IMPULSE®•Link 5

Viewer and Professional User Manual

MAGNETEK
MATERIAL HANDLING

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Preface and Safety

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Product Safety Information

Magnetek, Inc. (Magnetek) offers a broad range of radio remote control products, control products and adjustable frequency drives, industrial braking systems, and power delivery products for material handling applications. This manual has been prepared by Magnetek to provide information and recommendations for the installation, use, operation and service of Magnetek’s material handling products and systems (Magnetek Products). Anyone who uses, operates, maintains, services, installs or owns Magnetek products should know, understand and follow the instructions and safety recommendations in this manual for Magnetek products.

The recommendations in this manual do not take precedence over any of the following requirements relating to cranes, hoists, lifting devices or other equipment which use or include Magnetek products:

- Instructions, manuals, and safety warnings of the manufacturers of the equipment where the Magnetek Products are used,
- Plant safety rules and procedures of the employers and the owners of the facilities where the Magnetek Products are being used,
- Regulations issued by the Occupational Health and Safety Administration (OSHA),
- Applicable local, state, provincial, or federal codes, ordinances, standards and requirements, or
- Safety standards and practices for the industries in which Magnetek Products are used.

This manual does not include or address the specific instructions and safety warnings of these manufacturers or any of the other requirements listed above. It is the responsibility of the owners, users and operators of the Magnetek Products to know, understand and follow all these requirements. It is the responsibility of the employer to make its employees aware of all the above listed requirements and to make certain that all operators are properly trained.

No one should use Magnetek Products prior to becoming familiar with and being trained in these requirements and the instructions and safety recommendations for this manual.

Product Warranty Information

For information on Magnetek’s product warranties by product type, please visit the Material Handling site at www.magnetekmh.com.
DANGER, WARNING, CAUTION, and NOTE Statements

Read and understand this manual before installing, operating, or servicing this product.

The following conventions indicate safety messages in this manual. Failure to heed these messages could cause fatal injury or damage products and related equipment and systems.

⚠️ **DANGER**

DANGER indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.

⚠️ **WARNING**

WARNING indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

⚠️ **CAUTION**

CAUTION indicates a potentially hazardous situation that, if not avoided, could result in minor or moderate injury. It may also be used to alert against unsafe practices.

**NOTE:** A NOTE statement is used to notify people of installation, operation, programming, or maintenance information that is important, but not hazard-related.

⚠️ **WARNING**

Failure to observe these and other precautions indicated in this manual will expose the user to high voltages, resulting in serious injury or death. Damage to equipment may also occur.

- Read this user manual in its entirety before installing IMPULSE•Link 5 software.
- DO NOT connect or disconnect wiring or perform signal checks while the electrical power is ON.
- Improper programming of a drive with this software can lead to unexpected, undesirable, or unsafe operation or performance of the drive.

**DISCLAIMERS:** No patent liability is assumed with respect to the use of the information contained herein. Moreover, Magnetek is constantly improving its high-quality product; therefore, the information contained in this manual is subject to change without notice. Every precaution has been taken in the preparation of this document. Nevertheless, Magnetek assumes no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of the information contained in this publication.

**DISPOSAL STATEMENT:**

Disposal requirements for waste and electronic equipment:

**NOTICE:**

Electrical and electronic equipment can contain harmful substances that can affect the environment and human health.

WEEE (Waste of Electrical and Electronic Equipment): The symbol for the separated disposal of electrical and electronic equipment is a crossed-out waste bin on wheels (Directive 2002/96/EC waste and Electrical Equipment).

You must not dispose any electrical and electronic equipment marked with this symbol (battery-operated electrical appliances, measurement equipment, light bulbs, etc.) in the domestic waste but dispose of those separately. Always use the waste return and collection systems locally available and contribute to the reuse, recycling and all other forms of use for waste electrical and electronic equipment.
1. Introduction

1.1. Overview

IMPULSE•Link 5 (IL5) is a Windows® based software package to assist users in the setup and maintenance of Magnetek AC and DC drives. The software is available for free in a read-only mode called “Viewer.”. Advanced features can be unlocked in the Professional version by purchasing a USB software licensing dongle.

The free Viewer version of IMPULSE•Link 5 interacts with the DataLogger Series 4 (DLS4) keypad. Through a USB connection from a DLS4 to a host computer, a user can:

- View stored drive parameters
- See Run, Alarm, and Fault history
- View recorded trend data
- Open IL4.1 and IL5 Parameter files of type .par and .parx

The Professional version offers the above and much more:

- Find drives over wireless, industrial communications (such as Ethernet), and hardwired serial COM ports
- Read and write drive parameters
- Monitor real-time Run status, Alarms, and Faults on multiple drives at the same time

Communication profiles are automatically created and saved for the user using the Find Drives button with IL5 Professional. Users can execute a read or write immediately after using Find Drives the first time.

