

Module option communication RS485 pour 146 68
Module with RS485 communication option for 146 68
Modul mit Kommunikationsoption RS485 für 146 68
Modulo opzione comunicazione RS485 per 146 68
Module met communicatie optie RS485 voor 146 68
Módulo opción comunicación RS485 para 146 68
Módulo opção comunicação RS485 para 146 68



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Pour la sécurité du personnel et du matériel, il est impératif de bien s'imprégner du contenu de cette notice avant la mise en service.

Au moment de la réception du colis il est nécessaire de vérifier les points suivants :

- l'état de l'emballage,

- le produit n'a pas eu de dommage pendant le transport,
- la référence de l'appareil est conforme à votre commande,
- l'emballage comprend le produit ainsi qu'une notice d'utilisation.

INFORMATIONS GÉNÉRALES

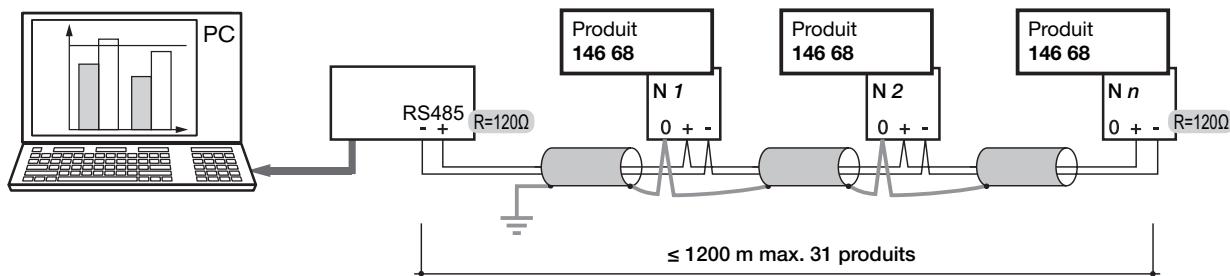
Fonctions

Le module option Communication RS485 doit être associé au produit **146 68**. Il met à disposition une liaison série RS485 (2 ou 3 fils) en protocole JBUS/MODBUS® qui permet l'exploitation du produit **146 68** à partir d'un PC ou d'un API.

Généralités

Dans une configuration standard, une liaison RS485 permet de mettre en relation 31 produits **146 68** ou tout autre produit communicant avec un PC ou un automate sur 1500 mètres à partir du protocole JBUS/MODBUS®.

DIRS 109 E.G



Recommandations :

Il est nécessaire d'utiliser une paire torsadée blindée type LIYCY. Dans un environnement perturbé ou sur un réseau important en longueur et en nombre de produit

146 68, nous conseillons d'utiliser une paire torsadée blindée avec un blindage général type LIYCY-CY.

Si la distance de 1200 m ou/et le nombre de 31 produits **146 68** sont dépassés, il est nécessaire de raccorder un répéteur (1 voie) ou un éclateur (4 voies) pour permettre un raccordement supplémentaire de produit **146 68** sur plus de 1200 m.

Nota :

Aux 2 extrémités de la liaison, il est indispensable de fixer une résistance de 120 ohms qui se trouve sur le module additionnel.

D'autres solutions existent (modem, fibre optique...). Merci de nous consulter.

146 71

INSTALLATION

F

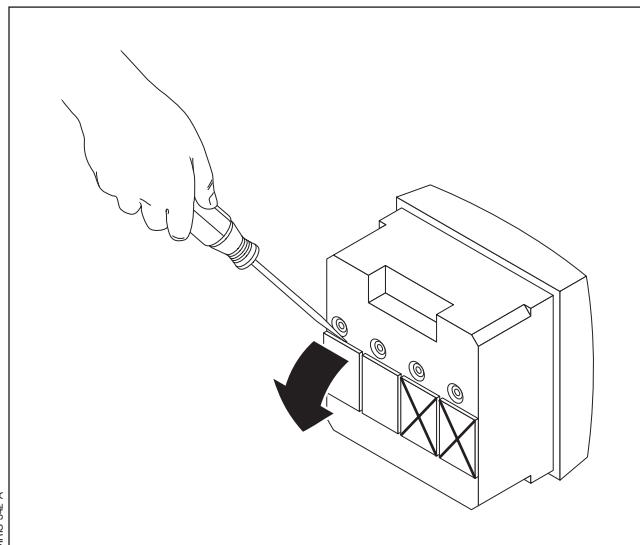
RACCORDEMENT

Le module s'installe en face arrière du produit **146 68** sur un des deux emplacements (1 et 2).



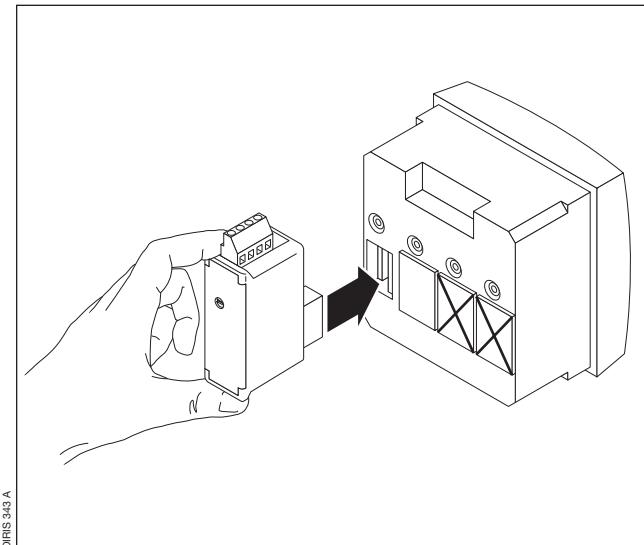
Le produit **146 68** doit être hors tension

①

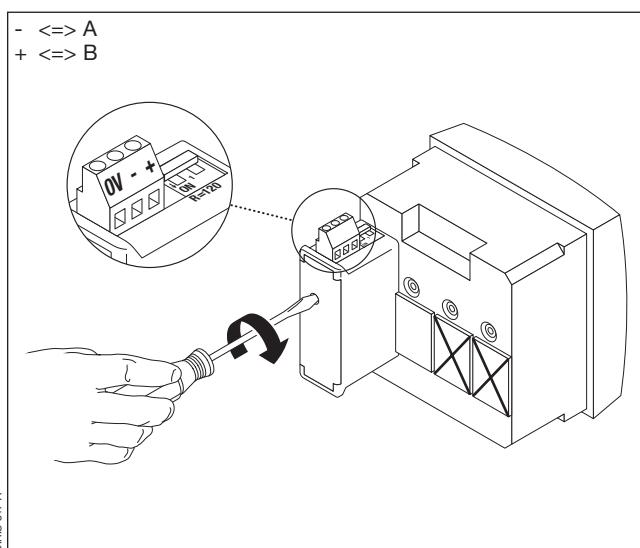


②

Fixer le module sur un des deux emplacements.



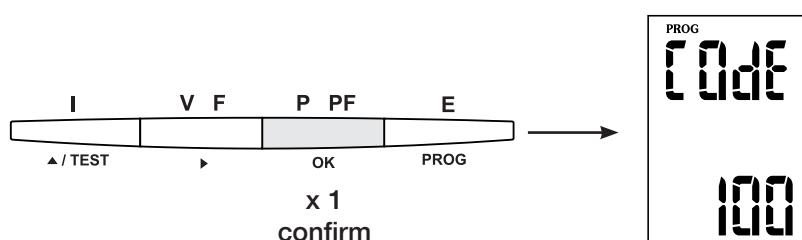
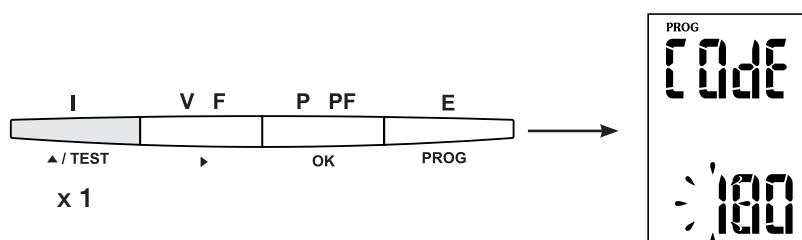
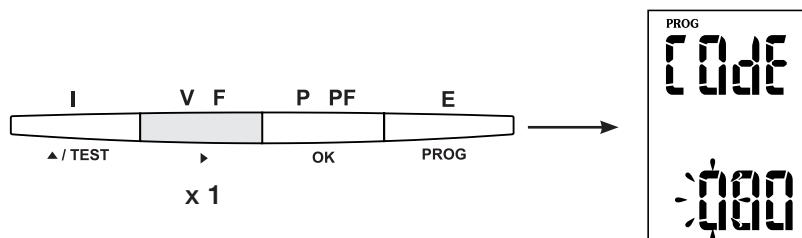
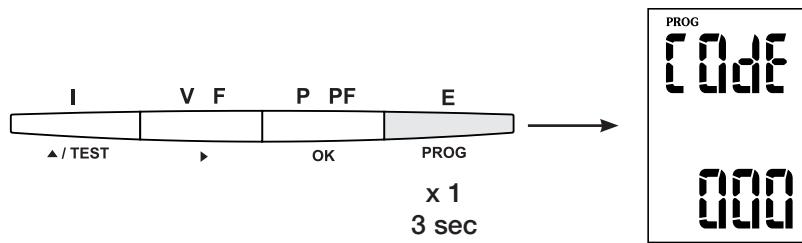
③



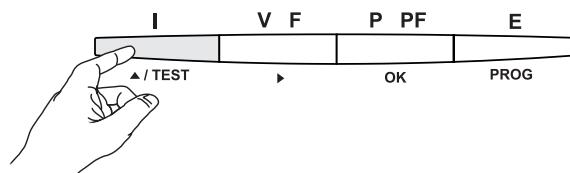
④

Raccorder le bornier en respectant les indications.
Remettre sous tension.

ENTRER EN PROGRAMMATION (COdE = 100)

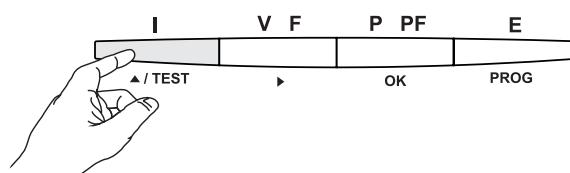


Menu précédent



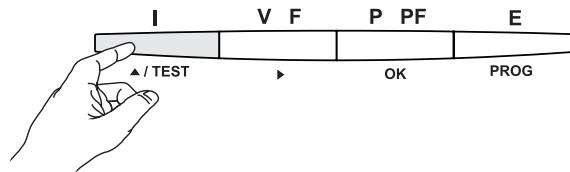
COR
Adr

— p.8



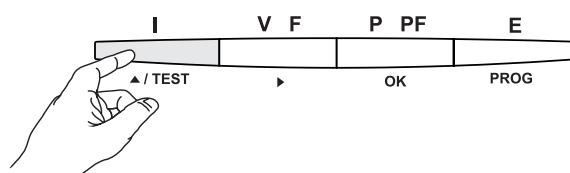
COR
bds

— p.9



COR
Par

— p.10



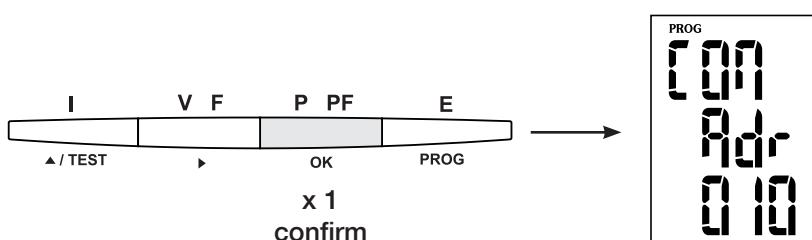
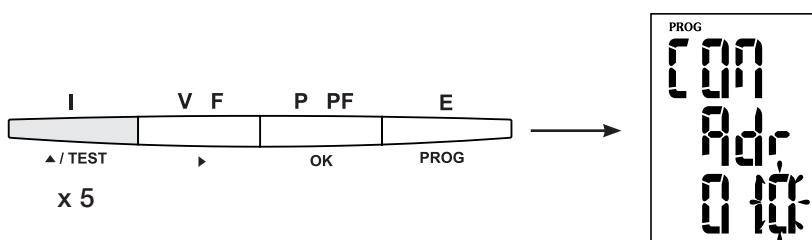
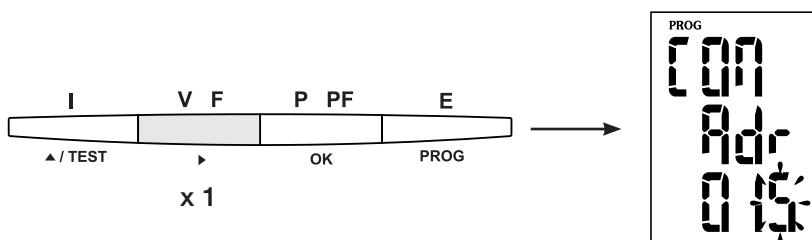
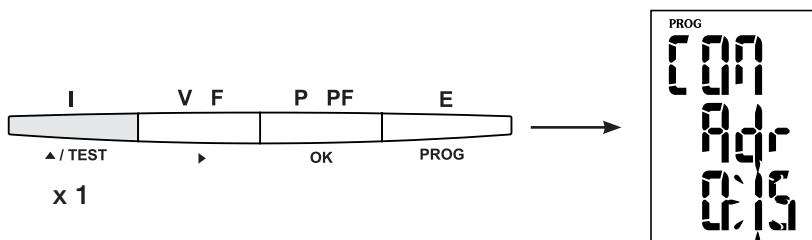
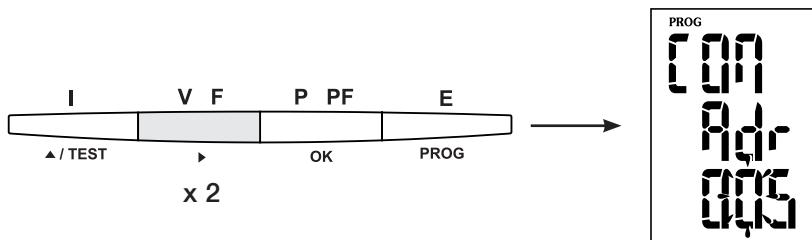
COR
Stop

— p.11

Menu suivant

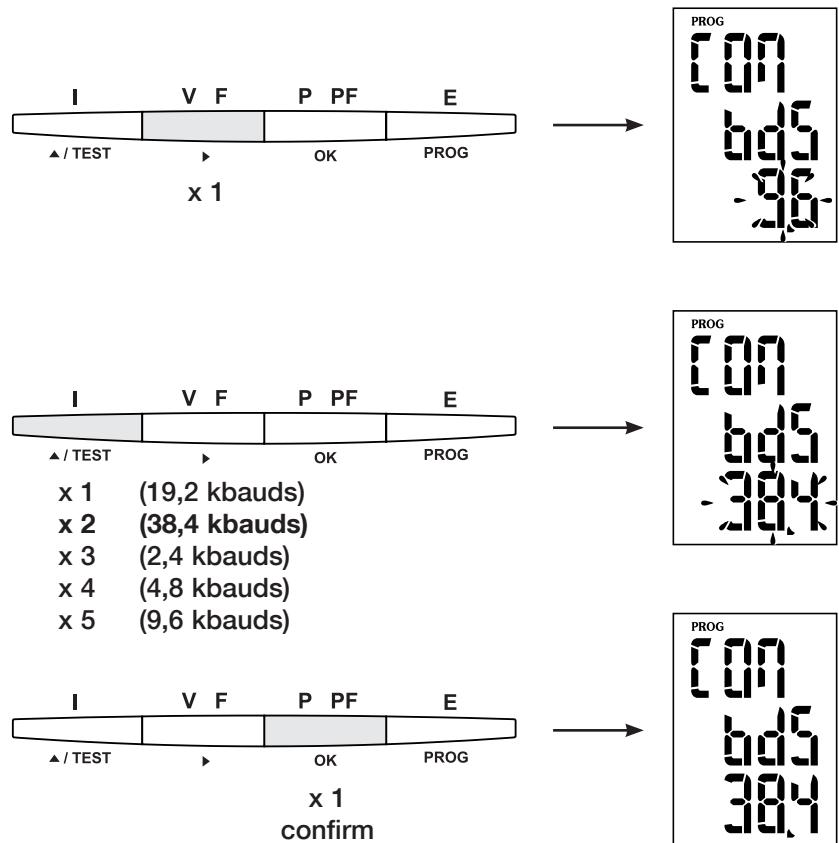
ADRESSE DE COMMUNICATION

> Exemple : Adr = 10



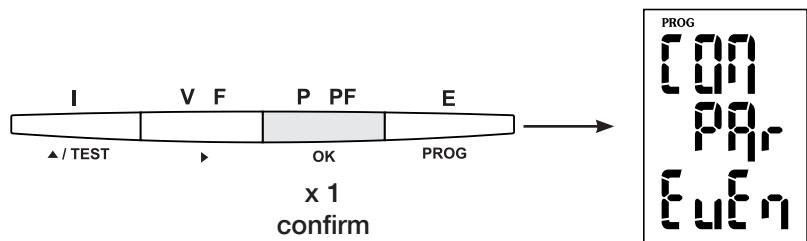
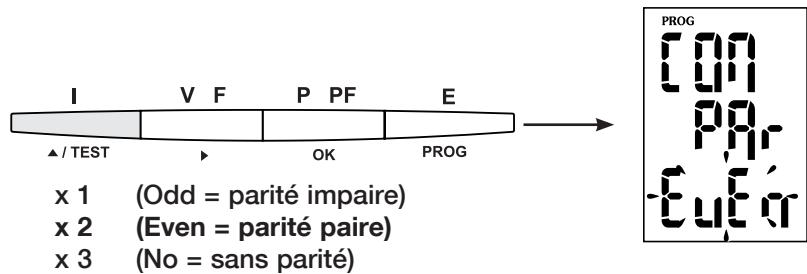
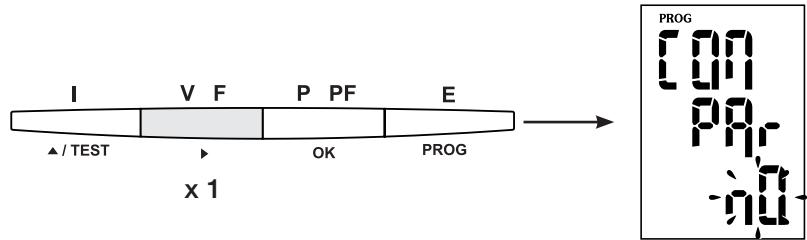
VITESSE DE COMMUNICATION

> Exemple : bdS = 38,4 kbauds



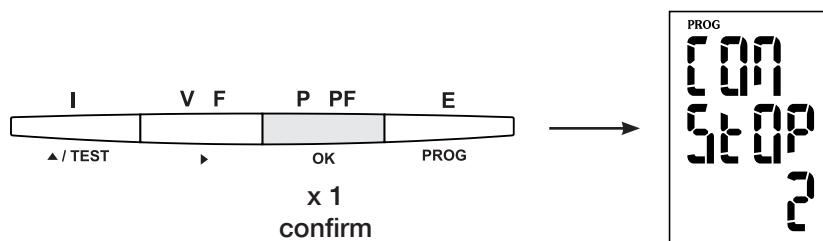
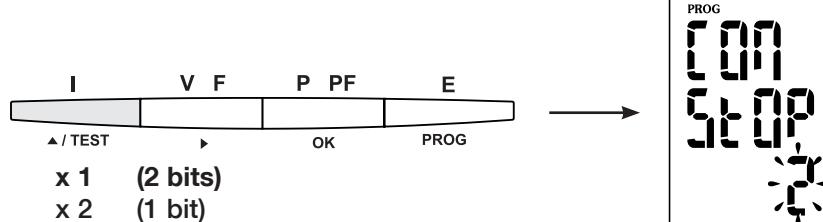
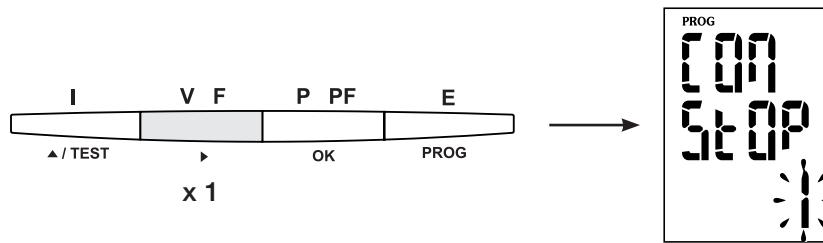
PARITÉ DE COMMUNICATION

> Exemple : PAr = EvEn

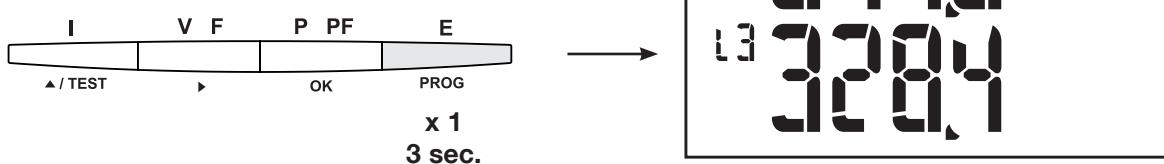


BIT DE STOP DE COMMUNICATION

> Exemple : stop = 2



QUITTER LA PROGRAMMATION



Le produit **146 68** communique à partir d'un protocole JBUS/MODBUS® qui implique un dialogue selon une structure maître/esclave. Deux dialogues sont possibles :

- le maître dialogue avec un esclave (le produit **146 68**) et attend sa réponse
- le maître dialogue avec tous les esclaves (le produit **146 68**) sans attendre leur réponse.

Le mode de communication est le mode RTU (Remote Terminal Unit) avec des caractères hexadécimaux composés au minimum de 8 bits.

