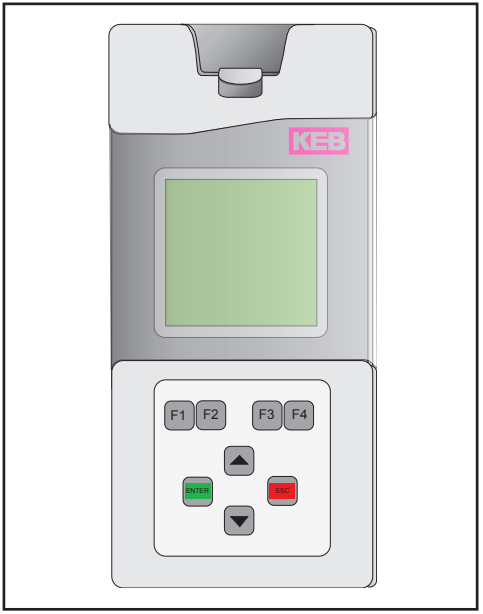
COMBIVERT

CE



GB INSTRUCTION MANUAL LCD operator

Mat.No.	Rev.
PLF50EB-K000	1B

KEB


GB

Table of contents

1. Introduction

1.1 General Information

Before working with the unit the user must become familiar with it. This includes especially the knowledge and observance of the safety and warning directions. The pictographs used in this instruction manual have following meaning:

Danger Indicates danger to life by electric current.

Warning Indicates possible danger to life or danger of injury.

Note Indicates tips and additional information.

1.2 Validity

This manual as well as the specified hardware and software are developments of the Karl E. Brinkmann GmbH. Errors and ommissions excepted! The Karl E. Brinkmann GmbH have prepared the documentation, hardware and software to the best of their knowledge, however, no guarantee is given that the specifications will provide the efficiency aimed at by the user. The Karl E. Brinkmann GmbH reserves the right to change the specifications without prior notification or further obligation. All rights reserved.

The information contained in the technical documentation, as well as any user-specific advice in spoken and written and through tests, are made to best of our knowledge and information about the application. However, they are considered for information only without responsibility. This also applies to any violation of industrial property rights of a third-party.
Inspection of our units in view of their suitability for the intended use must be done generally by the user. Inspections are particulary necessary, if changes are executed, which serve for the further development or adaption of our products to the applications (hardware, software or download lists). Inspections must be repeated completely, even if only parts of hardware, software or download lists are modified.

Inspection by the user

Application and use of our units in the target products is outside of our control and therefore exclusively in the area of responsibility of the user.

Use under special conditions

The used semiconductors and components of KEB are developed and dimensioned for the use in industrial products. If the KEB COMBIVERT is used in machines, which work under exceptional conditions or if essential functions, life-supporting measures or an extraordinary safety step must be fulfilled, the necessary reliability and security must be ensured by the machine builder.

1.3 Qualification

All work from the transport, to installation and start-up as well as maintenance may only be done by qualified personnel (IEC 364 and/or CENELEC HD 384 or DIN VDE 0100 and note national safety regulations). According to this manual qualified staff means those who are able to recognise and judge the possible dangers based on their technical training and experience and those with knowledge of the relevant standards and who are familiar with the field of power transmisssion (VDE 0100, VDE 0160 (EN 50178), VDE 0113 (EN 60204) as well as those who note the valid local regulations).

Danger by high voltage

KEB electronic components contain dangerous voltages, which can cause death or serious injury. Depending on the protective system they can have live parts, bright parts, if necessary also moving parts, as well as hot surfaces during operation.
Care should be taken to ensure correct and safe operation to minimise risk to personnel and equipment.

1.4 Order data

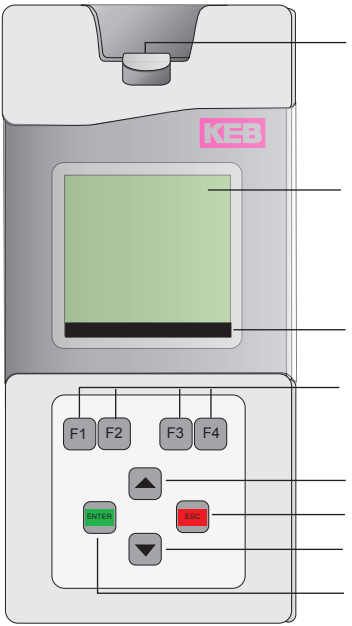
Operator graphic LCD	00.F5.060-K000
Optional zum Anschluss des LCD-Operators an die Diagnoseschnitt-stelle von Standard-Operatoren:	
HSP5 cable between LCD and standard operators:	00.F5.0C0-0020

