

MULTIFUNCTION DIGITAL TACHOMETER

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ABOUT THE MANUAL

This manual is written in four sections; Installation, Before Starting, Operation and Troubleshooting. The **Installation** section contains instructions for installing the various parts of the Multifunction Digital Tachometer. The **Before Starting** section contains step-by-step instructions for calibrating the various parts of the Multifunction Digital Tachometer. The **Operation** section describes the basic functions of the Multifunction Digital Tachometer. Finally, the **Troubleshooting** section contains information on situations that could occur, and details on how to find a solution.

If all else fails, make note of any questions, and contact Agtron Enterprises Inc. toll-free at **1-800-667-0640**, or by email at **cus-**

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NOTES

WARRANTY AND DISCLAIMER

WARRANTY TERMS

Once Agtron Enterprises Inc. receives a completed warranty card, the Multifunction Digital Tachometer is covered by a three year warranty on materials and workmanship. Without a completed warranty card, the Multifunction Digital Tachometer is covered for only one year.

1. Any warranty shipping costs and installation labour are the responsibility of the customer.
2. Any product failures during the warranty period will be repaired, or replaced with new or rebuilt product by Agtron Enterprises Inc. If replacement parts are sent, the customer has 30 days to return the original defective product. After 30 days the customer will be charged for the warranty replacement parts sent.
3. Damage from neglect, accidents, fire, liquids, chemicals, other substances, flooding, vibrations, excessive heat, power surges, excess supply voltage, incorrect supply voltage, radiation, electrostatic discharges including lighting, other external forces and impacts are not covered under warranty.
4. There are no customer serviceable parts inside the Multifunction Digital Tachometer. If the security screw is removed, the warranty will be void.
5. Unauthorized modifications to the Multifunction Digital Tachometer will void the warranty.
6. Any usage of the Multifunction Digital Tachometer outside of the intended use will void the warranty.

PRODUCT RETURNS

If unsatisfied with the Multifunction Digital Tachometer, a full refund is offered within 30 days of the date of purchase. To receive the refund, contact Agtron Enterprises Inc. for a Return Authorization number. Product returned after 30 days will be charged a 15% restocking fee. No refund is available on product returned 52 weeks after the date of purchase.

CONDITIONS OF USE

1. Agtron Enterprises Inc. takes no responsibility for injuries, damages, or losses due to the use, misuse, abuse, or failure of this equipment. It is the responsibility of the customer to understand the operation of the Multifunction Digital Tachometer and to ensure that it is operating properly.
2. All products produced by Agtron Enterprises Inc. are intended for use with agricultural implements. Any other application has not been considered; therefore complying with regulations is the sole responsibility of the cus-

PARTS LIST

STANDARD PARTS

	QUANTITY	PART NUMBER
Digital Tachometer	1	9AM2TCH
Splitter Box	1	9AM2EXT

OPTIONAL PARTS

SENSORS

Bin sensor	9KBNSEN07
Shaft sensor	AGHS00200

CABLES

Extension cable (2 foot)	9AM2X02
Extension cable (10 foot)	9AM2X10
Extension cable (20 foot)	9AM2X20
Extension cable (40 foot)	9AM2X40
Sensor cable (2 foot)	9AMDX02
Sensor cable (4 foot)	9AMDX04
Sensor cable (5 foot)	9AMDX05
Sensor cable (8 foot)	9AMDX08
Sensor cable (9 foot)	9AMDX09
Sensor cable (10 foot)	9AMDX10
Sensor cable (14 foot)	9AMDX14
Sensor cable (20 foot)	9AMDX20
Sensor cable (40 foot)	9AMDX40

MISCELLANEOUS PARTS

120VAC to 12VDC adapter	300681281
External alarm	9KRLYDR
Mounting bracket	9KBRKT0
Single Sensor cable (10 foot)	9AM2XAD
Turck proximity sensor adapter cable	9ACMSND

TACHOMETER INSTALLATION

MOUNTING

Select a flat mounting location in the tractor cab where the Tachometer display can be easily seen, and all the buttons are accessible.



