

# TERMINAL BOXES

## TBX Series

*"More than a terminal plate"*

The latest and most innovative solution for connecting wires from CT



### **GENERAL FEATURES**

The measurement, control, check and data recording circuits for medium and high power, oil-cooled, oil-insulated electric transformers require to bring current signals outside from the tank.  
CEDASPE terminal boxes allow an easy connection between external and internal measuring circuit of transformer tank.

### **CONSTRUCTION**

CEDASPE SM2 Series terminal boxes have the following constructional characteristics:  
casing made of sealed aluminium alloy, its flanged shape allows an easy fixation to the transformer tank with welded studs; casing has also a lowered bottom in order to prevent air pockets from forming when the box is fitted to the transformer tank.  
The cover, in aluminium alloy too, closes hermetically the case and protects the terminals; a nylon lid links cover and housing to avoid any mistake during wiring operation if more terminal boxes are used on the transformer.  
The terminals allow the connection between wiring inside and outside the transformer tank and are designed in a such way to avoid unscrew during assembly or wiring operation  
The terminal box is provided with an external identification plate and an internal numbered plate for terminals.

### **MANUFACTURING PROGRAM**

Four box sizes as below:

Terminal box type SM2-XS (pag5.36) : max number of terminal 6 max number of cable exit 2

Terminal box type SM2-S(pag5.37) : max number of terminal 12 max number of cable exit 4

Terminal box type SM2-L (pag5.38) : max number of terminal 36 max number of cable exit 6

Terminal box type SM2-XL (pag5.39) : max number of terminal 53 max number of cable exit 4

Drawings at pages 5-36; 5-37; 5-38 and 5-39 illustrate all different execution and location of terminals in standard execution, on demand special execution can be provided.

### **SETTING TO WORK**

Terminal boxes CEDASPE have to be installed as follows

If required (i.e. when terminal boxes on transformer are 2 or more on the same tank) engrave the number of terminal box on the external plate; if the numbering of wiring is different from the numbering of terminals write conversion numbers on the plate inside the box.

Make the wiring inside transformer tank referring to the plate inside the box; wires lug have to be inserted between the two washer M6 and locked by the antirotational nut.

Fit the terminal box on the transformer tank

Make the wiring outside the tank referring to the plate inside the box following the same procedure as above

### **WORKING CONDITIONS**

All the materials, components and constructional characteristics allow the SM2 Series terminal boxes to be used with environmental temperature -20°C to + 50°C

relative humidity 95% at 20°C \* 80% at 40°C \* 50% at 50°C

working temperature (mineral oil) -20°C to +110°C

For particular environmental conditions and /or other working conditions, special versions can be supplied.

### **TEST**

Following routine test are performed on 100% of production:

- Visual and dimensional test
- Leakage test on assembled terminal box
- insulation test between terminals and body at 2500V for 1 min

