

MAN638

**Models 86080
and 86081**

Universal Activity Wheel Counter User's Manual



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Description

The 86080 Universal Activity Wheel Counter has been designed to take the signal from standard 86060S Optical Sensors as well as other wheel switches and convert it into an output that is recognized by the DSI Telemetry Receivers, ABET II Interfaces, AnyMaze Interfaces and other devices that can recognize an active low pulse referenced to a Vin from 6 - 30 Volts DC. A user settable DIP switch is provided to accommodate wheels that generate multiple flags or signals for each revolution to a single pulse per revolution. It is also possible to generate multiple outputs per revolution from all Lafayette Instrument Company wheels if so desired.

Specifications

- Power:** Powered through the data collection interface
- Output:** Connector: RJ-45 T-568-B
Signal: An active low output pulse
Pulse Width: 20 ms (default), 10 ms, 5 ms or 1 ms
- Dimensions:** 2.7" x 1.55" x 1.0" (6.86 x 3.94 x 2.54 cm)

Wiring Instructions

Model 86080 users simply connect the RJ-45 Cable supplied from Data Sciences International (DSI) to the output jack on the side of the counter case.

Model 86081 users connect the RJ-45 plug on the supplied cable as above. Wire the other end of the cable to a suitable input using the wiring table provided. This 5v open collector output features a diode protected 5v pull up, allowing it to work with devices providing no pull up voltage or any pull up voltage up to 30 Volts.

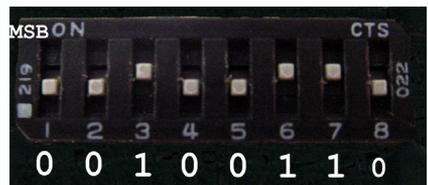
Pin #	Wire Color	Function
1	Orange w. White Stripe	GND
6	Green	Pulse Output
8	Brown	Vin (6 - 30 VDC)

Operating Instructions

Connect the wheel sensor to the 86080 counter and the cable supplied by DSI to the Data Exchange Matrix. This cable is available from DSI if needed. When using the cable supplied with the 86081 Counter package connect the stripped and tinned wires as indicated above.

Set the 8 bit DIP switch as appropriate for the wheel being used and the data collection device being connected. This switch may be found on the front of the unit. A setting of 1 might be used with a wheel using a magnetic reed switch and just one magnet on the wheel. A setting of 6 is used with all Lafayette Instrument Company Rat and Large Rodent Wheels as these wheels have six flags around their perimeter. A setting of 38 is used for all standard mouse wheels as these have 38 rungs and each rung is detected by the sensor. Users running a Miss-Step or MOSS Mouse Wheel should enter the number that corresponds with the number of rungs remaining in the wheel. The table on the next page provides all switch settings from 1 - 38. The maximum setting is 63. The two most significant bits are used to set the pulse width of the output.

The illustration shown is for a standard mouse wheel. As set, the 86080 Counter will output one 20 ms pulse per revolution. Adding up the binary value of the last 6 switches of the 8 position DIP switch add up to 38, the number of rungs in a standard mouse wheel; while the setting of the first 2 switches (in this case 00) result in a pulse width of 20 ms.



