



Controllers

◀ Section 2

PERSPECTO® Control Panels

- Merging control and visualization
- 8.9 cm ... 38.1 cm (3.5" ... 15")

Section 3.1

PFC200

- Maximum performance in a minimum space
- High processing speed
- Additional operating controls (e.g., start/stop switch)
- Based on Linux® also in high-level language

Section 3.2

Programmable Fieldbus Controllers

- Decentralized intelligence based on fieldbus couplers
- Programmable to IEC 61131-3
- WAGO-I/O-SYSTEM 750, modular

Section 3.3

Programmable Fieldbus Controller XTR

- For demanding applications where the following are critical:
- Extreme temperature stability
 - Immunity to interference and impulse-voltage withstand
 - Vibration and shock resistance

PFC200:**Maximum Performance in a Minimum Space**

As the newest member of the WAGO control family, the PFC200 Controller excels with high processing speed and multiple interfaces for parallel communication. All PFC200 Controllers feature two ETHERNET ports and – depending on the model – additional interfaces. The CANopen, PROFIBUS DP and MODBUS TCP/UPD/RTU protocols provide flexible connection to fieldbus systems and external input/output devices. These fieldbus systems can be easily configured directly in WAGO's easy-to-use **e!COCKPIT** development environment. The ETHERNET interfaces with an integrated switch also support all major IT protocols. In addition to multiple interfaces, the PFC200 provides memory for your applications thanks to the internal Flash memory and an integrated interface for SD/SDHC cards.

Telecontrol technology

Standardized telecontrol protocols according to IEC 60870-5, IEC 61850 or IEC 61400-25 ensure use of the PFC200 in telecontrol technology.

Link between Process Data and IT Application

The PFC200 ideally combines real-time requirements with IT functionality. It supports both MODBUS/TCP and ETHERNET/IP for use in industrial environments. HTTP, SNMP, FTP, BootP, DHCP, DNS, telnet, SSH and other protocols simplify integration into IT environments. Integrated Web pages and Web-based visualization provide IT applications with real-time process data. Furthermore, the PLC incorporates library functions for email, SOAP, ASP, IP configuration, ETHERNET sockets and file system.

Security on Board

The topics of ETHERNET communication and security are closely linked. To provide PFC200 users with a high level of security, mechanisms for secure connections such as HTTPS, FTPS, SSH and SSL/TLS are standard.

Modular Expandability

With the WAGO-I/O-SYSTEM 750, the PFC200 can be expanded to almost any input/output interface. The modular, DIN-rail mount design allows for easy installation, expansion and modification of the I/O node. The streamlined design reduces installation errors. In addition, proven CAGE CLAMP® technology offers fast, vibration-proof and maintenance-free connections that are independent of operator skill. Depending on the I/O module's granularity, the field peripherals can be directly wired using 1-, 2-, 3- or 4-wire technology.

Maximum Reliability and Ruggedness

The PFC200 is engineered and tested for use in the most demanding environmental conditions (e.g., temperature cycling, shock/vibration loading and ESD) according to the highest standards. Spring Pressure Connection Technology guarantees reliable operation. Integrated QA measures in the production process and 100 % function testing ensure consistent quality.

- Programmable to IEC 61131-3
- Can be combined with high-level languages
- Linux® real-time operating system
- Robust and maintenance-free
- Integrated IT security standards



Extended Temperature Range

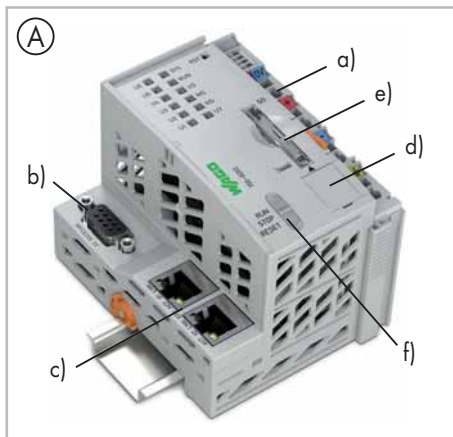
Industrial automation technology is typically operated in temperatures ranging from 0 °C to 55 °C. However, there are applications, e.g., telecontrol, that require an extended temperature range. These version are available in an extended temperature range of -20 °C to +60 °C.



ECO

The ECO version of the PFC200 limits the number of stackable I/O modules to four.