The Professional version retains the Communication Profiles of each discovered drive, allowing users to easily read and write to drives.

**IMPULSE•Link 5 Version Differences**

<table>
<thead>
<tr>
<th>Feature</th>
<th>IL5 Viewer</th>
<th>IL5 Professional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wireless Connection</td>
<td></td>
<td>×</td>
</tr>
<tr>
<td>Industrial Comms (e.g. Ethernet) Connection</td>
<td></td>
<td>×</td>
</tr>
<tr>
<td>Serial (Wired) Connection</td>
<td></td>
<td>×</td>
</tr>
<tr>
<td>Drive Discovery</td>
<td></td>
<td>×</td>
</tr>
<tr>
<td>Create &amp; Modify Parameters</td>
<td></td>
<td>×</td>
</tr>
<tr>
<td>Live Monitoring &amp; Datalogging</td>
<td></td>
<td>×</td>
</tr>
<tr>
<td>View Parameters</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>Save Parameters</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>Compare Parameters</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>View Event Files</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>View Trend Files</td>
<td>×</td>
<td>×</td>
</tr>
</tbody>
</table>
1.2. Professional Kit Contents

<table>
<thead>
<tr>
<th>IMPULSE Link 5 Professional Kit (IL5-PRO-KIT)</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>IL5 Software Installer USB Flash Drive</td>
<td>IL5-SOFTWARE-USB</td>
</tr>
<tr>
<td>Unikey USB Software Licensing Key</td>
<td>IL5-PRO-KEY</td>
</tr>
<tr>
<td>Series 4/Series 3/G+ Mini: Serial-to-USB Adapter (Keyspan)</td>
<td>ADAPTER-DB9M-USBA</td>
</tr>
<tr>
<td>DDC-S2 / DMC-S2: USB Cable</td>
<td>CABLE-USBA-USBMICROB</td>
</tr>
<tr>
<td>DDC-S1 / DMC-S1: DB9-to-Terminal Block Cable</td>
<td>CABLE-TB-DB9F</td>
</tr>
<tr>
<td>DSD: RJ12-toRJ12 PDCU Cable</td>
<td>CABLE-RJ12-RJ12</td>
</tr>
<tr>
<td>DSD: RJ12-to-DB9F Adapter</td>
<td>ADAPTER-RJ12-DB9F</td>
</tr>
</tbody>
</table>

1.3. Wireless Diagnostic System (WDS) Option

An optional WDS hardware system is available to connect drives wirelessly, but not required. WDS allows up to 31 drives to connect to a single Remote Unit. Multiple Remote Units can connect to a single Base Unit.

<table>
<thead>
<tr>
<th>Wireless Diagnostics System (WDS)</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Unit</td>
<td>WDS-BASE</td>
</tr>
<tr>
<td>Remote Unit (AC Input)</td>
<td>WDS-REMOTE-AC</td>
</tr>
<tr>
<td>Remote Unit (DC Input)</td>
<td>WDS-REMOTE-DC</td>
</tr>
</tbody>
</table>

1.4. Industrial Communication Options

IL5 may also use any of the available Ethernet option cards to connect to a drive.

<table>
<thead>
<tr>
<th>Industrial Communication Option Cards</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>EtherNet/IP</td>
<td>SI-EN3</td>
</tr>
<tr>
<td>EtherNet/IP (Dual-Port)</td>
<td>SI-EN3D</td>
</tr>
<tr>
<td>Modbus TCP/IP</td>
<td>SI-EM3</td>
</tr>
<tr>
<td>Modbus TCP/IP (Dual-Port)</td>
<td>SI-EM3D</td>
</tr>
<tr>
<td>PROFINET</td>
<td>SI-EP3</td>
</tr>
</tbody>
</table>

1.5. System Requirements

- 1.5 GHz processor or better
- 2 GB RAM (minimum); 4 GB (recommended)
- Minimum of 300 MB free hard-disk space available
- Windows Vista, Windows 7, Windows 8, or Windows 10 operating system
- 32-bit or 64-bit
- Available USB port
2. Installation Notes

The IMPULSE•Link 5 installer is located on the USB flash drive that comes with the DataLogger Series 4 kit and with the IL5 Professional kit. It is also available for download on the Magnetek Material Handling website: http://www.magnetek.com/en/Material%20Handling/Downloads.aspx.

