# OXYGEN THERAPY

DEVICES, ACCESSORIES & ASSEMBLY DIAGRAMS

FLOWMETERS, REUSABLE AND SINGLE-PATIENT HUMIDIFIERS,
PRESSURE REGULATORS, FLOW SELECTORS
AND SYSTEM FOR AMBULANCES



The line of **oxygen therapy** devices includes variable area flowmeters, calibrated holes "dial" flowmeters, pressure regulators with their cylinder connections, humidifiers, flow selectors and all the accessories to connect the devices to the oxygen and medical air supply sources in the hospital plants.

#### **APPLICATIONS**

The large range gives the possibility to select the best solution for the customer needs, allowing the creation of countless combinations meeting the various necessities of use.







emergency



home care

The devices are manufactured in full compliance with the main technical regulations, as well as the requirements of Regulation (EU) MDR 2017/745. This allows to operate in complete and absolute safety, even in the most extreme conditions of use.

# DIAGRAM OF OPTIONS

# MATCHING FLOWMETERS, CONNECTORS, HUMIDIFIERS

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# flow-meter™





# **FLOWMETERS**

# Comparison - Main information



# **EasyFLOW**®

Variable area oxygen flowmeters

EasyFLOW® flowmeters are instant flow variable area measurement devices for regulating the dosage of medical gases, particularly suitable in oxygen therapy.

#### **STRUCTURE**

They are manufactured with an integrated pressure reducer for the supplied pressure stabilization and with an outlet nipple having two connection threads on the two ends for an easy and quick interchangeability.

The body is made of impact-resistant polymer with brass chromeplated fittings, while the precision needle valve having a large ergonomic control knob, a Push&Lock system to keep locked the preset flow value and Soft Grip inserts allows the operator to easily adjust the gas flow at the required value, depending on the kind of therapy.

In **EasyFLOW®** flowmeter the measurement tube has a lens effect to get the scale values easy reading in any condition of use.

#### SIMPLE AND ACCURATE

The I/O switch button allows the operator to quickly lock and reactivate the flowmeter gas supply, keeping unchanged the previous flow preset value. The small size structure and the particular technical configuration allow the **EasyFLOW®** flowmeters to be able to supply flows of medical gas with extreme accuracy, even in the most difficult conditions, while the several options offered can satisfy any kind of use and exigencies.



### Main information



Both in single or twin flowmeter execution to allow double and separate gas flows by using a single medical gas supply.



The operators can get two options of outlet thread by simply reversing the nipple, depending on the required applications.

### **Related** products







Oxygen Probes and Accessories from p. 55

SIZES (LxWxH) 61x107x175 mm

WEIGHT 0.37 Kg

GAS SUPPLY PRESSURE 280÷600 kPa with an integrated pressure reducer for the stabilization

of supplied pressure

**GASES OPTIONS**  $O_2 \cdot Air$ 

**END OF SCALE VALUES** 5 L/min. · 10 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. value for flow E.O.S. ≤ than 1 L/min.)

**STANDARD INLET CONNECTION** ISO G 1/4" M. · 1/4"NPT M.

Nipple with double thread, interchangeable by the end user:

**STANDARD OUTLET** • M12x1.25 M - 1/4" ISO 3253 M.

**CONNECTION** • 9/16" UNF EN 13544-2 M. - 1/4" ISO 3253 M.

· M12x1.25 M. - 9/16" UNF EN 13544-2 M.

FLOW CALIBRATION DATA 1013 mbar 23 °C



- **2 Adjusting knob** with Push&Lock System and Soft Grip inserts for easy handling.
- **3 I/O switch.** Quick push switch button.
- 4 **Nipple** with double thread, interchangeable by the end user.







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# **Qmed**<sup>®</sup>

### Variable area oxygen flowmeters

Qmed® flowmeters are instant flow measuring devices suitable for the dosage of medical gases. They are manufactured in version with compensated or not compensated pressure and in single or twin configuration in order to allow a double and independent gas supply using a single gas source.

#### **STRUCTURE**

The flowmeters type **Qmed**® fit a needle valve with a knob in color code for the immediate identification of the supplied gas. The body is made of aluminium making it extremely light and giving the possibility to obtain different finishing solutions such as chrome-plating or anodising, this last case in different customised colours.

The measure group is made of high resistance polycarbonate, a high mechanical resistance material that, together with the chrome-plated brass nipples and the aluminium body, makes this device ideal for the toughest applications. Moreover the outlet nipple can be easily manually removed and replaced by the operator, to meet any immediate application requirements.

#### **SOLUTIONS AND OPTIONS**

The flowmeters type **Qmed®** are available in different solutions of pressure calibration and medical gases, various options of scale, normal or extended (L version) to allow a better reading of the indicated values and in several configurations of inlet and outlet connections offering a wide range of combinations to fit every application need.

#### Main information



**Qmed®** can be manufactured in single or twin configuration in order to allow double and separate gas supply using a single gas source.



The outlet nipple can be easily manually removed and replaced by the operator, to meet any immediate application requirements.

### **Related** products







Oxygen Probes and Accessories from p. 55

 SIZES (LxWxH)
 82x33x142 mm

 WEIGHT
 0.15 Kg

 SUPPLY MAX. PRESSURE
 600 kPa

 STANDARD END OF SCALE VALUES - 400 kPa
 1 L/min. · 4 L/min. · 5 L/min. · 10 L/min. · 15 L/min. · 20 L/min. · 30 L/min. · 50 L/min.

 ACCURACY
 ± 10% read value or ± 0.5 L/min. if greater (±10% E.O.S. value for flow E.O.S. ≤ than 1 L/min.)

 STANDARD INLET CONNECTION
 ISO G 1/8" F. · ISO G 1/4" M. · 1/4"NPT M. · 3/8" ISO 3253 F. · M 12x1 F.

 STANDARD OUTLET CONNECTION

 1/4" ISO 3253 M. · 3/8" ISO 3253 M. · M 12x1.25 M. · 9/16" UNF EN 13544-2 M.

- 1 **Outlet connection** easy to remove and to replace.
- 2 Anodized body version available in different colours.







# Rs

### Variable area **oxygen flowmeters**

Rs flowmeters are instant flow measuring devices suitable for the dosage of medical gases, in this case oxygen and medical air. They can be produced in version with pressure compensated or not compensated, and manufactured both with single or twin flow tubes in order to allow a double and independent gas supply using a single gas source.

#### **STRUCTURE**

The flowmeters type **Rs** fit a needle valve with a knob in color code for the immediate identification of the supplied gas.

The body is manufactured in chrome-plated brass with metal fittings. The measurement group is made of high resistance polycarbonate, making this device ideal for the toughest applications.