TRAME DE COMMUNICATION STANDARD

Elle est composée de :

| | | | | |
|----------------------|---------------------|---------|---------|--------|
| Adresse de l'esclave | Code de la fonction | Adresse | Données | CRC 16 |
|----------------------|---------------------|---------|---------|--------|

Conformément au protocole JBUS/MODBUS®, le temps intercaractère doit être \leq à 3 silences.

C'est-à-dire au temps d'émission de 3 caractères pour que le message soit traité par le produit **146 68**.

Pour exploiter correctement les informations, il est indispensable d'utiliser les fonctions suivant les codes :

3 : pour la lecture de n mots (maximum 128).

6 : pour l'écriture d'un mot.

8 : pour le diagnostic des échanges entre le maître et l'esclave à partir des compteurs 1, 3, 4, 5 et 6.

10 : pour l'écriture de n mots (maximum 128).

Nota :

1 mot \Leftrightarrow 2 octets \Leftrightarrow 16 bits

2 mots \Leftrightarrow 4 octets \Leftrightarrow 32 bits

En sélectionnant l'adresse de l'esclave 0, on transmet un message à tous les appareils présents sur le réseau (uniquement pour les fonctions 6 et 16).

Remarque :

Le temps de réponse (time out question/réponse) est de 250 ms maximum.

TABLE DE COMMUNICATION

➤ Les tables de communication sont disponibles sur le CD Rom fourni avec le module RS485 JBUS/MODBUS® pour le produit 146 68.

CARACTERISTIQUES TECHNIQUES

COMMUNICATION

| | |
|----------------------|-------------------------|
| RS485 | 2 ou 3 fils half duplex |
| Protocole | JBUS/MODBUS® mode RTU |
| Vitesse | de 2400 à 38400 Bauds |
| Isolation galvanique | 4 kV |
| Unité de charge | 1 UL (Unity of loads) |

LEXIQUE DES ABRÉVIATIONS

| | |
|------|--|
| COM | Communication |
| ADR | Adresse de l'esclave |
| BDS | Vitesse de communication en bauds (bits par seconde) |
| PAR | Parité de la trame de communication |
| NO | Sans parité |
| Even | Parité paire |
| Odd | Parité impaire |
| STOP | Bip de stop de la trame |
| 1 | 1 bit de stop |
| 2 | 2 bits de stop |

For personnel and product safety please read the contents of these operating instructions carefully before connecting.

Check the following points as soon as you receive the **146 68** product package:

- the packing is in good condition,

- the product has not been damaged during transport,
- the product reference number is conform to your order,
- the package contains the product and the operating instructions.

GENERAL INFORMATION

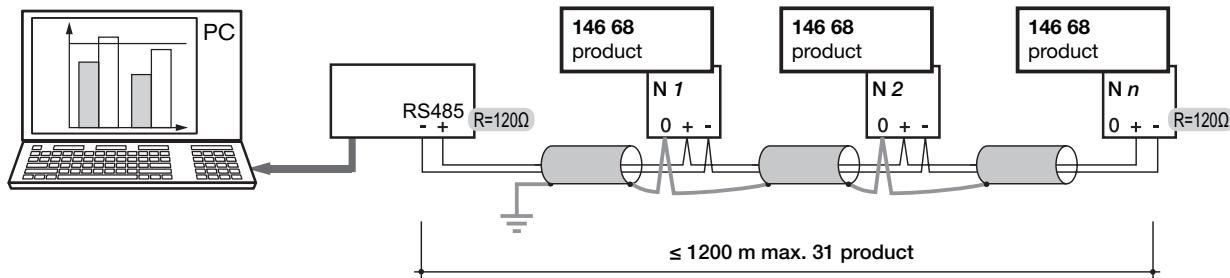
Functions

The optional Communication module must be connected to the **146 68** product. It provides an RS485 serial link (2 or 3 wires) with JBUS/MODBUS® protocol for the use of **146 68** product from a PC or PLC.

General points

In a standard configuration, an RS485 link can be used to connect thirty one **146 68** product units or any other product communicating with a PC or PLC over a distance of 1500 metres and using the JBUS/MODBUS® protocol.

DIRS 109 EG



Recommendations:

You should use a shielded twisted pair (LIYCY type). In a disturbed environment or large network (in terms of length) we recommend the use of a shielded twisted pair (type LIYCY-CY).

A repeater (1 channel) or an arrestor (4 channels) should be used if you intend to exceed the distance (1200 m) and/or maximum number (31) of the **146 68** product. Please contact us for more information.

NB :

A 120 ohm resistance (found on the additional module) must be fixed at both ends of the link. Other solutions are available (modem, TCP-IP, optical fibre, etc.). Please contact us.

146 71

INSTALLATION

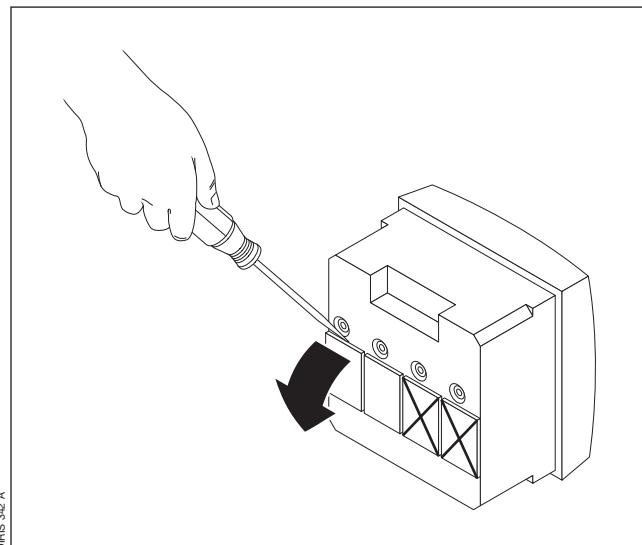
CONNECTION

The module is fitted onto the back of the **146 68** product in one of the two positions provided (1 and 2).

! The 146 68 product must be disconnected

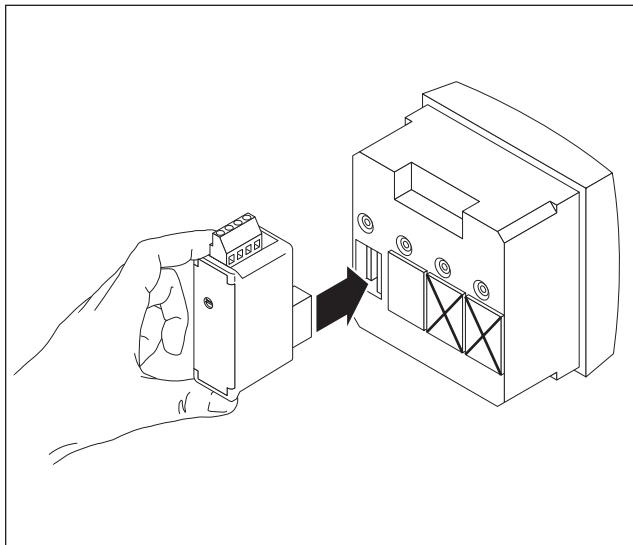
GB

①

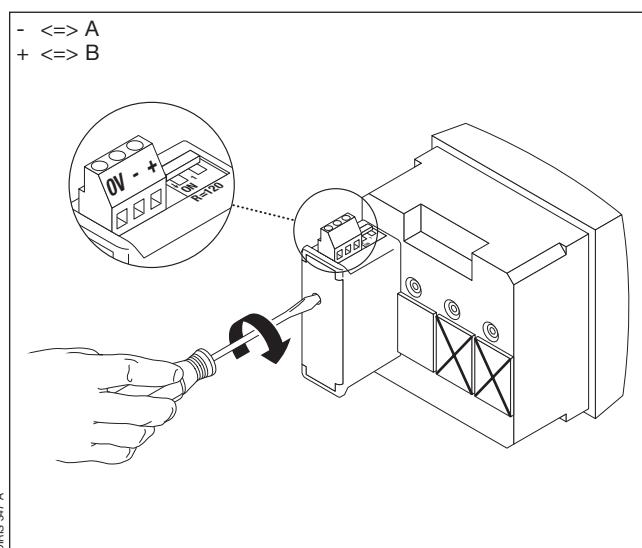


②

Fix the module in one of the two positions.



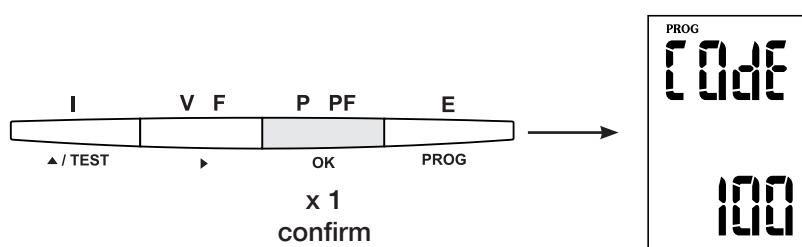
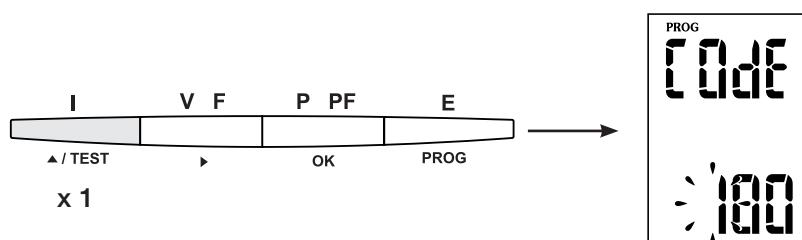
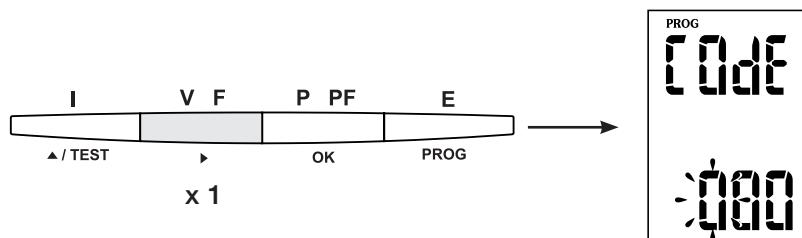
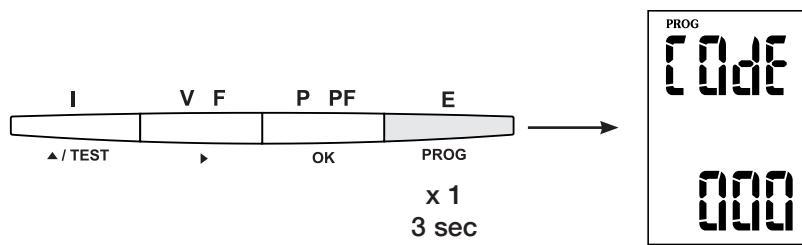
③

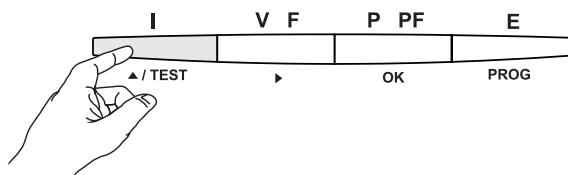


④

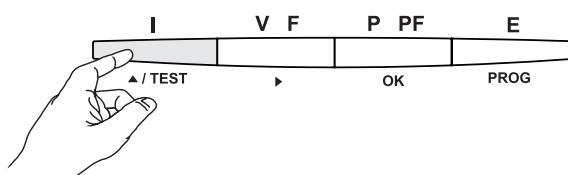
Follow indications when connecting the terminal.
Switch on voltage supply.

ACCESS TO PROGRAMMING MODE (COdE = 100)

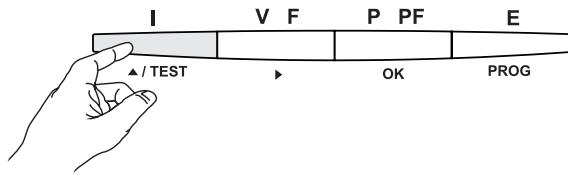


Previous menu**C0R
Adr**

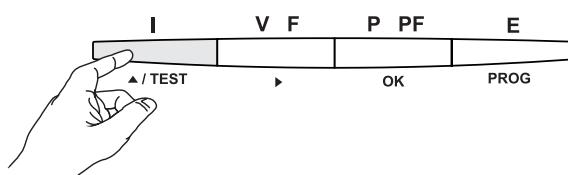
— p.18

**C0R
bds**

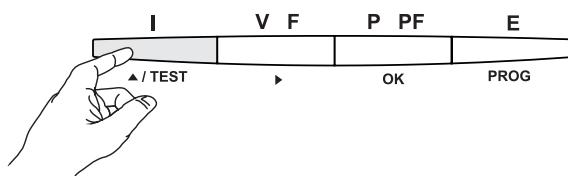
— p.19

**C0R
Par**

— p.20

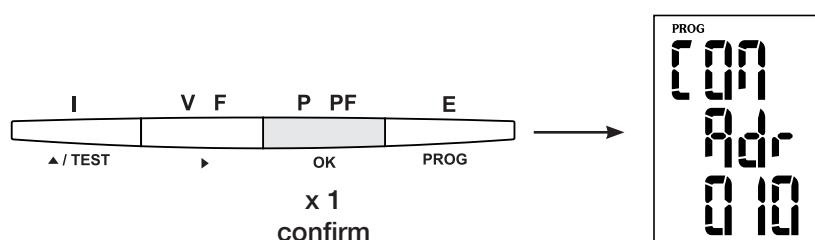
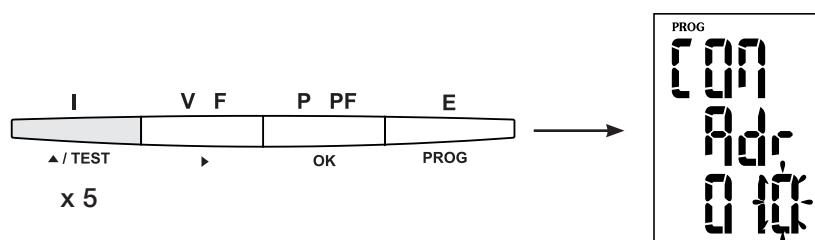
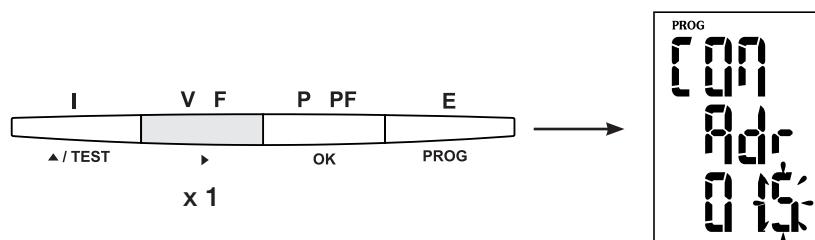
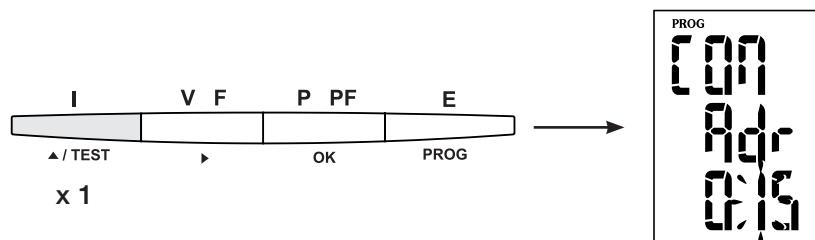
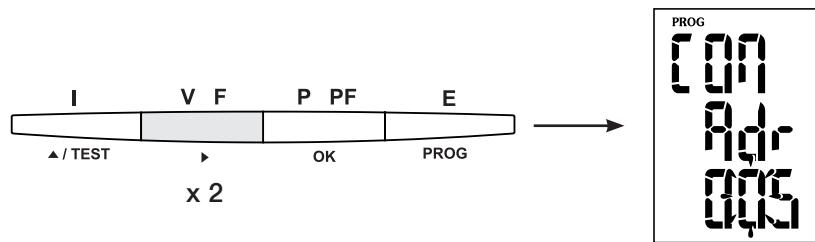
**C0R
Setup**

— p.21

**Following menu**

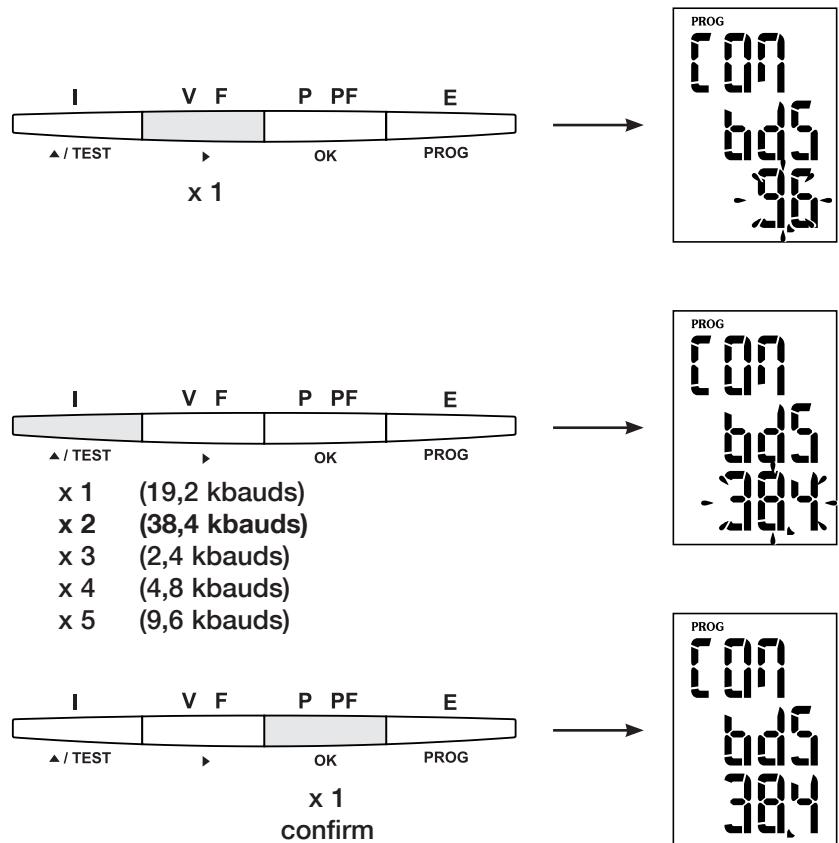
COMMUNICATION ADDRESS

> Example: COM Adr = 10



COMMUNICATION SPEED

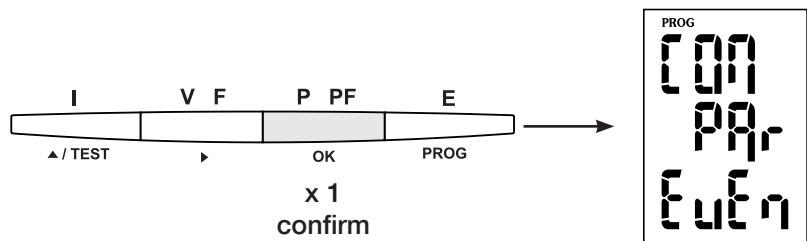
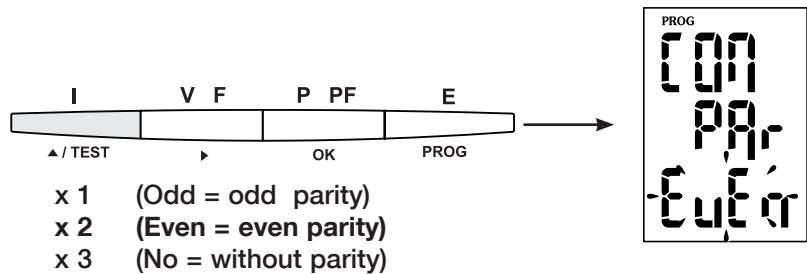
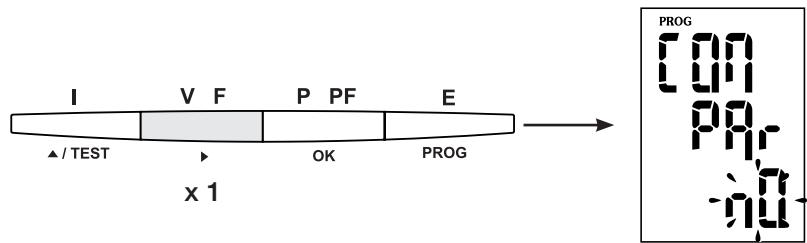
> Example : bds = 38,4 kbauds



GB

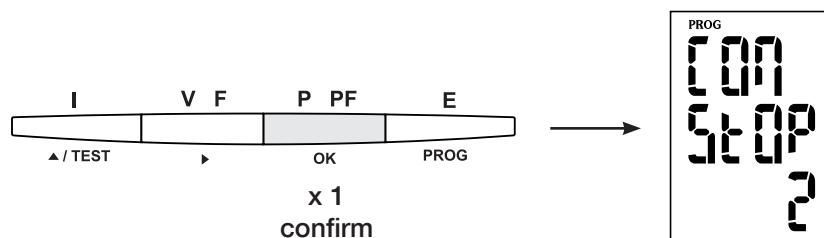
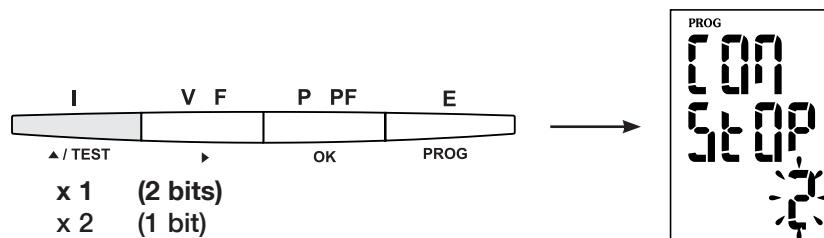
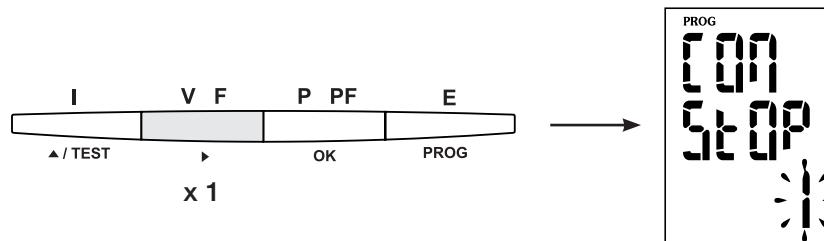
COMMUNICATION PARITY

> Example : PAr = EvEn

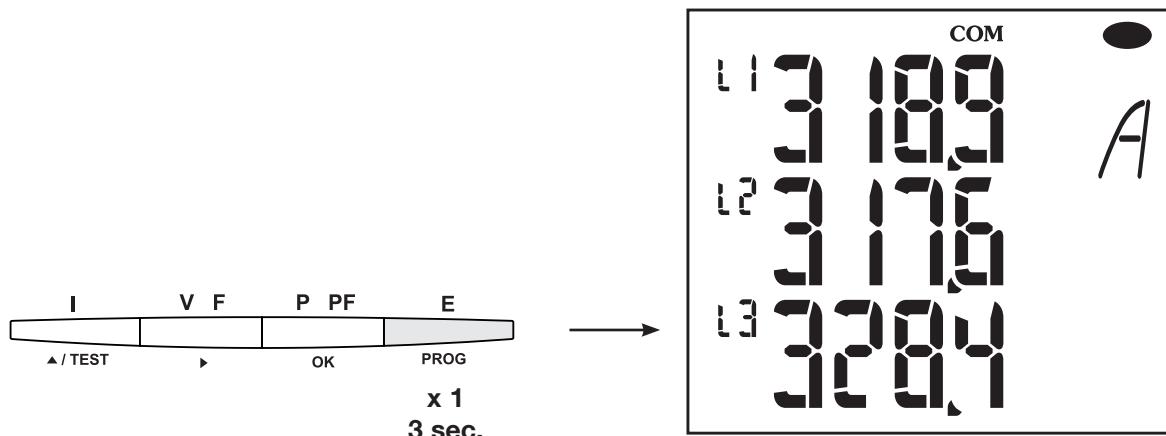


COMMUNICATION STOP BIT

> Example : StOP = 2



TO QUIT PROGRAMMING



The JBUS/MODBUS® used by the **146 68** product involves a dialogue using a master-slave hierarchical structure. There are two possible dialogues:

- the master communicates with a slave (**146 68** product) and waits for its reply
- the master communicates with all the slaves (**146 68** product) without waiting for their reply.