NOTE: Administrative privileges are required to install and/or update the software. Please make sure to log onto an administrator account before installation.

To install IMPULSE•Link 5 on a PC:

1. Insert the IL5 installer flash drive into a USB port on a PC and run ImpulseLink5_Install.exe.
2. When complete, IMPULSE•Link 5 will automatically launch.
3. To enable IL5 Professional, insert the Unikey dongle into a USB port on the PC.
4. Connect the drive to your PC using the proper cable(s) provided (refer to the Appendix C).

A Windows Security warning may pop up during the initial installation, with the message that IMPULSE•Link 5 would like to install device drivers.

![Windows Security Warning]

Figure 1: Windows Security Warning

The driver software is for the DataLogger Series 4. It is not required for installing or running IMPULSE•Link 5 Viewer or Professional; however, failure to install the driver will result in not being able to update the DataLogger.

NOTE: To ensure full functionality, select “Install” and proceed with the installation.
3. QUICK START: Viewer and Professional

Using Professional:

1. Click the **Find Drives** button.

2. Check desired scan type boxes located on the right side of your screen.

3. Click **Start** (Communication Profiles will be automatically created upon discovery).

**NOTE:** The **Find Drives** scanner will continue to run for 15 minutes for Scan COM ports and Scan WDS, or until a user clicks the **Stop** button. The **Find Drives** scanner must be stopped before monitoring.

4. Click **Stop** after desired drives appear.

5. Click the **Drive Monitor** button.

6. Select drive(s) and click **Start** to see Monitors.
Using DataLogger Series 4:

Step 1. Connect DataLogger (DLS4) to PC serial port using P/N: CABLE-USBA-USBMICROB.

Step 2. Select a file under Drive Workspace to view parameters, events, and trends.

Supported Drives

IMPULSE•Link 5 supports these Magnetek drives:

- IMPULSE®•G+/VG+ Series 3 & Series 4
- IMPULSE®•G+ Mini
- IMPULSE®•D+ HHP
- OmniPulse® DDC Series 1
- OmniPulse® DDC Series 2 (includes built-in *Ethernet port)
- OmniPulse® DSD
- MagnePulse® DMC Series 1
- MagnePulse® DMC Series 2

*DDC-S2 Ethernet compatibility requires firmware 44301 or above

Use the included Keyspan adapter for serial connections to drives over a USB COM port. Ethernet communication requires installation of a separate EtherNet/IP option card on IMPULSE drives.
4. Common Navigation

Both IL5 Viewer and Professional provide functions for viewing Parameter files, Drive Events, and Trend data. The following is a brief summary of the functions that can be accessed from the navigation toolbar using either version.

**NOTE:** IMPULSE•Link 5 will default to the Parameters tab on startup if a DataLogger is not connected to the PC. Once a DataLogger is connected, it will automatically switch to the DataLogger tab, and the Workspace will populate with the files currently loaded on the DLS4.

![Figure 2: IMPULSE•Link 5 Common Tabs on Start-up](image)

4.1. File Tab

![Figure 3: The File Tab](image)

**Open** – Opens parameter, DataLogger, or Trend files (Alt-F-O)

**Recent** – Displays files that have been recently accessed (Alt-F-R)

**Print** – Prints the active Parameter, events, or Trend file selected (Alt-F-P)
4.2. Parameters/DataLogger Tab

The Parameter and DataLogger tabs allow the opening, closing, and printing of parameters, DataLogger files, or Trend files. The DataLogger Tab is the default tab when a DataLogger is connected.

4.2.1. Parameter Tab

![Parameter Tab](image)

**Figure 4: The Parameter Tab**

- **New** – Create a Parameter file
- **Open** – Open a Parameter, DataLogger, or Trend file
- **Close** – Close an active Parameter, DataLogger, or Trend file
- **Print** – Print the active view (Ctrl-P)

Tool buttons also provide the following functions:

- **Compare** – Allows comparison between two different Parameter files
- **Convert** – Allows Parameter file conversion from one version to another (must be within the same drive series)
- **Export** – Export an open Parameter file to a CSV file
4.2.2. DataLogger Tab

The DataLogger tab is used to manage DataLogger Drive Events and Trend files as well as update DataLogger firmware. These events and trends can be viewed when the Parameters or DataLogger tab is selected.

