ScaleCore 2 Database

For Use With MSI-7300, MSI-3460, MSI-4260 and MSI-8000 and Helicopter Load Weighing Systems

Operator's Manual

Measurement Systems International™

A RICE LAKE WEIGHING SYSTEMS COMPANY

162314

Contents

Rice Lake continually offers web-based video training on a growing selection of product-related topics at no cost. Visit ***www.ricelake.com/webinars****.*

1.0 Introduction

Welcome to the ScaleCore 2 Database (*Sc2Db*) software application by Measurement Systems International (MSI). This application is designed to work with ScaleCore based products designed by MSI. The ScaleCore family products include:

- MSI-7300 Dyna-Link 2
- MSI-3460 Challenger 3
- MSI-4260 Port-A-Weigh
- MSI-8000 RF Remote Display
- Helicopter Load Weighing Systems

Additional products and capabilities are regularly being developed. Please check our website for more details or contact MSI.

This manual is intended to provide complete details of the *Sc2Db* application from installation and quick start to solution implementation.

1.1 Overview

Sc2Db is a software application to write weight data to an SQL database server. With this program, a range of solutions are handled including:

- Continuous access to weigh information provided by any MSI ScaleCore family products.
- Weigh data integration to all MRP, ERP, CRM systems and solutions.

Links to advanced printing and product tracking solutions including barcode labeling systems.

The *Sc2Db* application supports interface to SQL database servers that have available Java JDBC drivers, including:

- Microsoft SQL Server®[1]
- Oracle®[2] MySQL™ Server (http://www.mysql.com/)

Database interfaces are accomplished via Java JDBC. For additional database support contact MSI.

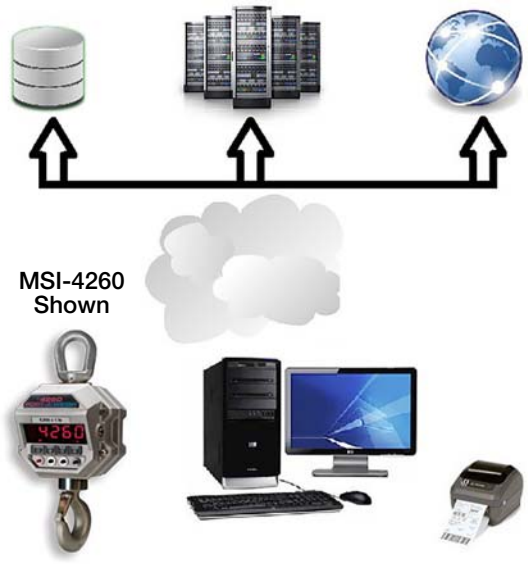

Figure 1-1. Quick Start - Connecting to the Network

1 Microsoft, Encarta, MSN, and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

2 Oracle is a registered trademark of Oracle and/or its affiliates.

2.0 Installation

The *Sc2Db* is distributed in the default configuration for Microsoft Windows® operating system.

When using a single compressed (.zip) file distribution, unzip the program to a location on the local computer and run the application. The location of the executable is referenced as the ***installation folder*** throughout this operator's manual. There is no further installation required for the application.

2.1 System Requirements

Following are the typical system requirements to run the *Sc2Db* application. Specifications are subject to change without notice.

Typical

Windows XP/Vista/7® Operating System

Windows® Embedded

Disk Usage: <200MB

Display: 800x600 or greater

Other Operating Systems:

Additional operating systems may be supported with the restriction of requiring TCP/IP device communications exclusively (no RS-232 serial communications are supported). Please contact MSI for details.

3.0 Database Interface

The Sc2Db application uses Java JDBC technology to connect to a database. The application comes with support for MySQL and Microsoft SQL. Any JDBC driver can be loaded and configured. The following procedure describes this process.

3.1 JDBC Driver Installation

Under the ***installation folder***, is a folder called **lib**. Place the JDBC driver JAR (Java Archive) file in this folder.

3.2 JDBC Driver Configuration

Under the ***installation folder***, is a file called **db.properties**, Open this with a text editor and complete the JDBC configuration by setting the user name, password, driver class, and connection URL. For complete details refer to the JDBC driver documentation.

4.0 Scale Device Communications

Sc2Db supports interfacing to MSI ScaleCore products from serial (RS-232) or TCP/IP sockets via Ethernet (802.3) or WiFi (802.11). The connection depends on the available interfaces of the particular ScaleCore product being used. Please refer to your specific device manual for more details on the interface capabilities.

4.1 Making a connection

The easiest way to connect to the ScaleCore device is the auto detect feature for serial interfaces.

1. Select ***File***.
2. Select ***Auto Detect Serial.*** *Sc2Db* will automatically scan all available serial ports for any attached ScaleCore devices. When the scan is complete, *Sc2Db* will display the detected devices (see Figure 4-1).

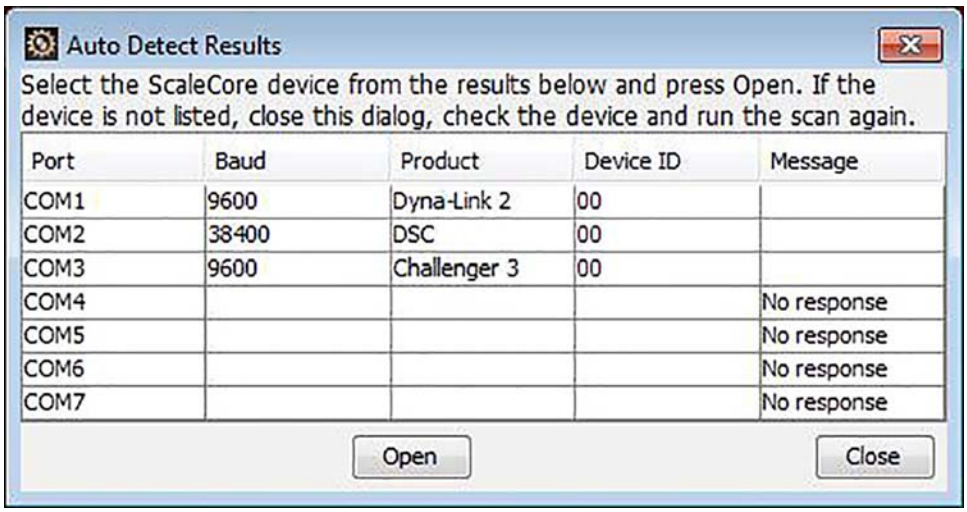

Figure 4-1. Auto Detect Serial Results Dialog

3. From the results, select the device required.
4. Press ***Open*** to begin communicating with the device.

Note ***If your device is not found, close the dialog, check the device power and data connection to the computer, then run the scan again.***

To manually connect to a ScaleCore product:

1. Select ***File***.
2. Select ***Open Communications***. *Sc2Db* will display the connection parameters dialog. This dialog allows you to manually enter either serial (RS-232) or IP host address and port for the device connection.

Typical serial connection parameters are shown in Figure 4-2.

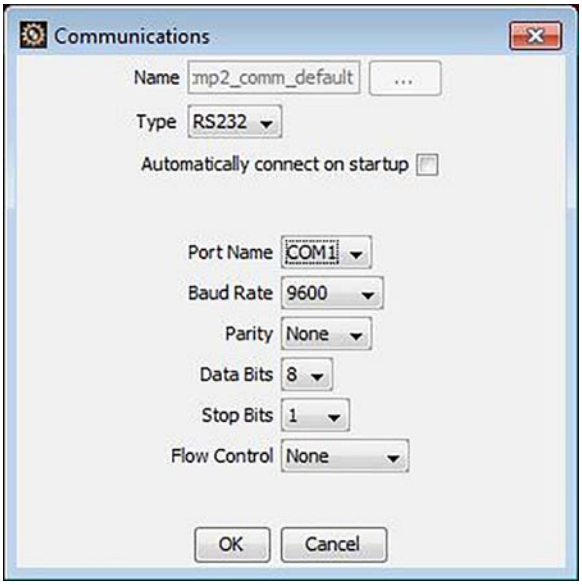

Figure 4-2. Communications Dialog (RS-232)

1. Select the serial port name of the local computer port that the ScaleCore device is connected to.
2. Press OK to open the connection.
3. Ethernet and Wi-Fi (802.11) communications require the IP address and port number of the ScaleCore device. The address is specific to the device installation. The port is typically 2101.

