

Trasduttore programmabile 8 Moduli

Un solo apparecchio per tutte le inserzioni,
linea monofase e trifase
Completamente configurabile in campo
Ingresso tensione trifase diretta fino a 500V
e su TV/100 e 115V
Ingresso corrente da TA/5A opp. /1A
Misura in vero valore efficace

Misure associabili all'uscita:

Potenza attiva
Potenza reattiva
Potenza apparente
Fattore di potenza
Angolo di fase
Potenza media
Frequenza

Uscita realizzabile con tutti
i segnali standard
0...5/10/20mA - 4...20mA
0...10V - 1...5V

Programmable transducer 8 Module

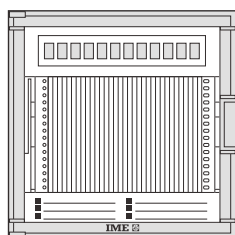
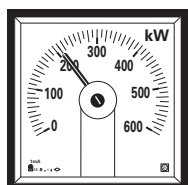
Just one meter for single-phase
and 3-phase connections
Wholly field programmable
Direct three-phase voltage input up to
500V and through V.T. 100 and 115V
Current input C.T/5A or /1A
True R.M.S. measurements

Measured quantity:

Active power
Reactive power
Apparent power
Power factor
Phase angle
Power demand
Frequency

Output possible with all standard signals
0...5/10/20mA - 4...20mA
0...10V - 1...5V

Tema fP



Inserzione diretta fino a 500V
Direct connection up to 500V



Rapporto TA-TV
CT-VT ratio

Uscita Output

0...5mA
0...10mA
0...20mA
4...20mA
5...0...5mA
10...0...10mA
20...0...20mA
0...10V
10...0...10V
1...5V

Grandezza Quantity

Potenza attiva
Active power
Potenza reattiva
Reactive power
Potenza apparente
Apparent power
Fattore di potenza
Power factor
Angolo di fase
Phase angle
Potenza media
Max. demand
Frequenza
Frequency

CODICI DI ORDINAZIONE ORDERING CODE	INGRESSO INPUT	AL. AUSILIARIA AUX. SUPPLY
TM8P02110	1A 80...500V	115V ca / ac
TM8P02120	5A 80...500V	115V ca / ac
TM8P03110	1A 80...500V	230 - 240V ca / ac
TM8P03120	5A 80...500V	230 - 240V ca / ac
TM8P0H110	1A 80...500V	20...150V cc / dc
TM8P0H120	5A 80...500V	20...150V cc / dc
TM8POL110	1A 80...500V	150...250V cc / dc
TM8POL120	5A 80...500V	150...250V cc / dc

• Grandezze visualizzate che possono essere trasdotte (associabili all'uscita analogica) *Display quantities which can be transduced (which can be associated to the analog output)*

 Grandezze solamente visualizzate (non possono essere associabili all'uscita analogica) *Quantities displayed only (which cannot be associated to the analog output)*

MISURE MEASURE	LINEA MONOFASE SINGLE PHASE LINE S250/97	LINEA TRIFASE THREE PHASE				
		3 FILI EQUILIBRATA BALANCED LOAD 3-WIRE S250/93 S250/100		4 FILI EQUILIBRATA BALANCED LOAD 4-WIRE S250/95	3 FILI SQUILIBRATA UNBALANCED LOAD 3-WIRE S250/94/96/98	4 FILI SQUILIBRATA UNBALANCED LOAD 4-WIRE S250/99
Potenza attiva monofase <i>Single phase active power</i>	•					
Potenza attiva L1-N <i>Active power L1-N</i>						•
Potenza attiva L2-N <i>Active power L2-N</i>						•
Potenza attiva L3-N <i>Active power L3-N</i>						•
Potenza attiva trifase <i>Three phase active power</i>		•		•	•	•
Potenza reattiva monofase <i>Single phase reactive power</i>	•					
Potenza reattiva L1-N <i>Reactive power L1-N</i>						•
Potenza reattiva L2-N <i>Reactive power L2-N</i>						•
Potenza reattiva L3-N <i>Reactive power L3-N</i>						•
Potenza reattiva trifase <i>Three phase reactive power</i>		•	•	•	•	•
Potenza apparente monofase <i>Single phase apparent power</i>	•					
Potenza apparente L1-N <i>Apparent power L1-N</i>						•
Potenza apparente L2-N <i>Apparent power L2-N</i>						•
Potenza apparente L3-N <i>Apparent power L3-N</i>						•
Potenza apparente trifase <i>Three phase apparent power</i>		•		•	•	•
Fattore di potenza monofase <i>Single phase power factor</i>	•					
Fattore di potenza L1-N <i>power factor L1-N</i>						•
Fattore di potenza L2-N <i>power factor L2-N</i>						•
Fattore di potenza L3-N <i>power factor L3-N</i>						•
Fattore di potenza trifase <i>Three phase power factor</i>		•		•	•	•
Angolo di fase monofase <i>phase angle, single phase</i>	•					
Angolo di fase trifase <i>phase angle, three phase</i>		•		•		
Potenza media <i>power demand</i>	•	•	•	•	•	•
Valore massimo potenza media <i>power max. demand</i>						
Frequenza <i>Frequency</i>	•	•	•	•	•	•

INGRESSO

Rete monofase, rete trifase 3 e 4 fili, carico equilibrato squilibrato
Inserzione: diretta o da TV e TA esterni (con rapporti programmabili)
Rapporti TA e TV: programmabili, $KTA \times KTV \leq 220.000$ (In 5A) - $\leq 2.000.000$ (In 1A)
Tensione trifase nominale Un: 400V (fase - fase)
Tensione monofase: 50...300V
Corrente In: 5A oppure 1A
Frequenza fn: 50Hz
Eccedenza di breve durata (EN 60688): $2Un/1s$ - $20In/1s$
Autoconsumo (per ogni fase): tensione $\leq 0,5VA$ - corrente $0,5VA$