The mode of communication is the RTU (Remote Terminal Unit) using hexadecimal characters of at least 8 bits.

THE STANDARD COMMUNICATIONS FRAME

The standard communications frame consists of:

| | | | | |
|---------------|---------------|---------|------|--------|
| Slave address | Function code | Address | Data | CRC 16 |
|---------------|---------------|---------|------|--------|

According to the JBUS/MODBUS® protocol, transmission time must be less than 3 silences, i.e. the emission time of 3 characters so that the message is processed by the **146 68** product.

To use this information correctly, it is indispensable that the functions be used in accordance with the codes:

3 : to read n words (maximum 128).

6 : to write one word.

8 : to diagnose exchanges between the master and the slave via meters 1, 3, 4, 5 and 6.

10 : to write n words (maximum 128)

NB:

1 word <=> 2 octets <=> 16 bits

2 words <=> 4 octets <=> 32 bits

When selecting slave address 0, a message is sent to all the instruments present on the network (only for functions 6 and 16)

Comment:

The response time (time out question/answer) is 250 ms maximum .

COMMUNICATION TABLE

- The communication tables are available on the CD-Rom supplied with the RS485 JBUS/MODBUS® module for **146 68** product.

GB

TECHNICAL CHARACTERISTICS

COMMUNICATION

| | |
|---------------------|----------------------------------|
| RS485 | 2 or 3 wires half duplex |
| Protocol | JBUS/MODBUS® protocol / RTU mode |
| Speed | 2400 to 38400 Bauds |
| Galvanic insulation | 4 kV |
| Charging unit | 1 UL (Unity of loads) |

GLOSSARY OF ABBREVIATIONS

| | |
|------|---------------------------------|
| COM | Communication |
| ADR | Slave address |
| BDS | Speed of communication in bauds |
| PAR | Communication frame parity |
| NO | Without parity |
| Even | Even parity |
| Odd | Odd parity |
| STOP | Frame-stop beep |
| 1 | 1 stop bit |
| 2 | 2 stop bits |

Aus Sicherheitsgründen ist das Lesen dieser Anleitung und der Anleitung für das Multifunktionsgerät **146 69** vor der Installation und der Inbetriebnahme erforderlich.

Nach Eingang der Lieferung sollten sie Folgendes überprüfen:

- Verpackungszustand,
- Transportschäden,

- Entspricht der Packungsinhalt Ihrer Bestellung,
- Die Verpackung enthält das Produkt.

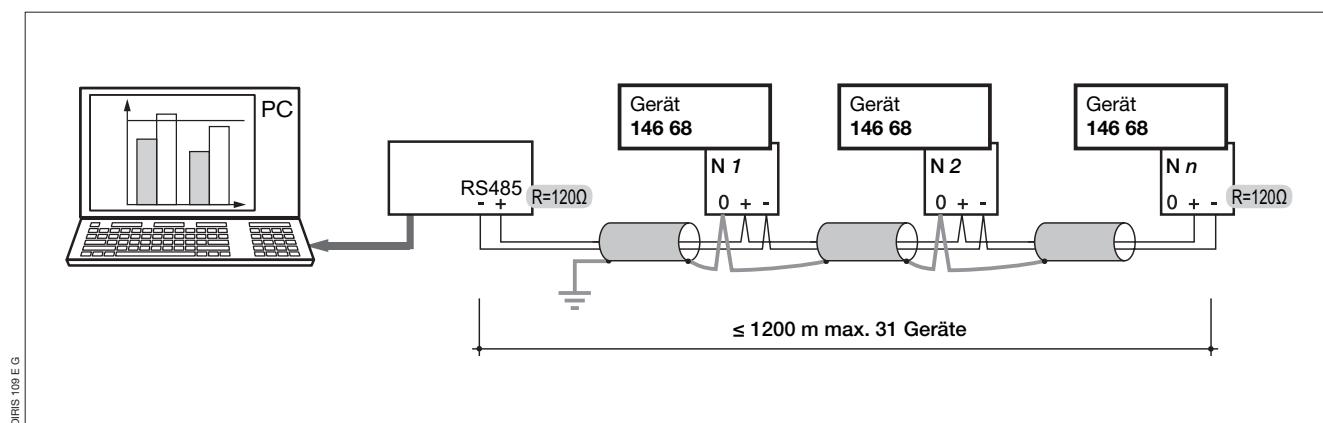
PRODUKTBESCHREIBUNG

Funktionen

Dieses Optionsmodul ist für den Einbau in das Gerät **146 68** bestimmt. Es bietet eine serielle Verbindung vom Typ RS485 (mit 2 oder 3 Drähten) im Protokoll JBUS/MODBUS® und ermöglicht somit eine Kommunikation des Gerätes **146 68** mit einem PC oder API.

Allgemeines

Standardmäßig können bis zu 31 Geräte bei einer maximalen Leitungslänge von 1200 m über die RS485-Schnittstelle kommunizieren.



Hinweise:

Wir empfehlen eine verdrillte und abgeschirmte Doppelleitung vom Typ LIYCY. Unter extremen Bedingungen oder in einem größeren Netzen (in Länge und Anzahl vom Geräten) empfehlen wir eine verdrillte und abgeschirmte Doppelleitung vom Typ LIYCY-CY.

Bei größeren Leitungslängen (über 1200 m) und/oder einer größeren Anzahl von Geräten (mehr als 31 Geräte **146 68**) muß ein Verstärker oder ein Repeater eingesetzt werden.

Anmerkung:

Die sich im Modul befindlichen 120 Ohm-Widerstände müssen im ersten und im letzten Gerät im Netzwerk eingeschaltet werden.

146 71

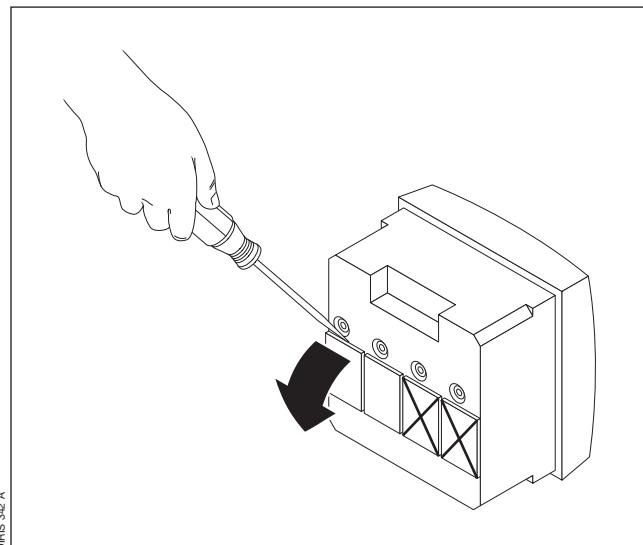
INSTALLATION

ANSCHLUSS

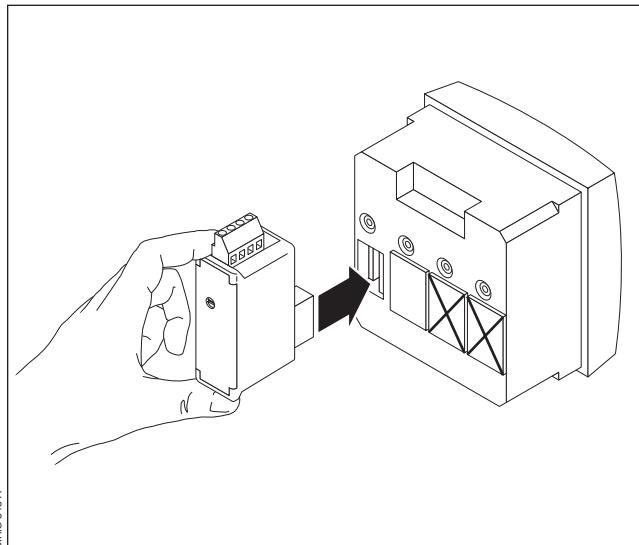
Das Modul wird auf der Rückseite in das Gerät **146 68** eingebaut. Es kann in eine beliebigen Moduleinbaubuchse gesteckt werden.

! Das Gerät 146 68 muß spannungsfrei sein

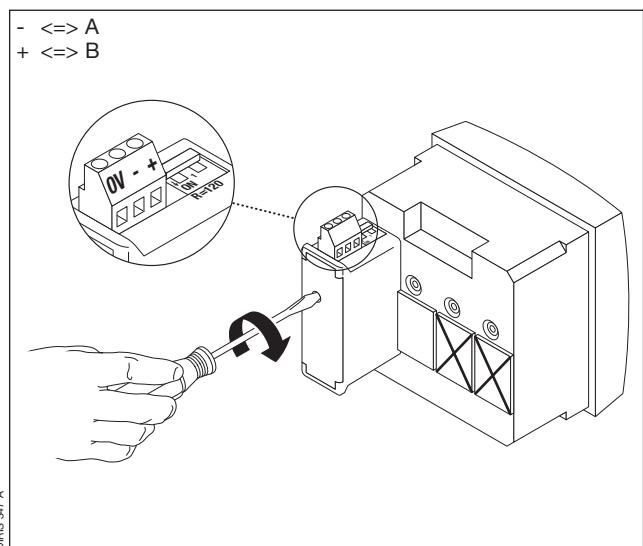
①



② Das Modul in die Aufnahme 1 oder 2 einstecken.

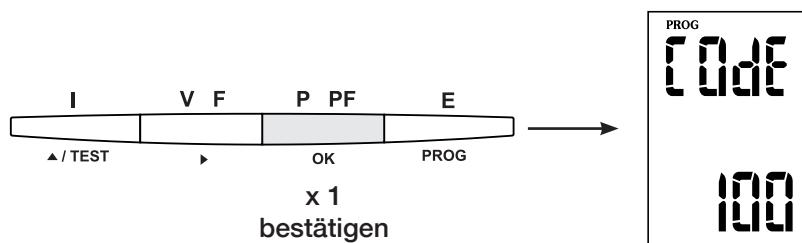
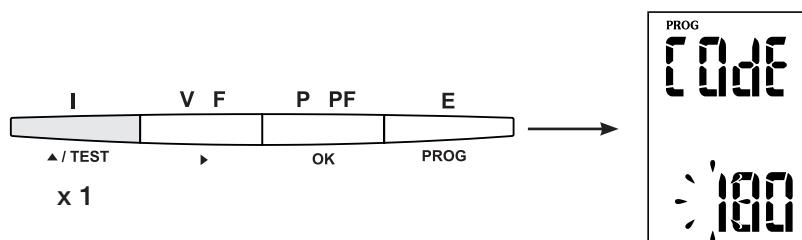
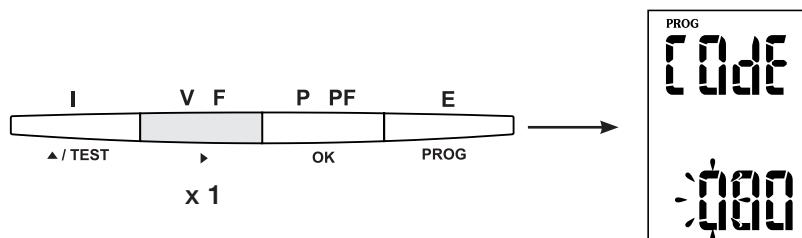
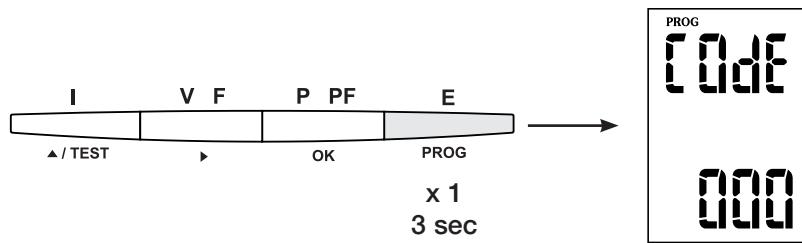


③

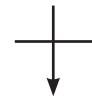


④ Für den Anschluß der Klemmleiste beachten Sie die entsprechenden Hinweise. Spannungsversorgung wieder einschalten..

ZUR KONFIGURATIONSEBENE (COdE = 100)



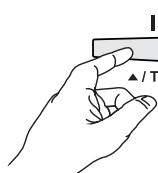
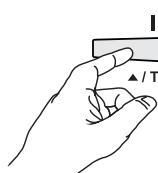
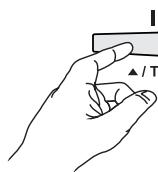
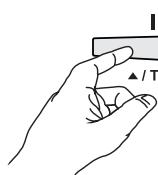
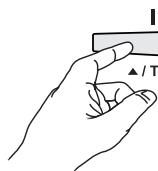
Vorheriges
Menu



C08
Adr

— S. 28

D



C08
bds

— S. 29

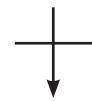
C08
Par

— S. 30

C08
Setup

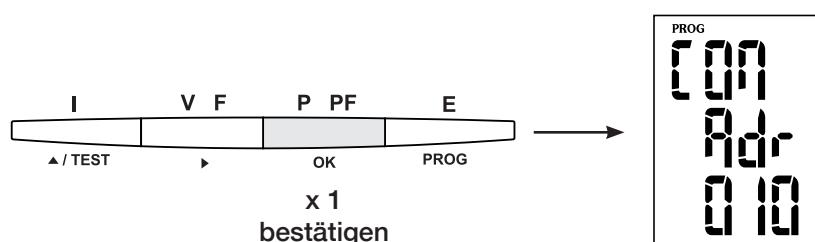
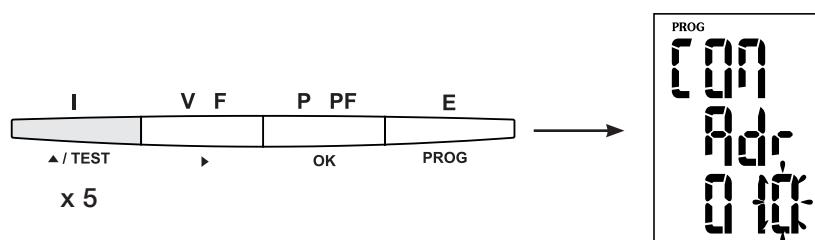
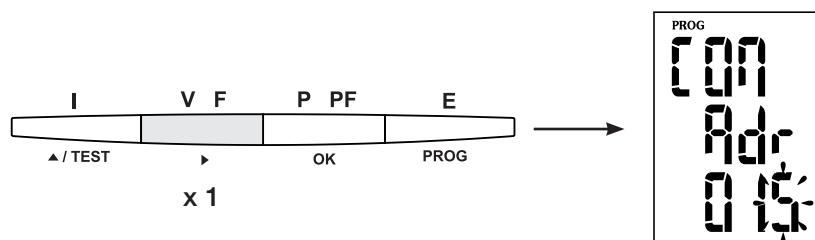
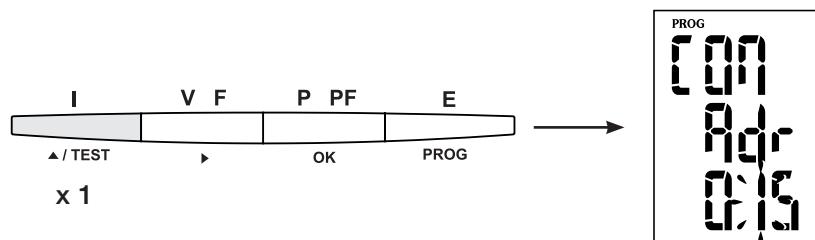
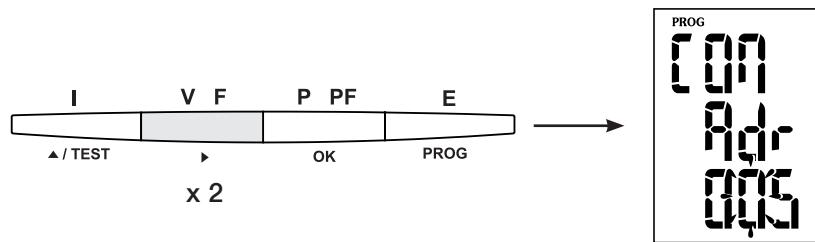
— S. 31

Nachfolgendes Menu



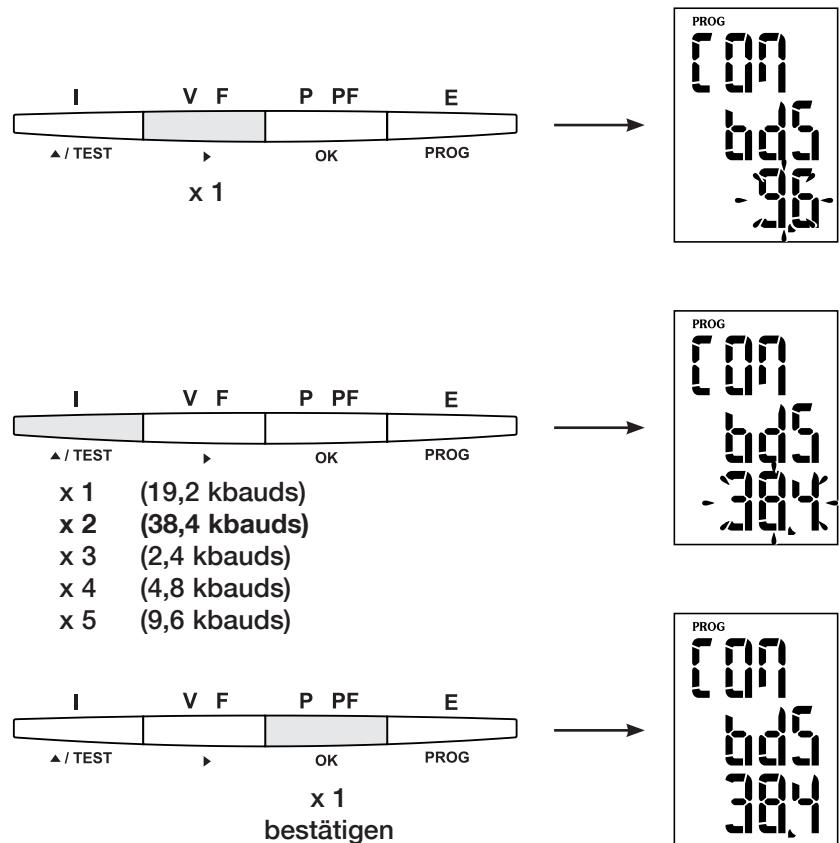
KOMMUNIKATIONSADRESSE

> Beispiel: COM Adr = 10



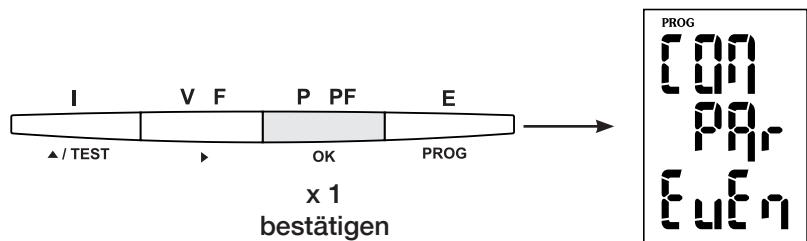
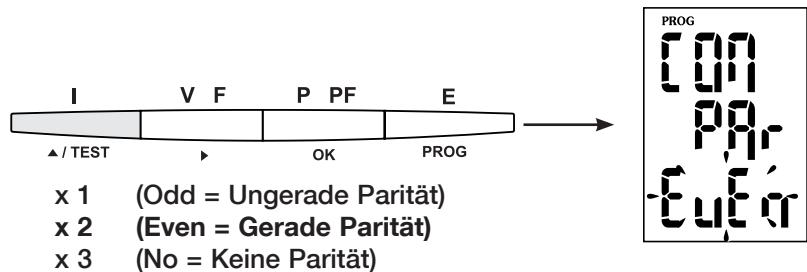
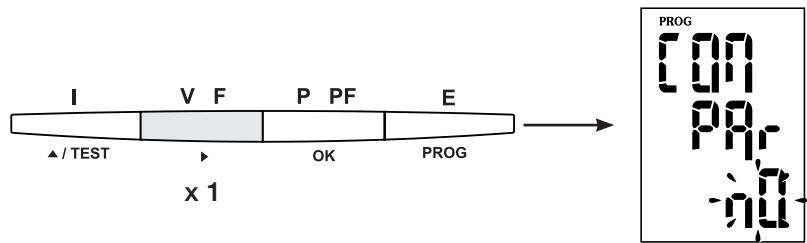
ÜBERTRAGUNGSGESCHWINDIGKEIT

