

# "ISET"

## Prefabricated Transformer Substations (PTS)





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# 04 ABOUT THE COMPANY

**ID-ENGINEERING** is a production and engineering company with experience and competence in implementing integrated projects in the electrical power industry.

## Company's Profile:

- Integrated engineering of electric power supply for construction sites, industry facilities and infrastructure
- Manufacturing of 0.4 - 20 kV electrical equipment
- Execution of construction, installation and commissioning works

Our customers are enterprises that require reliable and safe power supply for such industries as:

- Aviation and space industry
- Mechanical engineering
- Food and agricultural industry
- Electric grid companies
- Pharmaceutical industry
- Construction of commercial buildings and infrastructure facilities
- Telecommunications and data processing centers
- Oil refining and petrochemistry
- Mining and metallurgical industry
- Defense industry



Our production fully conforms to the latest world standards. The company has implemented and observes "Quality Management Policy". A quality management system is used in accordance with the requirements of GOST R ISO 9001-2015 (ISO 9001:2015). An occupational health and safety management system has been implemented in accordance with GOST R ISO 45001-2020 (ISO 45001:2018).

We carry out three-stage quality control of our products and services, guaranteeing our customers 100% result.

Today, ID-ENGINEERING company is represented in different cities of our country by more than 130 highly qualified specialists who are ready to solve challenging electrical tasks.

Over 18 years of operation, the company has proven itself as a reliable partner and responsible supplier of products and services.

The head office and production facilities of the company are located in the city of Yekaterinburg.

# ADVANTAGES OF "ISET" PTS 05



## CUSTOMIZED IMPLEMENTATION

The modular design of the "Iset" Prefabricated Transformer Substation (PTS) allows for implementation of flexible layout arrangements. The dimensions of each module can also be changed according to customer's requirements.



## ADAPTATION TO HARSH ENVIRONMENT

Heat losses are reduced through the use of mineral wool insulation and the installation of thermostats on heating devices.



## SHORT-TIME INSTALLATION

"Iset" PTS is delivered in full factory readiness with electrical equipment being tested and debugged prior to installation.



## SMALL DIMENSIONS

"Iset" PTS has a modular architecture and is supplied on the basis of module-by-module approach. Each module has transport dimensions that allow its shipment by any type of transportation.



## VANDAL RESISTANT DESIGN

In the all-welded version, the block-modular building is manufactured with its own load-bearing frame. The wall material in this case is profiled steel sheet. The body of the "Iset" PCTS modules is a monolithic structure made of reinforced concrete. The concrete strength grade ensures protection of the installed equipment against any external influences.



## SERVICE LIFE OF "ISET" PTS IS NOT LESS THAN 25 YEARS



## SEISMIC RESISTANCE IS UP TO 9 POINTS

## 06 MAIN PARAMETERS

"Iset" PTS is a fully factory-built transformer substation with one, two or more power transformers. Transformers can be either oil or dry-type, with epoxy resin insulation.

"Iset" PTS includes one or several modules. Wall materials can be:

- Sandwich panel
- All-metal version
- Concrete enclosure

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### MAIN PARAMETERS

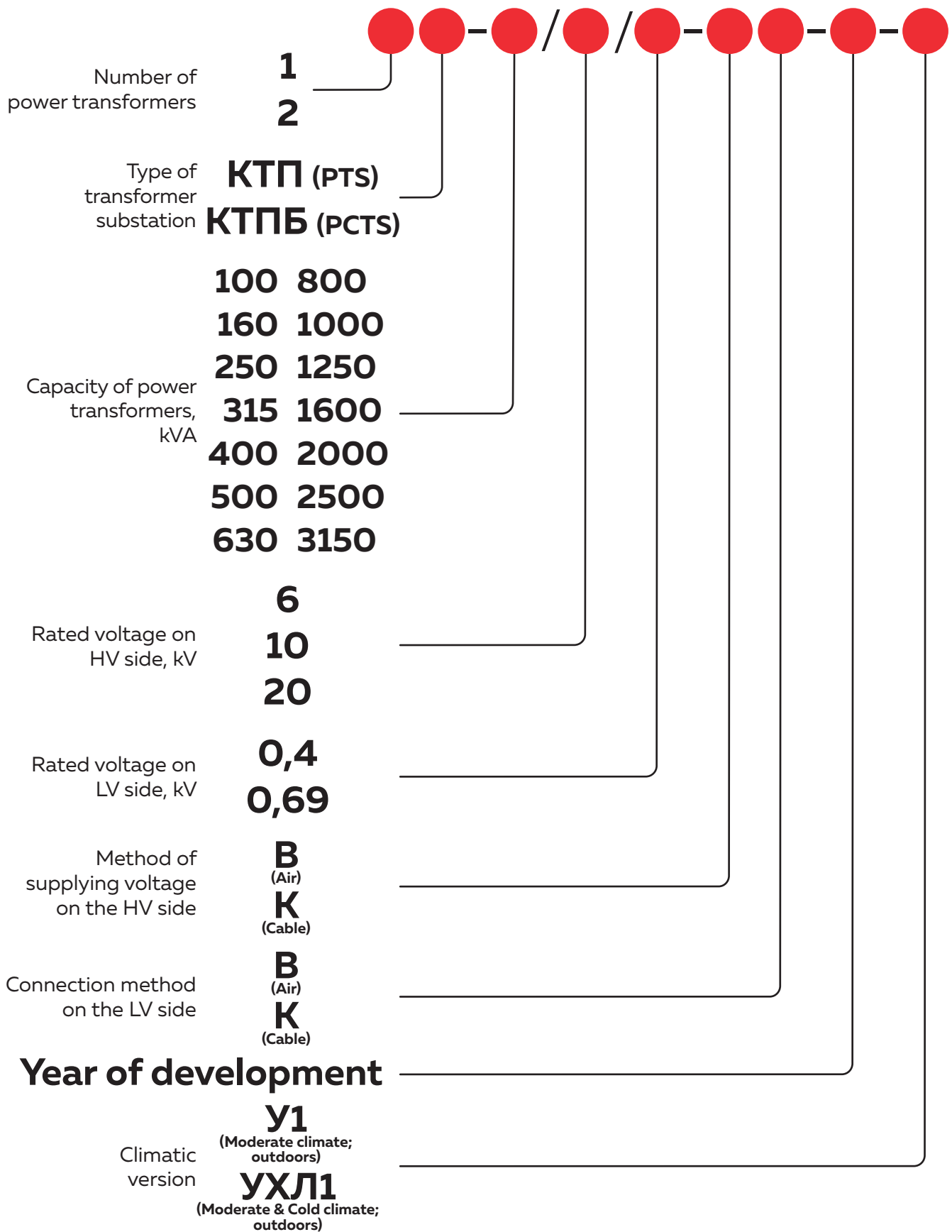
Power transformer capacity	100 - 3150 kVA
Rated voltage on HV side	6; 10; 20 kV
Rated voltage on LV side	0.4; 0.69 kV
Rated current of busbars on HV side	630; 1250 A
Rated current of busbars on LV side	up to 6300 A
Peak withstand current on HV side	up to 125 kA
Thermal stability current on HV side	up to 25 kA
Peak withstand current on LV side	150; 220 kA
Thermal stability current on LV side	up to 130 kA
Service life	at least 25 years

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### VERSION

TAmbient temperature	-60...+40°C
Fire resistance according to GOST 30247-94	E190
Structural fire hazard class	CO
Hazard class of building structures	KO
Explosion and fire hazard category	D
Category of premises	B4
Fire resistance degree	IV (II-III at the customer's request)
According to the type of transformers used	oil / dry-type
Seismic resistance according to MSK-64 scale	up to 9 points
Version for HV input	Cable / Air
Version for LV input	Cable / Air
Requirements specifications	RS 3412-001-26286057-2024
Climatic version, resistance to ambient environments GOST 15150-69 and GOST 15543.1-89	Y1 (Moderate climate) and YXЛ1 (Moderate & cold climate)

# NOTATION CONVENTIONS 07



Example of notation: "2PTS-1000/10/0.4-KK-2024-УХЛ1"

Pre-fabricated two-transformer substation with capacity of 1000 kVA. Voltage on the HV side is 10 kV, and voltage on the LV side - 0.4 kV, with cable entries. Year of development is 2024. Climatic version is УХЛ1 (Moderate & cold climate).

# 08 "ISET" PTS

## SANDWICH PANELS VERSION

Each module has a durable metal frame. The frame consists of horizontal purlins and vertical pillars to which all other structural elements are attached, including internal and external cladding, doors, windows, etc. Additional service life is ensured by a special anti-corrosion coating.

Off-the-shelf panels are cut according to the modules dimensions and fixed in the building frame. The panels have good thermal insulation and are designed for operating temperatures down to  $-60^{\circ}\text{C}$ . External and internal finishing of the "Iset" PTS can be changed at the customer's request.

