



red-y industrial series product information

Thermal Mass Flow Meters and Controllers for Gases with IP67 & Ex Protection

High accuracy for heavy duties:

Mass Flow Meters & Controllers with IP67 & Ex Protection

Reliable technology and industry standard interfaces for rough environments:

Our tried and tested thermal mass flow meters and controllers for gases now available as IP67 / NEMA 6 version.

Accurate measurement

The devices offer high accuracy and a wide dynamic range.

2 instrument versions:

“Standard” and “Hi-Performance”

Accuracy up to $\pm 0.3\%$ of full scale + $\pm 0.5\%$ of reading

Turndown ratio 1 : 100

Extended turndown ratio on request

Analog & digital: 2 in 1



The flow meters & controllers make use of the latest CMOS technology and have a digital (Modbus RTU) and analog interface as standard

IP67 / NEMA 6 protection



The instruments offer IP67 / NEMA 6 protection against solid particles and water

ATEX certification



red-y industrial devices come along with ATEX certification (Category 3 / Zone 2 & 22)

Multiple connections



The industrial series are available with different connection types: Cable gland with compression fitting or optional M12 plug on top

Options



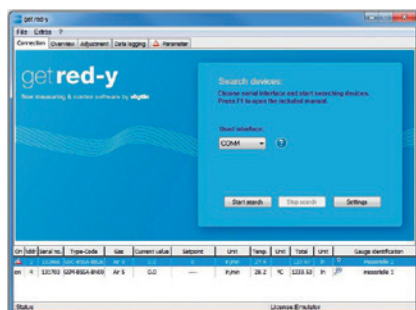
Multigas device

A device can be used for up to 10 different gases or gas mixtures



Profibus

The instruments are available with Profibus interface: DP-V0 & DP-V1 protocols



Setup tool “get red-y”

Efficient device setup with the free “get red-y” software:

- » **Service tool for remote maintenance**
- » **Switch gas type**
- » **Switch measurement units**
- » **Adjust control parameters**

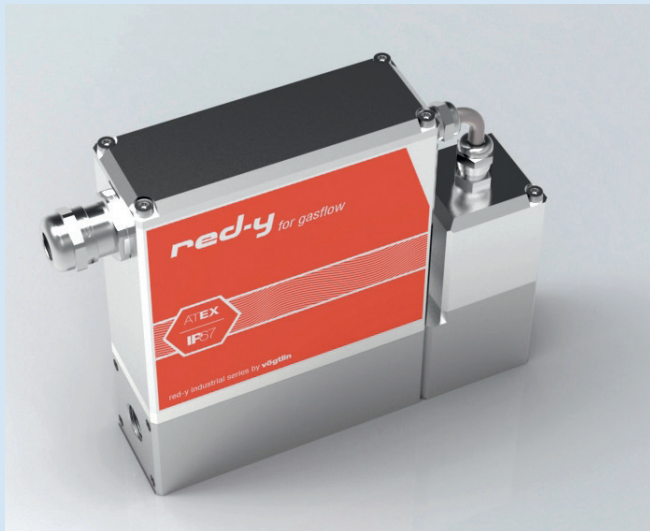
3-year warranty*



High-quality components ensure long and trouble-free operation

*does not apply to calibration, options and accessories

Cable gland (standard)

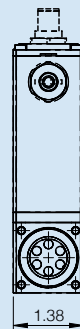


A red and silver industrial gas flowmeter, model red-y for gasflow, featuring ATEX IP67 certification and Vötsch Industrial Series branding. The device is shown from a three-quarter perspective, highlighting its compact, rectangular design and various connection ports.

A photograph of a compact, rectangular industrial gas flowmeter. The device has a silver-colored metal body and a prominent red label on its front face. The label features the text "red-y for gasflow" in white, with "red-y" in a stylized font. Below this, there is a hexagonal logo containing the text "ATEX" and "IP67". At the bottom of the label, it says "red-y industrial series by vötsch". The flowmeter has a threaded port on top and a flange connection on the right side. It is shown against a plain, light-colored background.

