

# **Bus-Scan 300 RF Installation Guide Operation Guide**



**ROBOTICS** \_\_\_\_\_  
**TECHNOLOGIES, INC**

Joliet, IL Made in U.S.A

[www.roboticstech.com](http://www.roboticstech.com)

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## ***Return Policy***

For Warranty Service, call Robotics Technologies, Inc. Customer Service to obtain an RMA (Return Materials Authorization), and then return the product postage prepaid to Robotics Technologies, Inc. The RMA number should be written clearly on the outside of the box. Please enclose a brief explanation of the problem, so that we can more efficiently diagnose your item and ensure timely service.

## ***Contact Information***

**For support, please contact Robotics Technologies, Inc. or a Robotics Technologies Authorized Dealer.**

**Robotics Technologies, Inc.**

**20655 Burl Court**

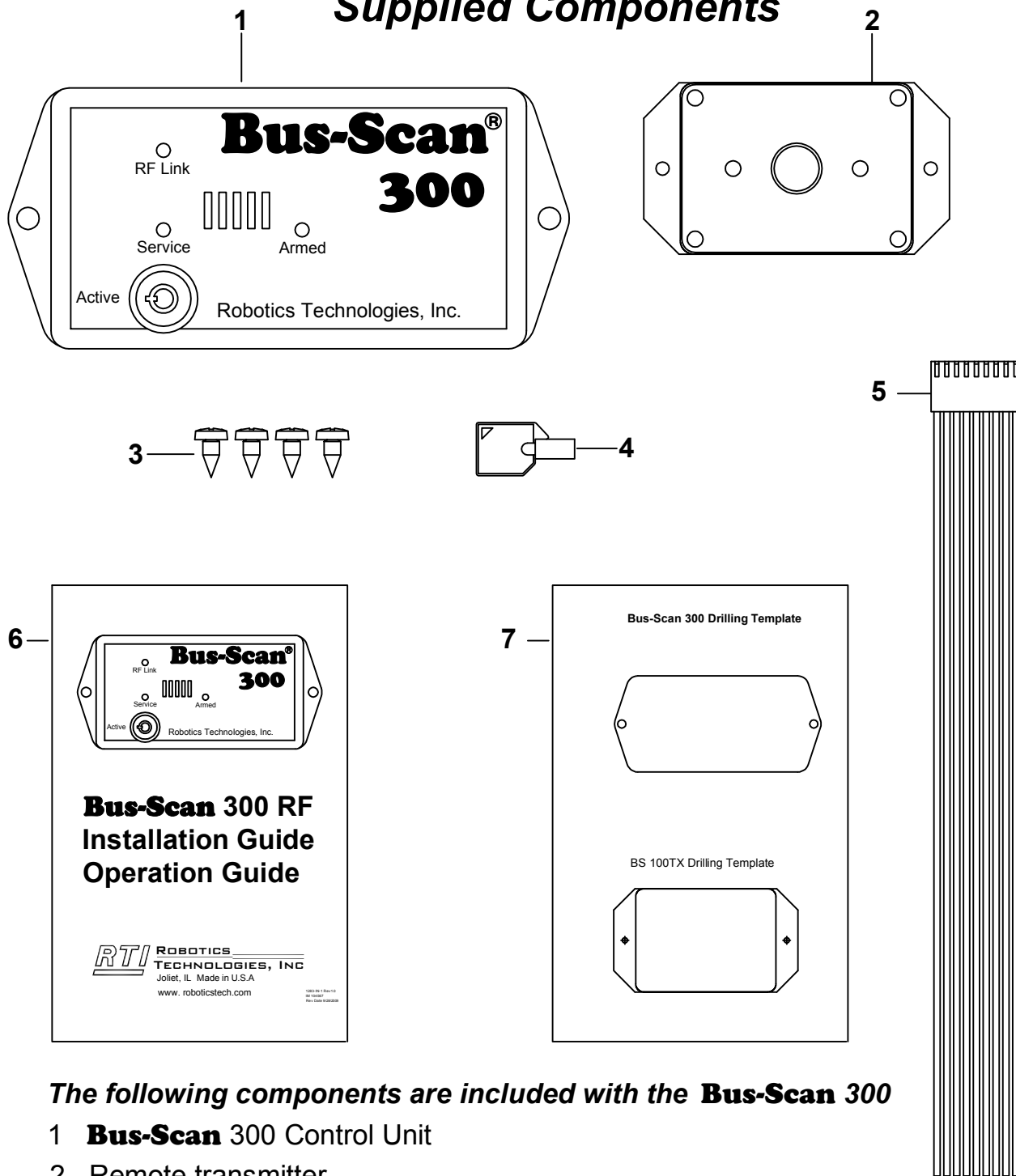
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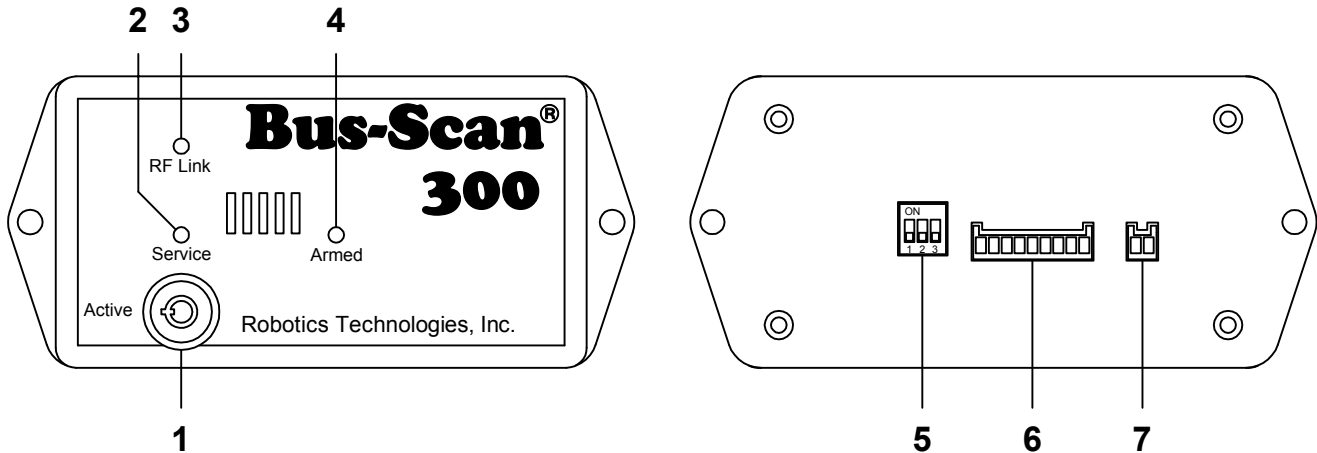
## Supplied Components



