

**Operation Manual for FEC01/06  
program or remote controlled  
flame effect controller**

**September 2009., Budapest<sup>1</sup>**

**LFO Bt.**

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<sup>1</sup> Based on the original Hungarian version (November 2006.)

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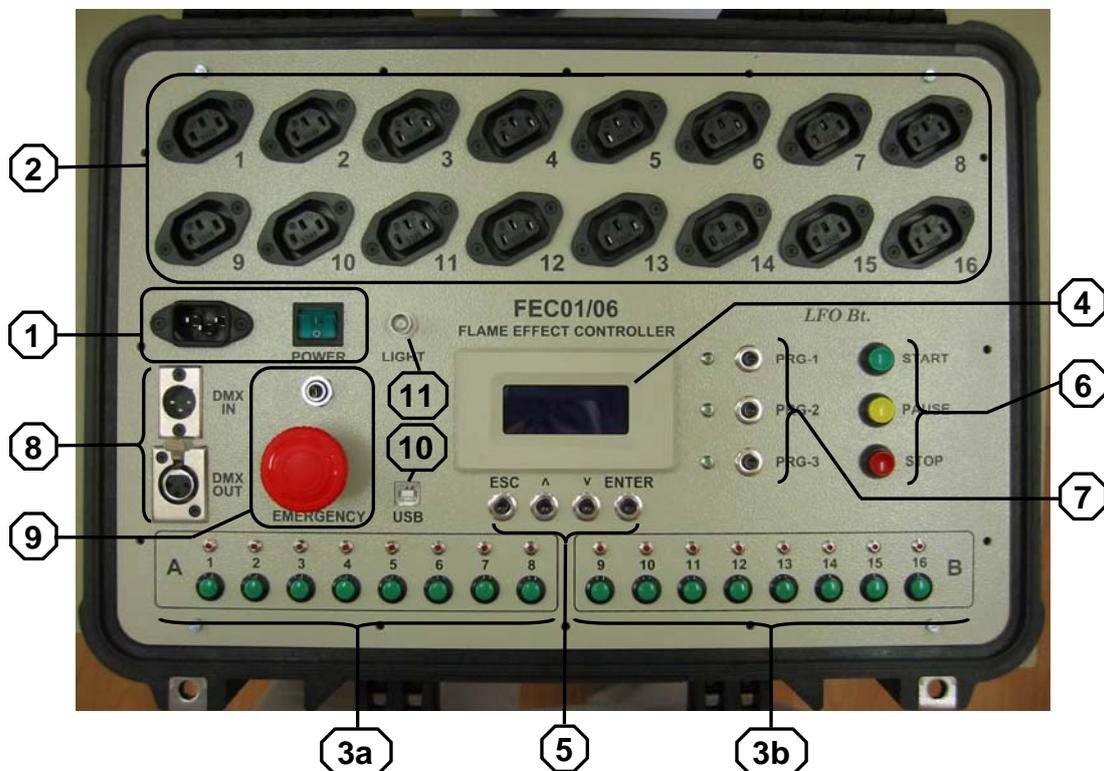
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## 1. General description and main features of flame effect controller

The FEC01/06 16 channel flame effect controller can control the flames in manual, in digital program controlled, or in DMX512 remote controlled mode. The manual control can be used parallel with the other two controlling method, namely it is possible to activate any of 16 channels during the program or DMX512 controlled show.

The each of 16 outputs can drive 230 V valves up to 0,5 A. There are two groups of channels (Group A: channel 1...8, Group B: channel 9...16). For each channel there is a LED, that in all controlling mode indicates the activation of a channel. On the character display the user can see the operation information (e.g. mode (Start/Stop/Pause), program step, stop-watch, operation time of group A and B).

Below you can see de front panel of the flame effect controller.



1. Power connector and the main switch
2. Output connectors 1...16
- 3a. and 3b. The two groups of buttons for manual operations, and the LEDs showing channel activation
4. Character display
5. Menu buttons (Escape, Up, Down, Enter)
6. Buttons controlling the program execution (Start, Pause, Stop)
7. Program selector buttons (Prg-1, Prg-2, Prg-3)
8. DMX connectors
9. Emergency button and connector for remote emergency button (not included)
10. USB connector for program download
11. Lamp connector (lamp not included)

In the following, the objects above identified by these numbers (e.g. [11]).

