Instructions

T & T
Tumbleton and Twist

T&T Digital Speedometer, Order no. 10034532

Congratulations on purchasing the T&T Digital Speedometer for motorcycles, scooters and quads/ATVs. The digital speedometer has an analogue speed display from 0 to 220 km/h, a digital odometer (total mileage) and two trip counters.

The digital speedo is suitable for all types of motorcycles with a 12 V DC electrical system and battery.
The signal can be transmitted in the following ways:
1. Via the Hall generator of an original electronic speedometer (three-core lead). Please ask your dealer whether your motorcycle has a speedometer with Hall generator.
2. Via a mechanical speedometer cable, if you order an adapter separately. The speedometer cable must have a 3x3 mm square drive and a cap nut with 12x1 mm or 5/8" x 18 thread.
3. Via a suitable km/h sensor and magnets (available at www.louis.eu). The pulse pick-up can, for example, be on the hub of the front or rear wheel, on the brake disc star or on the sprocket.

Items included:
1 digital instrument with bracket plate and wiring harness
1 pushbutton with cable

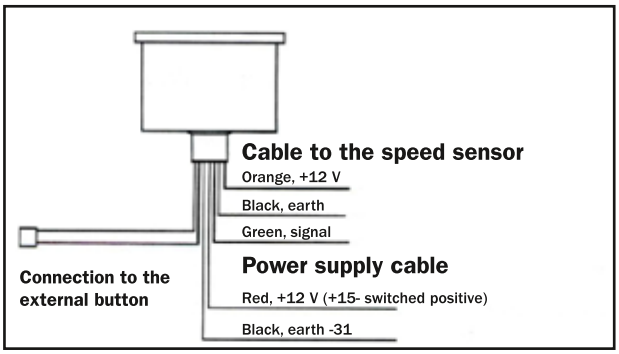
Installation:
Find a suitable position to mount the instrument on the triple tree, in the cockpit or on the handlebar. You will need to purchase a suitable clamp for handlebar mounting. Mounting on the triple tree or fork may require making an attractive bracket or using a compatible accessory from another manufacturer. Recessed mounting in the cockpit would involve making a U-shaped support and screwing it to the bottom instead of the bracket plate.
The instrument must not impede the steering lock, and should be positioned in the rider's field of view without causing any obstruction. The instrument should not be subjected to strong vibration. The connection cables must never be squashed or put under tension when the handlebar is at full lock.
The switch for programming the instrument is located on the wiring harness, and can be secured to the handlebar, close to the lamp, using a cable tie, or in the cockpit using an adhesive pad. The switch can also be concealed under the tank after programming the instrument, or it can be removed again. It must not be mounted in a location where trapped moisture may occur.

Electrical connection:
Remove the negative terminal from the battery before doing any work on the electrical system. Do not reconnect the battery until all the connections have been carefully made and checked. When connecting up to the electrical system, ensure that the connections are made properly and the terminals are securely crimped using a suitable crimping tool. Consult a workshop manual with wiring diagram for your model of motorcycle in order to connect the instrument quickly and safely.
For the power supply to the instrument, connect the red cable to the switched positive of the ignition lock, and the black cable to a negative lead of the motorcycle's wiring harness or to earth. Then connect the speedometer pulse as follows:

Pulse via Hall generator:
The Hall generator of an original electronic speedometer usually has three cables: red, white and black. Connect the red cable from the Hall generator to the orange cable of the speedometer, the black cable from the Hall generator to the black speedo cable, and the white cable from the Hall generator to the green speedo cable. It is best to use a vehicle block connector or Japanese connector (please purchase separately).

Pulse via speedometer cable adapter:
Screw the motorcycle's original speedometer cable to the adapter (optional extra) - with a brass threaded ring, it is compatible with 5/8 inch cap nuts; without a threaded ring, it is compatible with metric 12x1 mm cap nuts. Find a suitable position on the motorcycle for fixing the adapter (e.g. gusset plate, frame bracket or light mount). The speedometer cable must neither impede the steering lock nor be in contact with parts of the motorcycle that heat up (engine, exhaust, manifold). It must be routed, without kinking or tension, in a very gentle bend, and a safe distance from the wheel, brake disc and other moving parts. The adapter must be fixed. It must not hang loosely on the cable.
Then connect up by joining the cables of the same colour to each other (green/green, black/black, orange/orange) using a vehicle block connector or Japanese connector (please purchase separately). Or solder the connection and cover with heat shrink tubing for insulation.

