

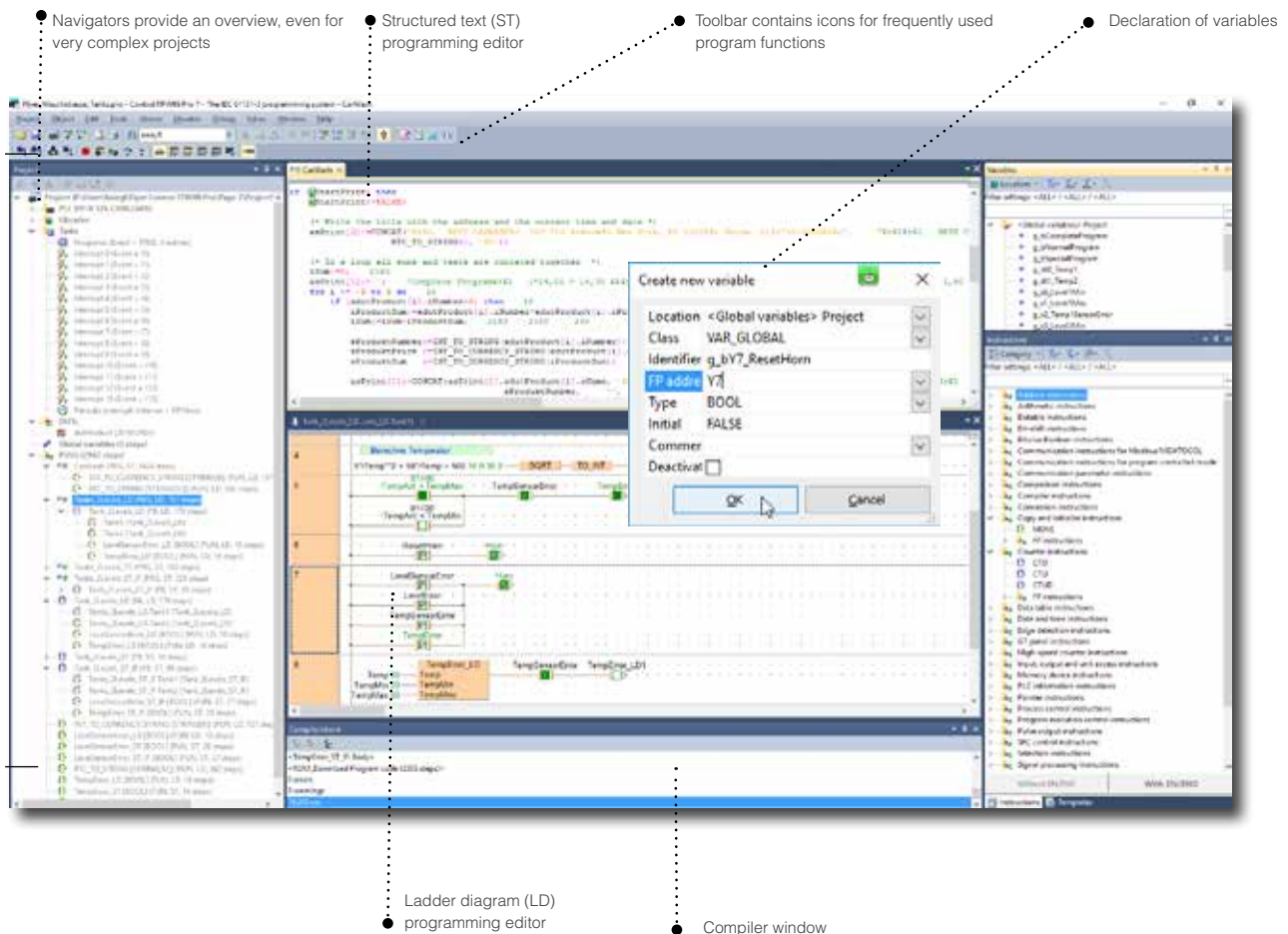
Panasonic

Control FPWIN Pro PLC PROGRAMMING SOFTWARE



One tool for all programmable controllers from Panasonic

Control FPWIN Pro is the Panasonic programming software developed according to the international standard IEC 61131-3 and aimed at achieving compatibility and reusability. Control FPWIN Pro allows the migration of time-tested programs and software solutions so that programmers can switch for example to the new FP7 series and still use all their knowledge and know-how.



