Controllers
Open – Flexible – Compact
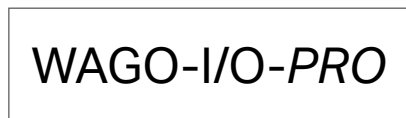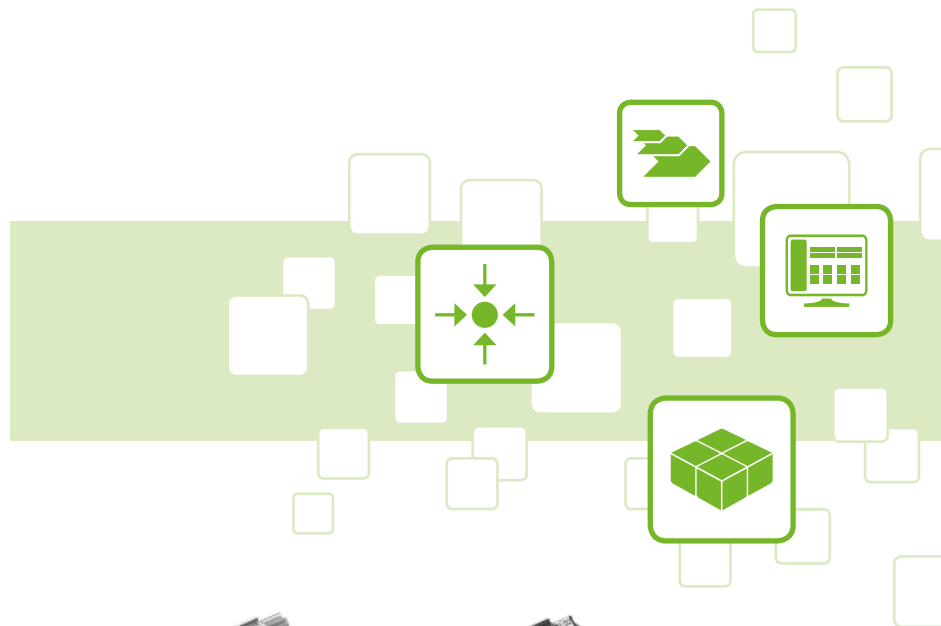
CONTROLLERS

Open – Flexible – Compact

e!COCKPIT

based on
CODESYS 3

WAGO-I/O-*PRO*

based on
CODESYS 2.3

750 Series Controllers

WAGO offers programmable controllers in a wide variety of performance classes for performing any automation task. And, they can be used for both centralized and decentralized applications. For decentralized control tasks, the WAGO controllers can be incorporated into the most prevalent fieldbus networks and they record all field signals via I/O modules.

WAGO's IEC 61131-3 programmable controllers perform a variety of automation tasks, while pro-

viding all the benefits of standard PLC technology (e.g., strength, stability, reliability and near-high constant uptime).
Direct connection to numerous and varied I/O modules that are part of the WAGO-I/O-SYSTEM 750 enables a large number of applications to be created. With performance and capabilities extending from the fieldbus controller to the PFC100 and PFC200, WAGO's controllers provide scalable memory and speed along with a variety of interfaces and communication protocols.

Modbus | CANopen | PROFIBUS | EtherNet/IP | IEC 61850 IEC 60870-5 IEC 61400-25 DNP3 | BACnet | KNX

PFC100 Controllers   PFC200 Controllers

FUNCTIONALITY AND PERFORMANCE

PERSPECTO® Control Panels
with Target Visualization

PFC200 Controllers

BENEFITS:

- **Fieldbus-independent – Support all standard fieldbus protocols and ETHERNET standards**
- **Scalable performance – Fieldbus Controllers, Control Panels, PFC100 and PFC200**
- **Programming that complies with IEC 61131-3**
- **Compatible with the WAGO-I/O-SYSTEM 750**

Programmable using:

*e!*COCKPIT   WAGO-I/O-*PRO*

PFC100 CONTROLLER

Maximum Performance in a Minimum Space

The PFC100 Controller expands WAGO's line of next-generation controllers with *e!RUNTIME.* WAGO's controller stands out for its high performance and space-saving design.

