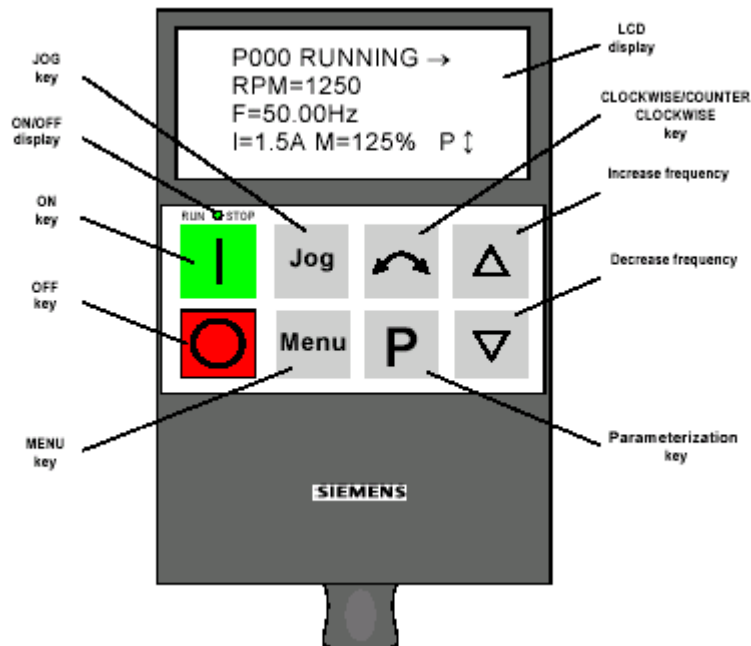


## Plain text operator panel OPM2



The optional plain text operator panel is intended to additionally enhance the user friendliness of the MICROMASTER, MICROMASTER Vector and MIDIMASTER Vector. Furthermore, it has been designed for use with COMBIMASTER. This provides the operator with a plain text basis for commissioning, parameterizing, configuring and operating the drive inverter.

The following functions are provided:

- ❖ Back lit LCD display with a high resolution and contrast control.
- ❖ 7 languages
- ❖ Up to 31 drive inverters can be centrally controlled, which are networked via USS.
- ❖ Up to 10 parameter sets can be saved in the non-volatile memory for uploading and downloading data between the plain text operator panel and drive.
- ❖ Help texts for diagnostics (troubleshooting).
- ❖ Insulated RS232 interface to connect to a PC.

The plain text operator panel fits perfectly into the front panel of the drive (screws are not required) and can be easily removed by lifting a bracket below the unit.

The operator panel is automatically activated as soon as it is connected to a drive inverter or the voltage is switched-on.

The plain text operator panel can be connected to the drive using a cable which means that it can be used as mobile terminal. It can also be mounted on a cabinet door thus serving as a favorably priced "Man/machine interface" for one or several drives in a cabinet.

Caution:

When using the plain text operator panel as interface converter RS232/ RS485 or without drive inverter, then an additional 6V DC power supply is always required.

The power supply specifications are as follows:

Voltage tolerance	6V ± 0.5V
Current drain for operation with a drive inverter:	50mA,
Current drain for operation without drive inverter:	250mA

Connector:

- outer diameter: 3.5 mm (=0V)
- inner diameter: 1.35 mm (=+6V)

# Operating Instruction of Enhanced Operator Panel OPM2

Figure 2: Dimensions

Dimensions H x W x D	130 mm x 73 mm x 40 mm
Current drain at 5 V	200 mA
Degree of protection	IP 54
Max. cable length	5 m

Figure 3: Order Numbers

Designation	Order No.
Multi-lingual plain-text operator panel OPM2 with integrated interface converter RS232/RS485	6SE3290-0XX87-8BF0
CABLE SET TO MOUNT THE OPM 2 IN THE CABINET, 3M LONG	6SE3290-0XX87-8PK0
PC INTERFACE CABLE RS232 FOR OPM 2, 1M LONG	6SE3290-0XX87-8SK0



Fig. 4: Pin assignment of the RS232 connector

Pin	Function, information
1	Not assigned
2	External TxD
3	External RxD
4	External RTS
5	Insulated 0V

Figure 5: RS485- PIN

Pin	Function, information
1	Not assigned
2	Not assigned
3	RS485 send and receive data line, two-wire, positive differential input/output B/P
4	Switch-on the send section ("request-to-send" RTS)
5	Reference potential, 0 V
6	Insulated power supply, 5V, for the terminating resistors
7	Not assigned
8	RS485 send and receive data line, two-wire, negative differential input/output A/N
9	Not assigned

# Operating Instruction of Enhanced Operator Panel OPM2

## Enhanced Operator Panel Introduction

The Enhanced Operator Panel (OPm) is a plug-in module that provides users with a clear text display that is both easy to use and understand.

