

QUICK START INSTALLATION GUIDE

SMARTTRACK GLOBAL FLEET CONTROLLER

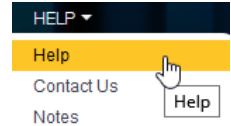
Part No.: 16423 | 16424

Important Note

For the latest specifications and configuration information, download the SmarTrack® Product Manual by following these instructions using your web browser:

You must be an existing registered SmarTrack® web portal user to access this information.

1. Go to SmarTrackglobal.com and log into the web portal (existing users only).
2. Visit the Help section.
3. Download the *SmarTrack product manual* as required.



Important Note for VDI 4458 Installations

For VDI 4458 installations, download the *VDI 4458 Installation Guide* from the same Help section.

If you have difficulties logging in or downloading, please contact your company's internal SmarTrack® product administrator first. If you still experience issues, email smartracksupport@rct-global.com.

Overview

There are two main ways to connect SmarTrack: the direct-wire method or via VDI 4458 (which requires a CAN Bus gateway that complies with the VDI 4458 standard).

The following installation guide is to assist the installer with SmarTrack Global direct-wire kits only. It includes a list of the kit contents, as well as a basic guide on the mounting and connection of each item.

Note

For connecting via VDI 4458, download the *VDI 4458 Installation Guide* from the Help section as described above.

Installation Guide

Kit Contents

Part No.	Description	Qty
16423 or 16424	Controller SmarTrack® Global	1
16622, or 16623	Loom Universal SmarTrack Global	1
15901 or 15913	Display SmarTrack Global	1
15266 or 15267	Loom Display SmarTrack Global	1
17288	Sensor Impact SmarTrack	1
10284 or 15905	Dual Antenna with SMA and SMA-R Connectors and Adhesive Base	1
8460	Ram Double Socket Arm 3"	1
8492	Ram Base 2 1/2" Diameter Base	1
2600	Switch Head Key Stay Put L/H	1
9476	Body With 1 x N/O Contact	1
10977	Label Bypass SmarTrack	1

Mounting of Hardware

Caution

- Disconnect the battery before commencing any work.
- Ensure best practice wiring methods are used especially when splicing wires—always splice/solder and heat shrink or tape all wiring connections.
- Do not make poor wiring connections by twisting wires together.
- Do not use 'snap locks' to splice wires.

SmarTrack Global Controller

1. The SmarTrack Global controller can be installed in a horizontal or vertical position under the instrument panel or in a convenient location allowing the loom to reach desired connection points.
2. The controller can be mounted via two 6 mm diameter holes with centres being 102 mm apart. Careful consideration should be given to the location of these holes before drilling to ensure adequate accessibility to the electrical connections located on the controller.
3. Do not mount the controller on or near any source of heat, vibration, or electrical interference such as a motor or engine. Do not mount the controller opposite an exhaust or muffler system.

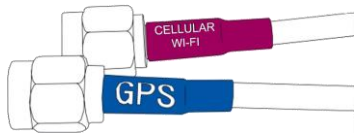
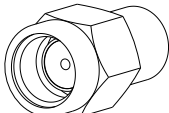
Display Unit

1. The recommended location for the display unit is in the operator's cabin in clear view and within easy reach of the operator. Proximity to the operator is important, as the display unit requires input from the operator for a number of functions.
2. Fit the RAM mount to the rear of the display unit using the supplied screws.
3. Mount the RAM base to a rigid surface and attach the display unit using the supplied RAM arm.
4. Secure the loom using cable ties at even intervals avoiding any pinch points and sharp bends. Coil excess length and secure with cable ties—do not bunch up.
5. Hand-tighten only the connector. DO NOT apply excessive force and ensure that there is no cross-threading.

