

TRIMEC UM UTILITY FLOWMETER

Versatile low cost flowmeter.

Primary Features:

- ◆ Economical.
- ◆ Integral strainer.
- ◆ Dual pulse outputs.
- ◆ Suitable for pumped or gravity flow.
- ◆ Suitable for water, diesel fuels and low viscosity insecticides and fertilizers.
- ◆ Wide turndown.
- ◆ Integral electronic options provide rate/total or batching.



UM Utility Flowmeter - with options

Packaged assembly

General Specifications

Brass body with 3/4" NPT or BSP connections.

Flow 1~70 l/min (0.3~18 USgal/min).

0.3~10 bar (4~150PSI) working pressure.

Process temp. up to 90°C.

Integral flow conditioning & strainer.

Accuracy better than +/-1.5% of rate.

Reed switch & Hall Effect outputs, Std.

Nominal output 30 PPL (115 P/USgal).

MODEL	DESCRIPTION	PRICE
Utility meter combinations.		
UM020B#	Blind meter with reed switch and hall effect outputs.	\$895.00
UM020B#-B2	Meter with BT11 dual totaliser with scaleable pulse output.	\$1455.00
UM020B#-B3	Meter with I.S. intrinsically safe BT11 totaliser.	\$1560.00
UM020B#-R2	Meter with RT12 rate totaliser with 4~20mA, scaleable pulse, alarm outputs, dual flow inputs.	\$2195.00
UM020B#-R3	Meter with I.S. intrinsically safe RT12 totaliser.	\$2305.00
UM020B#-EO	Meter with 24Vdc powered echobatch one or two stage batch controller.	\$2270.00

Overview

The UM series is specifically engineered for the most common of liquid transfer applications within industrial plants, mining sites, automotive service centers and refueling installations.

Monitoring or controlling the movements of small to medium volumes of water, diesel fuels and other low viscosity liquids under pumped or gravity conditions in small pipe sizes is widespread.

The UM flowmeter provides a cost effective solution to the traceability of disbursed liquids.



Simple construction

A single impeller is rotated by the flow, magnets within the impeller activate the electronic outputs (reed switch and solid state Hall Effect).

An integral strainer also serves as a flow conditioner allowing the meter to be located in restricted piping arrangements.

The UM meter is not limited to clean liquids, the impeller concept will tolerate Liquids bearing a degree of suspended particles which may pass the strainer.

Blind or with Flow Rate Totaliser option

UM is available as a "blind" flowmeter (pulse output only) or can be supplied fitted with the self powered RT series flow rate totaliser.

The RT series provides instantaneous readings of flow rate, accumulative total & a resettable total.

When powered from an external supply the RT will provide 4~20mA output, high & low flow alarms and a scaleable pulse output.

Optional Rate Totaliser features:

Large 8 digit LCD self powered display.

Extended battery life beyond 10 years.

Robust IP66 (NEMA4X) alloy enclosure.

Displays rate, accum. & resettable totals.

Alphanumeric prompts with sub-script text.

Optional backlit LCD display.

Non-volatile memory.



TRIMEC DUALPULSE

Insertion flow transducer.

Stainless steel insertion flow transducer with two independent pulse outputs.

Velocity range: 0.3~10 metres/second.
 Protection: IP68 Submersible.
 Pressure: 80 bar (1500 PSI) max.
 Temperature: Standard: -40~100°C (3 options available up to 200°C).
 Cable length: 3 metres of screened 5 core as standard.
 Material:

Body: 316L SS.
 Rotor shaft: 316L SS.
 O-ring: viton.
 Rotor: PEEK with graphite PTFE impregnated bearing.
 Outputs standard: Transmission to 1000m max.
 Output 1: Voltage pulse self generated, 1.5V x 10µ/sec.
 (2 wire) 220~240 Hz max.
 Output 2: Open collector NPN, 5~24Vdc square wave.
 (3 wire) 220~240 Hz max.



Wide application

Typical industry applications include:
 Hot and chilled water.
 Fire system.
 Thermal energy monitoring.
 Water treatment and reticulation.
 Chlorination.
 Chemical injection systems.
 Boiler feed water.
 Steam condensate.
 Batching systems.