All versions of the controller feature two ETHERNET ports, and – depending on the module – one DIP switch or one RS-232/485 interface. To ensure a high level of security, SSL/TLS, SSH, VPN and a firewall are standard. The controller supports protocols such as Modbus TCP Client/Server or open TCP-UDP communication. The serial interface also supports Modbus RTU as a client and server. Completing the package is a slot for microSD cards.

With integrated Web-based management and up-to-date HTML5 visualization, the PFC100 provides a convenient programming environment that is perfectly complemented by the integrated *e!COCKPIT* engineering software that is based on CODESYS 3 and the real-time Linux® operating system.

More information available at:
www.wago.com/pfc100

Programmable using:

PFC200 CONTROLLERS

Our Most Powerful Line of Controllers

The PFC200 Controller is impressive with its high processing speed and large selection of interfaces. The CANopen, PROFIBUS DP and Modbus TCP/UPD/RTU protocols provide flexible connection to fieldbus systems and external input/output devices. And multiple variants – one with an integrated wireless modem and another with a robust, expanded temperature range (XTR Series) – bring these features to virtually any application, including

SSL/TLS, SSH, VPN and a firewall ensure a secure connection.
The internal flash memory and an integrated interface for SD/SDHC cards provide a substantial amount of memory. A 128 kB of remanent memory area is also available.
In addition to the well-established CODESYS 2 runtime system standard, the PFC200 Controller also features *e!RUNTIME* – a CODESYS 3-based runtime system. Together with *e!COCKPIT* and the real-time *Linux*® operating system, these systems provide innovative options for generating programs and visualization.

More information available at:
www.wago.com/pfc200

Programmable using:

e!COCKPIT   WAGO-I/O-*PRO*

BENEFITS:

- **Can be combined with high-level languages**
- **Linux® real-time operating system**
- **SSH and SSL/TLS**
  provide high levels of security
- **Runtime system for CODESYS 2 and 3**

750 SERIES

Our Most Versatile Controllers

Modular Controllers for the WAGO-I/O-SYSTEM 750

WAGO's controllers are powerful solutions for a wide variety of applications ranging from industrial and building automation to measurement and data collection. They easily integrate into existing IT structures, providing a link between real-time process data and IT applications. The controllers ideally combine real-time requirements with IT functionality. They support MODBUS TCP and ETHERNET/IP for use in industrial environments.

HTTP, SNTP, SNMP, FTP and other protocols simplify integration into IT environments. Integrated Web pages and Web-based visualization provide IT applications with real-time process data.

A large number of library functions are available to support both software/hardware interfaces and an integrated file system.

Programmable using:

WAGO-I/O-*PRO*

BENEFITS:

- **Controllers for all prominent fieldbus systems**
- **Quick start-up**
- **Space-saving design**
- **Maintenance-free**

750 XTR Controllers

For Extreme Environmental Conditions

Modular Controllers for the WAGO-I/O-SYSTEM 750 XTR

WAGO-I/O-SYSTEM 750 XTR controller and I/O modules are instantly recognizable by their dark gray modules.

Take advantage of the WAGO-I/O-SYSTEM 750 XTR's unique features, which make it ideal for extreme environments or applications thanks to:

- Less space requirements
- Lower purchase costs
- Minimal energy costs
- Lower maintenance costs
- Safe investment
- Maximum system uptime
- Greater productivity

Programmable using:

WAGO-I/O-*PRO*

BENEFITS:

- **eXTReme temperatures from −40°C to +70°C**
- **eXTReme isolation**
  up to 5 kV of impulse voltage
- **eXTReme vibrations up to 5g of acceleration**

PERSPECTO® **PANELS**

Controlling – Monitoring – Visualizing

PERSPECTO® is WAGO's comprehensive monitoring and control panel system for operating and monitoring process data for machines, systems and control technology.
The WAGO-I/O-SYSTEM and *PERSPECTO*® are perfectly coordinated to work together seamlessly: Both system components guarantee continuous, smooth, trouble-free communication with the system controller. Enhanced runtime systems and programs provide consistently high performance.