Low engineering cost and short time to market

- Reuse of time-tested software parts and programming units
- Universal software for scalable and long-term available hardware platforms
- Simple licensing

Simple to learn – gets you there faster – little maintenance necessary

- Intuitive user interface thanks to clear navigator structure and simple project management
- 5 different programming languages, user interface in 8 languages
- Multi-language Unicode support
- Comprehensive remote diagnosis, programming, maintenance and control via Ethernet, USB, RS232C interface, or modem

The navigator

The clear graphic representation of the project hierarchy in the navigator provides an overview even for very complex projects. To access any object of the project, simply double click it.

System registers:
PLC hardware configuration can be adapted to the current project via the system registers. Examples:

- Change available number of timers/counters
- Change number of hold and non-hold internal flags
- COM port settings

Task pool:
Program tasks and interrupt tasks can be enabled in the task pool.

Global variables:
Assignment and definition of global variables for the entire project.

Toolbar for main functions.

Libraries:
For storing, linking, and reusing functions and function blocks in the project

DUT (Data Unit Type):
DUTs can be defined by the programmer for recipes, positioning application tables, etc.

Program Organization Units (POUs): Programs, functions and function blocks are organized in POU.

Higher efficiency thanks to reuse of functions and function blocks

Reusing functions and function blocks saves programming and debugging time. We offer ready-made libraries for all PLCs including online help and programming examples for standard routines and special applications.

Function block programming

1. Define inputs and outputs

Class	Identifier	Type	Initial	Co.
0	VAR_INPUT	bIncrement	BOOL	FALSE
1	VAR_INPUT	bDecrement	BOOL	FALSE
2	VAR_INPUT	bReset	BOOL	FALSE
3	VAR_OUTPUT	iCounter	INT	0

2. Program inside of function block

Examples of function blocks:

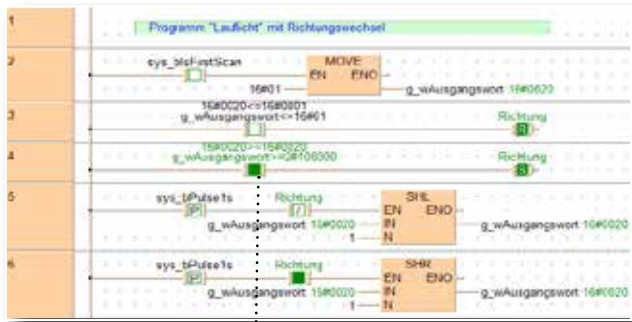
Free download of comprehensive and powerful libraries

Over the years, Panasonic has developed a large collection of function blocks and libraries in a worldwide cooperation. The continually expanded collection is available to customers for free. Some examples from our library portfolio:

- Motion control libraries for different servo drives
- Communication libraries for multiple data transfer protocols
- Libraries for configuring masters and slaves for many fieldbus systems