MODEL	DESCRIPTION	PRICE
DP490	Stainless steel insertion flow transducer . Pipe sizes: 40~900mm. (1.5~36") Process connection: 1.5" BSPT (G1.5) or NPT. Flow range: 0.25~6300 litres/second. (4~99600 US gall/min)	\$1135.00
	OPTIONS	Add price
	High temperature: 125°C. c/w term box. 150°C. c/w term box. NPN output only. -60~200°C. c/w term box. Voltage pulse only. Includes IS output.	\$365.00 \$365.00 \$1430.00
	Output type: Reed switch output only. (For use with an IS barrier in hazardous areas). Non magnetic rotor. NPN output. (For liquids with ferrous impurities). Intrinsically safe. Coil output. c/w term box.	N/C \$35.00 \$1065.00
DP525	Stainless steel insertion flow transducer. Suitable for hot tap installations. Pipe sizes: 50~2500mm. (2~100") Process connection: 2" BSPT (G2) or NPT. Flow range: 0.4~49000 litres/second. (6~780000 US gall/min).	\$1315.00
	OPTIONS	Add price
	High temperature: 125°C. c/w term box. 150°C. c/w term box. NPN output only. -60~200°C. c/w term box. voltage pulse. Includes IS output.	\$495.00 \$495.00 \$2073.00
	Output type: Reed switch output only. (For use with an IS barrier in hazardous areas). Non magnetic rotor. NPN output. (For liquids with ferrous impurities). Intrinsically safe. Coil output. c/w term box.	N/C \$35.00 \$1065.00



Construction

A durable peek rotor with a graphite-PTFE impregnated peek bearing rotates around a 3mm diameter 316SS shaft to promote longevity. The body is all 316L stainless steel.

The unique metering head and aerofoil shaped rotor is designed to extend the linear measuring range to cover flow velocities from 0.2~10m/sec.

TRIMEC Micropulse/Multipulse/Maxipulse Gear

Positive Displacement Flowmeters.

Operating temperature:	-10~120°C.
Repeatability:	typically ±0.03%.
Protection:	IP66/67 (NEMA4X), optional Exd IIB T6 or I.S.
Reed switch output:	30V dc x 200mA max.
Hall effect output:	3 wire open collector, 5~24Vdc max., 20mA max.
Control outputs:	two 1A NPN open collectors, 24Vdc max. two SPDT 5A relays (with ac & DIN powered versions).
Electrical connection:	M20 x 1.5mm or ½” NPT female threaded .

The Micropulse range of positive displacement flowmeters offer a high level of accuracy & repeatability. These precision meters are used for flow rate measurement in flow monitoring and control applications and for totalising in dispensing and batching. Micropulse meters are suitable for use with a wide range of clean liquids including viscous lubricants, chemicals, food bases and non-conductive low viscosity solvents either pumped or gravity fed.

Meter selection:

Meters are selected based on flow range, pressure, temperature, material compatibility and functionality. **Aluminium** Multipulse meters are ideal for petroleum products including oils and grease, fuels and fuel oils. **Stainless steel** meters are suited for chemicals, water based products and the food, cosmetic and pharmaceutical industries. **Multipulse** meters are available as blind meters with pulse output or with integral or remote totalisers, flow rate displays or preset batch controllers. These instruments provide a local LCD display, monitoring and control outputs including 4~20mA, scaled pulse, flow alarms outputs or batch control. **Pulse meters** outputs can be interfaced to most electronic displays or instrumentation. The reed switch is used when external power is not available and can be used in intrinsically safe loops. The output from the hall sensor is an NPN open collector providing high speed solid state pulses ideal for precise dispensing and batch control.



Micropulse



Multipulse



Maxipulse

Common Features:

- ◆ High accuracy & repeatability, direct reading flowmeter.
- ◆ No requirement for flow conditioning (straight pipe runs etc).
- ◆ Simple to install, easy to service (low number of parts).
- ◆ Stainless steel or aluminium models.
- ◆ Measures high & low viscosity liquids.
- ◆ Measures conductive & non-conductive clean liquids.
- ◆ Available with a variety of outputs and functions.
- ◆ Intrinsically safe & explosion proof models available.
- ◆ Quadrature pulse output option & bi-directional flow.

