
PISO-PS400 LabVIEW Driver User Manual

(Version 1.00)



ICP DAS CO., LTD.

泓格科技股份有限公司

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Tables of Content

1	Software Installation.....	4
1.1	Installation Driver.....	5
1.2	Creating the PISO-PS400 LabVIEW Palette	6
1.2.1	How to Customize the PISO-PS400 LabVIEW Palette.....	6
2	Driver Function Description	13
2.1	Function List.....	13

1 Software Installation

The PISO-PS400 LabVIEW 8.x driver is the PISO-PS400 function reference for the motion control card used on LabVIEW 8.x environment on Windows 2000/XP. Before users use this driver to develop the motion control system, the PISO-PS400 driver must be installed, because the PISO-PS400 LabVIEW 8.x driver needs to call the function of it. The driver architecture is shown in the following Figure1.1.

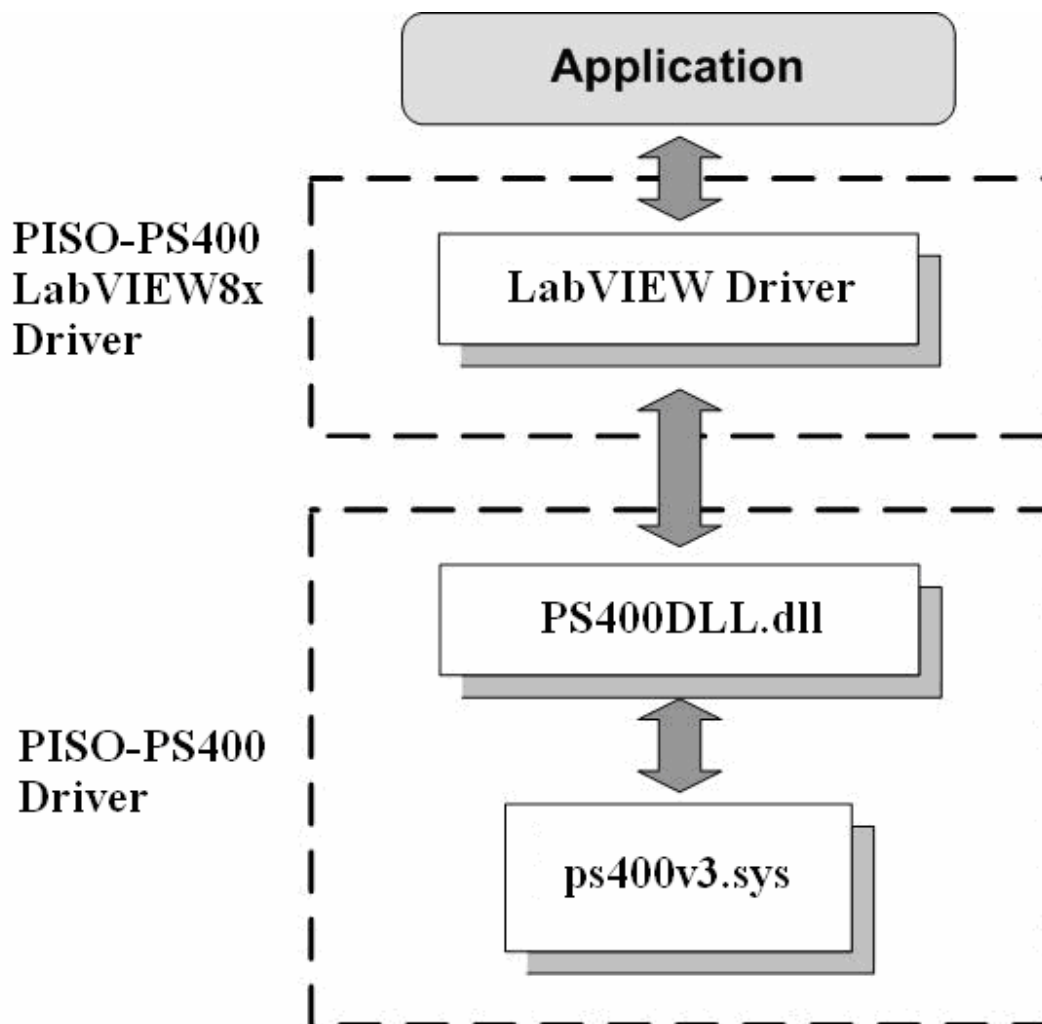


Figure 1.1 Driver concept of PISO-PS400 LabVIEW 8.x driver

1.1 Installation Driver