Interfaces and Configurations



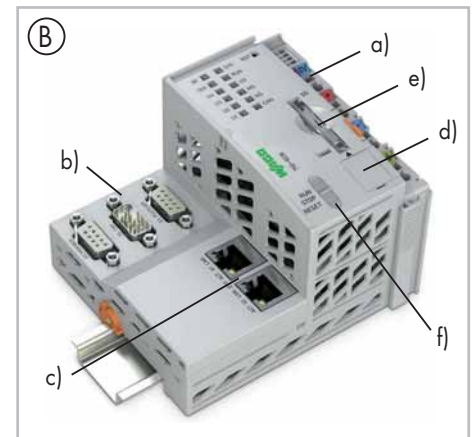
- Includes supply module (a)
- Technical differences on the connection level (b)
- ETHERNET 2 x RJ-45 (c)
- Service port (d)
- SD card slot for external storage media (e)
- Stop/start switch (f)

Housing design (A)

- W x H* x L (mm) 79 x 65 x 100

Housing design (B)

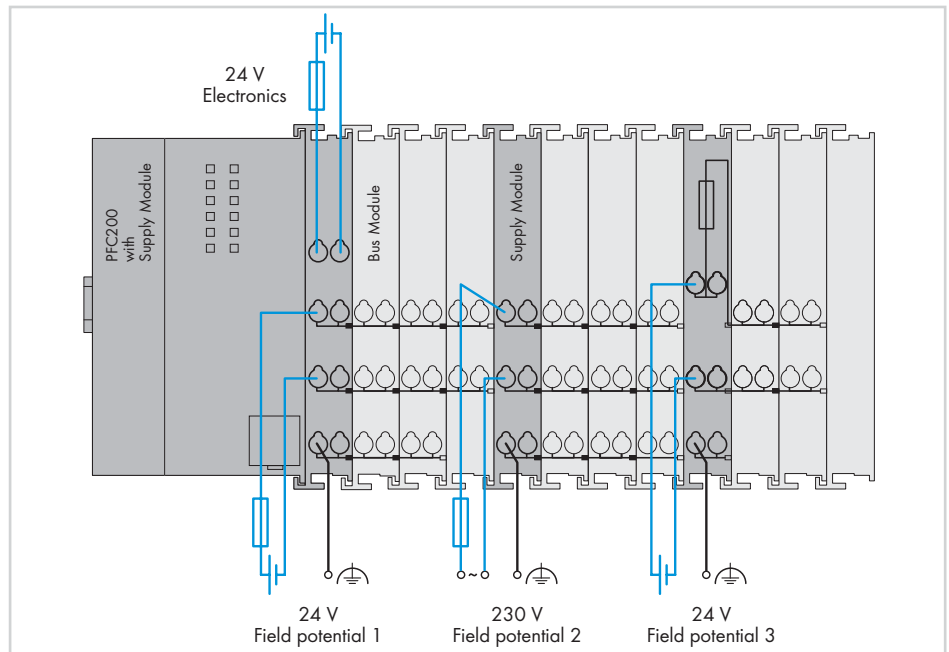
- W x H* x L (mm) 112 x 65 x 100



*Height from upper edge of the DIN-rail

Power Supply

The internal electronics are powered by the PFC200's supply module. The power supply to the field-side supply is electrically isolated. The division enables a separate supply for sensors and actuators. The I/O modules' connections automatically lead to transferring the supply voltages. Supply modules with diagnostics enable additional power supply monitoring. This ensures a flexible, user-specific supply design for a station. The current supply to the electronics is limited by a maximum value. If the sum of the internal current demand of all the I/O modules should exceed this value, an additional bus supply module is necessary. Even in this case, power supply to the field-side supply of 10 A may not be exceeded. However, different power supply modules allow a new power supply, formation of potential groups and the implementation of emergency stops.



Notes

Additional steps must be implemented based on where the I/O-System is installed:

- As part of **shipbuilding** or in the onshore/off-shore sector, specific power and field-side power supply filters must be provided (750-624/626).
- As part of operating **intrinsically safe Ex i modules**, use of a specific supply module is required (750-625). In addition, specific power and field-side power supply filters must be provided (750-624/626).

- As part of operating **safety-related I/O modules**, PELV/SELV power supply units must be used for 24 VDC supply of electronics and field. In addition, specific power and field-side power supply filters must be provided (750-626).

Please refer to the manual for details about the power supply's design.