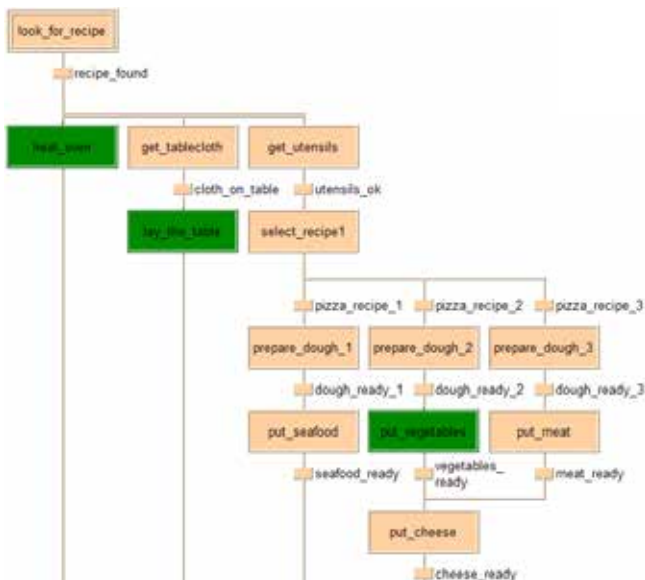
Please visit our download center on our website www.panasonic-electric-works.com. There you can find an overview over all available libraries.

Ladder diagram (LD)



● Contact with comparison expression

Sequential function chart (SFC)



Structured text (ST)

```

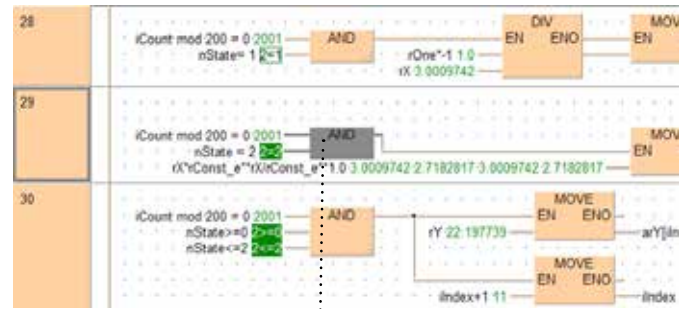
4) SPLIT_DT_INT
#If !IsInstructionSupported('FP_SEC_TO_DTBIN') #then
FP_SEC_TO_DTBIN(IN, dtuDTBIN);
YEAR := dtuDTBIN.Year_2digits+2000;
MONTH := dtuDTBIN.Month;
DAY := dtuDTBIN.Day;
HOUR := dtuDTBIN.Hour;
MINUTE := dtuDTBIN.Min;
SECOND := dtuDTBIN.Sec;
#elseif !IsInstructionSupported('DT2I_SEC_TO_DTBIN') #then

iDaysInCurrentYear := DINT_TO_INT(diDaysAfter2001 - diDays1);
if (diDaysAfter2001 >= diDays2) then
YEAR := YEAR - 1;
iDaysInCurrentYear := DINT_TO_INT(diDaysAfter2001 - diDays2);
end_if;

YEAR := YEAR + 2000;

MONTH := 13;
REPEAT
MONTH := MONTH - 1;
iDays3 := a1DaysOfY365(MONTH);
if (MONTH > 2 and (YEAR Mod 4 = 0)) then
iDays3:=iDays3 + 1;
end_if;
UNTIL (iDays3<=iDaysInCurrentYear)
END_REPEAT;
    
```

Function block diagram (FBD)



● Mathematical expression at the input

Comprehensive help system

A flexible choice of editors (instruction list IL, function block diagram FBD, ladder diagram LD, sequential function chart SFC, structured text ST) decreases programming time considerably, allowing you to choose the programming language with which you are most familiar or that best suits your project's structure.

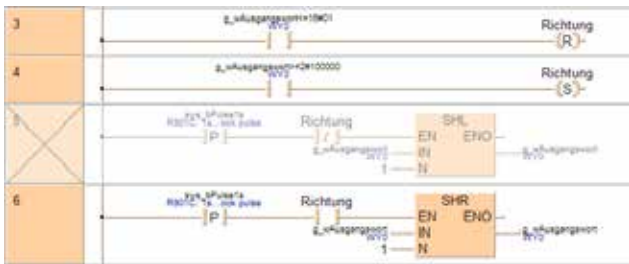
Useful tool tips

Tool tips provide information quickly, e.g. current values, data types, comments or addresses.