> Beispiel: bdS = 38,4 kbauds



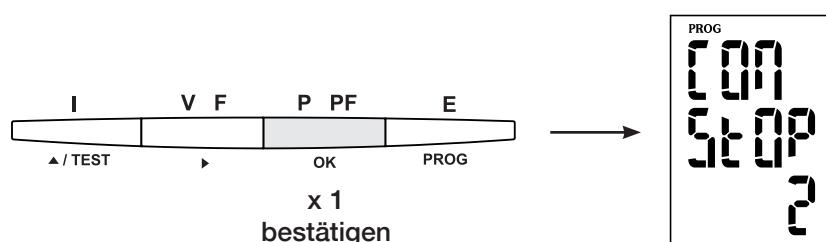
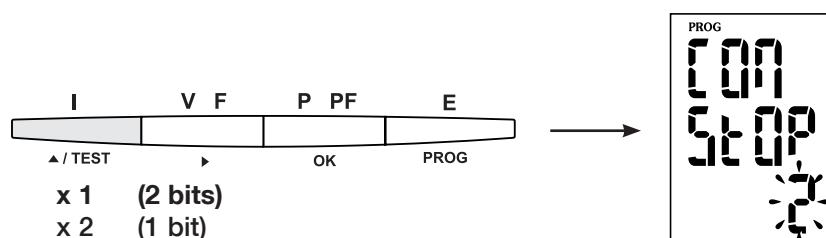
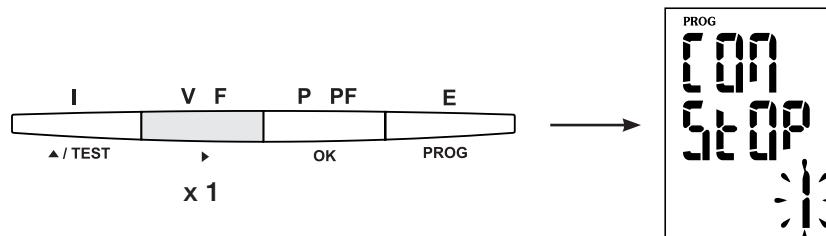
PARITÄT

> Beispiel: PAr = EvEn

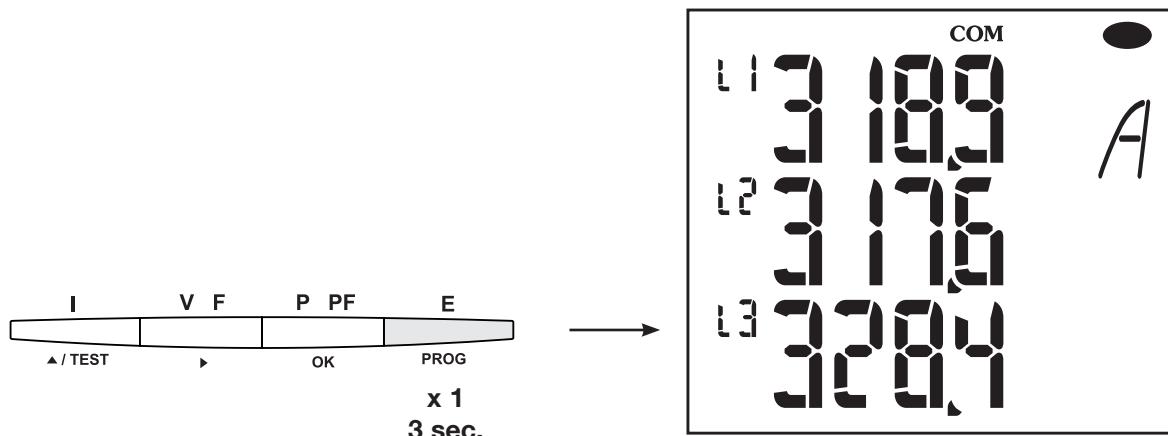


STOP-BITS

> Beispiel: StOP = 2



KONFIGURATIONSEBENE VERLASSEN



Der Datenaustausch des Gerätes **146 68** inklusiv Kommunikationsmodul erfolgt über das JBUS/MODBUS® Protokoll, welches einen Master/Slave-Dialog voraussetzt. Folgende zwei Dialogmöglichkeiten sind gegeben:

- die Master-Einheit steht in Verbindung mit einer Slave-Einheit (Gerätes **146 68**) und erwartet eine Antwort,

- die Master-Einheit steht in Verbindung mit allen Slave-Einheiten (Gerätes **146 68**), erwartet jedoch keine Antwort.

Bei dem Kommunikationsmodus handelt es sich um den RTU-Modus (Remote terminal Unit) mit hexadezimalen Zeichen bestehend aus mindestens 8 Bits.

DIE DATENFOLGE BESTEHT GRUNDSÄTZLICH AUS FOLGENDEN ELEMENTEN

Sie besteht aus:

| | | | | |
|---------------|---------------|---------|-------|--------|
| Slave-Adresse | Funktionscode | Adresse | Daten | CRC 16 |
|---------------|---------------|---------|-------|--------|

Nach dem JBUS/MODBUS®-Protokoll muß die Zeit zwischen Zeichen kürzer sein als 1,5x die Sendezeit für ein einzelnes Zeichen.

Die Pause zwischen Telegrammen muß länger als 3,5x die Sendezeit für ein einzelnes Zeichen sein.

Die folgenden Funktionscodes sind definiert:

3: Lesen von 'x' Wörtern (bis zu 128).

6: Schreiben eines Wortes.

8: Diagnose der ausgetauschten Daten zwischen Master und Slave über die Zähler 1, 3, 4, 5 und 6.

10: Schreiben von 'x' Wörtern (bis zu 128).

Bemerkung:

1 Worte <=> 2 octets <=> 16 bits

2 Wörter <=> 4 octets <=> 32 bits

Wenn als Slave-Adresse 0 gewählt wurde, wird die Meldung an alle angeschlossenen Geräte gesendet (gilt für die Funktionen 6 und 16).

Ammerkungen:

Die Anlaufzeit (time out Frage/Antwort), liegt bei höchstens 250 ms.

KOMMUNIKATIONSTABELLE

- › Die Kommunikationstabellen sind auf der, mit dem Modul RS485 JBUS/MODBUS® für das Gerät 146 68 gelieferten CD-ROM verfügbar.

TECHNISCHE DATEN

D

KOMMUNIKATION

| | |
|----------------------|-----------------------------|
| RS485 | 2 oder 3 Leiter Half Duplex |
| Protokoll | JBUS/MODBUS® RTU Modus |
| Geschwindigkeit | von 2400 bis 38400 Bauds |
| Galvanische Trennung | 4 kV |
| Lasteinheit | 1 UL (Unity of loads) |

GLOSSAR DER ABKÜRZUNGEN

| | |
|------|---------------------------------------|
| COM | Kommunikation |
| ADR | Adresse |
| BDS | Kommunikationsgeschwindigkeit in Baud |
| PAR | Parität |
| NO | Keine Parität |
| Even | Gerade Parität |
| Odd | Ungerade Parität |
| STOP | Stop-Bit |
| 1 | 1 Stop-Bit |
| 2 | 2 Stop-Bit |

Per la sicurezza del personale e del materiale, è indispensabile leggere attentamente il contenuto del presente libretto prima della messa in servizio.

Al momento del ricevimento della scatola contenente il prodotto **146 68**, è necessario verificare i seguenti punti:

- lo stato dell'imballo;

- la presenza di danneggiamenti o rotture dovuti al trasporto;
- se il numero di riferimento dell'apparecchio è conforme a quello della richiesta;
- l'imballaggio comprende il prodotto e del libretto di istruzione originale.

INFORMAZIONI GENERALI

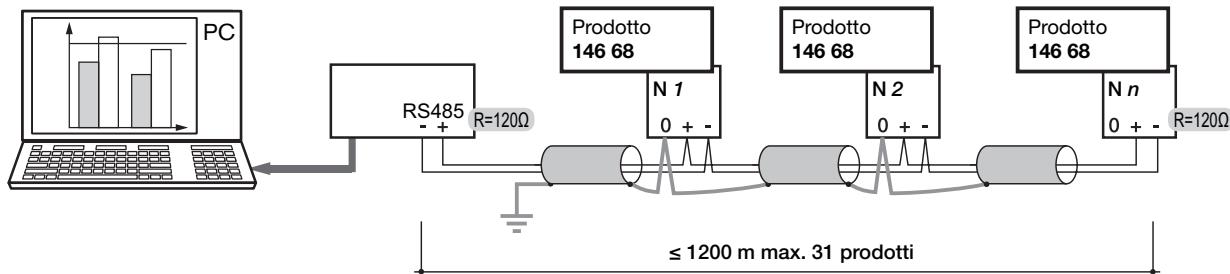
Funzioni

Il modulo opzione Comunicazione RS485 deve essere associato ai prodotti **146 68**. Il mette a disposizione un collegamento di serie RS485 (2 o 3 fili) col protocollo JBUS/MODBUS® che permette l'uso del prodotto **146 68** a partire da un PC o da un PLC.

Generalità

In una configurazione standard, un collegamento RS485 consente di mettere in relazione 31 prodotti **146 68** o qualunque altro prodotto che comunica con un PC o con un automa per 1500 metri a partire dal protocollo JBUS/MODBUS®.

DIRS 109 EG



Importante:

E' necessario utilizzare un paio di cavi intrecciati schermati di tipo LIYCY. In un ambiente perturbato o su una rete grande per lunghezza e per numero di prodotti **146 68**, si consiglia di utilizzare un paio di cavi intrecciati schermati di tipo LIYCY-CY.

Se la distanza di 1200 m o/e il numero di 31 prodotti **146 68** viene superato, è necessario collegare un ripetitore (1 via) o uno scaricatore (4 vie) per permettere un collegamento supplementare di prodotto **146 68** su altri 1200 m.

Nota:

Alle 2 estremità della linea di comunicazione, è indispensabile collegare una resistenza di 120 Ohm che si trova sul modulo aggiornale.

Per altre soluzioni o configurazioni particolari (modem, TCP-IP, fibra ottica...) contattarci.

146 71

INSTALLAZIONE

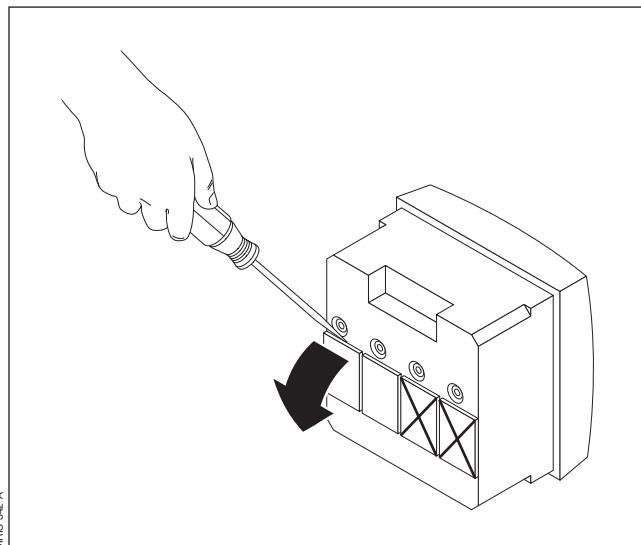
COLLEGAMENTO

Il modulo si installa nella parte posteriore del prodotto **146 68** su uno dei due spazi (1 e 2).



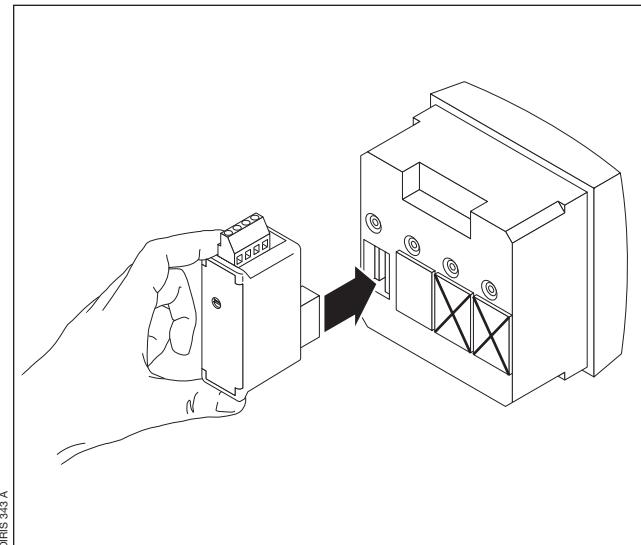
Il prodotto **146 68** deve essere
fuori tensione

①



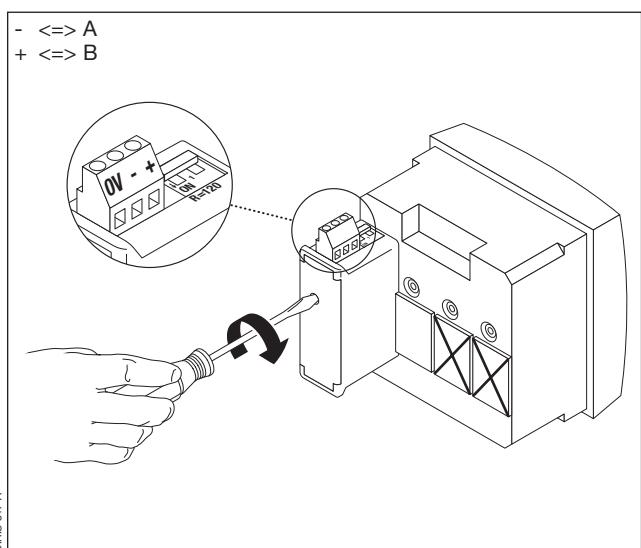
②

Fissare il modulo su uno dei due spazi.



I

③

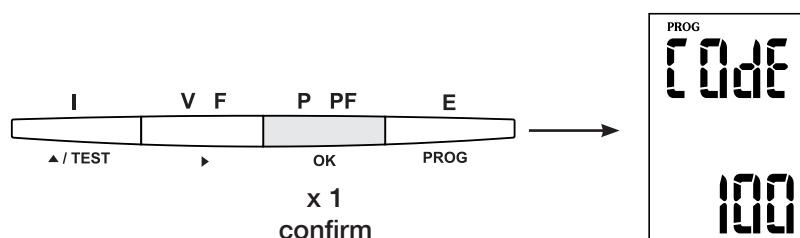
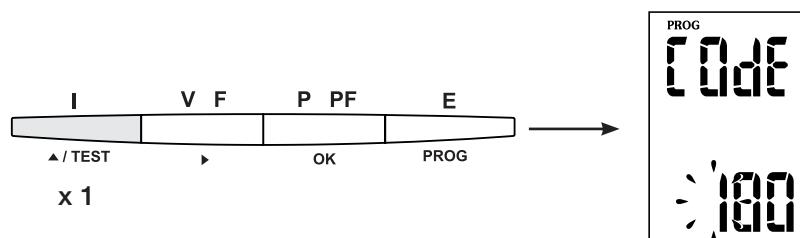
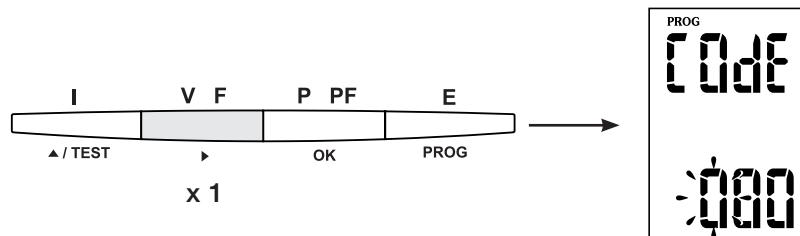
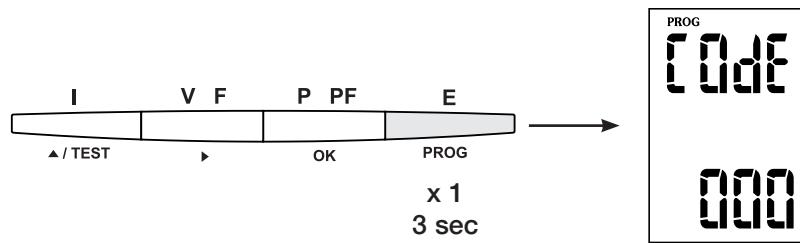


④

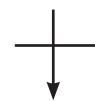
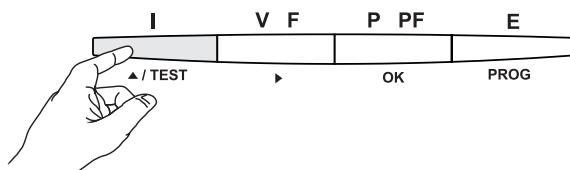
Raccordare i morsetti rispettando le indicazioni.
Alimentare il prodotto **146 68**.

DINIS 347 A

ACCESSO ALLA PROGRAMMAZIONE (COdE = 100)

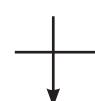
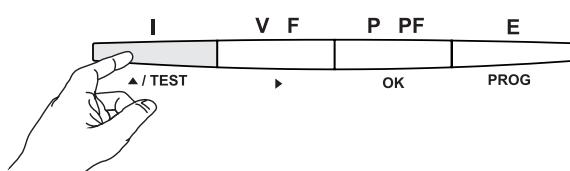


Menu precedente



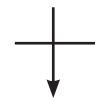
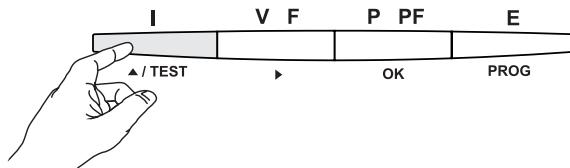
**CON
Adr**

— p.38



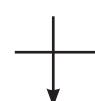
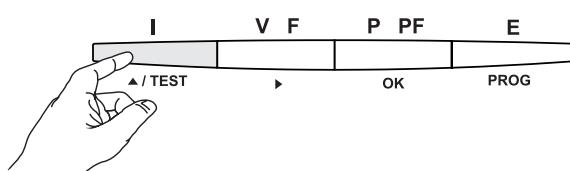
**CON
bds**

— p.39

I

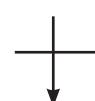
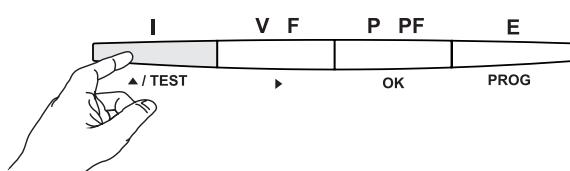
**CON
Par**

— p.40



**CON
Setup**

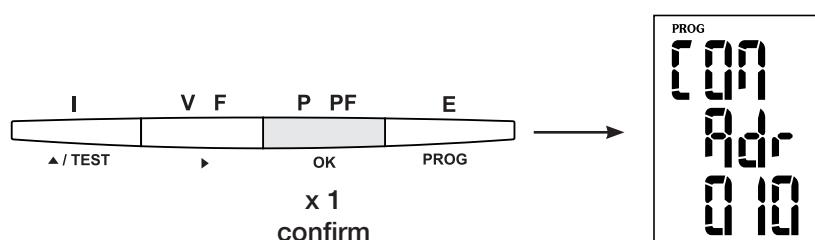
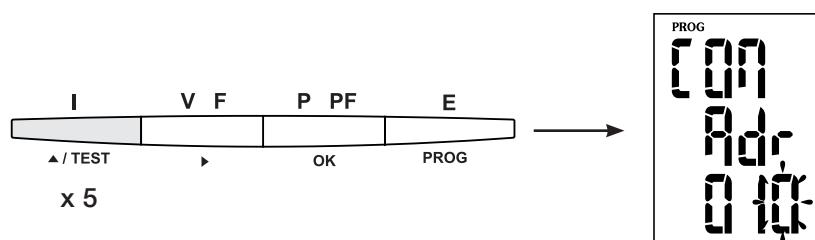
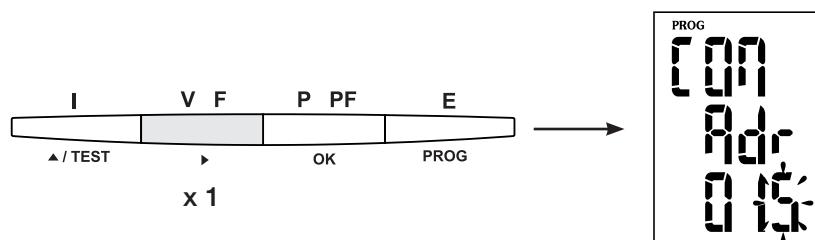
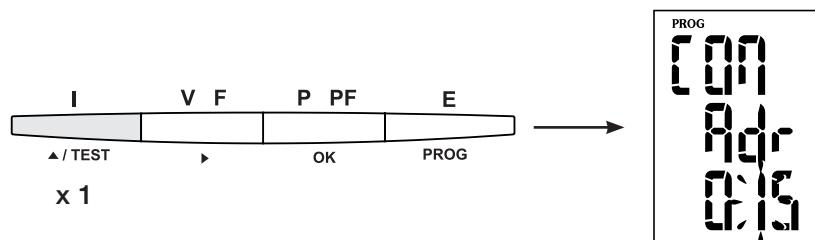
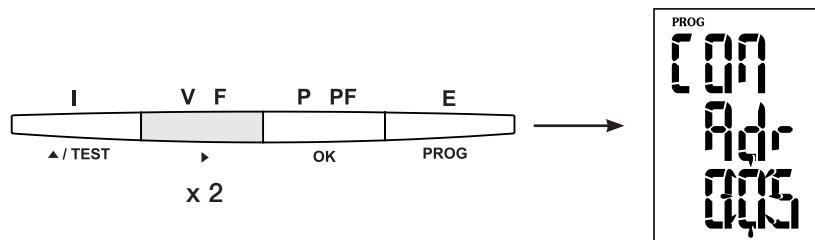
— p.41



