

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-251109-B	Cal Date	2025/11/9
Model No.	M3552D1	Serial No.	33688
Technician	Wei Jing Xian	Temp(C)/Hum.(%).	24/63
Customer	钛虎机器人科技 (上海)	Excitation(V)	5.0000
Description	6 AXIS FORCE SENSOR	Cable Length	1.4 m
Comments	搭配M8123B2 SN0440		

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	-600	0.0000	0.08	0.19			
FY	600	0.0000	0.24	0.53			
FZ	-1000	0.0000	0.03	0.13			
MX	-9	0.0000	0.19	0.20		DECOUPLE	
MY	-9	0.0000	0.13	0.12			
MZ	9	0.0000	0.35	0.10			

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	SRI_1000N-1	30727	2026/6/30

Calibrated by

Wei Jing xian

Approved by

Zhou

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Comments			

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	-600	0.00	0.06	0.05	0.01	0.27	0.18
FY	600	0.11	0.00	0.08	0.39	0.01	0.38
FZ	-1000	0.21	0.42	0.00	2.07	1.48	0.11
MX	-9	0.15	0.14	0.05	0.00	0.08	0.08
MY	-9	0.95	0.62	0.05	0.21	0.00	0.58
MZ	9	0.03	0.14	0.07	0.15	0.21	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] =

-378.77628	3.03029	-4.46754	-1.17147	390.94135	-7.85736
231.73322	-0.01506	-466.80981	-11.59143	216.47695	-1.08288
1.65909	239.69167	0.87461	244.05553	-3.64155	242.47556
-0.03248	-2.20491	0.12751	-0.09881	-0.06990	2.29637
0.28373	1.45326	0.16586	-2.31159	-0.03265	1.26887
-3.46879	0.03639	-4.37407	-0.01198	-3.84863	0.00172

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