Interference-Free in Safety-Related Applications

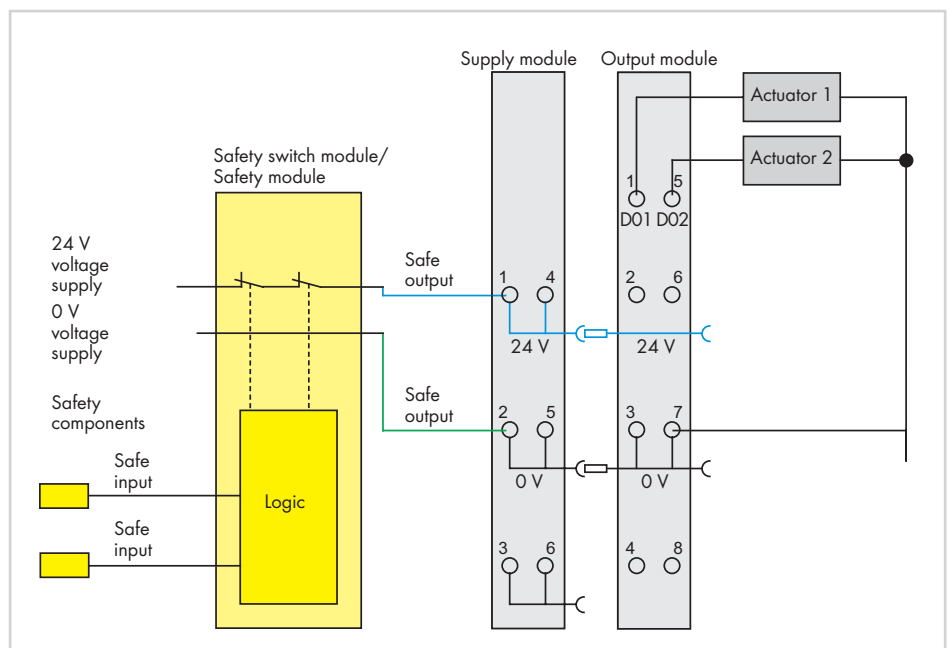
To safely and easily perform cost-effective, centralized deactivation of complete actuator groups, the actuator's power supply can be switched off using a safety switching device. This can either be performed for each individual actuator or by turning off the power supply to a group of control outputs.

In the event of failure, ensure that no interference from other current or power circuits occurs – even when the control voltage is switched off – so the defined safety function properties (logic and time response) remain unchanged.

Some modules are designed to provide interference-free safety functionality. These modules comply with safety requirements up to Category 4 of DIN EN ISO 13849-1:2007. The safety category and performance level depend solely on the safety components and their wiring.

Notice:

Interference-free WAGO I/O modules have no active influence on the safety function, they are not an active part of the safety application and are not a substitute for the safety switching device! When using the components in safety functions, the corresponding notes must be observed in the relevant manual.



Example: Two-channel, double-pole power supply disconnection

Explanation of the components for the item number key

Item No. : 750-82xx

02: 2 x ETHERNET, RS-232
 03: 2 x ETHERNET, CAN
 04: 2 x ETHERNET, RS-232, CAN
 06: 2 x ETHERNET, RS-232, CAN, PROFIBUS-DP Slave

.../025-yyy: Extended temperature range of -20 °C ... +60 °C
 y00: Standard
 y01: Telecontrol standard
 y02: Telecontrol ECO