MODEL	DESCRIPTION	PRICE
MG006	Micropulse Gear - Small Capacity. Accuracy @ 3cp: ±1%. Max pressure: Aluminium = 15 bar. 316SS = 34 bar. Recommended filtering: 75 micron minimum. Flow range: 2~100 litres/hr. Nominal size: 6mm. Output pulse resolution: Reed switch: 2100 pulses/litre. Hall effect: 2100 pulses/litre.	
MG006A	Body: Aluminium ¼” BSP.	\$958.00
MG006S	Body: 316 stainless steel ¼” BSP.	\$1205.00
MG008	Flow range: 15~550 litres/hr. Nominal size: 8mm. Output pulse resolution: nominal. Reed switch: 2100 pulses/litre. Hall effect: 2100 pulses/litre.	
MG008A	Body: Aluminium 3/8” BSP.	\$1040.00
MG008S	Body: 316 stainless steel 3/8” BSP.	\$1305.00
Micro Option	High pressure 316 stainless steel. Max pressure = 400 bar.	POA
MG025A	Multipulse Gear - Medium Capacity. Accuracy @ 3cp: ±0.5%. Recommended filtering: 250 micron minimum. Flow range: 10~150 litres/min. Nominal size: 25mm. Output pulse resolution: nominal. Reed switch: 27 pulses/litre. Hall effect: 107 pulses/litre. Quadrature Hall option: 54 pulses/litre quad.	
MG025A	Body: Aluminium 1” BSP.	\$1793.00
MG025S	Max pressure: 68 bar. Body: 316 stainless steel 1” BSP.	\$3765.00
MG025S	Max pressure: 100 bar.	
MG80HA	Maxipulse Gear - Large Capacity. Accuracy @ 3cp: ±0.5%. Body: Aluminium. Recommended filtering: 350 micron minimum. Flow range: 50~1000 litres/min 4” BSP. Max pressure: 12 bar. Nominal size: 80mm. Output pulse resolution: Reed switch: 1.5 pulses/litre. Hall effect: 6 pulses/litre. Quadrature Hall option: 3 pulses/litre quad.	
MG80HA		\$7520.00
MG100A	Flow range: 75~1500 litres/min 4” BSP. Max pressure: 10 bar. Nominal size: 100mm. Output pulse resolution: nominal. Reed switch: 1.1 pulses/litre. Hall effect: 4.4 pulses/litre. Quadrature Hall option: 2.1 pulses/litre quad.	
MG100A		\$9590.00
ALL Options	Optional functions and/or outputs (with RT, BT & EB instruments).	POA

Battery totaliser

Features:

- ◆ Self powered, 8 digit LCD cumulative totaliser and large 5 digit resettable total.
- ◆ Robust field mountable housing with protection cover as standard.
- ◆ Simple flow chart touch key programming.
- ◆ Scaleable universal pulse inputs.
- ◆ PIN protected programming.
- ◆ IP66 Weatherproof (*NEMA 4X*).
- ◆ Intrinsically safe design.
- ◆ Pre-amplified pulse output.
- ◆ Long battery life.
- ◆ Reverse polarity protection.

TRIMEC BT SERIES

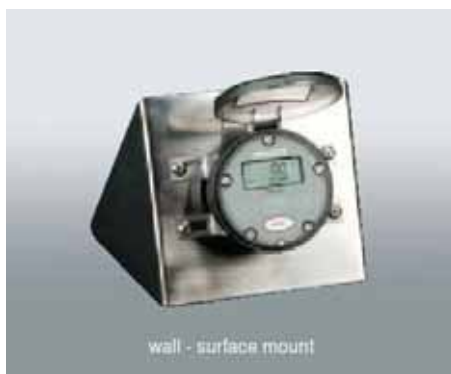
Battery Totaliser.