The OPm has the following features:

- 64 character backlit LCD screen.
- Choice of five languages.
- Can operate as a master device for controlling

up to 31 inverters via the USS bus.

- Ability to upload and download parameters.
- Non-volatile storage for up to 31 parameter

sets.

- Menu-driven screen options.
- Simple to install.

**Installation** Simply plug the OPm into the RS485 socket on the front of the inverter and then tighten the single securing screw. The inverter does not need to be switched off prior to installation (or removal). The OPm can also be panel-mounted using two M5 screws (see installation diagram). In this case, the cable used to connect the OPm to the inverter must not exceed 4 m in length and must be shielded. The shield must be connected to the shell of each connector. If two or more inverters are to be connected together via the serial link, the OPm may be powered either by one of the inverters or by an external +6 V power supply. The serial interfaces on the inverters may be connected together through either the external D-type connectors or the internal RS485 terminal connectors.

**Start-Up** The front panel buttons operate in a similar manner to the original buttons on the inverter (where fitted); i.e. the  $\wedge$  and  $\vee$  buttons enable you to scroll through available options and pressing **P** selects the current option. The screen that appears when the OPm is first powered on shows the language options. The flashing dashed line (cursor) shows the language that will be selected when the **P** button is pressed. To select a different language, press the  $\wedge$  or  $\vee$  button until the cursor is beneath the language required and then press **P**. The display will change to show the Main Menu (see below) in the language selected.

This menu can be accessed at any time by pressing the **P** and  $\_$  buttons simultaneously.

```
OPERATE  UPREAD
DIAG.    DOWNLOAD
PARAMS   LANGUAGE
MODE     INFO   P
```

## LOCAL Mode (Single Inverter Operation)

OPERATE

```
P000 RUNNING →
RPM=1250
F=50.00Hz
I=1.5A   M=125% P
```

Selecting OPERATE causes a screen similar to that shown below to appear:

This is the first screen that appears whenever the OPm is subsequently powered on. The top line indicates the current operational state of the inverter. The arrow indicates the direction of rotation of the motor.

RPM = Speed of the motor.

F = Frequency

(adjustable using the  $\wedge$  and  $\vee$  buttons).

I = Motor current.

M = Motor torque.

### Note

If a fault or warning is detected, the OPm will display the fault or warning code together with a brief explanatory message.

Pressing **P** causes the parameter selection screen to be displayed:

```
P000
Access Params.
P Operate Drive
```

Press the  $\wedge$  or  $\vee$  button to view parameter settings. The procedure for changing parameter settings is described in the inverter's handbook. Press **P** to return to the OPERATE screen.

DIAG

Selecting this option after a fault has occurred causes the diagnostics screen to be displayed:

```
overtemp.
#Check ambient
temp not too hi
F005 P
```

Pressing the  $\wedge$  or  $\vee$  button scrolls through the text that describes the possible causes of the

# Operating Instruction of Enhanced Operator Panel OPM2

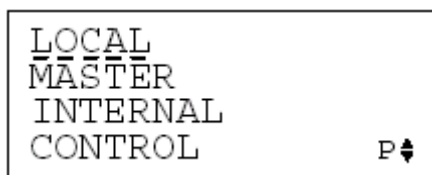
fault (refer to the Fault Codes section of the inverter's handbook for further details). Press **P** to return to the Main Menu.

## PARAMS

Selecting this option causes the parameter selection screen to be displayed (see OPERATE above).

## MODE

This option enables you to configure the OPM for controlling other inverters connected via the USS serial bus and for editing the OPM's operational parameters. The mode selected is retained during power interruptions.



