



Ford ProTM DC Charging Cabinet

Installation Manual Revision 1.5



PREPARATION FOR INSTALLING THE EQUIPMENT

Site recommendations

When deciding the location of the equipment and planning its installation, it is recommended to follow a series of guidelines derived from its characteristics.



CAUTION

To guarantee proper electrical installation, it is very important to comply with the bend radius of the cable. The customer must ensure the cables enter the equipment perpendicularly and the spacing between them is appropriate.

Avoid corrosive environments that may affect the equipment's proper functioning.



NOTICE

The instructions given in this section must not replace in any way the mandatory regulations of the country in which the equipment will be installed.

Prior to installation, a geotechnical study of the terrain where the equipment will be installed must be carried out to determine its characteristics and to decide the most suitable type of foundation.

It is the customer's responsibility to design and build concrete foundations with the necessary piping and ground network in accordance with the applicable regulatory requirements.

Proper installation is absolutely necessary and it is not within the scope of the manufacturer's responsibility.

Soil

The soil should have the following characteristics:

- The soil must be dry, compacted, stable and homogeneous.
- The land will be gravel, ballast or pebbles.
- Do not install on floodplains, neither in places where objects can fall on.
- The land should be provided with a drainage system, especially in locations with high water tables and/or heavy rainfall.
- It is recommended that the ground should not exceed the level of the foundation.
- Maximum permissible ground pressure of 150 kN/m².
- Soil compaction degree of 98%.
- Maximum land unevenness of 0.25%.
- It must not be a direct place of passage so that the load cables do not interrupt the movement of pedestrians or traffic.

Base site

Power Electronics recommends making a concrete foundation slab to support the equipment. The support surface for the equipment must be perfectly level. **The client is responsible for the correct dimensioning and construction of the foundation in accordance with current regulations.** The foundation must meet the following characteristics:

- It is recommended that a layer of cleaning concrete be installed between the ground and the foundation.
- The sizing should be appropriate for the weight of the equipment and the characteristics of the soil.
- It must be thick enough to support the equipment.
- It must have trenches wide enough to ensure proper wiring passage.
- It is advisable to leave the slab at the same level as the ground to facilitate maintenance work.



NOTICE

The client is responsible for building a solid concrete base perfectly leveled and elevated with respect to the user's floor height.

EN

In case of specification of variable actions such as snow, wind or earthquake, the slab must comply with the following requirements, **not being excluding those indicated by the specific regulations of the country of installation:**

- Ability to withstand compression forces of 25N/mm².
- Steel reinforcement capable of withstanding tensile forces of 500N/mm².
- Taking into account severe wind conditions (60m/s), the reinforcement should be dimensioned as follows:
 - The longitudinal side of the reinforcement must be able to withstand forces of up to 80kN.
 - The transverse side of the reinforcement must be able to withstand forces of up to 10kN.

Note that the thickness of the slab must be determined from the results of the geotechnical study.

See anchor recommendations at the "[Anchoring of the equipment](#)" section.

Minimum working distances



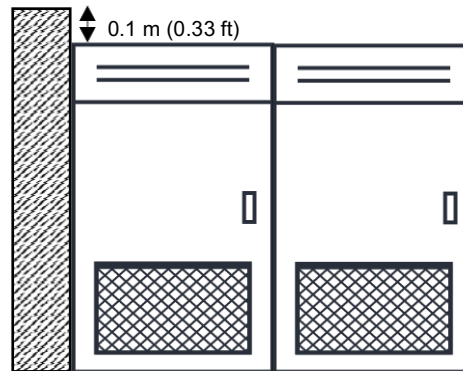
CAUTION

When installing the equipment, keep the minimum safety distances. Be aware of all the minimum insulation requirements established by the applicable electrical code, as well as the thermal, safety and accessibility requirements. The safety distances given in this section must not replace in any way the mandatory regulations of the country in which the equipment will be installed.

Power cabinets can be mounted back to back, against a wall or side by side. For proper inspection and ventilation, as well as correct handling, it is important to leave the following clearance distances:

Side to side distance: The equipment does not require any side to side space.

Top side space: It requires 0.1m (0.33ft) top side space.



Front side distance: The equipment requires 2m (6.56ft) free front space to access it, operate and open the door properly.

Rear side distance: The equipment does not require any rear space, as it does not include any door, access or ventilation grill.