#### **SOLUTIONS AND OPTIONS**

They are also available in different solutions of pressure calibration, various options of scale, normal or extended (L version) to allow a better reading of the indicated values. Several options are proposed concerning the threaded connections, inlet or outlet, offering an endless variety of combinations to meet all application requirements.

The **Rs** flowmeter also offers the possibility to have a flow selector integrated in its body.

#### Main **information**



Rs can be manufactured in single or twin configuration in order to allow double and separate gas supply using a single gas source.



The **Rs** flowmeter also offers the possibility to have a flow selector integrated in its body.

# **Related** products







**Humidifiers** from p. 47

**DF** flow selector p. 30

Oxygen Probes and Accessories from p. 55

SIZES (LxWxH)	80x33x136 mm	82x55x180 mm
WEIGHT	0.24 Kg	0.38 Kg
SUPPLY MAX. PRESSURE	600 kPa	
END OF SCALE VALUES - 350 kPa	1 L/min. · 4 L/min. · 5 L/min. · 10 L/min. · 15 L/min	. · 20 L/min. · 30 L/min. · 50 L/min.
ACCURACY	±10% read value or ±0.5 L/min. if greater (±10%	E.O.S. value for flow E.O.S. ≤ than 1 L/min.)
INLET CONNECTION	ISO G 1/8" F. · ISO G 1/4" M. · 1/4"NPT M. · 3/8" ISO	) 3253 F. · M 12x1 F.
OUTLET CONNECTION	1/4" ISO 3253 M. · 3/8" ISO 3253 M. · M 12x1.25 M. 9/16" UNF EN 13544-2 M. · 1/2" BSF F.	· 1/2" GAS M.

- 1 Rs ABS knob, oxygen color code.
- 2 Rs flowmeter with integrated DF flow selector.







# **EasyMED**® PLUS

# Calibrated orifices oxygen flowmeters

EasyMED® PLUS flowmeters are instant flow measurement devices with calibrated orifices for medical gases supply and dosage, particularly suitable in oxygen therapy. They are offered both in single or twin flowmeter execution to allow double and separate gas flow by using a single medical gas supply source.

#### **STRUCTURE**

The **EasyMED®** PLUS flowmeters are manufactured with an integrated pressure reducer for the supplied pressure stabilization and with an outlet nipple having two connection threads on the two ends for an easy and quick interchangeability. The operators can get two options of outlet thread by simply reversing the nipple, depending on the required applications. The body is made of impact-resistant polymer with brass chrome-plated fittings, while a large ergonomic control knob with Soft Grip inserts allows the operator to easily adjust the gas flow among the 10 possible preset options.

#### **SIMPLE AND ACCURATE**

The calibration of the gas flow is ensured by orifices got on a metal support with the laser technology. The I/O switch button allows the operator to quickly lock and reactivate the flowmeter gas supply, keeping unchanged the previous flow preset value. The small size structure and the particular technical configuration allow the **EasyMED® PLUS** "dial" flowmeters to be able to supply flows of medical gas with extreme accuracy, even in the most difficult conditions, such as in emergency mobile units.



### Main **information**



EasyMED® PLUS can be manufactured in single or twin configuration in order to allow double and separate gas supply using a single gas source.



Compared to conventional variable area flowmeters having vertical indicator, they do not need to be always and only used in the upright position.

### **Related** products







Oxygen Probes and Accessories from p. 55

SIZES (LxWxH) 61x104x78 mm

WEIGHT 0.19 Kg

GAS SUPPLY PRESSURE 280÷600 kPa with an integrated pressure reducer for the stabilization of supplied pressure

**GASES OPTIONS**  $O_2 \cdot Air$ 

**END OF SCALE VALUES** 6 L/min. · 14 L/min. · 15 L/min. · 30 L/min. · 50 L/min.

**ACCURACY**  $\pm 10\%$  read value or  $\pm 0.5$  L/min. if greater between 10% and 100% E.O.S.

±10% read value or ±0.2 L/min. if greater for flows < 10% E.O.S.

**STANDARD INLET CONNECTION** ISO G 1/4" M. · 1/4"NPT M.

Nipple with double thread, interchangeable by the end user:

STANDARD OUTLET CONNECTION • M12x1.25 M - 1/4" ISO 3253 M.

· 9/16" UNF EN 13544-2 M. - 1/4" ISO 3253 M.

· M12x1.25 M - 9/16" UNF EN 13544-2 M.

FLOW CALIBRATION DATA 1013 mbar 23 °C

**FLOW RATES** 10 (0+9 preset values)

- Adjusting knob with Soft Grip inserts for easy handling.
- **2 I/O switch**. Quick push switch button.
- **3 Nipple** with double thread, interchangeable by the end user.











# Regulation values for the different end of scale flows

			STEP VAL	UES								
S.	6 l	L/min.	0.00	0.25	0.50	1.00	1.50	2.00	3.00	4.00	5.00	6.00
A SE	14 l	L/min.	0.00	0.50	1.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00
OF S	15 l	L/min.	0.00	0.50	1.00	2.00	3.00	4.00	6.00	9.00	12.00	15.00
END (	30 l	L/min.	0.00	1.00	2.00	4.00	8.00	12.00	16.00	20.00	25.00	30.00
	50 l	L/min.	0.00	1.00	2.00	3.00	6.00	9.00	12.00	15.00	30.00	50.00

# **EASYMED®**

Calibrated orifices oxygen flowmeters

EASYMED® flowmeters are top-quality instant flow measurement devices with calibrated orifices for regulating the dosage of oxygen and air in medical applications.

#### **STRUCTURE**

The flowmeters type **EASYMED**® are manufactured with an integrated pressure reducer for the supplied pressure stabilization and with the outlet fitting with thread adapted to the various required applications. The body is made of impact-resistant polymer with brass plated fittings, while a large ergonomic control knob allows an operator smooth drive for the selection of the gas supply value among the 10 possible options.

#### **WORKING PRINCIPLE**

The calibration of the flow is ensured by orifices got on a metal support with the laser technology. The small size structure and the particular technical configuration allow the **EASYMED**® "dial" flowmeters to be able to supply flows of medical gas with extreme accuracy even in the most difficult conditions, such as in emergency mobile units.

#### Main **information**



**EASYMED®** can be manufactured in single or twin configuration in order to allow double and separate gas supply using a single gas source.



Compared to conventional variable area flowmeters having vertical indicator, they do not need to be always and only used in the upright position.

