



Parker Automation Controller

Intelligent Multi-Axis Motion Controller



ENGINEERING YOUR SUCCESS.

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Parker Automation Controller - PAC

Overview

Description

The Parker Automation Controller, PAC, is a PLC based on an ARM processor with integrated CODESYS. This programmable controller combines machine logic, real-time motion control and visualization into a standard based, performance driven, fan-less and easily mountable din rail solution.

The controller matches the PACIO modules, which can be attached directly to form a mechanically and electrically homogenous unit. In combination with these modules, it can take over complete machine control.

Equipped with a native, real-time EtherCAT bus, a modular interface slot, standard Ethernet and USB ports plus a built-in SD-card slot and the supported fieldbus options Profinet Slave, EtherCAT or EtherNet/IP the controller can be easily integrated and is suitable for a wide range of applications.

Programmed with CODESYS, efficient and powerful control systems can be designed based on IEC61131-3 and PLCopen motion standards. Offering the OPC UA server the controller is the perfect device for industry 4.0 communication.

Our PAC motion controller is available in two different versions: PAC120 and PAC340.

PAC120 is suitable for many motion applications. For higher demands on performance and memory the PAC340 is available. With its four processor cores, it also supports the CODESYS multicore feature.

Common Features

- Fan-less ARM processor technology
- Ethernet and EtherCAT
- Fieldbus options: EtherCAT, Profinet, EtherNet/IP, Modbus
- OPC UA server
- CODESYS V3.5
- CODESYS WebVisu
- CODESYS SoftMotion
- IEC61131-3 programming
- PLCopen motion control
- Web configuration tool
- SD card slot and USB interface
- Expandable with Parker PACIO modules
- DIN rail mounted



Scan the QR code or click here for more on PAC

| General | PAC120 |
|-----------------------|-----------------------------------------------------------------------------------------------------------|
| Function | Mini-IPC with integrated CODESYS SPS and EtherCAT master function for I/O modules systems PACHC and PACIO |
| Housing | Aluminium strap, plastic |
| Protection class | IP20 |
| Mounting | 35 mm DIN rail |
| Operation temperature | 0 °C...+55 °C |



| General | PAC340 |
|-----------------------|--------------------------------------------------------------------|
| Function | CODESYS PLC Motion Controller with a wide range of data interfaces |
| Housing | Aluminium strap |
| Protection class | IP20 |
| Mounting | 35 mm DIN rail |
| Operation temperature | Ambient operation temperature: (0 to +40) °C |

