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Chapter 1 – Program description

Introduction

Program PEX is designate for easy configuration of the Power Express® system modules.

Program futures:

- configuration of the dual channel analog outputs of the module PEA208
- configuration of the one channel dimmer module PED 108
- configuration of the dual channel dimmer module PED 202
- configuration of the programmable control unit PEE 120
- configuration of the module PEF 200 for control of the fluorescent tubes dimmable ballasts
- configuration of the 6 relays module PER 610
- configuration of the one channel transistor dimmer PET 102
- saving and offline editing of the making projects
- projects printing
- channel addresses check
- direct control of the dimmable or switcher channels

System requirements

- Computer PC 386 or better, CD drive”
- OS Windows 98 - XP
- 500 kB free space on HDD
- free serial port

Chapter 2 - Installation and start of the PEX program

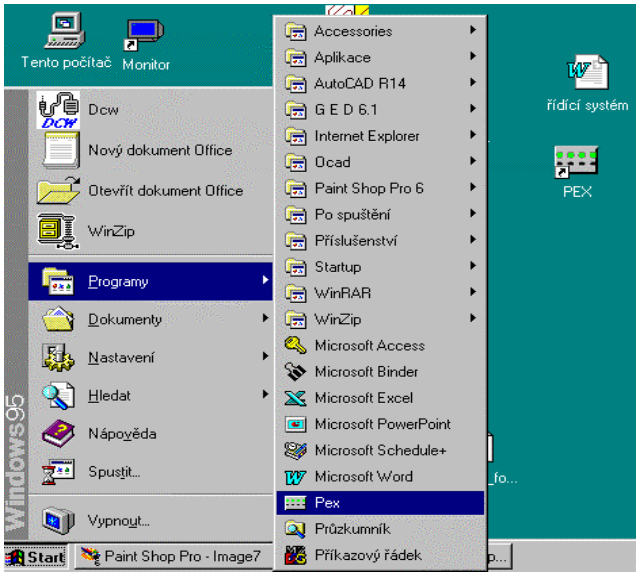
Program installation

The program is delivered on installation disc CD. Installation runs automatically after insert of the CD. If you have disable auto run in your PC then run program Setup.exe, please and follow the installation wizard.

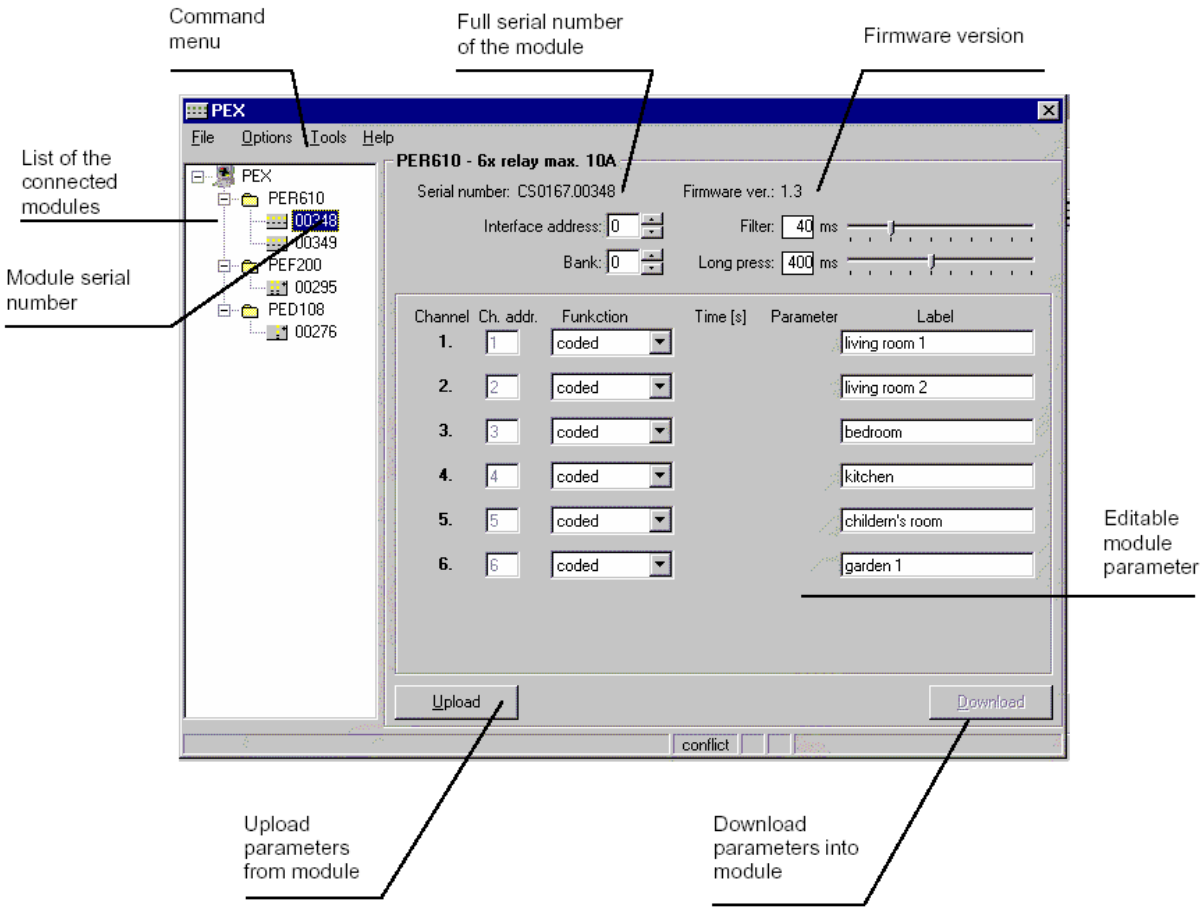
Start of the program

Programme start with modules Power Express ® online

Link the Power Express® system through module PEC25 into serial port of your computer. All Power Express® modules must have power supply. Run PEX program from the windows start menu.

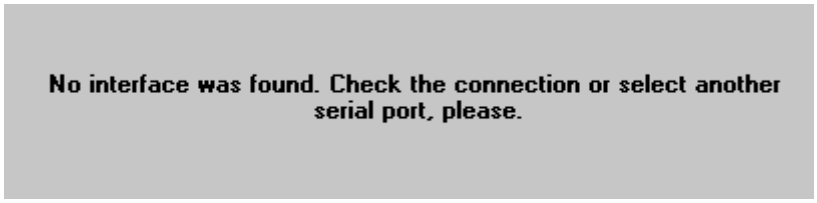


After loading of the program the main program window will be displayed. There is list of the connected modules with their serial numbers on the left side of the main window and space for their parameters on the right side of the window.



