



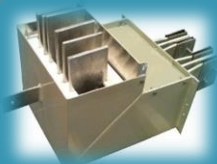
# Isolated Phases Busduct – IPB & Busway

## Barramento Blindado

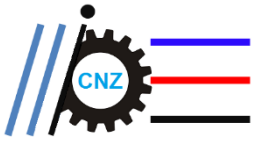
## Barras Aisladas



CNZ – Renewable Energy



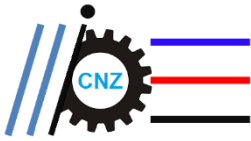
- ISOLATED PHASES;
- NON SEGREGATED;
- SEGREGATED;
- EXCITATION A.C. & D.C.;
- GENERAL DESIGN.



## General application:

- Hydroelectric [1];
- Thermoelectric [2];
- Retrofit;
- Standardized design ANSI.



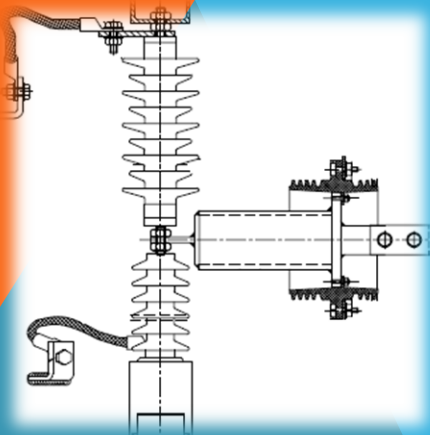


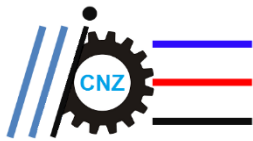
## Circuit breaker connection (IPB x GCB) Bus duct section for GCB connection and adjust.



### Special design

- Pressurized air systems;
- Drainage system;
- Grounding bar;
- Special designs;
- Spare parts;
- Galvanized steel frame works;
- Silver plate connector;
- Surge protection (Condenser, Surge arrester).





## Isolated phases bus duct (IPB)

Insulated conductors, separated in an independent enclosures

Application: Medium voltage. IP-54 e IP-65.



Corrente Nominal In	A	1500	2500	3000	4000	5000	6000	7000	8000	9600	10000	12000	15000	Outros sob consulta
Tensão nominal	kV	13,8-20	13,8-20	13,8-20	13,8-20	13,8-20	13,8-20	13,8-20	13,8-20	13,8-20	13,8-20	13,8-20	13,8-20	Outros sob consulta
Tensão Máxima	kV	15,5-27	15,5-27	15,5-27	15,5-27	15,5-27	15,5-27	15,5-27	15,5-27	15,5-27	15,5-27	15,5-27	15,5-27	Outros sob consulta
Frequencia	Hz	50/60											Outros sob consulta	
Corrente curta duração	kA	55	58	62	87	89	77	83	96	150	96	92	130	Outros sob consulta
Corrente Dinamica	kA	144	150	160	225	232	200	217	250	390	250	240	338	Outros sob consulta

## Non segregated busway (NSBD)

Assembled conductors, non separated in the same enclosures

Application: Low or Medium voltage. IP-54.



Corrente Nominal In	A	1550	2100	2400	3200	Outros sob consulta
Tensão Máxima	V	1000 - 13800				Outros sob consulta
Frequencia	Hz	50/60				Outros sob consulta
Corrente curta duração	kA	40	50	55	60-100	Outros sob consulta
Corrente Dinamica	kA	100	125	138	150-250	Outros sob consulta

## Segregated busway (SBD)

Assembled conductors, separated in the specific enclosures, but in the same cupboard. Application: Low or Medium voltage. IP-54.



Corrente Nominal In	A	1550	2100	2400	3200	Outros sob consulta
Tensão Máxima	V	1000 - 13800				Outros sob consulta
Frequencia	Hz	50/60				Outros sob consulta
Corrente curta duração	kA	40	50	55	60-100	Outros sob consulta
Corrente Dinamica	kA	100	125	138	150-250	Outros sob consulta





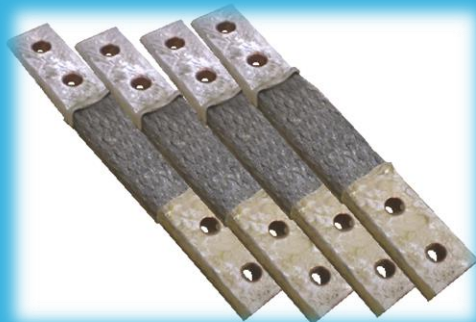
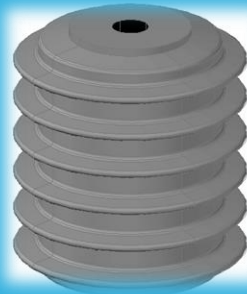
## Special design & refurbishment

- Design adaptation;
- Manufacturing details;
- Grounding busduct;
- Others.



