

ToughMeters

Series 270



The ToughMeter series of analog panel meters is designed to operate in harsh environments. Available in sizes 2.5" and 3.5", ToughMeters have metal cases, polycarbonate windows, gasket-sealed bezels, terminals and zero regulators to ensure dust and moisture protection. The meter mechanisms have a long history of durability and performance using Yokogawa's pivot & jewel or taut band suspension movement.

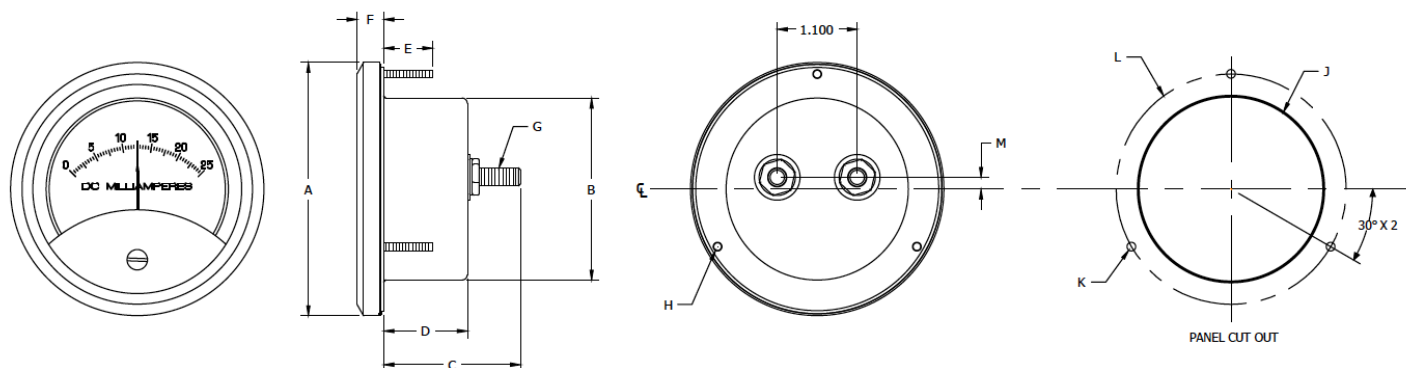
Specification	DC	AC	Frequency
Accuracy	±2% of full scale	±2% of full scale	±3% of span
Balance	±1%	±1%	±1%
Repeatability	2%	2%	2%
Overload	120% Continuous	120% Continuous	120% Continuous
Overshoot	10% Max	10% Max	10% Max
Response Time	2 sec max	2 sec max	2 sec max
Vibration (Sine)	3 Gs 10 - 80 Hz	3 Gs 10 - 80 Hz	3 Gs 10 - 80 Hz
Vibration Random (P&J)	10 - 1000 Hz 5 Gs RMS	10 - 1000 Hz 5 Gs RMS	10 - 1000 Hz 5 Gs RMS
Vibration Random (TB)	10 - 1000 Hz 3 Gs RMS	N/A	10-1000 Hz 3 Gs RMS
Shock	50 Gs 10 shocks per axis (30 total)	50 Gs 10 shocks per axis (30 total)	50 Gs 10 shocks per axis (30 total)
Environmental	IP66	IP66	IP66
Temperature	-45°C to 70°C	-45°C to 70°C	-45°C to 70°C

Vibration, temperature, and environmental specifications all exceed ANSI C39.1
Made in USA

