Trasformatore di tensione per reti bassa tensione Misura e Protezione

Voltage transformer for low-voltage network Measure and Protection

BTV20

Trasformatore monofase di tensione
INSERZIONE FASE-FASE
Tensione primaria: 100...1.000V
Tensione secondaria: 100V
Prestazione nominale:
20VA (cl.0,5) – 30VA(cl.1) – 50VA(cl.3P)
INSERZIONE FASE-NEUTRO
Tensione primaria: 100:√3...1.000:√3V
Tensione secondaria: 100:√3V
Prestazione nominale:
8VA (cl.0,5) – 10VA(cl.1) – 25VA(cl.3P)

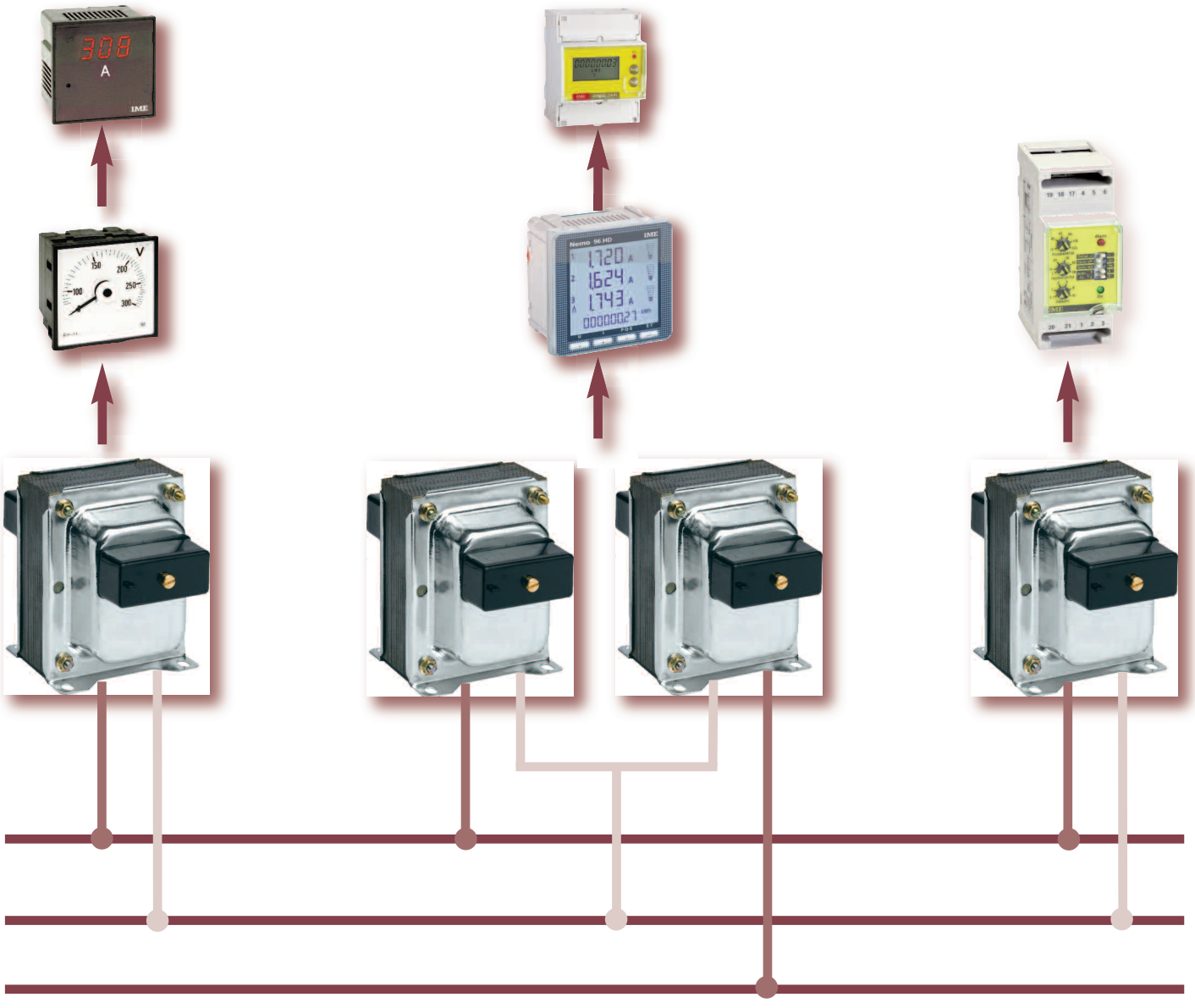
Single-phase voltage transformer
PHASE-PHASE CONNECTION
Primary voltage: 100...1.000V
Secondary voltage: 100V
Rated burden:
20VA (cl.0,5) – 30VA(cl.1) – 50VA(cl.3P)
PHASE-NEUTRAL CONNECTION
Primary voltage: 100:√3...1.000:√3V
Secondary voltage: 100:√3V
Rated burden:
8VA (cl.0,5) – 10VA(cl.1) – 25VA(cl.3P)