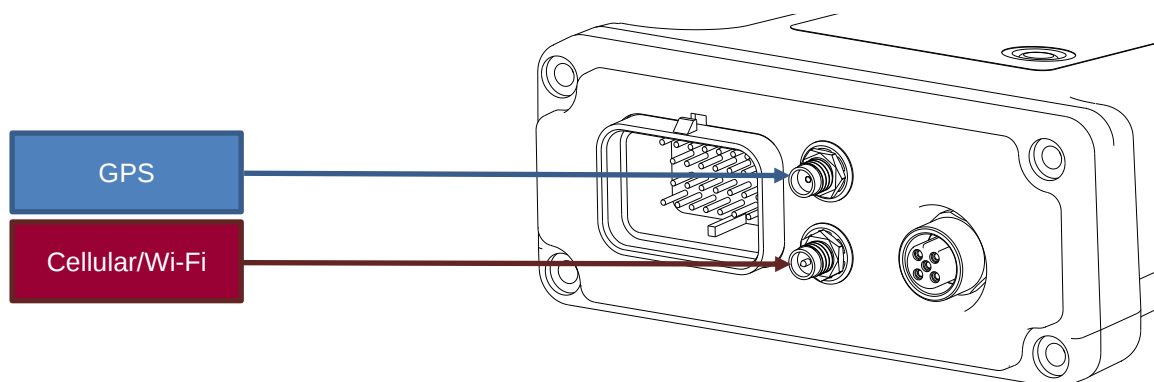
Antenna

1. The antenna should be installed on a horizontal plane with the adhesive side facing the ground, ideally on top of the machine and clear of electrical devices such as flashing lights.
2. The body or panels of the machine should not obscure the antenna.
3. The antenna must be no closer than one metre (~3 ft. 4 in) to the 16423 or 16424 controller.
4. Any excess antenna cable should be coiled up (no less than 100 mm [4 in] in diameter) and secured at least one metre (~3 ft. 4 in) or more away from the controller, where possible.
5. The antenna connectors are different so take care to mate the correct plug.
6. Tighten using an SMA finger wrench (RCT part number 10472). Do not over-tighten - FINGER TIGHT ONLY.

Antenna Lead Plug Identification

Antenna Plugs	Cellular/Wi-Fi Radio	GPS
		

Identification of Antenna Lead Connections on Fleet Controller



Impact Sensor

1. The impact sensor can be mounted in any orientation, including upside down and sideways. The location needs to be chosen carefully following the below steps and always in a repeatable location for same machine types.
2. Locate a flat surface that is part of the machine's main chassis. This surface needs to be rigid and ideally the thickest part of the machine chassis. The location needs to be away from sources of heat.
3. Check there is accessibility to the electrical connector of the sensor.
4. Clean the surface with the provided wipe to ensure it is free from grease and oil.
5. Stick the sensor to the flat and clean surface using the attached double-sided adhesive and make the electrical connection.

Loom

1. Check the latest SmarTrack® product manual for all maximum voltage and frequency thresholds before making any wiring connections to power sources.
2. Refer to the wiring table in drawing 650g on page 6 to wire up the control unit.
3. It is recommended that the wiring loom be installed alongside the OEM engine wiring, ensuring that it is secured at regular intervals. This will provide protection from heat and abrasion, and any other excess damage that may occur with extended machine operation.
4. When securing the loom to the OEM engine wiring, ensure that the loom is away from moving machine parts which could lead to loom damage and avoid proximity to sources of high current and/or high voltage.

Bypass Key

The bypass key should be mounted in an accessible location within the operator's compartment area. This will allow for ease of use if the bypass key is required.

Weight Feature

If the optional weight feature is used, an additional pressure sensor and associated hydraulic fittings will be required. A suitable sensor is RCT part number 11504.

Constant Supply Connection

Caution

The constant battery supply voltage cannot exceed 60 volts. The constant battery supply voltage will need to be connected to a dc-dc converter if installed on a machine with a battery that is a higher voltage than 48 volts. For example, a lithium-ion 80-volt battery-powered machine will require a dc-dc converter to reduce the constant battery supply voltage. Refer to the maximum input voltage table on page 5.

The SmarTrack system requires a constant power and ground source. The controller requires a positive voltage connection greater than 12 volts and no greater than 60 volts.

