
Model 8020-39

StringLink™

Instruction Manual



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1. INTRODUCTION

The GEOKON Model 8020-39 StringLink™ enables connections between GEOKON addressable sensor strings and a variety of systems, including personal computers, readouts, and data loggers.

The StringLink acts as a bridge between USB (2.0 or greater) capable readers and the GEOKON RS-485 enabled sensor strings. The device supports bidirectional signal conversion between USB and RS-485.

Communication with GEOKON addressable sensor strings uses the MODBUS RTU protocol over a half-duplex RS-485 connection. The device is designed for GEOKON addressable string systems with a fixed baud rate of 115.2 kilobits per second.

The StringLink is contained inside a rugged aluminum enclosure and incorporates a variety of safety features. These include high current surge protection, transient voltage suppression, electro-static discharge protection, and Lithium-Ion battery pack over/under voltage, charge, and temperature protection.

The StringLink draws its power from an internal 7.2 V 6900 mAh Lithium-Ion battery pack and generates its own 15 Volt supply for the RS-485 bus, which is used to power the sensor string.

Connection of the StringLink to the GEOKON addressable sensor string system is accomplished by either a flying-lead cable (included) or an adapter cable (purchased separately) connected to the front panel circular SENSOR connector.

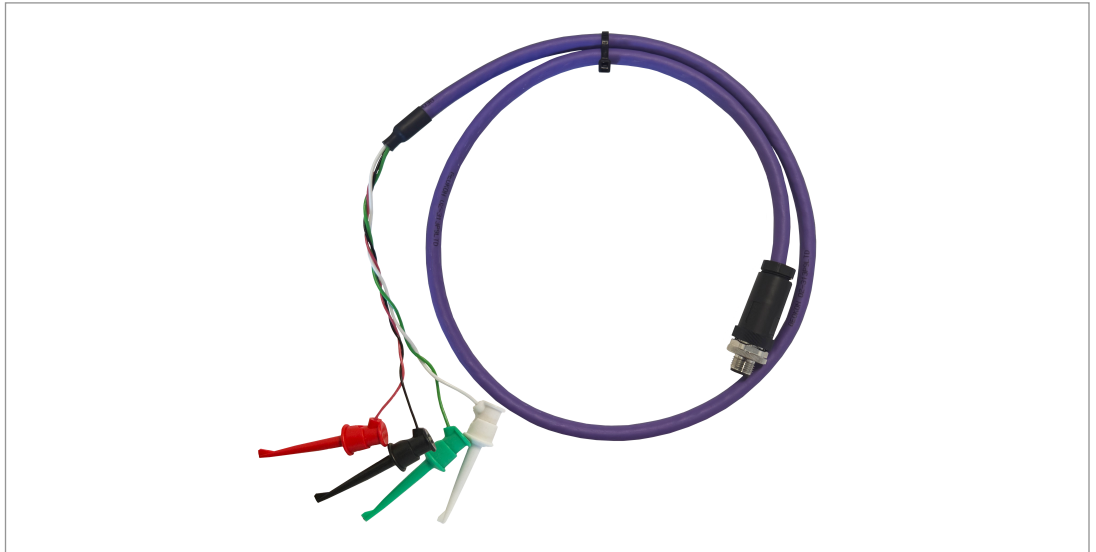


FIGURE 1: *Flying Lead Cable (Included)*



FIGURE 2: *Adapter Cable (Purchased Separately)*

2. INSTALLATION

2.1 CONNECTION AND OPERATION

1. Remove the cap from the sensor port.



FIGURE 3: Connect the Readout Cable to the StringLink

2. Connect the readout cable to the sensor port: Mate together the male and female connectors, then hand tighten the knurled coupling nut to secure the connection.



FIGURE 4: Connect the Readout Cable to the StringLink

3. Connect the other end of the readout cable to a GEOKON addressable sensor string, using either the flying-leads or adapter cable.

Instrument Cable Conductors	Model 8020-39 Internal Connector	Flying Lead Conductors	Description
White	485+	White	Communication RS-485+
Green	485-	Green	Communication RS-485-
Red	VBUS	Red	String Power
Black	GND	Black	Ground

TABLE 1: Readout Cable Connection (Flying Leads) to the Sensor String

4. Remove the cap from the USB-C's port. Plug the included USB-C cable into the port and connect the other end of the cable into the host's (i.e., PC) USB port. The blue LED on the ON/OFF switch will start blinking, indicating the internal Lithium-Ion battery pack is being charged.