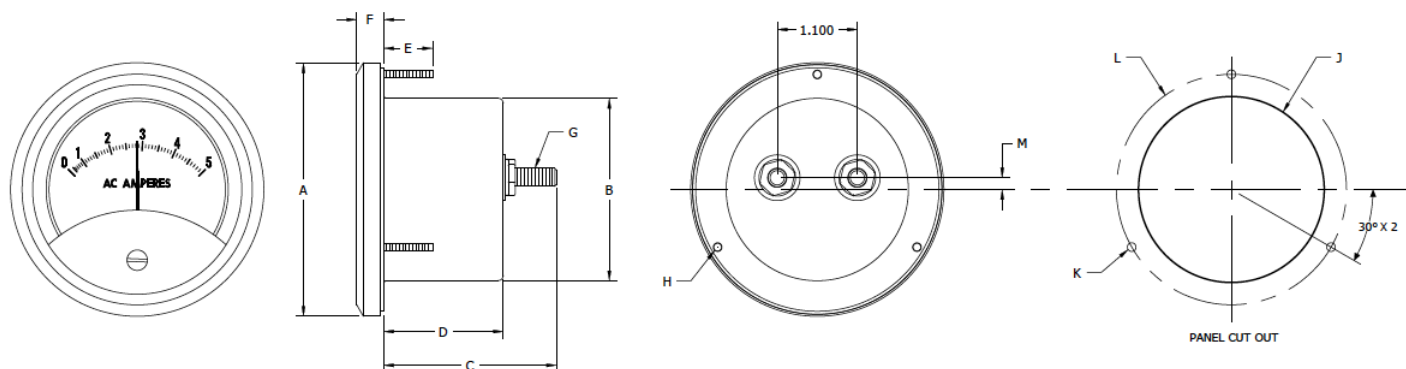
Mechanical Dimensions

		DC and Frequency		AC	
Dimensions		2.5" ToughMeter	3.5" ToughMeter	2.5" ToughMeter	3.5" ToughMeter
A		Ø 2.70	Ø 3.50	Ø 2.70	Ø 3.50
B		Ø 2.18	Ø 2.50	Ø 2.18	Ø 2.50
C	Standard	1.88	1.88	2.29	2.29
	/T1 (Short)	1.55	1.55	1.96	1.96
D		1.18	1.18	1.59	1.59
E		0.50	0.50	0.50	0.50
F		0.37	0.37	0.37	0.37
G		1/4 - 28 terminal (2)		1/4 - 28 terminal (2)	
H		4 - 40 on 2.44 BCD (3)		4 - 40 on 2.44 BCD (3)	
J		Ø 2.230	Ø 2.550	Ø 2.230	Ø 2.550
K		Ø 0.140 x 3	Ø 0.140 x 3	Ø 0.140 x 3	Ø 0.140 x 3
L		Ø 2.440	Ø 3.160	Ø 2.440	Ø 3.160
M		0.160	0.00 (on Centerline)	0.160	0.00 (on Centerline)
*Note: All dimensions are in inches					

DC and Frequency Dimensions



AC Dimensions



Model and Suffix Codes

		Model	Suffix Code	Optional Code	Description
Digits 1, 2, 3	Model	270			Taut Band Tough Meter
		271			Pivot & Jewel Tough Meter
Digit 4	Size	-2			2.5"
		-3			3.5"
Digits 5 & 6	Electrical & Mechanical Variables	00			DC Amps Zero-Left
		01			DC Amps Zero-Center
		04			DC mA for Volts Zero-Left
		05			DC mA for Volts Zero-Center
		20			DC Volts Zero-Left
		21			DC Volts Zero-Center
		24			DC Millivolts Zero-Left
		25			DC Millivolts Zero-Center
		40			AC Amps Iron Vane 60Hz (*1)
		41			AC Amps Iron Vane 400Hz (*1)
		44			AC Volts Iron Vane 60Hz (*1)
		45			AC Volts Iron Vane 400Hz (*1)
		50			Frequency
Digits 7 & 8	Rating Code	XX			As set by factory
Digits 9 & 10	Scale Code	-XX			As set by factory (*2)
Digit 11	Factory Style	8			Always 8
Digits 12, 13, 14	Special Features / Option Code	/T1			Short input terminals (*3)
		/BS			Black scale with white pointer

*1 Only available for model 271 (P&J)

*2 Custom scales available upon request. A one-time artwork fee will be applied for all new scales.

*3 See drawing for dimensions.



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Subject to change without notice

FL-61A270-01E-A