Ignition Supply Connection

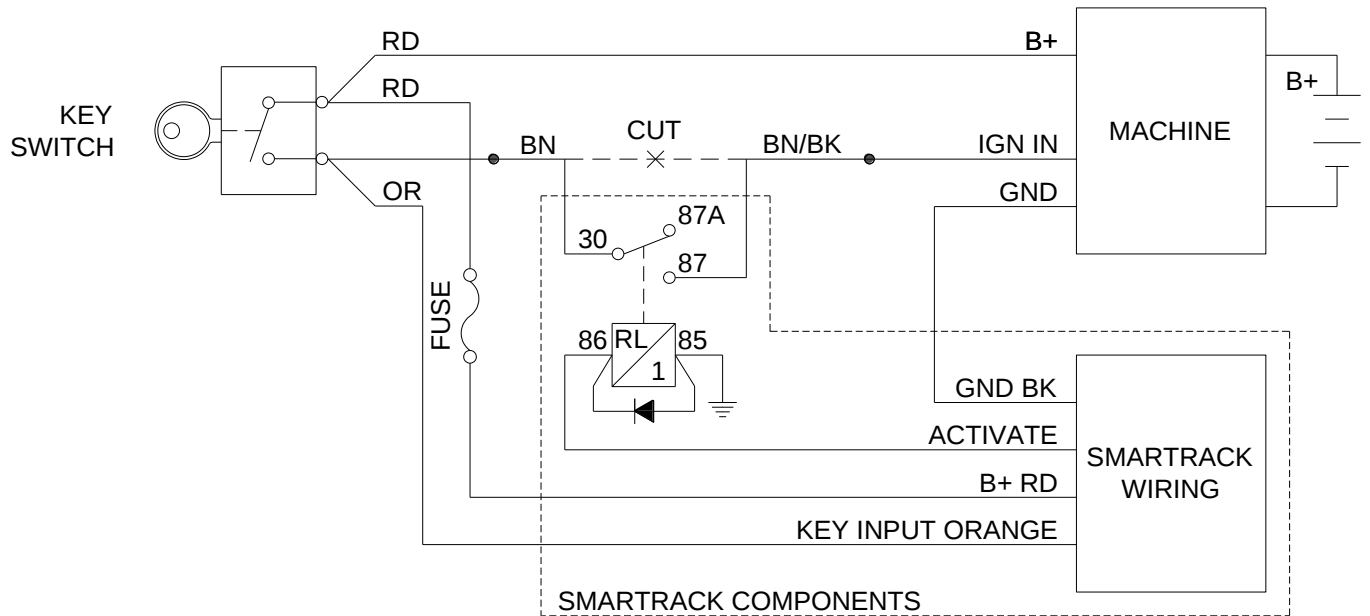
Caution

The ignition input cannot exceed 100 volts. Refer to the maximum input voltage table on page 5.