### **Related** products





**Humidifiers** from p. 47

Oxygen Probes and Accessories from p. 55

SIZES (LxWxH)	82x54x65 mm
WEIGHT	0.12 Kg
SUPPLY PRESSURE	280÷600 kPa with integrated pressure regulator for the supplied pressure stabilization
ACCURACY	$\pm 10\%$ read value or $\pm 0.5$ L/min. if greater between 10% and 100% E.O.S. $\pm 10\%$ read value or $\pm 0.2$ L/min. if greater for flows < 10% E.O.S.
STANDARD SUPPLY CONNECTION	ISO G 1/4" M. · 1/4" NPT M.
STANDARD GAS OUTLET CONNECTION	M12x1.25 M · 1/4" ISO 3253 M. · 3/8" ISO 3253 M. · 9/16" UNF EN 13544-2 M.
GASES OPTIONS	$O_2\cdotAir$
STANDARD FULL SCALE FLOW RATE	6 L/min. · 14 L/min. · 15 L/min. · 30 L/min. · 50 L/min.
FLOW RATES	10 (0+9 preset values)
FLOW CALIBRATION DATA	1013 mbar 23 °C

#### 1 Ergonomic knob.

2 Flow indicator: easy and immediate reading; ten reading values, to improve low flows regulation.









# Regulation values for the different end of scale flows

			STEP VAL	UES								
S	6	L/min.	0.00	0.25	0.50	1.00	1.50	2.00	3.00	4.00	5.00	6.00
CALES	14	L/min.	0.00	0.50	1.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00
OF S	15	L/min.	0.00	0.50	1.00	2.00	3.00	4.00	6.00	9.00	12.00	15.00
9	30	L/min.	0.00	1.00	2.00	4.00	8.00	12.00	16.00	20.00	25.00	30.00
	50	L/min.	0.00	1.00	2.00	3.00	6.00	9.00	12.00	15.00	30.00	50.00

### Flow selector for aerosol therapy

The DF flow selector, used in conjunction with Rs and Qmed® flowmeters, allows to divert the supplied gas through an humidifier or through a hose connector to connect devices used for aerosol therapy.

#### **STRUCTURE**

The **DF** flow selector can be connected through its threaded ring to the flowmeter or supplied directly integrated in the Rs body. The flow can be easily directed to the humidifier for oxygen therapy, through the axial outlet, otherwise it can be diverted through a side hose connector for aerosol therapies.

#### Main **information**



A synoptic printed on the body of the **DF** flow selector helps the operators to easily control the selected flow direction.

### **Related** products



variable area oxygen flowmeters p. 24



Qmed® area oxygen flowmeters p. 22



Humidifiers from p. 47

SIZES (LxWxH) 32x54x69 mm

WEIGHT 0.16 Kg

SUPPLY MAX. PRESSURE 500 kPa

MAX. PRESSURE DROP

9.20 kPa

WITH FLOW 15 L/min. O,

**INLET CONNECTION** 

1/4" ISO 3253 F.

M12x1.25 F. • 9/16" UNF EN 13544-2 F.

**OUTLET CONNECTION** 1/4" ISO 3253 M. · M12x1.25 M. · 9/16" UNF EN 13544-2 M.

**HOSE CONNECTOR FOR AEROSOL CIRCUIT** Ø 6÷9 mm

PRESSURE DROP AT THE HUMIDIFIER SIDE

WITH FLOW 20 L/min.

PRESSURE DROP AT THE AEROSOL SIDE WITH FLOW 20 L/min.

- 1 Connection to the flowmeters with different threads.
- 2 Connection to the humidifiers with different threads.
- 3 **DF** flow selector integrated in the **Rs** flowmeter.









3







# **DIAGRAM OF OPTIONS**

# MATCHING PRESSURE REGULATORS, CONNECTIONS, HUMIDIFIERS

ОХ	YGEN THERAPY PRESSURE REGULATORS	OXYGEN THERAPY	37
1	Easy CARE® PLUS pressure regulator		38
2	EASYCARE® pressure regulator		40
3	FM pressure regulator for oxygen therapy		42
ОХ	YGEN THERAPY	OXYGEN THERAPY	14
4	Qmed® variable area oxygen flowmeter		22
5	Rs variable area oxygen flowmeter		24
6	Flowmeter outlet hose connector		56
7	EasyOX® bubbling humidifier		50
8	OXITER® oxygen therapy single-patient humidifier		52
9	CH/200 PC oxygen therapy humidifier		48
10	TR/200 PC (or PSU) oxygen therapy humidifier		48
11	MAK/300 PC oxygen therapy humidifier		48
12	MAK/500 PC oxygen therapy humidifier		48
СО	NNECTIONS AND ACCESSORIES FOR OXYGEN THERAPY DEVICES		
Ε	CYLINDER INLET CONNECTIONS FOR OXYGEN PRESSURE REGULATORS	OXYGEN THERAPY	57
	Pin Index EN 850 (or CGA 870) · AFNOR NF-E 29-656		
	DIN 477-1 · UNI 11144 · BS 341-3 · CGA 540		
TE	RMINAL UNITS		
F	TERMINAL UNITS - COMPONENTS - OUTLETS  AFNOR NF-S 90-116/NF-DS 90-119 · UNI 9507 NEO	TERMINAL UNITS	143
	BS 5682 · DIN 13260 · SS 875 24 30		





# **PRESSURE REGULATORS**

Comparison - Main information



# **EasyCARE**® PLUS

### **Pressure regulators**



# The EasyCARE® PLUS two stage pressure regulators are suitable for direct mounting on oxygen and medical air cylinders.

#### **STRUCTURE**

Its structure is very compact and lightweight and it is particularly suitable for oxygen therapy. The body is made of brass and aluminium with an integrated calibrated orifices "dial" flowmeter having 10 preset medical gas flow options and it is housed inside a techno-polymer shock proof shell to protect the assembly, while a large ergonomic control knob with Soft Grip inserts allows the operator to easily adjust the gas flow between the 10 possible preset options. They are equipped with a preset overpressure safety valve, and can be supplied, as an option, with a terminal unit connected to the first stage chamber which allows to get an additional and separate source of medical gas. The outlet has a nipple with two connection threads on the two ends, for an easy and quick interchangeability.

#### **WORKING PRINCIPLE AND GAUGE**

The pressure calibration of the individual stages is fixed and a pressure gauge, with easy reading colored sections, allows to get view continuously of the cylinder gas level, up to minimum allowed. A protective silicone cover and a techno-polymer support prevent gauge damages caused by possible shocks received during transport or use. The gauge in tilted position helps in reading even if the regulator is assembled on cylinders having small dimensions.

### Main **information**



The inlet connection is offered in several options, as per the different reference standards of the destination Countries.



The operators can get two options of outlet thread by simply reversing the nipple, depending on the required applications.



The small size structure and the particular technical configuration allow the EasyCARE® PLUS pressure regulators to supply flows of medical gases like oxygen with extreme accuracy, even in the most difficult conditions, such as in mobile units of emergency.