Please notice that, besides the recommended clearance distances indicated above, the maximum distance between the power cabinet and the Dispenser must also be taken into account. This distance can not exceed 80 m (262.46 ft) with Ethernet communication or 150 m (492.13 ft) with the optical fiber communication, as optional.

Anchoring of the equipment

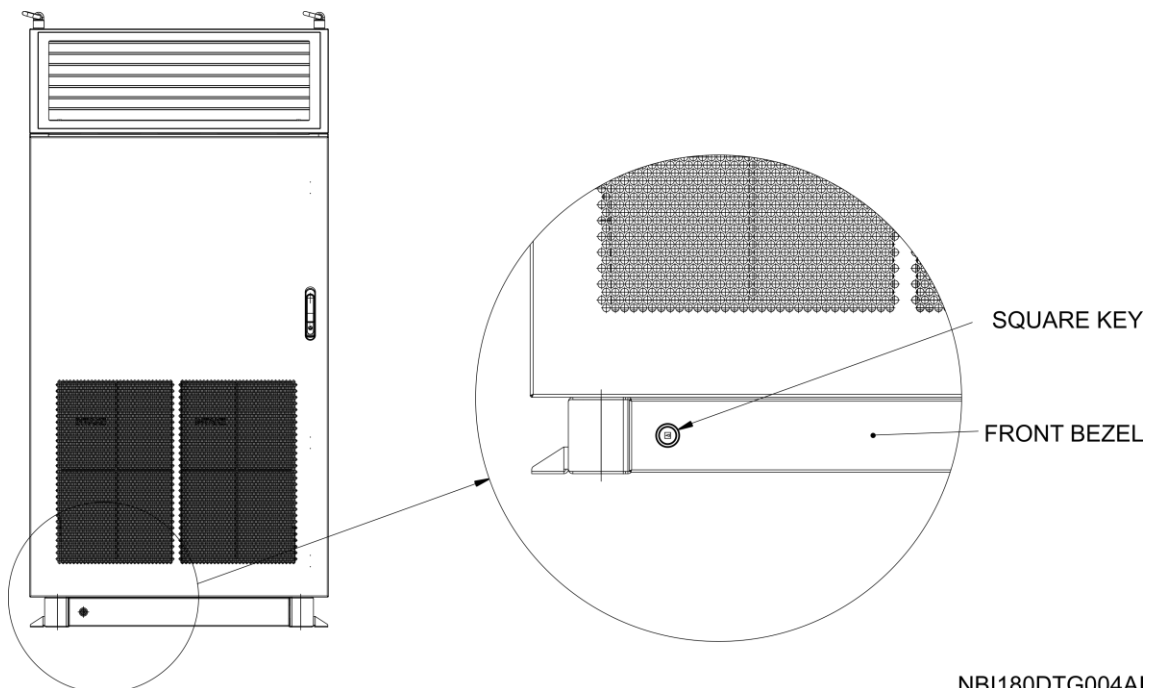


NOTICE

It is the customer's responsibility to dimension correctly equipment anchoring to the foundation, guaranteeing stability towards horizontal actions.

The equipment must be anchored to a solid and leveled surface (slab), see slab recommendations at the "[Base site](#)" section.

To anchor the equipment, customer must access the lower part. For this, the front and rear bezel must be removed by using a square key.

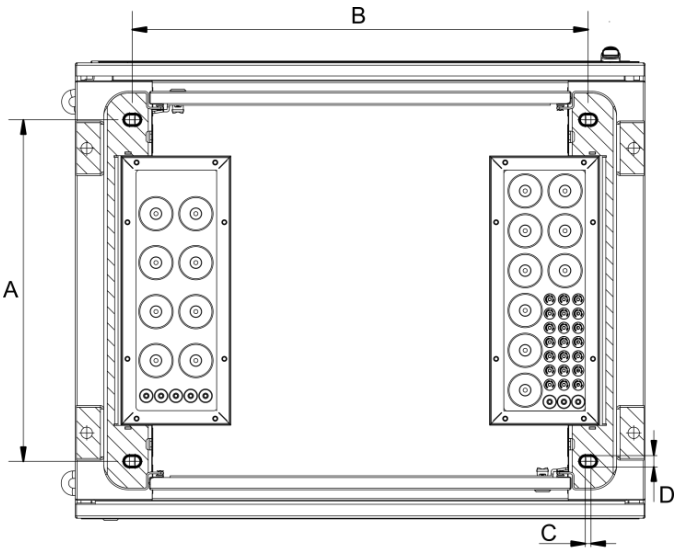


The equipment has two anchoring options, depending on the mounting needs. The location and diameter of the equipment's anchoring holes for each option are described below.

