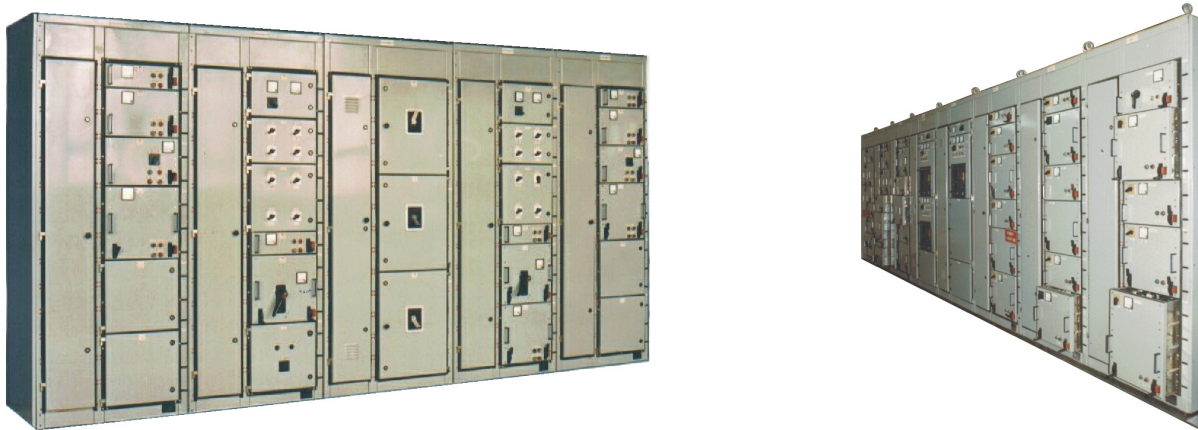


ProMotor Series

ProMotor T3200



ProMotor T3200 – general view

Destination

ProMotor T3200 is an ensemble with modular structure designed for LV panels and offers general solutions for main and secondary power distribution, command center and automation technology. These panels ensure safety degree which recommends them for applications in energetic stations, metalurgic industry....

ProMotor T3200 contains 3 types of distinct sections, grouped after their destination :

ProMotor T3200 PDP power distribution

- inputs 800 ... 3200A
- couples 800 ... 3200A
- outputs up to 2500A

with versions :

- **fixed units of power distribution type PDPF**
- **withdrawable units of power distribution type PDPW**

ProMotor T3200 PDM power distribution for engines

- inputs 800 ... 3200A
- outputs up to 630A – fixed
up to 200A – withdrawable
- Power factor correction max 50KVAR / module with versions :
- **fixed units of power distribution for engines type PDMF**
- **withdrawable units of power distribution for engines type PDMW**

Services power distribution type **ProMotor T3200 PDSF**

- inputs up to 630A
- outputs up to 630A

Components

A **ProMotor T3200** column is manufactured from standard elements which satisfies all the requests of the installation in which they are installed.

The architecture of a **ProMotor T3200** column is characterised through **4 functional areas**:

- **general bars system area**
- **derivation bars system area**
- **command and operate system area**
- **connection area**

These 4 areas are installed inside a metallic enclosure with separation walls realising the protection of the persons against the under voltage parts contact. The modular conception of the **ProMotor T3200** columns ensure an adaptation to the users requests is characterised with:

- **standardization** of the base elements
- **total withdrawable** of the circuits forward and backward and auxiliaries
- **exchangeability of the drawers** same type
- the possibility of **modification of the drawers** compartment size;
- **section view** of the power circuit through the front part's of the drawer indicator
- **safety handling** being impossible to disconnect under voltage
- **safety exploiting** self locking of the compartments
- **internal separation** in accordance with **IEC 439.1 form 1 - 3b**

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Metallic enclosure description

- A **ProMotor T3200** column **structure** is obtained from a base frame, manufactured from vertical and horizontal beams, assembled with screws.
- This base frame is full filled with a **connection compartment** placed in the side or in the back of it.
- A **base** with 88mm height which allows fixing on the montage surface.
- **Metallic enclosure**, (frame + walls) is realised from double pickeld steel sheet.
- **The protection** of this is done through powder coat electrostatic field paint standard colour RAL 7032.
- **The separation plates and the drawers** are made of steel sheet.
- **The protection degree**
 - standard **IP 31, IP 41**
 - if requested **IP 42, IP 54**.

Derivation and main bars area

- **Main bars system** (horizontal) is placed in a closed compartment in the upper part of the columns with access through the cover.
- **Derivation bars systems** (vertical) is placed behind the apparatus compartment.
- **Protection cable** is connected to the metallic enclosure and contains:
 - **A horizontally conductor** from copper bar placed in the auxilliary circuits compartment.
 - **A vertically conductor**, from copper bar, placed in the connecting compartment of each column, which allows the binding of the power cables protection conductors and the gorunding connection of the different elements installed in the panel.**Supplying the command and control circuits** is realised from **auxilliary collectors** placed in the upper part of each column in a closed compartment which passes horizontally the columns ensemble.
- **The bars support system** is realised from polyester with fiberglass and ensures electrical stability and the possibility of changing without difficulties of the bars dimmenssions.