![Figure 5: The DataLogger Tab and Workspace](image)

**Open** – Opens a Parameter, Drive Event, or Trend file

**Close** – Closes an active Parameter, Drive Events, or Trend file

**Select New Trend** – Opens window to select a different Trend file

**Print** – Print the active data shown in the View Window when a trend is selected

**Backup Device** – Back up data from the DLS4 to a PC location (determined by the user)

**Update Firmware** – Used to update the DataLogger Series 4 firmware

**Workspace** – Displays data loaded when the DataLogger is connected to the PC’s USB port

**View Window** – Displays a list of parameters (shown), Drive Events, or Trend files
4.3. Parameter File Display

Parameter files can be viewed by choosing a file from the workspace tree or browsing for a Parameter file stored on a PC.

4.3.1. Parameter Value Text Color

Parameters may be displayed with color coding. Various colors are used to identify a condition that may require further action. The table below displays the colors used, their meanings, and their descriptions.

<table>
<thead>
<tr>
<th>Color</th>
<th>Meaning</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>Modified</td>
<td>A parameter with blue text indicates the value is different than its default setting.</td>
</tr>
<tr>
<td></td>
<td>Constant</td>
<td></td>
</tr>
<tr>
<td>Gray</td>
<td>Read-Only</td>
<td>A parameter that is grayed-out is a parameter that cannot be modified, or the access level of the current Parameter set is lower than what is needed for that specific parameter (i.e., changing the parameter from the drive keypad would not be allowed with the current access level).</td>
</tr>
</tbody>
</table>

Table 1: Parameter Value Text Color

4.4. Workspace

4.4.1. DataLogger Parameter File Sets

The DataLogger Series 4 can store up to 11 Parameter sets. These sets are stored in "slots" numbered from 0 to 10 and located in the internal memory with the file's names PrmSet00.parx to PrmSet10.parx.

When the DLS4 is connected to the PC, the software will associate these Parameter files with the model of drive in the Workspace. Parameter set 00 contains the Parameter file from the most recent drive the DataLogger was connected to. The name of these files can be changed in the DLS4 (see Rename Parameter Data section in the DataLogger Series 4 Instruction Manual) and will appear in the Workspace shown in Figure 6.
4.4.2. Events

Events are used to view Run history, Fault history, and Alarm history of a drive. When an event is recorded, the DLS4 will gather detailed information about the state of the drive.

The DataLogger Series 4 can log:

- 5000 Run events
- 400 Alarm events
- 400 Fault events
- Approximately 300 hours of monitor data (U01-01 – U01-12, plus up to 10 selectable monitors)
- 11 Parameter sets

The information for Runs, Alarms, and Faults can be viewed by selecting Events under the drive in the Workspace tree.

Figure 7: Events
4.4.3. Trends

Drive status information is collected by a DataLogger Series 4 and can be charted and viewed in the Trends section of IMPULSE•Link 5. This data can be used to analyze drive issues during operation such as motor overload.

Trend files are automatically generated on power-up of the DLS4, and at the start of every hour. To view a trend, click on “Trends” under the desired drive. A Date Dialog Box will appear.

![Figure 8: Trends](image1)

![Figure 9: Date Dialog Box](image2)
The Date Dialog Box is used to navigate to the time of the trend. Click on a date to show all trends for that day.

**Figure 10: Selecting the Date**

All the trends for this date will be shown under “Available Times” on the right. Click on the date/time to highlight the trend to view and then choose “Load.”

**Figure 11: Selecting the Desired Trend**

**NOTE:** This may take several seconds to open depending on the trend length.

**NOTE:** Trends can also be found in the “Trend” folder in the DataLogger Series 4 internal memory. See the DataLogger Series 4 manual for more information.
4.4.4. Runs

When the DLS4 detects a run, it increments the run counter and begins to take average and peak values of the Monitors being logged. It also logs how long the run remains active. When the run has ended, this information is written to the internal memory. If the run ended due to a fault, the reference to that fault gets linked with the run. A reference to the last alarm (if any) that occurred during the run is also stored. The DLS4 records numerous pieces of data at the end of the run event. Each of these can be turned ON or OFF for viewing purposes. For example, when "Model" is deselected, it will not be displayed in the Events window.

