

Angular Accelerometers

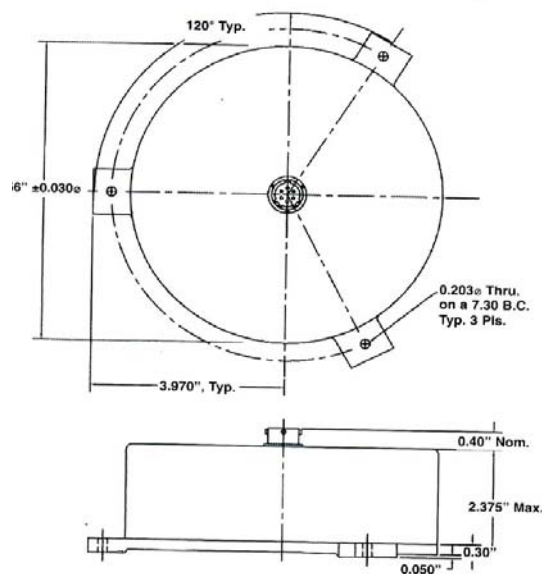
SR-100FR, SR-200RFR

The Columbia Models SR-100FR and SR-200RFR Angular Accelerometers are designed for low level near DC applications. These sensors incorporate the fluid rotor concept to provide extremely high sensitivity and full scale ranges as low as ± 0.01 radians/second². The high performance torquer design maintains ruggedness and reliability in severe shock and vibration environments.

The Model SR-100FR operates from a ± 15 volt power source and has an output span of ± 5 volts for full scale input. The Model SR-200RFR features the same sensor system as the SR-100FR but provides electronics that operate from a +24 to +32 volt aircraft supply and delivers 0 to 5 volt output. Both units are completely self-contained and require no additional amplification or conditioning.

Applications for these high sensitivity accelerometers include rotational studies or stabilization of structures, platforms, antennas and ships. *Consult the factory for customized versions of these sensors.*

* **High Sensitivity**
* **High Performance Fluid Rotor Design**



Specifications

	SR-100FR	SR-200RFR
Operational		
Ranges Available	± 0.1 To ± 5 Rad/Sec ²	
Output Voltage	± 5 Volts into 100K Load	0.2 To 4.8 VDC into 100K Load
Excitation	± 15 VDC <20 mA	+24 To +32 VDC <30 mA
Output Impedance	5,000 Ohms Typical	
Sensitive Axis Alignment	0.5 Deg	
Scale Factor Tolerance	$\pm 1\%$	
Scale Factor Temp Coefficient	0.054% / Deg C	0.07% / Deg C
Zero Bias	2 mRad / Sec ² Max.	2.5 ± 0.01 VDC
Null Temp Sensitivity	45 μ Rad/Sec ² /Deg C	60 μ Rad/Sec ² /Deg C
Natural Frequency	10 Hz Min.	
Damping Ratio	0.6 To 1	
Linear Acceleration Sensitivity	10 mRad / Sec ² / G	
Cross Axis Sensitivity	<0.5%	
Output Noise	2 mRad / Sec ² RMS	
Non-Linearity	$\pm 0.1\%$ F.R.	
Hysteresis & Non-Repeatability	$\pm 0.1\%$ F.R.	$\pm 0.2\%$ F.R.
Threshold & Resolution	0.001% F.R.	

Environmental

Temperature, Operating	-40 To +71 Deg C
Temperature, Storage	-40 To +71 Deg C
Vibration Survival (2 To 2,000 Hz)	10 G RMS, 0.5" Disp D.A.
Linear Acceleration Survival	100 G
Shock Survival	100 G, 11 mSec
Ambient Pressure	0 To 5 Atmospheres
Humidity	95% R.H.

Physical

Weight	3.5 Lbs. Max (1.58 KG)	
Size	6.56 In. Dia. x 2.375 In. H (16.7 cm Dia. x 6.0 cm H)	
Case Material	Anodized Aluminum	
Sealing	Environmental	
Connector	DT07H-12-8PN or Equiv.	PTIH-10-6P or Equiv.
Optional Mating Connector	PT06A-12-8S or Equiv.	PT06A-10-6S or Equiv.

I/O Connector Pin Functions:

SR-100FR		SR-200RFR	
Pin	Function	Pin	Function
A	Sig & Pwr Return	A	Sig & Pwr Grd
B	Current Output	B	+28V Input
C	Signal Output	C	Test
D	Test -	D	EO (Voltage Out)
E	-15 VDC	E	IO (Current Out)
F	+15 VDC	F	IO (Current Ret)
G	Test +		
H	Spare		

Ordering Information:

SR-100FR (+/- X Rad/Sec²) **M**
 SR-200RFR (+/- X Rad/Sec²) **M**
 Std Accelerometer w/Connector
 Range +/- X Rad/Sec² (Required)
 Mating Connector Supplied (Optional)



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