INTELLIGENT TRANSFER SWITCH - EVO

ITS-E - INSTALLATION MANUAL

V2.1-EN_04-04-2017 - FW 10.0

GB !!! WARNING !!!

- Carefully read the documentation before the installation or use.
- This equipment is to be installed by qualified personnel, complying to current standards, to avoid damages or safety hazards.
- Before any maintenance operation on the device, remove all the voltages from measuring and supply inputs and short-circuit the CT input terminals.
- The manufacturer cannot be held responsible for electrical safety in case of improper use of the equipment.
- Products illustrated herein are subject to alteration and changes without prior notice. Technical data and descriptions in the documentation are accurate, to the best of our knowledge, but no liabilities for errors, omissions or contingencies arising there from are accepted.
- A circuit breaker must be included in the electrical installation of the building. It must be installed close by the equipment and within easy reach of the operator.
  It must be marked as the disconnecting device of the equipment: IEC /EN 61010-1 § 6.11.2.
- Clean the device with a soft dry cloth; do not use abrasives, liquid detergents or solvents.

FR !!! ATTENTION !!!

- Lire attentivement le documentation avant toute utilisation et installation.
- Ces appareils doivent être installés par un personnel qualifié, conformément aux normes en vigueur en matière d'installations, afin d'éviter de causer des dommages à des personnes ou choses.
- Avant toute intervention sur l'instrument, mettre les entrées de mesure et d'alimentation hors tension et court-circuiter les transformateurs de courant.
- Le constructeur n'assume aucune responsabilité quant à la sécurité électrique en cas d'utilisation impropre du dispositif.
- Les produits décrits dans ce document sont susceptibles d'évoluer ou de subir des modifications à n'importe quel moment. Les descriptions et caractéristiques techniques du catalogue ne peuvent donc avoir aucune valeur contractuelle.
- Un interrupteur ou disjoncteur doit être inclus dans l'installation électrique du bâtiment. Celui-ci doit se trouver tout près de l'appareil et l'opérateur doit pouvoir y accéder facilement. Il doit être marqué comme le dispositif d'interruption de l'appareil : IEC/ EN 61010-1 § 6.11.2.
- Mainstoyer l'appareil avec un chiffon doux, ne pas utiliser de produits abrasifs, detergents liquides ou solvants.

DE !!! ACHTUNG !!!

- Dieses Dokumentation vor Gebrauch und Installation aufmerksam lesen.
- Zur Vermeidung von Personen- und Sachschäden dürfen diese Geräte nur von qualifiziertem Fachpersonal und unter Befolgung der einschlägigen Vorschriften installiert werden.
- Vor jedemβEingriff am Instrument die Spannungszufuhr zu den Messeingängen trennen und die Stromwandler kurzschlie en.
- Bei zweckwidrigem Gebrauch der Vorrichtung übernimmt der Hersteller keine Haftung für die elektrische Sicherheit.
- Die in dieser Broschüre beschriebenen Produkte können jederzeit weiterentwickelt und geändert werden. Die im Katalog enthaltenen Beschreibungen und Daten sind daher unverbindlich und ohne Gewähr.
- In die elektrische Anlage des Gebäudes ist ein Ausschalter oder Trennschalter einzubauen.
  Dieser muss sich in unmittelbarer Nähe des Geräts befinden und vom Bediener leicht zugänglich sein. Er muss als Trennvorrichtung für das Gerät gekennzeichmains sein: IEC/ EN 61010-1 § 6.11.2.
- Das Gerät mit einem weichen Tuch reinigen, keine Scheuermittel, Flüssigreiniger oder Lösungsmittel verwenden.

ES !!! ADVERTENCIA !!!

- Leer atentamente las documentación antes de instalar y utilizar el regulador.
- Este dispositivo debe ser instalado por personal cualificado conforme a la normativa de instalación vigente a fin de evitar daños personales o materiales.
- Antes de realizar cualquier operación en el dispositivo, desconectar la corriente de las entradas de alimentación y medida, y cortocircuitar los transformadores de corriente.
- El fabricante no se responsabilizará de la seguridad eléctrica en caso de que el dispositivo no se utilice de forma adecuada.
- Los productos descritos en este documento se pueden actualizar o modificar en cualquier momento. Por consiguiente, las descripciones y los datos técnicos aquí contenidos no tienen valor contractual.
- La instalación eléctrica del edificio debe disponer de un interruptor o disyuntor. Éste debe encontrarse cerca del dispositivo, en un lugar al que el usuario pueda acceder con facilidad. Además, debe llevar el mismo marcado que el interruptor del dispositivo (IEC/ EN 61010-1 § 6.11.2).
- Limpiar el dispositivo con un trapo suave; no utilizar productos abrasivos, detergentes líquidos ni disolventes.

RO !!! AVERTIZARE !!!

