2SWIFI
Serial to WiFi Module
Installation and Setup Manual

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DISCLAIMER

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FCC COMPLIANCE STATEMENT

This equipment generates uses and can radiate radio frequency and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area may cause interference in which case the user will be responsible to take whatever measures necessary to correct the interference.

You may find the booklet "How to Identify and Resolve Radio TV Interference Problems" prepared by the Federal Communications Commission helpful. It is available from the U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 001-000-00315-4.

PROPER DISPOSAL

When this device reaches the end of its useful life, it must be properly disposed of. It must not be disposed of as unsorted municipal waste. Within the European Union, this device should be returned to the distributor from where it was purchased for proper disposal. This is in accordance with EU Directive 2002/96/EC. Within North America, the device should be disposed of in accordance with the local laws regarding the disposal of waste electrical and electronic equipment.

It is everyone's responsibility to help maintain the environment and to reduce the effects of hazardous substances contained in electrical and electronic equipment on human health. Please do your part by making certain that this device is properly disposed of. The symbol shown to the right indicates that this device must not be disposed of in unsorted municipal waste programs.

II
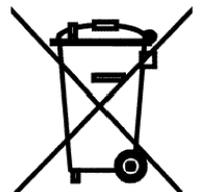
INTRODUCTION

Thank you for purchasing our Cardinal S2WIFI Serial to WiFi module. The S2WIFI module was built with quality and reliability and is used to connect to an IEEE 802.11b/g wireless local area networks (wireless LAN). When the device it is connected to is powered on, the S2WIFI will connect to a wireless LAN matching the configuration stored in the WiFi module.

The purpose of this manual is to provide you with a guide through installation and setup of the S2WIFI Serial to WiFi module. Please read it thoroughly before attempting to install the module and keep it handy for future reference.

SPECIFICATIONS

Wireless Network Type:	Soft AP
Service Set Identifier (SSID):	CardinalS2W-##*
Wireless Channel:	6
Security:	None
LAN IP Address:	192.168.0.100
LAN Subnet Mask:	255.255.255.0

* **NOTE:** ## is the last 2 digits of the MAC address of the module.

PRECAUTIONS

Before using this device, read this manual and pay special attention to all NOTIFICATION symbols:

⚠ **IMPORTANT**   ⚡ **ELECTRICAL WARNING**   ▲ **STATIC SENSITIVE**

INSTALLATION

Interconnections

⚠ **ATTENTION! OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.**

Product	Board Number	Connections
205/210 Legacy	8200-D201-0A – 205 8200-D201-1A – 210	Plug connector into option port on either side of board making sure wire connections go to Pin 1 side. Choose any open RS232 port and connect White wire to TX and Green wire to RX.
225 Legacy	8200-D358-0A	Plug connector into option port on either side of board making sure wire connections go to Pin 1 side. Choose any open RS232 port and connect White wire to TX and Green wire to RX.
205/210 w/USB	8200-D124-0A – 205 8200-D124-1A – 210	Use option port P10 for power or cut connector off and connect Red wire to P3 Pin 1 (+SRC) and Black wire to P3 Pin 10 (GND). Choose any open RS232 port and connect White wire to TX and Green wire to RX. *Jumper J2 is <u>must</u> be connected*.
225 w/USB	8200-D358-0A – USA 8200-D358-4A – INTL	Use option port P15 for power or cut connector off and connect Red wire to P19 Pin 1 (+SRC) and Black wire to P19 Pin 10 (GND). Choose any open RS232 port and connect White wire to TX and Green wire to RX. *Jumper J6 <u>must</u> be connected to the VP side*.
825	8545-D800-0A	Connect Red wire to P19 – 4, Black wire to P19 – 5, White wire to P19-1 and Green wire to P19-2.
201	8400-D100-0A	Connect Red wire to 0-10V OUT, Black wire to GND, White wire to 485Y/TXD and Green wire to 485A/RXD.
SB250 / SB500	3601-D431-0A	Plug connector into option port on either side of board making sure wire connections go to Pin 1 side. Connect White wire to P1-16 and Green wire to P1-17.
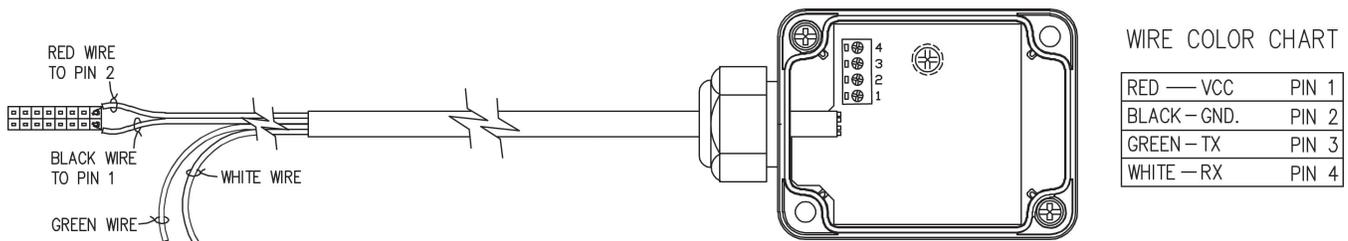
NETWORK CONFIGURATION

