

## Data Logger Details for "COLD ROOM" at Serampore

Sr.No.	Data Logger Alias (In Report)	Data Logger ID
01	S1191	VCVS/100/1191
02	S1192	VCVS/100/1192
03	S1193	VCVS/100/1193
04	S1194	VCVS/100/1194
05	S1195	VCVS/100/1195
06	S1196	VCVS/100/1196
07	S1197	VCVS/100/1197
08	S1198	VCVS/100/1198
09	S1199	VCVS/100/1199
10	S427 AMB	VCVS/427

DRAFT



# VEGA CALIBRATION AND VALIDATION SERVICES LLP.



C/105, 1st Floor, Jaswanti Allied Business Centre, Kachpada, Ramchandra Lane Extn., Malad West. Mumbai-400064, Maharashtra.



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## CALIBRATION CERTIFICATE

<b>Name &amp; Address Of Customer</b> <b>M/s. VEGA CALIBRATION AND VALIDATION SERVICES LLP.</b> C/105, 1st Floor, Jaswanti Allied Business Centre, Kachpada, Ramchandra Lane Extn., Malad West, Mumbai-400064, Maharashtra.		<b>Certificate No.</b> V220724041 <b>Service Request No.</b> VSR10072401 <b>Calibration Date</b> 22-07-2024 <b>Next Due Date</b> 21-07-2025 <b>Issue Date</b> 22-07-2024 <b>ULR No.</b> CC371724000001774F
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<b>Environmental Condition</b> :	Temperature : 25±4°C	Humidity : 30% - 75% RH
<b>Location Of Calibration</b> :	Lab	<b>Discipline</b> : Thermal
<b>Condition Of Item</b> :	Good	<b>Calibration Procedure</b> : VC/WI/TH04
<b>Date Of Receipt of Item</b> :	22-Jul-24	

### Details Of Unit Under Calibration (UUC)

<b>Instrument Name</b> :	TEMPERATURE & RH DATA LOGGER	<b>Serial No.</b> :	Not Specified
<b>Instrument ID</b> :	VCVS/100/1191	<b>Range</b> :	-30°C TO 60°C & 0%RH TO 85%RH
<b>Make</b> :	Tzone	<b>Least Count</b> :	0.1°C / 0.1%RH
<b>Model</b> :	TempU03	<b>Accuracy</b> :	Not Specified

### Reference Standard Used For Calibration

<b>Standard Used</b>	Temperature & Humidity Sensor with Indicator
<b>Make / Model</b>	ROTRONIC / HP32
<b>ID No.</b>	VCVS/HP/R/01
<b>Certificate No.</b>	IK/2024/305
<b>Calibrated By</b>	IKON INDUSTRIES (CC-3047)
<b>Valid Upto</b>	03-04-2025

The standard used are traceable to National / International Standard through chain of calibration.

### Calibration Results

i) Temperature (@ 50%RH)					
Range °C	Calibration Point °C	Standard Reading °C	UUC Reading °C	Deviation °C	Expanded Uncertainty ± °C
-30°C TO 60°C	10	10.32	10.1	-0.22	1.3
	20	20.34	20.4	0.06	1.3
	30	30.51	30.2	-0.31	1.3
	40	40.52	40.3	-0.22	1.3
	50	50.40	50.1	-0.30	1.3
ii) Humidity (@25°C)					
Range %RH	Calibration Point %RH	Standard Reading %RH	UUC Reading %RH	Deviation %RH	Expanded Uncertainty ± %RH
0%RH TO 85%RH	30	29.77	30.3	0.53	4.7
	45	44.55	45.1	0.55	4.7
	60	59.69	60.3	0.61	4.7
	75	74.57	75.2	0.63	4.7
	85	84.64	85.3	0.66	4.7

### Remarks :

- The reported expanded uncertainty in measurement is stated as the combined standard uncertainty in measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.
- The Standard Readings mentioned are the average of 5 readings.
- The Readings taken without any adjustments.

### Note :

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- The certificate should not be reproduced except in full without the prior permission from the Technical Manager, Vega Calibration And Validation Services LLP., Mumbai - 400064.
- The calibration results reported in the certificate are valid at the time of and under the stated conditions of measurement.
- Calibration points were selected as per customer specifications.
- The results are reviewed and authorised by the authorized signatory.



