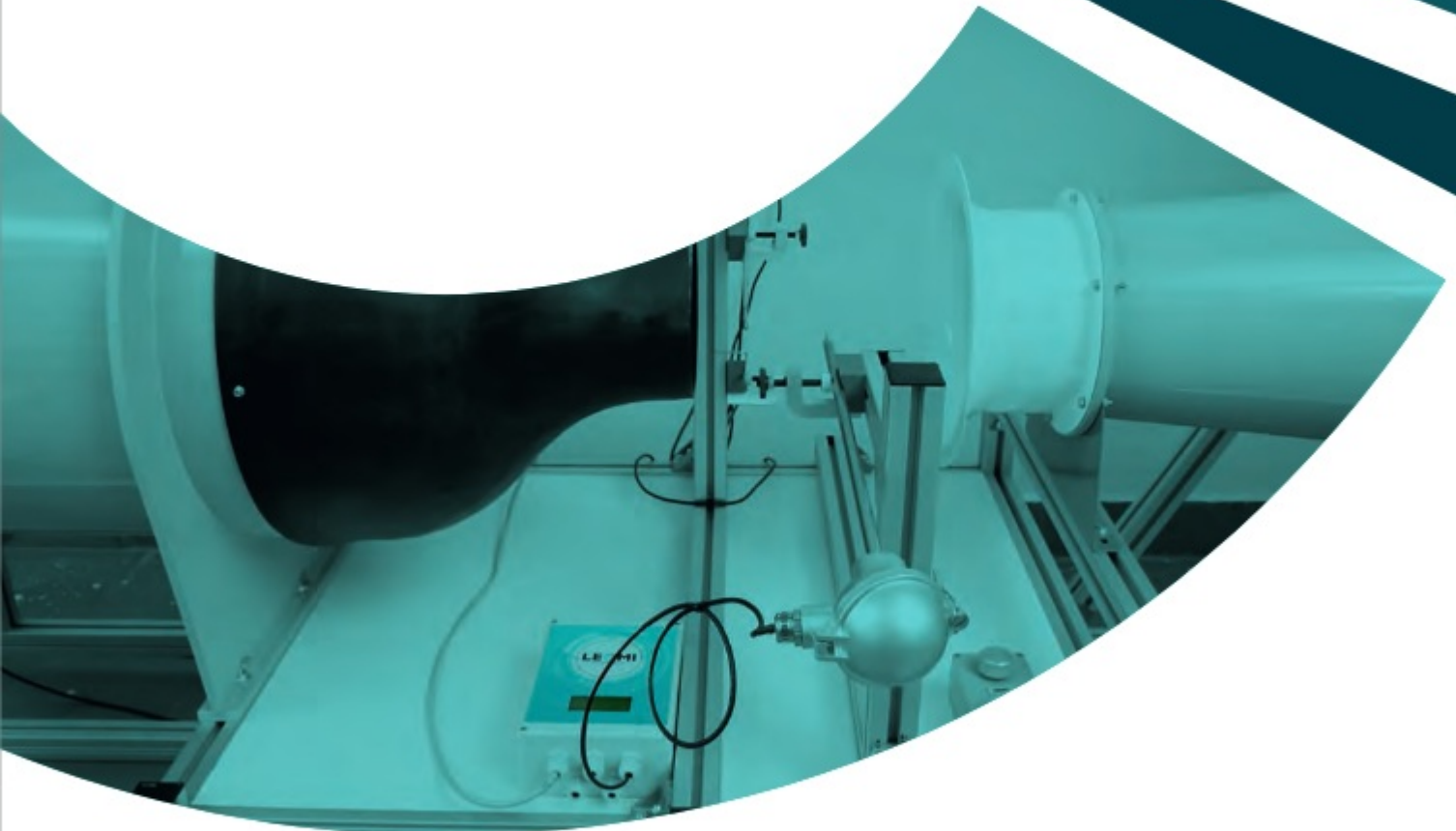


**LEOMI**<sup>®</sup>  
— OPTIMIZING LIFE —

$$q=h\Delta T$$



Manufacturer of Insertion Thermal Mass  
Flowmeter for Compressed Air & Process Gases

**GERMAN TECHNOLOGY ENGINEERED IN INDIA**

## ABOUT US

A continuous endeavour of more than two decades into the field of technologies and automation has inspired LEOMI Founders to start a manufacturing venture looking into the industrial measurement solutions that optimizes life. LEOMI provides affordable and reliable solutions with the hands on expertise of MTS Engineers Pvt Ltd that has fuelled reputed companies for industry specific technologies. LEOMI strive to hunt industries' rugged applications for optimization of industrial processes with German technology transfer from growth engine of India, Gujarat.