Result of tests are reported on test certificate

### **FINISHING**

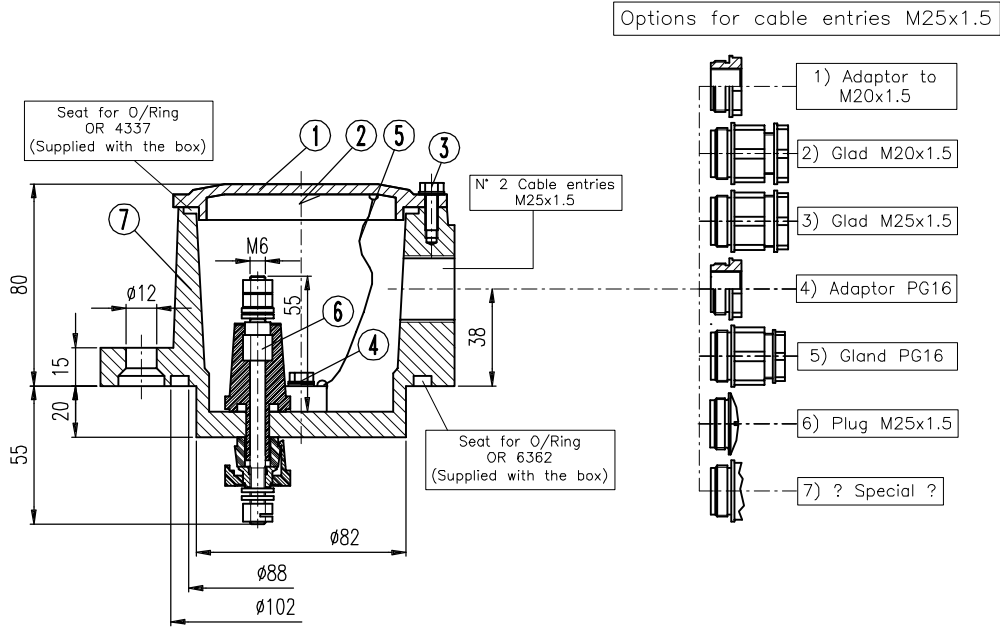
All external fittings are made in s/steel or brass nickel plated; body and cover are painted with one 50 µm-thick coat of two-pack epoxy primer (compatible with mineral transformer oil) on all external and internal surfaces, even those in contact with the oil, plus one 50 µm-thick coat of grey RAL 7030 two-pack polyurethane paint on all external surfaces not in contact with the oil; total thickness 100µm.

### **ORDERING INSTRUCTIONS**

The following information have to be provided to ask an offer or issue an order:

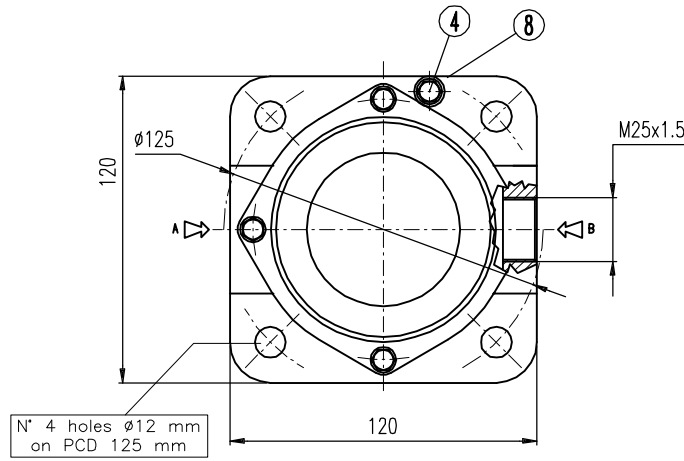
In case of a standard execution: only the code shown on drawing and the additional optional parts

In case of special execution : box size; number of terminals, number of cable exit and their size, special working condition (if present)



Options for cable entries M25x1.5

- 1) Adaptor to M20x1.5
- 2) Glad M20x1.5
- 3) Glad M25x1.5
- 4) Adaptor PG16
- 5) Gland PG16
- 6) Plug M25x1.5
- 7) ? Special ?



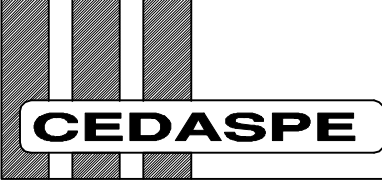
Pos.	Description
1	Terminal box cover
2	Terminal identification label
3	Cover assembly screw
4	Ground terminal
5	Cover holding screw
6	Terminal
7	Terminal box housing
8	Box identification label

- Protection degree: IP65
- Withstand insulation voltage between terminals & between terminals and ground : 2.5 kV a.c.
- Current reating (continous): 50 A