The default mode is LOCAL. In this mode the OPM can only control a single inverter. If several inverters are connected together then you must select MASTER mode. Note that the INTERNAL and CONTROL modes operate in a similar manner regardless of whether LOCAL or MASTER mode has been selected.

## UPREAD

This option lets you copy the inverter's parameter set to any of 31 locations within the OPM. The parameters are retained in memory during power interruptions and even while the OPM is disconnected from the inverter.

## DOWNLOAD

This option lets you copy a parameter set to the inverter that has previously been stored in the OPM.

## LANGUAGE

This option lets you change the language at any time.

### Note

The language selected is retained during power interruptions and even while the OPM is disconnected from the inverter.

## INFO

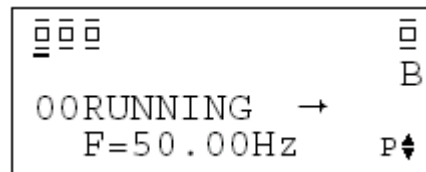
Selecting this option causes the LCD screen to display a brief description of the OPM. Press the  $\wedge$  button to scroll through the text one line at a time. Press **P** at any time to return to the Main Menu.

## MASTER Mode (Multi Inverter Operation)

Selecting the MASTER option on the MODE screen enables you to control two or more inverters from the OPM.



If you select OPERATE from the Main Menu after putting the OPM into MASTER mode, a screen similar to that shown below will appear. (Note that the PARAMS option is not available on the Main Menu in MASTER mode.)



This is the first screen that appears whenever the OPM is subsequently powered on in MASTER mode. In this example the top line shows that 4 inverters are connected to the bus with addresses 00, 01, 02 and 15. The address of the selected inverter is shown alongside the operational state.

Select the inverter to be controlled by pressing  $\wedge$  or  $\vee$  and then pressing **P**. This causes the local OPERATE screen to appear.

### Note

If the front panel buttons on an inverter are disabled (P007 = 0), the parameters can be changed but the inverter will not run.

If 'B' (Broadcast) is selected, all inverters connected to the bus can be controlled simultaneously via the ON, OFF, REVERSE and JOG buttons on the OPM.

## DIAG

Selecting this option after a fault has occurred causes the master OPERATE screen to be displayed. Select the inverter to be diagnosed by using the  $\wedge$  and  $\vee$  buttons and then pressing **P**.

# Operating Instruction of Enhanced Operator Panel OPM2

## UPREAD

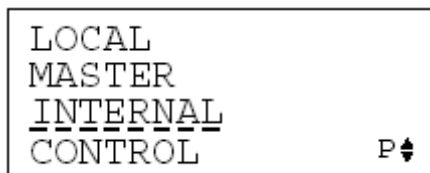
This option lets you copy parameter sets to the OPm from any inverter connected via the USS bus. Up to a maximum of 31 sets can be stored. They are retained in memory during power interruptions and even while the OPm is disconnected from the inverter. This function operates in a similar manner as when selected in LOCAL mode, except that it is necessary to enter the required inverter address using the  $\wedge$  and  $\vee$  buttons and then select it by pressing **P**.

## DOWNLOAD

This option lets you copy parameter sets previously stored in the OPm to any inverter connected via the USS bus. This function operates in a similar manner as when selected in LOCAL mode, except that it is necessary to enter the required inverter address using the  $\wedge$  and  $\vee$  buttons and then select it by pressing **P**.

## INTERNAL Mode

Selecting INTERNAL enables you to access and edit stored parameter sets, even if the OPm is not connected to an inverter (providing an external power supply is used).



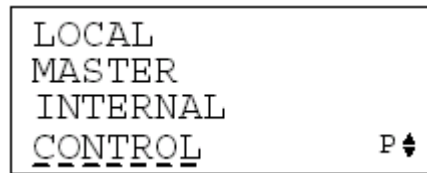
If you select PARAMS from the Main Menu after selecting INTERNAL, a screen similar to that shown below will appear. (Note that the OPERATE and DIAG options are not available on the Main Menu in INTERNAL mode.)

Select the required parameter set by using the  $\wedge$  and  $\vee$  buttons and then pressing **P**. If the selected set is empty, the default settings for the required inverter type may be installed. Note that the default settings for the motor parameters (P081 to P086) apply only to the smallest variant of each inverter type.

