

USER'S GUIDE

PROGAUGE

STEPPING DRIVE
TACHO METER Ø80

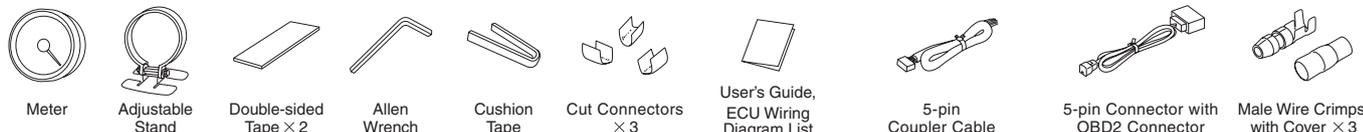
Thank you for purchasing PIVOT "PROGAUGE". Please read these instructions carefully before installing or using this device. Please do not lose this user's guide, as you will held liable for the cost of reissuing it.

Please check the contents of the package.

Common accessories for PT1 and PT2

for PT1

for PT2

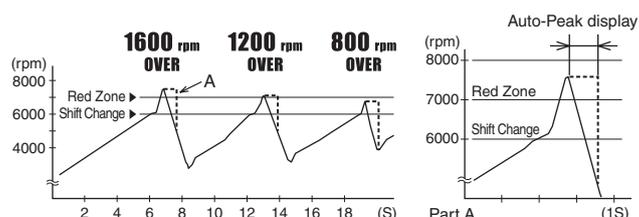


<p>CAUTION Improper use or disregard of these warnings may result in the injury or death of people.</p> <ul style="list-style-type: none"> Do not work in areas where there is excessive exhaust Due to vehicle exhaust emission poisoning or fire may result in a damage to humans. Please securely fasten the product to a stable place It is very dangerous if, while in use, the product falls off and interferes with braking. During installation be sure to remove the (-) cable from the battery So as to prevent fire and damage resulting from the shorting of circuits, etc... Do not crush the cable Please be careful that the cable does not get crushed by the seat rail or car door steel plate, nor cut by any sharp steel plate as this may cause a poor connection or an electric short leading to fire or other danger. Do not operate while driving Operating or checking the display during driving may cause an accident; please use with the utmost consideration for safety. Please be sure to store bundle away all wires with tape, etc... 	<p>NOTE Improper use or disregard of these warnings may cause injury to persons, damage the product and / or other things.</p> <ul style="list-style-type: none"> Do not use electrotape Wiring should be carried out using the attached "cut connector" or by soldering, make sure to securely insulate all wiring parts with insulation tape, and confirm that no wires are sticking out. This product is for DC12V cars; installation cannot be carried out on cars with other voltage batteries. Just after installation do not exert any strong force on the product When double-sided tape is used for an installation be warned that when hot the tape temporarily loses adhesiveness. If you are not confident about doing the wiring yourself, please consult your local pro shop or garage When installing this product, we recommend that if technical knowledge becomes necessary please consult a qualified mechanic. Do not install the product in any place subject to high temperature or any place where water may be splashed Make sure to replace all screws and parts to their original place Do not install the product in a place where it will cause distraction Do not, in any manner, process, take apart, or make changes to this product
--	--

FEATURES

World's First Auto-Peak Display provides Accurate Peak Numbers with each and every Shift.

By setting to "Auto-Peak" Mode the reading will be held for one second whenever revolutions exceed the set shift point; making it easy to see when an over-rev has occurred. It is also possible to set the optimum shift point so as never to enter the red zone. (patent pending)



<p>World's First AUTO PEAK</p> <p>Holding peak for one second upon exceeding set shift point.</p>	<p>No Wiring Coupler On (Only PT2)</p> <p>With some Toyota and Daihatsu models it is possible to connect directly using the coupler to the diagnostic monitoring connector.</p>	<p>1 ▶ 8 Cylinder Compatible with wide range</p> <p>All 1-8 cylinder cars compatible.</p>
<p>3 Types of Display</p> <p>Three types of display; Real / Auto-Peak / Peak.</p>	<p>SHIFT LAMP</p> <p>The sequential lamp system gives you warning lights as you approach the set rpm.</p>	<p>World's Lightest Body</p> <p>Extra lightweight means less vibration; only 107 grams (unit only).</p>
<p>All-in-One Unit</p> <p>No separate controller necessary.</p>	<p>No need for Opening Holes</p> <p>Fastening with double-sided tape means no need for opening holes.</p>	<p>Translucent Illumination</p> <p>The translucent LED system provides a clear even display.</p>

FUNCTION

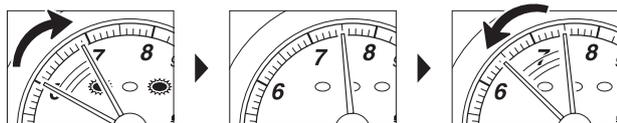
Three Types of Display

Three Types of Display: Real-time, Auto-peak and Peak hold.