Menu seguire

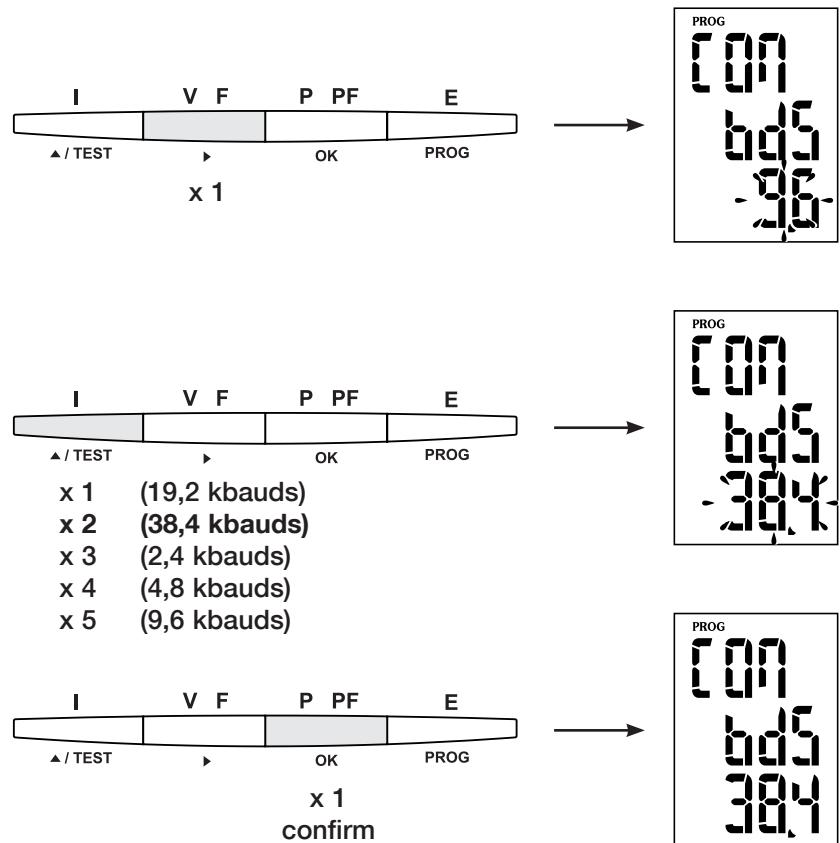
DELL'INDIRIZZO DI COMUNICAZIONE

> Esempio: COM Adr = 10



VELOCITÀ DI COMUNICAZIONE

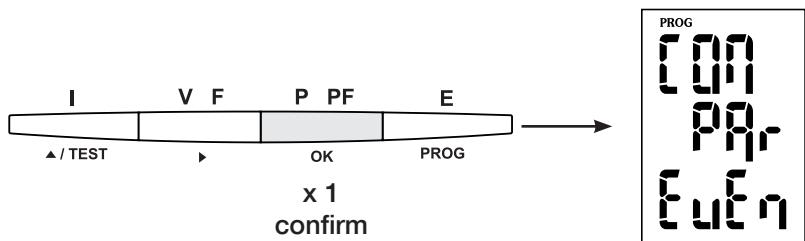
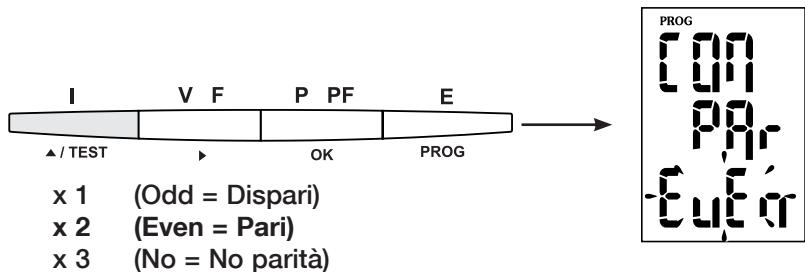
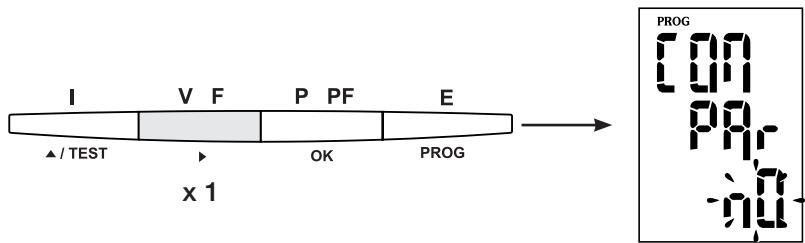
> Esempio: bdS = 38,4 kbauds



I

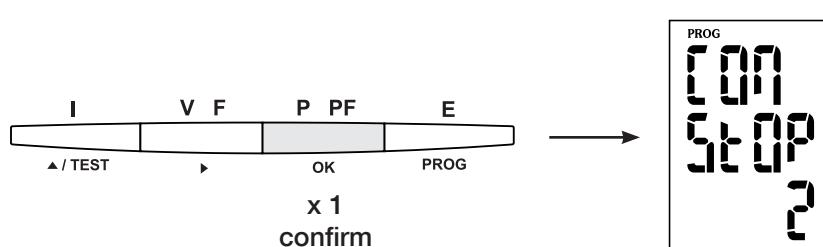
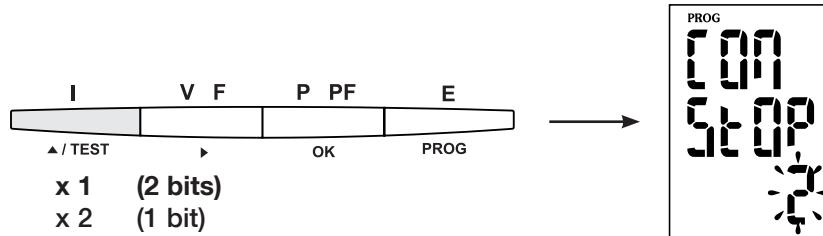
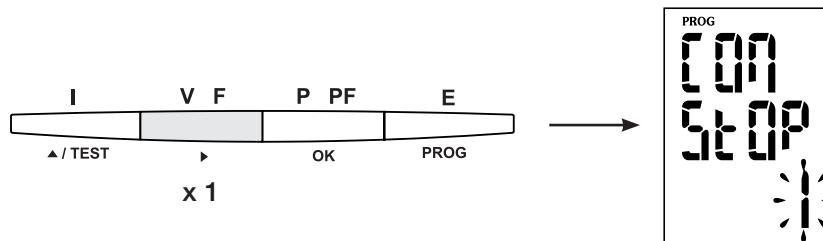
BIT DI PARITÀ

> Esempio: PAr = Even

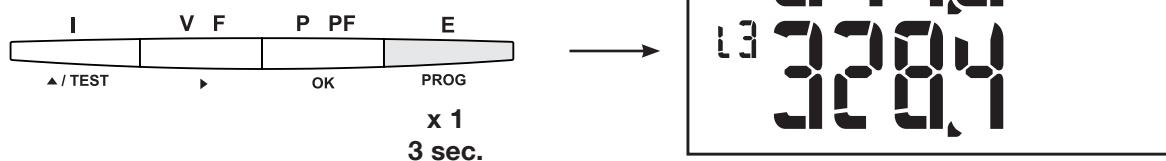


BIT DI STOP DI COMUNICAZIONE

> Esempio: StOP = 2



PER ABBANDONARE LA PROGRAMMAZIONE



Il prodotto **146 68** comunica utilizzando il protocollo JBUS/MODBUS® che implica un dialogo secondo una struttura master/slave.

- due sono i dialoghi possibili - il master dialoga con uno slave (prodotto **146 68**) e aspetta la sua risposta
- il master dialoga con tutti gli slave (prodotto **146 68**) senza aspettare la loro risposta.

La comunicazione avviene con modalità RTU (Remote Terminal Unit) con stringhe di valori esadecimali di minimo 8 bit.

LA SINTASSI DI COMUNICAZIONI STANDARD

È la seguente:

| | | | | |
|-----------------------|-----------------------|-----------|------|--------|
| Indirizzo dello slave | Codice della funzione | Indirizzo | Dati | CRC 16 |
|-----------------------|-----------------------|-----------|------|--------|

Secondo il protocollo JBUS/MODBUS®, il tempo di integrazione deve essere inferiore a 3 silenzi e cioè al tempo di emissione di tre caratteri perché il messaggio sia trattato dal prodotto **146 68**.

Per utilizzare correttamente le informazioni, è indispensabile utilizzare le funzioni secondo i codici:

- 3:** per la lettura di un numero n di parole (massimo 128).
- 6:** per la scrittura di una parola.
- 8:** per la diagnosi degli scambi tra il master e lo slave a partire dai contatori 1, 3, 4, 5 e 6.
- 10:** per la scrittura di un numero n di parole (massimo 128).

Nota:

1 parola <=> 2 octets <=> 16 bits
2 parole <=> 4 octets <=> 32 bits

Selezionando l'indirizzo dello slave 0, si trasmette un messaggio a tutti gli apparecchi presenti sulla rete (unicamente per le funzioni 6 e 16)

Nota:

Il tempo di risposta (time out domanda/risposta) è di 250 ms massime.

TABELLE DI COMUNICAZIONE

► Le tabelle di comunicazione sono disponibili nel CD Rom in dotazione con il modulo RS485 JBUS/MODBUS® per prodotto 146 68.

CARATTERISTICHE TECNICHE

COMUNICAZIONE

| | |
|----------------------|---------------------------|
| RS485 | 2 o 3 fili half duplex |
| Protocollo | JBUS/MODBUS® modalità RTU |
| Velocità | da 2400 a 38400 Bauds |
| Isolamento galvanico | 4 kV |
| Unità di carica | 1 UL (Unity of loads) |

I

LISTO DELLE ABBREVIAZIONI

| | |
|------|------------------------------------|
| COM | Comunicazione |
| ADR | Indirizzo |
| BDS | Velocità di comunicazioni in bauds |
| PAR | Parità |
| NO | No parità |
| Even | Pari |
| Odd | Dispari |
| STOP | Bip di stop |
| 1 | 1 bit di stop |
| 2 | 2 bit di stop |

Voor de veiligheid van het personeel en het materiaal is het van belang goed kennis te nemen van deze gebruiksaanwijzing voordat de apparatuur in gebruik wordt genomen.

Bij ontvangst van de doos met de product **146 68** moeten de volgende punten gecontroleerd worden:

- de staat van de verpakking;

- of het product geen schade heeft geleden tijdens het transport;
- of de referentie van het toestel overeenkomt met de bestelling;
- de verpakking bevat een product of de gebruiksaanwijzing.

ALGEMENE INFORMATIE

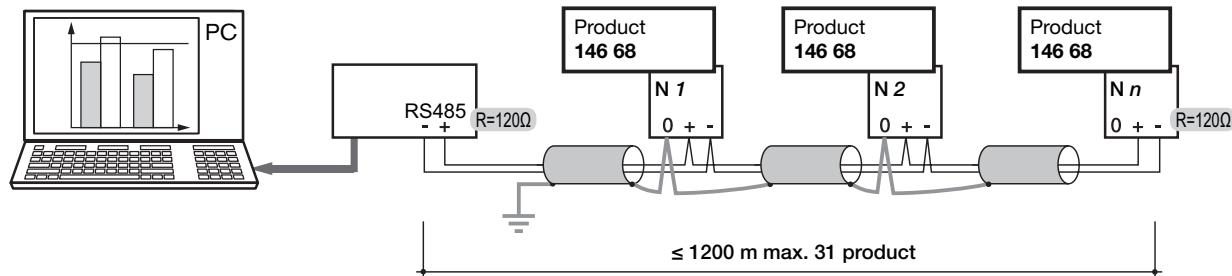
Functies

De optiemodule RS485 Communicatie moet worden aangesloten op de product **146 68**. Het biedt een serieaansluiting RS485 (2 of 3 draden) in het protocol JBUS/MODBUS® zodat de product **146 68** kan worden gebruikt via een PC of een API.

Algemeen

In een standaardconfiguratie maakt een RS485 verbinding het mogelijk 31 product **146 68** of ieder ander product dat communiceert met een computer of een automaat met elkaar te koppelen op een afstand van 1500 m met behulp van het protocol JBUS/MODBUS®.

DIRS 109 E.G



Aanbevelingen:

Het is noodzakelijk een verdraaid afgeschermd kabelpaar te gebruiken van het type LIYCY. In een omgeving met storing of een net met grote lengte en een groot aantal product **146 68** bevelen wij een verdraaid afgeschermd kabelpaar aan met een algemene afscherming van het type LIYCY-CY. Als de afstand groter is dan 1200 m en/of het aantal van 31 product **146 68** is overschreden, is het noodzakelijk een versterker (1 weg) of een multiplexer (4 wegen) aan te sluiten om een extra aansluiting van de product **146 68** mogelijk te maken over meer dan 1200 m.

NB:

Op de 2 verbindingsuiteinden is het noodzakelijk een weerstand van 120 ohm te bevestigen die zich op de toevoegbare module bevindt.
Andere oplossingen bestaan (modem, TCP-IP, optische vezel...). Ons raadplegen.

146 71

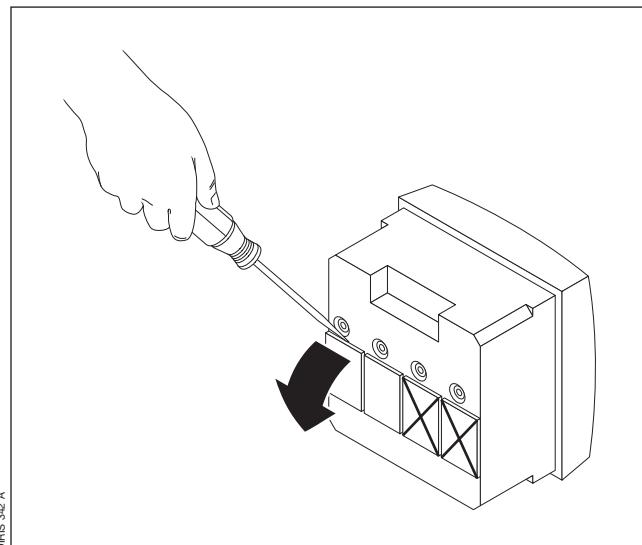
INSTALLERING

AANSLUITING

De module wordt geïnstalleerd aan de achterzijde van de product **146 68** op een van de hier voor bedoelde 2 plaatsen (1 en 2).

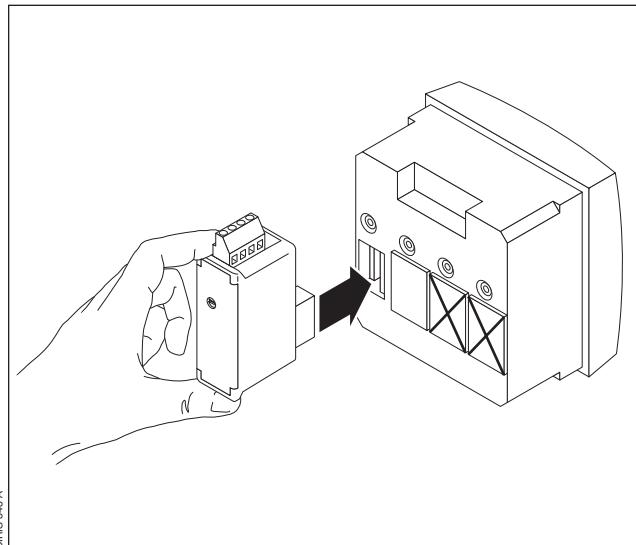


①

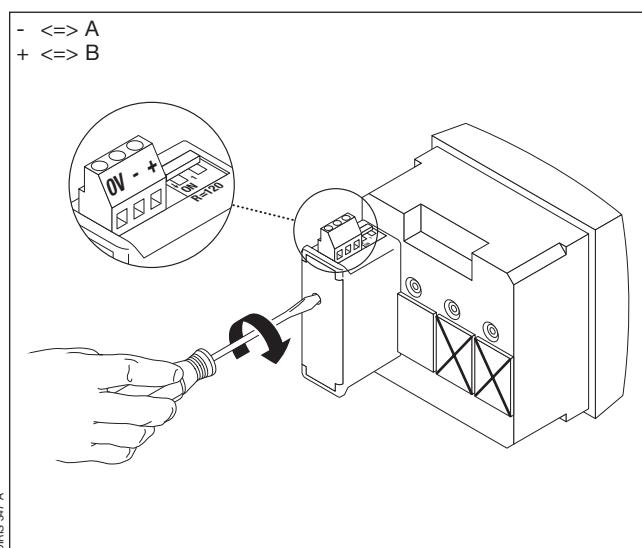


②

Bevestig de module op een van de 2 plaatsen.



③

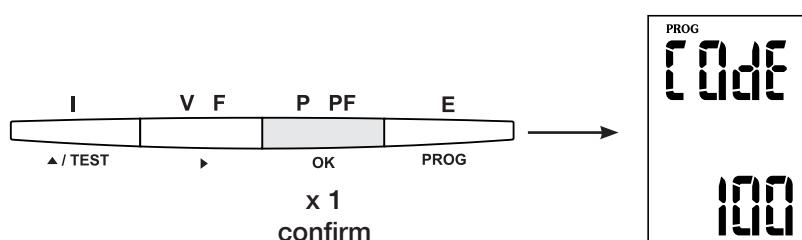
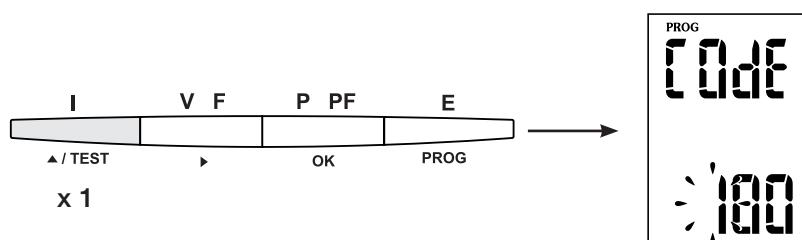
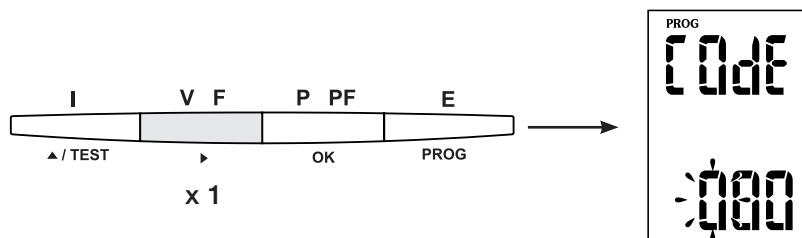
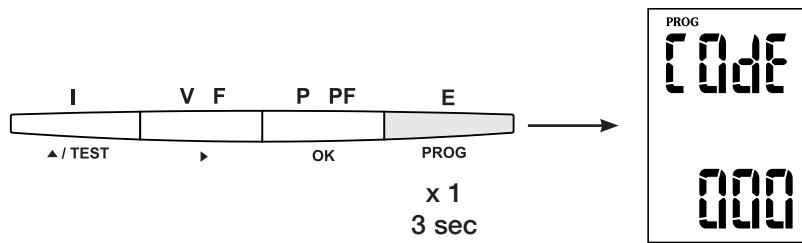


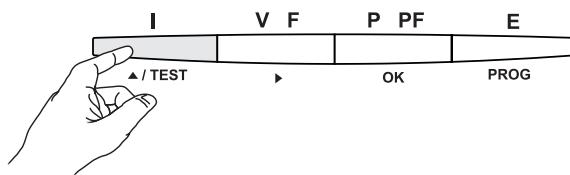
④

De klemmenstrook aansluiten zoals aangegeven
Terug spanning geven.