Wheel Sensor Input Selection Switch

Switch # (Bit Value)	1 (128) MSB	2 (64)	Output Pulse	3 (32)	4 (16)	5 (8)	6 (4)	7 (2)	8 (1) LSB	Counts per Rev
	0	0	20 ms	0	0	0	0	0	1	1
	0	1	10 ms	0	0	0	0	1	0	2
	1	0	5 ms	0	0	0	0	1	1	3
	1	1	1 ms	0	0	0	1	0	0	4
				0	0	0	1	0	1	5
				0	0	0	1	1	0	6
				0	0	0	1	1	1	7
				0	0	1	0	0	0	8
				0	0	1	0	0	1	9
				0	0	1	0	1	0	10
				0	0	1	0	1	1	11
				0	0	1	1	0	0	12
				0	0	1	1	0	1	13
				0	0	1	1	1	0	14
				0	0	1	1	1	1	15
				0	1	0	0	0	0	16
				0	1	0	0	0	1	17
				0	1	0	0	1	0	18
				0	1	0	0	1	1	19
				0	1	0	1	0	0	20
				0	1	0	1	0	1	21
				0	1	0	1	1	0	22
				0	1	0	1	1	1	23
				0	1	1	0	0	0	24
				0	1	1	0	0	1	25
				0	1	1	0	1	0	26
				0	1	1	0	1	1	27
				0	1	1	1	0	0	28
				0	1	1	1	0	1	29
				0	1	1	1	1	0	30
				0	1	1	1	1	1	31
	1	0	0	0	0	0	0	0	0	32
	1	0	0	0	0	0	0	1	0	33
	1	0	0	0	0	0	1	0	0	34
	1	0	0	0	0	0	1	1	0	35
	1	0	0	0	1	0	0	0	0	36
	1	0	0	0	1	0	0	1	0	37
	1	0	0	0	1	1	0	0	0	38

Chart Legend

1 = Switch ON (UP)
0 = Switch OFF (DOWN)

Blue Area

Switches 1-2 are used for setting the Output Pulse at the specified pulse width

Green Bar

Default Setting for LIC Rat & Large Rodent Wheels, Model 80850, 80850L, 80850M, 80859, 80859L

Yellow Bar

Default Setting for LIC Mouse Wheels, 80820 & 80820F

Terms and Conditions

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Phone, Fax, Email or Mail-in Orders

All orders need to be accompanied by a hard copy of your purchase order. All orders must include the following information:

- Quantity
- Part Number
- Description
- Your purchase order number or method of pre-payment
- Your tax status (include tax-exempt numbers)
- Shipping address for this order
- Billing address for the invoice we'll mail when this order is shipped
- Signature and typed name of person authorized to order these products
- Your telephone number
- Your email address
- Your FAX number

Domestic Terms

There is a \$50 minimum order. Open accounts can be extended to most recognized businesses. Net amount due 30 days from the date of shipment unless otherwise specified by us. Enclose payment with the order; charge with VISA, MasterCard, American Express, or pay COD. We must have a hard copy of your purchase order by mail, E-mail or fax. Students, individuals and private companies may call for a credit application.

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There is a \$50 minimum order. Payment must be made in advance by draft drawn on a major US bank; wire transfers to our account; charge with VISA, MasterCard, American Express, or confirmed irrevocable letter of credit. Proforma invoices will be provided upon request.

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If ordering instrumentation for use outside the USA, please specify the country of ultimate destination, as well as the power requirements (110V/60Hz or 220V/50Hz). Some model numbers for 220V/50Hz will have a "C" suffix.

Quotations

Quotations are supplied upon request. Written quotations will include the price of goods, cost of shipping and handling, if requested, and estimated delivery time frame. Quotations are good for 30 days, unless otherwise noted. Following that time, prices are subject to change and will be re-quoted at your request.

Cancellations

Orders for custom products, custom assemblies or instruments built to customer specifications will be subject to a cancellation penalty of 100%. Payment for up to 100% of the invoice value of custom products may be required in advance. Cancellation for a standard Lafayette Instrument manufactured product once the product has been shipped will normally be assessed a charge of 25% of the invoice value, plus shipping charges. Resell items, like custom products, will be subject to a cancellation penalty of 100%.

Exchanges and Refunds

Please see the cancellation penalty as described above. No item may be returned without prior authorization of Lafayette Instrument Company and a completed Return Form. A copy of the Return Form or your assigned Return # (you will receive this via email after submitting the form) must be included with the returned goods. The merchandise should be packed well and fully insured. Unopened merchandise may be returned prepaid within thirty (30) days after receipt of the item and in the original shipping carton. Collect shipments will not be accepted. Returned products must be in saleable condition, and credit is subject to inspection of the merchandise.