### MISSION



Developing measurement instruments to optimize life of industrial processes & equipments

### INTEGRITY



We embrace values of our stakeholders by remaining transparent and ethical in our dealings

### PRACTICAL



We understand and adaptive to real situations of our stakeholders for our business actions

### RESPONSIBLE



We responsibly conduct business considering socio-economic needs

### HOLISTIC



We accept holistic approaches in collaboration with our stakeholders for betterment of humanity

### INNOVATIVE



Our team engages in providing innovative solutions by working upon customer's pain areas consciously

OPTIMIZING LIFE OF PROCESS, MACHINE AND EQUIPMENT

## ABOUT US

- Started manufacturing at Electronic GIDC Gandhinagar, India in the year 2018 with more than 10000 sq ft 3 floor premises.
- An ISO 9001:2015 & Start-up India registered company.
- "Optimizing Life" is a central idea for new product & solutions development helping process optimization & control.
- Developing Thermal Mass Flowmeter in technical collaboration with Softflow.de Germany, product proven field performance more than 20 years, now produced at Leomi India.
- Highly experienced promoters & trained technical staff for production, testing, calibration and R&D.
- In-house product quality testing & proprietary calibration system with latest renowned brand test equipment in place.
- Installed India's First state-of-art Fully Automatic Wind Tunnel Made in Germany traceable to ISO-17025 standards.



## TECHNOLOGY VERIFICATION INITIATIVE

Thermal Dispersion technology for gas mass flow monitoring is emerging as economical, robust, and accurate against conventional differential pressure-based flow measurement. Due to continuous research and development, Leomi's technical team has gain in-depth knowledge for developing customized flow sensor with a combination of different materials and/or coatings for challenging process applications. Leomi team is ready to join hands to work on special projects together with customers for their applications success. Let's work together for your challenging application together for process optimization.



## CERTIFICATIONS



#startupindia



## CALIBRATION

### CALIBRATION FACILITY

India's first In-house latest state-of-the-art made in Germany fully automatic Göttinger calibration wind tunnel DKD certified as per ISO-17025 DAkkS traceability for Air Velocity ranges 0.2 m/s to 75 m/s with flow uniformity of  $\pm 0.2\%$ .