CAMPI NOMINALI DI UTILIZZO**(EN 60688)**

Tensione trifase: 80...500V (fase - fase)
Corrente: 0...120% In
Frequenza: 45...65Hz
Fattore di potenza: $\cos\varphi$ 0,5...1...0,5 - $\sin\varphi$ 0,5...1...0,5
Contenuto armonico: fino alla 16ª armonica

IMPOSTAZIONE CAMPO DI USCITA

Programmabile: tramite tastiera
Potenza corrispondente al fondo scala: 50...150% Pn
Minimo Δ inizio - fondo scala: 25% Pn
dove:
Pn (potenza nominale) = $Un \times In \times \sqrt{3}$
Un (tensione nominale) = 400V (inserz. diretta) - 100V (inserz.su TV esterno)
In (corrente nominale) = 5A oppure 1A

POTENZA MEDIA

Visualizzazione e misura: potenza media e valore massimo potenza media
Grandezza: potenza attiva, reattiva o apparente
Tempo di media: selezionabile 5/8/10/15/20/30/60 minuti
Calcolo: media fissa sul periodo selezionato
Azzeramento valore massimo potenza media: manuale, da tastiera

VISUALIZZAZIONE

Tipo display: LCD
Visualizzazione misure: suddivisa in differenti pagine, con scansione manuale
Unità ingegneristica: visualizzazione automatica misure lato primario (TA-TV esterni)

PROGRAMMAZIONE

Programmazione parametri: tastiera frontale, 3 tasti
Conservazione parametri di configurazione: memoria permanente

PARAMETRI PROGRAMMABILI

Connessione: rete monofase - trifase (3 - 4fili), carico equilibrato - squilibrato
TA - TV esterni: rapporto $KTA \times KTV \leq 220.000$ (In 5A) - ≤ 900.000 (In 1A)
Uscita analogica: grandezza associata, inizio e fondo scala, valore nominale di corrente (o tensione)
Potenza media: grandezza, tempo di media, azzeramento

USCITA

Grandezze associabili: vedi tabella
Tipo: uni e bidirezionale a zero reale e traslato, per carico d'uscita variabile
Precisione (EN 60688): cl.0,5 (potenza) - cl.1 (fattore di potenza) - $\pm 0,2Hz$ (frequenza)
Ondulazione (EN 60688): $\leq 1\%$
Tempo di risposta (EN 60688): $\leq 300ms$
Valori nominali di corrente: 0...5 - 5...0...5 - 0...10 - 10...0...10 - 0...20 - 20...0...20- 4...20mA
Tensione disponibile: 16,5V
Carico di uscita: $\leq 750\Omega$ (20mA) - $\leq 1,5k\Omega$ (10mA) - $\leq 3k\Omega$ (5mA)

INPUT

Single phase, three phase network, 3 and 4 wire, balanced and unbalanced load
Connection: direct or by external VT and CT (with programmables ratios)
VT and CT ratios: programmables, $KVT \times KCT \leq 220.000$ (In 5A) - $\leq 2.000.000$ (In 1A)
Three-phase voltage rating Un: 400V (phase - phase)
Single-phase voltage: 50...300V
Current rating In: 5A or 1A
Frequenza fn: 50Hz
Excessive input of short duration (EN 60688): $2Un/1s$ - $20In/1s$
Rated burden (each phase): voltage $\leq 0,5VA$ - current $\leq 0,5VA$

NOMINAL RANGE OF USE**(EN 60688)**

Voltage three-phase: 80...500V (phase - phase)
Current: 0...120% In
Frequenza: 45...65Hz
Power factor: $\cos\varphi$ 0,5...1...0,5- $\sin\varphi$ 0,5...1...0,5
Harmonic content: up to 16 th harmonic

OUTPUT RANGE SETTING

Programmable: by key
Power corresponding to full scale: 50...150% pn
Δ min. beginning - full scale: 25% pn
where:
Pn (nominal power) = $Un \times In \times \sqrt{3}$
Un (nominal voltage) = 400V (direct connection) - 100V (external VT)
In (nominal current) = 5A or 1A

POWER DEMAND

Measuring and display: power demand and power max. demand
Quantity: active, reactive or apparent power
Averaging time period: selectable 5/8/10/15/20/30/60 minutes
Calculation: Average on a selected time interval
Max. demand reset: manual, by keyboard

DISPLAY

Display type: LCD
Measurement display: subdivided on pages, with manual scroll
Engineering units: automatic display according to the set VT and CT ratios

PROGRAMMING

Parameters programming: front keyboard, 3 keys
Hold of configuration parameters: non volatile memory

PROGRAMMABLE PARAMETERS

Connection: single phase - three phase network (3 - 4wire), balanced and unbalanced load
External VT - CT: ratio $KTA \times KTV \leq 220.000$ (In 5A) - ≤ 900.000 (In 1A)
Analog output: transduced quantity, beginning and full scale, standard output
Power demand: quantity, averaging time period, reset

OUTPUT

Associable quantities: see table
Type: unidirectional and reversible, real or live zero for variable output load
Accuracy (EN 60688): cl.0,5 (power) - cl.1 (power factor) - $\pm 0,2Hz$ (frequency)
Ripple content (EN 60688): $\leq 1\%$
Response time (EN 60688): $\leq 300ms$
Current rated values: 0...5 - 5...0...5 - 0...10 - 10...0...10 - 0...20 - 20...0...20- 4...20mA
Compliance voltage: 16,5V
Output load: $\leq 750\Omega$ (20mA) - $\leq 1,5k\Omega$ (10mA) - $\leq 3k\Omega$ (5mA)

Valori nominali di tensione: 0...10V - 10...0...10 - 1...5V

Carico di uscita: $\geq 5k\Omega$

ALIMENTAZIONE AUSILIARIA

Valore nominale U_{aux} ca: 115 – 230 e 240V

Variazione ammessa: 0,85...1,1 U_{aux}

Frequenza nominale f_{aux} : 50Hz

Variazione ammessa: 47...63Hz

Autoconsumo: $\leq 3VA$

Valore nominale U_{aux} cc: 20...150Vcc -150...250Vcc

Autoconsumo: $\leq 3W$

Protezione contro l'inversione di polarità

PROVE DI ISOLAMENTO

(EN 60439-1)