Unit_AnalogInput_FP0R_AD8	
iIOWordOffset	ilnChannel0
wlnChannel0_Config	ilnChannel1
wlnChannel1_Config	ilnChannel2
wlnChannel2_Config	ilnChannel3
wlnChannel3_Config	ilnChannel4
VAR_INPUT, WORD, 0,	
wlnC	Config input of channel 0 as follows:
wlnC0	= -10 to +10V
wlnC1	= -5 to +5V
wlnC2	= 0 to 10V
wlnC3	= 0 to 5V / 0 to 20mA

Deactivate / activate networks, variables, and program tasks



For code generation, the network selected can be activated or deactivated.
 Deactivated networks are crossed out in the network information area or network list.
 It is also possible to activate or deactivate complete parts of the program or individual variables.

POU name	Comment
0	_001_GPRS_Setup_GMODS3_for_GPRSmana...
1	_002_GPRS_Connection
2	_003_GPRS_User_Cyclic_Sending
3	_003_GPRS_User_Delta_Event
4	_999_System_error_diagnosis_set_as_last_P...
5	Simulation

54	VAR_GLOBAL	g_bBurglary
55	VAR_GLOBAL	g_bP2_Alarm_Compensation
56	VAR_GLOBAL	g_bP2_ManualOperation
57	VAR_GLOBAL	g_bP1_Alarm

Powerful compiler options



You can specify the memory areas by simply adjusting the sliders.

Data monitor

Monitoring LD
 Monitoring ST

Variable	Value
CustomerID	1
Station	1002
Destination	1002
BufferMode	1
SendFlow	1
ReadFlow	1
TimeoutMin	T#11s
TimeoutMax	T#41s
SlaveReset	T#240s
ComPort	COM5

When you have opened a POU body on your screen, the variables in the corresponding POU can be monitored in online mode at the same time.

FPTimeChart



Control FPCWIN Pro offers a wealth of additional advanced functions that will help you save costs and increase productivity from the initial project planning to everyday operation.

- Print preview of your entire project
- Sophisticated online help
- Upload of complete projects from the PLC, including comments
- Recipe editor
- Complex data types, e.g. STRING or DATE, for all PLCs
- Useful syntax coloring and other color settings

Multi-language Unicode support

Because Control FPLIN Pro supports Unicode, comments, names of variables, functions, function blocks, and programs can be entered in any language. Umlauts and special characters containing accents or other diacritical marks are displayed correctly. No need to change any settings in Windows. Just use your normal keyboard.

The screenshot shows the software interface with multiple windows. The top window displays a variable declaration table in Japanese:

Class	Identifir	Type	Initial	Comment
0	VAR 機器有効化	BOOL	FALSE	
1	VAR 機器1	機器		機器
2	VAR 開始1	BOOL	FALSE	開始
3	VAR 停止1	BOOL	FALSE	停止
4	VAR 最大1	REAL	100.0	最大

Below this, a ladder logic diagram is shown with Japanese comments and labels. The diagram includes logic for machine enablement, start/stop, and alarm reset. Comments describe the machine's operation in RUN mode and the conditions for starting and stopping.

The bottom window shows the same variable declaration table in English:

Class	Identifier	Type	Initial	Comment
0	VAR EnableMachine	BOOL	FALSE	
1	VAR Start1	BOOL	FALSE	Start
2	VAR Stop1	BOOL	FALSE	Stop
3	VAR MinimumValue1	REAL	100.0	Minimum value
4	VAR MaximumValue1	REAL	200.0	Maximum value
5	VAR IsRunning1	BOOL	FALSE	Is running
6	VAR OutputValue1	REAL	0.0	Output value
7	VAR Alarm1	BOOL	FALSE	Alarm
8	VAR Error1	BOOL	FALSE	Error
9	VAR ResetAlarm	BOOL	FALSE	Reset the alarm
10	VAR Machine1	Machine1	FALSE	

The English ladder logic diagram below it shows the same logic as the Japanese version, with comments explaining the machine's operation and the conditions for starting and stopping.