Average weight: ~1.5 Kg

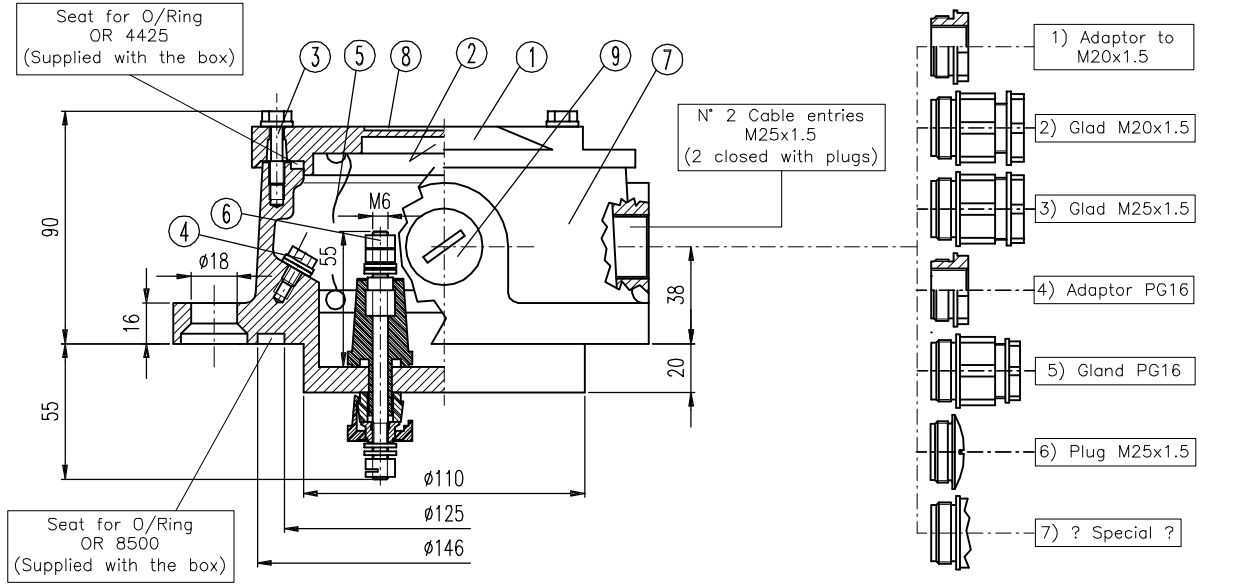
*Terminals position & numbering in standard execution*

<p><i>Execution 2T - 2 terminals</i> CODE : TB002S2000</p>	<p><i>Execution 3T - 3 terminals</i> CODE : TB003S2000</p>	<p><i>Execution 5T - 5 terminals</i> CODE : TB005S2000</p>	<p><i>Execution 6T - 6 terminals</i> CODE : TB006S2000</p>
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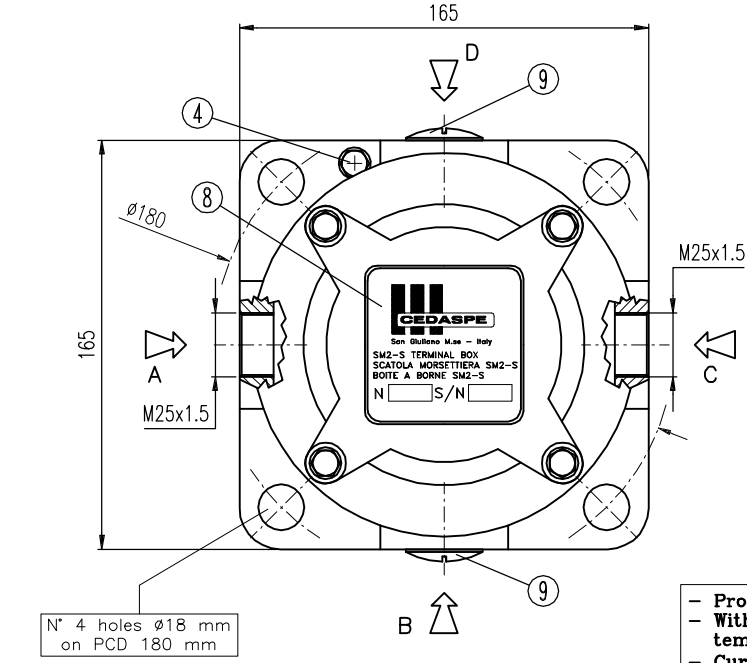
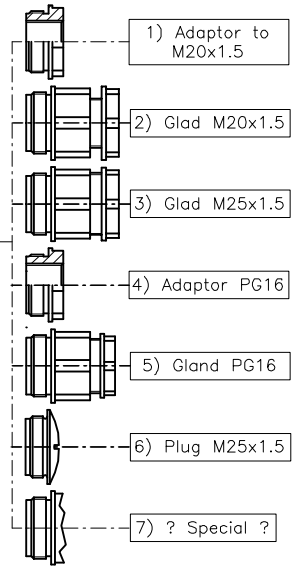