When users want to use the PISO-PS400 LabVIEW 8.x driver, the **PISO-PS400 motion control card driver(v3.0) must be installed firstly**. Afterwards, users should install PISO-PS400 LabVIEW 8.x driver. After finishing the installation process, the demo program may be a good reference for users to build a simple motion control application with LabVIEW. In the demo programs, most basic functions and operation methods of motion control VI blocks are introduced. It is very helpful for users to understand how to use these functions to develop their own applications.

1.2 Creating the PISO-PS400 LabVIEW Palette

This tutorial walks through the steps of creating a custom subpalette to add to the PISO-PS400 Functions palette in LabVIEW. It also walks through the process of adding subVIs to the palette.

1.2.1 How to Customize the PISO-PS400 LabVIEW Palette

Step 1: Navigate to the toolbar and select **Tools** → **Advanced** → **Edit Palette Set**

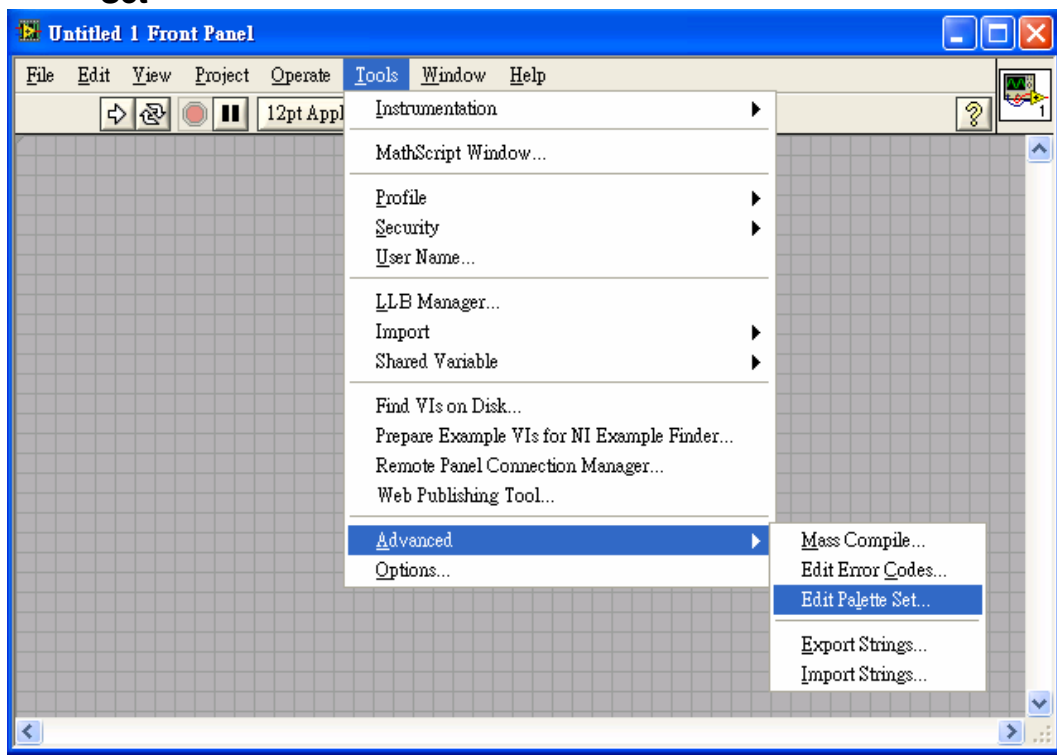


Figure 1.2 Edit Palette Set

Step 2: The Edit Controls and Function Palette Set will appear along with the top level submenus on both the Functions and Controls Palette.