Product Overview

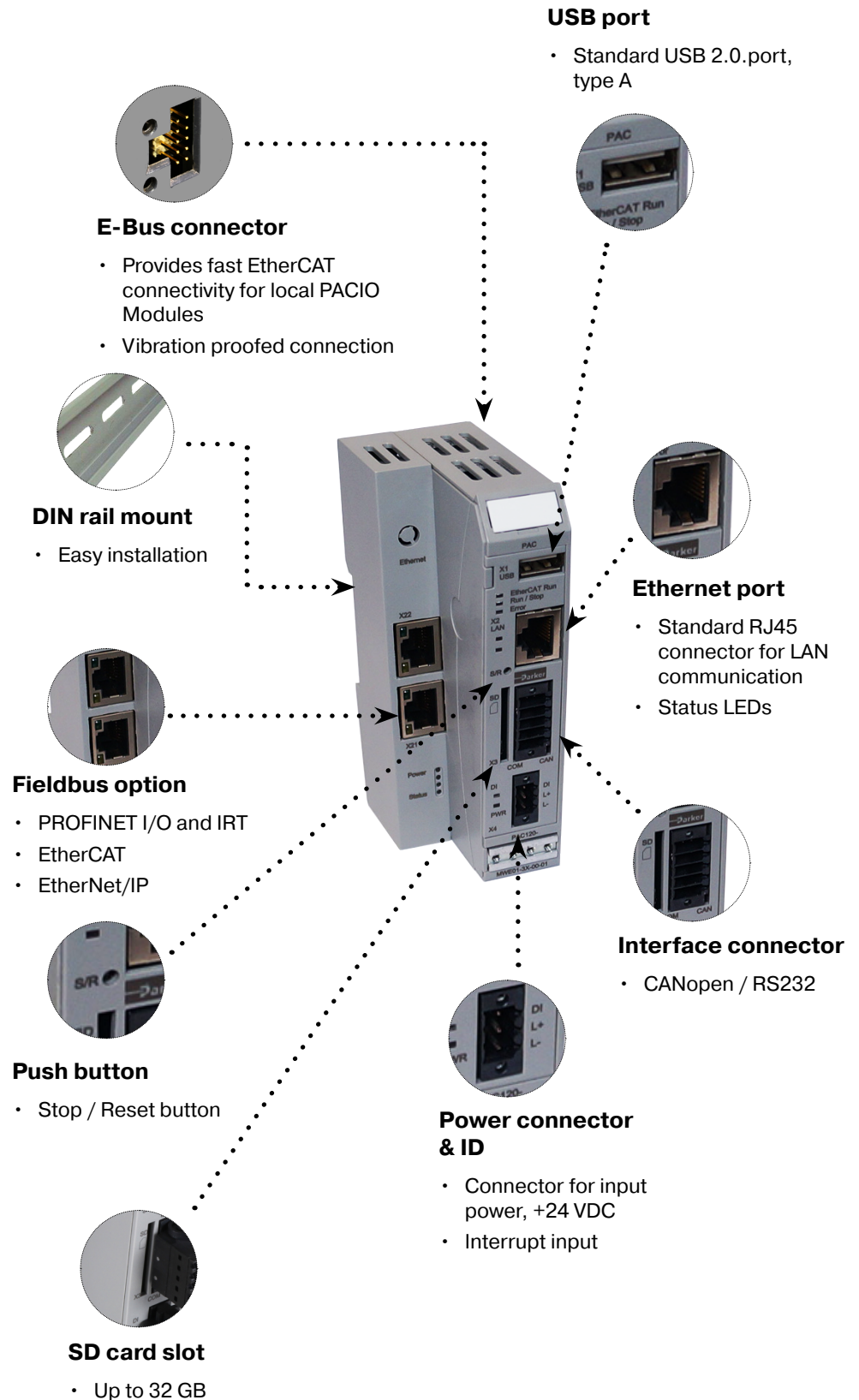
Designed to maximize efficiency while exceeding performance expectations, the Parker Automation Controller (PAC) is programmed with the well-established CODESYS, an Integrated Development Environment (IDE) and complemented by the PAC I/O System. Together these elements provide a powerful, standards-based programmable package designed to tackle the most demanding applications. The PAC system consolidates machine logic, signal handling, advanced motion, and visualization.