*Terminal box type*  
**SM2-XS**

Data	04/02/13	Dis. Nr <b>3727</b>
Scala	1:3	
Dis.		
Visto		1 2



Options for cable entries M25x1.5

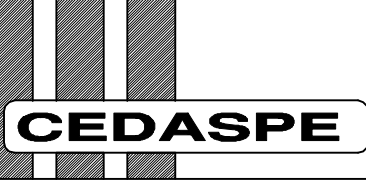
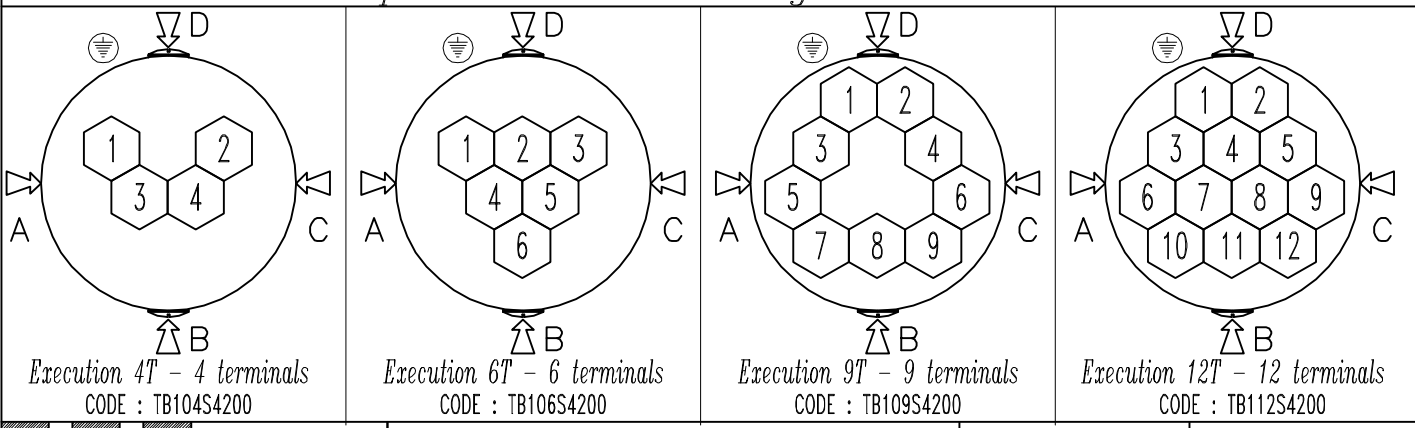


Pos.	Description
1	Terminal box cover
2	Terminal identification label
3	Cover assembly screw
4	Ground terminal
5	Cover holding screw
6	Terminal
7	Terminal box housing
8	Box identification label
9	Plug M25x1.5

- Protection degree: IP65
- Withstand insulation voltage between terminals & between terminals and ground : 2.5 kV a.c.
- Current reating (continous): 50 A