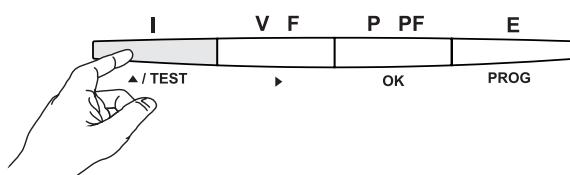
NL

OVERGAAN TOT PROGRAMMEERMODUS (COdE = 100)

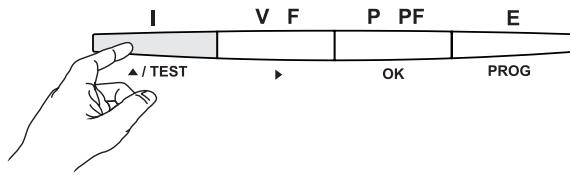


Menu voorgaand**C0R
Adr**

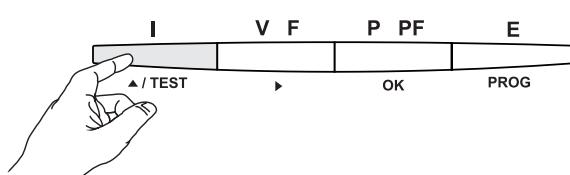
— p.48

**C0R
bds**

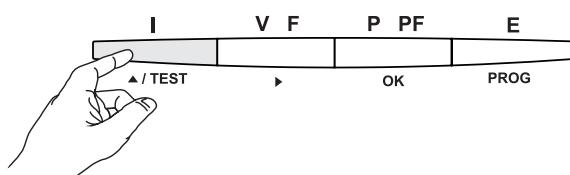
— p.49

**C0R
PAr**

— p.50

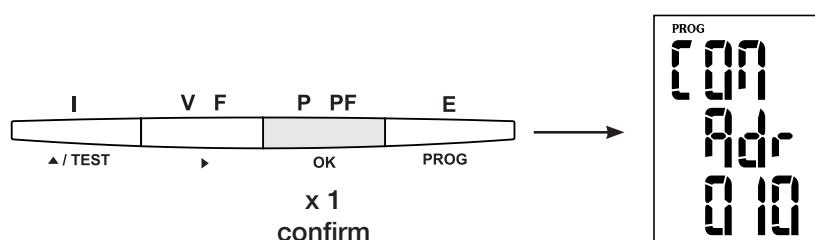
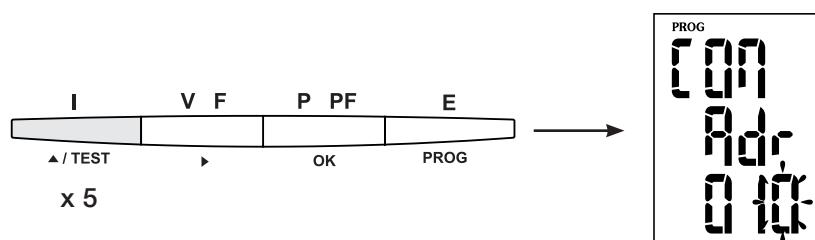
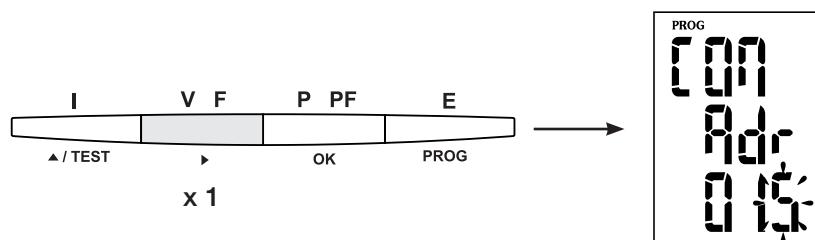
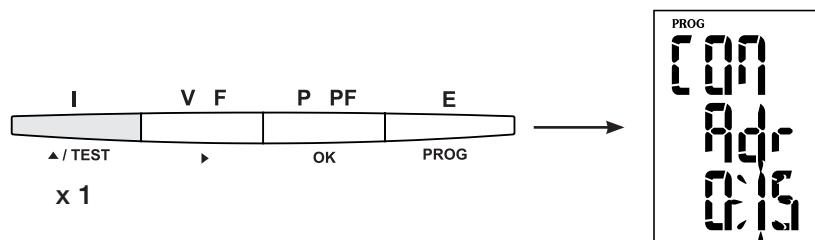
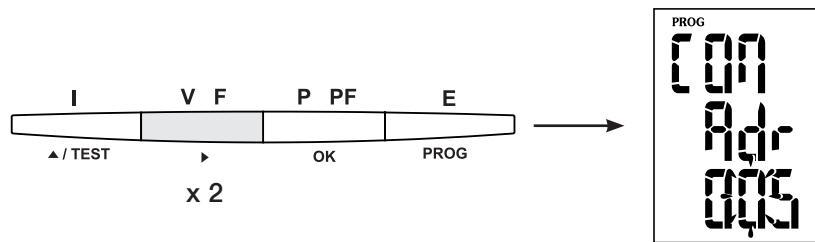
**C0R
StOp**

— p.51

**Menu volgend****NL**

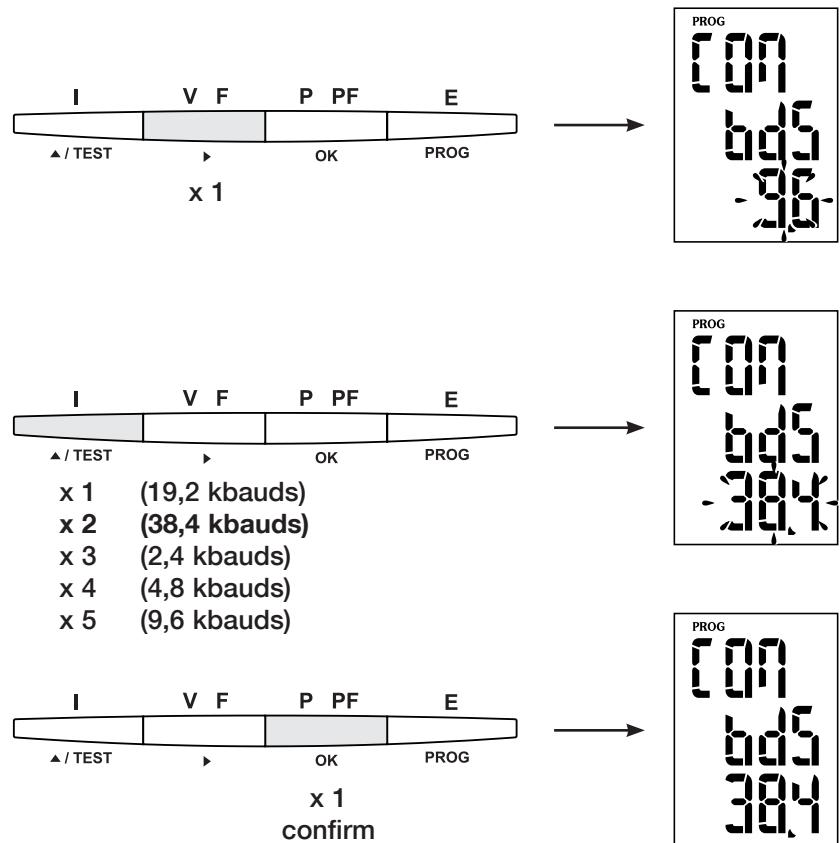
HET COMMUNICATIEADRES

> Voorbeeld: COM Adr = 10



COMMUNICATIESNELHEID

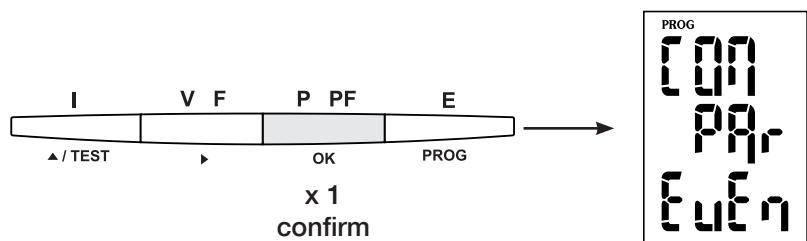
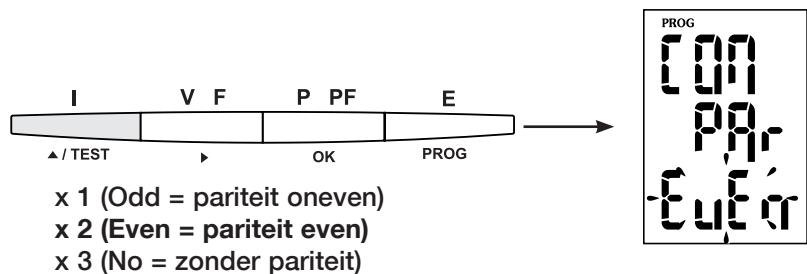
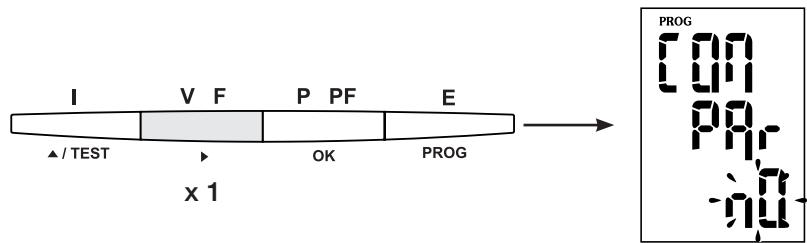
> Voorbeeld: bdS = 38,4 kbauds



NL

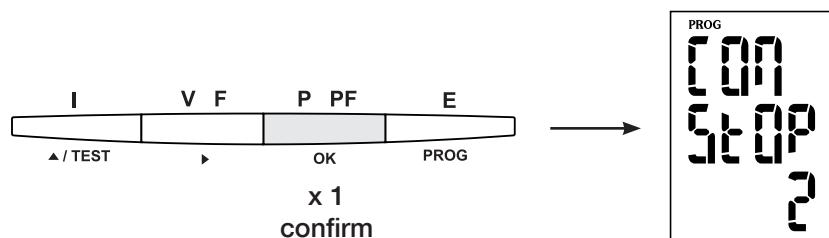
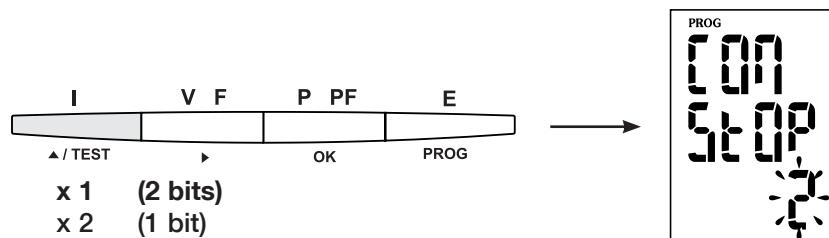
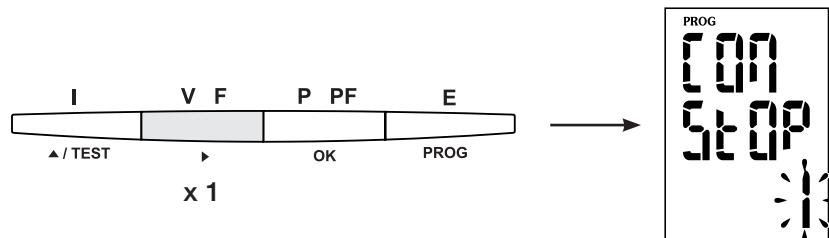
COMMUNICATIEPARITEIT

> Voorbeeld: PAr = EvEn

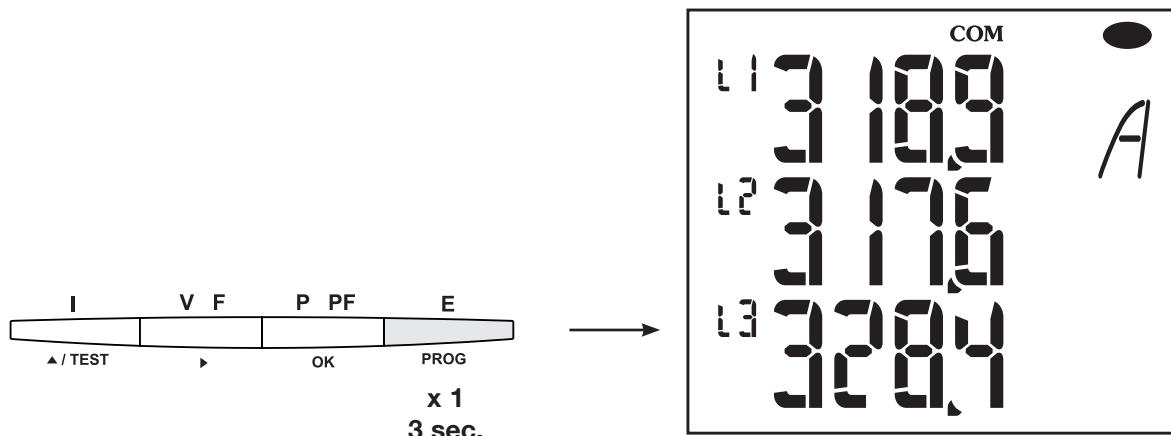


COMUNICATIE-STOPBIT

> Voorbeeld: StOP = 2



OM VIT POGRAMMERING TE GAAN



Product **146 68** communiceert vanaf het protocol JBUS/MODBUS® hetgeen een dialoog impliceert volgens de structuur meester/slaaf. Twee dialogen zijn mogelijk:

- de meester houdt een dialoog met een slaaf (product **146 68**) en wacht op zijn antwoord.
- de meester houdt een dialoog met alle slaven (product **146 68**) zonder op hun antwoord te wachten.

De communicatiemodus is de RTU-modus (Remote Terminal Unit) met hexadecimale tekens minimaal bestaande uit 8 bits.

HET STRAMIELEN VAN STANDAARDCOMMUNICATIE

Bestaat uit:

| | | | | |
|--------------------|---------------------|-------|------|--------|
| Adres van de slaaf | Code van de functie | Adres | Data | CRC 16 |
|--------------------|---------------------|-------|------|--------|

Overeenkomstig het protocol JBUS/MODBUS® moet de tussentekentijd lager zijn dan 3 stiltes d.w.z. dan de emissietijd van drie tekens om de boodschap te laten behandelen door de product **146 68**.

Om de informatie correct aan te wenden dient men de functies volgens de codes te gebruiken:

3: voor het lezen van n woorden (maximaal 128).

6: voor het schrijven van een woord.

8: voor de diagnose van de uitwisselingen tussen meester en slaaf vanaf de tellers 1, 3, 4, 5 en 6.

10: voor het schrijven van n woorden (maximaal 128).

Nota :

1 woord <=> 2 octets <=> 16 bits

2 woorden <=> 4 octets <=> 32 bits

Door het adres van de slaaf 0 te selecteren, zendt men een boodschap aan alle apparaten op het net (alleen voor de functies 6 en 16).

Opmerking:

De tijd van antwoord (time out vraag/antwoord) bedraagt 250 ms maximum.

COMMUNICATIETABEL

- De communicatietabellen zijn beschikbaar op CD Rom die meegeleverd is met de RS485 JBUS/MODBUS® module voor product **146 68**.

TECHNISCHE EIGENSCHAPPEN

COMMUNICATIE

| | |
|----------------------|---------------------------|
| RS485 | 2 of 3 draden half duplex |
| Protocol | JBUS/MODBUS® modus RTU |
| Snelheid | van 2400 tot 38400 Bauds |
| Galvanische isolatie | 4 kV |
| Laadeenheid | 1 UL (Unity of loads) |

LEXICON VAN DE AFKORTINGEN

NL

| | |
|------|------------------------------------|
| COM | Communicatie |
| ADR | Adres van de slaaf |
| BDS | Communicatiesnelheid in baud |
| PAR | Pariteit van het communicatieframe |
| NO | Zonder pariteit |
| Even | Pariteit even |
| Odd | Pariteit oneven |
| STOP | Stopbit |
| 1 | 1 stopbit |
| 2 | 2 stopbits |

Para la seguridad del personal y del material, será imperativo conocer perfectamente el contenido de este manual antes de su puesta en funcionamiento. Al recibir el paquete que contiene el producto **146 68**, será necesario verificar los aspectos siguientes:

- estado del embalaje;

- que el producto no se haya dañado durante el transporte;
- que la referencia del aparato esté conforme con su pedido;
- el embalaje incluye el producto el manual de utilización.

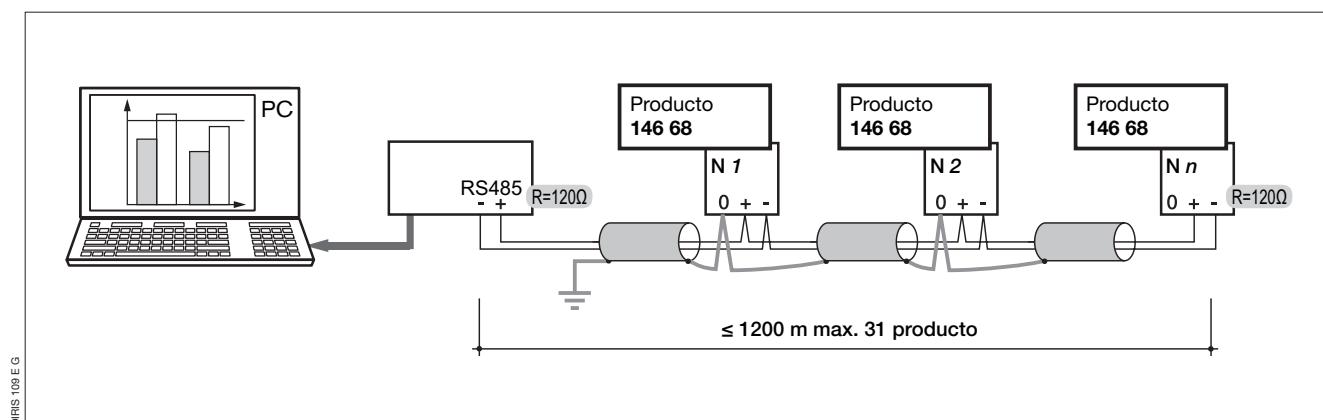
INFORMACIONES GENERALES

Funciones

El módulo opcional de comunicación RS485 se debe asociar a los modelos **146 68**. Pone a disposición un enlace serie RS485 (2 o 3 hilos) en protocolo JBUS/MODBUS® que permite la puesta en servicio del producto **146 68** a partir de un PC o de un API.

Generalidades

En una configuración estándar, una conexión RS485 permite poner en relación 31 producto **146 68** o cualquier otro producto de comunicación, con un PC o un autómata sobre 1500 metros a partir del protocolo JBUS/MODBUS®.



Recomendaciones:

Será necesario utilizar un par blindado tipo LIYCY. En un entorno perturbado o en una red importante en longitud y en número de producto **146 68**, aconsejamos utilizar un par blindado tipo con un blindaje general tipo LIYCY-CY.

Si la distancia es mayor que 1200 m y/o el número de producto **146 68** es superior a 31, será necesario instalar un repetidor (1 vía) o un amplificador (4 vías) para la instalación adicional de producto **146 68**, para más de 1200 m.

Nota:

En los 2 extremos de la unión, será indispensable utilizar la resistencia de 120 ohms que se encuentra en el módulo adicional. Existen otras soluciones (módem, TCP-IP, fibra óptica...). Rogamos nos consulten.

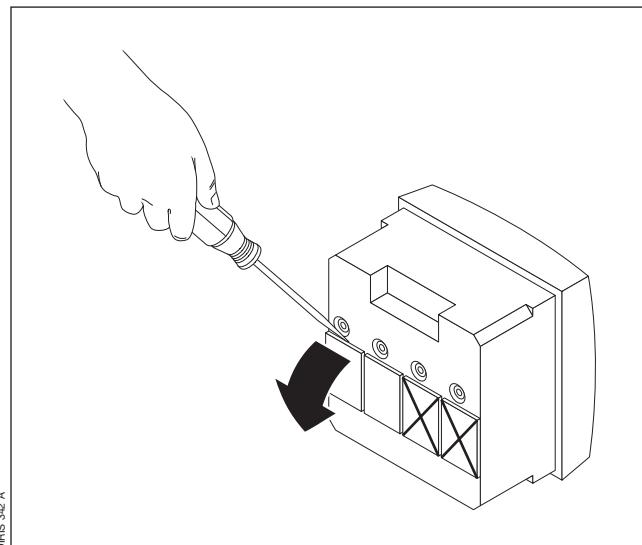
CONEXIÓN

El módulo se instala en la cara trasera del producto **146 68** en uno de los dos emplazamientos previstos para ello (1 y 2).



El producto **146 68** deberá
estar desconectado

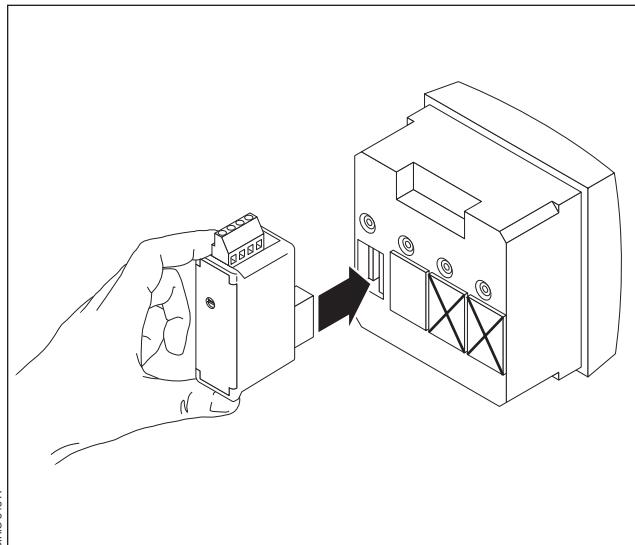
①



DINIS 342 A

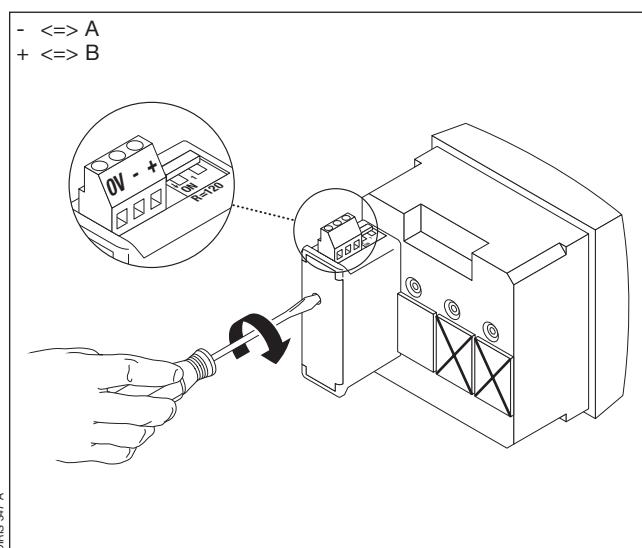
②

Fije el módulo en uno de los dos emplazamientos.