Tachometer

Note: Do not mount in a location that obstructs the view of the road or work area.

The tools required to install the Tachometer are:

- Wire strippers
- Wire cutters
- Crimp tool
- 1/4 inch drill bit (optional)
- 7/16 inch wrench (optional)

Route the power cable from the Tachometer to a switched 12 volt source in the accessory panel. Cut off any excess cable. Secure the power cable to the equipment with cable ties.

STANDARD MOUNTING

To mount the Tachometer, remove the backing from the adhesive hook and latch strip; located on the back of the Tachometer.

Note: The hook and latch strip allows the Tachometer to be easily moved.

MOUNTING BRACKET

Remove the Tachometer from the mounting bracket by loosening the thumb screws. Drill two 1/4 inch holes four inches apart. Using 1/4 inch bolts and a 7/16 inch wrench, secure the mounting bracket to the mounting location. Using the thumb screws, secure the Tachometer to the mounting bracket.

CABLE CONNECTIONS

TRACTOR

Connect the *red* power cable wire to a switched 12 volt source; the Tachometer is off when the ignition is off.

Connect the *white* power cable wire to the switch 12 volt source that controls the tractor dash lights.

Connect the *black* power cable wire to a ground source. Not all

rect.

SOLUTION

- First, ensure the Cal value is correct otherwise the RPM will not read correctly.
- Second, ensure the Shaft sensor is still in-line with the target.
- Third, ensure that the Shaft sensor is within the required distance from the target. For more information, see the **Shaft Sensor Installation** section. When the Shaft sensor is at an extreme distance limit, this may occur.
- Fourth, ensure there is power to the Shaft sensor; the power light.
- Fifth, check the sensor cable. Set the Cal value of the Shaft sensor channel to zero, the Low Alarm value to zero, and the High Alarm value to one. For more information, see the **Before Starting** section. Align a magnet in front of the Shaft sensor. Begin flexing and shaking the Sensor cable. If an alarm occurs, replace the Sensor cable.
- Sixth, replace the Shaft sensor.

SITUATION

When a Shaft sensor channel is selected only OFL is displayed.

SOLUTION

tor Head when the tank goes empty or full; depending on the calibration. Nothing but 0 is ever shown.

SHAFT SENSOR

SITUATION

The Tachometer displays no RPM on one or more channels.

SOLUTION

- First, ensure the Shaft sensor is plugging in and powered; the power light.
- Second, ensure the magnet is still on the shaft.
- Third, ensure the Shaft sensor is still in-line with the target.
- Fourth, check that the Shaft sensor is within the required distance from the target. For more information, see the **Shaft Sensor Installation** section.
- Fifth, ensure the High Alarm, Low Alarm and Cal values are set as described in the **Before Starting** section.
- Sixth, swap the Sensor cable and replace if necessary.
- Seventh, replace the Shaft sensor.

SITUATION

When a shaft stops turning, the Tachometer does not indicate an alarm, but an RPM is displayed.

SOLUTION

- First, ensure the Low Alarm value has not been set to zero. If the Low Alarm value is zero, the alarm is disabled.

SITUATION

The Tachometer always indicates an alarm even when the shaft is turning.

SOLUTION

- First, ensure the Low Alarm value is not higher than the RPM reported by the Shaft sensor.
- Second, ensure the High Alarm value is not lower than the RPM reported by the Shaft sensor.
- Third, ensure the Cal value is equal the number of target passes in one revolution.

SITUATION

The Shaft sensor produces an RPM, but it is erratic and incor-

tractor cabs are properly grounded; it is recommended to use a ground source in the fuse panel.

Note: *Do NOT connect the black wire to the negative terminal of the tractor battery.*

12 VOLT ADAPTER

Cut the end off the 120 VAC to 12 VDC Adapter. Using wire strippers, remove a quarter inch of jacketing from both wires.

Connect the *red* and *white* power cable wires to the black 12 Volt adapter wire with white dashes.

Connect the *black* power cable wire to the solid black 12 Volt adapter wire.