## 2. Putting in to operation of flame effect controller

**!** In case of emergency the flame effect controller can be fully switched off by pushing the emergency switch. If remote emergency switch is used (connected to the Ø6,3mm jack socket), the controller is not switched off, only all the outputs deactivated!

**!** If the flame effect controller is damaged, or there is considerable amount of solid or liquid pollution (mainly at the 230 V connectors), the operation of controller is not allowed!

If the first check is OK, you can switch on the controller. Check if emergency switch is not pushed in (if it is, turn right to release). Switch on the main switch [1], the character display [4] shows the welcome message. If don't, probably the main fuse (inside the controller) went.

Perform the quick check!

**!** During the quick check, don't connect a valve under pressure to any output!

### I. Quick check in manual mode

Check, if you press a button in group A or group B ([3a] és [3b]), the corresponding indicator LED lights.

### II. Quick check in program controlled mode

You can check the run of the show loaded in on the indicator LEDs. Download the program, and run it (see chapter 4.)! The indicator LEDs show the channel activity.

### III. Quick check in remote controlled mode

You can check the DMX5112 communication and operation of channels. Connect the controller to the DMX512 bus, and perform the DMX512 settings (see chapter 5.)! The indicator LEDs show the channel activity.

After performing quick check switch off the main switch! Connect the valves to the channel outputs [2], and switch on the power!

**!** If the valves are connected to the flame effect controller, and under pressure, make sure of the safe distance between valves and man or any flammable object!

### 3. The manual mode of flame effect controller

**i** The manual mode operates parallel with the program execution and DMX512 remote controlled mode. This means that if a button of manual operation is pressed, the corresponding output is activated (on), in that cases too, when the program or DMX512 don't switch it on. On the other hand, an output can be active, when in the manual mode don't switch it on.

#### Activities in manual mode

1. Start up the controller (see chapter 2.)!
2. On the display [4] you can see information about status of the controller like below:

S		0	0	:	0	0						s	t	o	p	
L					0											
A		0	0	:	0	0			B		0	0	:	0	0	

- a. First line: **S** (stop-watch), stop watch time (here: **00:00**), **stop** mode (there is no running program, or stopped)
  - b. Second line: **L** (program step (stands for “lépes”, program step in Hungarian)), number of last executed program-step (or program step in execution) (here: **0**)
  - c. Third line: **A** (group A), total operation time of valves in group A (here: **00:00**), **B** (group B), total operation time of valves in group B (here: **00:00**)
3. Check the outputs according to the following! Connect a valve each outputs to be use. Press a button! The valve and corresponding indicator LED on the activated channel must be on. If the valve is not getting into on state, but the indicator LED is on, the fuse of the channel went.

**i** The maximum load per channel is 100 W (maximum output current is 0,5 A). The channel outputs are protected by fuses against short circuit or overload.

**!** The fuses must replace by the same type, current and voltage!

**i** While there is an activated channel output in group A or B, the corresponding operation time counter is incremented. You can reset these counters by switch off then on the controller.

4. Now, the show can be played in manual mode.
5. When the show is finished, you must switch off the main switch [1] of the controller.

#### 4. The program-controlled mode of flame effect controller

**!** If the controller is switched on, and one of the buttons for channel activation [3a] [3b] is pressed, the corresponding output immediately will be on. (Namely the buttons controlling the program execution [6]) This can be dangerous!

**i** The program controlled mode operates parallel with the manual mode and DMX512 remote controlled mode. This means that if an output activated by program, the output will be on, in that cases too, when the buttons for manual operation or DMX512 don't switch it on. On the other hand, an output can be in active state, when the program is not put it to active state.

#### Activities in program controlled mode:

1. Start up the controller (see chapter 2.)!
2. On the display [4] you can see information about status of the controller like below:

S		0	0	:	0	0					s	t	o	p	
L					0										
A		0	0	:	0	0			B		0	0	:	0	0

- a. First line: **S** (stop-watch), stop watch time (here: **00:00**), **stop** mode (there is no running program, or stopped)
  - b. Second line: **L** (program step (stands for “lepes”, program step in Hungarian)), number of last executed program-step (or program step in execution) (here: **0**)
  - c. Third line: **A** (group A), total operation time of valves in group A (here: **00:00**), **B** (group B), total operation time of valves in group B (here: **00:00**)
3. Check the outputs according to the following! Connect a valve each outputs to be use. Start the program containing the show, or a test program! The valve and corresponding indicator LED on the activated channel must be on. If the valve is not getting into on state, but the indicator LED is on, the fuse of the channel went.

