22642 Indian Springs Road, Salinas, CA 93908
(831)-455-0418
Dave@TacticalFlowMeter.com

Ultrasonic Meter Setup Cheat Sheet Rev 7
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Cheat Sheet

Overview:

You will be using the numeric keypad to set up your meter. To do this you will hit MENU and the meter will prompt you to enter the Window number. Below, we give the Window No. for each variable to set up. We have labelled the Up and Down keys for reference

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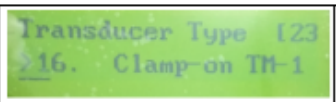
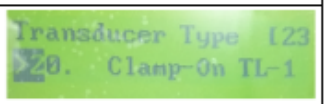
Step 1: Select your Transducer and Transducer Mounting.

Identify your transducers that are to be entered in Window 23. Most applications will use the M2 that is transducer number 22 in Window 23, most easily gotten to by going BACKWARDS from 0 with the Down button..

Use Menu 23 to select Transducer Type as TS-1(.6"-4"), or TM-1 (4"-27"), or TL-1 (11"-228")			
Screen			
Transducer			
Transducer Code	TS-1	TM-1	TL-1
Transducer Type	TS-1	TM-1	TL-1
Ultrasonic Frequency	1 MHz		
Pipe Diameter Ranges	0.6"- 4.0"	4"- 27.0"	11"- 228" (19')
Dimensions	1.8" x 1" x 1.13"	2.5" x 1.5" x 1.7"	3.8" x 2.1" x 2.1"
Fluid Temperature	-22 F- 200F -30 C- 90 C	-22 F- 200F -30 C- 90 C	-22 F- 200F -30 C- 90 C
Weight	7 Oz	10 Oz	20 Oz

1. Touch MENU
2. Touch 23
3. Touch the Up of Down button to cycle through until you select 23. Clamp-On L2 for the L2 transducer.
4. Hit ENT to set the selection

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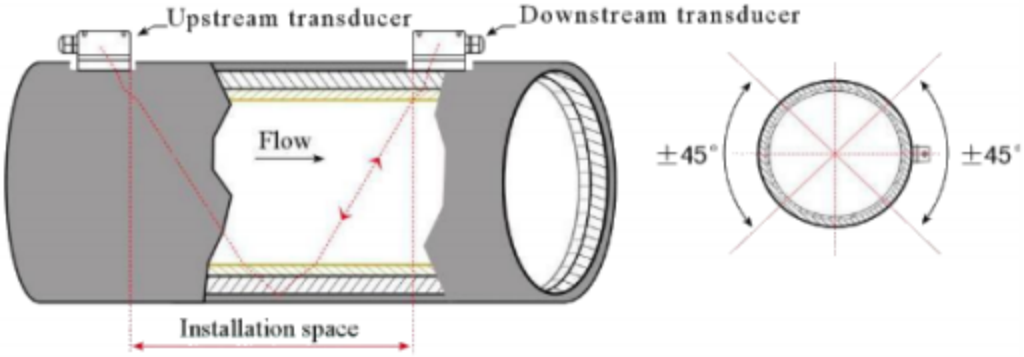
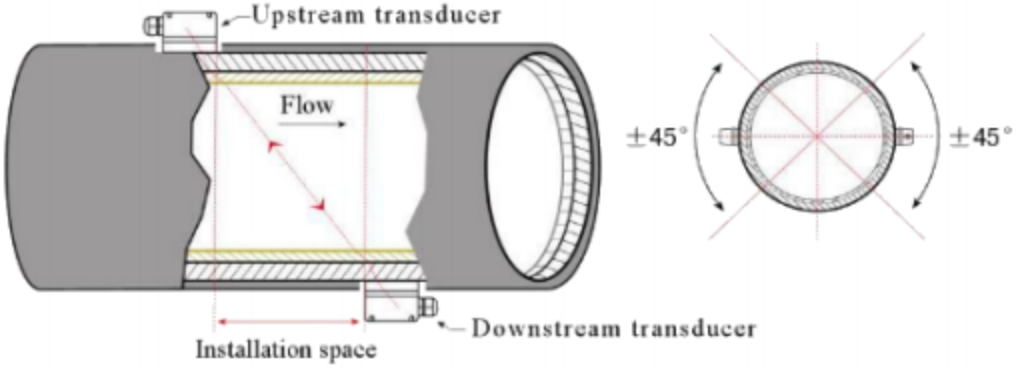
5. The NEXT window is Transducer Mounting. You will use either V or Z for most applications by using the Up and Down buttons to select the mounting.