Categoria di installazione: III

Grado di inquinamento: 2

Tensione di riferimento per l'isolamento: 500V

Prova di tensione a impulso 5kV 1,2/50 μ s 0,5J

Circuiti considerati: ingresso, uscita, alimentazione ausiliaria

Prova di tensione alternata 2,5kV valore efficace 50Hz/1 min

Circuiti considerati: ingr.tensione, ingr.corrente, uscita, alimentazione ausiliaria

Prova di tensione alternata 4kV valore efficace 50Hz/1 min

Circuiti considerati: alimentazione ausiliaria verso tutti gli altri circuiti

Prova di tensione alternata 4kV valore efficace 50Hz/1 min

Circuiti considerati: tutti i circuiti e massa

COMPATIBILITA' Elettromagnetica

Prove di emissione in accordo con EN61000-6-3

Prove di immunità in accordo con EN61000-6-2

CONDIZIONI AMBIENTALI

(EN 60688)

Gruppo di utilizzo: II

Temperatura di riferimento: 15...30°C

Temperatura di impiego: 0...50°C

Condizione limite di temperatura: -10...55°C

Temperatura di immagazzinaggio: -25...70°C

Adatto all'utilizzo in clima tropicale

Massima potenza dissipata ¹: $\leq 4,8W$

¹ Per il dimensionamento termico dei quadri

CUSTODIA

Dimensioni: 8 moduli DIN 43880

Conessioni: morsetti a vite per conduttore fino a 4mm² (amperometriche 8mm²)

Montaggio: a incastro su profilato 35mm

Tipo profilato: a cappello TH35-15 (EN60715)

Materiale custodia: policarbonato autoestinguente

Grado di protezione (EN 60529): IP52 (frontale), IP20 (morsetti)

Peso: 480 grammi

Voltage rated values: 0...10V - 10...0...10 - 1...5V

Output load: $> 5k\Omega$

AUXILIARY SUPPLY

Rated value U_{aux} ac: 115 – 230 and 240V

Tolerance: 0,85...1,1 U_{aux}

Rated frequency f_{aux} : 50Hz

Tolerance: 47...63Hz

Rated burden: $\leq 3VA$

Rated value U_{aux} dc: 20...150Vdc -150...250Vdc

Rated burden: $\leq 3W$

Protected against incorrect polarity

TESTS OF INSULATION PROPERTIES

(EN 60439-1)

Installation category: III

Pollution degree: 2

Insulation voltage rating: 500V

Impulse voltage test 5kV 1,2/50 μ s 0,5J

Considered circuits: input, output, auxiliary supply

A.C. voltage test 2,5kV r.m.s. 50Hz/1 min

Considered circuits: voltage input, current input, output, auxiliary supply

A.C. voltage test 4kV r.m.s. 50Hz/1min

Considered circuits: auxiliary supply toward all circuits

A.C. voltage test 4kV r.m.s. 50Hz/1min

Considered circuits: all circuits and earth

ELECTROMAGNETIC COMPATIBILITY

Emission test according to EN61000-6-3

Immunity test according to EN61000-6-2

ENVIRONMENTAL CONDITIONS

(EN 60688)

Usage group: II

Reference temperature: 15...30°C

Nominal temperature range: 0...50°C

Limit temperature range: -10...55°C

Limit temperature range for storage: -25...70°C

Suitable for tropical climates

Max. power dissipation ¹: $\leq 4,8W$

¹ For switchboard thermal calculation

HOUSING

Dimensions: 8 module DIN 43880

Connections: screw terminals for cable up to 4mm² (ammetric 8mm²)

Mounting: snap-on 35mm rail

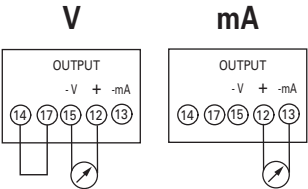
Rail type: top hat TH35-15 (EN60715)

Housing material: self-extinguishing polycarbonate

Protection degree (EN 60529): Ip52 (front frame); Ip20 (terminals)

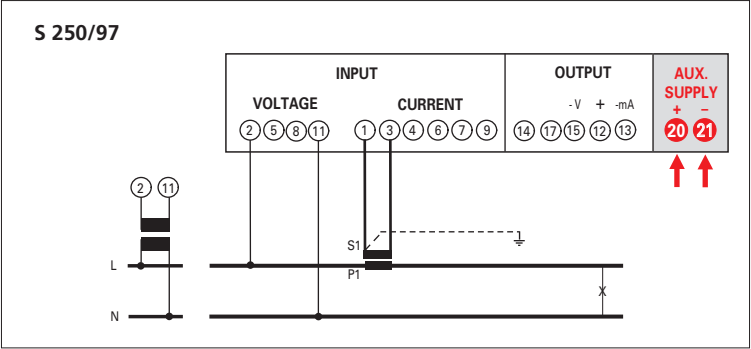
Weight: 480 grams

USCITA ANALOGICA

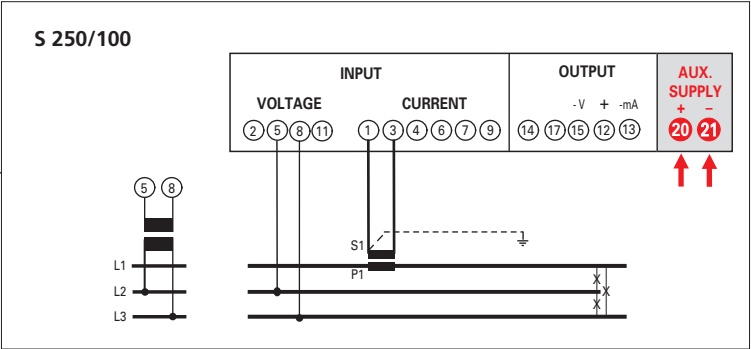
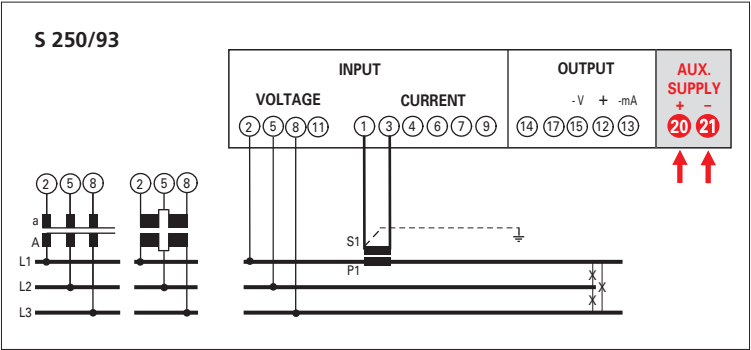