REAL Normal Real Display for All Areas.

AUTO PEAK Below the shift point=Real Display

Above the shift point=After holding the peak reading for one second, the real time display allows you to check for over-revs.



RPM beyond the Shift Point

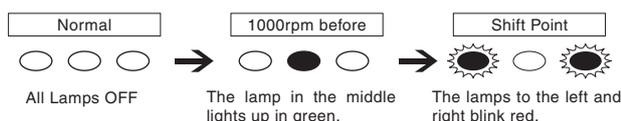
One-second Peak Display

Return to Real display

PEAK Shows the peak reading after the engine begins running

Shift Lamp (Setting Range : 3000 - 10000rpm, 200rpm unit)

In order to prevent over-revving while shifting, an F-1 sequential type shift has been included, which shows a green lamp 1000 rpm before the set engine rpm and a red lamp at the shift point.



ADVICE

Some Tips for Setting the Shift Point!

For Sports Driving

The shift point should be calculated by subtracting the over-rev at shifting from the rpm at which the maximum engine torque occurs.

※ The over-rev at shifting should be decided by actually measuring in Auto-peak mode.

※ In general it would be about 90% near the red-zone.(EX: If the red zone is 9,000 rpm, then use 8,000 rpm.)

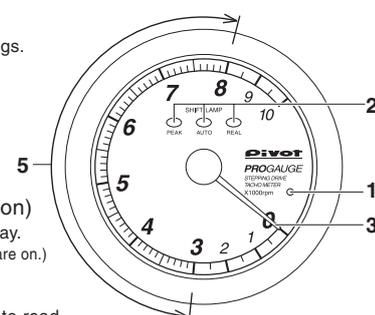
For Eco-driving

When using for eco-driving, it is best to use a lower rpm point as the shift point, so set the point at 1000 rpm higher than normal and shift when the green lamp comes on.

NOTE : The above is for your reference only; please make settings as desired.

PART NAMES AND FUNCTIONS

- Switch**
Use to change modes and/or settings.
- Shift Lamp (LED)**
Blinks at the set rpm.
- Needle**
Show the current values.
- Illumination (night illumination)**
Normally illuminated when on display. (Not illuminated when only parking lights are on.)
- Wide Range Display**
The display has been made easier to read by enlarging the 3,000 to 8,000 rpm area.

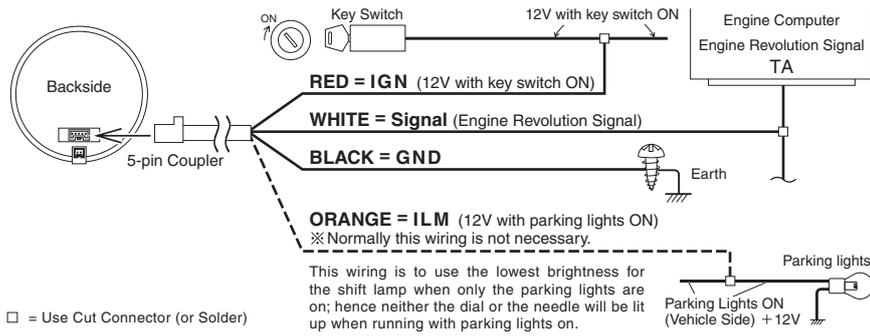


CONNECTING THE WIRES

Preparation

Before installation, please check that the installation method is proper for the model of car.

