OPERATOR'S MANUAL

OPM03

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logomat

Rev. 1.00

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1. Introduction

This chapter provides preliminary information concerning the OPM03 operator's panel and an overview of the applications it contains.

1.1. Preliminary information

The OPM03 is an operator's panel designed by Logomat over time with the specific aim of creating a valid connection between the automatic machine and the operator controlling it. The OPM03 combines all the components pertaining to machine warnings and controls.

The operator's panel is able to:

- *Display the machine status.*
- *Manage the Menus.*
- *Manage the machine.*

1.2. Outside interface

The machine status is displayed on a 4-line LCD (twenty characters per line) 9mm high.

The messages are written with a specific software (see Editor OPM03 software manual).

The management program of the machine is realized and downloaded by means of a specific software named Editor PLC.

1.3. Menu

The OPM03 is capable of managing menus that include a series of utilities (counter manager, selector manager, timers manager, etc.).

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2. Machine status display

This chapter describes the procedures to see the display messages.

2.1. Display

Upon switching on, the display carries out a series of internal tests. If they are successful, the display passes to the machine status display function. The message on the display depends on the bit coding 3.0÷3.6 (input port 3) or on the PLC program installed.

A message can be displayed either fixed or flashing.

The message can also display some counters.

*Press the* HELP *key to display an additional help message.*

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3. Menu

This chapter describes how to access the different menus and functions.

The available basic menus are:

- *Main menu.*
- *Size.*
- *Selectors-Timers.*
- *Counters.*
- *Counters reset.*
- *Language selection.*
- *Information.*
- *Input/output transfer.*
- *End.*

3.1. Main menu

Press the MENU *key to access the "Main menu". From here it's possible to access a series of submenus or exit this mode by pressing "End".*

Use the ▲ ▼ *keys to scroll the menu. When the ↵ arrows points to the desired function/submenu, press* ENTER *.*

If the symbol precedes the key, activate the hardware key before pressing ENTER *.*

3.2. Size

Select "Size" on the main menu to access a menu containing two items:

- *SET SIZE*
- *LOAD SIZE*

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3.2.1   Set size

Set size contains the list of the size names. By selecting the desired size with `ENTER` *, the positions of the selector/timers concerning that particular size will be memorized.*

To scroll the list use the ▲ ▼ *keys.*

Press `ENTER` *on "end" to return to the Main menu.*

3.2.2   Load size

Load size contains the list of the size names. By selecting the desired size `ENTER` *with , different selectors will be set as they were memorized.*

To scroll the list use the ▲ ▼ *keys.*

Press `ENTER` *on "end" to return to the Main menu.*

3.3.   Selectors-timers

The selector/push button/timer list enables to change their status. To modify the status of a selector/push button, select it and `ENTER` *press .*

In the case of a   push button the corresponding output will remain 1 as `ENTER` *long as the key is hold pressed. Whereas for a selector/timer, its status will* `ENTER` *change every time the key is pressed. To change the* ◄ ► *selector/timer status, the keys can be used.*

To scroll the list use the ▲ ▼ *keys.*

Press `ENTER` *on "end" to return to the Main menu.*

3.4.   Counters

The counter list enables to see the value of all the counters set, except the counter concerning the machine speed.

To scroll the list use the ▲ ▼ *keys.*

Press `ENTER` *on "end" to   return to the Main menu.*

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3.5. Counters reset

This list contains all the counters that can be reset by the user.

To scroll the list ▲ ▼ *use the keys. To* `ENTER` *reset press when the arrow → points to the counter to* `ENTER` *reset.*

Press *on "end" to return to the Main menu.*

3.6. Language selection

This list contains all the languages available for the customer.

To scroll the list use ▲ ▼ *the keys.*

Press `ENTER` *on "end" to return to the Main menu.*

ℹ️ *If a wrong language is selected, press* `ENTER` *on the message preceded by * to return to language selection.*

3.7. Information

This menu item contains the firmware version and the checksum of the display management program as well as the management software. This information will be displayed for some seconds, then the input/output status of the first board O 010 - I 020 - I 030 will be displayed. By means of the ▼ *key, it is possible to display the input/output status of the second board O 040 - I 050 - I060.*

Press `ENTER` *or* `ESC` *to return to the Main menu.*

3.8. Data Transfer

This function enables the serial port to establish a PC connection. Press `ENTER` *to disable the function and return to the Main menu.*

ℹ️ *To activate the function for "On-line display" of the variables, position the* ▶ *arrow to the item "Data transfer" on the Main menu, hold* `HELP` *pressed and press* `ENTER` *. 3 beeps will sound to confirm the activation of the function. This function can only be used if you have the Editor PLC program. During its use, it could slow down some display functions and result in some failures when scrolling the menu, in the counters display as well as slow down the execution of the PLC program.*

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3.8.1 Backup and data update.

*From page "**Data Trasfer**", using the button* ▼ *, it is possible to access the backup function and the update of the program OPM03 (messages and management program of the machine).*

It is necessary to have a USB drive to insert in the CNxx connector.