1.5 Product description

The LCD operator has a display with a text indicator, which enables a clearly representation of comprehensive informations,for example a parameter name with its value. Several languages are available.
The four function keys are occupied variable. Internal and external possibility of saving enables the transmission and storage of parameter lists and thereby a faster programming of inverter.

2. Hardware

2.1 Description of the operator



(1) Lock arm

(2) LCD display
160 x 160 pixel, 32 gray scale value

(3) Function bar

(4) Function keys F1 to F4

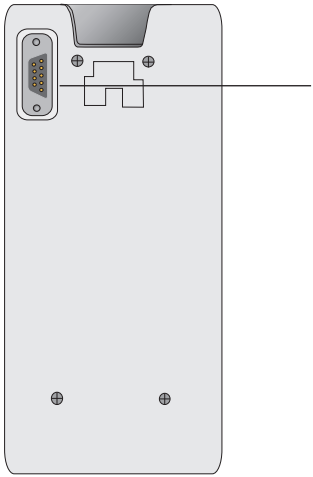
(5) Up

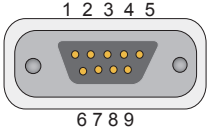
(6) ESC

(7) Down

(8) ENTER

1	The operator can be removed from the inverter.
2	The LCD display offers a detailed representation of the information with a plain text display.
3	A flashing function bar indicates an inverter error.
4	The function keys F1 to F4 are variable assigned. The assignment is displayed by the function bar.
5 and 7	With "Up" and "Down" it can be moved between the menu items or changing parameter values.
6	With ESC a jump to the next superior menu is done.
8	With ENTER it can be jumped into the selected menu item or a selection can be confirmed.





1	GND	Voltage supply
2	RxD	Receive signal, 0-active
3	TxD	Transmission signal, 0-active
4	VCC	Voltage supply +, connected with 9
5	GND	Reference for signals
6	GND	connect with 5
7	E_TxD	transmit handshake signal, 1-active
8	E_RxD	receive handshake signal, 1-active
9	VCC	Voltage supply +, connected with 4

An installed card shaft at the bottom side serves for input of SD or MMC memory cards

2.2 Internal flash memory

Access to this memory is possible via device C:. System files, work and parameter lists are stored here. Observe the following particularities:

- Only short file names (8,3 format) are possible.
- Data are not physically deleted. At first they are internal marked as deleted. Thus the available memory capacity decreases. The complete memory is formatted new with the command "format". All data are irrevocable deleted.
- With the command "clear" the deleted memory capacity can be made available again without reformatting.

2.3 External memory card

A SD or MMC memory card of any capacity can be insert into the slot of the operating unit. Access to this memory is possible via device A: Any files can be stored also here. Observe the following particularities:

- The file system is FAT16 and thus compatibly to external readers and Windows operating systems.
- It can be accessed only to files in the main directory.
- Only short file names (8,3 format) are possible.
- The write protection switch (at SD cards) is considered, writing on the card only possible after release.

2.4 System files

Necessary system files:

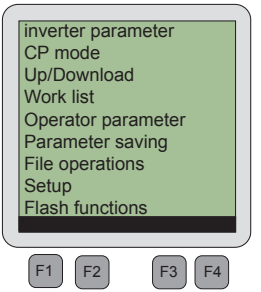
- LANGUAGE.DAT: Texts in all languages for the operation of the operator
- PARAS.BLB: Parameter functions and names for all inverter and operator parameters

2.5 Technical data

General	
Dimension (HxBxT)	160 x 75 x 30
Weight	160 g
Protective system (EN 60529)	IP20
Operation temperature	-10°…45°C
Storage temperature	-25°…70°C
Climatic category (EN60721-3-3)	3 K 3
Environment (IEC 664-1)	Pollution degree 2
Flash memory	4 MBytes
External memory	SD or MMC memory cards of any capacity

3. Software

3.1 Main menu



ENTER → Jump into the submenu

← F1 Return to the main menu

The function keys F1 to F4 can be assigned as follows depending on the respective submenu.