- Citiţi cu atenţie documentaţie înainte de instalare sau utilizare.
- Acest echipament va fi instalat de personal calificat, în conformitate cu standardele actuale, pentru a evita deteriorări sau pericolele.
- Înainte de efectuarea oricărei operaţiuni de întreţinere asupra dispozitivului, îndepărtaţi toate tensiunile de la intrările de măsurare şi de alimentare şi scurtcircuitaţi bornele de intrare CT.
- Producătorul nu poate fi considerat responsabil pentru siguranţa electrică în caz de utilizare incorectă a echipamentului.
- Produsele ilustrate în prezentul sunt supuse modificărilor şi schimbărilor fără notificare anterioară. Datele tehnice şi descrierile din documentaţie sunt precise, în măsura cunoştinţelor noastre, dar nu se acceptă nicio răspundere pentru erorile, omiterile sau evenimentele neprevăzute care apar ca urmare a acestora.
- Trebuie inclus un disjunctor în instalaţia electrică a clădirii. Acesta trebuie instalat aproape de echipament şi într-o zonă uşor accesibilă operatorului. Acesta trebuie marcat ca fiind dispozitivul de deconectare al echipamentului: IEC/EN 61010-1 § 6.11.2.
- Curăţaţi instrumentul cu un material textil moale şi uscat; nu utilizaţi substanţe abrazive, detergenţi lichizi sau solvenţi.

IT !!! ATTENZIONE !!!

- Leggere attentamente la documentazione prima dell'utilizzo e l'installazione.
- Questi apparecchi devono essere installati da personale qualificato, nel rispetto delle vigenti normative impiantistiche, allo scopo di evitare danni a persone o cose.
- Prima di qualsiasi intervento sullo strumento, togliere tensione dagli ingressi di misura, di alimentazione e cortocircuitare i trasformatori di corrente.
- Il costruttore non si assume responsabilità in merito alla sicurezza elettrica in caso di utilizzo improprio del dispositivo.
- I prodotti descritti in questo documento sono suscettibili in qualsiasi momento di evoluzioni o di modifiche.
  Le descrizioni ed i dati a catalogo non possono pertanto avere alcun valore contrattuale.
- Un interruttore o disgiuntore va compreso nell'impianto elettrico dell'edificio. Esso deve trovarsi in stretta vicinanza dell'apparecchio ed essere facilmente raggiungibile da parte dell'operatore. Deve essere marchiato come il dispositivo di interruzione dell'apparecchio: IEC/ EN 61010-1 § 6.11.2.
- Pulire l'apparecchio con panno morbido, non usare prodotti abrasivi, detergenti liquidi o solventi.

CZ !!! UPOZORNĚNÍ !!!

- Dokumentace se pozorně přečtěte, než začmainse instalovat a používat.
- Tato zařízení smí instalovat kvalifikovaní pracovníci v souladu s platnými předpisy a normami pro předcházení úrazů osob či poškození věcí.
- Před jakýmkoli zásahem do přístroje odpojte měřicí a napájecí vstupy od napětí a zkratujte transformátory proudu.
- Výrobce nenese odpovědnost za elektrickou bezpečnost v případě nevhodného používání regulátoru.
- Výrobky popsané v tomto dokumentu mohou kdykoli projít úpravami či dalším vývojem. Popisy a údaje uvedené v katalogu nemají proto žádnou smluvní hodnotu.
- Spínač či odpojovač je nutno zabudovat do elektrického rozvodu v budově. Musejí být nainstalované v těsné blízkosti přístroje a snadno dostupné pracovníku obsluhy. Je nutno ho označit jako vypínací zařízení přístroje: IEC/ EN 61010-1 § 6.11.2.
- Přístroj čistěte měkkou utěrkou, nepoužívejte abrazivní produkty, tekutá čistidla či rozpouštědla.

PL !!! UWAGA !!!

- Przed użyciem i instalacją urządzenia należy uważnie przeczytać dokumentacja.
- W celu uniknięcia obrażeń osób lub uszkodzenia mienia tego typu urządzenia muszą być instalowane przez wykwalifikowany personel, zgodnie z obowiązującymi przepisami.
- Przed rozpoczęciem jakichkolwiek prac na urządzeniu należy odłączyć napięcie od wejść pomiarowych i zasilania oraz zewrzeć zaciski przekładnika prądowego.
- Producent nie przyjmuje na siebie odpowiedzialności za bezpieczeństwo elektryczne w przypadku niewłaściwego użytkowania urządzenia.
- Produkty opisane w niniejszym dokumencie mogą być w każdej chwili udoskonalone lub zmodyfikowane. Opisy oraz dane katalogowe nie mogą mieć w związku z tym żadnej wartości umownej.
- W instalacji elektrycznej budynku należy uwzględnić przełącznik lub wyłącznik automatyczny. Powinien on znajdować się w bliskim sąsiedztwie urządzenia i być łatwo osiągalny przez operatora. Musi być oznaczony jako urządzenie służące do wyłączania urządzenia: IEC/ EN 61010-1 § 6.11.2.
- Urządzenie należy czyścić miękką szmatką, nie stosować środkow ściernych, płynnych detergentow lub rozpuszczalnikow.

RU !!! ПРЕДУПРЕЖДЕНИЕ !!!

- Прежде чем приступать к монтажу или эксплуатации устройства, внимательно ознакомьтесь одержанием настоящего документация.
- Во избежание травм или материального ущерба монтаж должен существляться только квалифицированным персоналом в соответствии с действующими нормативами.
- Перед проведением любых работ по техническому обслуживанию устройства необходимо обесточить все измерительные и питающие входные контакты, а также замкнуть накоротко входные контакты трансформатора тока (TT).
- Производитель не несет ответственность за обеспечение электробезопасности в случае ненадлежащего использования устройства.
- Изделия, описанные в настоящем документе, в любой момент могут подвергнуться изменениям или усовершенствованиям. Поэтому каталожные данные и описания не могут рассматриваться как действительные с точки зрения контрактов.
- Электрическая сеть здания должна быть оснащена автоматическим выключателем, который должен быть расположен вблизи оборудования в пределах доступа оператора. Автоматический выключатель должен быть промаркирован как отключающее устройство оборудования: IEC /EN 61010-1 § 6.11.2.
- Очистку устройства производить с помощью мягкой сухой ткани, без применения абразивных материалов, жидких моющих средств или растворителей.