Display: Alpha numeric LCD characters.
 Resettable total: 5 digit x 7.5mm high, programmable to 3 decimal places.
 Accumulated total: 8 digit x 3.6mm high, programmable to 3 decimal places.
 Engineering units: litres, Mlitres, gallons, Mgallons.
 displayed: m3, lbs, kgs or no engineering units displayed.
 Input types: reed switch, open collector, coil (*15mV P~P min.*), namur & other proximities.
 Max. input frequencies: coil 5Khz, hall 2.5Khz, namur 250hz.
 Pulse Outputs: NPN/PNP selectable, non-scaleable (*5Khz max.*) or scaleable (*50hz max.*), auto-ranging pulse width : 1000 / (hz x 2) = milliseconds, 300m/sec. max.
 Enclosure: Glass reinforced nylon, IP66 (*NEMA 4X*).
 Power source: 1 x 3.6V lithium battery, can last to 10 yrs.
 External powering: 8~24Vdc (*drives scaleable pulse output*).
 Options (*require 8~24Vdc*): scaleable pulse output, LCD backlighting.
 Temperature: -10~60°C.

MODEL	DESCRIPTION	PRICE
BT11	Battery Totaliser. Dual totaliser with scaleable pulse output.	\$565.00
Options	Include a range of mounting kits.	POA

BT Series Battery Totaliser Display Screens:



TRIMEC RT100 SERIES

Flow rate totaliser.



Scaleable Pulse Output

A selectable NPN or PNP transistor output with variable pulse width is provided to ensure compatibility with commonly used PLC inputs, counters and metering pumps. The default width of 300ms (frequency permitting) enables most PLC's to successfully scan the incoming pulses with standard input circuits, avoiding the need for, and additional cost of high speed counter inputs.

Loop powered 4~20mA output

An optional high resolution analogue output enables transmission of the instantaneous flowrate. The output reflects any linearisation that may be programmed.

Flow Alarm Outputs

Optional NPN or PNP selectable low and high flowrate alarms have independently adjustable deadbands to provide application flexibility and enable connection to commonly used devices.

Display:	8 digit alphanumeric, 9mm character height displays: * 8 digit total (resettable). * 8 digit accumulated total. * 5 digit instantaneous flow rate. * programming prompts and messages.
Input:	Pulse/frequency. Reed switch, open collector, Namur and sine wave with 20mV min P-P voltage (typical of turbine coils). Dual inputs, A+B, A-B or A÷B. 4~20mA analogue input.
Input Hz range:	0~5kHz. (rate display min 0.25Hz).
K-factor range:	0.001~999999.999. (floating decimal point during K-factor entry).
Rate time base:	Selectable as units per second, minute, hour or day.
Power supply:	* Self powered by lithium batteries. * External via reg. 8~24Vdc. * Optionally via the 4~20mA output loop.
Pulse output:	Scaleable NPN/PNP selectable, transistor. 100mA resistive load. Auto ranging pulse width with 1:1 ratio, defaulting to a min of 300ms.
Alarm output:	Two NPN/PNP selectable, transistor outputs, low and high flow alarms with adjustable deadband, 100mA resistive load.
Analogue output:	4~20mA 2 wire loop powered. 12~24Vdc. (750 ohms @ 24Vdc).
Enclosure:	Powder coated aluminium, IP67.
Temperature:	-20~80°C.

MODEL	DESCRIPTION	PRICE
RT-FM	Universal flow rate totaliser. Field Mount. Pulse/frequency input. 2 wire 4~20mA loop powered, flow alarms and dual input.	\$1305.00
RT-PM	Universal flow rate totaliser. Panel Mount. Pulse/frequency input. Panel mount AC or DC supply c/w 2 SPDT SA relays.	\$1795.00

Overview

The RT100 flowrate totaliser has been specifically designed to operate with common pulse producing flowmeters such as positive displacement, turbine and paddle-wheel sensors, without the need for external power. All data is retained in the event of power loss or battery removal. Ultra low power consumption provides many years of service from replaceable lithium batteries. External power may be applied to interface with common controllers such as PLC's via the scaleable pulse output and/or optional analogue output. Multipoint linearity correction of the flowmeter input is available to enhance accuracy and extend flow sensor rangeability. Flexibility of wall or pipe mounting via optional stainless steel brackets. Direct on meter and panel mounting versions are available.



Simple Programming

Simple flow chart programming with English prompts enables the user to configure the RT100 with ease. Once in program mode the scrolling prompts guide you through the entire programming routine greatly reducing the need to refer to the manual. The RT100 is fully user programmable and has selectable PIN protection for security.