Table 2 shows the various data that is collected.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run #</td>
<td>Number of Runs recorded by the DLS4.</td>
</tr>
<tr>
<td>Date</td>
<td>Date the Run event ended [Day/Month/Year].</td>
</tr>
<tr>
<td>Time</td>
<td>Time the Run event ended [Hour:Minute:Second].</td>
</tr>
<tr>
<td>Direction</td>
<td>“FWD” or “REV”.</td>
</tr>
<tr>
<td>Duration [sec]</td>
<td>Amount of time the Run command was active.</td>
</tr>
<tr>
<td>Avg DC Bus [VDC]</td>
<td>Average DC Bus Voltage during the run.</td>
</tr>
<tr>
<td>Peak DC Bus [VDC]</td>
<td>Peak DC Bus Voltage during the run.</td>
</tr>
<tr>
<td>Avg Iout [A]</td>
<td>Average output current to the motor.</td>
</tr>
<tr>
<td>Peak Iout [A]</td>
<td>Peak output current to the motor.</td>
</tr>
<tr>
<td>Avg Fout [Hz]</td>
<td>Average output frequency of the drive.</td>
</tr>
<tr>
<td>Peak Fout [Hz]</td>
<td>Peak output frequency of the drive.</td>
</tr>
<tr>
<td>Avg Mtr Speed [Hz]</td>
<td>Average speed of the motor.</td>
</tr>
<tr>
<td>Peak Mtr Speed [Hz]</td>
<td>Peak speed of the motor.</td>
</tr>
<tr>
<td>Avg Mtr Torque [%]</td>
<td>Average torque applied to the motor during the Run.</td>
</tr>
<tr>
<td>Peak Mtr Torque [%]</td>
<td>Peak torque in the motor.</td>
</tr>
<tr>
<td>Heatsink [°C]</td>
<td>Heatsink temperature when the Run event ended.</td>
</tr>
<tr>
<td>Last Alarm</td>
<td>Last Alarm recorded.</td>
</tr>
<tr>
<td>Last Fault</td>
<td>Last Fault recorded.</td>
</tr>
<tr>
<td>Control</td>
<td>Control method of the drive.</td>
</tr>
<tr>
<td>Motion</td>
<td>Motion of the drive.</td>
</tr>
</tbody>
</table>

1 Only valid when the control method is Open Loop Vector or Flux Vector.

Table 2: Run Data – AC Drive
4.4.5. Alarms

If an Alarm is detected during a Run, it will be logged under the Alarms tab. Each data point can be turned ON or OFF for viewing purposes. For example, when “Model” is deselected, it will not be displayed in the Events window.

Table 3 shows the various data that is collected.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm #</td>
<td>Alarm number in the DLS4.</td>
</tr>
<tr>
<td>Alarm</td>
<td>Name of the Alarm posted at the end of the Run event.</td>
</tr>
<tr>
<td>Date</td>
<td>Date the Alarm occurred [Day/Month/Year].</td>
</tr>
<tr>
<td>Time</td>
<td>Time the Alarm occurred [Hour:Minute:Second].</td>
</tr>
<tr>
<td>Assoc. Run #</td>
<td>Associated Run number that the Alarm occurred in.</td>
</tr>
<tr>
<td>Control</td>
<td>Control method of the drive.</td>
</tr>
<tr>
<td>Motion</td>
<td>Motion of the drive.</td>
</tr>
</tbody>
</table>

Table 3: Alarm Data

4.4.6. Faults

If a Fault is detected during a Run, it will be logged under the Faults tab. Each data point can be turned ON or OFF for viewing purposes. For example, when “Model” is deselected, it will not be displayed in the Events window.

Table 4 shows the various data that is collected.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fault #</td>
<td>Number of the Fault stored in the DLS4.</td>
</tr>
<tr>
<td>Date</td>
<td>Date the Fault occurred [Day/Month/Year].</td>
</tr>
<tr>
<td>Time</td>
<td>Time the Fault occurred [Hour:Minute:Second].</td>
</tr>
<tr>
<td>Assoc. Run #</td>
<td>Associated Run number that the Fault occurred in.</td>
</tr>
<tr>
<td>Fault</td>
<td>Name of the Fault.</td>
</tr>
<tr>
<td>Fref [Hz]</td>
<td>Frequency reference at the time of the Fault.</td>
</tr>
<tr>
<td>Fout [Hz]</td>
<td>Output frequency at the time of the Fault.</td>
</tr>
<tr>
<td>Iout [A]</td>
<td>Output current at the time of the Fault.</td>
</tr>
<tr>
<td>Motor Speed [Hz]</td>
<td>Motor speed at the time of the Fault.</td>
</tr>
<tr>
<td>Vout [VAC]</td>
<td>Output voltage at the time of the Fault.</td>
</tr>
<tr>
<td>DC Bus [VDC]</td>
<td>Voltage on the DC Bus at the time of the Fault.</td>
</tr>
<tr>
<td>Power Out [HP] 1</td>
<td>Output power at the time of the Fault.</td>
</tr>
<tr>
<td>T-ref [%] 1</td>
<td>Torque reference at the time of the Fault.</td>
</tr>
<tr>
<td>Input Terminal Status</td>
<td>Status of the input terminals at the time of the Fault.</td>
</tr>
<tr>
<td>Output Terminal Status</td>
<td>Status of the output terminals at the time of the Fault.</td>
</tr>
<tr>
<td>Inverter Status</td>
<td>Status of the drive at the time of the Fault.</td>
</tr>
<tr>
<td>Elapsed Time [Hr]</td>
<td>Time since the last Fault was recorded.</td>
</tr>
<tr>
<td>Heatsink [°C]</td>
<td>Heatsink temperature at the time of the Fault.</td>
</tr>
<tr>
<td>Control</td>
<td>Control method of the drive.</td>
</tr>
<tr>
<td>Motion</td>
<td>Motion of the drive.</td>
</tr>
</tbody>
</table>