**i** The maximum load per channel is 100 W (maximum output current is 0,5 A). The channel outputs are protected by fuses against short circuit or overload.

**!** The fuses must replace by the same type, current and voltage!

**i** While there is an activated channel output in group A or B, the corresponding operation time counter is incremented. You can reset these counters by switch off then on the controller.

4. To play the show, select the program, downloaded before!

**i** For creating, editing or downloading programs see chapter 7.

**i** The flame effect controller can store up to three programs (shows).

5. Press the program selector switch of the program to play [7]. If you pressed the button "PRG-1", you can see on the display something like this:

P	r	o	g	r	a	m				p	r	o	g		1
N	e	v	e	:											
V	é	g	i	g	f	u	t								

(In the first line there is the number of the selected program (Prog 1). In the second line there is the word "Neve:" (in English: "Name:"). In the third line there is the name of the show, which read out from the Excel sheet (here: „Vegigfut”).

6. In the next, by the buttons controlling the program execution [6] you can start, put to pause, or stop the program/show. The program execution statuses: start, pause and stop you can check on the display, or quick-check on the green LEDs beside the corresponding buttons. If you pressed the button "PAUSE", the program execution don't stop, but all the outputs will be de-activated until you don't press the button "PAUSE" again. This function is for interrupting the show for any reason, but the

timing must be unchanged. The pictures below show the display in program execution and in pause (in Hungarian: szunet) mode.

S	0	0	:	2	1					s	t	a	r	t
L			3	7										
A	0	0	:	1	4			B	0	0	:	0	8	

S	0	0	:	2	1					s	z	ü	n	e	t
L			3	7											
A	0	0	:	1	4			B	0	0	:	0	8		

- When the show is finished (it is indicated by the turning off the corresponding green program LED), you must switch off the main switch [1] of the controller.

**5. The DMX512 remote controlled mode of the flame effect controller**

**!** If the controller is switched on, and one of the buttons for channel activation [3a] [3b] is pressed, the corresponding output immediately will be on. (Namely the buttons controlling the program execution [6]) This can be dangerous!

**i** The DMX512 remote controlled mode operates parallel with the manual mode and program controlled mode. This means that if an output activated by remote control, the output will be on, in that cases too, when the buttons for manual operation or program don't switch it on. On the other hand, an output can be in active state, when the remote controlling is not put it to active state.

**i** The channels are going into active state (on), if the corresponding DMX512 channel contains value greater than 64. Else, the corresponding channel will be off.

**i** If the polarity of DMX512 signals are inverted (the DMX+ and DMX- signals are transposed), the remote controlling will not work. In this case, for safety reasons the controller prohibits the remote controlling and program execution. Manual operation can be used. From this state you can exit only by switching off then on the controller. The DMX+ and DMX- signals can be swapped at the DMX controller, or by a special cable.

**Activities in DMX512 remote controlled mode:**

1. Start up the controller (see chapter 2.)!
2. On the display [4] you can see information about status of the controller like below:

S		0	0	:	0	0					s	t	o	p	
L					0										
A		0	0	:	0	0			B		0	0	:	0	0

- d. First line: **S** (stop-watch), stop watch time (here: **00:00**), **stop** mode (there is no running program, or stopped)
  - e. Second line: **L** (program step (stands for “lepes”, program step in Hungarian)), number of last executed program-step (or program step in execution) (here: **0**)
  - f. Third line: **A** (group A), total operation time of valves in group A (here: **00:00**), **B** (group B), total operation time of valves in group B (here: **00:00**)
3. Check the outputs according to the following! Connect the flame effect controller to a DMX512 controller. In the flame effect controller’s menu set the number of first DMX channel used to control the outputs (see chapter 6.)! After connecting to DMX512 bus with proper polarity, at the bottom right on the display you can see the text “DMX”.

S		0	0	:	0	0					s	t	a	r	t	
L					0											
A		0	0	:	0	0			B		0	0	:	0	0	
														D	M	X

**i** Remote controlling is possible only in that case, when first the Start mode selected (you pressed the “Start” button). Remote controlling is stopped, if Stop button pressed.

**i** If the polarity of DMX512 signals are inverted (the DMX+ and DMX– signals are transposed), the flame effect controller will go into safety mode, and prohibits the remote controlling and program execution. From this state you can exit only by switching off then on the controller. The DMX+ and DMX- signals can be swapped at the DMX controller, or by a special cable.

