

FLOWMETER UNITS

The range of anesthesia **flowmeter units series FM, SF and RM**, available in different configurations, makes it possible to offer many options to meet various requirements in the operating theatre, mobile units and field hospitals. **flow-meter™** anesthesia flowmeters are manufactured in total compliance with all relevant EU standards and meet the requirements of the European Directive 93/42/EEC, ensuring that they can be relied upon for **total safety** even in the most stressful situations.

FM FLOWMETERS

The **FM** flowmeters are devices for the supply of medical gases with two to six antistatic and graduated tubes and completed with an integrated dosage unit. The body is made of anodized aluminum and the inlet connections for O₂, Air and N₂O at the bottom of the flowmeter are arranged to be connected to hospital centralized gas plants or to cylinders complete with pressure regulators. The gas feeding unit includes a safety valve automatically blocking the N₂O supply when the feeding pressure of O₂ drops below the value of approximately 0.8 bar. The mixtures of O₂ and N₂O can be supplied to the patient through a dosage unit. An incorporated mixing device proportions the N₂O in such a way that a minimum of at least 30% of O₂ is always present in the gas mixture. At the outlet of the dosage unit, an anesthesia evaporator can be connected or the gas mixture can be supplied directly to the patient through the gas feeding unit. The O₂+ flush button can be used for a quick supply of O₂ directly at the outlet of the mixture on the gas feeding unit.





01



02



03

Gas selector detail **01**
O₂+ flush button detail **02**
Knob detail **03**

	FM 2200	FM 2300	FM 2500	FM 2800	FM 2900
Sizes (LxWxH)	160x145x318 mm	160x145x318 mm	160x145x318 mm	160x145x318 mm	160x190x318 mm
Weight	5.52 Kg	5.57 Kg	5.64 Kg	5.69 Kg	7.2 Kg
Dosage range	O ₂ : 0.2 - 15 L/min. N ₂ O: 0.2 - 12 L/min.	O ₂ : 0.1 - 1 L/min. 0.2 - 15 L/min. N ₂ O: 0.1 - 1 L/min. 0.2 - 12 L/min.	O ₂ : 0.2 - 15 L/min. Air: 0.2 - 15 L/min. N ₂ O: 0.2 - 12 L/min.	O ₂ : 0.1 - 1 L/min. 0.2 - 15 L/min. Air: 0.2 - 15 L/min. N ₂ O: 0.1 - 1 L/min. 0.2 - 12 L/min.	O ₂ : 0.1 - 1 L/min. 0.2 - 15 L/min. Air: 0.2 - 15 L/min. N ₂ O: 0.1 - 1 L/min. 0.2 - 12 L/min. CO ₂ : 0.1 - 2 L/min. (limited at 1 L/min.)
Accuracy	±10% read value or ±0.3 L/min. if greater (± 10% E.O.S. for flow < than 1 L/min.)				
Inlet pressures	3.5 - 5 bar ±20%				
N₂O blocking device	the supply of N ₂ O is blocked when the O ₂ pressure drops below 0.8 bar ±0.3 bar.				
Charge loss level, side under pressure (before the adjusting needle valves)	less than 25 ml/min. in normal pressure conditions (ISO 5358)				
Charge loss level, low pressure side (after the adjusting needle valves, vaporizer excluded)	less than 25 ml/min. at 30 cm H ₂ O				
Hypoxycuard system	at least 30% -3% O ₂ is guaranteed in the mixture with N ₂ O opening value equal to 0.4 L/min. (with inlet pressures of 3.5 bar)				
Mixed gases outlet connection	conical connection 23 mm F ISO DIN 5356/1				
Gases inlet connections	hose connector Ø 6 mm				
O₂ quick dosage (if foreseen)	when pushed it can supply more than 45 L/min. O ₂				

SF FLOWMETERS

The **SF** flowmeters are devices for the supply of medical gases particularly suitable in respiratory therapy. They are made of anodized aluminum body, and they are available with one or more graduated tubes and a built-in dosage unit. The inlet connections are at the bottom of the unit and arranged to be connected to the hospitals centralized gas plants or to cylinders complete with pressure regulators. For veterinary use, an anesthesia evaporator can be connected at the outlet of the dosage unit.



