

THE WIND OF CHANGE.

Rotary screw compressors with direct drive transmission

14 2

NUAIR

NUAIR

451

IE4 °

NUAIR

**FIXED SPEED - VARIABLE SPEED - PERMANENT MAGNETS** 



NEW







## The group

• The Nuair brand is part of the FNA international group, which has 75 years of experience in the compressed air industry.

FNA, the world's leading manufacturer of piston compressors, undisputed leader in the production of professional compressors and among the first in Europe in the industrial screw compressor segment, has established itself on the market thanks to its strengths: **dynamism, technological innovation, know-how, creativity, integrated marketing, flexible production processes and 'tailor-made' customer service.** 

The group counts on an experienced and highly qualified team, capable of interpreting the market needs in defining, developing and distributing its products. The Nuair industrial range is wide and comprehensive and includes rotary screw compressors from 2.2 to 75 kW with belt transmission, and the new POLAR range, with direct transmission, from 5.5 to 45 kW.

		PULAK product range
18.5-22 kW	11-15 kW	5.5-7.5 kW
Available versions: floor mounted compressor compressor + dryer	<b>Available versions:</b> floor mounted compressor compressor + dryer compressor + air receiver compressor + air receiver + dryer	<b>Available versions:</b> floor mounted compressor compressor + dryer compressor + air receiver compressor + air receiver + dryer
<b>Air-end:</b> FS100 - FS140	Air-end: FS50	Air-end: FS26
Controller: LOGIN	Controller: LOGIN	Controller: LOGIN
<b>Intake regulator:</b> IR60 - IR70	Intake regulator: IR30	Intake regulator: IR10
Fixed speed or permanent magnets for variable speed	Fixed speed Variable speed	Fixed speed (5.5 kW) Variable speed (7.5 kW)
Electric motor:	Electric motor:	Electric motor:

2



# **Our figures**

Employees across 3 continents	1300
Global service centres	1500
Countries we export to	120
Screw compressors produced per year	11000
Manufacturing plants	5

<image/> <section-header></section-header>	45 kW	<image/> <image/>
<b>Available versions:</b> floor mounted compressor compressor + dryer (only Polar 31 and 38)	<b>Available versions:</b> floor mounted compressor	Available versions: floor mounted compressor
<b>Air-end:</b>	<b>Air-end:</b>	<b>Air-end:</b>
FS140 - FS270	FS270	FS270
Controller:	Controller:	Controller:
LOGIN	LOGIN	LOGIN
Intake regulator:	Intake regulator:	Intake regulator:
IR100	IR100	IR100
Fixed speed or permanent magnets for variable speed	Fixed speed	Variable speed with permanent magnets
Electric motor:	Electric motor:	Electric motor:
IE4	IE4	IE4

3



#### Made in Italy design and production.

The Polar screw compressor line is developed entirely in Italy: from design to packaging, each stage of production is carefully overseen by our engineers to ensure that it meets the best requirements in terms of efficiency, quality, energy saving, performance, quiet operation. Each compressor, before being placed on the market, is tested and subjected to a final audit that certifies its perfect compliance with over 50 significant requirements. Moreover, since 1996, the Quality System is guaranteed by compliance with standard UNI EN ISO 9001:2015.

#### We have been producing air-ends for over 30 years.

The Nuair air-ends feature rotors with an optimised profile and outstanding performance.

The production process is completely integrated thanks to avant-garde machine tools and sophisticated control instrumentation that guarantees the highest level of quality. A solid CAD modelling system optimises the set-up of the components.

Each single rotor is cut in four well-defined manufacturing stages to achieve extremely high execution precision and repeatability.

All of the air-ends are tested twice: individually after assembly and later upon installation on the complete machine.





# Italian excellence.

Nuair is an Italian excellence using the latest technology and highly specialised labour. The Made in Italy trademark is the expression of typical Italian quality and creativity, recognised and appreciated around the world, and which is now one of the distinguishing elements of our industrial production.

# Intake regulators and separator blocks.

In addition to the air-end, all major components that contribute to machine performance, such as intake regulators and separator blocks, are designed and manufactured in our factories in Italy.

	Power range [kW]	Max. operating pressure * [bar]		Power range [kW]	Max. operating pressure * [bar]
FS26	5.5 ÷ 7.5	15	IR10	5.5 ÷ 7.5	15
FS50	11 ÷ 15	15	IR30	11 ÷ 15	15
FS100	18.5 ÷ 22	15	IR60	18.5 ÷ 22	15
FS140	22 ÷ 37	15	IR70	24	15
FS270	37 <del>:</del> 45	15	IR100	30 ÷ 45	15

\* The value indicated refers to the maximum pressure that can be reached by the air-end and the intake regulator. Max. pressure of Polar series compressors: 13 bar.