I/O Modules

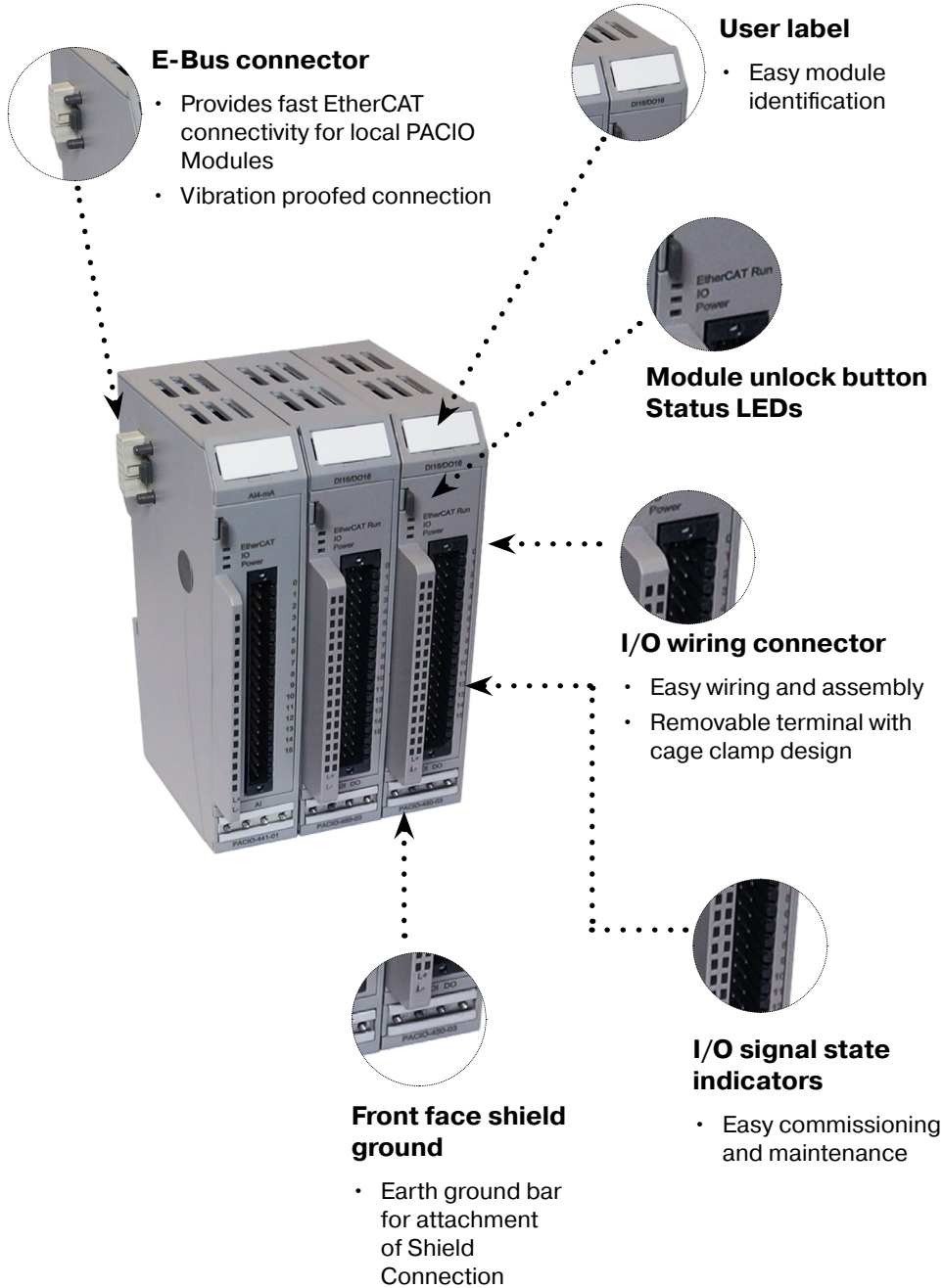


The PAC I/O System includes a variety of modules for digital, analog, temperature signals, high-speed counters, and communication interfaces.

PAC120 overview:

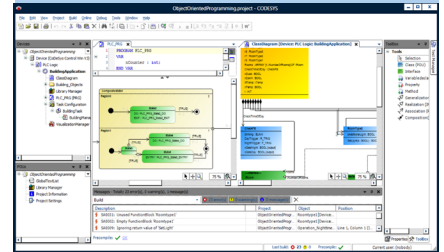


I/O Modules overview:

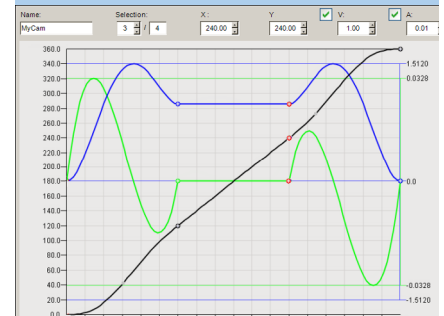


Software

CODESYS is the leading manufacturer-independent IEC 61131-3 automation software for engineering control systems. It's a software platform for industrial automation technology. The core of the platform is the IEC-61131-3 programming tool "CODESYS Development System". It offers practice-oriented, integrated solutions for the convenient configuration of automation applications. Everything is integrated in a single user interface



Engineers can work smarter, more efficiently and more effectively by choosing from the five IEC standard programming languages to optimize for an application, by using industry standard PLCopen Motion for motion control programming, deploying to the powerful simulation runtime for faster development and using online variable watch and trending for logic analysis.