Programme start without modules Power Express ® connected

The PEX program can be run without modules Power Express® connected.There is notice on the startup in this case:

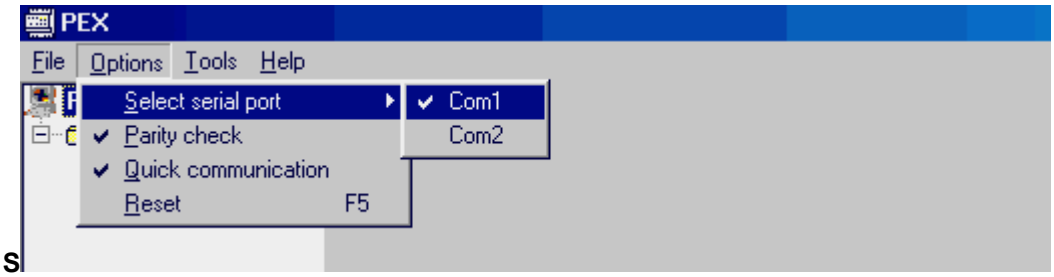


Chapter 3 - Programme operating

Command menu

Selecting command

You can select command ordinarily from the menu or you can use the keyboard shortcuts, for example: ALT + O for open Option part of the menu.



S

File menu Alt+F

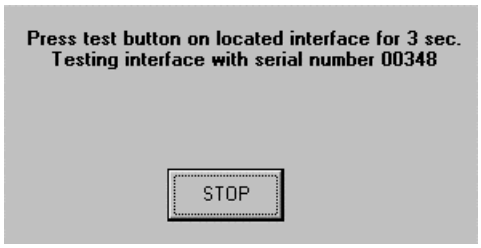
- OPEN Ctr+O Open project with configuration of the modules of the Power Express® system from the file.
- SAVE Ctr+S save the actual project into the file.
- SAVE AS Save the actual project into the file with new name.
- EXPORT Export the actual project as file for: Excel (*.csv), Internet Explorer (*.htm), Plain text (*.txt)
- EXIT Terminate the PEX program.

Options menu Alt+O

- SELECT SERIAL PORT Show list all of free serial ports in computers. The marked port is selected for communication with modules of the Power Express® system. If you select any other serial port the program make RESET and load data from new selected port.
- PARITY CHECK switch on/off communication parity check
- QUICK COMMUNICATIONS switch on/off quick
- RESET F5 The program make new load of the connected modules of the Power Express® system. You can make it by pressing keyboard shortcut F5 too.

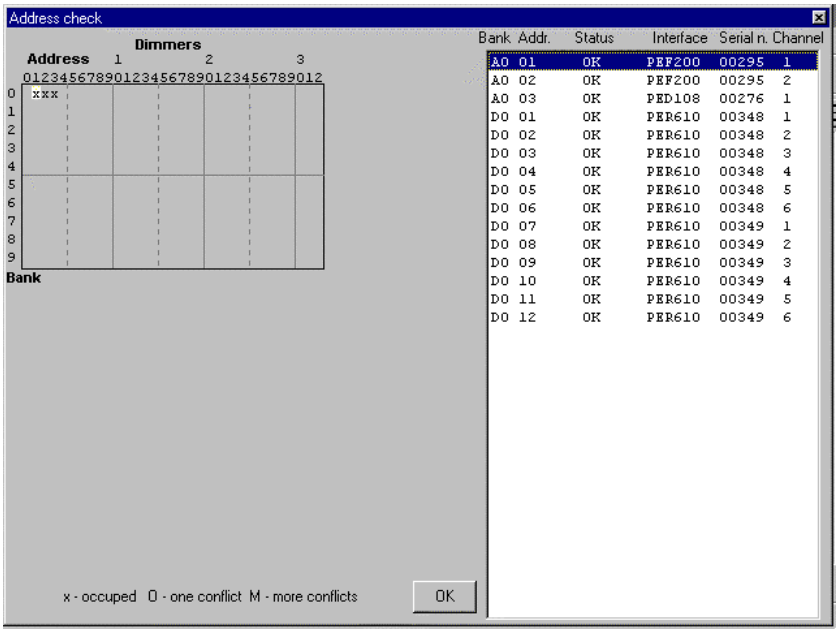
Tools menu Alt+T

LOCATE F3 By this command you can seek channel without knowing of it‘s address by pressing it‘s button on the module.

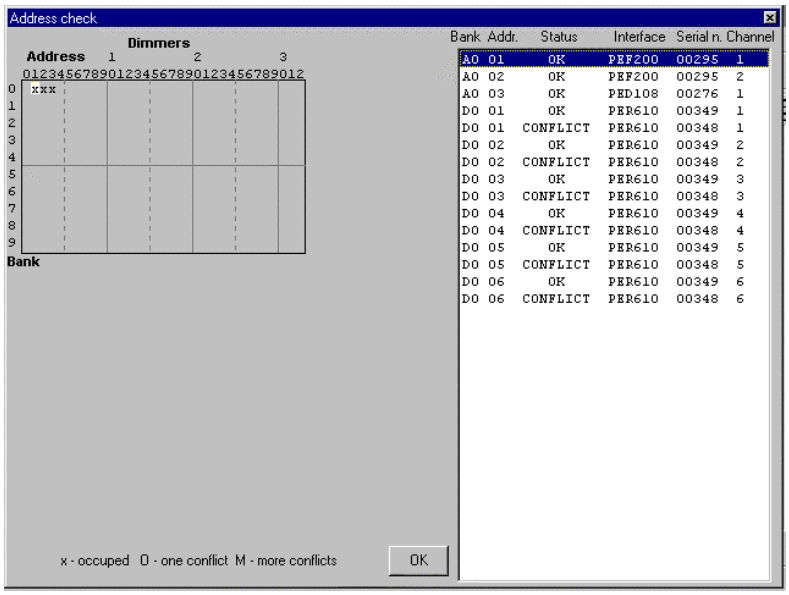


You can STOP this function by pressing the STOP button. If there is more then one channels with the same address, the LOCATE command don't run and show warning message:

ADRESS CHECK F4 This command is used for checking addresses of all connected modules. For display results of this command there is shown special window. There is list of all connected channels on right side of the window.



There is table representative address map of the channels analog (dimmable) or digital (relay) type.



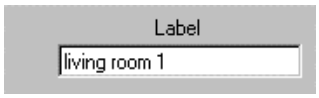
If there is conflict in addressing, there is warning “CONFLICT“in the column “Status“at conflict channels. Double click by the right mouse button on the selected channels in the list open configuration window of relevant module.