# LOGIN: intelligent and intuitive control.

The Login controller, installed on all Polar models, introduces new software capabilities to upgrade diagnostic functions, thereby guaranteeing excellent performance in all conditions. Login provides additional facilities including remote control and multi-compressor management.





#### Exclusive design

Italian design, functionality, user-friendly and with the latest generation technology all come together with the innovative Login electronic controller. The touch-screen display and the icon-based menu make it extremely intuitive and easy to use.



#### Memory card slot

Login features a memory card slot which can be used to store compressor data and configurations and to transfer them to another control unit.



#### **Multilanguage management** It is possible to select the local language from any of the 20 pre-installed languages.



**Remote control** Allows a complete remote monitoring of the compressor.



#### Multicolour display

All of the operational parameters are displayed on the large 4.3" colour screen which also displays graphs in real time (pressure, power, energy/time).



**Designed for Industry 4.0** 





# SMS z.o

# Preventive and targeted maintenance.

SMS 2.0 (Service Management System) is the innovative device (optional) to remotely access and perform preventive maintenance checks on any of NUAIR screw compressors equipped with a Login controller.

Through a LAN connection with Ethernet cable, SMS 2.0 allows e-mails to be sent automatically should an irregular event occur (up to 5 settable e-mail addresses). At the same time, it is possible to monitor the correct operation of the compressor and to check the scheduling for future maintenance interventions and checks.

## **Compressor remote control.**

- Online compressor status control (view of temperature and pressure parameters);
- On/off control;
- View of events and alarms;
- View of remaining hours for maintenance;
- Graphic view of analogue signals connected to the controller, in real time;
- No additional software is needed.





### **POLAR** Rotary screw compressors with direct drive transmission



#### Maximum efficiency and energy saving

Significant energy savings are achieved thanks to the IE3 and IE4 "Super Premium Efficiency" class motors.

The latest generation air-ends ensure greater compressed air flow rates with reduced energy consumption. Direct-drive transmission technology. Air and oil circuits components are optimised for efficiency. Use of latest generation inverters.



# New LOGIN controller

All Nuair Polar models are equipped with the new LOGIN electronic controller with touch-screen display. In addition to full control of all compressor functions, it also stores the data on a specific memory card, so as to manage multiple compressors (up to 8 units, even different types) and for remote control via SMS Device 2.0 that can be matched to the control unit itself.



#### **Quiet operation**

The low speed air-ends and the use of radial cooling fans allow Polar products to maintain amongst the lowest noise values in their category. This means a simplified installation allowing the compressor positioning close to the point-of-use.





# Simplified maintenance

All of the routine service components are located in the most convenient and easily accessible position. The panels can be taken away or opened for complete access. Maintenance costs are reduced and efficiency improved thanks to the use of the highest quality components.



#### **Compact design**

The Polar series has been designed to offer maximum performance and highest reliability, in a compact space saving format.



#### Remote monitoring and preventive maintenance

The optional SMS 2.0 system allows the remote monitoring of the compressor and promptly informs the user or the service centre on the machine status, reporting any alarms or the need to perform maintenance operations.



#### **Refrigerated dryer**

The Polar series up to 37 kW can be equipped with a refrigerated dryer, powered and controlled separately from a dedicated control unit.



#### POLAR 5.5-15 kW FIXED AND VARIABLE SPEED



#### 1 IE3 electric motor

The highly efficient electric motors that equip the Polar range from 5.5 to 15 kW, combined with our high-performance air-ends, cut energy costs and reduce  $CO_2$  emissions: an important contribution to environmental protection.

**Radial fan** 2

This combines excellent cooling of the compressor with very quiet operation.



#### 4 Intake regulator

Designed and manufactured by Nuair, guarantees high efficiency, low noise and high reliability.



#### 🗧 "In-house" air-ends 🔳 📕

Extremely reliable and highly efficient, they are entirely designed, manufactured and tested in our Italian factories. The special design of the rotor profile ensures excellent performance.



POLAR 11





- Low r.p.m.
- Extremely quiet
- Compact design
- User-friendly
- High efficiency
- Plug&Play



**Direct transmission** 6 Special 1:1 coupling based on original Nuair design: offers the maximum mechanical transmission efficiency.