- IEC61131-3 programming system
- PLCopen motion control
- Simulation runtime
- Visualization
- CNC / robotics
- Industry 4.0 platform

PAC340 overview:

EtherCAT (green)

- Status
- Pre-Op
- Safe-Op
- Op

PWR On (blue)

**Run / Stop
(green / red)**

Error (red)

**USB 2.0 /
Boot**

Micro SD

- Max. 2 Tbyte

Reset button

- Start / Stop
- Reset
- Service Mode

100 Mbit Lan

- Profinet
- EtherNet / IP
- Ethernet

Gbit Lan

- EtherCAT
- Profinet
- Ethernet

2x USB 3.0

- USB thumb drive
- USB to Ethernet Adapter

2x USB 3.0

- USB thumb drive

Supply

- Connector for input power +24VDC

Display interface

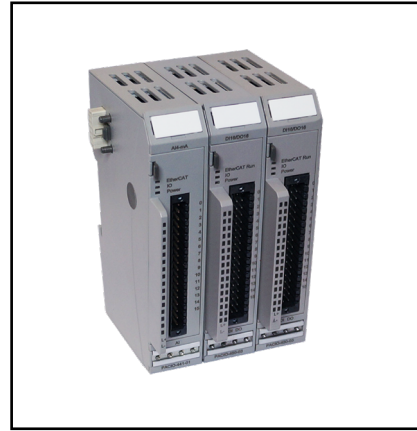
- HDMI 2.0 standard

Technical Characteristics

| Electrical | PAC120 | PAC340 |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| CPU | i.MX6 SoloX Freescale 1 GHz | BCM2711, 1.5GHz Quad Core |
| RAM / Flash | 256 MB / 256 MB | 1 GB / 8GB |
| Retain Memory | 128 MB | 200 MB |
| Operating system | Linux RT | Linux RT |
| Software | CODESYS V3 runtime softmotion | CODESYS V3 runtime softmotion |
| Network | 1 x Ethernet 10/100 MBit | 1 x Ethernet 10/1000 Base, RJ45 1 x Ethernet 10/100 Base 2-Port Switch |
| interfaces | 1 x digital input, 1ms 1 x USB 2.0 1 x SD (HC) card slot | 1 x digital display Interface 3x USB 3.0 1 x μ SD (SDXC) |
| Digital and analog interfaces | Parker PACIO extension modules | Parker PACIO extension modules |
| Field bus interfaces | EtherCAT master via Extender Module CANopen, galvanic isolated ProfiNet IO and IRT (PAC120-*P), EtherNet/IP Adapter (PAC120-*E) OPC UA server | EtherCAT Master via Extender Module Profinet-Device-IEC EtherNet/IP-Scanner, EtherNet/IP-Adapter OPC UA server |
| Clock | Real-time clock with battery buffering | Real-time clock, 72h buffer |
| Power supply | 24 V DC (19.2... 28.8) | 24 V DC (19.2... 28.8) |
| Potential separation | Modules are potential separated against each other and bus | Modules are potential separated against each other and bus |
| Industrial requirements | Protection class III according to EN 601131-2 | Protection class III according to EN 601131-2 |
| EMC | 2004/108/EC | 2014/30/EU emitted interference: EN 61000-6-4, industrial zone |
| Environmental conditions | Relative humidity 5 % ... 95 % w/o dew | Relative humidity max. 85%, non-condensing |
| CE conformity | 2004/108/EC | CE (EN 61131-2) |
| UL certification | Certified: E-File-No. E506274 | In process |

Parker Remote I/O System PACIO

The PACIO System includes a variety of modules for digital, analog and temperature signals as well as communication interfaces. The modules connect directly to the controller via the built-in EtherCAT bus for local architectures and are extended to remote locations via the extender and bus coupler modules, thus supporting both local and distributed I/O architectures. PACIO communicates natively on the EtherCAT bus, therefore it provides the full functionality and throughput of high-speed Ether-CAT to meet the most demanding real-time requirements.