Positive displacement flowmeter



- ◆ Metered liquids range from non conductive low viscosity solvents through to extremely viscous lubricants, chemicals and food bases.
- ◆ No stagnate chambers to harbour contaminants.
- ◆ No restrictions on mounting orientation and the flowmeter may be operated under vacuum flow, pumped flow or gravity flow conditions.
- ◆ Particularly suited to batching and dispensing duties.
- ◆ Meter performance is independent of flow profile eliminating the need for straight pipe runs.
- ◆ Multipulse flowmeter utilise the oscillating piston design principle. The only moving part.
- ◆ Intrinsically Safe = Reed switch output (without Hall device fitted) + approved intrinsically safe barrier.



APPLICATIONS:

316L Stainless Steel		Aluminium
Alcohols	Margarine	Gasoline
Acetic acid	Mayonaise	Fuel oils
Caustic soda	Molasses	Ketones
Ethanol	PVA glue	Lube oils
Fuel additives	Resin	Greases
Glucose	Tallow	Solvents
Hexane	Urethane	
Insecticides	Water	
Latex	Xylene	
Liquid sugar	Yeast	
UPVC		
Specialist applications		
Sodium hypochlorite		
Photographic solutions		

TRIMEC MULTIPULSE

Positive displacement flowmeter.

Positive displacement flowmeter with two independent pulse output signals which are linearly proportional to volumetric flow rate.

Materials:

Body: manifold and terminal cover: 316L SS, Aluminium or UPVC.
 Piston: PEEK – polyetheretherketone (standard) or optional carbon filled teflon.
 O-ring: Viton (standard) or optional EPDM, teflon or Buna-N (nitrile).
 Partition: 316L SS (standard) or optional Ceramic (for non-lubricating liquids).

Temperature: a. -40~60°C. (UPVC meters, max 40°C).
 b. +10~120°C.
 c. +60~150°C (output 2 only).

Accuracy: ±0.5% of rate.
 Reed switch output: 30Vdc max. voltage / 20mA max current.
 Square wave output: 5~24Vdc / 20mA max. 3 wire NPN open collector.
 Protection: IP67. - Optional, Ex d IIB T6 (Class 1, Division 1).

Output 1: Reed switch output. Voltage free contact closure.
 The reed switch is classed as a 'simple device' and can be used in hazardous areas when connected via an approved intrinsically safe barrier.

Output 2: Square wave output.
 An open collector pulse output produced by a solid state Hall Effect device. This three wire device requires 5~24Vdc excitation voltage and produces a high resolution NPN square wave conditioned output.

MODEL	DESCRIPTION			PRICE
MP15S	Material:	316L SS.	100 bar max.	\$2460.00
MP15A	Material:	Aluminium.	30 bar max.	\$1280.00
MP15H	Material:	316L SS.	350 bar max.	\$3410.00
	Size:	15mm.	½" BSPP.	
	Flow range:	10~500 litres/hour.		
	Output:	Reed switch.	200 pulses/litre.	
		Square wave.	400 pulses/litre.	
MP25S	Material:	316L SS.	100 bar max.	\$3030.00
MP25A	Material:	Aluminium.	80 bar max.	\$1700.00
MP25H	Material:	316L SS.	200 bar max.	\$3850.00
MP20P	Material:	UPVC.	4 bar max.	\$3030.00
	Size:	25mm.	1" BSPP.	
	Flow range:	120~3000 litres/hour.		
	Output:	Reed switch.	20 pulses/litre.	
		Square wave.	100 pulses/litre.	
MP40S	Material:	316L SS.	100 bar max.	\$4935.00
MP40A	Material:	Aluminium.	80 bar max.	\$3370.00
MP40H	Material:	316L SS.	250 bar max.	\$5635.00
	Size:	40mm.	1½" BSPP.	
	Flow range:	250~8000 litres/hour.		
	Output:	Reed switch.	7.3 pulses/litre.	
		Square wave.	44 pulses/litre.	
MP50S	Material:	316L SS.	38 bar max.	\$6785.00
MP50A	Material:	Aluminium.	20 bar max.	\$4085.00
	Size:	50mm.	2" BSPP.	
	Flow range:	700~20000 litres/hour.		
	Output:	Reed switch.	2.5 pulses/litre.	
		Square wave.	20 pulses/litre.	
OPTIONS				
For process connections of: NPT, Tri-clamp, Flanges.				POA
Integrally mounted electronic register: RT12-1DO Flowrate totaliser, Loop powered, pulse out and alarms.				\$1413.00
Note: These must be remotely mounted if the operating temperature exceeds 80°C.				