The following components are included with the **Bus-Scan 300**

- 1 **Bus-Scan** 300 Control Unit
- 2 Remote transmitter
- 3 # 8 x 3/8" sheet metal screws (4)
- 4 Service override key
- 5 Wiring harness
- 6 **Bus-Scan** 300 installation and operations guide
- 7 Drilling template

# Bus-Scan 300 Features and Functions



## **1 Service Switch**

Deactivates the **Bus-Scan** 300. This feature is used when the vehicle is being serviced. The key removes only in the active position

## **2 Service indicator light**

Blinks when the **Bus-Scan** 300 is in the service mode

## **3 RF Link indicator light**

Lights when the coded signal is received from the Bus-Scan Transmitter

## **4 Armed indicator light**

Lights when the system is armed

## **5 Option Select Switches**

Selects different time-out lengths and controls the operation the RF receiver

## **6 Main Harness Receptacle**

## **7 Optional Siren Receptacle**

# **Bus-Scan 300 System Operation**

The **Bus-Scan** 300 system operates in the following sequence:

- 1) The bus is started and the route begins.
- 2) After the route is completed and the bus is turned off, the **Bus-Scan** 300 emits a reminder tone.
- 3) The driver proceeds to the rear of the bus, checking for sleeping children.
- 4) The driver activates the remote transmitter.
- 5) The **Bus-Scan** 300 is deactivated.
- 6) The driver exits the vehicle.