Connect a valve each outputs to be use. The outputs must go active (valve is on, channel activity LED lights), if on the corresponding DMX channel containing a value greater than 64.

**i** The maximum load per channel is 100 W (maximum output current is 0,5 A). The channel outputs are protected by fuses against short circuit or overload.

**!** The fuses must be replaced by the same type, current and voltage!

**i** While there is an activated channel output in group A or B, the corresponding operation time counter is incremented. You can reset these counters by switching off then on the controller.

4. When the show is finished (it is indicated by the turning off the corresponding green program LED), you must switch off the main switch [1] of the controller.

**i** If during DMX512 remote controlling a program selector button [7] is pressed by chance, you can move back to the main screen by the ESC button [5].

## 6. Using the menu of flame effect controller

By pressing the **MENU** button [5], you drop into the menu system. There you can set the starting DMX address for remote controlling, and the light intensity of lamp connected to the lamp socket [11]. The parameters stored nonvolatile.

You can select the parameter to set by buttons  $\wedge$  and  $\vee$  [5]. For change the displayed value, press **ENTER** [5]. Showing selection, appears an asterisk "\*" at the corresponding parameter.

To make a change, press  $\wedge$  or  $\vee$  buttons [5]. If the buttons pressed for a long period, the parameter is incremented or decremented continuously. For validation of the new value of the parameter press **ENTER** [5].

You can step back to the main screen by pressing the **ESC** button [5].

## 7. Installing and using the show editor (LangKonv)

The show editor program (LangKonv) is for converting a show edited in Excel to a digital program for flame effect controller. Additional functions are downloading and checking the downloaded program. The LangKonv must install before the first use.

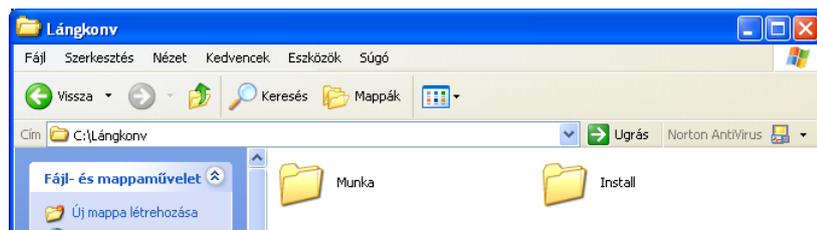
**!** During installing LangKonv and especially USB driver the Windows system can go to pending state. To avoid data loss, please close all other applications.

There is two steps: first install the USB driver, then install LangKonv. It is recommended to create the next library structure in the root C:

*Langkonv*

→ *Install*

→ *Munka*



(Munka means Work in english)

### Installing USB driver:

Extract the file „USB Driver.zip” to Install folder! Connect the flame effect controller to an unused USB port (USB cable included)!

**i** If you connect the flame effect controller next time to the same PC, it is recommended to use same USB port.

The Windows recognizes the controller, and searches after its driver. For installing two necessary driver, set the previously created Install folder. During installation, the Windows automatically sets a value to the communication port. You make a note of this value, because later, for downloading, it will be important. You can find this value by next method: right click My Computer, select Properties→Hardware→Resources→Ports (COM and LPT)!

### Installing LangKonv:

Extract LangKonv.zip to folder Langkonv! Create an program icon for the Langkonv.exe!

On the installation CD you can find some show examples (examples.zip). Extract this file to the folder Munka (Work). You can modify these examples, and can save them on other name, to avoid syntax errors in the Excel file.

The Excel sheet containing the show is strictly defined. Each Excel file can contain three shows. The shows must be on separate sheets (Munka1, Munka2, Munka3). The structure of sheets see below.

**i** The syntax errors of sheets containing the shows are reported by LangKonv.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2	<b>Név:</b>	Végigfut jobbra																
3																		
4																		
5			<b>Csatornák</b>															
6	<b>Sorszám</b>	<b>Időpont</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>
7	1	00:00.0	x															
8	2	00:00.2		x														
9	3	00:00.4			x													
10	4	00:00.6				x												
11	5	00:00.8					x											
12	6	00:01.0						x										
13	7	00:01.2							x									
14	8	00:01.4								x								
15	9	00:01.6									x							
16	10	00:01.8										x						
17	11	00:02.0											x					
18	12	00:02.2												x				
19	13	00:02.4													x			
20	14	00:02.6														x		
21	15	00:02.8															x	
22	16	00:03.0																x
23	17	00:03.2																
24		<b>V É G E</b>																

- The heading contains the name of the show (here: “Vegigfut jobbra”), and the compulsory column names (Numbering - Sorszam, Time - Idopont, Channels 1...16 - Csatornak 1...16).