TR !!! DİKKAT !!!

- - Montaj ve kullanımdan önce bu el belgeleme dikkatlice okuyunuz.
- Bu aparatlar kişilere veya nesnelere zarar verme ihtimaline karşı yürürlükte olan sistem kurma normlarına göre kalifiye personel tarafından monte edilmelidirler.
- Aparata (cihaz) herhangi bir müdahalede bulunmadan önce ölçüm girişlerindeki gerilimi kesip akım transformatörlerinede kısa devre yaptırınız.
- Üretici aparatın hatalı kullanımından kaynaklanan elektriksel güvenliğe ait sorumluluk kabul etmez.
- Bu dokümanda tarif edilen ürünler her an evrimlere veya değişimlere açıktır. Bu sebeple katalogdaki tarif ve değerler herhangi bir bağlayıcı değeri haiz değildir.
- Binanın elektrik sisteminde bir anahtar veya şalter bulunmalıdır. Bu anahtar veya şalter operatörün kolaylıkla ulaşabileceği yakın bir yerde olmalıdır. Aparatı (cihaz) devreden çıkartma görevi yapan bu anahtar veya şalterin markası: IEC/ EN 61010-1 § 6.11.2.
- Aparatı (cihaz) sıvı deterjan veya solvent kullanarak yumuşak bir bez ile siliniz aşındırıcı temizlik ürünleri kullanmayınız.

