

# RED-Y SMART SERIES

Thermal Gas Flow Meters & Gas Flow Controllers with CMOS Sensor-Technology



The Red-y Smart Series thermal mass flow meters and controllers offer high accuracy and turndown ratio with analog and digital interface standard. Temperature and pressure compensation provide for the most accurate flow measurements. Available with flow ranges from 0.2 SCCM to 450 SLPM, RS-485 (Modbus RTU protocol) for digital communications (flow and temperature data), user configurable analog input and output. Thanks to their modular design, suitability for mounting in any position, exceptional ease of cleaning (with out recalibration), and innovative CMOS sensor technology, the Red-y Smart Series thermal mass flow meters are extremely attractive for a wide range of applications. They are especially well suited for measurement and control applications in industry and laboratory usage as well as for customer-specific OEM applications. The products are provided with many features which can be easily optimized to meet a customer's individual requirements.

## Profibus Connection

The Red-y Smart series now has the option to include a Profibus-connection. The Profibus provides the Smart flow unit with integrated identification and maintenance functions. The input also provides selectable device parameters to modify the flow, setpoint, and 30 other parameters. The Profibus input connection can be accessed and configured with the Get Red-y Software included with every Red-y Smart Series flow meter.

## FEATURES

- Digital and analog interface standard
- Insensitive to pressure & temperature changes
- CMOS sensor technology
- Short response time for meters and controllers
- High accuracy and turndown ratio
- Minimal pressure loss
- Temperature measurement standard (with digital interface)
- Compact design, simple installation
- Easy to service and maintain
- 3-year warranty

## APPLICATIONS

- Analyzers
- Surface coating installations
- Semiconductor production
- Welding
- Lasers
- Furnaces
- Fuel cells
- Machinery manufacture
- Gas distribution systems
- Compressed air systems
- Laboratory use

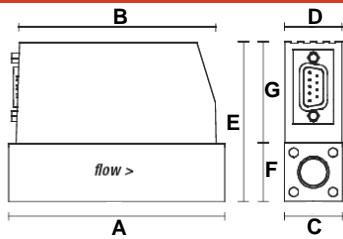
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 THERMAL  
**MASS FLOW**<sup>™</sup>  
A Monkey Industrial Supply Company

## SPECIFICATIONS

Media	Air, O <sub>2</sub> , N <sub>2</sub> , He, Ar, CO <sub>2</sub> , H <sub>2</sub> , CH <sub>4</sub> , C <sub>3</sub> H <sub>8</sub> , N <sub>2</sub> O, SF <sub>6</sub> , C <sub>3</sub> H <sub>6</sub> , CO, C <sub>4</sub> H <sub>10</sub> , other gases available upon request
Accuracy	±1.5% of full scale (standard) ±0.3% of full scale plus ±0.5% of reading (high-performance)
Turndown ratio	1:30 (standard) or 1:100 (high-performance)
Response time	<150 ms
Pressure	145 psig (10 bar g) maximum
Temperature	0 – 50°C (32 – 122°F)
Power supply	24VDC (+10%/-5%)
Power consumption	Meter 60mA (1.6W), Controller 170 mA (4W)
Materials	Aluminum or stainless steel
Seals	FKM, optional EPDM
Output signals	Analog: 4 – 20 mA, 0 – 5 V, 0 – 10 V, 0 – 20 mA, 1 – 5 V, 2 – 10 V Digital: RS-485 (Modbus RTU protocol) for flow and temperature
Process connection	Up to 50 SLPM: ¼" & Up to 450 SLPM: ½"
Electrical connection	Sub D plug, 9 pole

## DIMENSIONS

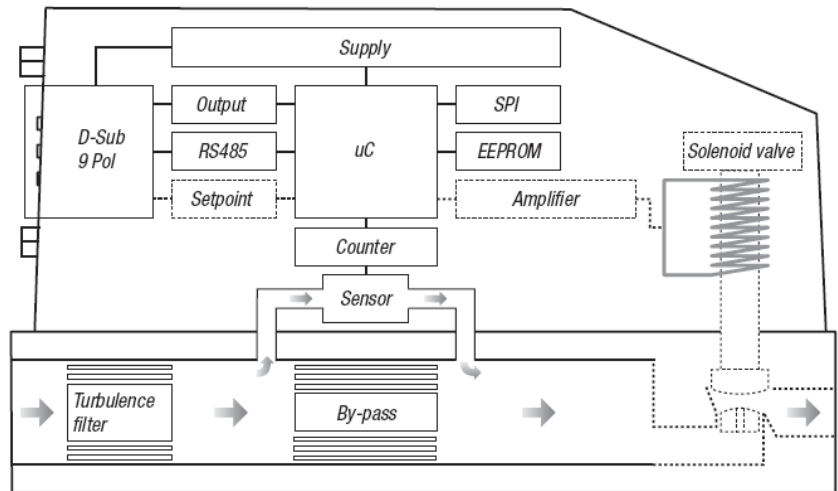


### Measurements (in)

	A	B	C	D	E	F	G
Smart meter 1/4"	3.70	3.43	0.98	0.98	2.72	0.98	1.73
Smart meter 1/2"	5.71	3.43	1.38	0.98	3.11	1.38	1.73
Smart controller 1/4"	4.88	4.61	0.98	0.98	2.72	0.98	1.73
Smart controller 1/2"	6.69	4.61	1.38	0.98	3.11	1.38	1.73
Smart flow module	-	3.43	-	0.98	-	-	1.73



RED-Y SMART SERIES



The digital intelligence linked with the CMOS sensor permits the output of a fully calibrated, temperature-compensated signal. The CMOS sensor 'intelligence' integrated onto the chip thus facilitates an extremely simple processing of the emitted measurement data. CMOS is a standard technology for the manufacture of integrated circuits.

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### RED-Y SMART SERIES

When ordering, specify gas type, flow rate, inlet/outlet pressure, and temperature.

For example: 650 SCCM Helium, 30 psig inlet, 5 psig outlet, 30° C (86° F).

# RED-Y SMART PRODUCT CODES

Basic task

G gasflow

Series

S smart series

Function

M Meter  
C Controller  
F Flowmodul Meter  
D Flowmodul Controller

Maximum Flow Rate (Air)

A9 < 500 SCCM 1/4" NPT, 1/4" OD tube, G1/4"  
B9 500-5000 SCCM  
C9 0.5-50 SLPM  
D9 50-200 SLPM 1/2" NPT, 1/2" OD tube, G1/2"

Class

S Standard (±1.5% FS, 1:30 turndown)  
T Hi Performance (±0.3% FS±0.5% Reading, 1:100 turndown)  
K Customer specific

Materials Body and seals

A Aluminum, FKM\*  
B Aluminum, EPDM  
S Stainless Steel, FKM\*  
T Stainless Steel, EPDM  
N Without Body  
K Customer Specific

Signals Input/Output Signals  
(Field configurable using Get Red-y Software)

I	O
A	A
B	A
C	C
D	D
E	E
F	F
G	G
K	K
N	N

Current 4-20 mA Namur NE 43  
Current 4-20 mA\*  
Current 0-20 mA  
Voltage 0-5 V  
Voltage 1-5 V  
Voltage 0-10 V  
Voltage 2-10 V  
Customer specific  
No Input Signal

Valve Automatic Valve for controller  
(sized by manufacturer)

88 Valve size unspecified  
00 No valve

Code G S C - B9 S A - A N 00

\* = Standard

## TERMS AND CONDITIONS

### PAYMENTS AND TERMS

Prices quoted are good for 30 days unless otherwise noted. Thermal Mass Flow accepts cash, check, wire transfer, or credit cards. All prices are quote in US Dollars, unless otherwise noted. All sales are final. Standard shipping is \$10 USD per meter. All goods remain the property of Thermal Mass Flow until paid in full. Payment is due at time of order unless credit has been granted. All past due accounts accrue a service fee of 3% per month. Thermal Mass Flow is a DBA of Komodo Enterprises, Inc., a Nevada Corporation.

### PRIVACY STATEMENT

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### WARRANTY AND INDEMNITY

Thermal Mass Flow warrants products it manufactures for a period of 90 days to the original purchaser from the date of purchase. Items not manufactured by Thermal Mass Flow are limited to their own manufacturer's warranties. This warranty does not apply to defects due directly or indirectly to misuse, negligence, accidents, abuse, repairs, or alterations or lack of maintenance. This is Thermal Mass Flow's sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. Thermal Mass Flow does not warrant or represent that the merchandise complies with the provisions of any law or acts. In no event shall Thermal Mass Flow liability under this warranty exceed the purchase price paid for the product. Both parties agree to binding arbitration in Las Vegas, Nevada. Thermal Mass Flow shall in no event be liable for death, injuries to persons or property or for incidental, and contingent, special, or consequential damages arising from the use of our products. Thermal Mass Flow warrants products only for the specific use expressly agreed to at time of purchase by Thermal Mass Flow in writing. All claims, including claims covered under the limited warranty, are subject to inspection and investigation before Buyer's claim is settled. Any parts returned for warranty or repair will not be accepted without an RMA number and must be shipped pre-paid. Contact Customer Service with the original bill of sale to obtain an RMA number. CMOSens is a trademark of Sensinirion AG.

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