



ISSPRO 3 3/8" Diameter Programmable Speedometer
 Microprocessor Aircore Version

General Information:

Operating Voltage: 11 – 32 VDC. Note: Instrument comes equipped with a 12V lamp. Replace with one of proper voltage when installing instrument on 24V systems. 24V Lamp Part number is 656.

Input: Magnetic sensor or AC generator

Transient Protection: +100 V, -400 V

Reverse Voltage Protected

Calibration:

The ISSPRO Programmable Speedometer is calibrated (programmed) by setting a combination of ten switches found in the rear of the instrument. The odometer and pointer are electronically linked together and both are calibrated when the switches are properly set. Program before installing.

Note: the switch setting must be done with power "off". If power is left "on", changing the switch will have no effect on calibration until power is interrupted.

Calibration Procedure:

Calculate the "calibration number" from the appropriate formula below. (A minimum calibration number of 10080 is required to be within calibration range). Refer to the "CALIBRATION SWITCH SETTING" table with this number. Locate the row in which the calibration number is between the limits, then set the switches marked with a "0" to the "on" position (up).

Example: Calibration number = 29644: From the table 29644 lies between 29581 and 29700, therefore, switches 4, 9, and 10 will be set to "on".

Note: "0" means switch is on, "1" means switch is off.

(1) Front wheel mounted tone wheel:

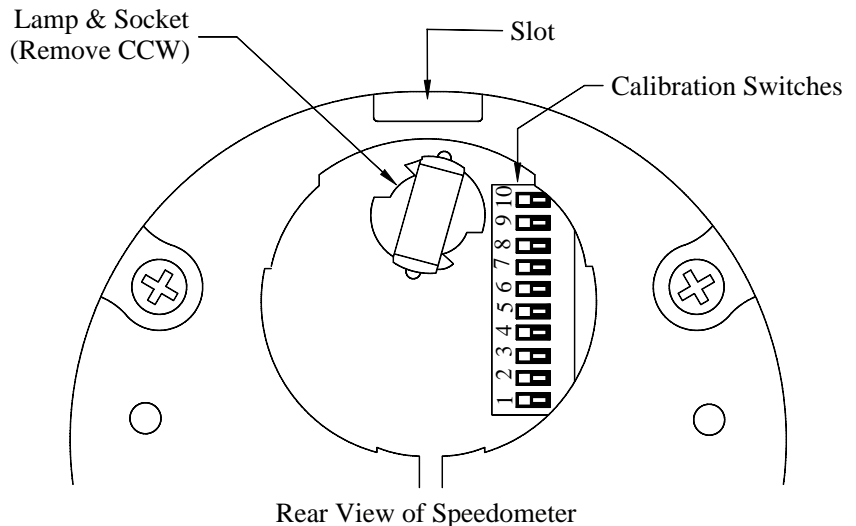
Calibration Number = Number of Slots in Tone Wheel X Tire Revs per Mile

(2) Tail Shaft mounted magnetic sensor:

Calibration Number = Tire Revs per Mile X Differential Ratio X 16

(3) Sender driven from transmission cable drive:

Calibration Number = Cable Turns Per Mile X Number of Pulses per Sender Turn



Note: For metric versions, substitute kilometers for miles in the above formulas. Multiply the resulting value by 1.621 to obtain final calibration number.

If the number of cable turns per mile (or kilometer) is not known, follow this procedure: Obtain a ratio tester and correct drive tang for your transmission. With a steel tape measure, mark off 1/10th mile (528 ft.) (or kilometer [1000 meters]) in as straight of a line as possible. Mark start and stop lines with chalk or paint. Position the vehicle so that one of the wheels aligns with the start mark. Disconnect the speedometer cable at the transmission and install the ratio tester in its place. Secure the cables and reset the ratio tester. Drive the vehicle to the stop point positioning the selected wheel on the stop mark. The reading displayed on the ratio tester is the number of cable turns per mile (or kilometer) if using an Engler "SAC-10". If using an SS White ratio tester (P/N 312-12175Y), multiply the reading by 10 to obtain the cable turns per mile (or kilometer).