EXTENSION CABLE

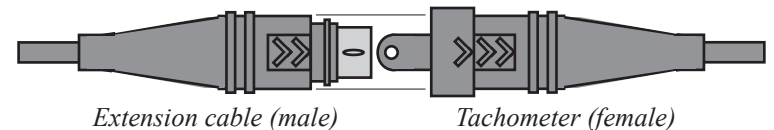
Route an Extension cable from the tractor hitch to the Tachometer in the tractor cab. Connect the male Extension cable plug into the female Extension cable plug of the Tachometer. Secure the Extension cable to the equipment with cable ties.



Connect a male Extension cable plug into the female Extension cable plug of the Tachometer. Route the Extension cable from the Tachometer to the Splitter Box mounting location. For more information, see the **Splitter Box Installation** section. Secure the Extension cable to the equipment with cable ties.

Note: *To keep plugs clean, always cover disconnected Extension cable plugs with the provided dust caps molded onto the cable.*

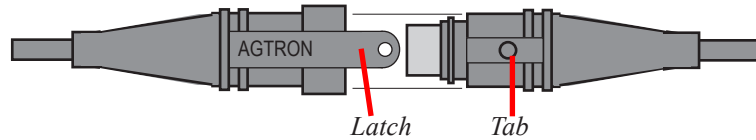
Note: *When making Extension cable connections make sure to align the molded arrows. If difficult to push together, check the condition of the pins.*



Note: *To help avoid static problems, loop then twist any excess Extension cables to create a figure eight shape before securing the cable.*

Note: *When making Extension cable connections, make sure*

to secure the latch on the female plug over the tab on the male plug.



SPLITTER BOX INSTALLATION

MOUNTING

Select a mounting location that is central to the Shaft and Bin sensors. Select a mounting location where the Splitter Box is protected from field debris damage.



Splitter Box

The tools required to install a Splitter Box are:

- Electric drill
- 5/16 inch hex driver
- 1/8 inch drill bit

Using a 5/16 inch hex-driver and the provided self tapping screws, secure the Splitter Box to the mounting location. Drilling an 1/8 inch pilot hole will make installation easier.

CABLE CONNECTIONS

Note: For information on the cable connections for the Bin and Shaft sensors, see the appropriate **Sensor Installation** section.



Extension cable

Connect the female Extension cable plug from the Tachometer into the male Extension cable plug of the Splitter Box.

For multiple Splitter Boxes, use Extension cables to connect the male Extension cable plug of the first Splitter Box into the female Extension cable plug of the second Splitter Box.

Note: With multiple Splitter Boxes connect only one sensor per channel. For example, if channel 1 and 2 are used on the first Splitter Box do not use channel 1 and 2 on

SINGLE SENSOR ADAPTER CABLE

SITUATION

With the Single Sensor Adapter cable connected, the Tachometer will not power up.

SOLUTION

- First, check that the arrows of the Extension cables are properly aligned.
- Second, replace the Extension cable.
- Third, replace the Single Sensor Adapter cable.

BIN AND PROXIMITY SENSOR

SITUATION

The Tachometer never indicates an alarm when the product bin is empty or full.

SOLUTION

- First, ensure product has not built-up between or “bridged” over the Bin sensor eyes.
- Second, ensure the High Alarm, Low Alarm and Cal values are set as described in the **Before Starting** section.
- Third, swap the Sensor cable and replace if necessary.
- Fourth, replace the Bin or Proximity sensor.

SITUATION

The Tachometer always indicates an alarm when the product bin is full or empty.

SOLUTION

- First, ensure the product has not built-up or “bridged” over the Bin sensor eyes.
- Second, ensure the High Alarm, Low Alarm and Cal values are set as described in the **Before Starting** section.
- Third, swap the Sensor cable and replace if necessary.
- Fourth, replace the Bin or Proximity sensor.

SITUATION

When a Bin or Proximity sensor channel is selected nothing but 0 is shown.

SOLUTION

- First, Bin and Proximity sensors are only report to the Moni-

TROUBLESHOOTING

OFL MESSAGE (OVERFLOW)

When an RPM higher than 9999 is reported, OFL is displayed. The OFL message remains until the reported RPM drops below 9999.