If the driver exits the vehicle without deactivating the **Bus-Scan** 300, the horn will sound after the preset time-out. (Alarm Condition).

## **To Cancel the Alarm**

- 1) The driver must cycle the Ignition off to on to off.
- 2) The driver must follow the proper deactivating sequence (steps 3-6 above)

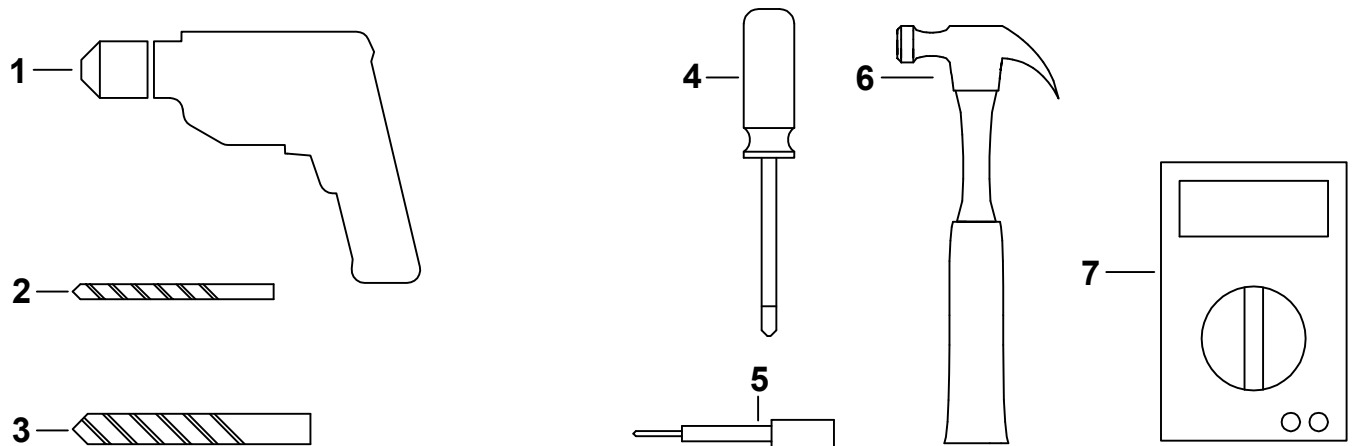
The **Bus-Scan** 300 is equipped with a tamper feature that will alarm it the remote transmitter is tampered with.

A tamper condition exists if the remote transmitter is activated during the cycling of the ignition from on to off.

## **To Cancel the Tamper Alarm**

- 1) The Tamper condition must be removed
- 2) The driver must cycle the Ignition off to on to off
- 3) The driver must follow the proper deactivating sequence (steps 3-6 above)

## Required Tools



The following tools are required to install the **Bus-Scan 300**

- |                             |                |
|-----------------------------|----------------|
| 1 Electric drill            | 5 Center punch |
| 2 1/8" drill bit            | 6 Hammer       |
| 3 1/2" drill bit            | 7 Multi meter  |
| 4 Phillips head screwdriver |                |

## Installation Instructions

### Mounting the **Bus-Scan 300**

- 1 Locate a suitable location near the driver's compartment
- 2 Using the supplied Drilling Template, center punch and drill according to the template
- 3 Wire the **Bus-Scan 300** according to the wiring instructions
- 4 Attach the **Bus-Scan 300** to the bus using 2 #8 x 3/8" sheet metal screws.