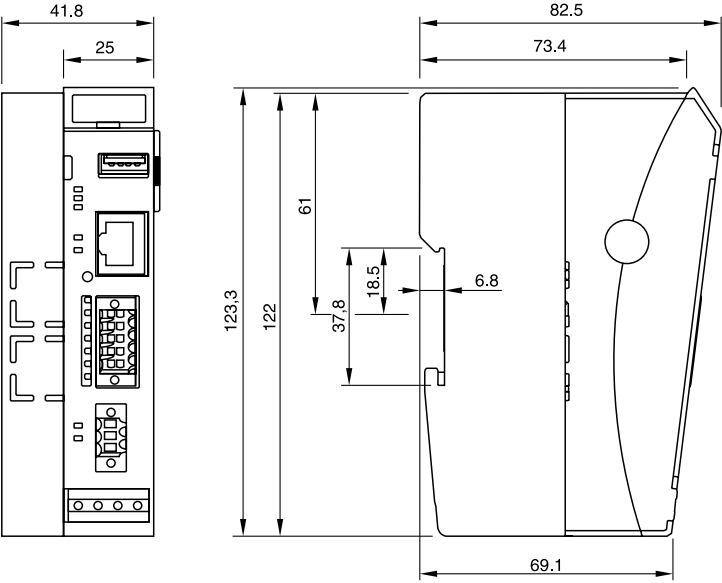


| Module Type | Part Number | PACIO Description |
|----------------------------|----------------|-----------------------------------------------------------------------------------|
| Interfaces | PACIO-400-00 | PACIO EtherCAT Bus coupler, 3 A |
| | PACIO-400-02 | PACIO Extender 2 Port (EtherCAT I/O extender) |
| Accessories | PACIO-411-00 | Power Distribution Module (distributes 0 VDC or 24 VDC attached at pins L1 or L2) |
| | PACIO-412-01 | PACIO Shield 2x8 mm |
| | PACIO-412-02 | PACIO Shield 14 mm |
| Analog | PACIO-441-51 | PACIO AI4-mA (4 single-ended analog input module), 12 Bit CoE |
| | PACIO-441-52 | PACIO AI4/8-VDC (4 differential/8 single-ended analog input module), 13 Bit CoE |
| | PACIO-442-52 | PACIO AO4-VDC/mA (4 analog output module), 12 Bit resolution CoE |
| Temperature | PACIO-443-57 | PACIO AI4-Pt/Ni/Thermo, 16 Bit CoE |
| | PACIO-443-58 | PACIO AI8-Pt/Ni/Thermo, 16 Bit CoE |
| Digital I/O Modules | PACIO-450-02 | PACIO DI16/DO8 (16 inputs/8 outputs), 1 ms delay, 1 A |
| | PACIO-450-03 | PACIO DI16/DO16 (16 inputs/16 outputs), 1 ms delay, 0.5 A |
| | PACIO-450-05 | PACIO DI8/DO8 (8 inputs/8 outputs), 1 ms delay, 0.5 A |
| | PACIO-450-13 | PACIO DI16/DO16 (16 inputs/16 outputs), 1 ms delay, 0.5 A Low-side |
| | PACIO-451-02 | PACIO DI32 (32 inputs), 1 ms delay |
| | PACIO-451-03 | PACIO DI16 (16 inputs), 1 ms delay |
| | PACIO-452-01 | PACIO DO16 (16 outputs), 0.5 A |
| | PACIO-452-02 | PACIO DO8 (8 outputs) 1 A |
| | Counter | PACIO-454-01 |