FIGURE 5: Connect the USB Cable to the StringLink

5. Press the ON/OFF switch. The blue LED will turn solid blue, indicating that the StringLink is on and ready to receive commands from the application software.

It should be noted that even while the Converter is on, the internal Lithium-Ion battery pack is still being charged. If the Lithium-Ion battery pack needs to be charged, the blue LED will pulse brightly once every 5 seconds.

2.2 DISCOVERING SENSORS AND TAKING READINGS

1. Download and launch the GEOKON Desktop application:
<https://apps.microsoft.com/detail/9P05ZLF7JTHJ>
2. With the 8020-39 connected to the PC, navigate to the **Sensors** tab, then select **Discover Sensors** and set your sensor discovery range.
 - **Search All Addresses:** Select this option to scan all available drops (addresses 1–500).
 - **Select Address Range:** If you know the addresses of your sensors, enter a specific range to speed up the discovery process.

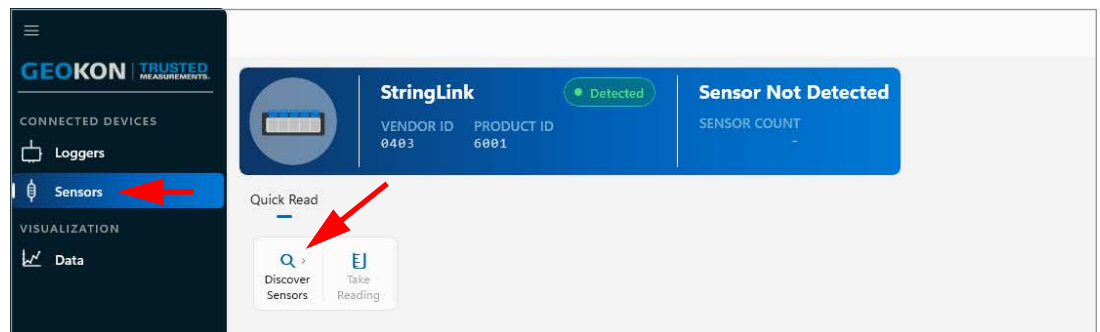


FIGURE 6: Main Screen with Model 8020-39 Connected

3. Select **Discover**. The application will scan the string and populate a list of detected sensors. Discovered sensors will display their serial numbers (if available) and firmware version.
4. To take readings on the discovered sensors, select **Take Reading**.

