

# NEWSLETTER

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## On the Net!

Procon Technology's website has only operated for a few months and already we receive hundreds of visits from around the world each month. We have also been nominated 'Robot site of the Week' by Arrick Robotics ([www.robotics.com](http://www.robotics.com)). At our site you will find our past newsletters and press releases plus pricelists and free software to download. A recent addition to our site is the SPECIALS page where extra savings can be made on old or surplus fischertechnik stock. Our website address is:

[www.procontechology.com.au](http://www.procontechology.com.au)

If you forget our address just search for 'fischertechnik procon' with any of the major search engines on the net. Of interest is that fischertechnik Germany has finally made it onto the net with up-to-date information and pictures on the latest kits - such as the Industry Robots Kit and the Infrared Controller.

Those of you who haven't tried the net yet - DO IT! Not only will you find vast amounts of information and pictures on fischertechnik, robotics, computers etc. You could control a robot over the net, listen to live radio, purchase books and CDs (and listen to tracks off them), download free soft-



ware, printout sheet music (and have free music lessons) and communicate with people around the world for next to nothing! You might be concerned that much of the information about fischertechnik is in the German language - have no fear - there is even an on-line translation service!

If you don't have access to the internet just yet, why not send us ten 45c stamps for a copy of our entire site on floppy disk - you can then view it on any computer with a web browser (browser software is available on CD-ROM with PC-User or APC magazines).

## Software Upgrade

The Experimental Kit Software (95381WIN) has been updated to include Windows programs that teach the turtle or robot arm to move in up to 999 steps. Also provided are programs for the turtle to find the brightest source of light in the room, negotiate an obstacle or follow a path drawn on the floor. A few 95381-1 kits are still available at

an extra special price. See our website for more details.

All of the Profi Kit software (30521DOS, 30521WIN, 30521WIN32) has had the plotter programs upgraded to make it easier to use and to make it more robust in operation. A program that allows the plotter to be 'taught' a sequence of operations has also been added to the Windows versions - the sample file provided actually plots the word -

fischertechnik!

The 30521WIN32 software now has more Delphi 3 example programs than before. Projects for the parcel-turning machine, plotter, robot arm and turtle have been added. Also recently added is Visual C++ examples for the turtle and the plotter.

Software upgrades may be purchased for half the normal retail price.

## Industrial range

Procon Technology is now offering a fischertechnik construction service for those wishing to make industrial models for training, research and prototyping purposes.

Standard models are available, including; small and large conveyor modules, rotating conveyors, lifting conveyors, milling and drilling machines, elevators, robot arms, warehouse storage systems, process or workstation lines and sorting systems. These various models can be supplied in modular form to allow the construction of much larger systems.

Wiring is provided with IDC or D type connectors for easy assembly. Customized models can also be supplied.

Small systems may be controlled directly from an IBM-PC through the low-cost fischertechnik interface unit which expands to 16 inputs and 16 outputs (eight bi-directional motor outputs). Larger systems may be controlled by a modular I/O board system manufactured by Procon Technology (the PC-IO-XX system) which expands to 128 inputs and 120 outputs. Analogue inputs are also available. Drive software for the fischertechnik or PC-IO-XX system is available in most DOS and Windows programming languages. A relay-ladder-logic program (or soft-PLC) is also available. Fischertechnik also provides a flowchart style language (SFC) for DOS and Windows.

The industrial model may also be controlled from any 24VDC PLC system (e.g. Allen Bradley, Siemens or Omron etc.) making it ideal for company or school PLC/SCADA training courses.

## Active Interface

The new active interface (30402) may be controlled through the serial port (COM1 or COM2) on the PC. Any language capable of serial port i/o may control the interface unit directly. The parameters for the serial port are: 9600 Baud, 8 bits, no parity and 1 stop bit. The computer sends a two byte command to the interface, the first byte tells the interface what data is requested the second byte sets the motor output state. The interface returns one or three bytes in return - see tables following:

### 1. BYTE B1 (first byte sent)

193 - get E1 .. E8 inputs  
197 - get E1 .. E8 and EX  
201 - get E1 .. E8 and EY

### 2. BYTE B2 (second byte sent)

Bit 0 - Motor 1 ccw  
Bit 1 - Motor 1 cw  
Bit 2 - Motor 2 ccw  
Bit 3 - Motor 2 cw  
Bit 4 - Motor 3 ccw  
Bit 5 - Motor 3 cw  
Bit 6 - Motor 4 ccw  
Bit 7 - Motor 4 cw

### 3. BYTE B3 (first byte returned)

Bit 0 - E1 state  
Bit 1 - E2 state  
....  
Bit 7 - E8 state

### 4. BYTE B4/5 (2nd & 3rd bytes)

analogue value EX or EY  
B4 - high byte  
B5 - low byte

Note: The 2nd and 3rd bytes are only returned when the 197 or 201 commands are used.

This information was obtained over the internet from Somatec in Germany - website address:

<http://www.somatec.com>

The following QBASIC program shows how to communicate with the 30402 interface unit:

```
OPEN "com2:9600,n,8,1,bin,cs,ds0" AS 1
B1 = 193 'Command byte
B2 = 1 'Motor control byte
PRINT #1, CHR$(B1);CHR$(B2);
B3 = ASC(INPUT$(1, #1)) 'Get E1 .. E8
```

Small example programs in various languages will be available for downloading from our website shortly. More comprehensive software packages for the Mobile Robots Kit (30400) and the Profi Computing Kit (30330) will also be available for purchase soon.

Final note: A special plug adapter is now available to allow the Profi Computing kit connector to plug onto the active interface unit!

## Hints & Tips

Tip 1. Most fischertechnik enthusiasts would have discovered that the best 9V battery to use with the motorized kits is an alkaline battery. However, these are ex-

pensive and non-rechargeable. The rechargeable NiCd battery is readily available but doesn't work as well. Finally an alternative is available; the Nickel Metal Hydride battery! This type of battery provides good operation over a longer period and it doesn't suffer from the dreaded 'memory' effect. You may have trouble buying this battery consequently Procon Technology is now stocking it. Part no. 3058OPT.

Tip 2. Problems have been experienced with the photo-transistor (E5) on the plotter in the Profi Computing Kit. The lamp is not bright enough to activate the device. The best solution is to connect the lamp directly to the power supply rather than to M4. The OPPOSITE problem occurs when the plotter is controlled from the 30402 interface - the best solution here is to reduce the supply voltage from 9V to 7.5V! Don't forget to test the E5 input by running the diagnostic program with M1 and M2 active (with the gearboxes disengaged).

Tip 3. In the last fan-club magazine, Paul van Damme from Belgium shows how to control a pneumatic cylinder (see the Profi Pneumatic kit) from the computer interface unit. Using a motor and gearbox plus a handful of components the pneumatic valve can be controlled. Further details are available from our website.

## More?

Why not write to me, Peter King, and tell me what you'd like to see in this newsletter. If you'd like a full colour catalogue and past issues of the newsletter send 4 x 45c stamps to cover costs to:

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