

## Communication Profiles

Communication protocols connect industrial devices (such as smart controllers, operator interfaces, or VFDs), as well as control devices (such as programmable logic controllers or computers) to a network for a data exchange. Communication between devices requires that the devices agree on the format of the data. Protocols are the rules that are followed when transmitting and receiving information. Different device groups have different “languages.” Communicating computer-to-computer is different than communicating PLC-to-PLC, or PLC-to-smart sensor. Each of the communication profiles is designed to operate most efficiently for different devices.

The following protocols are available for all of Magnetek’s IMPULSE®·G+/VG+ Series 4 Drives, and will be available in Q1 of 2016 for the IMPULSE®·G+ Mini.

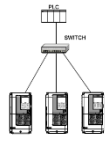
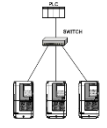
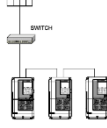
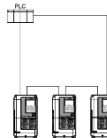
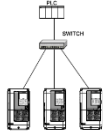
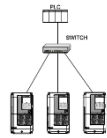
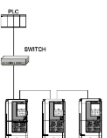
**EtherNet/IP** combines standard Ethernet technologies with the media-independent Common Industrial Protocol (CIP), managed by ODVA, Inc. (Open DeviceNet Vendors Association). This option provides the ability to configure the IP address from a user specified IP address, a DHCP host, or a BootP host. All parameters, diagnostics, and operational commands are accessible via EtherNet/IP. A **Dual-port EtherNet** card is available, which adds the capability of daisy-chain and ring topologies

**Modbus TCP/IP** protocol is essentially the Modbus protocol over a Modbus TCP/IP network. A master controller, typically a PLC, sends commands to slave devices, which then perform the specified functions and send a response to the master. The drive using the option has slave functionality.

**ProfiBUS-DP** (Decentral Periphery) is one of three ProfiBUS variants. DP is dedicated to fast data communication between systems and peripherals at field level. This option connects a Magnetek drive to a field network using the ProfiBUS-DP protocol.

**ProfiNET** enables communication between programmable controllers and distributed field devices in the Ethernet network. The protocol classifies devices into IO controllers, IO supervisors, and IO devices, which have a specific collection of services.

**Communication Profile Comparison**

	<b>EtherNet/IP</b>	<b>Dual-port Ethernet/IP</b>	<b>Modbus TCP/IP</b>	<b>ProfiBUS-DP</b>	<b>ProfiNET</b>
<b>Series 4 Option Card</b>	SI-EN3	SI-EN3D	SI-EM3	SI-P3	SI-EP3
<b>Option Card Location</b>	CN5-A	CN5-A	CN5-A	CN5-A	CN5-A
<b>Typical With</b>	Allen Bradley PLCs, Siemens PLCs	Allen Bradley PLCs, Siemens PLCs	Siemens PLCs	Allen Bradley PLCs, Siemens PLCs	Siemens PLCs
<b>Communication Speeds</b>	10/100 mbps	10/100 mbps	10/100 mbps	9.6 kbps – 12 mbps	10/100 mbps
<b>Master Device</b>	(e.g. PLC) Can operate drive, monitor operation status, change parameter settings				
<b>Control Wiring Replacement</b>	RJ45 (CAT 5) cable	RJ45 (CAT 5) cable	RJ45 (CAT 5) cable	9-pin D-sub communication connector cable	RJ45 (CAT 5) cable - Only use cable recommended for ProfiNET
<b>Topology</b>	Star 	Star, Daisy-Chained, Ring   	Star 	N/A	Star, Daisy-Chained  
<b>Benefits</b>	- Uses the same Ethernet and	- Uses the same Ethernet and	- Openly published	- Configured using parameters	- Diagnostics and alarm mechanism



	TCP/IP standards as email, Internet, and many popular business protocols	TCP/IP standards as email, Internet, and many popular business protocols	and royalty-free - Easy to deploy and maintain	within the drive, allowing for easy configuration and eliminating hardware switches	- Alarm data provided to IO controller
<b>Available Files for Integration</b>	EDS (electronic data sheet)	EDS (electronic data sheet)	N/A	GSD (general station description)	GSDML (general station description markup language)