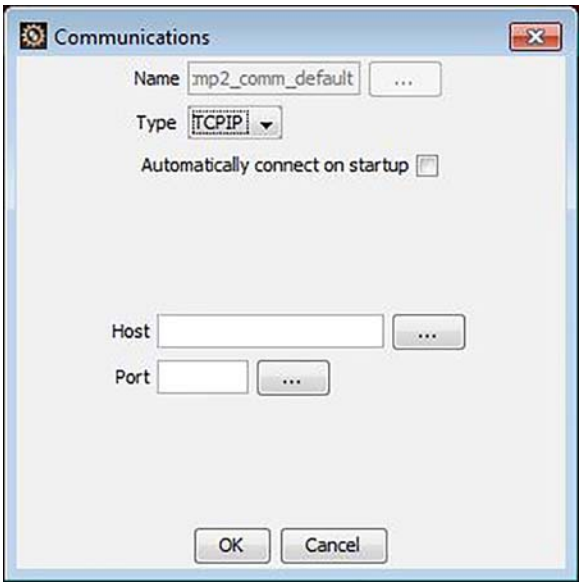

Figure 4-3. Communications Dialog (TCP/IP)

Note ***The last used connection parameters will be automatically filled in for convenience.***

4.2 Operation

After the application connects to the MSI scale device, it will show a table with all sensors similar to Figure 4-4.

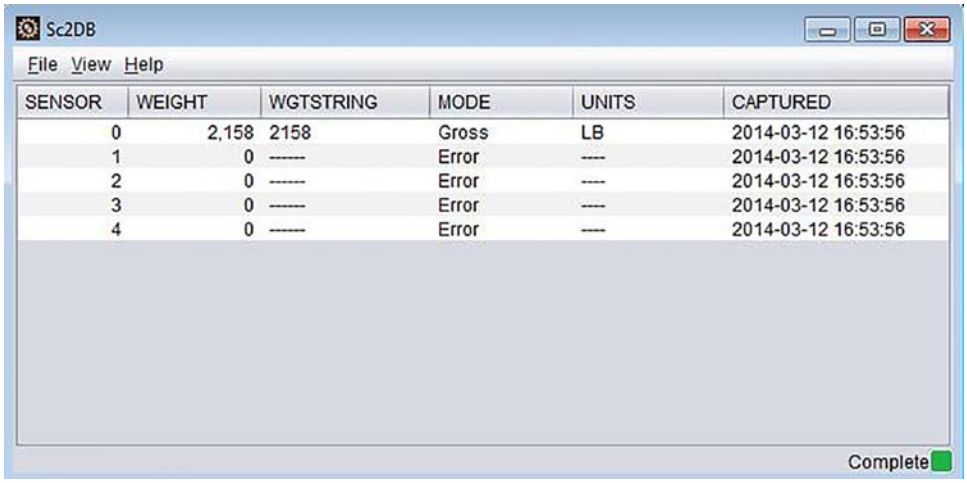

Figure 4-4. Sc2Db Main Display

From this point, the application will maintain the connection to the device. If the device power cycles, the program will automatically re-establish connection.

During normal operation, the application must be left running, but it can be minimized to reduce screen clutter.

5.0 Application – Barcode Label Printer

For this application, the information saved via the *Sc2Db* application is used as a source for TekLynx Label Matrix PowerPro Edition to print barcode labels.

Required Equipment:

- Computer Running Windows 7 Pro
- Zebra GK420d Printer
- MySQL Database Server version 5.6 (or compatible)
- Label Matrix 2012 PowerPro Edition from TekLynx
- ScaleCore 2 Database Application Software
- MSI ScaleCore Family Device connected to computer via RS-232 or TCP/IP

5.1 MySQL Server Setup

This section describes the setup and configuration of a MySQL database server for a label printing application.

5.1.1 Installation

This application requires a MySQL server installation with 32-bit ODBC driver. A complete setup of a MySQL server installation is beyond the scope of this document. For details about setting up the database, refer to the MySQL documentation.

