

TrueShot

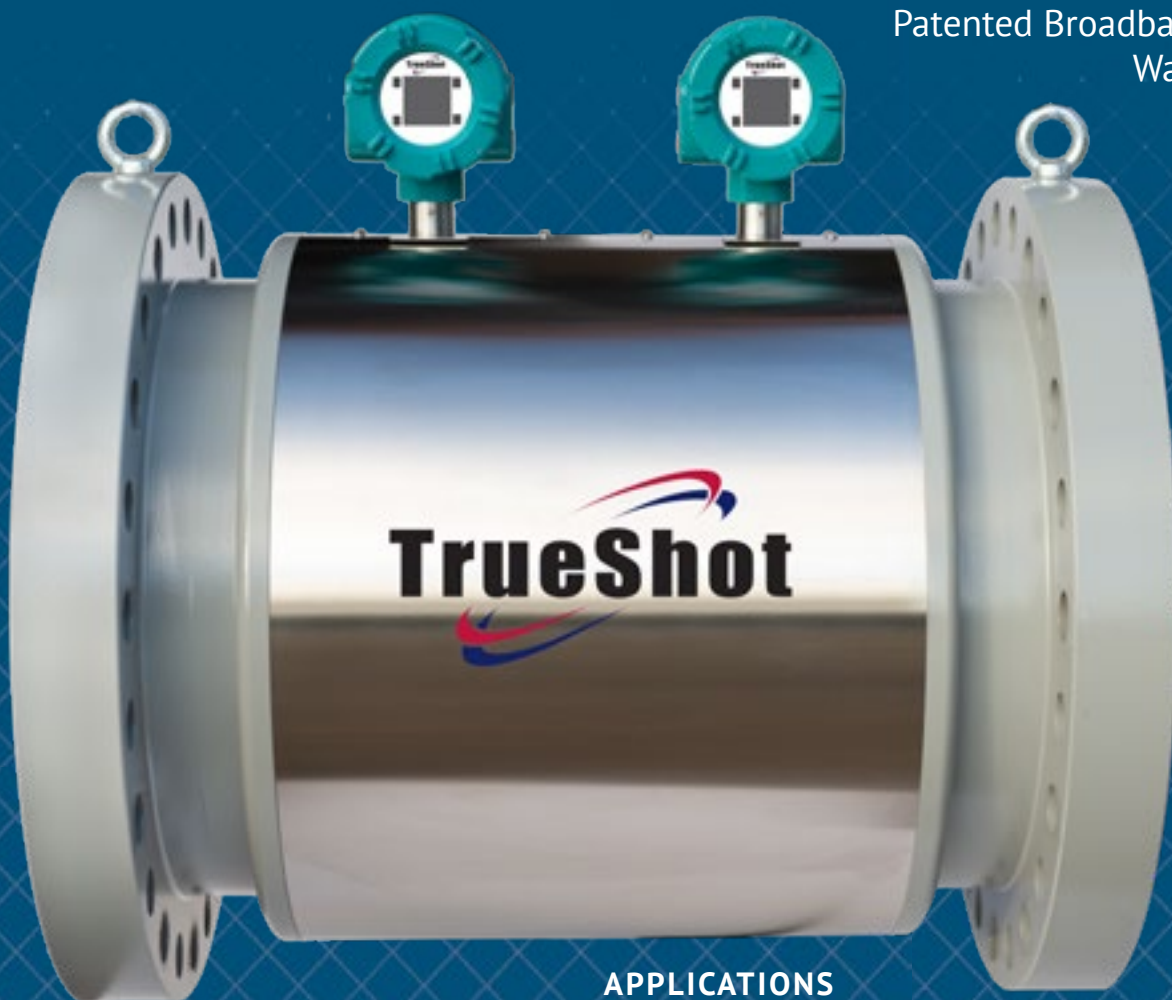
ULTRASONIC METERS

Transus
Instruments

UIM-4F DUO

Two Independent
Accurate Custody Transfer
Measurements in a
Single Flowmeter Body

Patented Broadband Continuous
Wave Technology



APPLICATIONS

- Custody Transfer Metering of Natural Gas and other Gasses
- Allocation Metering



