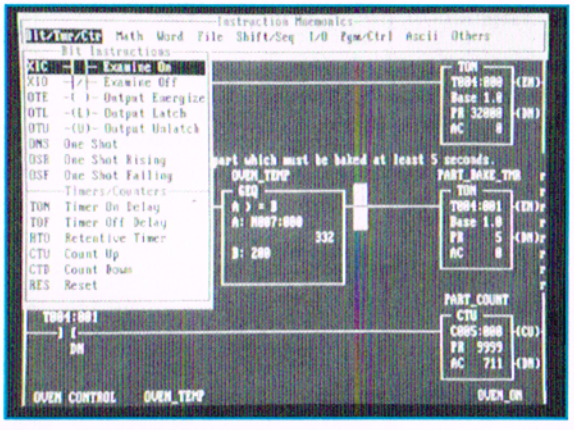
SoftPLC CORPORATION

PRODUCT DATA SHEET

TOPDOC®

Advanced PLC program development and documentation software



STANDARD FEATURES:

- ☐ Powerful multi-file offline ladder diagram and data table editors
- ☐ Online operations both direct connect and over Data Highway Plus
- ☐ Program upload/download
- ☐ PLC address and program documentation offline & online
- ☐ Cross referencing
- ☐ Comprehensive set of reports
- ☐ Support for SoftPLC, 1774 PLC, PLC-2, PLC-3 and PLC-5 with a common, easy to use interface
- ☐ Intelligent Difference Detector, program comparison utility
- ☐ PID auto-tuning feature with template display
- ☐ DOS and OS/2 versions available
- ☐ Program file and documentation import/conversion from Allen-Bradley 6200 software formats
- ☐ Integrated PLC emulation and simulation with companion product, **SoftWIRES**

GENERAL DESCRIPTION

The TOPDOC family of products provides a complete set of tools for PLC program development, documentation and maintenance, as well as PLC system monitoring and troubleshooting.

TOPDOC makes PLC programming and continued maintenance faster and easier. TOPDOC's user interface design minimizes keystrokes, provides an optional pull-down menu system and complete context sensitive help for beginning or infrequent users.

TOPDOC is designed to maximize productivity with special features such as the Multi-File Editor, Data Watch Windows, symbolic programming, and an ASCII format Ladder Compiler/ Decompiler.

USER EXPERIENCE

"TOPDOC works so well that we've had it 2 years and haven't called technical support until today. I'm surprised that you still supported us".

"We've been spoiled by all the program development and maintenance capabilities you've provided us in TOPDOC."

"After looking at all of the PLC programming products on the market, only TOPDOC and SoftWIRES do everything we need them to do."

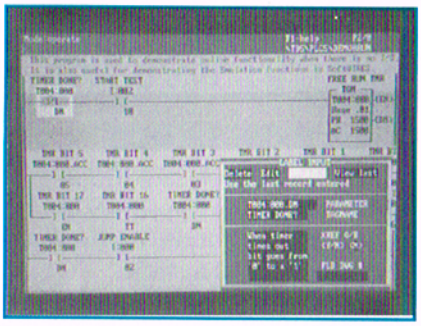
"I really like your offline. It's easier and faster to create ladder than with any other package."

"The integration of the editors, speed of the pop-up windows, and the online help functions make TOPDOC a very efficient, effective, and friendly product."

A COMPLETE SET OF EDITING TOOLS TO SIMPLIFY AND ACCELERATE PROGRAMMING

TOPDOC provides fully integrated ladder, data table, and documentation editing. The same commands are used offline and online and within ladder, data table, and documentation editors -- key definitions do not change (eg: F1 is always help, INS is always used to insert information). You can either use "hotkey" keystroke commands or pull-down menus.

You can easily change the amount of information displayed on the screen by turning on/off rung comments, address descriptions or tag names.