SITUATIONS AND SOLUTIONS

To effectively troubleshoot the Multifunction Digital Tachometer, start with a known “good” or working system. There are six areas of possible failure; the Tachometer, Splitter Box, Extension cable, Sensor cables, Shaft sensors or Bin sensors.

Listed below are situations that could occur with the various parts of the Multifunction Digital Tachometer. If a situation occurs, locate the needed part section then follow the SOLUTION process to identify the cause and restore normal operation.

MONITOR HEAD

SITUATION

When power is supplied, the Tachometer does not power-up.

SOLUTION

- First, check that the power cable is connected as described in the **Tachometer Installation** section.
- Second, check the 3 Ampere fuse.
- Third, check that there is at least 12.5 volts between the red and black wires of the power cable.
- Fourth, replace the Tachometer.

SPLITTER BOX

SITUATION

With the Splitter Box connected, the Tachometer will not power up.

SOLUTION

- First, check that there is power to the Splitter Box; power light.
- Second, check that the arrows of the Extension cables are properly aligned.
- Third, replace the Extension cable.
- Fourth, replace the Splitter Box.

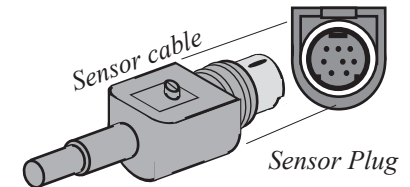
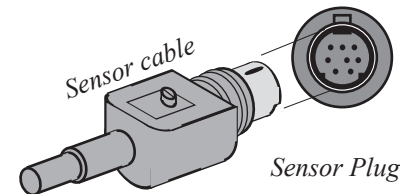
the second Splitter Box.

Note: *To keep plugs clean, always cover disconnected Sensor cable plugs with the provided dust caps; molded onto the new Sensor cables.*

Note: *To help avoid static problems, loop then twist any excess Sensor cables to create a figure eight shape before securing the cable.*

Note: *When making Sensor cable connections, make sure to secure the latch of the Sensor cable plug over the tab on the Sensor cable.*

Note: *When making Sensor cable connections make sure to align the “D” shaped Sensor cable with the “D” shaped sensor plug; see right. With old style Sensor cables, align the key of the Sensor cable with the groove of the plug; see top. With combinations of both, align the pin patterns; see left. If difficult to connect, check the condition of the pins.*



BIN SENSOR INSTALLATION

MOUNTING

Select a flat mounting location in the bin or tank at the desired empty or full product level. Select a mounting location where the Sensor cable is protected from field debris damage.



Bin sensor

The tools needed to install a Bin sensor are:

- Electric drill
- 3/4 inch drill bit
- 5/16 inch hex driver
- Needle nose pliers

In the selected mounting location, drill a 3/4 inch hole. Remove the cut-outs and adhesive backing from the supplied gasket, thread over the sensor cable and affix to the back of the sensor. Place the Bin sensor plug into the 3/4 inch hole. Using a 5/16 inch hex-driver and the provided self tapping screws, secure the Bin sensor to the mounting location.

Note: To prevent product bridging, mount the Bin sensor on a 45 degree angle.



Sensor cable

CABLE CONNECTIONS

Using needle nose pliers, remove the dust cap from the Bin sensor plug. Connect a Sensor cable into the Bin sensor. Route the Sensor cable from the Bin sensor to the Splitter Box. Secure the Sensor cable to the equipment with cable ties.

Using needle nose pliers, remove the dust cap from a free Splitter Box plug; 1, 2, 3, 4, 5 or 6. Plug the Sensor cable from the Bin sensor into the free Splitter Box plug.

SHAFT SENSOR INSTALLATION

MOUNTING

Select a mounting location within the specified distance from the target and aligned with the largest surface of the target. Select a mounting location where the Shaft sensor and Sensor cable are protected from field debris damage.



Shaft Sensor

The Tachometer comes with preset High Alarm values of 9000 on Channels 1 and 2, and 2000 on Channels 3, 4, 5 and 6.

LOW ALARM BUTTON

The **Low Alarm** button is used to calibrate the minimum RPM alarm set points for each channel. For more information, see the **Before Starting** section.