Help menu

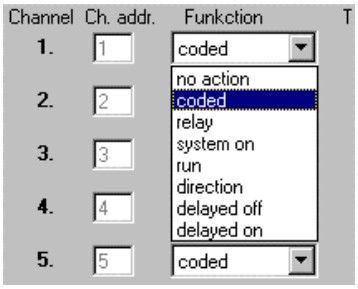
About... Show window with program version and contact addresses of makers.

Chapter 4 - Configuration of the Power Express® modules

Double click in the module list in main window show editable parameters of the module. You can change parameters by:

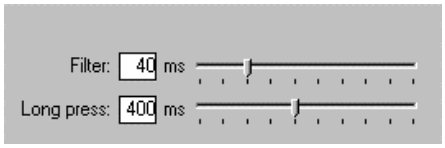


Selecting from range of choice,



Incrementing or decrementing of numerical values,

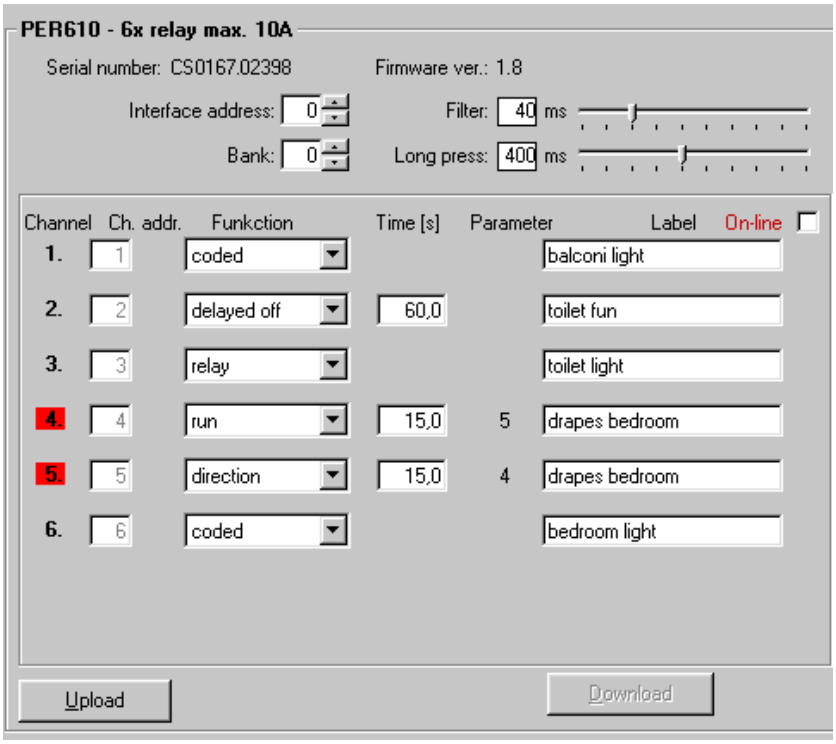
Or dragging scroll bars



If any parameter is change its value background if make red as indication of change. On move the above changed value there is show its previous value in the balloon hint. You can recover original values from the module by pressing button UPLOAD or by keyboard shortcut Alt+U. Pressing button DOWNLOAD (Alt+D) transfer the actual parameters into module.

Configuration of the PER 610 module

The PER 610 module is six relay modules. There are all changeable parameters in configuration window of the module. The parameters on top side of the window are joint for all channels of the module.

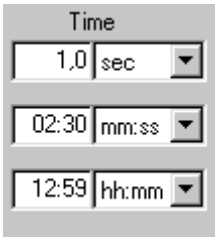


PER 610 parameters description

- *Interface address* *0-15* address of the module. On this value are based addresses of all channels of this module.
- *Bank* *0-9* module group
- *Filtr* *0-180* minimal time of pressing the button for the press to be valid.
- *Long press* *0-900* if time of pressing the button is longer than this value, the press is interpreted as the long time press.
- *Function* mode selection for control relay by it's buttons
- *no action* buttons are disable
- *coded* every press do negation of the relay state.
- *relay* the relay is on if the button is hold.
- *system on* the button switch on the relay and it can be switched off only by command.
- *run* Short press switch relay on for time entered in its parameter. Long time press do the relay on only for button is holding. It is useful in couple with other channel with direction mode for controlling of motors.
- *direction* it is useful for selecting direction of controlled motors. After 200 ms the couple relay with mode run is switched on too.
- *delayed off* the relay is switched on at once but it is switch off after delay time.
- *delayed on* the relay is switched off at once but it is switch on after delay time.

- *run DC* (firmware 1.9 or later) Short press switch relay on for parameter time. Long time press do the relay on only for button is holding. It is useful in couple with other channel with same mode for controlling DC motors.
- *Pulz* (firmware 1.10 or later) relay is switched on for short time impulse entered in parameter.

- *Time* time parameter in seconds for modes.
- (firmware 1.11 or later) threre are these timeformats avilable:



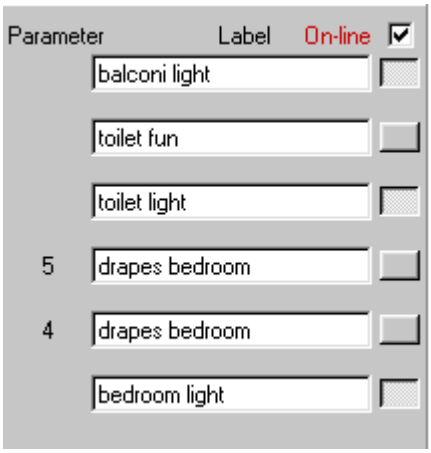
seconds 0,1 – 999,9 s

minutes - seconds: 00:01 – 59:59

hours - minutes: 00:01 – 12:59
(longest avilable time is 12 hours 59 minutes)

- *Label* Channel legend. Max 22 chars.

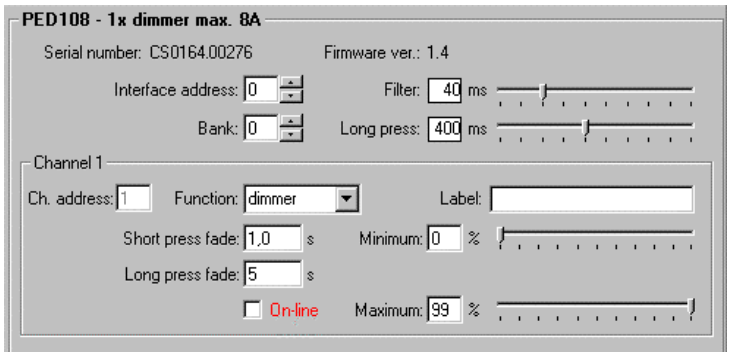
Direct control of the channels



After checking of On-line check box you can do negation of the relay state by pressing buttons under this box.