The ceiling of the modular building is also assembled using sandwich panels and it has greater thermal insulation to reduce heat losses. The roof is mounted directly on the module and it can be either single-pitched or double-pitched. All elements are fixed by means of welding or bolted connections.

The "Iset" PTS floor consists of a metal frame and is sheathed on both sides with sheet metal. The space between the sheets is filled with thermal insulation material.





## ALL-WELDED VERSION

All-welded block containers have sealed welded seams. Due to their increased rigidity and immunity to workloads, the block-modular buildings can be mobile (frame on a sled or chassis). The construction of foundation (strip foundation or concrete foundation blocks) is not required for this PTS operational conditions.

The modules have non-flammable and environmentally friendly thermal insulation, similar to PTS made of sandwich panels.

At the customer's request, it is possible to have a winterized version. This is achieved through the use of heat insulator with increased thickness. Such a building can withstand low temperatures down to -60 °C.



# 10 "ISET" PCTS

## REINFORCED CONCRETE MODULES VERSION

The reinforced concrete structure of "Iset" PCTS (prefabricated concrete transformer substation) consists of an above-ground part for equipment installation and an underground part for cable routing.



### UPPER MODULE

The upper concrete module of each substation block is a monolithic enclosure of four walls with a floor. The wall openings are provided for installation of doors and ventilation grilles. The floor has openings for descending into the underground unit and holes for cable input/output. Also, in the floor there are metal embedded parts for fastening equipment and guides for installing a transformer. The roof has two layers of waterproof materials.



### LOWER MODULE

The lower (underground) concrete module of each substation block is a monolithic enclosure with a floor, the walls of which have holes for inlet/outlet cable. The underground unit is covered from the outside with a waterproofing layer. The basement block can be furnished with a ladder for access to the underground pit. At the customer's request, it is possible to install a metal oil receiver.



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## BASIC SCOPE OF SUPPLY

- PTS modules with utility facilities
- HV switchgear (HVSG)
- LV switchgear (LVSG)
- Power transformers
- Cable power jumpers:
  - HVSG - Transformer
  - Transformer - LVSG
- Auxiliary power supply cabinets (APSC)
- Transformer thermal protection boards (when ordering dry-type power transformers)
- Oil receiver (when ordering oil transformers)
- Service platforms
- Individual protection kit
- PTS technical documentation

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## OPTIONAL SCOPE OF SUPPLY

- Remote control system
- Operating current system
- Fire alarm system
- Security alarm system
- Air conditioning and forced ventilation systems

# 12 SUBSTATION COMPARTMENTS

Inside the substation is divided into compartments:

High voltage (HV)  
compartment

Low voltage (LV)  
compartment

Transformer  
compartment



At the customer's request, the high and low voltage compartments can be combined. Each compartment has a separate entrance. The transformer compartment has gates for installing and replacing transformers. The necessary technological holes are made to connect the cables. All installation holes are provided with special glands that ensure tightness and prevent rodents from entering the PTS.

At the customer's request, service platforms are supplied together with PTS.

## UTILITIES SYSTEMS COMMUNICATIONS

All utilities systems communications are installed at the factory and do not require on-site installation.

The switchgear compartments are equipped with electric convection heaters with automatic control to maintain a given temperature range.

Electric lighting is installed in all compartments in accordance with the lighting standards of SNiP 23-05-95. Electric lighting is controlled by wall switches located near the entrance to the compartments.

The lighting is powered from the auxiliary switchboard (ASB).

Ventilation of premises is natural. Air exchange is carried out through louvered grilles located in the ventilation open-ings. The ventilation grilles have a "winter-summer" valve.

# TRANSFORMER COMPARTMENT 13

Depending on the type of transformer, oil- or dry-type, the transformer compartment can be implemented with an oil drain pan or without a pan, respectively.

