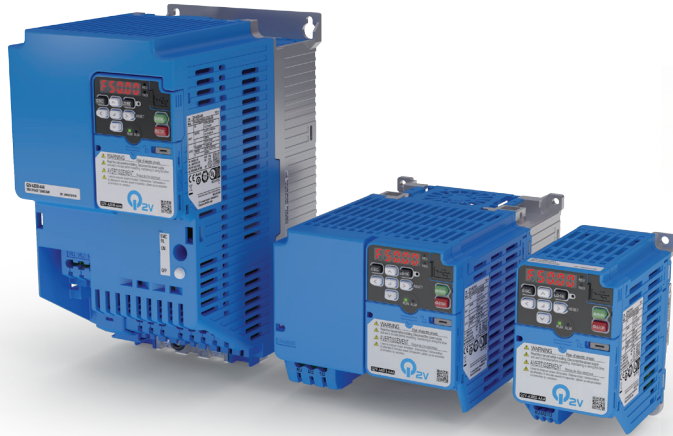# OMRON

Q2V COMPACT DRIVE

Q2V drive…
even more versatile and reliable

The Q2 family offers a compact AC drive that combines easy operation with high-efficiency control for almost any motor type. The result is a robust product designed for maintenance free long-term operation.

Easy installation & set-up

- Reduce cabinet size with side-by-side mounting without derating
- Screwless terminals safe wiring installation time
- Hardware simplification thanks to a built-in EMC filter and the STO (Safe Torque Off) safety function
- Intelligent application wizard for quick set-up
- Mobile app for set-up and monitoring
- Optional graphical LCD display

Application versatility

· Flexible motor control - IM, PM, SynRM
· V/f and Sensorless vector (current/voltage) motor control methods
· Speed and torque control in open loop
· Customized functions with application wizards
· Graphic development tool allows you to create your own program

Proven robustness

· Coated PCB boards as standard protect the electronics from dust and humidity
· Designed for 10 years maintenance free use
· Working operation up to 50 degrees without derating
· Experience matters: more than 10-million drives installed

CONFORMAL COATING IEC60721-3-3 (3C2 & 3S2)

Minimize commissioning & operating costs

The Q2V is designed to provide more convenient commissioning: All I/Os come with screwless terminals and the hardware is simplified thanks to a built-in EMC filter and STO function. The benefit is cost-effectiveness due to less wiring effort.

REMOTE LCD DISPLAY

10:00am   FWD   Rdy   ANALOG
Hz   Frequency Ref (OPE)

0.0   10.0   50.0

✓ Optimize control cabinet space and cost

Side-by-side mounting without derating

Expand the operating terminal to new level

The intelligent application set-up guides you through the parameter settings

· Copy function and automatic parameter back-up
· Multi-language display
· Micro SD card for data storage
· Real-time clock
· Bluetooth option

FAST DYNAMIC RESPONSE TO LOAD CHANGES PROVIDING UP TO 2% MOTOR SPEED ACCURACY AT AS LOW AS 1HZ
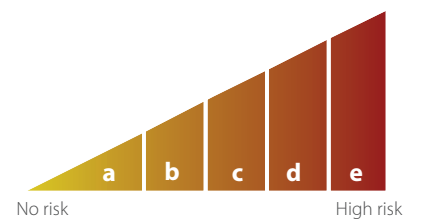
Driving safe