Average weight: ~3 Kg

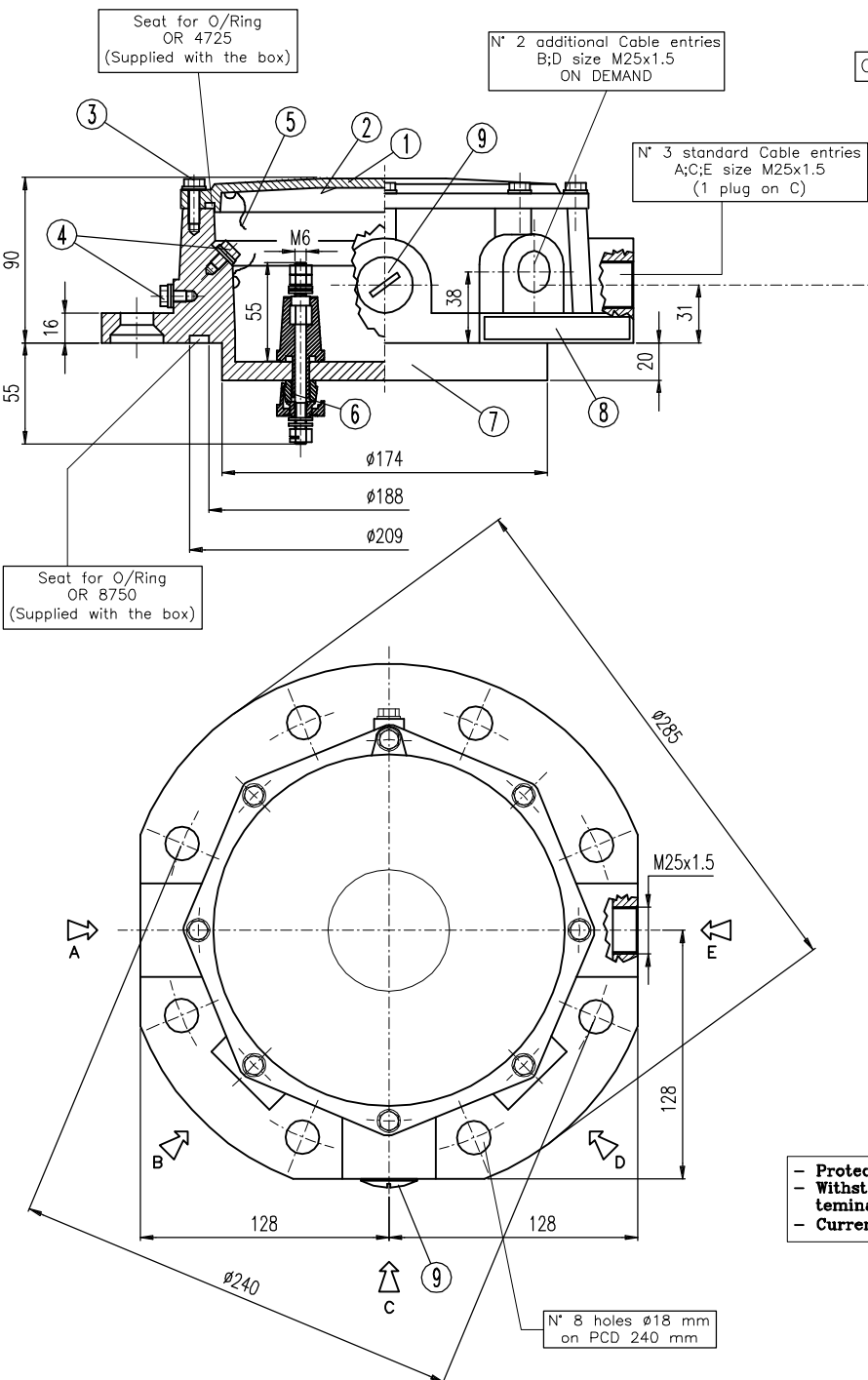
Terminals position & numbering in standard execution