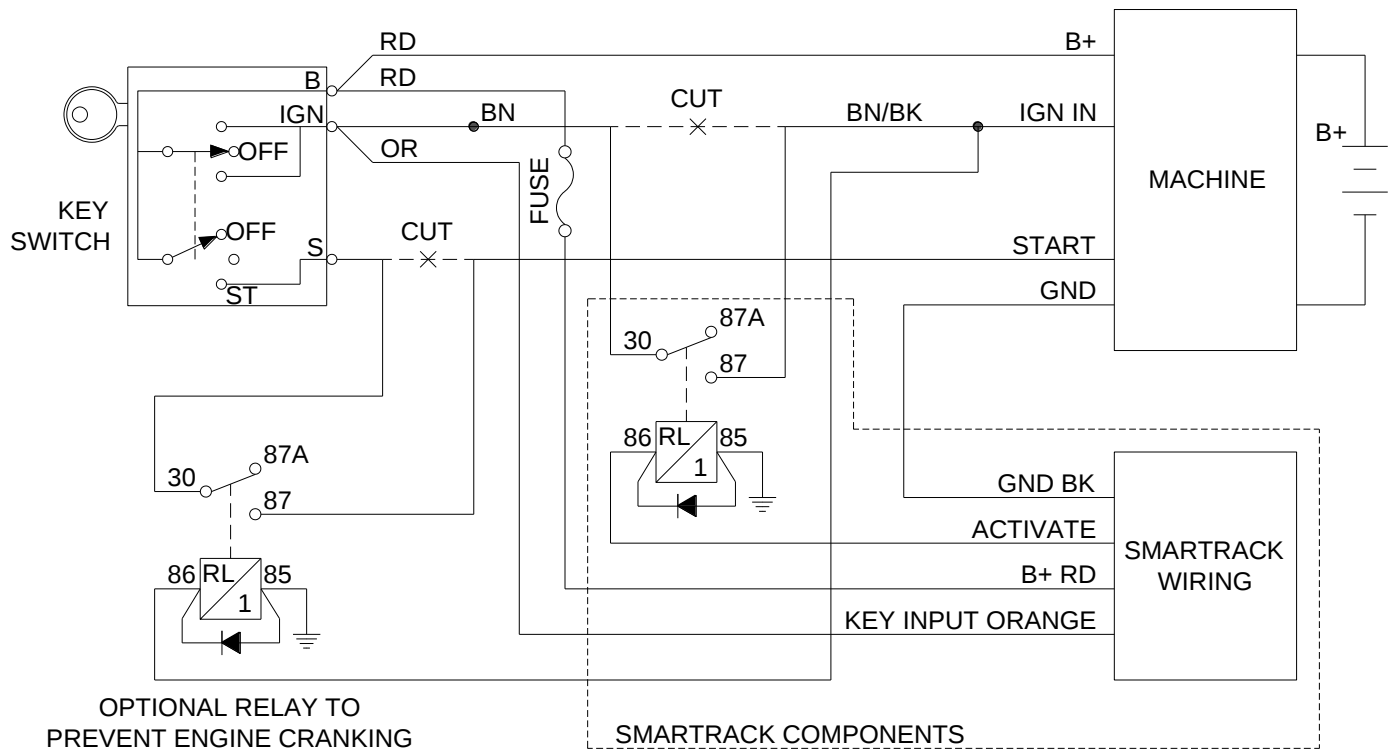
The SmarTrack® system supports latching and momentary inputs to wake the system for use. Latching inputs typically utilise a key switch or ignition switch. Momentary inputs can also be used to wake the SmarTrack system, such as from a horn, seat, or dead man switch. These need to be a rising positive voltage greater than 4 volts and no greater than 100 volts. A falling signal to ground will not work.

Connect the ORANGE ignition sense wire to the ignition switch as shown, or other 'wake' source. By default, the system is configured for latching (ignition switch) and rising positive signal when on.

Typical Battery Electric Power Wiring



Typical Internal Combustion Power Wiring



Recommended Fuse	
12 Vdc	5 A
24 Vdc	3 A
48 Vdc	2 A

Description of Work Inputs

Caution

The work inputs cannot exceed certain voltages for each input. Refer to maximum input voltage table on page 5.

Caution

Any contact of the 'Signal Ground' wires to a positive source will cause irreparable damage to the device.

The below table can be used in conjunction with drawing 650g (following). Refer to the product manual for all input specification ratings.

Work Inputs	Meaning / Function	IC Pickup Example	Be Pickup Example	Reports On
Work 1 (Pin 1)	Detects Activity / Movement	FWD Solenoid	Speed Sensor	Utilisation
Work 2 (Pin 3)	Detects Activity / Movement	REV Solenoid	Hyd Motor Sensor	Utilisation
Work 3 (Pin 5)	Detects Activity / Movement	Optional	Optional	Utilisation
Signal Ground (Pins 2, 4, 6)	Signal Ground	Connect at least one corresponding Signal Ground (negative). All Signal Ground wires are common.	Connect at least one corresponding Signal Ground (negative). All Signal Ground wires are common.	

Maximum Input Voltage

Wire / Input	Constant Supply Wire (Red)	Ignition Input (Orange)	Work Input 1 (Blue)	Work Input 2 (Blue / Red)	Work Input 3 (Blue / Yellow)	Seat Input (Grey)	Seat Belt Input (Green / Red)
Absolute Maximum Voltage	60 Vdc	100 Vdc	60 Vdc	60 Vdc	60 Vdc	60 Vdc	60 Vdc

System Test

After successfully completing the hardware installation, you must power the system up for the first time and complete the Installation and Commissioning Wizard, which will guide you through a complete system test including testing all inputs.