ANALOG OUTPUT

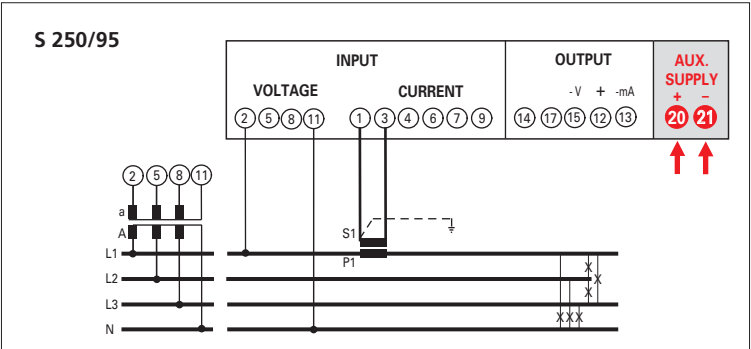
LINEA MONOFASE • SINGLE PHASE



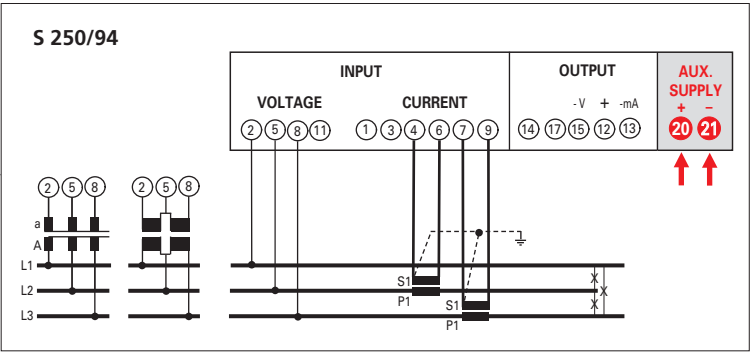
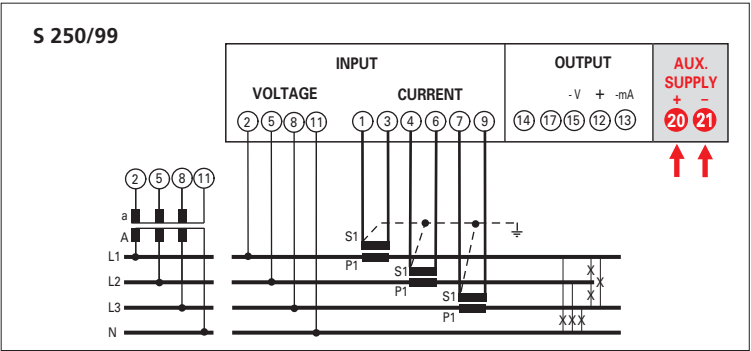
LINEA TRIFASE 3 FILI, CARICO EQUILIBRATO
THREE PHASE 3 WIRE, BALANCED LOAD



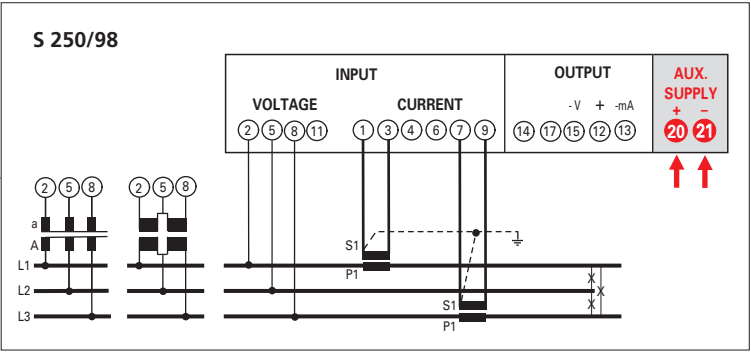
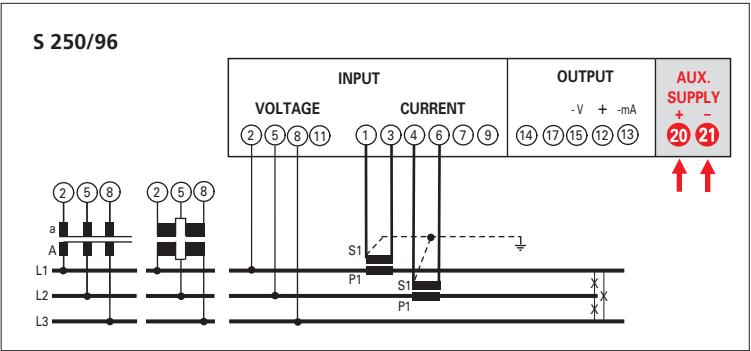
LINEA TRIFASE 4 FILI, CARICO EQUILIBRATO
THREE PHASE 4 WIRE, BALANCED LOAD



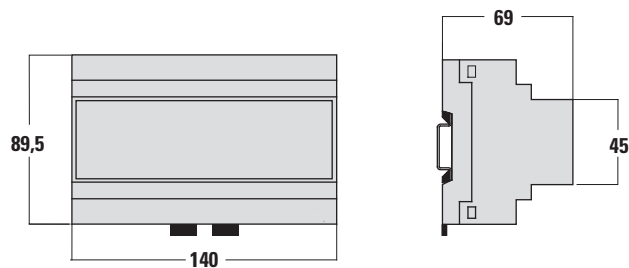
LINEA TRIFASE 4 FILI, CARICO SQUILIBRATO
THREE PHASE 4 WIRE, UNBALANCED LOAD



LINEA TRIFASE 3 FILI, CARICO SQUILIBRATO
THREE PHASE 3 WIRE, UNBALANCED LOAD



DIMENSIONI DIMENSIONS



Transducteur programmable 8 Modules

Un seul appareil pour raccordement
sur réseau monophasé et réseau triphasé
Paramètres configurables
Entrée tension directe triphasée jusqu'à 500V
et sur TT/100 et 115V
Entrée courant sur TC/5A ou /1A
Mesures en valeur efficace vraie (RMS)