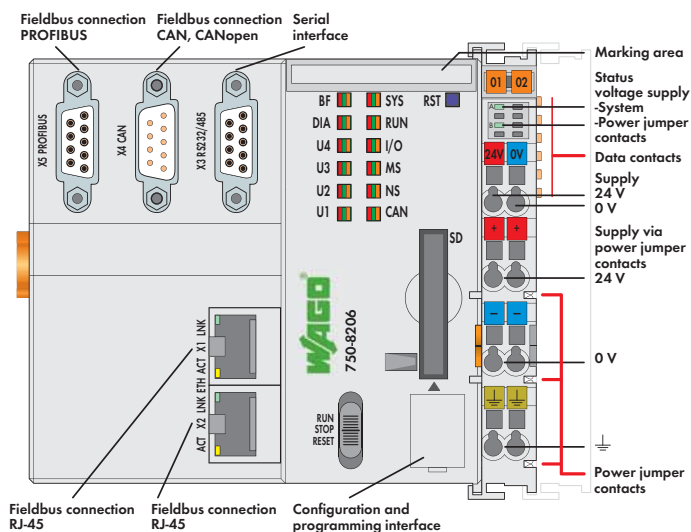
Standards and Rated Conditions

General Specifications

Operating voltage	24 VDC (-25 % ... +30 %)*; *for all shipbuilding-certified PFC200s
Operating temperature	0 °C ... +55 °C
Operating temperature for versions with an extended temperature range	-20 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Storage temperature for versions with extended temperature range	-40 °C ... +85 °C
Relative humidity (without condensation)	95 %
Operating altitude	without temperature derating: 0 m ... 2000 m; with temperature derating: 2000 m ... 5000 m (0.5 K/100 m); max.: 5000 m
Degree of contamination	II acc. to IEC 61131-2
Vibration resistance	0.5g (4g for all shipbuilding-certified PFC200s) acc. to IEC 60068-2-6
Shock resistance	15g acc. to IEC 60068-2-27
EMC immunity to interference	acc. to EN 61000-6-2 / marine applications
EMC emission of interference	acc. to EN 61000-6-3 / EN 61000-6-4 / marine applications
Protection type	IP20
Mounting position	any
Type of mounting	DIN-rail
Housing material	Polycarbonate, polyamide 6.6
Stress due to contaminants	acc. to IEC 60068-2-42 and IEC 60068-2-43
Maximum pollutant concentration with a relative humidity < 75 %	SO ₂ ≤ 25 ppm; H ₂ S ≤ 10 ppm
Connection technology	CAGE CLAMP®
Conductor cross-section; stripped lengths	0.08 mm ² ... 2.5 mm ² /28 ... 14 AWG; 8 ... 9 mm/0.33 in.
Current via power jumper contacts	max. 10 A

PLC – PFC200 Controller


PFC200 CS 2ETH RS CAN DPS



The PFC200 Controller is a compact PLC for the modular WAGO-I/O-SYSTEM. Besides network and fieldbus interfaces, the controller supports all digital, analog and specialty modules found within the 750/753 Series. Two ETHERNET interfaces and integrated switch enable line topology wiring. An integrated Web server provides the user with configuration options and status information from the PFC200. Besides the processing industry and building automation, typical markets for the PFC200 include the standard machine and plant industries (e.g., packaging, bottling, textiles, production and metal & wood processing).

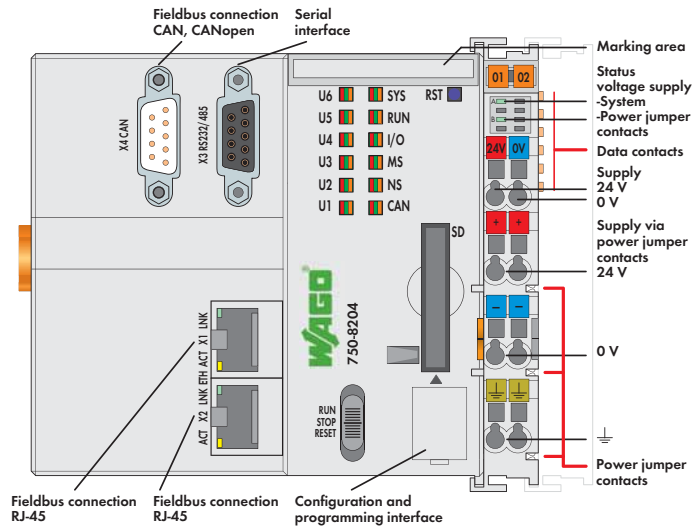
Programmable to IEC 61131-3

- Programmable via WAGO-I/O-PRO V2.3
- Direct connection of WAGO I/O modules
- 2 x ETHERNET (configurable), RS-232/-485, CAN, CANopen, PROFIBUS DP Slave
- Linux 3.6 operating system with RT-Preemption patch
- Configuration via CODESYS, e!COCKPIT or Web-based management interface
- Maintenance-free

Description	Item No.	Pack. Unit
PFC200 CS 2ETH RS CAN DPS	750-8206	1
PFC200 CS 2ETH RS CAN DPS/T	750-8206/025-000	1
Extended temperature range: -20 °C ... +60 °C		
PFC200 CS 2ETH RS CAN DPS TELE/T	750-8206/025-001	1
Extended temperature range: -20 °C ... +60 °C		
Accessories	Item No.	Pack. Unit
WAGO-I/O-PRO V2.3, RS-232 kit	759-333	1
SD memory card, 2 GB	758-879/000-001	1
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see Section 11	
Approvals		
Conformity marking	CE	
Korea Certification	K (750-8206)	
Marine applications (versions upon request)	GL	
UL 508		
TÜV 14 ATEX 148929 X	II 3 G Ex nA IIC T4 Gc (750-8206)	
Permissible ambient temperature 0 °C ... +60 °C		
IECEx TUN 14.0035 X	Ex nA IIC T4 Gc (750-8206)	
Permissible ambient temperature 0 °C ... +60 °C		