Technical drawing of the Reddy 10000 BTU gas heater. The drawing shows the heater unit with various dimensions and labels. The main unit is labeled "Reddy by quadratec" and "10000 BTU". The dimensions are as follows:

- Overall height: 4.88
- Height from base to top of unit: 4.14
- Height from base to top of unit (excluding base): 1.38
- Overall width: 3.7
- Width of the main unit: 1.97
- Height of the main unit: 0.71
- Height of the main unit (excluding base): 0.79
- Labels: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.



	Length (inch)		Length of fitting
Type/Body	A	B	P
GIM / ¼" (MFM)	3.7	—	We offer a range of different inlet/outlet fittings.
GIM / ½" (MFM)	5.7	—	
GIC / ¼" (MFC)	—	5.28	
GIC / ½" (MFC)	—	7.09	
GIC / ½" (MFC) valve type 8	—	7.8	

- 1 Cable gland / cable diameter 0.236-0.315 inch
- 2 M12 connector A-Coding 8pol male
- 3 M12 connector B-Coding 5pol female

Technical Data “red-y industrial series”

Instrument types



industrial meter GIM
Thermal mass flow meter



industrial controller GIC
Thermal mass flow controller



industrial controller GIE
Thermal mass flow controller with external valve

Instrument versions

“Standard”

The economic solution

Accuracy: $\pm 1.0\%$ of full scale⁽¹⁾

Turndown ratio: 1 : 50

“Hi-Performance”

With highest accuracy and turndown ratio
(available for GIM < 200 SLPM / GIC < 150 SLPM (air))

Accuracy: $\pm 0.3\%$ of full scale + $\pm 0.5\%$ of reading⁽¹⁾

Turndown ratio: 1 : 100

⁽¹⁾An additional error of $\pm 0.25\%$ may apply for analogue signals

Measuring ranges

(Air/Full scale freely selectable)	Type/Body	Measuring range (air)	
red-y industrial meter GIM Meter	GIM/¼"	from 0 ... 27 SCCM	to 0 ... 64 SLPM
	GIM/½"	from 0 ... 65 SLPM	to 0 ... 480 SLPM
red-y industrial controller GIC controller	GIC/¼"	from 0 ... 27 SCCM	to 0 ... 64 SLPM
	GIC/½"	from 0 ... 65 SLPM	to 0 ... 480 SLPM

Performance data

Media (real gas calibration)	Air, O ₂ ⁽²⁾ , N ₂ ⁽²⁾ , He, Ar, CO ₂ , H ₂ , CH ₄ , C ₃ H ₈ (other gases and gas mixtures on request) ⁽²⁾ O ₂ & N ₂ are calibrated with air
Response time	Meter (GIM): $\pm 80\text{ms}$ ⁽³⁾ ; Controller (GIC): $\pm 500\text{ms}$ ⁽³⁾ ⁽³⁾ depending on device configuration & according to SEMI standard E17-1011, 5-100% of range under optimized conditions
Repeatability	$\pm 0.2\%$ of full scale (according to SEMI standard E56-0309)
Longterm stability	< 1% of measured value / year
Power supply	24 Vdc (18 – 30 Vdc), 15 Vdc on request
Current consumption	Meter (GIM): max. 100 mA; Controller (GIC): max. 250 mA (GIC with valve type 8 max. 410mA)
Operation pressure	3 - 160 psia (0.2 - 11 bara)/GIC with valve type 4.5 and 8: max. 120 psia (8 bara)
Temperature (environment/gas)	32 - 122°F (0 – 50°C)
Pressure sensitivity	<0.014% / psi (<0.2% / bar) of reading (typical N ₂)
Temperature sensitivity	<0.012% FS measuring range type per 1°F (<0.025% per 1°C)
Warm-up time	< 1 sec. for full accuracy

Materials

Body	Stainless steel 316L (see operating instructions for wetted parts)
Electronic Housing	Aluminum
Seals	EPDM (FDA), optional FKM and FFKM

Integration & Installation

In- / Output signals analog	0-20 mA, 4-20 mA, 0-5 V, 1-5 V, 0-10 V, 2-10 V
In- / Output signals digital	RS-485; Modbus RTU 2 wire (Slave); LabView-VIs available / Option: Profibus DP-V0, DP-V1
Process connection	G¼" (BSPP ⁽⁴⁾ female) up to 64 SLPM, G½" (BSPP ⁽⁴⁾ female) up to 480 SLPM ⁽⁴⁾ British Standard Pipe Parallel
Inlet section	None required
Electrical connection	Cable gland with compression fitting M16x1.5 / Option: M12 plug (DIN-standard) (both connection IP67 protected)
Mounting orientation	All orientations are possible. We recommend horizontal mounting. Please contact the manufacturer for further information.

Safety

Test pressure	240 psia (16 bara)
Leak rate	< 1 x 10 ⁻⁶ mbar l/s He
Environmental protection	IP67 (conforms to NEMA 6)
EMC	CE EN 61326-1
ATEX Certification	Ex II 3G nA IIC T4 Gc (Category 3/Zone 2) Ex II 3D Ex tc IIIC T100°C Dc (Category 3/Zone 22)

Type code “red-y industrial series”

Instrument type		red-y industrial series (Gas)									
Function	Meter	G		I	M						
	Controller				C						
	Controller with external valve				E						
Full scale of measuring range (air)	Divider A, up to 640 SCCM, ¼" Body				A 9						
	Divider B, up to 6,400 SCCM, ¼" Body				B 9						
	Divider C, up to 64 SLPM, ¼" Body				C 9						
	Divider D, up to 480 SLPM, ½" Body				D 9						
Instruments version	Standard (±1.0% full scale, 1 : 50)				S						
	Hi-Performance (±0.3% full scale, ±0.5% reading, 1 : 100)				T						
	Customer-specific / OEM				K						
Connection/Materials (body, seals)	Cable gland/Stainless steel/EPDM (FDA)**				S						
	M12 plug/Stainless steel/EPDM (FDA)				T						
	Cable gland/Stainless steel/FKM				U						
	M12 plug/Stainless steel/FKM				V						
	Customer-specific / OEM				K						
Analog signals (output)	Current 4-20 mA**				B						
	Current 0-20 mA				C						
	Voltage 0-5 V				D						
	Voltage 1-5 V				E						
	Voltage 0-10 V				F						
	Voltage 2-10 V				G						
	Customer-specific / OEM				K						
Analog signals (input)	Current 4-20 mA**				B						
	Current 0-20 mA				C						
	Voltage 0-5 V				D						
	Voltage 1-5 V				E						
	Voltage 0-10 V				F						
	Voltage 2-10 V				G						
	Not defined				N						
Control valve (integrated)	Customer-specific / OEM				K						
	Type 0.1				2 1						
	Type 0.2				2 2						
	Type 0.5				2 3						
	Type 1.2				2 6						
	Type 4.5				1 2						
	Type 8.0				1 3						
	Valve mounted				9 5						
	Customer-specific / OEM				9 9						
Type code	No valve				0 0						
Type code		G I		-		-					

**standard

Available types of fittings (additional fittings on request)

Compression			Push-in for Polytube			VCO® & VCR® Alternatives		
Type	Body Size	max. flow (SLPM)	Type	Body Size	max. flow (SLPM)	Type	Body Size	max. flow (SLPM)
1/8" SS	¼"	5	1/4" Brass	¼"	50	1/4" SS	¼"	50
1/4" SS	¼"	50	6mm Brass	¼"	50	1/2" SS	½"	480
1/4" Brass	¼"	50	8mm Brass	¼"	64	VCO® & VCR® are registered Trademarks of Swagelok		
6 mm SS	¼"	50	3/8" Brass	½"	300			
8 mm SS	¼"	50	1/2" Brass	½"	480			
3/8" SS	½"	300	12mm Brass	½"	480			
3/8" Brass	½"	300						
1/2" SS	½"	480						
1/2" Brass	½"	480						
8 mm SS	½"	300						
12 mm SS	½"	480						

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