Configuration of the PED 108 module

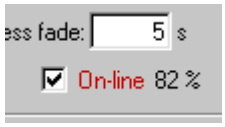
The PED 108 module is one channel dimmer up to 1,8 kW (230V/8A).



PED 108 parameters description

- *Interface address* *0-31* address of the module. On this value is based address of channel of this module
- *Bank* *0-9* module group
- *Filtr* *0-180* minimal time of pressing the button for the press to be valid.
- *Long press* *0-900* if time of pressing the button is longer than this value, the press is interpreted as the long time press.
- *Function* mode selection for control channel by it's buttons
- *no action* buttons are disable
- *toggle* both buttons switch outputs between maximum and minimum values.
- *solid state* if no button is pressed the output value is minimum. If one button is pressed the output has value entered in parameter Intermediate. If both buttons are pressed the output has maximum value.
- *dimmer* Short press of UP/DOWN button change output value to maximum/minimum at speed of parameter Short press fade. If holding button the output dim up / down at speed of parameter Long press fade and stop it after release of the button.
- *Short press fade* *0-99.9* Speed of dimming if normal button press.
- *Long press fade* *0-99* Speed of dimming if long time button press.
- *Minimum* *0-99* Minimum value of output in %
- *Intermediate* *0-99* Intermediate value of output in % for mode solid state
- *Maximum* *0-99* Maximum value of output in %
- *Label* Channel legend. Max 22 marks.

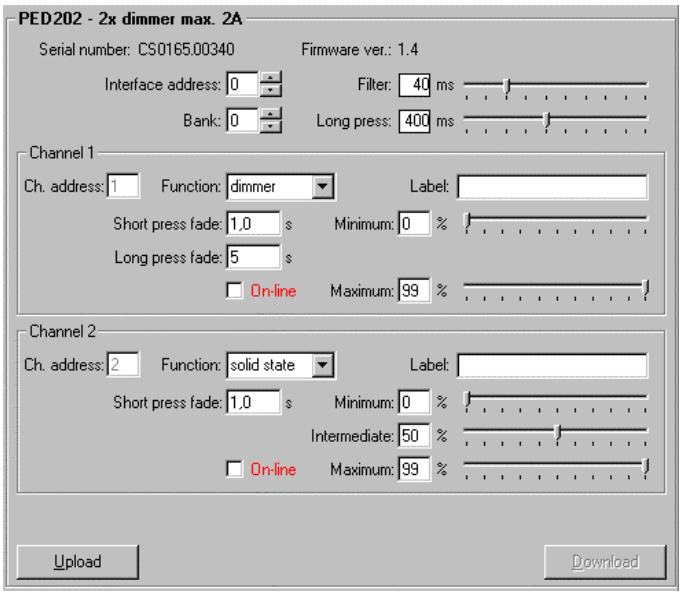
Direct control of the dimable channels



After checking On-line check box the changes of parameters Minimum, Intermediate a Maximum are immediately transfer to output of the module.

Configuration of the PED 202 module

The PED 202 module is dual channel dimmer up to 2 x 450 W (triak) (230V/4A together).



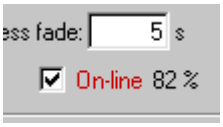
PED 202 parameters description

- *Interface address* *0-31* address of the module. On this value is based addresses of both channels of this module
- *Bank* *0-9* module group
- *Filtr* *0-180* minimal time of pressing the button for the press to be valid.
- *Long press* *0-900* if time of pressing the button is longer than this value, the press is interpreted as the long time press.

Next parameters can be set for every channel independend:

- *Function* mode selection for control channel by it's buttons
- *no action* buttons are disable
- *toggle* both buttons switch outputs between maximum and minimum values.
- *solid state* if no button is pressed the output value is minimum. If one button is pressed the output has value entered in parameter Intermediate. If both buttons are pressed the output has maximum value.
- *dimmer* Short press of UP/DOWN button change output value to maximum/minimum at speed of parameter Short press fade. If holding button the output dim up / down at speed of parameter Long press fade and stop it after release of the button.
- *Short press fade* *0-99.9* Speed of dimming if normal button press.
- *Long press fade* *0-99* Speed of dimming if long time button press.
- *Minimum* *0-99* Minimum value of output in %
- *Intermediate* *0-99* Intermediate value of output in % for mode solid state
- *Maximum* *0-99* Maximum value of output in %
- *Label* Channel legend. Max 22 marks.

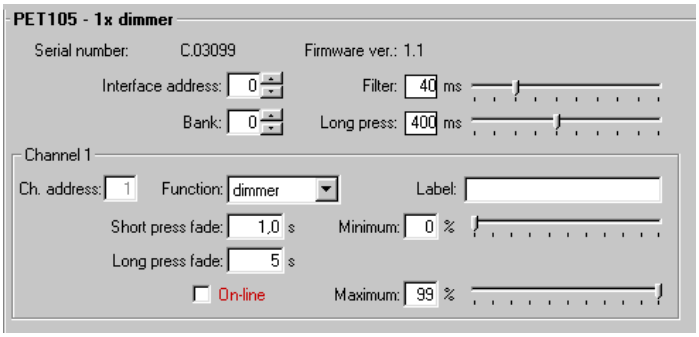
Direct control of the dimable channels



After checking On-line check box the changes of parameters Minimum, Intermediate a Maximum are immediately transfer to output of the module.

Configuration of the PET 105 module

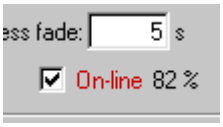
The PET 105 module is one channel dimmer (transistor) up to 1 kW (230V/5A).



PET 105 parameters description

- *Interface address* *0-31* address of the module. On this value is based addresses of both channels of this module
- *Bank* *0-9* module group
- *Filtr* *0-180* minimal time of pressing the button for the press to be valid.
- *Long press* *0-900* if time of pressing the button is longer than this value, the press is interpreted as the long time press.
- *Function* mode selection for control channel by it's buttons
- *no action* buttons are disable
- *toggle* both buttons switch outputs between maximum and minimum values.
- *solid state* if no button is pressed the output value is minimum. If one button is pressed the output has value entered in parameter Intermediate. If both buttons are pressed the output has maximum value.
- *dimmer* Short press of UP/DOWN button change output value to maximum/minimum at speed of parameter Short press fade. If holding button the output dim up / down at speed of parameter Long press fade and stop it after release of the button.
- *Short press fade* *0-99.9* Speed of dimming if normal button press.
- *Long press fade* *0-99* Speed of dimming if long time button press.
- *Minimum* *0-99* Minimum value of output in %
- *Intermediate* *0-99* Intermediate value of output in % for mode solid state
- *Maximum* *0-99* Maximum value of output in %
- *Label* Channel legend. Max 22 marks.