Authorised By :

Mr. Ashwin Masurkar  
Technical Manager



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<b>Environmental Condition</b> :	Temperature : 25±4°C	<b>Humidity</b> :	30% - 75% RH
<b>Location Of Calibration</b> :	Lab	<b>Discipline</b> :	Thermal
<b>Condition Of Item</b> :	Good	<b>Calibration Procedure</b> :	VC/WI/TH04
<b>Date Of Receipt of Item</b> :	22-Jul-24		

### Details Of Unit Under Calibration (UUC)

<b>Instrument Name</b> :	TEMPERATURE & RH DATA LOGGER	<b>Serial No.</b> :	Not Specified
<b>Instrument ID</b> :	VCVS/100/1192	<b>Range</b> :	-30°C TO 60°C & 0%RH TO 85%RH
<b>Make</b> :	Tzone	<b>Least Count</b> :	0.1°C / 0.1%RH
<b>Model</b> :	TempU03	<b>Accuracy</b> :	Not Specified

### Reference Standard Used For Calibration

<b>Standard Used</b>	Temperature & Humidity Sensor with Indicator
<b>Make / Model</b>	ROTRONIC / HP32
<b>ID No.</b>	VCVS/HP/R/01
<b>Certificate No.</b>	IK/2024/305
<b>Calibrated By</b>	IKON INDUSTRIES (CC-3047)
<b>Valid Upto</b>	03-04-2025

The standard used are traceable to National / International Standard through chain of calibration.

### Calibration Results

i) Temperature (@ 50%RH)					
Range °C	Calibration Point °C	Standard Reading °C	UUC Reading °C	Deviation °C	Expanded Uncertainty ± °C
-30°C TO 60°C	10	10.32	10.2	-0.12	1.3
	20	20.34	20.3	-0.04	1.3
	30	30.51	30.4	-0.11	1.3
	40	40.52	40.1	-0.42	1.3
	50	50.40	50.2	-0.20	1.3
ii) Humidity (@25°C)					
Range %RH	Calibration Point %RH	Standard Reading %RH	UUC Reading %RH	Deviation %RH	Expanded Uncertainty ± %RH
0%RH TO 85%RH	30	29.77	30.3	0.53	4.7
	45	44.55	45.2	0.65	4.7
	60	59.69	60.2	0.51	4.7
	75	74.57	75.1	0.53	4.7
	85	84.64	85.3	0.66	4.7

### Remarks :

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<b>Environmental Condition</b> :	Temperature : 25±4°C	<b>Humidity</b> :	30% - 75% RH
<b>Location Of Calibration</b> :	Lab	<b>Discipline</b> :	Thermal
<b>Condition Of Item</b> :	Good	<b>Calibration Procedure</b> :	VC/WI/TH04
<b>Date Of Receipt of Item</b> :	22-Jul-24		

### Details Of Unit Under Calibration (UUC)

<b>Instrument Name</b> :	TEMPERATURE & RH DATA LOGGER	<b>Serial No.</b> :	Not Specified
<b>Instrument ID</b> :	VCVS/100/1193	<b>Range</b> :	-30°C TO 60°C & 0%RH TO 85%RH
<b>Make</b> :	Tzone	<b>Least Count</b> :	0.1°C / 0.1%RH
<b>Model</b> :	TempU03	<b>Accuracy</b> :	Not Specified

### Reference Standard Used For Calibration

<b>Standard Used</b>	Temperature & Humidity Sensor with Indicator
<b>Make / Model</b>	ROTRONIC / HP32
<b>ID No.</b>	VCVS/HP/R/01
<b>Certificate No.</b>	IK/2024/305
<b>Calibrated By</b>	IKON INDUSTRIES (CC-3047)
<b>Valid Upto</b>	03-04-2025

The standard used are traceable to National / International Standard through chain of calibration.

