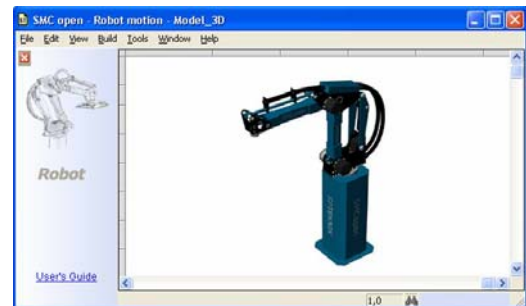
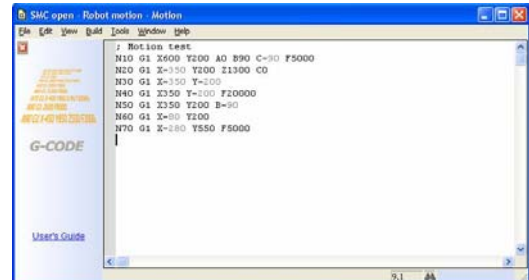
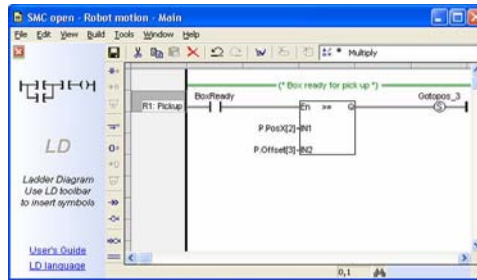




SoftNC software used with JVL MAC motors



SoftNC

The software SoftNC is the most advanced and flexible IEC-61131-3 based soft PLC on the market today. Install it on a standard PC or industrial PC with Windows XP and you can use all programming languages under IEC-61131-3.

Using serial RS232/RS485 communication up to 254 of JVL's integrated MAC motors with built in controller, driver, encoder etc are controlled. Step motors can also be controlled via the PA0122 modules and a separate drivers. For this JVL can also offer several solutions.

The combination of the SoftNC software and the JVL range of integrated servo motors and step motor equipment is ideal for controlling several axes,

such as in X-Y or X-Y-Z pick and place robots, and in robots utilizing G-codes known from the CNC world.

SoftNC on a Pentium4 (or Centrino) with Windows XP offers a PLC scan time of just 1 ms virtually independently of the number of I/Os or axes. This advanced 64-bit soft motion controller in combination with a standard MOXA RS485 PCI card controls up to 32 of JVL's MAC motors in up to 8 coordinate systems. The coordinate systems can be related, nested or synchronized with external encoders. Communication between SoftNC and the MAC motors runs in real time with deterministic cycle time (substituting Windows XP's real-time-kernel). Thereby even very complex applications like arm robots and

other multi-axis machines are controlled perfectly and the solution is additionally highly robust regarding electrical noise.

Digital I/O's are connected easily e.g. using the Fast I/O modules, type PA0120. Since the SoftNC runtime includes a Modbus I/O driver the vast number of digital and analog I/O modules available on the market are also connected effortlessly. The system manages concurrently several Modbus-TCP connections on Ethernet and Modbus-RTU on RS232 ports.

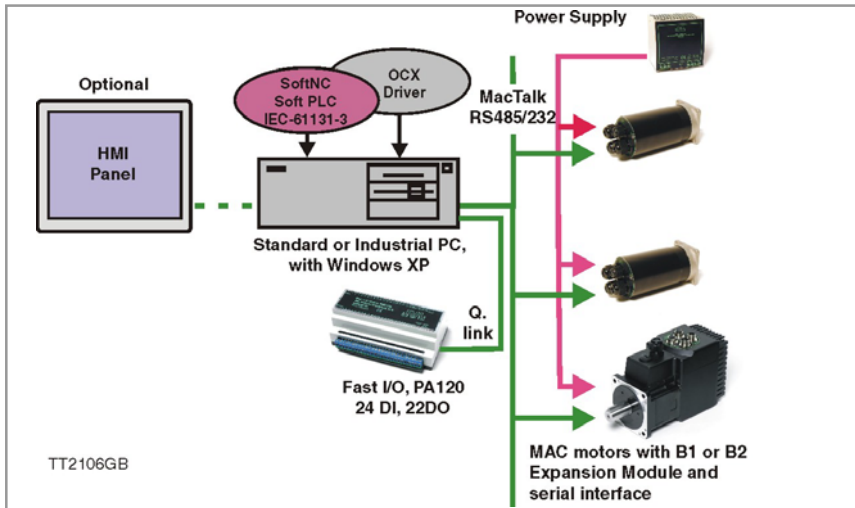
For input of external encoder signals we recommend standard PCI cards plugged into the PC or IPC.