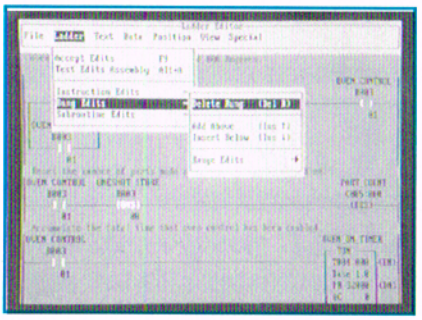
Powerful Ladder Diagram Editor

TOPDOC provides online and offline editing with an extensive range of features, as well as special functions unique to either mode.

With TOPDOC, programs can be created offline, then downloaded to a PLC using a wide variety of communications paths to the shop floor. TOPDOC also lets you work directly online to create, monitor, and modify programs.

Data/Instruction Entry Made Easy

TOPDOC provides easy-to-read and easy-to-manipulate edit displays. Menu-driven editing with extensive command sets and keystroke shortcuts simplify work. The context-sensitive help system provides easy access to available commands at all times.



- ☐ Edit with keystroke commands or menu system
- ☐ Program with addresses or tag-names (symbolic programming)
- ☐ Center screen editing lets you see prior and following rungs
- ☐ Addresses or values within an instruction can be changed without having to delete or re-enter the information
- ☐ "Scroll Recall" feature retrieves the last 14 entries for editing and reuse - saves many keystrokes!
- ☐ Large rungs can be scrolled and you can use compressed mode displays (132 columns x 43 lines) for EGA/VGA systems

Searching and Positioning

TOPDOC provides many ways to move through a program:

- ☐ Search for address, instruction, tagname/symbol, or instruction/address combination by direct reference or with wildcard specifications
- ☐ Position by rung number, program section or program file
- ☐ Scroll one rung or multiple rungs at a time

On-Screen Cross-reference

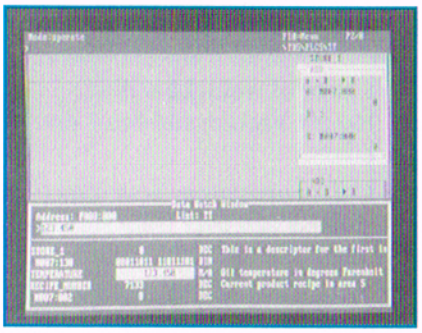
TOPDOC's on-screen cross reference display lets you easily see the location of every bit, word and file level instruction that will affect a given data element. You can quickly zoom from the cross reference display to any of the rungs listed with a single keystroke!

Non-Sequential Rung and/or Data Table Display

TOPDOC lets you display selected ladder logic rungs in any order. You can even display non-sequential groupings from different program files! Desired rungs can be marked in the ladder display, or you can enter them by rung number into a special display.

Data table "watch windows" can be displayed with the ladder or in the data table editor. These are groups of non-sequential bits and/or words that you can monitor and edit.

In both cases above, you can name groups and save them to disk for later re-use in diagnostics and troubleshooting.



Simple Test Edits

TOPDOC makes test edits for the PLC-5 and PLC-3 simple both online and offline. Online you can easily toggle testing of edits on/off and power bars of active rungs are a different color than inactive rungs.

- ☐ Assemble or remove edits rung-by-rung, within a selected range of rungs, or all at once
- ☐ Upload or download programs with unresolved edits
- ☐ Search for edits

ONLINE & UPLOAD/ DOWNLOAD FEATURES

Full-Function Monitoring, Editing and Documentation

- ☐ TOPDOC is speedy in terms of screen update, system start up, contact histogram, upload/ download, searching, etc.
- ☐ Complete online programming, including block move and delete, is available connected directly to the PLC or over the Data Highway Plus through a wide range of interface modules. Data Highway monitoring, data change, and upload/download are also supported.
- ☐ Data values, such as timer/ counter presets, can be easily changed, and bits can be set ON or OFF from the ladder or data table.
- ☐ A "Who Is It" function allows verification of communications and correct PLC selection before upload/download or online operations, while a "Who" function gives you an overview of all the stations on a Data Highway.
- ☐ TOPDOC includes online diagnostics to help determine where the PLC faulted, the status of the Data Highway Plus network, and more. Error messages include suggestions for problem resolution.