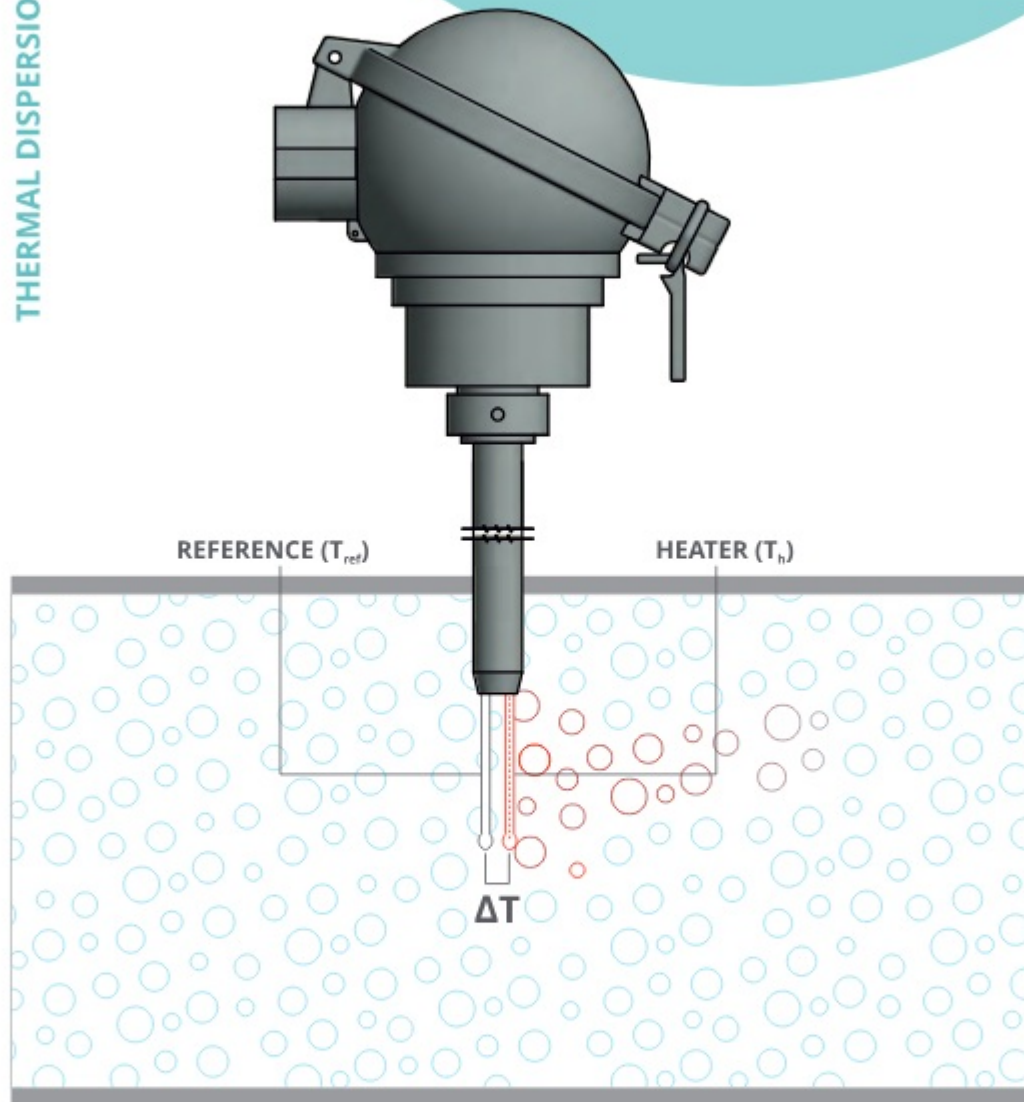
### CALIBRATION SERVICES

LEOMI provides calibration services for other manufacturers of various types of Air velocity Instruments such as Insertion Thermal Mass Flowmeter, Hot-wire & Vane Anemometer, Pitot Tubes etc.



# MEASUREMENT PRINCIPLE

## THERMAL DISPERSION TECHNIQUE



### Constant Temperature Anemometry (CTA)

(Digital controlled Circuit not Wheatstone bridge)

**LEOMI** Thermal Mass (Calorimetric) Flow Meter works on the physical principle of thermal dispersion from a heated element to the ambient medium (example: air or gases). This is affected by the velocity, density (temperature and pressure) and by the characteristic of the medium. The amount of needed energy is a function of the temperature difference  $\Delta T$  and the mass flow.

Gas flowing through two RTD Pt-100 one reference ( $T_{ref}$ ) and other Heater ( $T_h$ ). The temperature difference (over-temperature)  $\Delta t$  between the reference sensor (medium temperature) and the heater sensor is controlled constantly. As per **King's Law**, higher the mass flow rate, higher the cooling effect of the heater sensor, thus higher the power required to maintain the differential temperature constant. Therefore the heater power is proportional to the gas mass flow rate.

# LEOMI 581

Inline Thermal Mass Flowmeter



## FEATURES

- No moving parts
- Available meter Size 2" (DN 50) to 6" (DN150)
- Air/Gas Mass flow meter independent of pressure and temperature variation
- Flow rate upto 14000 Nm<sup>3</sup>/hr
- Wide turn down ratio 100:1 (allows leak detection)
- Highest accuracy in it's class  $\pm 3\%$  RD
- Sensor design suitable for moist gases & air
- Easy sensor cleaning
- Inline rugged Aluminum or stainless steel body
- I/O Plug-n-play connector
- Programmable units via Terminal software

## SENSOR TECHNICAL SPECIFICATIONS

Line Size	: DN50(2"); DN65(2 ½"); DN80(3"); DN100(4"); DN150(6")
Process connection	: Pipe schedule 40; ANSI 150# Flange End (Other upon request)
Sensor Details	: 2 X Pt-100 RTD Sensor Element (4-wire Technique)
Sensor & Body Material	: Sensor- SS-316Ti DIN1.4571 Body- Aluminium alloy (Std) or SS304 matt finish (optional)
Fluids	: Air & Non-corrosive gases
Flow Range	: 0.6 – 120 Nm/s (Turndown 100:1); (lower or higher upon request) (N stands for DIN 1343: 0°C/1.01325 bar(a), 0% RH)
Accuracy (%) *	: ±3% reading (0°C-100°C); at reference calibration conditions upto 75 m/s. (** Better accuracy possible please consult factory)
Repeatability (%)	: ±0.5% of reading
Response time t90	: <1.5 secs
Operating temperature	: 0°C to 70°C
Operating pressure	: 16bar(g) Max. PN16 (Higher upon request)
Ambient temperature	: -20°C to +60°C
Ingress Protection	: IP65

\* Calorimetric flow sensors normally needed no service, but however, electronic components get under influence of growing older and changing its electrical characteristics. Changing of the coating by corrosion and pollution could also influence the accuracy. So, it is necessary, from time to time (recommendation: about every 2 years) to check the calibration.