## Spare parts & tools

- Technical specification;
- Bill of material;
- Adaptation parts;
- Supply.



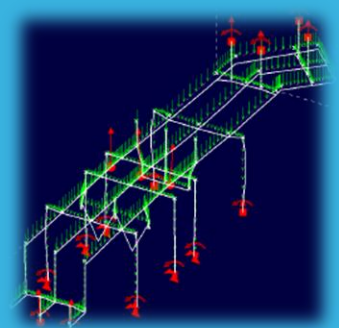
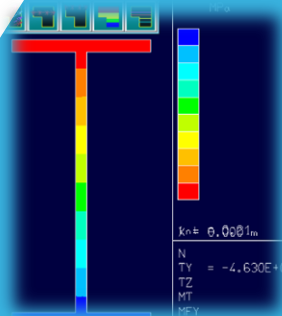
## General consulting

- Equipment specification;
- Multidisciplinary engineering;
- Layout;
- Criteria;
- Others.

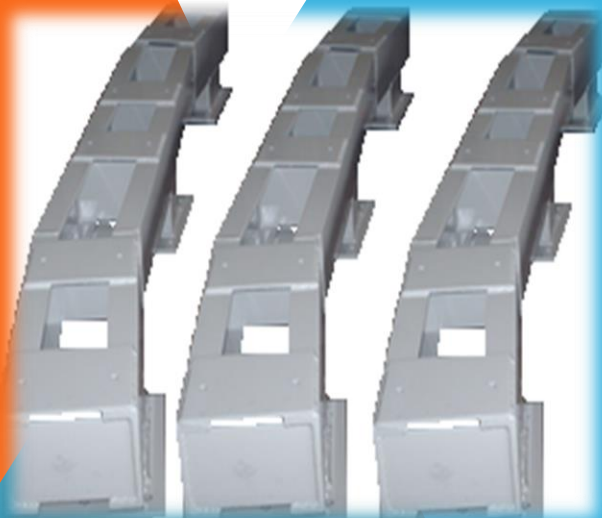




## Galvanized steel structures



## Aluminum structures





## Project office and Engineering:



- Know-how;
- Reliability;
- Innovation;
- Research & development.

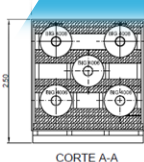
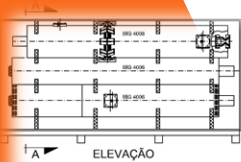
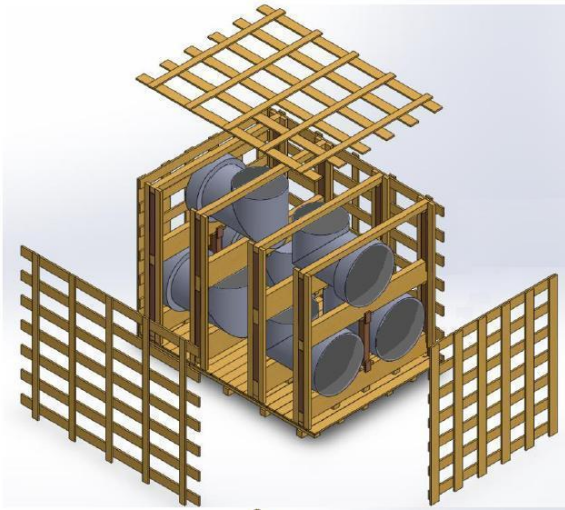
## Manufacturing:



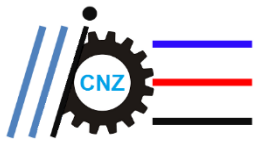




## Wooden crate packing box:

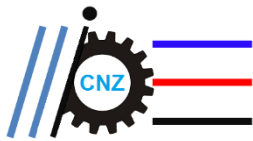






Site installation:





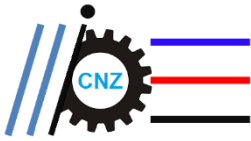
## Compact BUSWAY – SMALL HYDRO



IMAGEM ILUSTRATIVA

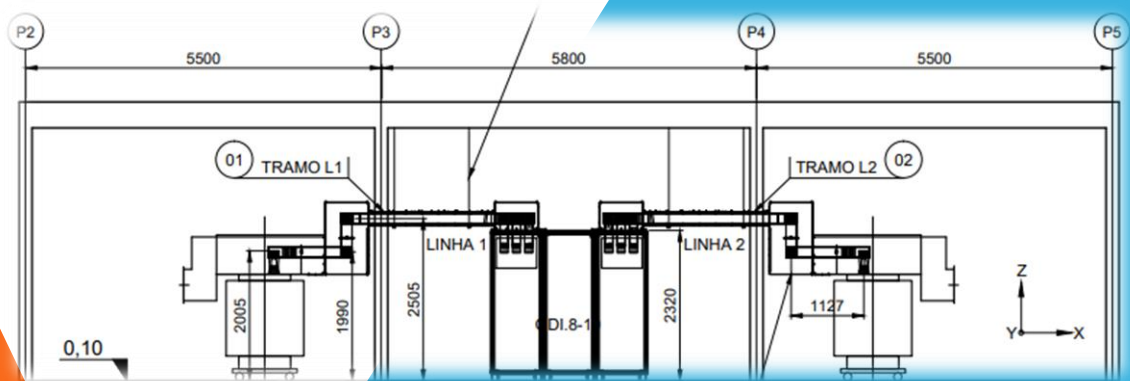


**Isolated bus way (Bus duct)**  
Small Hydro & Industry



## Power plants:

- Small hydro plants;
- Generators integrated;
- Industrial application;
- General application.



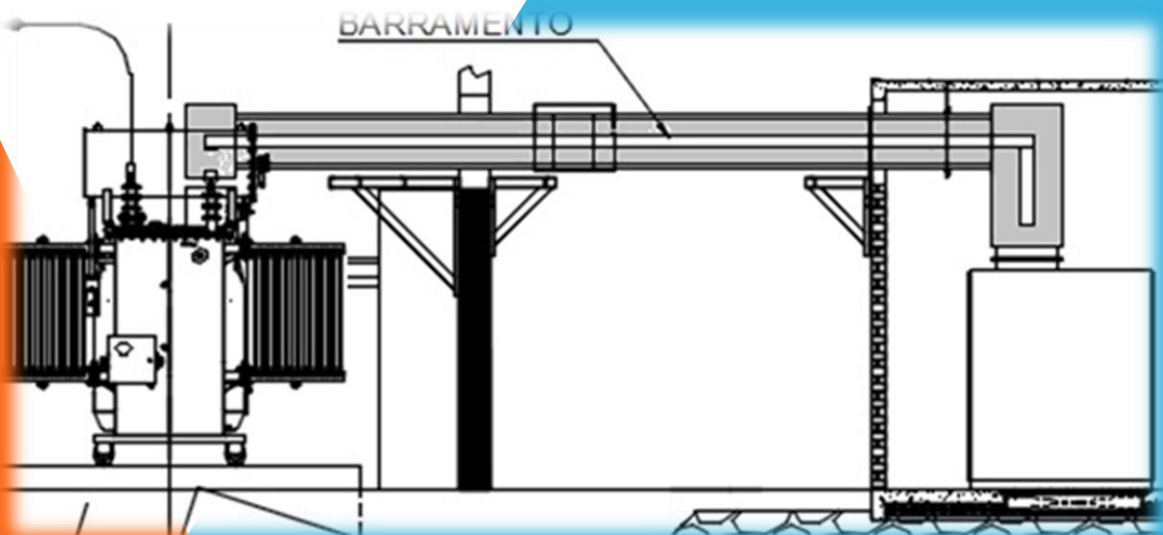
## Advantages versus cables:

- Reliability;
- Temperature rise controlled;
- High life cycle;
- Free maintenance;
- Smaller size;
- Weather resistance;
- Short-circuit withstand;
- Fast assembly.



## Application:

- Medium voltage;
- Low voltage;
- Segregated;
- Non segregated;
- Multiple generators;
- Cupboards and transformers connections.







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