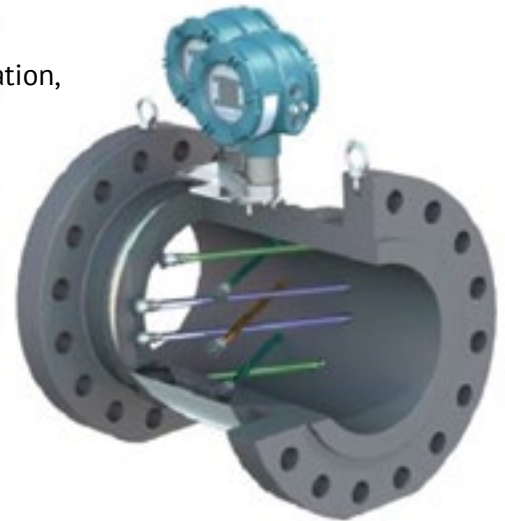
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FEATURES

UIM SERIES: UIM-4F DUO

- Two independent accurate custody transfer flow measurements in a single flowmeter body.
- Primary flow measurement uses the highly accurate UIM-4F four path chordal configuration, meeting AGA-9 and OIML R137 (class 0.5) international standards for custody transfer metering.
- Secondary flow measurement uses the UIM-3F three path chordal configuration, also highly accurate, and meeting AGA-9.
- Available in sizes from 8" and larger and flange ratings up to 900#.
- Each meter has the full range of versatile I/O of the UIM-4F and UIM-3F flowmeters, including optional pressure and temperature sensors for PTZ compensation.
- Retraction tool available for removal and replacement of transducers under pressure.
- A space saving compact package compared to installing a second meter for verification. Smaller skid sizes and lower installation costs.
- The four path primary measurement and three path secondary measurement ensure that common problems are detected. Two identical path configurations can miss common mode issues such as pipe blockage.
- Two custody transfer measurements ensure that false alarms are avoided, as is often a problem when using sensitive one or two path secondary measurements.



BENEFITS

- The combination of cutting edge electronic processing, rugged and powerful transducers and international certifications result in the optimum solution for custody transfer gas measurement conditions.
- Highly accurate custody transfer flow measurement with continuous verification by the secondary measurement.
- Simultaneous transmission and fast response provide reliability and accuracy in the most challenging flow regimes and pulsating flow conditions.
- TIMCare® software provides extensive diagnostic information to determine the "health" of the flow system, including blockages, dirt build-up and up-stream disturbances.
- On-board diagnostics and flow readings may also be accessed using the LCD and keypad.
- Complete intrinsic safety means there are no restrictions accessing the display/keypad even in hazardous areas.
- Full intrinsic safety also reduces wiring costs and installation costs and greatly simplifies field maintenance.



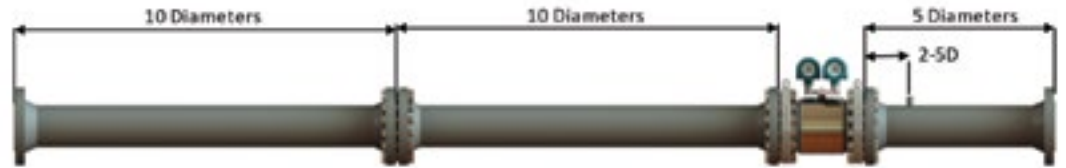
FLOW RANGES

UIM SERIES: UIM-4F DUO

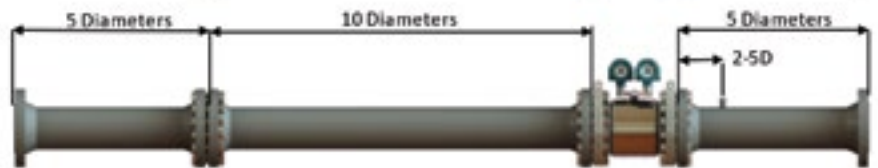
Nominal Size	Schedule	Internal diameter [mm]	Internal diameter [inch]	Flow [m ³ /hr]			Flow [CFH]			Turndown
				Q _{max}	Q _t	Q _{min}	Q _{max}	Q _t	Q _{min}	
8" / DN200	40	202.7	7.981	3490	349	27	123.100	12.310	950	130
	80	193.7	7.625	3190	319	25	112.370	11.237	870	128
10" / DN250	40	254.5	10.020	5500	550	43	194.100	19.410	1.490	128
	80	242.9	9.562	5100	510	39	176.700	17.670	1.360	131
12" / DN300	STD	304.7	11.938	7900	790	61	278.200	27.820	2.140	130
	80	289.0	11.376	7100	710	55	250.200	25.020	1.920	130
14" / DN350	STD	336.5	13.126	9700	970	74	339.200	33.920	2.610	132
	80	317.5	12.500	8600	860	66	302.000	30.200	2.320	131
16" / DN400	STD	387.3	15.250	12800	1280	98	449.500	44.950	3.450	131
	80	363.5	14.314	11300	1130	86	395.900	39.590	3.040	132
18" / DN450	STD	437.9	17.250	16300	1630	125	574.600	57.460	4.410	131
	80	409.3	14.124	14300	1430	109	502.000	50.200	3.850	132
20" / DN500	XS	482.6	19.250	19800	1980	152	697.700	69.770	5.350	131
	80	455.6	17.974	17700	1770	136	621.900	62.190	4.770	131
24" / DN600	XS	584.6	23.250	28100	2810	223	989.700	98.970	7.850	127
	80	547.7	21.562	24600	2460	196	868.800	86.880	6.890	126
30" / DN750	30	730.2	28.750	42300	4230	347	1.490.900	149.090	12.250	122
	wt. = 35	692.0	27.244	38000	3800	312	1.338.900	133.890	11.000	122
36" / DN900	30	882.2	28.750	61700	6170	507	2.176.000	217.600	17.880	122
	wt. = 35	844.0	33.244	56400	5640	464	1.991.600	199.160	16.360	122