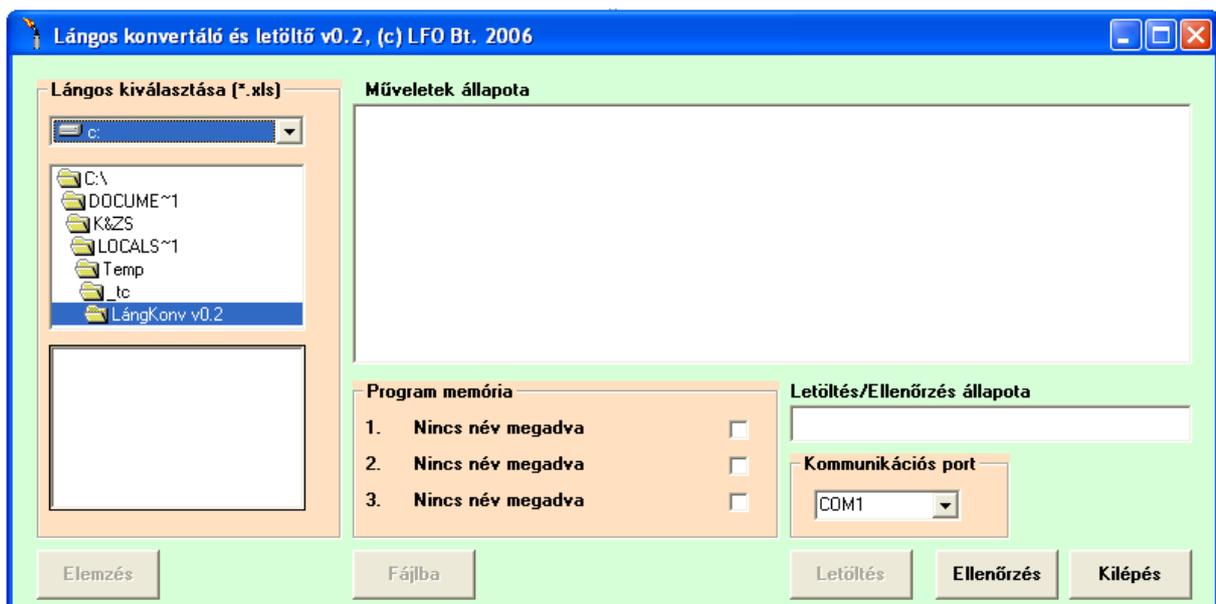
**i** The color of the regions are example only, these can be changed, of course. The chart can be extend horizontally (e.g notes).

- The column **Sorszamis** from 1 to the time of the last activity.
- The column **Időpont** contains the time of activities in the format: mm:ss.s (m: minutes, s: seconds). The last row of this column you must put the directive „V E G E” (END).

**i** The syntactic is very important, mainly the proper placing the colon (: ) and full stop ( . ). Below the directive „V É G E” you can write any text.

- In the columns C...R, at the filed “Csatornak 1...16” you can set the states of valve outputs at a defined time: if the output is active, place a cross (x) to the corresponding column, or a space if the output is not active.

You can see below the main window of Langkonv:



You must select the Excel file to be use on the left (only the files with .xls extension will be listed). Click “Elemzés” (Parsing) to read and parse the Excel file. The status of parsing is showed in the window “Muveletek allapota” (Status).

Next step is to select the program(s), which you want to download. These programs can be selected in the field “Program memoria” (Program memory). You can download one or more shows simultaneously.

For downloading, connect the controller to the PC. Set the communication port (Kommunikacios port) Click “Letoltes” (Download) to downloading programs, and checking the download.

**i** If there is the error “Missing MSCOMM32.OCX”, please copy MSCOMM32.OCX from the folder “LangKonv” to the folder **\Windows\System32!**

**i** The checking of stored programs (shows) can be performed independently. Click “Ellenorzes” (Checking). In this case there is no new download, but the contents of flame effect controller’s program memory checked against the selected programs.

For exiting, click “Kilepes” (Exit)