### Note

Do not confuse the number assigned to a parameter set with the address of individual inverters. This is the first screen that appears whenever the OPm is subsequently powered on in INTERNAL mode.

## CONTROL Mode



Selecting CONTROL lets you change the OPm parameters listed below:

**Backlighting** (enabled/disabled)

**4 Digit Display** (enabled/disabled)

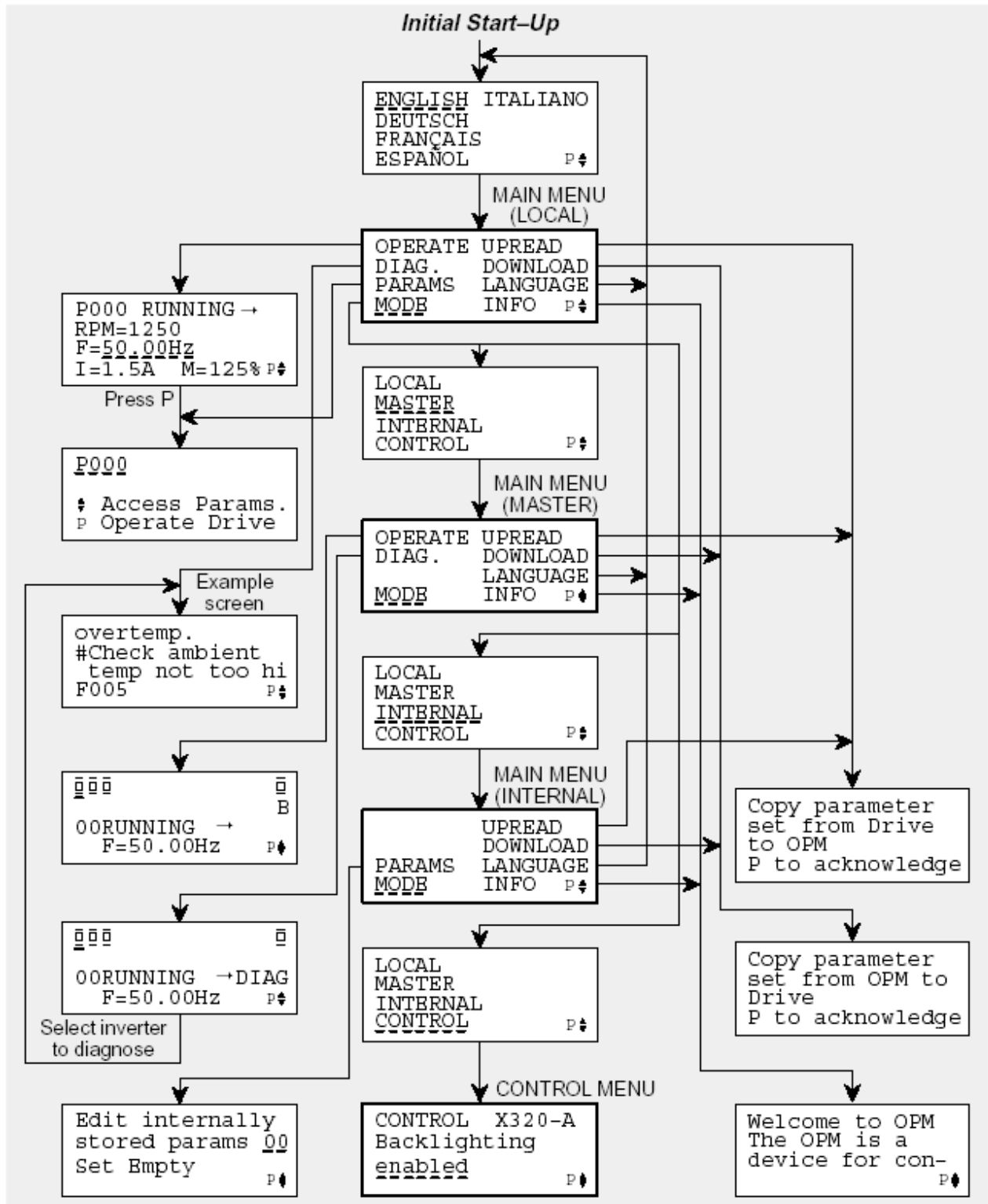
If a button is not pressed for 45 s, the display changes to show the value determined by the setting of P001 in large (full-screen) characters.