DINIS 343 A

③



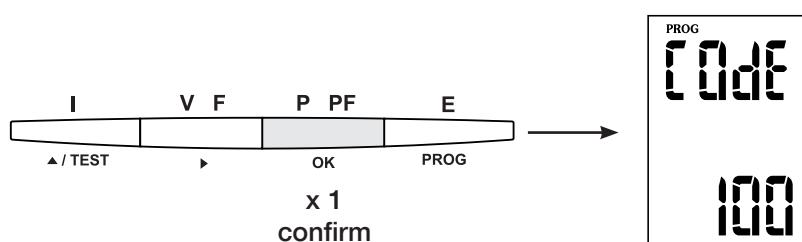
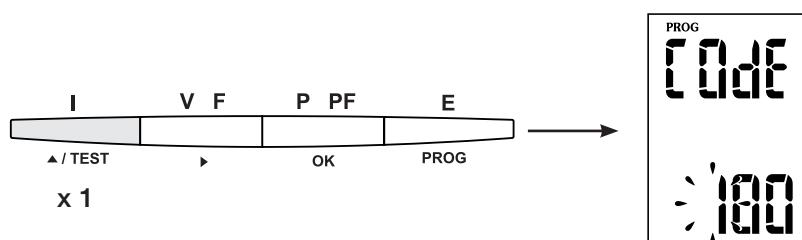
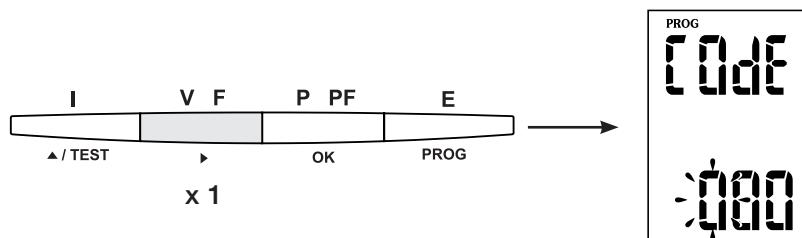
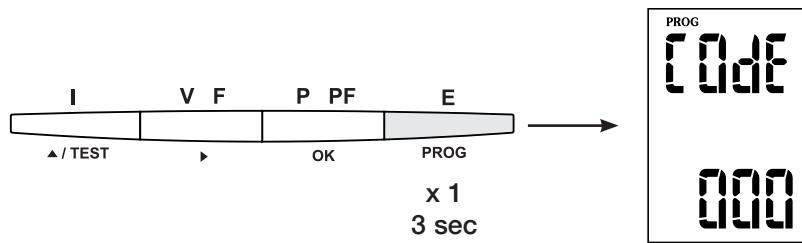
DINIS 347 A

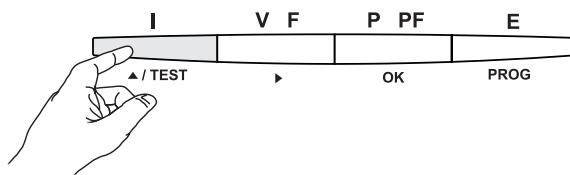
④

Conectar respetando las indicaciones
Poner en tensión.

E

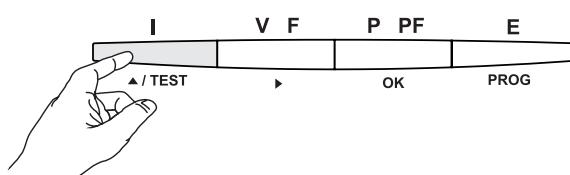
ENTRAR EN MODO PROGRAMACIÓN (COdE = 100)



Menú anterior

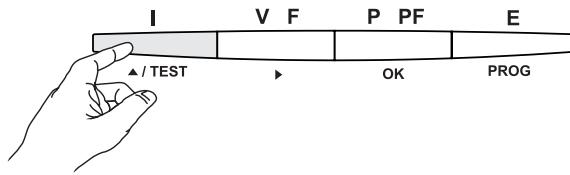
**CON
Adr**

— p.58



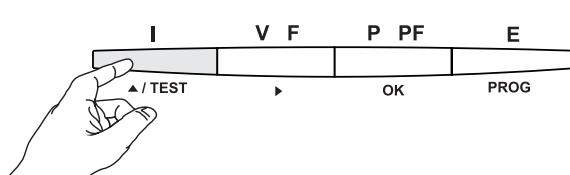
**CON
bds**

— p.59



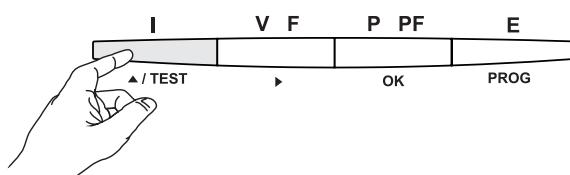
**CON
PAr**

— p.60



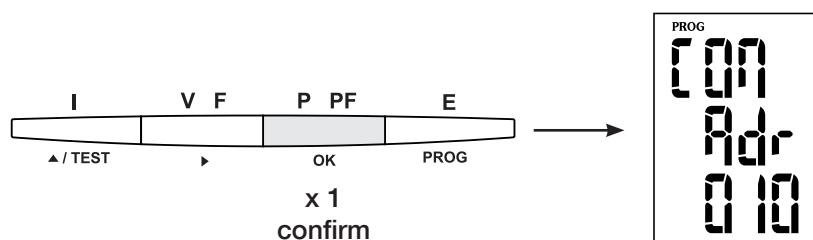
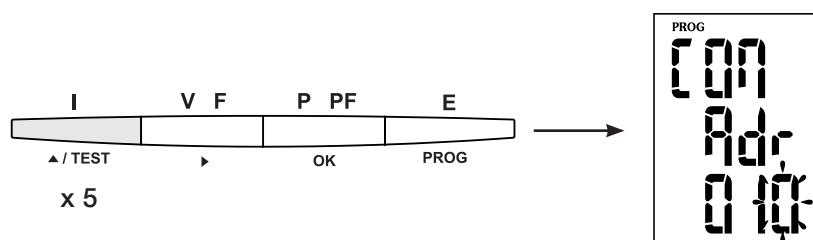
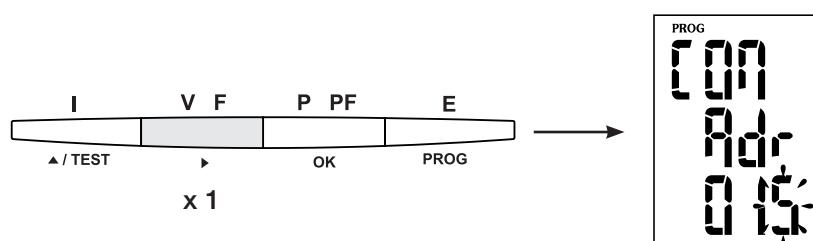
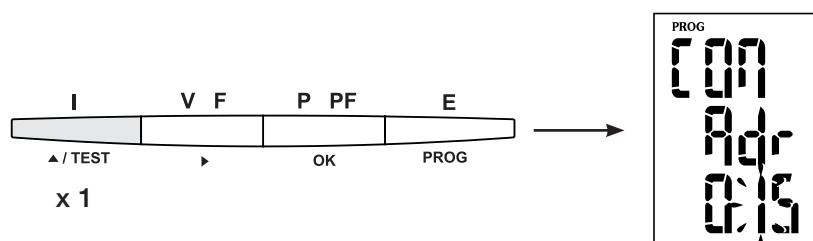
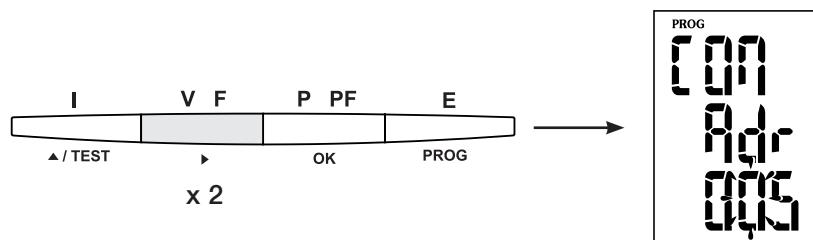
**CON
StOp**

— p.61

E**Menú siguiente**

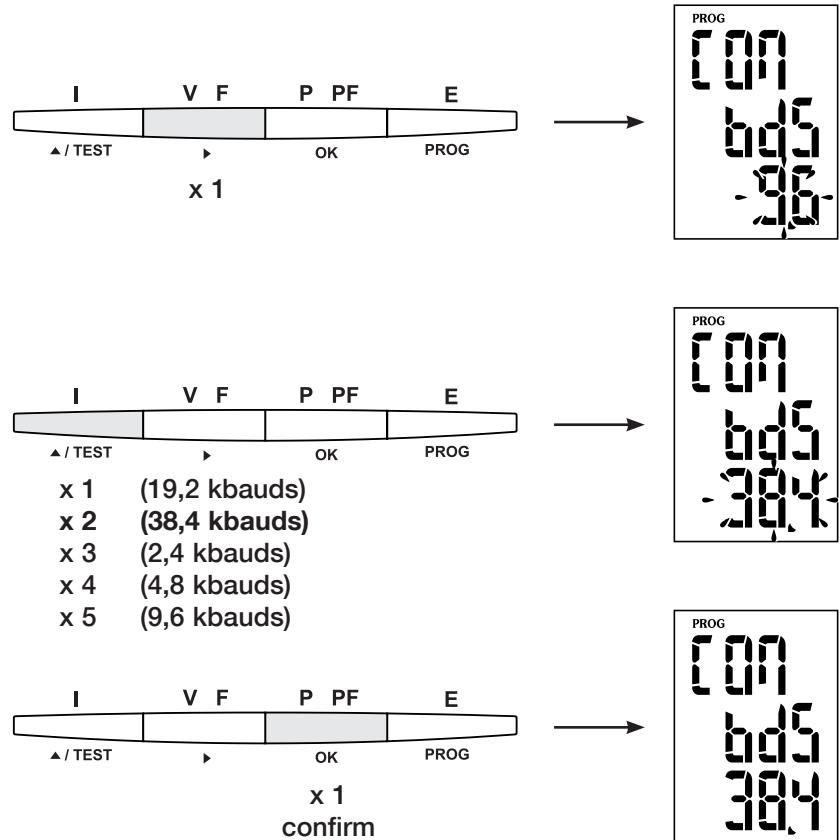
DIRECCION DE COMUNICACIÓN

> Ejemplo: COM Adr = 10



VELOCIDAD DE COMUNICACIÓN

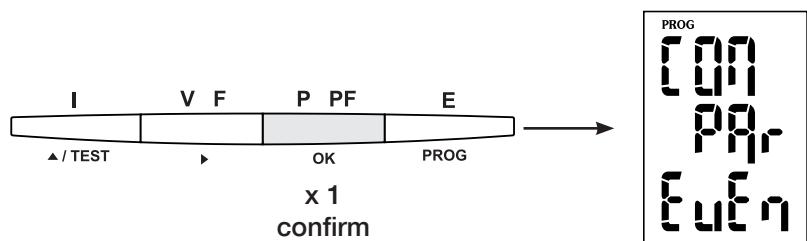
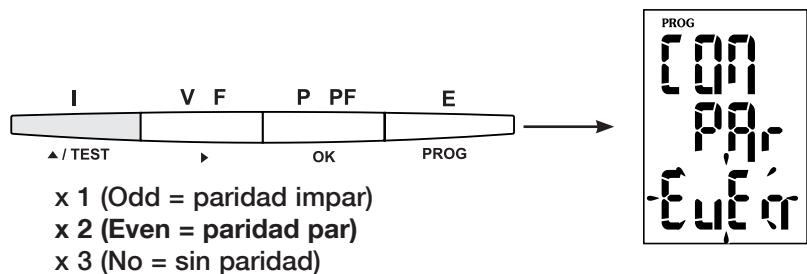
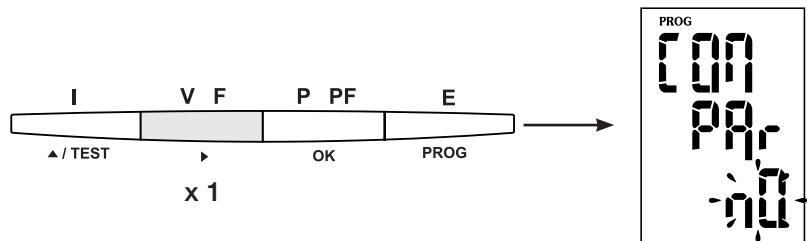
> Ejemplo: bdS = 38,4 kbauds



E

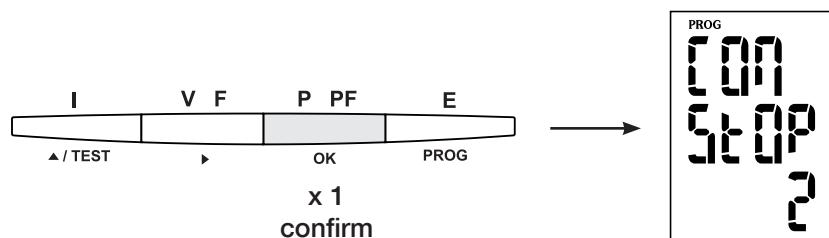
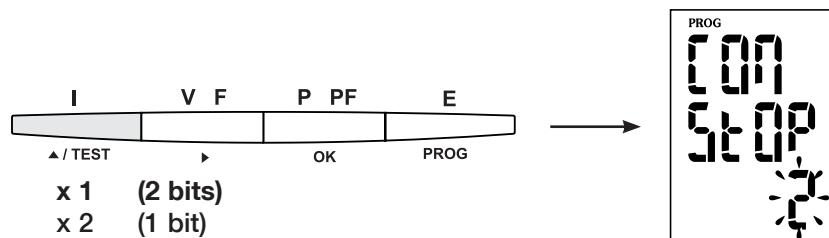
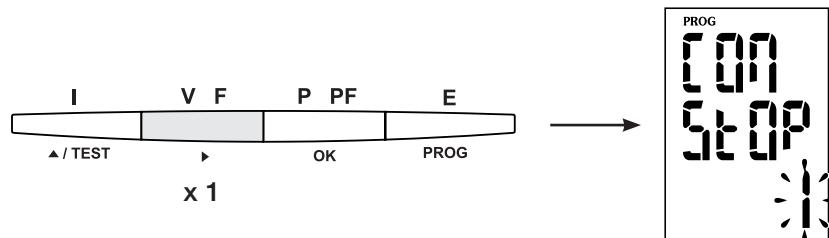
PARIDAD DE COMUNICACIÓN

> Ejemplo: PAr = EvEn



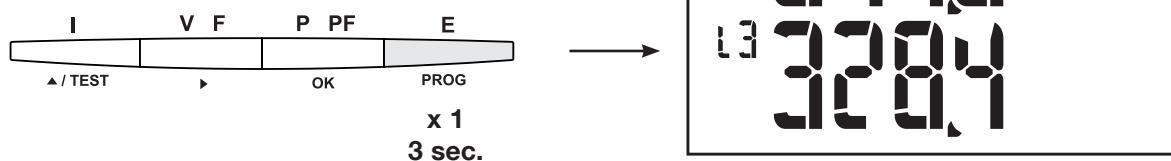
BIT DE STOP DE COMUNICACIÓN

> Ejemplo: StOP = 2



PARA SALIR DE LA PROGRAMACIÓN

E



El producto **146 68** comunica a partir de un protocolo JBUS/MODBUS® que implica un diálogo según una estructura maestra/esclava. Son posibles dos diálogos:

- el diálogo maestro con un esclavo (producto **146 68**)
y espera
de respuesta
- el diálogo maestro con todos los esclavos (producto **146 68**) sin espera de respuesta.

El modo de comunicación es el modo RTU (Remote terminal Unit) con caracteres hexadecimales compuestos de 8 bits como mínimo.

LA TRAMA DE COMUNICACIÓN ESTÁNDAR

Está compuesta de:

| | | | | |
|-----------------------|----------------------|-----------|-------|--------|
| Dirección del esclavo | Código de la función | Dirección | Datos | CRC 16 |
|-----------------------|----------------------|-----------|-------|--------|

Conforme al protocolo JBUS/MODBUS®, el tiempo intercarácter deberá ser inferior a 3 silencios, es decir al tiempo de emisión de tres caracteres para que el mensaje se trate por el producto **146 68**.

Para explotar correctamente las informaciones, es indispensable utilizar las funciones siguiendo los códigos:

3: para la lectura de n palabras (máximo 128).

6: para la escritura de un palabra.

8: para el diagnóstico de intercambios entre el maestro y el esclavo a partir de los contadores 1, 3, 4, 5 y 6.

10: para la escritura de n palabras (máximo 128).

Nota :

1 palabra <=> 2 octets <=> 16 bits

2 palabras <=> 4 octets <=> 32 bits

Al seleccionar la dirección del esclavo 0, se transmite un mensaje a todos los aparatos presentes en la red (únicamente para las funciones 6 y 16).

Nota:

El tiempo de respuesta (out cuestión/respuesta) es de 250 ms máximos.

TABLA DE COMUNICACIÓN

- » Las tablas de comunicación están disponibles en el CD Rom proporcionado con el módulo RS485 JBUS/ MODBUS para el producto 146 68.

CARACTERÍSTICAS TÉCNICAS

COMMUNICACIÓN

| | |
|-----------------------|-------------------------|
| RS485 | 2 o 3 hilo half dúplex |
| Protocolo | JBUS/MODBUS® modo RTU |
| Velocidad | de 2400 a 38400 Baudios |
| Aislamiento galvánico | 4 kV |
| Unidad de carga | 1 UL (Unity of loads) |

LÉXICO DE LAS ABREVIACIONES

| | |
|------|--------------------------------------|
| COM | Comunicación |
| ADR | Dirección del esclavo |
| BDS | Velocidad de comunicación en baudios |
| PAR | Paridad de la trama de comunicación |
| NO | Sin paridad |
| Even | Paridad par |
| Odd | Paridad impar |
| STOP | Bip de stop |
| 1 | 1 bit de stop |
| 2 | 2 bits de stop |

E

Para a segurança do pessoal e do material, convém inteirar-se bem do conteúdo deste manual antes da colocação em serviço.

Na altura da recepção da encomenda do produto **146 68**, é necessário verificar os seguintes pontos:

- o estado da embalagem;
- se o produto não foi danificado durante o transporte;
- se a referência do Aparelho está acordo com a sua encomenda;
- dentro da embalagem encontra-se realmente o produto e um manual de utilização.

INFORMAÇÕES GERAIS

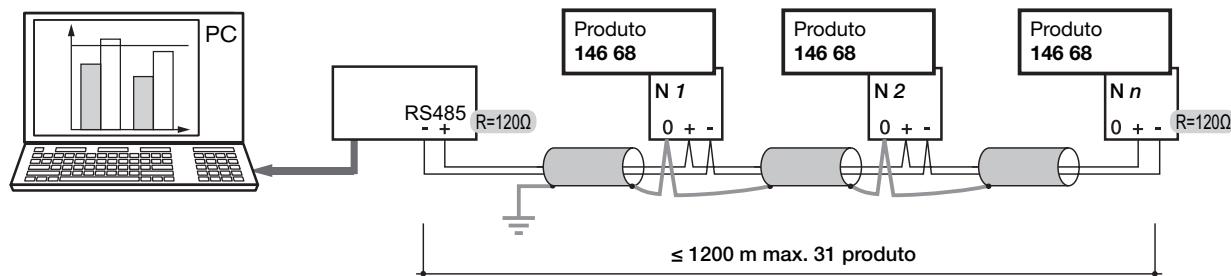
Funções

O módulo opção Comunicação RS485 deve estar associado aos produto **146 68**. Coloca à sua disposição uma ligação de série RS485 (2 ou 3 fios) em protocolo JBUS/MODBUS® que permite a exploração do produto **146 68** a partir de um PC ou de um API.

Generalidades

Numa configuração standard, uma ligação RS485 permite colocar em relação 31 produto **146 68** ou qualquer outro produto que comunique com um PC ou um automáto, num limite de 1500 metros, a partir do protocolo JBUS/MODBUS®.

DIRS 109 EG



Recomendações:

É necessário utilizar um par torcido blindado tipo LIYCY. Num ambiente perturbado ou numa rede importante em comprimento e em número de produto **146 68**, convém utilizar um par torcido blindado com uma blindagem geral tipo LIYCY-CY.

Se a distância de 1200 m e/ou o número de 31 produto **146 68** são ultrapassados, é necessário ligar um repetidor (1 via) ou um amplificador (4 vias) para permitir uma ligação suplementar de produto **146 68** em mais de 1200 m.

Nota:

Nas 2 extremidades da ligação, é indispensável fixar uma resistência de 120 ohms que se encontra no módulo.

Outras soluções existentes (modem, TCP-IP, fibra óptica...).

E favor consultar-nos.

