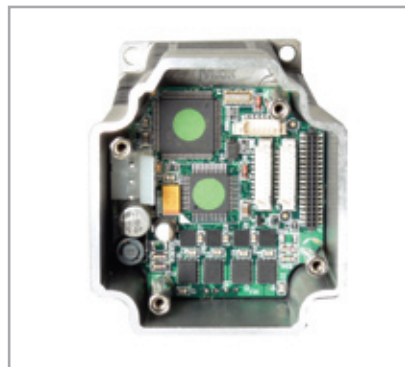


**A newsletter from  
JVL Industri Elektronik A/S**

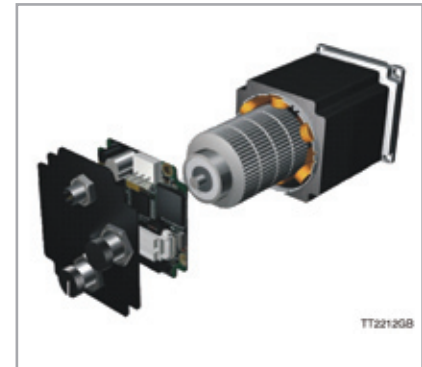
## The new QuickStep motors from JVL Positioning or velocity control – a wealth of opportunities

JVL has now launched its latest innovative product: "QuickStep", the integrated step motor. The Pulse/Direction model of QuickStep was introduced in the Spring of 2006 with great success. This has now been supplemented with the introduction of a QuickStep model which provides a position controller, PLC facilities and a serial interface with optional encoder and CANopen interface. All electronics are integrated into the motor itself, providing a very compact and complete unit. This minimises cabling costs since machine sensors can be connected directly to the motor. Control cabinets can often be either totally redundant or significantly reduced in size.

- Serial communication from a PC or PLC via RS485
- Built-in PLC with graphic programming and arithmetic functions.
- 8 I/O, 5-28V DC which can be configured as inputs, outputs, or



- analogue inputs.
- Magnetic encoder with 1024 pulses/rev.
- CANbus and CANopen DSP 402.
- Pulse/Direction with freely programmed gear ratio.
- M12 connectors for high level of protection in aggressive environments.
- User-friendly software and oscilloscope function.
- Uses MAC protocol so MAC motors and QuickStep motors can be con-



- nected to the same RS485 bus.
- Dual supply so position and parameters can be maintained during emergency stop.
- Power supply 12-48V DC.
- NEMA23 flange.
- Motor torque: 1.1 to 2.9Nm.

Together, the two models of the QuickStep motor, with either Pulse/Direction or Positioning controller, meet the needs of any step-motor application.

## MAC800 motors UL recognized

**JVL's MAC800 motors with built-in power supply now UL recognized**

The very popular MAC800 integrated servo motor has now been UL-recognized in accordance with UL (Underwriters Laboratories Inc.®) standard UL508C (Power Conversion Equipment) and related sub-standards.

The UL508C standard deals with fundamental personal safety and precautions to avoid overheating and fire.

Based on customer feedback and the

fact that the world is getting smaller and smaller, JVL realised several years ago that adherence to international standards and recognition was increasingly important.



We are currently seeing a major increase in demand for UL-recognized products from customers in Europe and the USA. JVL will continue to

maintain focus on introducing products that comply with UL- and other international standards to ensure we remain the preferred supplier of integrated motors and related equipment.



