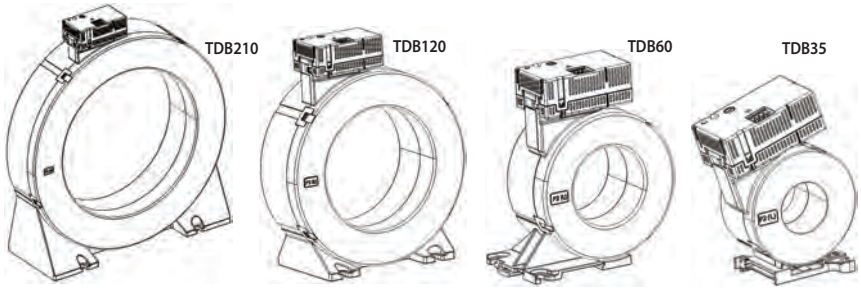
BTicino SpA
Viale Borri 231, 21100 Varese - Italia
www.imeitaly.com

Toroidi differenziali di tipo “B”

Codici: **TDB35-TDB60-TDB120-TDB210**

Modello: Delta



Sommario **Pagine**

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2. Gamma 1
3. Installazione 1
4. Dimensioni 1
5. Connessioni 2
6. Dati operativi 3
7. Caratteristiche generali 3
8. Conformità e certificazioni 5

1. USO

Il toroide della serie TDB, accoppiato al MRCD, misura le correnti di dispersione verso terra con forme d’onda di tipo B secondo la norma EN/IEC 60947-2 Annesso M.

I campi di applicazione più comuni sono:
Convertitori di frequenza, apparecchi medicali come macchine a raggi X o TAC, linee di alimentazioni di ascensori, impianti di prova nei laboratori, mezzi di produzione nei cantieri, inverter per sistemi fotovoltaici, postazioni di caricamento batterie dei carrelli elevatori, officine meccaniche, macchine per la lavorazione del metallo.

2. GAMMA

Codice Articolo	Modello
IM-TDB35	Toroide Ø 35mm
IM-TDB60	Toroide Ø 60mm
IM-TDB120	Toroide Ø 120mm
IM-TDB210	Toroide Ø 210mm

3. INSTALLAZIONE

Fissaggio:

TDB35 - TDB60: su rotaia simmetrica EN/IEC 60715 o guida DIN 35

TDB120 – TDB210: a vite

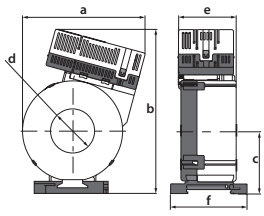
Utensili necessari:

Per il fissaggio del dispositivo sulla guida DIN: cacciavite piatto da 5,5 mm (da 4 a 6 mm)

4. DIMENSIONI

Custodia Toroidi TDB..

A



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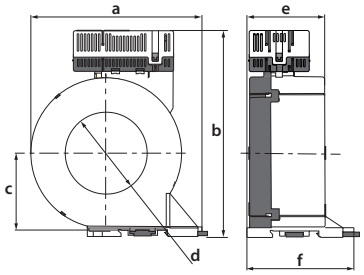

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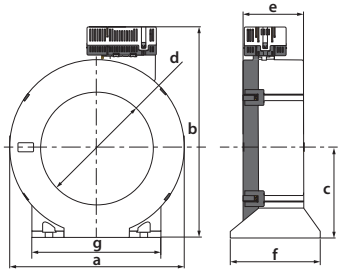
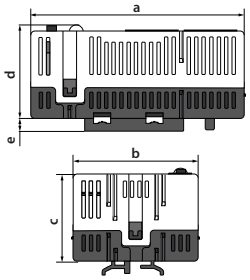


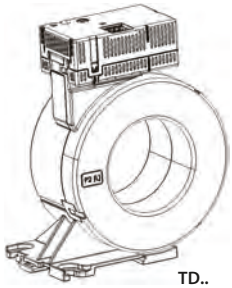
D



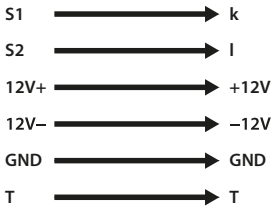
	Articolo	a	b	c	d	e	f	g
A	TDB35	97	130	47	Ø35	46	61	-
B	TDB60	126	151	57	Ø60	56	78	-
C	TDB120	188	255	96	Ø120	65	96	139
	TDB210	339	339	153	Ø210	67	113	277
D	TDB...	74	44	30	32	4.6	-	-

5. CONNESSIONI – COLLEGAMENTO

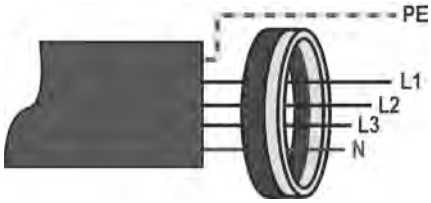
(Il range di settaggio di IΔn sul toroide deve essere congruo con la soglia di sgancio configurata nel MRCD)



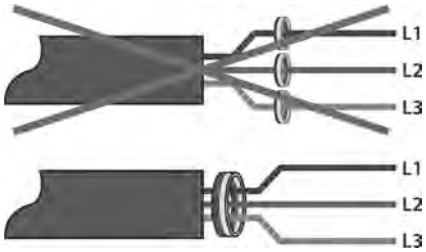
TD..



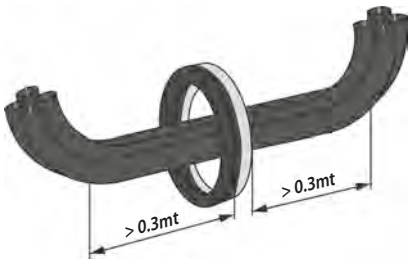
RD..



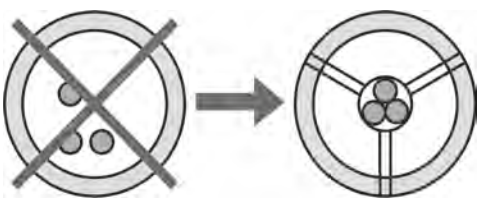
Non far passare i cavi schermati attraverso
il trasformatore di corrente di misura

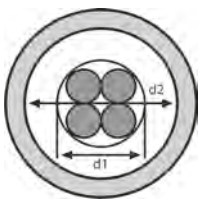


Assicurarsi che tutti i cavi che portano corrente siano passanti
attraverso il trasformatore di corrente di misura



I cavi possono essere piegati solo a distanza
> 0.3mt dal trasformatore di corrente di misura





6. DATI OPERATIVI

6.1 ELETTRICI

Corrente nominale:

Codice	Modello	In @ IΔn min
IM-TDB35	Toroide Ø 35mm	80 A @0,03A 125 A @0,30 A
IM-TDB60	Toroide Ø 60mm	160 A @ 0,03 A 250 A @ 0,30 A
IM-TDB120	Toroide Ø 120mm	330 A @ 0,10 A
IM-TDB210	Toroide Ø 210mm	630 A @ 0,30 A

Sezione collegabile:

- Cavi in rame.
- Morsettiera estraibile per il collegamento del dispositivo MRCD :

	WIRE CLASS
0,2...1,5 mm²	AWG 24...16
0,2...1,5 mm²	AWG 24...16
0,25...0,75 mm²	AWG 24...19

Utensili necessari:

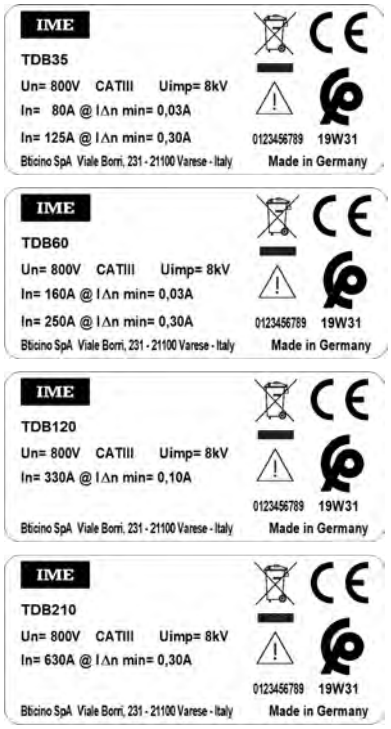
- Per il morsetto di collegamento del toroide: cacciavite a lama 1mm