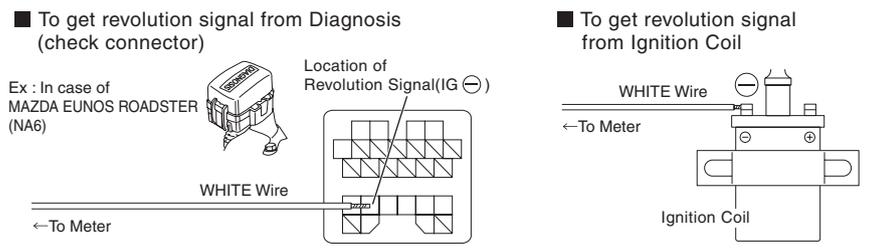
PT1 Basic Wiring



CAUTION

- ※When another device is already connected to the revolution signal from the ECU .
- ▶▶ and that device works properly keep that wiring.
- ▶▶ and the Meter or other device stops working properly or sometimes becomes unstable disconnect from the ECU wire and get the revolution signal from the ⊖ terminal of ignition coil or diagnosis.

To get revolution signal from ignition coil use resistor wire included in kit.

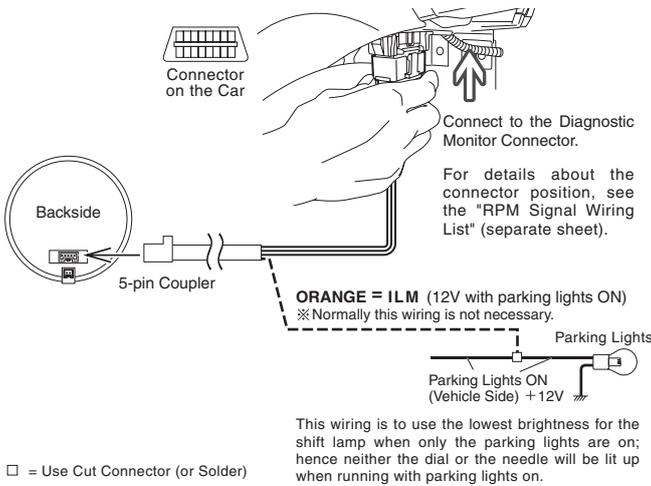


CAUTION

- ※When connecting the revolution signal to the ignition coil or diagnosis and the indicated rpm on the meter may be obviously lower than the actual rpm as shown on tachometer. Ex: For a 6 cylinder car, the reading should be 3,000rpm, but display shows 500rpm.
- This may be caused by the individual wiring system of that model of car. Change the Cylinder Setting to "1". See "SETTINGS A" for details.

PT2 Basic Wiring

Connect the OBD2 Connector.

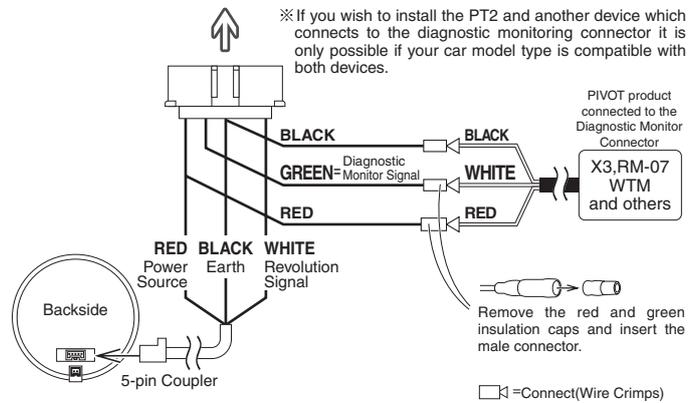


When used in conjunction with other PIVOT Diagnostic Monitor Connected Products.

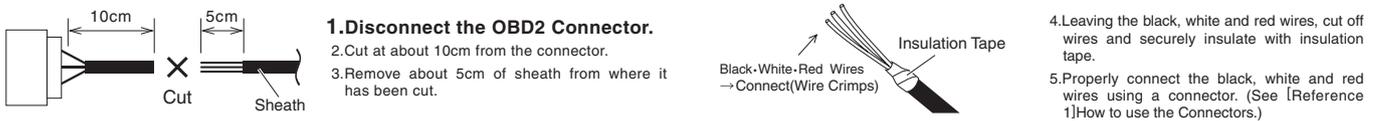
※Not compatible with another company's products

Insert while the engine is running.