We recommend using dry-type IDR-T transformers with cast epoxy resin insulation. The installation of dry-type transformer has a number of advantages:

- With equal power, the dry-type transformer has smaller dimensions and weight, which significantly reduces the overall dimensions and weight of PTS
- Dry-type IDR-T transformers do not require additional maintenance (such as oil sampling)
- There is no need to install an oil drain pan
- Dry-type IDR-T transformers are fireproof

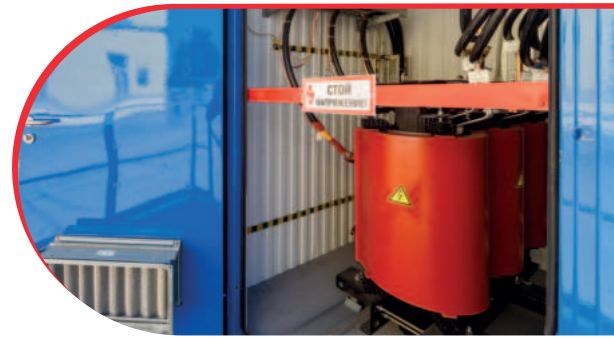
Transformer thermal protection shield (TTPS) is installed to protect a dry-type IDR-T transformer from overheating.

TTPS provides for:

- Monitoring the temperature of transformer windings (with indication on built-in display)
- Transformer overheating alarm in accordance with a given setpoint (dry contact)
- Transformer shutdown when critical temperature is reached (dry contact)

When choosing an oil transformer, we recommend to use sealed oil transformers (SOT). When ordering a substation with SOT, an oil receiving device is installed in transformer compartment. Oil drain is provided for large volumes of oil.

All transformers supplied as part of the "Iset" PTS are equipped with transport rollers for moving the transformer to the service platform.



# 14 HV SWITCHGEAR (HVSG)

Small-sized monoblocks UM, RME or ULTIMA modular units are used as high voltage switchgear (HVSG) in "SET" PTS.

**UM** is a compact SF6 gas insulated device designed for power supply, distribution of electrical energy and power transformers protection in networks with insulated neutral and rated voltage 6-20 kV. Power transformer protection function is carried out by means of a combination of circuit breaker (CB) and relay protection device.

**ULTIMA** is a switchgear with a unique combination of vacuum circuit breakers and solid insulating material based on epoxy rubber insulation, designed for receiving and distributing electrical energy in networks with an isolated neutral and rated voltage 6-10 kV.



Switchgears presented in OOO "ID-ENGINEERING" typical product line are capable of providing the following functions:

- Connection
- Distribution
- Power transformer protection

The transformer protection function is provided by a combination of circuit breaker with ADR relay protection.

ADR relay protection can operate normally without operating current together with independent release (similar to VIP 400 relay) and has the following functionality:

- Relay protection functions:
  - Overcurrent protection, Single phase-to-earth fault, Overheat protection (OP)
- CB control and diagnostic logic
- Event recorder
- 3 Digital inputs
- 2 Output relays
- Communication interface RS-485



The device can be included in process control systems and information management systems as a lower-level subsystem. The device transmits information about switching device position, alarm events and current information on all controlled parameters to remote workstations of operating and supervisory personnel.

At the customer's request, any other relay protection and automatics terminal that is suitable with respect to overall dimensions, specs and set of interlocks can be installed on HVSG:

**TORUS**



**BMRZ**



**SIRIUS**



**EKRA**



[about the company](#)

[advantages](#)

[parameters](#)

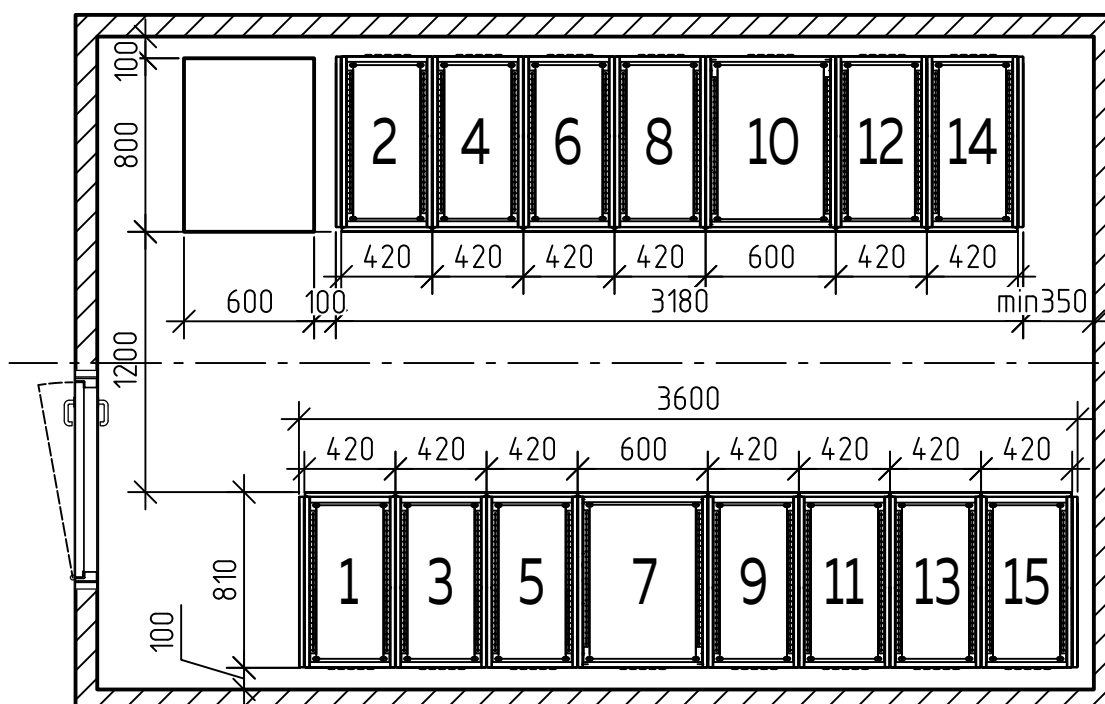
[notations](#)