Connecting to S2WIFI Access Point (Ad Hoc)

From the initial factory settings, S2WIFI module will appear as a wireless access point with the name "CardinalS2W-##" where ## is the last 2 digits of the MAC address. In order to connect to S2WIFI for initial setup, you will need to connect to it as a wireless access point using a wireless device such as a laptop, PC, tablet or smart phone. Once connected you can make use of the full functionality described in the Operation section below.

Connecting to an Existing Network

In order to set up the S2WIFI to connect to an existing network:

1. Power on the scale with the S2WIFI installed.

2. Connect to the S2WIFI access point.

3. With a PC or laptop, use HyperTerminal or another terminal client to connect to the wireless module IP address and port 10001. The default IP address is 192.168.0.100.

4. Once connected, send three '$' characters and press enter. The module should reply with "CMD" and is now in command mode.

5. To launch the web configuration utility, type "**run web_app**" into the terminal console window and press Enter. This will cause the S2WIFI to reboot in the web configuration mode where you can set it to connect to an existing network.

6. Since the module rebooted, you will need to reconnect to the S2WIFI access point. Once you have reconnected to the WIFI module, launch a web browser and navigate to

    http://config

If your attempt to browse to this page is unsuccessful, you may need to disable any other Ethernet adapters besides the wireless adapter being used to connect to the S2WIFI module. Make sure to start the web configuration app by briefly applying the DEFAULTS jumper before connecting to the S2WIFI access point.

You should then be presented with a new page which contains a form that can be used to set up the network configuration to either connect to an existing network, or act as a wireless access point. On the next page is an image of how this screen will appear as well as functional descriptions of each of the settings.

NETWORK CONFIGURATION, CONT.

Reset to Defaults

ATTENTION! OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.

In the event that you change the network settings in such a way that you can no longer access the S2WIFI or the S2WIFI configuration web page, a jumper has been provided (J1 DEFAULT) to reset the network configuration to the initial factory defaults.

To reset the S2WIFI to defaults, set the jumper in the shorted position and apply power to the scale. You should see the DEFAULT LED (D3) light up while the S2WIFI is in the process of resetting the configuration. When the reset to defaults is complete you should see the LED flash 5 times and then go out when it is complete.

> **NOTE:** To gain access to the DEFAUILTS jumper, loosen the 2 screws shown and remove the lid.

It is necessary to completely remove power and re-apply power to ensure that the default settings have taken effect.

This means that it is very important that the DEFAULTS jumper NOT be left in place on the board for normal operation and should only be used if trying to recover a module with incorrect settings.

At this point, the S2WIFI should continue with normal operation using the default configuration.

NOTE: The DEFAULTS jumper will launch the configuration web page if set briefly after power up.

J1

DEFAULT LED D3
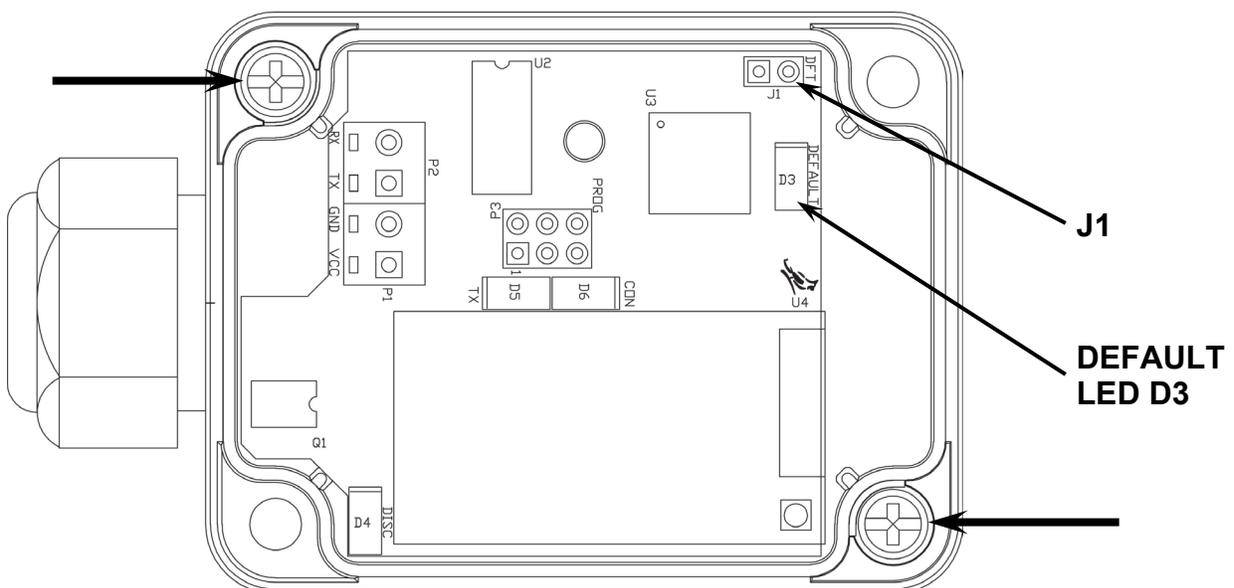
NETWORK CONFIGURATION, CONT.

Web Configuration Parameter Descriptions – Access Point

The configuration web page in the S2WIFI module allows the module to be configured as either an access point, or to connect to an existing network. In order to accomplish this, a new parameter has been added on the web page "Network Mode".

MICROCHIP

| Network Configuration | Information |

Network Mode

Server (SoftAP) ▾

Access Point SSID
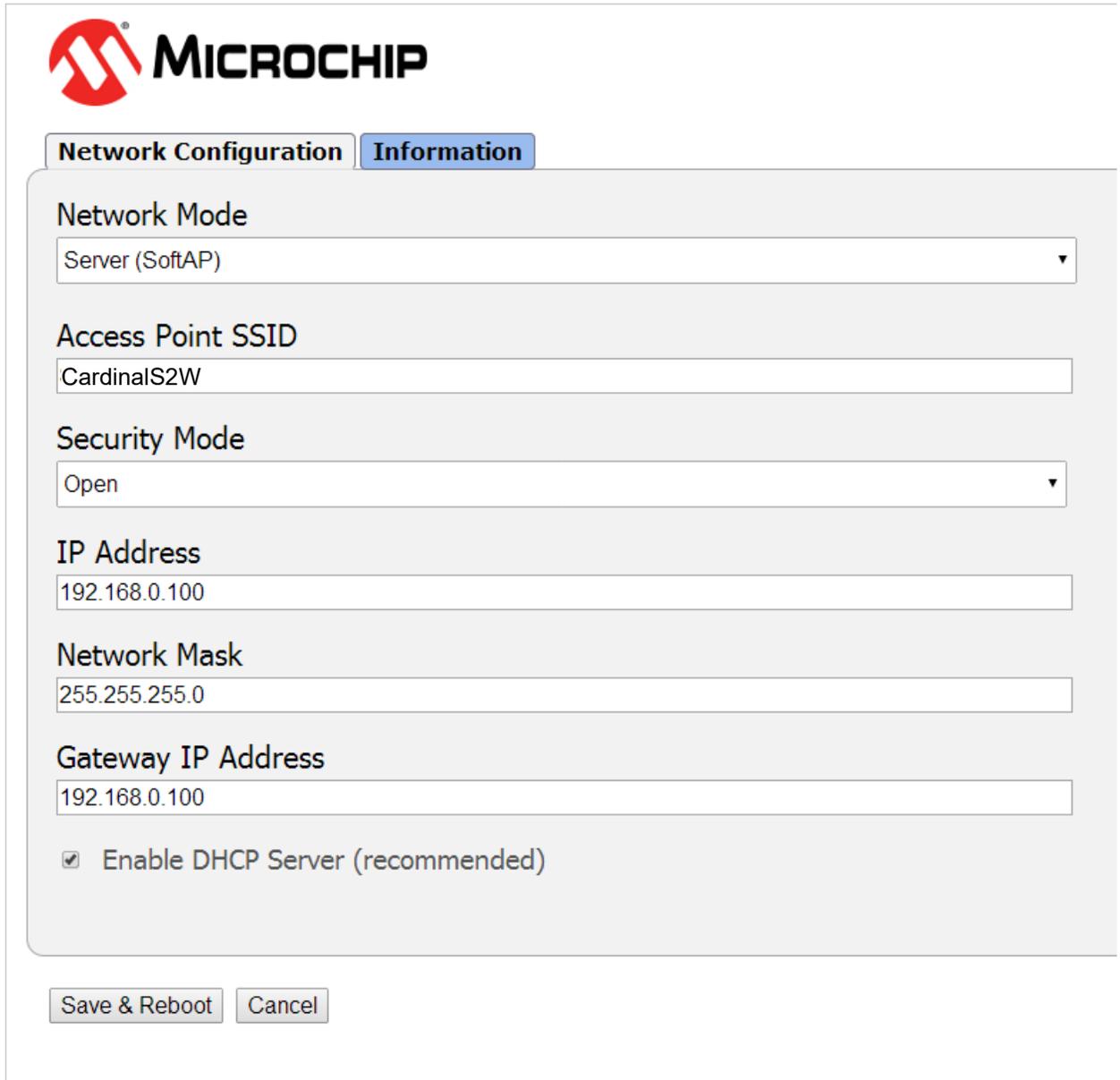
CardinalS2W

Security Mode

Open ▾

IP Address

192.168.0.100

Network Mask

255.255.255.0

Gateway IP Address

192.168.0.100

☑ Enable DHCP Server (recommended)

Save & Reboot   Cancel

NETWORK CONFIGURATION, CONT.

Web Configuration Parameter Descriptions – Access Point, Cont.

Network Mode – This parameter allows the S2WIFI module to be configured as either an access point, or to connect to an existing network.

In order to set up the S2WIFI module as an access point, set the mode to "Server (SoftAP).

Access Point SSID – Enter the SSID of the access point you wish to connect to here. If no access point exists with the SSID that is entered, then the S2WIFI module will attempt to start an access point with the entered SSID.

Security Mode – When the "Network Mode" is set to "Server (SoftAP)" mode, then this sets the security type that will be used in order to connect to the module acting as an access point. The password used by the connecting device must match the password set on the configuration web page in order to connect to the module.

IP Address – Enter the static IP address of the S2WIFI module here.

Network Mask – Enter the desired net mask here.

Gateway IP Address – Enter the default gateway IP address here.

Enable DHCP Server (recommended) – When "Server (SoftAP)" mode is active, the "Enable DHCP Server" checkbox will enable the DHCP server to assign addresses automatically to connecting devices.

NOTE: If this check box is unchecked in this mode, it will be important to set static IP addresses in the devices connecting to the WIFI module that are compatible with the settings that are set in the module itself.

Once all settings have been entered, click "Save & Reboot" at the bottom of the webpage in order to save the parameters.

NOTE: It is very important not to press "Enter" before all of the configuration settings have been properly entered. Pressing "Enter" prior to entering in all of the appropriate settings will submit the information and may put the device into a state where it cannot be connected to. If this happens, it may be necessary to isolate the S2WIFI module from wireless signals and use the DEFAULT jumper to restore the network to a known configuration.

NETWORK CONFIGURATION, CONT.

Web Configuration Parameter Descriptions – Client (Infrastructure)

The configuration web page in the S2WIFI module allows the module to be configured as either an access point, or to connect to an existing network. In order to accomplish this, a new parameter has been added on the web page "Network Mode".

NETWORK CONFIGURATION, CONT.

Web Configuration Parameter Descriptions – Client (Infrastructure), Cont.

Network Mode – This parameter allows the S2WIFI module to be configured as either an access point, or to connect to an existing network.

In order to set the module to connect to an existing network, change the "Network Mode" to "Client (Infrastructure)".

Available Access Points – Click the "Refresh List" button in order to scan for available access points that the S2WIFI module can connect to. You can select an AP by clicking on its name in the list.

Access Point SSID – Enter the SSID of the access point you wish to connect to here. If no access point exists with the SSID that is entered, then the S2WIFI module will attempt to start an access point with the entered SSID.

Security Mode – When the "Network Mode" is set to "Client (Infrastructure)" mode, this sets the security type that the module will use to attempt to connect to the existing network. This will be beneficial when attempting to connect to certain secured networks that the older firmware was having issues in properly detecting the security type.

Use DHCP (recommended) – When "Client (Infrastructure)" mode is active, the "Use DHCP" will cause the module to try and obtain an IP address automatically when it connects to an existing network.

NOTE: Having this box checked may make the module difficult to locate on an existing network unless the existing network has been configured to always assign the same IP address to the WIFI module.

When set to connect to an existing network, it is recommended to use static IP addressing in order to make connecting to the module easier.

Once all settings have been entered, click "Save & Reboot" at the bottom of the webpage in order to save the parameters.

NOTE: It is very important not to press "Enter" before all of the configuration settings have been properly entered. Pressing "Enter" prior to entering in all of the appropriate settings will submit the information and may put the device into a state where it cannot be connected to. If this happens, it may be necessary to isolate the S2WIFI module from wireless signals and use the DEFAULT jumper to restore the network to a known configuration.

TROUBLESHOOTING

Status LED's

The S2WIFI has four (4) LED's to indicate the communication status of the wireless connection.
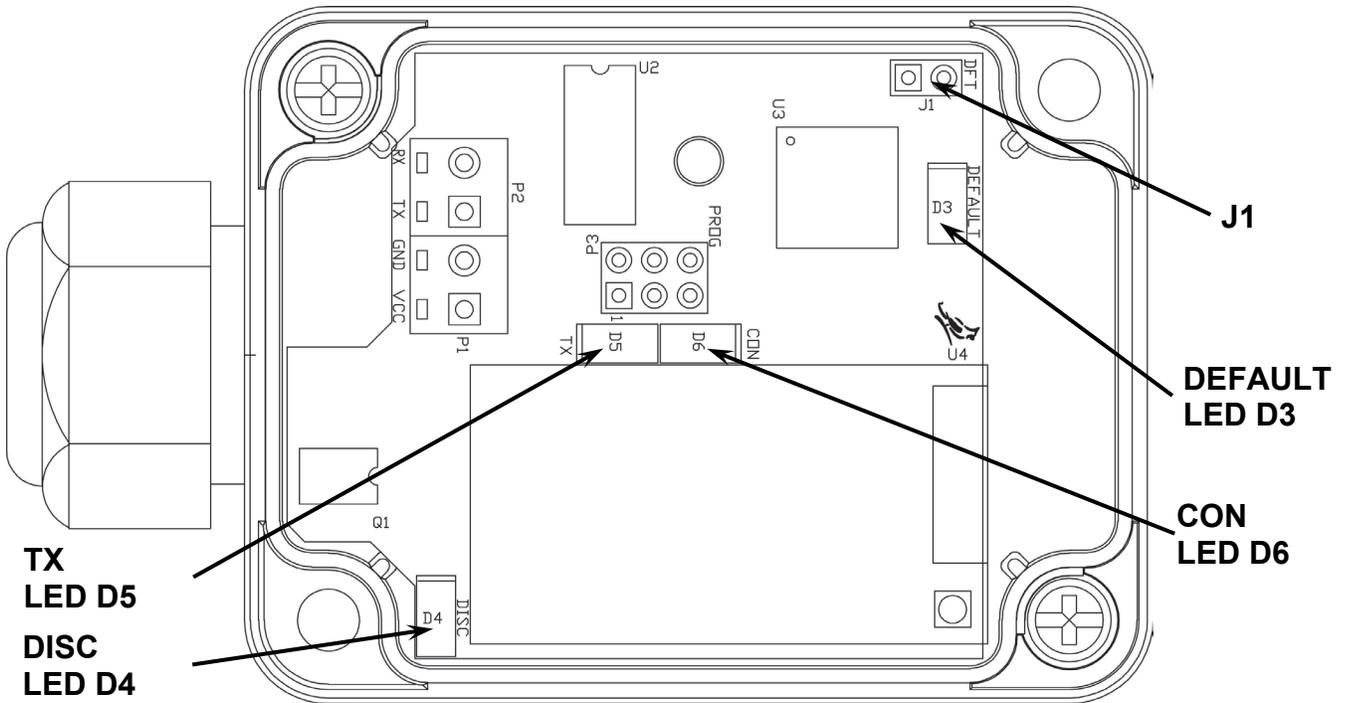
LED	Indication	Description
D3	DEFAULT	This LED will illuminate to indicate the S2WIFI is in the process of resetting the configuration. When the reset to defaults is complete you should see the LED flash 5 times and then go out when it is complete.
D4	DISC	This LED indicates that Discovery Mode is active on the S2WIFI. Discovery Mode affects whether the S2WIFI can see (find) computers and devices on the network and whether other computers on the network can see the S2WIFI.
D5	TX	This LED will illuminate when the S2WIFI has been successfully connected to a network and will flicker when there is data activity over the wireless network.
D6	CON	This LED displays the communication status. It will be ON or flashing rapidly when communications between the S2WIFI and the wireless network is established.

PARTS IDENTIFICATION
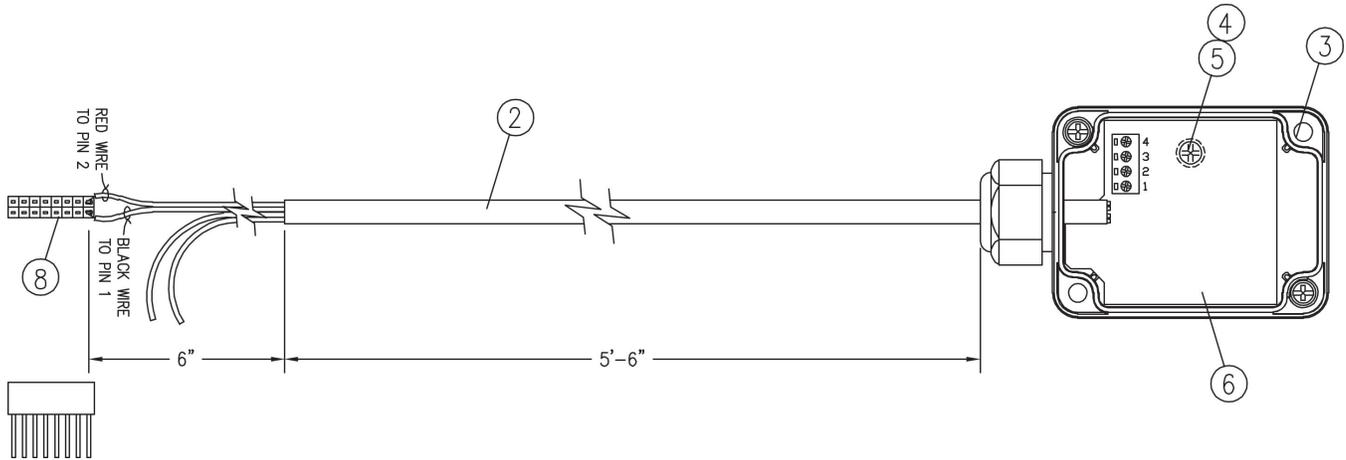
ITEM	PART NO.	QTY	DESCRIPTION
2	6980-0103	1	CABLE, 4 COND. 24 GA. W/SHLD, 74" LONG
3	6540-0150	1	ENCLOSURE, POLYCARBONATE
4	6680-1015	1	SPACER, #4 X .375 SELF RETAINING
5	6021-1100	1	SCREW, PAN HD. #4-40 X .69
6	8527-C511-0A	1	PC BOARD
8	6610-0050	1	CONNECTOR, 19 PIN

Printed in USA

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