Programmable using:

WAGO-I/O-*PRO*

BENEFITS:

- **Full CODESYS 2.3 functionality**
- **Integrated webserver**
- **Energy efficiency**
- **Multiple interfaces**

ENGINEERING SOFTWARE

Programming that Complies with IEC 61131-3

Software Factors into Success

Operating in mechanical engineering and related industries today is characterized by ever-shortening development times, exponentially more complex projects and the increasing role of software as part of the overall solution. In fact, software is becoming an essential factor that influences the success of a project.

Linux® and WAGO
– Automation for the Future

WAGO's Microsoft Windows-based engineering software dovetails perfectly with our controller portfolio that features the Linux® operating system.
In addition to their scalability through the open source community, the Linux®-based controllers are impressive with a future-proof code base. To create complex tasks, you have a choice between programming in IEC-61131 with CODESYS or in Linux® directly with the controllers from WAGO.

CODESYS
– as an Integrated Environment

All WAGO controllers are equipped with the high-performing CODESYS industry standard. This allows software development in the SPS programming languages for IEC 61131-3 (ST, FUP, KOP, AWL, AS) as well as in the CFC. As a trusted programming environment, CODESYS guides developers, allowing them to reuse and further develop existing programs without relearning software. This means that modern paradigms, such as Object-Oriented Programming (OOP), or modern visualization technologies are available.

Instructions for Using Open-Source Software:

The firmware used in the controllers was created using open-source software. Go to "Download" under http://www.wago.com for the software packages and their licenses, and be sure to follow the rules listed there. The controller firmware itself is available as a "board support package" (BSP). If interested, please contact:
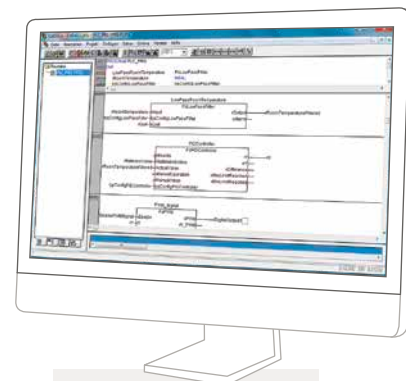
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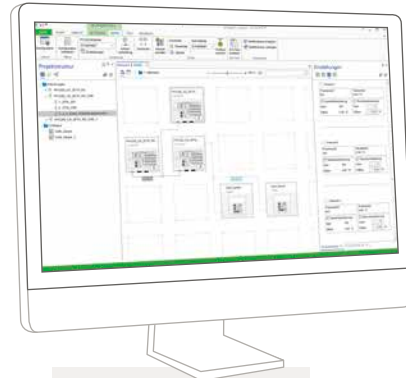
e!COCKPIT

Based on CODESYS 3

- Integrated engineering: one software for every task
- A smart design that invites you to discover
- Modern software: comprehensive data retention and automatic online upgrades
- Based on CODESYS 3 technology
- Graphical network configuration

WAGO-I/O-*PRO*

Based on CODESYS 2.3

- Efficiently translate between programming languages
- Automatic variable declaration
- Library management
- Online status display using the program code
- Offline simulation and integrated process visualization
- Record and graphically display project variables