For operator guidance connect a PC monitor or an HMI panel.



SoftNC/MAC motor solutions

Solution 1: Multiaxis control with MacTalk through JVL OCX driver integrated in SoftNC



Application:

Positioning of axes etc.

Advantages:

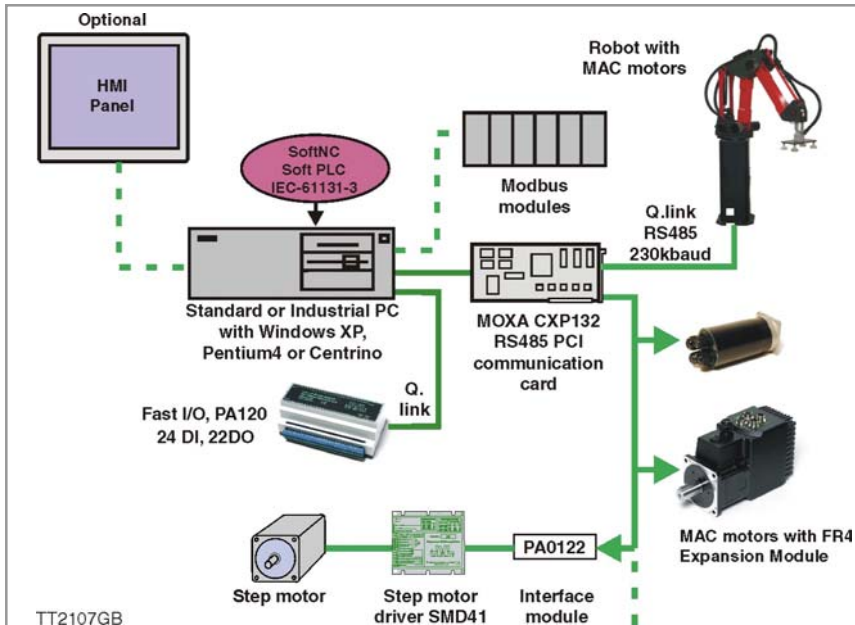
The solution gives full access to all functions and registers in the MAC motor with expansion module B1 or B2.

Can be used with all standard serial ports.

Disadvantages:

Slow communication. If more than one call per PLC scan is performed, the scan time increases.

Solution 2: Multiaxis control with Q.link



Application:

Point to point control of for instance pick and place robots and/or coordinated control of e.g. robots using G-codes

Advantages:

Gives fast and stable scan time. Even very complex applications can be controlled. The motor communication

takes place in real time. The motor position is stored in the FR2 or FR4 Expansion Module. Can also be used with step motors.

Disadvantages:

Can be used only with the FR2 or FR4 Expansion Module and the MAC motor in gear mode. Can be used only with MOXA standard serial card.

Fast I/O module PA0120



The Fast I/O module PA0120 connected to the PC via Q.link makes further 24 digital inputs and 22 digital outputs available for various purposes. (38.400 baud or higher)

Motor ordering information

MAC050-A1 to MAC141A1:

MAC motor up to 140W

MAC400-D1 or MAC800-D1:

MAC motor up to 750W

MAC00-B1:

Serial interface, 19200 bit/s. D-Sub con.

MAC00-B2:

Serial interface, 19200 bit/s. Glands

MAC00-FR2:

High speed serial RS485 with glands

MAC00-FR4:

High speed serial RS485 with M12 con.

PA0120:

Fast I/O RS485 with 24I/22O

PA0122:

High speed serial RS485 DIN box for pulse direction control



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