### Calibration Results

i) Temperature (@ 50%RH)					
Range °C	Calibration Point °C	Standard Reading °C	UUC Reading °C	Deviation °C	Expanded Uncertainty ± °C
-30°C TO 60°C	10	10.32	10.2	-0.12	1.3
	20	20.34	20.3	-0.04	1.3
	30	30.51	30.4	-0.11	1.3
	40	40.52	40.1	-0.42	1.3
	50	50.40	50.2	-0.20	1.3
ii) Humidity (@25°C)					
Range %RH	Calibration Point %RH	Standard Reading %RH	UUC Reading %RH	Deviation %RH	Expanded Uncertainty ± %RH
0%RH TO 85%RH	30	29.77	30.4	0.63	4.7
	45	44.55	45.2	0.65	4.7
	60	59.69	60.2	0.51	4.7
	75	74.57	75.3	0.73	4.7
	85	84.64	85.2	0.56	4.7

### Remarks :

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Authorised By :

Mr. Ashwin Masurkar  
Technical Manager



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<b>Environmental Condition</b> : Temperature : 25±4°C	<b>Humidity</b> : 30% - 75% RH
<b>Location Of Calibration</b> : Lab	<b>Discipline</b> : Thermal
<b>Condition Of Item</b> : Good	<b>Calibration Procedure</b> : VC/WI/TH04
<b>Date Of Receipt of Item</b> : 22-Jul-24	

### Details Of Unit Under Calibration (UUC)

<b>Instrument Name</b> : TEMPERATURE & RH DATA LOGGER	<b>Serial No.</b> : Not Specified
<b>Instrument ID</b> : 'VCVS/100/1194	<b>Range</b> : -30°C TO 60°C & 0%RH TO 85%RH
<b>Make</b> : Tzone	<b>Least Count</b> : 0.1°C / 0.1%RH
<b>Model</b> : TempU03	<b>Accuracy</b> : Not Specified

### Reference Standard Used For Calibration

<b>Standard Used</b> : Temperature & Humidity Sensor with Indicator	
<b>Make / Model</b> : ROTRONIC / HP32	
<b>ID No.</b> : VCVS/HP/R/01	
<b>Certificate No.</b> : IK/2024/305	
<b>Calibrated By</b> : IKON INDUSTRIES (CC-3047)	
<b>Valid Upto</b> : 03-04-2025	

The standard used are traceable to National / International Standard through chain of calibration.

### Calibration Results

i) Temperature (@ 50%RH)					
Range °C	Calibration Point °C	Standard Reading °C	UUC Reading °C	Deviation °C	Expanded Uncertainty ± °C
-30°C TO 60°C	10	10.32	10.1	-0.22	1.3
	20	20.34	20.4	0.06	1.3
	30	30.51	30.3	-0.21	1.3
	40	40.52	40.2	-0.32	1.3
	50	50.40	50.1	-0.30	1.3
ii) Humidity (@25°C)					
Range %RH	Calibration Point %RH	Standard Reading %RH	UUC Reading %RH	Deviation %RH	Expanded Uncertainty ± %RH
0%RH TO 85%RH	30	29.77	30.3	0.53	4.7
	45	44.55	45.1	0.55	4.7
	60	59.69	60.3	0.61	4.7
	75	74.57	75.1	0.53	4.7
	85	84.64	85.3	0.66	4.7

### Remarks :

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Authorised By :

*(Signature)*

Mr. Ashwin Masurkar  
Technical Manager





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<b>Environmental Condition</b> :	Temperature : 25±4°C	<b>Humidity</b> :	30% - 75% RH
<b>Location Of Calibration</b> :	Lab	<b>Discipline</b> :	Thermal
<b>Condition Of Item</b> :	Good	<b>Calibration Procedure</b> :	VC/WI/TH04
<b>Date Of Receipt of Item</b> :	22-Jul-24		

### Details Of Unit Under Calibration (UUC)

<b>Instrument Name</b> :	TEMPERATURE & RH DATA LOGGER	<b>Serial No.</b> :	Not Specified
<b>Instrument ID</b> :	VCVS/100/1195	<b>Range</b> :	-30°C TO 60°C & 0%RH TO 85%RH
<b>Make</b> :	Tzone	<b>Least Count</b> :	0.1°C / 0.1%RH
<b>Model</b> :	TempU03	<b>Accuracy</b> :	Not Specified

### Reference Standard Used For Calibration

<b>Standard Used</b>	Temperature & Humidity Sensor with Indicator
<b>Make / Model</b>	ROTRONIC / HP32
<b>ID No.</b>	VCVS/HP/R/01
<b>Certificate No.</b>	IK/2024/305
<b>Calibrated By</b>	IKON INDUSTRIES (CC-3047)
<b>Valid Upto</b>	03-04-2025

The standard used are traceable to National / International Standard through chain of calibration.