TRIMEC TURBOPULSE

Turbine flowmeter.

Turbine flowmeters are precise, reliable and rugged units for the volumetric flow measurement of clean low viscosity liquids in the petrochemical, pharmaceutical, food processing and general industrial applications.

Materials:

Body: 304 SS, (316 SS optional).
Bearings: Tungsten carbide sleeve.

Temperature: -50~150°C, (-50~240°C optional).
Pressure: 250 bar max for threaded units. Flanged units to ruling.
Pressure drop: Approx 0.28 bar at max flow. (SG=1, viscosity=1 cSt).
Linearity: ±0.5% over 10:1 turndown.
Viscosity: 10 cSt recommended maximum to maintain linear range.
Output: Pulse. Reluctance type pick-off coil. Second pick-off optional. (20mV P/P min), max 50m transmission.



Shown with a RT100 Series Rate Totaliser fitted

MODEL	DESCRIPTION	PRICE
TP010	Meter size: 15mm. Process connection: 0.5" BSP. Flow range: 0.11~1.1 m ³ /hr.	\$2510.00
TP012	Meter size: 20mm. Process connection: 0.75" BSP. Flow range: 0.22~2.2 m ³ /hr.	\$2510.00
TP015	Meter size: 20mm. Process connection: 0.75" BSP. Flow range: 0.4~4 m ³ /hr.	\$2510.00
TP020	Meter size: 20mm. Process connection: 0.75" BSP. Flow range: 0.8~8 m ³ /hr.	\$2510.00
TP025	Meter size: 25mm. Process connection: 1" BSP.. Flow range: 1.6~16 m ³ /hr.	\$2635.00
TP040	Meter size: 40mm. Process connection: 1.5" BSP. Flow range: 3.4~34 m ³ /hr.	\$3020.00
TP050	Meter size: 50mm. Process connection: 2" BSP. Flow range: 6.8~68 m ³ /hr.	\$3343.00

The following meters are flanged units. Further information on request.

TP080	80mm.	13.5~135 m ³ /hr.	POA
TP100	100mm.	27~270 m ³ /hr.	
TP150	150mm.	55~550 m ³ /hr.	
TP200	200mm.	110~1100 m ³ /hr.	
TP250	250mm.	190~1900 m ³ /hr.	
TP300	300mm.	270~2700 m ³ /hr.	
TP400	400mm.	400~4000 m ³ /hr.	
TP500	500mm.	700~7000 m ³ /hr.	

Hygienic models.

The design allows the meter to be in-line cleaned and sterilised by chemical methods.

Sizes 012 to 080 can have Tri-clamp hygienic ferrules.

POA

Strainers

It is recommended that Y type strainers are fitted in line to the smaller size meters (15 to 50mm) to provide mechanical protection to the measuring elements.

Overview

Turbopulse turbine flowmeters are precise, reliable and robust units for the volumetric flow measurement of clean low viscosity liquids.

Stainless steel construction with tungsten carbide bearings provides long life with a wide range of aggressive and non-lubricating liquids in petrochemical and general industrial applications.

Fifteen sizes cover flows from 0.11 to 7000 m³/hr. with ±0.5% linearity.

Enhanced linearity is available in larger sizes where custody transfer performance is required.

The standard pick-off coil is supplied with either a military style plug or a junction box with terminal strip. Integral preamplifiers are available for harsh environments, to extend transmission distance or to interface with secondary instruments that require a conditioned signal input.

An integral RT100 series flowrate totaliser is optionally available to provide local indication with 4~20mA and Hi/Lo flow alarm outputs and/or scaleable pulse output.



Calibration

Sizes 25mm (1") and larger are calibrated on positive displacement prover loops in accordance with current API standards.

For each meter size calibration is performed at five points across the nominal flow range to ensure optimum performance in every application.