

Controllers and mobile applications

Parker Hannifin has introduced the Iqan-MC4x family of high performance controllers for hydraulic systems. It also announced a connectivity solution to expand its controller range for mobile applications.



The Iqan-MC4x family comprises a total of three scalable designs (Photo: Parker)

The introduced Iqan-MC4x family comprises a total of three scalable designs covering a range of applications including task-oriented control, mid-size applications, I/O distribution, and large centralized control systems. The scalable approach that Parker Hannifin has implemented means that each size of controller in the family has the same pinout, same software, and same feature-set allowing up/down-grading and scaling of the application. The latest generation processor and design concept has resulted in an integrated controller family with a small footprint and high performance. Applications that demand high levels of computing capacity can be supported with down to 1 ms cycle time. Functional safety applications are supported up to SIL2.

The connectable controller family offers 50 inputs (analog, timers, digital) and 36 outputs (CAM, PWM, and digital) along with five CAN and Ethernet ports for in-vehicle network and diagnostics. Alongside voltage, digital, and frequency inputs, the family also includes 0 V to 35 V and 4 mA to 20 mA inputs giving the OEM higher freedom in selecting sensor solutions for their specific application needs. The family is designed to meet the demands of the mobile machinery industry, especially harsh performance and environmental requirements including water, humidity, vibration, and shifting temperatures.

Motion control is made possible with Parker Hannifin's CAM regulator for proportional current control of mobile valves. Requiring no tuning or tweaking, the regulator circuit offers precision current control down to 1 mA and zero drift control ensures that the offset current drift over time, temperature or load changes is almost immeasurable. The family is compatible with existing Iqan applications. The IQAN Design platform is used for programming, simulation, testing, production, service, and maintenance.

Iqan is a trademark for electronic control systems for mobile machinery, owned by the Parker Hannifin corporation. The CAN-based system was developed between 1990 and 1995. Iqan solutions enable mission critical reliability, hard real-time, and high performance systems. With a portfolio of controllers, display modules, and software solutions, it aims to empower OEMs to develop innovative solutions quickly and cost-effectively.

Bluetooth connectivity to CAN

Iqan-G11 is a Bluetooth device that is connected to the Iqan master module's CAN network. It allows the operator or service technician to access machine parameters using a smartphone or tablet with dedicated apps like Iqan Sync and Iqan Run. With Sync, the operator can update machine applications and get logs from the machine. The app can also work as a gateway to the cloud service, Iqan Connect, making the machine available for service technicians in remote locations. The Run app is a tablet version of the current PC based service tool.

The use of a smartphone in combination with the Iqan-G11 gives both operators and service technicians a diagnostic tool that can help maximize machine productivity. As an alternative to existing modem-based solutions, the device allows the use of smartphone and tablet technology to be utilized as connectivity solutions in machine control. With this solution it is possible to directly interface Bluetooth-capable devices to the CAN network by using dedicated apps.

Most day-to-day usage such as downloading logs and productivity data are performed free-of-charge via Bluetooth. When a remote connection is needed, the Sync app facilitates a smartphone-to-cloud connection, which allows a remote service team to 'tap into' the CAN network via the cloud service. The cloud service uses pre-paid connection tokens. Housed in a rugged black plastic case with IP67 and IP6K9K, the device is designed for mounting either in-cab or outside. It incorporates a 4-pin Deutsch connector and a



The Iqan-G11 has an operating temperature between -40 °C and +85 °C (Photo: Parker)

status indication LED for confirmation of the operational status.

[ae](#)



The Bluetooth device gives service technicians access to machine parameters using a smartphone (Photo: Parker)