The available functions are:

- *RESTORE: It allows you to copy messages and machine management program from the USB drive to the OPM.*

- *BACKUP: It allows you to copy messages and machine management program from the OPM to the USB stick. (Contact LOGOMAT srl company to get the password needed to perform the operation.)*

- *COMPARE: It allows you to compare the contents of the USB stick with the messages and the machine management program currently in OPM.*

- *RETURN: to return to the main Menu.*

To scroll the list use ▲ ▼ *the keys.*

Pressing ENTER *the command selected is executed.*

3.9. End

Select "End" to return to the machine status display function.

4. Hardware description

This chapter describes the display technical features.

4.1. Face

The OPM03 operator's panel has two faces:

1. *Front*
2. *Back*

4.1.1 Front face

The front face is the panel side visible to the operator that contains the display and the function keys.

Fig. 1

1	*Front face.*	6	*Help message push button.*
2	*Scroll left push button/Menu start.*	7	*ESC push button to return to previous menu.*
3	*Scroll up push button.*	8	*Push button to return to the Main menu.*
4	*Scroll down push button.*	9	*ENTER push button.*
5	*Scroll right push button / Menu end.*	10	*Display.*
		2 + 5	*Display reset*

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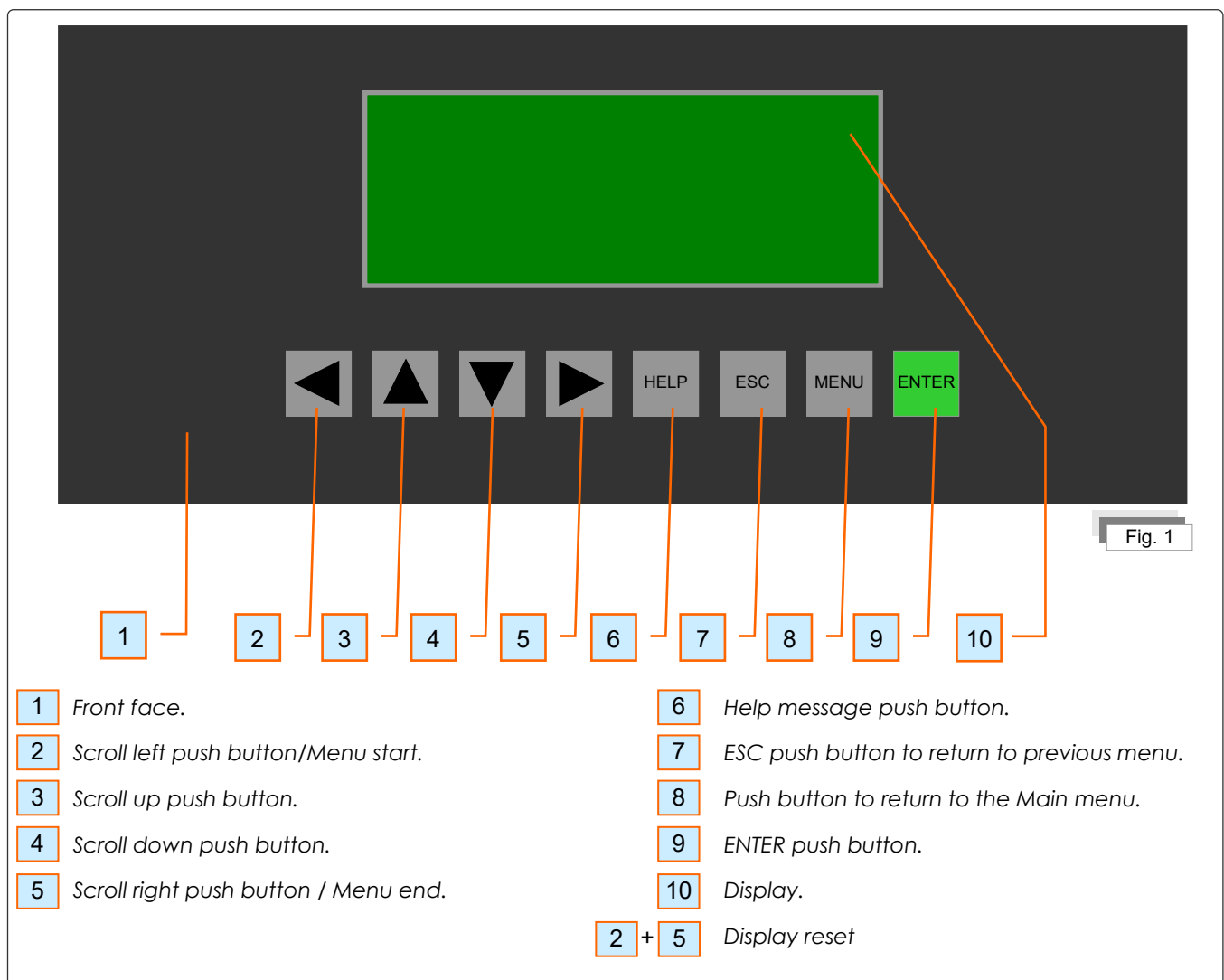
4.1.2   Back face