I/O Forcing

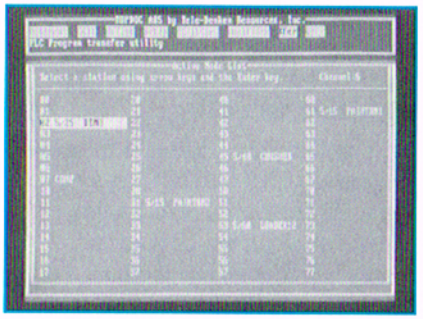
TOPDOC provides full forcing capability. You can force:

- ☐ Directly from the ladder display when positioned on a bit instruction
- ☐ Through a special force table display
- ☐ From the data table editor

The force table display shows the current status of all forces and address description information to make it easier to find the right bit. You can also remove groups of forces and enable/disable forces from the table.

Contact Histogram

TOPDOC's contact histogram allows monitoring of up to 16 bits at a time (or in the PLC-3, 2 consecutive words) - accurately. Data can also be simultaneously sent to disk or a printer. A mask allows you to only record data when specific bits within the word(s) change state, allowing you to "mask out" timer/counter control bits in a PLC-2, for example.



OFFLINE EDITING FEATURES

TOPDOC really shines when used for offline development. PLC program development is undeniably fastest & easiest with TOPDOC.

Here are a few reasons why:

Multi-file editing

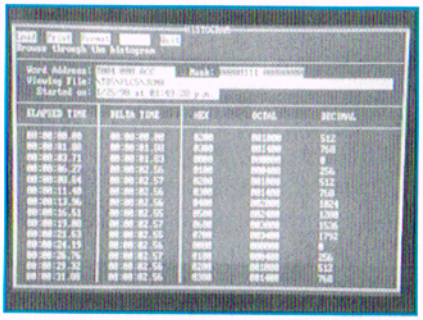
You can simultaneously access up to 16 ladder logic files in memory. These files can be from a library of control sequences you have developed, or complete programs. From these files, you can quickly cut and paste, then do address search & replace, to create new programs. You can:

- ☐ Switch between programs with a single keystroke
- ☐ Move/copy ranges of rungs (or whole programs) between files, with or without documentation
- ☐ Perform an address search & replace (with wildcard address specification) on all or a range of rungs
- ☐ Copy ranges of values from one program's data table to another

Other Offline Features

TOPDOC's program validity checker reviews each PLC program for accuracy, including validity of instructions for a particular PLC model, validity of addresses for the given data table size, jumps to undefined labels, unfinished rungs, open branches and more.

A data table sizing facility can help you find and correct errors in programming. It can also automatically ensure that your data table size matches the program.



DATA TABLE EDITOR

TOPDOC's comprehensive Data Table Editor lets you view and edit the data table in a variety of formats, including a PID template display. Using the same keystrokes as the ladder editor, you can quickly move from one section or file of the data table to another or search for particular addresses.

Offline, the Data Table Editor lets you perform multi-file editing on data tables, including copying ranges of values within a single program's data table or from one program's data table to another. You can also fill a range of words with a single value.

THOROUGH DOCUMENTATION

TOPDOC gives you the capability to create extensive program documentation. The documentation editors are full featured, fully integrated editors for handling rung comments and address labels. They include automatic numbering, copy, and more to make entry fast and easy.

Conversion utilities let you import documentation from other suppliers' files. Other utilities let you use off-the-shelf text editors, word processors, or database programs to create/edit your documentation files, then import them into TOPDOC.

Massive Rung Comments

TOPDOC supports rung comments up to 32,000 characters long (6 to 10 pages). Comments can be edited using TOPDOC's integrated Rung Comment Editor which supports copying comments from one rung to another, or a comment handling utility that lets you export and import comments as text files so you can use any text editor or word processor to edit or manipulate comments.