# 10 .....

#### **Refrigerated dryer** (optional)

Powered separately from the compressor and managed independently from the DMC35 controller, to obtain clean, dried air. In the "ES" versions the dryer improves system reliability, avoids costly downtime and delays in production, and protects the quality of the final product.

11



# Variable speed with inverter

The reduction of energy consumption and the protection of our precious environmental resources is one of the major global challenges in our times.

Thanks to many years of experience in the industrial sector, Nuair is recognised as a technological leader in the field of variable speed compressors, capable of guaranteeing high performance levels and efficient energy solutions.

The inverter is able to dynamically adjust the speed of the motor, thereby regulating the production of the compressed air that is required.

## The benefits of using the Polar VS with inverter are remarkable:

- continuous control and regulation of the compressed air volume generated by varying the speed of the electric motor from 40%up to 100% of the full speed;
- the compressed air generated is therefore constantly proportional to the system requirements.



#### 1 New Login controller

In addition to full control of all compressor functions, it allows data to be stored on a specific memory card, enables multiple compressor management and remote control via SMS 2.0.

#### 2 Inverter

The latest-generation inverter allows for a controlled use of energy resources minimising consumption.

#### 3 Minimum pressure valve

Designed by Nuair to ensure reduced pressure losses and reduce energy consumption.





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#### **Cleaning and protection**

The ventilation circuit is protected by a pre-filtering panel (standard on all Polar models) that separates the incoming dusts and keeps the inside of the machine clean, increasing the longevity of internal components.

THE HISTOGRAM SHOWS THE BREAKDOWN OF THE TOTAL COSTS DURING THE LIFE CYCLE OF A POLAR VS DURING 5 YEARS OF USE, **COMPARED TO A FIXED SPEED COMPRESSOR** WITH THE SAME POWER.

	120%	1	
	110%	20%	
	100%		
	90%		
	80%		
SE	70%	69%	
2	60%		
	50%		
	30%	 440/	
	20%	 11%	
	10%	20%	
	0%		

The calculation shown in the graphs is based on the energy analysis of a 11 kW POLAR, considering 2000 hours of operation a year and an energy cost of about 0.17  $\in$ /kWh.

77%

13



2

4



#### 1 LOGIN controller

Simple and intuitive, powerful and flexible programming. For remote control and multi-compressor management. Designed for Industry 4.0.

#### 2 Inverter

Combined with Permanent Magnet Motor, ensures maximum performance and energy-saving, across the entire speed and load range.

#### **Easy maintenance**

The careful design of the Polar models, which can be fully opened on all 4 sides, allows easy and quick access to its internal components.

3 The "spin-on" oil filter, air filter and oil separator filter are positioned for easy access and therefore quick to replace. The air-end-motor unit is completely

removable.

4 Single or two-stage air filter, depending on the model. The top-quality consumables ensure a long operating life, excellent reliability and reduced maintenance costs.



**Cleaning and protection** The ventilation circuit is protected by a pre-filtering panel (standard on all Polar models) that separates the incoming dusts and keeps the inside of the machine clean, increasing the longevity of internal components.

> **Intake regulator** Ensures highly efficient operation, low noise and high reliability.

5

0



**Minimum pressure valve** Guarantees minimum pressure losses and reduces energy consumption.

www.nuair.it





- Highest energy savings
- Extremely quiet
- High efficiency
- Easy maintenance

E	NERGY EFFICIENCY CLASSES ording to IEC standard 60034-30-1	I
SUPER PREMBIN LEFFEERCY MOTOR	Super Premium Efficiency	
IE3	Premium Efficiency	l
IE2	High Efficiency	
IE1	Standard Efficiency	
	Non-standard	1



Very high efficiency motors IE4 "Super Premium Efficiency" motors, with IP55 protection as standard on all models. The variable speed versions feature IE4 Permanent Magnet synchronous motors.

THE R



#### POLAR 18.5-45 kW

#### FIXED SPEED AND VARIABLE SPEED WITH



#### 1 Efficient cooling system

A thermostatic-control centrifugal fan ensures the temperature inside the compressor remains within a specific tolerance and at a constant level, avoiding temperature peaks that may prevent the machine from operating correctly.

The particularly quiet fans and the use of top quality soundproofing materials ensure one of the lowest acoustic levels of the range.



#### 2 Easy to transport

The basement design allows handling with a pallet truck or with a forklift truck, simply by removing the panels which, when installed, minimise machine noise.

#### 3 Heat exchangers

Carefully designed to combine highly efficient heat transfer in all conditions and reduced pressure losses.