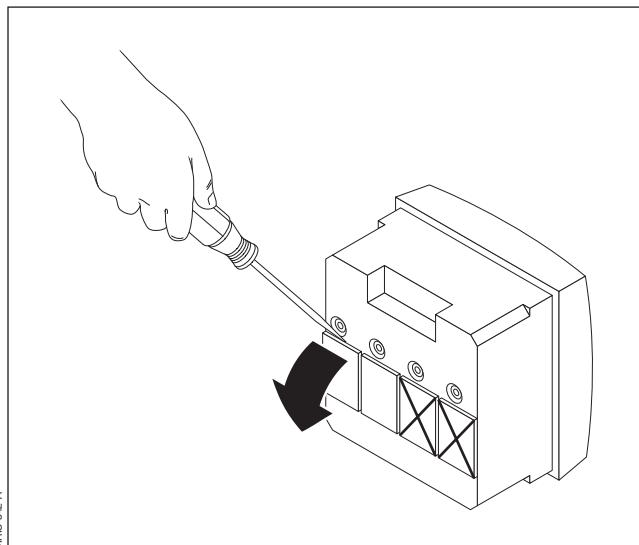
LIGAÇÃO

O módulo instalase na face traseira do produto **146 68** numa das 2 localizações (1 e 2).



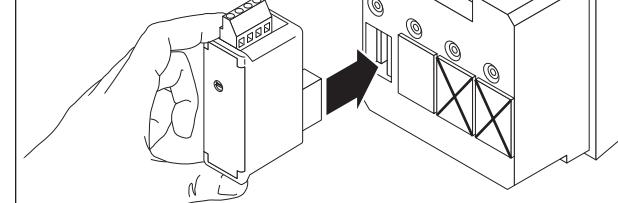
O produto **146 68** deve ficar desligado

①

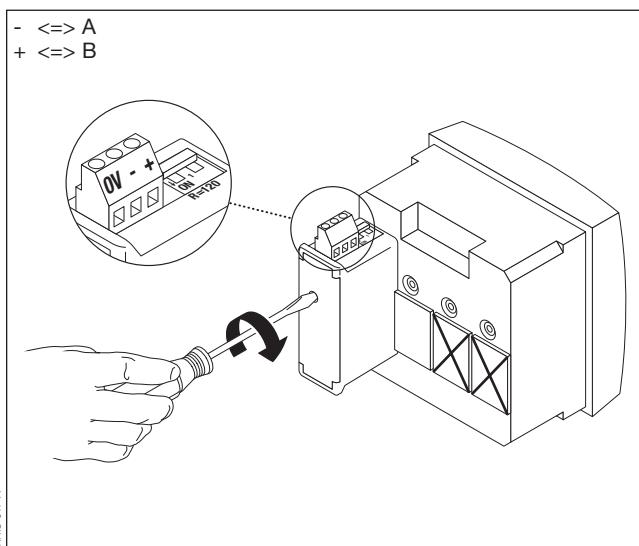


②

Fixe o módulo numa das 2 localizações.



③

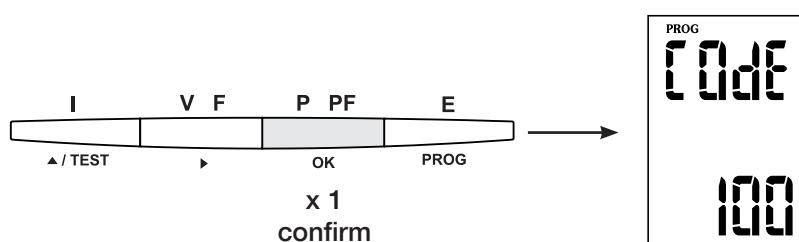
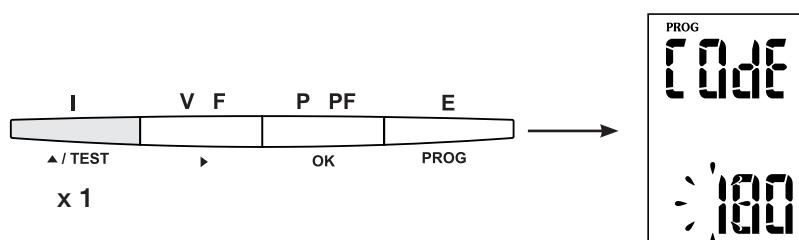
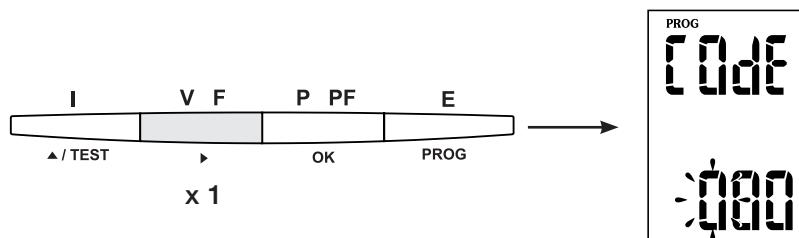
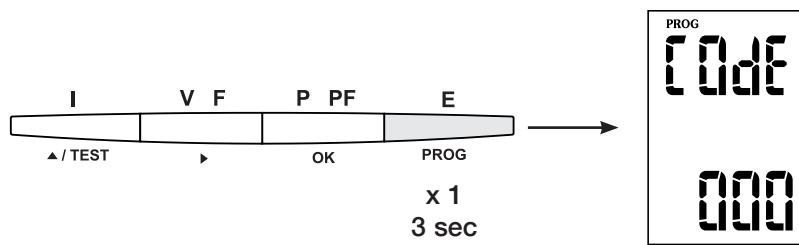


④

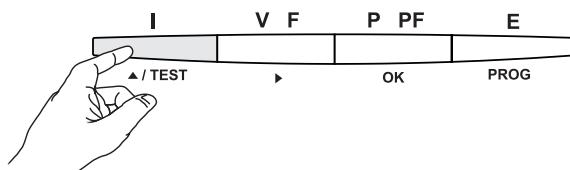
Ligar o terminal de bornes respeitando as indicações Colocar sob tensão novamente.

P

ENTRAR EM MODO PROGRAMAÇÃO (COdE = 100)

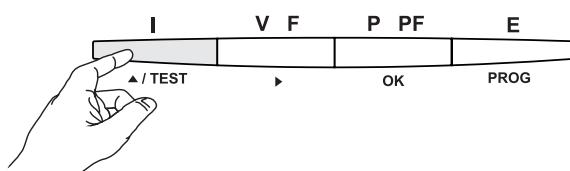


Menu precedente



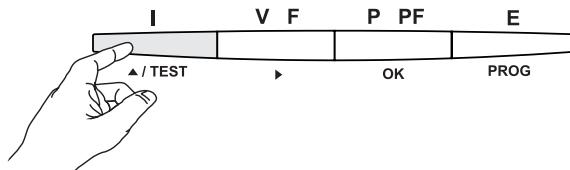
**CON
Adr**

— p.68



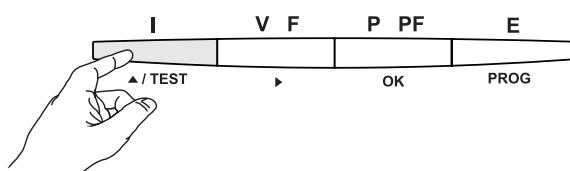
**CON
bds**

— p.69



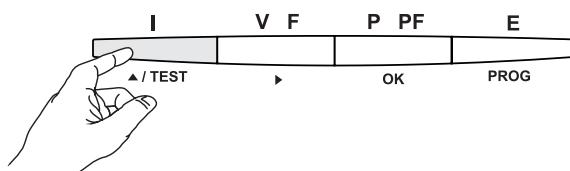
**CON
PAr**

— p.70



**CON
StOp**

— p.71

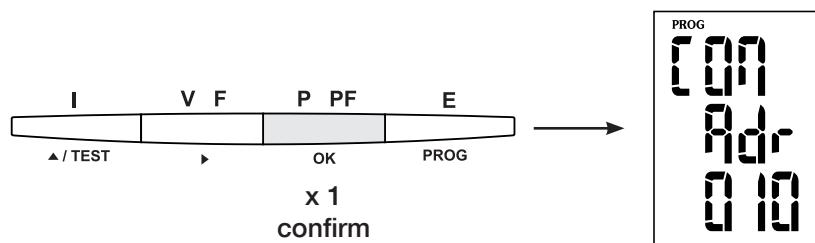
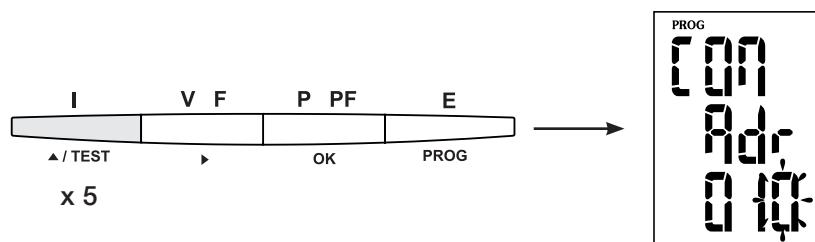
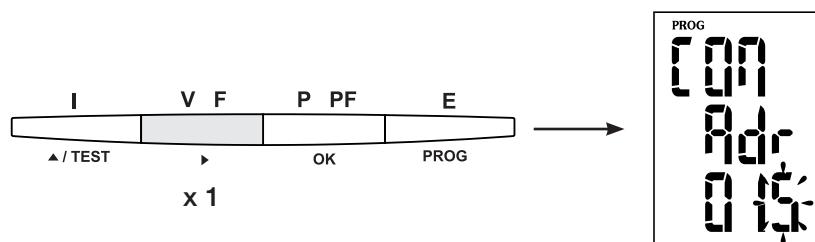
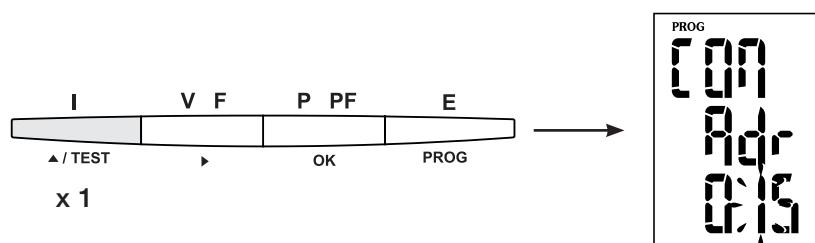
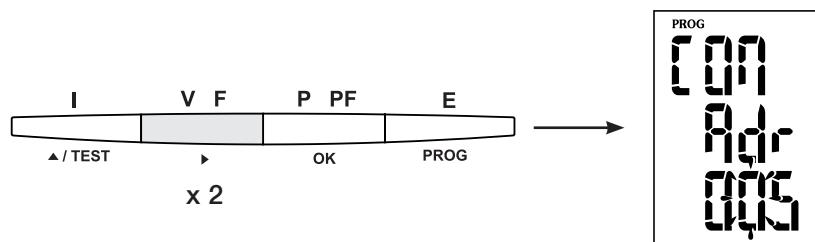
P

**CON
StOp**

Menu seguir

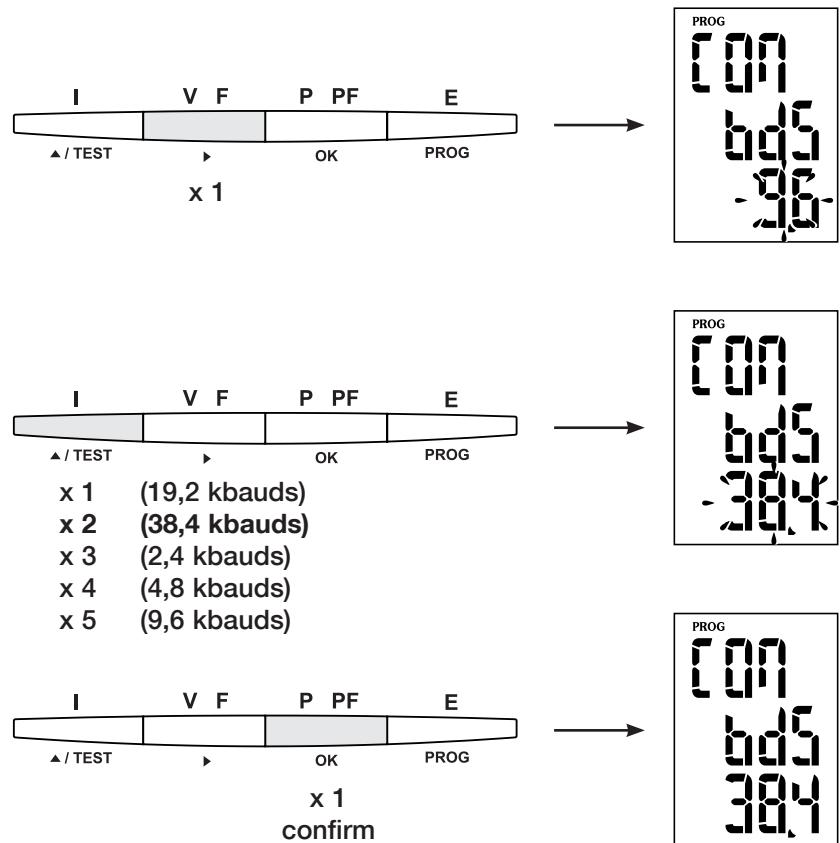
ENDEREÇO DA COMUNICAÇÃO

> Exemplo: COM Adr = 10



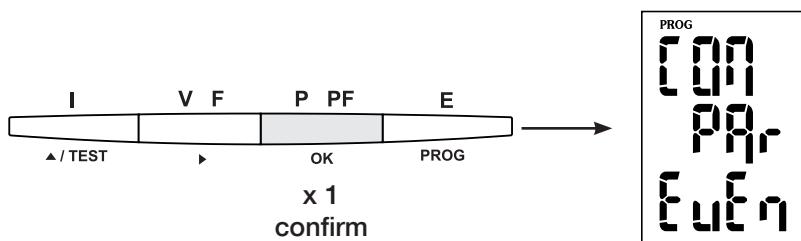
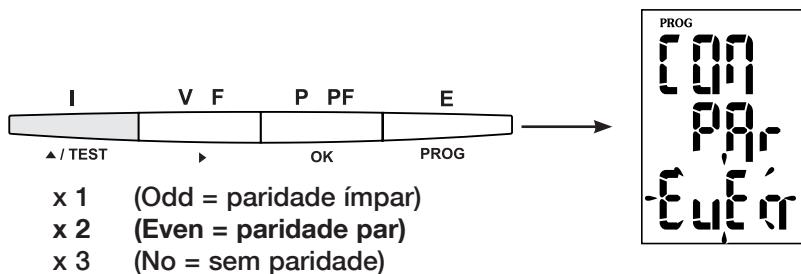
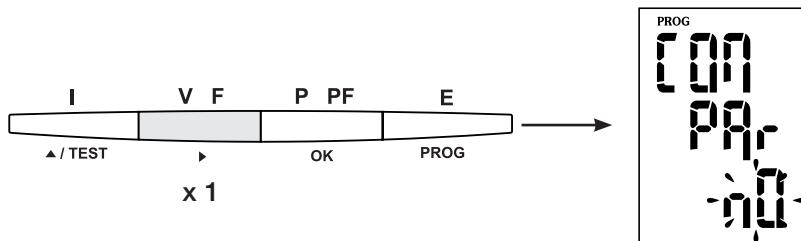
VELOCIDADE DE COMUNICAÇÃO

> Exemplo: bdS = 38,4 kbauds



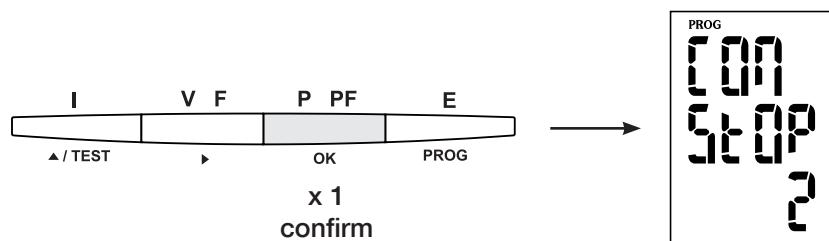
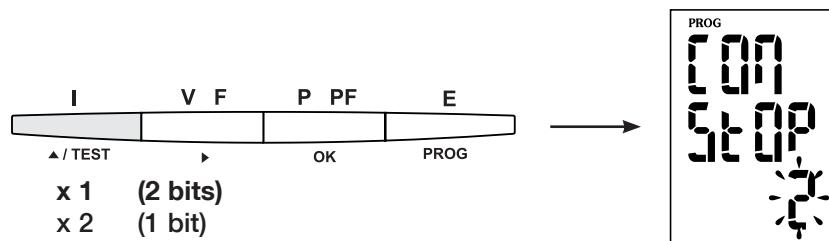
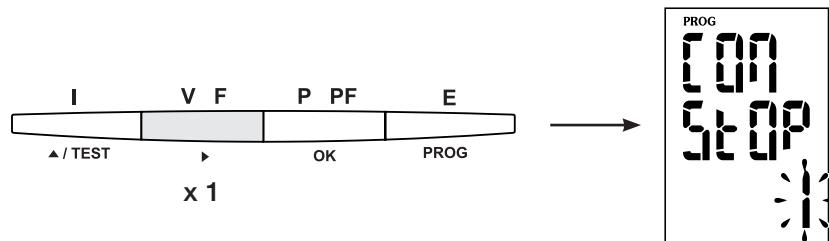
PARIDADE DE COMUNICAÇÃO

> Exemplo: PAr = EvEn

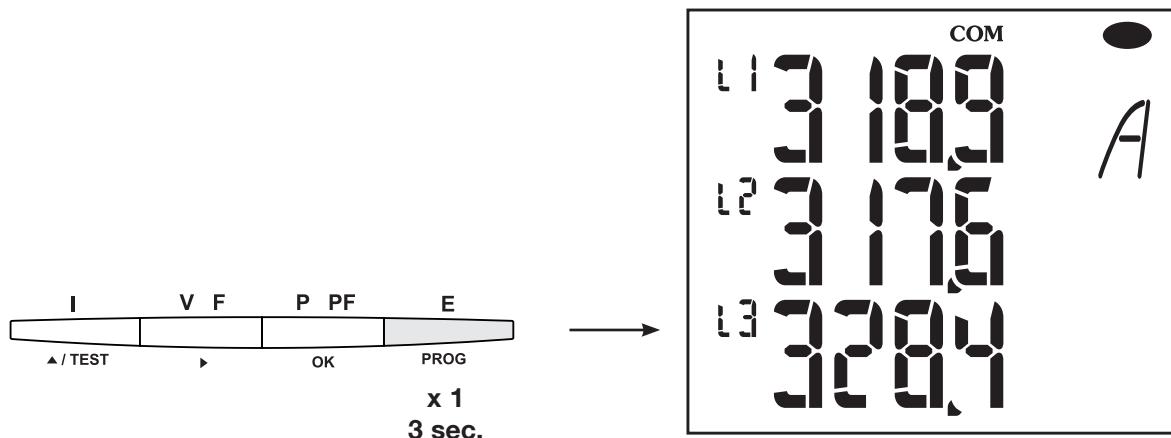


BIT DE STOP DE COMUNICAÇÃO

> Exemplo: StOP = 2



PARA SAIR DA PROGRAMAÇÃO



O produto **146 68** comunica a partir de um protocolo JBUS/ MODBUS® que implica um diálogo mediante uma estrutura mestre/escravo. Dois diálogos são possíveis:

- o mestre diáloga com um escravo (produto **146 68**) e aguarda a sua resposta
- o mestre diáloga com todos os escravos (produto **146 68**) sem aguardar a sua resposta.

O modo de comunicação é o modo RTU (Remote terminal Unit) com caracteres hexadecimais constituído, no mínimo, de 8 bits.

A TRAMA DE COMUNICAÇÃO PADRÃO

é constituída por:

| | | | | |
|---------------------|------------------|----------|-------|--------|
| Endereço do escravo | Código da função | Endereço | Dados | CRC 16 |
|---------------------|------------------|----------|-------|--------|

Em conformidade com o protocolo JBUS/MODBUS®, o tempo inter-caracter deve ser inferior a 3 silêncios, isto é ao tempo de emissão de três caracteres para que a mensagem seja tratada pelo produto **146 68**.

Para explorar correctamente as informações, é indispensável utilizar as funções segundo os códigos:

3: para a leitura de n palavras (máximo 128).

6: para a redacção de uma palavra.

8: para o diagnóstico das trocas entre o mestre e o escravo a partir dos contadores 1, 3, 4, 5 e 6.

10: para a redacção de n palavras (máximo 128).

Nota:

1 palavras <=> 2 octets <=> 16 bits

2 palavra <=> 4 octets <=> 32 bits

Seleccionando o endereço do escravo 0, transmite-se uma mensagem a todos os aparelhos apresentados na rede (apenas para as funções 6 e 16).

Observação:

O tempo de resposta (time out pergunta/resposta) é de 250 ms máximas.

TABELA DE COMUNICAÇÃO

- » As tabelas de comunicação encontram-se disponíveis no CD Rom fornecido com o módulo RS485 JBUS/ MODBUS® para produto 146 68.

CARACTERÍSTICAS TÉCNICAS

COMUNICAÇÃO

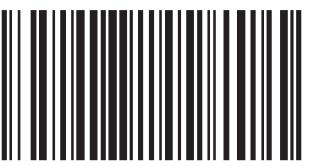
| | |
|----------------------|-------------------------|
| RS485 | 2 ou 3 fios half duplex |
| Protocolo | JBUS/MODBUS® modo RTU |
| Velocidade | de 2400 a 38400 Bauds |
| Isolamento galvânico | 4 kV |
| Unidade de carga | 1 UL (Unity of loads) |

LÉXICO DAS ABREVIATURAS

| | |
|------|------------------------------------|
| COM | Comunicação |
| ADR | Endereço do escravo |
| BDS | Velocidade de comunicação em bauds |
| PAR | Paridade da trama de comunicação |
| NO | Sem paridade |
| Even | Paridade par |
| Odd | Paridade ímpar |
| STOP | Bip de stop da trama |
| 1 | 1 bit de stop |
| 2 | 2 bits de stop |

NOTES

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