

Sunrise Instruments Calibration Report

Address: 2nd Floor Building B2 19#Keyuan Xishi Road Nanning Guangxi Province China 530007
Phone: +86 771-389-9499 Fax: +86 771-389-9497
Email: sri@srisensor.com



Calibration Report

Calibration No.	SRI-V-241204-C	Cal Date	2024/12/4
Model No.	M3564F	Serial No.	28192
Technician	Jiang Yu Tuan	Temp(C)/Hum.(%).	23.0 / 55.0
Customer		Excitation(V)	5.0000
Description	6 AXIS FORCE SENSOR	Cable Length	4m
Comments	M8123B2 SN0260		

Voltage Calibration

<u>Bridge</u>	<u>Capacity</u>	<u>Zero Offset</u>	<u>Nonlinearity</u>	<u>Hysteresis</u>	<u>Output @ Capacity</u>	<u>Sensitivity</u>	<u>Change</u>
	N/Nm	V	%FS	%FS	V	V/EU	%
FX	-2500	0.0000	0.09	0.09			
FY	2500	0.0000	0.09	0.25			
FZ	-5000	0.0000	0.05	0.15			
MX	-200	0.0000	0.08	0.09		DECOUPLE	
MY	-200	0.0000	0.05	0.09			
MZ	100	0.0000	0.41	0.55			

Wire Color Codes

FUNCTION

+EXC

+SIG

-EXC

-SIG

Sensor ID

ID Return

CONNECTOR

Reference Load Cell

<u>Manufacturer</u>	<u>Model Type</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Cal Due Date</u>
SUNRISE	GOLDEN TYPE	M3005	6409	2024/12/27

Calibrated by

Approved by

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CROSSTALK

<u>Bridge</u>	<u>Load</u>	<u>FX</u>	<u>FY</u>	<u>FZ</u>	<u>MX</u>	<u>MY</u>	<u>MZ</u>
	N/Nm	% FS	% FS	% FS	% FS	% FS	% FS
FX	-2500	0.00	0.09	0.01	0.03	0.05	0.30
FY	2500	0.13	0.00	0.03	0.23	0.12	0.15
FZ	-5000	0.27	0.90	0.00	0.73	0.64	0.22
MX	-200	0.75	0.96	0.16	0.00	0.48	0.32
MY	-200	1.51	0.58	0.10	0.28	0.00	0.08
MZ	100	0.77	0.87	0.04	0.06	0.18	0.00

Bridge to Transducer body resistance greater than 5G Ohm when measured with 50V excitation

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SENSOR TYPE A ----- OUTPUT RELATED TO EXCITATION VOLTAGE.

Decoupled Matrix

[DECOUPLED] =

-8.76757	-1460.37255	4.86934	12.55149	-3.77245	1490.14302
-10.83510	842.70391	-0.19120	-1693.36164	22.15982	870.90654
-948.12968	-7.91138	-975.04903	12.83942	-976.94577	8.11791
19.57453	-0.31843	-0.12748	0.91180	-20.04602	-0.38846
-11.67392	-0.78604	22.97684	-0.23551	-11.61068	0.63809
-0.54930	-23.64356	0.08904	-22.53938	-0.04734	-24.59809

The six axis loads can be decoupled as follows:

Step 1: Obtain the raw data of Channels 1 through 6 into Volt

[RAW] = {rawchn1, rawchn2, rawchn3, rawchn4, rawchn5, rawchn6}

where rawchn1, rawchn2, rawchn3, rawchn4, rawchn5 and rawchn6 are in V

Step 2: Convert the raw data into mV/V

Assume the raw data output in Volt, Excitation voltage = EXC, Amplifier gain = GAIN

[DAT] = {chn1, chn2, chn3, chn4, chn5, chn6} * 1000 / (EXC * GAIN)

where chn1, chn2, chn3, chn4, chn5 and chn6 are in mV/V

Step 3: To calculate decoupled loads

[RESULT]T = [DECOUPLED]*[DAT]T

where [RESULT] = {FX, FY, FZ, MX, MY, MZ}. Force Unit: N. Moment Unit: Nm

[DECOUPLED] is the above decoupled matrix