



Operator's Manual

Radio Transcorder

Remote Radio Module

Part Numbers and Accessories



Radio Transcorder
Model 915 V03A



USB Radio Adapter
Model 7-023-B



Model 915 V03A Transcorder with
Model 920 Amcorder
*Amcorder sold separate



Model 915 V03A Transcorder with
Model 910 Varcorder
*Varcorder sold separate

Operators Manual

Radio Transcoder

Recorder Radio Interface

Available Stock Codes:			
915 V02	915-EU V02	915	915-EU
915 V03	915-EU V03	915 V03A	915 V03A EU

Table of Contents

Overview	5
Safety	5
Specifications	6
Radio Certifications	7
Hardware Setup	8-9
Softlink Installation	10
Communicating to Recorder	11
Configure Recorder Settings	12
Download Recorder Data	13
Saving Recorder Data	14
Opening Data Files	15
Options	16
Graphing	17
Troubleshooting Radio Communications	18
Warranty Statement	19
Quality Assurance	Back Cover

Overview

The Radio Transcorder provides utility engineers with the ability to drive by installed Recorders to setup and download data without requiring a line crew to remove the units from the line. This capability improves the speed to gather and analyze data. Line crews can then be scheduled to retrieve and relocate the recorders for further studies. Softlink identifies each recorder by its user definable name and the serial number of the Radio Transcorder.

The Radio Transcorder is designed to connect directly onto either a Varcorder or Amcorder on an overhead line. The Radio Transcorder is compatible with previous version recorders and communicates directly to a computer running SensorLink's Softlink software via a USB Radio Adaptor.

Safety Information



Read all safety and instruction statements before using the product. Failing to follow the safety guidelines can cause severe injury or death.



The Recorder with the Radio Transcorder is designed for use on live, overhead lines where the voltage is between 0 to 69 KV. All procedures appropriate for the line voltage should be taken including proper work techniques, equipment, and Personal Protection Equipment.



The Recorder should be deployed and retrieved only by certified personnel who have been trained for live-line, high voltage work by their organization.



The Recorder is to be installed and removed from the line with a suitable shotgun or switch stick style hot stick. The hot stick should be considered the sole voltage isolation device.



The hot stick length must be correct for line voltage per minimum approach distances stated in published OSHA and/or Utility regulations.



The cover plate, chuck, Recorder and Radio Transcorder should be considered at the same potential as the conductor where they are attached. Putting the cover plate, chuck or other parts of the Recorder within the air gap of adjacent phases or ground may cause a phase-to-phase or phase-to-ground fault.



The Radio Transcorder adds an additional 1.98" to the Recorder. The total height of the Recorder with the Radio Transcorder is 12.11". Make certain it is installed so it cannot reach the air gap of adjacent phases or ground.



Do not alter the product in any manner.

Specifications

Kit Number	6-915-3
Type	For use with SensorLink Amcorder or Varcorder *Amcorder or Varcorder not included
Kit Includes	3 ea Transcorder Modules, 915 V03* 1 ea USB Radio, 7-023 V02** * Model 915 and Model 915 V03/V03A are not compatible. **Model 915 compatible with 7-023 ***Model 915 V03 and Model 915 V03A compatible with 7-023 V02 and 7-023-B
Radio	
Frequency	ISM 2.4 GHz
Power	63 mW (18dBm)
Range	300 ft, Line of Site
Range of Operation	
Voltage	69kV
Mechanical	
Weight	5.6 oz, 0.16 kg, without batteries
Height	1.98 in, 5.03 cm
Diameter	3.62 in, 9.19 cm
Operating Temperature	-22° to +140°F, -30° to +60° C Use Lithium batteries for usage down to -4°F and -20°C
Housing	Shock & water resistant molded urethane
Battery	
Type	2 ea, 9V Alkaline or Lithium
Life	90 days, downloading once per week
Software Requirements	Softlink by SensorLink
System	Windows 7, 8, and 10
Xbee/Pro Agency Approvals	FCC part 15.247 (USA) IC (Industry Canada) CE (European Union) R201WW08215111 (Japan)

Radio Information

FCC and IC Notices

UNITED STATES OF AMERICA

Contains FCC ID: MCQ-XBEE3

Contains Model XBee3-PRO Radio, IC: 1846A-XBEE3

The/XBee3-PRO® RF Module has been certified by the FCC for use with other products without any further certification (as per FCC section 2.1091). Modifications not expressly approved by Digi could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

CANADA

Contains Model XBee3-PRO Radio, IC: 1846A-XBEE3

This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

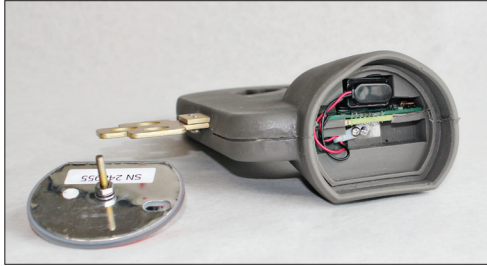
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: Re-orient or relocate the receiving antenna, Increase the separation between the equipment and receiver, Connect equipment and receiver to outlets on different circuits, or Consult the dealer or an experienced radio/TV technician for help.

Battery Life

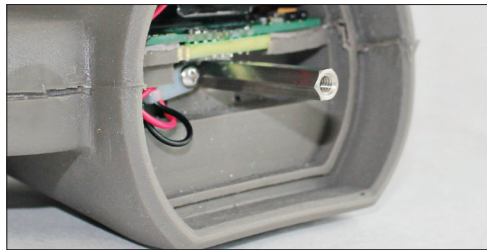
The Radio Transcorder is designed to run on two 9 volt alkaline batteries. For the majority of the unit's deployment, the radio and the micro-processor are in sleep mode. When a connected USB Radio Adaptor comes into radio range, the Radio Transcorder awakens so the two radios can communicate. In order to achieve 90 days of run time from the Radio Transcorder, the user may only make contact between the two radios once per week. For every additional connection of the two radios, it will reduce the predicted battery life.

Hardware Setup Instructions

1. Unscrew the thumb screw from the front panel assembly and remove from the Recorder.



2. Screw the male end of the standoff assembly into the threaded hole.



3. Using a small 1/4" open end wrench, tighten the standoff so it does not come loose.
4. Install the batteries into the pocket of the Radio Transcoder molded assembly. If only one battery is used, be sure to cap the unused battery connector. Failure to do so could cause a fault on the battery board if contact is made.



Note: The Radio Transcoder has provision for two 9 volt batteries in parallel. The Radio Transcoder will operate with one battery, but this will reduce battery life.

Hardware Setup Instructions...continued

6. Place the Recorder Radio Module into the bottom of the recorder.



7. Place the front panel assembly from the Recorder onto the Radio Transceiver and turn the thumb screw to tighten. Do not over tighten.



Line Installation

See the Amcorder or Varcorder user manual for instructions on deploying the Recorder on an overhead line.



Softlink Software

Softlink is a software application that allows the user to download, view, graph and import data from their Recorder. In order for a PC running Softlink to communicate via radio, the Radio Transcorder must be installed onto the Recorder and both units powered on.

Please see the Amcorder or Varcorder manual for instructions with USB IrDA communication.

Softlink System Requirements

OPERATING SYSTEM: Softlink installs onto computers running Windows 7, 8, and 10. Softlink requires Microsoft .NET, which will install with Softlink if not already installed.

NETWORK INSTALLATION: Softlink is a single user application and is not supported when installed onto a server.

INSTALLATION AUTHORITY: Installation will require administration rights. Computers managed by electric utility organizations often limit the programs that can be installed. If the user does not have admin rights they will need the assistance of the IT department to download the software.

USB PORT PERMISSIONS: The USB IrDA has an install program that runs the first time it is connected. The user may have rights to install programs but may not be aware that the USB ports are locked on the PC. Please contact your network administrator for permission and instructions to complete the install if drivers are not installing automatically.

Softlink Installation

Step 1: Softlink Installer is available at www.sensorlink.com/products/varcorder or www.sensorlink.com/products/amcorder. Save the file to the desired location. The Softlink .exe file will automatically begin the download when clicked.

Step 2: You must agree to the licensing agreement to proceed with the download

Step 3: A dialog box will appear to let you know when the download is complete. Shortcut paths will automatically load during the install.

Step 4: To open Softlink, click on the Start Menu. Under Programs, select Softlink.

Manual Radio Driver Installation

The USB Radio Adapter will install a driver from FTDI (Future Technology Devices International) when plugged into a computer using Windows 7, 8 or 10. If the driver does not automatically install it can be downloaded from:
<https://www.ftdichip.com/FTDrivers.htm>

Ensure the driver is installed and ready for use before opening Softlink or Steelhead.

To verify the USB Adapter is recognized by the computer, open Device Manager, under Universal Serial Bus controllers it will show as "USB Serial Converter". Double click on "USB Serial Converter" and a property window will show the device Manufacturer as "FTDI".

Communicating with a Recorder

To communicate with a Recorder, follow these steps:

Step 1: Insert the USB Radio Dongle into the Computer's USB port

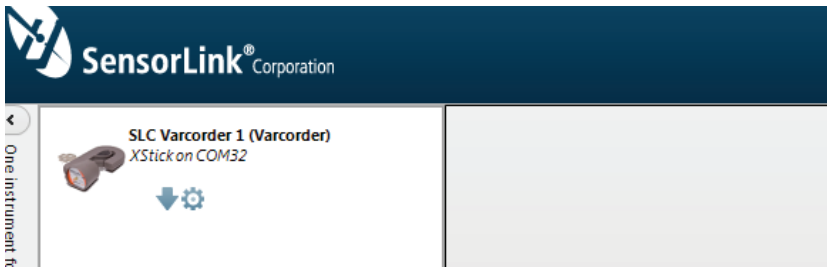
Step 2: Open Softlink from either the Desktop or Start Menu

Model 915 Transcorder will only communicate with Model 7-023 radio dongle.

Model 915 V03A Transcorder will only communicate with Model 7-023 V02 and Model 7-023-B radio dongle.

Discover

Softlink will automatically discover the available Recorder.



The description and photo displayed will change from the communication device to the unit when the Recorder has been discovered.

Configure

Select the Configure button to setup Recorder preferences.

Varcorder Configuration

Varcorder Information

Serial Number: 241391
Firmware: 910-3.00.0014 1 Feb 2004

Name (16 Characters): PG&E #1 PH A
Description (46 Characters): Harrison July 16

Log Interval

1 minute

Sample Interval

5 seconds

☐ Clear all logged data from your instrument and synchronize logging with the hour

Cancel Upload

Name: Identify the Recorder with up to 16 characters.

Description: Enter a description of up to 46 characters. For example, you may want to note the Recorder's service location and the date range for the recordings.

Log Interval: Select how often to log data. The Recorder averages all samples taken since the previous logging and records the result. Typical sample and log interval synchronization are one minute and 15 minutes, respectively. The log interval must exceed the sample interval.

How many Log intervals are available in the Amcorder? 64,000

How many Log intervals are available in the Varcorder? 64,000

Sample Interval: Select how often the Recorder will sample current by sliding the cursor on the scroll bar. Battery life depends on this setting; see page four.

Synchronization: Selecting the "Clear all logged data from the Recorder... and synchronize logging to the hour" box will allow the Recorder to synchronize itself to the computer's clock. When multiple Recorders are setup and synchronized using the same log interval and the same computer, they will all log at the same time.

Clock is Set: If the Recorder is not synchronized before hanging on the line, the log times will be set, even though not evenly aligned to the hour.

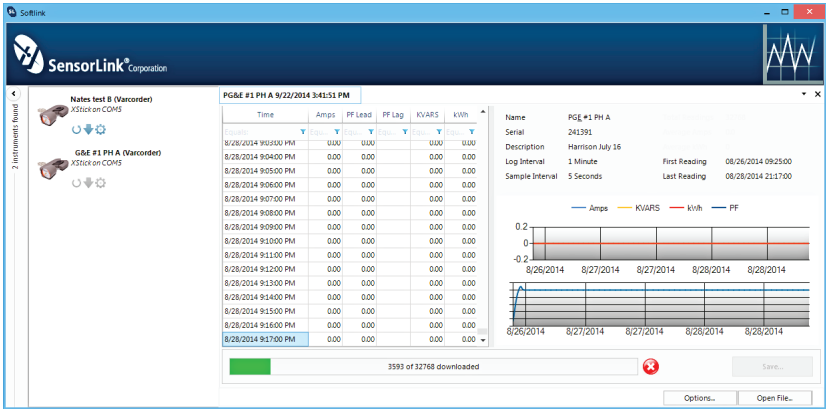
Clock is Unset: If the Recorder's battery fails prior to any Softlink communication.

Legacy: Older version Recorders cannot be synchronized. To achieve log-time accuracy with these units, take them down before the battery fails, and download all data before re-hanging the unit. All log times prior to the first download are accurate to within a log interval, as long as the battery has not failed.

Download

Clicking the Download button instructs Softlink to begin downloading data from the Recorder.

The user is able to view the Recorder's configuration, data, and progress as it is downloading in graph view.



The download can be stopped at any time by selecting the red button to the right of the download progress bar. With a full unit, download rate is approximately 5400 lines/minute.

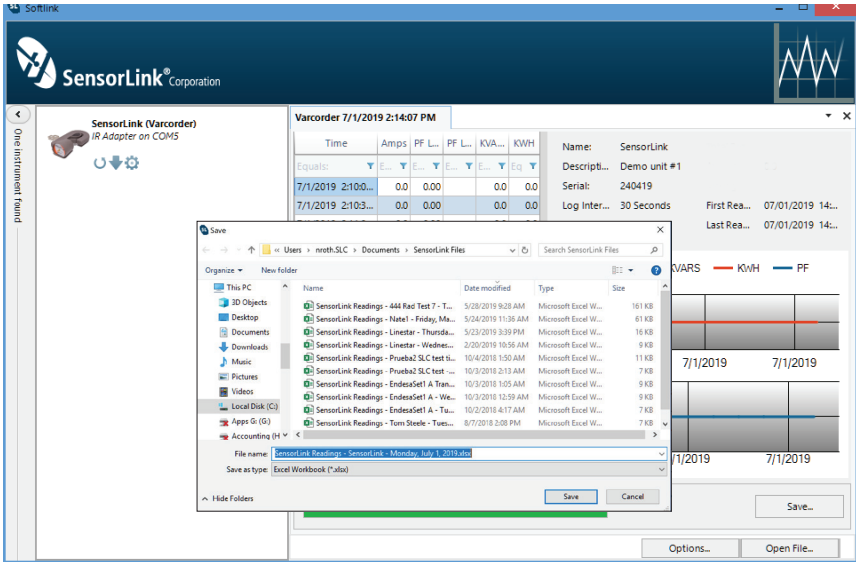
Saving Recorder Data

Data files may be saved as a .csv or .xlsx file for future review in Softlink or another data management program. The data from each recorder is saved into its own file.

Step 1: Select the data file by selecting the Recorder on the menu

Step 2: Select "save"

Step 3: Repeat this process for any other data files to be saved



Opening Recorder Data files in Softlink

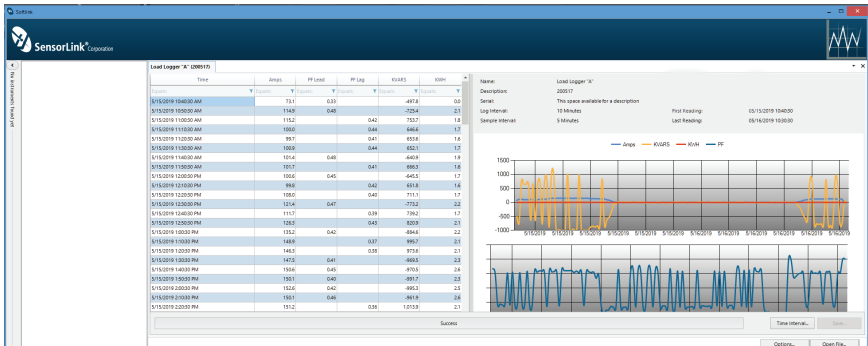
Previously saved files from a Recorder may be opened in Softlink. Follow these steps for opening saved files:

Step 1: Open Softlink

Step 2: Close the "Discovering ports and instruments" bar

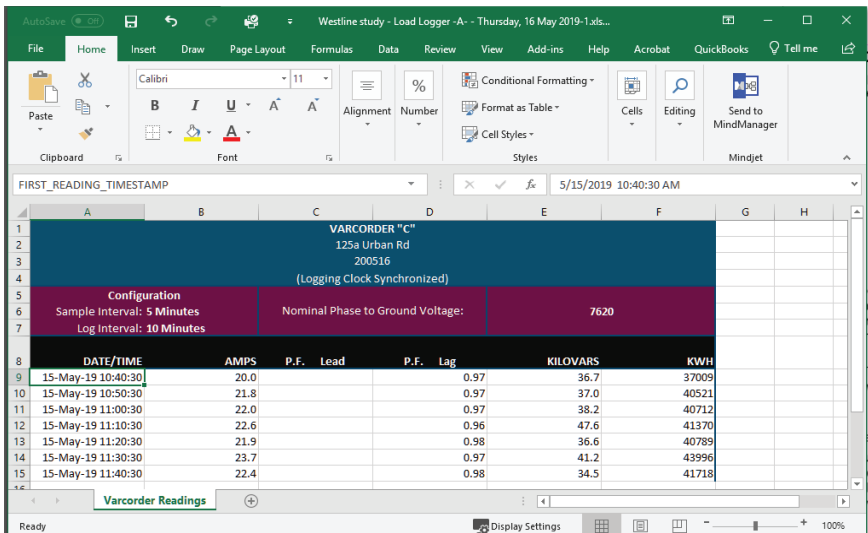
Step 3: Select "Open File"

Step 4: Find and select the .csv or.xlsx Softlink file



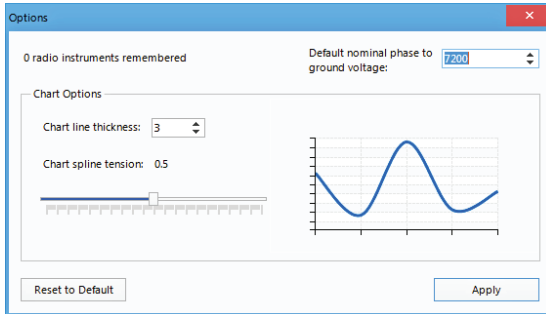
Opening data files in other programs

Previously saved files from a Recorder may be opened in other data management programs for analysis and review.



Options

The options button on the Download Screen allows the user to change certain preferences.



Radio instruments remembered: Softlink remembers Radio Transcoders that were used in previous downloads. Select "Clear All" for Softlink to forget the radios.

Note: If the Radio Transcoder is swapped with different Recorders, it is recommended to select "CLEAR ALL".

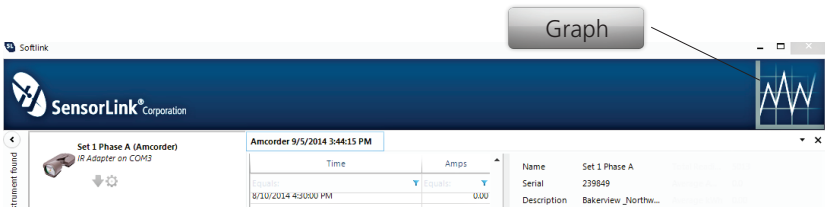
Chart line thickness: The thickness of the graph lines can be changed by the user. Thickness is numbered 1 - 10, and defaults at three. The software will show a preview to the user as the value is changed.

Chart spline tension: The chart spline tension is used to smooth graph lines. The spline tension range is 0 - 1. Slide the scroll bar to change the spline tension. The software will show a preview to the user as the value is changed.

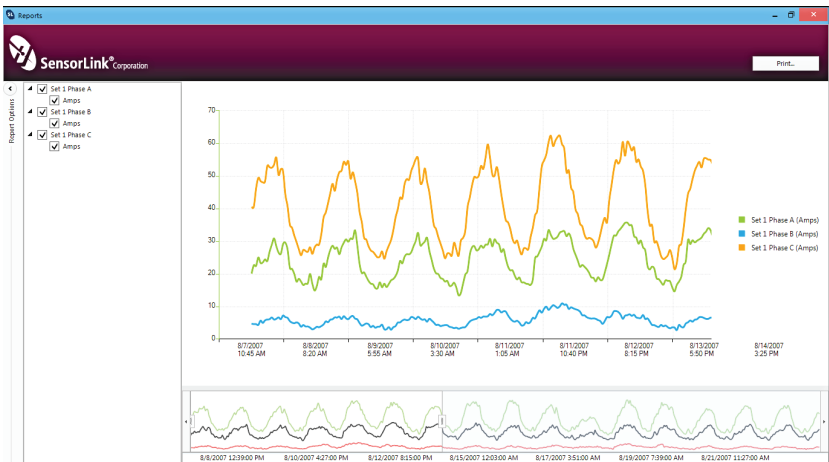
Default nominal phase to ground voltage: This option is for Varcorders and has no effect on the operation of an Amcorder.

Graphing

To graph the downloaded data, click the Graph Icon on the download screen.



A second screen will open and display the data in graphical format.



Report Options

Select the units and measurement parameters to graph by clicking in the selection boxes. Only selected measurement parameters will display on the graph.

Hide and Show Report Options

Click the left arrow to hide Report Options. Click the right arrow to show the hidden Report options.

Zoom Window

The bottom graph displays the entire time series. To view a section of time, adjust the left and right sliders. The upper graph will display the values between the slides.

Cursor Tool

Placing the cursor over the graph will display the date and time values of the measurements.

Troubleshooting Radio Communication

If the unit is having problems communicating, try the following:

- Verify you have administration rights to download software and have full access to the PC's USB ports.
- Examine the USB Radio device's connection to the PC's port, and reconnect.
- Use the same USB port that was unlocked by IT. Using a different port will not work without security permissions from IT.
- Try restarting Softlink by first exiting and then restarting.
- Docking station USB ports may fail to communicate and are not recommended.
- Errors may occur with communication if more than three units are communicating to software at a time.
- The unit will not communicate if the battery is below 5 volts. See Varcorder or Amcorder user manual for full battery life instructions.
- When a new battery is inserted the user has 5 minutes to start downloading data. In 5 minutes the Recorder resets and all data is deleted from flash memory. **We recommend that you do not remove the battery until you have downloaded all of the data.**

SensorLink Corporation Warranty

SensorLink warrants each instrument it manufactures to be free from defects in materials and workmanship under normal use and service for the period of one year after date of shipment. Within this period, SensorLink agrees to repair or replace, at SensorLink's option, any instrument that fails to perform as specified. This Warranty shall not apply to any instrument that has been:

- 1 Repaired, worked on, or altered, including removal of the front panel, by persons unauthorized by SensorLink in such a manner as to injure, in SensorLink's sole judgment, the performance, stability, or reliability of the instrument;
- 2 Subjected to misuse, negligence, or accident; or
- 3 Connected, installed, adjusted, or used otherwise than in accordance with the instructions furnished by SensorLink.

This Warranty is in lieu of any other warranty, expressed or implied. SensorLink reserves the right to make any changes in the design or construction of its instruments at any time, without incurring any obligation to make any change whatever in units previously delivered.

If a failure occurs, contact the manufacturer for a Return Authorization and instructions for return shipment. This warranty constitutes the full understanding of the manufacturer and buyer, and no terms, conditions, understanding, or agreement purporting to modify or vary the terms hereof shall be binding unless hereafter made in writing and signed by an authorized official of SensorLink.

Quality Assurance Certification

Radio Transcorder

Models 915 V03A

SensorLink certifies that its calibration measurements are traceable to the National Institute of Standards and Technology (NIST), to the extent allowed by the Institute's calibration facility, and to the calibration facilities of other International Standards Organization members.

This document certifies the following Radio Transcorder was tested at the SensorLink High Voltage Laboratory, Ferndale, WA, USA to the appropriate standard and comply with the requirements of that standard.

Serial Number: _____

Model Number: _____

I hereby certify that the Radio Transcorder listed above has passed all tests defined in the SensorLink standard. I also certify that I have reviewed the standard and test procedure and that they are sufficient in determining compliance with the standard.

Signed: _____

Date: _____



These products proudly made in the USA.

Form No: SALE-Manual Template TRANSCORDER-013 REV: V10

Date: 01/2023

Manual Stock Code No: M050-080-001

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