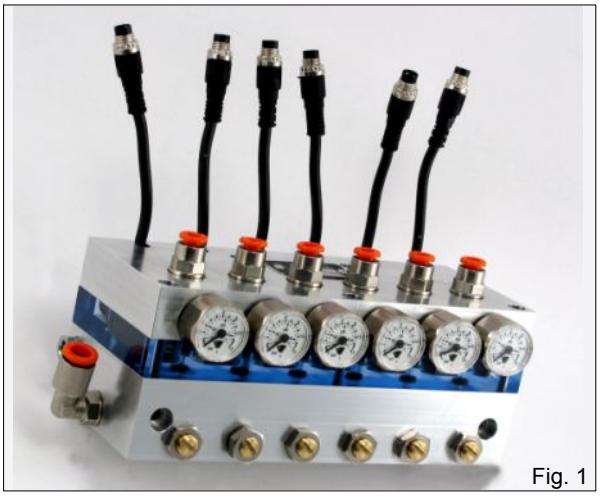


Fig. 1

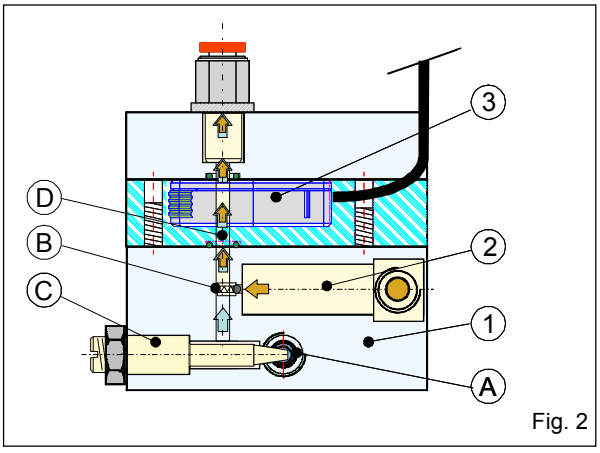
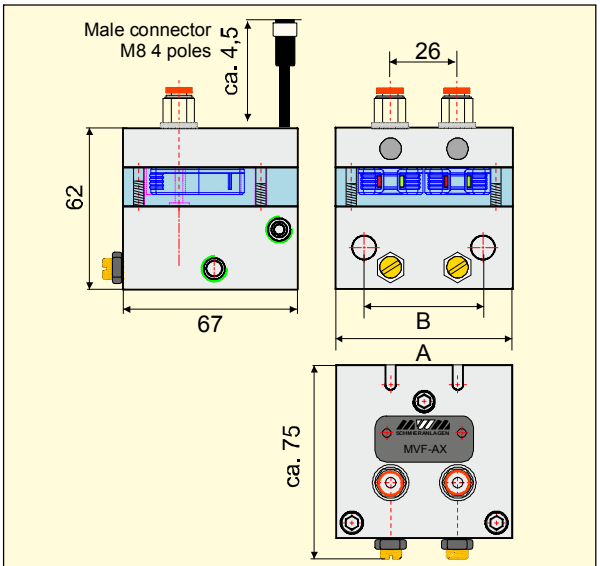


Fig. 2

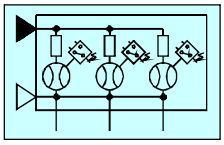


Outlets	A	B	Weight
2	68	46	0,8 kg
4	120	108	1,1 kg
6	172	150	1,5 kg

Fig. 3

- Subject to changes without notice -

Air-oil mixer MVF-AX
with electronic monitoring



European Patent Office **Certificate N°2427301**

Application:
Used for the automatic control of the air-oil mixture in minimal quantity lubrication systems.
The integrated optical sensor inside the mixer verifies both the oil dosing and the presence of a correct air flow, confirming that the air-oil pipeline is not obstructed.

- **Electronic and visual checking through LED**
- **Detection both of air flow and oil metering**
- **Adjustment of air flow for each outlet**
- **Compact block**
- **Different version for 1-2/3-4/5-6 outlets**
- **Gauge for each outlet (optional)**

Function:
The mixer MVF-AX is substantially made up of an air-oil mixing group 1, an oil dosing element 2 and an optical sensor 3 for lubricant detection and monitoring. The air is fed from the main line A to the single air-oil channels D through adjustable screws C that establish the air flow for each lubrication point.
The oil quantity metered by the dosing element 2 through the check valve B, is pushed by the air pressure inside the channel D across the detection area of the optical sensor 3. So, each time an oil drop is carried by a regulated air flow, the sensor will give an electronic signal, indicated by a green light, confirming the mixer is working correctly.