**OPm Reset** (enabled/disabled)

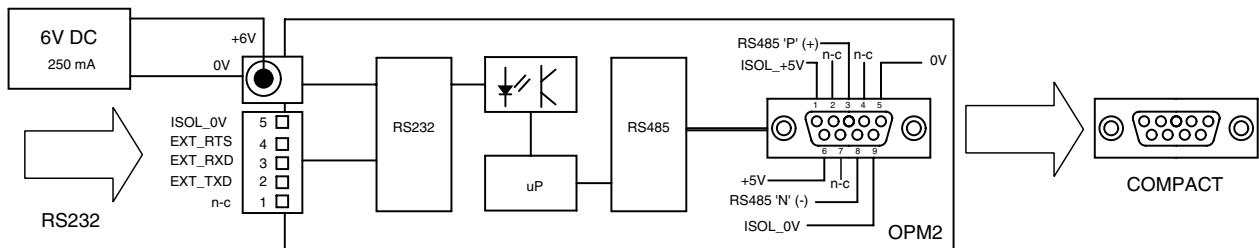
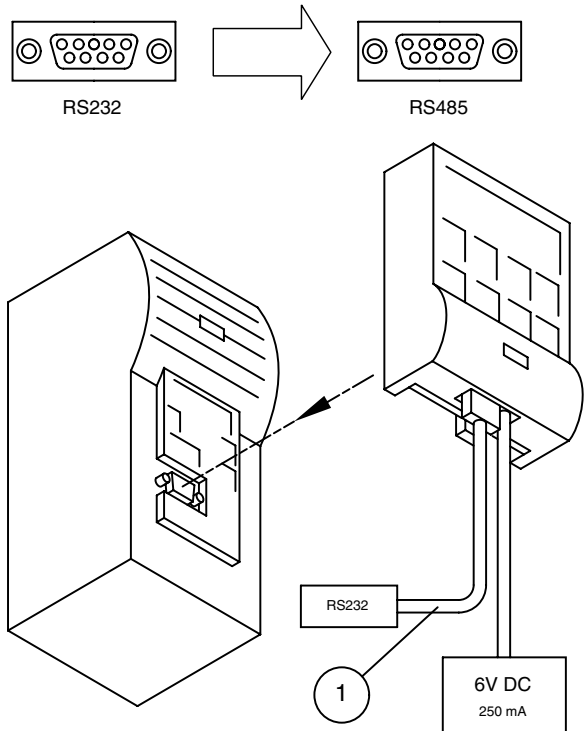
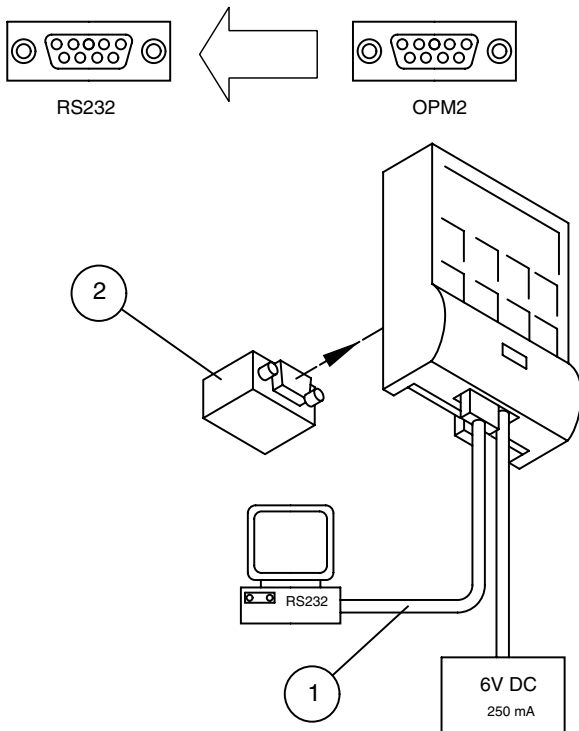
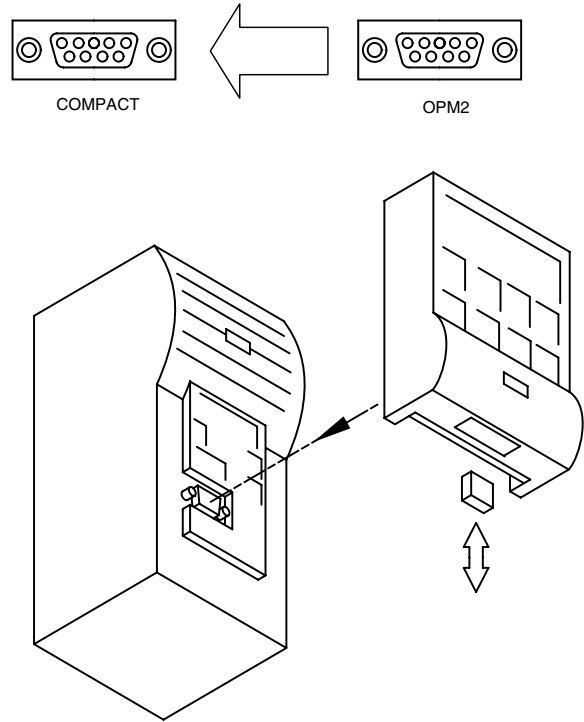
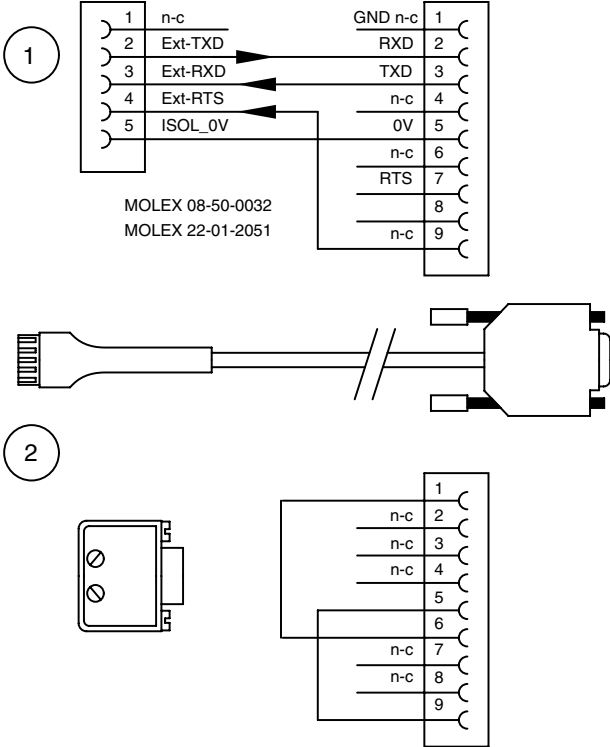
### Note Selecting