3.2 Operation of the function keys

Display	Function
Flash/Card	Change between internal flash memory and external memory card
DecHex	Change between decimal and hexadecimal display
Num	Numeric input: manual input of numbers
Set	Changing the sets [I], [A] or [0-7]
Select	Selection of a configuration file
Last	Select the last used configuration file
Top/Bottom	Change between first and last list item
Formt [1)]	⚠ The complete memory including the system file is formatted again. → Data are irrevocable deleted
CinUp [1)]	Make deleted memory space without new formatting available again
Delete [1)]	Delete the selected file of memory card or flash memory
Upload	Load complete download list from current inverter
Download	Store download list in the inverter

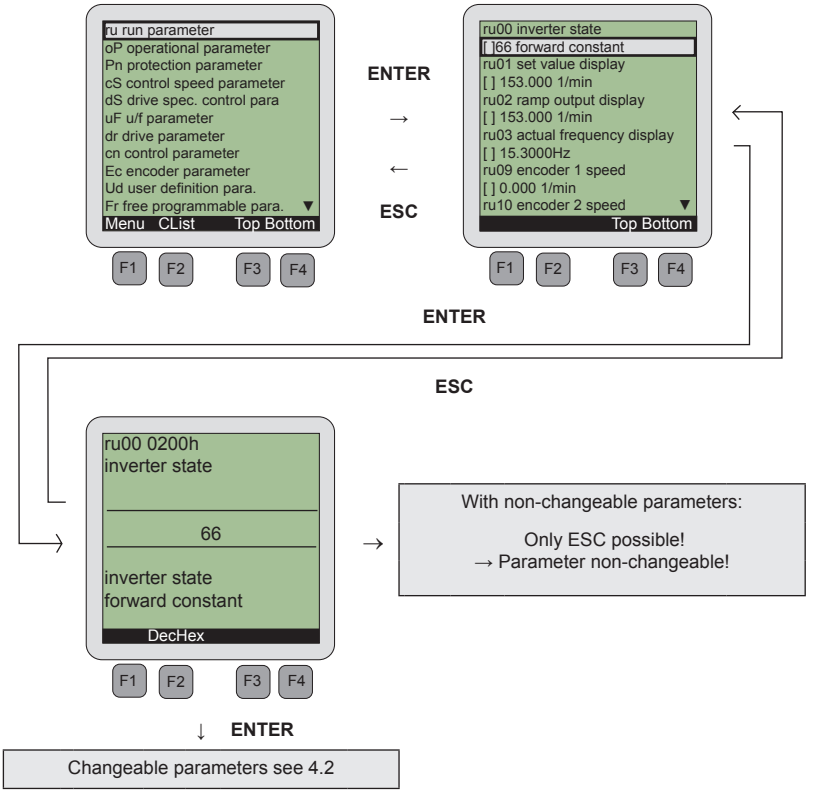
further on next side

Display	Function
Copy	Copy of files between flash memory and memory card
← →	Move to the left and right (e.g. at numeric input or input of file names)
CList	A complete parameter list is generated
Menu	Return to the main menu
Yes	Process confirm
+-	The sign is changed
,	A point and a further digit are inserted.
1)	File access is possible depending on the password level, reduced or switched off