For both options, it is recommended to use M16 (5/8") A4-70 stainless screws for high load solicitations, being accepted both expansive anchor bolts and chemical. Please, secure them applying the recommended torque for mechanical connections.

Option 1

Equipment anchoring using the **four internal holes**, with the following dimensions.

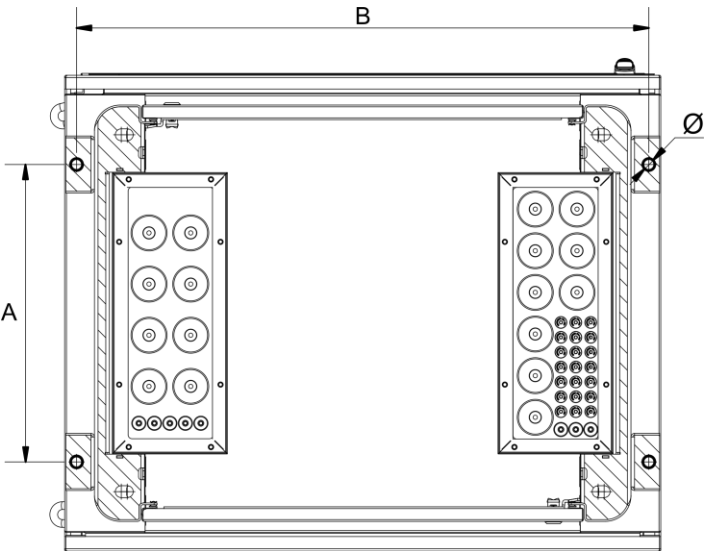


NBi180DTD003A

ANCHORING DIMENSIONS – OPTION 1				
	A	B	C	D
m	600	80	10	20
mm		0		
in.	23.6	31.	0.3	0.7
	2	5	9	9

Option 2

Equipment anchoring using the **four external holes**, with the following dimensions.



NBi180DTD004A

ANCHORING DIMENSIONS – OPTION 2			
	A	B	Ø
mm	500	960	20
in.	19.6	37.8	0.7
	9		9

Ventilation system



CAUTION

Special care must be taken to ensure that there are no external elements near the air inlets and outlets that prevent proper ventilation of the equipment.

The power cabinet has a forced air ventilation system. The air inlet is located at the bottom of the door and the outlet is at the top.



DC output power connections

Exit from power cabinet to Dispenser.

Cable size:

The table below shows the recommended cable size for the power cabinet to Dispenser. Customer must choose the cables taking into consideration the minimum and maximum diameter, as well as the particularities of the project:

OUTPUT POWER SUPPLY (DC+/DC-)				
	RECOMMENDED SECTION	CABLE GLAND	MINIMUM DIAMETER	MAXIMUM DIAMETER
NBi060	95 mm ² (3/0 AWG)	M50 (2")	27 mm (1.06 in.)	35 mm (1.38 in.)
NBi090	120 mm ² (4/0 AWG)	M50 (2")	27 mm (1.06 in.)	35 mm (1.38 in.)
NBi120	185 mm ² (300MCM)	M50 (2")	27 mm (1.06 in.)	35 mm (1.38 in.)
NBi150	185 mm ² (300MCM)	M50 (2")	27 mm (1.06 in.)	35 mm (1.38 in.)
NBi180	185 mm ² (300MCM)	M50 (2")	27 mm (1.06 in.)	35 mm (1.38 in.)

GROUND (PE)				
	RECOMMENDED SECTION	CABLE GLAND	MINIMUM DIAMETER	MAXIMUM DIAMETER
NBi060	50 mm ² (1 AWG)	M50 (2")	27 mm (1.06 in.)	35 mm (1.38 in.)
NBi090	70 mm ² (2/0 AWG)	M50 (2")	27 mm (1.06 in.)	35 mm (1.38 in.)
NBi120	95 mm ² (3/0 AWG)	M50 (2")	27 mm (1.06 in.)	35 mm (1.38 in.)
NBi150	95 mm ² (3/0 AWG)	M50 (2")	27 mm (1.06 in.)	35 mm (1.38 in.)
NBi180	95 mm ² (3/0 AWG)	M50 (2")	27 mm (1.06 in.)	35 mm (1.38 in.)

Connection:

The DC output power connections (DC+/DC-, PE) are directly connected to the Nema 2-hole lug, as shown in the following image:

