FEATURES

- **Flow ranges from 2 to 50 slpm,**
- **Thermal mass flow sensing**
- **0.5...4.5 V non-ratiometric linear output**
- **RoHS and REACH compliant**
- **Quality Management System according to ISO 13485:2003 and ISO 9001:2008**

MEDIA COMPATIBILITY

To be used with dry gases only.

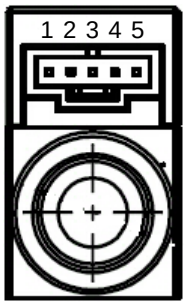
The WTA series is NOT designed for liquid flow and will be damaged by liquid flow through the sensor.

SPECIFICATIONS[6]

Maximum ratings

Supply voltage	5 ... 28 V
Temperature limits	
Compensated	0 ... 50 °C
Operating	-25 ... 85 °C
Storage	-40 ... 125 °C
Flow change	
2, 3, 4, 5 slpm devices	5 slpm/sec
10, 20, 30, 40, 50 slpm devices	30 slpm/sec
Pressure drop	1.8 mbar @ 5 slpm 6 mbar @ 50 slpm
Common mode pressure	5 bar
Humidity limits (non-condensing)	0 ... 95 %RH
Vibration[1]	20 g
Mechanical shock[2]	30 g

ELECTRICAL CONNECTION



Pin	Connection	Wire colour
1	I / C*	Blue
2	$+V_S$	Green
3	$+V_{out}$	Red
4	GND	Black
5	I / C*	Yellow

* Internal connection. Do not connect for any reason.

PERFORMANCE CHARACTERISTICS[6]

(V_S = 12 ±0.01 V, T_A = 20 °C, P_{Abs}= 101.325 kPa, output signal is non-ratiometric to V_S, media = air)

Characteristics	Min.	Typ.	Max.	Unit
Zero offset	0.49	0.50	0.51	V
Full scale span[5]	3.91	4.00	4.09	
Full scale output		4.50		
Accuracy[3]			±(2 % of reading + 0.25 %FSO)	
Total accuracy (0...50 °C)[4]			±(4.0 % of reading + 0.25 %FSO)	
Repeatability (incl. hysteresis)		±0.25		% of reading
Offset long term stability (1 year)		±0.05		%FSS
Noise level			0.1	
Current consumption (no load)			15	mA
Response time (t_{90})			10	ms
Warm-up time[7]			70	

Note:
The sensor's performance is determined by intake flow conditions which depend on mounting and environmental effects. To ensure laminar flow through the sensor, it should be considered to insert a straight tube with a length 10 times the inner diameter of the pneumatic connector or a laminar flow element upstream of the sensor. Additionally, the WTA has to be mounted with both ports horizontally and in an upright position.

GAS CORRECTION FACTORS[8]

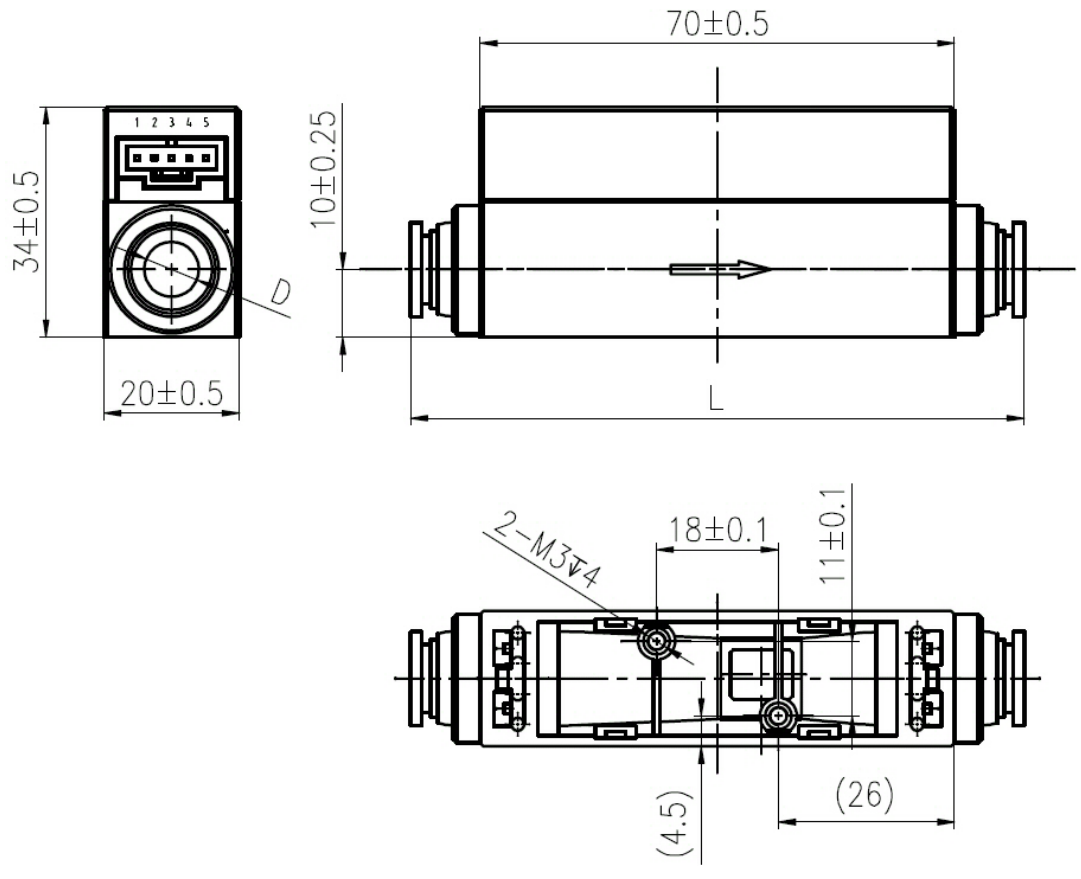
Gas type	Gas correction factor
Air	1.0
Oxygen (O_2)	1.0
Nitrogen (N_2)	1.0
Argon (Ar)	1.18
Hydrogen (H_2)	*
Carbon dioxide (CO_2)	0.67