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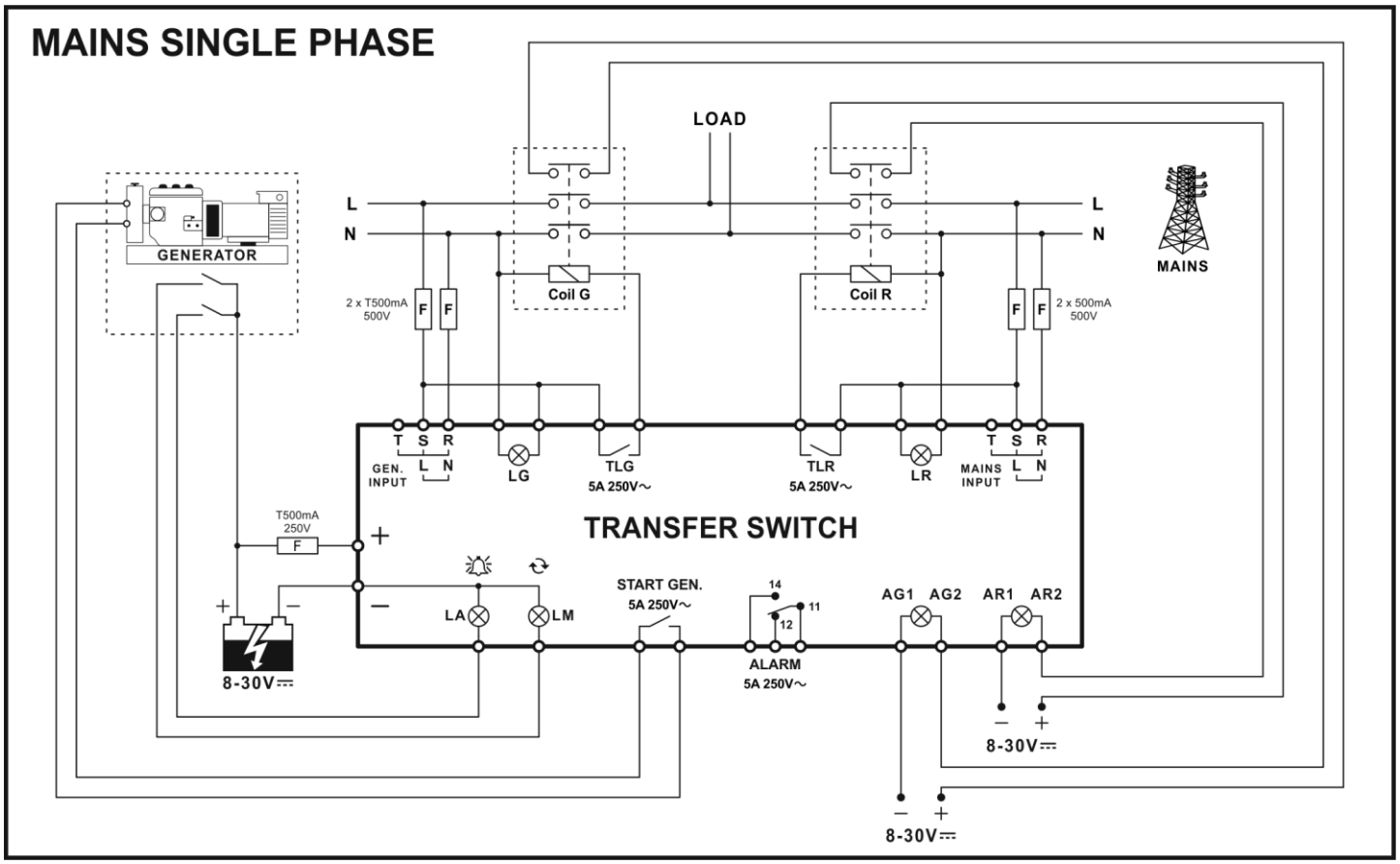
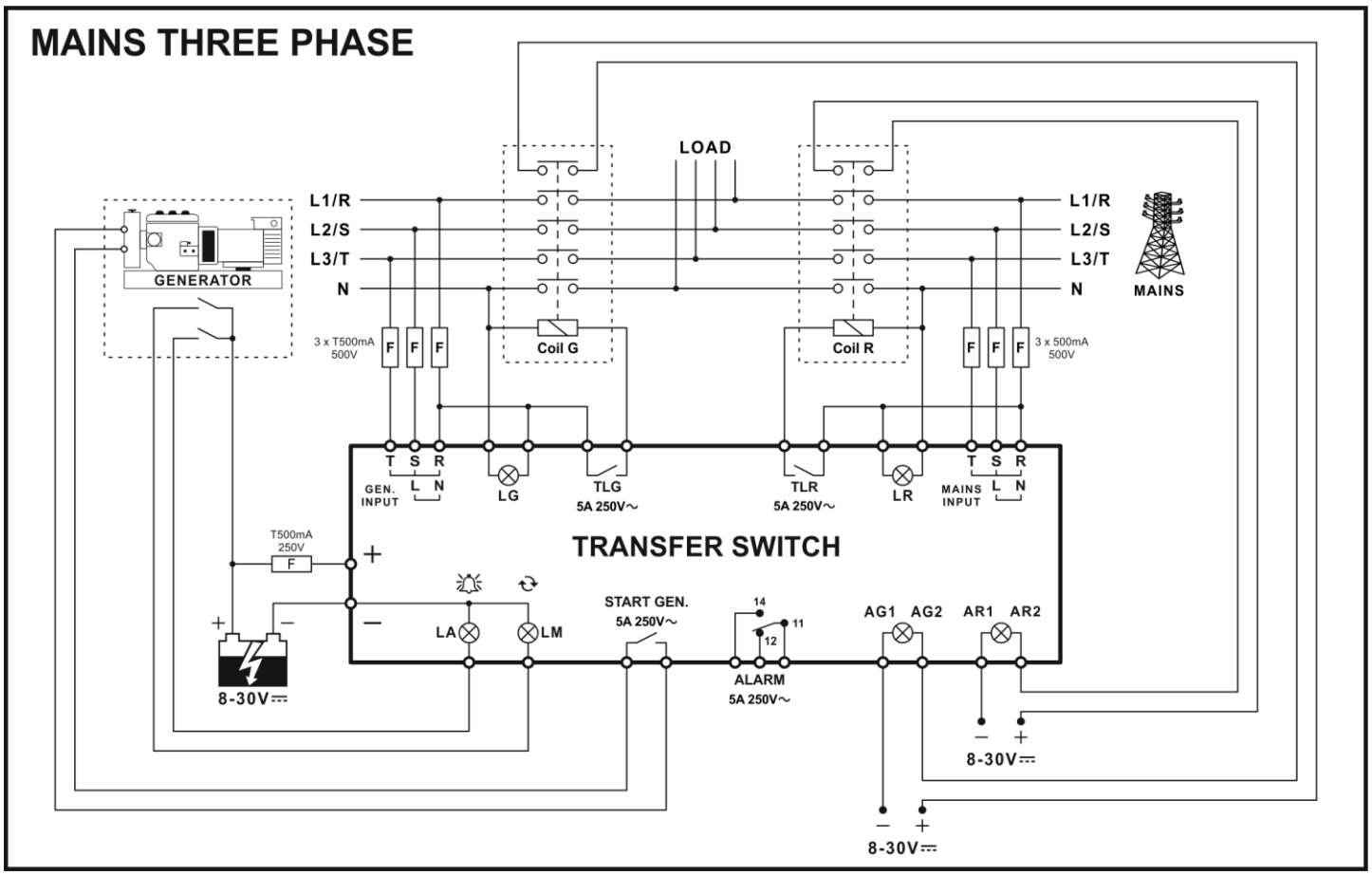
TYPICAL WIRING DIAGRAM (for reference purposes only)





The installer has to provide an external disconnection device;
This breaker has to be easily reachable and identified as "disconnection device".