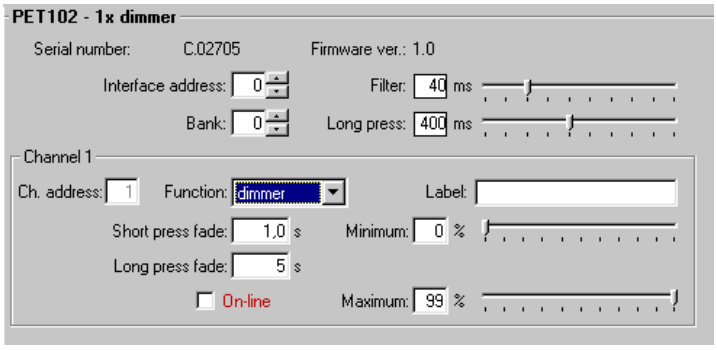
Direct control of the dimable channels



After checking On-line check box the changes of parameters Minimum, Intermediate a Maximum are immediately transfer to output of the module.

Configuration of the PET 102 module

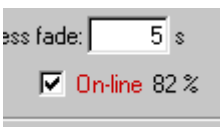
The PET 102 module is one channel dimmer (transistor) up to 400 W (230V/2A).



PET 102 parameters description

- *Interface address* *0-31* address of the module. On this value is based addresses of both channels of this module
- *Bank* *0-9* module group
- *Filtr* *0-180* minimal time of pressing the button for the press to be valid.
- *Long press* *0-900* if time of pressing the button is longer than this value, the press is interpreted as the long time press.
- *Function* mode selection for control channel by it's buttons
- *no action* buttons are disable
- *toggle* both buttons switch outputs between maximum and minimum values.
- *solid state* if no button is pressed the output value is minimum. If one button is pressed the output has value entered in parameter Intermediate. If both buttons are pressed the output has maximum value.
- *dimmer* Short press of UP/DOWN button change output value to maximum/minimum at speed of parameter Short press fade. If holding button the output dim up / down at speed of parameter Long press fade and stop it after release of the button.
- *Short press fade* *0-99.9* Speed of dimming if normal button press.
- *Long press fade* *0-99* Speed of dimming if long time button press.
- *Minimum* *0-99* Minimum value of output in %
- *Intermediate* *0-99* Intermediate value of output in % for mode solid state
- *Maximum* *0-99* Maximum value of output in %
- *Label* Channel legend. Max 22 marks.

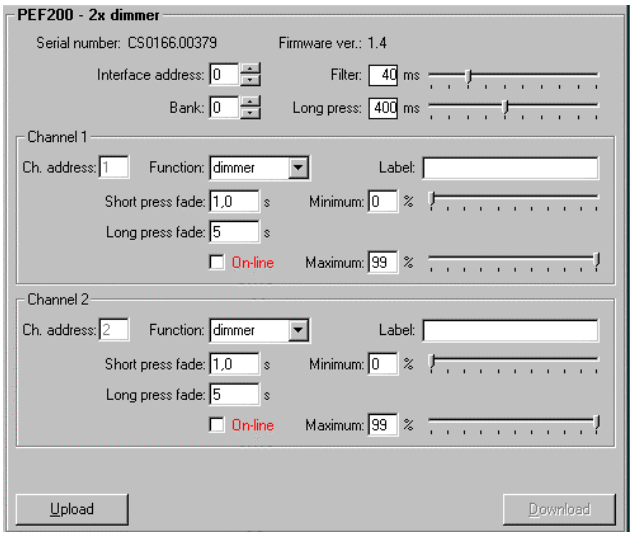
Direct control of the dimable channels



After checking On-line check box the changes of parameters Minimum, Intermediate a Maximum are immediately transfer to output of the module.

Configuration of the PEF 200 module

The PEF 200 module is double channel control unit for control of the dimmable fluorescent tube ballasts TRIDONIC (ZUMTOBEL).



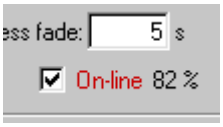
PEF 200 parameters description

- *Interface address* *0-31* address of the module. On this value is based addresses of both channels of this module
- *Bank* *0-9* module group
- *Filtr* *0-180* minimal time of pressing the button for the press to be valid.
- *Long press* *0-900* if time of pressing the button is longer than this value, the press is interpreted as the long time press.

Next parameters can be set for every channel independend:

- *Function* mode selection for control channel by it's buttons
- *no action* buttons are disable
- *toggle* both buttons switch outputs between maximum and minimum values.
- *solid state* if no button is pressed the output value is minimum. If one button is pressed the output has value entered in parameter Intermediate. If both buttons are pressed the output has maximum value.
- *dimmer* Short press of UP/DOWN button change output value to maximum/minimum at speed of parameter Short press fade. If holding button the output dim up / down at speed of parameter Long press fade and stop it after release of the button. If holding down button the minimum value doesn't stop at value 0 %, but at 1 %. For total off use short press.
- *Short press fade* *0-99.9* Speed of dimming if normal button press.
- *Long press fade* *0-99* Speed of dimming if long time button press.
- *Minimum* *0-99* Minimum value of output in %
- *Intermediate* *0-99* Intermediate value of output in % for mode solid state
- *Maximum* *0-99* Maximum value of output in %
- *Label* Channel legend. Max 22 marks.