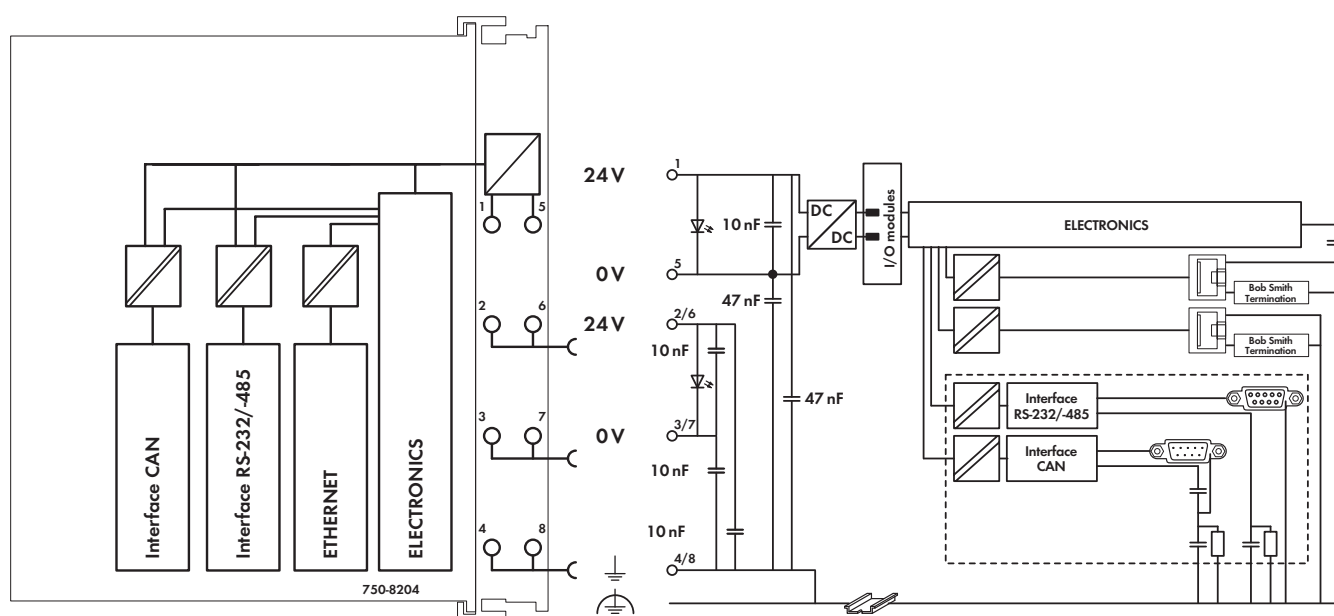
System Data	
CPU	Cortex A8, 600 MHz
Operating system	RealTime Linux 3.6 (with RT-Preemption patch)
Main memory (RAM)	256 Mbytes
Internal memory (flash)	256 Mbytes
Retain memory	128 Kbytes
ETHERNET	2 x RJ-45 (switched)
Transmission medium	Twisted Pair S-UTP
	100 Ω, Cat 5;
	Max. line length: 100 m
Baud rate	10/100 Mbit/s; 10Base-T/100Base-TX
Interface (serial)	RS-232/-485 (switchable)
Fieldbus	PROFIBUS DP Slave, CAN, CANopen
Protocols	DHCP, DNS, NTP, FTP, FTPS, SNMP, HTTP, HTTPS, SSH, MODBUS (TCP, UDP, RTU)
750-8206/025-001	IEC 60870-5-101/-103/-104, IEC 61850-7-4, IEC 61400-25
Programming	WAGO-I/O-PRO V2.3, e!COCKPIT
IEC 61131-3	IL, LD, FBD (CFC), ST, FC
SD card slot	Push-push mechanism, sealable cover lid
Type of memory card	SD and SDHC up to 32 GB (All guaranteed properties are only valid in connection with the WAGO 758-879/000-001 memory card.)

PFC200 CS 2ETH RS CAN



- Programmable to IEC 61131-3
- Programmable via WAGO I/O-PRO V2.3
- Direct connection of WAGO I/O modules
- 2 x ETHERNET (configurable), RS-232/-485, CAN, CANopen
- Linux 3.6 operating system with RT-Preemption patch
- Configuration via CODESYS, e!COCKPIT or Web-based management interface
- Maintenance-free

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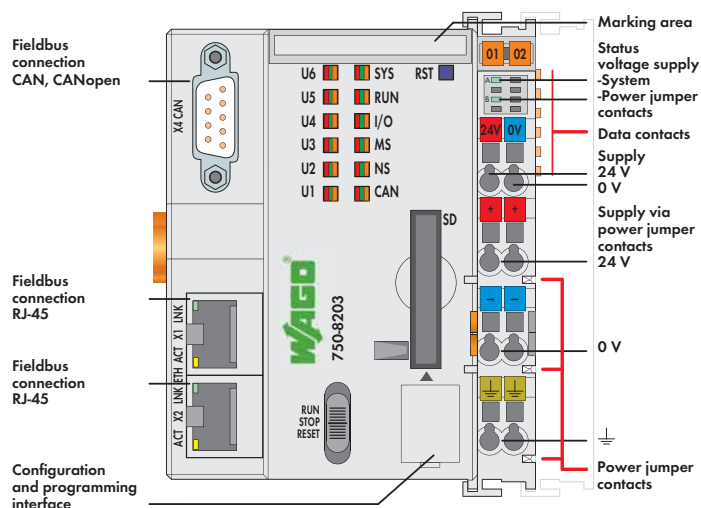
Technical Data

