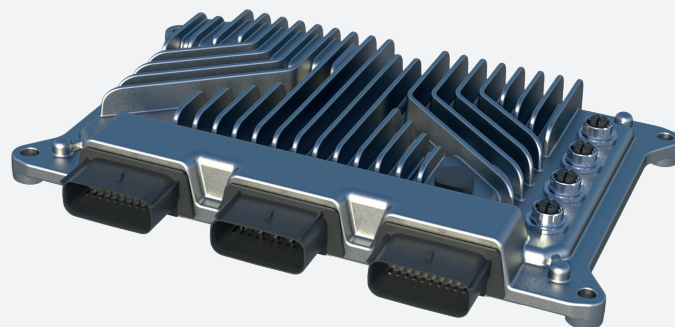


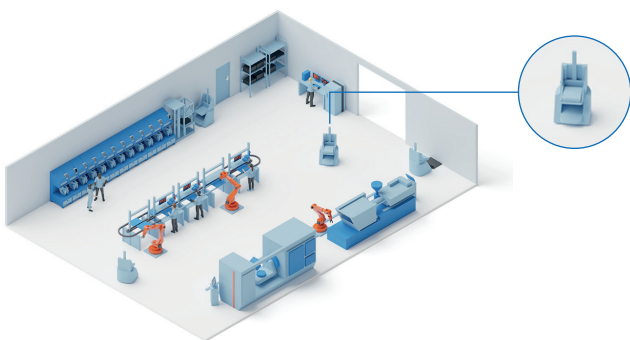
# PTcontrol A53-SG

## Communication gateway & I/O controller

A53-SG, an ARM-based industrial controller featuring the NXP i.MX 8M series, is designed to deliver powerful, reliable, and scalable performance in demanding industrial environments. The controller offers robust connectivity with multiple Ethernet and CAN-bus interfaces, all housed within an IP67 enclosure. Additionally, an integrated coprocessor offloads tasks from the main processor, enabling efficient handling of a wide range of digital and analog inputs and outputs.



### Application



### Communication and gateway capabilities

A53-SG integrates a Gigabit Ethernet switch directly connected to the internal application processor, providing four outward-facing Ethernet ports to support flexible network topologies. To further enhance field-bus connectivity, the controller incorporates an in-house-developed USB-to-CAN interface, expanding the number of CAN channels beyond those natively supported by the NXP i.MX 8M processor.

The combination of multi-port Gigabit Ethernet and scalable CAN-bus connectivity enables the controller to function as a powerful and reliable communication gateway - seamlessly bridging networks, subsystems, and devices.

### Product features



Wide input  
voltage range



IP6K7



Industrial  
Grade



U-boot (secure boot)  
Linux/Yocto

### Scalable and customizable

This product is a scalable and customizable solution built on proven technology building blocks, offering unmatched flexibility for a wide variety of applications. With the ability to upgrade the main processor and memory as well as the ability to tailor digital and analog I/O to your exact needs, this controller is designed to grow with your application while ensuring reliable performance and seamless integration.

### Processing & Memory

|                |                             |
|----------------|-----------------------------|
| Microprocessor | NXP i.MX8M Mini Quad        |
| Cores          | Quad ARM Cortex-A53 <1.6GHz |
| Memory         | 4GB LPDDR4 (scalable)       |
| Storage        | 4GB eMMC HS-400 (scalable)  |

### Interfaces

|          |                                    |
|----------|------------------------------------|
| Ethernet | 4x 10/100/1000 BASE-T              |
| CAN      | 4x CAN 2.0 up to 1Mbit/s           |
| Serial   | 1x RS232                           |
| Outputs  | 4x High-Side, 4x Low-Side switches |
| Inputs   | 8x Analog Input                    |

### Automotive Electrical Compliance

|                          |                            |
|--------------------------|----------------------------|
| Nominal voltage          | 9-32 VDC                   |
| Transients and Load Dump | ISO 16750-2 / ISO 7637-2/3 |

### Environmental Compliance

|                     |                                 |
|---------------------|---------------------------------|
| Ambient temperature | -40 to +60°C                    |
| Thermal Shock       | IEC 60068-2-14 (Na), 300 cycles |
| Thermal Cycling     | IEC 60068-2-14 (Nb), 300 cycles |
| Vibrations          | IEC 60068-2-64, 2.4Grms         |
| Mechanical Shock    | IEC 60068-2-27, 30G             |
| Humidity            | IEC 60068-2-38 (Z/AD), RH=95%   |
| Salt Spray          | IEC 60068-2-52 (severity 3)     |
| IP rating           | IP6K7                           |

### Regulatory

CE (planned)