

NEWSLETTER

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Edutech 99

On stand B10, you will see the latest kits from fischertechnik including; the Mobile Robots Kit, the Industry Robots Kit and the IR Control Set. On demonstration will be a robot arm controlled by computer that dispenses brochures (such as this one) on request.

If you have time, request a demo of the voice activated robot - an educational demonstration that illustrates the use of robots (such as in medicine) at a fraction of the cost of a 'real-world' robot.

Also on show will be the various programming languages - as full source code is provided for each fischertechnik project; schools, TAFE colleges and universities can incorporate the use of robotics into programming courses in; PC-Logo, VisualBASIC, Delphi or VisualC++ (plus the a range of DOS based languages). Or, if interested in machine control languages, relay-ladder logic programming is available as well as sequential flowchart control!

On the Net

Procon Technology's website has operated for over one year and we continue to get hundred's of visits each week. It's a great way to check out the latest information, software and specials. Our web address is:

www.procontech.com.au

Many overseas sales have been made through the internet to countries such as; Canada, England, Italy and Brazil. You may wonder why they source from us - with the extra cost of shipping from Australia! It's because we offer software for most major



languages and also offer kits that are unavailable elsewhere. And, of course, we are very competitive on price!

Industry Robots

Finally arrived in Australia is the Industry Robots Kit (30408). Designed as an add-on to any of the computer kits, this kit provides the parts and software to build and operate four robot arms; a swivel robot, welding robot, column type robot and kink-arm robot (see above).

Our evaluation shows that these robots are more robust and more flexible (with an extra degree of movement) than previous robot arms. Contained in this kit is four motors, eight switches and over 500 parts.

On a CD-ROM, in the kit, is example programs in LLWIN (this is a flow-chart style programming language that is available separately) and programs for three out of the four projects that allow you to train each robot to perform a sequence of steps. A unique feature of this software is that it operates just like a real robot would in industry - as a robot nears a new position the motor

speed reduces and it slowly moves into the final position!

Of course, we have also produced our own documentation and software for Windows. It's available separately or as a package with interface and power supply. Our software provides source code in VisualBASIC for Windows version 3 and greater.

Due for release later this year is a pneumatically controlled robot arm. For further details check out:

www.fischertechnik.de

Robots 'R' Us

A review of the Mobile Robots Kit (30400) appeared in the April issue of the Australian PC-Buyer magazine. Here's what Aldis Ozols had to say:

'The fischertechnik products are clearly inspired by industrial designs, and this is reflected in the "look and feel" of the Mobile Robots kit. There's a distinct ambience of "realness" to these projects, making it seem as if you'd find the same design, only larger, in a factory or laboratory somewhere.

The assembly instructions are presented in a clear, technical-drawing style, which makes it pretty easy to work out which of the 280 pieces you need next. Of course, you can design and build your own machines if you're feeling creative.

The software is a bit less straightforward. It works and makes sense, but it's not very intuitive and imposes a considerable learning curve. Unlike the LEGO equivalent, the fischertechnik control unit comes with detailed technical notes and can be programmed using industry-

standard languages like Delphi and VisualC++. This makes it harder to operate than LEGO, but exposes the user to more techniques used in real-world computers and robots.'

Interfaces

Two fischertechnik computer interface units are available. Each provides eight digital inputs, two analog inputs and four forward and reverse motor outputs. The two analog inputs on the interface may be used with potentiometers (for position control), light dependent resistors (for measuring light), thermistors (for measuring temperature) or other resistive devices.

One interface unit (30520) connects to any IBM-PC printer port and the other 'intelligent' interface (p/n 30402 shown above), containing its own micro-computer, connects to any serial port and allows programs to be 'downloaded' to it for independent operation from the computer.

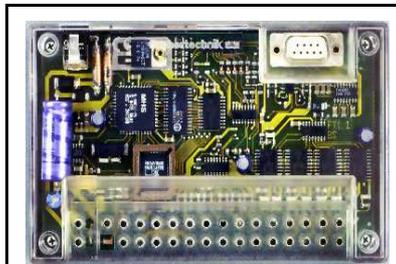
Please note, both interface units, including the new IR remote control unit, can be used to control other 9 Volt systems.

Some schools have also purchased fischertechnik kits without interface units for use with their own controller - which may be a micro-computer system or programmable logic controller.

Procon Technology also manufactures, in Australia, its own 'real world' interface board capable of expanding to 128 inputs and 120 outputs and programmable in most DOS and Windows languages. Many of these boards have been used in home automation and factory control systems.

In Education

In Germany, fischertechnik is used by students in grades 8 to 13 for motivational goal setting. Their task is to build mobile robots that solve problems with various degrees of difficulty. The goal is to promote



The new 'intelligent' interface unit - 30402

the mechanical construction of a vehicle with all its associated motors, drives, sensors and control unit. Some of their models have been remotely controlled by PC and over the Internet!

In the USA, fischertechnik materials are used to develop award winning educational programs that enhance a students understanding of engineering, mathematics and science. Here's what Steve Cramer, the U.S. presidential award winner for science teaching, says about fischertechnik; 'As an instructional component for education in schools, there exists no rival, its flexibility and resistance to accidental disassembly due to its solid construction make it ideal for both basic and advanced modeling activities.'

Also in the USA, the last four consecutive year's winning teams in the High School Section of the Control Technology Division, TSA conference robot competition have used fischertechnik kits and controlling software!

In Australia, fischertechnik has been used by schools, TAFE colleges and universities for problem solving, project work and in computing, engineering and science.

Profi Extension

The PROFIL computing kit (30490) continues to be the most popular kit used by schools and universities. It is the most comprehensive kit available from fischertechnik. The kit provides

888 parts with an 164 page manual describing the construction of 12 computer-controlled models. These models include; cash dispenser, plotter, CD player, parcel-turning machine, sorting system, reflex tester, mobile turtle with fork lift and robot arm with a motor-driven gripper.

To make the Profi Computing Kit even more popular, Procon Technology has recently released the Profi Extension Pack (30490-1). This pack provides the assembly instructions, software and additional parts to perform four extra projects with the turtle (a roving robot) as well as construct a transfer robot and a welding robot.

The four turtle projects allow you to: 1. add a pen holder to the turtle to draw interesting patterns. 2. to add a light sensor for finding the brightest light source in the room. 3. to add a bumper switch for detecting obstacles. 4. to add a read head for following lines drawn on the floor.

This low-cost kit also provides a convenient way to upgrade software to 32 bits. i.e. to use VisualBASIC for Windows version 4 and above. The complete source code for all additional projects is provided on the diskette.

SPECIAL DEAL!

Until the 30th June 1999 any school that organizes a demonstration of fischertechnik or purchases any kit (goods may be purchased 'on approval') will receive the Off Road kit (value \$30) free-of-charge even if the goods are returned. And with any Mobile Robots kit purchased, free batteries and charger will be provided - that's another \$30 value!

Please mention this deal when booking your demonstration or placing your order.