

# Calibration Certificate

UNIT DESCRIPTION:  MODEL NO.:

SR. NO.:  CERTIFICATE NO.:

NAME OF CUSTOMER:

ADDRESS OF CUSTOMER:

CALIBRATION DATE:  CAL. VALIDITY:

DETAILS OF EQUIPMENT USED FOR CALIBRATION  
NOTE: Tick  mark where as applicable.

Digital Lab Thermometer  Digital Tachometer  Digital Stop Watch

Auto Ranging R.P.M. Meter  Digital Strobe  Weight Set

Digital Temperature Indicator

Sr. No.	Description	Certified By	Instrument Id. No.	Certificate No.	Calibration Date	Validity
01	Digi. Lab. Thermo.	AUTOCAL	2151215	C2181128/T/01	13.08.2021	12.08.2022
02	Digi. Strobe	AUTOCAL	ISR-01	C21101836/P/01	27.10.2021	26.10.2022

## OBSERVATIONS:

Sr. No.	Instrument Temp. Displayed (°C)	Indicator Temp (°C)	Temp. Deviation	Remark
01	32	32.1	0.1	OK

Sr. No.	Instrument Speed Displayed (RPM)	Speed Reading on Strobe	Diff. In Actual and Strobe	Remarks
01	20000	20038	038	OK
02	10000	10186	186	OK

- NOTE:
1. Calibration done with R - 248 M Rotor head at 20000 rpm.
  2. Calibration Traceable to national standards.
  3. Overall deviation is within specified accuracy.
  4. Result is related only to the item calibrated.
  5. Maximum tolerance permissible is  $\pm 1^\circ\text{C}$  &  $\pm 5^\circ\text{C}$  whichever is applicable and RPM 2% FSD and  $\pm 5\text{gm}$  to set weight

REMARKS: ACCEPTED

CALIBRATED BY: SAGAR



APPROVED BY: MANAGER Q. A.



**CALIBRATION CERTIFICATE**  
**THERMAL DISCIPLINE**

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ULR No.	CC238221200006684F		
Certificate No	C2181128/T/01	Issue Date	14/08/2021
Date of calibration	13/08/2021	Next Calibration Date	12/08/2022

Service Request Form No.	C2181128		
Calibrated For	Remi Elektrotechnik Ltd		
Date of Receipt of Instrument	06/08/2021		
Condition of Instrument on Receipt	Working	Calibration at	Lab
Environmental Conditions	Temperature: 25±4 °C	Relative Humidity	50±20 %RH

Details of Unit Under Calibration (UUC)			
Instrument	Temperature indicator with sensor	Equipment	--
Make:	Delta Control	Equipment Id	--
Model No.:	Multi - 49	Department	--
Sr. No:	2151215	Section	--
Tag/Id. No.	2151215	Location:	--
Procedure No	WI/ASPL/CAL/TH/01	Ref. Used:	ITS-90

Range	Resolution	Accuracy/ Acceptance Criteria
(-100) to 400 °C	0.1 °C	Not Specified

Details of Standard(s) used for Calibration (Traceable to National & International Standards)				
Description	Make & Model	Serial No. & Id No	Traceability (Certificate No.)	Valid Upto
PRT Sensor With Indicator	Fluke & I:1524 , S:5616-12	I:2335036 , S: 80089 & STD/P/TH/113	ASPL, Vasai (C20121009/T/03)	04/12/2021

**Measurement Result**

Group : Temperature

Parameter : Temperature

Range	Test Point	Reading on UUC	Actual Reading on STD	Error	Expanded Uncertainty (±)	Coverage Factor (k)
(-100) to 400 °C	°C	°C	°C	°C	°C	
	-86	-85.3	-86.022	0.722	0.1096	2
	-40	-39.5	-40.016	0.516	0.0607	2
	-20	-19.6	-20.010	0.410	0.0607	2
	25	24.9	24.992	-0.092	0.0622	2
	100	99.8	99.987	-0.187	0.0625	2

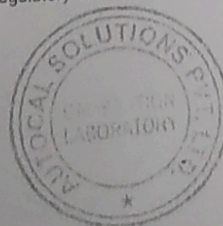
**Remark**

- The reported expanded uncertainty of measurement is stated as a standard uncertainty of measurement multiplied by coverage factor "k= 2" such that the coverage probability corresponds to approximately 95% confidence level.
- The measured values mentioned are the average of 5 readings.
- Measured readings have been mentioned.

**Notes**

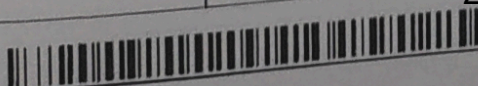
- This certificate refers only to the particular item calibrated at site / laboratory.
- The calibration results reported are valid at the time of and under the stated conditions of measurement.
- Any correction in this certificate invalidates this certificate.
- This certificate shall not be reproduced except, in full without the written approval from the Laboratory.
- Calibration of UUC done by any accredited laboratories is meant for scientific and industrial purpose only. However, if used for commercial trading, additional recognition/ approval shall be complied as required by Dept. of Legal metrology, Regulatory bodies, etc.