4 Inverter Parameter

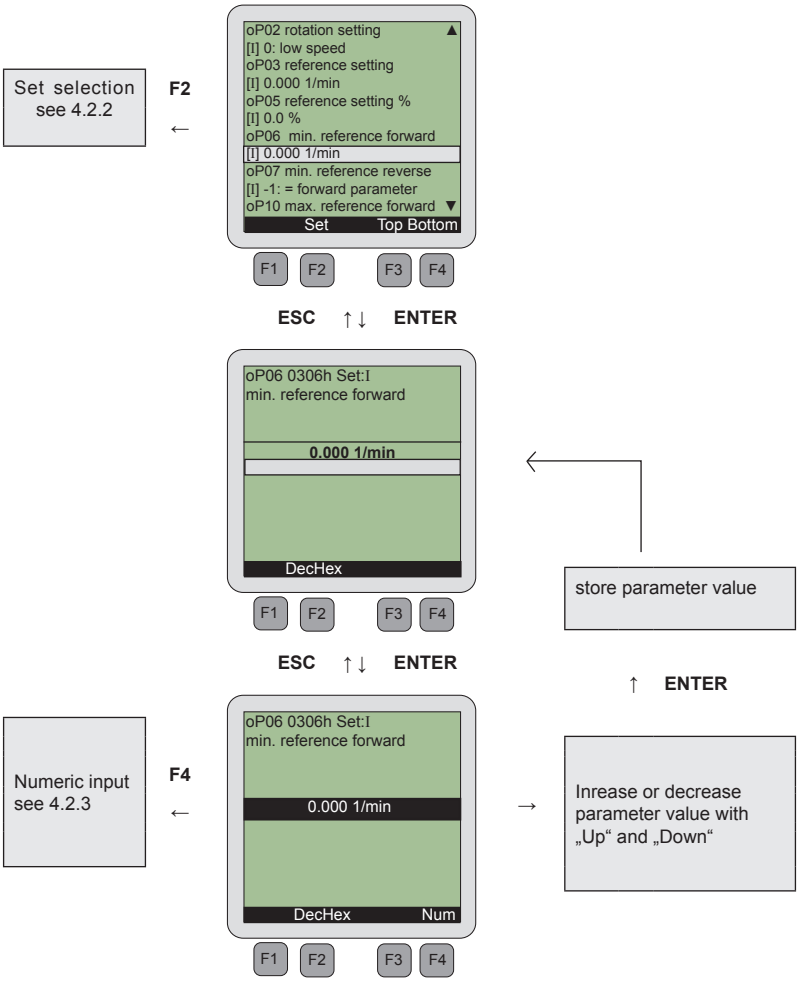
4.1 Non-changeable parameters

i	The parameter groups are depending on the inverter

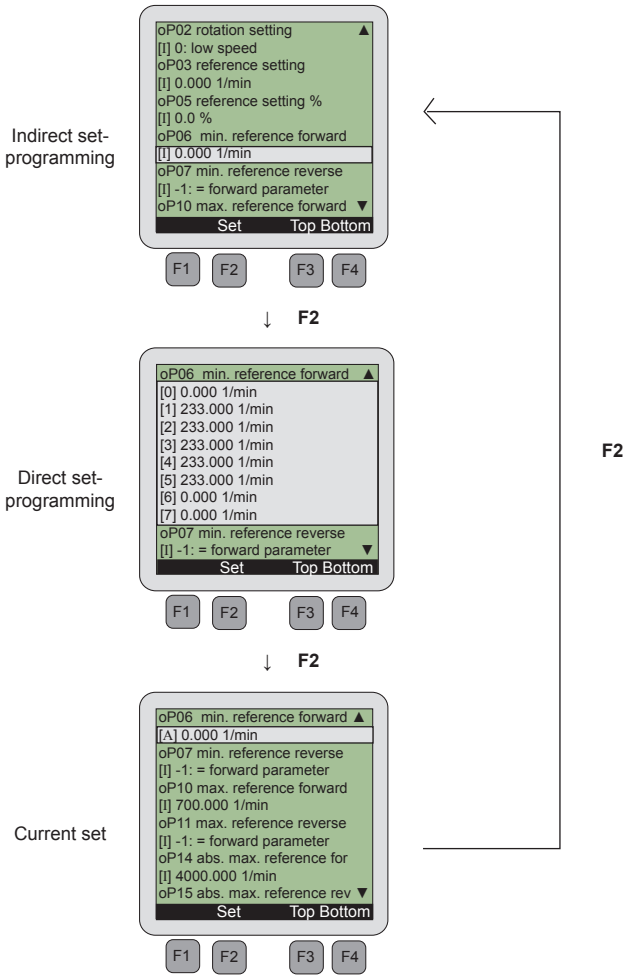


4.2 Changeable parameters

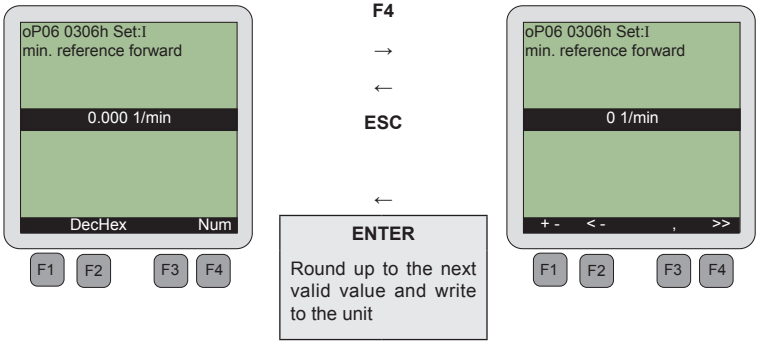
4.2.1 Changing with „Up“ and „Down“



4.2.2 Set selection

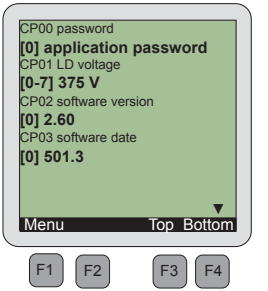


4.2.3 Numeric input



F1	F2	F3	F4
The sign is changed	A digit is removed	A point and a further digit are inserted. The digit can be changed with "UP" and „Down“. With several points only the first is considered!	The display is extended by a digit. The digit can be changed with "UP" and „Down“.

5. CP Mode

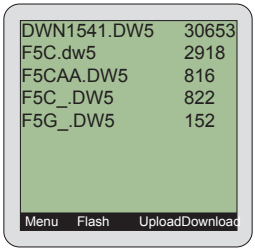


CP mode

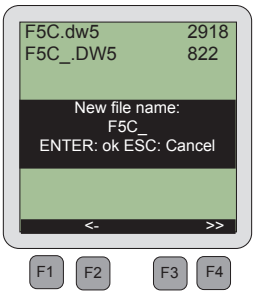
The defined customer parameters in the inverter are displayed.
Operation takes place like the inverter parameters.

The representation size of the parameter values can be adjusted separately!
→ see “menu“ → “adjustments“ → “type size 2“

6. Up/Download

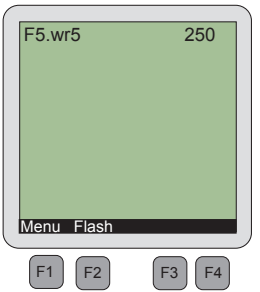


F1	F2
Back to the main menu	**Card** The file path is on memory card and changes to flash **Flash** The file path is on flash and changes to memory card