The back face (Fig. 2) has 4 well-defined areas:

C	3.7	3.6	3.5	3.4	C	3.3	3.2	3.1	3.0
10	9	8	7	6	5	4	3	2	1

Display Port 3 CN8

C	2.7	2.6	2.5	2.4	C	2.3	2.2	2.1	2.0
20	19	18	17	16	15	14	13	12	11

Display Port 2 CN6

C	1.7	1.6	1.5	1.4	C	1.3	1.2	1.1	1.0
30	29	28	27	26	25	24	23	22	21

Display Port 1 CN7

Serial

OPM 02

CN1

Power supply

Fig. 2

- *Port 1. It comprises 10 terminals for coded output signals. The port coding corresponds to the value "1.**X**" ("4.**X**" for the expansion board) where 1 indicates the port and X identifies one of the connectors whose value range is between 0 and 7. The two connectors marked with "C" must be connected to the common.*

CN7 (PORT 1)

C	O 017 / 1.7	O 016 / 1.6	O 015 / 1.5	O 014 / 1.4	C	O 013 / 1.3	O 012 / 1.2	O 011 / 1.1	O 010 / 1.0
30	29	28	27	26	25	24	23	22	21

PLC address → / Display address →

Expansion board (option)

CN7 (PORT 4)

C	O 047 / 4.7	O 046 / 4.6	O 045 / 4.5	O 044 / 4.4	C	O 043 / 4.3	O 042 / 4.2	O 041 / 4.1	O 040 / 4.0
30	29	28	27	26	25	24	23	22	21

PLC address → / Display address →

Fig. 3

- *Port 2. It comprises 10 terminals for coded input signals. The port coding corresponds to the value "2.**X**" ("5.**X**" for the expansion board) where 2 indicates the port and X id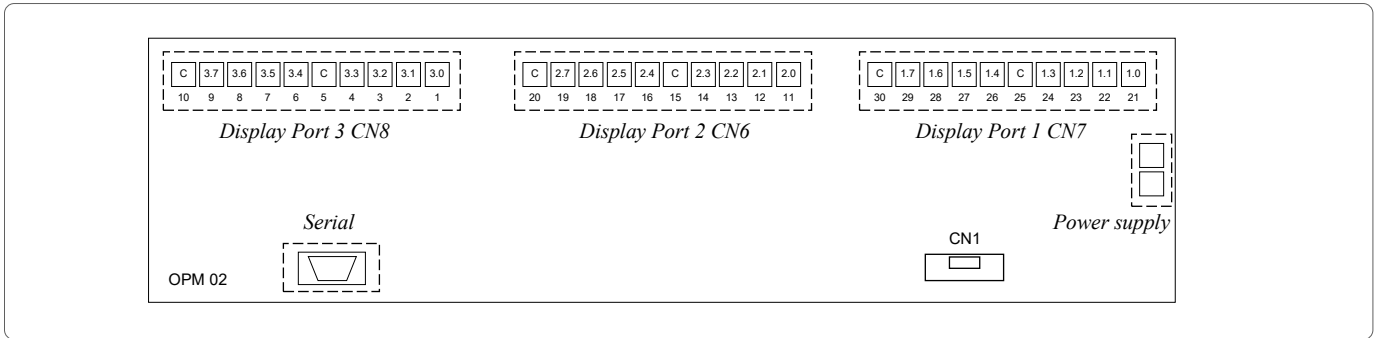entifies one of the connectors whose value range is between 0 and 7. The two connectors marked with "C" must be connected to the common.*

CN6 (PORT 2)

C	O 027 / 2.7	O 026 / 2.6	O 025 / 2.5	O 024 / 2.4	C	O 023 / 2.3	O 022 / 2.2	O 021 / 2.1	O 020 / 2.0
20	19	18	17	16	15	14	13	12	11

PLC address → / Display address →

Expansion board (option)

CN6 (PORT 5)

C	O 057 / 5.7	O 056 / 5.6	O 055 / 5.5	O 054 / 5.4	C	O 053 / 5.3	O 052 / 5.2	O 051 / 5.1	O 050 / 5.0
20	19	18	17	16	15	14	13	12	11