1 Only valid when the control method is Open Loop Vector or Flux Vector.

Table 4: Fault Data – AC Drive
4.5. Trend Analysis

4.5.1. Trend Navigation

Trend view will display both analog and digital signals from the drive as well as signal names and ranges. These signals can be selected in the Signal Selection pane.

Figure 12: Trend Navigation Overview

4.5.2. Trend File Information

The Trend file data displays information about the Trend file being viewed.

Figure 13: Trend File Information

NOTE: The “Date” format is based on the PC’s settings.
4.5.3. Signal Name Select

Analog and digital signals can be selected or deselected from the Signal Name Select pane. The following shows the default selections when a trend is first viewed.

```
Select All
Deselect All

- Frequency Ref
- Output Freq
- Output Current
- Motor Speed
- Output Voltage
- DC Bus Voltage
- Output HP
- Torque Reference
- Run FWD
- Run REV
- Fault Reset
- Upper Limit 1 N.C.
- Upper Limit 2 N.C.
- Not Used
- Not Used
- Not Used
- Brake Release
- Brake Release
- Fault Annun (0078)
- Fault Relay
- Running
- Zero Spot
- Reverse
- Flt Reset
- Spd Agree
- VFD Ready
- Alarm Det
- Alarm Fct
- Term A1 Level
- Term A3 Level
```

Select or deselect all signals

- Drive Monitors
  - U1-01 to U1-09

- Input Terminals
  - S1 to S8 (Series 3 and 4)
  - S1 to S7 (G+ Mini)

- Output Terminal Status
  - MA-MB-MC, M0-M1, M3-M4, M6-M6 (Series 3 and 4)
  - MA-MB-MC, P1-PC, P2-P3 (G+ Mini)

- U1-12

- Custom Monitors
  - A1 Level
  - A3 Level

Figure 14: Signal Name Select Pane
4.5.4. Mouse Tooltips

Hovering the mouse pointer over a signal in the Signal Name Select pane will display additional information about that signal, such as the monitor name or meaning, terminal number, and programmed parameter value.

![Mouse Tooltips Example](image)

Figure 15: Mouse Tooltip Examples

4.5.5. Signal Names – Analog

When an analog signal is selected, the trend will populate the graph with this data and display the signal name with the upper and lower limits for that monitor. The color of the name is the same as the color of the data graphed.

![Analog Signal Names](image)

Figure 16: Analog Signal Names
4.5.6. Signal Names – Digital

When a Multi-Function Digital Input (MFDI) or Multi-Function Digital Output (MFDO) signal is selected, the trend will populate the graph and display the signal name. A one (1) or a zero (0) is used to identify whether the input/output is on (closed) or off (open). The color of the name is the same as the color of the data graphed.

![Diagram of S1 Closed and S1 Open](image)

Figure 17: Digital Signal Names

4.5.7. Time

Time is displayed on the bottom in HH:MM:SS using 24-hour format.

4.5.8. Trackball

The trackball displays values for each of the analog signals when the mouse pointer is hovered over the area where the analog signals are shown. The details shown are the values recorded by the DLS4 for each signal. The colors of the names are the same as the color of the signal in the graph.

![Trackball Details](image)

The vertical line identifies the point on the trend where the values shown in the trackball are read.

Figure 18: Trackball Details
4.5.9. Scrollbar Navigation

IMPULSE•Link 5 provides a proportional scrollbar to navigate through a Trend file. The scrollbar is used to zoom in/out or move from the beginning/end of the Trend file.

4.5.10. Sliding the Scrollbar

Navigation from the beginning to the end of a Trend file is done by left-clicking on the scrollbar and sliding the scrollbar left or right.

![Figure 19: Sliding the Scrollbar](image)
4.5.11. Zoom

Zooming in or out on a trend can be done with the scrollbar, mouse, or mouse wheel.