Reusable Address Labels

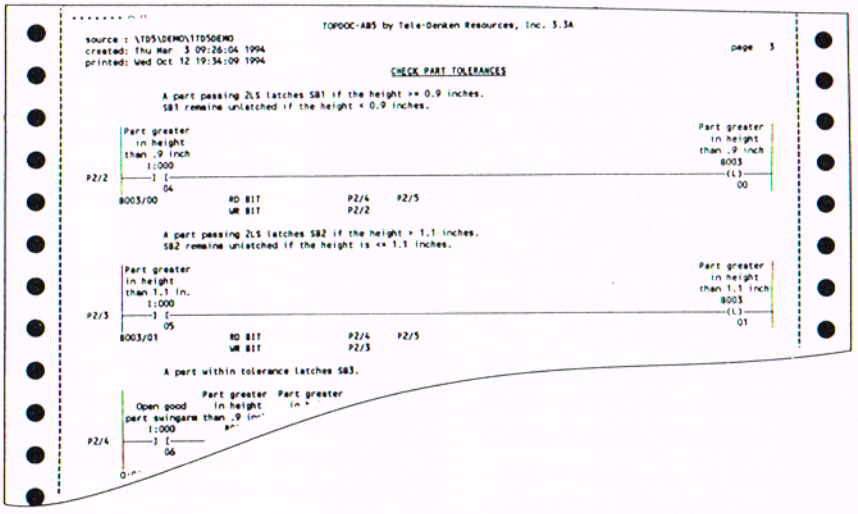
TOPDOC gives you five 13-character lines per PLC address, as well as a 13-character tagname (symbol name). A Drawing Reference Number field is also provided.

Address Labels are stored in dBASEIV compatible files. You can use other software (eg: database, spreadsheet) to create custom reports, or combine databases into one master plant-wide database.

TOPDOC includes a database utility program to import or export address labels, or merge multiple databases, for editing.

The Database Editor is fully integrated with TOPDOC and can be used in either a stand-alone data entry fashion, or you can enter labels from the ladder diagram one instruction at a time.

Individual labels can be entered for each address, or TOPDOC will automatically use the label for the next "larger" address, such as the timer label for timer control bits.



Comprehensive Cross Referencing

TOPDOC's fast generating cross-reference is extremely comprehensive. You not only know what rungs an address is used on, but how the address is used on each rung. We even "cross reference the cross reference". This means, for example, that because a word is used, the bits in that word are used, although indirectly. In multi-address instructions, all addresses are cross-referenced.

On the Ladder Diagram Report, all output address references are listed below the rung. Input addresses show the last rung number where the address was used as an output. On the Address Report all references for all addresses are printed.

Extensive Reporting Capability

TOPDOC provides a wide range of reports. Among them are:

- ☐ Ladder Diagram Report (in user-selectable formats, with or without documentation)
- ☐ Address Usage Report (shows which addresses are used and how, which are documented, and which are available)
- ☐ Address Detail Report (detailed cross-reference)
- ☐ Data Table Report (data table values and configuration)
- ☐ Database Report (address descriptor listing)
- ☐ Other user-selectable reports

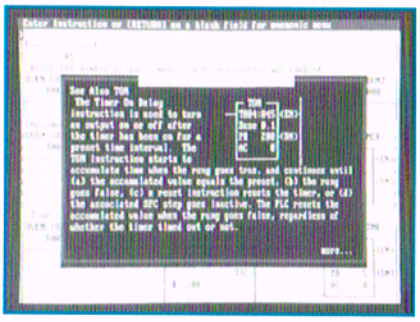
With TOPDOC, you can print ranges of rungs or addresses and select what kinds of information will be included. TOPDOC supports a variety of printers (including laser and dot matrix). It also supports output to disk file and communications through a COM port to mainframe computers.

You can also print a "batch" of reports for unattended output.

INTUITIVE,MENU-DRIVEN INTERFACE MAKES TOPDOC EASY TO LEARN AND USE

When you learn TOPDOC for one PLC model, you've virtually learned it for every PLC model. Uniform look, commands, and keystrokes are used for all TOPDOC products. Features include:

- ☐ Pop-up windows, easy to use menus
- ☐ Command "hotkeys" are easy to remember and use (eg: F1 for help, INS-B to insert a branch)
- ☐ Menu structure, commands, key sequences and short-cuts designed to minimize keystrokes
- ☐ Commands for similiar functions consistent throughout products
- ☐ Command structure and help features address different needs of novice and expert users
- ☐ Individual user configuration files remember settings for your reports, edit formats, communications, and colors
- ☐ TOPDOC sets defaults to your previous entries - many times all you need is to press [Enter]



Extensive Help is Easily Accessed

- ☐ Context-sensitive help provides step-by-step guidance
- ☐ Help messages include information about hardware switch settings, cabling, etc. which can minimize need for equipment manuals
- ☐ Help Browse feature provides information on all topics from any location within TOPDOC

TOPDOC UTILITIES

TOPDOC includes a number of utilities to simplify editing, enhance communications and import or export information.

Difference Detector

TOPDOC's Difference Detector set the industry standard. It intelligently compares two versions of a PLC program, such as an uploaded version from a PLC and the master backup version. It lets you quickly locate rung insertions and deletions as well as changes within a rung or data table.

When differences are found, the utility resynchronizes to the next set of matching rungs and continues searching for differences from that point forward. The differences can be viewed on the screen or sent to a printer or disk file.

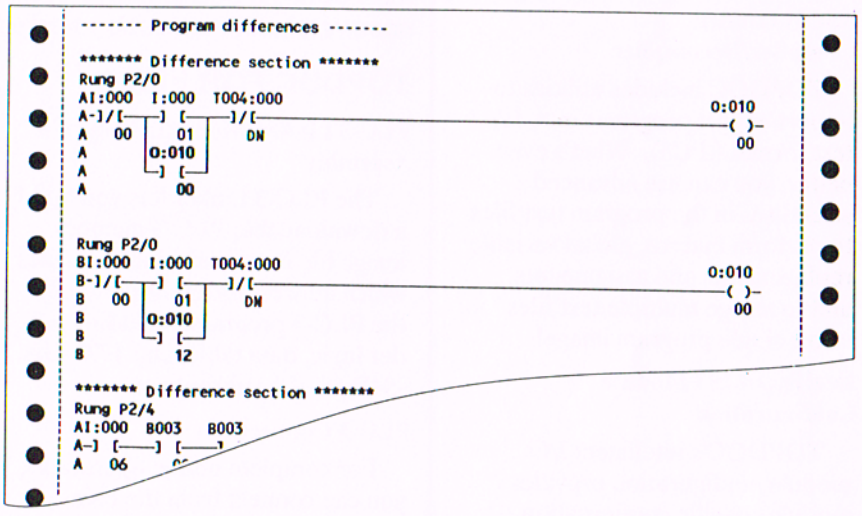
A-B PLC Model Conversions

Only Tele-Denken provides the means to automatically convert:

- 1774 PLC to PLC-2
- PLC-2 to PLC-5 or SoftPLC
- 1774 PLC to PLC-5 or SoftPLC
- 1774 PLC to PLC-3
- PLC-2 to PLC-3

These optional utilities convert an existing program and documentation for use with another PLC model, taking into account the differences in addressing, program structure, & instruction operation of the different A-B PLC models.

TOPDOC's Difference Detector quickly finds differences between two versions of a PLC program.



Conversion Utilities

Tele-Denken provides a number of conversion utilities to allow users of multiple PLC's or PLC documentation packages to save hours of work.

TOPDOC includes menu options to directly import/export programs from A-B 6200 Series software format, tape format (1770-SA/-SB), and Data Hwy format.

Documentation Conversions

Utility programs are available to convert program documentation generated with another software package to TOPDOC format (the 6200 conversion is included, others are optional). Some of these utilities also convert the program itself, or allow bi-directional conversions (package to TOPDOC and TOPDOC to package).

Switching to TOPDOC is easy since you don't need to re-enter your existing documentation!

TOPDOC FOR PLC-5

TOPDOC supports the full range of PLC-5 processors. TOPDOC also supports the EEPROM burning feature of the PLC-5.

"All-in-One"

TOPDOC treats all program files (main program and subroutines) within the PLC-5 memory as a single entity. This means you can scroll and search from one program file to another without having to exit & separately load each program file. You can even display, in non-sequential mode, rungs from multiple program files on the same screen!