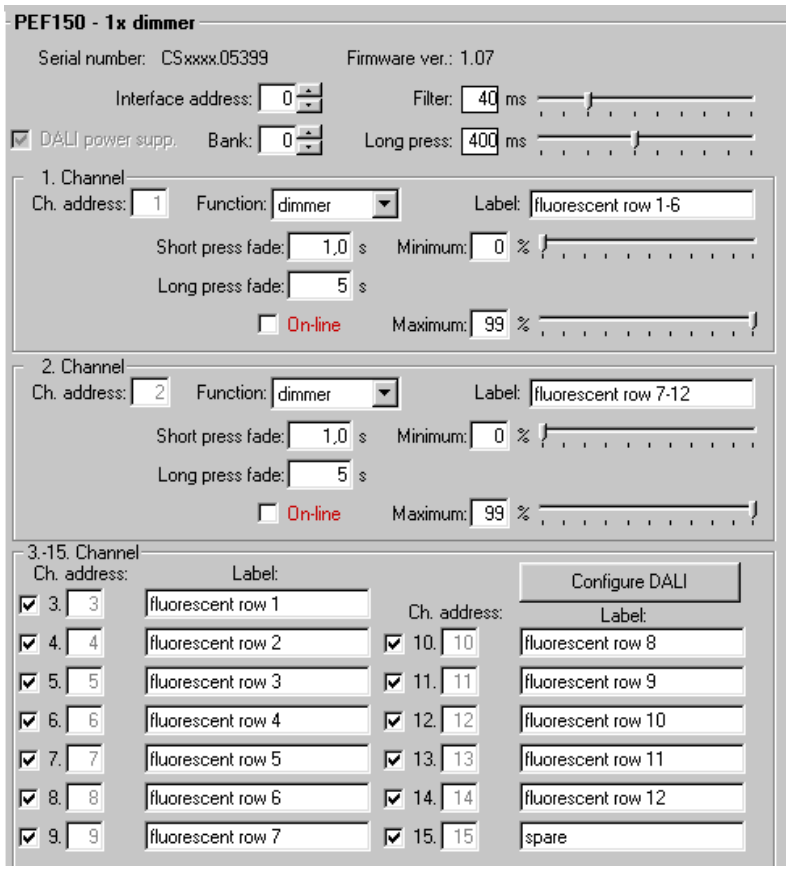
Direct control of the dimable channels



After checking On-line check box the changes of parameters Minimum, Intermediate a Maximum are immediately transfer to output of the module.

Configuration of the PEF 150 module

The PEF 150 module is 15 channels control unit for control of the dimmable fluorescent tube ballasts DALI.



PEF 150 parameters description

- *Interface address* *0-31* address of the module. On this value is based addresses of both channels of this module
- *Bank* *0-9* module group
- *Filtr* *0-180* minimal time of pressing the button for the press to be valid.
- *Long press* *0-900* if time of pressing the button is longer than this value, the press is interpreted as the long time press.

Next parameters can be set for every channel independend:

- *Function* mode selection for control channel by it's buttons
- *no action* buttons are disable
- *toggle* both buttons switch outputs between maximum and minimum values.
- *solid state* if no button is pressed the output value is minimum. If one button is pressed the output has value entered in parameter Intermediate. If both buttons are pressed the output has maximum value.
- *dimmer* Short press of UP/DOWN button change output value to maximum/minimum at speed of parameter Short press fade. If holding button the output dim up / down at speed of parameter Long press fade and stop it after release of the button.

- *Short press fade* *0-99.9* Speed of dimming if normal button press.
- *Long press fade* *0-99* Speed of dimming if long time button press.
- *Minimum* *0-99* Minimum value of output in %
- *Intermediate* *0-99* Intermediate value of output in % for mode solid state
- *Maximum* *0-99* Maximum value of output in %
- *Label* Channel legend. Max 22 marks.

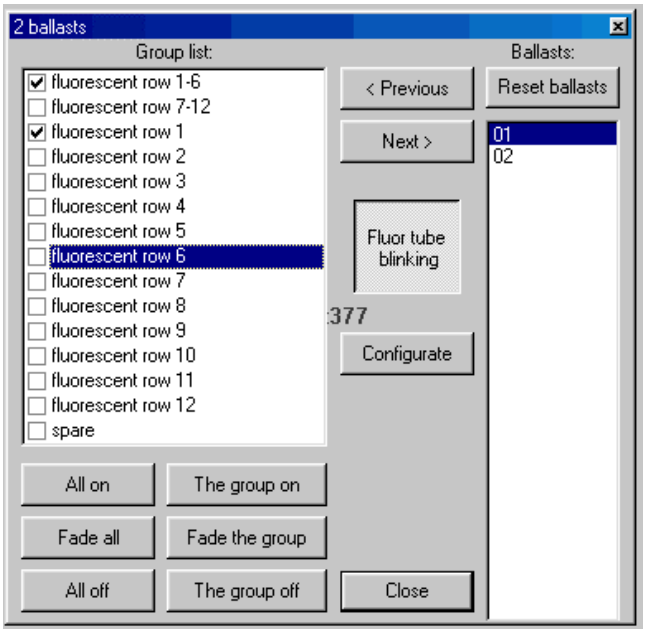
Dali ballasts configuration by PEF 150 module

After connecting PEF150 into DALI bus, which is connected to max. 63 ballast, there you have to set address in DALI ballasts and assign them into groups. This configuration you can start by pressing *Configure DALI* button. Now come initialization and test of ballasts's addresses.

If the addresses of ballasts are not continuity, there is shown this message:

If select yes, the control of addresses start again. Otherwise the program ask, when you want to start setting addresses.

In setting addresses every adresses of ballast are deleted (information about groups stay save) and is done new assigning af addresses for the ballasts. If every founded ballast has its short address there is shown form for assigning ballasts into channels (groups).

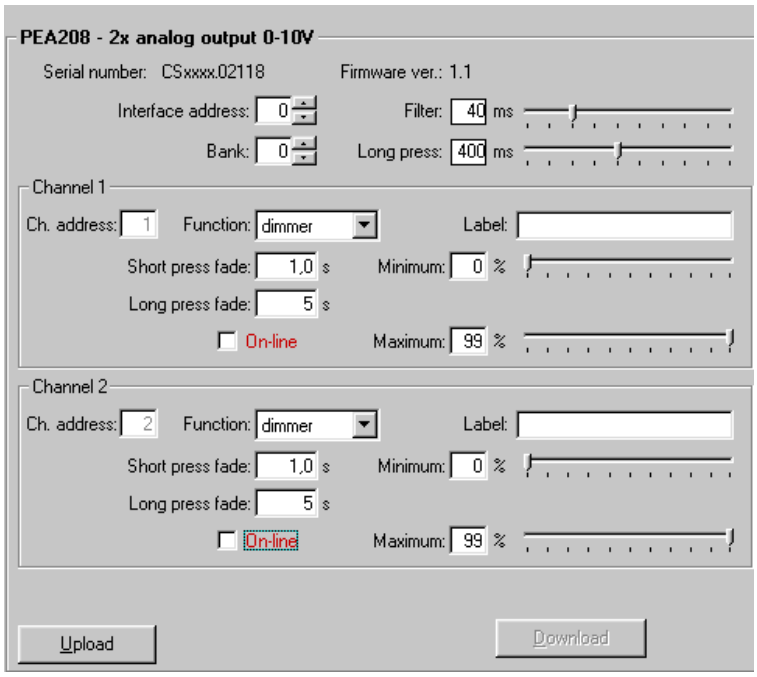


There is list of all founded ballasts on the right side. The tube of sellected ballast is blinking for easy identification it in the room. After locallization we can assign it into one ore more channels

(group). There is list of groups on the left side of form. Blinking of the tube can be stoped by pressing “Fluor tube blinking” button. There are some next buttons for switch on/off or fading of ballast in selected group. The *Configurate* button start configuration of ballast over again. Button close close the configuration form.