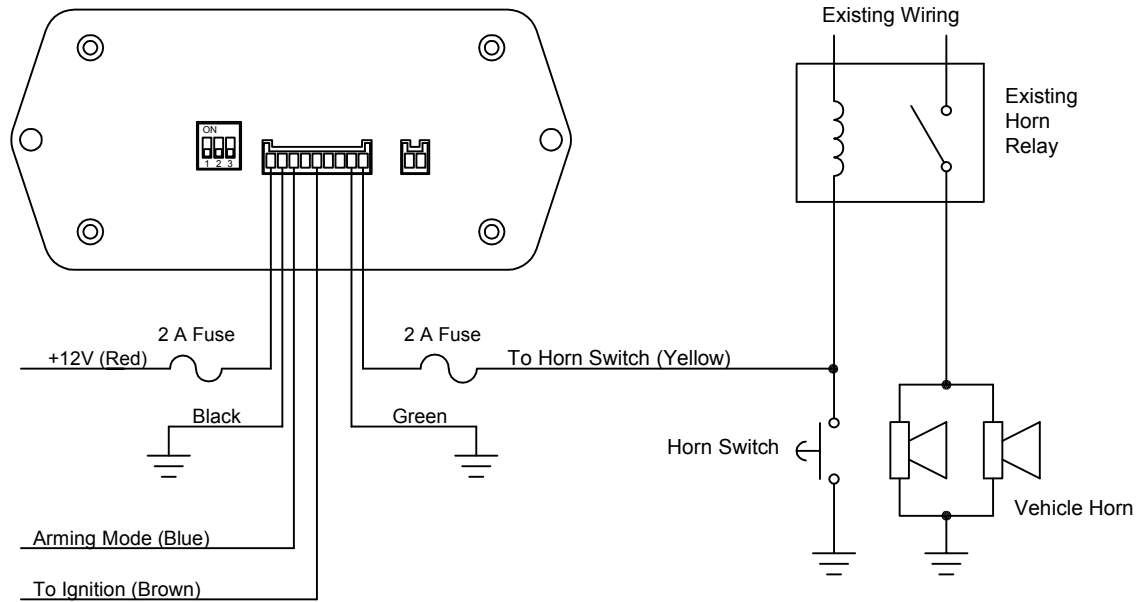
### Mount the Remote Transmitter

- 1 Locate a suitable location where the Remote Transmitter may be mounted.
- 2 Center punch and drill the mounting holes
- 3 Attach the Remote Transmitter to the bus.

### Test the Transmitter / Receiver

- 1 Activate the Remote Transmitter
- 2 Check the RF link indicator on the **Bus-Scan 300** Unit.
- 3 If the RF link indicator is not steady, reorient the transmitter for the strongest signal.

# Bus-Scan 300 Wiring Instructions



- 1) Connect the Red wire to a constant +12v.
- 2) Connect the Black wire to chassis ground.
- 3) Connect the Brown wire to the ignition circuit.
- 4) Connect the Green wire to chassis ground.
- 5) Connect the Yellow wire to the horn switch (button).
- 6) Connect the Blue wire (Arming Mode)
  - a) Connect the Blue wire to +12v for **Bus-Scan** Classic operation (Armed whenever the Ignition is on)
  - b) Connect the Blue wire to the stop arm activation switch for Stop Arm Arming. The system will be Armed after the stop arm has been activated

## IMPORTANT!!

Vehicle must be equipped with a **Horn Relay**. If your Vehicle does not have a Horn Relay, a Horn Relay Kit Part No. 102893 is available.

## System Testing

### Normal Test

- 1) Turn the Ignition on and wait for the Armed Led to Illuminate
- 2) Turn the ignition off and the reminder tone will sound
- 3) Deactivate using Remote Transmitter the reminder tone and Armed LED will shut off.