Grandeurs mesurées:

Puissance active
Puissance réactive
Puissance apparente
Facteur de puissance
Angle de phase
Puissance moyenne
Fréquence

Sorties possibles avec tous les signaux standards
0...5/10/20mA - 4...20mA
0...10V - 1...5V

Programmable transducer 8 Module

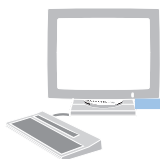
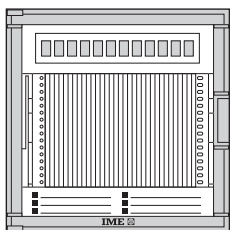
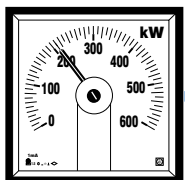
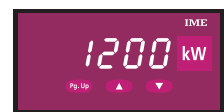
Just one meter for single-phase
and 3-phase connections
Wholly field programmable
Direct three-phase voltage input up to
500V and through V.T. 100 and 115V
Current input C.T/5A or /1A
True R.M.S. measurements

Measured quantity:

Active power
Reactive power
Apparent power
Power factor
Phase angle
Power demand
Frequency

Output possible with all standard signals
0...5/10/20mA - 4...20mA
0...10V - 1...5V

Tema fP



Raccordement direct jusqu'à 500V
Direct connection up to 500V

Rapport TC-TT
CT-VT ratio

Sortie Output

0...5mA
0...10mA
0...20mA
4...20mA
5...0...5mA
10...0...10mA
20...0...20mA
0...10V
10...0...10V
1...5V

Grandeurs Quantity

Puissance active
Active power
Puissance réactive
Reactive power
Puissance apparente
Apparent power
Facteur de puissance
Power factor
Angle de phase
Phase angle
Puissance moyenne
Max. demand
Fréquence
Frequency

REFERENCE ORDERING CODE	ENTREE INPUT	ALIM. AUX. AUX. SUPPLY
5025 2600	1A 80...500V	115V ca / ac
5025 3600	5A 80...500V	115V ca / ac
5025 2700	1A 80...500V	230 - 240V ca / ac
5025 3700	5A 80...500V	230 - 240V ca / ac
5025 2800	1A 80...500V	20...150V cc / dc
5025 3800	5A 80...500V	20...150V cc / dc
5025 2900	1A 80...500V	150...250V cc / dc
5025 3900	5A 80...500V	150...250V cc / dc

- Visualisation des grandeurs converties à la sortie analogique *Display quantities which can be transduced (which can be associated to the analog output)*
- 👁 Grandeurs visualisées (non associable à la sortie analogique) *Quantities displayed only (which cannot be associated to the analog output)*

MESURE MEASURE	RESEAU MONOPHASE SINGLE PHASE LINE S250/97	RESEAU TRIPHASE THREE PHASE				
		3 FILS EQUILIBRE BALANCED LOAD 3-WIRE S250/93 S250/100		4 FILS EQUILIBRE BALANCED LOAD 4-WIRE S250/95	3 FILS NON EQUILIBRE UNBALANCED LOAD 3-WIRE S250/94/96/98	4 FILS NON EQUILIBRE UNBALANCED LOAD 4-WIRE S250/99
Puissance active monophasée Single phase active power	•					
Puissance active L1-N Active power L1-N				👁		•
Puissance active L2-N Active power L2-N						•
Puissance active L3-N Active power L3-N						•
Puissance active triphasée Three phase active power		•		•	•	•
Puissance réactive monophasée Single phase reactive power	•					
Puissance réactive L1-N Reactive power L1-N				👁		•
Puissance réactive L2-N Reactive power L2-N						•
Puissance réactive L3-N Reactive power L3-N						•
Puissance réactive triphasée Three phase reactive power		•	•	•	•	•
Puissance apparente monophasée Single phase apparent power	•					
Puissance apparente L1-N Apparent power L1-N				👁		•
Puissance apparente L2-N Apparent power L2-N						•
Puissance apparente L3-N Apparent power L3-N						•
Puissance apparente triphasée Three phase apparent power		•		•	•	•
Facteur de puissance monophasé Single phase power factor	•					
Facteur de puissance L1-N Power factor L1-N				👁		•
Facteur de puissance L2-N Power factor L2-N						•
Facteur de puissance L3-N Power factor L3-N						•
Facteur de puissance triphasé Three phase power factor		•		•	•	•
Angle de phase monophasé Phase angle, single phase	•					
Angle de phase triphasé Phase angle, three phase		•		•		
Puissance moyenne Power demand	•	•	•	•	•	•
Valeur max. de la puissance moyen. Power max. demand	👁	👁	👁	👁	👁	👁
Fréquence Frequency	•	•	•	•	•	•

ENTREE

Réseau monophasé, réseau triphasé 3 et 4 fils, réseau équilibré, non équilibré
Raccordement: direct sur TT et TC externe (avec rapport programmable)
Rapport TC et TT: programmables, $KTA \times KTV \leq 220.000$ (In 5A) - $\leq 2.000.000$ (In 1A)
Tension triphasée Un: 400V (phase - phase)
Tension monophasée: 50...300V
Courant In: 5A ou 1A
Fréquence fn: 50Hz
Surcharge de brève durée (EN 60688): 2Un/1s - 20In/1s
Autoconsommation (pour chaque phase): tension $\leq 0,5VA$ - courant 0,5VA

VALEURS NOMINALES D'UTILISATION

(EN 60688)