Pulse via sensor and magnets:
You can pick up the pulse via the appropriate sensor from the Louis range and magnets on the wheel. This requires a wheel that is 18 inches or less in diameter. If your front wheel is larger than 18 inches, you would either have to use 8 magnets or connect up to the rear wheel, which is generally smaller.
Connect the red cable from the sensor to orange from the speedometer, black to black, and white from the sensor to green from the speedometer. The magnets can be fitted on the hub, the brake disc star or the sprocket. If the surface is not magnetic, the magnets can be fixed with two-component adhesive. The sensor with its fastener must be installed so that the magnets sweep past it at a distance of approx. 1-2 mm. At least four magnets, but preferably five or six, must be used with equal spacing in a centric circular arrangement. The magnets can, for example, be fitted in the hex heads of the brake disc bolts. The marked side must point outwards.



Programmierung bei Hallgeber oder Tachowellenadapter-Anschluss:
Once all the cables are correctly connected and the motorcycle is roadworthy again, you can re-connect the battery and program the speedometer. When the ignition is switched on, the instrument should illuminate, start up and zero its km/h display. Now you can start programming. A short press on the button switches back and forth between the digital displays of trip counter 1, trip counter 2 and odometer. Keep the button depressed to zero the displayed the trip counter. It is not possible to zero the odometer.
To program the speedometer to the wheel size, jack up the motorcycle so that the wheel which transmits the pulse is raised off the ground and can rotate freely. Put the speedometer into calibration mode by starting it up (ignition lock „On") and pressing the button briefly to call up the odometer display. Then depress the button until „A" appears. Keep the button depressed until 00000 appears on the number pad. Make a chalk mark on the wheel, and turn the wheel exactly 10 full revolutions. The display then shows the pulses for these 10 revolutions. Divide this value by 10, and divide the result again by the circumference of your tyre, measured in cm.

Pulses after 10 wheel revolutions, according to display: 10

Wheel circumference (in cm) = pulses per km

Example: Your tyre circumference is 119.7 cm, and after 10 full revolutions, the speedometer displays a reading of 96 pulses (9.6 pulses per revolution).
Conversion from cm to km = 1 divided by 100,000, so in our example, this means 119.7 cm ÷ 100,000 = 0.001197 km.
Pulses per km = 9.6 ÷ 0.001197
Pulses per km = 8020

If you have any questions about the product and/or these instructions, please contact our Technical Centre by fax on 00 49 (0)40 734 193-58 or by e-mail at: technikcenter@louis.de before you install or use the product. We will then be able to resolve your questions quickly. This is the best way to ensure that your product is installed properly and used correctly.

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This value must be entered as follows:

Put the speedometer into calibration mode by starting it up (ignition lock „On") and pressing the button briefly to call up the odometer display. Then depress the button until „A" appears.

Press the button again briefly – „P" appears. Then depress the button until the number pad appears for entering the pulses per kilometre, calculated using the formula given above. Enter the individual digits by pressing the button briefly once to increase each digit by one. A „long" press is required to save the correct digit and move on to the next one etc. until you have entered the complete number. When you save the last digit, the speedometer starts up again to confirm your entry. If the pulse value you have entered is only 4 digits long, as in the example above, enter a zero in the first position. Your speedometer should now be correctly programmed. Go for a test ride to check whether the display is realistic.

Note:
You can take the tyre circumference from a tyre manufacturer's

table. Or you can refer to the following table, or measure the circumference yourself with a tape measure, or measure the wheel diameter
and multiply by 3.14159.