Frequently Used Senders

#Pulses Per Turn

DATCON 4-D-C 71267	8 *
DIXSON SG201A, SG201A1, SG202	2 *
ENGLER 870-0588	15
ISSPRO R8970, R8940	30
KIENZLE-ARGO 8-161-237008	8 *
MOTOROLA 4-100 (7SG100), 4-111 (7SG100B)	30
ROCKWELL 240R02-001	30
SUN Model CP7643	6 *
SYNCHRO-START Minigen	30
TELEFLEX 9604276	8 *
VDO (Old Style Engler) ISSPRO 300092	4 *
ZEMCO 4710	8 *
ZEMCO 6314	5 *

*Note: These senders do not produce the minimum required number of pulses to be in calibration range when driven at 1000 turns per mile (or kilometer). It may be necessary to change your sender to one that generates more pulses per rev such as an ISSPRO R8970.

Installation: Mount the speedo in the dash panel and connect the wires as described below:

RED – Connect to ignition switched power source.

BLACK – Connect to ground and sensor wire (-)

WHITE – Connect to sensor wire. (+)

GREEN – Connect to dash lamp power.

VIOLET – 2 speed axle (no connection if not used)

(Connection to positive gives correct MPH (or KPH) reading with 0.733 axle ratio change.

A 0.680 ratio available on special factory orders.)

Installation Hints:

- 1.) When power is applied, the needle should go to mid scale then to the zero position. If it does not, there may be a bad connection in the “Hot” (red wire) or ground wire circuit. Check power to the meter by measuring with a voltmeter at the plug (meter leads on the pins that attach to the red and black wires). If there is power at the plug, the problem is in the gauge.
- 2.) Low voltage can cause inaccurate reading. If inaccuracy is suspected, measure voltage with vehicle operating and meter connected. This can be done by connecting a voltmeter to power source (i.e. fuse block, etc.) and/or piercing the red and black wire insulation with the meter leads.
- 3.) If speedo reads zero, then “jumps” to normal reading after a certain speed, adjust the sensor in closer to gear. (generators cannot be adjusted)



Odometer/Hourmeter Setting Instructions For Tachometers and Speedometers with Counter Access Slot

Access to the counter enables setting of mileage or engine hours in the field. **The user is responsible to insure that all laws and regulations are complied with when setting the odometer mileage.** Normally, mileage can only be legally set to actual vehicle mileage when replacing the speedometer or in Heavy Duty applications such as Class 8 trucks. ISSPRO is not responsible for any liabilities associated with the setting of mileage on this unit in the field. Damage caused to the speedometer or tachometer by setting the counter is NOT covered by the ISSPRO warranty.

****** Please read entire directions before starting. ******

The speedometer or tachometer is shipped with a yellow warning label covering the counter access slot. An additional label is supplied to re-cover the slot after the counter has been set. To set the counter:

1. Remove the warning label from the unit covering the slot.

For instruction purposes, setting the odometer is shown. An hourmeter should only need the numbered wheels changed.

2. Determine the mileage setting that you want to enter on the odometer. For this example, we will assume that the mileage on the speedometer that is being replaced as 45,567 miles.
3. Begin from the right side of the counter and set the 1-mile odometer wheel first. To do this, carefully slide idler gear #1 to the right (towards the tenth wheel) with a small flat blade screwdriver or similar tool. Be careful not to damage the idler or odometer wheel. Use only enough pressure to disengage the idler from the ODO wheel. When the gear has been moved far enough, it will disengage from the odometer wheel and allow you to turn the odometer wheel to the desired setting (Number 7 in this example), with another tool, such as a toothpick or a pencil. Do not allow the idler gear to turn on its shaft. Note: All of the idlers must have alternating long and short teeth lined up across the counter before and after the setting. Release the idler from the pressure applied by the screwdriver and allow it to reengage the odometer wheel teeth. Make sure that the digit that has been set is lined up correctly in the face dial window and that lower digits are aligned correctly.
4. Proceed to the left and set each odometer wheel in succession until all digits have been set. In this example, set the "7" and move to the "6", then "5", then "5", then "4". Double check to make sure that the correct mileage number is shown in the face dial window and correctly lined up. Also, check the large and small teeth of the idler gears to make sure that they have not shifted and are also lined up. You may now do a simple test to insure that the odometer will operate correctly. By viewing the unit from the front at a steep angle, a dull metal plate can be seen underneath the idler gears. If you carefully insert your small screwdriver through the slot and tap this plate several times in succession, the odometer should begin to count at each tap of the plate.
5. Make sure that no foreign objects have fallen into the unit then re-cover the access slot using the extra warning label provided.