For the V Method use the figure below as a guideline and horizontally align the two transducers. Note the center line is horizontal with the pipe axis line. This method is suitable for pipe diameters in the range of ½" - 16" orDN15mm-DN400mm. This method is considered a reflected mode.



Use the Z method for large pipe diameters and where there may be suspended particulate or scaling. This method is ideal because the transducers dransmit directly to each other withoug the reflection mode utilized in the V method. This method is known as the single sound path method.



6. Hit ENT to select mounting.

Step 2: Select your Units:

1. Touch MENU
2. Touch 30
3. Touch the Up of Down button to cycle through English or Metric
4. Touch ENT again to select the next function.
5. Touch the Down button to select the desired flow rate.
6. Touch ENT to enable selection

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22642 Indian Springs Road, Salinas, CA 93908
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7. Touch Up or Down to cycle through the units.
8. Touch ENT when you have the desired units. Our example is US Gallon
9. Touch the ENT when the time units shows up
10. Touch Up or Down to select the desired time units. In our case /min
11. Touch ENT to select /min
12. The display will confirm the units.
13. Touch ENT to select the Totalizer units
14. Touch Up or Down to select the desired units, our example is US Gallon (Gal)
15. Touch ENT to select.
16. Touch ENT to select Totalizer Multiplier value. Most will be 1

Step 3: Select your Pipe ID/OD/Thickness/Type:

This step will set up the flow meter to operate with your specific installation. You will be entering the Pipe ID and OD and can look them up using the QR Code on your smartphone, if you are reading this PDF file online just click on the image below to open up the pipe dimensions for reference.

Tioga™

Philadelphia Regional Center
2450 Wheatsheaf Lane
Philadelphia, PA 19137
O 215-831-0700
F 215-533-1645
E sales@tiogapipe.com

Houston Regional Center
616 FM 1960 W, Suite 700
Houston, TX 77090
O 713-433-2111
F 281-397-0132
E sales@tiogapipe.com

Chattanooga Regional Center
1301 Riverfront Parkway, Suite 108
Chattanooga, TN 37402
O 423-899-3398
F 423-899-9695
E sales@tiogapipe.com

PIPE DIMENSIONS AND WEIGHTS

Available in commercial and nuclear

U.S./METRIC

NOMINAL PIPE SIZE INCH MM	OD INCH MM	SCHEDULE DESIGNATIONS ASME			WALL THICKNESS INCH	WALL THICKNESS MM	WEIGHT LBS/FOOT	WEIGHT KG/METER	ID INCH	ID MM
1/8 6	0.405 10.3									82 84 84
1/4 8	0.540 13.7									40 22 66
3/8 10	0.675 17.1									80 48 70
1/2 15	0.840 21.3									00 08 76 84 74 36
3/4 20	1.050 26.7									40 96 88 58 06
1 25	1.315 33.4	STD	40	40S	0.133	3.38	1.68	2.50	1.049	26.64
		XS	80	80S	0.179	4.55	2.17	3.24	0.957	24.30
		160			0.250	6.35	2.85	4.24	0.815	20.70
		XX			0.358	9.09	3.66	5.45	0.599	15.22
1-1/4 32	1.660 42.2	5		5S	0.065	1.65	1.11	1.65	1.530	38.90
		10		10S	0.109	2.77	1.81	2.69	1.442	36.66
		STD	40	40S	0.140	3.56	2.27	3.39	1.380	35.08

Scan QR Code...

NOMINAL PIPE SIZE INCH MM	OD INCH MM	SCHEDULE DESIGNATIONS ASME			WALL THICKNESS INCH	WALL THICKNESS MM	WEIGHT LBS/FOOT	WEIGHT KG/METER	ID INCH	ID MM
5 125	5.563 141.3	5		5S	0.109	2.77	6.36	9.46	5.345	135.76
		10		10S	0.134	3.40	7.78	11.56	5.295	134.50
		STD	40	40S	0.258	6.55	14.63	21.77	5.047	128.20
		XS	80	80S	0.375	9.53	20.80	30.97	4.813	122.24
		120			0.500	12.70	27.06	40.28	4.563	115.90
		160			0.625	15.88	32.99	49.12	4.313	109.54
		XX			0.750	19.05	38.59	57.43	4.063	103.20
6 150	6.625 168.3	5		5S	0.109	2.77	7.59	11.31	6.407	162.76
		10		10S	0.134	3.40	9.30	13.83	6.357	161.50
					0.188	4.78	12.94	19.28	6.249	158.74
		STD	40	40S	0.280	7.11	18.99	28.26	6.065	154.08
		XS	80	80S	0.432	10.97	28.60	42.56	5.761	146.36
		120			0.562	14.27	36.43	54.21	5.501	139.76
		160			0.719	18.26	45.39	67.57	5.187	131.78
		XX			0.864	21.95	53.21	79.22	4.897	124.40
								35.10	7.023	178.40
								56.69	6.625	168.30
								94.00	5.875	149.24
8 200	8.625 219.1			5S	0.109	2.77	9.92	14.78	8.407	213.56
		10		10S	0.148	3.76	13.41	19.97	8.329	211.58
		20			0.250	6.35	22.38	33.32	8.125	206.40
		30			0.277	7.04	24.72	36.82	8.071	205.02
		STD	40	40S	0.322	8.18	28.58	42.55	7.981	202.74
		60			0.406	10.31	35.67	53.09	7.813	198.48
		XS	80	80S	0.500	12.70	43.43	64.64	7.625	193.70
		100			0.594	15.09	51.00	75.92	7.437	188.92
		120			0.719	18.26	60.77	90.44	7.187	182.58
		140			0.812	20.62	67.82	100.93	7.001	177.86
		XX			0.875	22.23	72.49	107.93	6.875	174.64
		160			0.906	23.01	74.76	111.27	6.813	173.08