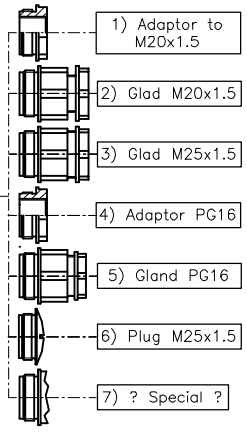
Terminal box type  
SM2-S

Data 04/02/13  
Scala 1:3  
Dis.  
Visto

Dis. Nr  
3728  
1 2



Options for cable entries M25x1.5

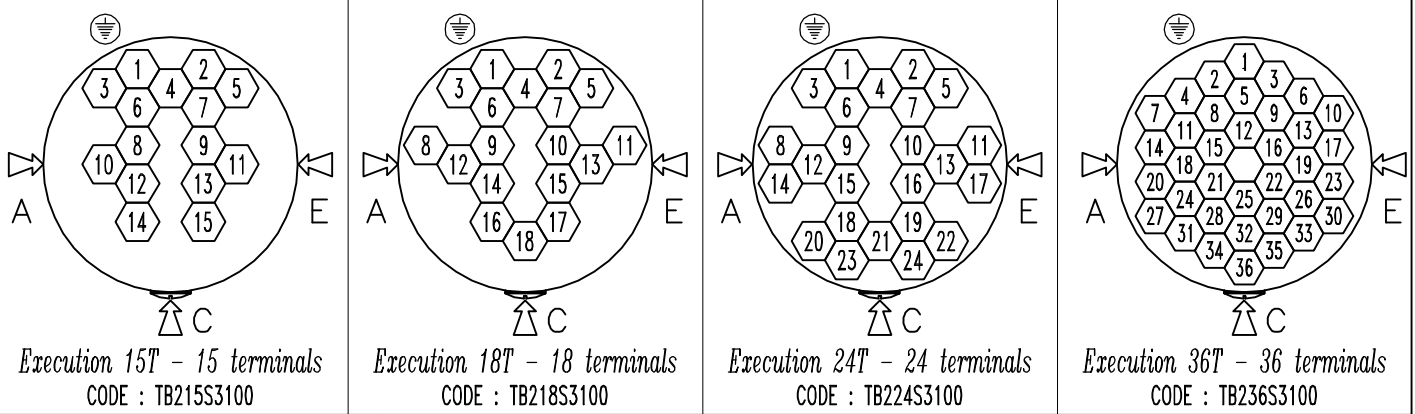


Pos.	Description
1	Terminal box cover
2	Terminal identification label
3	Cover assembly screw
4	Ground terminal
5	Cover holding screw
6	Terminal
7	Terminal box housing
8	Box identification label
9	Plug M25x1.5

- Protection degree: IP65  
 - Withstand insulation voltage between terminals & between terminals and ground : 2.5 kV a.c.  
 - Current rating (continuous): 50 A