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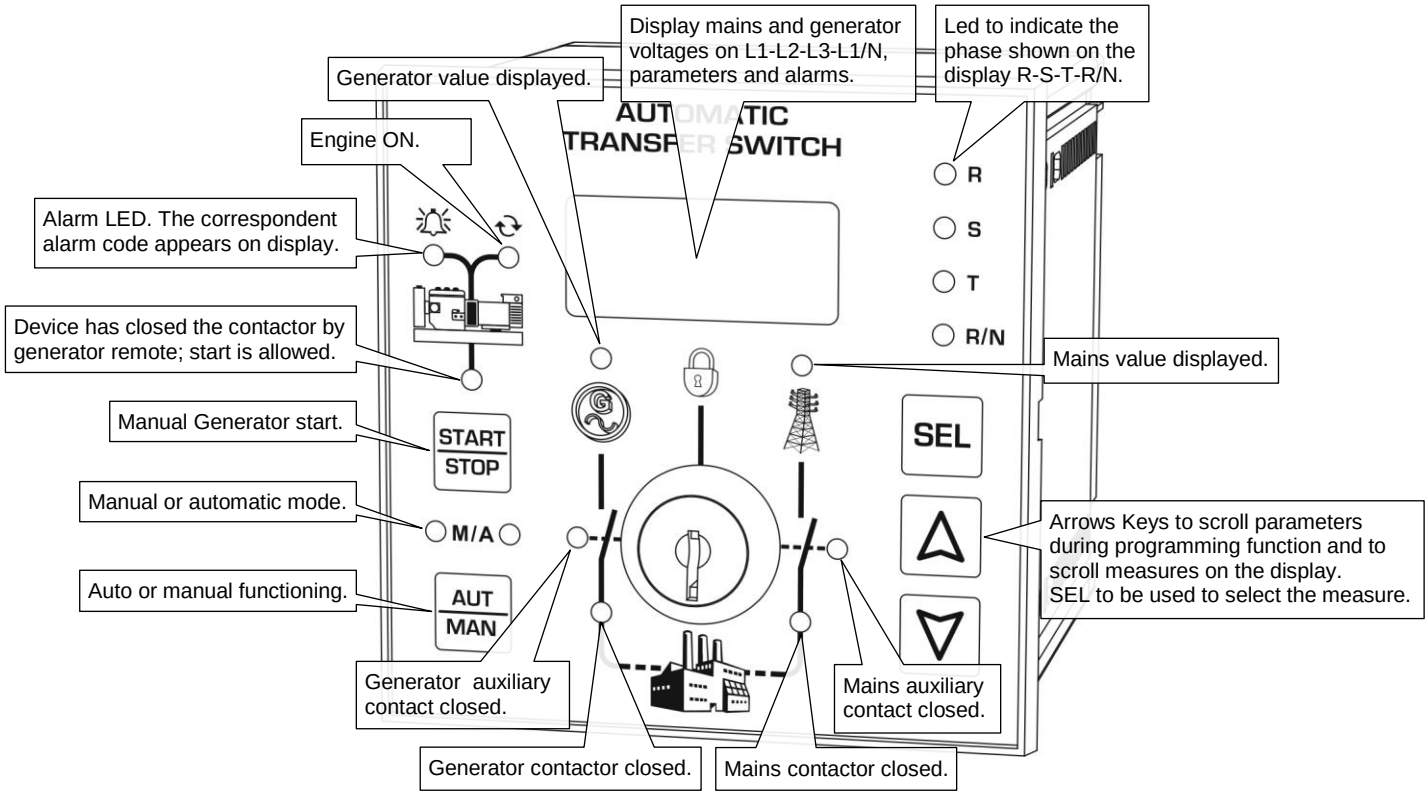
INSTRUMENT INFORMATION



OPERATIONS MODE

The device can operate in auto or manual mode.

At the start, the device is in auto or manual mode according to the P 13 *(default 0 = Manual).*

Firmware version will be displayed and, consequently the nominal tension (Vn) to be monitored, set in P0 1, and in detail:

"L20." 208V~	"L23." 230V~	"L40." 400V~ (default)	"L44." 440V~
"L20" 208V 3~	"L23" 230V 3~	"L40" 400V 3~	"L44" 440V 3~

In case the lock mode is active, the **AUT/MAN** key is meant only to erase the error signals (auto mode).

Switching from *Automatic to Manual* is possible only when the lock mode is on (P 14 set at 1).

Switching from mains to gen or vice versa happens after the time set in P2 1 is expired.

- MANUAL MODE

In *Manual mode,* activating threshold and delay time for the changeover are disabled.
Start and Stop of the generator are activated by **START/STOP** button.
The changeover of the power supply source is controlled by a key selector, the selection of the mains or the generator is identified from the red LED, white LED indicate the state and the green ones **AG/AR** show the aux contact status (if any).
The pushbutton **SEL** will toggle between gen or mains tensions.
With the **UP/DOWN** buttons, the instrument toggles between phases tension, indicated by the right side LED**.**

In gen mode, when the start contact is not enabled, the display shows " OFF " and the generator is not enabled; when the contact is enabled, the "OFF" display disappear and a tension measure appears.
By pressing **AUT/MAN** the instrument toggles between the 2 modes.

!!! In manual mode no errors are detected and controlled !!!

- AUTO MODE

In *Automatic mode* all the functions are solely handled by the software.
In this mode it is not possible to start or stop the generator by the use of the pushbuttons and also the key is disabled.
In this mode the info on the display follows the system status; if the instrument is on the mains and all the tensions are ok, LEDs and display will show the mains tensions.
If a changeover occurs, the display will show the new parameters accordingly.
In any time, we can visualize the measures by pressing **SEL** while with the **UP/DOWN** arrows we can toggle between the phase tensions.
The missing of one phase trigger the begin of the changeover sequence, the missing of one phase of the generator, instead, trigger an error.

Only in three phase systems the asymmetry is controlled, handled by parameters P 16 and P 17.
Frequency is only controlled on the generator side.

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The following errors and alarm are available in Auto mode:

Max or min mains work tension.

- "HI " (max) or "LO" (min) blink on the display.
- the instrument will start the changeover sequence:
  1) Generator ignition.
  2) Generator tension and frequency check.
  3) Changeover (from line to gen)

When generator tension and frequency are stable, changeover sequence can start.

This has to happen within the time settled into P08. If not, the instrument will show one of the errors indicated below:

"Er 1"**:** Generator tension is over/under threshold set in P05 and P06.