\*\* Better accuracy with additional charges possible.



Note: Technical specifications and dimensions subject to change due to continuous research and development.

## SIGNAL TRANSMITTER TECHNICAL SPECIFICATIONS

### LEOMI 581

Integral Signal Transmitter	: Microprocessor based, complete and automatically compensation of temperature conditioned signal drifting. Digital conductivity compensated adjustment of heater over temperature
Power Supply	: Isolated 24VDC (Std)
Power Consumption	: < 5 watts
Display	: 16 X 4 LCD Backlit Display
Measuring Unit	: User selectable Kg/hr; SCFM; Nm <sup>3</sup> /hr or Sm <sup>3</sup> /hr & Process Temperature (°C)
Outputs	: 0/4-20 mA DC (Isolated 600Ω) OR 0 -10VDC flowrate proportional; 1 NO/ NC Relay contact @250VAC/ 6A programmable for Temperature OR Flowrate; Opto-coupler impulse output, RS-232 Modbus Bi-directional for data transmission & configuration via LEOMI 580.1.0.0 Terminal Software,
Testing standards	: EMC/EMI compliant as per IEC 61000 as per CE norms
Enclosure Details	: Aluminium Diecast 160mm (L) x 160mm(W) x 91mm (D)

# MODEL CODE LEOMI 581

Part No. 0500 0581 1 A S 1 1 1 1 I 1 C 1 N 5

<b>1</b>	<b>Line Size</b>	
	1	DN 50 (2")
	2	DN 65 (2 1/2")
	3	DN 80 (3")
	4	DN 100 (4")
	5	DN 150 (6")
<b>2</b>	<b>Body MOC</b>	
	A	Aluminium
	S	SS 316
<b>3</b>	<b>Sensor MOC</b>	
	S	SS 316 Ti (1.4571)
<b>4</b>	<b>Temperature</b>	
	1	70°C
<b>5</b>	<b>End Connection</b>	
	1	Flanged End ANSI B16.5 Class 150
<b>6</b>	<b>Pressure Rating</b>	
	1	PN 16
<b>7</b>	<b>Accessories</b>	
	1	M12 connector with 1-meter loose end cable
<b>8</b>	<b>Transmitter</b>	
	I	Integral
<b>9</b>	<b>Input Power Supply</b>	
	1	24 VDC - Isolated@ 625 mA
<b>10</b>	<b>Output 1</b>	
	C	4-20 mA DC (Isolated 600Ω)
	V	0-10 VDC
<b>11</b>	<b>Output 2</b>	
	1	Relay Output
<b>12</b>	<b>Communication Interface</b>	
	N	Not Applicable
<b>13</b>	<b>Enclosure MOC</b>	
	5	Aluminium Die Cast - IP 65

# APPLICATIONS

## TEXTILE INDUSTRY



**Compressed Air, Combustion Air,**  
Natural Gas, Aeration Air

## CEMENT & FERTILIZERS



**Process Gas, Co<sub>2</sub> Gas, Compressed Air, Natural Gas, Combustion Air, Flue Gas, Aeration Air**

## CHEMICAL & PETROCHEMICALS



**Flare Gas, Process Gas, Compressed Air, Natural Gas, Combustion Air, Aeration Air**

## STEEL & POWER



**Fluegas, Blast Furnace Gas, Combustion Air, Compressed Air, Natural Gas, Welding Gas**

## AUTOMOBILE & ANCILLARIES



**Natural Gas, Compressed Air, Welding Gases**

## FOOD & PHARMACEUTICALS



**Aeration Air, Biogas, Compressed Air, Natural Gas,**

No Pressure Drop

High Turndown Ratio

Accurate measurement over temperature ranges upto 400°C

Works well even in Wet Gas Applications

# SOFTWARE & CALCULATORS



Leomi Terminal Software Version 580.1.0.0



Leomi Software 587.1.0.0



Sensor surface insertion depth calculator



Gas volume (flow rate) calculator



Gas mixture calculator

# ACCESSORIES



Ball Valve



Flange Accessories



Compression Ferrule



Retractable Assembly



## MAJOR CUSTOMERS

**AM/NS  
INDIA**



## OUR PRESENCE





58016.0.0

## **LEOMI INSTRUMENTS PVT. LTD.**

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