

## Upgrading the PLC software using WriteFlash 3.023 program

### **Updating flash and EEPROM for FS40X serie PLCs with board N51.714 or N51.7114**

(EEPROM = electrically-erasable programmable read-only memory)

(PLC = programmable logic controllers)

#### **1 Introduction**

From version 3.0, WriteFlash program enables to update the software for stretch wrapping machines Models FS400/FS401/FS402/FS403.

This program has been developed for Windows operating systems.

The program allows to update the flash EEPROM in a board with microprocessors MC68HC908 or MC68HC912.

#### **2 System precondition**

Minimal installation:

- Intel Pentium CPU or compatible and / or higher
- min. 16 MB RAM
- 10 MB hard disk free space
- Win 95, Win 98, ME, Win NT 4.0, Win 2000
- free RS232 serial port

#### **3 Set up the program**

Open the program "setup.exe" from the first installation disk (or directory where there are the installation files).

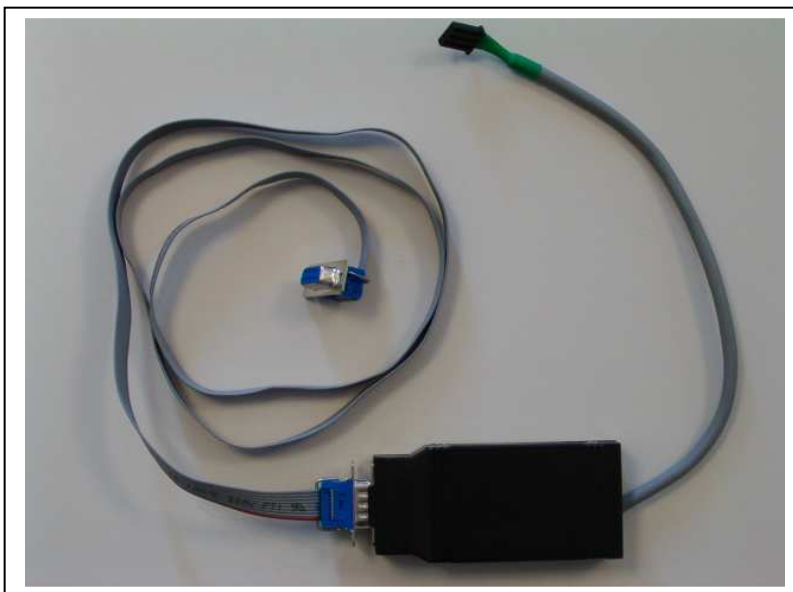
Following the program will be installed on the hard disk in a selected directory and a folder will be created in menu

"Start>Programs". Inside this folder will be an icon created to link the program.

Adding the parameter /uk at the line of command (c:\wrflash\_30\wrflash\_30.exe /uk), the program will be executed in English language.

#### **4 Upgrading the PLC with the personal computers (PC ) with RS232 serial port**

To upgrade the PLC with a PC you need a TTL to RS232 interface, FROMM code N5.7180