Average weight: ~5 Kg

Terminals position & numbering in standard execution

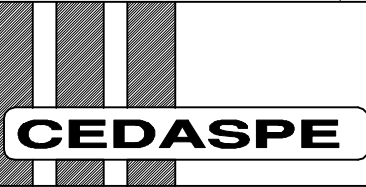


Execution 15T - 15 terminals  
CODE : TB215S3100

Execution 18T - 18 terminals  
CODE : TB218S3100

Execution 24T - 24 terminals  
CODE : TB224S3100

Execution 36T - 36 terminals  
CODE : TB236S3100



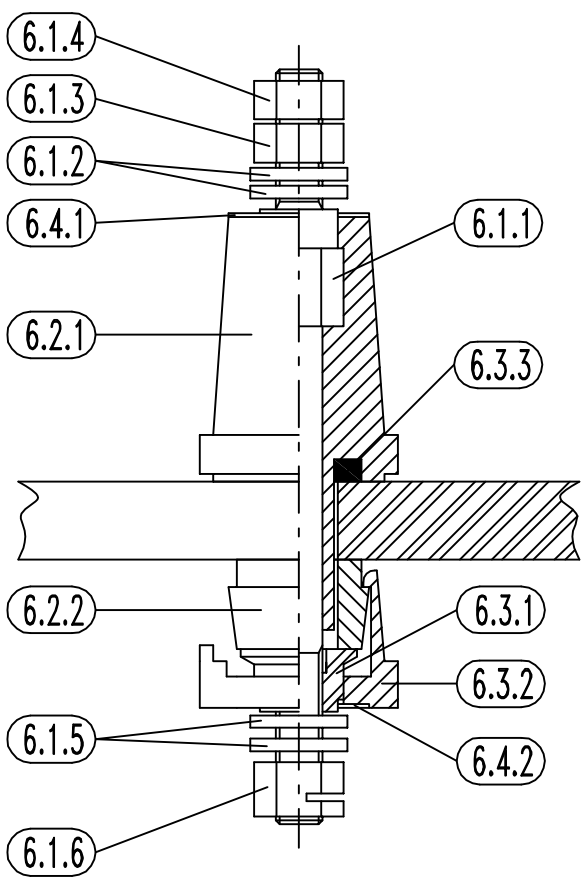
Terminal box type  
SM2-L

Data 04/02/13  
 Scala 1:4  
 Dis.  
 Visto

Dis. Nr  
3731

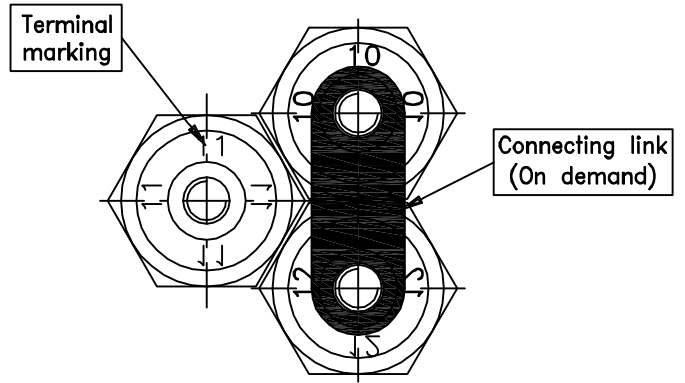
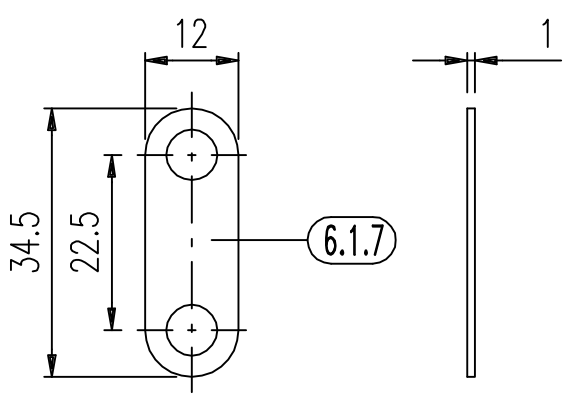
1	2	3	4
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Pos.	Description
6.1.1	Brass rod
6.1.2	Contact washer
6.1.3	Fixing nut
6.1.4	Lock nut
6.1.5	Contact washer
6.1.6	Self-locking nut
6.1.7	Terminal connection plate (on demand)
6.2.1	Terminal insulation
6.2.2	Lower spacer
6.3.1	Terminal fixing nut
6.3.2	Ring nut against rotation of nut 6.3.1
6.3.3	Gasket
6.4.1	Upper identification label
6.4.2	Lower identification label

TERMINAL CONNECTION PLATE (ON DEMAND)



Code: ZZB000002

La CEDASPE S.p.A. si riserva a termini di legge la proprietà del presente disegno con divieto di riprodurlo o comunicarlo a terzi senza sua autorizzazione.

			Finitura		TOLLERANZA GENERALE UNI-ISO 2768	
			Trattamento		Qualità = f <input type="checkbox"/> m <input checked="" type="checkbox"/> c <input type="checkbox"/>	
			Materiale Unific. Design.		Assieme =	
1	04/07/16	Agg. codice	Peso Grezzo	kg	Codice grezzo =	
Ind.	Data	Modifica	Peso Finito	kg	Codice =	



Titolo  
**TBX terminal  
Details**

Data 13/03/13  
Scala 1:1  
Dis.  
Visto

Dis. Nr  
**3799**

1				
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# ORDER FORM

A4 (210x297)

LMT [(0,0) (196,286)]

.DWG

FILE = 4410

REV. 00 DTD 07/11/17

La CEDASPE Power S.r.l. si riserva a termini di legge la proprietà del presente disegno con divieto di riprodurlo o comunicarlo a terzi senza sua autorizzazione.