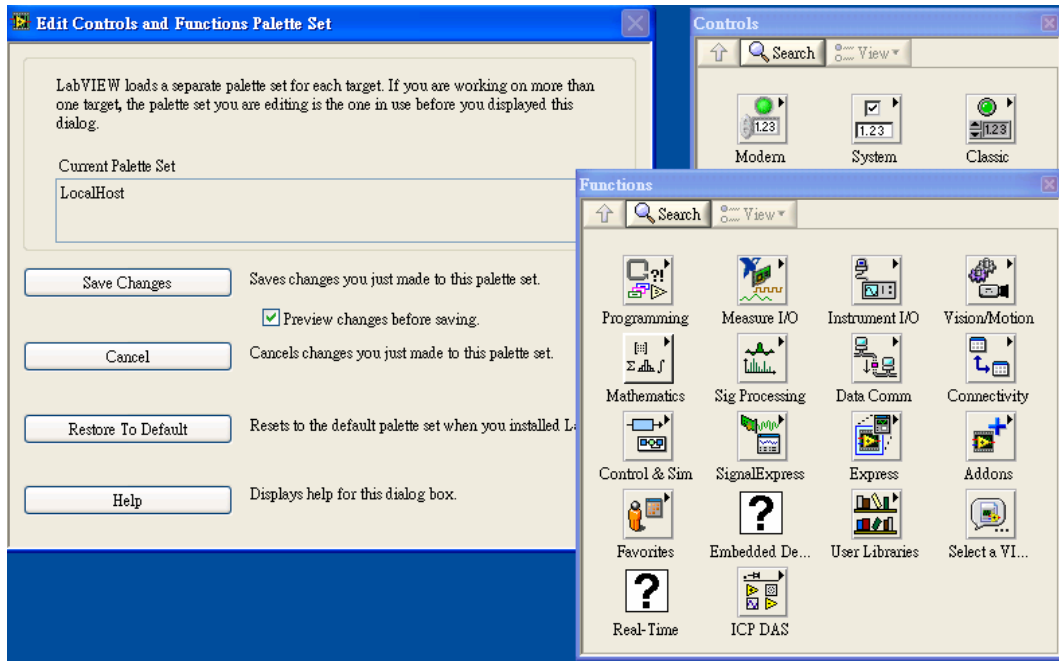


Figure 1.3 Functions and Controls Palette

Step 3: To create a custom palette, right-click in the free space on either the Controls or Functions palette, and select **Insert**→**Subpalette...** For this demonstration, we will use the Functions palette