PID Auto-Tuning

TOPDOC includes an integrate PID Auto-Tuning facility, which based on process conditions, will recommend parameters. A PID Template display mode is also included.

ASCII Ladder Compiler/Decompiler

TOPDOC includes utilities to import/export programs in A-B's text format (.PC5). What's even better, you can use advanced structures in the program text files to perform macros, global variable replacements and assignments, and to merge multiple text files into a single program image!

Intelligent I/O Module Configuration

TOPDOC's intelligent I/O module configuration provides module specific configuration screens. You can easily enter/edit/monitor both module and channel data on the same display screen. From your selections, TOPDOC automatically configures the data table.

PLC-5 Connections

TOPDOC supports communications via a range of hardware modules, or through the RS-232 port on PLC-5 processors so equipped.

TOPDOC FOR SoftPLC

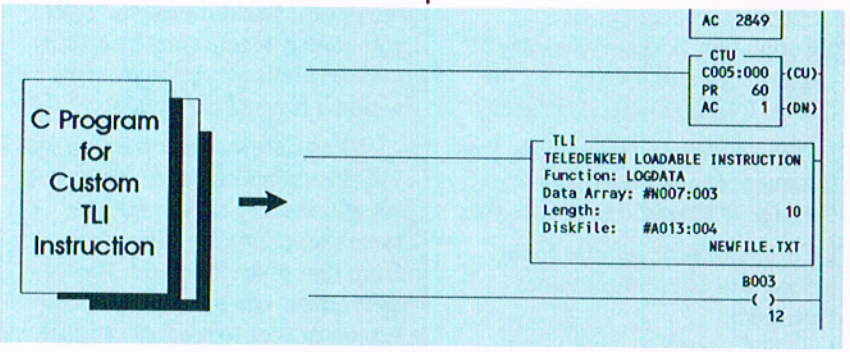
TOPDOC for Tele-Denken's SoftPLC includes the features of TOPDOC PLC-5 and more:

- ☐ Automatic display/edit capability for custom developed "C" instructions (TLI's)
- ☐ Save/Load feature to allow SoftPLC to manage its own files directly

TOPDOC FOR PLC-2

TOPDOC, in addition to supporting all the PLC-2 family processor features, also gives PLC-2 processors capabilities they weren't designed for! Features like:

- ☐ Online RUN mode programming by rung, not instruction, to minimize considerations of instruction entry order



TOPDOC dynamically learns about any custom instructions (TLI's) from SoftPLC and displays them like other standard instructions, complete with instruction and parameter names.

TOPDOC FOR PLC-3

PLC-3 Linker, Modular Program Assembly

The PLC-3 Linker lets you build a downloadable PLC-3 memory image file from individual disk files which address different parts of the PLC-3 program, including ladder logic, data table, and 1775-GA, -S4B or -KA subroutines.

PLC-3 Connections

For complete online operations, you can connect from the computer serial port (COM) to the PLC-3 front port (scanner module) with a standard RS-232-C cable. You don't need any special Allen-Bradley hardware. Alternatively, you can communicate to the PLC-3 over the Data Highway Plus using the 1775-S5/SR5 Scanner Module and a Data Highway/Computer Interface module.

Upload/download can also be accomplished via the Data Highway (1775-KA) or to the Cartridge Recorder.

- ☐ Intelligent force control so forces can be held even though the computer to PLC-2 connection is broken
- ☐ Data Table organization aids to easily determine which addresses are used for Timers, Counters, Files, etc.
- ☐ 1774 PLC Support and conversion from PLC to PLC-2

PLC-2 Connections

Connecting directly to the PLC-2 processor port requires only a Tele-Denken designed cable that goes from the computer serial port (COM) to the PLC-2 processor port. This means you can use a Laptop or Portable computer, and it means you save money!

You can also communicate to the PLC-2 via Data Highway/Data Highway Plus for program monitoring/data change and program upload/download, or perform upload/download by connecting to a -T3 or a Cartridge/Cassette Recorder.