Repairs

Instrumentation may not be returned without prior authorization by Lafayette Instrument Company and a completed Return Form. When you

complete the Form, or call Lafayette Instrument, you will receive a Return #. Your Return # number will be good for 30 days. Address the shipment to:

Lafayette Instrument Company
3700 Sagamore Parkway North
Lafayette, IN 47904, USA.

Shipments cannot be received at the LIC PO Box. Items should be packed well, insured for full value, and returned along with a copy of the Return Form or the Return #. An estimate of repair will be given prior to completion ONLY if requested in an enclosed cover letter. We must have a completed purchase order by mail or fax, or repair work cannot commence for non-warranty repairs.

Damaged Goods

Damaged instrumentation should not be returned to Lafayette Instrument prior to a thorough inspection. If a shipment arrives damaged, note damage on delivery bill and have the driver sign it to acknowledge the damage. Contact the delivery service, and they will file an insurance claim. If damage is not detected at the time of delivery, contact the carrier/shipper and request an inspection within 10 days of the original delivery. Please call the Lafayette Instrument Customer Service Department for repair or replacement of the damaged merchandise.

Limited Warranty

Lafayette Instrument Company warrants equipment manufactured by the company to be free of defects in material and workmanship for a period of one year from the date of shipment, except as provided hereinafter. The original manufacturer's warranty will be honored by Lafayette Instrument for items not manufactured by Lafayette Instrument Company, i.e. resell items. This assumes normal usage under commonly accepted operating parameters and excludes consumable products.

Warranty period for repairs or used instrumentation purchased from Lafayette Instrument is 90 days. Lafayette Instrument Company agrees either to repair or replace, at its sole option and free of part charges to the customer, instrumentation which, under proper and normal conditions of use, proves to be defective within the warranty period. Warranty for any parts of such repaired or replaced instrumentation shall be covered under the same limited warranty and shall have a warranty period of 90 days from the date of shipment or the remainder of the original warranty period whichever is greater. This warranty and remedy are given expressly and in lieu of all other warranties, expressed or implied, of merchantability or fitness for a particular purpose and constitutes the only warranty made by Lafayette Instrument Company.

Lafayette Instrument Company neither assumes nor authorizes any person to assume for it any other liability in connection with the sale, installation, service or use of its instrumentation. Lafayette Instrument Company shall have no liability whatsoever for special, consequential, or punitive damages of any kind from any cause arising out of the sale, installation, service or use of its instrumentation. All products manufactured by Lafayette Instrument Company are tested and inspected prior to shipment. Upon prompt notification by the Customer, Lafayette Instrument Company will correct any defect in warranted equipment of its manufacture either, at its option, by return of the item to the factory, or shipment of a repaired or replacement part. Lafayette Instrument Company will not be obliged, however, to replace or repair any piece of equipment, which has been abused, improperly installed, altered, damaged, or repaired by others. Defects in equipment do not include decomposition, wear, or damage by chemical action or corrosion, or damage incurred during shipment.

Limited Obligations Covered by this Warranty

1. In the case of instruments not of Lafayette Instrument Company manufacture, the original manufacturer's warranty applies.
2. Shipping charges under warranty are covered only in one direction. The customer is responsible for shipping charges to the factory if return of the part is required.
3. This warranty does not cover damage to components due to improper installation by the customer.
4. Consumable and/or expendable items, including but not limited to electrodes, lights, batteries, fuses, O-rings, gaskets, and tubing, are excluded from warranty.
5. Failure by the customer to perform normal and reasonable maintenance on instruments will void warranty claims.
6. If the original invoice for the instrument is issued to a company that is not the company of the end user, and not an authorized Lafayette Instrument Company distributor, then all requests for warranty must be processed through the company that sold the product to the end user, and not directly to Lafayette Instrument Company.

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