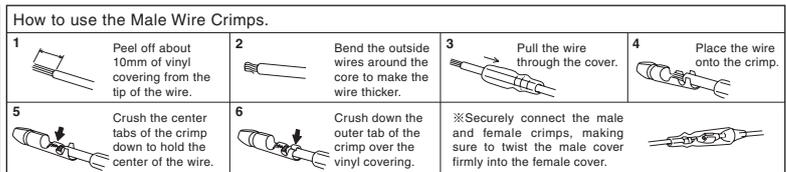
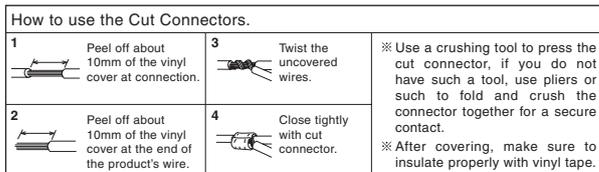
In order to prevent making mistakes when inserting the coupler, make sure to insert while the engine is running.



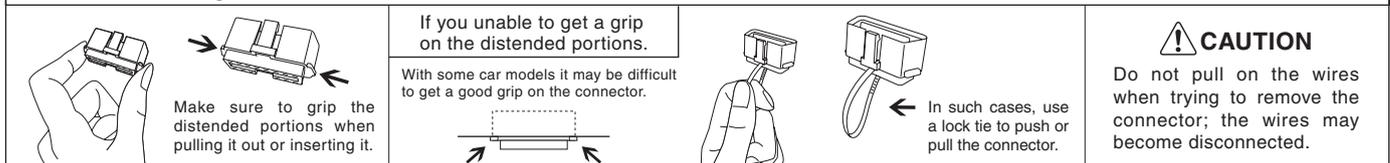
How to process the OBD2 Connector to use with other PIVOT Products.(X3-RM-07-WTM)



[Reference 1] How to use the Connectors.



Notes about using the OBD2 Connector.



CAUTION

Do not pull on the wires when trying to remove the connector; the wires may become disconnected.

BASIC OPERATIONS

Basic Operations from Engine Start to Stopping.

- 1 **ENGINE START**
Start the engine.
- 2 **Opening Demo**
It will not operate properly unless the wiring to the RPM signal has been completed.
- 3 **The needle will show the set shift point.**
Shift Lamp will light up at night.
- 4 **Current RPM Display.**
- 5 **Engine Stop**
OFF
- 6 **Meter OFF**
※ Due to characteristics of the gauge, even though the engine is OFF and the gauge is not measuring, the needle will not return to "0".

SETTINGS

After finishing the installation, make various settings.

Preparation

Please check the number of cylinders and cycles for the model car being used.

● = ON ☀ = Blink ○ = OFF

A Cylinder Number Setting

Set the cylinder number for the car being used. The number of cylinders is set by the shift lamp pattern.

- 1 While holding down the switch, start the engine.
- 2 **Opening Demo**
- 3 **Cylinder Display** ○ ● ● ●
(The factory default setting is for a four-cylinder engine.)
- 4 **Press the switch once**
Press the switch to change the pattern and set to the proper one.

Turn 4-cylinder ▷ 5 ▷ 6 ▷ 8 ▷ Special A ▷ 1 ▷ 2 ▷ 3

Patterns for Cylinder Settings Display.

Number of cylinders	Shift Lamp	Car Models
1	● ○ ○ ○	NISSAN(FAIRLADY Z Z33)-MAZDA(ATENZA and others) ※1
2	○ ● ○ ○	MAZDA(RX-8)-SUBARU(PLEO and others) ※1
※1 For one and two cylinder engines, set the signal level switch to two. See "F How to Switch the Signal Level" for details.		
3	○ ○ ● ○	Three-cylinder
4	○ ● ● ○	Four-cylinder. Rotary Engine(RX-7)
5	● ● ● ○	Five-cylinder
6	● ● ● ●	Six-cylinder
8	● ● ● ● ●	Eight-cylinder
Special A	☀ ○ ○ ○	NISSAN MARCH/CUBE, Cars equipped with an HR-type Engine.

Reference : If the engine is a two cycle engine, multiply the number of cylinders by two. (EX:For a two-cycle three-cylinder engine the setting would be six.)

- 5 **With no operation for 2 seconds**
- 6 **Tachometer Display**

B Switching the Display (Auto-peak / Real-time) Press

Switching the Auto-peak / Real-time Display.

