20°C (mΩ/m)	0.064	0.064	0.051	0.046	0.037	0.029	0.022
Impedance at 20°C (mΩ/m)	0.347	0.347	0.281	0.206	0.172	0.134	0.095
Voltage drop, cos φ = 0.8 (V/m)	0.081	0.081	0.092	0.075	0.081	0.080	0.087
Reference weight (kg/m)	7.37	7.37	7.74	8.63	9.21	10.11	13.87



GRGY HIGH-VOLTAGE COMMON BOX BUSBAR DUCT

GRGY high voltage common box bus duct is a high-performance product specially developed for 3.15-35kV power system, mainly used in the electrical energy connection between generator and transformer or between transformer and higher than cabinet, and also can be used in generator AC and DC excitation circuit, substation and civil power supply system. The product shell is made of weakly magnetic steel plate or aluminum alloy plate, and the bus conductor is made of high-strength and high-performance DMC insulated support block clamping structure, which has good load performance and dynamic thermal stability.

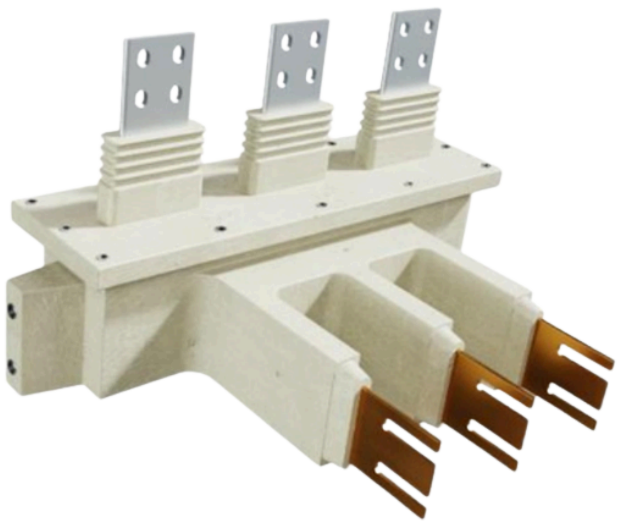


Parameter	Unit	Value
Housing material	—	Weakly magnetic steel or aluminium alloy plate
Conductor material	—	T1/T2 electrolytic copper
Rated working voltage	kV	3.15, 6.3, 10.5, 20, 35
Insulation class	kV	18/40, 23/60, 37/75, 80/185
Frequency	Hz	50/60
Protection class	IP	IP54
Temperature rise (rated load)	K	<70
PE protection circuit effectiveness	—	<0.02
Rated short-circuit withstand duration	s	4
Rated short-time withstand current (main circuit)	kA	40
Rated peak withstand current (main circuit)	kA	100
Rated power-frequency withstand voltage (dry test)	kV	42
Rated lightning impulse withstand voltage (dry test)	kV	75

GRJZ-G HIGH-PRESSURE POURING TYPE BUSBAR DUCT

GRJZ-G high-pressure cast busway adopts epoxy resin mixed with volcanic inorganic minerals to cast the copper conductor closed, with a protection level of IP68, with more than 60 years of maintenance-free excellent characteristics and the most economical investment benefits. It has the characteristics of high economic current density, small voltage drop, low loss, power saving, strong overload capacity, waterproof, fireproof, anti-corrosion, explosion-proof, anti-salt spray, anti-vibration, impact resistance, ageing resistance, and maintenance-free for 60 years of normal operation. Widely used in 3.6~40.5kV nuclear power, data centers, ships, chemical industry, metallurgy, coal mines and other demanding and harsh environments.

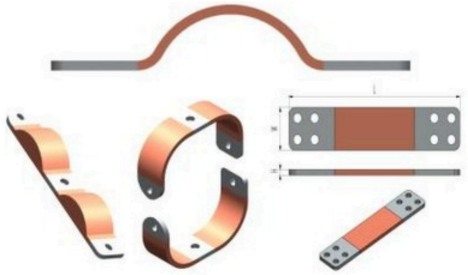
Parameter	Unit	Value
Housing material	—	Epoxy resin + volcanic mineral mixture
Conductor material	—	T1/T2 electrolytic copper
Rated working voltage	kV	3.15, 6.3, 10.5, 20, 35
Insulation class	kV	18/40, 23/60, 37/75, 80/185
Frequency	Hz	50/60
Protection class	IP	IP68
Rated current	A	800~6300
Temperature rise (rated load)	K	<70
Busway temperature rise	K	<50
PE protection circuit effectiveness	—	<0.02
Rated short-time withstand current	kA	40
Rated peak short-circuit current	kA	100
Crashworthiness rating	—	1K10
Environmental temperature	°C	5~65



ELECTRIC ENERGY TRANSMISSION PRODUCTS

Copper Strip Soft Connection

- Patented product (ZL201610377032.2), in-house developed
- T1/T2 copper foil, 0.05–0.3 mm, stacked and joined by high-temperature polymer diffusion welding
- Maximum consistency between soft copper sheet and lap surface
- Used in power, mining, electrolysis and welding equipment industries



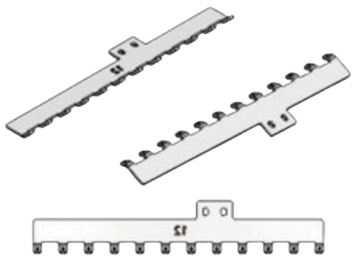
Main functions

1. Absorbs equipment installation errors — prevents foundation subsidence risk
2. Reduces vibration and noise transmitted between equipment
3. Larger heat dissipation area — higher current capacity per cross-section
4. Live-travel design follows equipment movement synchronously

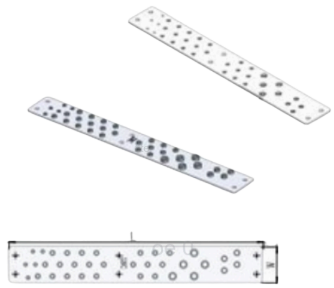
New-Energy Irregular Copper Busbar

New energy shaped copper busbars are processed with tapping, riveting, and multi-angle bending to reduce lap surfaces, improve aesthetics, enhance current-carrying capacity, and save space. Various surface treatments are available to suit different environments and applications.

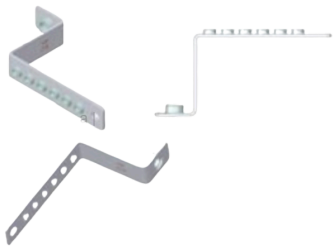
Using laser cutting technology, our copper busbars offer higher efficiency and better precision than traditional processing methods. Made from T1 or T2 copper plates with thicknesses of 1.5–8 mm, they can be customized into various sizes and shapes for power distribution, electronics, new energy, automotive, aerospace, and other industries.



Nickel-plated profiled copper rows for photovoltaic energy



Tinned copper profile for charging pilestorage cabinets



Distribution Cabinet Tinned Shaped Copper Rowstorage Cabinet

Process and name	Optional materials
Copper arrangement	T1 electrolytic copper, T2 electrolytic copper
Rivet nut	Carbon steel, stainless steel, brass
Pressure rivet nut surface treatment	Carbon steel galvanized, carbon steel chrome plated, carbon steel nickel plated, brass tin plated, brass nickel plated
Copper row surface treatment	Tin, silver, nickel plating (thickness of plating on request)