F3	Generate-correction is required		F4	
A downloadliste is loaded from the current inverter and stored under new name			A downloadlist is stored in the inverter	
↓ ENTER		**↓ ESC**	**↓ ENTER**	**↓ ESC**
		Cancel	process confirmed	Cancel
↓	↓			
A digit is removed	A digit is added. The digit can be changed with "UP" and „Down“: 0-9; _ ; A-Z			
	↓ENTER	**↓ESC**		
	Procedure confirmed/if necessary "overwrite“ inquiry	Cancel		

A complete parameter list can be generated with "CList" in the menu item "inverter parameter".

7. Work List



ENTER

→

←

ESC

Displays of the work list F5.wr5

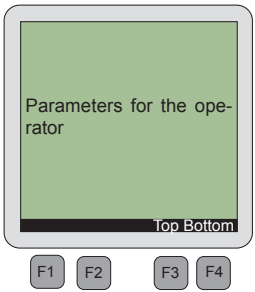
The selection of a work list of the memory card or the flash memory (function key F2) occurs in this menu item.

The compilation of the work list must be done with COMBIVIS.

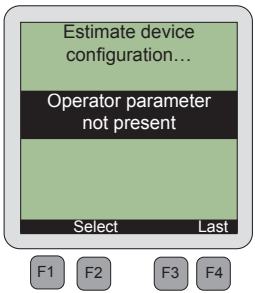
8. Operator Parameter

The LCD operator must be connected to the HSP5 diagnostic interface of the appropriate operator for representation of operator parameters.

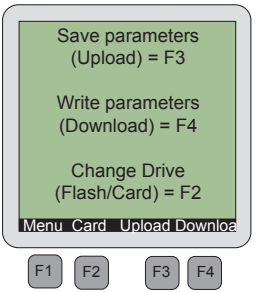
The operator can load the appropriate parameters if a valid configuration number is recognized. Operation takes place like the inverter parameters.