* For Hydrogen applications, the actual H_2 calibration is performed whenever possible.

Specification notes:

1. Sweep 20 to 2000 Hz, 8 min, 4 cycles per axis, MIL-STD-883J w/CHANGE 4, Method 2007.3.
2. 5 shocks, 3 axes, MIL-STD-883J w/CHANGE 4, Method 2002.5.
3. Accuracy is the combined error from offset and span calibration, linearity, hysteresis and repeatability.
4. Total accuracy is the combined error from offset and span calibration, linearity, hysteresis, repeatability and temperature effects.
5. Full Scale Span (FSS) is the algebraic difference between the output signal for the highest and lowest specified flow.
6. Specification is preliminary. Data sheet is based on Pre-Series sample verification.
7. Warm-up time is the time from power on to the first stable reading.
8. To obtain the real flow rates in a specific gas, multiply the readings from the sensor by the gas correction factor in the table. The factors are approximate and should be used as guidelines only. Sensor performance strongly depends on gas dynamics and has to be evaluated in the respective application.

OUTLINE DRAWING



first angle projection

weight approx. 60 g

dimensions in mm

Sensor	Connection	L	D
Flow ranges up to 5 slpm	ID=4 mm	84 mm	Ø 4 mm
Flow ranges from 10 slpm	ID=8 mm	91 mm	Ø 8 mm

Notes:
- **Positive flow direction is defined by the molded-in arrow and results in positive output.**
- **The mounting screw length must not exceed 4 mm measured from the sensor's bottom.**

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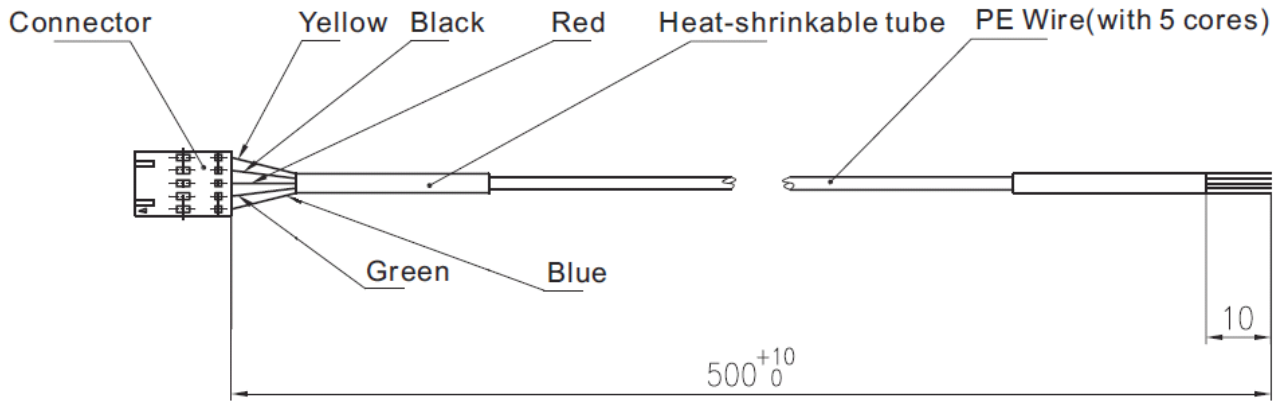
ACCESSORY (included in delivery)

Connecting cable assembly



dimensions in mm

ORDERING INFORMATION

	Series	Flow range		Gas		Flow direction		Grade	
Options	**WTA**	**L002**	2 slpm	**D***	Dry air	**U**	Unidirectional	**P**	Prime
		L003	3 slpm						
		L004	4 slpm						
		L005	5 slpm						
		L010	10 slpm						
		L020	20 slpm						
		L030	30 slpm						
		L040	40 slpm						
		L050	50 slpm						
				* other calibration gases on request					
Example:	**WTA**	**L005**		**D**		**U**		**P**	

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LGA InterCert
Certified Quality System
EN ISO 13485:2003+AC:2009
DIN EN ISO 9001:2008