Number of I/O modules (per node)	64
with bus extension	250
Input and output process image (max.)	
Internal data bus	1000 words
MODBUS	1000 words
CAN	2000 words
I/O interfaces (serial)	1 x serial interface per TIA/EIA 232 and TIA/EIA 485 (switchable), 9-pole D-sub female connector
Diagnostic LEDs	Power supply; SYS; RUN; FIELD BUS (MS, NS, CAN); USER (U1 ... U6); Internal data bus
User LEDs	via CODESYS library
Memory configuration CODESYS 2.3	
Program memory	16 MB
Data memory	64 MB
Non-volatile memory (retain)	128 KB
Memory configuration e!RUNTIME	
Program and data memory	80 MB (dynamically distributed)
Non-volatile memory (retain)	128 KB
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	550 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply


General Specifications

Dimensions (mm) W x H x L	112 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	246.6 g
EMC immunity of interference	acc. to EN 61000-6-2, marine applications
EMC emission of interference	acc. to EN 61000-6-3, marine applications
Degree of protection	IP20 acc. to DIN 60529
Type of mounting	DIN 35 rail
Housing material	PC
Ambient conditions	
Operating temperature	0 °C ... +55 °C
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	8 ... 9 mm / 0.33 in

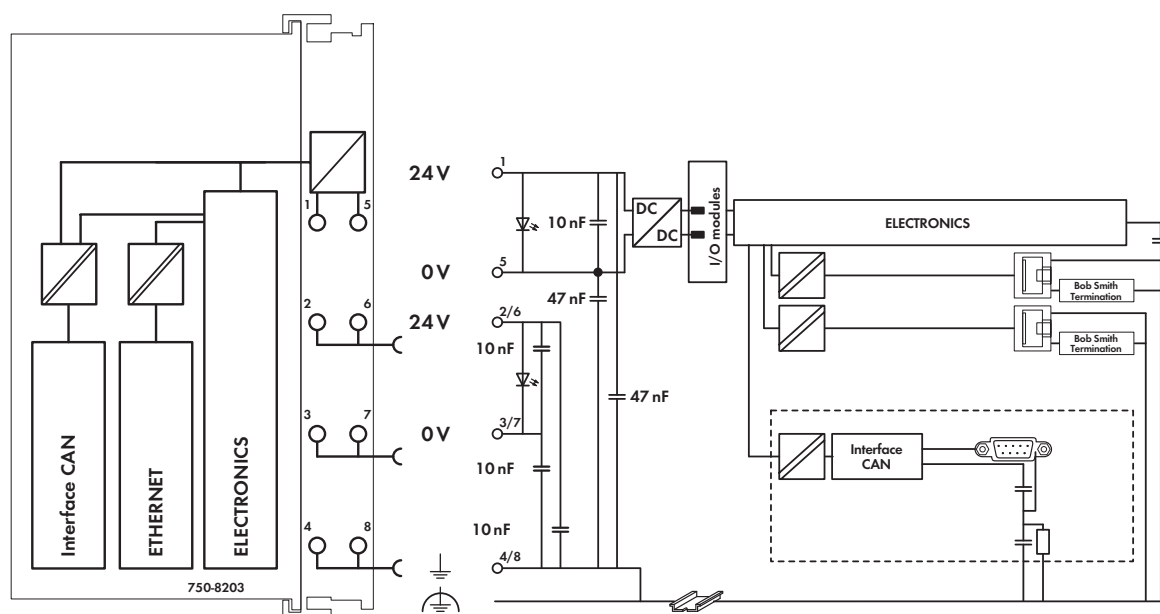
PFC200 CS 2ETH CAN



- Programmable to IEC 61131-3
- Programmable via WAGO I/O-PRO V2.3
- Direct connection of WAGO I/O modules
- 2 x ETHERNET (configurable), CAN, CANopen
- Linux 3.6 operating system with RT-Preemption patch
- Configuration via CODESYS, **e!**COCKPIT or Web-based management interface
- Maintenance-free