### Calibration Results

i) Temperature (@ 50%RH)					
Range °C	Calibration Point °C	Standard Reading °C	UUC Reading °C	Deviation °C	Expanded Uncertainty ± °C
-30°C TO 60°C	10	10.32	10.2	-0.12	1.3
	20	20.34	20.3	-0.04	1.3
	30	30.51	30.4	-0.11	1.3
	40	40.52	40.1	-0.42	1.3
	50	50.40	50.2	-0.20	1.3
ii) Humidity (@25°C)					
Range %RH	Calibration Point %RH	Standard Reading %RH	UUC Reading %RH	Deviation %RH	Expanded Uncertainty ± %RH
0%RH TO 85%RH	30	29.77	30.4	0.63	4.7
	45	44.55	45.2	0.65	4.7
	60	59.69	60.3	0.61	4.7
	75	74.57	75.2	0.63	4.7
	85	84.64	85.2	0.56	4.7

### Remarks :

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- The Standard Readings mentioned are the average of 5 readings.
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*(Signature)*

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<b>Environmental Condition</b> : Temperature : 25±4°C	<b>Humidity</b> : 30% - 75% RH
<b>Location Of Calibration</b> : Lab	<b>Discipline</b> : Thermal
<b>Condition Of Item</b> : Good	<b>Calibration Procedure</b> : VC/WI/TH04
<b>Date Of Receipt of Item</b> : 22-Jul-24	

### Details Of Unit Under Calibration (UUC)

<b>Instrument Name</b> : TEMPERATURE & RH DATA LOGGER	<b>Serial No.</b> : Not Specified
<b>Instrument ID</b> : VCVS/100/1196	<b>Range</b> : -30°C TO 60°C & 0%RH TO 85%RH
<b>Make</b> : Tzone	<b>Least Count</b> : 0.1°C / 0.1%RH
<b>Model</b> : TempU03	<b>Accuracy</b> : Not Specified

### Reference Standard Used For Calibration

<b>Standard Used</b> : Temperature & Humidity Sensor with Indicator	
<b>Make / Model</b> : ROTRONIC / HP32	
<b>ID No.</b> : VCVS/HP/R/01	
<b>Certificate No.</b> : IK/2024/305	
<b>Calibrated By</b> : IKON INDUSTRIES (CC-3047)	
<b>Valid Upto</b> : 03-04-2025	

The standard used are traceable to National / International Standard through chain of calibration.

### Calibration Results

i) Temperature (@ 50%RH)					
Range °C	Calibration Point °C	Standard Reading °C	UUC Reading °C	Deviation °C	Expanded Uncertainty ± °C
-30°C TO 60°C	10	10.32	10.2	-0.12	1.3
	20	20.34	20.3	-0.04	1.3
	30	30.55	30.4	-0.15	1.3
	40	40.50	40.1	-0.40	1.3
	50	50.43	50.2	-0.23	1.3
ii) Humidity (@25°C)					
Range %RH	Calibration Point %RH	Standard Reading %RH	UUC Reading %RH	Deviation %RH	Expanded Uncertainty ± %RH
0%RH TO 85%RH	30	29.79	30.3	0.51	4.7
	45	44.51	45.2	0.69	4.7
	60	59.70	60.2	0.50	4.7
	75	74.79	75.3	0.51	4.7
	85	84.64	85.3	0.66	4.7

### Remarks :

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<b>Environmental Condition</b> : Temperature : 25±4°C	<b>Humidity</b> : 30% - 75% RH
<b>Location Of Calibration</b> : Lab	<b>Discipline</b> : Thermal
<b>Condition Of Item</b> : Good	<b>Calibration Procedure</b> : VC/WI/TH04
<b>Date Of Receipt of Item</b> : 22-Jul-24	