# Italian art controlled by MAC motors

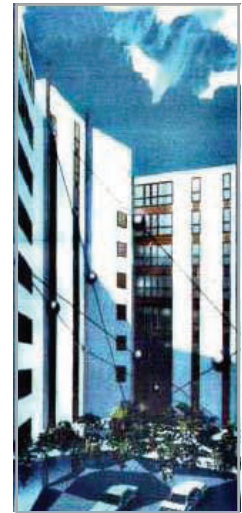
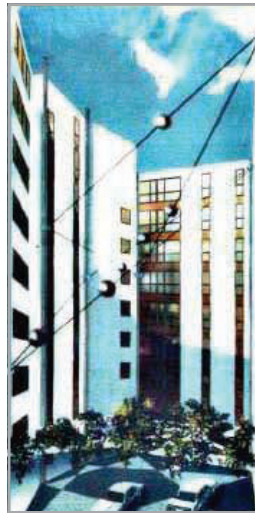
## 8 MAC800 motors control dynamic art in Rome

JVL Industri Elektronik A/S is proud of the fact that we have now also helped to bring a piece of art to life. The work came into being in Rome, where artist architect Silvana De Stefano was selected to decorate a plaza at the large Finmeccanica Palace, owned by the company Finmeccanica, in the centre of Rome.

Finmeccanica is one of the largest Italian industrial groups and works in the fields of aerospace, defence and security. The Finmeccanica Group is based in Italy and the U.K., and has extensive production facilities in the rest of Europe and the USA. The Group has a total workforce of some 56,000 people and an annual turnover of around 12 billion Euro.

The first 3 photos show the design phase of the project, which is situated in the plaza of Finmeccanica's building (shown below).

The artwork consists of 2 internally illuminated spheres that move up and down and backwards and forwards as illustrated in the schematic below. Each sphere is suspended by a thin steel wire and is moved by 4 MAC800 motors. With coordinated movement of each sphere in 4 directions interest-



The design stage of the project



The completed work of art

ing dynamics can be created, especially in the evening when the spheres are illuminated.

In their use of JVL's MAC800s, the constructors emphasised the major advantages as decentralisation of

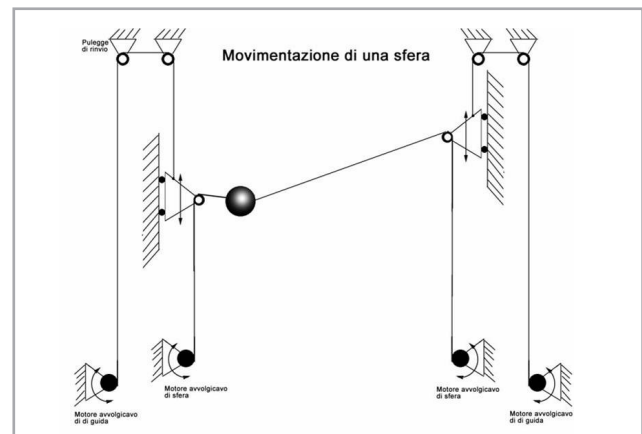


Two of the installed MAC800 motors

intelligence to the motor itself and the benefits of a plug and play system. Linearity in the speed of the motors was also highlighted.



Finmeccanica's building in Rome

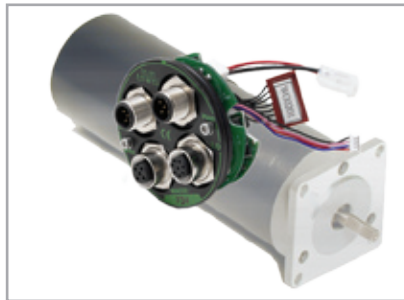


Schematic of control of one of the spheres

## New high-speed RS485 multi-axis module

### High-speed module, now with M12 connectors

JVL can now offer yet another new expansion module for integrated MAC motors MAC50 to 141 and MAC800. The new module, MAC00-FS4, is similar to previously released module FS1, but is equipped with M12 connectors for use in demanding environments. The module can be used in multi-axis applications with up to 255 units on the same RS485 bus with repeaters. I/O, position, error status, etc., are scanned locally and can be read very quickly from a PC or PLC. For example,



16 motors can be scanned in only 12 ms. It is possible to send new position data to 255 motors in only 133 ms.

This is very advantageous for machines where many axes must be adjusted quickly and simultaneously. All motor parameters can also be read/written, and a group command enables simultaneous writing to a number of motors.