* Actual flowrange may vary depending on application
Refer to OIML or MID certificates for approved flowranges

CONFIGURATION 1
Conservative configuration with flow conditioner



CONFIGURATION 2
Recommended configuration with flow conditioner



CONFIGURATION 3
Recommended configuration without flow conditioner

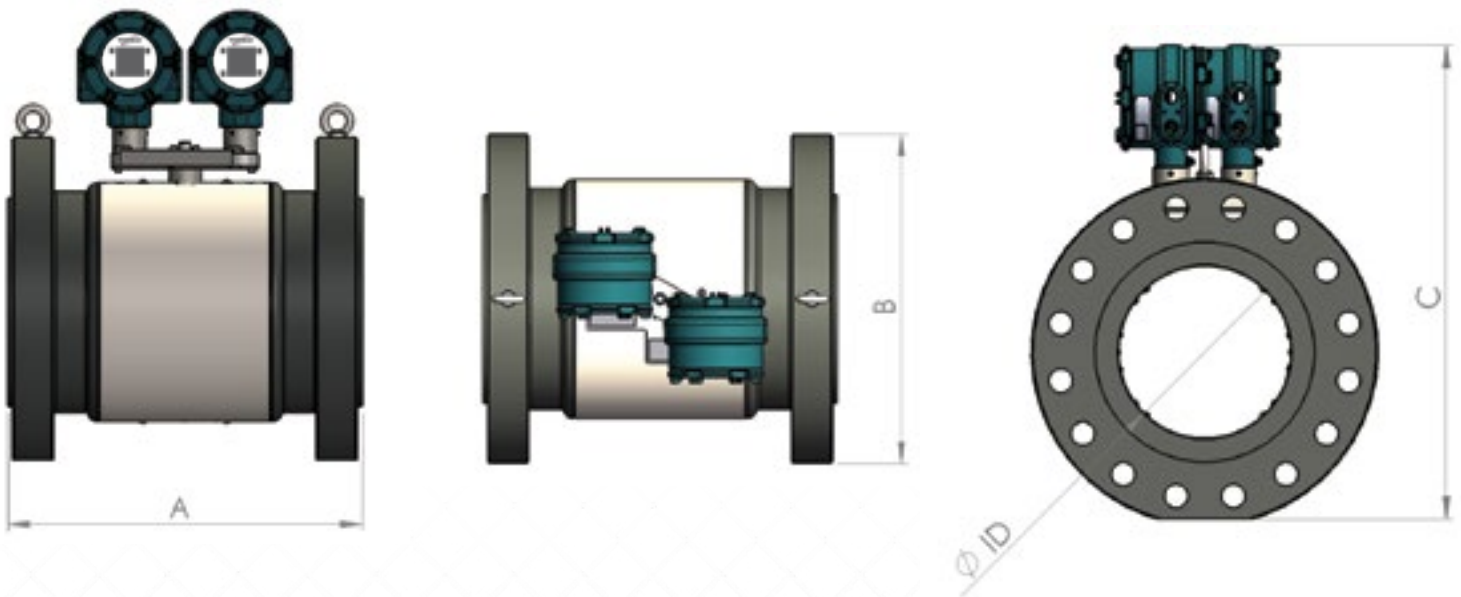


DIMENSIONS & WEIGHTS

UIM SERIES: UIM-4F DUO

Nominal Size [inch]	Rating	A- Length [mm]	B- Width [mm]	C- Height [mm]	Weight [kg]	A- Length [IN]	B- Width [IN]	C- Height [IN]	Weight [lb]
8" / DN200	300	500	380	532	165	19.69	14.96	20.94	364
	600	500	420	570	205	19.69	16.54	22.44	452
10" / DN250	300	550	445	610	225	21.65	17.52	24.02	496
	600	550	510	640	320	21.65	20.08	25.20	706
12" / DN300	300	600	520	675	305	23.62	20.47	26.57	673
	600	600	560	695	419	23.62	22.05	27.36	924
14" / DN350	300	650	585	705	535	25.59	23.03	27.76	1180
	600	650	605	730	585	25.59	23.82	28.74	1290
16" / DN400	300	700	650	755	690	27.56	25.59	29.72	1521
	600	700	690	775	760	27.56	27.17	30.51	1676
18" / DN450	600	800	745	905	950	31.50	29.33	35.63	2095
20" / DN500	600	900	815	940	1240	35.43	32.09	37.01	2734
24" / DN600	600	1100	940	1010	1800	43.31	37.01	39.76	3969
30" / DN750	600	1300	1130	1220	2750	51.18	44.49	48.03	6084
36" / DN900	600	1400	1300	1400	3600	51.18	44.49	48.03	7938

* Actual weights and dimensions may vary for specific designs



Principle of Operation	Broadband continuous wave-transit time
Flange Rating and Sizes	150, 300, 600 and 900lbs. 3 -36", other sizes on request
Flange Type	ANSI, DIN, others on request
Pressure Ranges	Up to 153 bar (2250 psi), other ranges on request
Ambient Temperature	-40 to +60°C (-40 to 140°F)
Process Temperature	- 30 to +80°C (-22 to + 176°F)
Typical Uncertainty (primary meter)	<p>Factory calibration $\frac{Q_t - Q_{\max}}{Q_{\min} - Q_t}$ 0.5%</p> <p>Flow calibrated $\frac{Q_t - Q_{\max}}{Q_{\min} - Q_t}$ 0.2%</p> <p>$\frac{Q_t - Q_{\max}}{Q_{\min} - Q_t}$ 0.5%</p>