OPm Reset deletes all stored parameter sets from memory, resets the OPm to the default language (English) and sets the mode to LOCAL. For each of the above parameters, pressing  $\wedge$  or  $\vee$  toggles between the options and pressing **P** selects the current option and advances to the next parameter. However, pressing **P** when Opm. Reset is displayed causes the OPm to exit from CONTROL mode and return to the Main Menu (unless OPm Reset has been enabled).

# Operating Instruction of Enhanced Operator Panel OPM2



KIT: 6SE3290-0XX87-8SKO (Items 1 & 2 below)



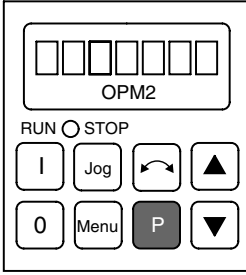
- (D) OPM2 - GEBRAUCHSANWEISUNG
- (GB) OPM2 - OPERATING INSTRUCTIONS
- (F) OPM2 - MODE D'EMPLOI
- (I) OPM2 - ISTRUZIONI PER L'USO

- (E) OPM2 - INSTRUCCIONES PARA EL USO
- (NL) OPM2 - BEDININGSHANDLEIDING
- (DK) OPM2 - BETJENINGSREJLEDNING

G85139-H1747-U602-A2		Desc.	Date
Iss	Desc.	Date	Iss
A1	Prod. Issue	10.09.97	
A2	Revisions	01.02.01	