A new, improved MACCOMM OCX (ActiveX control) facilitates development of Windows software such as Visual Basic, Labview programs, etc., that can control up to 255 MAC motors.

## MAC800 motors in IP65 models

Like the smaller MAC50-141 (46 to 134W) motors, JVL's large MAC800 motor (750W) is now available in a model that offers IP65 protection. This makes the MAC800 well-suited for applications in more demanding environments such as are common in the food processing industries.

The IP65 protection of the motor

has been achieved by replacing the ventilator built into the cooling fins with large fins. In addition, a water-tight seal of the axle bearing has been achieved using an IP67 Rulon® Teflon bush. This has very low friction and requires no lubrication. The flange and shaft are made of stainless steel. Note that the expansion module used must also fulfil IP65 requirements.



The motor in the picture is furthermore equipped with a brake.

## QuickStep motors now also with encoder

### The integrated step motors are now also available with encoder

In the past, step motor systems were always used without an encoder, and therefore the motor was used without knowing its position with 100% certainty. If, for example, the motor was overloaded due to resonance, or a component was jammed in the machinery, the motor would stop at an arbitrary position without any error message. Operation could be seriously interrupted and in addition the motor and machinery had to be reset using

sensors.

Using JVL's newly developed QuickStep motors, it is now possible to use a magnetic encoder to monitor motor position. If a deviation occurs between the desired position and the encoder position, it is possible to choose whether an automatic correction should be carried out, or whether the encoder position should be used for correction and/or error reporting. Furthermore, it is possible to deter-

mine the absolute motor position in any revolution. This can be used for example to move to a specific point of revolution and thus avoid the need for a zero-search sensor.



## Brake reconstructed

Electric Brake MAB23x-02 has been designed for direct mounting on a step or servo motor with NEMA23 flange and axle. It is thus ideal for use with the QuickStep and MAC motors. The brake has been redesigned and

improved, and is now available with a 6.35mm or (optionally) 10mm shaft. In addition it is available with a special shaft seal for ingress protection to IP65 or higher. The holding torque is 1.5Nm.



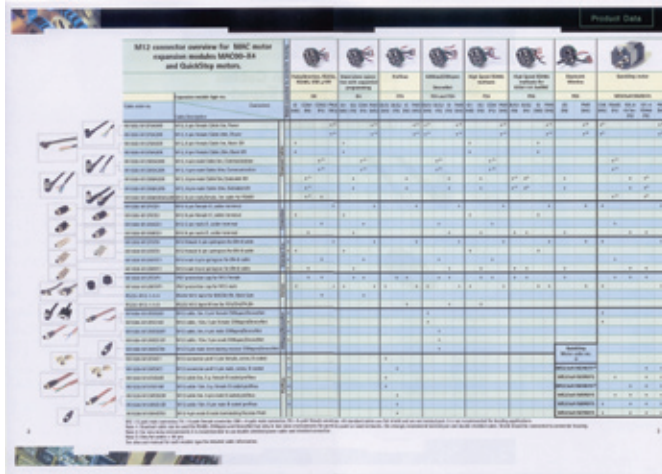
# M12 connectors and cables for MAC and QuickStep

## New overview makes it easy to find the right cables and connectors

To enable easy installation of MAC and QuickStep motors with M12 connectors, JVL has developed a range of complete cables, adaptors, connectors, and other components.

Since the range is extensive and offers a very wide selection, we have produced a data sheet that provides a practical overview for easily choosing cables for the specific expansion module or QuickStep motor used.

All cables, adaptors and connectors



M12 connector overview for MAC motor expansion modules SPACR-04 and QuickStep motors		Product Data	
Part No.	Description	Part No.	Description
1000000000	M12 connector, 5-pin, male, shielded	1000000000	M12 connector, 5-pin, female, shielded
1000000001	M12 connector, 8-pin, male, shielded	1000000001	M12 connector, 8-pin, female, shielded
1000000002	M12 connector, 12-pin, male, shielded	1000000002	M12 connector, 12-pin, female, shielded
1000000003	M12 connector, 15-pin, male, shielded	1000000003	M12 connector, 15-pin, female, shielded
1000000004	M12 connector, 20-pin, male, shielded	1000000004	M12 connector, 20-pin, female, shielded
1000000005	M12 connector, 25-pin, male, shielded	1000000005	M12 connector, 25-pin, female, shielded
1000000006	M12 connector, 30-pin, male, shielded	1000000006	M12 connector, 30-pin, female, shielded
1000000007	M12 connector, 35-pin, male, shielded	1000000007	M12 connector, 35-pin, female, shielded
1000000008	M12 connector, 40-pin, male, shielded	1000000008	M12 connector, 40-pin, female, shielded
1000000009	M12 connector, 45-pin, male, shielded	1000000009	M12 connector, 45-pin, female, shielded
1000000010	M12 connector, 50-pin, male, shielded	1000000010	M12 connector, 50-pin, female, shielded

can normally be ordered from stock. Special cable lengths can be supplied

to order. Use of the protective caps also shown in the overview is recommended for connectors that are not used.

All M12 connectors fulfil IP67 requirements.

If required, customers can make their own flexible or robot cables using 5- and 8-pole, male and female connectors, and customer-specified cable lengths

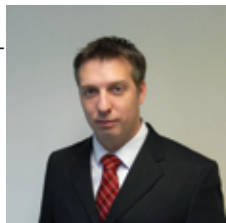
supplied by JVL.

## JVL opens office in Germany

JVL has now established its own sales office in Germany: **JVL Germany.**



The office will handle all enquiries and orders for JVL products throughout Germany. Order administration and processing will be handled at JVL



headquarters in Denmark. Mr. Oliver Bischoff has been appointed Sales Director of JVL Germany and will coordinate all our activities on the German market. All enquiries will be handled directly by Oliver Bischoff. Mr. Bischoff is an electrical engineer and has extensive experience of motion control in industry. He comes from a position at Berger Lahr where he was involved in sales support and as a project manager. We are confident that Oliver will foster JVL's reputation in Germany and establish JVL as

the leader in integrated motors on the largest automation market in Europe. We welcome Oliver to the JVL team and look forward to successful co-operation.

### Address:

JVL Germany  
Heerstrasse 20/1  
D-77933 Lahr  
Tel.: +49 7821 920 52 60  
Fax: +49 7821 920 52 61  
E-mail: [oliver.bischoff@jvl.dk](mailto:oliver.bischoff@jvl.dk)  
Internet: [www.jvl.dk](http://www.jvl.dk)

## JVL again at SPS/IPC Drives



From the 28<sup>th</sup> to 30<sup>th</sup> November last year, JVL once again took part in the SPS/IPC Drives exhibition in Nuremberg, Germany. SPS/IPC Drives is a specialised exhibition for all equipment in the field of automation. We received a large number of visitors at the JVL stand, where interest naturally focussed on the integrated MAC motors and the completely new integrated step motor, QuickStep. We were also very happy to be able to inform customers of the opening of our new office in Germany.



**JVL Industri Elektronik A/S**  
Blokken 42  
DK-3460 Birkerød, Denmark  
Tel: +45 4582 4440  
Fax: +45 4582 5550  
E-mail: [jvl@jvl.dk](mailto:jvl@jvl.dk) [www.jvl.dk](http://www.jvl.dk)

**JVL Germany**  
Tel. +49 7821 920 52 60  
Fax : +49 7821 920 52 61  
E-mail: [ob@jvl.dk](mailto:ob@jvl.dk) [www.jvl drives.de](http://www.jvl drives.de)

**JVL UK**  
Tel.+44 1354 695558  
Fax. +44 1354 694918  
E-mail: [arp@jvluk.com](mailto:arp@jvluk.com) [www.jvluk.com](http://www.jvluk.com)