Either a configuration file can be selected via function key F2 or the last used configuration file can be taken via function key F4 if no configuration number is recognized.



9. Parameter Saving



F3	F4
All inverter and operator parameters (if an operator is available) are read out and saved in the flash memory or memory card. Every new upload process overwrites the pre-saved parameter lists.	A download is not possible without saved inverter parameters → error message! Operator parameters are only written if they are saved in the flash memory or memory card and if an operator is on the new inverter, which is to be written.

Fixed file names for saved parameter lists:

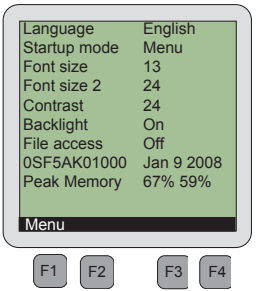
Inverter parameters: %%SAVEFU.DW5

Operator parameters: %%SAVEOP.DW5

10. File Operations

F2	F3	F4
Change between the files of the memory card and the files of the flash memory.	The selected file is copied between flash memory and memory card. The generate-correction is required. If the target file is already available, also the delete-authorization is necessary.	The selected file of the memory card or the flash memory is deleted. The delete-authorization is necessary.

11. Settings



11.1 Language
A language is selected for the menu and the parameters.
If the selected language is not available the parameters are displayed in english.

11.2 Startup mode
The startup mode determines the menu item after initialization of the operator.

11.3 Font size
It can be selected between font sizes 8.10.13.16 and 24 in the display.
Exception: see „font size 2“

11.4 Font size 2
The font size for the display of parameter values is specified in the CP mode and in the work list.

11.5 Contrast
The contrast adjustments of the LCD display can be changed within the range of 0 to 50.

11.6 Backlight
If the backlight displays „on" it is generally switched on. If the backlight is adjusted to "out" it is generally switched off. If the backlight is adjusted to "auto", it is switched on during pressing a key and switched off again after 10 seconds if no key is pressed.

11.7 File access

The following possibilities are available to determine the file access:

Display	Function	Password
Off	Files cannot be generated or deleted	0
Create	Files can be generated	55
Create/Delete	Existing files can be generated, deleted or overwritten	345

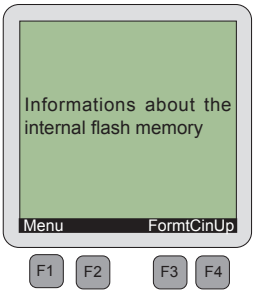
11.8 Software information

The display indicates the material number and the output data of the operator software.

11.9 Peak memory

The peak load of the text memory is displayed first. The peak load value of the communication buffer is displayed behind (this display is only for information).

12. Flash Functions



F3	Generate-/delete-authorization is required	F4
⚠	The complete memory including the system files is formatted again. → Data are irrevocable deleted!	The deleted memory capacity can be made available again without reformatting.

13. Password Protection of the KEB COMBIVERT

The KEB COMBIVERT is equipped with an extensive password protection.
This affects the LCD operator as follows:

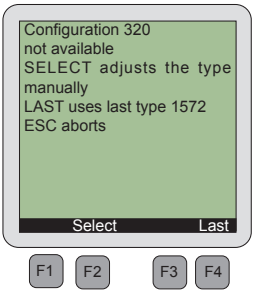
Password level	Meaning	LCD operator
CP read	Reading is only possible in the final customer menu (CP-Parameter).	No inverter parameters No operator parameters
CP read/ write	Reading and writing is possible in the final customer menu (CP-Parameter)	
Application mode	All parameter groups and parameters are visible	No restriction

The change between the password inputs:

Current password level	Password input in parameter
CP mode	CP.00
Application mode	Ud.01

14. Error

● Error:	Password setting insufficient
Cause:	Selection of parameters at low password level
Solution:	Adjust another password in the CP mode

● Error:	The following message is displayed when switching on: 
Solution:	● Select the last used parameter configuration with the function LAST
	● Select a new parameter configuration with the function SELECTION
	● Load the current system file "PARAS.BLB" from the internet to the memory card and download it to the operator flash memory in the menu item "file management"

● Error:	The selected language is not displayed
Solution:	Load the current system file „PARAS.BLB“ from the internet to the memory card and download it to the operator flash memory in the menu item "file management" → eventually not all parameters are available here in the desired language

Notes

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