Built-in STO safety function, SIL3/PLe

SIL3 PLe FUNCTIONAL SAFETY

TÜVRheinland CERTIFIED

HIGHEST PERFORMANCE LEVEL

| a | b | c | d | e |

No risk   High risk

Improve energy efficiency

The Q2V series improves the energy efficiency of all the components in the loop. Firstly, it is able to drive efficient motors such as PMs, secondly by driving them in the most efficient way with special motor control methods like the EZ Vector for pumps and fans, and finally thanks to the dedicated energy saving functions.
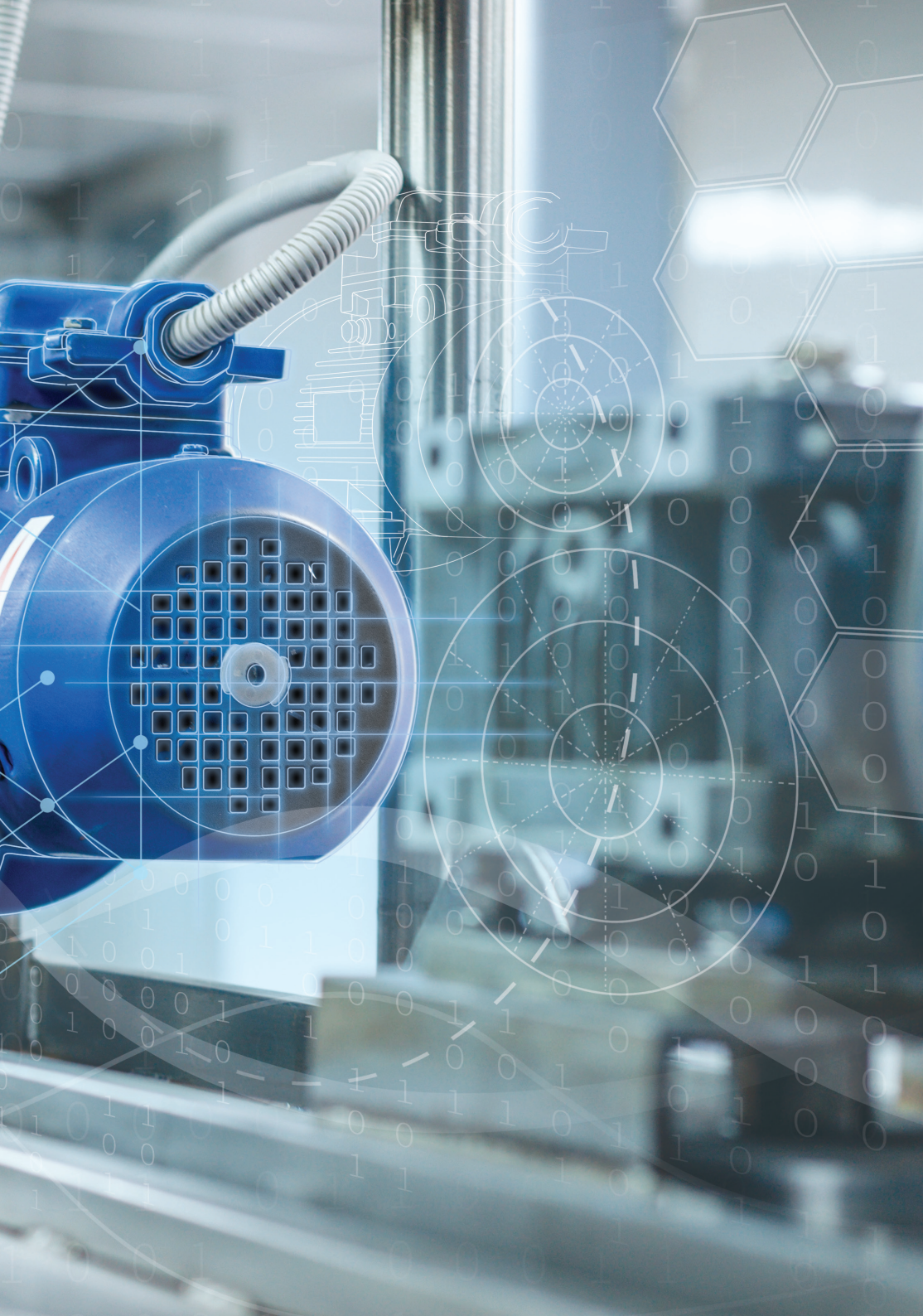
Flexible and efficient energy motor control – IM, PM, SynRM

- Built-in latest motor control technology for induction, permanent magnet and synchronous reluctance motors has, as a result, the best motor control along with minimum energy consumption.
- Additionally, we can use the new EZ vector control method for pumps and fan applications which optimizes output current even more thanks to the MTPA algorithm (Maximum Torque Per Ampere).

Up to 50% energy saving

- Special dedicated energy saving functions for applications where the loads have variable or reduced torque characteristics such fans or pumps which will automatically optimize energy savings.
- Advanced motor control algorithms will increase efficiency by up to 6% for asynchronous motors and up to 2% for permanent magnet motors compared with conventional market drives.