5.2 Database Setup

The *Sc2Db* application requires a single schema named ***scalecoreprinter*** with a single table. The "create statement" for the table is shown below:

```
CREATE TABLE `scprint` (
`id` int(10) unsigned NOT NULL,
`weight` double(12,6) NOT NULL,
`weightstring` varchar(12) NOT NULL,
`mode` varchar(8) NOT NULL,
`units` varchar(8) NOT NULL,
`captureTimeStamp` timestamp NOT NULL DEFAULT CURRENT_TIMESTAMP ON UPDATE
CURRENT_TIMESTAMP,
PRIMARY KEY (`id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```

Figure 5-1 shows the database as viewed from MySQL Workbench 6.0 CE.

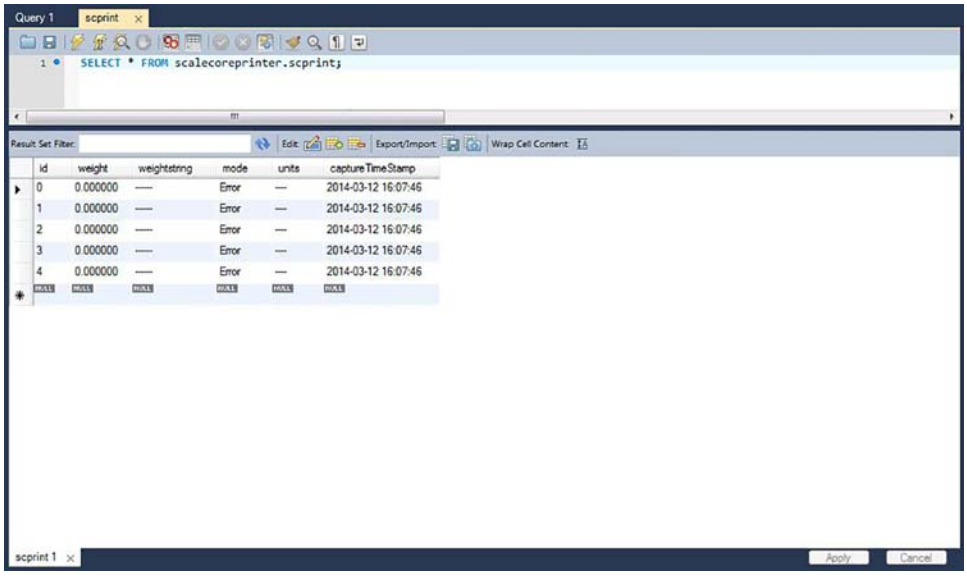

Figure 5-1. MySQL Workbench 6.0 CE

5.3 MySQL ODBC Connection

The Label Matrix 2012 PowerPro software requires an ODBC database connection. The following steps should help in configuring MySQL ODBC connection. For complete details and additional support, please see the MySQL documentation.

1. Start the ODBC Data Source Administrator.
   - Access ***Control Panel***
   - Select ***System and Security*** followed by ***Administrative Tools***
   - Select the shortcut for ***Data Sources (ODBC)***
   - For 64-bit systems, you may have to access: C:\Windows\SysWOW64\odbcad32.exe
   - A dialog similar to Figure 5-2 should display.

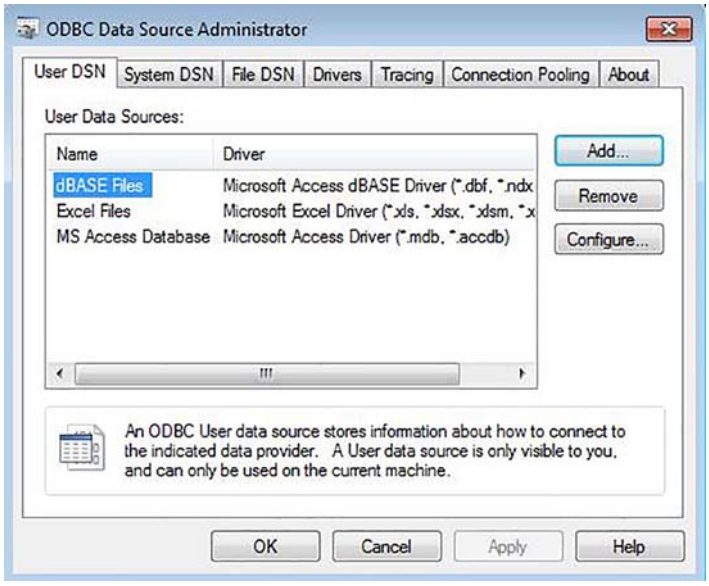

Figure 5-2. ODBC Data Screen

2. Select the ***System DSN*** tab.
3. Click the **Add...** button.

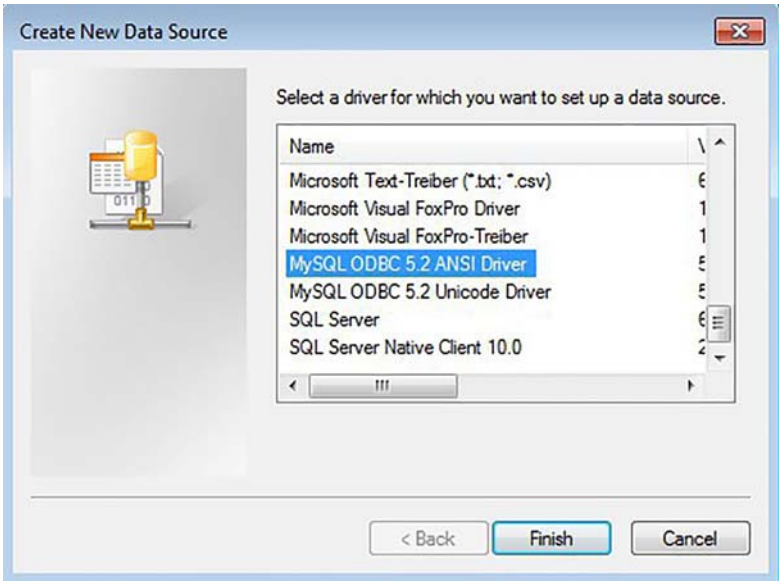

Figure 5-3. Create New data Source

4. In the ***Create New Data Source*** dialog, scroll down to select ***MySQL ODBC 5.2 ANSI Driver*** (or equivalent). See Figure 5-3.

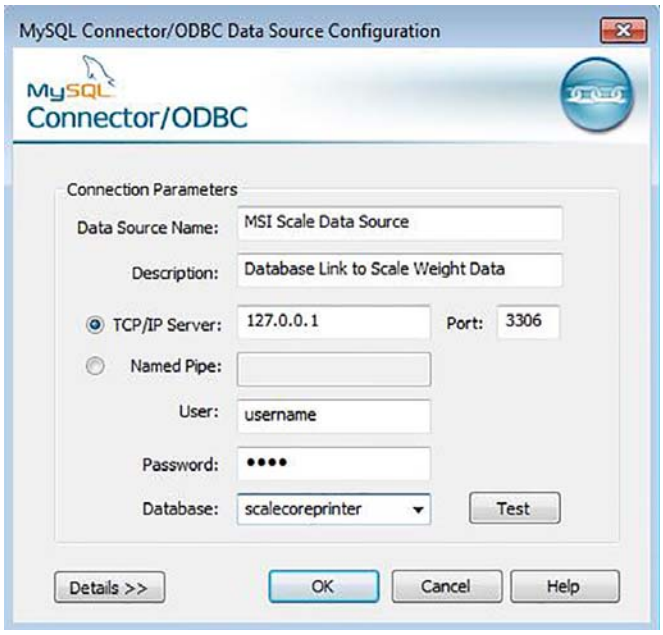

Figure 5-4. MySQL Connector/ODBC

5. Enter the connection parameters in the next dialog for the MySQL database server (see Figure 5-4).
6. Click the **Test** button and confirm the test result shows ***Connection Successful***.
7. Click **OK** on the ***ODBC Data Source Administrator*** to close this dialog.

5.3.1 TekLynx Label Matrix Setup

1. Start ***Label Matrix 2012 PowerPro Edition***.

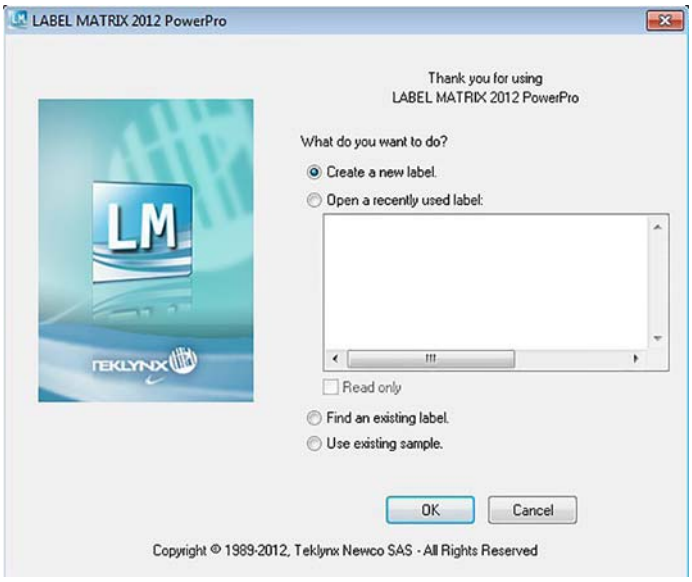

Figure 5-5. Label Matrix 2012 PowerPro

2. Start the ***New Label Wizard*** (automatically).

3. In the ***New Label Wizard***, select the ***User information obtained from databases*** checkbox.

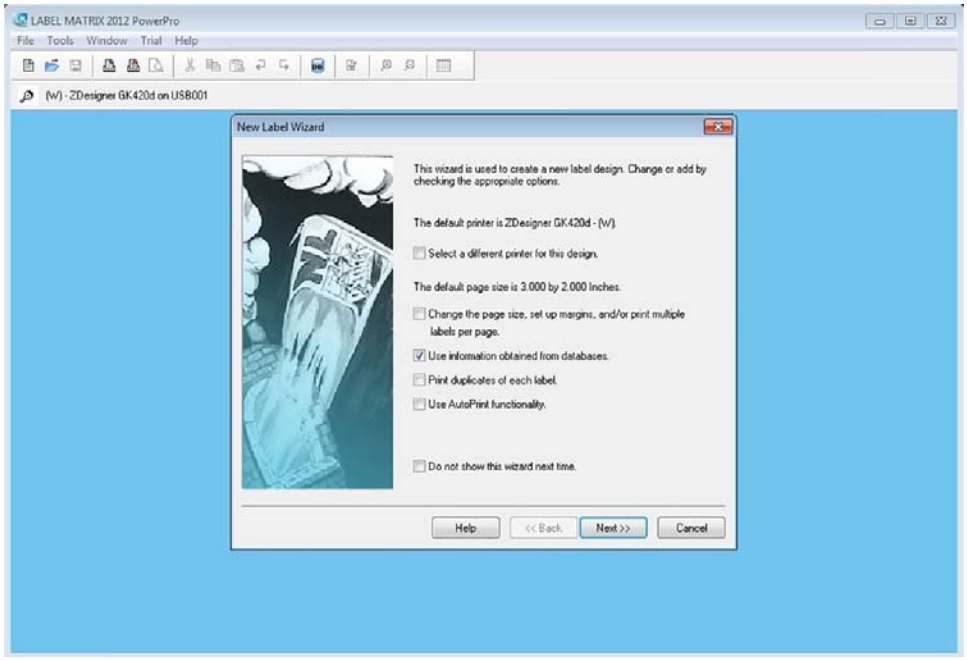

Figure 5-6. New Label Wizard

4. Press the **Add...** button.

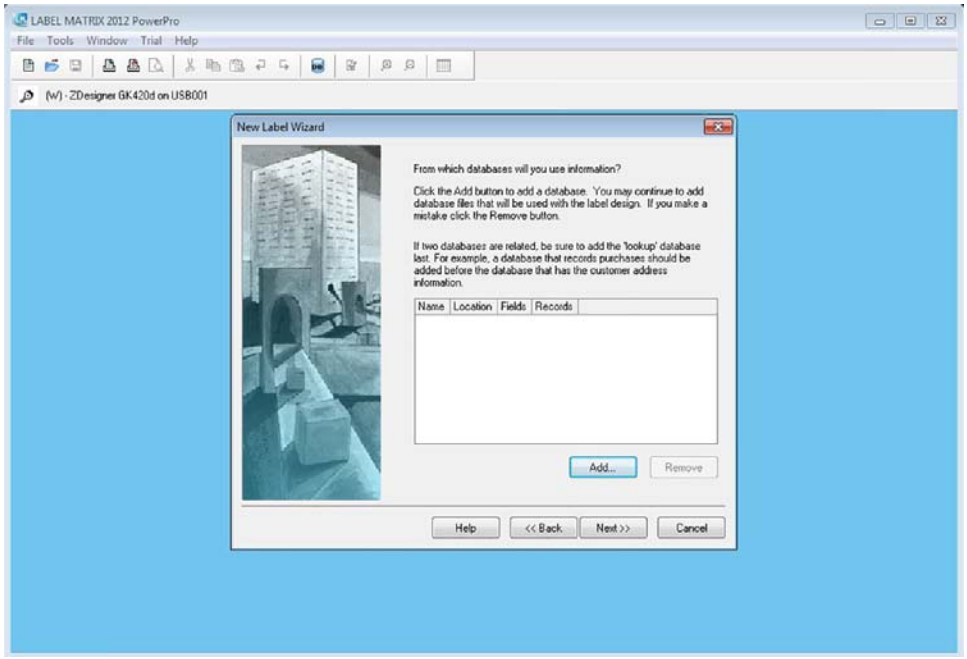

Figure 5-7. New Label Wizard Add Button

5. Select Advanced Setup.

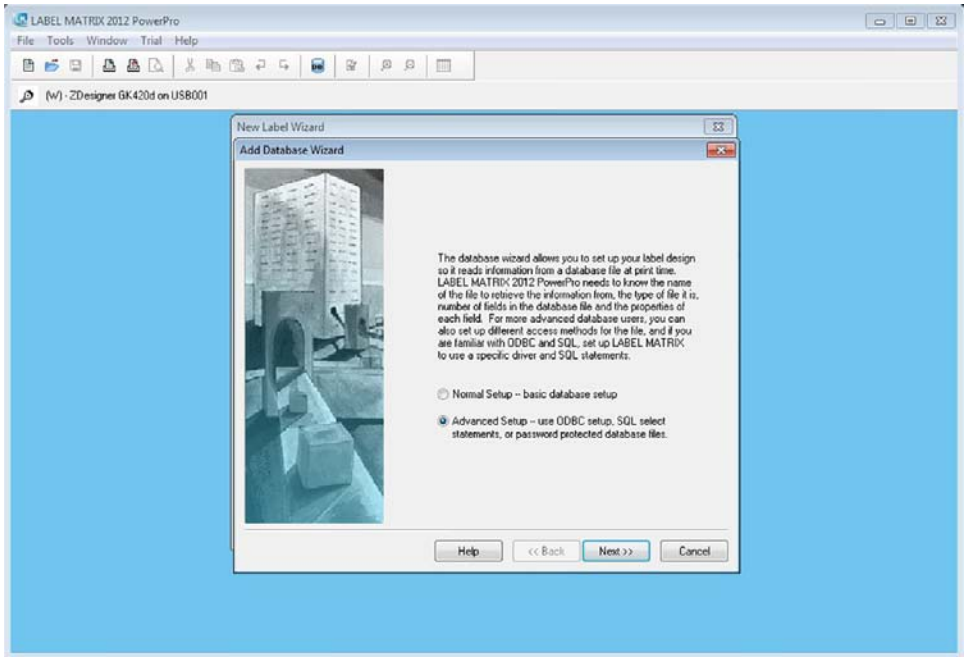

Figure 5-8. New Label Wizard Advanced Setup

6. Select the following checkboxes:
   - Select an OLE DB Provider
   - Provide a User Name and Password
   - Customize SQL Select Statement

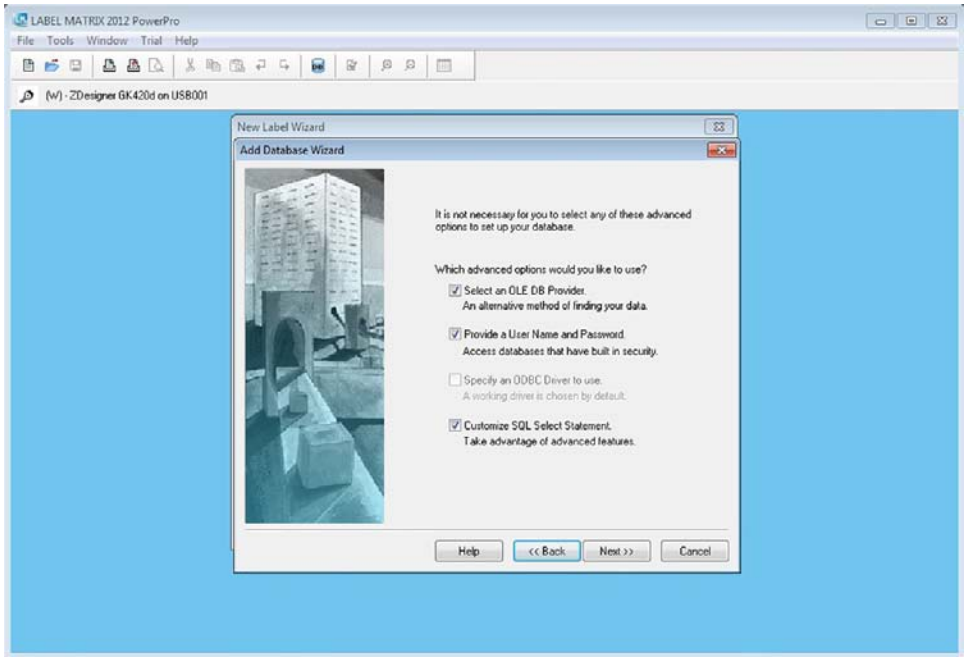

Figure 5-9. New Label Wizard Customize SQL Select Statement

7. Select Microsoft OLE DB Provider for ODBC Drivers.

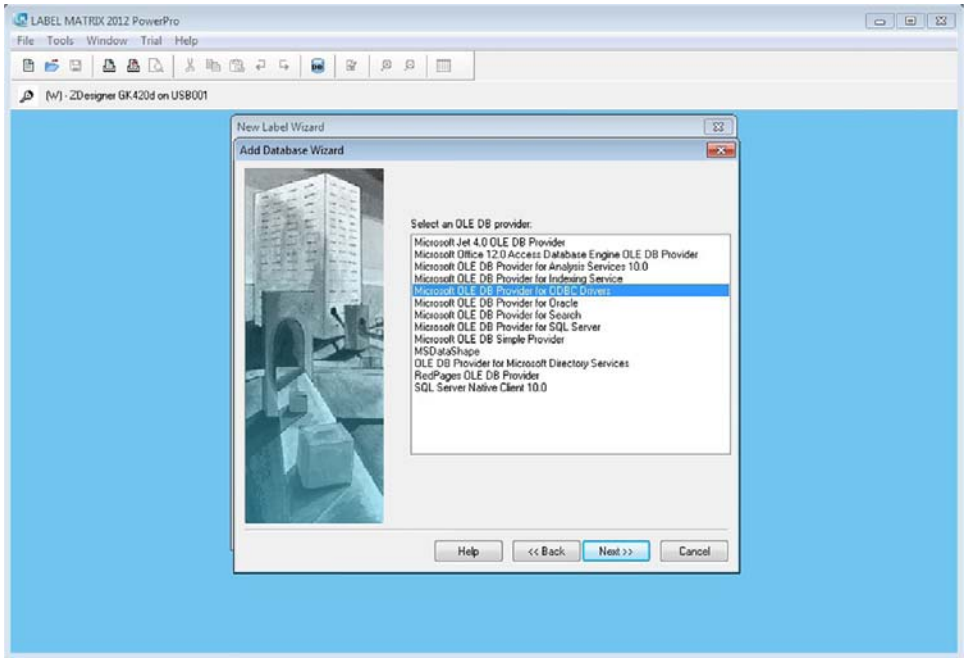

Figure 5-10. New Label Wizard OLE DB Provider for ODBC Drivers

8. Select the configured ODBC Driver.

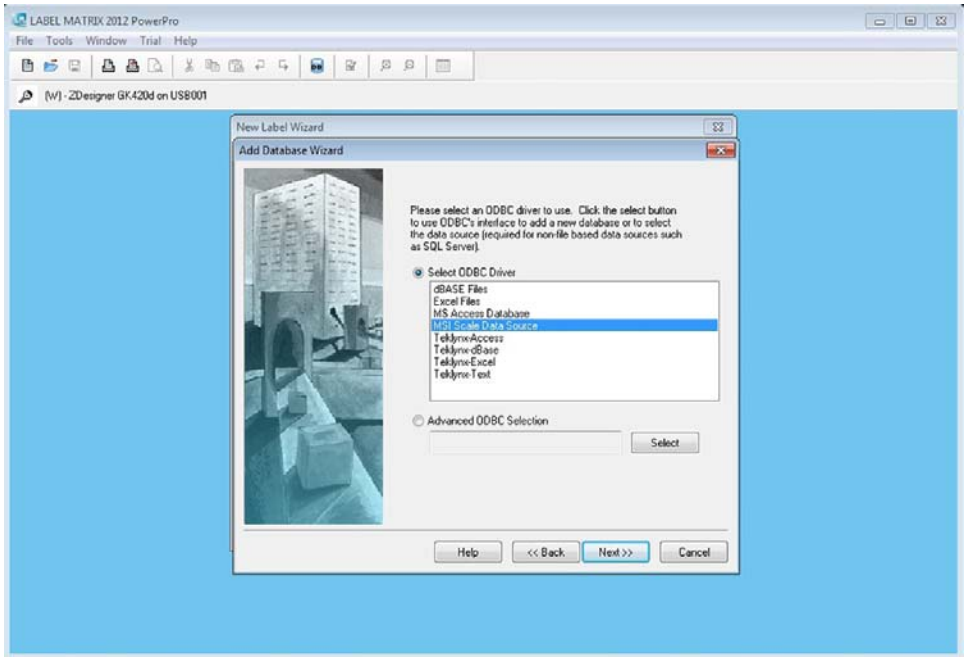

Figure 5-11. New Label Wizard ODBC Driver

9. Enter an empty (existing) text or csv file.

10. Enter the Username and Password in the dialog.

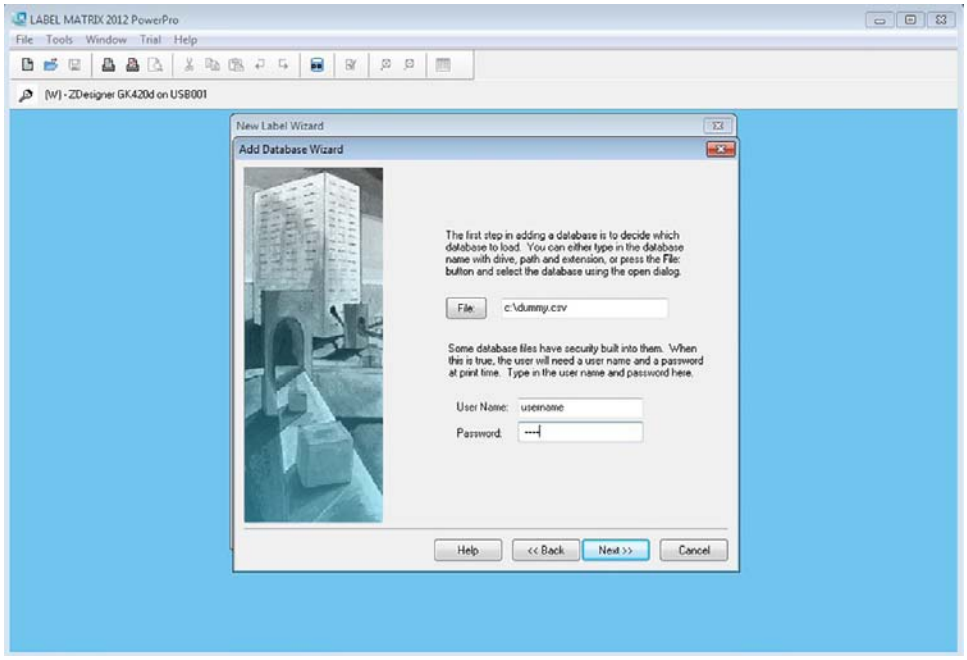

Figure 5-12. New Label Wizard Username and Password Dialog

11. Select SQL Builder and use the dialog to configure your database selection. By default, it will select all rows.

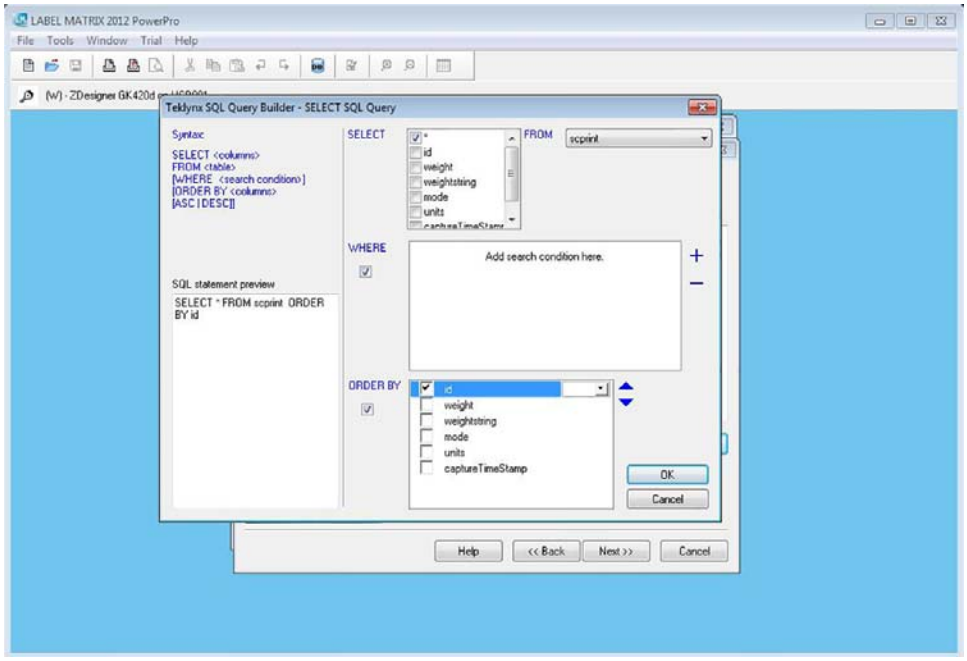

Figure 5-13. New Label Wizard SQL Builder

12. Verify the select statement.

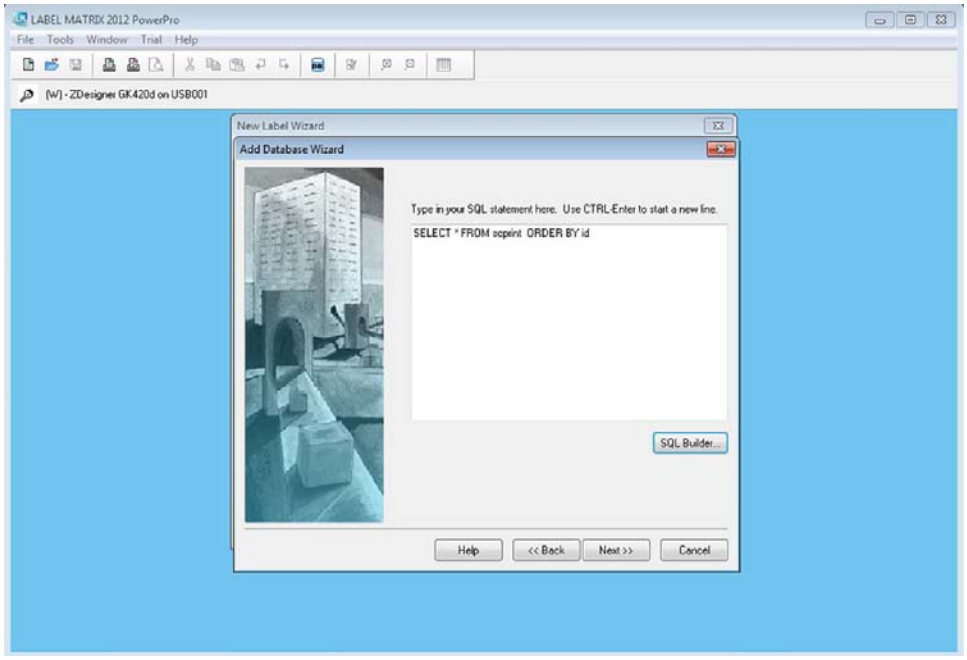

Figure 5-14. New Wizard Label Select Statement

13. Configure the fields for the label setup.
    - Enter the min/max length for each field (see Figure 5-15 for recommended values).

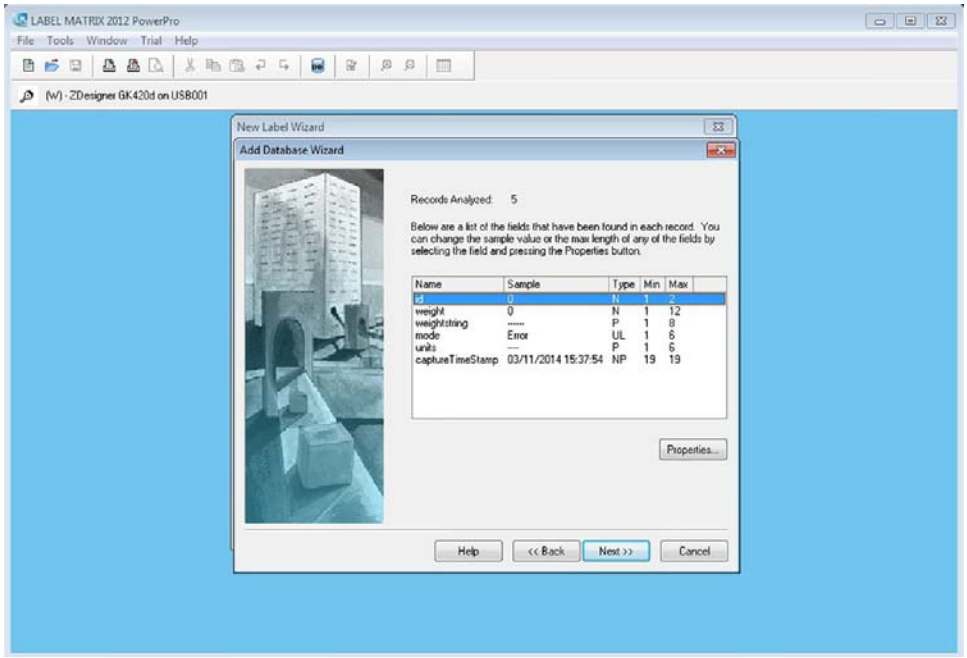

Figure 5-15. New Label Wizard Length

14. Select Keyed Access, Primary Key to always take data from the desired scale sensor.