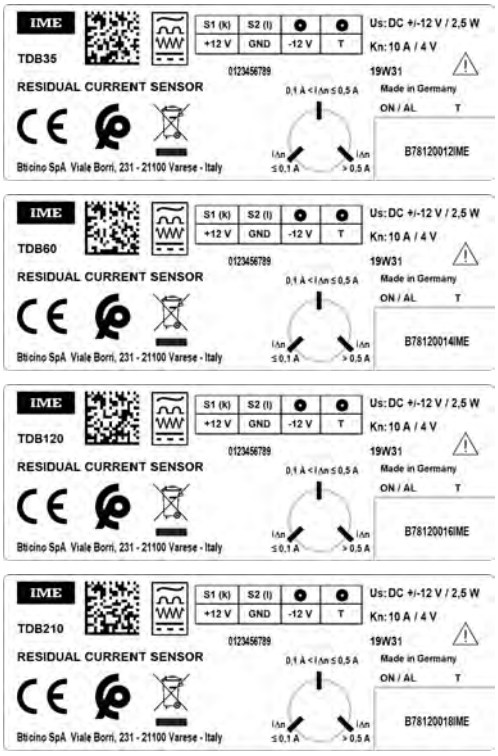
6.2 MECCANICI

Morsetti a pressione

7. CARATTERISTICHE GENERALI *(continua)*

Dati di marcatura:





7. CARATTERISTICHE GENERALI *(continua)*

Temperature ambiente di funzionamento

- Min. = -25 °C Max. =+55 °C.

Temperature ambiente di immagazzinamento:

- Min. = -25 °C Max. =+70 °C.

Corrente nominale dinamica IΔyn:

- 6kA/40msec

Classe di protezione:

- Indice di protezione dei morsetti contro i corpi solidi e liquidi: IP20 (IEC/EN 60529)
- Indice di protezione dei componenti interni contro i corpi solidi e liquidi: IP30 IEC/EN 60529

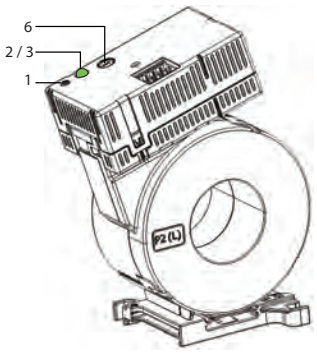
Materiale custodia: >PC+ABS<

Volume e peso Toroidi imballati:

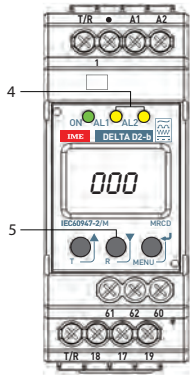
Codice Articolo	Modello	dm^3	Kg
IM-TDB35	Toroide Ø 35mm	2	0,4
IM-TDB60	Toroide Ø 60mm	5	0,7
IM-TDB120	Toroide Ø 120mm	13	1,65
IM-TDB210	Toroide Ø 210mm	29	4,65

7. CARATTERISTICHE GENERALI

TEST manuale toroide TDB:



TDB…



MRCD

1) Premere tasto
2) Lampeggio LED “verde” lento mantenere il tasto premuto
3) Lampeggio LED “verde” veloce lasciare il tasto
4) Allarme TRIP accensione dei LED “gialli” **AL1** e **AL2** del MRCD
5) RESET allarme “premere tasto **R** sul MRCD”
6) Il RANGE di settaggio di **IΔn** sul toroide deve essere congruo con la soglia configurata nel MRCD

8. CONFORMITÁ E CERTIFICAZIONI

Isolamento
- Tensione di isolamento, Ui:800V
- Categorie di installazione: III
- Grado di inquinamento: 2

Tensione di impulso :
- Uimp: 8kV

Conformità alle norme:
- EN/IEC 60947-2 Annesso M

Rispetto dell’ambiente – Conformità alle direttive UE:
- Conformità alla direttiva 2011/65/UE modificata dalla direttiva 2015/863 (RoHS 2) relativa alle limitazioni circa l’utilizzo di alcune sostanze pericolose nelle apparecchiature elettriche ed elettroniche.
- Conformità al Regolamento REACh (1907/2006): alla data di pubblicazione di questo documento, nessuna sostanza inserita nell’allegato XIV è presente all’interno di questi prodotti.
- Direttiva RAEE (2012/19/EU): la commercializzazione di questo prodotto prevede un contributo agli eco-organismi incaricati, in ciascun paese europeo, della gestione del fine vita dei prodotti che rientrano nel campo di applicazione della Direttiva Europea sui Rifiuti di Apparecchiature Elettriche ed Elettroniche.

Imballi:
- Progettazione e produzione degli imballi ai sensi della direttiva 94/62/CE.

Materie plastiche:
- Marcatura delle parti secondo le norme ISO 11469 e ISO 1043.

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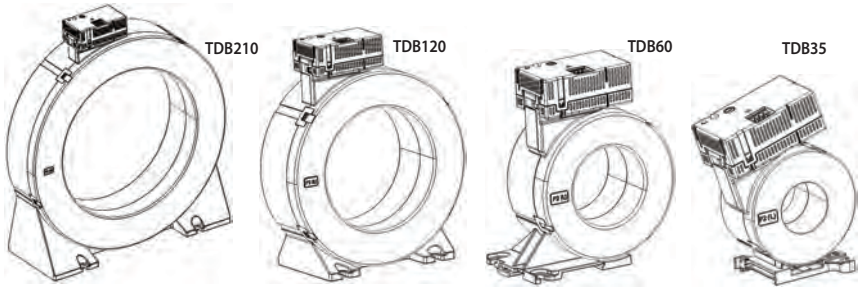
Type “B” differential toroids

Code: **TDB35-TDB60-TDB120-TDB210**

Model: Delta



Contents Pages

1. Use 1
2. Range 1
3. Installation 1
4. Dimensions 1
5. Connections 2
6. Operating data 3
7. General features 3
8. Conformity and certifications 5

1. USE

The TDB series toroid, coupled with the MRCD, measures the dispersion currents to the ground as a B type wave shape pursuant to EN/IEC 60947-2 Annex M

The most common application fields are:
Frequency converters, medical devices such as X ray or CT scan machines, lift power supply line, lab testing equipment, site production equipment, photovoltaic system inverters, fork lift truck battery charging stations, mechanical workshop, metalworking machines.

2. RANGE

Code Art.	Model
IM-TDB35	Toroid Ø 35mm
IM-TDB60	Toroid Ø 60mm
IM-TDB120	Toroid Ø 120mm
IM-TDB210	Toroid Ø 210mm

3. INSTALLATION

Fixing:

TDB35 - TDB60: on EN/IEC 60715 symmetrical rail or DIN 35 rail

TDB120 – TDB210: screw type

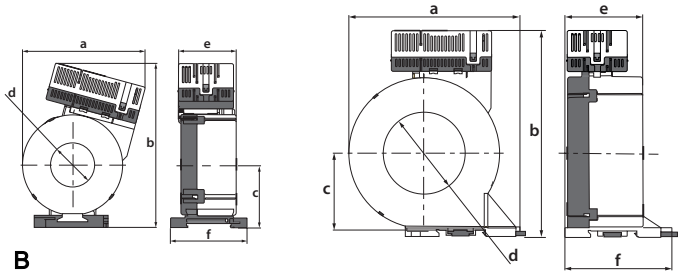
Necessary tools:

For fastening the device on the DIN rail: 5.5 mm flat screwdriver (from 4 to 6 mm)