### Alarm Test

- 1) Repeat Steps 1 and 2 above
- 2) Wait for 60 seconds then the horn will sound
- 3) Recycle Ignition and deactivate using Remote Transmitter

# ***Troubleshooting***

## ***Reminder tone not sounding after ignition on/off cycle***

- 1 Check Red wire for a constant +12v
- 2 Check Brown wire
  - a) +12v when Ignition is on
  - b) 0v when ignition is off
- 3 An arming mode other than Classic has been selected:
  - a) The Blue wire is disconnected
  - b) The Blue wire is connected to the stop arm control (Stop Arm Arming)

## ***Armed System Disarms after Ignition Cycle***

- 1 A power interruption or brown out power condition accrued
  - a) Connect the Red wire to another 12v power source

## ***Horn Sounds when ignition is turned off***

- 1 Tamper Condition.
  - a) Remote Transmitter pushed during ignition cycling.

## ***Remote Transmitter will not deactivate the system***

- 1 Transmitter battery may need replacement.
- 2 Reorient the transmitter for a "clear path" to the receiver.

## ***Alarm will not sound horn***

- 1 Horn Switch Wire (Yellow) improperly wired.
- 2 Horn Switch Wire (Yellow) Fuse open.
- 3 Horn Ground Wire (Green) improperly wired.

## ***Horn Switch Fuse Blows***

- 1 Vehicle does not have a Horn Relay.
  - a) Install Horn Relay Kit Part No. 102893.
- 2 Horn Switch Wire (Yellow) improperly wired.



## Troubleshooting Continued

### **Reminder Tone Sounds 5 times whenever the vehicle is turned on**

This is normal when the **Bus-Scan** 300 is in service mode. The beeps remind the driver that the **Bus-Scan** 300 is in service mode.

### **The range of the keyless entry system decreased**

- 1 The **Bus-Scan** and the vehicle are both using the 315Mhz Frequency.
  - a) Locate the Option Dip Switch (3 Position Switch) on the back of the Bus-Scan 300. Reference the diagram and chart below
  
  - b) Slide switch #3 on the to the on position.  
Note the RF Link will only be active during the **Bus-Scan** Time-Out

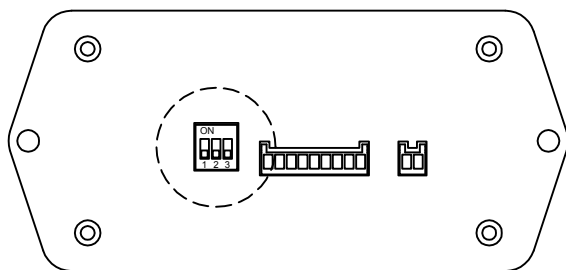
### **I want a longer or shorter Time-Out**

The **Bus-Scan** 300 can be set for a 1,2,3,or 5 minute delay.

- 1 To change the delay
  - a) Locate the Option Dip Switch (3 Position Switch) on the back of the Bus-Scan 300
  
  - b) Slide switches #1 and #2 on the to the desired value.  
Reference the diagram and chart below

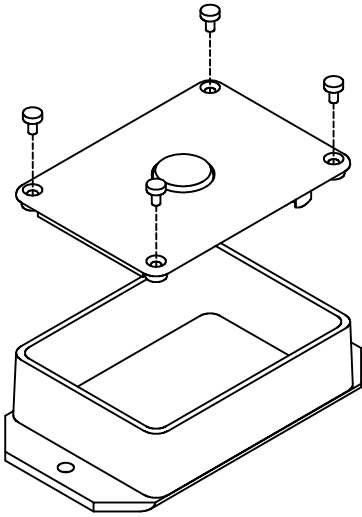
## Bus-Scan 300 Option Setting

To change the time-out delay and receiver option, change the dip switch settings according to the chart



1 2 Time			3 Remote Option	
Off	Off	1 Minute	Off	Full Time Remote Sensing
On	Off	2 Minutes		
Off	On	3 Minutes		
On	On	5 Minutes	On	Remote Sensing During Time-Out Only

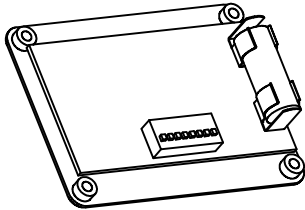
# ***RF Transmitter / Receiver***



The Bus-Scan is equipped with an RF transmitter and receiver. The signal is encoded with a digital code. The transmitter and receiver are now auto-paired and dip switch setting is no longer required.