Technical data:

Lubricant:	mineral or synthetic oil
Viscosity:	ISO VG from 22 to 320
Dosing precision:	+0,+20% with 10 mm^3
Max operating frequency:	(with 10 mm^3) max. 4 cycles/min
Operating oil pressure:	min. 20 ÷ max. 30 bar
Relief pressure:	< 1 bar
Operating air pressure:	min 0,5 ÷ max. 6 bar
Min air flow per outlet:	15 l/min
Post de-aeration installation:	horizontal or vertical
Automatic de-aeration position:	as in fig. 2
Operating temperature:	+10 ÷ +45 °C
Material:	Aluminium and transparent policarbonate
Electrical data optical sensor IFX-S08 :	
Output circuit:	PNP
Connection:	male round connector M8, 4 poles
Operating voltage:	10÷30 VDC
Load current:	<15%
Absorption:	<8 mA
Protection class:	IP67
EMC: ESD/RFI/Burst/IVW	4/3/4/ext.

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Operating principle of optical sensors IFX S08:
Optical sensors with programmable sensibility IFX-S08 are able to detect very small oil quantities. The lubricant streaks detection provides an OK signal between a lubrication cycle and the following one. Connect optical sensors according to the side scheme: remember to connect the earth clamp (-3)(GND).
Further technical details are available in the technical data sheet on optical sensor IFX-S08.

Electrical scheme **PNP**

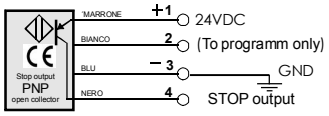
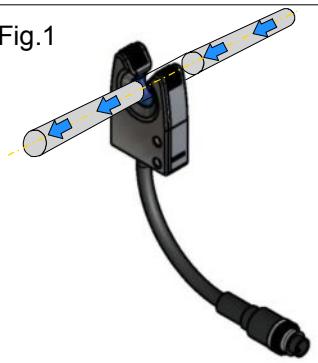


Fig.1



Cicle Time: 0 sec

Sensor state	LED		STOP Output
	green	red	NC
Warning	OFF	ON	Open

Only air in pressure in the feeding channel, output stop open.

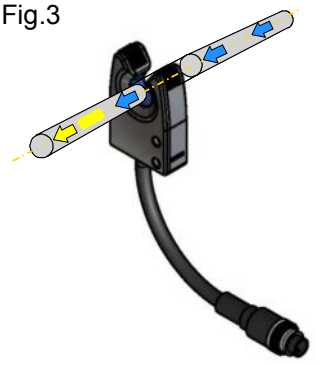
Fig.2

Cicle Time: 5 sec*

Sensor state	LED		STOP Output
	green	red	NC
Detection	ON	OFF	+24 V

Lubricant metering, oil streaks are detected in the feeding channel,output stop closed.

Fig.3

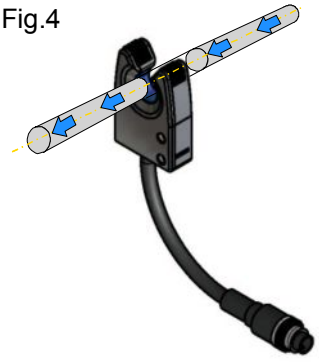


Cicle Time: 15 sec*

Sensor state	LED		STOP Output
	green	red	NC
Warning	ON	ON	+24 V

Interruption of lubricant flow in the feeding channel, no oil streak detected by the sensor. Temporary failure. Red light on output stop remains closed for 5 sec. (std)

Fig.4



Cicle Time: 20 sec*

Sensor state	LED		STOP Output
	green	red	NC
Warning	OFF	ON	Open

Only air in pressure in the feeding channel, no oil streak detected by the sensor, output stop open.

* Approximative time, it depends on air pressure and on metered oil volume

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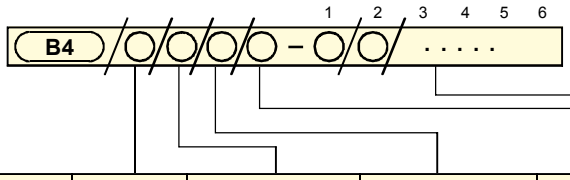
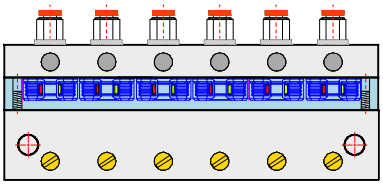
Order designation:
Air-oil single line mixer MVF-AX

