Industrial Ethernet Option

Modbus/TCP

For Emotron VFX/FDU 2.0 AC drive and Emotron TSA softstarter
Brief description

The Modbus/TCP option board makes it possible to control the Emotron VFX 2.0 and FDU 2.0 variable speed drives and Emotron TSA softstarters via an Industrial Ethernet bus system. All functions can be accessed via the network, making it possible to control, monitor, adjust and configure the drive.

The Industrial Ethernet Modbus/TCP option offers a high-speed communication data exchange, with more information/data flow in shorter time and communication in both directions at the same time (full duplex). The network can be built with redundancy to increase safety if transmission in one direction is not possible. For instance, if a cable is cut, an alternative route is automatically selected.

The Modbus/TCP has a user-friendly built-in web server, which can be accessed through any computer with any commonly used web browser, without any need for additional PC software.

When using the Modbus/TCP Industrial Ethernet option, it is still possible to control the Reference, Start/Stop and Reset commands from different control sources:

- Remote I/O terminals
- Communication network
- Keyboard

The Emotron VFX 2.0, FDU 2.0 and Emotron TSA offer various options as to what actions should be taken when a communication fault is detected:

- Ignore the communication fault
- Give a Warning and maintain operation
- Give a Fault message and stop operation by either coast or ramp down to standstill.

Technical information

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<th>Modbus/TCP</th>
<th>Connector</th>
<th>Isolated RJ45 connector</th>
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<tr>
<td>Transmission speed</td>
<td>10/100 Mbit/s – half/full duplex</td>
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<tr>
<td>Physical interface</td>
<td>10BASE-T / 100BASE-TX (standard for Ethernet)</td>
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| IP Address configuration | • Manually configured  
• Automatically set by DHCP server  
• By PC program ‘IPconfig’ |
| Application protocol | Modbus TCP |
| Carrier protocol | TCP/IP |
| Transfer cable | Recommendation: CAT5e (or better), STP type |

| Features | Web server | Server is factory-configured and automatically adapted in case of firmware updates. The built-in server supports DNS (Domain Name Server) and contains the following pages:  
- Main Menu; showing product information  
- Network Interface; showing system information  
- Network Configuration & Statistics  
- Parameter data; access to the drive parameters for configuration, adjustment and monitoring. |
| Function codes | Read Coil Status (01h)  
Read Holding Registers (03h)  
Read Input Registers (04h)  
Force Single Coil (05h)  
Write Single Register (06h)  
Force Multiple Coils (0Fh)  
Write Multiple Registers (10h)  
Read/Write Multiple Registers (17h) |
| Diagnostics | LEDs | Network status, Module status, and Link activity |
| Control Panel Display | Bus status, Module status, Internal communication link status, incoming and outgoing process data from/to PLC. |