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1. Touch MENU
2. Touch 11
3. Touch ENT to allow entry of Pipe OD, example 6.65
4. Touch ENT to select the value
5. Touch Down to select Pipe Wall Thickness
6. Touch ENT to allow entry of thickness at 0.258
7. Touch ENT to select the value.
8. Touch Down to select Pipe Inner Diameter and confirm.
9. Touch Down to select Pipe Material
10. Touch ENT to allow selection of Pipe Material
11. Touch Up or Down to find your material, for our example we select 6. Aluminum
12. Touch ENT to select the value.
13. Touch Down to select Liner Material, most will be NO liner material.
14. Touch Down to select Fluid Type
15. Touch ENT to allow entry of the value
16. Touch Down until you find your fluid, for us it is 0. Water (General)
17. Touch ENT to select the value
18. Touch Down to confirm the transducer and mounting type.
19. When you arrive at window 26 touch ENT twice to SAVE the settings.

Step 4: Verify Settings:

1. Touch MENU
2. Touch 10
3. Touch the Down button to cycle through all the values to ensure they have been properly entered.
4. You will see the Transducer Spacing and you will jot it down.
5. Touch ENT to confirm.

Step 5: Store Settings:

1. Touch MENU
2. Touch 26
3. Touch ENT TWICE to save and the display will flash and then beep. If no changes were made the meter will not beep, meaning all AOK as it is now.

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Cheat Sheet

Print this sheet out and fill in YOUR system variables

Variable	Window No.	Example	Your System
Transducer Type	23	23. Clamp on L2	
Transducer Mounting	Down	V	
Units	30	English	
Flow Rate Unit	31	US Gallon (Gal)	
Flow time units	Down	/min	
Totalizer Units	32	US Gallon (Gal)	
Totalizer Multiplier	Down	x1	
Pipe Outer Diameter	11	6.65”	
Pipe Wall Thickness	Down	0.258	
Pipe Inner Diameter	Down	Confirm or enter	
Pipe Material	14	1. Stainless Steel	
Liner Material	16	0. None, No Liner	
Fluid Type	20	0. Water (General)	
Read Transducer Spacing	Hit Down	Your number will display	
Save Settings, or Solidify Settings where we SAVE your configuration	26	Hit ENT Twice and hear beep and screen blinks. If no changes made no beep will be heard. **The QR code to the right will get you to a page with pipe ID and wall thicknesses for many sizes**	
Check Signal Quality	90		This window verifies the signal quality in real time

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Properly functioning meter will indicate *R in the Upper Right hand corner	00		View running status with Window 00
Configure 4-20 mA output	55	Most common is 4-20 mA	
4 mA Output Value	Down	Most common is 0 g/m	
20 mA Output Value	Down	Most common is Full Scale in g/m	
Validate 4-20 mA output	58	Verify with ammeter + on AO+ and ammeter - on AO-. Self powered 4-20 mA	
Configure Frequency Output	67	Select from 100 Hz to 1000 Hz. This output can be assigned to	
Configure High FO Frequency	Down	Select 1000 for the High frequency	
Configure Low FO Frequency	Down	Select 0 for the Low frequency	
Configure Low FO Flow Rate	68	Select 0 for your low flow. Most common is 0	
Configure High FO Flow Rate	Down	Select your full scale flow	
Date and Time Setup	60	Type in the new date, starting with the year and hit ENT when done	
Display Reynolds Number	94	Display Reynolds Number and pipe coefficient for diagnostics.	Dynamic Display
Online User Manual		Instruction manual online QR Code	

Note: LCD Backlight time on with Menu 70