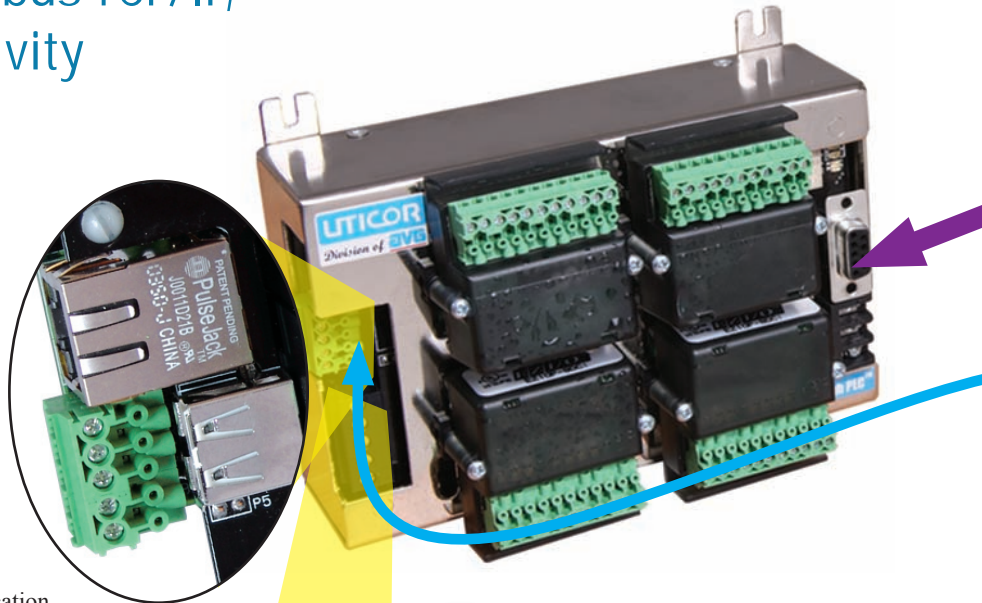


**Tough PLC™**  
Director 1050

# Advanced Communication Capability

## 1 Ethernet TCP/IP, Modbus TCP/IP, Ethernet IP Connectivity

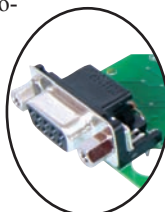
Tough PLC's has advanced communication capabilities through industrial Ethernet protocols such as Modbus TCP/IP, Ethernet IP (Rockwell) and Utopic IP. The 10MHz Ethernet connection allows High-speed communications between multiple Tough PLCs in a network as well as other control devices such as drives, temperature controllers and other PLCs in the plant control network.



## 2 Profibus Slave

Tough PLC can operate as an auxiliary PLC communicating to a Profibus master. This communication interface provides the ability to transfer 244 bytes of data between a Profibus master and Tough PLC. It also has an auto-detect feature for the baud rate.

The Profibus option has an PTO approved 9-pin D-sub female connector. You can plug any Profibus certified 9-pin male D-sub connector, such as ERNI 103658 or 103659, into this option card. Recommended cables are Belden 3079A or Siemens 6XV1 830 0AH10. Maximum network length depends on the frequency at which your Profibus network is operating. The Tough PLC-Profibus option card can operate from 9.6 Kbps to 12Mbps as selected through the Tough PLC programming software.



## 3 DeviceNet Slave

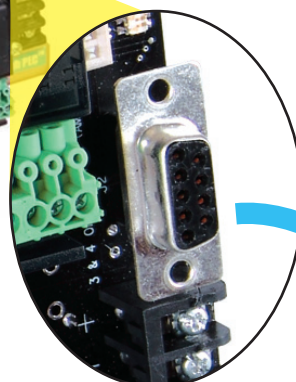
Tough PLC can operate as an auxiliary PLC communicating to DeviceNet master.

This option card allows Tough PLC to become a slave node on a DeviceNet network. 256 bytes of data can be exchanged between the DeviceNet master and Tough PLC in a predefined group to master/slave communication mode.

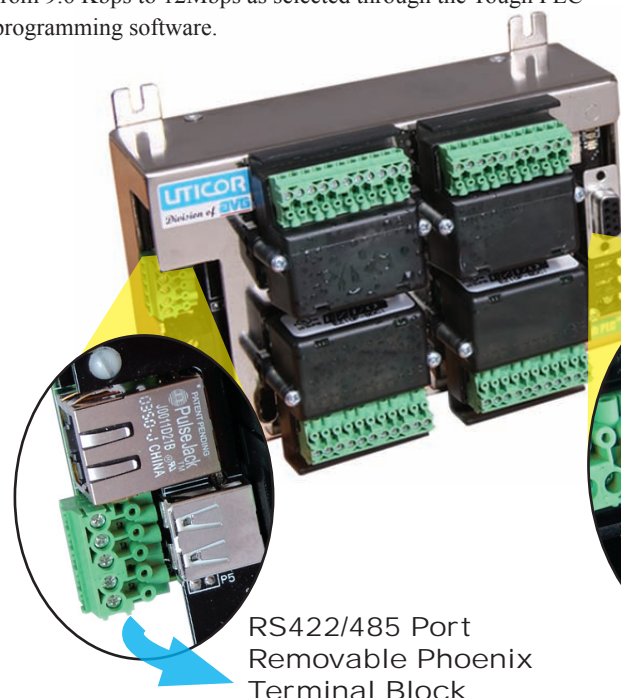


## 4 2 Serial Communication Ports

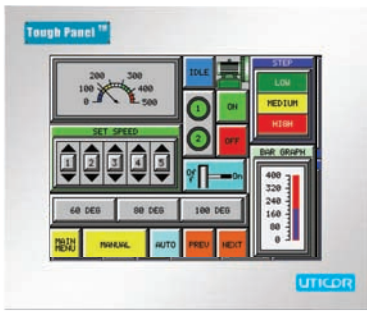
The Tough PLC has two serial communication ports for maximum flexibility. Port 1 is RS232 and can be used for programming of Tough PLC and can also be used for communication to an operator interface. Port 2 has the same communication capabilities of many larger PLCs in a serial port which can be used to network AC drives or any other compatible device with multi-drop capability over RS422/485. Port 2 supports Modbus RTU communication either as a Master or as a Slave under program control



RS232 9 pin sub-D connector



RS422/485 Port Removable Phoenix Terminal Block



## 5 Use Programming Port (Port 1) to Connect to Operator Interface

Use Port 1 on Tough PLC for programming and once you're done use the same Port 1 to connect to your Tough Touchpanel. This leaves your Port 2 free for any other communication needs including connection to an external device or networking. Tough PLC is also programmable through Ethernet.

## 6 Use Port 2 to Connect Directly to ASCII Device(s)

Our Tough PLC has built-in ASCII communication capability which allows you to connect to any compatible ASCII device in a seamless manner:

- Port 2 supports ASCII in or out on RS422/485
- Error detection bits on both ASCII in and out transactions
- Data rates from 1200 to 38.4 K
- Simple programming within ladder logic
- Time/date stamps in three formats
- Connect to barcode readers, weigh scales, or embedded controllers



## 7 Connect to Tough Marquee on Port 2 or Ethernet

Tough PLC's has special software instructions to send stored messages inside the PLCs to display on Uticor's Tough marquee's or any other display device that accepts ASCII or Ethernet TCP/IP communication.