Description	Item No.	Pack. Unit
PFC200 CS 2ETH CAN	750-8203	1
PFC200 CS 2ETH CAN/T	750-8203/025-000	1
Extended temperature range: -20 °C ... +60 °C		
Accessories	Item No.	Pack. Unit
WAGO-I/O-PRO V2.3, RS-232 kit	759-333	1
SD memory card, 2 GB	758-879/000-001	1
Miniature WSB Quick marking system		
	plain	248-501
	with marking	see Section 11
Approvals		
Conformity marking	CE	
Korea Certification	KC (750-8203)	
Marine applications (versions upon request)	GL	
UL 508		
EN TÜV 14 ATEX 148929 X	II 3 G Ex nA IIC T4 Gc (750-8203)	
Permissible ambient temperature 0 °C ... +60 °C		
IECEx TUN 14.0035 X	Ex nA IIC T4 Gc (750-8203)	
Permissible ambient temperature 0 °C ... +60 °C		

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Technical Data

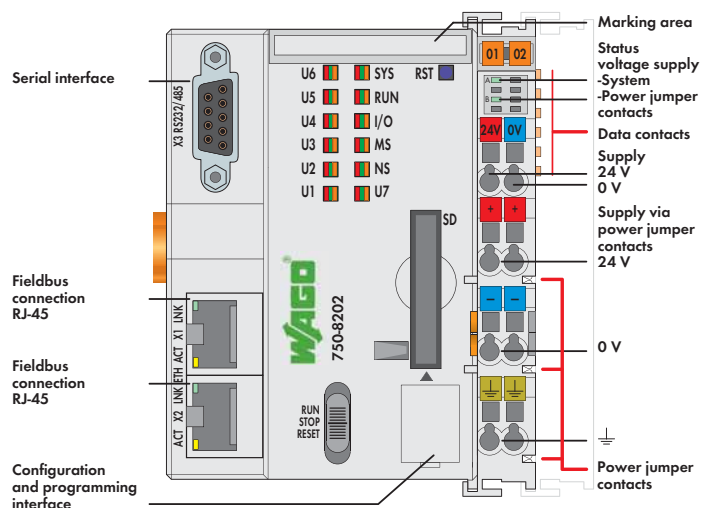
Number of I/O modules (per node)	64
with bus extension	250
Input and output process image (max.)	
Internal data bus	1000 words
MODBUS	1000 words
CAN	2000 words
Diagnostic LEDs	Power supply; SYS; RUN; FELDBUS (CAN, MS, NS); USER (U1 ... U6); Internal data bus
User LEDs	via CODESYS library
Memory configuration CODESYS 2.3	
Program memory	16 MB
Data memory	64 MB
Non-volatile memory (retain)	128 KB
Memory configuration e!RUNTIME	
Program and data memory	80 MB (dynamically distributed)
Non-volatile memory (retain)	128 KB
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	550 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply

General Specifications

Dimensions (mm) W x H x L	79 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	208.5 g
EMC immunity of interference	acc. to EN 61000-6-2, marine applications
EMC emission of interference	acc. to EN 61000-6-3, marine applications
Degree of protection	IP20 acc. to DIN 60529
Type of mounting	DIN 35 rail
Housing material	PC
Ambient conditions	
Operating temperature	0 °C ... +55 °C
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	8 ... 9 mm / 0.33 in

PLC – PFC200 Controller


PFC200 CS 2ETH RS



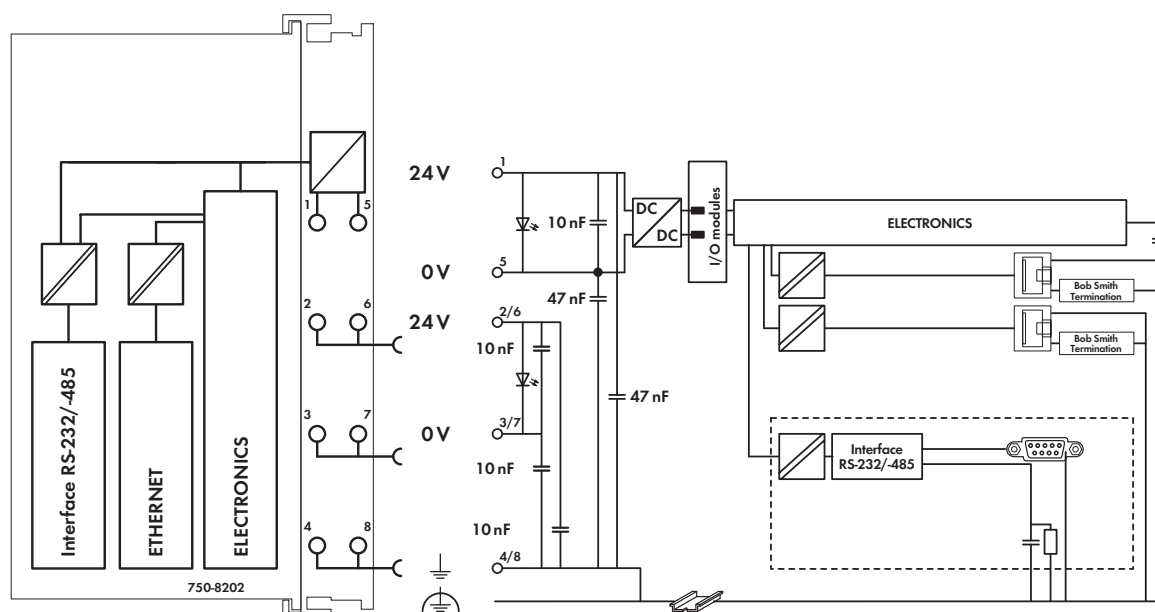
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Programmable to IEC 61131-3