1. Scrollbar: Left-click on the outside edge of the scrollbar, then drag to expand or contract view. Below is an example of zooming out. The cursor turns into a double-sided arrow.

![Scrollbar Example](image)

**Figure 20: Using the Scrollbar**

2. Mouse wheel: Position the mouse over the desired area on the trend to zoom in/out from. Use the mouse wheel to zoom in or out on the trend at that position on the graph.

3. Mouse: With the mouse, left-click and hold on the desired area of the graph and then drag the mouse to zoom in.
4.6. Printing

IMPULSE•Link 5 can print Parameter sets, Event information, and Trending data.

4.6.1. Parameter Data

To print parameter data, go to the Parameters tab and select the Parameter set from the Workspace.

![Figure 21: Selecting the Parameter Set](image)

Click the Print icon, which will bring up the IMPULSE•Link 5 Print dialog.

![Figure 22: Print Preview of the Parameter Set](image)
The initial "Print" data is controlled by the Parameter view. Changing the view in the Parameter tab from "All" to the desired view (parameter groups, modified parameters, etc.) will change the data available for printing.

Figure 23: Selecting a Specific Parameter Group

To print select parameters, shift-click the desired block of rows to print, or ctrl-click to select non-contiguous rows. If a parameter was selected in error, simply ctrl-click that parameter to remove it from the selected parameters (it should no longer be highlighted). Then click on the Print icon to open the Print dialog and click the "Selected" option before printing.

Figure 24: Highlighting Select Parameters
4.6.2. Events

In order to print Event data, go to the DataLogger tab and select the Event set to be printed from the workspace.

![Figure 25: Selecting an Event](image)

Click the Print icon, which will bring up the IMPULSE•Link 5 Print dialog.

![Figure 26: Print Preview of the Event](image)
Users can use the scroll arrows in the Print preview to see Runs, Alarms, and/or Faults.

Figure 27: Selecting Alarms
Figure 28: Selecting Specific Runs, Alarms, and/or Faults

Figure 29: Print Preview of Selected Data

NOTE: The selection options for the events under the DataLogger tab do not control what will print.
4.6.3. Trends

In order to print Trend data, go to the DataLogger tab and select the trend to be printed from the workspace.

![Figure 30: Selecting the Trend](image)

Click the Print icon, which will bring up the IMPULSE•Link 5 Print dialog.

![Figure 31: Printing the Trend](image)

The printed data is based on the view in the main window, so be sure to adjust the view as necessary before printing (zooming on the desired data, adding and removing signals as necessary, etc.).
4.7. Help Tab

The Help tab contains information about IMPULSE•Link 5 Viewer and Professional, as well as resources for the user.

![IMPULSE® Link 5 Professional](image)

**Figure 32: The Help Tab**

**About** - Launches the "About IMPULSE•Link 5" screen, which includes information regarding the version, the build, and the copyright date.

![About IMPULSE® Link 5 Professional](image)

**Figure 33: About IMPULSE•Link 5**

**User Manual** – Downloads the IMPULSE•Link 5 User Manual from the internet, provided the PC is connected.


**Magnetek Website** – Opens Magnetek Material Handling's main website ([http://www.magnetekmh.com/](http://www.magnetekmh.com/)).

**Register Product** – Opens a dialog to obtain an IMPULSE•Link 5 Professional software license.

**Contact Us** – Opens a dialog containing the Technical Support number and a link to the Field Service email.
5. Professional Features

5.1. Start Screen

The IMPULSE•Link 5 Welcome screen appears on start-up to allow quick access to key features and functions through single-click buttons. Clicking the Home button brings up the Welcome display, too.

![IMPULSE•Link 5 Professional Start-up screen with USB dongle inserted](image)

**Figure 34:** IMPULSE•Link 5 Professional Start-up screen with USB dongle inserted

Users can automatically discover drives (Find Drives), create new Communication Profiles (New File), read parameters, open a Parameter file, or monitor drives. The navigation toolbar also provides feature access.
5.2. Communications

5.2.1. Find Drives

1. Select the Communications tab, and click the Find Drives button, or click the Find Drives button on the Welcome screen to open the Find Drives dialog.

2. Select WDS, Ethernet, or COM port checkboxes to scan for the desired drives. One or more choices may be selected before clicking the Start button.

3. Click the Start button to begin the scan.

- WDS and COM port scan timeout is 15 minutes unless a user clicks the Stop button.
- Ethernet scans finish more rapidly, and automatically timeout within a few seconds.

WDS displays a moving circle containing the hexadecimal drive address of each scan attempt. Up to 31 drives may be connected to a single WDS Remote Unit (01-1F).