Dimensions

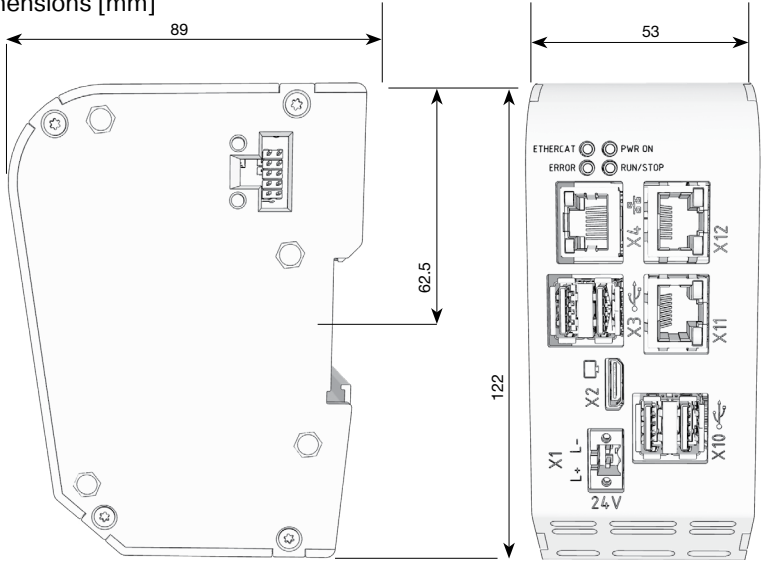
PAC120 Dimensions

Dimensions [mm]



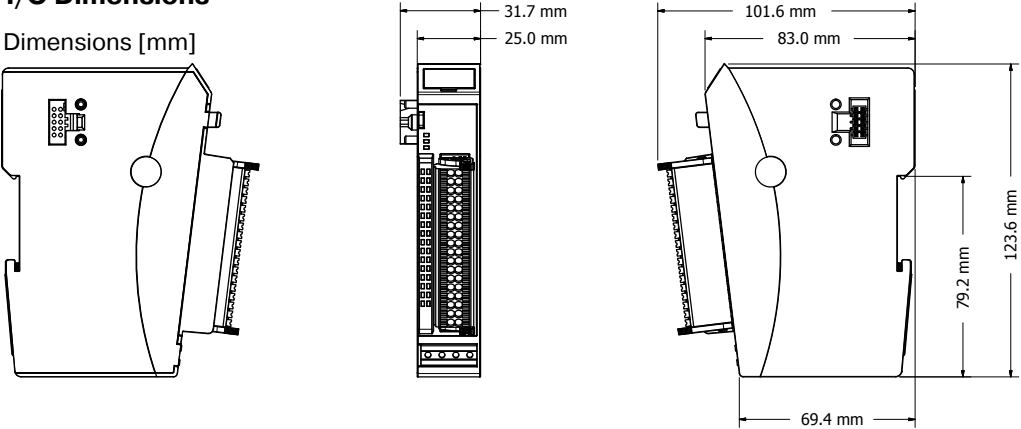
PAC340 Dimensions

Dimensions [mm]



I/O Dimensions

Dimensions [mm]



Order Code

Parker Automation Controller

| | 1 | 2 | | 3 | 4 | 5 | 6 | 7 | | 8 | 9 | | 10 | | 11 |
|---------------|------------|------------|---|----------|----------|----------|----------|----------|---|----------|----------|---|-----------|---|-----------|
| Order example | PAC | 340 | - | M | W | B | 1 | 1 | - | 3 | X | - | 00 | - | 01 |

| | | |
|----------------------------------|------------|----------------------------------------|
| 1 Series | PAC | Parker Automation controller |
| 2 Type | 120 | |
| | 340 | |
| 3 Software | P | IEC, PLC only (PAC120 only) |
| | M | IEC, PLCopen Motion |
| | C | IEC, PLCopen Motion, CNC (PAC340 only) |
| 4 Visualization | W | Web Visualization |
| 5 Communication | E | EtherNet/IP (PAC120 only) |
| | P | PROFINET IRT slave (PAC120 only) |
| | B | EtherNet/IP + PROFINET (PAC340 only) |
| 6 Retentive Memory | 0 | 128 kB (PAC120 only) |
| | 1 | 200 kB (PAC340 only) |
| 7 Processor | 1 | i.MX6 SoloX Freescale 1 GHz (PAC120) |
| | 1 | BCM2711, 1.5GHz Quad Core (PAC340) |
| 8 Certification | 3 | UL / cUL / CE Certification |
| 9 Reserved | X | Standard |
| 10 Extended Software | 00 | Extended Software |
| 11 Extended communication | 01 | Enhanced communication OPC UA |



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