Tension triphasée: 80...500V (phase - phase)
Courant: 0...120% In
Fréquence: 45...65Hz
Facteur de puissance: $\cos\varphi$ 0,5...1...0,5 - $\sin\varphi$ 0,5...1...0,5
Contenu des harmoniques: jusqu'aux harmoniques du rang 16

CONFIGURATION DES VALEURS DE SORTIE

Programmables: par touches
Puissance correspondant au fond d'échelle: 50...150% Pn
Minimum Δ début - fond d'échelle: 25% Pn
lorsque:
Pn (puissance nominale) = $Un \times In \times \sqrt{3}$
Un (tension nominale) = 400V (raccord.direct) - 100V (raccord. sur TT externe)
In (courant nominal) = 5A ou 1A

PUISSANCE MOYENNE

Mesure et affichage: puissance moyenne et valeur max. de la puissance moyenne
Grandeur: puissance active, réactive ou apparente
Temps d'intégration: sélectionnable 5/8/10/15/20/30/60 minutes
Calcul: moyenne sur la période sélectionnée
Remise à zéro de la valeur max.: manuelle à l'aide de touches

AFFICHAGE

Type d'affichage: LCD
Affichage des mesures: afficheur divisé en pages, à défilement manuel
Unité de mesure: affichage automatique en fonction des TC-TT externes

PROGRAMMATION

Paramètres programmables: 3 touches en face avant
Conservation des paramètres de configuration: mémoire permanente

PARAMETRES PROGRAMMABLES

Raccordement: réseau monophasé - triphasé (3 - 4 fils), réseau équilibré, non équilibré
TT-TC externes: rapport $KTA \times KTV \leq 220.000$ (In 5A) - ≤ 900.000 (In 1A)
Sortie analogique: grandeur associée, début et fond d'échelle, valeur nominale du courant (ou tension)
Puissance moyenne: grandeur, temps d'intégration, remise à zéro

SORTIES

Grandeurs associées: voir tableau
Type: uni et bidirectionnel à zéro vif ou décalé, pour charge de sortie variable
Précision (EN 60688): cl.0,5 (puissance) - cl.1 (facteur de puissance) - $\pm 0,2Hz$ (fréquence)
Ondulation (EN 60688): $\leq 1\%$
Temps de réponse (EN 60688): $\leq 300ms$
Valeur nominale du courant: 0...5 - 5...0...5 - 0...10 - 10...0...10 - 0...20 - 20...0...20 - 4...20mA
Tension disponible: 16,5V
Charge de sortie: $\leq 750\Omega$ (20mA) - $\leq 1,5k\Omega$ (10mA) - $\leq 3k\Omega$ (5mA)

INPUT

Single phase, three phase network, 3 and 4 wire, balanced and unbalanced load
Connection: direct or by external VT and CT (with programmables ratios)
VT and CT ratios: programmables, $KVT \times KCT \leq 220.000$ (In 5A) - $\leq 2.000.000$ (In 1A)
Three-phase voltage rating Un: 400V (phase - phase)
Single-phase voltage: 50...300V
Current rating In: 5A or 1A
Frequency fn: 50Hz
Excessive input of short duration (EN 60688): 2Un/1s - 20In/1s
Rated burden (each phase) : voltage $\leq 0,5VA$ - current $\leq 0,5VA$

NOMINAL RANGE OF USE

(EN 60688)

Voltage three-phase: 80...500V (phase - phase)
Current: 0...120% In
Frequency: 45...65Hz
Power factor: $\cos\varphi$ 0,5...1...0,5- $\sin\varphi$ 0,5...1...0,5
Harmonic content: up to 16 th harmonic

OUTPUT RANGE SETTING

Programmable: by key
Power corresponding to full scale: 50...150% Pn
Δ min. beginning - full scale: 25% Pn
when:
Pn (nominal power) = $Un \times In \times \sqrt{3}$
Un (nominal voltage) = 400V (direct connection) - 100V (external VT)
In (nominal current) = 5A or 1A

POWER DEMAND

Measuring and display: power demand and power max. demand
Quantity: active, reactive or apparent power
Averaging time period: selectable 5/8/10/15/20/30/60 minutes
Calculation: Average on a selected time interval
Max. demand reset: manual, by keyboard

DISPLAY

Display type: LCD
Measurement display: subdivided on pages, with manual scroll
Engineering units: automatic display according to the set VT and CT ratios

PROGRAMMING

Parameters programming: front keyboard, 3 keys
Hold of configuration parameters: non volatile memory

PROGRAMMABLE PARAMETERS

Connection: single phase - three phase network (3 - 4wire), balanced and unbalanced load
External VT - CT: ratio $KTA \times KTV \leq 220.000$ (In 5A) - ≤ 900.000 (In 1A)
Analog output: transduced quantity, beginning and full scale, standard output
Power demand: quantity, averaging time period, reset

OUTPUT

Associable quantities: see table
Type: unidirectional and reversible, real or live zero for variable output load
Accuracy (EN 60688): cl.0,5 (power) - cl.1 (power factor) - $\pm 0,2Hz$ (frequency)
Ripple content (EN 60688): $\leq 1\%$
Response time (EN 60688): $\leq 300ms$
Current rated values: 0...5 - 5...0...5 - 0...10 - 10...0...10 - 0...20 - 20...0...20 - 4...20mA
Compliance voltage: 16,5V
Output load: $\leq 750\Omega$ (20mA) - $\leq 1,5k\Omega$ (10mA) - $\leq 3k\Omega$ (5mA)

Valeur nominale de tension: 0...10V - 10...0...10 - 1...5V
Charge de sortie: $\geq 5k\Omega$

ALIMENTATION AUXILIAIRE

Valeur nominale U_{aux} ca: 115 – 230 et 240V
Variation admissible: 0,85...1,1 U_{aux}
Fréquence nominale faux: 50Hz
Variation admissible: 47...63Hz
Autoconsommation: $\leq 3VA$
Valeur nominale U_{aux} cc: 20...150Vcc -150...250Vcc
Autoconsommation: $\leq 3W$
Protection contre l'inversion de polarité

ESSAI D'ISOLEMENT

(EN 60439-1)