Once selected, the red indicator light above the **Low Alarm** button and the selected channel button turn on. When the **Low Alarm** button is selected, the **On/Off** button does not work.

The Tachometer comes with preset Low Alarm values of 200 on Channels 1 and 2, and 50 on Channels 3, 4, 5 and 6.

CAL BUTTON

The CAL button is used to identify the type of sensor connected, and to set the number of targets per revolution. For more information, see the **Before Starting** section.

Once selected, the red indicator light above the **Cal** button and the selected channel button turn on. When the **Cal** button is selected, the **On/Off** button does not work.

The Tachometer comes preprogrammed with a Cal value of 1 on all six channels.

POWER BUTTON

The Power button is used to turn off the Tachometer. Pressing any button turns-on the Tachometer. The Power button will not operate when the **Hi Alarm**, **Low Alarm** or **Cal** buttons are selected. Only the Tachometer turns-off; the sensors, dash lights

OPERATION

There are 12 buttons on the Tachometer. The top six buttons are the independent RPM channels, and the bottom six buttons are used for control or calibration. See below for more information.



CHANNEL BUTTONS

The Tachometer has six independent channels labeled **1, 2, 3, 4, 5** and **6**. Only one channel is displayed at a time. To select a channel, press the desired channel button. When selected, the red indicator light above the channel button turns on.

Only one channel is displayed on the screen, but each channel is continually monitored. During normal operation, only the light above the displayed channel button will be on.

If a High or Low RPM, or an empty or full bin alarm occurs, the light above the alarming channel button will begin to flash; an audible alarm will sound for 10 seconds. After the audible alarm stops, the visual alarm will continue until normal operation is restored. Pressing the **Off** button will stop the audible alarm before the 10 second period. Press the channel button to display the alarming channel.

HI ALARM BUTTON

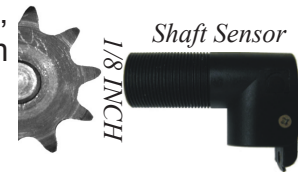
The **Hi Alarm** button is used to calibrate the maximum RPM alarm set points for each channel. For more information, see the **Before Starting** section.

Once selected, the red indicator light above the **Hi Alarm** button and the selected channel button turn on. When the **Hi Alarm** button is selected, the **On/Off** button does not work.

Listed below are the tools needed to install a Shaft sensor:

- Two 24 mm or 15/16" wrench
- Electric drill
- 3/4 inch drill bit
- Tape measure

For a metal target, using a tape measure, move the Shaft sensor within 1/8 inch from the closest surface of the metal target.



For a magnetic target, clean any dirt or grease from the mounting location. Remove the adhesive backing and using the provided cable tie, secure the magnet in place. Using a tape measure, move the Speed sensor within 1/2 inch from the largest surface of the magnet.

Drill a 3/4 inch hole into a bracket or into the Implement casing. Install one nut that is supplied onto the sensor, then insert the sensor into the 3/4 inch hole. Secure the Shaft sensor to the mounting location with the other nut that was provided. Insure that there is a 1/2 inch distance to the magnet or 1/8 inch distance if using a tooth gear.

Note: *The Tachometer's maximum RPM depends on the number of targets. For example, a Shaft sensor detecting RPM from a 25 tooth chain drive has a maximum speed of 1920 RPM. To calculate the maximum RPM, use this formula:*

$$\frac{48,000}{\# \text{ OF TARGETS}} = \text{RPM}_{\text{MAXIMUM}}$$

CABLE CONNECTIONS

Using needle nose pliers, remove the dust cap from the Shaft sensor plug. Connect a Sensor cable into the Shaft sensor. Route a Sensor cable from the Shaft sensor to the Splitter Box.

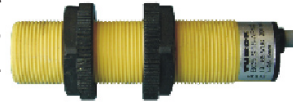
Using needle nose pliers, remove the dust cap from a free Splitter Box plug; 1, 2, 3, 4, 5 or 6. Connect the Sensor cable from the Shaft sensor into the free Splitter Box plug.