Command and operating area

The apparatus operating and command area is the main part of a **ProMotor T3200** column. This is placed in the front part and has a usefull height splitted in 14 **modules (M)** with distance of 142,5 mm / M. Every circuit occupy a nr of modules. The maximum nr of modules is 4.

Depending on the size of the apparatus, there are 2 types of equipments :

- * **Withdrawbles drawers**, for :
 - fuses + thermal relay + switch
 - disconnectors + thermal relay + switch
 - disconnectors
 - circuit breakers
- * **Withdrawbles trolleys** for disconnectors



Drawer - front view



Drawer - different models and dimmenssions

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The withdrawable compartment

it is composed by :

The mobile part composed of a frame on which the command elements and the devices will be installed.

The fixed part with connecting elements and mobile part's positioning steerage.

The connection mechanism which allows the highlight of the 3 positions of the mobile part « **connected – test – disconnected** ». This mechanism is foreseen with a safety device against the undervoltage disconnect manueurs, which operates the trigger coil of the contactor or disconnector opening the contacts.

The main circuits LV power beams foreseen with insulated boxes containing knife type couplers which allows the connections to the secondary bars.

The secondary circuits beams on which auxilliary circuits connections are assembled.

Insulating plates which covers the undervoltage parts in front of the beams after disconnecting the mobile part.

Limit element of the extraction manueur of the mobile part movement.

Test position is obtained by moving the mobile part and making the power circuit section upstream and downstream. This position allows to check the auxilliary circuits operations.

Connecting area

It consists from a **frame** attached to the main column. It's position is determinated by the access mode of the cables.

The input of the cables can be :

- **through the bottom part** (passing area restricted)
- **through the top part**

In special cases, the dimmensions of the frame can be adapted for a big volume of cables.

The terminals are according the respective drawer's dimmensions :

- Flat copper terminals 20 X 5 with Φ 6,2 holes for 1M and 2M drawers
- Flat copper terminals 40 X 5 with Φ 8,2 holes for 3M and 4M drawers
- Flat copper terminals in insulated supports for fuses or disconnectors compartments.
 Φ 6,2; Φ 8,2 ; Φ 10,2 mm holes.

Beams for installing the power and auxilliary cables.

Installation

The panels are delivered dismounted, separate columns, with general busbar separately delivered. The manufacturing mode allows the fast reassemble at the mounting place and allows the installation on the final position.

The installation can be done :

- **directly on the floor** (concrete with dowels) ;
- **on metallic profiles** type U ;
- **on scaffolds** or other adapted supports;

Note : In any version, the fixing surface must have a 2mm / m flat deviation.

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Operating conditions	Technical characteristics
<ul style="list-style-type: none"> mounting interior or exterior 24 h environmental average temperature 35°C storage and transport temperature -33 : +50°C oprating environmental temperature -40 : +50°C climatical fabrication N3 sau N1 relative humidity 90% la 20°C maximal altitude 2000 m lifetime 20 years 	<ul style="list-style-type: none"> operating nominal voltage 400 / 500 Vca insulating nominal voltage 660 Vca operating frequency 50/60 Hz neutral regime IT/TT/TN operating nominal current <ul style="list-style-type: none"> - on main bars 3200 A - on derivation bars 900 A 1 sec thermal stability current 25 / 42 / 52 KA for trafo dynamical stability current 50 / 84 / 114 KA for trafo output nominal current <ul style="list-style-type: none"> - fixed compartments up to 630A - withdrawble drawers up to 250A protection degree IP 30,42,54 columns dimmension <ul style="list-style-type: none"> - PDP H =2350 mm;L =989; 1089 mm; D =1000;1200 mm - PDM H =2350 mm;L =600;900;1000 mm;D =800;1000 mm length of connecting compartment 285; 385 mm external appearance RAL 7032 colour (standard)

Ordering mode

For fabricating the equipment, the following datas are requested :

- * the type
- * the protection degree
- * electrical technical requests :
 - the power and number of feeding transformers
 - the feeding voltage of the AAR diagram
 - the number, the size and the type of the consumers
 - start and command diagram