[design](#)

# ULTIMA HVSG SPECIFICATIONS 15

Rated voltage (kV)	6	10
Rated current (A)	630; 1250	
Rated frequency (Hz)	50	
Test voltage 1 min. (kV)	32	42
Full lightning impulse withstand voltage test (kV)	60	75
Rated short-circuit breaking current (kA)	25 for 630A 31,5 for 1250A	
Short-time thermal current (kA)	25 for 630A 31,5 for 1250A	
Short-circuit current flow time (s)	3	
Electrodynamic withstand current (kA)	63 for 630A 80 for 1250A	
Partial discharge level (pC)	≤20	
Ingress Protection Rating of enclosure / power circuits	IP4X/IP67	
Main circuit resistance (μOhm)	≤150	
Making time, no more than (ms)	40	
Breaking time, no more than (ms)	35	
Mechanical endurance (on-off cycles) circuit breaker / load break switch / disconnectors	10000/5000/3000	
Seismic stability (points)	9	
Service life	30 years	

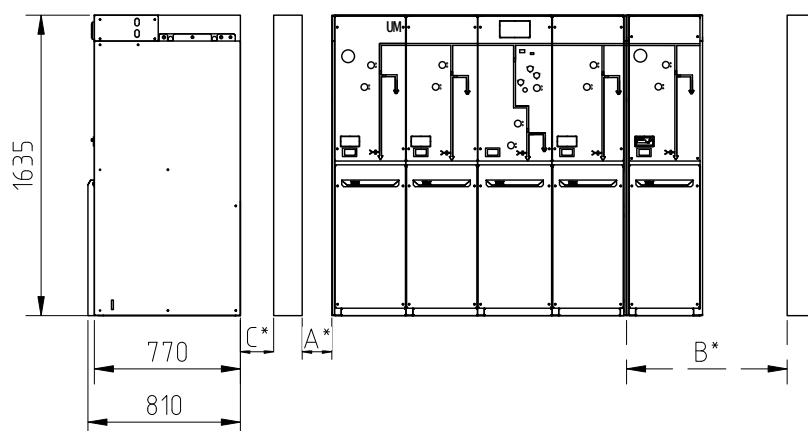
## ULTIMA LVSG DIMENSIONS



# 16 UM HVSG SPECIFICATIONS

Rated voltage (kV)	6	10	20
Rated current (A)		630	
Rated frequency (Hz)		50	
Test voltage 1 min. (kV)	32	42	65
Full lightning impulse withstand voltage test (kV)	60	75	125
Rated short-circuit breaking current (kA)	20	20	16
Short-time thermal current (kA)	20	20	16
Short circuit current flow time (s)		3	
Internal arc resistance (s)		0,5	
Electrodynamic withstand current (kA)	51	51	41
Ingress Protection Rating of enclosure / power circuits		IP3X/IP67	
Main circuit resistance ( $\mu\text{Ohm}$ )		$\leq 150$	
Mechanical endurance (on-off cycles) circuit breaker / load breaking switch / disconnecter		10000/3000/3000	
SF6 gas pressure in tank (MPa)		0,040-0,045	
SF6 gas leakage per year		$\leq 0,02$	
Making time, no more than (ms)		50	
Breaking time, no more than (ms)		70	
Installation altitude above sea level (m)		$\leq 1000$	
Ambient temperature ( $^{\circ}\text{C}$ )		-25...+40	
Air humidity (%)		Monthly average $\leq 90$	
Seismic stability (points)		6	
Service life		30 years	