Catégorie de l'installation: I
Degré de pollution: 2
Tension de référence pour l'isolement: 500V
Tension d'essai 5kV impulsion normalisée 1,2/50 μs 0,5J
Circuits considérés: entrée, sortie, alimentation auxilaire
Tension d'essai 2,5kV valeur efficace 50Hz/1 min
Circuits considérés: entrée tension, entrée courant, sortie, alim.aux.
Tension d'essai 4kV valeur efficace 50Hz/1 min
Circuits considérés: alimentation auxiliaire vers tous les circuits
Tension d'essai 4kV valeur efficace 50Hz/1 min
Circuiti considerati: tous les circuits et la masse

COMPATIBILITE ELECTROMAGNETIQUE

Essai d'émission selon la norme EN61000-6-3
Essai d'immunité selon la norme EN61000-6-2

CONDITIONS D'UTILISATION

(EN 60688)

Groupe d'utilisation: I
Température de référence: 15...30°C
Température d'utilisation: 0...50°C
Condition limite de température: -10...55°C
Température de stockage: -25...70°C
Adapté pour l'utilisation en climat tropical
Puissance max. dissipée¹: $\leq 4,8W$
¹Pour le dimensionnement thermique du coffret

BOITIER

Dimensions: 8 modules DIN 43880
Raccordement: bornes à vis pour conducteur jusqu'à 4mm²
(circuit ampèremétrique jusqu'à 8mm²)
Fixation: rail 35mm (EN 50022)
Type de profil: TH35-15 (EN60715)
Matériaux du boîtier: makrolon autoextinguible
Degré de protection (EN 60529): IP52 (face avant), IP20 (bornes)
Poids: 480 grammes

Voltage rated values: 0...10V - 10...0...10 - 1...5V
Output load: $> 5k\Omega$

AUXILIARY SUPPLY

Rated value U_{aux} ac: 115 – 230 and 240V
Tolerance: 0,85...1,1 U_{aux}
Rated frequency faux: 50Hz
Tolerance: 47...63Hz
Rated burden: $\leq 3VA$
Rated value U_{aux} dc: 20...150Vdc -150...250Vdc
Rated burden: $\leq 3W$
Protected against incorrect polarity

TESTS OF INSULATION PROPERTIES

(EN 60439-1)

Installation category: I
Pollution degree: 2
Insulation voltage rating: 500V
Impulse voltage test 5kV 1,2/50 μs 0,5J
Considered circuits: input, output, auxiliary supply
A.C. voltage test 2,5kV r.m.s. 50Hz/1 min
Considered circuits: voltage input, current input, output, auxiliary supply
A.C. voltage test 4kV r.m.s. 50Hz/1min
Considered circuits: auxiliary supply toward all circuits
A.C. voltage test 4kV r.m.s. 50Hz/1min
Considered circuits: all circuits and earth

ELECTROMAGNETIC COMPATIBILITY

Emission test according to EN61000-6-3
Immunity test according to EN61000-6-2

ENVIRONMENTAL CONDITIONS

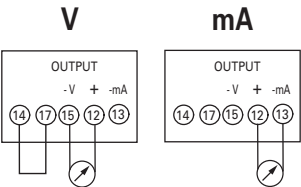
(EN 60688)

Usage group: I
Reference temperature: 15...30°C
Nominal temperature range: 0...50°C
Limit temperature range: -10...55°C
Limit temperature range for storage: -25...70°C
Suitable for tropical climates
Max. power dissipation ¹: $\leq 4,8W$
¹ For switchboard thermal calculation

HOUSING

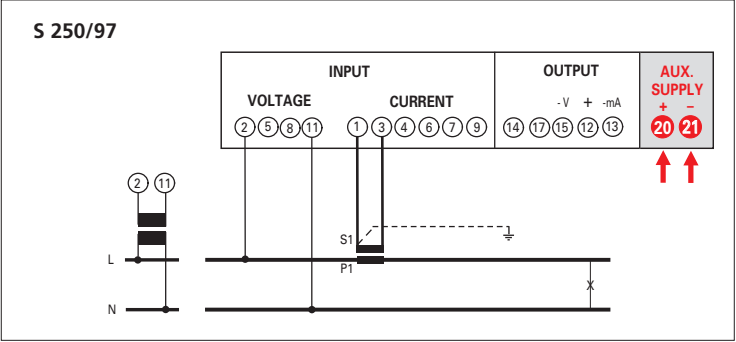
Dimensions: 8 module DIN 43880
Connections: screw terminals for cable up to 4mm² (ammetric 8mm²)
Mounting: snap-on 35mm rail
Rail type: top hat TH35-15 (EN60715)
Housing material: self-extinguishing polycarbonate
Protection degree (EN 60529): IP52 (front frame); IP20 (terminals)
Weight: 480 grams

SORTIE ANALOGIQUE

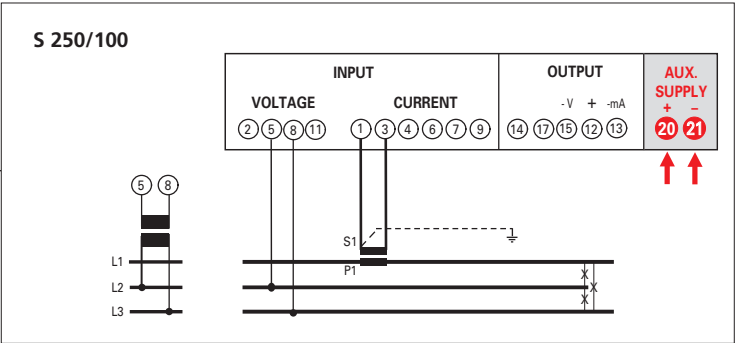
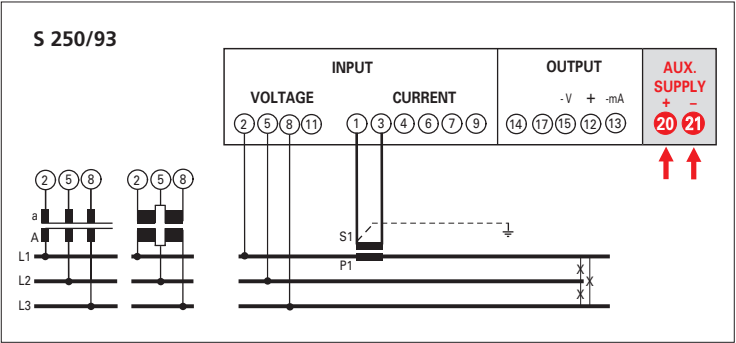