- 1 While the tachometer is being displayed, press the switch once.
- 2 **Peak Display + Shift Lamp ON (Setting)**
- 3 **Press the switch**
Pressing the switch changes the peak reading display mode.
● ● AUTO ○ ○ **Auto-peak**
○ ○ AUTO ● ● **Real-time**
- 4 **With no operation for 2 seconds**
- 5 **Tachometer Display**

C Peak Display and Re-set. Press

Peak display and Re-set.

- 1 While the tachometer is being displayed, press the switch once.
- 2 **Peak Reading Display**
- 3 **Press the switch for 2 seconds**
Pressing the switch will re-set the peak reading.
- 4 **Tachometer Display**

D Shift Point Setting Press for 1.5 seconds

Make RPM setting for turning on the Shift Lamp.(Setting Range = 3000-10000rpm)

- 1 **Press the switch for 1.5 seconds**
While the tachometer is being displayed, press the switch for longer than 1.5 seconds.
- 2 The needle will show the set shift point.
The lamps blink red.
- 3 **Press the switch**
While holding down the switch, change the RPM setting.
Each pressing of the switch will raise the setting 200 RPM; at 10,000 RPM it will return to 3,000 RPM.
※ By continually pressing down on the switch the needle will move to 10,000 RPM.
- 4 **With no operation for 2 seconds**
- 5 **Tachometer Display**

E Shift Lamp Brightness Setting Press for 3 seconds

Make settings to change the Shift Lamp brightness. (With parking lights ON, brightness is fixed at the lowest possible.)

- 1 **Press the switch for 3 seconds**
While the tachometer is being displayed, press the switch for long.
- 2 After 1.5 seconds the shift point will be shown and after 3 seconds.
all shift lamps will light.
- 3 **Press the switch**
While holding down the switch, change the brightness setting.
Each pressing will decrease the brightness; when pressed at the darkest setting it will return to the brightest possible setting.
- 4 **With no operation for 2 seconds**
- 5 **Tachometer Display**

F Switching the Signal Level Press for 5 seconds

Changes are only necessary for those car models listed below.
NISSAN FAIRLADY Z Z33 · MAZDA(after 2002) · SUBARU(PLEO and others) · MITSUBISHI(COLT and others)
※See [ECU Wiring Diagram List] How to use the Connectors.

- 1 **Key ON (Engine Stop)**
- 2 **Press the switch for 5 seconds**
- 3 The lamps blink red.
- 4 **Press the switch**
Set the signal detection level by pressing the switch to change the needle position to the correct setting.
1=If the generic car. 2=If the level is small.
- 5 **With no operation for 2 seconds**
- 6 **Lamp Off**