## ГАБАРИТНЫЕ РАЗМЕРЫ РУВН ТИПА UM



B\* is a distance from the side to the wall, taking into account the expansion of the monoblock

- for 1 function DE is 800 mm
- for 2 functions DE is 1200 mm
- for 3 functions DE is 1650 mm
- for 4 functions DE is 2050 mm

A\* is a distance from the side to the wall

C\* is a distance from the back to the wall



Low voltage distribution cabinet (LVDC-ID) is used in 0.4 kV AC voltage networks with 50 Hz frequency and with solidly earthed neutral. It serves to receive and distribute electrical energy, as well as to protect against overloads and short-circuit currents in outgoing lines.

LVDC-ID compact design makes it possible to use these cabinets in confined space conditions (Modular Prefab Transformer Substation, MPTS).

LVDC-ID cabinets are distinguished by:

- Flexibility of solutions. Depending on the user's choice, it is possible to implement automatic or manual transfer switch.
- Reliability and durability. Components from the world's best manufacturers are used in LVDC-ID.
- Safety. All current-carrying parts are reliably covered in LVDC-ID, which ensures a high degree of protection for operating personnel. Shielded fuse holders are used in LVDC-ID, which ensures personnel safety when replacing fuses.
- Ease of maintenance. Possibility of performing work on each feeder without shutting down the entire section.
- Energy efficiency. Possibility of installing fiscal metering station both on input and output lines.
- Ease of installation. Convenient connection and routing of outgoing and feeder cables.

## SPECIFICATIONS

Rated voltage (kV)	0,4
Frequency (Hz)	50
Busbar rated current (A)	800-4000
Number of fuse holders (pcs)	10, 12, 14, 16, 18
Fuse holder rated current (A)	400, 630
Permissible through short-circuit current in cabinet busbars at $t=0.5$ s (kA)	50
Insulation rated voltage (V)	690
Earthing system type	TN-C, TN-C-S

LVSG with fuses  
on outgoing lines



# 18 LVSG

In terms of design, LVSG with circuit breakers are made on the basis of front-accessible or two-side serviced metal cabinets. The input of supply and output cables can be made both from the top and bottom of the cabinet. Cabinets are installed on the plinth. Fixed or withdrawable circuit breakers with a rated current of up to 6300A can be installed at the input. If there is an ATS, a light alarm as to the ATS status is installed on the LVSG front panel or door, as well as buttons for operating the input circuit breakers in manual mode.

Instrumentation (voltmeter, ammeter) can be installed at the customer's request.

In the LVSG standard version, fiscal metering of electrical energy is organized at the input, where certified current transformers with an accuracy class of 0.5S are installed. The secondary terminals of the current transformers are equipped with a sealable cover.

## SPECIFICATIONS

Rated voltage (kV)	0,4; 0,69
Frequency (Hz)	50
Busbar rated current (A)	250-6300
Permissible through short-circuit current in cabinet busbars at $t=0.5$ s (kA)	up to 100
Insulation rated voltage (V)	690
Earthing system type	TN-C, TN-C-S
Sectioning form	up to 4b



LVSG with circuit breakers

## EARTHING

The internal equipotential bonding loop is prefabricated. All metal non-current-carrying parts of the equipment installed at "Iset" PTS are connected to the equipotential bonding loop. The loop is assumed to be common for voltages of 6 (10) and 0.4 kV and is made of a 4x40 mm steel strip along the perimeter of the substation premises.

The equipotential bonding loop has outlets for connection to external earthing loop. At each connection point to the external loop there is an "Earthing" sign, in accordance with GOST 21130-75.

When installing a PTS, it is necessary to connect the external and internal loops. The PTS operation without connection to the external loop is not allowed.

The earthing device is calculated when PTS is to be complied to specific conditions.

## FOUNDATION

The foundation is not included in the scope of supply of PTS and is to be designed individually depending on specific conditions. Piles, concrete blocks or other types of foundations can be used as a mounting base for PTS modules. When ordering, the Customer is provided with drawings of pile field indicating the substation support points and weight of PTS blocks.

## PTS TRANSPORTATION

PTS is transported in a vertical position on the basis of transport modules approach. If "Iset" PTS consists of several modules, it is delivered on module-by-module principle. Each module will not exceed transport dimensions.

The module frames have special transport fixtures for PTS lifting and displacing. Service platforms are transported separately from the PTS.



## 20 Example of questionnaire, page 1 ("ISET" PTS)

1	Object name and address						
2	Climatic version and placement category	У1 <input type="checkbox"/>			УХЛ1 <input type="checkbox"/>		
3	Seismic resistance requirement, points (MSK-64)	6 points (standard) <input type="checkbox"/>			9 points <input type="checkbox"/>		
4	"Iset" PTS type	1 PTS <input type="checkbox"/>			2 PTS <input type="checkbox"/>		
5	Power transformer capacity, kVA	100 <input type="checkbox"/>	160 <input type="checkbox"/>	250 <input type="checkbox"/>	400 <input type="checkbox"/>	630 <input type="checkbox"/>	1000 <input type="checkbox"/>
6	Rated voltage on HV side, kV	6 <input type="checkbox"/>			10 <input type="checkbox"/>		
7	Rated voltage on LV side, kV	0.4 <input type="checkbox"/>					
8	Diagram and connection group of power transformer windings	D/Yn-11 <input type="checkbox"/>					
9	Availability of transformers in the scope of supply	Yes <input type="checkbox"/>					
10	Type of power transformers	Dry <input type="checkbox"/>					
11	Availability of ATS on the side	HV <input type="checkbox"/>			LV <input type="checkbox"/>		
12	HVSG type	RME <input type="checkbox"/>		UM <input type="checkbox"/>		Ultima <input type="checkbox"/>	
13	HVSG rated current	630 <input type="checkbox"/>			1250 <input type="checkbox"/>		
14	LVSG type	LVDC-ID (with fuse holders) <input type="checkbox"/>					
15	LVSG rated current	630 <input type="checkbox"/>	800 <input type="checkbox"/>	1000 <input type="checkbox"/>	1250 <input type="checkbox"/>	1600 <input type="checkbox"/>	2000 <input type="checkbox"/>
16	Set of PTS service platforms	Yes <input type="checkbox"/>					
17	Building foundation type	Pile field <input type="checkbox"/>			Concrete foundation blocks <input type="checkbox"/>		
18	PTS enclosure embodiment	Sandwich panel <input type="checkbox"/>					
19	Individual protection kit	Yes <input type="checkbox"/>					
20	Security alarm	Yes <input type="checkbox"/>			No <input type="checkbox"/>		
21	Fire alarm	Yes <input type="checkbox"/>			No <input type="checkbox"/>		
22	Ventilation	Yes <input type="checkbox"/>			No <input type="checkbox"/>		
23	Heating	Yes <input type="checkbox"/>			No <input type="checkbox"/>		
24	Outdoor lighting	Yes <input type="checkbox"/>			No <input type="checkbox"/>		
25	Emergency lighting	Yes <input type="checkbox"/>			No <input type="checkbox"/>		
26	Class of structural fire hazard of PTS building	C0 (standard) <input type="checkbox"/>					
27	Fire resistance rating of PTS building	IV (standard) <input type="checkbox"/>					
28	Color solutions for PTS building	Standard "Iset" PTS <input type="checkbox"/>					
29	HV cable entry	Upper <input type="checkbox"/>					
30	Availability of an organized drainage system	Yes <input type="checkbox"/>					No <input type="checkbox"/>
		With heating <input type="checkbox"/>		Without heating <input type="checkbox"/>			
31	Door closer	Yes <input type="checkbox"/>			No <input type="checkbox"/>		
32	Additional requirements						

# Example of questionnaire, page 2 2 21

("ISET" PTS)

Other					
Other					
Other					
1250 <input type="checkbox"/>	1600 <input type="checkbox"/>	2000 <input type="checkbox"/>	2500 <input type="checkbox"/>	3150 <input type="checkbox"/>	Другое
20 <input type="checkbox"/>			Other		
Other					
Y/Yn-0					
No <input type="checkbox"/>					
Oil <input type="checkbox"/>					
No <input type="checkbox"/>					
Other					
Other					
PSB-ID (with circuit breakers) <input type="checkbox"/>					
2500 <input type="checkbox"/>	3200 <input type="checkbox"/>	4000 <input type="checkbox"/>	5000 <input type="checkbox"/>	6300 <input type="checkbox"/>	Другое
No <input type="checkbox"/>					
Other					
Sheet metal with insulation <input type="checkbox"/>					
No <input type="checkbox"/>					
Note					
Note					
Note					
Note					
Note					
Note					
Other					
Other					
Other					
Bottom <input type="checkbox"/>					
Note					
Note					