Conditional compilation

With conditional compilation, users can define conditions when to execute preprocessing instructions or translate certain parts of the program. This is the purpose of the preprocessing instruction #if, which works like the if statements in C.

The #if instruction is particularly helpful during debugging as it allows the user to exclude whole parts of the program from the compilation.

Thanks to the conditional compilation it is possible to create programs with the new features in Control FPLIN Pro 7 that are still compatible with older PLC versions that do not support the new features.

Some of the typical usages of conditional compilation are:

- outputting a compiler error for certain PLC types
- code generation that depends on the existence of a system variable
- code generation if a system instruction is supported, which depends on the activation of a certain pulse output channel

Programming example: outputting a compiler error for certain PLC types

```
(* Check the current plc type and output a compiler error *)
#if ((SYS_CURRENT_PLC AND (SYS_FP2 OR SYS_FP2SH)) <> 0) #then
    OutputCompilerError('Wrong PLC type FP2, FP2SH');
#end_if;
```

Software support

As expected, the latest version of the software includes even more command to help you efficiently program your PLC.

Among the innovations contained in the new version are many features that have been implemented for the FP7:

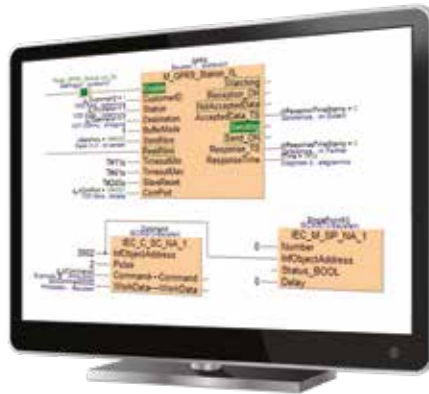
- › Clock/calendar function can now be configured in the software
- › Full support of IEC standard with POU's, data types, and instructions, etc.
- › New family of overloaded and type-safe instructions usable for 32-bit type PLCs (FP7) and 16-bit type PLCs
- › SD card instructions

Additional instructions for simplifying work with analog values, e.g.:

- › Scaling
- › Averaging
- › Assigning addresses for expansion units

- › Arrays of data unit types
- › Activation and deactivation of variables
- › Expressions usable as inputs
- › Conditional compilation
- › Contacts with comparison expressions

Together with the FP7, the new functions have simplified data handling even more. Data can be transmitted via Ethernet communication or stored on SD cards. Special logging and trace instructions help with data and process monitoring.



Years of experience ensure competence and innovation

For us, consistent quality management for all phases of development from design to implementation, and maintenance has the highest priority. This is why our processes are certified according to ISO 90001. It goes without saying that our programming system is fully compliant with the IEC 61131-3 standard.

Control FPWIN Pro 7, a structured, easy-to-use software with a simple software licensing system.

- › FP OPC Server
The standard interface for data exchange between the PLCs of the FP series
- › FP Data Analyzer
The software for reading and displaying PLC data
- › PCWAY
Microsoft Excel add-in for data monitoring, logging and visualization
- › Control FP Connect
The ActiveX control for integrating Panasonic PLCs into applications
- › Control Configurator MS
Software tool for quick setup of GSM alarm message systems
- › FP Web Designer
Editor for creating websites and for visualizing process data collected by FP Web-Server
- › FPGT Loader
The software for easy upload of complete programs to touch panels or FP series PLCs

Product	Order number
Control FPWIN Pro programming software, version 7, version for all FP series PLCs	FPWINPRO7S
Control FPWIN Pro upgrade to version 7	FPWINPRO7S-UPGRADE

Programmers benefit from an extensive set of function blocks and user libraries, which have been developed on a worldwide level over many years and which can be downloaded for free.

Visit us on www.panasonic-electric-works.com.

Here, you find our comprehensive user libraries and a free demo version of Control FPWIN Pro 7 (10,000 steps).



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