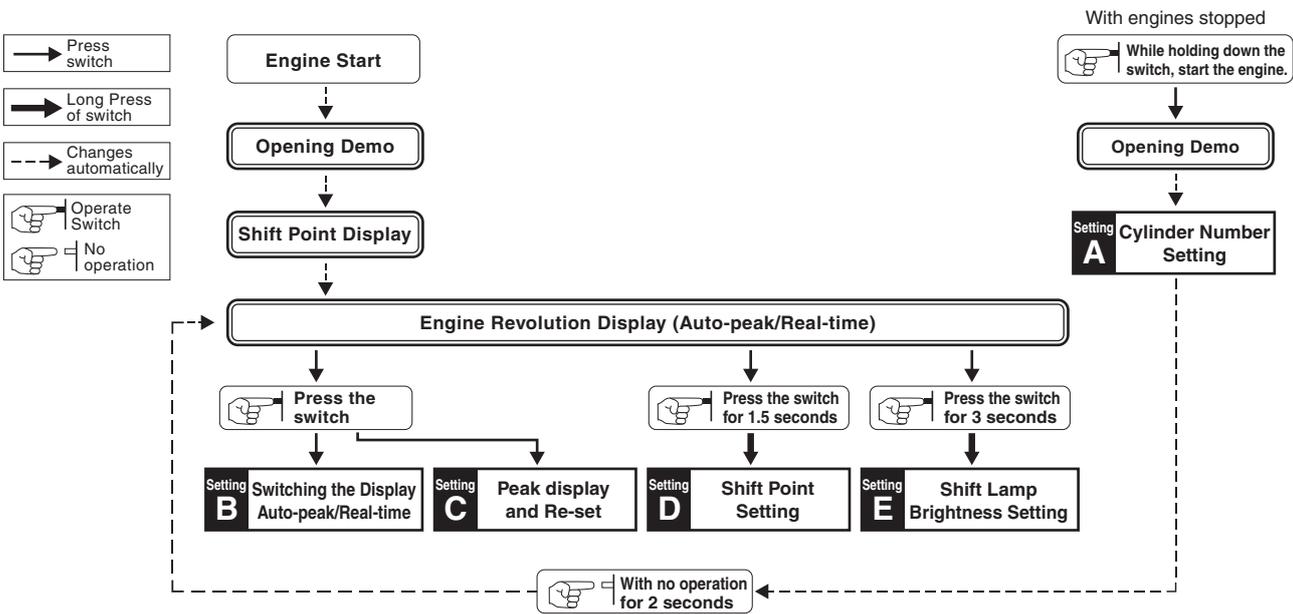
METER INSTALLATION

Install in an easy-to-view location.

A Installation with the Adjustable Stand		When using the provided Band Holder to install on the dashboard.		B Installation with the Cushion Tape	
Fasten using the double-sided tape. (On top of the steering column cover or dashboard.)	1. Installing the Adjustable Stand ① Place the stand's holder band around the back of the meter. NOTE : If you cannot get the band around the meter, loosen the hexagonal bolt and expand the band. ② After getting the band in place, tighten the hexagonal bolt to secure the band.	2. Installing to the Car ① Bend the stand to securely fit the place of installation. ② Clean the surface; removing all oil or dust. ③ Fasten using the double-sided tape. ※ Please be sure about where you wish to install the meter, as it is not advisable to reuse double-sided tape.	④ After deciding the position and angle of the meter face, fasten the hexagonal bolts on both sides to secure.	Wrap the cushion tape around the base of the meter and forcibly insert into the 80mm hole in the panel.	
Can be Mounted in Various Places Mount almost anywhere using the double-sided tape. After mounting it is possible to adjust the face of gauge for easy-reading. 		Meter Dimensions (unit : mm) 		※ If you wish to open holes to fasten the unit to the pillar or column cover, please purchase and use the separately sold pillar holder. Pillar Holder for ø80 PH-80 ¥1,780 	

BASIC FLOW OF OPERATIONS

Basic Flow of Operations for PROGAUGE. For details about settings see each [SETTINGS].



※Demo Mode Settings and Deletion.

Demo-mode is used in stores to show and explain operations; for most Users it is not necessary.

Demo Mode Settings



Demo Mode Deletion



TROUBLESHOOTING

Trouble	Possible Causes	Possible Solutions
The opening demo does not work.	The engine does not start.	Start the engine.
	Poor connection of each wire.(It will not operate properly unless the wiring to the RPM signal has been completed.)	Check the coupler connections or conditions.
Engine is running but tachometer doesn't work.	Poor connection of each wire.	Check the coupler connections or conditions.
	Poor connection of 5-pin coupler cable or OBD2 connector.	Check the coupler connections or conditions.
	The signal detection level is not correct.	See page 3 [SETTINGS F] and [ECU Wiring Diagram List], make any necessary changes.
The car's tachometer and PROGAUGE readings are very different.	The cylinder setting is wrong.	Due to differences in accuracy, readings may not be the same as those on the standard tachometer. See page 3 [SETTINGS A] and make any necessary changes.
	The signal detection level is not correct.	See page 3 [SETTINGS F] and make any necessary changes.
The Shift Lamp does not light up.	The engine rpm has not reached the set shift point.	See page 3 [SETTINGS D] and make any necessary changes in the rpm shift point.
Even with the parking lights on, brightness of the shift lamp does not decrease.	Contact failure of ORANGE wire (parking lights ON + 12V).	Check the Orange wire connections or conditions.
The gauge is operating even when the engine had been stopped.	Noise from the car (door locks and so on) may cause it to temporarily operate.	If the operation is only temporary it is not a malfunction; but if it still causes worry cut the red wire in the OBD2 connector and connect it to IGN.
With the key OFF, the needle does not rest on "0".	This is a special characteristic of the meter's movement and is not a malfunction.	
The auto- power window function and/or other electronic devices are re-set.	This is due to the minus terminal on the battery being disconnected.	Re-connect the minus terminal and follow re-setting instructions for any affected devices.