## 22 Example of questionnaire, page 1 ("ISET" PCTS)

1	Object name and address						
2	Climatic version and placement category	У1 <input type="checkbox"/>			УХЛ1 <input type="checkbox"/>		
3	Seismic resistance requirement, points (MSK-64)	6 points (standard) <input type="checkbox"/>			9 points <input type="checkbox"/>		
4	"Iset" PTS type	1 PTS <input type="checkbox"/>			2 PTS <input type="checkbox"/>		
5	Power transformer capacity, kVA	100 <input type="checkbox"/>	160 <input type="checkbox"/>	250 <input type="checkbox"/>	400 <input type="checkbox"/>	630 <input type="checkbox"/>	1000 <input type="checkbox"/>
6	Rated voltage on HV side, kV	6 <input type="checkbox"/>			10 <input type="checkbox"/>		
7	Rated voltage on LV side, kV	0.4 <input type="checkbox"/>					
8	Diagram and connection group of power transformer windings	D/Yn-11 <input type="checkbox"/>					
9	Availability of transformers in the scope of supply	Yes <input type="checkbox"/>					
10	Type of power transformers	Dry <input type="checkbox"/>					
11	Availability of ATS on the side	HV <input type="checkbox"/>			LV <input type="checkbox"/>		
12	HVSG type	RME <input type="checkbox"/>		UM <input type="checkbox"/>		Ultima <input type="checkbox"/>	
13	HVSG rated current	630 <input type="checkbox"/>			1250 <input type="checkbox"/>		
14	LVSG type	LVDC-ID (with fuse holders) <input type="checkbox"/>					
15	LVSG rated current	630 <input type="checkbox"/>	800 <input type="checkbox"/>	1000 <input type="checkbox"/>	1250 <input type="checkbox"/>	1600 <input type="checkbox"/>	2000 <input type="checkbox"/>
16	Set of PTS service platforms	Yes <input type="checkbox"/>					
17	Building foundation type	Monolithic slab <input type="checkbox"/>					
18	PTS enclosure embodiment	Concrete <input type="checkbox"/>					
19	Individual protection kit	Yes <input type="checkbox"/>					
20	Security alarm	Yes <input type="checkbox"/>			No <input type="checkbox"/>		
21	Fire alarm	Yes <input type="checkbox"/>			No <input type="checkbox"/>		
22	Ventilation	Yes <input type="checkbox"/>			No <input type="checkbox"/>		
23	Heating	Yes <input type="checkbox"/>			No <input type="checkbox"/>		
24	Outdoor lighting	Yes <input type="checkbox"/>			No <input type="checkbox"/>		
25	Emergency lighting	Yes <input type="checkbox"/>			No <input type="checkbox"/>		
26	Color solutions for PTS building	Standard "Iset" PTS <input type="checkbox"/>					
27	HV cable entry	Upper <input type="checkbox"/>					
28	Availability of an organized drainage system	Yes <input type="checkbox"/>				No <input type="checkbox"/>	
		With heating <input type="checkbox"/>		Without heating <input type="checkbox"/>			
29	Door closer	Yes <input type="checkbox"/>			No <input type="checkbox"/>		
30	Additional requirements						

# Example of questionnaire, page 2 23 ("ISET" PCTS)

Other					
Other					
Other					
1250 <input type="checkbox"/>	1600 <input type="checkbox"/>	2000 <input type="checkbox"/>	2500 <input type="checkbox"/>	3150 <input type="checkbox"/>	Other
20 <input type="checkbox"/>			Other		
Other					
Y/Yn-0					
No <input type="checkbox"/>					
Oil <input type="checkbox"/>					
No <input type="checkbox"/>					
Other					
Other					
PSB-ID (with circuit breakers) <input type="checkbox"/>					
2500 <input type="checkbox"/>	3200 <input type="checkbox"/>	4000 <input type="checkbox"/>	5000 <input type="checkbox"/>	6300 <input type="checkbox"/>	Другое
No <input type="checkbox"/>					
Other					
No <input type="checkbox"/>					
Note					
Note					
Note					
Note					
Note					
Note					
Other					
Bottom <input type="checkbox"/>					
Note					
Note					



## 0.4 - 20 kV Power supply solutions from a responsible supplier



[www.ideng.ru](http://www.ideng.ru)

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