ANALOG OUTPUT

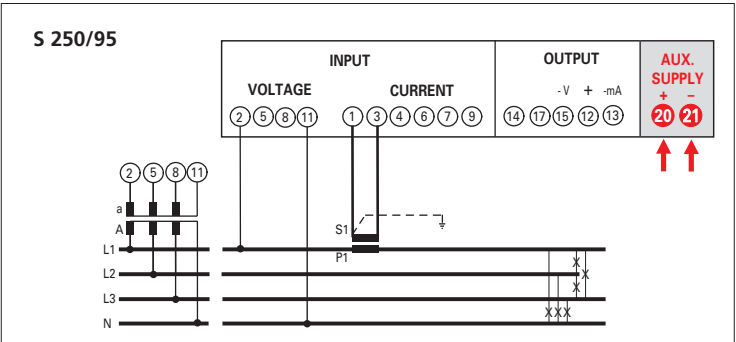
RESEAU MONOPHASE • SINGLE PHASE



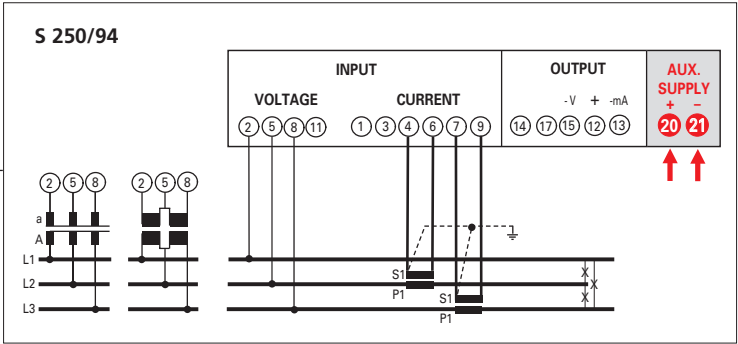
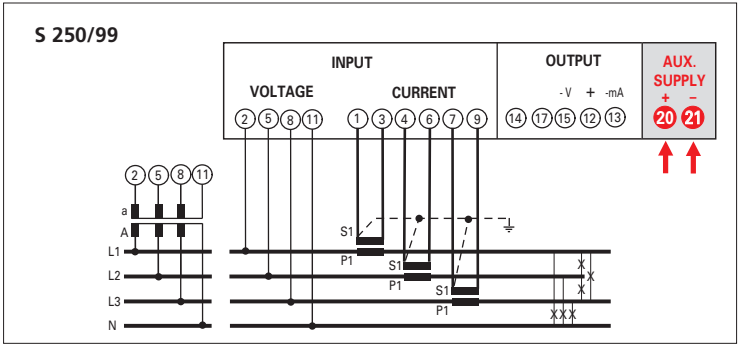
RESEAU TRIPHASE 3 FILS, EQUILIBRE
THREE PHASE 3 WIRE, BALANCED LOAD



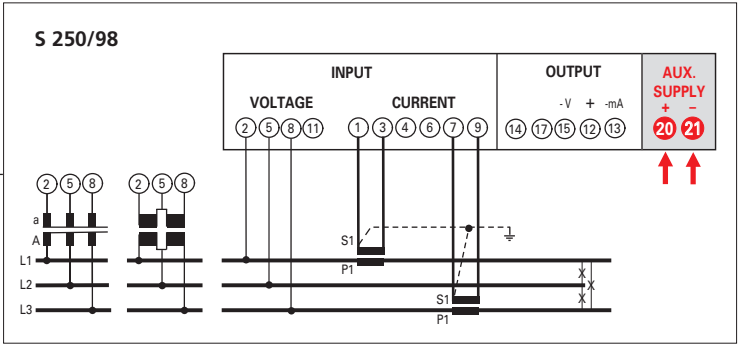
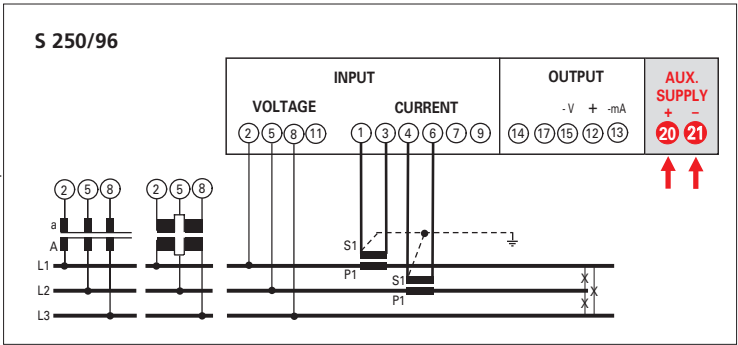
RESEAU TRIPHASE 4 FILS, EQUILIBRE
THREE PHASE 4 WIRE, BALANCED LOAD



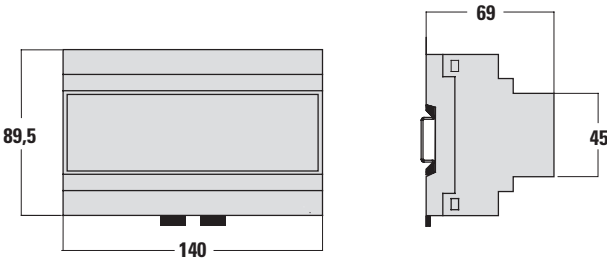
RESEAU TRIPHASE 4 FILS, NON EQUILIBRE
THREE PHASE 4 WIRE, UNBALANCED LOAD



RESEAU TRIPHASE 3 FILS, NON EQUILIBRE
THREE PHASE 3 WIRE, UNBALANCED LOAD



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