1. Connect the battery.
2. Turn the ignition on or activate the momentary switch, such as the horn, to wake the system from sleep.
3. Follow the Installation and Commissioning Wizard prompts. For further assistance, follow the Installation and Commissioning Wizard instructions inside the product manual.
4. Once the Installation and Commissioning Wizard has been successfully completed, use the PIN 555555 to login.
5. To logout, turn the ignition key off and wait five seconds or, if activated, momentarily press, and hold the logout soft key.
6. Turn the bypass key on. Ensure the machine can be activated whilst logged out from the SmarTrack® system.
7. Turn the bypass key off. Ensure the machine cannot be activated whilst logged out from the SmarTrack system.

SMARTTRACK GLOBAL CONTROLLER PINOUTS

SOCKET	FUNCTION
1	SEAT INPUT
8	ACTIVATION SIGNAL
10	WORK INPUT 1
11	WORK INPUT 2
16	+12 Vdc OUTPUT
17	AUX SIGNAL
18	LOAD WEIGHT INPUT
19	SEAT BELT INPUT
21	CAN LOW
22	CAN HIGH
23	CAN REFERENCE
24	ZONE OUTPUT
26	WORK INPUT 3
27	KEY SWITCH INPUT
28	SIGNAL GROUND
31	BATTERY POSITIVE
32	BATTERY NEGATIVE

RECOMMENDED FUSE

COMPONENT	FUSE RATING
BATTERY POSITIVE	12 Vdc - 5 A
BATTERY POSITIVE	24 Vdc - 3 A
BATTERY POSITIVE	48 Vdc - 2 A

SMARTTRACK GLOBAL CONTROLLER

SMARTTRACK GLOBAL DISPLAY

GSM / GPS ANTENNA

WIFI AND GPS ANTENNA

WIRE COLOR CODE

WIRE	FUNCTION	MAX. CURRENT	AUX OUTPUT
1	WORK 1 SIGNAL - DIGITAL FREQUENCY	33 Vdc	
2	BNWH		
3	BURO (BU)	WORK 2 SIGNAL - DIGITAL FREQUENCY	33 Vdc
4	BNWH	SIGNAL GROUND	
5	BUW (BU)	WORK 3 SIGNAL - DIGITAL ANALOGUE	60 Vdc
6	BNWH	SIGNAL GROUND	

WIRE COLOR CODE IN BRACKET'S DENOTES REVISION A WIRE COLOR

WIRE LEGEND

WIRE	FUNCTION
BK	BLACK
BL	BLUE
BR	BROWN
GN	GREEN
GY	GREY
OR	ORANGE
PK	PINK
PU	PURPLE
RD	RED
WH	WHITE
YL	YELLOW
TO	TURQUOISE

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2	BNWH		
3			

Requesting Support

To request support from RCT, send an email to support@rct-global.com containing the following information:

1. **Contact details:** Name and contact details of the person requesting support and/or the nominated person for RCT to communicate with when resolving the issue.
2. **Customer and site name:** The name of the company and site where the equipment is located.
3. **RCT system or product:** For example, Teleremote, MIC, speed limiter etc.
4. **Fleet and/or machine details:** The machine make, model, serial number, fleet number and any other relevant information.
5. **Priority:** Indicate a priority and the impact of the issue being experienced. For example, machine down, losing operational data, creating a safety issue, etc.
6. **Description:** Provide a full description of the issue being experienced. Supporting diagrams and drawings are welcome. Attachments are limited to 10 MB.

The support@rct-global.com e-mail address is linked to RCT's support ticketing system. Upon receipt of your email, a support ticket will be automatically generated, and a unique support number will be allocated to your request. You will receive an automatic reply confirming receipt of your email that will also contain your unique support ticket number.

Support tickets are triaged by RCT within two hours of receipt during normal working hours.

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