Authorised Signatory	Prashant Jadhav Lab Incharge
Calibrated By	Prajakta Zagade Calibration Engineer



*Jadhav*  
Authorised Signatory

2 ---- End of Certificate ----





**CALIBRATION CERTIFICATE  
MECHANICAL DISCIPLINE**

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Certificate No.	C21101836/P/01	Issue Date	28/10/2021
Date of Calibration	27/10/2021	Next Calibration Date	26/10/2022

Service Request Form No.	C21101836		
Calibrated for	Remi Elektrotechnik Ltd (Instrumentation division) Bldg. B, Survey No. 65/1, Village Valiv, Vasai (East) Dist. Palghar Maharashtra 401208, India		
Date of Receipt of Instrument	26/10/2021		
Condition of Instrument on Receipt	Working	Calibrated at	Lab
Environmental Conditions	Temperature: 23 ± 1.5°C	Relative Humidity	50 ± 10 % RH

**Details of Unit Under Calibration (UUC)**

Instrument	Stroboscope	Equipment:	NA
Make	TTPL	Equipment ID.	NA
Model	TT-5100	Department	NA
Sr. No.	1364	Section	NA
Tag/ID No.	ISR-01	Location	NA
Procedure No.	WI/ASPL/CAL/PR/07		

Range/Size	Resolution/Least Count	Accuracy/Acceptance Criteria
150 to 20000 RPM	1 RPM	Not Specified

**Details of Standard(s) Used for Calibration (Traceable to National / International Standards)**

Description	Make / Model	Serial No./ ID No.	Traceability (Certificate No.)	Valid upto
Digital Tachometer	Monarch / PLT200	1856742 STD/P/PR/07	Hi Tech, Chennai (HT/CC/210623-20/003)	25/06/2022

**Measurement Result**

Group : Acceleration, Speed & Acoustics

No.	Calibration Point	Reading On UUC	Reading On Standard	Error	(±) Expanded Uncertainty
1	150	150	149.69	0.310	1.50
2	1000	1000	1000.1	-0.10	1.50
3	5000	5000	5000.3	-0.3	1.50
4	10000	10000	10002	-2.0	5.60
5	20000	20000	20003	-3	4.00

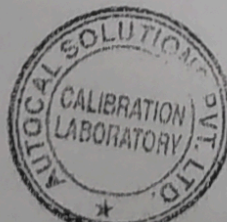
**Remarks**

- The reported expanded uncertainty of measurement is stated as a standard uncertainty of measurement multiplied by coverage factor "k=2" such that the coverage probability corresponds to approximately 95% confidence level.
- The Measured Values Mentioned are the average of 5 readings

**Notes**

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- Any correction in this certificate invalidates this certificate.
- This certificate shall not be reproduced except, in full without the written approval from the Laboratory
- Calibration of UUC done by any accredited laboratory is meant for scientific and industrial purpose only however, if used for commercial trading additional recognition / approval shall be compiled as a required by department of legal metrology, regulatory bodies, etc.

Authorised Signatory	Jyolindra Mehta Sr. Manager
Calibrated By	Vijay Kulkade Calibration Engineer



*(Signature)*  
Authorised Signatory





### CALIBRATION CERTIFICATE

Certificate No.	HT/CC/210623-20/003	ULR No.	ULR - CC215121000017633F		
<b>CUSTOMER DETAILS</b>		<b>DEVICE UNDER CALIBRATION DETAILS</b>			
Name	M/s. Autocal Solutions Pvt. Ltd,	Description	Digital Tachometer		
Address	Unit No. : 04, Ruby Industrial Estate PCS Ltd., Navghar, Vasai ( E), Dist. Palghar 401 210.	Make	Monarch		
		Model	PLT200	Mode	Non - Contact
		Range	As Per Manual		
		Least Count	0.001/0.01/0.1/1 RPM		
Job No.	210623-20	Accuracy	± 0.01% Rdg or Least count (Whichever is Greater)		
Job Receipt Date	23-Jun-2021	Identification	STD/P/PR/07		
Issue Date	26-Jun-2021	Serial No.	1856742		
Received Condition of DUC	Satisfactory	Location	--		
<b>ENVIRONMENTAL CONDITION</b>		Calibration On	26-Jun-2021		
Temperature	25 °C ± 2 °C	Due On	25-Jun-2022		
Humidity	30 % RH to 75 % RH	Calibrated By	P. Sheeba Saraswathi		
Discipline & Group	Mechanical Calibration & Acceleration, Speed and Acoustics				
Calibration Procedure	HT/W1/M/AS (Section 01) & SANAS TR 45-02 by Comparison Method				
<b>STANDARD DETAILS</b>					
Description	Digital Tachometer				
Identification No.	M/AS/TACHO/08 & M/AS/TACHO/04				
Certificate No.	SALPR/0653/1/20-A1 & FCRI/EQL/20-21/315				
Valid Till	08-Sept-2021 & 23-Sept-2021				

### CALIBRATION RESULT

DUC Reading in RPM	Standard Reading in RPM	Error in RPM	Expanded Uncertainty in ± RPM
6.007	6.006	0.001	0.16
59.993	59.995	-0.002	0.16
100.01	100.02	-0.01	0.20
1000.2	1000.2	0.0	0.31
10002	10001.7	0.3	1.42
30002	30001.4	0.6	1.88
50001	50002.2	-1.2	2.57
99948	99950.5	-2.5	3.31

#### Remarks:

- The Calibration is performed at Permanent Facility.
- The calibration certificate is valid for scientific & industrial purpose only.
- The Expanded uncertainty is expressed at 95.45 % confidence level with coverage factor k=2.

Checked By  
D. JAYAKUMAR - CALIBRATION ENGINEER  
HT / FT / 7.8 / 01

**CERTIFIED TRUE COPY**  
**AUTOCAL SOLUTIONS PVT. LTD.**

Authorized Signatory

Approved By  
R.R. HARI JAIKUMAR - TECHNICAL MANAGER  
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