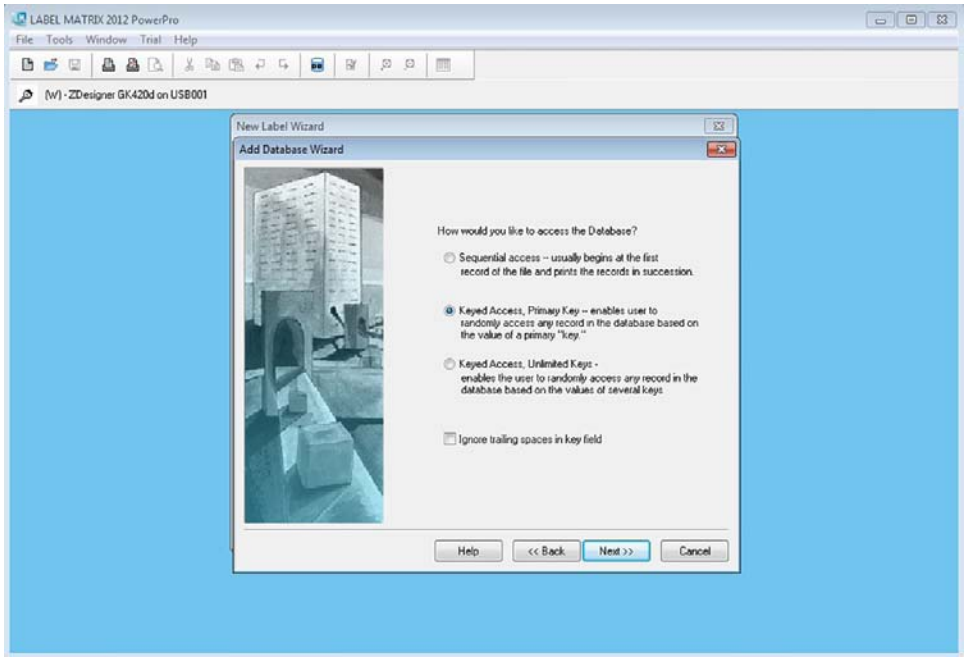

Figure 5-16. New Wizard Label Keyed Access

15. Select Constant.

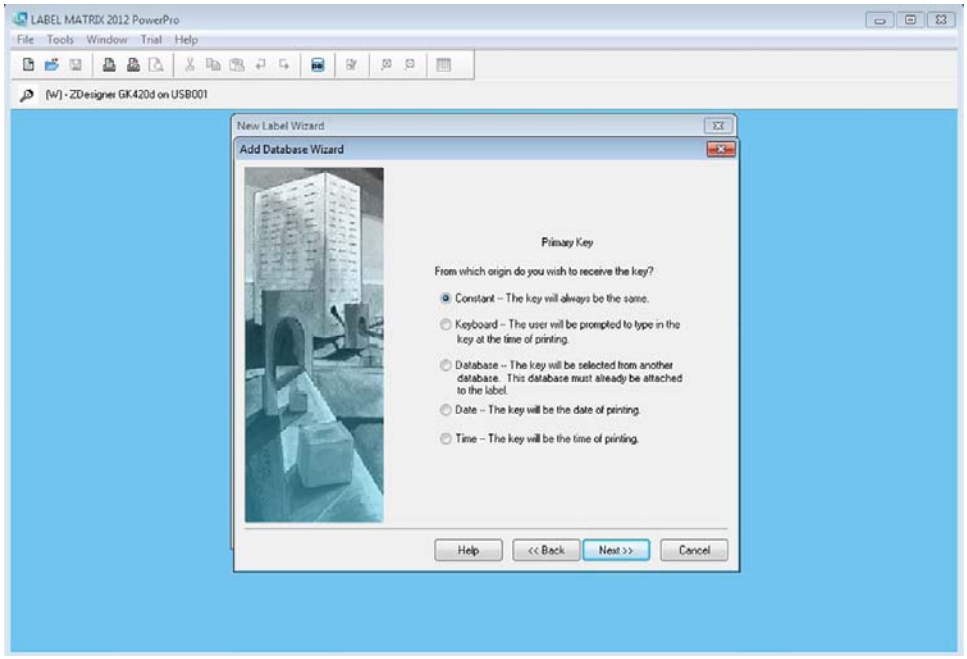

Figure 5-17. New Label Wizard Constant Primary Key

16. In the Value text box, enter the scale sensor id (typically 0 for single load cell scales, refer to your scale device

operator's manual for more information).

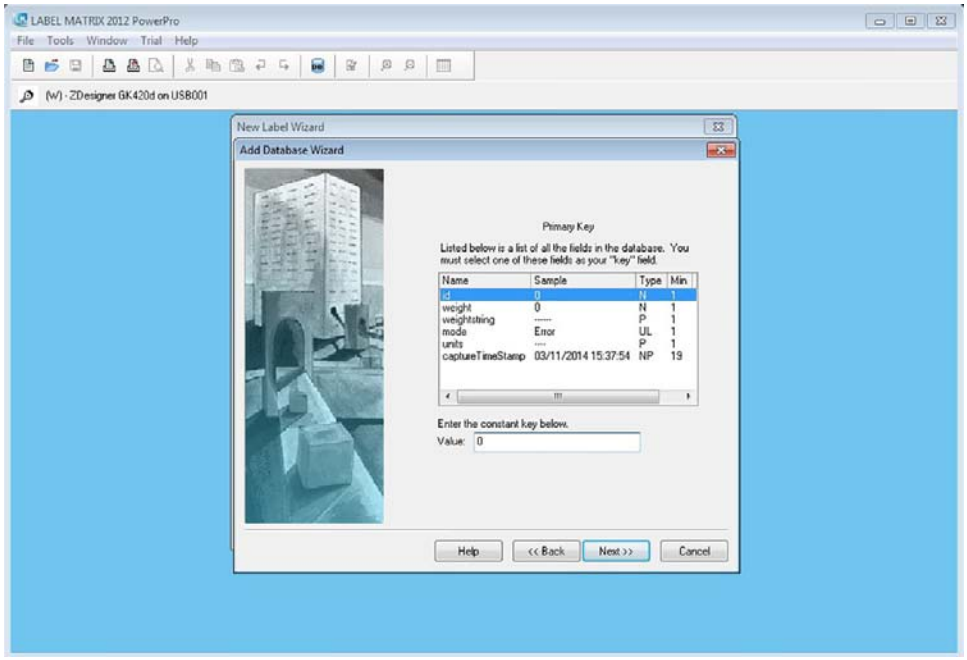

Figure 5-18. New Label Wizard Sensor ID

17. Enter a name and a description (optional) for this database for reference.

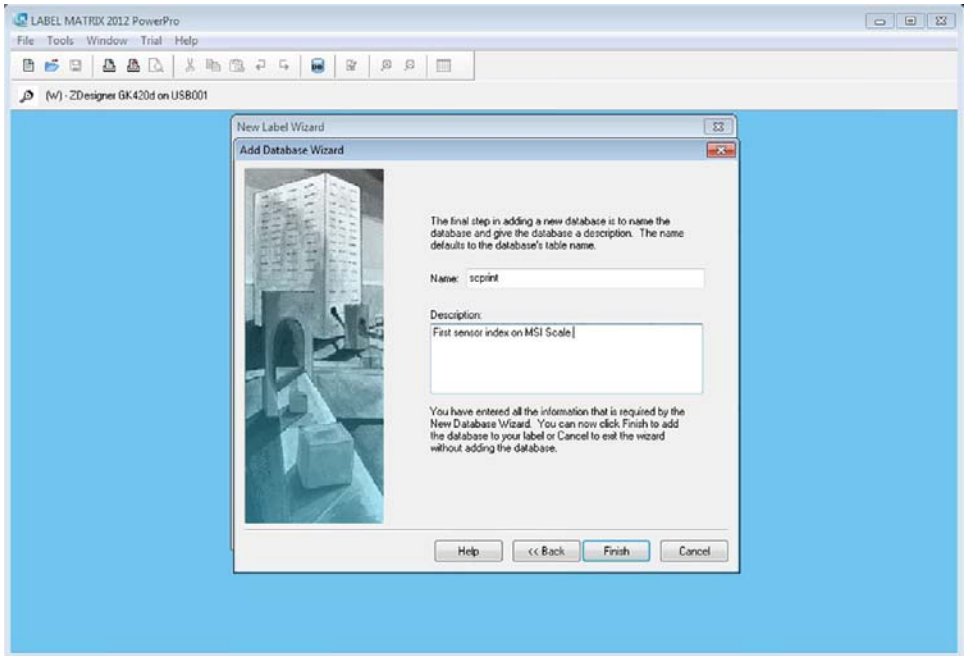

Figure 5-19. New Label Wizard Name and Description

18. Select the newly entered database in the list.

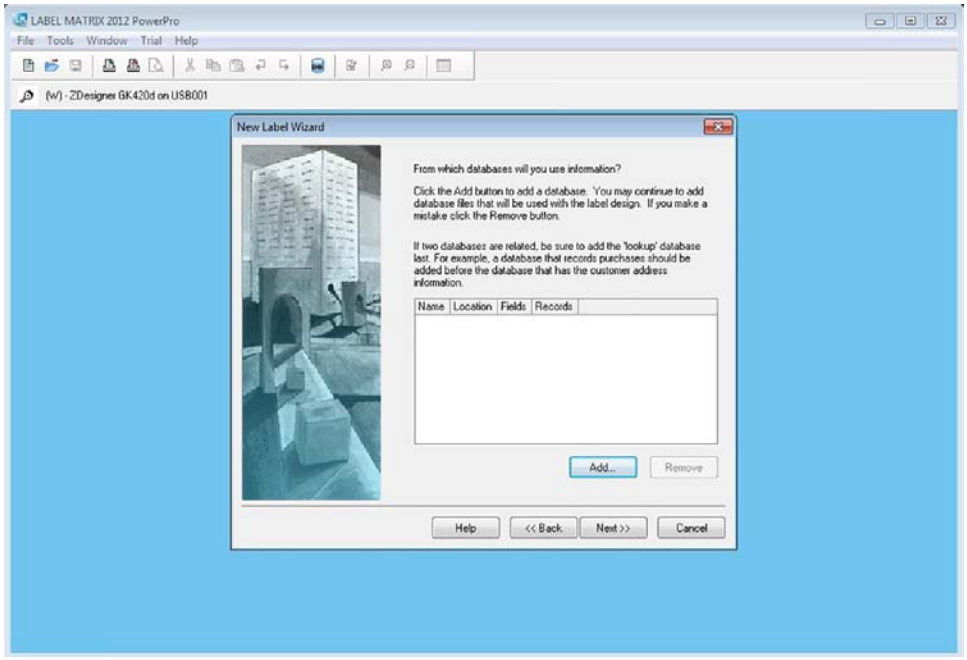

Figure 5-20. New Label Wizard Database List

19. Enter a description for this label.

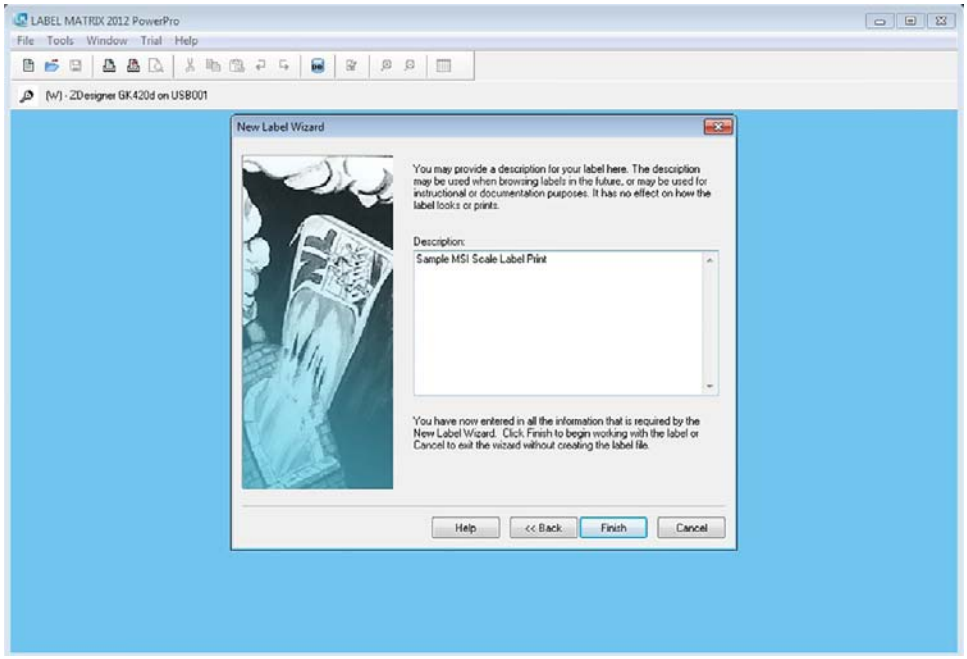

Figure 5-21. New Label Wizard Description

20. Configure the label size.

21. Add text data to the label.

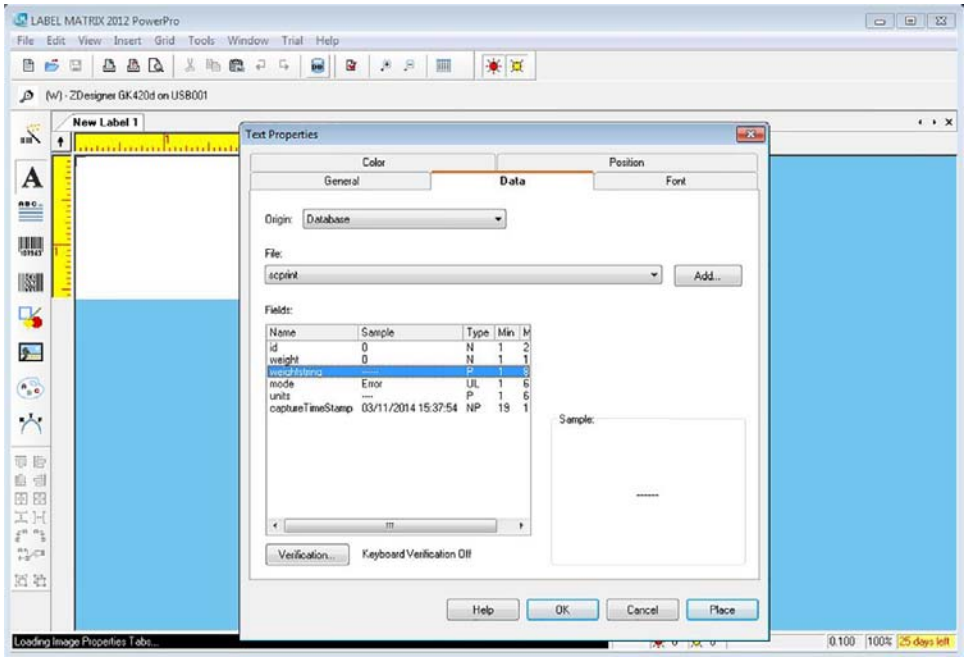

Figure 5-22. New Label Wizard Data

22. Start the *Sc2Db* application.

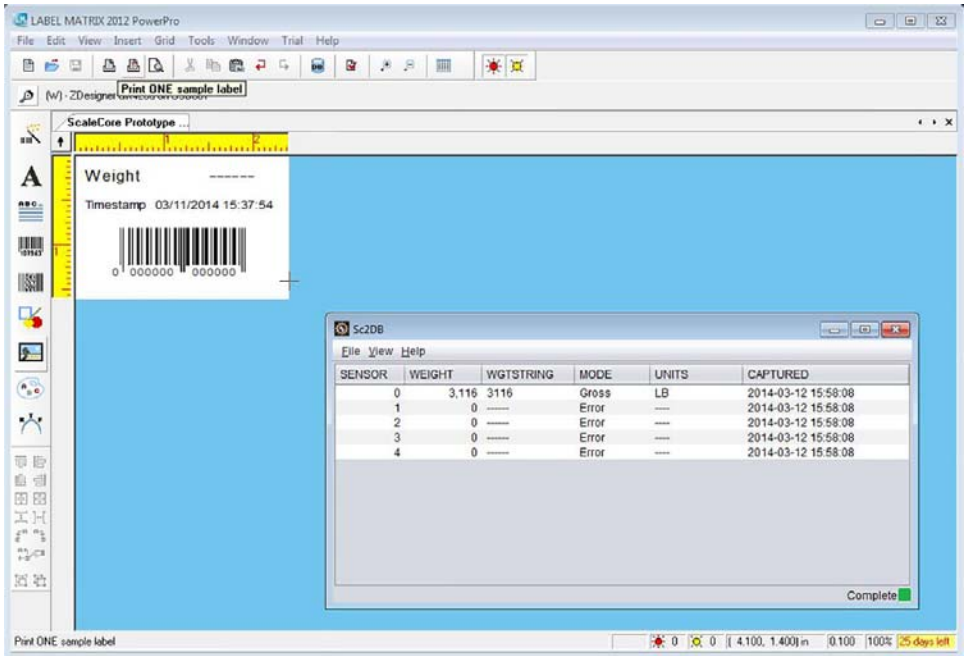

Figure 5-23. Sc2Db Application

23. Print a label and observe the scale data formatted as desired on the label.
24. Continue with desired configuration of the Label Matrix software for your desired solution.