### Details Of Unit Under Calibration (UUC)

<b>Instrument Name</b> : TEMPERATURE & RH DATA LOGGER	<b>Serial No.</b> : Not Specified
<b>Instrument ID</b> : 'VCVS/100/1197	<b>Range</b> : -30°C TO 60°C & 0%RH TO 85%RH
<b>Make</b> : Tzone	<b>Least Count</b> : 0.1°C / 0.1%RH
<b>Model</b> : TempU03	<b>Accuracy</b> : Not Specified

### Reference Standard Used For Calibration

<b>Standard Used</b>	Temperature & Humidity Sensor with Indicator
<b>Make / Model</b>	ROTRONIC / HP32
<b>ID No.</b>	VCVS/HP/R/01
<b>Certificate No.</b>	IK/2024/305
<b>Calibrated By</b>	IKON INDUSTRIES (CC-3047)
<b>Valid Upto</b>	03-04-2025

The standard used are traceable to National / International Standard through chain of calibration.

### Calibration Results

i) Temperature (@ 50%RH)					
Range °C	Calibration Point °C	Standard Reading °C	UUC Reading °C	Deviation °C	Expanded Uncertainty ± °C
-30°C TO 60°C	10	10.32	10.1	-0.22	1.3
	20	20.34	20.2	-0.14	1.3
	30	30.55	30.3	-0.25	1.3
	40	40.50	40.1	-0.40	1.3
	50	50.43	50.4	-0.03	1.3
ii) Humidity (@25°C)					
Range %RH	Calibration Point %RH	Standard Reading %RH	UUC Reading %RH	Deviation %RH	Expanded Uncertainty ± %RH
0%RH TO 85%RH	30	29.79	30.4	0.61	4.7
	45	44.51	45.1	0.59	4.7
	60	59.70	60.3	0.60	4.7
	75	74.79	75.4	0.61	4.7
	85	84.64	85.2	0.56	4.7

### Remarks :

- The reported expanded uncertainty in measurement is stated as the combined standard uncertainty in measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.
- The Standard Readings mentioned are the average of 5 readings.
- The Readings taken without any adjustments.

### Note :

- This certificate refers only to the particular item(s), submitted for calibration.
- The certificate should not be reproduced except in full without the prior permission from the Technical Manager, Vega Calibration And Validation Services LLP., Mumbai - 400064.
- The calibration results reported in the certificate are valid at the time of and under the stated conditions of measurement.
- Calibration points were selected as per customer specifications.
- The results are reviewed and authorised by the authorized signatory.



Authorised By :

*(Signature)*

Mr. Ashwin Masurkar  
Technical Manager





# VEGA CALIBRATION AND VALIDATION SERVICES LLP.



C/105, 1st Floor, Jaswanti Allied Business Centre, Kachpada, Ramchandra Lane Extn., Malad West. Mumbai-400064, Maharashtra.



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## CALIBRATION CERTIFICATE

<b>Name &amp; Address Of Customer</b> <b>M/s. VEGA CALIBRATION AND VALIDATION SERVICES LLP.</b> C/105, 1st Floor, Jaswanti Allied Business Centre, Kachpada, Ramchandra Lane Extn., Malad West, Mumbai-400064, Maharashtra.		<b>Certificate No.</b> V220724048 <b>Service Request No.</b> VSR10072401 <b>Calibration Date</b> 22-07-2024 <b>Next Due Date</b> 21-07-2025 <b>Issue Date</b> 22-07-2024 <b>ULR No.</b> CC371724000001781F
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<b>Environmental Condition</b> : Temperature : 25±4°C	<b>Humidity</b> : 30% - 75% RH
<b>Location Of Calibration</b> : Lab	<b>Discipline</b> : Thermal
<b>Condition Of Item</b> : Good	<b>Calibration Procedure</b> : VC/WI/TH04
<b>Date Of Receipt of Item</b> : 22-Jul-24	