"Er2"**:** Generator frequency is out of tolerance as set in P 12.

As immediate consequence, the generator will be switched off and the instrument will point the load back to the source indicated into the parameter P 18. To reset the error condition press the button **AUT/MAN**.

Generator tension or frequency error (after changeover).

Once changeover from mains to gen is done, there is a software filter active to avoid false alarms.

If variations of tension/frequency last longer than the time set in P 15, the instrument will display the following errors:

"Er 1"**:** Generator tension is over/under threshold set in P05 and P06.

"Er2"**:** Generator frequency is out of tolerance as set in P 12.

As immediate consequence, the generator will be switched off and the instrument will point the load back to the source indicated into the parameter P 18. To reset the error condition press the button **AUT/MAN**.

Missing tension or contactors failure.

This error is settled with P20:

- 1 = disabled.
- 2 = monitors the inputs **LG** and **LR**, when the tension is missing, the white LED will go off.
- 3 = monitors the inputs **AG1/AG2** and **AR1/AR2**; this is possible only if we also have aux contacts on contactors, powered with low tension 8-36V⎓.
  In case of a problem at the contactors or to the aux contacts, the green LED will go off.
  In both cases the display will show:
  "Er3"**:** *aux contact closed or missing tension.*

As immediate consequence, the generator will be switched off and the instrument will put the load back to the source indicated into the parameter P 18. To reset the error condition press the button **AUT/MAN**.

Phase asymmetry (only on three-phase systems)

- In mains mode "LSI " blinks on the display.
- The instrument start the changeover sequence:
  1) Generator ignition.
  2) tension and frequency verify.
  3) changeover from main to generator.

If, during the generator mode, symmetry should go out of limits and should exceed the duration set in P 17, the display will show:

"Er4"**:** the meaning is that the asymmetry value is detected to be exceeding the P 16 value.

As an immediate consequence, the generator will be shut down and the instrument will turn the load back on the source set into P 18. To reset the error signal push **AUT/MAN**.

Enabling relay alarms

When errors Er 1, Er2, Er3 and Er4 occur, the alarm relay enables on contacts 11-12-14.

This relay is set with P 19:

- 1 = state NO (switches to NC on alarm).
- 2 = state NC (switches to NO on alarm).
- 3 = disabled.

Changeover timing from generator to mains.

When tension and symmetry of mains come back to set values, the instrument starts the sequence for the changeover from generator to mains:

1) Counts the delay as set in P 10.

2) Count the delay for the generator shut off as set in P 11.

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PROGRAMMING

Pressing together the buttons **UP / DOWN** for 5 seconds, the instrument enters in programming mode and the display shows "1 Pr".

Once the buttons are released, the display shows "P0 1".

Use **UP / DOWN** arrows to toggle between the parameters from P0 1 to P2 1.
Press **SEL** to visualize the parameter value and modify it with **UP / DOWN** arrows.
Keep pressed **UP / DOWN** arrows to increase the variation speed of the values.
To go back to the parameters list press again **SEL**.

To save data and exit, press together **UP / DOWN** arrows from the above menu; display will show "EPr" (end programming).

Should the error "EEE" appear, reset the default values as indicated:

1) Press once the **SEL** button, the display will show "rrr" to confirm that the default data have been restored.
2) Switch off and back on again the instrument.
3) Now is possible to re-program the values as indicated in the above procedure.

Note:

- When changing the value in P0 1 (which phase to be monitored), threshold of min and max are set to 10%, either for mains and generator.
- To distinguish the values between single and three-phase, when the single-phase is showed, the dot is lit on the last digit of the units.
- Values of changeover and delay are not affected.

PARAMETERS AND LIMITS

PAR.	FUNCTION	VALUES	DESCRIPTION	DEFAULT
P0 1	Nominal tension (Vn).	208. / 208 230. / 230 400. / 400 440. / 440	Mains to be monitored. Dot at the last digit indicates the single phase mode.	**400.**
P02	Frequency.	50 / 60	Frequency value of the mains to be monitored.	**50**
P03	Minimum mains tension.	-20% Vn	Minimum value level. Highest value selectable is Vn -4V	**-10%**
P04	Maximum mains tension.	+20% Vn	Minimum value level. Smaller value selectable is Vn +4V	**+10%**
P05	Minimum generator tension.	-20% Vn	Minimum value level. Highest value selectable is Vn -4V	**-10%**
P06	Maximum generator tension.	+20% Vn	Minimum value level. Smaller value selectable is Vn +4V	**+10%**
P07	Generator start delay	1…600s	Delay between error detected on mains and generator ignition.	**5s**
P08	Delay for generator OK.	1…600s	Grace time when generator has to be within the set values. This time resets to 0 when values are within the limits.	**120s**
P09	Mains/generator changeover delay.	1…240s	Delay between generator OK status and changeover mains/gen.	**5s**
P 10	Gen/mains changeover delay.	1…240s	Delay between mains OK status and changeover gen/mains.	**10s**
P 11	Gen switch-off delay.	1…240s	Delay between changeover and gen switch-off.	**30s**
P 12	Frequency tolerance	± 1…9Hz	Generator frequency tolerance.	**± 5Hz**
P 13	Working mode.	0 = Manual 1 = Auto	Working mode on instrument start.	**0**
P 14	Working mode lock *(Automatic / Manual).*	0 = locked 1 = unlocked	Working mode locking. On 0 the working mode is locked.	**1**
P 15	Errors filter.	0…60s	Avoid instant unstable conditions to be detected as errors.	**3s**
P 16	Phase asymmetry tolerance (only on 3phase systems)	10…40V	Tolerance value on asymmetry of the 3 phases.	**20V**
P 17	Phase asymmetry toler. filter (only on 3phase systems)	1…30s	Filters the asymmetry conditions before error generation.	**1s**
P 18	Gen/Mains forced	0 = disabled 1 = enabled	If enabled and, on a gen unstable condition, this parameter leads the system to switch to mains automatically.	**0**
P 19	Alarms relay.	1 = NC 2 = NO 3 = disabled	Working mode of the alarm relay. If enabled, it works on all the errors.	**1**
P20	Contactors control	1 = disabled 2 = input LR/LG 3 = input AR/AG	Select the input to be monitored, coils or aux contacts.	**1**
P2 1	Changeover delay (LR / TLG)	250…2500ms	Delay time for changeover (both directions). The value shown on the display must be multiplied x10. Example: "50" = 500ms	**500ms**

- Threshold values are settable with 1V steps
- Delay values are settable with 1 second steps.
- Tolerance frequency values are settable with 1Hz steps.

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OPERATIONS IN DETAIL

The first and most important value to be set at the very beginning is P01 which is the exact voltage tension to be monitored.
If default values are kept valid, here below we describe the working:

With Mains OK :

Manual mode = ON (changeover enabled with key)
Contact TLR = ON (closed contact, load on mains)
Contact TLG = OFF (open contact)
Contact START GEN. = OFF (open contact)
Relay ALARM = OFF (open contact)

AUTO mode:

with mains KO, after time P07:

Contact START GEN. = ON (contact closed)

With mains KO and after time P07 + P08 + P09:

Contact TLR = OFF (open contact)
Delay time P21
Contact TLG = ON (closed contact, load on gen)

With Gen OK and mains OK , after time P10:

Contact TLG = OFF (open contact)
Delay time P21
Contact TLR = ON (closed contact, load on mains)

With gen OK , mains OK, after P11:

Contact START GEN. = OFF (open contact)

With mains KO , after time P07 + P08 + P09 and gen KO:

Contact TLR = OFF (open contact)
Contact TLG = OFF (open contact)
Relay ALARM = ON (closed contact)

ALARM DELAY

The instrument has to monitor up to 6 tensions (3 mains, 3 generator).
Every reading of the tension takes 300ms, then, the entire reading cycle is completed in 1 second for every side (mains and gen); consequently the alarm may take up to 1sec to be activated.
The delay that may occur during the return to the normal tensions is doubled because all 6 phases are monitored (2 seconds).

ERRORS - Er1 - Er2 - Er3 - Er4

Er1 = VOLTAGE
Er2 = FREQUENCY
Er3 = CONTACTOR
Er4 = ASYMMETRY

In error state the relay ALARM will act as set in P19.

If P18 is enabled and with a generator failure, the systems forces the changeover to the mains. The error on the display will come off only after pressing **AUT/MAN**.
If disabled and with a generator failure, the system shut down the generator without switching to mains. The load will be connected to mains only when tension and frequency parameters will be back to normality.

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TECHNICAL DATA

Supply	
Rated voltage	8…30V⎓
Operating limits	-10%…+10% Ue
Frequency	50 or 60Hz
Power Consumption	3W
Measurement/Overvoltage category	Class II
Reading and Control Range	
Type of measurable and selectable V~	208V 1PH - 208V 3PH - 230V 1PH - 230V 3PH 400V 1PH - 400V 3PH - 440V 1PH - 440V 3PH
Voltage Range measured on generator	0…500V~
Voltage Range measured on mains	0…500V~
Accuracy in Measurements	± 2%
AG1 - AG2 - AR1 - AR2 (auxiliary remote control switch contact control)	8…30V⎓
SG1 - SG2 Generator starter contact	5A - 10…30V⎓
TR1 - TR2 Mains remote control switch contact	5A - 230V~
TG1 - TG2 Generator remote control switch	5A - 230V~
Relay Outputs	
Contacts Capacity	5A - 250V~
Maximum Switching Voltage	250V~
Electrical Contact Life	20 x 100^6 ops
Mechanical Contact Life	100 x 10^3 ops
Ambient conditions	
Operating temperature	-20 / +50 °C
Storage temperature	-30 / +70 °C
Operating altitude	Up to 2000m
Maximum pollution degree	2
Relative humidity w/o condensation	90 RH%
Connections and Housing	
Type of terminal	Pluggable
Conductor cable type	Only 90°C - 1.5/2.5mm^2 - 16/14 AWG
Enclosure version	Flush mount
Degree of protection	IP41 Front - IP20 Terminals
Dimensions	96 x 96 x 112mm
Weight	230g