Dual rating

- Q2V is able to supply around 20% more output current when driving variable torque applications compared with those using standard constant torque.
- This Dual rating function will result in application flexibility due to the same inverter model driving motors with different ratings depending on load characteristics.

Reduce machine downtime

By providing data acquisition at device level, you can prevent potential failures by avoiding unplanned downtimes. The Q2V can trace and record data to the local SD card or provide data to IT systems via the NX/NJ machine controller.

Program >>Deploy >> Go

Q2 series can be programmed without being connected to any power supply. Simply **plug it into one of your PC's USB ports**, start programming and enjoy the ease of commissioning.

- ☑ No power supply
- ☑ Reduced commissioning time

Make use of all assets in the most effective way by accessing production data

Vertical integration delivers production data from the manufacturing process to the IT systems. Device data collected via an Ethernet-based network to the machine controller can be used to increase productivity and improve predictive maintenance.

NX/NJ
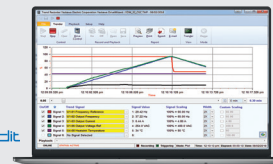
Be proactive against potential failures!

Data reporting with trip history. You can predict drive failures with aging models for critical components.

- Micro SD card trace-recording with optional remote LCD keypad
- Lifetime modeling for critical components
- Time-stamped historical log
- Customized maintenance functions

Focus on your application

SPECIFICATIONS	
Control method	V/f and Sensorless vector (current/voltage) motor control methods
	Speed and torque control in open loop
Power range	Single-phase 200 VAC: 0.1 to 4 kW
	Three-phase 200 VAC: 0.1 to 22 kW
	Three-phase 400 VAC: 0.37 to 30 kW
Motor types	Induction motor (IM), Permanent Magnet motor (IPM/SPM), Synchronous Reluctance motor (SynRM)
Serial communication	Modbus, RS-485
Communication options	Modbus/TCP, EtherCAT, EtherNet/IP, PROFINET, POWERLINK
Safety built-in	STO (Safe Torque Off) SIL3/Ple
Conformity/Standards	CE, UL, cUL, EAC, REACH, RoHS

MAIN FUNCTIONS	APPLICATION EXAMPLES
Energy saving	Pump & Fan, Centrifuges & Mixers
Dual rating	Pump & Fan, Centrifuges & Mixers
PM & SynRM motor control	Transport, Pump & Fan
Speed accuracy at low speed	Transport, Rotative tables
High starting torque at low speed	Transport, Centrifuges & Mixers, Compressor
Stop accuracy	Transport, Feeders
DC injection	Winding, Feeders, Press, Hoist, Spindle
Sensorless positioning	Transport, Feeders
High flux braking	Centrifuges & Mixers, Winding, Hoist, Spindle
Silent operation	HVAC, Home lifts
200% overload	Compressor, Hoist, Transport
Custom V/f curve	Compressor, Spindle
PID control	Winding, Pump & Fan

OPTIONS	
Remote LCD keypad	Copy function and automatic parameter back-up
	Multi-language display
	Micro SD card for data storage
Remote LCD keypad with Bluetooth	Real-time clock

SOFTWARE TOOLS	
Q2edit	Parameter edit tool
Q2dev	Programming tool
Q2app	Parameter edit tool for mobile devices (Android & iOS)

https://industrial.omron.eu/en/products/q2v
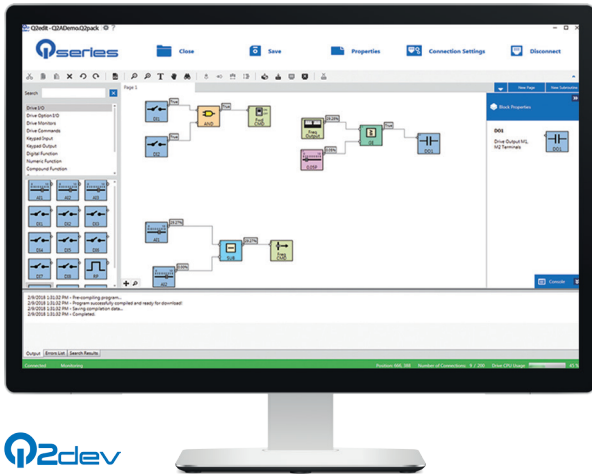
Optimize your engineering time

Graphic Development Environment provides faster application customization.

- Intuitive drag and drop programming
- Over 480 function blocks
- Up to 200 connections
- Access to I/Os, network interfaces, drive parameters and monitors
- Logic/math functions
- Timers/counters
- Subroutine creation
- Online debugging
- Constant scan cycle (0.5 ms fastest)
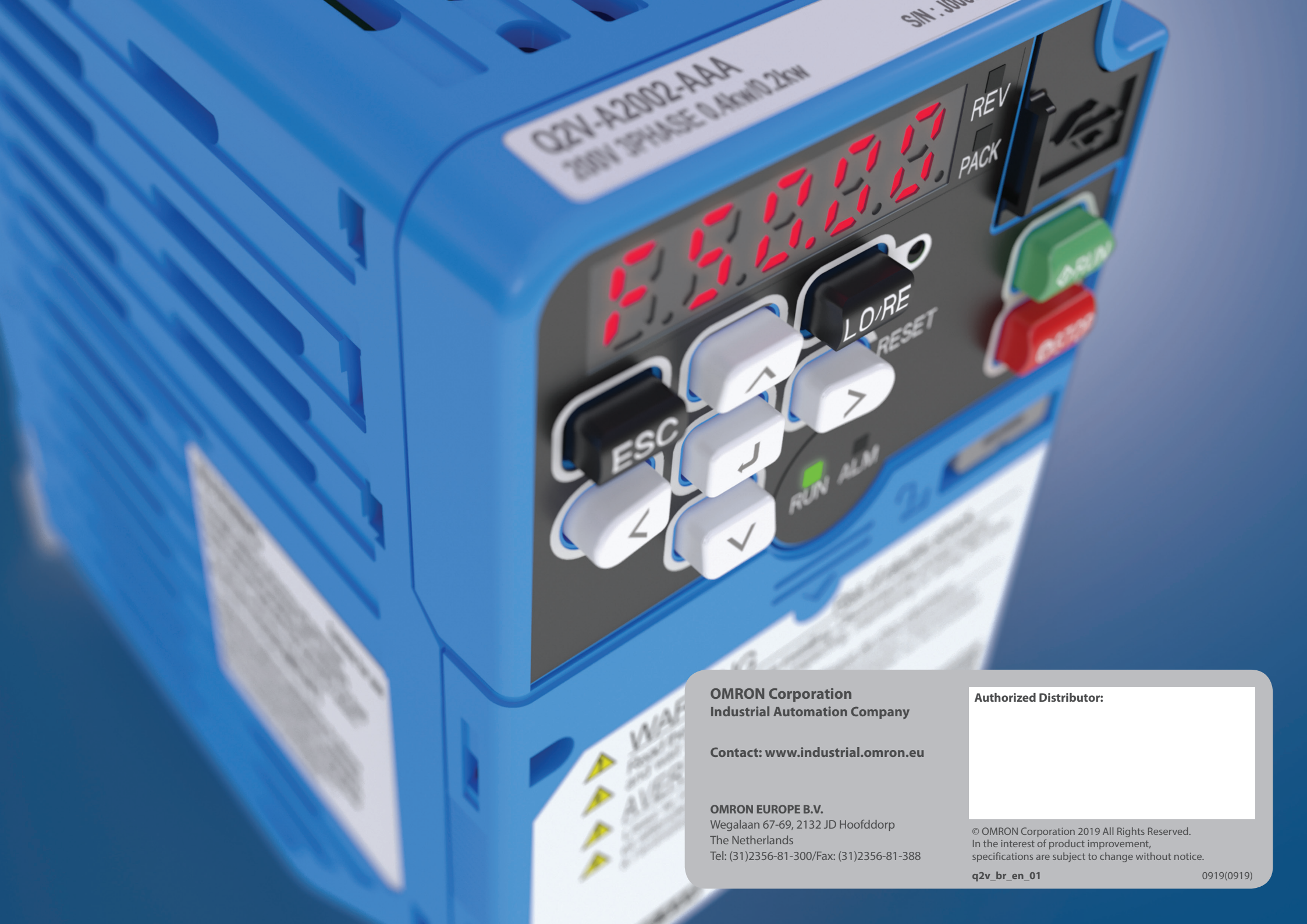
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