Metrology	AGA-9 compliant, OIML R137-1 & 2, MID2014-/32-EU
Repeatability	0.1%
Configurations	Meter A: UIM-4F Meter B: UIM-3 or UIM-4F (optionally UIM-1 or UIM-2)
Velocity Sampling Interval	20 - 40Hz (0.025 - 0.05 seconds)
Turndown	>100:1 (pipe size dependent)
Meter Body Materials	Carbon steel ASTM A350 LF2 Cl.1 Stainless steel ASTM A182-F316/316L Other materials on request
Transducers	All metal Titanium; retractable version available as option
Pressure Port	1/4" NPT female, other options on request
Electronic Enclosure Material	Epoxy painted, low copper aluminium alloy
Electronic Enclosure Cable Entry	M20x1.5 female 1/2" NPT female
Power Supply	Main power: 12 - 28.8V, 670mW max I/O option board power 10.8 -28.8V, 225mW max
User Interface	128X128 dot matrix LC Display, 4 keys
Interface Ports	1 x USB (not intrinsically safe) 1 x Frequency output (HF or LF)
Optional Interface Ports	<p><u>01-0020 - I/O Option Board</u> 1 x RS485, two wire, externally powered 2 x Digital, software configurable (HF, LF, Status)</p> <p><u>01-0251 - Dual RS485 Option board</u> 2 x RS485, two wire, externally powered 2 x Digital, software configurable (HF, LF, Status) 1 x PT100, 4-wire temperature sensor interface 1 x Bridge type, 4-wire pressure sensor interface</p> <p><u>01-0022 - PT Option Board</u> 1 x PT100, 4-wire temperature sensor interface 1 x Bridge type, 4-wire pressure sensor interface</p> <p><u>01-0203 - 4-20mA Option Board</u> (Not available when Dual RS485 board fitted) 1 x 4-20mA loop powered output</p>
Communication Protocols	MODBUS (RS485 and USB)
Hazardous Area Certification	<p>ATEX Ex II G Ex ia IIC T4 Ga (Zone 0)</p> <p>IECEX Ex ia IIC T4 Ga (Zone 0)</p> <p>ATEX Ex ec IIC T4 Gc (Zone 2)</p> <p>USA/Canada Class 1, Divion 1, Group A, B, C, D T4</p>
Ingress Protection	IP66, NEMA 4x





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