## ***Battery:***

The Bus-Scan remote transmitter is equipped with a 12v alkaline battery. The battery life is over 5 years in normal use; however, we recommend that the battery be replaced at the beginning of each school year.



## **FCC ID: OF9-1229TXR1**

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.

Model No. BS100TX  
Robotics Technologies, Inc Joliet, IL  
Made in U.S.A.

## ***To Replace the Battery:***

- 1) Remove the 4 cover screws
- 2) Remove the cover
- 3) Replace the battery
- 4) Replace the cover
- 5) Replace the 4 cover screws

## ***Specifications***

### **Bus-Scan 300 Control Unit**

Dimensions: Length 4.25" Width 2.25" Height 1.5"  
Enclosure Material: Flame Retardant ABS Plastic UL 94-5VA  
Electrical System: 12v Negative Ground Fused @ 2A  
Horn Activation: Form A Contact Fused @ 2 Amp  
RF Receiver: 315 Mhz ASK

### **BS 100TX Remote Transmitter**

Dimensions: Length 4.25" Width 2.375" Height 1.0"  
Enclosure Material: Flame Retardant ABS Plastic UL 94-5VA  
Battery: 12v Alkaline Battery MN21A, GP23A or equivalent  
Frequency: 315 Mhz ASK

## ***Replacement Parts and Accessories***

<b><i>Part No.</i></b>	<b><i>Description</i></b>
104564	<b>Bus-Scan</b> 300 RF Control Unit
101649	<b>Bus-Scan</b> BS 100TX Remote Transmitter
103553	12v Alkaline Battery
104546	<b>Bus-Scan</b> RF Wiring Harness
103543	<b>Bus-Scan</b> Service Switch Lock
102799	<b>Bus-Scan</b> Service Switch Key
104569	<b>Bus-Scan</b> 300 RF Parts Kit
104567	<b>Bus-Scan</b> 300 RF Installation and Operations Guide
102893	<b>Bus-Scan</b> Horn Relay Kit
104533	<b>Bus-Scan</b> Siren

## **Warranty**

Robotics Technologies, Inc. (RTI) warrants its products to be free from defects in materials and workmanship for a period of one (1) year from the date of purchase. Its obligation under this warranty is limited to repairing or replacing at its own sole option any such defective products. To obtain service under this warranty you must obtain a Return Material Authorization (RMA) number from RTI. Products must be returned to RTI with transportation charges prepaid and must be accompanied by a brief description of the problem encountered and proof of date and place of purchase. This warranty does not apply to equipment that has been damaged by accident, negligence or misapplication or has been altered or modified in any way. This warranty applies only to the original purchaser.

The Bus-Scan® Seat Check Reminder is not a security or detection device. It is used as a reminder for the driver to physically check seats.

It is the responsibility of the customer to ensure secure mounting and the continued maintenance thereof. Customer will indemnify RTI and hold it harmless from all actions or litigation arising from misuse of or improper mounting of the Bus-Scan®.

EXCEPT AS PROVIDED HEREIN RTI MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Some states do not permit limitation or exclusion of implied warranties; therefore the aforesaid limitation(s) or exclusion(s) may not apply to purchaser.

EXCEPT AS PROVIDED ABOVE, IN NO EVENT WILL RTI BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS PRODUCT EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Specifically, RTI is not liable for any costs such as loss of profits or revenue, loss of service, loss of equipment, costs of substitutes, and claims by third parties or otherwise. This warranty gives you specific legal rights and you may also have other rights that vary from state to state.

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