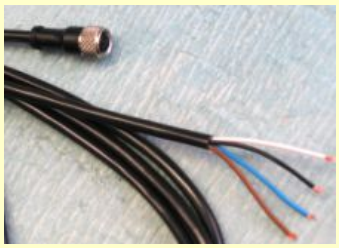


Type	Outlets number	Air-oil outlets connections	Air inlet connection	Outlets monitoring	Metering element [mm³/cycle]
MVF-AX	① ② ③ ④ ⑤ ⑥	⓪ without ① Ø 4 RL1 ② Ø 6 RL1 ③ Ø 8 RL1 ④ Ø 4 RL31 ⑤ Ø 6 RL31 ⑥ Ø 8 RL31	⓪ without ① Ø 8 RL1 ② Ø 8 RL31 ③ Ø 6 RL1 ④ Ø 6 RL31	⓪ without ① gauge ② digital sensor	⓪ 0 ① 10 ② 20 ③ 30



Order example:
Air-oil mixer MVF-AX with optical monitoring, with 6 outlets, with straight air-oil outlets connections 4 mm, without air inlet connection, without gauge, with 2 metering elements 10 mm3, 2 elements 20 mm3, 2 elements 30 mm3.
Order designation: Air-oil mixer MVF-AX B4 6/1/0/0 - 1/1/2/2/3/3


Digital pressure sensor
Fig. 5


Cable with straight connector
Fig. 6

Air-Oil outlets connections
Fig. 7

Air inlet connections
Fig. 8


Manometer
Fig. 9


Optical sensor IFX-S08
Fig. 10

Accessories: (to be ordered separately) **Code**

Programmable digital pressure sensor (Fig. 5) (see datasheet)	N200110
Connection cable to CN standard with connector straight 4 poles (3 connected) M8 with cable 3 m Pur	N860062
Connection cable with straight M8 connector 4 poles 3 m cable (Fig. 6)	N860060

Standard fittings

Air/oil outlets: (Fig. 7)

RL1 Ø4 Ø1/8" for PA pipe Ø4	J847000
RL1 Ø6 Ø1/8" for PA pipe Ø6	J847100
RL1 Ø8 Ø1/8" for PA pipe Ø8	J847200
RL 31 Ø4 1/8" rotary for PA pipe Ø4	J877416
RL 31 Ø6 1/8" rotary for PA pipe Ø6	J877417
RL 31 Ø8 1/8" rotary for PA pipe Ø8	J877420

Air inlet: (Fig. 8)

RL1 Ø6 1/8" for PA pipe Ø6	J847100
RL1 Ø8 1/8" for PA pipe Ø8	J847200
RL31 Ø6 1/8" rotary for PA pipe Ø6	J877417
RL31 Ø8 1/8" rotary for PA pipe Ø8	J877420

Oil inlet:

Fitting for PA pipe Ø6	D313000
Bicone ogive Ø6	D313002

Other diameters and special fittings on request.

Spare parts:

Manometer ø22mm G1/8 0÷12 bar (Fig.9)	N277000
Optical sensor IFX S08	N87121
Dosing element 10 mm3	I300010
Dosing element 20 mm3	I300020
Dosing element 30 mm3	I300030
Blind element	I300000

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To connect to distr. boxes with M12-4 poles plugs

L= 500 mm

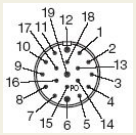
M8 M12

Cable connector M8 fem 4poles- M12 mal. 4 poles

L= 1500 mm

Double cable conn.M8 fem 4poles- M12 x2 mal. 4 p.

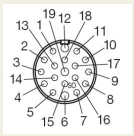
Vista frontale



M12

Distribution box with 8 plugs M12 4 poles with cable conn. M23 mal. 19 poles

Connector M23 - fem. 19 poles (link to CN panel)



Accessories per collegamenti elettrici: **Code**
(to be separately ordered)

Connector cable Y **N860071**
M8x1 fem. 4 p./M12x1 mal. 4 p.
PVC L=1500mm

Double conn. cable Y **N860072**
M8x1 fem. 4 p./M12x1 mal. 4 p.
PVC L=600mm

Double conn. cable **N860182**
M8x1 fem. 4 p./M12x1 mal. 4 p.
PVC L=1000mm

Distribution box 8 inlets **N860041**
M12x1 fem. 4 poles
straight connector M23 mal. 19 poles

Cable M23 L= 1 m **N860200**
straight connector M23 fem. 19 poles

Cable M23 L= 1 m **N860204**
90° connector M23 fem. 19 poles

Cable M23 L= 3 m **N860220**
90° connector M23 fem. 19 poles

Cable M23 L= 5 m **N860202**
90° connector M23 fem. 19 poles

Cable M23 L= 10 m **N860203**
90° connector M23 fem. 19 poles

Cable M23 L= 15 m **N860205**
90° connector M23 fem. 19 poles

Application example:

Connection by distribution boxes with double cables (signals of the optical sensors and digital pressure sensors to PLC)

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