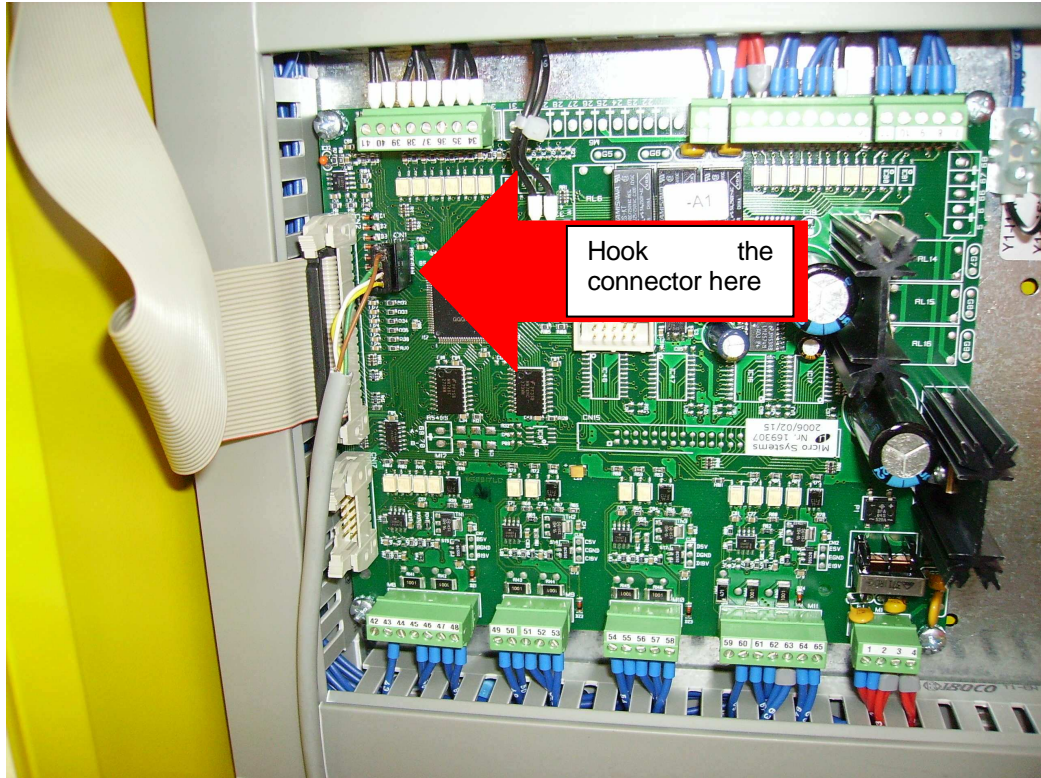


TTL to RS232  
Interface.  
Fromm Code:  
N5.7180

The interface is supplied with a connector to hook in the PLC and with a 9 poles cable with a length of 1 meter (39 inches) to hook in the PC 9 poles RS232 port.

5 | Connect the PLC interface to the personal computers (PC) with RS232 serial port

The connection between the PC to the TTL to RS232 interface must be made by an "null-modem" standard cable.  
 The maximum length of the cable should not exceed 15 m (590 inches).



**Cable schematics and wiring:**

null-modem standard cable with 2 x 9 pole connector:

TTL to RS232 interface 9 pole cannon connector	Connection wire	Personal computer (PC) 9 pole cannon connector
PLC PIN		PC PIN
PIN2 (TXD)	→	PIN3 (RXD)
PIN3 (RXD)	←	PIN2 (TXD)
PIN5 (GND)	↔	PIN5 (GND)

null-modem standard cable with 1 x 9 pole and 1 x 25 pole connector:

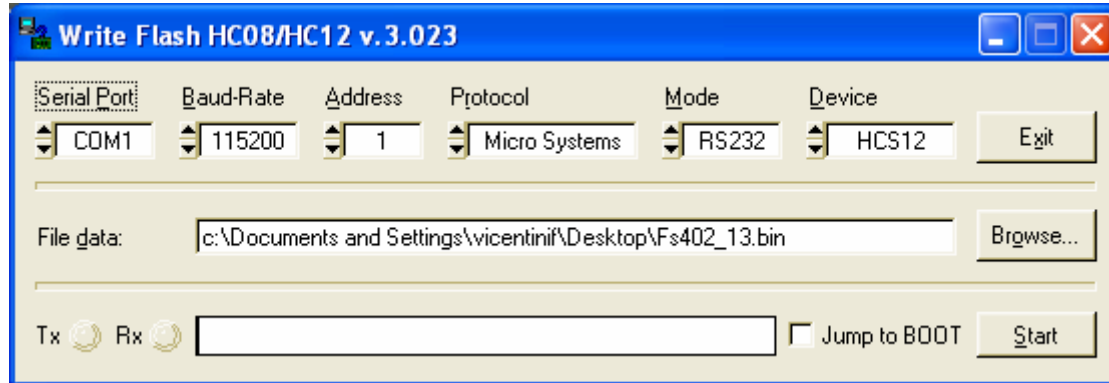
TTL to RS232 interface 9 pole cannon connector	Connection wire	Personal computer (PC) 25 pole cannon connector
PLC PIN		PC PIN
PIN2 (TXD)	→	PIN3 (RXD)
PIN3 (RXD)	←	PIN2 (TXD)
PIN5 (GND)	↔	PIN7 (GND)

6 | Before

Before upgrading the PLC software you have to switch on the machine and assure that the emergency stop is locked.

## 7 Updating flash EEPROM

Start the program Write Flash HC08\_HC12 and set as following:

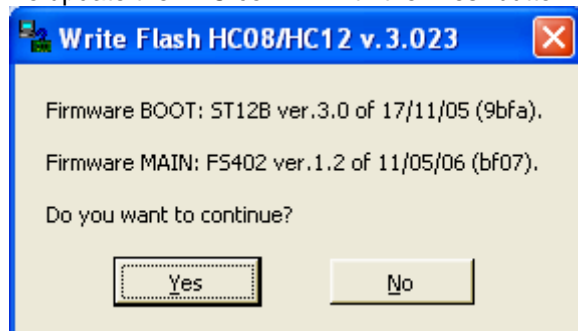


## 8 Setting the parameters

Serial Port: (select the interface port on the PC for data transfer via null-modem standard cable)  
 Baud-Rate: 115200  
 Address: set 1  
 Protocol: Micro Systems  
 Mode: RS232  
 Device: HCS12  
 Jump to boot: not selected

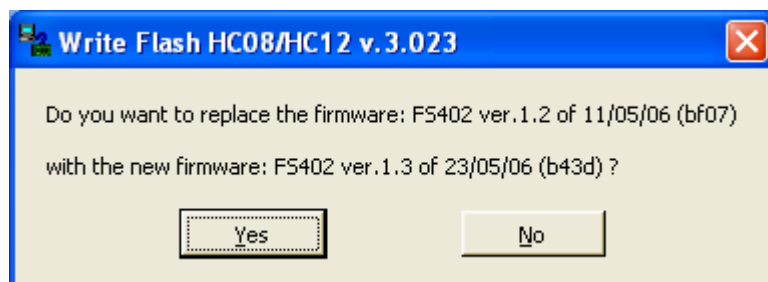
Now click the “Browse” button and select the new program file (FS400\_XX.bin) supplied by FROMM. Click the “Start” button to update the flash EEPROM.

In the next window will be shown the version of the program installed on the PLC. To update the PLC confirm with the “Yes” button.

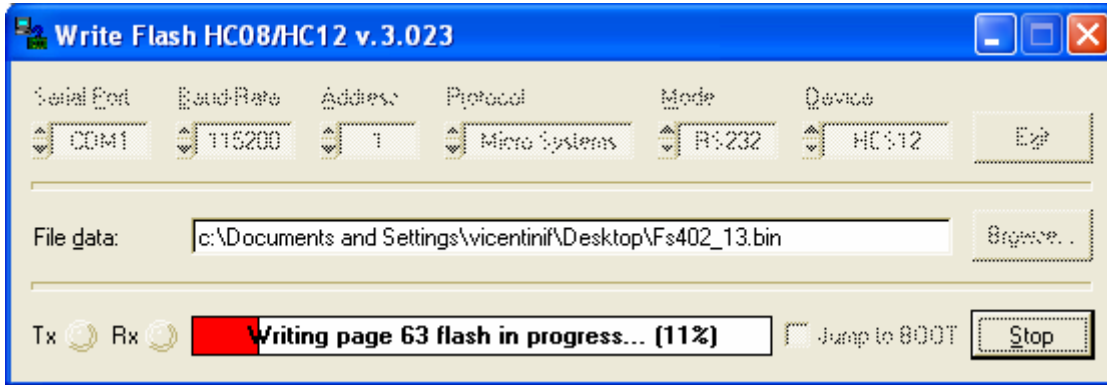


In the next window will be displayed the installed firmware on the PLC and the firmware that will be downloaded.

To update the PLC confirm with the “Yes” button.



Now will start the communication between the PC and PLC and the progressing bar will increase. The program is writing the flash and the progress will be shown in % (red bar).



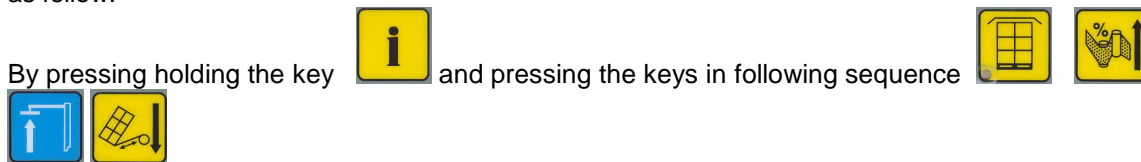
The next window will inform that the downloading is finished.



Now the new firmware (update) is installed on the PLC. Click "OK" button and disconnect the interface from PC to PLC.

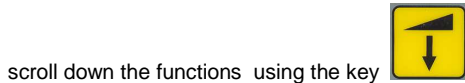
9 | Default EEPROM self programming

After download the new software update in the PLC its necessary to reload the default parameter, as follow:



you will enter into the test menu and on display will indicate:


TEST INPUT (flashing)  
TEST OUTPUT



on the display will appear consecutively the following messages:

TEMPERATURE NTC  
SET CONTRAST  
ANALOG SENSOR  
4-20 mA

LOADING DEFAULT  
PROGRAM?

Now press the start button  to load the default parameters, After few seconds, on the display will appear:

PROGRAMMAZIONE  
OK!

That informs that the PLC has loaded the default parameter into the EEPROM.



Now press the Stop key to exit from the menu

## 10 Selection of language

After reloading of the default parameter its possible that the selected language, before program updating, is changed. In this case we recommend to change the language following these steps.



Press the keys

On the display will indicate

TOTAL PRODUCED  
PALLETS 00000



Press the key , the display will indicate

TOTAL CONSUMED  
FILM 00000000M



Press the key , the display will indicate

LANGUAGE-GB



Pressing start key gives the choice to select the own language. The languages will be displayed in the following order,

LANGUAGE -GB  
LANGUE -F  
SPRACHE -D  
SPROG -DANISH  
TAAL -NL  
IDIOMA -E  
SPRAK -S  
KIELI -FIN  
LINGUA -P  
SPRAK -N  
LINGUA -I



press stop key to exit from the menu.

**THE STRETCH WRAPPER MACHINE IS NOW READY FOR OPERATION**

**Inverter information.**

See settings information for the inverter in file ATV.28 .PDF

All the fault relays of the inverters are connected in serial, so when there is one (or more) faults, you will see error E1 on the board.

For this information see manual

Still error E1 is displayed.

When all the inverters are OK (no errors), probably one of the relays (terminals : R1A-R1C) are causing this mistake, or the input of the PLC.

To test the input on the board:

If you do not have the Error.... on the inverters, make a jumper between terminal 48 and 42 of the board.

If the E1 still remains, this means that the board causes the failure. (But this is very strange).

To test the relay of the inverter:




In case that the error E1 disappears, one of the relays for inverter causes the fault.

Make a jumper between terminals R1A-R1C of one of the inverters.

Take this action inverter by inverter until you find the faulty one.

(The problem is caused here)


Control hidden parameters FS4xx

By pressing holding the key  and pressing the keys in following sequence  



you will enter into the test menu and on display will indicate:

TEST INPUT (flashing)  
TEST OUTPUT

scroll down the functions using the key  on the display will appear consecutively the following messages:




**Hidden menu** (Next pages)

After the selected function press the start button  and you enter the lower menu, or change the parameter from YES into NO or ON into OFF

Now press the Stop key  to exit from the menu

Exhibition program

**MACHINE DEMO / EXHIBITION PROGRAM:**

1	2	3	<p>Within 2 seconds for each button</p> <p><u>Exhibition program</u></p> <p>Keep button 1 pressed down. Following by pressing button 2 one time. than followed by button 3 one time</p> <p><i>The machine will start continuously running, in the speed which has been set in the manual program</i></p>	MACHINE DEMO
				

**Hidden menu** under FROMM PASSWORD

Message in display	Explanation	Further description
TEST INPUT	Test of the inputs	

**Lower Menus**

Analog input OFS GN		
Test Led-Display		
PWM1 OFS GN		
PWM2 OFS GN		
PWM3 OFS GN		
PWM4 OFS GN		
OUTAUX OUTRELAY		
Automatic output scan		

KEY PRESSED	Test of the pressed key	
ANALOG. INP	Test of the analogical input	
TEST OUTPUT	Test of the outputs	
TEMPERATURE NTC	Temperature sensor on the PLC	
SET CONTRAST	Sent the display contrast	
ANALOG SENSOR	Chose of the analogical sensor : 0-20 or 4-20 mA	
LOADING DEFAULT PROGRAM?	Reset parameter to OEM (Original Entry Manufacturer)	
RESET PRODUCED PALLETS COUNTER?	Reset parameter to zero (0)	
PALLET COUNTER RESETTED		
RESET CONSUMED FILM COUNTER?	Reset parameter to zero (0)	
CONSUMED FILM COUNTER RESETTED		
"TOP PLATE" " "	Installation menu Top-plate Yes or No	
HORSESHOE TURNABLE	Installation menu Horse shoe Turntable Yes or No	
AUDIO SIGNAL " "?	Installation menu Audio Signal Yes or No	



Hidden menu under FROMM PASSWORD

PHOTOCELL LAG " sec"	Photocell delay. For example when big holes are in the pallets the timer of the photocell can be extended	
ENABLE REMOTE START STOP	Function Remote start OFF or ON	
DELAY TIME E02 " sec"	Delay time for film brake EROR E2	
NO PALLET DETECT ERROR 7		
TURNTABLE 90° " sec"	Stop position turntable at 90 degrees	
TURNTABLE 180° " sec"	Stop position turntable at 180 degrees	
TURNTABLE 270° " sec"	Stop position turntable at 270 degrees	
GEARBOX RATIO " "	In case ration 1/28 was installed originally and now changed to ration 1/48 you have to change this parameter	
CUTTING DEVICE " "	Cutting device OFF or ON	
PRESTREC CUTTING " %"	Pre stretch before cutting	
DOUBLE STROKE " "	Double stroke program	
ANALOG VALUE " "	Value analogue sensor	
TAB POS SPEED " "	Value	
MAX. ALLOWED PROGRAMS	To work with for example only 10 programs. All the other programs will be disabled	
ENABLE PROGRAM " "	Enable or disable the displayed program	
DOOR APPLICATION " "	Special application for the wrapping of the doors	
"USER PASSWORD" " "		
INPUT NEW PASSWORD?		
RESET USERPASSWORD?		