PROXIMITY SENSOR INSTALLATION

MOUNTING

Select a mounting location in the air cart meter box. The Proximity sensor alarms when uncovered. Select a mounting location where the Proximity sensor and cable are protected from field debris.



Proximity sensor

The tools required to install a Proximity sensor are:

- Electric drill
- 3/4 inch drill bit
- 15/16 inch wrench
- Needle nose pliers

In the selected mounting location, drill a 3/4 inch hole. Remove the plastic nuts. Place the Proximity sensor in the 3/4 inch hole. Place a plastic nut on the front Proximity sensor; inside the meter box. Use the plastic nut to set the desired Proximity sensor depth. Place the remaining plastic nut on the back of the Proximity sensor. Using a 15/16 inch wrench, secure the Proximity sensor in the meter.

CABLE CONNECTIONS

Note: An adapter cable is needed for the Proximity sensor to function.



Sensor cable

Connect the Proximity sensor adapter cable to the Proximity sensor; brown is the 12 volt wire, black is the signal wire, and blue is the ground wire. Using needle nose pliers, remove the dust cap from a free Splitter Box plug; 1, 2, 3, 4, 5 or 6. Connect the Proximity sensor adapter cable into the free Splitter Box plug. Secure the cable to the equipment with cable ties.

nel button are both on.

7. Use the \oplus and \ominus buttons to set the number of targets per revolution. For example, one magnet would be a Cal value of 1.
8. Press any channel button to complete the change; 1, 2, 3, 4, 5 or 6.
9. Repeat this procedure for each Shaft sensor channel.

TESTING THE INSTALLATION

It is recommended to check the Tachometer installation before starting. Follow this procedure to check the Tachometer installation.

CONNECTION TEST

1. Turn on the Tachometer.
2. Make sure the Splitter Box and Shaft sensor power lights turn on; if installed.

SHAFT SENSOR TEST

1. Press the Shaft sensor channel button.
2. Repeatedly pass a spare magnet across the end of the Shaft sensor; this should display a RPM.
3. Stop passing the magnet to make sure the channel issues a Low Alarm.

BIN SENSOR TEST

Note: A Bin sensor channel set to alarm when full will NOT be in alarm, and a Bin sensor channel set to alarm when empty will be in alarm.

1. Press the Bin sensor channel button.
2. Cover both Bin sensor eyes with electrical tape.
3. A Bin sensor channel set to alarm when full will be in alarm. A Bin sensor channel set to alarm when empty

8. Press any channel button to complete the change; **1, 2, 3, 4, 5** or **6**.
9. Repeat this procedure for each Bin sensor channel.

Follow this procedure to program a Bin sensor to alarm when full.

1. Press the Bin sensor channel button; **1, 2, 3, 4, 5** or **6**; the light above the channel button turns on.
2. Press the **Hi Alarm** button; the light above the Hi Alarm and channel button are both on.
3. Use the **+** and **-** buttons to change the High Alarm value to 0.
4. Press the **Low Alarm** button; the light above the Low Alarm and channel button are both on.
5. Use the **+** and **-** buttons to change the Low Alarm value to 1.
6. Press the **Cal** button; the light above the Cal and channel button are both on.
7. Use the **+** and **-** buttons to change the Cal value to 0.
8. Press any channel button to complete the change; **1, 2, 3, 4, 5** or **6**.
9. Repeat this procedure for each Bin sensor channel.

SHAFT SENSOR CALIBRATION

There are three values needed for a Shaft sensor to function; High Alarm, Low Alarm and Cal. Follow this procedure to calibrate a Shaft sensor.

1. Press the Shaft sensor channel button; **1, 2, 3, 4, 5** or **6**; the light above the channel button turns on.
2. Press the **Hi Alarm** button; the light above the Hi Alarm and channel button are both on.
3. Use the **+** and **-** buttons to set the High Alarm value to the desired maximum shaft RPM.
4. Press the **Low Alarm** button; the light above the Low Alarm and channel button are both on.
5. Use the **+** and **-** buttons to set the Low Alarm value to the desired minimum shaft RPM.
6. Press the **Cal** button; the light above the Cal and chan-

EXTERNAL ALARM INSTALLATION

MOUNTING

Select a mounting location where the relay can be mounted with the wires hanging down. Select a mounting location where the wires and relay are out of "harms way".