Exemple : PDMW – 1000 KVA , IP 31

U AAR = 220 Vca

U cda = 220 Vca

13/engines/30KW; 5/engines/37KW

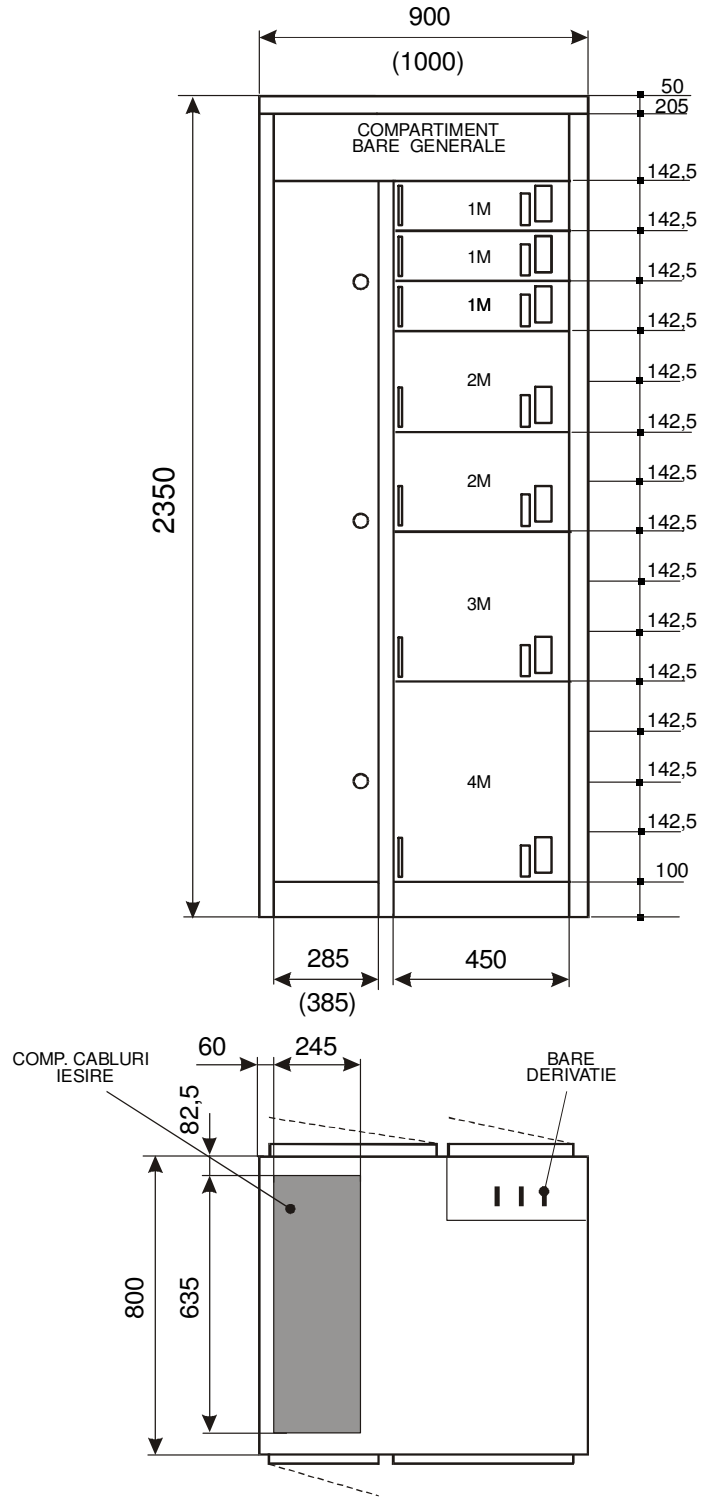
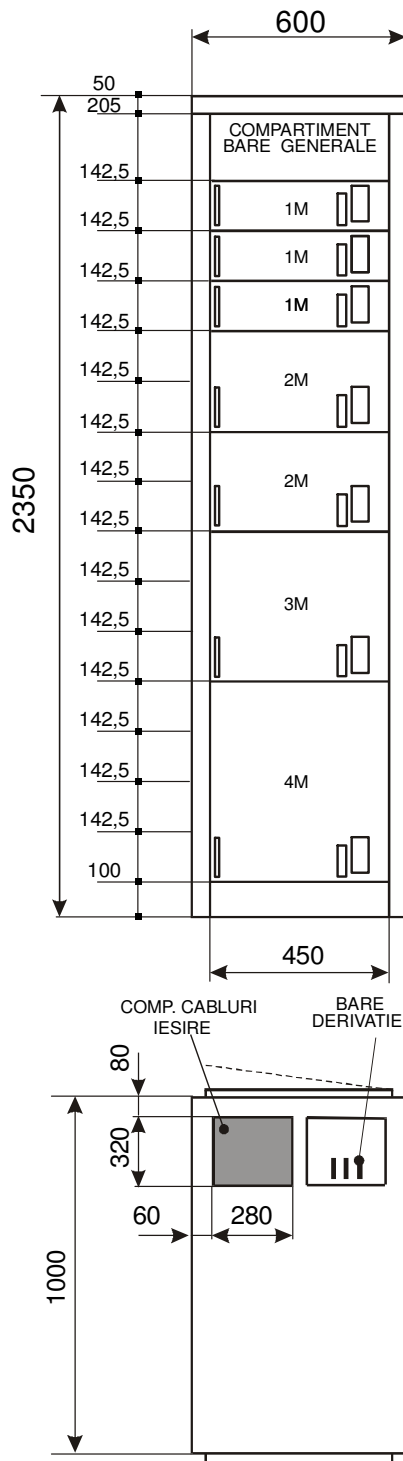
starting diagram: star triangle

Circuit power [kW]	Modules number (import apparatur)		
	Direct Start	Star-Triangle Start	Invert of direction
22	1	2	2
30	1	2	2
37	1	2	3
45	2	2	3
55	2 ; 3	3	4F
75	3	4	4F
90	3	4F	5F
110	3 ; 4	5F	6F
160	5F	6F	7F
200	6F	7F	8F
300	7F	8F	-

F = fixed functional units

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ProMotor T3200 COLUMNS