Configuration of the PEA 208 module

The PEA 208 module is dual channel analog module for control analog dimmable fluorescent tube ballasts.



PEA 208 parameters description

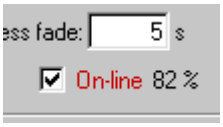
- *Interface address* *0-31* address of the module. On this value is based addresses of both channels of this module
- *Bank* *0-9* module group
- *Filtr* *0-180* minimal time of pressing the button for the press to be valid.
- *Long press* *0-900* if time of pressing the button is longer than this value, the press is interpreted as the long time press.

Next parameters can be set for every channel independend:

- *Function* mode selection for control channel by it's buttons
- *no action* buttons are disable
- *toggle* both buttons switch outputs between maximum and minimum values.
- *solid state* if no button is pressed the output value is minimum. If one button is pressed the output has value entered in parameter Intermediate. If both buttons are pressed the output has maximum value.
- *dimmer* Short press of UP/DOWN button change output value to maximum/minimum at speed of parameter Short press fade. If holding button the output dim up / down at speed of parameter Long press fade and stop it after release of the button.
- *fluorescent* Short press of UP/DOWN button change output value to maximum/minimum at speed of parameter Short press fade. If holding button the output dim up / down at speed of parameter Long press fade and stop it after release of the button. If holding down button the minimum value doesn't stop at value 0 %, but at 5 %. For total off use short press.

- *Short press fade* *0-99.9* Speed of dimming if normal button press.
- *Long press fade* *0-99* Speed of dimming if long time button press.
- *Minimum* *0-99* Minimum value of output in %
- *Intermediate* *0-99* Intermediate value of output in % for mode solid state
- *Maximum* *0-99* Maximum value of output in %
- *Label* Channel legend. Max 22 marks.

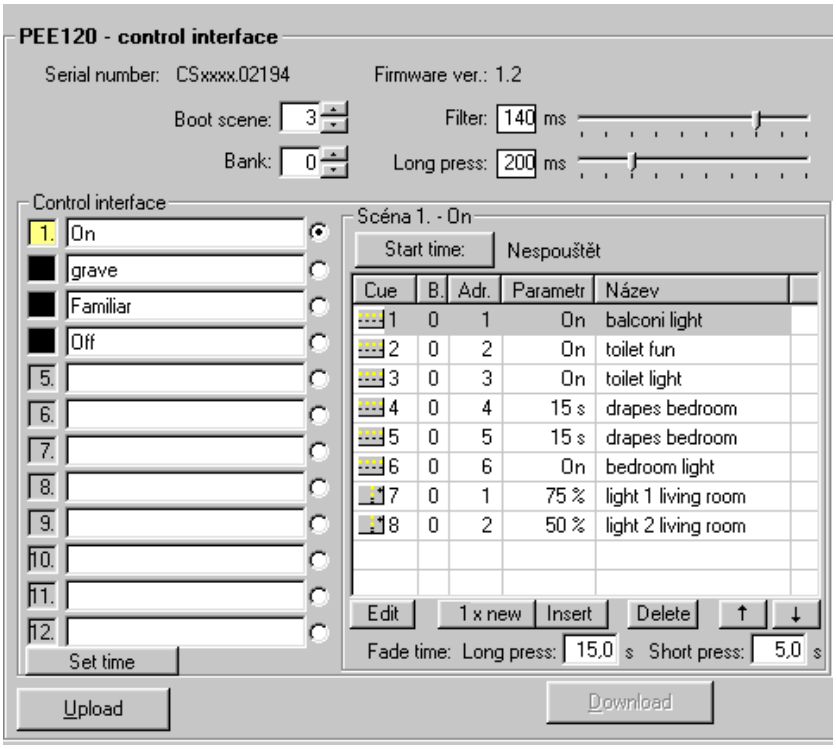
Direct control of the dimable channels



After checking On-line check box the changes of parameters Minimum, Intermediate a Maximum are immediately transfer to output of the module.

Configuration of the PEE 120 module

The PEE 120 module is programmable unit for control of the modules of the Power Express systems. It contains 12 scenes, every with 50 commands. Scenes are activated by real time, buttons or after access of power supply.



PEE 120 parameters description

- *Boot scena 0-12* number of scene, which run after access power supply. (Select 0 for disable)
- *Bank 0-9* module group
- *Filtr 0-180* minimal time of pressing the button for the press to be valid.
- *Long press 0-900* if time of pressing the button is longer than this value, the press is interpreted as the long time press.
- *Fade time: Long press 0-99,9* delay before start scene if long press.
- *Fade Time: Short press 0-99,9* delay before start scene if short press.

Selection of the scene, it's names and indication LEDs

There is list of twelve scenes in left part of the window. Relevant scene is selected by click on switcher on right side next to scenes name. After selection of the scene its parameters are shown in window on the right side of the window. Name of scene you can change by click into its input box. Background color of the number of the scene indicates state of its LED. Yellow color indicate turnedon LED, black color indicate turned-off LED and gray color indicate this LED not to be changed by the scene. LED reaction you can set from popup menu after right click on number of scene.

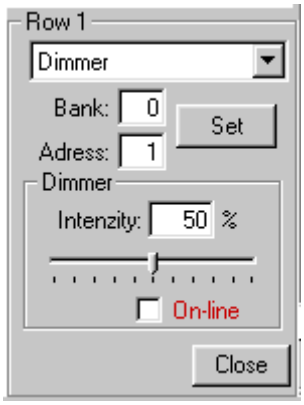
- *Nezměněno* – Cancel the LED reaction, its background get to gray.
- *Zapnout* – switch on the LED, background get to yellow.
- *Vypnout* – switch off the LED, background get to black.
- *Blikat* – make the LED blinking, background get green.
- *Vše nezměněno* – Cancel reaction of all LED.
- *Vše zapnout* – switch on all LED.
- *Vše vypnout* – switch off all LED.
- *Vše blikat* – make all LED blinking.

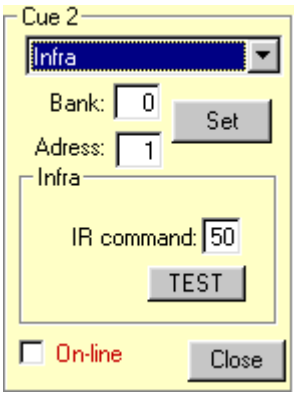
Editation of the scene steps, copying of the scenes

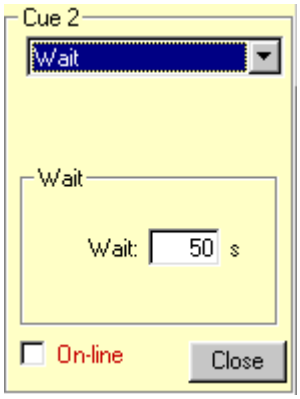
There are selected scene steps shown on the right side of main window. By buttons under the steps you can add and remove scene steps. Selected step have blue background.