### **Related** products





Humidifiers from p. 47

Cylinder inlet connections p. 57

SIZES (LxWxH)	57x160x128 mm (with UNI 11144 cylinder connection and without optional terminal unit)
WEIGHT	0.75 Kg (without optional terminal unit)
MAXIMUM GAS SUPPLY PRESSURE	200 bar
PRESSURE CONTROL GAUGE	315 bar end of scale

**END OF SCALE STANDARD FLOW VALUES** 6 L/min. · 14 L/min. · 15 L/min. · 30 L/min. · 50 L/min. **FLOW RATES** 10 (0+9 preset values)

**GASES OPTIONS**  $O_2 \cdot AIR$ 

**DIAL FLOWMETER ACCURACY**±10% read value or ±0.5 L/min. if greater between 10% and 100% E.O.S.
±10% read value or ±0.2 L/min. if greater for flows < 10% E.O.S.

**PRESSURE REDUCER ASSY** double stage with shutter system

FLOW SETTING DATA 1013 mbar 23 °C

 $\textbf{INLET CYLINDER CONNECTIONS} \quad \text{UNI 11144} \cdot \text{EN 850} \cdot \text{NF-E 29-656} \cdot \text{BS 341-3} \cdot \text{DIN 477-1} \cdot \text{ISO 5145} \cdot \text{CGA 540}$ 

Nipple with double thread, interchangeable by the end user:

• M12x1.25 M. - 1/4" ISO 3253 M.

• 9/16" UNF EN 13544-2 M. - 1/4" ISO 3253 M.

· M12x1.25 M. - 9/16" UNF EN 13544-2 M.

**TERMINAL UNIT (OPTIONAL)** AFNOR NF-S 90-116 · UNI 9507 · BS 5682 · DIN 13260 · SS 875 24 30

**SUPPLY PRESSURE** 360÷550 kPa (with cylinder pressure between 200 and 60 bar and constant flow of 40 L/min. 23 °C)

- 1 Gauge with easy reading colored sections to allow the continuous control of the cylinder gas level. Gauge fit in tilted position with colored sections and double scale (bar/kPa + PSI). Protective silicone cover and techno-polymer support.
- **2 Big size knob**, with Soft Grip inserts for easy handling.
- **3 Nipple** with double thread, interchangeable by the end user.
- 4 Optional outlet.

Being the integrated flowmeter a calibrated orifices type, there is no need to get it always and only used in the upright position, as required in case of use of pressure regulators fitting conventional variable area flowmeters with vertical reading values scales.





WATCH THE VIDEO









# Regulation values for the different end of scale flows

			STEP VAL	UES								
S.	6 l	L/min.	0.00	0.25	0.50	1.00	1.50	2.00	3.00	4.00	5.00	6.00
A SE	14 l	L/min.	0.00	0.50	1.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00
OF S	15 l	L/min.	0.00	0.50	1.00	2.00	3.00	4.00	6.00	9.00	12.00	15.00
END (	30 l	L/min.	0.00	1.00	2.00	4.00	8.00	12.00	16.00	20.00	25.00	30.00
	50 l	L/min.	0.00	1.00	2.00	3.00	6.00	9.00	12.00	15.00	30.00	50.00

# **EASYCARE®**

### **Pressure regulators**

# The EASYCARE® two stage pressure regulator is suitable for direct mounting on oxygen cylinders.

#### **STRUCTURE**

Its structure is very compact and lightweight and it is particularly suitable for oxygen therapy. The body is made of brass and chrome-plated aluminum with an integrated impact resistant polymer calibrated orifices flowmeter with 10 options of flow oxygen supply. It is equipped with a pre-calibrated overpressure safety valve, and with a terminal unit (optional) connected to the first stage chamber which allows to get an additional and separate source of oxygen or air supplied at 4 bar. The inlet connection is offered in several options, as per the different reference standards of the destination Countries, and the outlet too is available with threads adapted to different applications.

#### **WORKING PRINCIPLE AND GAUGE**

The pressure calibration of the individual stages is fixed and a pressure gauge allows to get view of the cylinder contents. A protective silicone cover prevents gauge damages caused by possible shocks received during transport or use.

#### Main **information**



The inlet connection is offered in several options, as per the different reference standards of the destination Countries.



The small size structure and the particular technical configuration allow the EASYCARE® pressure reducers to get flows of medical gases like oxygen dispensed with extreme accuracy, even in the most difficult conditions, such as in mobile units of emergency.

### **Related** products





**Humidifiers** from p. 47

Cylinder inlet connections p. 57

SIZES (LxWxH)	147x55x117 mm (with UNI 11144 cylinder connection and without optional terminal unit)
WEIGHT	0.81 Kg (without optional outlet)
MAXIMUM INLET PRESSURE	200 bar
GASES OPTIONS	$O_2 \cdot AIR$
STANDARD FLOW RANGE	6 L/min. · 14 L/min. · 15 L/min. · 30 L/min. · 50 L/min.
FLOW RATES	10 (0+9 preset values)
FLOWMETER ACCURACY	±10% read value or ±0.5 L/min. if greater between 10% and 100% E.O.S. ±10% read value or ±0.2 L/min. if greater for flows < 10% E.O.S.
INLET CONNECTION TO THE CYLINDER	UNI 11144 · EN 850 · NF-E 29-656 · BS 341-3 · DIN 477-1 · ISO 5145 · CGA 540
OUTLET CONNECTION	1/4" ISO 3253 M. · 3/8" ISO 3253 M. · M12x1.25 M. · 9/16" UNF EN 13544-2 M.
TERMINAL UNIT (OPTIONAL)	AFNOR NF-S 90-116 · UNI 9507 · BS 5682 · DIN 13260 · SS 875 24 30



3 Ergonomic knob.

4 Detail of optional outlet.

In fact, being the integrated flowmeter a calibrated orifices type, there is no need to get it always and only used in the upright position, as required in case of use of pressure regulator fitting conventional variable area flowmeters with vertical indicator.

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# Regulation values for the different end of scale flows

			STEP VAL	UES								
S.	6 l	L/min.	0.00	0.25	0.50	1.00	1.50	2.00	3.00	4.00	5.00	6.00
A SE	14 l	L/min.	0.00	0.50	1.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00
OF S	15 l	L/min.	0.00	0.50	1.00	2.00	3.00	4.00	6.00	9.00	12.00	15.00
END (	30 l	L/min.	0.00	1.00	2.00	4.00	8.00	12.00	16.00	20.00	25.00	30.00
	50 l	L/min.	0.00	1.00	2.00	3.00	6.00	9.00	12.00	15.00	30.00	50.00

# **FM**

Pressure regulators for **oxygen therapy** 

The single-stage FM pressure regulators, in their application in oxygen, are suitable for direct mounting on oxygen cylinders.

#### **STRUCTURE**

The **FM** pressure regulators are supplied with oxygen cylinder connections, among those available, according to the different reference standards of the destination Countries. They have a direct connection to a **Rs** and **Qmed** series variable area flowmeters, available in some options regarding the scale reading values and the outlet threads, suitable to connect a humidifier or a simple hose connector. The FM pressure regulators are designed for use with preset outlet pressure value. The structure and the fittings are in brass and the pressure relief valve is pre-calibrated, to guarantee protection in case of any system failure. A protective silicone cover prevents gauge damages caused by possible shocks received during transport or use.

### Main **information**



The structure and fittings are in brass.



The FM pressure regulator has an integrated variable area flowmeter and it must be only used in upright position.

# **Related** products





**Humidifiers** from p. 47

Cylinder inlet connections p. 57

	MAX. SIZES (LxWxH)	MAX. WEIGHT		
VERSION WITH HOSE CONNECTION ON OUTLET	100x178x161 mm	1.24 Kg		
VERSION WITH HUMIDIFIER ON OUTLET	108x180x320 mm	1.40 Kg		
MAXIMUM INLET PRESSURE	200 bar			
GASES OPTIONS	$O_2 \cdot AIR$			
STANDARD FLOW RANGE	5 L/min. · 10 L/min. · 15 L/min. · 30 L/min. · !	50 L/min.		
FLOWMETER ACCURACY	±10% read value or ±0.5 L/min. if greater			
INLET CONNECTIONS	UNI 11144 · EN 850 · NF-E 29-656 · BS 341-3 · DIN 477- 1 · ISO 5145 · CGA 540			
FLOWMETER OUTLET CONNECTION	1/4" ISO 3253 M.· 3/8" ISO 3253 M.· M12x1.2	5 M. · 9/16" UNF EN 13544-2 M.		

- 1 Protective silicone cover. Gauge with colored sections and double scale.
- 2 Detail of Rs outlet thread connected

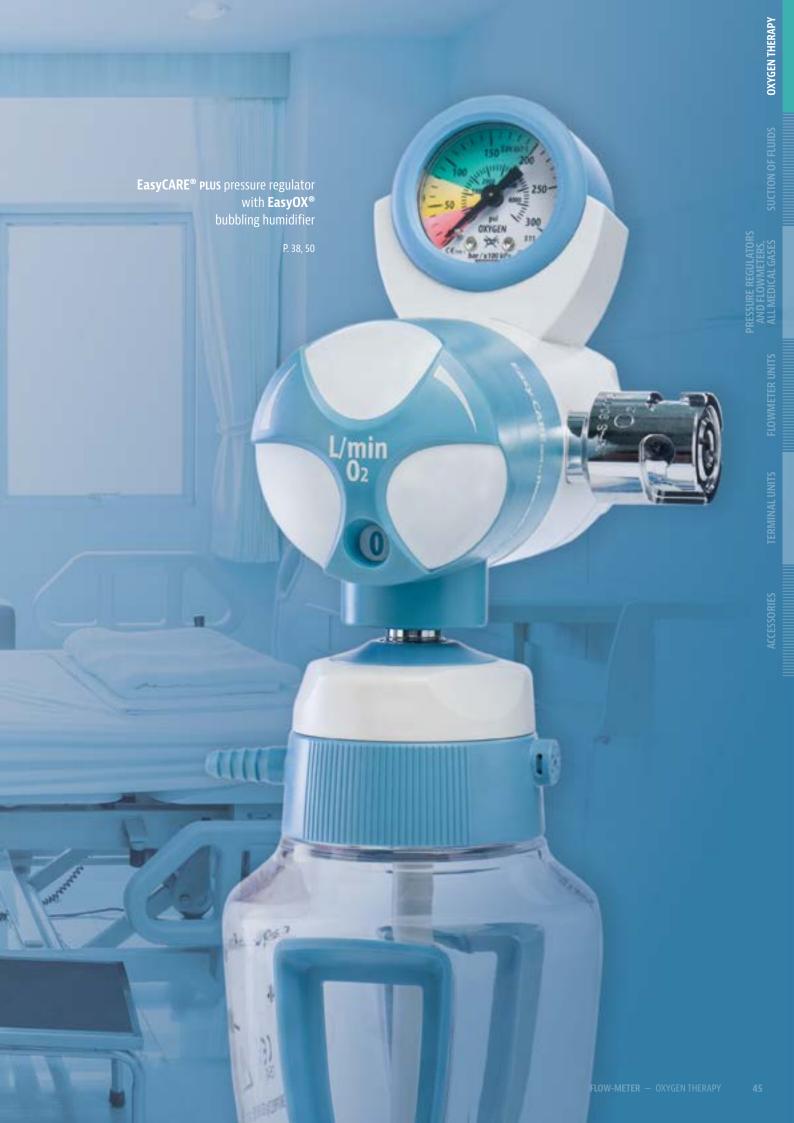














# **HUMIDIFIERS**

# Comparison - Main information

	p. 48	p. 48	p. 48	p. 50	p. 52
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	CH/200	TR/200	MAK/300&500	Easy0X <sup>®</sup>	OXITER®
MATERIAL	polycarbonate	polycarbonate polysulfone	polycarbonate	polycarbonate	polycarbonate and ABS
CAPACITY	210 ml	120 ml	MAK/300 285 ml MAK/500 355 ml	190 ml	285 ml
RELIEF VALVE	-	optional	optional	integrated	-
INLET & OUTLET	inlet nut and hose connector in brass	inlet nut and hose connector in brass	inlet nut and hose connector in brass	rotating nut with different snap inserts and 360° rolling positioning hose connector	hose connector and nut in ABS
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# **CH, TR and MAK**

Oxygen therapy humidifiers

The bubbling humidifiers for oxygen therapy series CH/200, TR/200, MAK/300 and MAK/500 are devices used to increase the relative humidity in the treatments with medical oxygen, both in hospital and at home.

#### **STRUCTURE**

Humidifiers for oxygen series **CH/200**, **TR/200**, **MAK/300** and **MAK/500** are manufactured with both the transparent jar and the cover with bubbler in polycarbonate. All fitments are in brass and they can be sterilized in autoclave at 121 °C for 15 min. The model **TR/200** can also be realized in PSU where higher value of sterilization temperature is requested (134 °C - 18 min.).

#### **OPTIONS AND CAPACITIES**

The model TR/200, MAK/300 and MAK/500 can be equipped with an optional relief valve to avoid the possible over pressure inside the humidifier. They guarantee, in conjunction with flowmeters EasyFLOW®, Rs, Qmed®, EASYMED® and EasyMED® PLUS, an easy use and great versatility, combined with an extreme economy. They are supplied in different options of capacity (200 ml, 300 ml and 500 ml) and with optional threads in the input connections, this to satisfy the most varied requirements and needs.

CH/200

#### Main **information**



Medical oxygen, as it is normally supplied from hospital plant outlets or cylinders, has not a sufficient degree of humidity to be physiologically tolerated by the patient's airways without collateral consequences. Hence the need to add humidifiers on flowmeters' outlet for the humidification of the gas during dispensing.



The model **TR/200**, **MAK/300** and **MAK/500** can be equipped with an optional relief valve to avoid the possible over pressure inside the humidifier.

### **Related** products





Variable area and orifices calibrated oxygen flowmeters from p. 19

MVK/3UU

Pressure regulators from p. 37

MAK/500

INNER MAX. VOLUME         210 ml         120 ml         285 ml         355 ml           SIZES (LxWxH)         55x67x200 mm         60x75x190 mm         70x81x175 mm         70x81x207 mm           WEIGHT         0.11 Kg         0.13 Kg         0.15 Kg         0.16 Kg           MAX. APPLICABLE PRESSURE VALUE         500 kPa         500 kPa <th></th> <th>CH/200</th> <th>1R/200</th> <th>WAK/300</th> <th>WAK/500</th>		CH/200	1R/200	WAK/300	WAK/500	
WEIGHT         0.11 Kg         0.13 Kg         0.15 Kg         0.16 Kg           MAX. APPLICABLE PRESSURE VALUE         500 kPa           MAX. APPLICABLE FLOW VALUE         10 L/min.           INLET CONNECTION         1/4" ISO 3253 F. ⋅ 3/8" ISO 3253 F. ⋅ M 12x1.25 F. ⋅ 9/16" UNF EN 13544-2 F.           OUTLET CONNECTION         hose connector Ø 6÷9 mm	INNER MAX. VOLUME	210 ml	120 ml	285 ml	355 ml	
MAX. APPLICABLE PRESSURE VALUE  MAX. APPLICABLE FLOW VALUE  10 L/min.  1/4" ISO 3253 F. ⋅ 3/8" ISO 3253 F. ⋅ M 12x1.25 F. ⋅ 9/16" UNF EN 13544-2 F.  OUTLET CONNECTION hose connector Ø 6÷9 mm	SIZES (LxWxH)	55x67x200 mm	60x75x190 mm	70x81x175 mm	70x81x207 mm	
MAX. APPLICABLE FLOW VALUE  10 L/min.  INLET CONNECTION  1/4" ISO 3253 F. ⋅ 3/8" ISO 3253 F. ⋅ M 12x1.25 F. ⋅ 9/16" UNF EN 13544-2 F.  OUTLET CONNECTION  hose connector Ø 6÷9 mm	WEIGHT	0.11 Kg	0.13 Kg	0.15 Kg	0.16 Kg	
INLET CONNECTION 1/4" ISO 3253 F. $\cdot$ 3/8" ISO 3253 F. $\cdot$ M 12x1.25 F. $\cdot$ 9/16" UNF EN 13544-2 F.  OUTLET CONNECTION hose connector Ø 6÷9 mm	MAX. APPLICABLE PRESSURE VALUE	500 kPa				
<b>OUTLET CONNECTION</b> hose connector Ø 6÷9 mm	MAX. APPLICABLE FLOW VALUE	10 L/min.				
	INLET CONNECTION	1/4" ISO 3253 F. · 3/8" ISO 3253 F. · M 12x1.25 F. · 9/16" UNF EN 13544-2 F.				
<b>RELIEF VALVE (OPTIONAL)</b> preset at 80 kPa ±10% with a flow equal to 10 L/min.	OUTLET CONNECTION	hose connector Ø 6÷9 mm				
	RELIEF VALVE (OPTIONAL)	preset at 80 kPa ±10% with a flow equal to 10 L/min.				

- 1 Detail of the **bubbling device**.
- 2 Detail of the lid.
- 3 Detail of the **relief valve** (optional).
- 4 The model TR/200 can also be realized in PSU where higher value of sterilization temperature is requested.







**Bubbling humidifiers** 

The bubbling humidifiers for oxygen therapy series EasyOX® are devices used to increase the relative humidity in the treatments with medical oxygen, both for hospital and homecare applications.

#### **STRUCTURE**

The humidifiers for oxygen series **EasyOX**® are completely made of polycarbonate and they can be sterilized in autoclave at 121 °C for 15 min. The advanced design and the different options of snap threaded nut, allowing to fit the device in any situation, and the overall ergonomics make the humidifier **EasyOX®** particularly innovative. In conjunction with flowmeters **EasyFLOW®**, **Rs**, **Qmed®**, **EASYMED®** and **EasyMED® PLUS**, this humidifier guarantees operators an easy use and great versatility, combined with an extreme economy.



### Main **information**



Medical oxygen, as it is normally supplied from hospital plant outlets or cylinders, has not a sufficient degree of humidity to be physiologically tolerated by the patient's airways without collateral consequences. Hence the need to add humidifiers on flowmeters' outlet for the humidification of the gas during dispensing.



The bottle hollow shape, besides being a design unique element, offers the operator an easy and safe handling and guarantees a higher humidification efficiency.

### **Related** products







Pressure regulators from p. 37

INNER MAXIMUM VOLUME 190 ml

SIZE (LxWxH) 89x84x161 mm

WEIGHT 0.13 Kg

MAXIMUM APPLICABLE PRESSURE VALUE 80 kPa

MAXIMUM APPLICABLE FLOW VALUE 10 L/min.

**INLET CONNECTION** 9/16" UNF EN 13544-2 F. · 1/4" ISO 3253 F.

M 12x1.25 F. · 3/8" ISO 3253 F.

**OUTLET CONNECTION** hose connector Ø 6÷9 mm

- Snap nut, color coded and provided with different connections threads to be choosen by the end user. Once inserted it cannot be removed.
- 2 Opening by quick 1/12 turn to facilitate the humidifier filling and cleaning procedures.
- 3 An ergonomic and big size rotating nut allows to easily connect and disconnect the humidifier EasyOX® to the oxygen supply device.
- **4** 360° rolling positioning hose connector Ø 6÷9 mm.
- 5 Detail of the relief valve.



WATCH THE VIDEO











### **OXITER®**

Oxygen therapy single-patient **humidifiers** 

The OXITER® bubbling humidifiers are single patient devices used to increase the relative humidity in the treatments with medical oxygen both in hospital and at home.

#### **STRUCTURE**

The **OXITER®** single-patient bubbling humidifiers are made of a jar in polycarbonate and a cover and remaining structure in ABS. They are supplied in packs of 20 pieces.

The bubbling device guarantees the best supplied oxygen humidification, maintaining a noise level far below the limits of the reference standard (<50 dB at 1 m) and thus giving acceptable comfort to the patient, especially in prolonged respirators treatments. They guarantee, in conjunction with flowmeters <code>EasyFLOW®</code>, <code>Rs</code>, <code>Qmed®</code>, <code>EASYMED®</code> and <code>EasyMED®</code> <code>PLUS</code>, an easy use and great versatility, combined with an extreme economy.

### Main **information**



Medical oxygen, as it is normally supplied from hospital plant outlets or cylinders, has not a sufficient degree of humidity to be physiologically tolerated by the patient's airways without collateral consequences. Hence the need to add humidifiers on flowmeters' outlet for the humidification of the gas during dispensing.



This humidifier must be disposed at the end of the oxygen therapy treatment on a single patient.

### **Related** products







Pressure regulators from p. 37

INNER VOLUME 285 ml

SIZES (LxWxH) 70x83x178 mm

WEIGHT 0.08 Kg

MAX. APPLICABLE PRESSURE VALUE 500 kPa

MAX. APPLICABLE FLOW VALUE 10 L/min.

**INLET CONNECTION** 1/4" ISO 3253 F. • 9/16" UNF EN 13544-2 F.

**OUTLET CONNECTION** hose connector Ø 6÷9 mm

HUMIDIFICATION POWER WITH OXYGEN SUPPLY (RELATIVE HUMIDITY AT 18.7 °C)

INPUT 14%

**OUTPUT** 89%

AFTER 2 m TUBE Ø 5 mm WITH MASK 73%

- Connections: easy and intuitive; a color code highlights the match to different flowmeter outlet threads.
- 2 Screw lid detail.
- 3 Detail of the **bubbling device**.









# CONNECTIONS AND ACCESSORIES

### FOR OXYGEN THERAPY DEVICES

The flowmeters for oxygen therapy applications can be supplied completed with probes of our production for direct coupling into the terminal units. Otherwise, the pressure regulators are always supplied with special oxygen cylinder connections designed and made according to the various national and international standards. The oxygen flowmeter probes support frequent connections and detachments to the medical gas distribution systems, while the pressure regulators must guarantee perfect sealing and safety, when connected to the gas cylinders. The following pages contain main information regarding the available range of probes with thread connection and hose connection, for mounting on wall rails or floor stands. The pressure regulators cylinder connections too are available in the most popular standards. Detailed or specific solutions are available on request.

OXYGEN PROBES WITH THREAD AND HOSE CONNECTION, FLOWMETER OUTLET HOSE CONNECTION, RAIL CLAMPING SYSTEMS FOR OXYGEN FLOWMETERS, STAINLESS STEEL RAIL, CYLINDER INLET CONNECTIONS FOR OXYGEN PRESSURE REGULATORS

### **Probes with thread connection**



**AFNOR NF-S 90-116** probe, thread ISO G. 1/4" F.



AFNOR NF-S 90-116 type EASYFIX® probe, thread ISO G. 1/4" F.



**UNI 9507** probe, thread ISO G. 1/4" F.



BS 5682 probe, thread ISO G. 1/4" F.



**DIN 13260** probe, thread ISO G. 1/4" F.



**SS 875 24 30** probe, thread ISO G. 1/8" M. or ISO G. 1/4" F.



JIS T 7101 probe, thread ISO G. 1/8" M.



SANS 1409 probe, thread ISO G. 1/4" F.





**OHMEDA** probe, thread ISO G. 1/4" F.

### Probes with hose connection Flowmeter outlet hose connection · Stainless steel rail

#### **Probes with hose connection**



AFNOR NF-S 90-116 type EASYFIX® probe, hose connection Ø 6 mm.



**UNI 9507** probe, hose connection Ø 6 mm.



**BS 5682** probe, hose connection Ø 6 mm.



**DIN 13260** probe, hose connection Ø 6 mm.



**SS 875 24 30** probe, hose connection Ø 6 mm.



**JIS T 7101** probe, hose connection Ø 6 mm.



**SANS 1409** probe, hose connection Ø 6 mm.



**OHMEDA** probe, hose connection Ø 6 mm.

### Flowmeter outlet hose connection



Polypropylene hose connector, three inlet threads (1/4" ISO 3253 F.  $\cdot$  9/16" UNF EN 13544-2 F.  $\cdot$  M12x1.25 F.), outlet tubing Ø 6÷9 mm.

### Stainless steel rail



### Rail clamping systems for oxygen flowmeters Cylinder inlet connections for oxygen pressure regulators

### **Rail clamping systems**



ABS clamp bracket for rail 30x10 mm and 50x10 mm, with nipple threaded ISO G. 1/4" F. and hose connector Ø 6 mm.



Anodized aluminum wedge for OHMEDA rail clamp bracket, with nipple threaded ISO G. 1/4" F. and hose connector Ø 6 mm.



Anodized aluminum OHMEDA rail clamp bracket.

### Cylinder inlet connections for oxygen pressure regulators



**EN 850 (or CGA 870)** "pin-index" yoke cylinder connection.



**AFNOR NF-E 29-656** cylinder connection.



**DIN 477-1** cylinder connection.



**UNI 11144** cylinder connection.



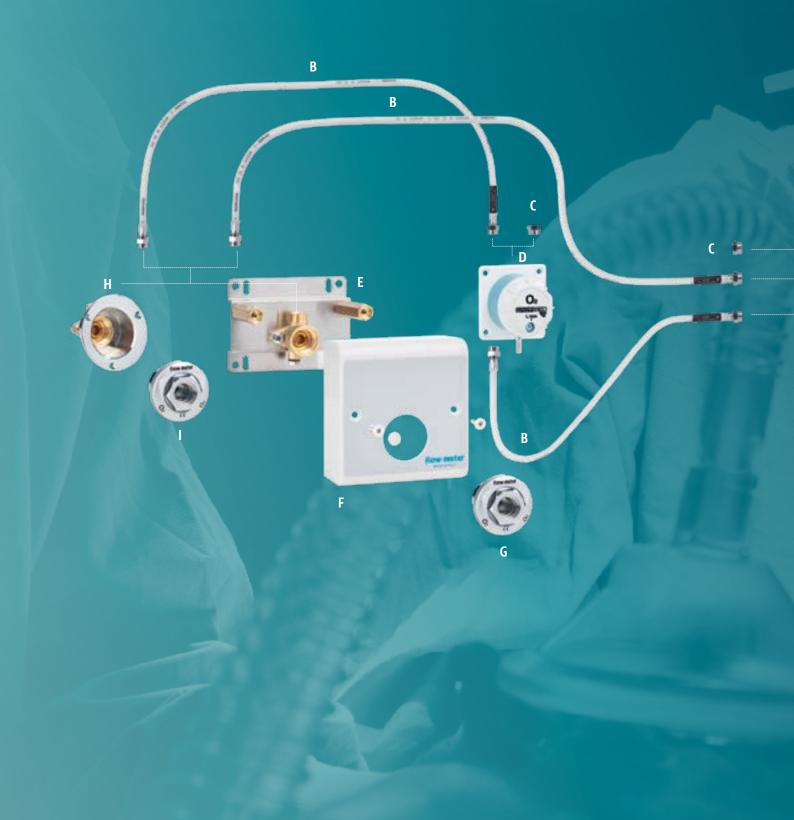
**BS 341-3** "bull nose" cylinder connection.