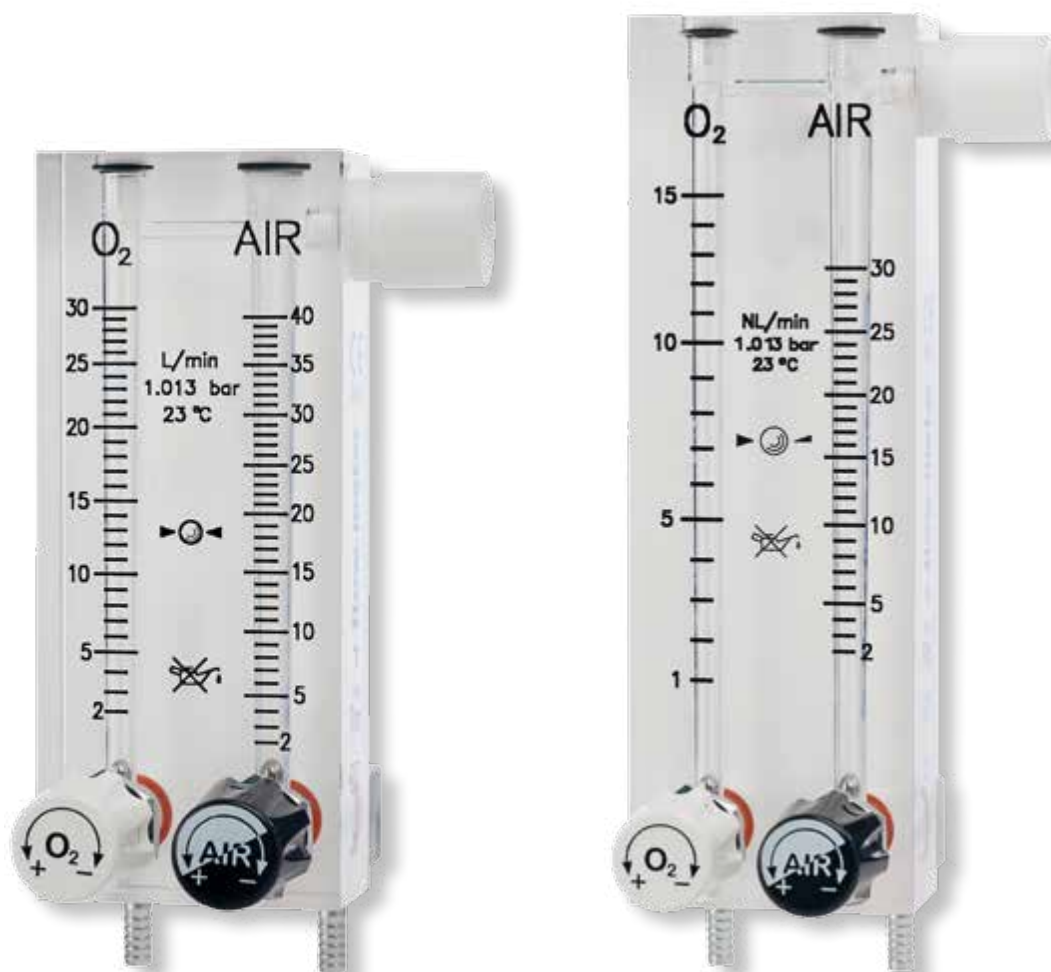


Gas adjusting knobs 01
Inlet hose connectors, detail 02

	SF 1	SF 2	SF 3	SF 4
Sizes (LxWxH)	115x73x294 mm	115x114x294 mm	115x137x294 mm	115x170x294 mm
Weight	1.12 Kg	1.61 Kg	2.0 Kg	2.4 Kg
Dosage range	O ₂ : 0.1 - 1 L/min. 0.1 - 8 L/min. 0.2 - 15 L/min. N ₂ O: 0.1 - 1 L/min. 0.2 - 12 L/min. Air: 0.2 - 15 L/min.			
Accuracy	±10% read value or ± 0.3 L/min. if greater (±10% E.O.S. for flow < than 1 L/min.)			
Inlet pressures	3.5 - 5 bar ±20%			
Charge loss level, side under pressure (before the adjusting needle valves)	less than 25 ml/min. in normal pressure conditions (ISO 5358)			
Charge loss level, low pressure side (after the adjusting needle valves)	less than 25 ml/min. at 30 cm H ₂ O			
Mixed gases outlet connection	Ø 22 M. - 15 F. ISO DIN 5356-1 or conical connection 23 mm F ISO DIN 5356/1 (for veterinary use only)			
Gases inlet connections	hose connector Ø 6 mm			

RM FLOWMETERS

The flowmeters type **RM/145-2** and **RM/185-2** are devices for the supply of medical gases with two meters suitable in respiratory therapy. The measurement tubes are integral within the body of the unit and the inlet connections are at the bottom of the units and arranged to be connected to the hospitals centralized gas plants or to gas cylinders completed with pressure regulators. For veterinary use, an anesthesia evaporator can be connected at the outlet of the dosage unit.





Adjusting knobs 01

	RM/145-2	RM/185-2
Sizes (LxWxH)	99x83x164 mm	99x83x204 mm
Weight	0.52 Kg	0.60 Kg
Dosage range O ₂ • N ₂ O • Air	5 L/min. • 15 L/min. • 30 L/min. • 40 L/min.	
Accuracy	± 10% read value or ± 0.5 L/min. if greater (±10% E.O.S. for flow < than 1 L/min.)	
Inlet pressures	3.5 - 5 bar ±20%	
Charge loss level, side under pressure (before the adjusting needle valves)	less than 25 ml/min. in normal pressure conditions (ISO 5358)	
Charge loss level, low pressure side (after the adjusting needle valves, vaporizer excluded)	less than 25 ml/min. at 30 cm H ₂ O	
Mixed gases outlet connection	Ø 22 M. - 15 F. ISO DIN 5356-1 or conical connection 23 mm F ISO DIN 5356/1 (for veterinary use only)	
Gases inlet connections	hose connector Ø 6 mm	

O₂+ FLUSH DEVICE

The O₂+ flush device is suitable for a quick oxygen supply directly at the mixed gases outlet at the end of an anesthesia circuit. Made of anodized aluminum, it is equipped with an anesthetic mixture inlet connection, an oxygen enriched mixture outlet connection, an O₂ feeding connection and a supply button. Different constructions can be made on request.





Inlet connection in detail 01

O₂+ flush button, detail 02

O₂+ flush device

Sizes (LxWxH)	93x63x80 mm
Weight	0.34 Kg
Mixed gases inlet connection	conical connection 23 mm M., ISO DIN 5356/1
Mixed gases outlet connection	conical connection 23 mm F., ISO DIN 5356/1
Feeding	3.5 - 5 bar ±20%
O ₂ feeding connection	automatic type for Ø 6 mm PA hose
O ₂ quick supply	when pushed it can supply more than 45 L/min. O ₂ (at 3.5 bar)