**Size:**

XS <input type="checkbox"/>	S <input type="checkbox"/>	L <input type="checkbox"/>	XL <input type="checkbox"/>
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**N° of Terminals:**

2 <input type="checkbox"/>	4 <input type="checkbox"/>	15 <input type="checkbox"/>	27 <input type="checkbox"/>
3 <input type="checkbox"/>	6 <input type="checkbox"/>	18 <input type="checkbox"/>	37 <input type="checkbox"/>
5 <input type="checkbox"/>	9 <input type="checkbox"/>	24 <input type="checkbox"/>	45 <input type="checkbox"/>
6 <input type="checkbox"/>	12 <input type="checkbox"/>	36 <input type="checkbox"/>	53 <input type="checkbox"/>
Special <input type="checkbox"/>	Special <input type="checkbox"/>	Special <input type="checkbox"/>	Special <input type="checkbox"/>

**N° of Cable entries:**

	<u>M25x1.5:</u>		<u>M50x1.5:</u>
2 <input type="checkbox"/>	2 <input type="checkbox"/>	2 <input type="checkbox"/>	2 <input type="checkbox"/>
	3 <input type="checkbox"/>	3 <input type="checkbox"/>	3 <input type="checkbox"/>
	4 <input type="checkbox"/>	4 <input type="checkbox"/>	4 <input type="checkbox"/>

**Options for Cable entries:**

<u>M25x1.5:</u>		<u>M50x1.5:</u>
Adaptor to M20x1.5 <input type="checkbox"/>	Gland PG16 <input type="checkbox"/>	Adaptor to M32x1.5 <input type="checkbox"/>
Gland M20x1.5 <input type="checkbox"/>	Plug M25x1.5 <input type="checkbox"/>	Adaptor to M25x1.5 <input type="checkbox"/>
Gland M25x1.5 <input type="checkbox"/>	Special <input type="checkbox"/>	Plug M50x1.5 <input type="checkbox"/>
Adaptor PG16 <input type="checkbox"/>		Special <input type="checkbox"/>

**Working conditions:**

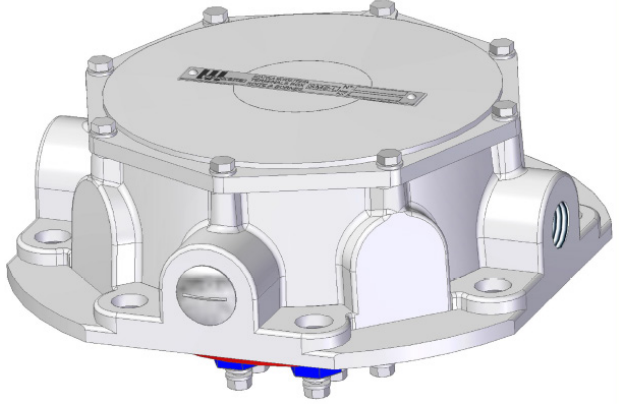
Environmental temp. (-20°C to +50°C) <input type="checkbox"/>	Relative Humidity (95% at 20°C) <input type="checkbox"/>	Working temp. (Mineral Oil) (-20°C to +110°C) <input type="checkbox"/>
	(80% at 40°C) <input type="checkbox"/>	Special <input type="checkbox"/>
	(50% at 50°C) <input type="checkbox"/>	

**Finish:**

Standard (.....)  Heavy duty (.....)  Off shore (.....)

**Colour:**

RAL4003 <input type="checkbox"/>	RAL7030 <input type="checkbox"/>	RAL7032 <input type="checkbox"/>
RAL7033 <input type="checkbox"/>	RAL7034 <input type="checkbox"/>	RAL7035 <input type="checkbox"/>
RAL7036 <input type="checkbox"/>	RAL7038 <input type="checkbox"/>	RAL7040 <input type="checkbox"/>
RAL7044 <input type="checkbox"/>		



**Notes:**

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Titolo  
**Terminal Box  
Order sheet**

Data **06/12/17**  
Scala **====**  
Dis.  
Visto

Dis. Nr  
**4410**