Communication Profiles are automatically created for each discovered drive, and they appear beneath the Communications section.

4. Click the Stop button to end the Find Drives scan.

Figure 35: IMPULSE® Link 5 Professional Find Drives
5.2.2. Drive Monitor

1. Select the Communications tab and click the **Drive Monitor** button.

   ![Select drives to monitor]

   - Displayed drives may be automatically discovered from the Find Drives feature.
   - Users may also create Communication Profiles manually.

2. Check one or more of the boxes for the desired drive(s) to monitor.
3. Click the Start button.
4. If monitoring more than one drive, use Drive Workspace to click to another drive.

**NOTE:** The word “Ready” appears next to each drive under Workspace when it’s available for monitoring.

![Figure 36: IMPULSE•Link 5 Professional Monitor Drive(s)]
The monitor screen displays real-time values for whichever drive is highlighted under Drive Workspace. Click the Stop button to end the Drive Monitor on the highlighted drive. The drive will be removed from the Drive Workspace as it is stopped.

5. Click the Save button to save a data log to your host PC.
6. Click the Clear button to remove all Runs, Alarms, and Faults for this monitor.

5.2.3. OmniPulse DDC Series 2 Flash Utility

An OmniPulse DDC Series 2 (DDC-S2) Flash Utility allows a user to update the DDC-S2 Control Board firmware using the provided DDC-S2 cable. To update the DDC-S2 firmware, do the following:

1. Click Load FW button
2. Select firmware file
3. Click Open button
4. Select Com port
5. Click Update Firmware button

![Figure 37: OmniPulse DDC-S2 Flash Utility](image)
6. DataLogger Maintenance

6.1. Updating DataLogger Series 4 Firmware

IMPULSE•Link 5 can update the firmware in the DataLogger Series 4 (DLS4) to incorporate any new features and enhancements to the DLS4. If the PC has internet, the newest version of firmware for the DLS4 will be automatically installed on the PC using the Check for Updates button.

The newest version of the firmware may be manually downloaded from the Magnetek Material Handling website at: http://www.magnetek.com/en/Material%20Handling/Downloads.aspx

Once the firmware is saved to the PC, do the following:

1. Connect the DataLogger Series 4 to the PC using a USB cable. Press the DLS4 keypad’s F1 and F2 keys simultaneously until the “READY FOR UPDATE” message appears.

2. Go to the DataLogger tab.

3. Click on the “Update Firmware” icon in IMPULSE•Link 5.

![Figure 38: DataLogger Series 4 Screen – Ready for Update](image)

![Figure 39: The Update Firmware Icon](image)
4. After the firmware is updated, the version will be displayed on the main screen of the DLS4.

![Figure 40: DataLogger Series 4 Main Screen](image)

7. Software Updates

Additional features and enhancements may be released without notice.


To check for updates after IMPULSE•Link 5 software has been installed:

1. Click the **Check for Updates** button under the Help tab.

![Check for Updates](image)

If an update is available, it will prompt the user to install the update. The computer must have internet access.

![Update Found](image)
If the user chooses to install the update immediately, the Web Update Check Client will launch.

The installer may request a core prerequisite.
Once IMPULSE•Link 5 is done installing the update, it will automatically relaunch.
Appendices

Appendix A: Wiring for Wireless Diagnostic System Base Unit

![Diagram of wiring for wireless diagnostic system base unit]

NOTE: PROTECT POWER CABLE AND WIRE TO POWER SUPPLY

ANTENNA MOUNTED ON OUTSIDE OF ENCLOSURE
Appendix B: Wiring for Wireless Diagnostic System Remote Unit

IMPULSE G+/VG+ Series 4, G+/VG+ Series 3, and G+ Mini
Appendix C: Drive to PC Serial Wiring

Series 4 / Series 3 / G+ Mini Serial Connection

1. Connect USB-A male to available USB port on a PC.
2. Attach USB-B male to USB female plug of Keyspan ADAPTER-DB9M-USBA.
3. Open Device Manager and verify a **Keyspan USB Serial Port** appears after Step 2.

![Device Manager Screenshot]

**NOTE:** If a Keyspan COM Port does not appear under Device Manager Ports, try downloading the **Keyspan USA-19HS Driver** for Windows 7, 8, and 10 from the Magnetek Downloads page under **Drivers.**


4. Connect DB-9 female of CABLE-RJ45-DB9F to Keyspan ADAPTER-DB9M-USBA.
5. Connect RJ45 connector to drive.
6. Use IMPULSE•Link 5 to interact with your drive. See QUICK START.
IL5 Professional kit contents: