

Trimble® TMX-2050™ Display

Agriculture Business Area

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This is the August 2015 release (Revision F) of the TMX-2050 display documentation. It applies to version 2 of the display software.

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This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Responsible Party:

Trimble Navigation
935 Stewart Drive
Sunnyvale CA 94085
Telephone: 1-408 481 8000

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This apparatus complies with Canadian RSS-GEN.

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[h](http://www.trimble.com/Corporate/Environmental_Comppliance.aspx)

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Meerheide 45
5521 DZ Eersel, NL

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Always follow the instructions that accompany a Warning or Caution. The information it provides is intended to minimize the risk of personal injury and/or damage to property. In particular, observe safety instructions that are presented in the following format:



WARNING – This alert warns of a potential hazard which, if not avoided, could result in severe injury or even death.



CAUTION – This alert warns of a potential hazard or unsafe practice which, if not avoided, could result in injury or property damage or irretrievable data loss.

Note – An absence of specific alerts does not mean that there are no safety risks involved.

Antennas



CAUTION – Wireless, cellular, radio and GNSS signals can interfere with each other. For best performance, mount antennas at least 1 meter away from each other.

Cabling



CAUTION – Connecting the Port Replicator of the NavController cable to the P4 or P12 connector of the NavController harness will result in damage to the equipment, and will void the warranty.

DCM-300 modem



CAUTION – Do not mount the DCM-300 modem in direct sunlight or in areas of high heat. This will cause degraded performance.

Installation



CAUTION – Connecting the Port Replicator of the NavController cable to the P4 or P12 connector of the NavController harness will result in damage to the equipment, and will void the warranty.



CAUTION – Make sure the vehicle power is off when you are connecting system components.

Safety information



CAUTION – If the vehicle has a master electrical disconnect, make sure the power cable ground connections are not directly attached to the battery terminal. Attach the ground connections of the power cable to the chassis side of the main disconnect so that it is as close as possible to the battery, but still gets disconnected when the master disconnect is turned off. Failure to connect the power cable ground will cause damage to the display. For more information, see [Master disconnect \(page 33\)](#).



CAUTION – Do not attempt to power the display without the TM-200 Module.

Touch screen




CAUTION – Do not press on the screen with a sharp item, such as a pencil. You may damage the surface of the screen.

Data Sheet

- [TMX-2050™ display](#)
- [TM-200 Module](#)
- [EXP-100 Port Expander](#)
- [AG-815](#)

TMX-2050 display

Technical	
Power	27 volts, 3.5 amps (supplied by the TM-200 Module)
	 CAUTION – Do not attempt to power the display without the TM-200 Module.
Processor	1 GHz quad core
Storage	Primary embedded memory - 32 GByte

Mechanical	
Dimensions	312 mm x 214 mm x 45 mm (plus connectors) (1 ft 8/32 in x 8 1/4 in x 1 49/64 in)
Weight	2.5 kg (5.5 lb)
Mount	4 M6 screws on 75 mm centers (3 inch). VESA MIS-D 75.

Housing	
Material	Magnesium
Environmental Rating	IP55

Temperature	
Operation	0 °C to 65 °C (32 °F to 149 °F)
Storage	-40 °C to 85 °C (-40 °F to 185 °F)

LCD display	
Size	307 mm (1 ft 3/32 in)
Touch screen	Capacitive touch
Resolution	1280 x 800

Front-facing camera	
Type	Low light level, color
Resolution	1.3 M pixels

Connections	
USB	USB side (side of display), USB rear (back of display)
Ethernet	RJ45 connector. Power input for TMX-2050 display only.

TM-200 Module

Technical	
Power	9 to 16 volts, 25 amps
Storage	64 megabytes (Flash)

Mechanical	
Dimensions	209 mm x 184 mm x 57 mm (plus connectors) (8 15/64 in x 7 1/4 in x 2 1/4 in)
Weight	2.54 kg (5.6 lb)
Mount	4 M6 (or #12) screws on 165 mm centers (6.5 inch).

Housing	
Material	Aluminum
Environmental Rating	IP55

Temperature	
Operation	-40 °C to 65 °C (-40 °F to 149 °F)
Storage	-40 °C to 85 °C (-40 °F to 185 °F)

GNSS	
Internal 220 channel GNSS receiver, L1 / L2 / GLONASS capable	

Connections	
Power (14-pin Ampseal connector)	Power input CAN 2x Digital In / Out 12 volt power output (non-regulated, fused) Ignition Sense
I / O (12-pin DEUTSCH connector)	CAN RS232 Digital In Digital Out Video In (640 x 480 resolution) NTSC & PAL 12 volt power output
Display Ethernet (White 8-pin Ampseal connector)	Display power 28 volt, 2 amp output Display Ethernet Communications Video Out Ignition Sense
Secondary Ethernet (Black 8-pin Ampseal connector)	Ethernet Communications 12 volt power output Video In
GPS / GNSS (TNC connector)	GPS / GNSS antenna 5 volt

EXP-100 Port Expander

Technical	
Power	Input: 12VDC, 1.5A Output: 12VDC, 0.75A

Mechanical	
Dimensions	98 mm x 64 mm x 29 mm (3 7/8 in x 2 17/32 in x 1 1/8 in)
Weight	0.40 kg (0.89 lb)

Housing	
Material	Thermoplastic polyamide
Environmental Rating	IP67

Temperature	
Operation	-30 °C to 80 °C (-22 °F to 176 °F)
Storage	-40 °C to 85 °C (-40 °F to 185 °F)

AG-815

Technical

Power	Via TM-200 module
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Mechanical

Dimensions	144 mm x 81 mm x 52.5 mm (plus connectors) (5 43/64 in x 3 3/16 in x 2 1/16 in)
Weight	0.55 kg (1.22 lb)
Mount	The AG-815 module attaches directly to the TM-200 module with four M3 x 16 mm (5/8 in) screws

Housing

Material	Aluminum
Environmental rating	IP55

Temperature

Operation	-40 °C to 65 °C (-40 °F to 149 °F)
Storage	-40 °C to 85 °C (-40 °F to 185 °F)

GNSS

Internal 220 channel GNSS receiver, L1/L2/GLONASS capable

Radio options	450 MHz radio	900 MHz radio
Range	13 km (8 miles); varies with terrain and operating conditions	13 km (8 miles); varies with terrain and operating conditions
Frequency range	430 to 450 MHz, 450 to 470 MHz (region-dependent)	902 to 928 MHz

Data Sheet

Radio options	450 MHz radio	900 MHz radio
Networks	20 user-selectable networks	40 user-selectable networks
Wireless data rates	128 Kbps	128 Kbps
Modes	Rover (receive only)	Rover (receive only)

Connections	
Radio (TNC connector)	Radio antenna, if installed
GNSS (TNC connector)	GNSS receiver, if installed

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Introduction

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The Trimble® TMX-2050™ display is an in-cab touch screen display that provides affordable guidance, steering and precision agriculture functionality.

TMX-2050 display overview

The TMX-2050 display is a ruggedized display consisting of a 30 cm (12") touch-sensitive, color LCD screen.

Compatibility

TMX-2050 display is compatible with the following:

- Trimble Autopilot™ automated steering system
- Trimble EZ-Steer® assisted steering system
- Trimble EZ-Pilot® steering system
- Trimble TrueTracker™ implement steering system
- Trimble TrueGuide™ implement guidance system
- Trimble FieldLevel™ II
- Trimble WM-Drain® farm drainage system
- Trimble Rawson™ drive
- Trimble Field-IQ™ crop input control system
- Trimble RangePoint™ RTX™
- Trimble CenterPoint™ RTX and CenterPoint VRS™
- Trimble VRSNow™

Changes for Version 2, Revision F

The changes for this version/revision are:

- Added instructions for the quick release mounting plate (part number 99563). See [TMX-2050 display mounting \(page 29\)](#).
- Added instructions to connect cameras. See [Connect optional camera\(s\) \(page 42\)](#).
- Added instructions for [Yield Monitoring with Autopilot using CLAAS CAN - Lexion \(page 127\)](#) and [Yield Monitoring with Autopilot using CLAAS CAN - Jaguar \(page 128\)](#).

Components

In this chapter:

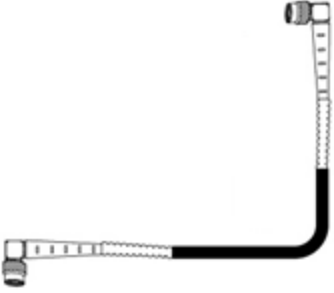


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This chapter shows the components of the TMX-2050 display.

Use Trimble cables only. Trimble cables use specific wire gauges not found in some off-the-shelf RJ45/CAT 6 cables.

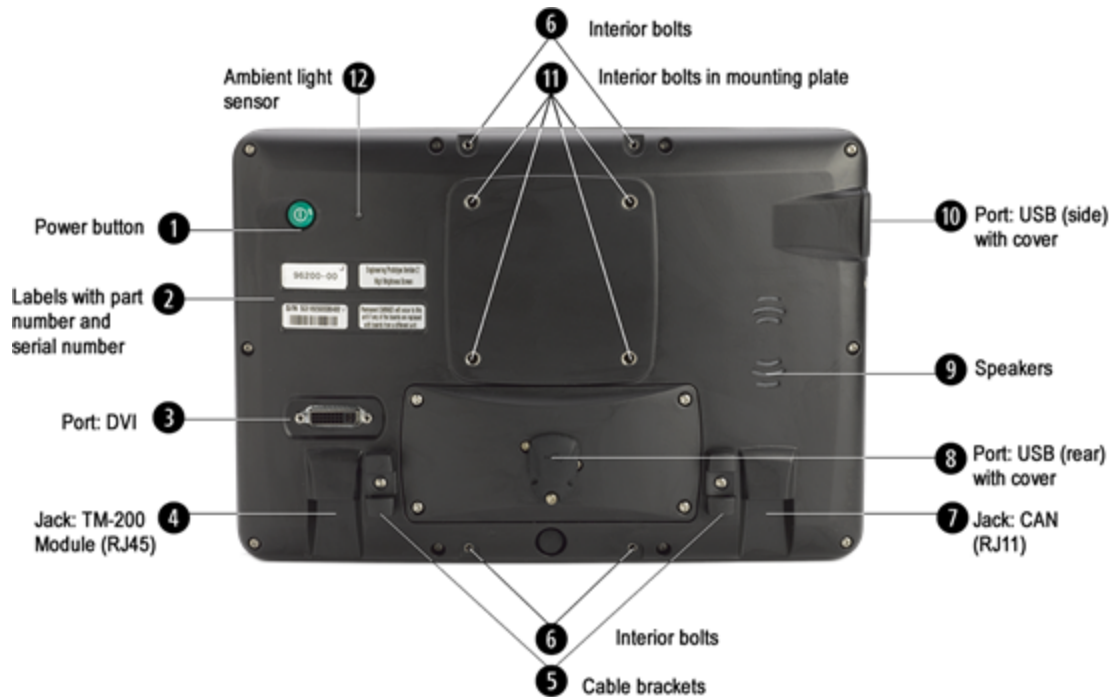
TMX-2050 display system components


Item	Description	Part Number
	TMX-2050 display, rear view	96700-00
	TM-200 Module to display cable	93843
	TM-200 Module	95060-00
	TM-200 Module power and I/O cable	92676
	TM-200 Module battery cable	92905

Item	Description	Part Number
	AG-25 GNSS antenna to TM-200 Module cable	50449
	AG-25 GNSS antenna	77038-01
	AG-815, with integrated radio and/or GNSS receiver	
Integrated radio only	430 - 450 MHz	95090-44
	450 - 470 MHz	95090-46
	900 MHz	95090-90
GNSS receiver only		95092-xx
Integrated radio + GNSS receiver combo	430 - 450 MHz	95094-xx
	450 - 470 MHz	95095-xx
	900 MHz	95093-xx

Item	Description	Part Number
	Radio antenna cable	72122
	Radio antenna 430 - 450 MHz 450 - 470 MHz SiteNet™ 900	24253-44 24253-46 22882-10
	EXP-100 Port Expander ASSEMBLY, EXP-100 Port Expander Adapter TM-200 to Ethernet Adapter DCM-300 (94267) to Ethernet EXP-100, Patch Cable 1 Meter	101895-00 100904 100906 102730

TMX-2050 display—rear view



Item	Name	Explanation
1	Power button	Powers the TMX-2050 display on or off
2	Labels with part number and serial number	N/A
3	Port: DVI	For future capability
4	Jack: TM-200 Module (RJ45) 	Socket for connecting to the TM-200 Module
5	Cable brackets	Holds Ethernet cables to prevent cable strain
6	Interior bolts	Location for mounting Field-IQ system switch box
7	Jack: CAN (RJ11)	For future capability
8	Port: USB (rear) with cover	Socket for USB drive to transferring data to and from the TMX-2050 display

Item	Name	Explanation
9	Speakers	For use if you have sound activated on the TMX-2050 display.
10	Port: USB (side) with cover	Socket for USB drive to transferring data to and from the TMX-2050 display.
11	Interior bolts in mounting plateplate	Receives screws for Zirkona display mount
12	Ambient light sensor	Senses lower ambient light and activates the backlight on the display.



CAUTION – Do not press on the screen with a sharp item, such as a pencil. You may damage the surface of the screen.

See [TMX-2050 display mounting \(page 29\)](#) and [Power connection \(page 34\)](#).

TM-200 Module

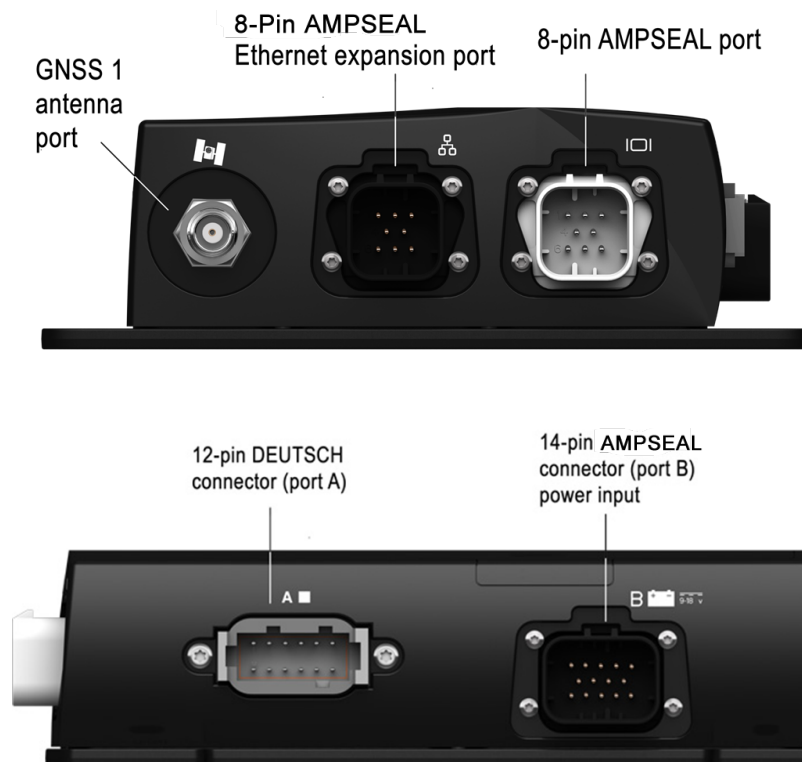
The TM-200 Module has multiple power and input/output connections, with only one connection to the TMX-2050 display. This enables you to quickly detach the display without removing all other connections.



CAUTION – If the vehicle has a master electrical disconnect, make sure the power cable ground connections are not directly attached to the battery terminal. Attach the ground connections of the power cable to the chassis side of the main disconnect so that it is as close as possible to the battery, but still gets disconnected when the master disconnect is turned off. Failure to connect the power cable ground will cause damage to the display. For more information, see [Master disconnect \(page 33\)](#).

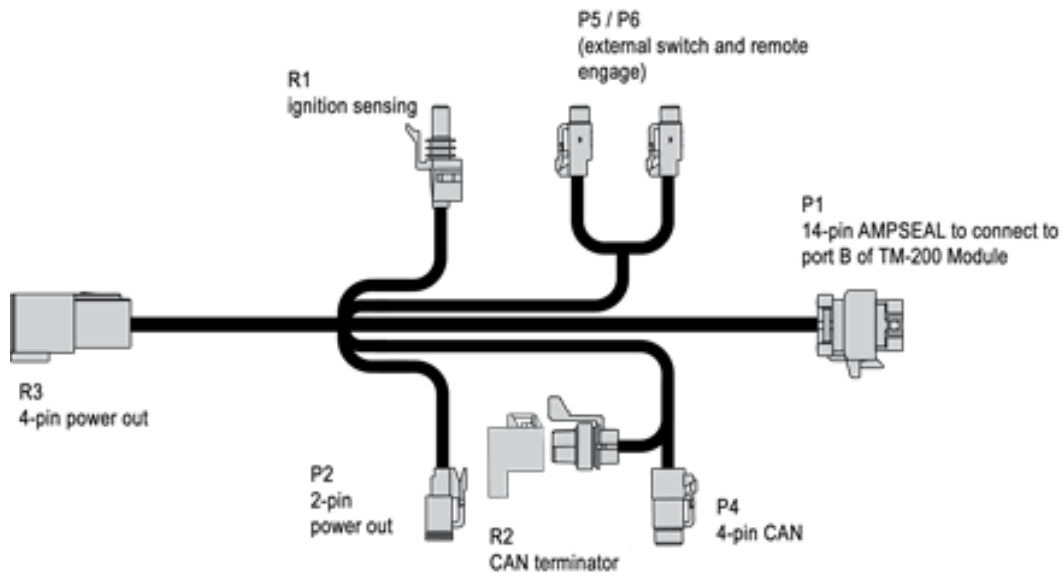


CAUTION – Do not attempt to power the display without the TM-200 Module.



TM-200 Module, power and I/O cable

The power and input/output cable provides power as well as enabling a variety of equipment configurations.



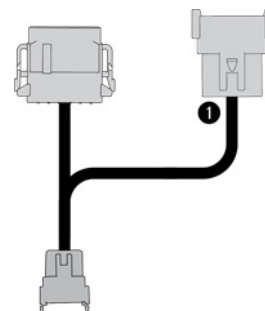
Making correct connections

Keep the following guidelines in mind for configuring cables with multiple connectors to single ports.



CAUTION – Connecting the Port Replicator of the NavController cable to the P4 or P12 connector of the NavController harness will result in damage to the equipment, and will void the warranty.

- The Field-IQ™ crop input control and Boom Height Control systems and the Yield Monitoring system require a CAN connection.
- The EZ-Steer and EZ-Pilot assisted steering systems require their own dedicated CAN ports.
- The Autopilot automated steering system must be connected to port A on the TM-200 Module. See [Autopilot system \(page 56\)](#).
- The DCM-300 modem can only be connected to the Ethernet expansion port on the TM-200 Module.



Installation

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The TMX-2050 display is supported by the Zirkona mount, which can be attached to a rail in the cab. The power connection depends on the vehicle and system configuration.

Use Trimble cables only. Trimble cables use specific wire gauges not found in some off-the-shelf RJ45/CAT 6 cables.

Installation overview

To install the TMX-2050 display:

1. Mount the display. See [TMX-2050 display mounting \(page 29\)](#).
2. Complete the appropriate power connections. See [Power connection \(page 34\)](#).
3. If you are using the AG-815, join the AG-815 to the TM-200 Module. See [AG-815 \(page 51\)](#).
4. Connect the display to the TM-200 Module. See [TM-200 Module \(page 25\)](#).
5. Connect the AG-25 GNSS antenna(s) and other hardware required for corrections. See:
 - [Hardware for corrections \(page 46\)](#)
 - [AG-25 GNSS antenna \(page 47\)](#)
 - [Dual AG-25 GNSS antenna \(page 49\)](#)
 - [DCM-300 modem \(page 53\)](#)
6. Connect the EXP-100 if required. See [EXP-100 connection \(page 39\)](#).

TMX-2050 display mounting

Use the mounting hardware supplied in the display kit to mount the display in the vehicle cab.



CAUTION – Make sure the vehicle power is off when you are connecting system components.

Before completing installation steps, select a position in the cab where the bar mount can be attached to a rail. Hold the display in the selected location and make sure that it is:

- Easy to see, but does not block the driver's view
- Within the driver's reach so that the USB drive is easy to remove and replace
- Does not interfere with the driver getting in or out of the cab, or any other activities



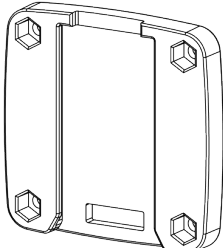
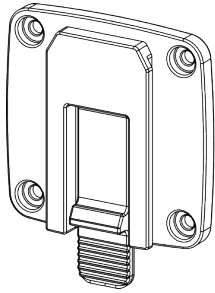
1. Use the provided bolts to attach the bar mount to a rail in the cab.



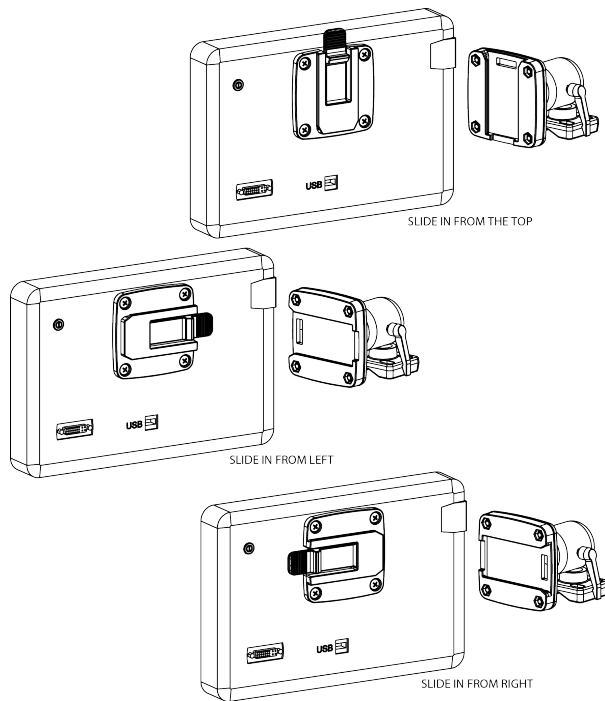
2. Use the supplied screws to firmly attach the mounting plate to the back of the TMX-2050 display. See [TMX-2050 display—rear view \(page 23\)](#).
3. Turn the tightening arm to loosen the Zirkona mount.
4. Adjust the TMX-2050 display until it is positioned where you want it. Turn the tightening arm the other direction to tighten the Zirkona mount.

Quick release kit

The Trimble® Quick Release Kit (part number 99563) for the TMX-2050 display enables you to quickly transfer the display from one vehicle to another by sliding it off the quick release mounting plate. This kit includes:

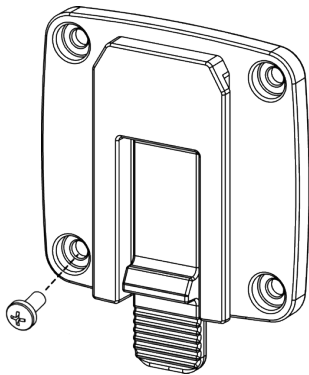
Quantity	Description
9	 M6 x 1" screws
5	 MX6 x 1" hex nuts
1	 Quick release mounting plate
1	 Quick release display plate with quick release tab

- Determine which direction the display will slide to be removed from the display mount:
 - Slide to the right
 - Slide to the left
 - Slide up



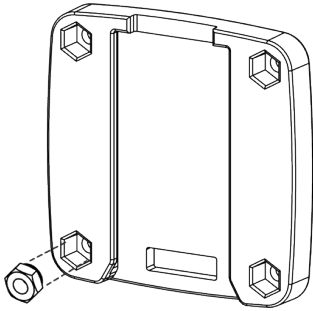
The quick release tab should point in the opposite direction from the direction you will slide the display out of the mount.

2. Use the included M6 x 1" screws to firmly attach the quick release display plate to the back of the display.



Note – Do not attach the display plate with the quick release tab pointing down. This will cover the connection port or USB port.

3. Use the included M6 x 1" screws and MX6 x 1" hex nuts to attach the quick release mounting plate to the mounting plate of the display mount. (The kit includes one extra M6 x 1" screw and one M6 x 1" hex nut.)

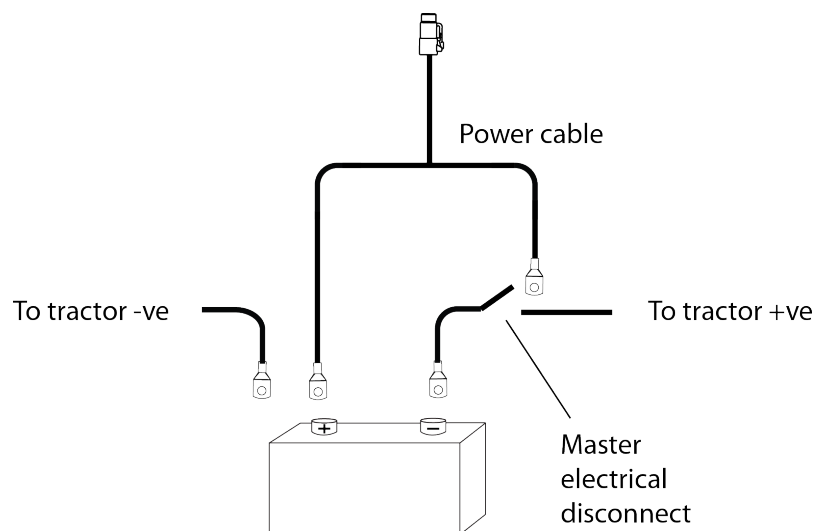


4. Slide the quick release display plate into the quick release mount plate until you hear the quick release tab click.
5. To remove the display, press down the quick release tab and slide the display off the quick release mount plate.

Master disconnect

1. Before proceeding further with the installation, make sure you know whether the vehicle has a master disconnect.
2. If the vehicle has a master electrical disconnect, make sure that the power cable ground connections are **not** directly attached to the battery terminal, shown as the negative pole in the graphic below.
3. Attach the ground connections of the power cable to the chassis side of the main disconnect so that it is as close as possible to the battery but still gets disconnected when the master disconnect is turned off.

Note – If a Master disconnect is installed on either the positive or ground path of the battery, the ring terminals of the power cable should always be connected behind the master disconnect device.



CAUTION – Make sure the vehicle power is off when you are connecting system components.

Power connection

The correct power cabling depends on the configuration of your vehicle: with or without an existing OEM harness.

Regular after-market installation

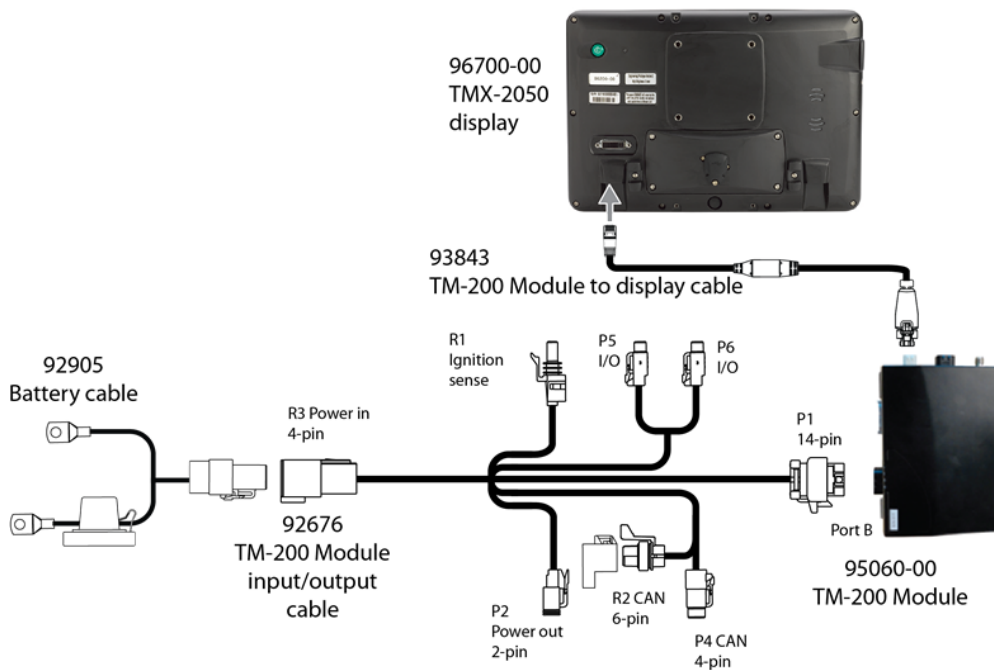
The following configuration is a regular power connection for the TMX-2050 display for vehicles that do not have an existing OEM harness.



CAUTION – If the vehicle has a master electrical disconnect, make sure the power cable ground connections are not directly attached to the battery terminal. Attach the ground connections of the power cable to the chassis side of the main disconnect so that it is as close as possible to the battery, but still gets disconnected when the master disconnect is turned off. Failure to connect the power cable ground will cause damage to the display. For more information, see [Master disconnect \(page 33\)](#).



CAUTION – Make sure the vehicle power is off when you are connecting system components.



Part Number	Description
92676	TM-200 Module power and I/O cable connected to port B
92905	TM-200 Module battery cable
93843	TM-200 Module to display cable
95060-00	TM-200 Module
96700-00	TMX-2050 display

Existing OEM harness installation

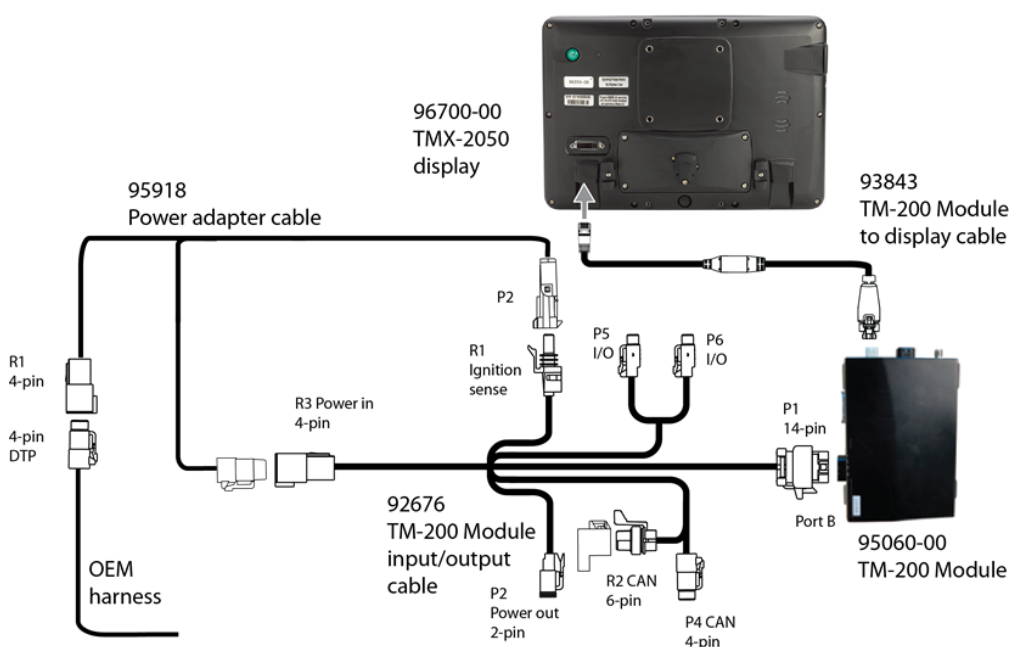
For vehicles that have an existing OEM harness, use the configuration as shown in the following graphic.



CAUTION – If the vehicle has a master electrical disconnect, make sure the power cable ground connections are not directly attached to the battery terminal. Attach the ground connections of the power cable to the chassis side of the main disconnect so that it is as close as possible to the battery, but still gets disconnected when the master disconnect is turned off. Failure to connect the power cable ground will cause damage to the display. For more information, see [Master disconnect \(page 33\)](#).

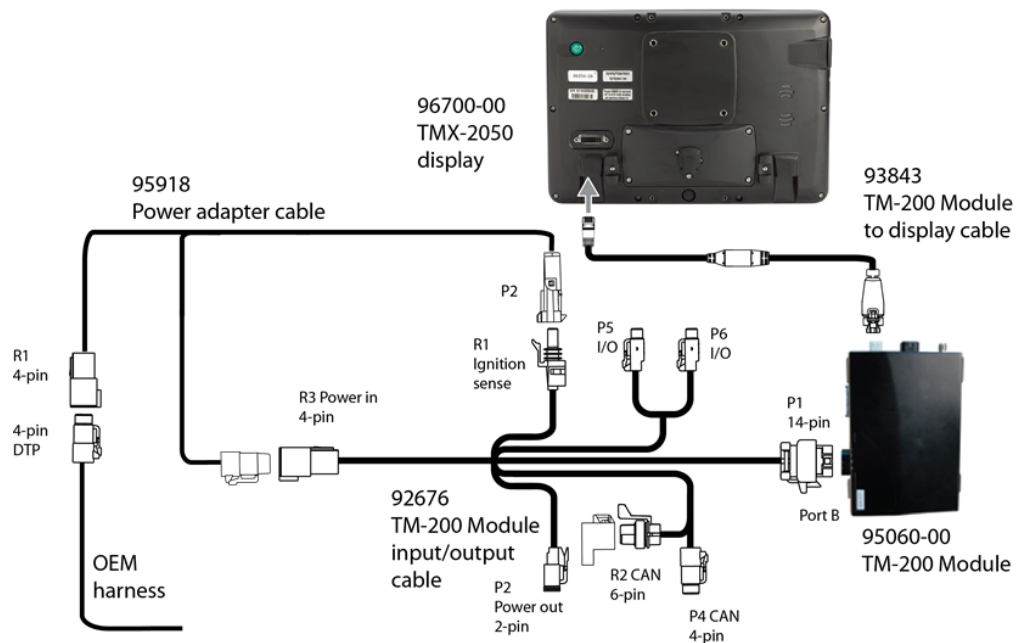


CAUTION – Make sure the vehicle power is off when you are connecting system components.



Part Number	Description
92676	TM-200 Module power and I/O cable connected to port B
93843	TM-200 Module to display cable
95060-00	TM-200 Module
95918	Power adapter cable
96700-00	TMX-2050 display

CNH power installation



TM-200 Module connection

The TM-200 Module connects to the antenna, auto-steering and other systems, such as the Field-IQ system's Rate and Section Control. Before installation, make sure the TM-200 Module is out of the way but accessible, and close enough to connect to the display with the supplied display cable.



CAUTION – Make sure the vehicle power is off when you are connecting system components.

1. Make sure you have connected the AG-815 to the TM-200 Module. See [AG-815 \(page 51\)](#).
2. Use the display cable to connect the TM-200 Module to the TMX-2050 display.

Connector icons

On TM-200 Module:



On display:





Ensure the cable is fastened into the cable clip next to the port on the rear of the display.

This prevents the cable from being removed from the port and reduce stress on the cable.



CAUTION – Do not attempt to power the display without the TM-200 Module.

3. To connect the AG-25 GNSS antenna to the TM-200 Module, see [AG-25 GNSS antenna \(page 47\)](#).
4. Insert the TM-200 Module power and I/O cable into Port B of the TM-200 Module. Port icon:

B  12V , 25A

EXP-100 connection

The EXP-100 port expander for the TMX-2050 display provides additional CAN, serial and input/output connections. The EXP-100 port expander connects to the TM-200 module, adding a 12-pin connector that allows for additional serial, CAN, and I/O connections. The EXP-100 plugs into the black 8-pin AMPSEAL connector on the end of the TM-200 module and communicates via Ethernet.

Each EXP-100 can be used to configure one serial feature and two I/O features. You can use up to three EXP-100 Port Expanders if your configuration requires multiple serial features.

Serial Features:

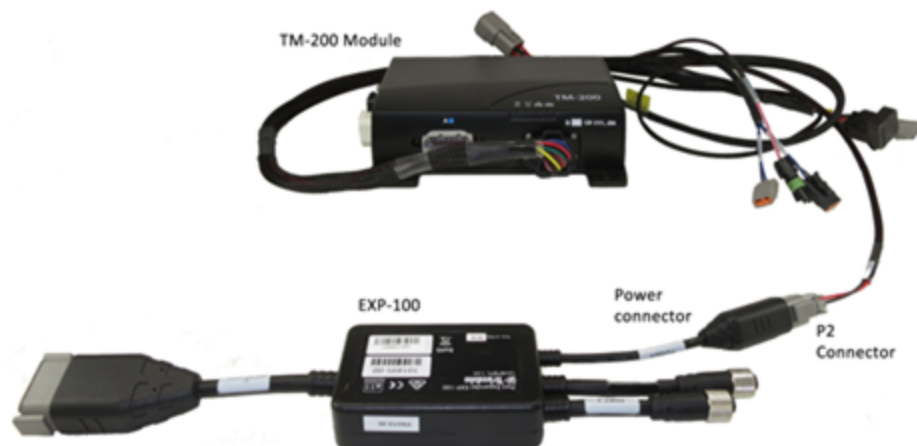
- External receiver
- External radio
- NMEA output
- Remote output
- Serial data input
- Serial rate control
- TrueTracker™
- Yield Monitoring, serial

I/O Features:

- Autopilot 3rd Solenoid/Isolation Valve Output
- Logging switch input
- Remote output

Note – The EXP-100 kit part number is 101990-00. If your configuration uses a DCM-300 modem, you need kit 101990-01.

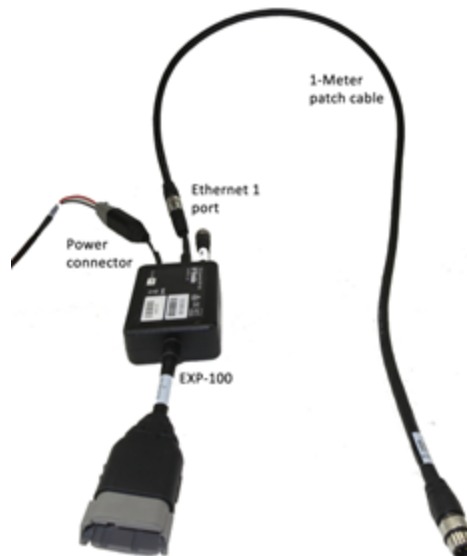
1. Plug the power connector from the EXP-100 into the P2 connector on the 92676 cable coming from the TM-200 Module.



If you need more than one power out from the 92676, use the optional Multi Power Accessory Cable 94645.



2. Connect the 1-Meter Patch cable (102730) to the EXP-100 non-capped connector of the Ethernet 1 port.



3. Connect the TM-200 Adaptor cable (100904) to the other end of the 1-Meter Patch cable

(102730) that you just connected to the EXP-100, Ethernet 1 port.



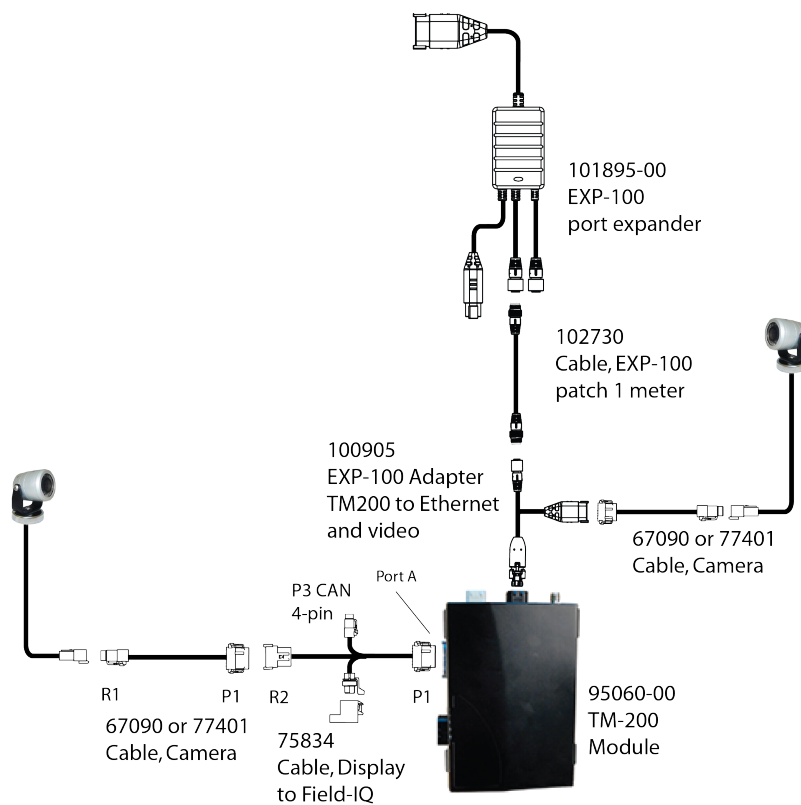
4. Plug the TM-200 Adaptor cable (100904) into the Black AMPSEAL connector on the end of the TM-200 Module.
5. If you are using a DCM-300 modem or Multiple EXP-100, remove the end cap from the Ethernet 2 port on the EXP-100.
6. Connect the 1-Meter Patch cable (102730) to the Ethernet 2 port on the EXP-100.



7. Connect the other end of the 1-Meter Patch cable (102730) to either the Secondary EXP-100 or the DCM-300 Adaptor (100906).



Connect optional camera(s)

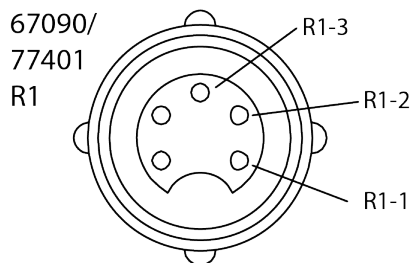


Part Number	Description
67090	Cable, camera
75834	Cable, display to Field-IQ
77401	Cable, camera
95060-00	TM-200 Module
100905	EXP-100 Adapter TM200 to Ethernet and video
101895	EXP-100 port expander
102730	Cable, EXP-100 patch 1 meter

Pins for AgCam with cables 100905 and 67090

Pin Description	AgCamera (3 wire/5-pin)	Camera 1 (TM-200 Port A)	Camera 2 (TM-200 Ethernet port)
12 V+ out	R1-1 / Red	DTM-12 pin 9	Eth-8 pin 2
Power ground	R1-2 / Black	DTM-12 pin 8	Eth-8 pin 6
Video in	R1-3 / White	DTM-12 pin 7	Eth-8 pin 4
Video ground			

Note – R1-4 and R1-5 are unused.



Pins for common 4-wire ag camera

Pin Description	Common 4-wire Ag Camera	Camera 1 (TM-200 Port A)	Camera 2 (TM-200 Ethernet port)
12 V+ out	Pin 1 / Red	DTM-12 pin 9	Eth-8 pin 2
Power ground	Pin 2 / Black	DTM-12 pin 8	Eth-8 pin 6
Video in	Pin 3 / Yellow	DTM-12 pin 7	Eth-8 pin 4
Video ground	Pin 4 / White	DTM-12 pin 6	Do not use

Connectivity

In this chapter:

Hardware for corrections	46
AG-25 GNSS antenna	47
Dual AG-25 GNSS antenna	49
AG-815	51
DCM-300 modem	53

The type of correction services and data transfer services you want determine the configuration for connectivity hardware.

Use Trimble cables only. Trimble cables use specific wire gauges not found in some off-the-shelf RJ45/CAT 6 cables.

Hardware for corrections

The type of corrections you will be using determines your configuration.

Note – The AG-25 GNSS antenna is required for all correction services.

Hardware	Used for Correction Service:
AG-25 GNSS antenna (page 47)	<ul style="list-style-type: none"> • SBAS* • OmniSTAR® HP/G2 • RangePoint™ RTX™ • Centerpoint™ RTX
AG-815 (page 51) with the integrated radio installed AG-25 GNSS antenna (page 47)	<ul style="list-style-type: none"> • RTK**
DCM-300 modem (page 53) AG-25 GNSS antenna (page 47)	<ul style="list-style-type: none"> • CenterPoint VRS™ • VRSNow™ <p>Note – Also provides telematics and enables you to wirelessly transfer data from your vehicle.</p>


*SBAS (Satellite Based Augmentation Systems) includes:

- WAAS (Wide Area Augmentation System), available in the USA
- EGNOS (European Geostationary Navigation Overlay Service), available in Europe
- MSAS (MTSAT Satellite-based Augmentation System), available in Japan

**Traditional RTK uses radio communications to provide corrections. When using RTK with radio communications, you need access to a base station located within a eight-mile radius (approximately) from your farm. An RTK base station sends corrections via a radio transmitter to a mobile receiver attached to your vehicle.

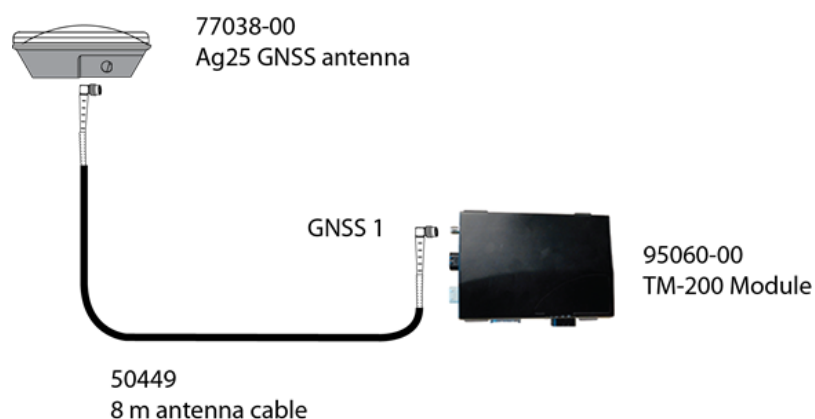
AG-25 GNSS antenna

Note – The AG-25 GNSS antenna is required for all correction services.

The GNSS antenna is required for the GNSS receiver in the TM-200 Module to receive GPS / GNSS corrections. The AG-25 GNSS antenna connects to the antenna connector  on the TM-200 Module.



CAUTION – Wireless, cellular, radio and GNSS signals can interfere with each other. For best performance, mount antennas at least 1 meter away from each other.



Part Number	Description
50449	AG-25 GNSS antenna cable
77038-00	AG-25 GNSS antenna
95060-00	TM-200 Module



CAUTION – Make sure the vehicle power is off when you are connecting system components.




CAUTION – Wireless, cellular, radio and GNSS signals can interfere with each other. For best performance, mount antennas at least 1 meter away from each other.

The AG-25 GNSS antenna has integrated magnets for easy installation. To attach the antenna to a non-metal surface, use the mounting plate.

Note – If you are using the AG-25 GNSS antenna with a steering system, see the installation instructions for the steering system to determine the proper location for mounting the antenna.

1. Connect the antenna cable to the AG-25 GNSS antenna.



2. Place the antenna on the roof of the vehicle, at the front and centered from left to right.
3. On the mounting plate, remove the protective covers from the adhesive strips.
4. Attach the mounting plate to the vehicle roof with the adhesive strips.
5. Place the antenna on top of the mounting plate.
6. Route the other end of the antenna cable into the cab.
7. Connect the GNSS antenna cable to the TM-200 Module. Connector icon: . Also see [TM-200 Module connection \(page 38\)](#).

Note – To minimize any interference to the GNSS signal, make sure that any other antenna (including a radio antenna) is at least 1 m (3 ft) from the AG-25 GNSS antenna.




CAUTION – The GNSS antenna may experience interference if you operate the vehicle within 100 m (300 ft) of any power line, radar dish, or cell phone tower.

For mounting the AG-25 antenna on a mast, see [Dual AG-25 GNSS antenna \(page 49\)](#).

Dual AG-25 GNSS antenna

Note – The AG-25 GNSS antenna is required for all correction services.

The first AG-25 receiver connects to the antenna connector  on the TM-200 Module.

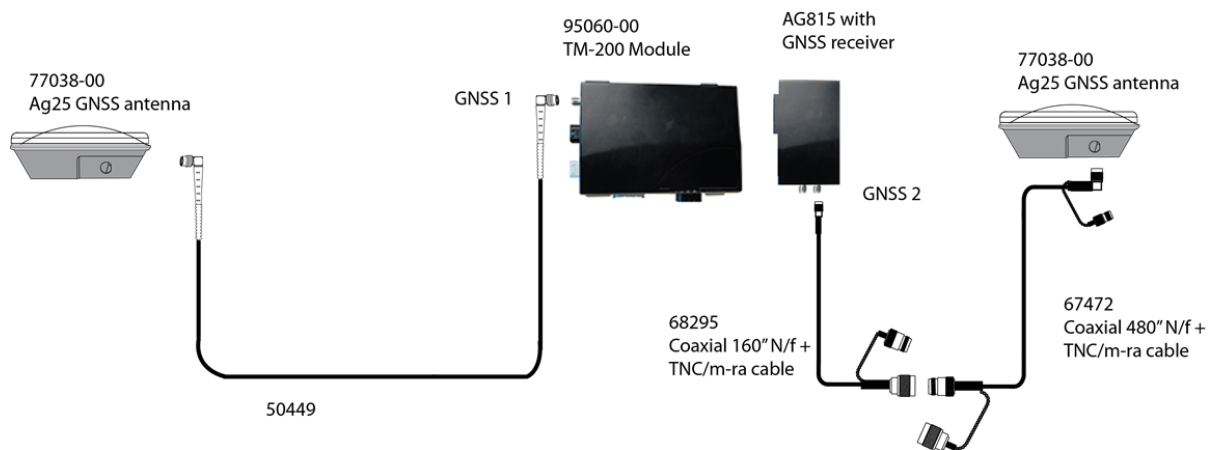
The second AG-25 GNSS antenna connects to the GNSS receiver's connector on the AG-815.



CAUTION – Wireless, cellular, radio and GNSS signals can interfere with each other. For best performance, mount antennas at least 1 meter away from each other.

TrueTracker, TrueGuide

This configuration is applicable to either TrueTracker or TrueGuide.



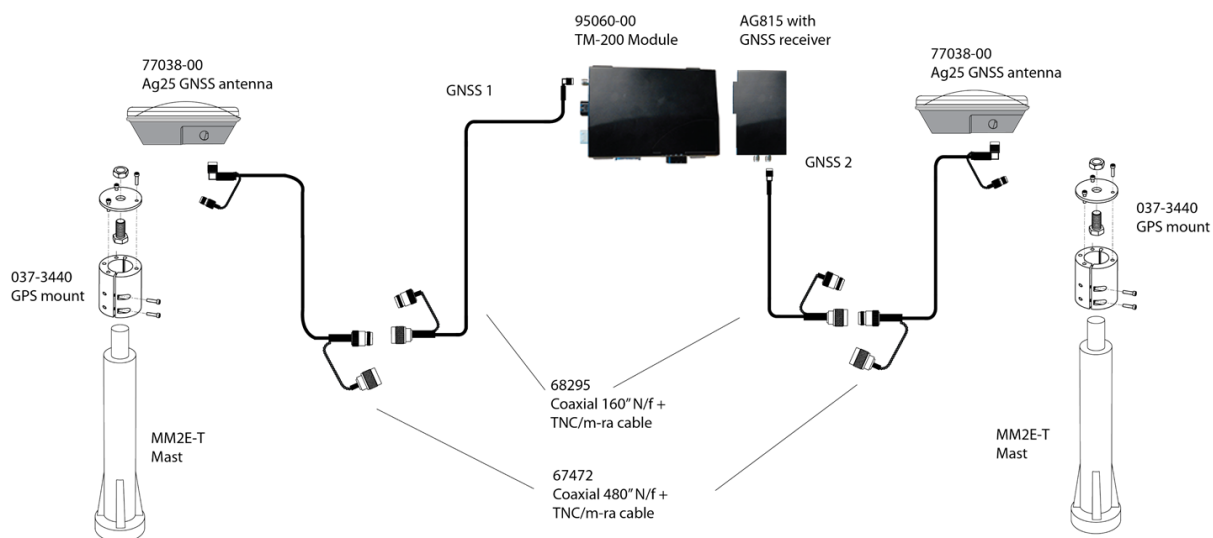
Part Number	Description
50449	AG-25 GNSS antenna cable
67472	Coaxial 480 TNC/m-ra cable
68295	Coaxial 160 TNC/m-ra cable
77038-00	AG-25 GNSS antenna
95060-00	TM-200 Module
95092-xx, 95093-xx, 95907-xx, or 95095-xx	AG-815 with GNSS receiver

FieldLevel II

This configuration is applicable to using either:

- A dual scraper: Two AG-25 GNSS receivers are placed on masts mounted to the right and left side of the scraper
- Tandem scrapers: One AG-25 antenna is placed on the mast of the front scraper and a second antenna is placed on the mast of the rear scraper

Also see [Water Management \(page 119\)](#).

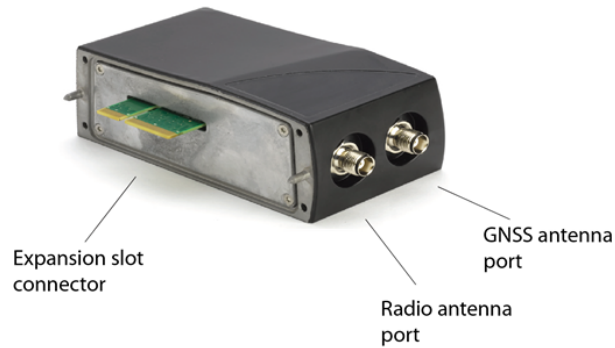


Part Number	Description
037-3440	GPS mount
67472	Coaxial 480 TNC/m-ra cable
68295	Coaxial 160 TNC/m-ra cable
77038-00	AG-25 GNSS antenna
95060-00	TM-200 Module
95092-xx, 95093-xx, 95907-xx, or 95095-xx	AG-815 with GNSS receiver
MM2E-T	Mast

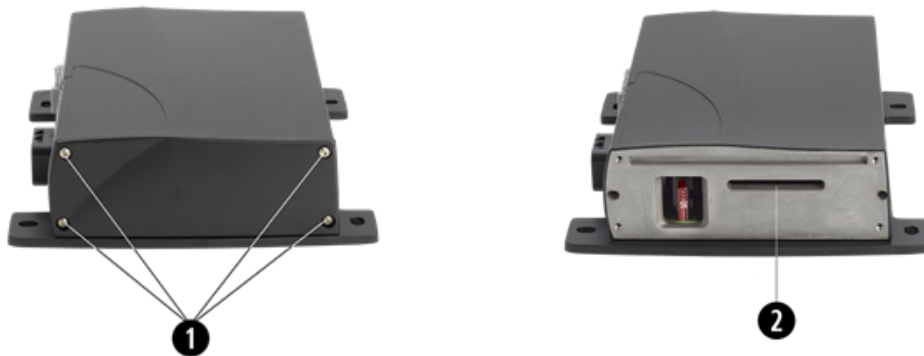
AG-815

The AG-815 with:

- An integrated radio is required for using RTK connections
- A GNSS receiver is required to use two GNSS antennas.



1. Use a T10 Torx screwdriver to remove the screws (1) and face plate from the TM-200 Module.

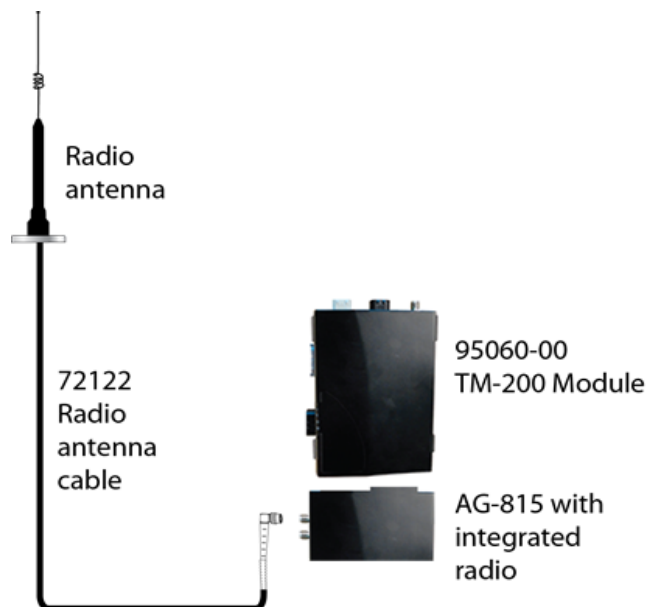


2. Insert the AG-815 blade connector (2) into the radio expansion slot of the TM-200 Module.
Use the long screws provided with the AG-815 to fasten the it to the TM-200 Module.



This image shows the AG-815 attached to the TM-200 Module.

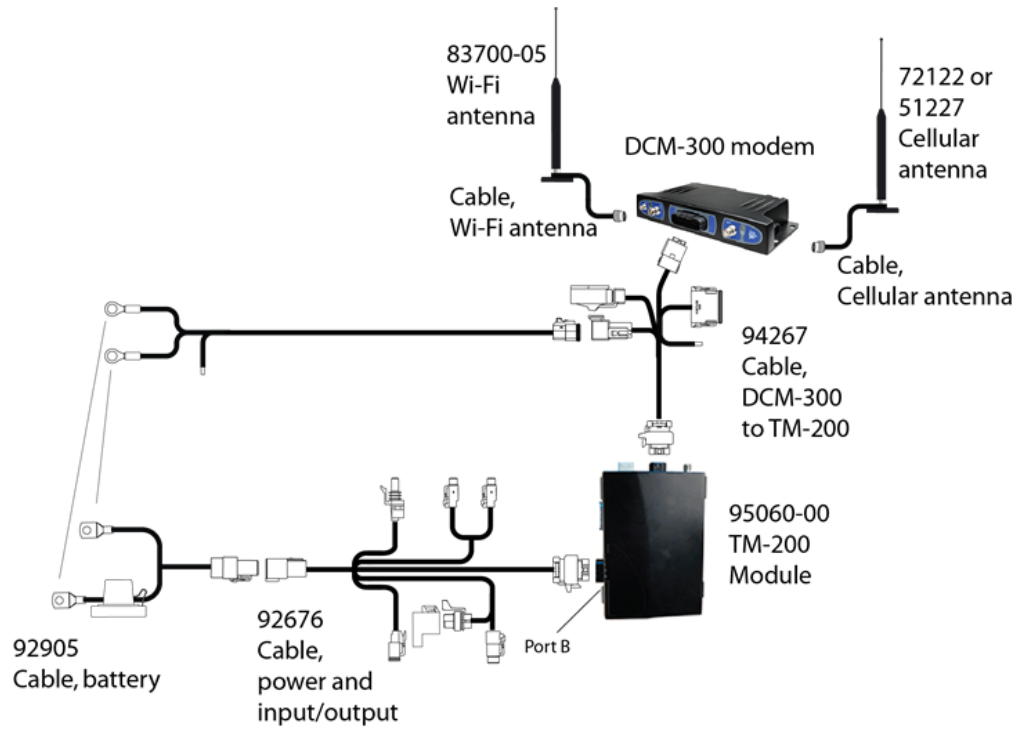
AG-815 with integrated radio



CAUTION – Wireless, cellular, radio and GNSS signals can interfere with each other. For best performance, mount antennas at least 1 meter away from each other.

Part Number	Description
24253-44	Radio antenna 430 - 450 MHz
24253-46	Radio antenna 450 - 470 MHz
22882-10	Radio antenna SiteNet™ 900
72122	Radio antenna cable
95060-00	TM-200 Module
95090-xx, 95093-xx, 95094-xx, or 95095-xx	AG-815 with integrated radio

DCM-300 modem



Part Number	Description
51227	Cellular antenna
72122	Cellular antenna
83500-xx	DCM-300 modem
83700-05	Wi-Fi antenna
92676	Cable, TM-200 Module power and input/output
92905	Cable, battery
94267	Cable, DCM-300 to TM-200 Module
95060-00	TM-200 Module

When you install the modem, use the hardware supplied with the DCM-300 modem for installation.



CAUTION – Make sure the vehicle power is off when you are connecting system components.



CAUTION – Do not mount the DCM-300 modem in direct sunlight or in areas of high heat. This will cause degraded performance.

1. Mount the modem inside the cab of the vehicle, in a shaded area with good ventilation. Mount the cellular antenna on the outside of the vehicle. If you are using Vehicle Sync or Office Sync to exchange data remotely, mount the WiFi antenna on the outside of the vehicle.
2. Use the DCM-300 modem to TM-200 Module cable to connect the DCM-300 modem to the Ethernet port on the TM-200 Module. The connector icon for the port on the TM-200 Module is:



CAUTION – Do not mount the DCM-300 modem in direct sunlight or in areas of high heat. This will cause degraded performance.



CAUTION – Wireless, cellular, radio and GNSS signals can interfere with each other. For best performance, mount antennas at least 1 meter away from each other.

Guidance systems

In this chapter:

Autopilot system	56
TrueGuide system	66
TrueTracker system	68
EZ-Pilot system	70
EZ-Steer system, aftermarket	74

This section covers the automatic guidance systems that can be used with the TMX-2050 display:

- Autopilot™ automated steering system (including the Trimble Ready® configuration)
- EZ-Pilot® steering system
- EZ-Steer® assisted steering system
- TrueGuide™ implement guidance system
- TrueTracker™ implement steering system

Use Trimble cables only. Trimble cables use specific wire gauges not found in some off-the-shelf RJ45/CAT 6 cables.

Autopilot system

How you connect the Autopilot automated steering system to your vehicle will differ, depending on the configuration of the vehicle:

- [Trimble Ready install \(page 57\)](#)
- [After-market install \(page 58\)](#)
- [After-market ACGO install \(page 59\)](#)
- [After-market install for Krone harvesters \(page 61\)](#)
- [Factory-ready CNH vehicle install \(page 62\)](#)
- [Classic Autopilot](#)
- [Challenger MT Tracked 700 / 800](#)



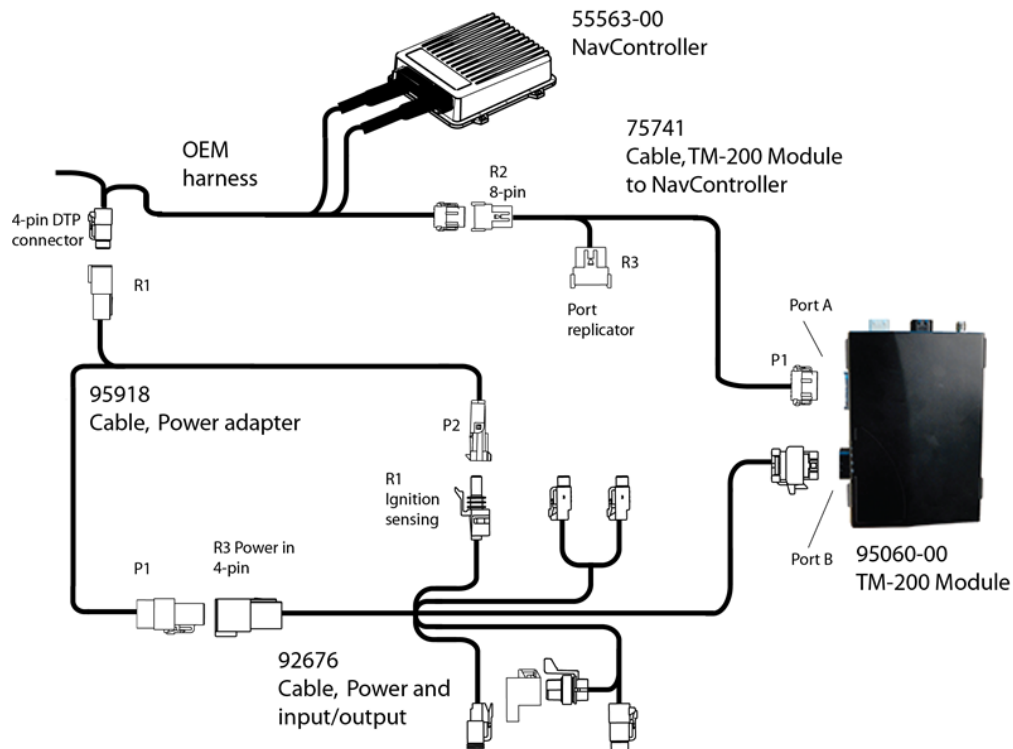
CAUTION – If the vehicle has a master electrical disconnect, make sure the power cable ground connections are not directly attached to the battery terminal. Attach the ground connections of the power cable to the chassis side of the main disconnect so that it is as close as possible to the battery, but still gets disconnected when the master disconnect is turned off. Failure to connect the power cable ground will cause damage to the display. For more information, see [Master disconnect \(page 33\)](#).



CAUTION – Connecting the Port Replicator of the NavController cable to the P4 or P12 connector of the NavController harness will result in damage to the equipment, and will void the warranty.

Trimble Ready install

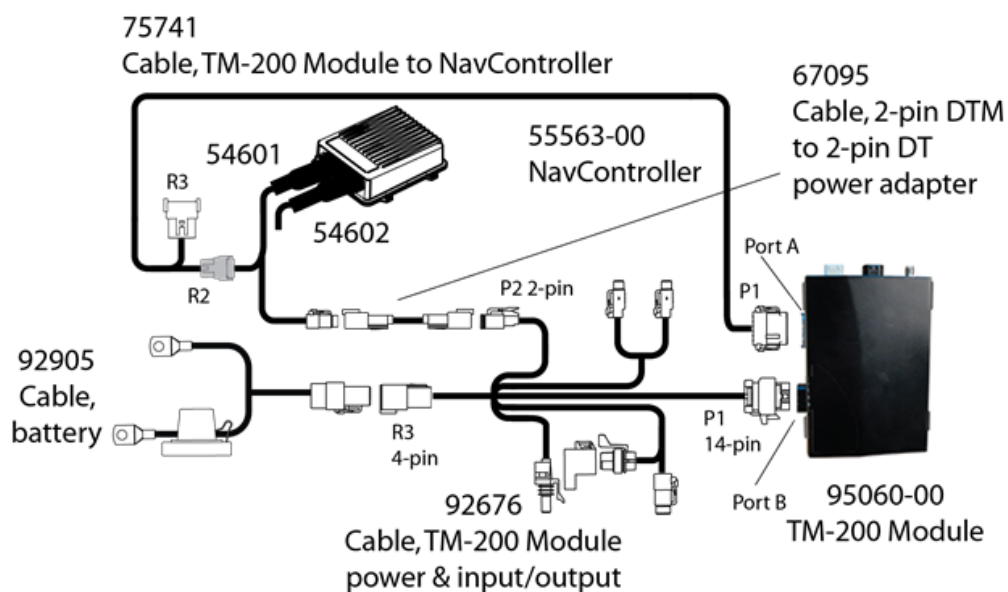
Trimble Ready® vehicles connect the OEM harness from the NavController to the power adapter cable.



Part Number	Description
55563-00, 55566-00	NavController
75741	TM-200 Module to NavController cable with port replicator
92676	TM-200 Module power and I/O cable connected to port B
95060-00	TM-200 Module
95918	Power adapter cable

After-market install

This graphic shows how to connect the TM-200 Module and the Autopilot system for after-market installations.

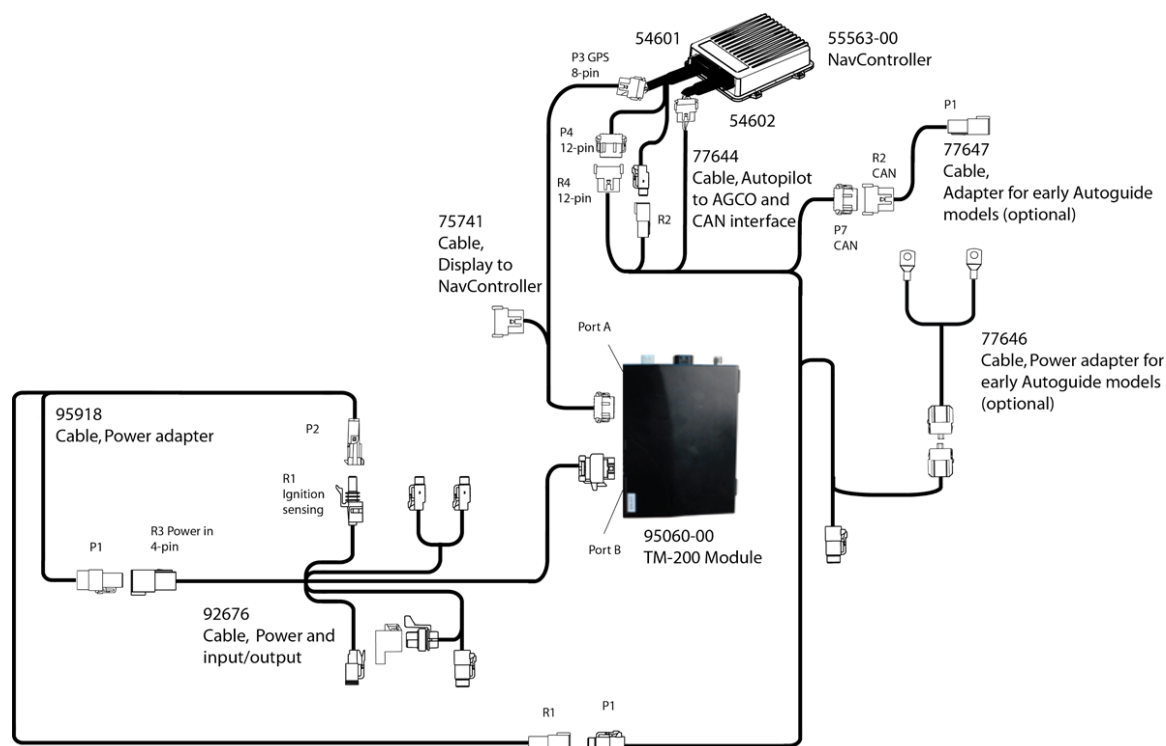


Part Number	Description
54601	Main NavController cable
54602	Cable, NavController diagnostic
55563-00, 55566-00	NavController
67095	2-pin DTM to 2-pin DT power adapter cable
75741	TM-200 Module to NavController cable with port replicator
92676	TM-200 Module power and I/O cable
92905	Cable, battery
95060-00	TM-200 Module

After-market ACGO install

This graphic shows how to connect the TM-200 Module and the Autopilot system to the following vehicles using the power adapter cable:

- Challenger MT500/600
- AGCO DT or RT series
- Massey Ferguson 8X00, 7X00 and 6x00 series

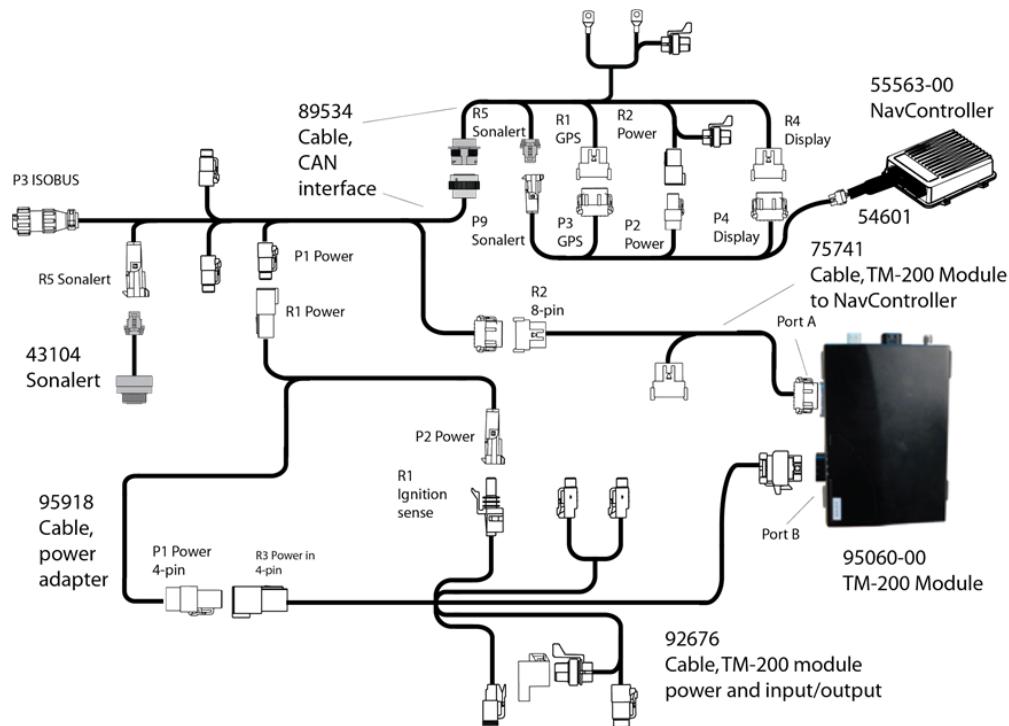


Part Number	Description
54601	Main NavController cable
54602	Cable, NavController diagnostic
55563-00, 55566-00	NavController
75741	TM-200 Module to NavController cable with port replicator
77644 (incl. with kit 77648)	Autopilot to AGCO power and CAN interface cable
77646 (incl. with kit 77648)	Power adapter for early Autoguide models (optional)

Part Number	Description
77647 (incl. with kit 77648)	Adapter for early Autoguide models (optional)
92676	TM-200 Module power and I/O cable
95060-00	TM-200 Module
95918	Power adapter cable

After-market install for Krone harvesters

This graphic shows how to connect the TM-200 Module and the Autopilot system to Krone vehicles using the CAN interface cable (89534).



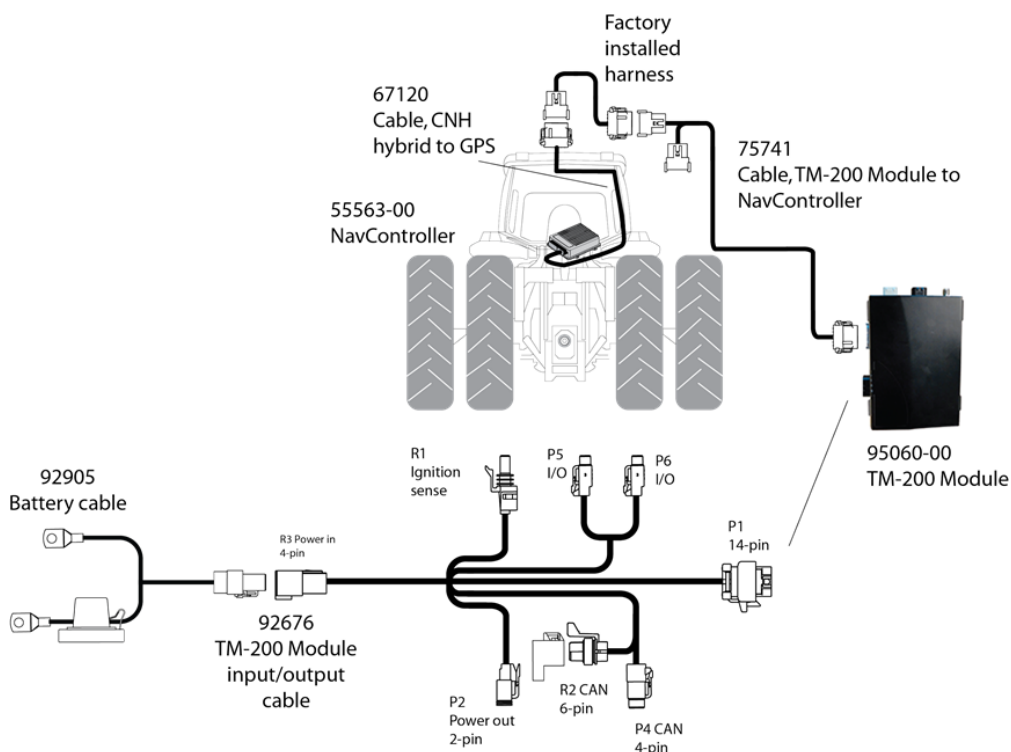
Part Number	Description
43104	Sonalert
54601	Main NavController cable
55563-00, 55566-00	NavController
75741	TM-200 Module to NavController cable with port replicator
89534	CAN interface cable
92676	TM-200 Module power and I/O cable connected to port B
95060-00	TM-200 Module
95918	Power adapter cable

Factory-ready CNH vehicle install

The following graphic shows how to connect the TM-200 Module and the Autopilot system to a factory-ready CNH vehicle.

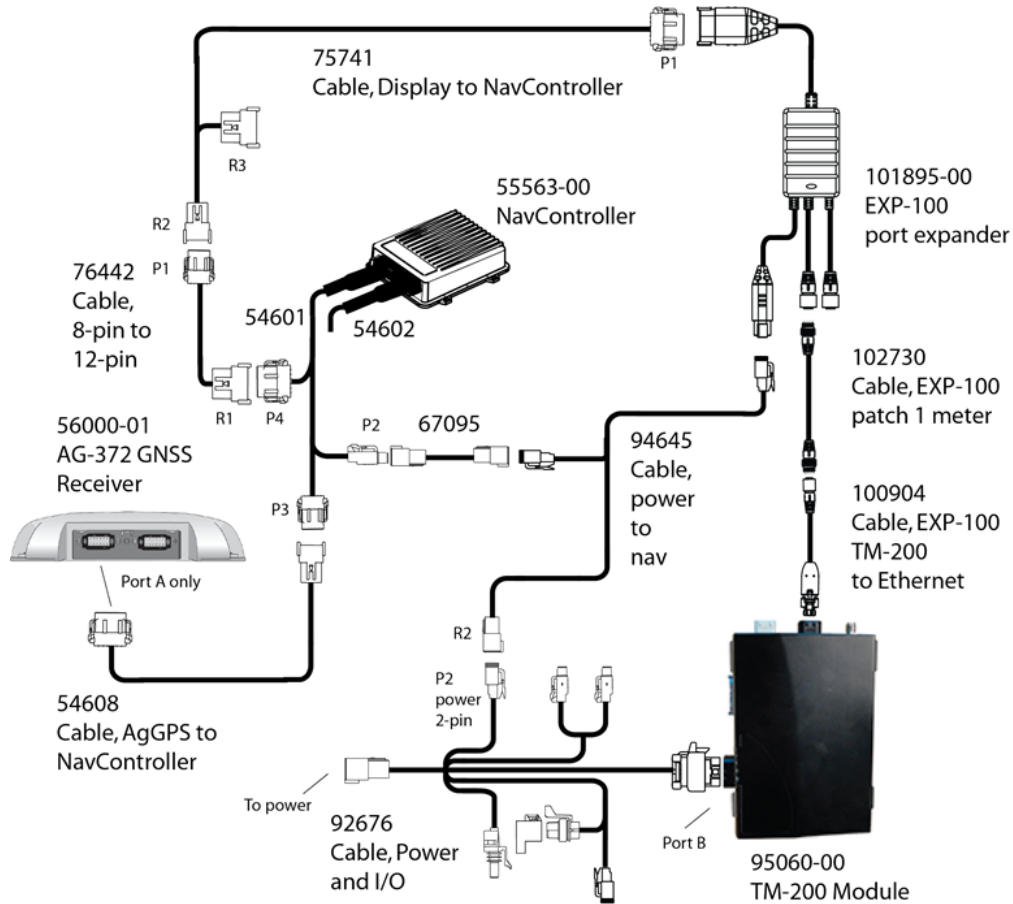


CAUTION – Connecting the Port Replicator of the NavController cable to the P4 or P12 connector of the NavController harness will result in damage to the equipment, and will void the warranty.



Part Number	Description
55563-00, 55566-00	NavController
67120	CNH hybrid to GPS cable
75741	TM-200 Module (port A) to NavController cable with port replicator
92676	TM-200 Module power and I/O cable connected to port B
92905	Cable, battery
95060-00	TM-200 Module

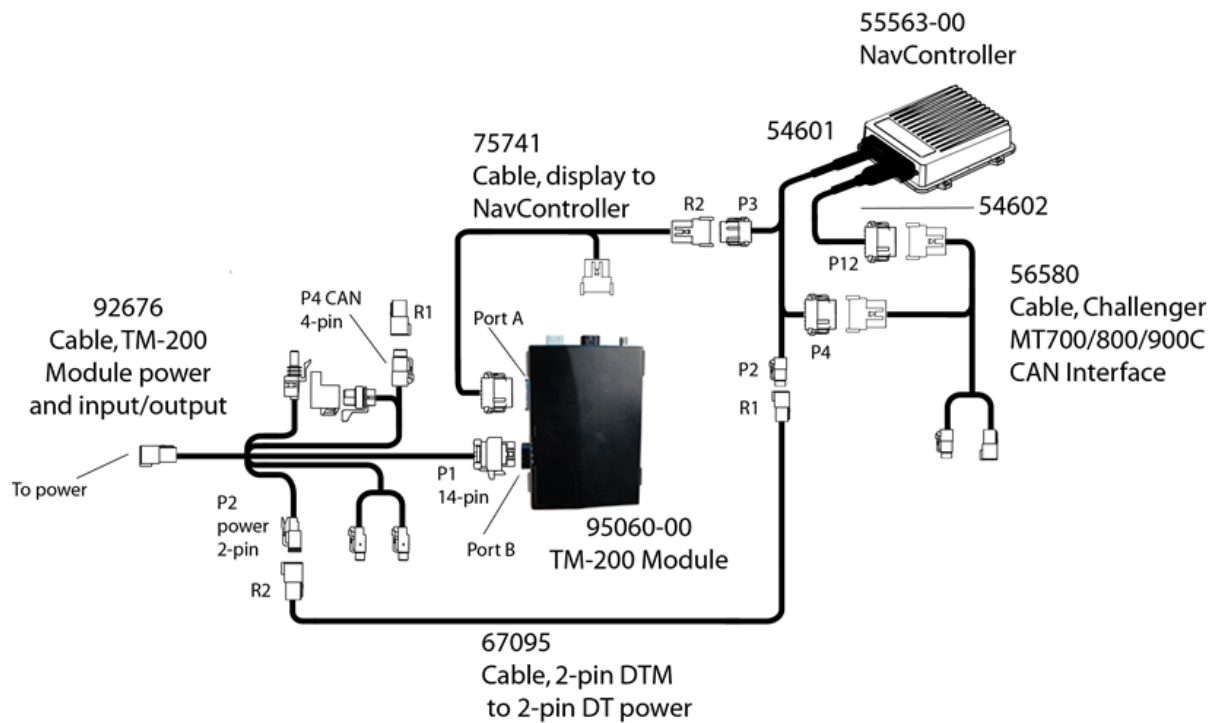
Classic Autopilot



Part Number	Description
54601	Cable, main NavController
54602	Cable, NavController diagnostic
54608	Cable, AgGPS receiver to NavController
55563-00, 55566-00	NavController
56000-01	AG-372 GNSS receiver
67095	Cable, 2 PIN DTM to 2 PIN DT Power Adapt
75741	Cable, TM-200 Module (port A) to NavController
76442	Cable, 8-pin to 12-pin adapter

Part Number	Description
92676	Cable, TM-200 Module power and input/output
94645	Cable, power to NavController
95060-00	TM-200 Module
100904	Cable, EXP-100 TM-200 Module to Ethernet
101895-00	EXP-100 port expander
102730	Cable, EXP-100 patch 1 meter

Challenger MT Tracked 700 / 800



Part Number	Description
54601	Cable, NavController main
54602	Cable, NavController diagnostic
55563-00, 55566-00	NavController
56580	Cable, Challenger MT CAN interface
67095	Cable, 2-pin DTM to 2-in DT power
75741	TM-200 Module (port A) to NavController II cable with port replicator
92676	Cable, TM-200 Module power and input/output
95060-00	TM-200 Module

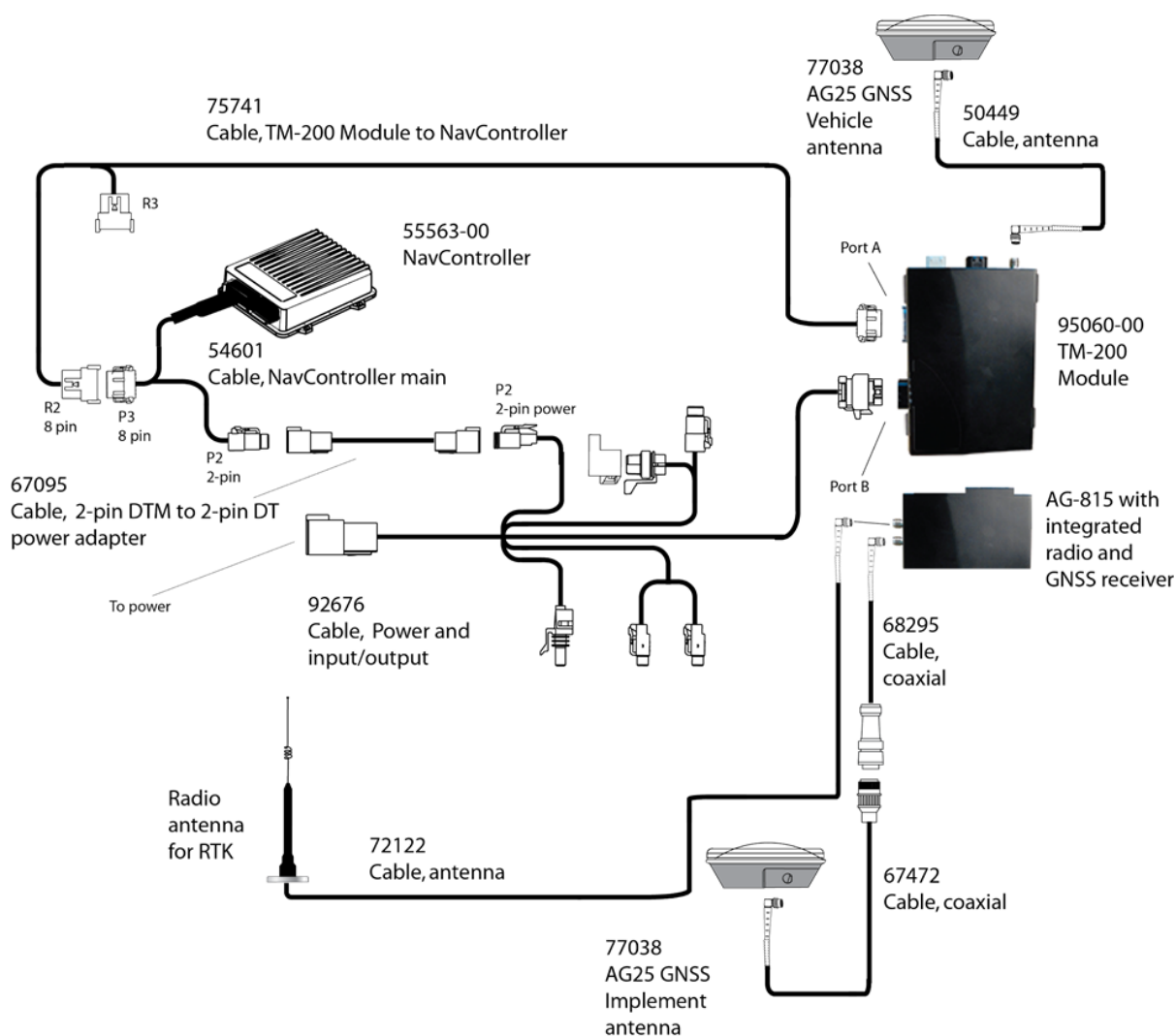
TrueGuide system



CAUTION – If the vehicle has a master electrical disconnect, make sure the power cable ground connections are not directly attached to the battery terminal. Attach the ground connections of the power cable to the chassis side of the main disconnect so that it is as close as possible to the battery, but still gets disconnected when the master disconnect is turned off. Failure to connect the power cable ground will cause damage to the display. For more information, see [Master disconnect \(page 33\)](#).



CAUTION – Connecting the Port Replicator of the NavController cable to the P4 or P12 connector of the NavController harness will result in damage to the equipment, and will void the warranty.



Part Number	Description
50449	Cable, antenna 8M TNC
54601	Cable, NavController main
55563-00, 55566-00	NavController
67095	Cable, 2-pin DTM to 2-pin DT power adapter
67472	Cable, coaxial N/m + TNC/m-ra
68295	Cable, coaxial N/f + TNC/m-ra
72122	Cable, Antenna with magnetic base
75741	Cable, Display to NavController
77038	AG25 GNSS antenna
92676	Cable, TM-200 Module power, CAN and input/output
95060-00	TM-200 Module
95093-xx, 95094-xx, or 95095-xx	AG-815 with integrated radio and GNSS receiver

TrueTracker system

The Trimble TrueTracker™ system, the implement receives separate guidance and steering to increase accuracy. Implement steering actively steers the implement being towed by the vehicle. This prevents the implement from pulling to one side (called implement draft):

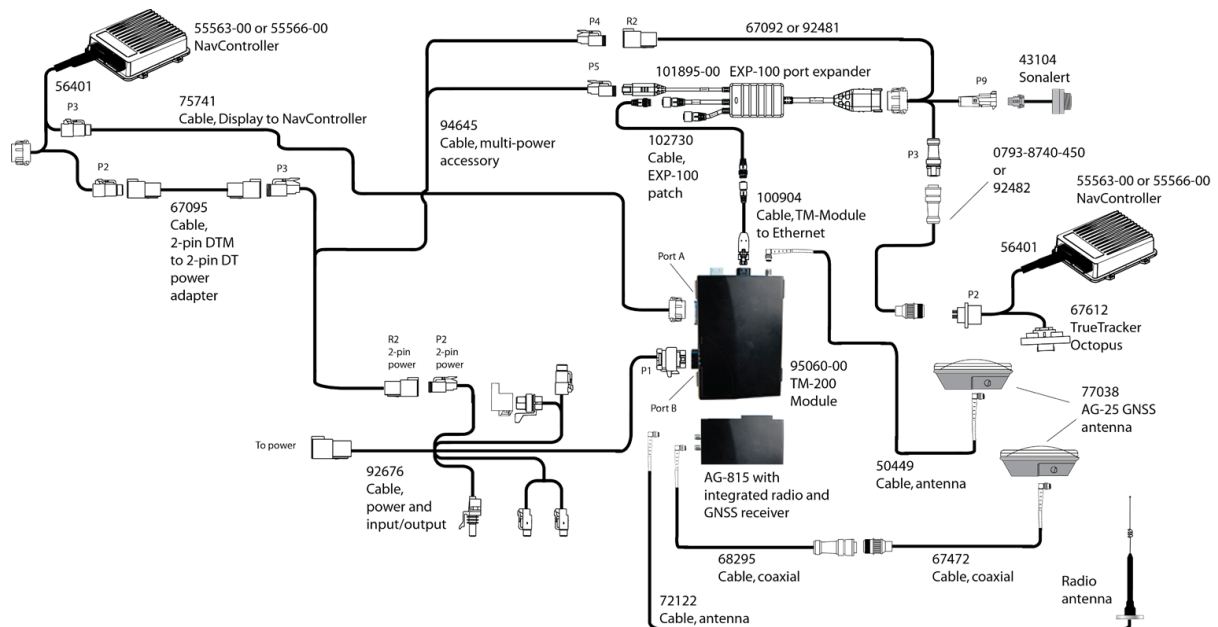
- On extremely sloped ground
- In variable soil conditions
- On curved guidance patterns



CAUTION – If the vehicle has a master electrical disconnect, make sure the power cable ground connections are not directly attached to the battery terminal. Attach the ground connections of the power cable to the chassis side of the main disconnect so that it is as close as possible to the battery, but still gets disconnected when the master disconnect is turned off. Failure to connect the power cable ground will cause damage to the display. For more information, see [Master disconnect \(page 33\)](#).



CAUTION – Connecting the Port Replicator of the NavController cable to the P4 or P12 connector of the NavController harness will result in damage to the equipment, and will void the warranty.



Note – For installation of the TrueTracker joystick with manual steering, see the document 92405-06-E05.

Part Number	Description
43104	Sonalert
50449	Cable, antenna 8M TNC
54601	Cable, NavController main
55563-00, 55566-00	NavController
67092	Cable, TrueTracker to display
67095	Cable, 2-pin DTM to 2-pin DT power adapter
67472	Cable, coaxial N/m + TNC/m-ra
67612	Cable, Display to TrueTracker octopus
68295	Cable, coaxial N/f + TNC/m-ra
72122	Cable, Antenna with magnetic base
75741	Cable, Display to NavController
77038	AG25 GNSS antenna
92481	Cable, TrueTracker in-cab harness
92482	Cable, TrueTracker extension
92483	Cable, TrueTracker NavController harness
92676	Cable, TM-200 Module power, CAN and input/output
94645	Cable, Multi-power accessory
95060-00	TM-200 Module
95093-xx, 95094-xx, or 95095-xx	AG-815 with integrated radio and GNSS receiver
100904	Cable, EXP-100 adapter, TM-200 Module to Ethernet
101895-00	EXP-100 port expander
102730	Cable, EXP-100 patch 1 meter

EZ-Pilot system

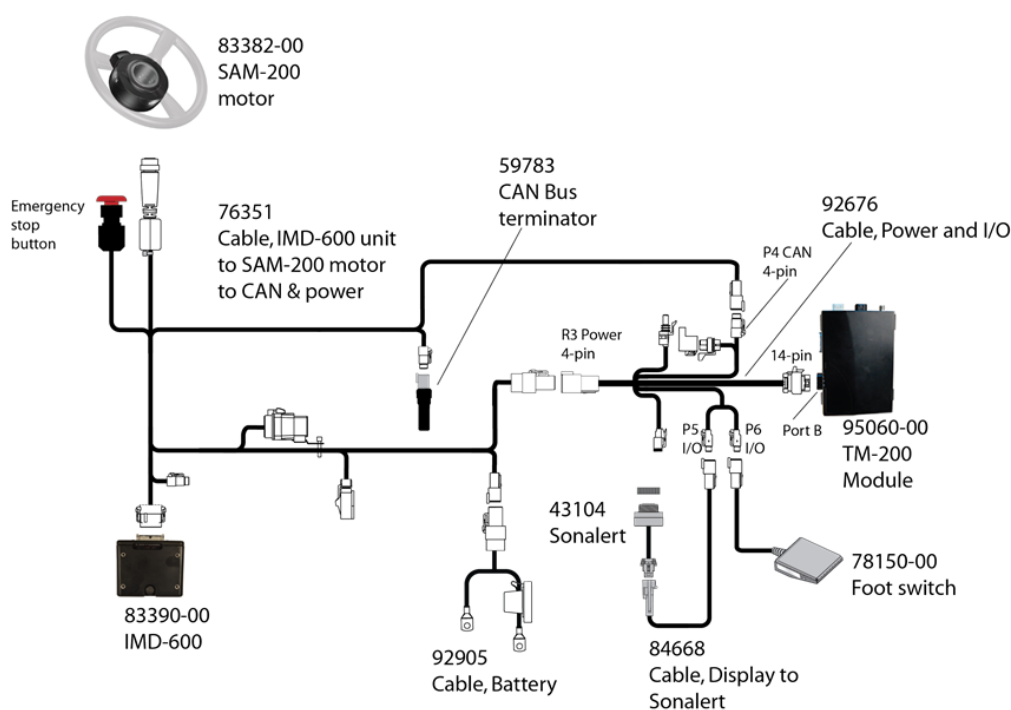
The connection for the EZ-Pilot steering system to your vehicle will differ, depending on whether it is an after-market install or an OEM install.



CAUTION – If the vehicle has a master electrical disconnect, make sure the power cable ground connections are not directly attached to the battery terminal. Attach the ground connections of the power cable to the chassis side of the main disconnect so that it is as close as possible to the battery, but still gets disconnected when the master disconnect is turned off. Failure to connect the power cable ground will cause damage to the display. For more information, see [Master disconnect \(page 33\)](#).

After-market install

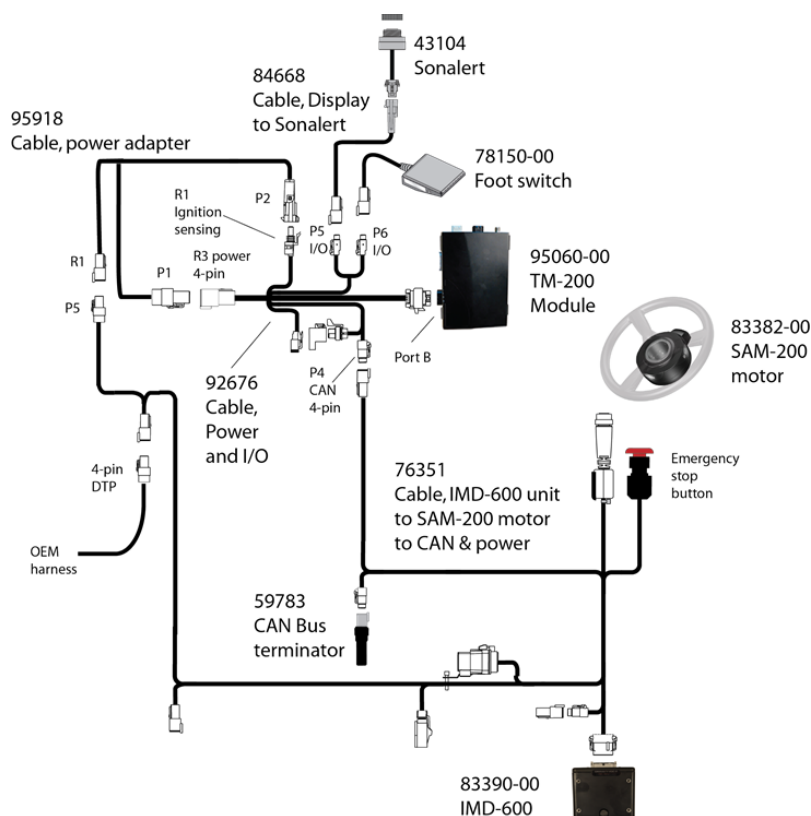
This diagram shows how perform an after-market install to connect the TM-200 Module with the EZ-Pilot system.



Part Number	Description
43104	Sonalert
59783	CAN bus terminator
76351	IMD-600 unit to SAM-200 motor to CAN and power cable
78150-00	EZ-Pilot system foot switch remote engage (P6 connector only)
83382-00	SAM-200 motor
83390-00	IMD-600 unit
84668	Display to Sonalert cable
92676	TM-200 Module power and I/O cable connected to port B
92905	TM-200 Module battery cable
95060-00	TM-200 Module

OEM install

The following graphic shows how connect the EZ-Pilot system to a vehicle with an existing OEM harness.



Part Number	Description
43104	Sonalert
59783	CAN bus terminator
76351	IMD-600 unit to SAM-200 motor to CAN and power cable
78150-00	EZ-Pilot system foot switch remote engage (P6 connector only)
83382-00	SAM-200 motor
83390-00	IMD-600 unit
84668	Display to Sonalert cable
92676	TM-200 Module power and I/O cable connected to port B

Part Number	Description
95060-00	TM-200 Module
95918	Power adapter cable

Part Number	Description
53058-00	EZ-Steer motor
53067	EZ-Steer accessory cable
53348-10	EZ-Steer controller
60941-00	Foot switch and cable
62257	EZ-Steer motor cable
75742	TM-200 Module (port A) to EZ-Steer with 2-pin power input
92676	TM-200 Module power and I/O cable connected to port B
92905	TM-200 Module battery cable
95060-00	TM-200 Module

Field-IQ system

In this chapter:

Field-IQ cab kit, Rate and Section Control	78
Field-IQ Rate & Section Control with guidance	82
Field-IQ Rate & Section Control / Sprayer full platform kit	88
Boom Height Control with Rate and Section Control	91
Field-IQ system Section Control and Raven rate Control	93
CasellH SPX sprayers (2009 and later), Rate and Section Control	98
Seed Monitoring	101

This chapter shows the cabling for connecting TM-200 Module to the Field-IQ™ crop input control system for various configurations.

Use Trimble cables only. Trimble cables use specific wire gauges not found in some off-the-shelf RJ45/CAT 6 cables.

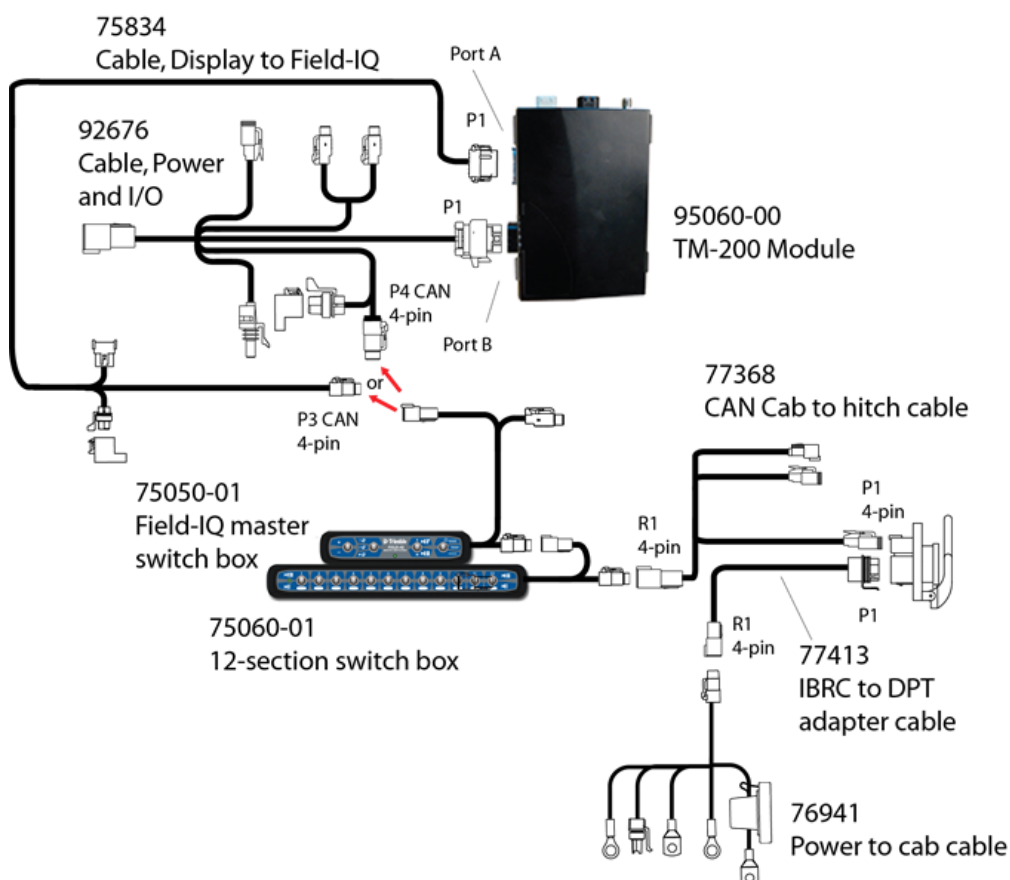
Field-IQ cab kit, Rate and Section Control



CAUTION – If the vehicle has a master electrical disconnect, make sure the power cable ground connections are not directly attached to the battery terminal. Attach the ground connections of the power cable to the chassis side of the main disconnect so that it is as close as possible to the battery, but still gets disconnected when the master disconnect is turned off. Failure to connect the power cable ground will cause damage to the display. For more information, see [Master disconnect \(page 33\)](#).

Without power relay

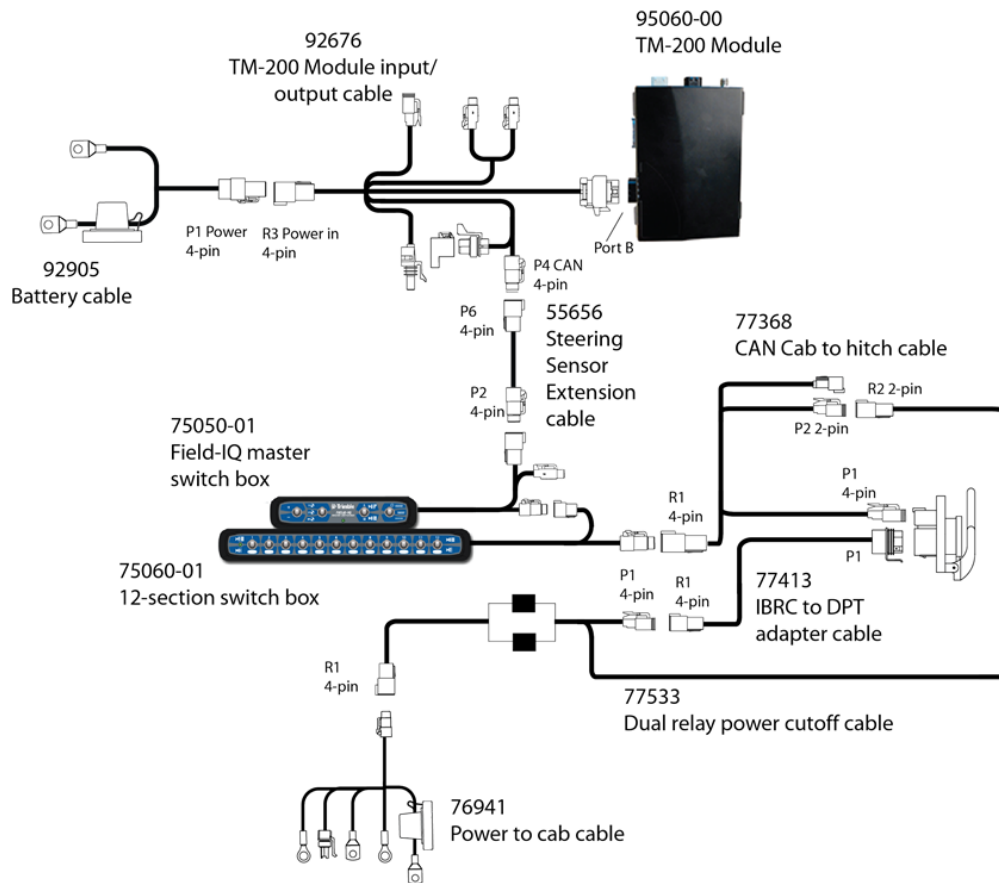
The following shows how to configure the Field-IQ system cab kit for Rate and Section Control.



Part Number	Description
75050-01	Field-IQ system master switch box
75060-01	12-section switch box
75834	Display to Field-IQ system cable
76941	Field-IQ system power cable
77368	Cab to hitch CAN cable
77413	IBRC to DPT adapter cable
92676	Power and I/O cable
95060-00	TM-200 Module

With power relay

The following shows how to configure the Field-IQ cab kit for Rate and Section Control with a power relay.



Part Number	Description
55656	Steering sensor extension cable
75050-01	Field-IQ system master switch box
75060-01	12-section switch box
75834	Display to Field-IQ system cable
76491	Field-IQ system power cable
77368	Cab to hitch CAN cable
77413	IBRC to DPT adapter cable

Part Number	Description
77533	Dual relay power cutoff cable
92676	Power and I/O cable
92905	Battery cable
95060-00	TM-200 Module

Field-IQ Rate & Section Control with guidance

The following diagrams show how to connect the TM-200 Module with Field-IQ system Rate and Section control and:

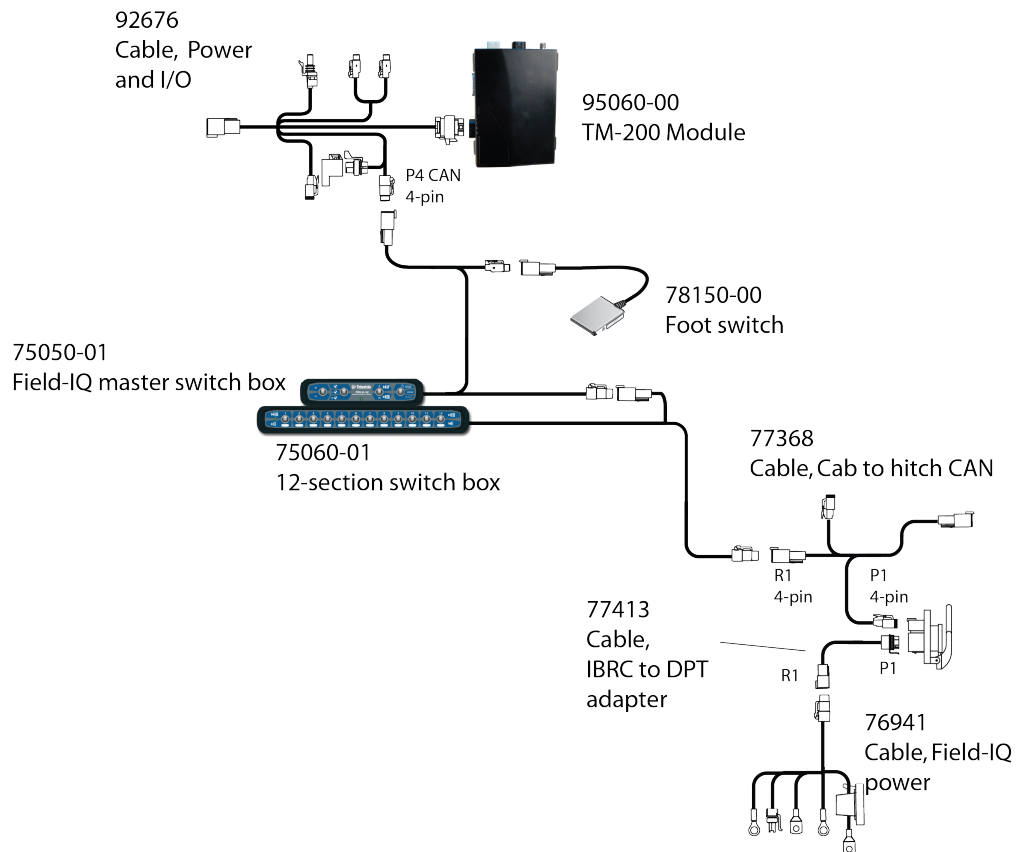
- [Autopilot system with Rate and Section Control \(page 83\)](#)
- [EZ-Pilot system with Rate and Section Control \(page 84\)](#)
- [EZ-Steer system with Rate and Section Control \(page 86\)](#)



CAUTION – If the vehicle has a master electrical disconnect, make sure the power cable ground connections are not directly attached to the battery terminal. Attach the ground connections of the power cable to the chassis side of the main disconnect so that it is as close as possible to the battery, but still gets disconnected when the master disconnect is turned off. Failure to connect the power cable ground will cause damage to the display. For more information, see [Master disconnect \(page 33\)](#).

Autopilot system with Rate and Section Control

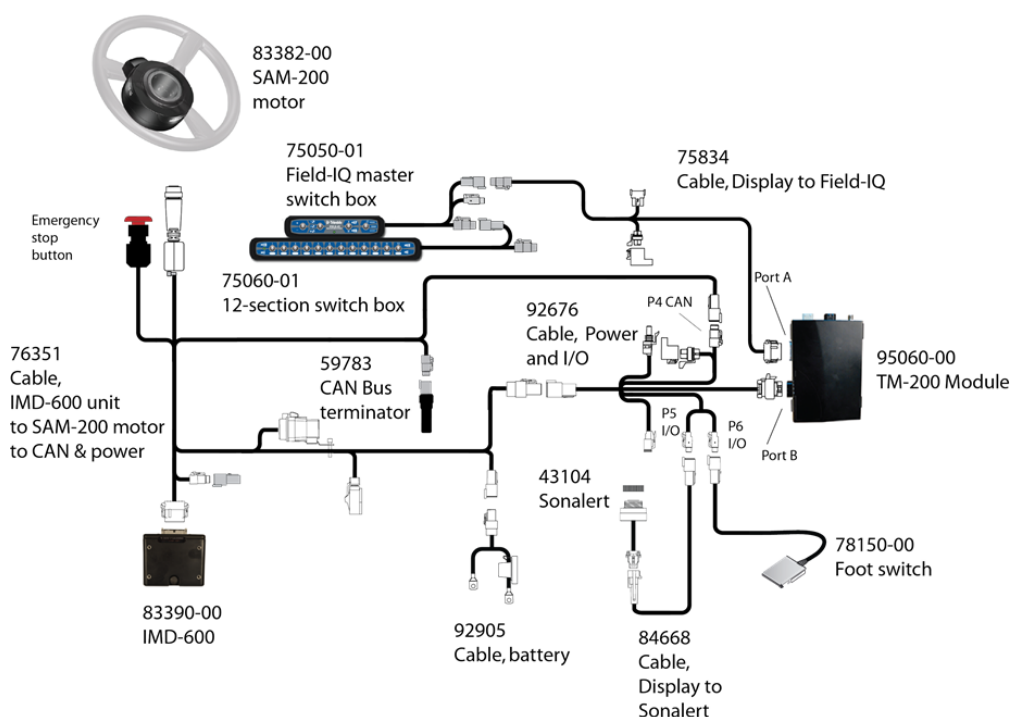
To see the Autopilot configuration, see [Autopilot system \(page 56\)](#).



Part Number	Description
75050-01	Field-IQ master switch box
75060-01	Field-IQ 12-section switch box, optional
76941	Field-IQ power cable
77368	Cable, Cab to hitch CAN
77413	IRBC to DPT adapter
78150	Foot switch
92676	TM-200 Module power and I/O cable connected to port B
95060-00	TM-200 Module

EZ-Pilot system with Rate and Section Control

Field-IQ Rate and Section Control cab kit for the EZ-Pilot system requires the Field-IQ master switch box . Optionally, the 12-switch box may also be used.

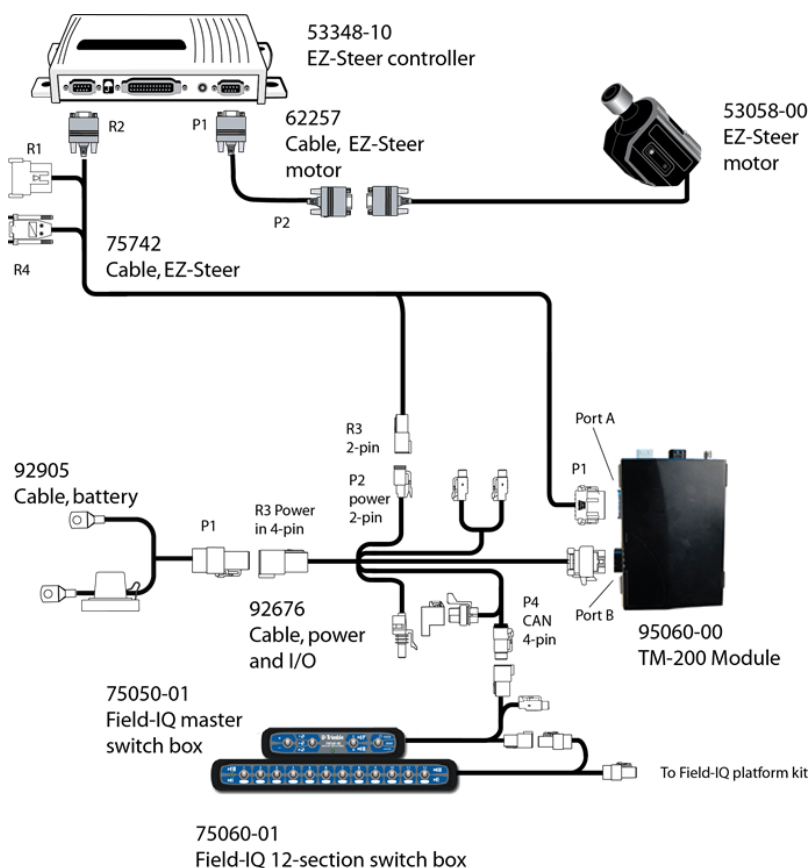


Part Number	Description
43104	Sonalert
55656	Steering Sensor Extension cable and Field-IQ Switch Box Extension
59783	CAN bus terminator
75050-01	Field-IQ master switch box
75060-01	12-section switch box (optional)
75834	TM-200 Module to Field-IQ cable
76351	IMD-600 unit to SAM-200 motor to CAN and power
78150-00	Foot switch
83382-00	SAM-200 motor

Part Number	Description
83390-00	IMD-600
84668	Display to Sonalert cable
92676	Power and I/O cable
92905	Battery cable
95060-00	TM-200 Module

EZ-Steer system with Rate and Section Control

Field-IQ Rate and Section Control cab kit for the EZ-Steer system requires the Field-IQ master switch box . The 12-switch box may also be used.



Part Number	Description
53058-00	EZ-Steer motor
53348-10	EZ-Steer controller
62257	EZ-Steer motor
75050-01	Field-IQ master switch box
75060-01	12-section switch box (optional)
75742	EZ-Steer cable
92676	TM-200 Module power and I/O cable connected to port B

Part Number	Description
92905	Battery cable
95060-00	TM-200 Module

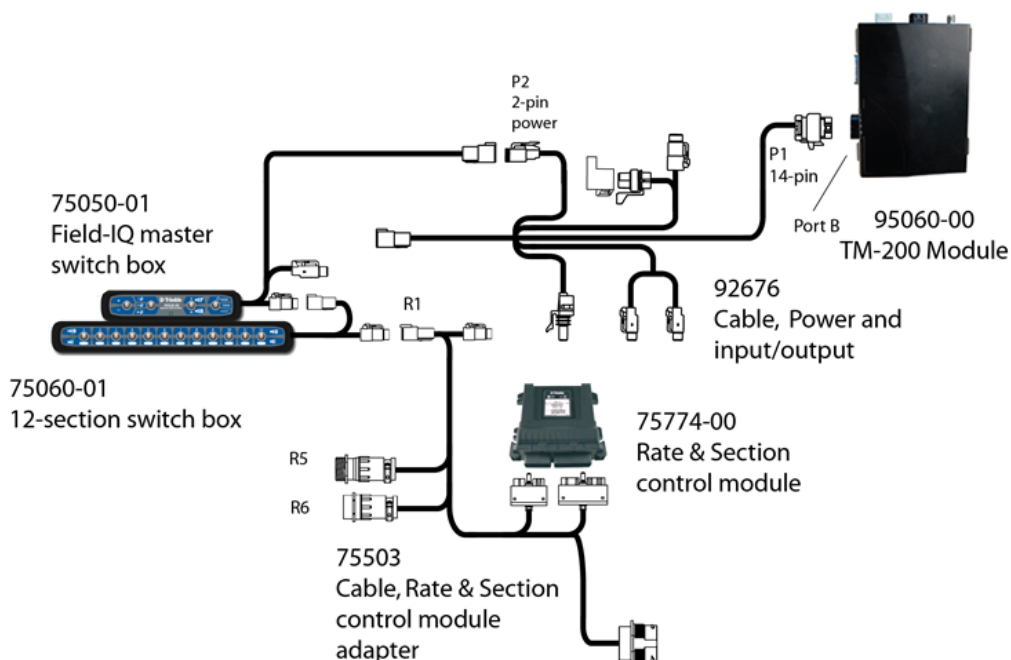
Field-IQ Rate & Section Control / Sprayer full platform kit

The following graphic shows how to connect the TM-200 Module to the Field-IQ Rate and Section Control system and sprayers.



CAUTION – If the vehicle has a master electrical disconnect, make sure the power cable ground connections are not directly attached to the battery terminal. Attach the ground connections of the power cable to the chassis side of the main disconnect so that it is as close as possible to the battery, but still gets disconnected when the master disconnect is turned off. Failure to connect the power cable ground will cause damage to the display. For more information, see [Master disconnect \(page 33\)](#).

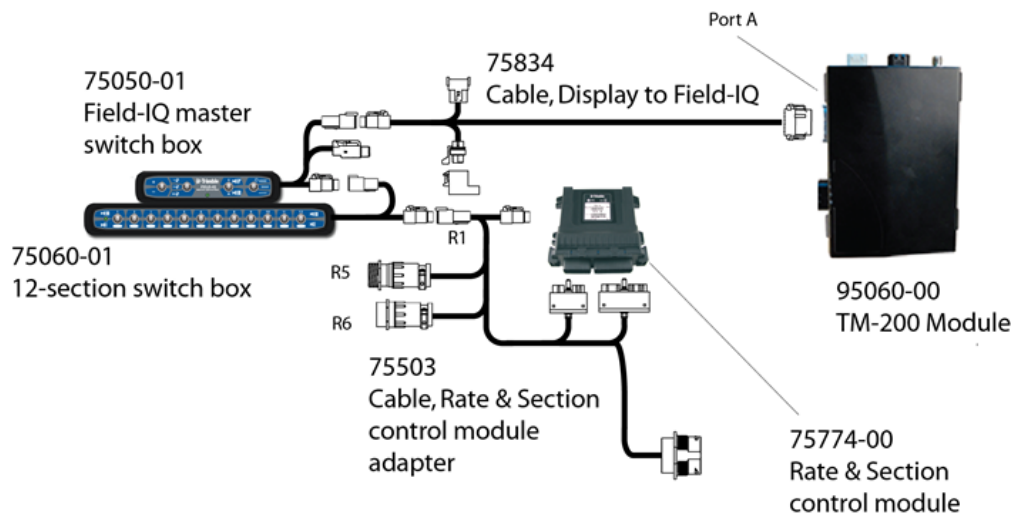
With Power and Input/Output cable



Part Number	Description
75051-01	Field-IQ system master switch box
75060-01	12-section switch box
75503	Rate and Section Control module adapter cable

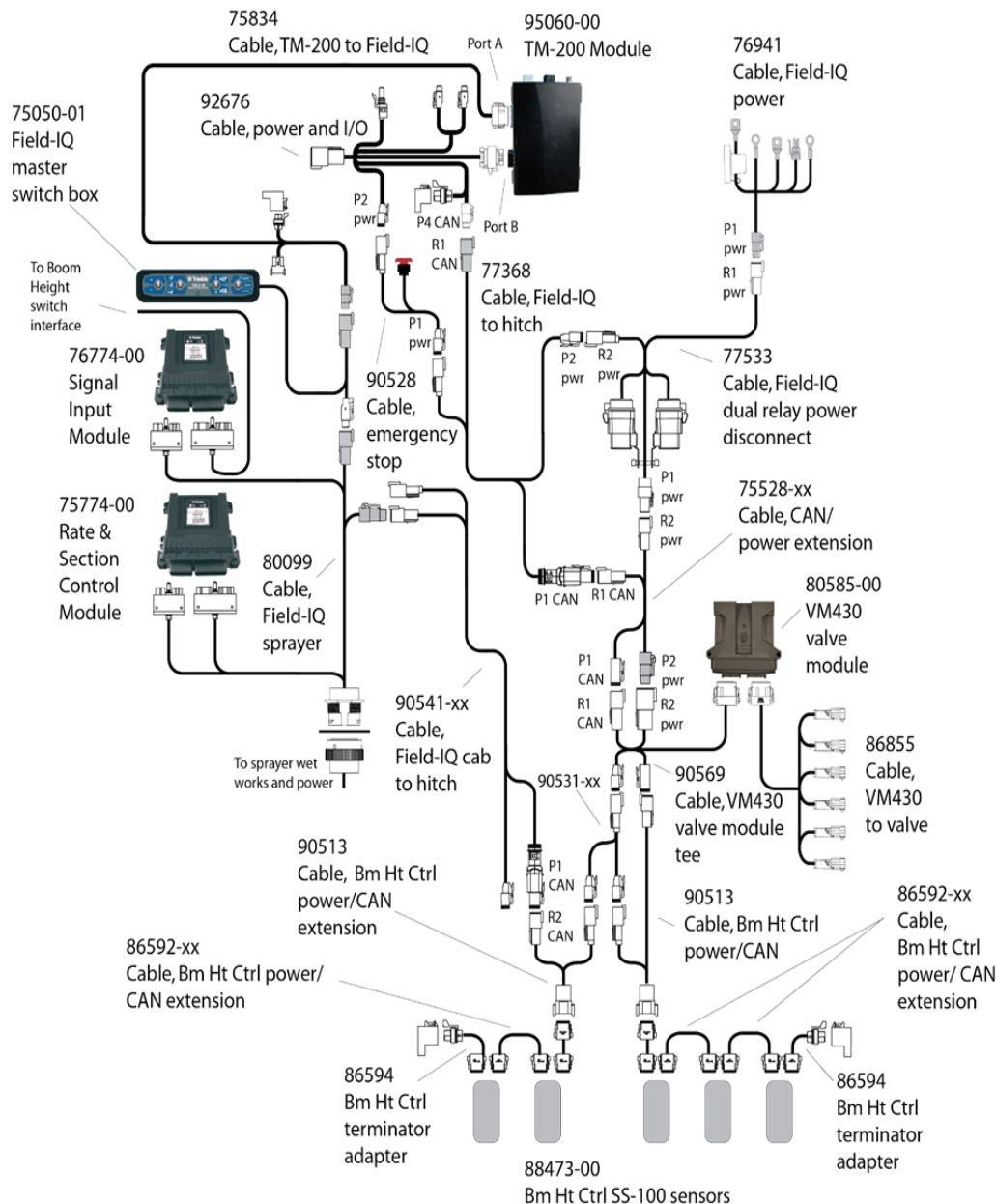
Part Number	Description
75774-00	Rate & Section control module
92676	Cable, TM-200 Module power and input/output
95060-00	TM-200 Module

Without Power and Input/Output cable



Part Number	Description
75051-01	Field-IQ system master switch box
75060-01	12-section switch box
75503	Rate and Section Control module adapter cable
75774-00	Rate & Section control module
75834	TM-200 Module to Field-IQ cable
95060-00	TM-200 Module

Boom Height Control with Rate and Section Control



CAUTION – If the vehicle has a master electrical disconnect, make sure the power cable ground connections are not directly attached to the battery terminal. Attach the ground connections of the power cable to the chassis side of the main disconnect so that it is as close as possible to the battery, but still gets disconnected when the master disconnect is turned off. Failure to connect the power cable ground will cause damage to the display. For more information, see [Master disconnect \(page 33\)](#).

Part Number	Description
75050-01	Field-IQ system master switch box
75528-xx	Field-IQ system CAN/power extension
75774-00	Rate and section control module
75834	TM-200 Module to Field-IQ cable
76774-00	Signal Input Module - SIM
76941	Field-IQ system power cable
77368	Field-IQ system cab to hitch cable
77533	Field-IQ system dual relay power disconnect cable
80099	Field-IQ sprayer cab cable
80585-00	VM430 valve module
86592-xx	Boom Height Control power / CAN extension cable
86594	Boom Height Control terminator adaptor
86855	VM430 to valve cable
88473-00	Boom Height Control SS-100 sensor
90513	Boom height control power Y cable
90528	Emergency stop cable
90541-xx	Field-IQ system cab to hitch cable
90569	VM430 valve module tee cable
92676	TM-200 Module power and I/O cable connected to port B
95060-00	TM-200 Module
90531	Boom Height power Y-cable

Field-IQ system Section Control and Raven rate Control

The following diagrams show how to connect the TM-200 Module to the Field-IQ section control system and the:

- [Raven 4x0 rate control \(page 94\)](#)
- [Raven 4x00 rate control \(page 96\)](#)

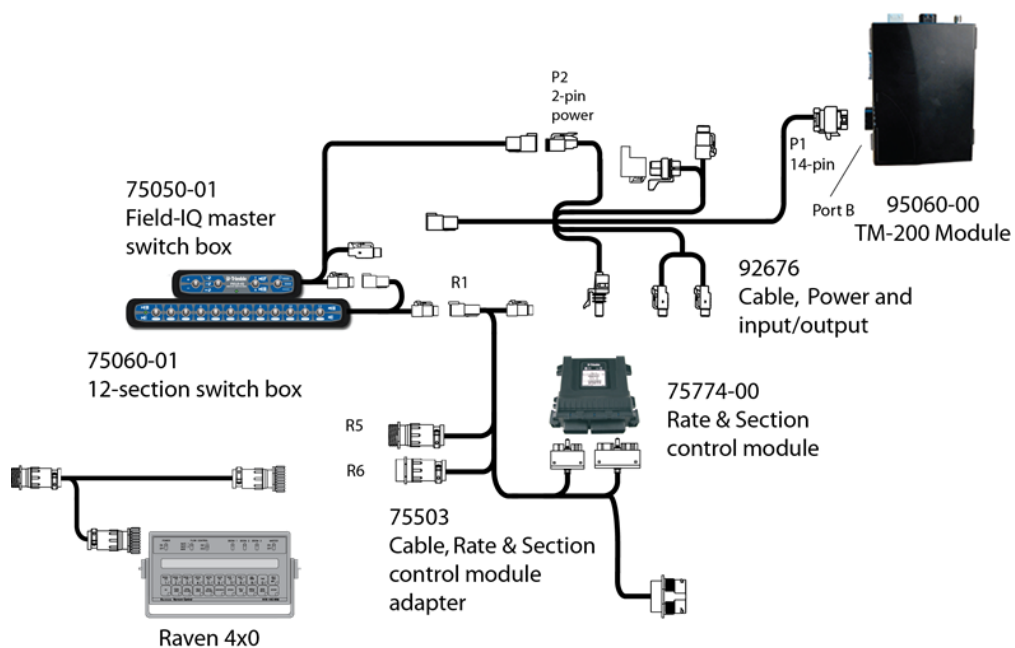


CAUTION – If the vehicle has a master electrical disconnect, make sure the power cable ground connections are not directly attached to the battery terminal. Attach the ground connections of the power cable to the chassis side of the main disconnect so that it is as close as possible to the battery, but still gets disconnected when the master disconnect is turned off. Failure to connect the power cable ground will cause damage to the display. For more information, see [Master disconnect \(page 33\)](#).

Raven 4x0 rate control

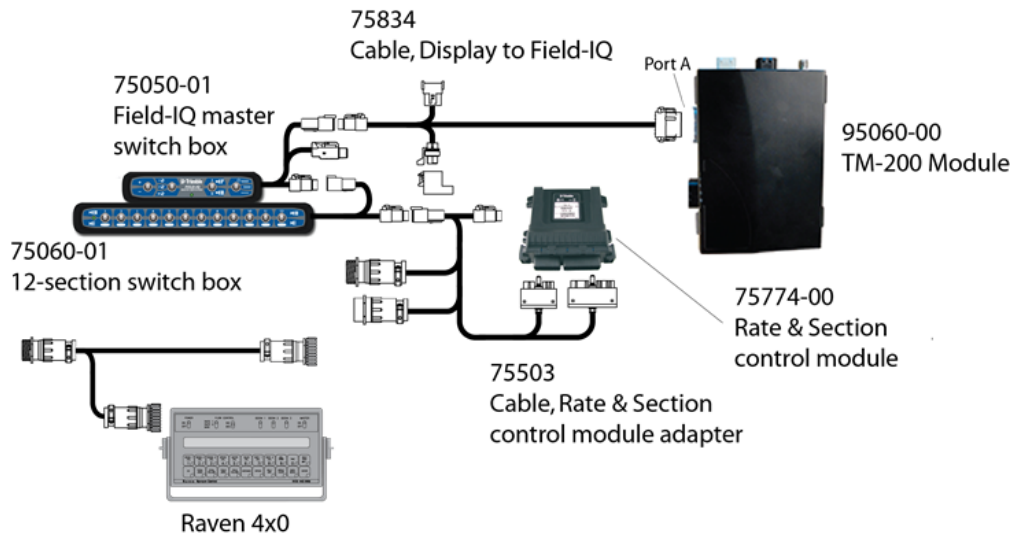
The following graphic shows how to connect the TM-200 Module to the Field-IQ section control system with the Raven 4x0 controller.

With Power and Input/Output cable



Part Number	Description
75050-01	Field-IQ system master switch box
75060-01	12-section switch box (optional)
75503	Rate and section control module adapter cable
75774-00	Rate and Section Control module
92676	Cable, TM-200 Module power and input/output
95060-00	TM-200 Module

Without Power and Input/Output cable

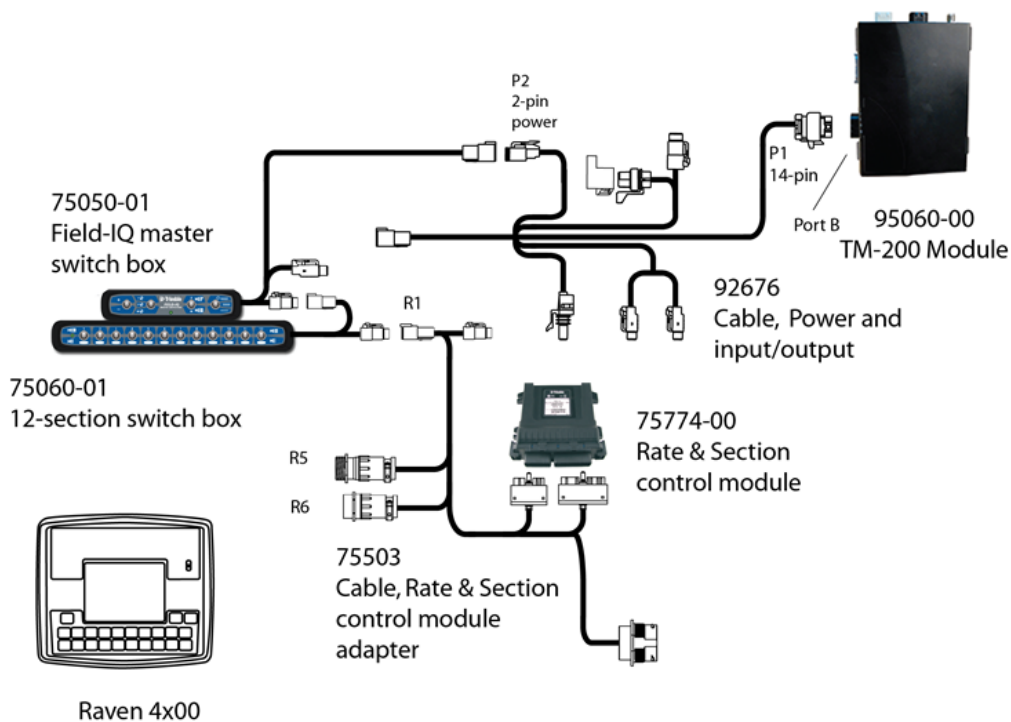


Part Number	Description
75050-01	Field-IQ system master switch box
75060-01	12-section switch box (optional)
75503	Rate and section control module adapter cable
75774-00	Rate and Section Control module
92676	Cable, Power and input/output
95060-00	TM-200 Module

Raven 4x00 rate control

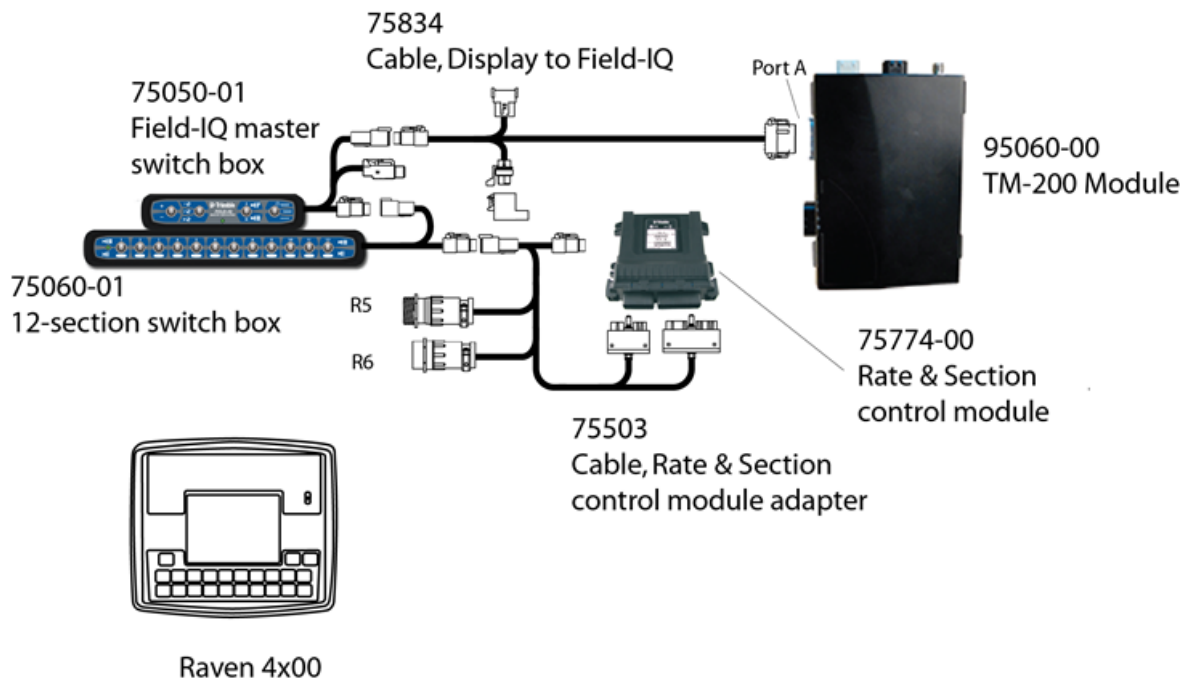
The following graphic shows how to connect the TM-200 Module to the Field-IQ Section Control system with the Raven 4x00.

With Power and Input/Output cable



Part Number	Description
75050-01	Field-IQ system master switch box
75060-01	12-section switch box (optional)
75503	Rate and section control module adapter cable
75774-00	Rate and Section Control module
75834	TM-200 Module (port A) to Field-IQ cable
95060-00	TM-200 Module

Without Power and Input/Output cable



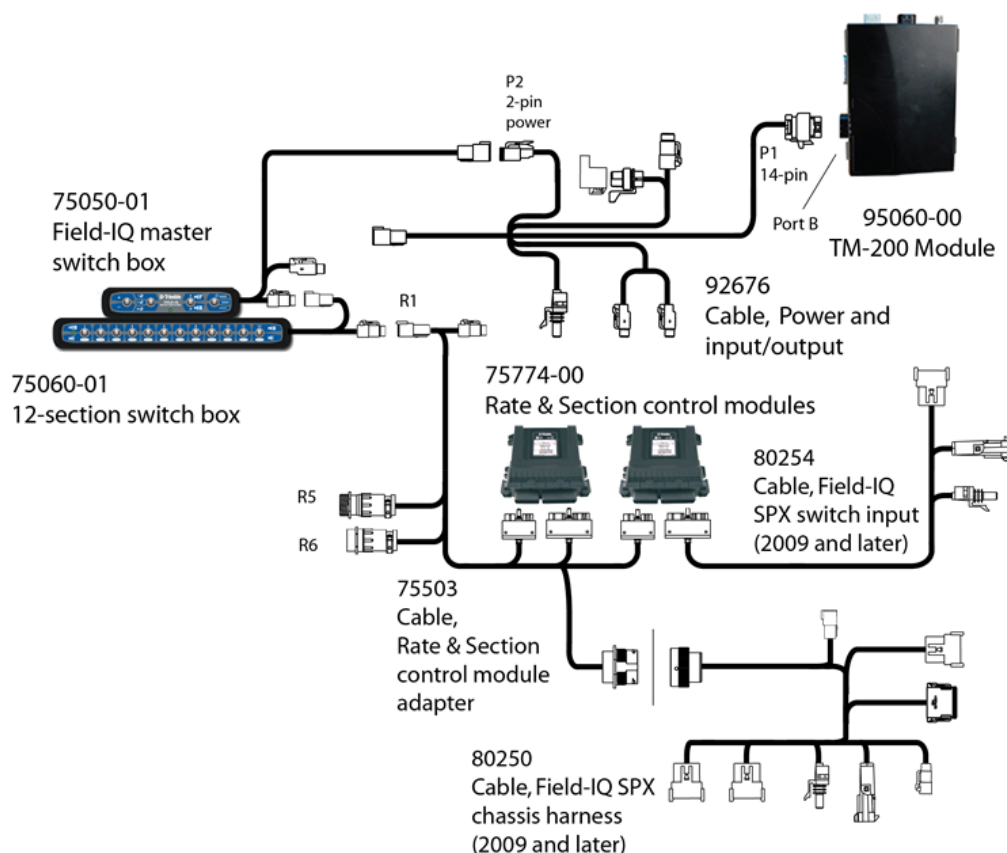
Part Number	Description
75050-01	Field-IQ system master switch box
75060-01	12-section switch box (optional)
75503	Rate and section control module adapter cable
75774-00	Rate and Section Control module
75834	TM-200 Module (port A) to Field-IQ cable
95060-00	TM-200 Module

CaseIH SPX sprayers (2009 and later), Rate and Section Control



CAUTION – If the vehicle has a master electrical disconnect, make sure the power cable ground connections are not directly attached to the battery terminal. Attach the ground connections of the power cable to the chassis side of the main disconnect so that it is as close as possible to the battery, but still gets disconnected when the master disconnect is turned off. Failure to connect the power cable ground will cause damage to the display. For more information, see [Master disconnect \(page 33\)](#).

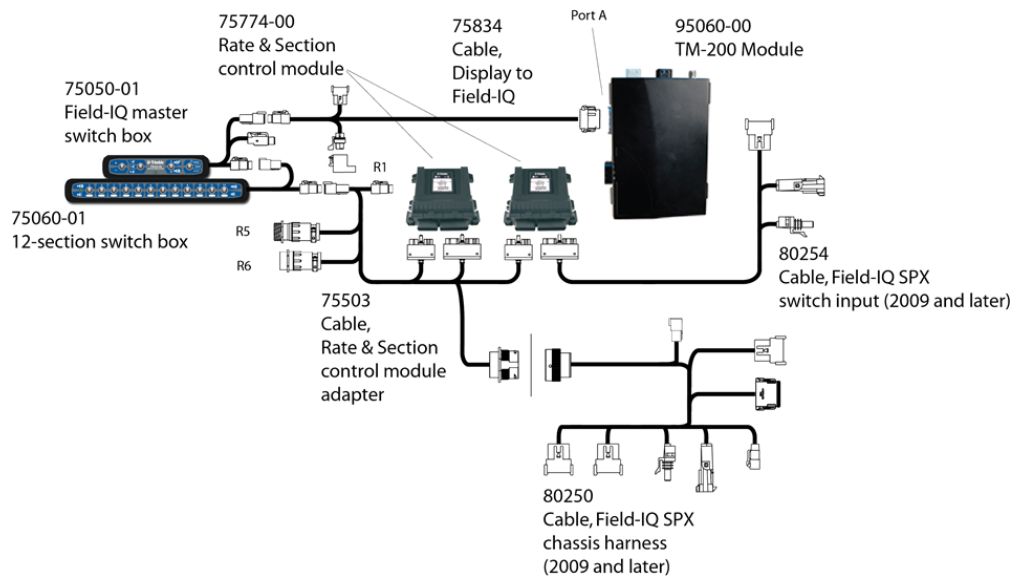
With Power and Input/Output cable



Part Number	Description
75050-01	Field-IQ system master switch box
75060-01	12-section switch box (optional)


Part Number	Description
75503	Rate and section control module adapter cable
75774-00	Rate and Section Control module
80250	Field-IQ SPX chassis harness cable (2009 and later)
80254	Field-IQ SPX switch input cable (2009 and later)
92676	Cable, TM-200 Module power and input/output
95060-00	TM-200 Module

Without Power and Input/Output cable

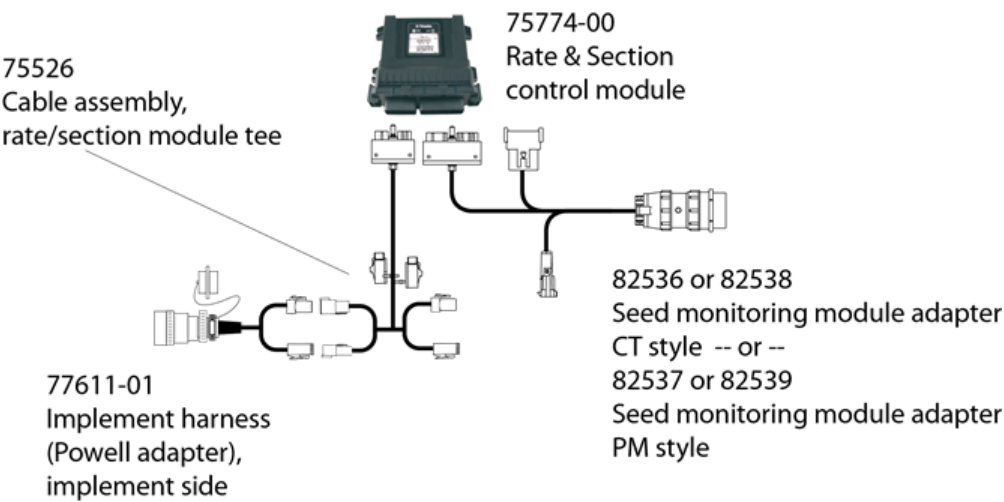


Part Number	Description
75050-01	Field-IQ system master switch box
75060-01	12-section switch box (optional)
75503	Rate and section control module adapter cable
75774-00	Rate and Section Control module
75834	TM-200 Module (port A) to Field-IQ cable
80250	Field-IQ SPX chassis harness cable (2009 and later)
80254	Field-IQ SPX switch input cable (2009 and later)
95060-00	TM-200 Module

Seed Monitoring

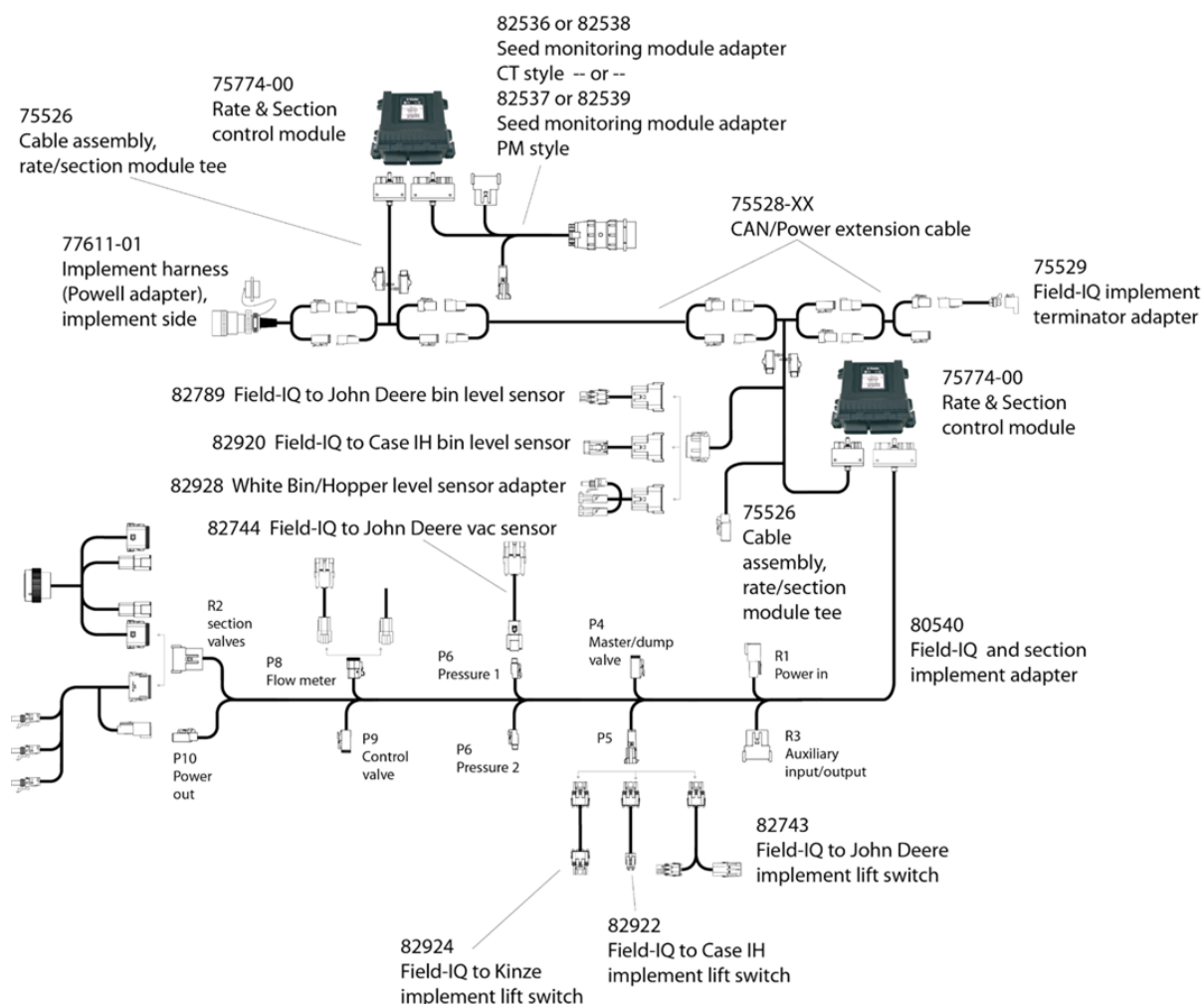
 **CAUTION** – If the vehicle has a master electrical disconnect, make sure the power cable ground connections are not directly attached to the battery terminal. Attach the ground connections of the power cable to the chassis side of the main disconnect so that it is as close as possible to the battery, but still gets disconnected when the master disconnect is turned off. Failure to connect the power cable ground will cause damage to the display. For more information, see [Master disconnect \(page 33\)](#).

Seed Monitoring Only



Part Number	Description
75526	Rate and section control module tee, cable assembly
75774-00	Rate and Section Control module
77611-01	Implement harness, Powell adapter, implement side
82536 / 82538	Seed monitoring module adapter, CT style
82537 / 82539	Seed monitoring module adapter, PM style

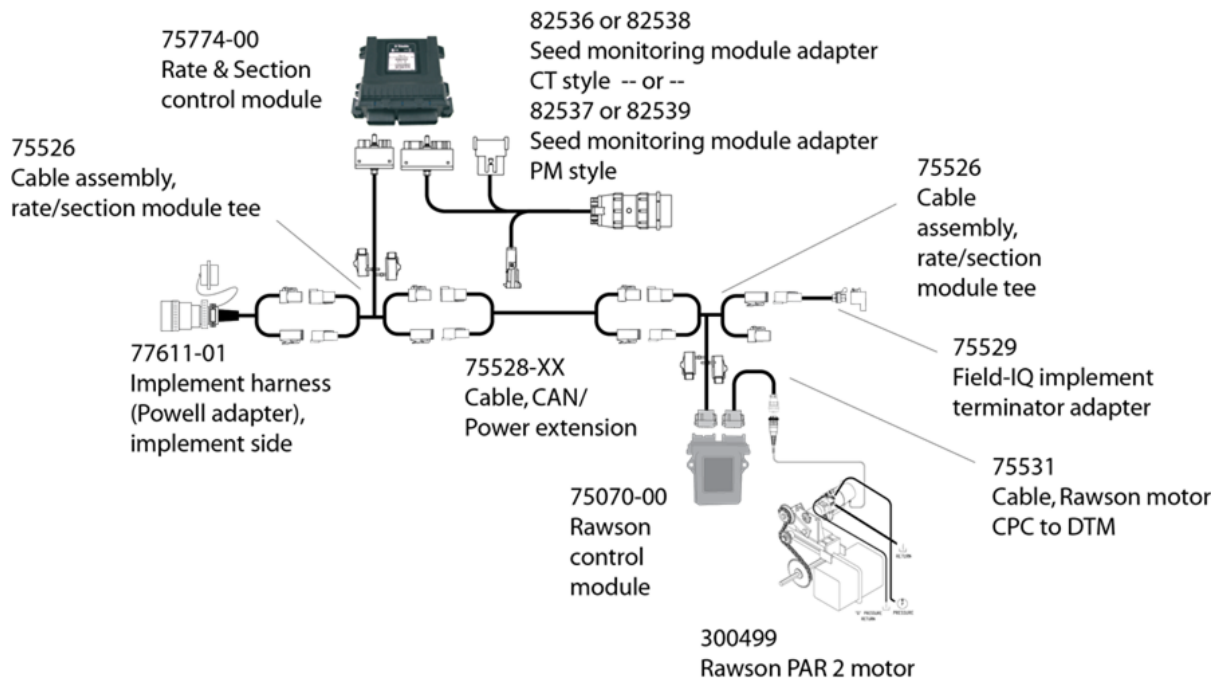
Seed Monitoring with Rate & Section Control



Part Number	Description
75526	Rate/Section module tee cable assembly
75528-xx	CAN/power extension cable
75529	Field-IQ implement terminator adapter
75774-00	Rate and Section Control module
77611-01	Implement harness (Powell adapter), implement side
80540	Field-IQ and section implement adapter
82536 / 82538	Seed monitoring module adapter, CT style

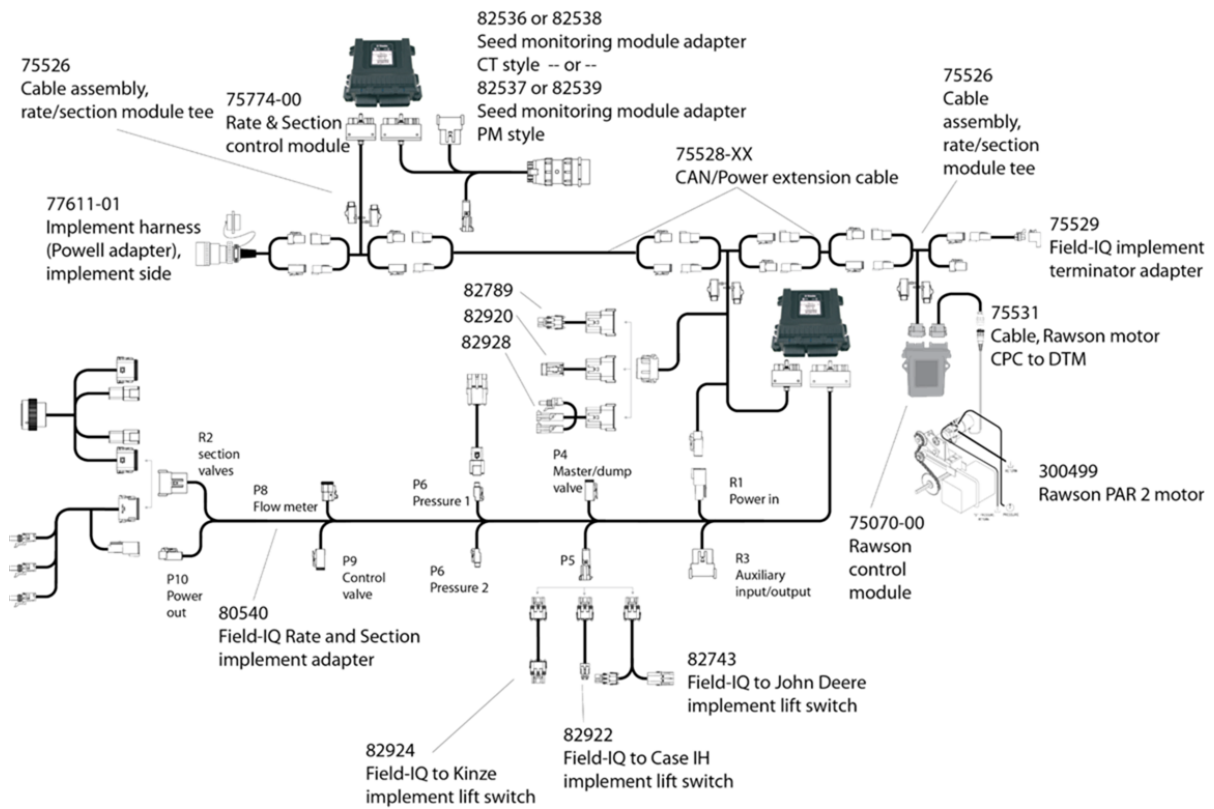
Part Number	Description
82537 / 82539	Seed monitoring module adapter, PM style
82743	Field-IQ system to John Deere implement lift switch
82744	Field-IQ system to John Deere vac sensor
82789	Field-IQ system to John Deere bin level sensor
82920	Field-IQ system to Case IH bin level sensor
82922	Field-IQ system to Case IH implement lift switch
82924	Field-IQ system to Kinze implement lift switch
82928	White bin/hopper level sensor adapter

Rawson Par 2 Seeding with Rate and Section Control



Part Number	Description
75050-00	Rawson control module
75526	Rate/Section module tee cable assembly
75528-xx	CAN/power extension cable
75529	Field-IQ implement terminator adapter
75531	Cable, Rawson motor CPC to DTM
75774-00	Rate and Section Control module
77611-01	Implement harness (Powell adapter), implement side
82536 / 82538	Seed monitoring module adapter, CT style
82537 / 82539	Seed monitoring module adapter, PM style
300499	Rawson PAR 2 motor

Rawson Par 2 seeding and Row Section Control



Part Number	Description
75050-00	Rawson control module
75526	Rate/Section module tee cable assembly
75528-xx	CAN/power extension cable
75529	Field-IQ implement terminator adapter
75531	Cable, Rawson motor CPC to DTM
75774-00	Rate and Section Control module
77611-01	Implement harness (Powell adapter), implement side
80540	Field-IQ Rate and Section implement adapter
82536 / 82538	Seed monitoring module adapter, CT style
82537 / 82539	Seed monitoring module adapter, PM style

Part Number	Description
82743	Field-IQ to John Deere implement lift switch
82789	Cable Assembly, Field-IQ To John Deere Bin Level Sensor
82920	Cable Assembly,Field-IQ to Case IH Bin Level Sensor
82922	Field-IQ system to Case IH implement lift switch
82924	Field-IQ to Kinze implement lift switch
82928	Cable Assembly, Field IQ to Dickey John Bin Level Sensor
300499	Rawson PAR 2 motor

Serial variable rate and radar output

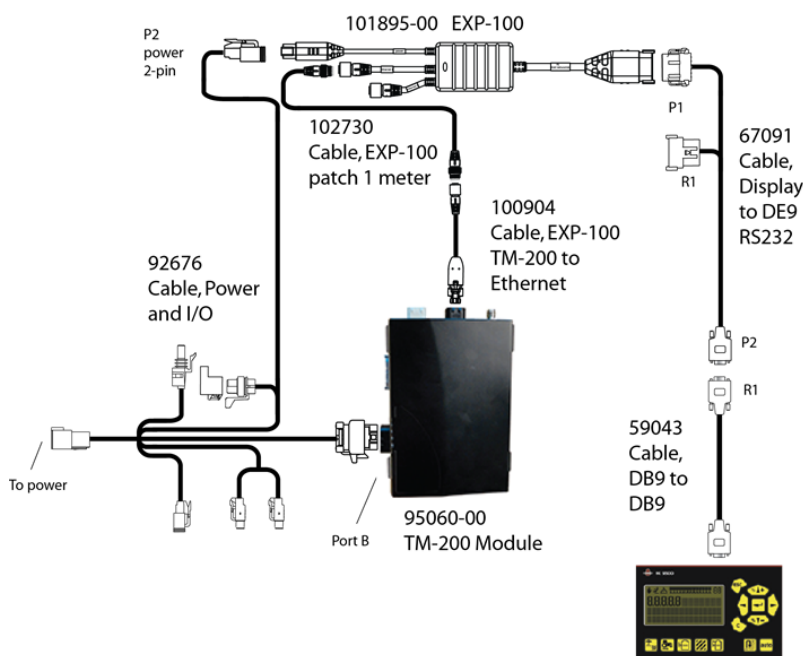
In this chapter:

Hardi 5500	108
Raven SCS400 or SCS600 series	109
Rawson drive module	110
Third-party controllers	111

This section covers connections for serial variable rate and radar output, including the Rawson™ drive module.

Use Trimble cables only. Trimble cables use specific wire gauges not found in some off-the-shelf RJ45/CAT 6 cables.

Hardi 5500

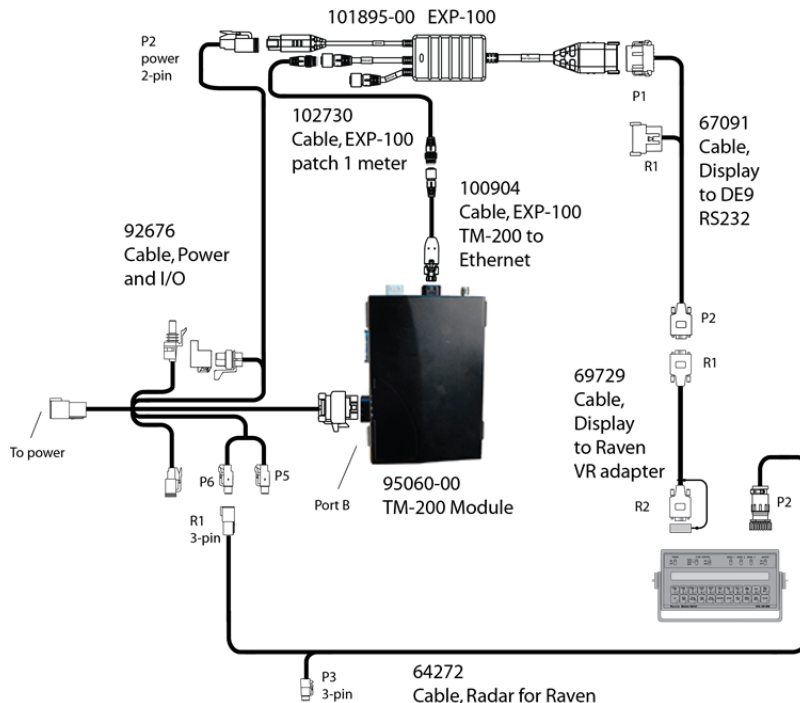


This diagram shows the connections for the Hardi 5500 controller with serial variable rate and radar output.

Note – Radar output is not available with the EZ-Pilot system.

Part Number	Description
59043	Cable, DB9 to DB9
67091	Cable, display to DE9 RS232
92676	Cable, TM-200 Module power and input/output
95060-00	TM-200 Module
100904	Cable, EXP-100 TM-200 Module to Ethernet
101895-00	EXP-100 port expander
102730	Cable, EXP-100 patch 1 meter

Raven SCS400 or SCS600 series

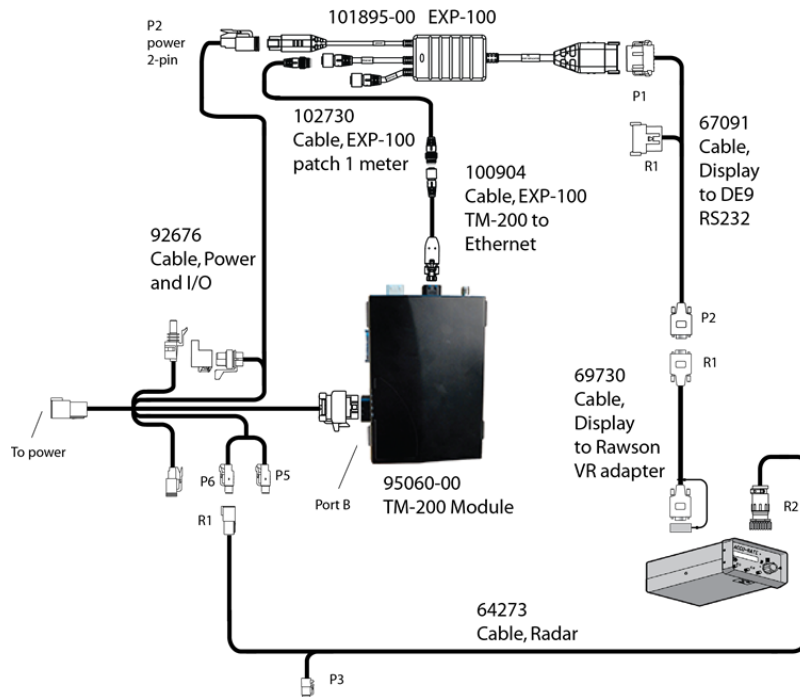


This diagram shows the connections for Raven with serial variable rate and radar output.

Note – Radar output is not available with the EZ-Pilot system.

Part Number	Description
59043	Cable, DB9 to DB9
67091	Cable, display to DE9 RS232
69729	Cable, display to Raven VR adapter
92676	Cable, TM-200 Module power and input/output
95060-00	TM-200 Module
100904	Cable, EXP-100 TM-200 Module to Ethernet
101895-00	EXP-100 port expander
102730	Cable, EXP-100 patch 1 meter

Rawson drive module

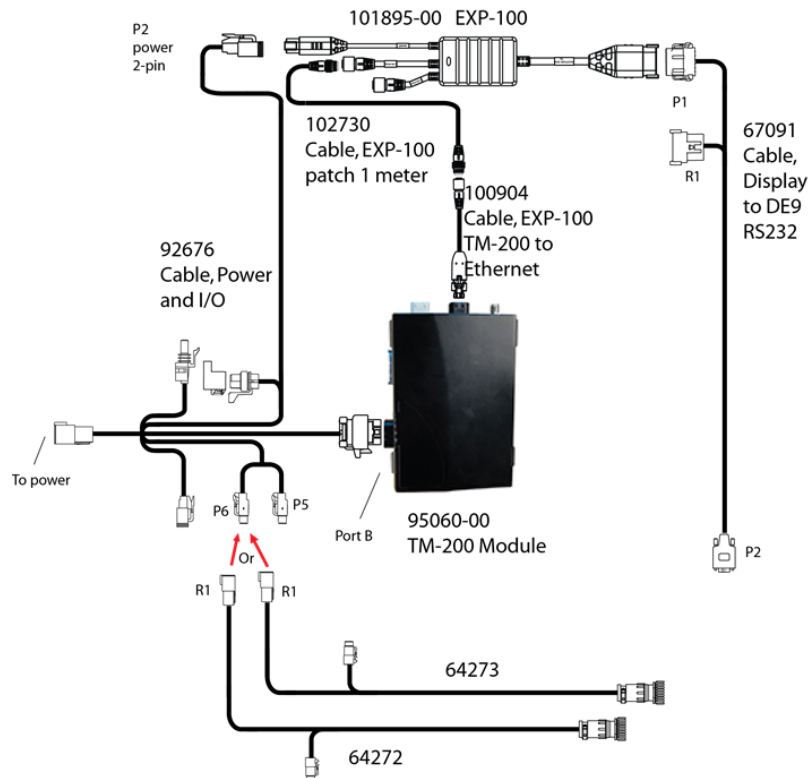


This diagram shows the connections for the Rawson™ drive module with serial variable rate and radar output.

Note – Radar output is not available with the EZ-Pilot system.

Part Number	Description
64273	Cable, radar
67091	Cable, display to DE9 RS232
69730	Cable, display to Rawson VR adapter
92676	Cable, TM-200 Module power and input/output
95060-00	TM-200 Module
100904	Cable, EXP-100 TM-200 Module to Ethernet
101895-00	EXP-100 port expander
102730	Cable, EXP-100 patch 1 meter

Third-party controllers



This diagram shows the connections for third-party controllers with serial variable rate and radar output.

Note – Radar output is not available with the EZ-Pilot system.

Part Number	Description
64272	Cable, radar for Raven
64273	Cable, radar for Dickey-john
67091	Cable, display to DE9 RS232
92676	Cable, TM-200 Module power and input/output
95060-00	TM-200 Module
100904	Cable, EXP-100 TM-200 Module to Ethernet
101895-00	EXP-100 port expander
102730	Cable, EXP-100 patch 1 meter

ISOBUS

In this chapter:

Full harness	114
In cab	116

This section shows how to connect ISOBUS to the TMX-2050 display.

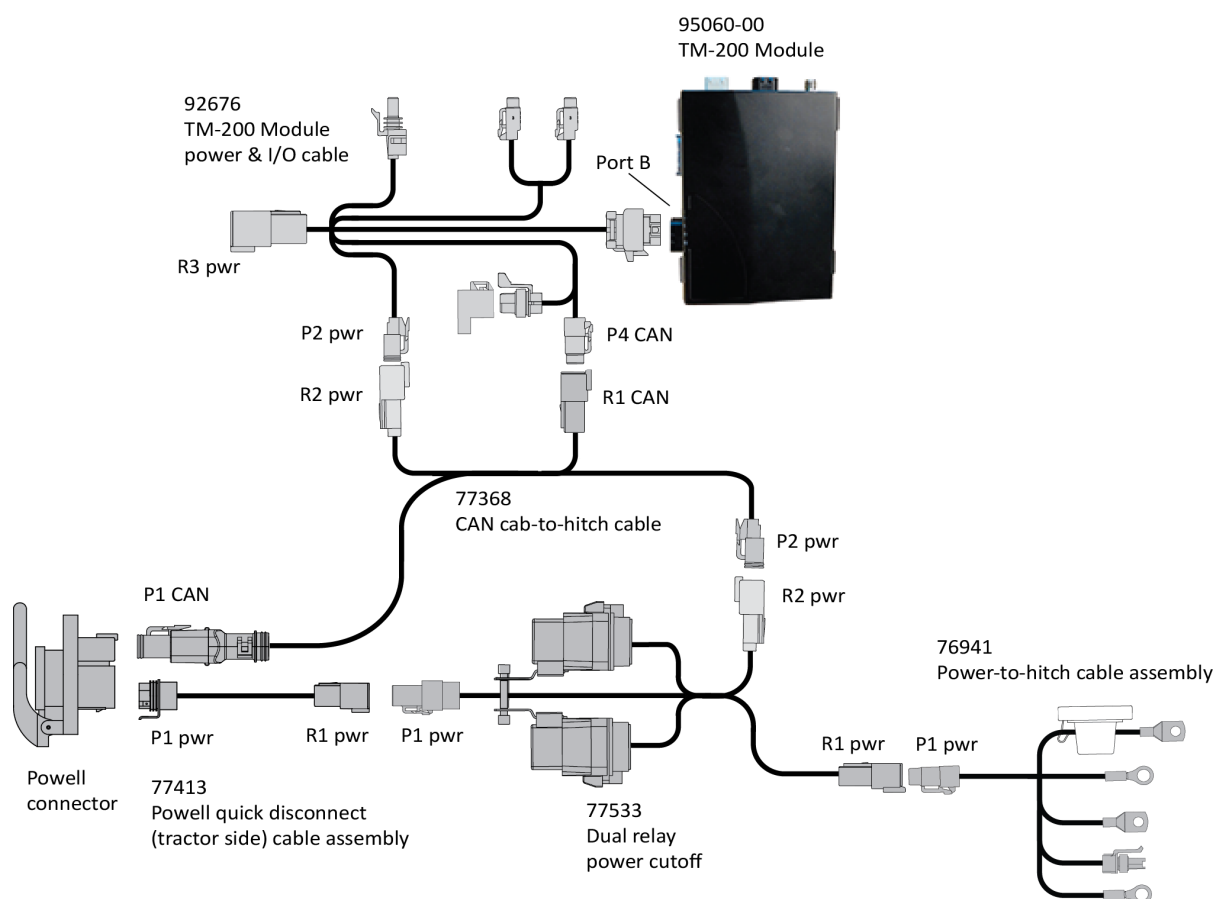
Use Trimble cables only. Trimble cables use specific wire gauges not found in some off-the-shelf RJ45/CAT 6 cables.

Full harness

The following cables are included in ISOBUS harness kit P/N 89285-00:

- 77368, CAN cab-to-hitch cable
- 77413, IBRC-to-DTP adapter (Powell) cable
- 76941, Power-to-hitch cable
- 75834 (not shown in diagram), can be used to connect ISOBUS full harness to Port A on TM-200 Module

Recommended but not included in 89285-00: 77533, Dual relay power cutoff: Optional.
Recommended for cutting power to implement when display is off and to cycle power when restarting display).

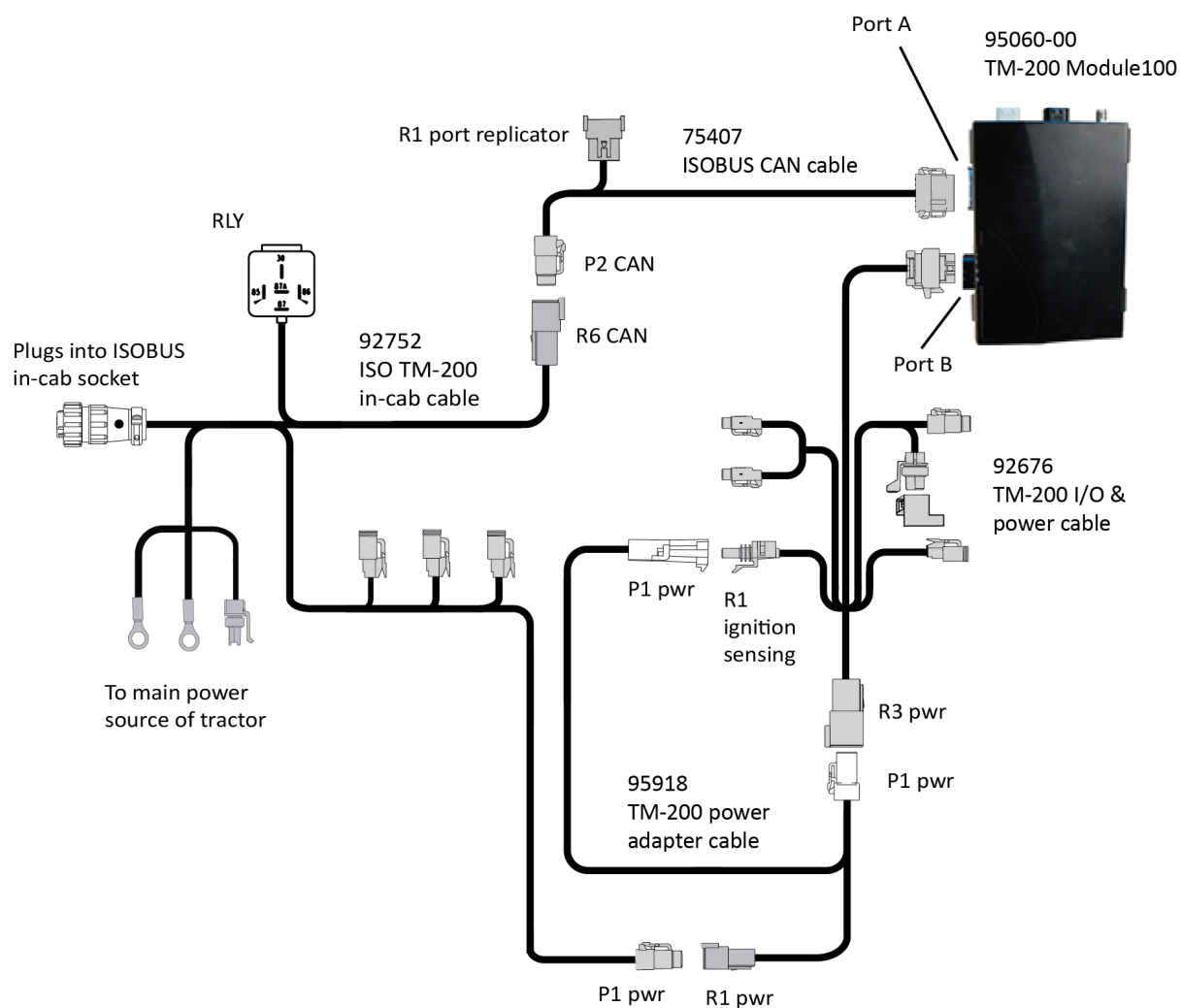


Part Number	Description
76941	Cable assembly, power-to-hitch
77368	Cable, CAN cab-to-hitch
77413	Cable assembly, Powell quick disconnect (tractor side)
77533	Dual relay power cutoff
92676	Cable, TM-200 Module power and input/output
95060-00	TM-200 Module

In cab

The following cables are included in ISOBUS harness kit P/N 89285-02:

- 75407, TM-200 to ISOBUS in-cab cable
- 92752, ISO in-cab cable
- 95918, Power adapter cable (This cable is not included in the ISOBUS harness kit, but is recommended. This enables you to power on the TM-200 when bus is energized.)



Part Number	Description
75407	Cable, ISOBUS CAN
92676	Cable, TM-200 Module power and input/output
92752	Cable, ISO TM-200 in-cab
95060-00	TM-200 Module
95918	TM-200 Module power adapter cable

Water Management

In this chapter:

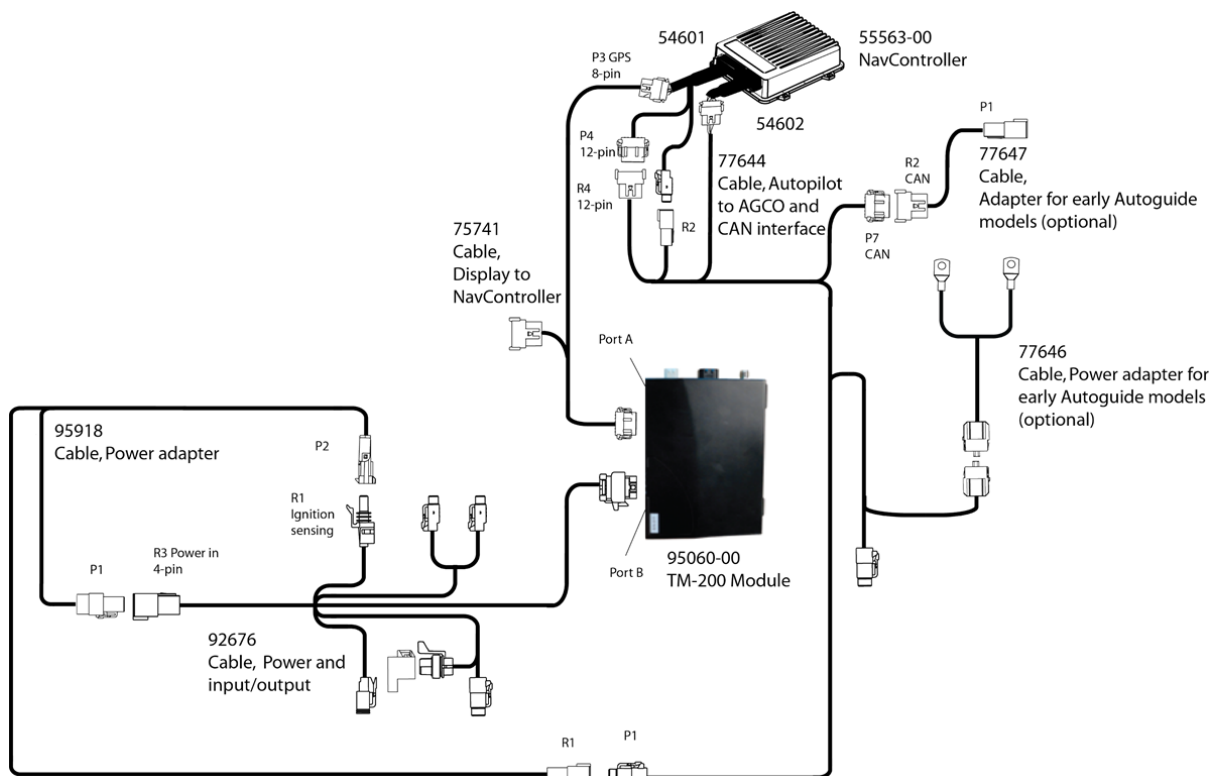
Dual/Tandem FieldLevel II Classic Autopilot	120
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VM430	122
IMD-600	124

This chapter shows the cabling for Water Management features:

- FieldLevel™ II
- WM-Drain® farm drainage system

Use Trimble cables only. Trimble cables use specific wire gauges not found in some off-the-shelf RJ45/CAT 6 cables.

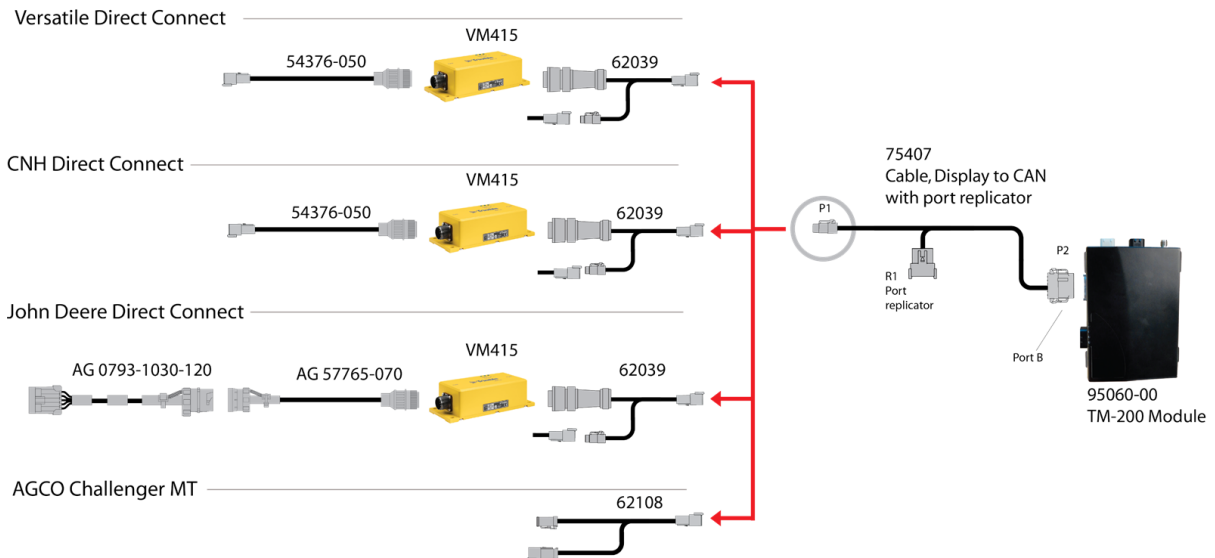
Dual/Tandem FieldLevel II Classic Autopilot



Part Number	Description
54601	Cable, Main NavController
54602	Cable, NavController diagnostics
55563-00, 55566-00	NavController
75741	Display to NavController cable
77644	Cable, Autopilot to AGCO CAN interface
77646	Cable, Power adapter for early Autoguide models (optional)
77647	Cable, Adapter for early Autoguide models (optional)
92676	Power and I/O cable
95060	TM-200 Module
95918	Cable, Power adapter

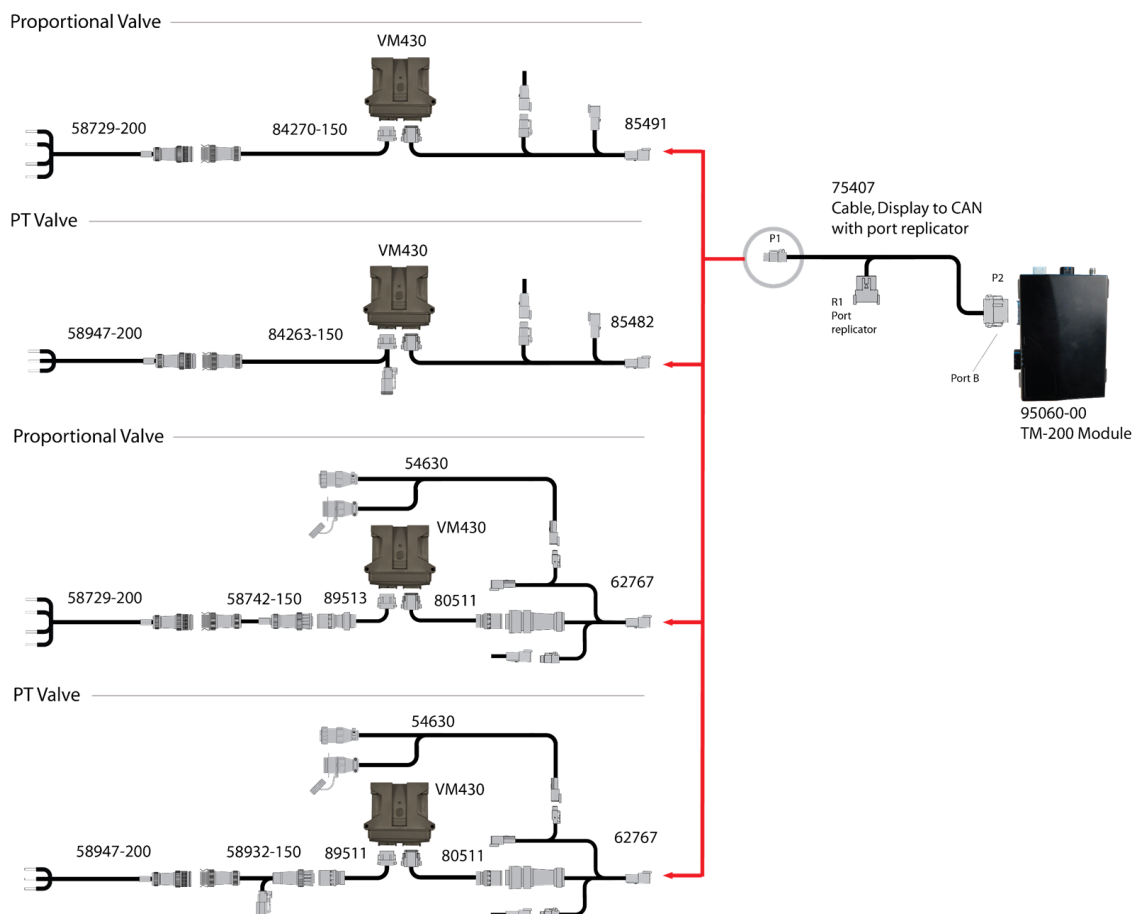
This configuration also requires [Dual AG-25 GNSS antenna \(page 49\)](#).

AG VM415



Part Number	Description
54376-050	CBL VLV VM415 DUAL CASE DIRCT
62039	Cable, Field Level II, FMD to VM
62108	Cable, Challenger MT CAN Interface - Field Level II
75407	Cable, display to CAN
95060-00	TM-200 Module
AG 0793-1030-120	CABLE,ASSY,WIRING HARNESS,JD
AG 57765-070	CBL VLV VM415 DUAL DEERE DRCT

VM430

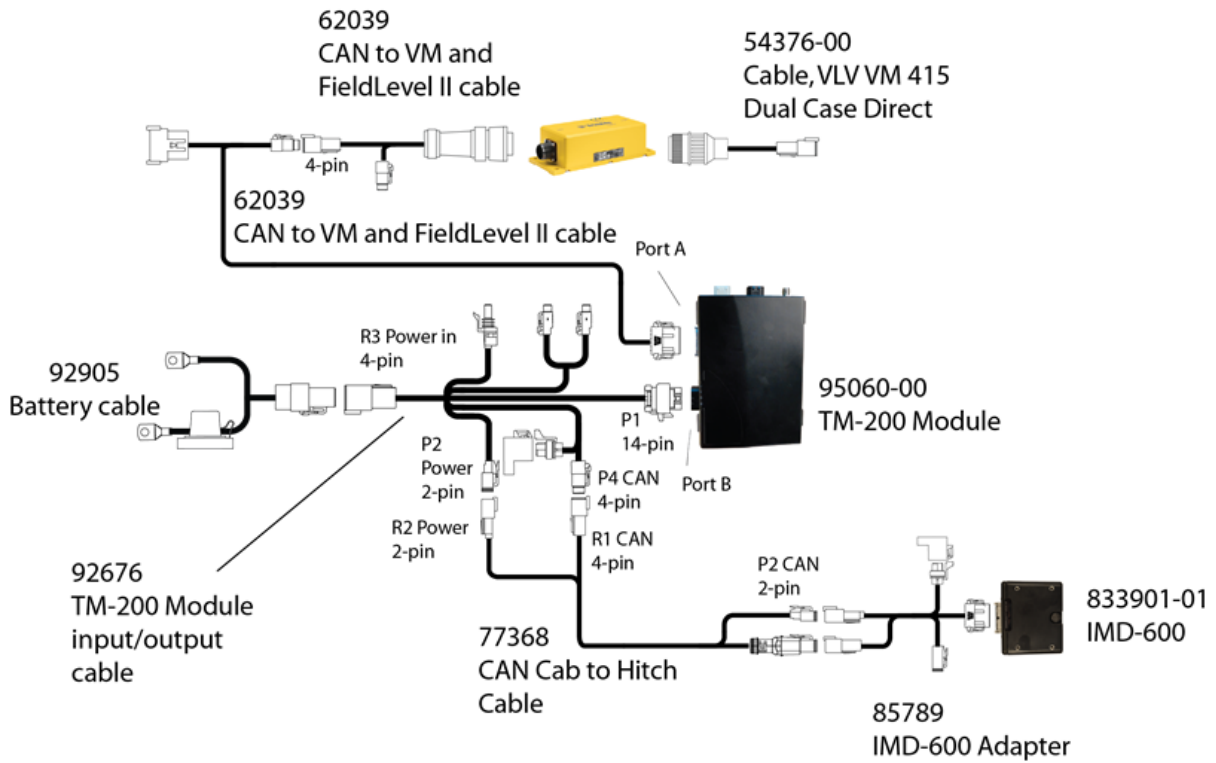


Part Number	Description
54630	Cable, Auxiliary power universal
58729-200	CABLE, GCS300 SGL DANFOSS VALVE QUICK DISCONNECT
58742-150	CABLE, GCS400 DUAL DANFOSS VALVE QUICK DISCONNECT TRACTOR
58932-150	CABLE, GCS400 DUAL PT VALVE, QUICK DISC, TRACTOR
58947-200	GCS300 Single PT valve quick disconnect cable
62767	Cable, Field Level II, FMD to VM 410/420
75407	Display to CAN cable with port replicator

Part Number	Description
80511	Harness - VM420 Adapter, 10 pin MTH , 12 soc Lat
84263-150	CABLE, GCS400 DUAL PT VALVE, QUICK DISC, TRACTOR, VM430
84270-150	CABLE, GCS400 DUAL DANFOSS VALVE QUICK DISC, TRACTOR, VM430
85482	Cable, Field Level II, FMX to VM430, PT VALVE
85491	Cable, Field Level II, FMX to VM430, Prop Valve
89511	Harness - VM410 Valve Adapter, 10 Soc Eth, 12 Soc Lat
89513	Harness - VM410 Valve Adapter, 10 Soc Eth, 12 Soc Lat
95060-00	TM-200 Module

IMD-600

The WM-Drain solution using an IMD-600 will require an EXP-100 when running the EZ-Pilot steering system.



Part Number	Description
54376	Cable, VLV VM 415 Dual Case Direct
62039	CAN to VM and FieldLevel II cable
77368	CAN Cab to hitch cable
85789	IMD-600 Adapter
92676	Power and I/O cable
92905	Battery cable
95060-00	TM-200 Module
833901-01	IMD-600

Yield Monitoring

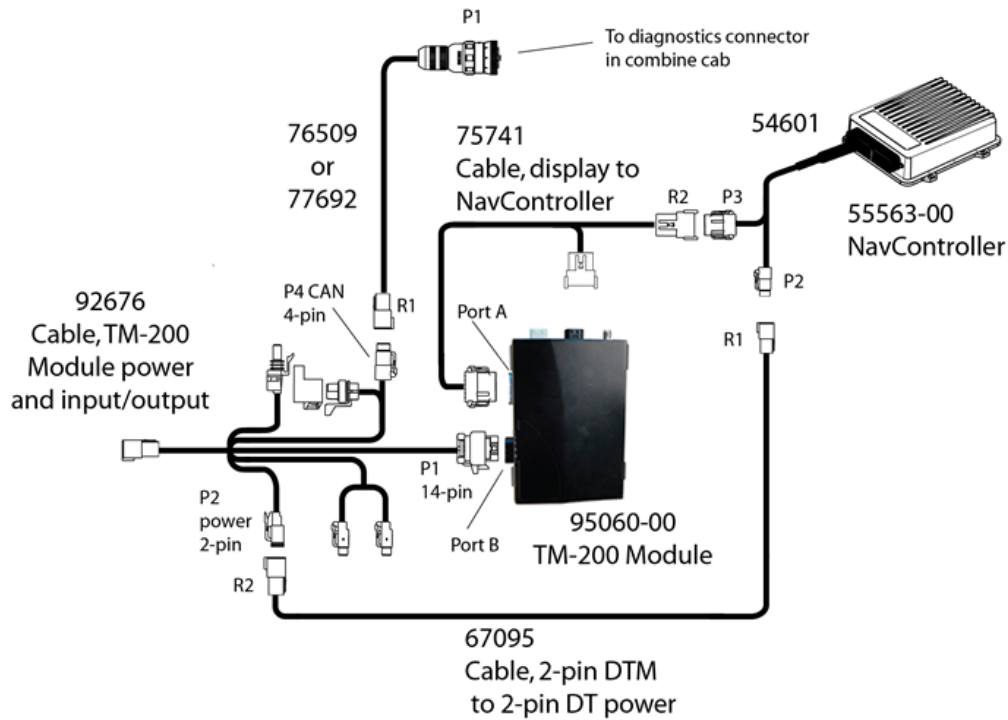
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Yield Monitoring with Autopilot using CLAAS CAN - Lexion	127
Yield Monitoring with Autopilot using CLAAS CAN - Jaguar	128
Yield Monitoring serial data input	129

This section covers cabling for Yield Monitoring.

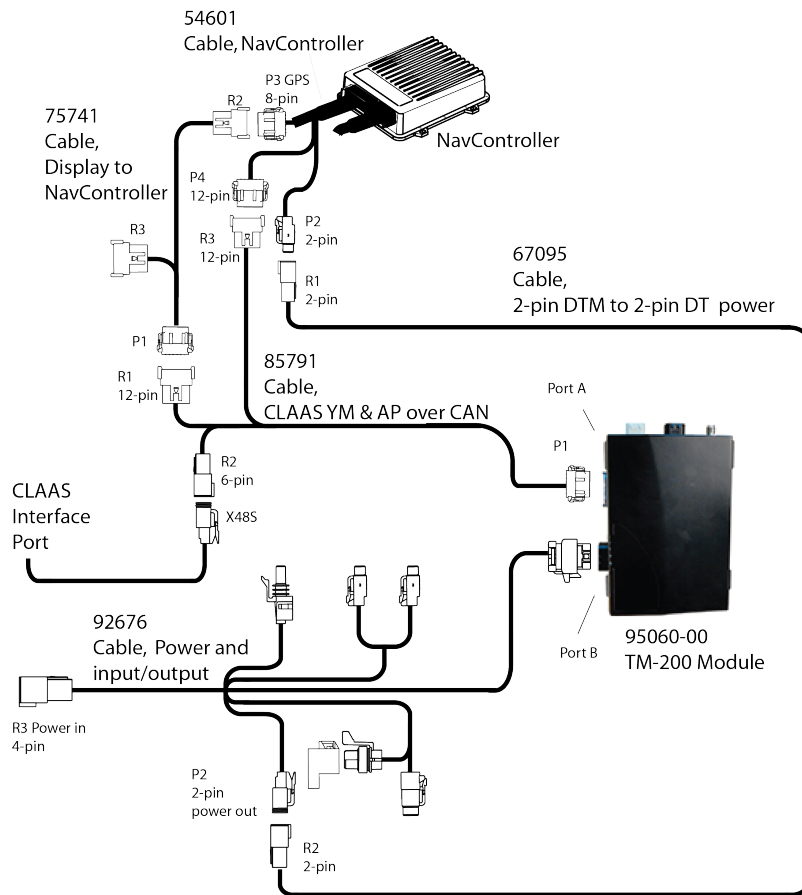
Use Trimble cables only. Trimble cables use specific wire gauges not found in some off-the-shelf RJ45/CAT 6 cables.

Autopilot and John Deere over CAN



Part Number	Description
54601	Cable, NavController main
55563-00, 55566-00	NavController
67095	Cable, 2-pin DTM to 2-pin DT power
75741	Cable, Display to NavController
76509	Cable, display to John Deere 9x70 or 9x60 non-ATR Ready
77692	Cable, display to John Deere 9x60 ATR Ready
92676	Cable, TM-200 Module power and I/O
95060-00	TM-200 Module

Yield Monitoring with Autopilot using CLAAS CAN - Lexion

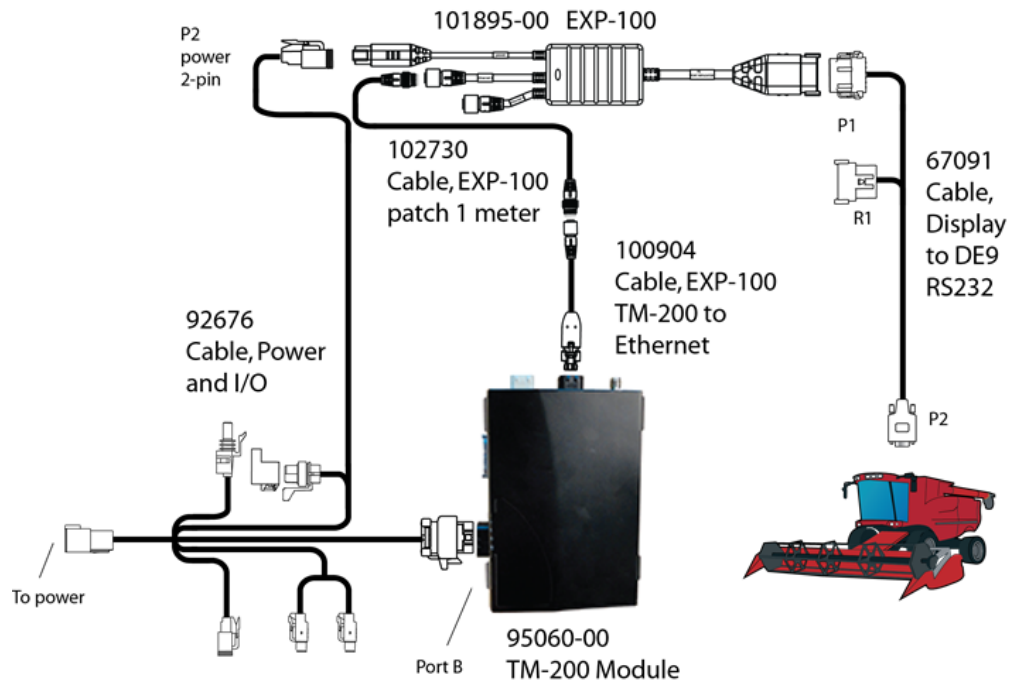


Use this diagram to connect the CLAAS Lexion grain harvester.

Note – CLAAS Lexion to NAVController
CAN communication is made over the connection 85791 R3 to 54601 P4.

Part Number	Description
54601	Cable, NavController main
55563-00, 55566-00	NavController
67095	Cable, 2-pin DTM to 2-pin DT power
75741	Cable, Display to NavController
92676	Cable, TM-200 Module power and I/O
85791	Cable, CLAAS YM & AP over CAN
95060-00	TM-200 Module

Yield Monitoring serial data input



Part Number	Description
67091	Cable, display to DE9 RS232
92676	Cable, TM-200 Module power and input/output
95060-00	TM-200 Module
100904	Cable, EXP-100 TM-200 Module to Ethernet
101895-00	EXP-100 port expander
102730	Cable, EXP-100 patch 1 meter

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