- Programmable via WAGO-I/O-PRO V2.3
- Direct connection of WAGO I/O modules
- 2 x ETHERNET (configurable), RS-232/-485
- Linux 3.6 operating system with RT-Preemption patch
- Configuration via CODESYS, e!COCKPIT or Web-based management interface
- Maintenance-free

Description	Item No.	Pack. Unit
PFC200 CS 2ETH RS	750-8202	1
PFC200 CS 2ETH RS/T	750-8202/025-000	1
Extended temperature range: -20 °C ... +60 °C		
PFC200 CS 2ETH RS Telecontrol/T	750-8202/025-001	1
Extended temperature range: -20 °C ... +60 °C		
PFC200 CS 2ETH RS Telecontrol ECO/T	750-8202/025-002	1
Extended temperature range: -20 °C ... +60 °C		
Accessories	Item No.	Pack. Unit
WAGO-I/O-PRO V2.3, RS-232 kit	759-333	1
SD memory card, 2 GB	758-879/000-001	1
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see Section 11	
Approvals		
Conformity marking	CE	
Korea Certification	KC (750-8202)	
Marine applications (versions upon request)	GL	
UL 508		
TÜV 14 ATEX 148929 X	II 3 G Ex nA IIC T4 Gc (750-8202)	
Permissible ambient temperature 0 °C ... +60 °C		
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System Data	
CPU	Cortex A8, 600 MHz
Operating system	RealTime Linux 3.6 (with RT-Preemption patch)
Main memory (RAM)	256 Mbytes
Internal memory (flash)	256 Mbytes
Retain memory	128 Kbytes
ETHERNET	2 x RJ-45 (switched)
Transmission medium	Twisted Pair S-UTP
	100 Ω, Cat 5;
	Max. line length: 100 m
Baud rate	10/100 Mbit/s; 10Base-T/100Base-TX
Interface (serial)	RS-232/-485 (switchable)
Protocols	DHCP, DNS, NTP, FTP, FTPS, SNMP, HTTP, HTTPS, SSH, MODBUS (TCP, UDP, RTU)
750-8202/025-001 und -002	IEC 60870-5-101/-103/-104, IEC 61850-7-4, IEC 61400-25
Programming	WAGO-I/O-PRO V2.3, e!COCKPIT
IEC 61131-3	IL, LD, FBD (CFC), ST, FC
SD card slot	Push-push mechanism, sealable cover lid
Type of memory card	SD and SDHC up to 32 GB (All guaranteed properties are only valid in connection with the WAGO 758-879/000-001 memory card.)



Technical Data

Number of I/O modules (per node)	64
with bus extension	250
750-8202/025-002	4
Input and output process image (max.)	
Internal data bus	1000 words
MODBUS	1000 words
I/O interfaces (serial)	1 x serial interface per TIA/EIA 232 and TIA/EIA 485 (switchable), 9-pole D-sub female connector
Diagnostic LEDs	Power supply; SYS; RUN; FIELD BUS (MS, NS); USER (U1 ... U7);
User LEDs	Internal data bus via CODESYS library
Memory configuration CODESYS 2.3	
Program memory	16 MB
Data memory	64 MB
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Memory configuration e!RUNTIME	
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Dimensions (mm) W x H x L	79 x 65 x 100
Weight	209.7 g
EMC immunity of interference	acc. to EN 61000-6-2, marine applications
EMC emission of interference	acc. to EN 61000-6-3, marine applications
Degree of protection	IP20 acc. to DIN 60529
Type of mounting	DIN 35 rail
Housing material	PC
Ambient conditions	
Operating temperature	0 °C ... +55 °C
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Strip lengths	8 ... 9 mm / 0.33 in