6SE3290-0XX77-1BFO

1



- START MIT VORGEGEBENER FREQUENZ (D)
- RUN AT PRESET FREQUENCY (GB)
- MARCHE A LA VITESSE PRE SELECTIONNEE (F)
- FUNZIONAMENTO A FREQUENZA PREDEFINITA (I)
- FUNCIONAMIENTO A FRECUENCIA PREFIJADA (E)
- IN BEDRIJF OP INGESTELDE FREQUENTIE (NL)
- KØR MED FORUDINDSTILLET FRELENEUS (DK)

- (D) UMKEHR DREHRICHTUNG
- (GB) REVERSE DRIVE DIRECTION
- (F) INVERSION DU SENS ROTATION
- (I) INVERSIONE DI DIREZIONE
- (E) INVERSIONE DE GIRO
- (NL) OMGEKEERDE DRAAIRICHTING
- (DK) SKIFT OMLØBSRETNING

2



- START INVERTER (D)
- MISE EN MARCHÉ DE L'ENTRAÎNEMENT (GB)
- AVVIAMENTO DELL'INVERTITORE (F)
- ARRANQUE DEL CONVERTIDOR (I)
- START OMVORMER (E)
- START (NL)
- START (DK)

- (D) ERHOHUNG
- (GB) INCREASE VALUE/UP
- (F) AUGMENTER VALEUR/PLUS
- (I) AUMENTO DEL VALORE/SU
- (E) INCREMENTAR VALOR/ARRIBA
- (NL) VERHOOG DE WAARDE/HOGER
- (DK) FORØG VARD/IOP

3



- STOP UMRICHTER (D)
- STOP INVERTER (GB)
- ARRET DE L'ENTRAÎNEMENT (F)
- ARRESTO DELL'INVERTITORE (I)
- PARADA DEL CONVERTIDOR (E)
- STOP OMVORMER (NL)
- STOP (DK)

- (D) REDUZIERUNG
- (GB) DECREASE VALUE/DOWN
- (F) DIMINUER VALEUR/MOINS
- (I) DIMINUZIONE DEL VALORE/GIU'
- (E) DECREMENTAR VALOR/ABAJO
- (NL) VERLAAG DE WAARDE/LAGER
- (DK) FORMINDSK VARDI/NED

- HAUPT MENU (D)
- MAIN MENU (GB)
- MENU PRINCIPAL (F)
- MENU' PRINCIPALE (I)
- MENU PRICIPALE (E)
- HOOFDMENU (NL)
- HOVED MENU (DK)

- (D) AUSWAHL
- (GB) SELECT CHOICE/VALUE
- (F) SELECTION CHOIX/VALEUR
- (I) SCELTA OPZIONE/VALORE
- (E) SELECCIONAR/VALOR
- (NL) SELECTEER KEUS/WAARDE
- (DK) VALG FUNKHON/VARDI

- (D) HILFE
- (GB) GET HELP
- (F) AIDE
- (I) AIUTO
- (E) AYUDA
- (NL) VRAAG HULP
- (DK) REKVINEN HJALP

- (D) ZURUCK ZUM UNTER MENU
- (GB) RETURN TO SUB-MENU
- (F) RETOUR AU SOUS-MENU
- (I) RITORNO AL SOTTO-MENU
- (E) VOLVER AL SUB-MENU
- (NL) TERUGKEREN NAAR SUB-MENU
- (DK) TILBAGE TIL UNDERMENU

- (D) MONTAGE BAUSATZ
- (GB) PANEL MOUNTING KIT
- (F) KIT DE MONTAGE
- (I) KIT PER IL MONTAGGIO A PANNELLO
- (E) KIT PARA MONTAJE SOBRE PANEL
- (NL) INBOUW MONTAGESET
- (DK) ADAPTER FOR TAVLEMONTAGE

- (D) SPANNUNGNACHLAS < 0.2V
- (GB) VDROP < 0.2V
- (F) CHUTE DE TENSION < 0.2V
- (I) CADUTA DI TENSIONE < 0.2V
- (E) CAIDA DE TENCION < 0.2V
- (NL) SPANNINGSVERLIES < 0.2V
- (DK) SPENDINGS FALD < 0.2V