#### 4 Oil separator filter

Easily accessible for maintenance operations, it is spin-on type on models up to 37 kW, while it is basket-type on Polar 45 version.

#### 5 Remotely controlled grease nipples

Installed as standard on all Polar models from 18.5 to 45 kW, they facilitate and reduce routine maintenance time by lubricating the electric motor bearings even when the machine is running and without having to access the inside of the compressor.







#### **Direct transmission, with latest** generation air-ends

The motor shaft is coaxial to the male rotor of the air-end: this configuration means less wear on components, therefore less need for maintenance and quieter operation in comparison to belt transmission. This design, in combination with IE4 motors, guarantees superior efficiency and reliability.



#### Efficiency is synonymous with sustainability

For all companies, environmental sustainability is a most important objective and why a focus on the efficiency of all processes is critical. Polar PM compressors provide a significant opportunity in this area. Working and living sustainably means preserving our natural resources as much as possible: choosing a Polar or Polar PM product, reducing energy consumption and CO<sub>2</sub> emissions therefore, represents an ecological and sensible choice.

#### Significant energy savings

The inverter, pre-installed in the compressor's electrical panel, dynamically regulates the speed of the electric motor and therefore the speed of the air-end, continuously adjusting the delivered air flow to the system's real time compressed air requirements. This also eliminates current surges thanks to the soft start-up and drastically reduces operating cycles avoiding unnecessary no-load operation, avoiding significant energy wastage and reducing energy costs.





16%

LIFE CYCLE COST DISTRIBUTION

**OVER 5 YEARS** 

The calculation shown in the graphs is based on the energy analysis of a 37 kW POLAR PM, considering 4000 working hours per year and an energy cost of about 0.17 €/kWh.

When compared to the operation of a fixed speed compressor, a POLAR PM is able to achieve significant energy savings, up to 50%. This represents a reduction of around 30% to the total life cycle costs during 5 years of use.



## Why choose a Permanent Magnet compressor?

The energy costs linked to an air compressor operation during its life cycle represent more than 80% of the total life cycle costs. For Nuair the improved energy efficiency of its products represents a key objective. This objective is achieved with the use of Permanent Magnet motors in IE4 Super Premium Efficiency category, along with the employment of our own, latest generation compressor air-ends.

The application of these cutting- edge technologies, provides all users an air compressor with superior energy saving characteristics. The compressors from this new range offer greater flexibility in the delivery of compressed air. The output flow of compressed air may span a capacity range of between 15% to 100% of the maximum flow rate. This makes it possible to greatly reduce waste full unloaded operation, saving significant amounts of energy and minimising component wear, whilst adding greater reliability and longer service life.

## Why choose a Polar PM?

- Permanent Magnet motor with IE4 efficiency.
- Latest generation air-ends.
- Direct transmission.
- Efficient intake regulator.
- High performing inverter.
- Intuitive touchscreen controller.
- High quality components.
- Low noise levels.
- Low maintenance.

For the variable speed models with PM motors, we exclusively use direct transmission with flexible coupling.



The graph represents the total life cycle costs breakdown of a 37 kW fixed speed compressor, over 5 years of use, considering 4000 working hours per year and an energy cost of about 0.17 €/kWh.

> Energy consumption 🦲 Maintenance 💼

> > Investment





# The advantages offered by the new Polar PM range are considerable:

- The compressed air generated is aligned to the system requirements and is achieved by regulating the speed of the electric motor, which can range from 15% to 100% of the maximum speed.
- Excellent and precise pressure control of the pneumatic system, in a range 6 to 13 bar, depending on the chosen compressor model.
- Accurate and optimised cooling of the compressor is obtained through the use of efficient, powerful and quiet radial fans.
- Proven, highly reliable design.
- Attention to details, to maximise quiet operation and reliability.





# Improved efficiency in all applications of compressed air.

The advanced and extremely compact Permanent Magnet motors, guarantee the highest performance along with a much wider speed/load range when compared to traditional inverter-controlled asynchronous motors. They offer the greatest possible advantages in terms of energy savings. This applies especially when used at partial capacity and load, which is a characteristic seen frequently in modern applications throughout all industrial sectors.