Programming when using a km/h sensor and magnets:
Proceed as described above, but enter the number of wheel magnets (without dividing them) in the formula instead of the pulses after 10 revolutions of the wheel. The wheel does not need to be rotated with the chalk marking. Only formula results above 3000 can be entered in the instrument. Lower values come about if the wheel is too large or if too few magnets are used (see above).

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Bikes

Wheelsize	*Diameter*	*Circumference*
100/90-16	587 mm	1770 mm 0.001770 km
110/90-16	605 mm	1824 mm 0.001824 km
120/80-16	599 mm	1806 mm 0.001806 km
130/70-16	591 mm	1776 mm 0.001776 km
130/90-16	638 mm	1933 mm 0.001933 km
150/80-16	645 mm	1951 mm 0.001951 km
100/80-17	594 mm	1788 mm 0.001788 km
110/70-17	591 mm	1770 mm 0.001770 km
110/80-17	607 mm	1836 mm 0.001836 km
120/60-17	582 mm	1740 mm 0.001740 km
120/65-17	591 mm	1858 mm 0.001858 km
120/70-17	605 mm	1812 mm 0.001812 km
130/70-17	617 mm	1854 mm 0.001854 km
90/90-18	620 mm	1869 mm 0.001869 km
100/80-18	617 mm	1938 mm 0.001938 km
100/90-18	638 mm	1924 mm 0.001924 km
110/80-1	638 mm	1912 mm 0.001912 km
110/90-18	655 mm	1978 mm 0.001978 km
120/70-18	632 mm	1888 mm 0.001888 km
120/90-18	673 mm	2032 mm 0.002032 km
90/90-19	648 mm	2034 mm 0.002034 km
100/90-19	665 mm	2002 mm 0.002002 km

Scooters

Wheelsize	*Diameter*	*Circumference*
3.00-8	363 mm	1140 mm 0.001140 km
3.50-8	388 mm	1220 mm 0.001220 km
80/90-10	396 mm	1244 mm 0.001244 km
2.75-10	396 mm	1244 mm 0.001244 km
90/90-10	411 mm	1292 mm 0.001292 km
3.00-10	419 mm	1316 mm 0.001316 km
3.50-10	434 mm	1364 mm 0.001364 km
4.00-10	457 mm	1436 mm 0.001346 km
120/90	472 mm	1483 mm 0.001483 km
130/90-10	493 mm	1547 mm 0.001547 km
100/90-12	488 mm	1531 mm 0.001531 km
110/100-12	520 mm	1635 mm 0.001635 km
120/80-12	503 mm	1579 mm 0.001579 km
130/70-12	488 mm	1531 mm 0.001531 km
110/90-13	511 mm	1603 mm 0.001603 km
130/60-13	495 mm	1555 mm 0.001555 km
150/70-13	544 mm	1707 mm 0.001707 km
120/80-14	549 mm	1723 mm 0.001723 km

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Montageanleitung

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T&T Digital-Tachometer Best.Nr. 10034532

Motocross/off-road bikes

Radgröße	*Durchmesser*	*Umfang*
60x110-14	490 mm	1539 mm 0.001539 km
70x100-17	588 mm	1842 mm 0.001842 km
2.50-19	627 mm	1970 mm 0.001970 km
70/100-19	635 mm	1994 mm 0.001994 km
90/100-20	696 mm	2185 mm 0.002185 km
80/100-21	706 mm	2217 mm 0.002217 km

ATVs / quads

Radgröße	*Durchmesser*	*Umfang*
18x7-7	457 mm	1436 mm 0.001436 km
20x7-8	480 mm	1507 mm 0.001507 km
21x8-9	536 mm	1683 mm 0.001683 km
25x12-9	638 mm	2002 mm 0.002002 km
20x11-10	511 mm	1603 mm 0.001603 km
21x7-10	536 mm	1683 mm 0.001683 km
22x8-10	561 mm	1763 mm 0.001763 km
23x8-11	588 mm	1842 mm 0.001842 km
24x9-11	610 mm	1914 mm 0.001914 km
24x8-12	615 mm	1930 mm 0.001930 km
25x8-12	640 mm	2010 mm 0.002010 km
25x10-12	640 mm	2010 mm 0.002010 km

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