**CGA 540** cylinder connection.



### **OXYGEN SUPPLY SYSTEM FOR AMBULANCES**



OXYGEN THERAPY 58

60

60

63-144

63-143

CONNECTION AND ACCESSORIES FOR OXYGEN SUPPLY SYSTEM FOR AMBULANCES

**OXYGEN SUPPLY SYSTEM FOR AMBULANCES** 

**1b** Stainless steel cover panel

**H** Socket with nut for panel mounting

Oxygen outlet

**1a** Oxygen terminal units system for ambulances

1a

A	FM pressure regulator with electrical signal	OXYGEN THERAPY	62-112
В	Low pressure hose for oxygen system for ambulances	<b>ACCESSORIES</b>	63
C	Plug to close the system (already supplied with the device)	OXYGEN THERAPY	
D	EASYMED® calibrated orifices oxygen flowmeter with panel for ambulances	OXYGEN THERAPY	62
E	Socket for oxygen terminal unit	TERMINAL UNITS	63
F	Surface mounted case with stainless steel cover panel one position	TERMINAL UNITS	62
G	Oxygen outlet	TERMINAL UNITS	63-143

В

1b

TERMINAL UNITS

TERMINAL UNITS

# Oxygen supply systems for ambulances

The oxygen supply systems in ambulances allow the oxygen distribution through terminal units, granting moreover the connection to mobile sources, such as medical gases cylinders, by means of suitable pressure regulators.

#### **OPTION AND STRUCTURE**

They are available in configurations of one, two or three terminal units and with 2 inlets for the connection to the cylinders that can be activated separately by a selector.

The O<sub>3</sub> supply systems for ambulances mainly consist of:

- a stainless steel bottom support with holes for wall fixing;
- a selector enabling the operator to switch the supply source normally consisting in a medical gas cylinder fitted with pressure regulator;
- a copper pipe, bent and welded with cadmium free silver alloy. The copper pipe is a Class II A medical device, CE marked according to the current Regulation and following amendments and conforming to the specifications of the UNI EN 13348 standards;
- one or more oxygen terminal units. These terminal units are designed and manufactured according to the different standards and they are safe and simple to use for the operator. The terminal units are Class II B medical devices, CE marked according to current Regulation and following amendments and conforming to the specifications of the referenced standards;
- a gauge for the control of the line pressure, to grant the correct performance of the system and the oxygen supply continuity;
- two nipples with gas-specific threads to univocally connect the supply by means of low pressure hose assemblies properly banded and conforming to the specifications of UNI EN ISO 5359 standards (optional);
- a painted stainless steel cover panel with mounting fittings (optional).

### Main **information**

Different devices necessary for ventilation therapies or for general medical applications and fitted with proper quick probes can be connected to the terminal units, available in different standards.

1 terminal unit version: 87.5x270x130 mm

SIZES (LxWxH) 2 terminal units version: 87.5x355x130 mm
3 terminal units version: 87.5x440x130 mm

**WORKING PRESSURE** 4.0 bar ±20%

SUPPLY GAS oxygen

LINE PRESSURE CONTROL GAUGE end of scale 6.0 bar diam. 50 mm. Cl. 2.5

**SUPPLY CONNECTIONS** thread M16x1.25 M. (UNI 9507)

**TERMINAL UNITS STANDARDS** AFNOR NF-S 90-116 · UNI 9507 · BS 5682 · DIN 13260 · SS 875 24 30

- 1 Stainless steel bottom support with holes for wall fixing.
- 2 Nipples with gas-specific threads to univocally connect the supply by means of low pressure hose assemblies properly banded and conforming to the specifications of UNI EN ISO 5359 standards (optional).









## Accessories FOR AMBULANCE SYSTEM





### $FM \cdot pressure regulator with special gauge for ambulances$

A special version, made for ambulances applications, fits a pressure gauge with electric signal 4-20 mA or 0.5-4.5 V output for the continuous monitoring of the supplied pressure and with system control panel interface.

GASES OPTIONS	Oxygen
GAUGE ELECTRICAL FINAL	4-20 mA or 0.5-4.5 V output
OUTLET CONNECTOR	hose connector with gas specific rotating nut



### Flow indicator: easy and immediate reading; ten reading values, to improve low flows regulation.

### **EASYMED®** · Calibrated orifices oxygen flowmeter

Calibrated orifices oxygen flowmeter complete with panel for ambulances supplied with mounting fittings. The flowmeter is manufactured with an integrated pressure reducer for the supplied pressure stabilization. It has also a flow indicator with 10 possible options and it is available with different end of scales.

### Regulation values for the different end of scale flows

STEP VALUES												
SI SI	6	L/min.	0.00	0.25	0.50	1.00	1.50	2.00	3.00	4.00	5.00	6.00
	14	L/min.	0.00	0.50	1.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00
F	15	L/min.	0.00	0.50	1.00	2.00	3.00	4.00	6.00	9.00	12.00	15.00
	30	L/min.	0.00	1.00	2.00	4.00	8.00	12.00	16.00	20.00	25.00	30.00
面	50	L/min.	0.00	1.00	2.00	3.00	6.00	9.00	12.00	15.00	30.00	50.00



#### **Surface mounted case**

Surface mounted case with stainless steel cover panel one position for housing AFNOR NF-S 90-116, UNI 9507, DIN 13260, BS 5682, SS 875 24 30 outlets.

Technical details on p. 150.



### Oxygen socket for:

- 1 DIN 13260, BS 5682, SS 875 24 30 outlets.
- **2 AFNOR NF-S 90-116** and **UNI 9507** outlets with gas specific thread, complete with nut and copper welding tube nipple.
- 3 panel mounting with gas specific thread available for AFNOR NF-S 90-116 and UNI 9507 outlets only.





### Oxygen outlet type:

- 1 AFNOR NF-S 90-116 with gas specific thread UNI 9507
- 2 UNI 9507 with gas specific thread UNI 9507
- 3 DIN 13260
- 4 BS 5682
- 5 SS 875 24 30





3



4



5





### Low pressure hoses for oxygen

with gas specific connection to the ambulance system and available with following lengths:

0.75 m - 1.5 m - 2.5 m - 6 m



### **Gas identification labels**

suitable for fitting on surface mounted case for:

1 AFNOR NF-S 90-116

2 DIN 13260, BS 5682, SS 875 24 30