4. DIMENSIONIS

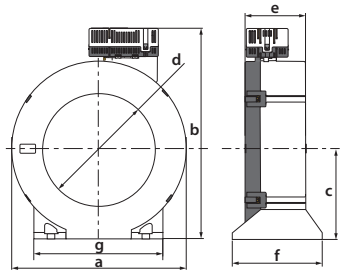
TDB.. Toroid Housing

A

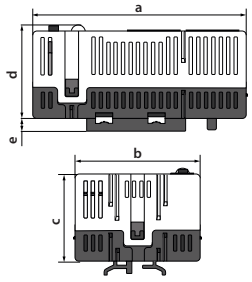


B

C



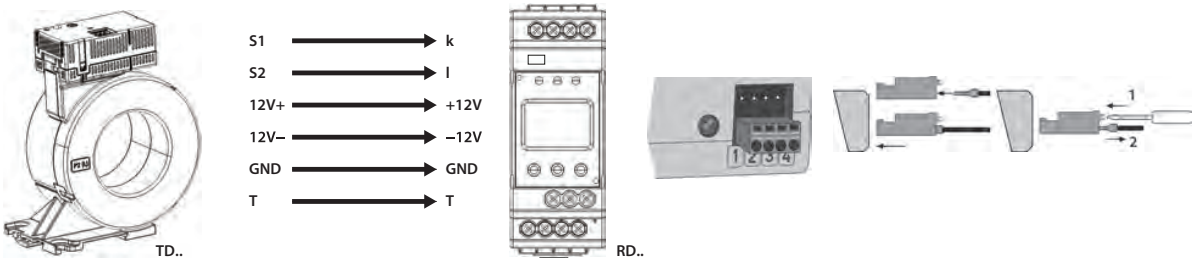
D

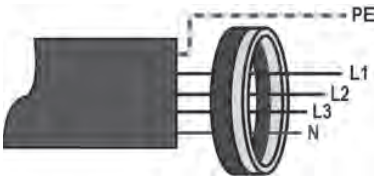


	Article	a	b	c	d	e	f	g
A	TDB35	97	130	47	Ø35	46	61	-
B	TDB60	126	151	57	Ø60	56	78	-
C	TDB120	188	255	96	Ø120	65	96	139
	TDB210	339	339	153	Ø210	67	113	277
D	TDB...	74	44	30	32	4.6	-	-

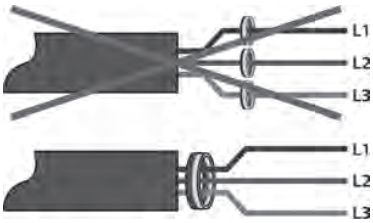
5. COMMISSIONNING - CONNECTION

(The setup range of IΔn on the toroid must be consistent with the release threshold programmed in MRCD)

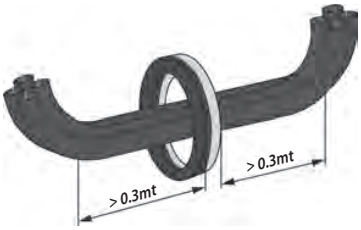




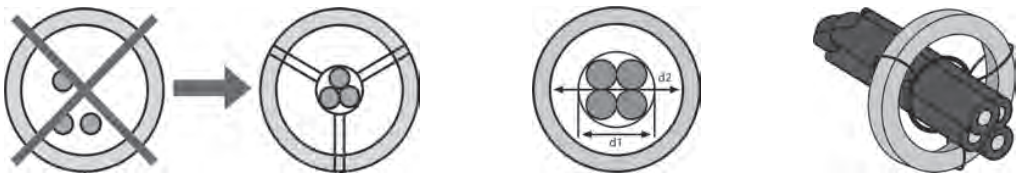
Do not pass the shielded cables through the measurement current transformer



Make sure that all the current cables go through the measurement current transformer



The cables may only be bent at distances > 0.3 from the measurement current transformer



6. OPERATING DATA

6.1 ELECTRIC DATA

Rated current:

Code	Model	In @ IΔn min
IM-TDB35	Toroid Ø 35mm	80 A @0,03A 125 A @0,30 A
IM-TDB60	Toroid Ø 60mm	160 A @ 0,03 A 250 A @ 0,30 A
IM-TDB120	Toroid Ø 120mm	330 A @ 0,10 A
IM-TDB210	Toroid Ø 210mm	630 A @ 0,30 A

Connectable section:

- Copper wires.
- Removable terminal board for MRCD device connection:

		WIRE CLASS
	0,2...1,5 mm²	AWG 24...16
	0,2...1,5 mm²	AWG 24...16
	0,25...0,75 mm²	AWG 24...19

Necessary tools:

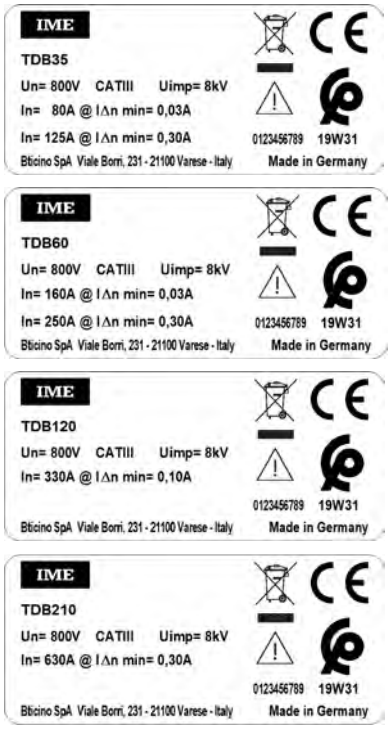
- For the toroid connection terminal: screwdriver with 1 mm blade

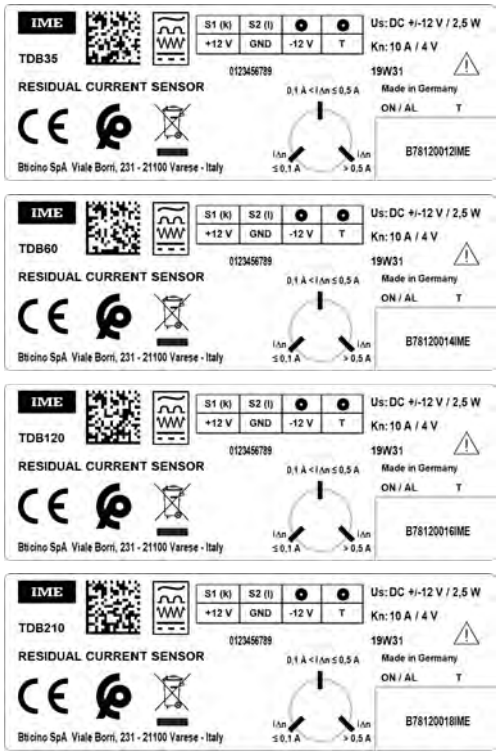
6.2 MECHANICAL DATA

Pressure clamps

7. GENERAL FATURES *(continued)*

Marking data:





7. GENERAL FATURES *(continued)*

Operating room temperatures:
- Min. = -25 °C Max. =+55 °C.

Room storage temperatures:
- Min. = -25 °C Max. =+70 °C.

Dynamic nominal current IΔyn:
- 6kA/40msec

Protection class:
- Terminal protection index against solid bodies and liquids: IP20 (IEC/EN 60529)
- Protection index of the internal components against solid bodies and liquids: IP30 IEC/EN 60529

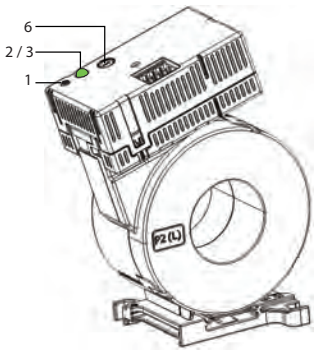
Housing material: >PC+ABS<

Volume and weight of packed Toroids:

Code Art.	Model	dm^3	Kg
IM-TDB35	Toroid Ø 35mm	2	0,4
IM-TDB60	Toroid Ø 60mm	5	0,7
IM-TDB120	Toroid Ø 120mm	13	1,65
IM-TDB210	Toroid Ø 210mm	29	4,65

7. GENERAL FATURES

TDB toroid manual TEST:



TDB… **MRCD**

1) Press the key
2) “Green” LED flashing slowly, keep the button pressed
3) “Green” LED flashing quickly, release the button
4) TRIP alarm, switching on of “yellow” LEDs **AL1** and **AL2**” of the MRCD
5) Alarm RESET, press **R** key on the MRCD
6) The setting RANGE of IΔn on the toroid must be congruous with the threshold configured in the MRCD

8. CONFORMITY AND CERTIFICATIONS

Insulation
- Insulation voltage, Ui:800V
- Installation categories: III
- Level of pollution: 2

Impulse voltage:
- Uimp: 8kV

In compliance with the standards:
- EN/IEC 60947-2 Annex M

Respecting the environment – Conformity with the EU directives:
- Compliance with the 2100/65/EU Directive, as modified by the 2015/863 Directive (RoHS 2), on the restriction of the use of certain hazardous substances in electrical and electronic equipment.
- Conformity with the REACH Regulation (1907/ 2006): at the date of publication of this document no substance in the annex XIV is found in these products.
- RAEE Directive (2012/19/EU: the sale of this product includes a contribution to the appointed environmental bodies of each European country in charge of handling, at the end of their life, the products falling within the scope of the EU Directive on Electric and Electronic Equipment Waste.

Packaging:
- Packaging designed and produced in accordance with directive 94/62/CE

Plastic materials:
- Part marking according to standards ISO 11469 and ISO 1043.

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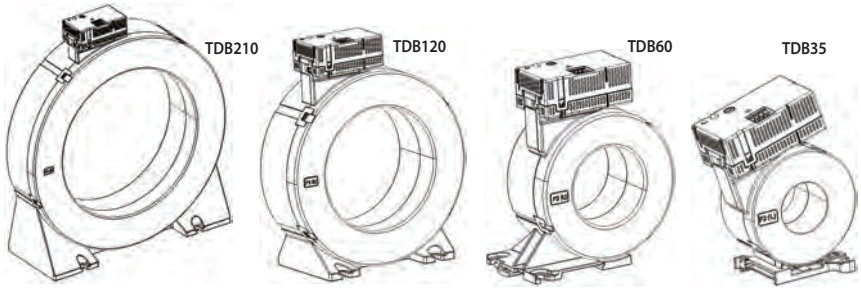
Toroïdes différentiels de type “B”

Codes: **TDB35-TDB60-TDB120-TDB210**

Modèle: Delta



Índice **Páginas**

1. Utilisation 1
2. Gamme 1
3. Instalattion 1
4. Dimensionnelles 1
5. Connexions-Branchement 2
6. Données de fonctionnement 2
7. Caractéristiques générales 3
8. Conformité et certifications 5

1. UTILISATION

Le toroïde de la série TDB, accouplé au MRCD, mesure les courants de dispersion vers la terre à forme d’onde de type B conformément à la norme EN/IEC 60947-2 (Annexe M).

Les champs d’application les plus courants sont les suivants : Convertisseurs de fréquence, appareils médicaux tels que machines à rayons X ou scanner, lignes d’alimentation d’ascenseurs, installations de tests de laboratoire, moyens de production sur les chantiers, onduleurs pour systèmes photovoltaïques, postes de charge de batteries de chariots élévateurs, ateliers mécaniques, machines de travail du métal.

2. GAMME

Code Référence	Modèle
IM-TDB35	Toroïde Ø 35mm
IM-TDB60	Toroïde Ø 60mm
IM-TDB120	Toroïde Ø 120mm
IM-TDB210	Toroïde Ø 210mm

3. INSTALLATION

Fixation:

TDB35 - TDB60: sur rail symétrique EN/IEC 60715 ou guide DIN 35

TDB120 – TDB210: à vis

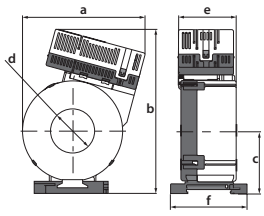
Outillages nécessaires :

Pour la fixation du dispositif sur guide DIN: tournevis plat de 5,5 mm (de 4 à 6 mm)

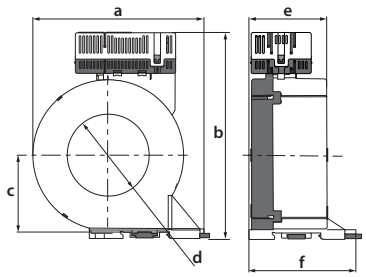
4. DIMENSIONNELLES

Boitier Toroïdi TDB..

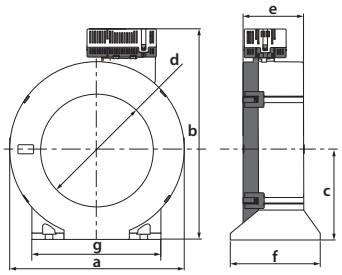
A



B



C



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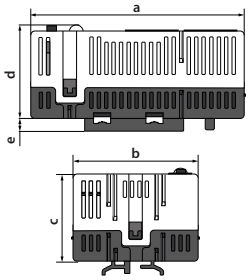
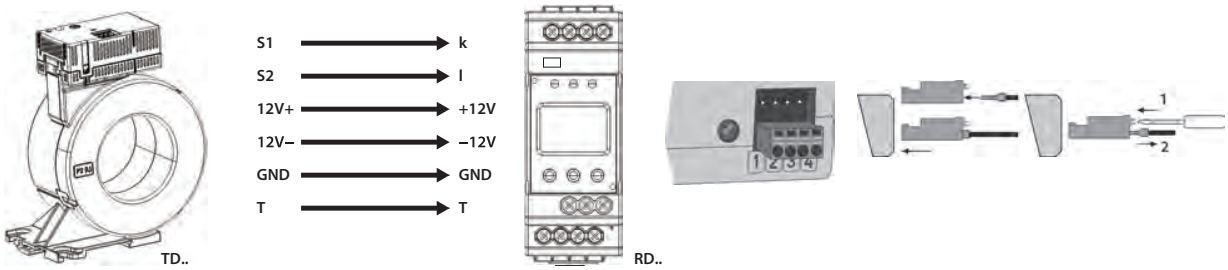


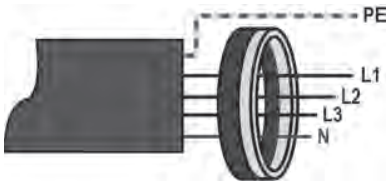
	Référence	a	b	c	d	e	f	g
A	TDB35	97	130	47	Ø35	46	61	-
B	TDB60	126	151	57	Ø60	56	78	-
C	TDB120	188	255	96	Ø120	65	96	139
	TDB210	339	339	153	Ø210	67	113	277
D	TDB...	74	44	30	32	4.6	-	-

Info produit: IDP000280FR_03 Modifié le: 15/01/2020 Première version: 05/09/2019

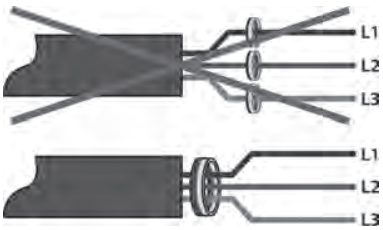
5. CONNEXIONS - BRANCHEMENT

(la plage de réglage de IΔn sur le toroïde doit être cohérente avec le seuil de décrochage configuré dans le MRCD)

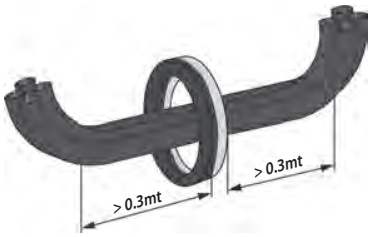




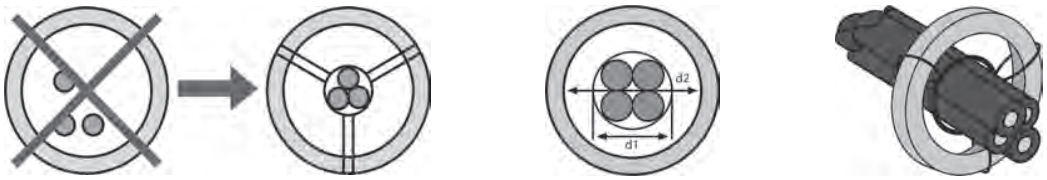
Ne pas faire passer les câbles blindés à travers le transformateur de courant de mesure



S’assurer que tous les câbles qui transportent du courant passent à travers le transformateur de courant de mesure



Les câbles peut être pliés uniquement à une distance > 3 mètres du transformateur de courant de mesure



6. DONNÉES DE FONCTIONNEMENT

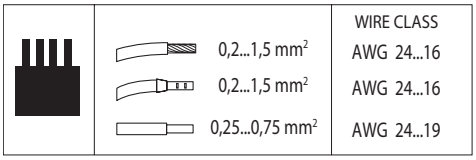
6.1 CARACTÉRISTIQUES ÉLECTRIQUES

Courant nominal:

Code	Modèle	In @ IΔn min
IM-TDB35	Toroïde Ø 35mm	80 A @0,03A 125 A @0,30 A
IM-TDB60	Toroïde Ø 60mm	160 A @ 0,03 A 250 A @ 0,30 A
IM-TDB120	Toroïde Ø 120mm	330 A @ 0,10 A
IM-TDB210	Toroïde Ø 210mm	630 A @ 0,30 A

Section connectable:

- Câbles en cuivre.
- Bornier extractible de branchement du dispositif MRCD:



Outillages nécessaires :

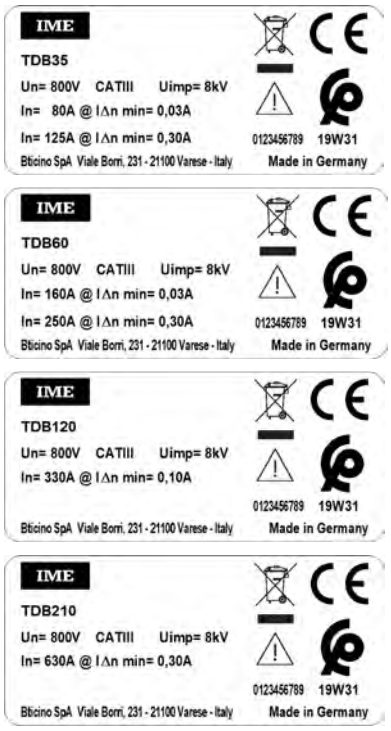
- Pour la borne de branchement du toroïde: tournevis plat de 1mm

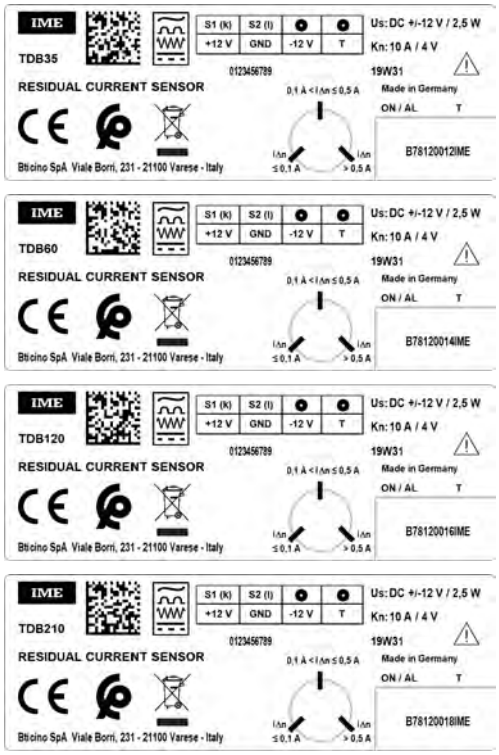
6.2 CARACTÉRISTIQUES MÉCANIQUES

Bornes à pression

7. CARACTÉRISTIQUES GÉNÉRALES *(continue)*

Données de marquage :





7. CARACTÉRISTIQUES GÉNÉRALES *(continue)*

Température ambiante de fonctionnement
- Min. = -25 °C Max. =+55 °C.

Température ambiante de stockage :
- Min. = -25 °C Max. =+70 °C.

Courant nominal dynamique IΔyn:
- 6kA/40msec

Classe de protection :
- Indice de protection des bornes contre les corps solides et les liquides : IP20 (IEC/EN 60529)
- Indice de protection des composants internes contre les corps solides et liquides : IP30 IEC/EN 60529

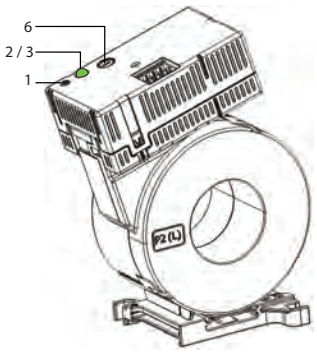
Matériau habillage : >PC+ABS<

Volume et poids toroïdes emballés

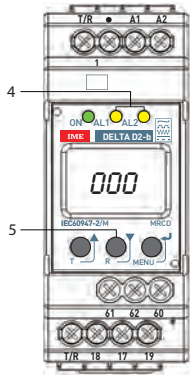
Code Référence	Modèle	dm^3	Kg
IM-TDB35	Toroïde Ø 35mm	2	0,4
IM-TDB60	Toroïde Ø 60mm	5	0,7
IM-TDB120	Toroïde Ø 120mm	13	1,65
IM-TDB210	Toroïde Ø 210mm	29	4,65

7. CARACTÉRISTIQUES GÉNÉRALES

TEST manuel toroïde TDB :



TDB…



MRCD

1) Appuyer sur la touche
2) Clignotement lent voyant « vert », maintenir la touche enfoncée
3) Clignotement rapide voyant « vert », relâcher la touche
4) Alarme TRIP, allumage des voyants « jaunes » **AL1** et **AL2** du MRCD
5) RESET alarme, « appuyer sur la touche **R** du MRCD »
6) La plage de réglage de **IΔn** sur le tore doit correspondre à le seuil configuré dans le MRCD

8. CONFORMITÉ ET CERTIFICATIONS

Isolation:
- Tension d'isolation, Ui:800V
- Catégories d’installation : III
- Degré de pollution: 2

Tension d’impulsion:
- Uimp: 8kV

Conformité aux normes:
- EN/IEC 60947-2 Annexe M

Respect de l’environnement - Conformité aux directives UE:
- Conformité à la directive 2011/65/UE modifiée par la directive 2015/863 (RoHS 2) relative aux limitations imposées à l’utilisation de certaines substances dangereuses dans les équipements électriques et électroniques.
- Conformité au règlement REACh (1907/2006) : à la date de publication du présent document, aucune substance mentionnée dans l’annexe XIV n’est présente dans les produits.
- Directive DEEE (2012/19/EU) : la commercialisation du produit prévoit une contribution aux organismes écologiques en charge, dans chaque pays européen, de la gestion de la fin du cycle de vie des produits qui rentrent dans le champ d’application de la Directive européenne sur les déchets d’équipements électriques et électroniques.

Emballages:
- Conception et production des emballages conformes à la directive 94/62/CE.

Matériaux plastiques:
- Marquage des parties conforme aux normes ISO 11469 et ISO 1043.

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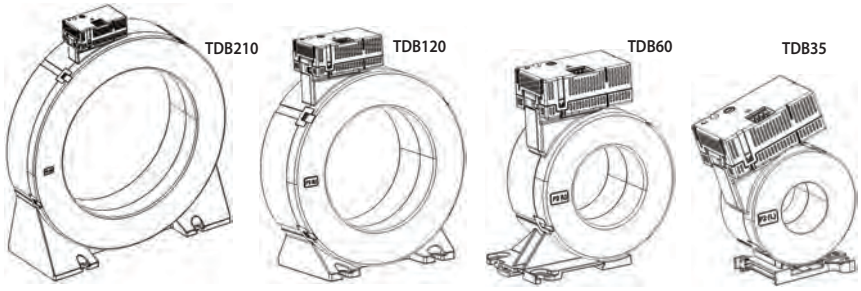
Differential-Toroide vom Typ "B"

Bestellcode: **TDB35-TDB60-TDB120-TDB210**

Type: Delta



Inhaltsverzeichnis **Seiten**

1. Verwendung 1
2. Bestellcodes 1
3. Installation 1
4. Abmessungen 1
5. Verbindungen - Anschlüss 2
6. Betriebsdaten 2
7. Allgemeine Eigenschaften 3
8. Konformität und Zertifizierungen 5

1. VERWENDUNG

Der Ringstromwandler der Baureihe TDB gekoppelte mit dem MRCD misst die Ableitströme gegen Erde mit Wellenformen vom Typ B nach EN/IEC 60947-2 Anhang M.

Die häufigsten Anwendungsgebiete sind:
Frequenzumrichter, medizinische Geräte wie Röntgen- oder CT-Geräte, Hubstromleitungen, Laborprüfstände, Produktionsanlagen auf Baustellen, Wechselrichter für Photovoltaikanlagen, Batterieladestationen für Gabelstapler, Werkstätten, Metallbearbeitungsmaschinen.

2. BESTELLCODES

Artikelcode	Type
IM-TDB35	Toroide Ø 35mm
IM-TDB60	Toroide Ø 60mm
IM-TDB120	Toroide Ø 120mm
IM-TDB210	Toroide Ø 210mm

3. INSTALLATION

Befestigung

TDB35 - TDB60:
Auf symmetrischen Schiene EN/IEC 60715 oder DIN 35mm Schiene.

TDB120 – TDB210: mit Gewinde

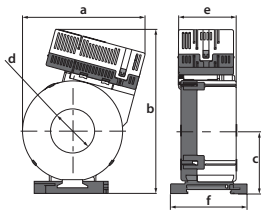
Erforderliche Werkzeuge:

So befestigen Sie das Geräts auf der DIN Schiene: 5.5 mm Schlitzschraubendreher (4 bis 6mm)

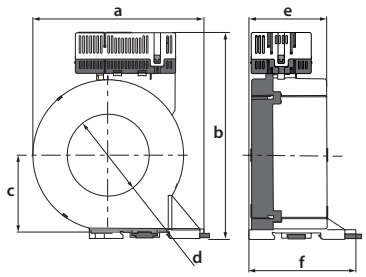
4. ABMESSUNGEN

Gehäuse: ToroideTDB..

A



B



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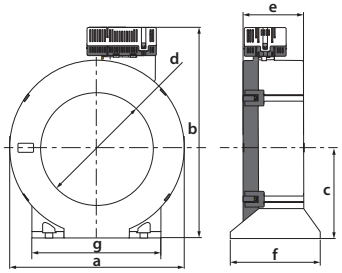
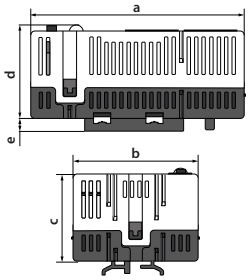


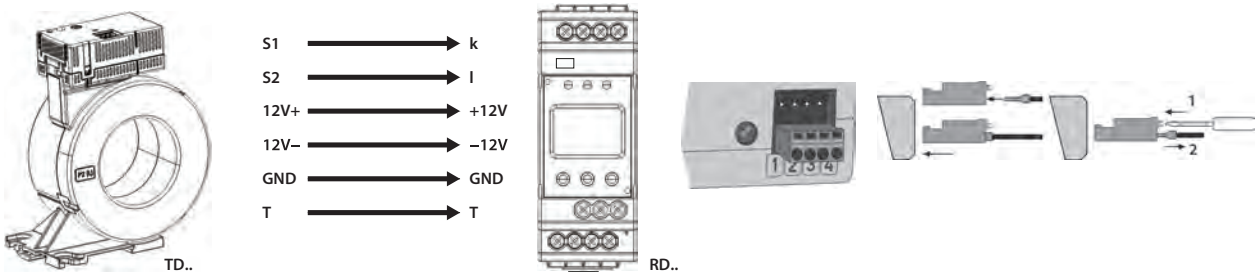
D

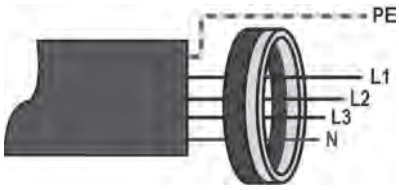


	Artikelcode	a	b	c	d	e	f	g
A	TDB35	97	130	47	Ø35	46	61	-
B	TDB60	126	151	57	Ø60	56	78	-
C	TDB120	188	255	96	Ø120	65	96	139
	TDB210	339	339	153	Ø210	67	113	277
D	TDB...	74	44	30	32	4.6	-	-

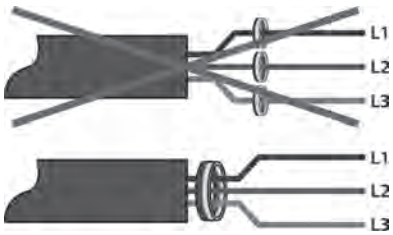
5. VERBINDUNGEN - ANSCHLUSS

(Der Einstellbereich von IΔn am Toroid muss mit der in der MRCD konfigurierten Auslöseschwelle übereinstimmen))

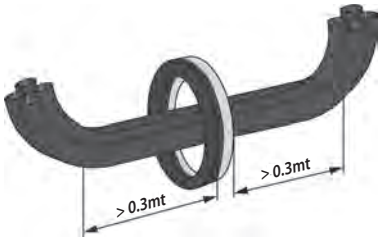




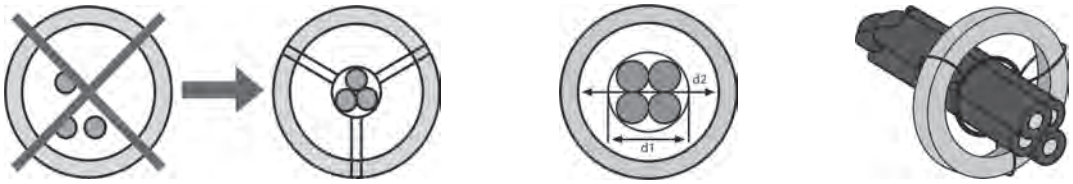
Führen Sie keine geschirmten Kabel durch den Messstromwandler



Achten Sie darauf, dass alle stromführenden Kabel durch den Messstromwandler geführt werden



Kabel können nur in mehr als 0,3 m Entfernung vom Messstromwandler gebogen werden.



6. BETRIEBSDATEN

6.1 STROMDATEN

Nennstrom:

Artikelcode	Type	In @ IΔn min
IM-TDB35	Toroide Ø 35mm	80 A @0,03A 125 A @0,30 A
IM-TDB60	Toroide Ø 60mm	160 A @ 0,03 A 250 A @ 0,30 A
IM-TDB120	Toroide Ø 120mm	330 A @ 0,10 A
IM-TDB210	Toroide Ø 210mm	630 A @ 0,30 A

Anschluss:

- Kupferkabel.
- Abnehmbare Klemmleiste für den Anschluss des MRCD-Geräts:

		WIRE CLASS
	0,2...1,5 mm²	AWG 24...16
	0,2...1,5 mm²	AWG 24...16
	0,25...0,75 mm²	AWG 24...19

Erforderliche Werkzeuge:

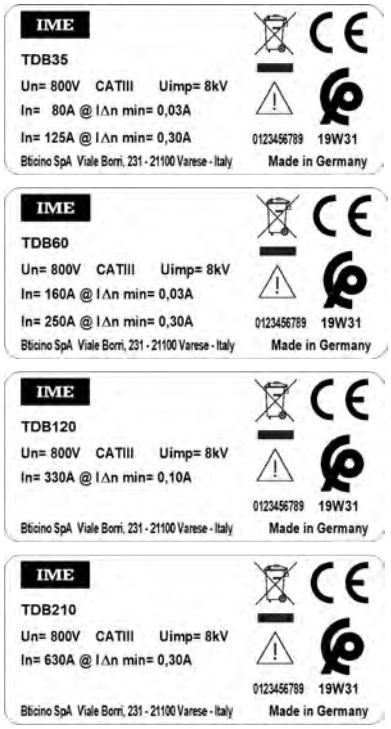
Für Anschlussklemme des Ringstromwandlers:
Flachschraubendreher 1mm

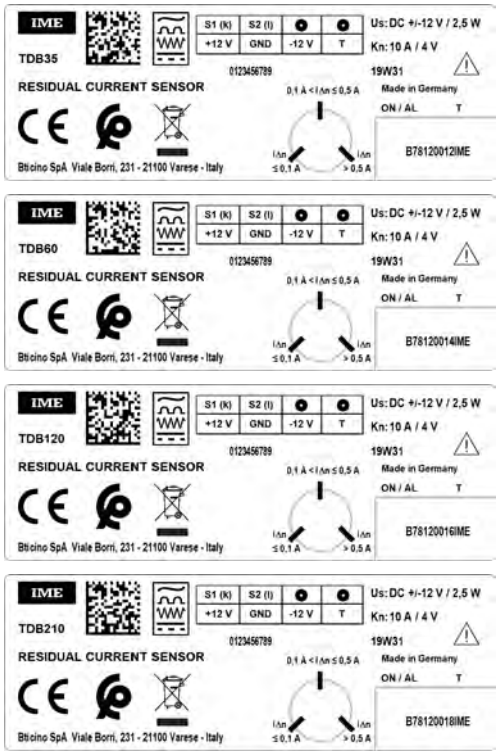
6.2 MECHANIK

Druckklemmen

7. ALLGEMEINE EIGENSCHAFTEN *(Fortsetzung)*

Kennzeichnungsdaten:





7. ALLGEMEINE EIGENSCHAFTEN *(Fortsetzung)*

Arbeitstemperaturen
- Min. = -25 °C Max. =+55 °C.

Lagertemperaturen:
- Min. = -25 °C Max. =+70 °C.

Dynamischer Nennstrom IΔyn:
- 6kA/40msec

Schutzklasse:
- Schutzart der Klemmen gegen feste und flüssige Körper: IP20 (IEC/EN 60529)
- Schutzindex der inneren Komponenten gegen feste und flüssige Körper: IP30 IEC/EN 60529

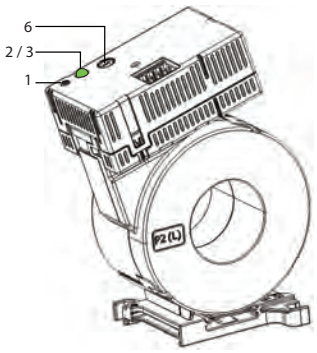
Gehäusematerial: >PC+ABS<

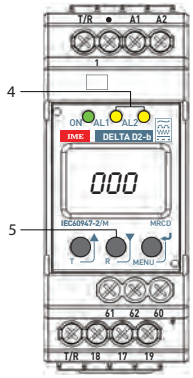
Volumen und Gewicht der verpackten TDB:

Artikelcode	Type	dm^3	Kg
IM-TDB35	Toroide Ø 35mm	2	0,4
IM-TDB60	Toroide Ø 60mm	5	0,7
IM-TDB120	Toroide Ø 120mm	13	1,65
IM-TDB210	Toroide Ø 210mm	29	4,65

7. ALLGEMEINE EIGENSCHAFTEN

Manueller TEST TDB toroide:





TDB… **MRCD**

1) Taste drücken
2) Die „grüne“ LED blinkt langsam; die Taste gedrückt halten
3) Die „grüne“ LED blinkt schnell die Taste loslassen
4) TRIPAlarm; Einschalter der „gelben“ LEDs **AL1** und **AL2** des MRCD
5) RESET Alarm „Taste **R** am MRCD drücken“
6) Die Einstellung RANGE of **IΔn** auf dem Toroid muss mit der in der MRCD konfigurierten Schwelle übereinstimmen

8. KONFORMITÄT UND ZERTIFIZIERUNGEN

Isolation

- Isolationsspannung, Ui:800V
- Installationskategorie: III
- Verschmutzungsgrad: 2

Impulsspannung:

- Uimp: 8kV

Konform nach Normen:

- EN/IEC 60947-2 Annex M

Umweltschutz - Konform nach den EU-Richtlinien:

- Einhaltung der Richtlinie 2011/65 / EU in der durch die Richtlinie 2015/863 (RoHS 2) geänderten Fassung hinsichtlich der Beschränkungen der Verwendung einiger gefährlicher Stoffe in Elektro- und Elektronikgeräten
- Konform mit der REACh-Verordnung (1907/2006): Zum Zeitpunkt der Veröffentlichung dieses Dokuments ist kein in Anhang XIV enthaltener Stoff in diesen Produkten enthalten.
  WEEE-Richtlinie (2012/19 / EU): Die Vermarktung dieses Produkts liefert einen Beitrag an die Umweltorganisationen in jedem europäischen Land, die für die Entsorgung der Altgeräte verantwortlich sind, die in den Geltungsbereich der europäischen Richtlinie über Elektro- und Elektronik-Altgeräte fallen.

Verpackungen:

- Gestaltung und Herstellung von Verpackungen gemäß Richtlinie 94/62/EG

Kunststoffe:

- Kennzeichnung von Teilen nach ISO 11469 und ISO 1043.

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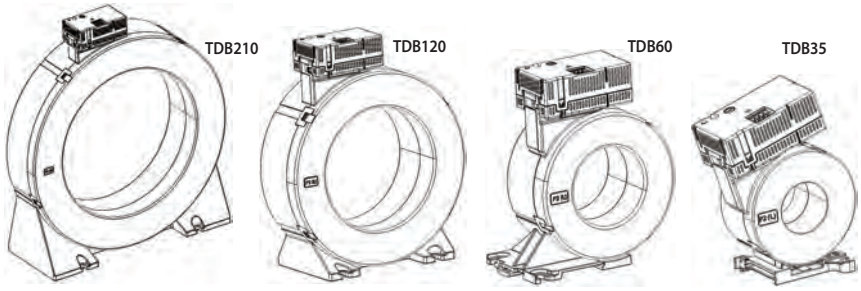
Toroides diferenciales de tipo “B”

Códigos: **TDB35-TDB60-TDB120-TDB210**

Modelo: Delta



Índice **Páginas**

1. Uso 1
2. Gama 1
3. Instalación 1
4. Dimensiones 1
5. Conexiones 2
6. Datos de funcionamento 2
7. Características generales 3
8. Conformidad y certificaciones 5

1. USO

El toroide de la serie TDB, acoplado al MRCD, mide las corrientes de fuga hacia tierra con formas de onda de tipo B según la norma EN/IEC 60947-2 Anexo M.

Los campos de aplicación más comunes son:
Convertidores de frecuencia, aparatos médicos, tales como aparatos de rayos X o TAC, líneas de alimentaciones de ascensores, sistemas de prueba en los laboratorios, medios de producción en las obras, inversores para sistemas fotovoltaicos, puestos de carga de las baterías de las carretillas elevadoras, talleres mecánicos, máquinas para el mecanizado del metal.

2. GAMMA

Código del Artículo	Modelo
IM-TDB35	Toroide Ø 35mm
IM-TDB60	Toroide Ø 60mm
IM-TDB120	Toroide Ø 120mm
IM-TDB210	Toroide Ø 210mm

3. INSTALACIÓN

Fijación

TDB35 - TDB60: En carril simétrico EN/IEC 60715 o guía DIN 35

TDB120 – TDB210: de rosca

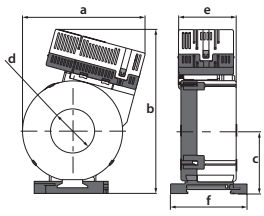
Herramientas necesarias:

Para la fijación del equipo en la guía DIN: destornillador plano de 5,5 mm (de 4 a 6 mm).

4. DIMENSIONES

Funda Toroides TDB.

A



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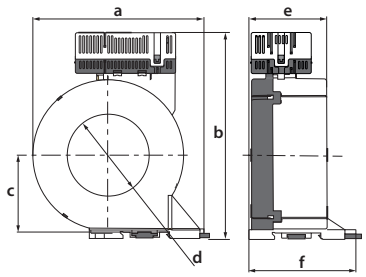

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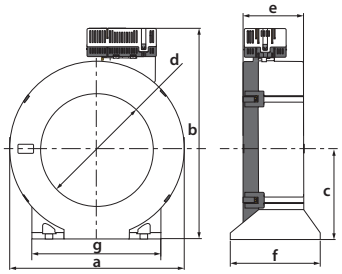
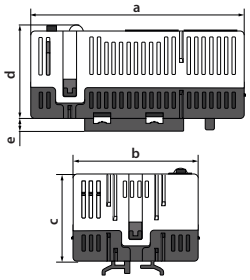


D

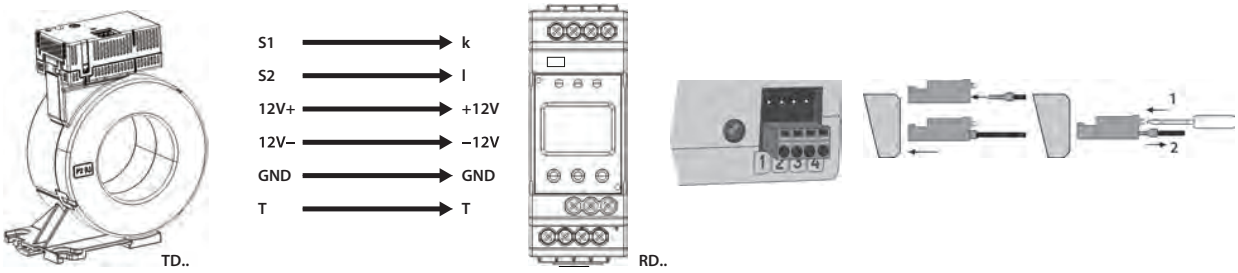


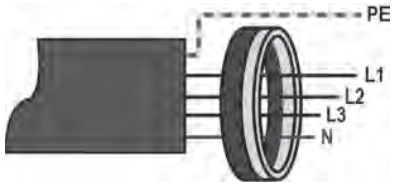
	Artículo	a	b	c	d	e	f	g
A	TDB35	97	130	47	Ø35	46	61	-
B	TDB60	126	151	57	Ø60	56	78	-
C	TDB120	188	255	96	Ø120	65	96	139
	TDB210	339	339	153	Ø210	67	113	277
D	TDB...	74	44	30	32	4.6	-	-

Información sobre el producto: IDP000280ES_03 Modificada el: 15/01/2020 Primera redacción: 05/09/2019

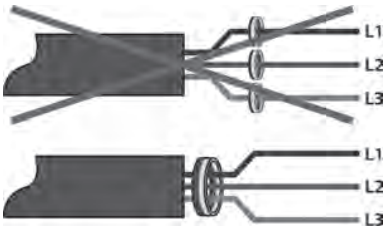
5. CONEXIONES - ACOPLAMIENTO

(El rango de configuración de IΔn en el toroide ha de ser coherente con el umbral de desenganche configurado en el MRCD)

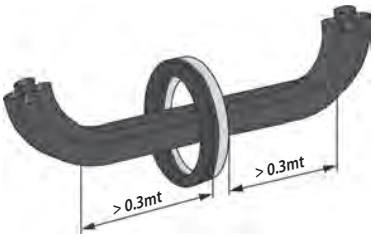




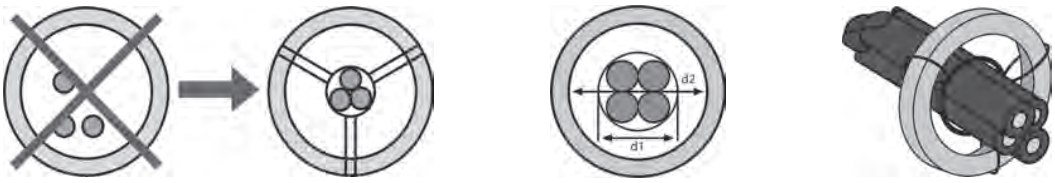
No pasar los cables apantallados por
el transformador de corriente de medición



Asegurarse de que todos los cables cables, que llevan corriente,
pasen por el transformador de corriente de medición



Los cables pueden plegarse solo a una distancia
> 0,3m del transformador de corriente de medición



6. DATOS DE FUNCIONAMIENTO

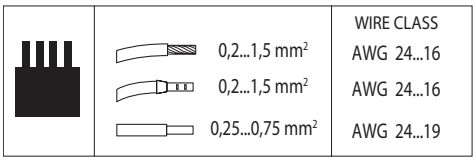
6.1 ELÉCTRICOS

Corriente nominal:

Código	Modelo	In @ IΔn min
IM-TDB35	Toroide Ø 35mm	80 A @0,03A 125 A @0,30 A
IM-TDB60	Toroide Ø 60mm	160 A @ 0,03 A 250 A @ 0,30 A
IM-TDB120	Toroide Ø 120mm	330 A @ 0,10 A
IM-TDB210	Toroide Ø 210mm	630 A @ 0,30 A

Sección conectable:

- Cables de cobre.
- Regleta extraíble para la conexión del dispositivo MRCD:



Herramientas necesarias:

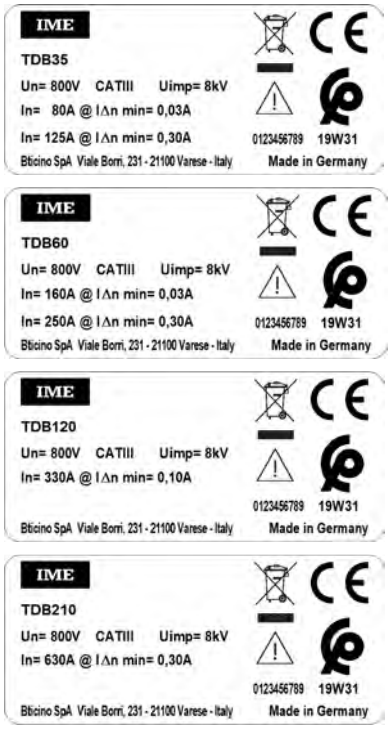
- Para el borne de conexión del toroide: destornillador plano de 1mm

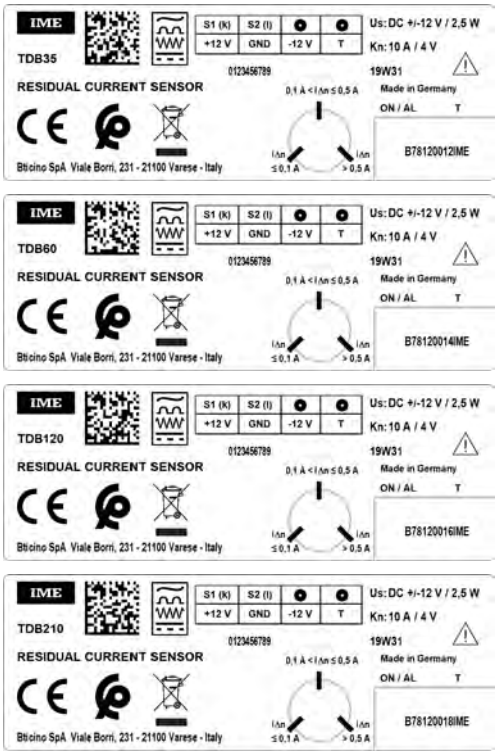
6.2 MECÁNICOS

Bornes de presión

7. CARACTERÍSTICAS GENERALES *(sigue)*

Datos de marcado:





7. CARACTERÍSTICAS GENERALES *(sigue)*

Temperatura ambiente de funcionamiento

- Min. = -25 °C Max. =+55 °C.

Temperatura ambiente de almacenaje:

- Min. = -25 °C Max. =+70 °C.

Corriente nominal dinámica IΔyn:

- 6kA/40msec

Clase de protección:

- Grado de protección de los bornes contra cuerpos sólidos y líquidos: IP20 (IEC/EN 60529)
- Grado de protección de los componentes internos contra cuerpos sólidos y líquidos: IP30 IEC/EN 60529

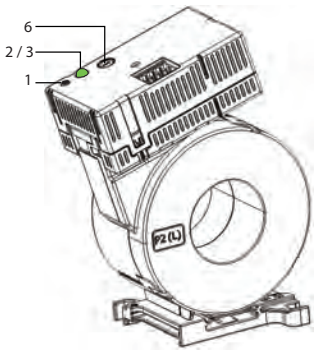
Material de la funda: >PC+ABS<

Volumen y peso Toroides embalados:

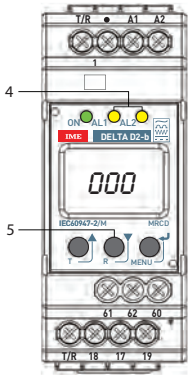
Código del Artículo	Modelo	dm^3	Kg
IM-TDB35	Toroide Ø 35mm	2	0,4
IM-TDB60	Toroide Ø 60mm	5	0,7
IM-TDB120	Toroide Ø 120mm	13	1,65
IM-TDB210	Toroide Ø 210mm	29	4,65

7. CARACTERÍSTICAS GENERALES

TEST manual toroide TDB:



TDB…



MRCD

1) Pulsar el botón
2) Parpadeo del LED “verde” lento, mantener el botón pulsado
3) Parpadeo del LED “verde” rápido, soltar el botón
4) Alarma TRIP encendido de los LEDs “amarillos” **AL1** y **AL2** del MRCD
5) RESET alarma “pulsar botón **R** en el MRCD”
6) El rango de ajuste de **IΔn** en el toroide debe ser congruente con el umbral configurado en el MRCD

8. CONFORMIDAD Y CERTIFICACIONES

Isolamento
- Aislamiento Ui:800V
- Categorías de instalación: III
- Grado de contaminación: 2

Tensión de impulso:
- Uimp: 8kV

Conformidad a las normas:
- EN/IEC 60947-2 Anexo M

Respeto del medio ambiente - Conformidad a las directivas UE:
- Conformità alla direttiva 2011/65/UE modificata dalla direttiva 2015/863 (RoHS 2) relativa alle limitazioni circa l’utilizzo di alcune sostanze pericolose nelle apparecchiature elettriche ed elettroniche.
- Conformità al Regolamento REACh (1907/2006): alla data di pubblicazione di questo documento, nessuna sostanza inserita nell’allegato XIV è presente all’interno di questi prodotti.
- Direttiva RAEE (2012/19/EU): la commercializzazione di questo prodotto prevede un contributo agli eco-organismi incaricati, in ciascun paese europeo, della gestione del fine vita dei prodotti che rientrano nel campo di applicazione della Direttiva Europea sui Rifiuti di Apparecchiature Elettriche ed Elettroniche.

Embalajes:
- Diseño y producción de los embalajes en cumplimiento de la directiva 94/62/CE.

Materias plásticas:
- Marcado de las partes según las normas ISO 11469 e ISO 1043.