WAGO CONTROL TECHNOLOGY

		Item Number	CPU	Fieldbus			
				EtherNet/IP	MODBUS	PROFIBUS	CANopen
750 Series Controllers		750-806	16-bit				
		750-81x			RTU		
		750-833				Slave	
		750-837					Master/Slave
		750-838					Master/Slave
		750-842			TCP (UDP)		
		750-843			TCP (UDP)		
		750-852	32-bit	X	TCP (UDP)		
		750-871		X	TCP (UDP)		
		750-872		X	TCP (UDP), RTU		
		750-873		X	TCP (UDP), RTU		
		750-880		X	TCP (UDP)		
		750-881		X	TCP (UDP)		
		750-882		X	TCP (UDP)		
		750-885		X	TCP (UDP)		
		750-831			TCP (UDP)		
		750-889			TCP (UDP)		
		750-829			TCP (UDP)		
750 XTR Controllers		750-838/040-000	16-bit				Master/Slave
		750-880/040-00x	32-bit	X	TCP (UDP)		
PFC100 Controllers		750-8100	Cortex A8, 600 MHz		TCP (UDP)		
		750-8101			TCP (UDP)		
		750-8102			TCP (UDP), RTU		
PFC200 Controllers		750-8202	Cortex A8, 600 MHz		TCP (UDP), RTU		
		750-8203			TCP (UDP)		Master/Slave
		750-8204			TCP (UDP), RTU		Master/Slave
		750-8206			TCP (UDP), RTU	Slave	Master/Slave
		750-8207			TCP (UDP), RTU		
		750-8208			TCP (UDP), RTU	Master	Master/Slave
PFC200 XTR Controllers		750-8202/040-000	Cortex A8, 600 MHz		TCP (UDP), RTU		
		750-8206/040-000				Slave	Master/Slave
		750-8202/040-001					
		750-8206/040-001				Slave	Master/Slave
PERSPECTO® Control Panels		762-3035/000-001	32-bit ARM9, 200 MHz		TCP (UDP), RTU		
		762-3057/000-001					
		762-3104/000-001	32 Bit-Xscale, 520 MHz				
		762-3121/000-001					
		762-3150/000-001	Intel Atom N270, 1.6 GHz				
		762-3150/000-003					

Other User Protocols	Interfaces		Program Memory	Data Storage	Retain Memory	File System	Web Server	Web Visu	Target Visu
	ETHERNET	Serial							
			128 kB	64 kB	8 kB				
			32 kB	32 kB	8 kB				
			128 kB	64 kB	8 kB				
			128–640 kB	64–832 kB	8 kB				
			128–640 kB	64–832 kB	8 kB				
X	X		128 kB	64 kB	8 kB				
X	X		64 kB	64 kB	8 kB				
X	2 x		512 kB	256 kB	8 kB		X		
X	2 x		1024 kB	1024 kB	30 kB	2 MB	X	X	
X	X	X	1024 kB	1024 kB	28 kB	2 MB	X	X	
X	X	X	1024 kB	1024 kB	30 kB	2 MB	X	X	
X	2 x		1024 kB	1024 kB	32 kB	2 MB internal + 32 GB with SD card	X	X	
X	2 x		1024 kB	512 kB	32 kB	2 MB	X	X	
X	2 x		1024 kB	512 kB	32 kB	2 MB	X	X	
X	2 x		1024 kB	1024 kB	32 kB	2 MB internal + 32 GB with SD card	X	X	
X	2 x		1024 kB	1024 kB	32 kB	4.5 MB internal + 32 GB with SD card	X	X	
X	2 x		1024 kB	1024 kB	32 kB	2 MB internal + 32 GB with SD card	X	X	
X	2 x		1024 kB	1024 kB	32 kB	4.5 MB	X	X	
			640 kB	832 kB	8 kB				
X	2 x		1024 kB	1024 kB	32 kB	2 MB internal + 32 GB with SD card	X	X	
			10 MB dynamically distributable		64 kB				
	2 x		12 MB dynamically distributable		64 kB	80 MB + 32 GB with Micro SD card	X	X	
		X			128 kB				
X	2 x	X	Depending on the runtime system: - *e!RUNTIME* = 60 MB (dynamically distributed) - CODESYS 2.3 = 16 MB (program memory), 64 MB (data memory)		128 kB	80 MB + 32 GB with SD card	X	X	
X	2 x	X	Depending on the runtime system: - *e!RUNTIME* = 60 MB (dynamically distributed) - CODESYS 2.3 = 16 MB (program memory), 64 MB (data memory)		128 kB	80 MB + 32 GB with SD card	X	X	
X	X	X	1024 kB	1024 kB	128 kB	adjustable	X	X	X
			1024 kB	1024 kB	64 kB				

WE INNOVATE!

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