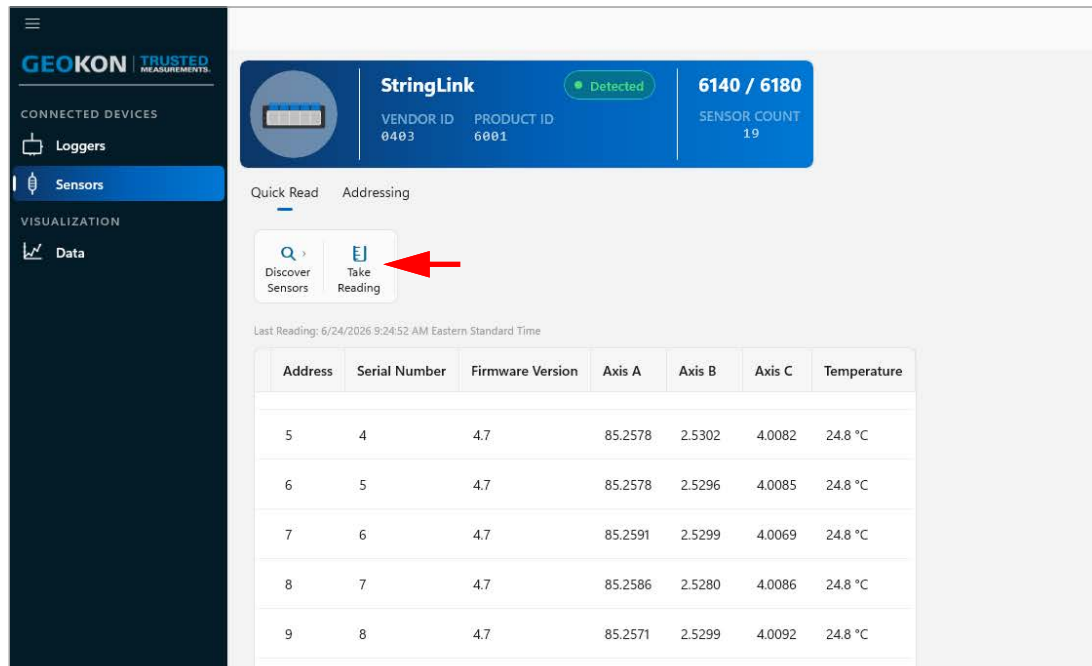


FIGURE 7: Results after Taking a Reading

3. MAINTENANCE

3.1 CHARGING THE UNIT

Charging of the internal Lithium-Ion battery pack is accomplished by connection to an external source via the front panel USB-C connector. The internal charger circuitry offers 2 charging rates.

- Low-rate charging (indicated by a slow blinking of the blue front panel LED) is provided anytime the 8020-39 is connected to a USB 2.0 or greater port. Low-rate charging will fully charge a depleted battery pack in approximately 24 hours.
- High-rate charging (indicated by a fast blinking of the blue front panel LED) is provided if the external source is USB-PD (Power Delivery) capable. High-rate charging will fully charge a depleted battery pack in approximately 4 hours.

A low battery voltage condition is indicated by a fast blink of the blue front panel LED once every 5 seconds.

APPENDIX A. SPECIFICATIONS

A.1 MODEL 8020-39 STRINGLINK SPECIFICATIONS

Power	
Power Supply Input	USB: 5 Volts DC 500 mA USB-PD: 12 Volts DC 3 A
Power Supply Output	15 Volts DC 1 A (max)
Sleep (OFF) Current	200 μ A
Operating Current	12 mA (max)
Operating Temperature	-20 to +50 °C
Battery Charger Operating Temperature	0 to +45 °C
Internal Battery Pack	7.2 V 6900 mAh Rechargeable Lithium-Ion
Battery Pack Charging Current	USB 2.0 Low rate: 350 mA (~24 hours until fully charged) USB-PD High rate: 2 A (~4 hours until fully charged)
Communication	
Interface	RS-485 (half-duplex, two-wire differential) USB 2.0 to USB 3.x
Baud Rate	115200 bits per second
Mechanical	
Enclosure Material	Die-cast aluminum, IP 65 (dust-tight; protected against low-pressure water jets from any direction)
Weight	3 lbs (1361 g)

TABLE 2: Model 8020-39 StringLink Specifications

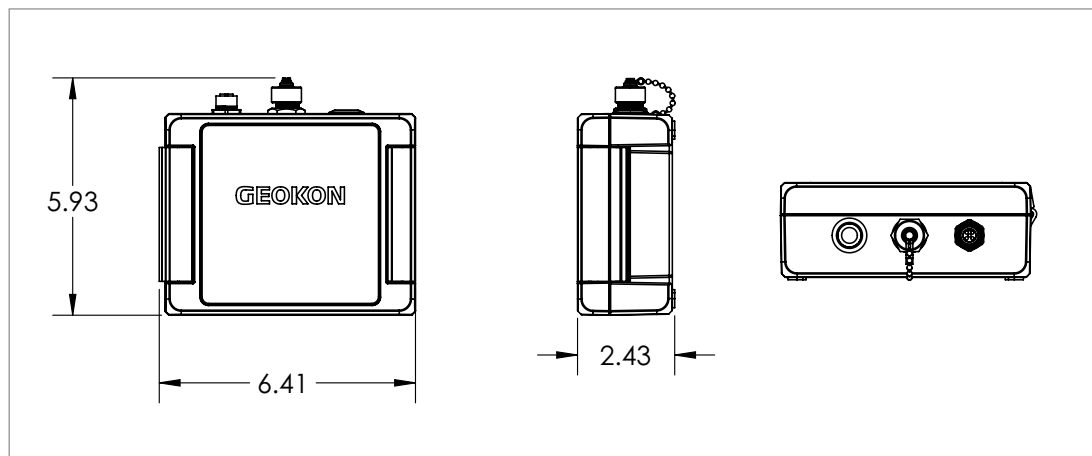


FIGURE 8: Device Dimensions (Displayed in Inches)

A.2 PARTS LIST

BAT-211	Lithium-Ion Battery Pack
S-8020-39-FL	Flying Leads Readout Cable
8020-39-CABLE	Adapter Readout Cable

TABLE 3: *Model 8020-39 Parts List*



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