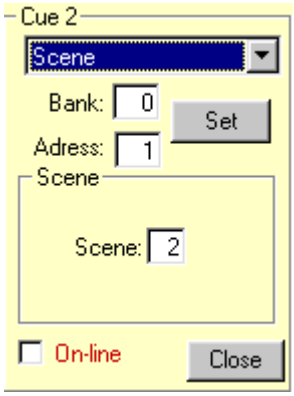
Edit	open window for editing selected scene step.
1xnew	add new step to the end of step list.
Insert	add new step before actual step.
Delete	delete selected step.
↑	move step up
↓	move step down

Editation window have several looks depending on type of the edited step:



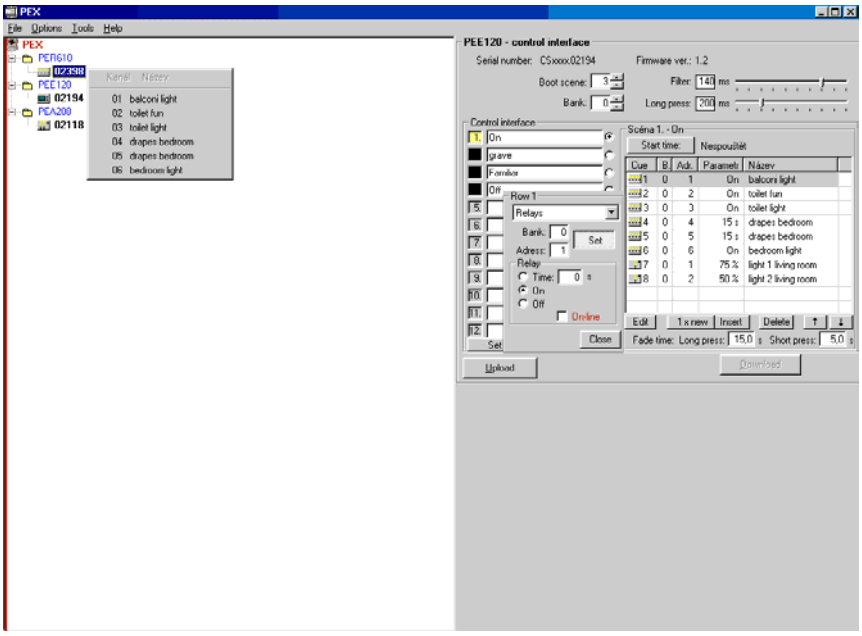






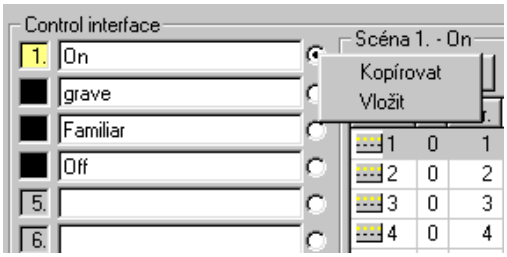
There is number of scene step on the left top corner of the window. Under it you can chose type of the command, bank and address of the module to which is command sending. If command is scene, there is needed to enter number of scene you want to invoke.

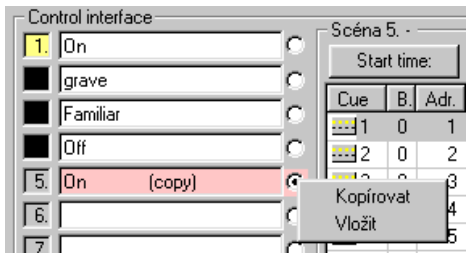
For easier entering addresses of large projects use the button SET. After click on this button the program switch to setting mode. After it by click on the name of the module there is shown window with its addresses and channels. If you select the channel, its address is entered into just editing scene step.



Button CLOSE close the scene editation window.

The scenes can be copying using command copy Kopírovat and past Vložit from its popup menu.



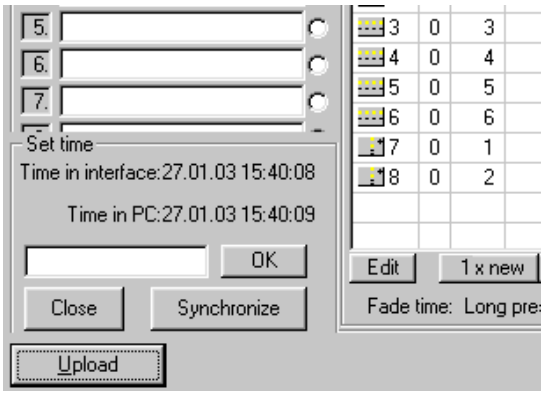


Direct control of the scenes

If checking ON-line check box the scenes are immediately transferred into module after every change of its setting.

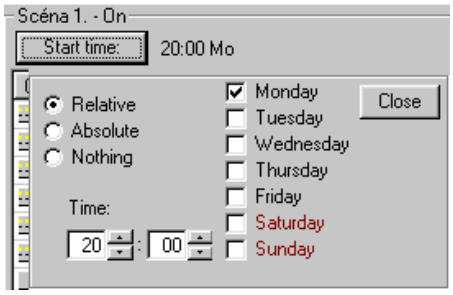
Real timing setup, starting of the scenes

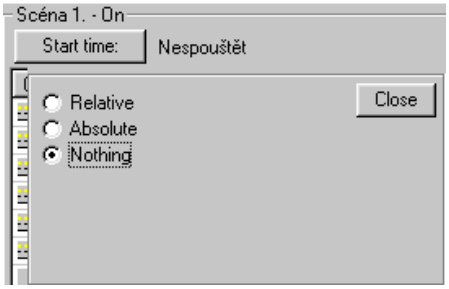
The PEE120 module contains the real time circuit where is realized automatic switching between normal and DST time. Real time you can set after click on the Set time button.



Every scene can be started by real time or by press external button. Time for start the scene you can set after click on button Start time. There is the window for entering it.

- *Relative* Chose if you want to run the scene periodically. Enter days of week and time of the day here.
- se scéna spuští
- *Absolute* Chose if you want to run the scene in absolute time. Enter whole date and daytime here.
- *Nothing* the scene is not to start by the time.





Next to Start time button is shown actually entered time for run the scene.