PLC address → / Display address →

Fig. 4

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- *Port 3. It comprises 10 terminals for the display message loading input. The port coding corresponds to the value "3.**X**" ("6.**X**" for the expansion board) where 2 indicates the port and X identifies one of the connectors whose value range is between 0 and 7. The two connectors marked with "C" must be connected to the common.*
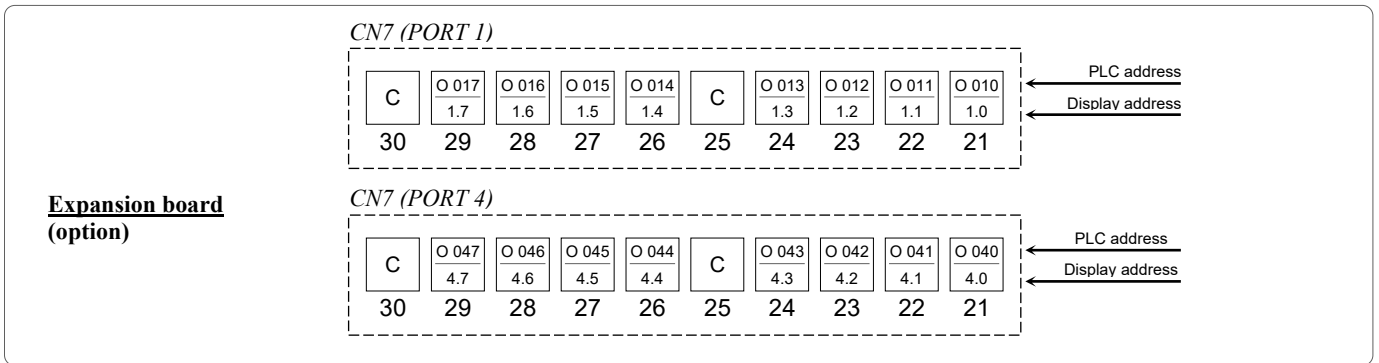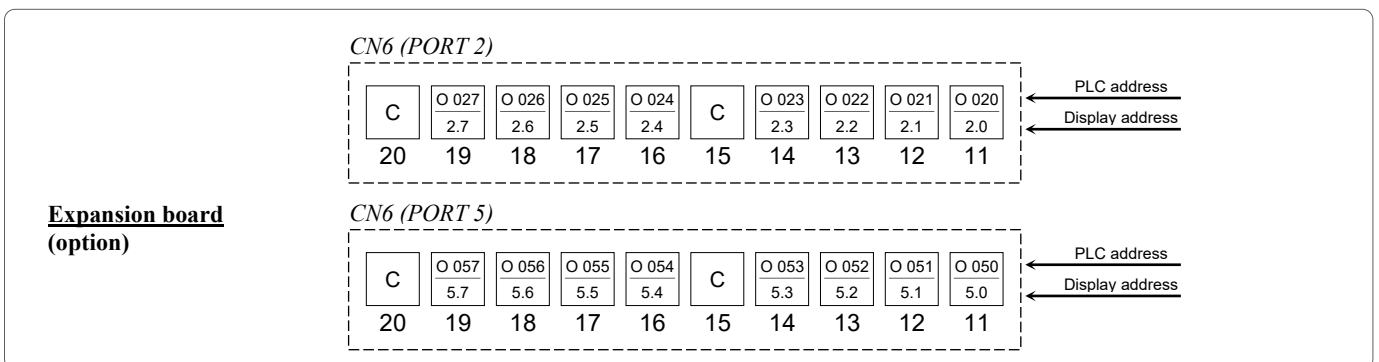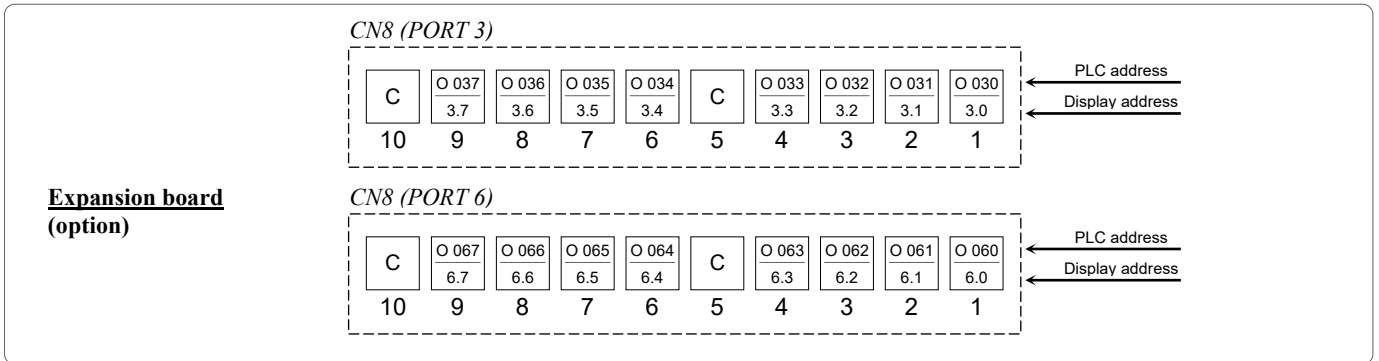

Fig. 5

- *Serial port. The serial port connection is not standard. Therefore use an adequate adapter for the OPM03 and the PC. The communication takes place by means of a RS232 port.*

4.1.3 I/O display card (optional)

The I/O display card named CN1 comprises three groups of LEDs. Each group is associated with an input/output port. The LEDs turn on every time there is a signal on the input/output linked to it.
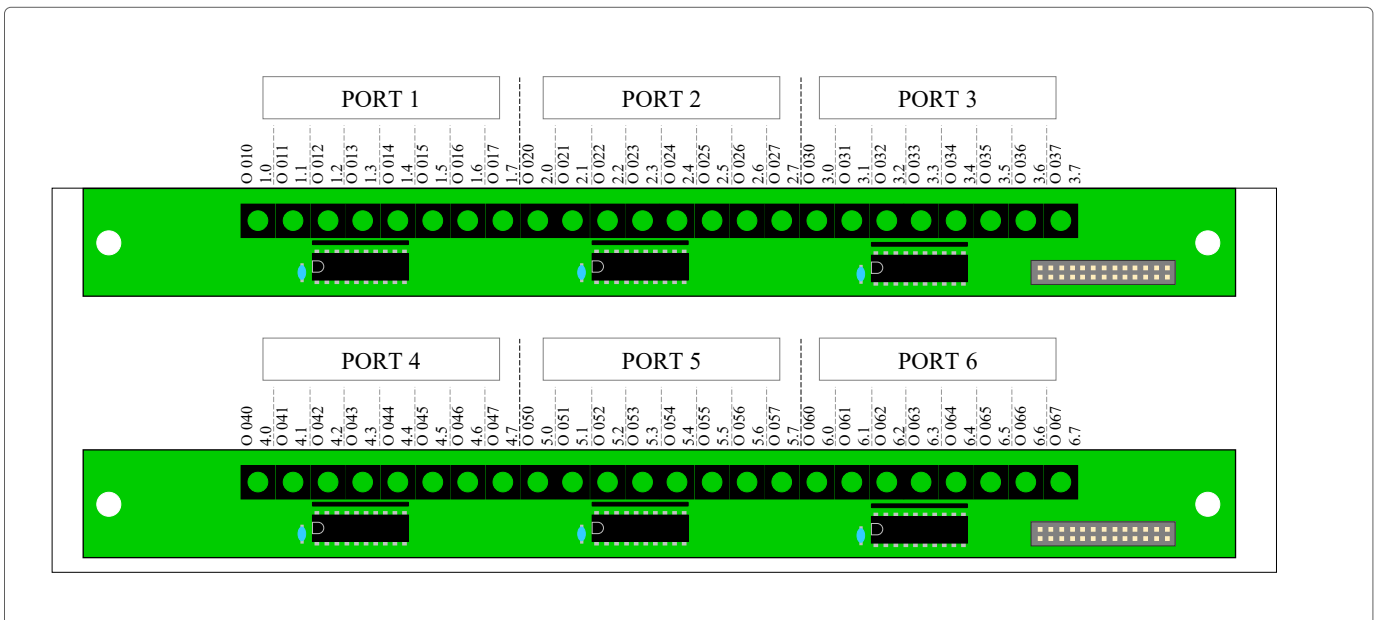

Fig. 6

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4.2. Memories

The OPM03 has three different internal memories:

- *1 32-KBYTE FLASHEPROM*

- *1 256-KBYTE FLASHEPROM*
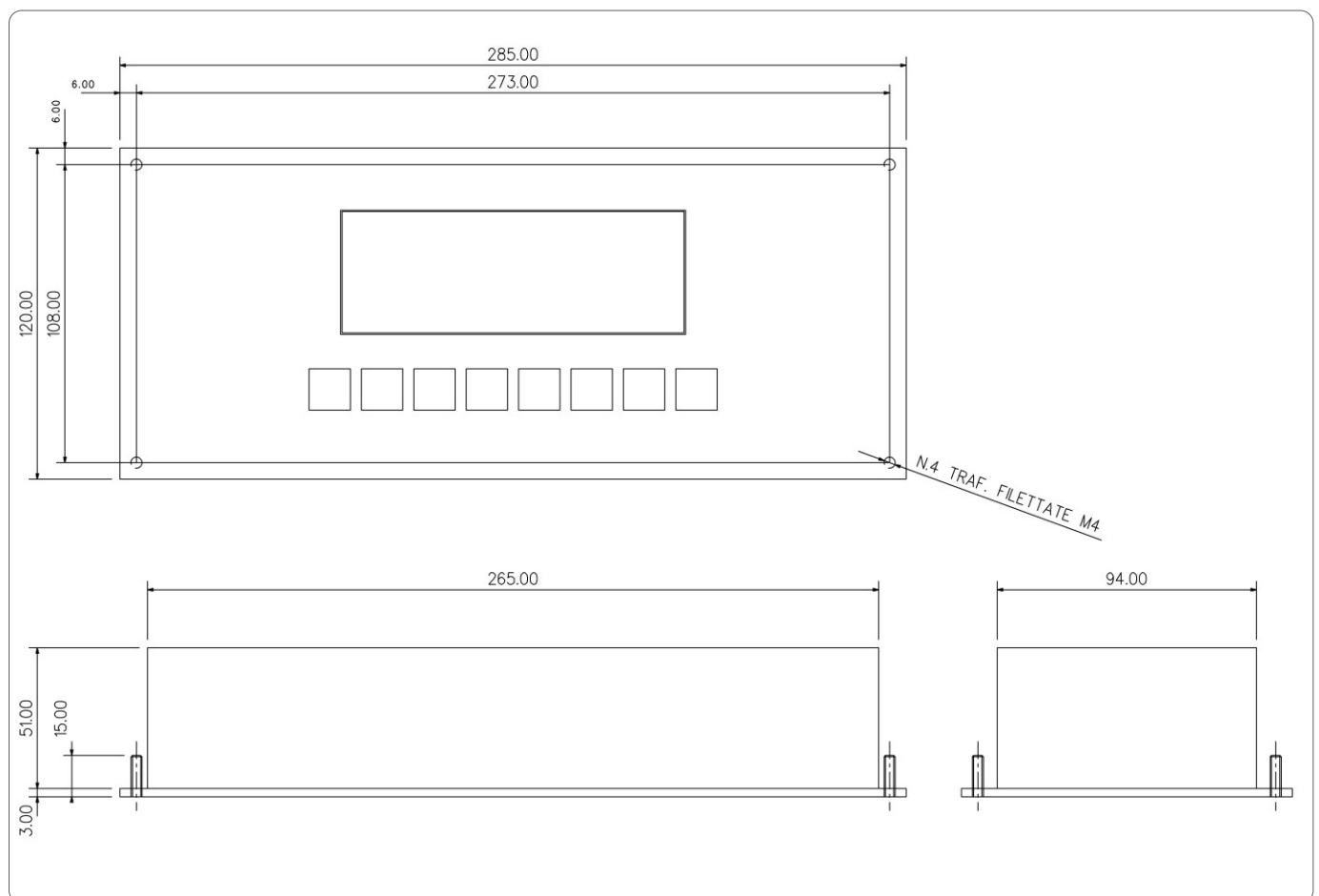
- *1 8-KBYTE BUFFER RAM*

4.3. Dimensions

Fig. 7

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4.4. Power supply

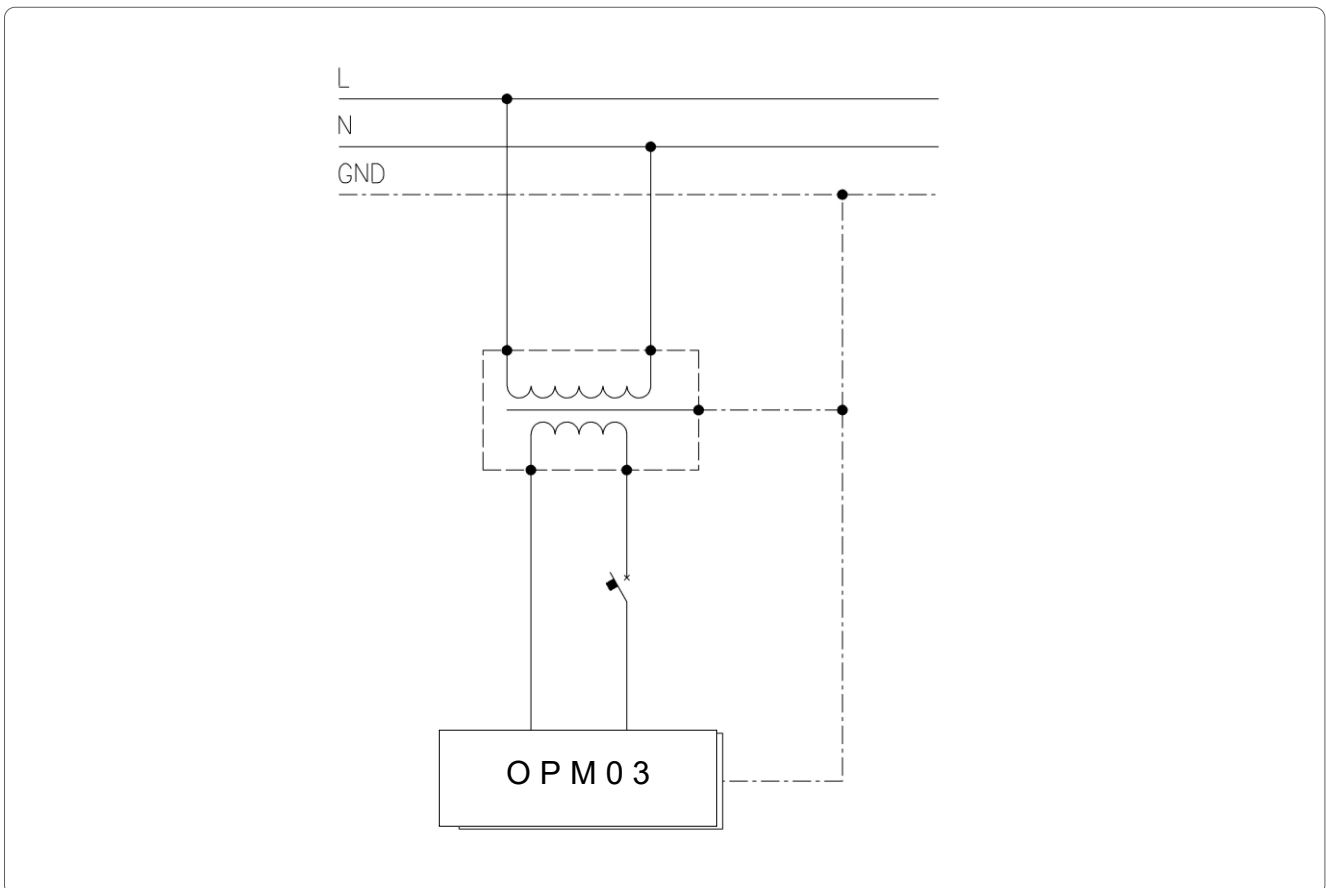| 2-pole power connector			
 • • ~ ~	L	12-24Vac/Vdc power input	*(the poles are interchangeable also in dc current powering)*
	N	12-24Vac/Vdc power input	

Fig. 8

4.5. Interface ports

The OPM03 is equipped with:

- *1 RS232C serial port*

- *16 two-way 24Vdc inputs*

- *8 two-way 24Vdc / 150mA outputs (resistive load*

- *16 input - 8 output expansion board option*

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The RS232C serial port is used for the communication between PC and OPM03.

The two-way inputs are used to acquire information in the form of electric signals. If the input is used as a revolution counter, it shall have a signal with a logic state over 550 µsec. (maximum speed that can be reached at 850 RPM). If it is used as a signal, it shall have a logic state over 20 msec for the inputs I02X and I06X; for the inputs I03X and I05X the entire byte is filtered, therefore the entire byte shall remain stable for 20msec.
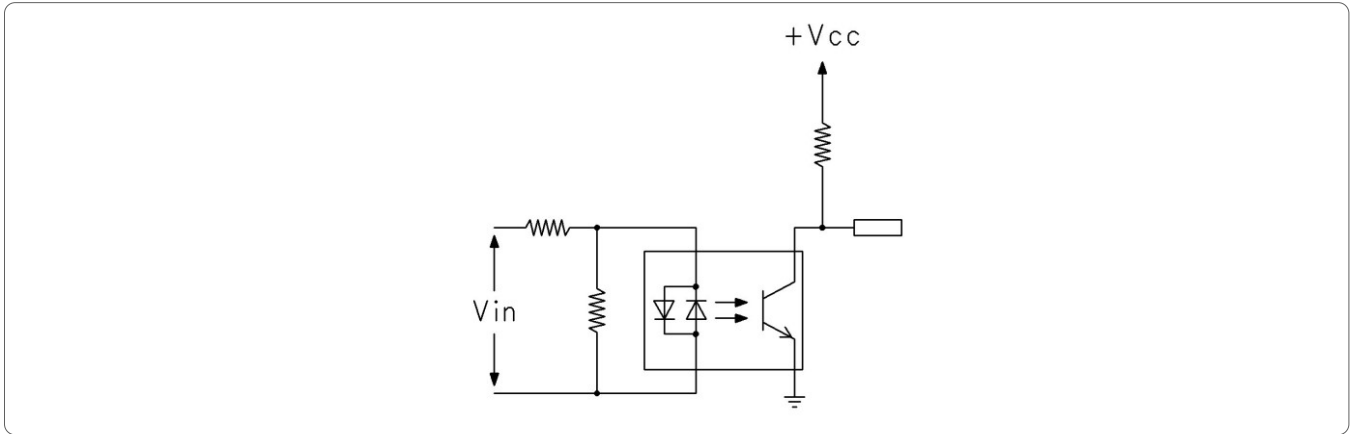

Fig. 9

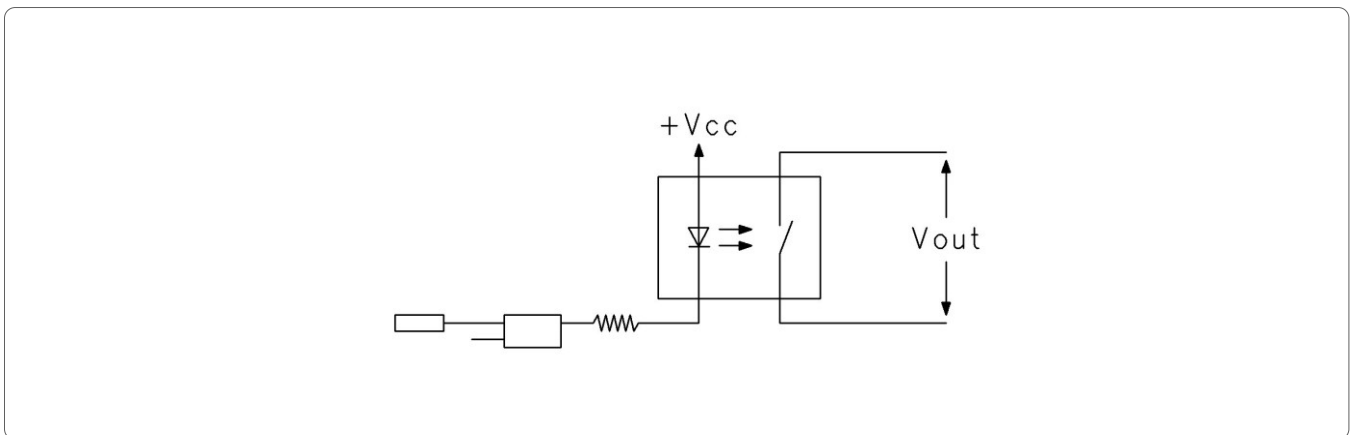*The outputs are used to export information in the form of electric signals.*

Fig. 10

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4.6. Serial connection cable
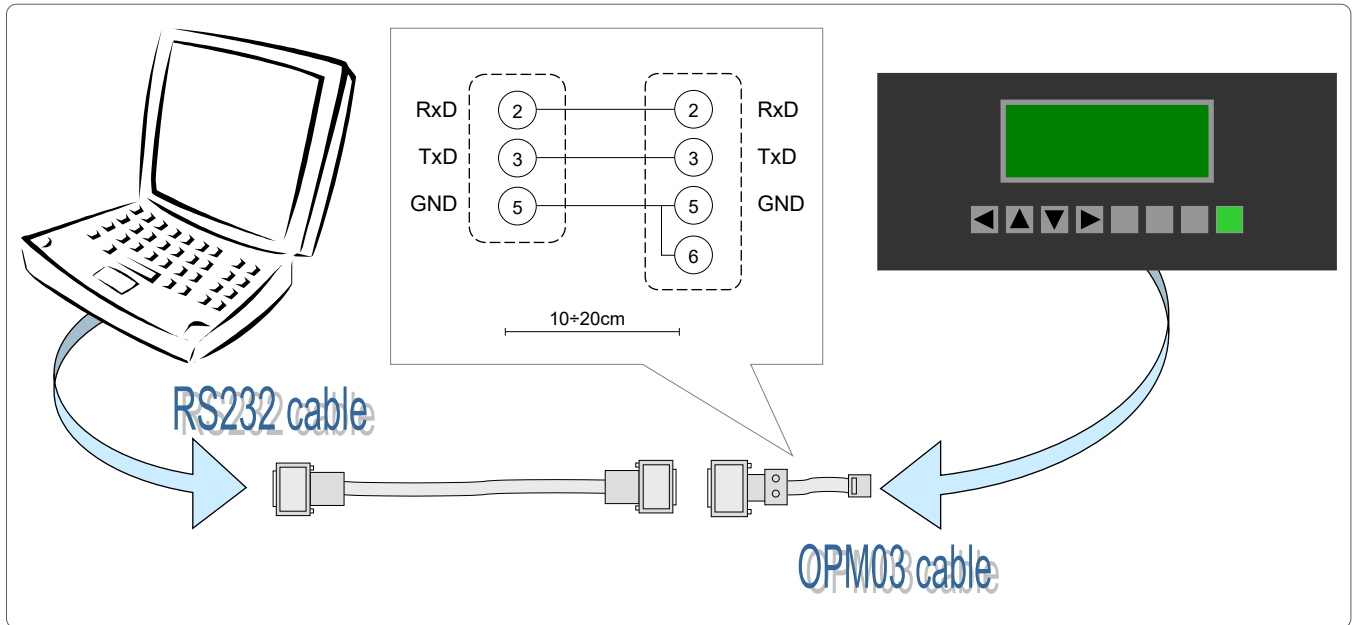
The OPM03 is equipped with the following cable:

RxD 2 — 2 RxD
TxD 3 — 3 TxD
GND 5 — 5 GND
              6

10÷20cm

RS232 cable

OPM03 cable

Fig. 11

4.7. Program updating

Please contact LOGOMAT S.r.l. to update the resident software (support.opm@logomat.it)

4.8. Failures

The following error messages can appear on the display:

1. *REPROGRAM MESSAGE !*

   FLASH EPROM:

   MISSING, EMPTY OR

   DATA CORRUPTED

The message appears every time the program detects one of the following failures, when the display is switched on:

- *Data Eprom missing.*
- *Data Eprom empty.*
- *Data Eprom corrupted.*

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2. *KEY PRESSED:*

The message indicates that, upon switching on, one of the keys is pressed. The key symbol will be displayed to indicate the pressed key: →   ←   ↑   ↓   -   *E*   *M*   *E*

- →

- ←

- ↑

- ↓

- *E for ESC*

- *M for menu.*

- *E for enter.*

3. *No messages:*

    If no message appears on the display check:

    - *the power supply.*

4. *"Data Transfer" display upon switching on:*

    If, upon switching on, the display automatically sets to Data Transfer without showing any message before, check if the "HELP" key is blocked in pressed position. It automatically sets to Data Transfer if the message EEPROM is missing, empty or faulty, or if the Data RAM is missing or faulty.

5. *ZERO POWER MISSING:*

    It is displayed for a few seconds upon the switching on when the Data RAM is missing or faulty.

6. *After a machine program transfer, the keyboard or the display are in fault. The transfer is aborted. Switch off the operator's panel and switch it on by holding the* HELP *key pressed. The wording "Data transfer" will be displayed. Now transfer the machine program again.*

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4.9. Adjustment of display contrast.

The trimmer in the photo adjusts the contrast of the display. It should be rotated if the characters on the display are not easily readable until they become so.

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