The tools required to install the External Alarm are:

- Wire strippers
- Crimp tool
- Electric drill
- 5/16 inch hex driver

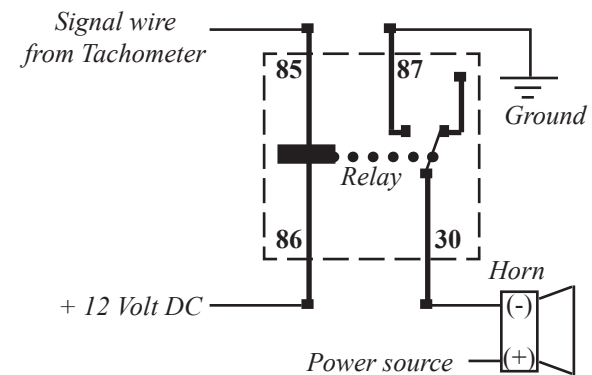
Remove the mounting bracket from the relay. Using a 5/16 inch hex driver and the provided self tapping screw, secure the relay to the mounting location.

CABLE CONNECTIONS

Using a crimp tool and one of the provided spade connectors, connect the external alarm wire from the Tachometer to pin 85 of the relay. Using a crimp tool and one of the provided spade connectors, connect a 12 volt source to pin 86 of the relay; this must be the same 12 volt source that powers the Tachometer.

Using a crimp tool and one of the provided spade connectors, connect pin 87 of the relay to a ground source. Using a crimp tool and one of the provided spade connectors, connect the negative terminal of the external alarm to pin 30 of the relay.

Connect the external alarm to a power source.



SINGLE SENSOR CABLE INSTALLATION

Note: The Single Sensor Adapter cable replaces the Splitter Box, and only uses Channel #1.

MOUNTING

Mount the Single Sensor Adapter cable in a location that is near the sensor; within the 10 foot cable length. Secure the Single Sensor Adapter cable with cable ties.

CABLE CONNECTIONS

Note: The Single Sensor Adapter cable adapts an Extension cable to a Sensor cable. No Sensor cables are required. Plug the Single Sensor Adapter cable directly into the Shaft or Bin sensor.

Using Extension cables, connect the female Extension cable plug from the Tachometer into the male Extension cable plug of the Single Sensor



Extension cable

BEFORE STARTING

TURN OFF UNUSED CHANNELS

Before starting, turn off all the unused channels; no Shaft or Bin sensor connected. Follow this procedure to turn off a channel.

1. Press the unused channel button; **1, 2, 3, 4, 5** or **6**; the light above the channel button turns on.
2. Press the **Low Alarm** button; the light above the Low Alarm and channel button are both on.
3. Use the **+** and **-** buttons to change the Low Alarm value to 0.
4. Press the **Cal** button; the light above the Cal and channel button are both on.
5. Use the **+** and **-** buttons to change the Cal value to 10.
6. Press any channel button to complete the change; **1, 2, 3, 4, 5** or **6**.
7. Repeat these changes for each unused channel.

BIN SENSOR CALIBRATION

There are three values needed for a Bin sensor to function; High Alarm, Low Alarm and Cal. Bin sensors can be set to alarm when the bin or tank is empty or full; position dependant. Follow this procedure to program a Bin sensor to alarm when empty.

1. Press the Bin sensor channel button; **1, 2, 3, 4, 5** or **6**; the light above the channel button turns on.
2. Press the **Hi Alarm** button; the light above the Hi Alarm and channel button are both on.
3. Use the **+** and **-** buttons to change the High Alarm value to 1.
4. Press the **Low Alarm** button; the light above the Low Alarm and channel button are both on.
5. Use the **+** and **-** buttons to change the Low Alarm value to 0.
6. Press the **Cal** button; the light above the Cal and channel button are both on.
7. Use the **+** and **-** buttons to change the Cal value to 0.