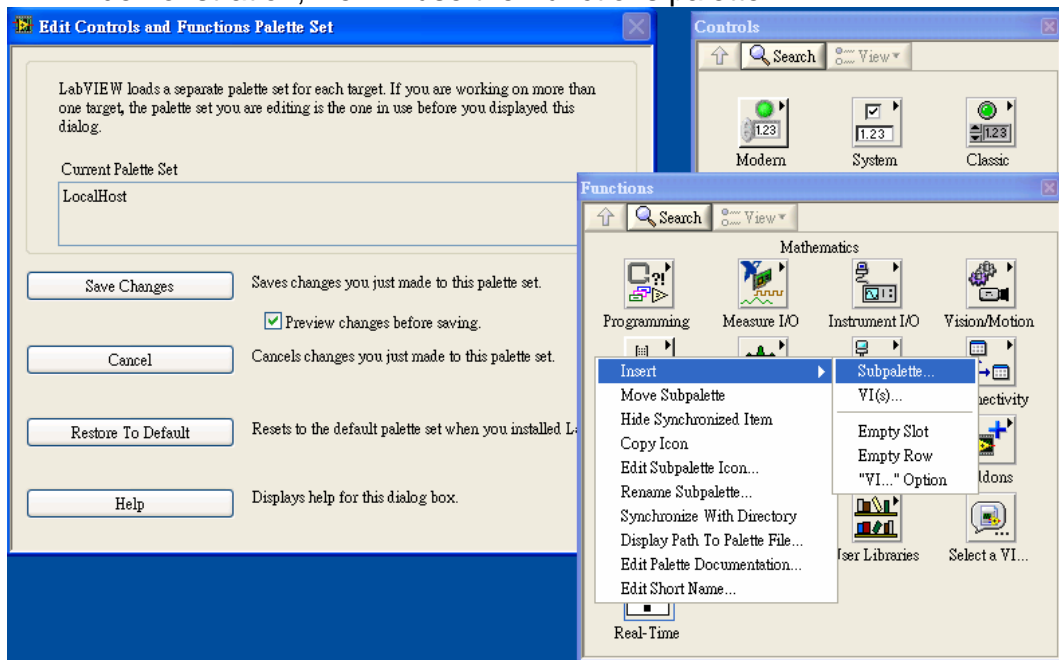


Figure 1.4 Insert Subpalette1

Step 4: The Insert Subpalette dialog box will pop-up. Select the first option, **Create a new palette file (.mnu)**.

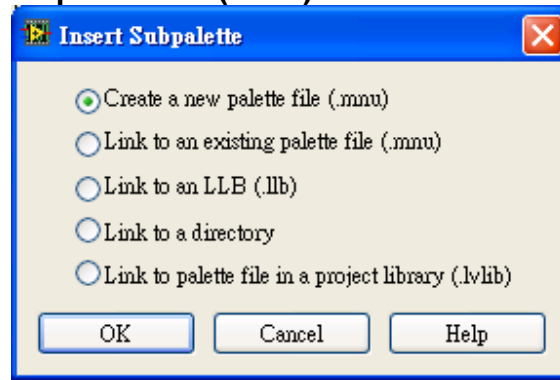


Figure 1.5 Create a new Palette file

Step 5: Place a custom subpalette on the Functions palette. It should add the .mnu extension when naming the file.