For additional details about configuring Label Matrix, Please contact TekLynx for support.

6.0 Troubleshooting

The following troubleshooting reference is intended to help with common problems related to the *Sc2Db* application. It is not a comprehensive solution for every problem.

Problem	Solutions
The application does not start.	• Verify the application has been installed correctly • Confirm installation requirements • Verify an instance of the application is not already running
There are no serial ports listed when I try to make a serial connection.	• Confirm you are running the application on a compatible version of Windows. • Confirm there are serial ports available on the installed platform. • If using USB to serial converters, verify the device driver was correctly installed for the converter in Windows.
The application is not connecting to my RS-232 device.	• Verify the device is turned on. • Verify serial communications settings in both the application, and the device. • Some ScaleCore devices require the radio be turned off for the serial port to operate.
The application is not connecting to my Ethernet/802.11 device.	• Verify the device is turned on. • Try using a ping tool to attempt to verify access to the device. • Check firewall and router configuration.

Table 6-1. Troubleshooting Guide

7.0 Acronyms and Glossary of Terms

Following is a list of acronyms and terms used throughout this document.

Term	Definition
802.3	The IEEE standard for wired Ethernet.
802.11	The IEEE standard for wireless Ethernet.
ADC	Analog to Digital Converter.
AZM	Auto Zero Maintenance.
COZ	Center of Zero.
DAC	Digital to Analog Converter.
LC	See Load Cell.
LED	Light Emitting Diode.
Load Cell	A transducer that is used to convert a force into electrical signal.
Math (Sensor)	A sensor type that uses math functions to combine multiple load sensors into one value.
RS-232	Serial Communications Protocol.
SC	ScaleCore is a family of products by Measurement Systems International.
SC Device	A term referring to a physical ScaleCore family weighing product.
SCCMP	ScaleCore Configuration Management Program.
ScaleCore	A family of weighing products by Measurement Systems International.
Setpoint	A standard function in ScaleCore products to monitor load thresholds.
TCP/IP	Transmission Control Protocol / Internet Protocol.

Measurement Systems International™

A RICE LAKE WEIGHING SYSTEMS COMPANY

14240 Interurban Avenue South Suite 200 • Seattle, WA 98168-4661 • USA
Phone: 206-433-0199 • Fax: 206-244-8470
www.msiscales.com

www.ricelake.com www.ricelake.mx www.ricelake.eu www.ricelake.co.in m.ricelake.com