Indicatori
Meters

Mutifunzione
Multifunction

Contatori
Static energy meters

Relè
Relays



CODICE ORDINAZIONE / *ORDER CODE*		Tensione primaria *Primary voltage*	CL. 0,5	CL. 1	CL. 3P
Secondario / *Secondary*					
100V	100: √3V	V	VA	VA	VA
TVVDC100C100		100	20	30	50
TVVDC110C100		110	20	30	50
TVVDC115C100		115	20	30	50
TVVDC230C100		230	20	30	50
TVVDC240C100		240	20	30	50
TVVDC400C100		400	20	30	50
TVVDC440C100		440	20	30	50
TVVDC450C100		450	20	30	50
TVVDC500C100		500	20	30	50
TVVDC600C100		600	20	30	50
TVVDC660C100		660	20	30	50
TVVDC690C100		690	20	30	50
TVVDC700C100		700	20	30	50
TVVDC800C100		800	20	30	50
TVVDD100C100		1000	20	30	50
	TVVDG100G100	100: √3V	8	10	25
	TVVDG110G100	110: √3V	8	10	25
	TVVDG115G100	115: √3V	8	10	25
	TVVDG230G100	230: √3V	8	10	25
	TVVDG240G100	240: √3V	8	10	25
	TVVDG400G100	400: √3V	8	10	25
	TVVDG440G100	440: √3V	8	10	25
	TVVDG450G100	450: √3V	8	10	25
	TVVDG500G100	500: √3V	8	10	25
	TVVDG600G100	600: √3V	8	10	25
	TVVDG660G100	660: √3V	8	10	25
	TVVDG690G100	690: √3V	8	10	25
	TVVDG700G100	700: √3V	8	10	25
	TVVDG800G100	800: √3V	8	10	25
	TVVDH100G100	1000: √3V	8	10	25
ATVCOP01	* Coprimorsetti sigillabili primario / secondario - *Primary / secondary sealable terminal cover*				

NORME DI RIFERIMENTO

EN/IEC61869-1, EN/IEC61869-3

REFERENCE STANDARDS

EN/IEC61869-1, EN/IEC61869-3

CARATTERISTICHE TECNICHE

INSERZIONE FASE-FASE

Tensione nominale primaria U_{pr}: 100...1.000V

Tensione nominale secondaria U_{sr}: 100V

INSERZIONE FASE-NEUTRO

Tensione nominale primaria U_{pr}: 100:√3...1.000:√3V

Tensione nominale secondaria U_{sr}: 100:√3V

Frequenza nominale: 50Hz

Frequenza di funzionamento: 47...63Hz

Opzione: frequenza nominale 400Hz (prestazioni da definire)

Prestazione nominale: vedi tabella

Classe di precisione: cl. 0,5 – 1 (misura) – 3P (protezione)

FATTORE DI TENSIONE NOMINALE (tensione per prova riscaldamento)

Durata nominale continua: $1,2U_{pr}$

Durata nominale 8 ore: $1,9U_{pr}$ (inserzione fase-neutro e primario U_{pr}:√3)

Massima potenza dissipata[1]: ≤ 8,5W

[1]Per il dimensionamento termico dei quadri

SPECIFICATIONS

PHASE-PHASE CONNECTION

Rated primary voltage U_{pr}: *100...1.000V*

Rated secondary voltage U_{sr}: *100V*

PHASE-NEUTRAL CONNECTION

Rated primary voltage U_{pr}: *100:√3...1.000:√3V*

Rated secondary voltage U_{sr}: *100:√3V*

Rated frequency: *50Hz*

Working frequency: *47...63Hz*

Option: *rated frequency 400Hz (burdens to the advised)*

Rated burden: *see table*

Accuracy class: *cl. 0,5 – 1 (measuring) – 3P (protective)*

RATED VOLTAGE FACTOR *(for voltage heating test)*

Continuous rated time: *$1,2U_{pr}$*

8 hours rated time: *$1,9U_{pr}$ (phase-neutral and primary U_{pr}:√3 connection)*

Max. power dissipation[1]: *≤ 8,5W*

[1]For switchboard thermal calculation

PRESCRIZIONI RELATIVE ALL'ISOLAMENTO

Trasformatore a secco, isolamento in aria

Classe di isolamento (EN/IEC61869-1): B

INSULATION REQUIREMENTS

Dry transformer, air insulation

Class of insulation (EN/IEC61869-1): *B*

Tensione nominale primaria U_{pn} *Rated primary voltage U_{pn}*	≤ 600V	> 600V
Tensione massima di riferimento per l'isolamento Um *Highest voltage for equipment Um*	0,72kV valore efficace / *r.m.s.*	1,2kV valore efficace / *r.m.s.*
Livello di isolamento nominale *Rated insulation level*	3kV valore efficace / *r.m.s.* 50Hz / 1min	6kV valore efficace / *r.m.s.* 50Hz / 1min

CONDIZIONI AMBIENTALI

Installazione in situazione non esposta (EN/IEC61869-1)

Temperatura di riferimento: 23°C ± 1°C

Temperatura di impiego: -25…50°C

Temperatura media giornaliera: ≤ 30°C

Temperatura di magazzinaggio: -40…85°C

Umidità relativa: ≤ 85%

Adatto all'utilizzo in clima tropicale

ENVIRONMENTAL CONDITIONS

Non-exposed installation (EN/IEC61869-1)

Reference temperature: *23°C ± 1°C*

Nominal temperature range: *-25…50°C*

Daily mean temperature: *≤ 30°C*

Limit temperature range for storage: *-40…85°C*

Relative humidity: *≤ 85%*

Suitable for tropical climates

LIMITI DELL'ERRORE DI TENSIONE E DELL'ERRORE D'ANGOLO

(EN/IEC61869-3)

LIMITS OF VOLTAGE ERROR AND PHASE DISPLACEMENT

(EN/IEC61869-3)

Classe di precisione *Accuracy class*	Errore di tensione (rapporto) in percentuale ± *Percentage voltage (ratio) error ±*	Errore d'angolo ± / *Phase displacement ±*	
		Minuti *Minutes*	Centiradianti *Centiradians*
	80…120%Un	80…120%Un	80…120%Un
0,5	0,5	20	0,6
1	1,0	40	1,2

L'errore di tensione e l'errore d'angolo a frequenza nominale non devono superare i valori indicati in tabella, ad ogni tensione compresa tra l'80% e il 120% della tensione nominale e con prestazione compresa tra il 0% e il 100% della prestazione nominale (per TV con prestazione < 10VA) o tra il 25% e il 100% della prestazione nominale (per TV con prestazione ≥ 10VA) a fattore di potenza di 0,8 in ritardo.

The voltage error and phase displacement at rated frequency shall not exceed the values given in table, at any voltage between 80% and 120% of rated voltage and with burdens of between 0% and 100% of rated burden (VT with burden < 10VA) or 25% and 100% of rated burden (VT with burden ≥ 10VA) at a power factor of 0,8 lagging.

Classe di precisione *Accuracy class*	Errore di tensione (rapporto) in percentuale ± *Percentage voltage (ratio) error ±*	Errore d'angolo ± / *Phase displacement ±*	
		Minuti *Minutes*	Centiradianti *Centiradians*
	*5…100%Un x Ft	*5…100%Un x Ft	*5…100%Un x Ft
3P	3,0	120	3,5

*** Il fattore di tensione nominale (Ft), a seconda dell' inserzione del TV (fase-fase o fase-neutro), è pari a 1,2 o 1,9 volte la tensione nominale (Upn).**

L'errore di tensione e l'errore d'angolo a frequenza nominale non devono superare i valori indicati in tabella, al 5% della tensione nominale e alla tensione nominale moltiplicata per il fattore di tensione nominale (1,2 o 1,9) con prestazioni comprese tra il 25% e il 100% della prestazione nominale con fattore di potenza di 0,8 in ritardo.

Al 2% della tensione nominale, i limiti di errore di tensione e d'angolo con prestazione compresa tra il 25% e il 100% della prestazione nominale con fattore di potenza di 0,8 in ritardo sono due volte più alti di quelli dati in tabella.

**** Depending on the voltage transformer connection (phase - phase or phase - neutral), the rated voltage factor (Ft) corresponds to 1,2 or 1,9 times the rated voltage (Upn).***

The voltage error and phase displacement at rated frequency shall not exceed the values in table at 5% rated voltage and at rated voltage multiplied by the rated voltage factor (1,2 or 1,9) with burdens of between 25% and 100% of rated burden at a power factor of 0,8 lagging.

At 2% of rated voltage, the limits of error and phase displacement with burdens of between 25% and 100% of rated burden at a power factor of 0,8 lagging will be twice as high as those given in table.

CUSTODIA

Materiale custodia: metallo

Grado di protezione (EN/IEC 60529): IP00 morsetti (IP20 con coprimorsetto)

Fissaggio a vite per montaggio a parete

Peso: 2,7 kg

HOUSING

Housing material: *metal*

Protection degree (EN/IEC 60529): *IP00 terminals (IP20 with terminal cover)*

Fixing screw facility for wall mounting

Weight: *2,7 kg*

CONNESSIONI

Morsetti a vite M4 e faston 6,3x0,8mm

SIGLATURA CONNESSIONI

Primario: A – B (fase-fase) / A – N (fase-neutro)

Secondario: a – b (fase-fase) / a – n (fase-neutro)

CONNECTIONS

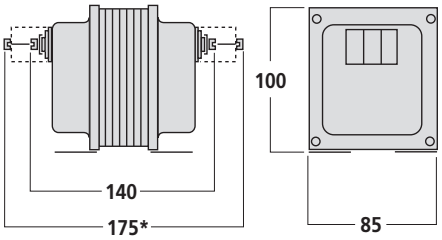
Screw terminals M4 and fast-ons 6,3x0,8mm

CONNECTIONS LABEL

Primary: *A – B (phase-phase) / A – N (phase-neutral)*

Secondary: *a – b (phase-phase) / a – n (phase-neutral)*

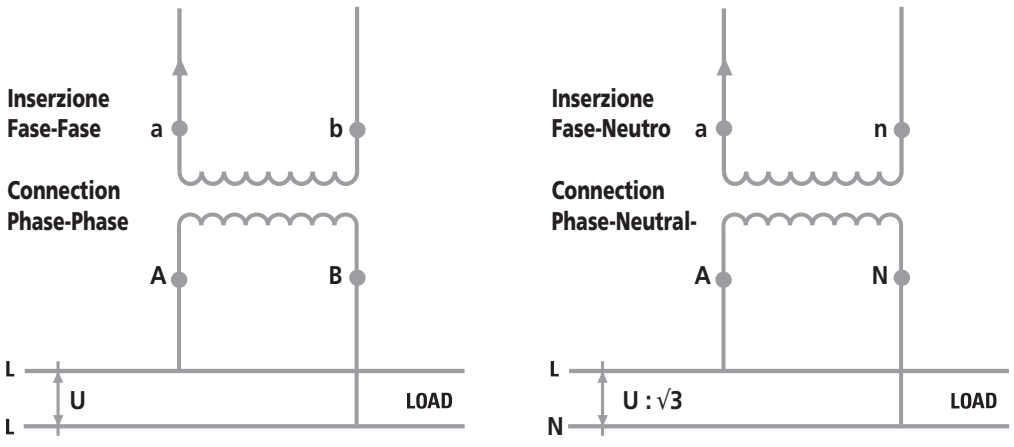
DIMENSIONI *DIMENSIONS*



NOTA: è possibile realizzare trasformatori con più ingressi primari e/o uscite secondarie.
Caratteristiche tecniche (precisione, prestazioni, isolamento, ecc.) e dimensioni: da definire.

NOTE: it is possible to manufacture transformers with various primary inputs and/or secondary outputs.
Dimensional and technical specifications (accuracy, rated burden, insulation, etc): to be specified.

SCHEMA D'INSERZIONE *WIRING DIAGRAM*



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Transformateurs de tension pour réseau basse tension Mesure et Protection

Voltage transformer for low-voltage network Measure and Protection

BTV20

Transformateur de tension monophasé
RACCORDEMENT PHASE - PHASE
Tension primaire: 100...1.000V
Tension secondaire: 100V
Prestation nominale:
20VA (cl.0,5) – 30VA(cl.1) – 50VA(cl.3P)
RACCORDEMENT PHASE-NEUTRE
Tension primaire: 100:√3...1.000:√3V
Tension secondaire: 100:√3V
Prestation nominale:
8VA (cl.0,5) – 10VA(cl.1) – 25VA(cl.3P)

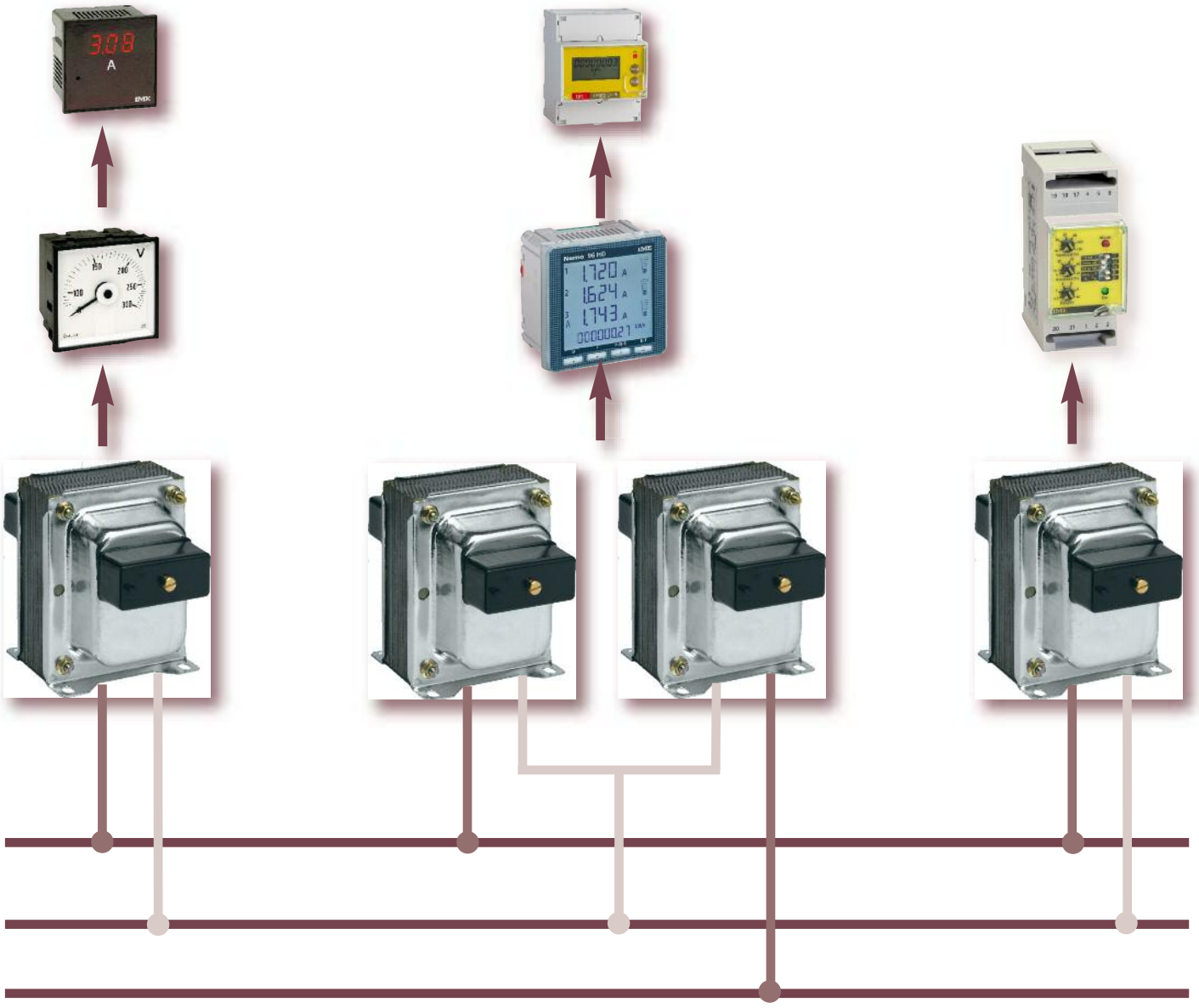
Single-phase voltage transformer
PHASE-PHASE CONNECTION
Primary voltage: 100...1.000V
Secondary voltage: 100V
Rated burden:
20VA (cl.0,5) – 30VA(cl.1) – 50VA(cl.3P)
PHASE-NEUTRAL CONNECTION
Primary voltage: 100:√3...1.000:√3V
Secondary voltage: 100:√3V
Rated burden:
8VA (cl.0,5) – 10VA(cl.1) – 25VA(cl.3P)

Indicateurs *Meters*

Centrales de mesure *Multifunction*

Compteurs d'énergie *Static energy meters*

Relais *Relays*



REFERENCE *ORDER CODE*		Tension primaire *Primary voltage*	CL. 0,5	CL. 1	CL. 3P
Secondaire / *Secondary*					
100V	100: √3V	V	VA	VA	VA
3013 2010		100	20	30	50
3013 2011		110	20	30	50
3013 2012		115	20	30	50
3013 2020		230	20	30	50
3013 2022		240	20	30	50
3013 2030		400	20	30	50
3013 2040		440	20	30	50
3013 2045		450	20	30	50
3013 2050		500	20	30	50
3013 2060		600	20	30	50
3013 2061		660	20	30	50
3013 2062		690	20	30	50
3013 2063		700	20	30	50
3013 2064		800	20	30	50
3013 2090		1.000	20	30	50
	3013 2100	100: √3V	8	10	25
	3013 2102	110: √3V	8	10	25
	3013 2101	115: √3V	8	10	25
	3013 2104	230: √3V	8	10	25
	3013 2105	240: √3V	8	10	25
	3013 2107	400: √3V	8	10	25
	3013 2108	440: √3V	8	10	25
	3013 2109	450: √3V	8	10	25
	3013 2110	500: √3V	8	10	25
	3013 2111	600: √3V	8	10	25
	3013 2112	660: √3V	8	10	25
	3013 2113	690: √3V	8	10	25
	3013 2114	700: √3V	8	10	25
	3013 2115	800: √3V	8	10	25
	3013 2116	1.000: √3V	8	10	25
3020 0011	Cache-bornes primaires / secondaires plombable - *Primary / secondary sealable terminal cover*				

NORME DE REFERENCE

EN/IEC61869-1, EN/IEC61869-3

REFERENCE STANDARDS

EN/IEC61869-1, EN/IEC61869-3

CARACTERISTIQUES TECHNIQUES

RACCORDEMENT PHASE-PHASE

Tension nominale primaire U_{pr}: 100...1.000V

Tension nominale secondaire U_{sr}: 100V

RACCORDEMENT PHASE-NEUTRE

Tension nominale primaire U_{pr}: 100:√3...1.000:√3V

Tension nominale secondaire U_{sr}: 100:√3V

Fréquence nominale: 50Hz

Fréquence de fonctionnement: 47...63Hz

Option: fréquence nominale 400Hz (prestations à définir)

Prestation nominale: voir tableau

Classe de précision: 0,5 – 1 (mesure) – 3P (protection)

FACTEUR DE TENSION NOMINALE (pour test d'échauffement)

Durée nominale continue: $1,2U_{pr}$

Durée nominale 8 heures: $1,9U_{pr}$ (raccordement phase-neutre et primaire Upr √3)

Puissance max. dissipée[2]: ≤ 8,5W

[2]Pour le dimensionnement therrmique du coffret

SPECIFICATIONS

PHASE-PHASE CONNECTION

Rated primary voltage U_{pr}: *100...1.000V*

Rated secondary voltage U_{sr}: *100V*

PHASE-NEUTRAL CONNECTION

Rated primary voltage U_{pr}: *100:√3...1.000:√3V*

Rated secondary voltage U_{sr}: *100:√3V*

Rated frequency: *50Hz*

Working frequency: *47...63Hz*

Option: *rated frequency 400H z (burdens to the advised)*

Rated burden: *see table*

Accuracy class: *0,5 – 1 (measuring) – 3P (protective)*

RATED VOLTAGE FACTOR *(for voltage heating test)*

Continuous rated time: *$1,2U_{pr}$*

8 hours rated time: *$1,9U_{pr}$ (phase-neutral and primary U_{pr} √3 connection)*

Max. power dissipation[2]: *≤ 8,5W*

[2]*For switchboard thermal calculation*

PRESCRIPTIONS RELATIVES À L'ISOLEMENT

Transformateur sec, isolé dans l'air

Classe de l'isolement (EN/IEC 61869-1): B

INSULATION REQUIREMENTS

Dry transformer, air insulation

Class of insulation (EN/IEC 61869-1): *B*

Tension nominale primaire U_{pn} *Rated primary voltage U_{pn}*	≤ 600V	> 600V
Tension max. de référence pour l'isolement Um *Highest voltage for equipment Um*	0,72kV valeur efficace / r.m.s.	12kV valeur efficace / r.m.s.
Niveau de l'isolement nominal *Rated insulation level*	3kV valeur efficace / r.m.s. *50Hz / 1min*	6kV valeur efficace / r.m.s. 50Hz / 1min

CONDITIONS D'UTILISATION

Installation non exposée (EN/IEC61869-1)

Température de référence: 23°C ± 1°C

Température d'utilisation: -25…50°C

Température moyenne journalière: ≤ 30°C

Température de stockage: -40…85°C

Humidité relative: ≤ 85%

Adapté pour l'utilisation en climat tropical

ENVIRONMENTAL CONDITIONS

Non-exposed installation (EN/IEC61869-1)

Reference temperature: *23°C ± 1°C*

Nominal temperature range: *-25…50°C*

Daily mean temperature: *≤ 30°C*

Limit temperature range for storage: *-40…85°C*

Relative humidity: *≤ 85%*

Suitable for tropical climates

LIMITE DES ERREURS DE COURANT ET DEPLACEMENT DE PHASE

(EN/IEC61869-3)

LIMITS OF VOLTAGE ERROR AND PHASE DISPLACEMENT

(EN/IEC61869-3)

Classe de précision *Accuracy class*	Erreur de tension (rapport) en pourcentage *Percentage voltage (ratio) error* ±	Déplacement de phase *Phase displacement* ±	
		Minutes *Minutes*	Centiradiants *Centiradians*
	80...120%Un	80...120%Un	80...120%Un
0,5	0,5	20	0,6
1	1,0	40	1,2

L'erreur de tension à la fréquence nominale ne doit pas dépasser les valeurs indiquées dans le tableau. Toute tension comprise entre 80% et 120% de la tension nominale et avec des prestations comprises entre 0% et 100% de la prestation nominale (TT avec prestation <10VA) ou 25% et 100% de la prestation nominale (TT avec prestation ≥ 10VA) à un facteur de puissance de 0, 8 en retard.