Note: At startup, the device waits 2 seconds before enabling the relays

EC Directives: - 2014/30/UE - EMC
- 2014/35/UE - LVD

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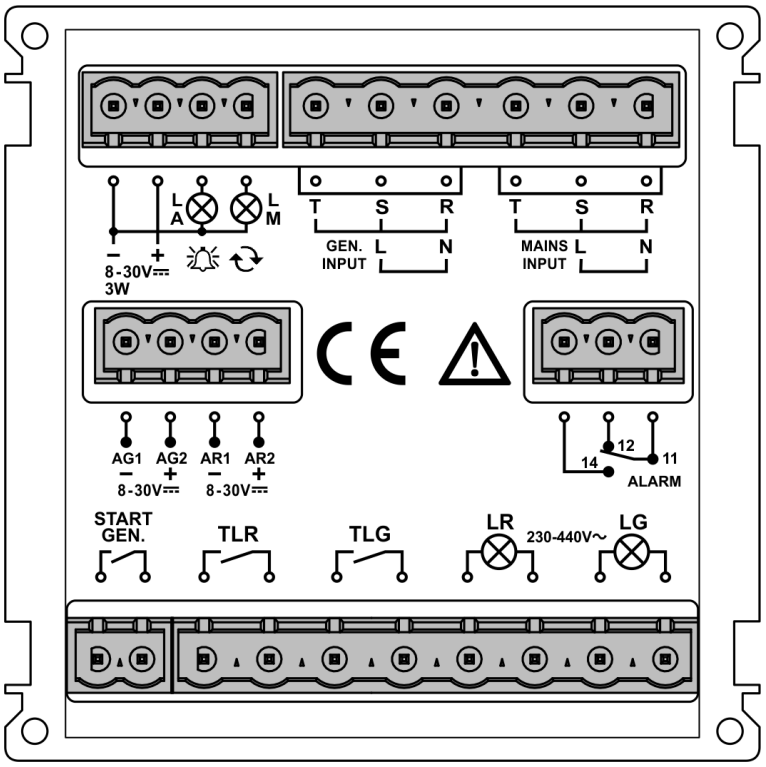
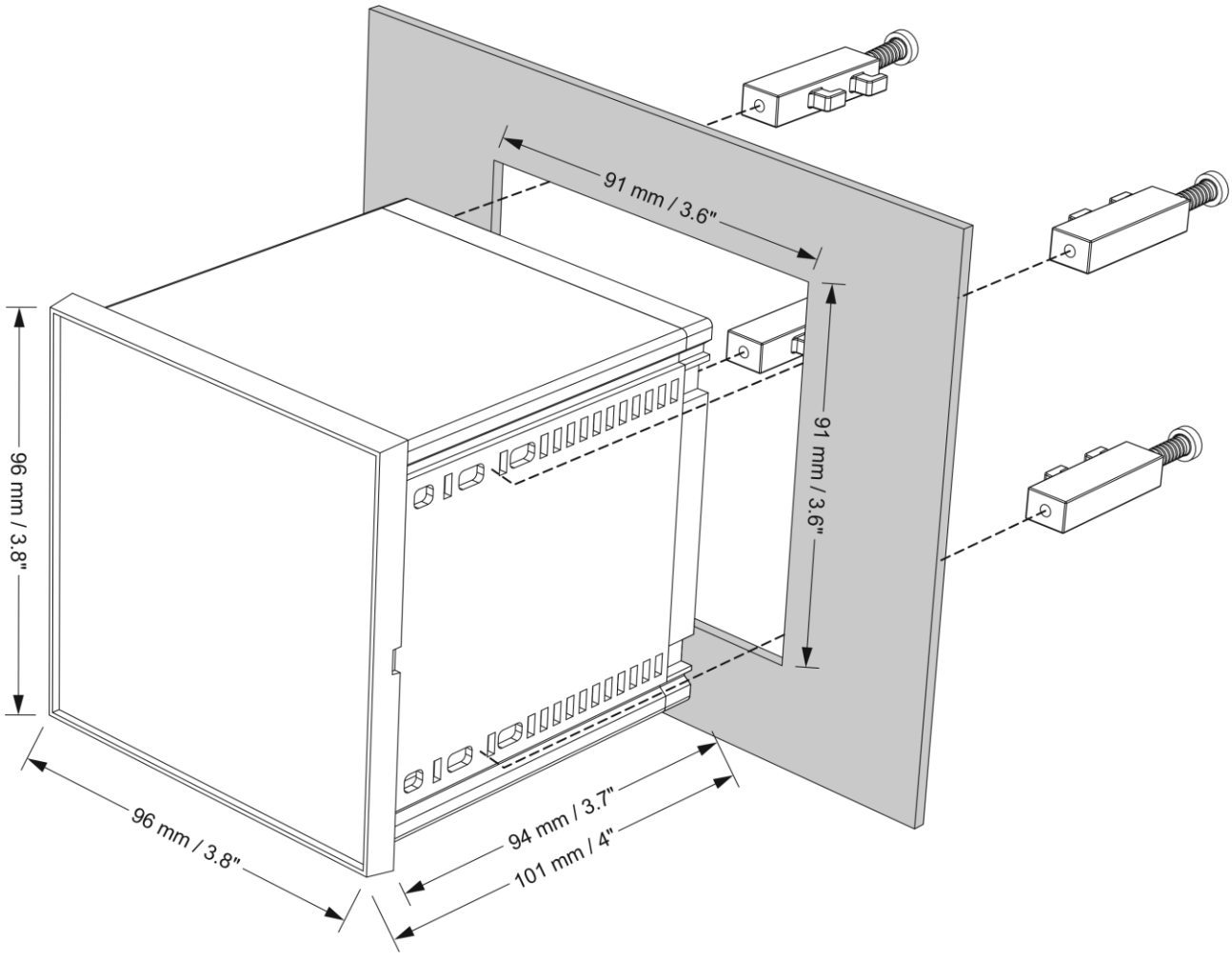
TERMINAL CONNECTIONS:



DIMENSIONS



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