### Details Of Unit Under Calibration (UUC)

<b>Instrument Name</b> : TEMPERATURE & RH DATA LOGGER	<b>Serial No.</b> : Not Specified
<b>Instrument ID</b> : 'VCVS/100/1198	<b>Range</b> : -30°C TO 60°C & 0%RH TO 85%RH
<b>Make</b> : Tzone	<b>Least Count</b> : 0.1°C / 0.1%RH
<b>Model</b> : TempU03	<b>Accuracy</b> : Not Specified

### Reference Standard Used For Calibration

<b>Standard Used</b>	Temperature & Humidity Sensor with Indicator
<b>Make / Model</b>	ROTRONIC / HP32
<b>ID No.</b>	VCVS/HP/R/01
<b>Certificate No.</b>	IK/2024/305
<b>Calibrated By</b>	IKON INDUSTRIES (CC-3047)
<b>Valid Upto</b>	03-04-2025

The standard used are traceable to National / International Standard through chain of calibration.

### Calibration Results

i) Temperature (@ 50%RH)					
Range °C	Calibration Point °C	Standard Reading °C	UUC Reading °C	Deviation °C	Expanded Uncertainty ± °C
-30°C TO 60°C	10	10.32	10.2	-0.12	1.3
	20	20.34	20.3	-0.04	1.3
	30	30.55	30.4	-0.15	1.3
	40	40.50	40.2	-0.30	1.3
	50	50.43	50.1	-0.33	1.3
ii) Humidity (@25°C)					
Range %RH	Calibration Point %RH	Standard Reading %RH	UUC Reading %RH	Deviation %RH	Expanded Uncertainty ± %RH
0%RH TO 85%RH	30	29.79	30.4	0.61	4.7
	45	44.51	45.2	0.69	4.7
	60	59.70	60.4	0.70	4.7
	75	74.79	75.3	0.51	4.7
	85	84.64	85.3	0.66	4.7

### Remarks :

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Authorised By :

*(Signature)*

Mr. Ashwin Masurkar  
Technical Manager



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## CALIBRATION CERTIFICATE

<b>Name &amp; Address Of Customer</b> <b>M/s. VEGA CALIBRATION AND VALIDATION SERVICES LLP.</b> C/105, 1st Floor, Jaswanti Allied Business Centre, Kachpada, Ramchandra Lane Extn., Malad West, Mumbai-400064, Maharashtra.		<b>Certificate No.</b> V220724049 <b>Service Request No.</b> VSR10072401 <b>Calibration Date</b> 22-07-2024 <b>Next Due Date</b> 21-07-2025 <b>Issue Date</b> 22-07-2024 <b>ULR No.</b> CC371724000001782F
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<b>Environmental Condition</b> : Temperature : 25±4°C <b>Location Of Calibration</b> : Lab <b>Condition Of Item</b> : Good <b>Date Of Receipt of Item</b> : 22-Jul-24	<b>Humidity</b> : 30% - 75% RH <b>Discipline</b> : Thermal <b>Calibration Procedure</b> : VC/WI/TH04
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### Details Of Unit Under Calibration (UUC)

<b>Instrument Name</b> : TEMPERATURE & RH DATA LOGGER <b>Instrument ID</b> : 'VCVS/100/1199 <b>Make</b> : Tzone <b>Model</b> : TempU03	<b>Serial No.</b> : Not Specified <b>Range</b> : -30°C TO 60°C & 0%RH TO 85%RH <b>Least Count</b> : 0.1°C / 0.1%RH <b>Accuracy</b> : Not Specified
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### Reference Standard Used For Calibration

<b>Standard Used</b> <b>Make / Model</b> <b>ID No.</b> <b>Certificate No.</b> <b>Calibrated By</b> <b>Valid Upto</b>	Temperature & Humidity Sensor with Indicator ROTRONIC / HP32 VCVS/HP/R/01 IK/2024/305 IKON INDUSTRIES (CC-3047) 03-04-2025
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The standard used are traceable to National / International Standard through chain of calibration.

### Calibration Results

i) Temperature (@ 50%RH)					
Range °C	Calibration Point °C	Standard Reading °C	UUC Reading °C	Deviation °C	Expanded Uncertainty ± °C
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Authorised By :

Mr. Ashwin Masurkar  
Technical Manager