The voltage error and phase displacement at rated frequency shall not exceed the values given in table, at any voltage between 80% and 120% of rated voltage and with burdens of between 0% and 100% of rated burden (VT with burden <10VA) or 25% and 100% or rated burden (VT with burden ≥ 10VA) at a power factor of 0,8 lagging.

Classe de précision *Accuracy class*	Erreur de tension (rapport) en pourcentage *Percentage voltage (ratio) error* ±	Déplacement de phase *Phase displacement* ±	
		Minutes *Minutes*	Centiradiants *Centiradians*
	*5...100% Un x Ft	*5...100% Un x Ft	*5...100% Un x Ft
3P	3,0	120	3,5

**en fonction du raccordement du transformateur de tension, le facteur de tension nominale (Ft) correspond à 1,2 ou 1,9 fois la tension nominale (Upn).*

L'erreur de tension à la fréquence nominale ne doit pas dépasser les valeurs indiquées dans le tableau, à 5% de la tension nominale et à une tension nominale multipliée par le facteur de tension (1,2 ou 1,9) avec des prestations comprises entre 25% et 100% de la prestation nominale à un facteur de puissance de 0,8 en retard.

A 2% de la tension nominale, les limites d'erreurs avec des prestations comprises entre 25% et 100% de la prestation nominale à un facteur de puissance de 0,8 en retard seront deux fois plus élevées que celles indiquées dans le tableau.

**Depending on the voltage transformer connection (phase - phase or phase - neutral), the rated voltage factor (Ft) corresponds to 1,2 or 1,9 times the rated voltage (Upn).*

The voltage error and phase displacement at rated frequency shall not exceed the values in table at 5% rated voltage and at rated voltage multiplied by the rated voltage factor (1,2 or 1,9) with burdens of between 25% and 100% of rated burden at a power factor of 0,8 lagging.

At 2% of rated voltage, the limits of error and phase displacement with burdens of between 25% and 100% of rated burden at a power factor of 0,8 lagging will be twice as high as those given in table.

BOITIER

Matériau du boîtier: métal

Degré de protection (EN/IEC 60529): IP00 bornes (IP20 avec cache borne)

Facilité de fixation pour montage en saillie

Poids: 2,7 kg

HOUSING

Housing material: *metal*

Protection degree (EN/IEC 60529): *IP00 terminals (IP20 with terminal cover)*

Fixing screw facility for wall mounting

Weight: *2,7 kg*

RACCORDEMENT

Primaire - secondaire : par vis M4 et faston 6,3 x 0,8mm

ETIQUETTES DE RACCORDEMENT

Primaire: A – B (phase-phase) / A – N (phase-neutre)

Secondaire: a – b (phase-phase) / a – n (phase-neutre)

CONNECTIONS

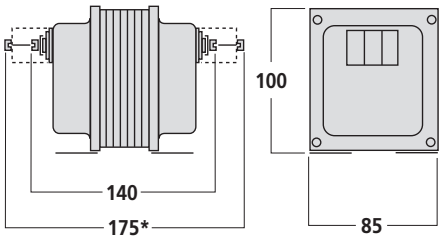
Screw terminals M4 and fast-ons 6,3x0,8mm

CONNECTIONS LABEL

Primary: *A – B (phase-phase) / A – N (phase-neutral)*

Secondary: *a – b (phase-phase) / a – n (phase-neutral)*

DIMENSIONS *DIMENSIONS*



NOTE: il est possible de fabriquer des transformateurs avec diverses entrées primaires et / ou sorties secondaires.
Dimensions et spécifications techniques (précision, prestation, isolement, etc): à préciser.

NOTE: it is possible to manufacture transformers with various primary inputs and/or secondary outputs.
Dimensional and technical specifications (accuracy, rated burden, insulation, etc): to be specified.

SCHEMA DE RACCORDEMENT *WIRING DIAGRAM*