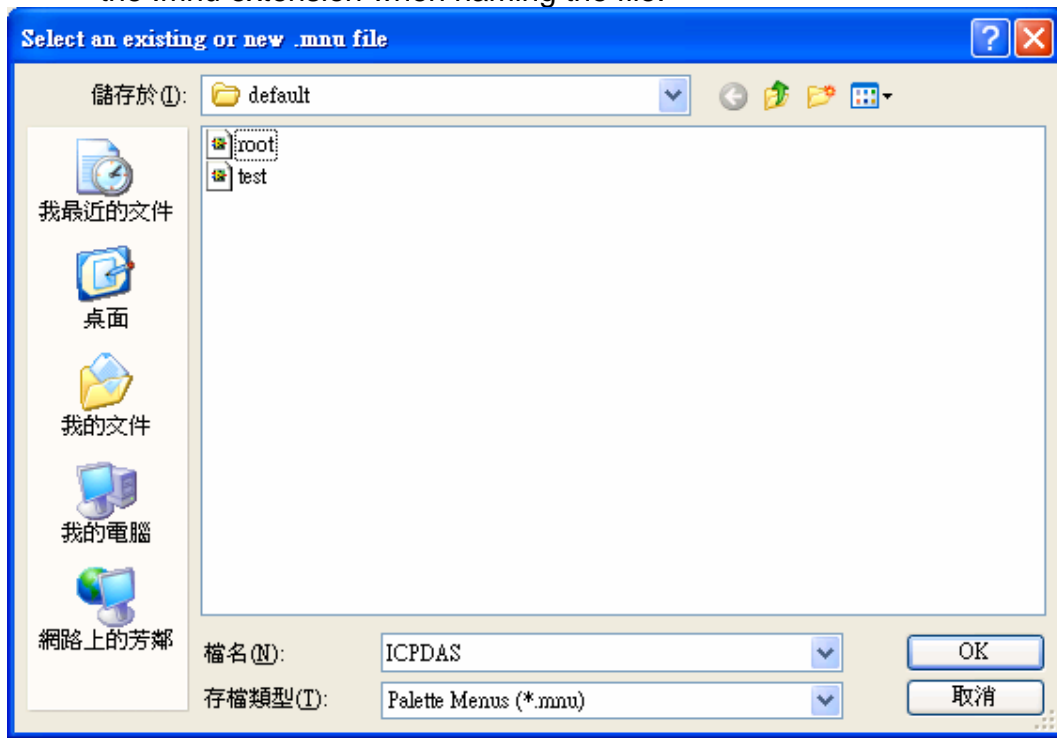


Figure 1.6 Add a new .mnu

Next, it will be prompted to name the subpalette, and click OK.



Figure 1.7 Edit Palette Item Name

Step 6: The ICPDAS subpalette on the Functions palette.

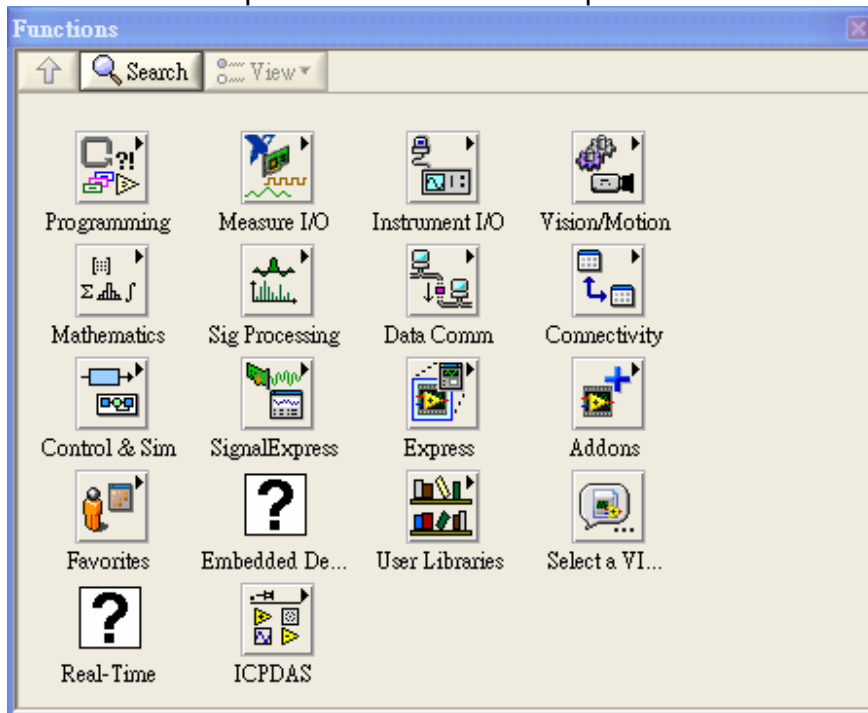


Figure 1.8 Functions palette

Step 7: Click on the ICPDAS subpalette, and insert another subpalette, Right-click in the free space, and select **Insert** → **Subpalette...**

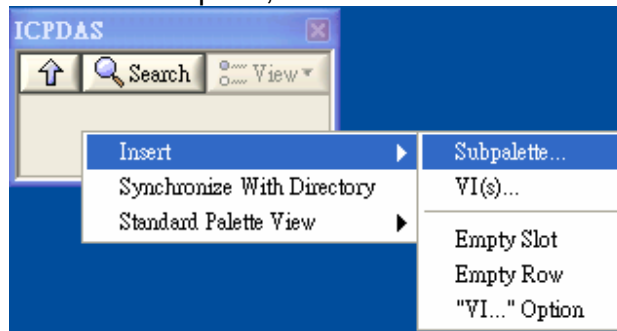


Figure 1.9 Insert Subpalette2

Step 8: Select the fourth option, **Link to a directory**.

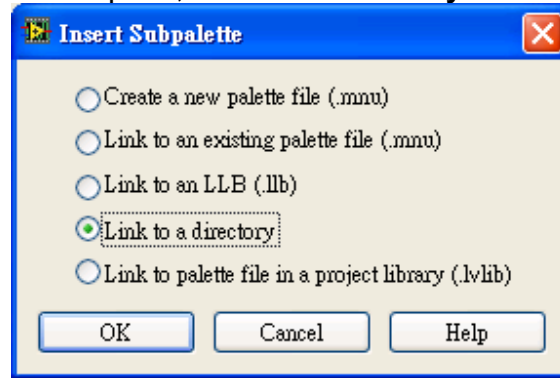


Figure 1.10 Link to a directory

Step 9: A dialog box will appear. Navigate to the directory path, **C:\ICPDAS\PISO_PS400\LabVIEW8x\Driver\PISO_PS400**, and click Current Folder.

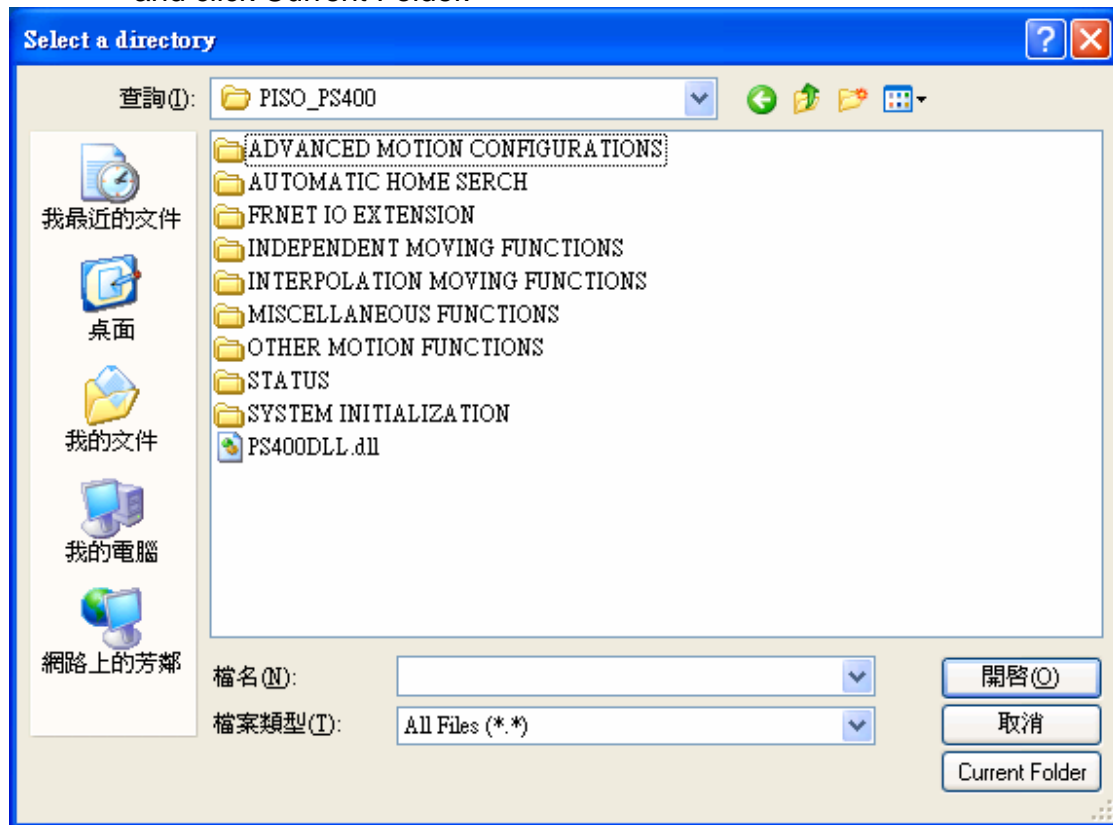


Figure 1.11 Select a directory

Step 10: PISO_PS400 VI will appear in the ICPDAS Functions palette.



Figure 1.12 ICPDAS Functions Palette

Click PISO_PS400 VI, it will appear all PISO-PS400 SubVI

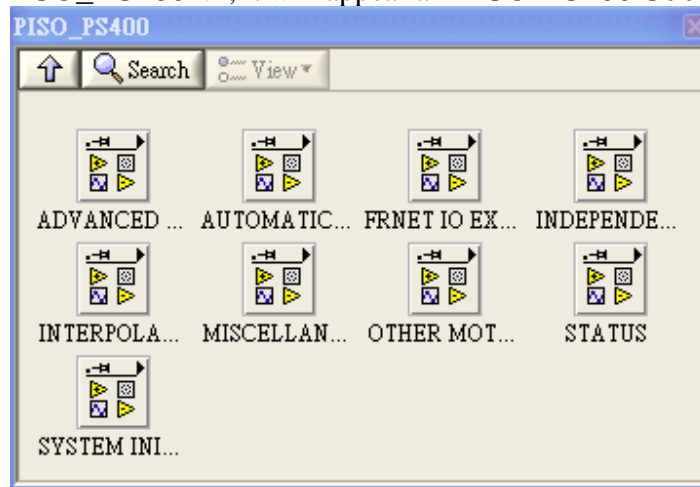


Figure 1.13 PISO-PS400 SubVis

Step 11: Click Save Changes.

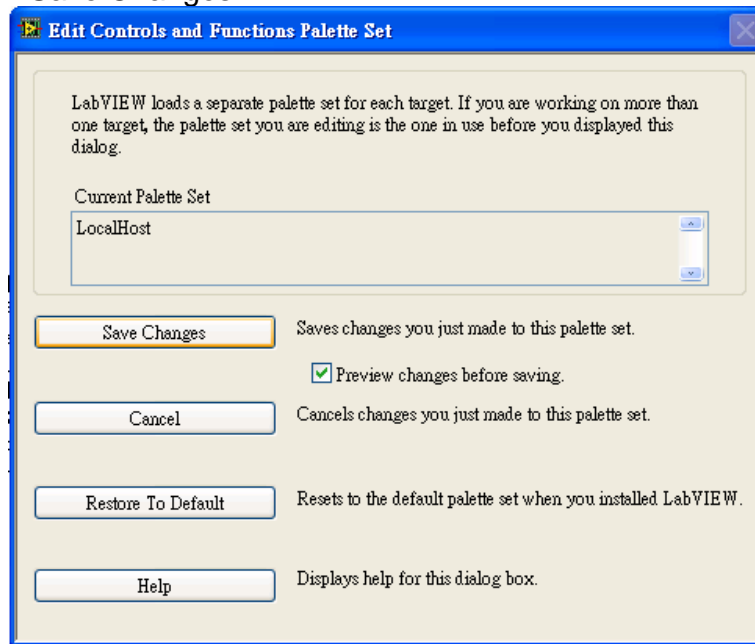


Figure 1.14 Save Changes

Step 12: Finally, the Function palette will show below.

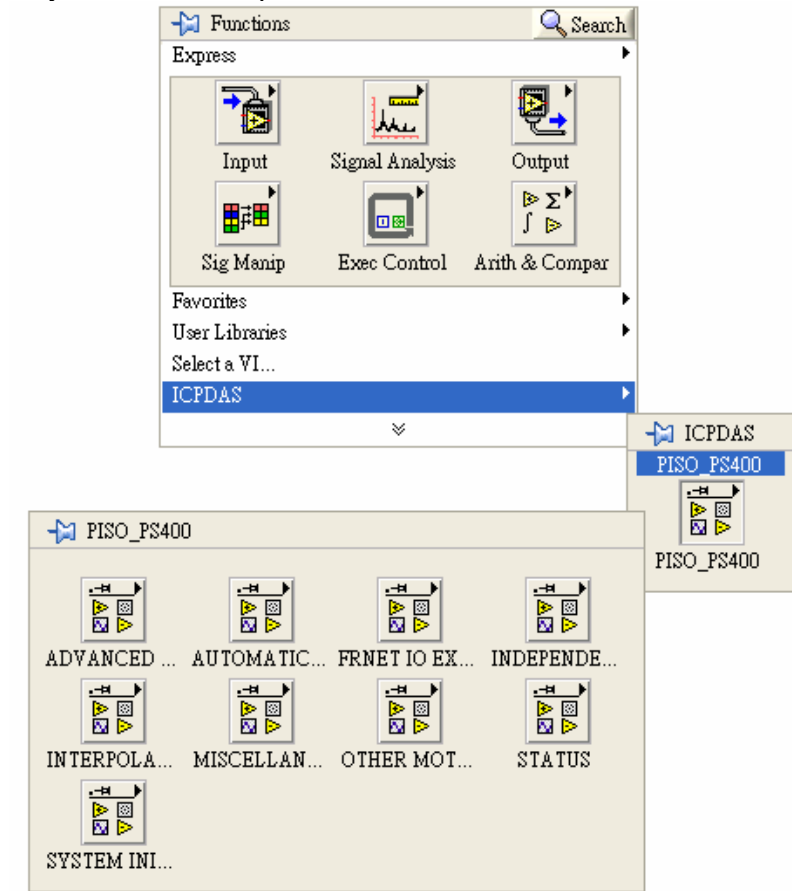





















Figure 1.15 PISO-PS400 Function Palette



2 Driver Function Description








2.1 Function List












Every function provides each VI for user to use in the LabVIEW environment. All the functions provided by the PS400DLL.dll are listed in the following table.





System Initialization	
VI Icon	Function Name
	ps400_scan
	ps400_get_cardinfo
	ps400_open
	ps400_close
	ps400_reset
	ps400_open_all
	ps400_close_all
	ps400_reset_all
	ps400_set_range
	ps400_get_range_settings
	ps400_set_pls_cfg
	ps400_set_enc_cfg
	ps400_set_limit









System Initialization	
VI Icon	Function Name
	ps400_set_inp
	ps400_set_alarm
	ps400_set_filter
	ps400_set_softlimit
	ps400_load_config
	ps400_servo_on






Automatic Home Search	
VI Icon	Function Name
	ps400_set_home_cfg
	ps400_home_start











Independent Moving Functions	
VI Icon	Function Name
	ps400_velocity_move
	ps400_const_move
	ps400_const_moveall
	ps400_t_move
	ps400_t_moveall
	ps400_s_move
	ps400_s_moveall






Interpolation Moving Functions	
VI Icon	Function Name
	ps400_t_line2_move
	ps400_s_line2_move
	ps400_t_line3_move
	ps400_s_line3_move
	ps400_t_arc2_move
	ps400_conti_interp_begin
	ps400_conti_interp_next_ready
	ps400_conti_line2_move
	ps400_conti_line3_move
	ps400_conti_arc2_move
	ps400_conti_interp_end

Other Motion Functions	
VI Icon	Function Name
	ps400_stop_move
	ps400_stop_move_all
	ps400_drv_hold
	ps400_drv_start

Advanced Motion Configurations	
VI Icon	Function Name
	ps400_set_vring
	ps400_set_mpg
	ps400_cmptrig_config
	ps400_set_int_factor
	ps400_int_event_config
	ps400_set_synch
	ps400_synch_t_move_cfg
	ps400_synch_s_move_cfg

Miscellaneous Functions	
VI Icon	Function Name
	ps400_t_change_v
	ps400_t_set_avtri
	ps400_change_p
	ps400_set_cmdcounter
	ps400_set_position

Status	
VI Icon	Function Name
	ps400_motion_done
	ps400_get_cmdcounter
	ps400_get_position
	ps400_get_speed
	ps400_get_acc
	ps400_get_latch
	ps400_get_mdi_status
	ps400_get_in3
	ps400_get_int_status
	ps400_get_error_status

FRnet I/O extension	
VI Icon	Function Name
	ps400_scan_FRnet_DI
	ps400_reset_FRnet
	ps400_config_FRnet
	ps400_get_FRnet_DI
	ps400_set_FRnet_DO