NUAIR

POLAR 5.5







IE3		Air	Mo	tor				M	av	Air-	Soud	Air	Not	Net	Gross	Dimonsioni
Model	Code	receiver	pov	ver	Air	outflow r	ate	pres	ssure	end	level	outlet	weight	dimensions	weight	lorde
		l	kW	HP	l/min.	m³/min.	c.f.m.	bar	p.s.i.		dB(A)	G	kg	LxWxH (mm)	kg	LxWxH (mm)
5,5 kW																
POLAR 5.5-10	V51PS92N1NA64	-	5.5	7.5	710	0.71	25	10	145	FS26	62	1/2"	162	830x680x850	176	940x770x1030
POLAR 5.5-10 ES	V51PS92N1NB64	-	5.5	7.5	710	0.71	25	10	145	FS26	62	1/2"	200	1120x710x850	220	1290x770x1030
POLAR 5.5-10-270	V91PS92N1NA44	270	5.5	7.5	710	0.71	25	10	145	FS26	62	1/2"	239	1200x680x1540	266	1320x850x1720
POLAR 5.5-10-270 ES	V91PS92N1NB44	270	5.5	7.5	710	0.71	25	10	145	FS26	62	1/2"	277	1200x680x1540	303	1320x850x1720
7,5 kW			_		_											
POLAR 7.5-10	V51PT92N1NA64	-	7.5	10	1050	1.05	37	10	145	FS26	62	1/2"	165	830x680x850	179	940x770x1030
POLAR 7.5-13	V51PY92N1NA64	-	7.5	10	700	0.70	25	13	189	FS26	62	1/2"	165	830x680x850	179	940x770x1030
POLAR 7.5-10 ES	V51PT92N1NB64	-	7.5	10	1050	1.05	37	10	145	FS26	62	1/2"	203	1120x710x850	223	1290x770x1030
POLAR 7.5-10-270	V91PT92N1NA44	270	7.5	10	1050	1.05	37	10	145	FS26	62	1/2"	242	1200x680x1540	270	1320x850x1720
POLAR 7.5-13-270	V91PY92N1NA44	270	7.5	10	700	0.70	25	13	189	FS26	62	1/2"	265	1200x680x1540	291	1320x850x1720
POLAR 7.5-10-500	V83PT92N1NA44	500	7.5	10	1050	1.05	37	10	145	FS26	62	1/2"	292	2000x680x1520	332	2065x800x1680
POLAR 7.5-10-270 ES	V91PT92N1NB44	270	7.5	10	1050	1.05	37	10	145	FS26	62	1/2"	280	1200x680x1540	308	1320x850x1720
POLAR 7.5-13-270 ES	V91PY92N1NB44	270	7.5	10	700	0.70	25	13	189	FS26	62	1/2"	280	1200x680x1540	308	1320x850x1720
POLAR 7.5-10-500 ES	V83PT92N1NB44	500	7.5	10	1050	1.05	37	10	145	FS26	62	1/2"	330	2000x680x1520	370	2065x800x1680
11 kW																
POLAR 11-08	V60PU92N1NA64	-	11	15	1700	1.70	60	8	116	FS50	67	3/4"	238	1030x730x1000	265	1240x850x1190
POLAR 11-10	V60PJ92N1NA64	-	11	15	1600	1.60	57	10	145	FS50	67	3/4"	238	1030x730x1000	265	1240x850x1190
POLAR 11-13	V60PW92N1NA64	-	11	15	1250	1.25	44	13	189	FS50	67	3/4"	238	1030x730x1000	265	1240x850x1190
POLAR 11-08 ES	V60PU92N1NB64	-	11	15	1700	1.70	60	8	116	FS50	67	3/4"	283	1400x730x1000	303	1505x810x1180
POLAR 11-10 ES	V60PJ92N1NB64	-	11	15	1600	1.60	57	10	145	FS50	67	3/4"	283	1400x730x1000	303	1505x810x1180
POLAR 11-13 ES	V60PW92N1NB64	-	11	15	1250	1.25	44	13	189	FS50	67	3/4"	283	1400x730x1000	303	1505x810x1180
POLAR 11-08-500	V83PU92N1NA44	500	11	15	1700	1.70	60	8	116	FS50	67	3/4"	365	2000x730x1660	405	2065x800x1850
POLAR 11-10-500	V83PJ92N1NA44	500	11	15	1600	1.60	57	10	145	FS50	67	3/4"	365	2000x730x1660	405	2065x800x1850
POLAR 11-13-500	V83PW92N1NA44	500	11	15	1250	1.25	44	13	189	FS50	67	3/4"	400	2000x730x1660	440	2065x800x1850
POLAR 11-08-270 ES	V91PU92N1NB44	270	11	15	1700	1.70	60	8	116	FS50	67	3/4"	343	1450x730x1700	376	1720x750x1770
POLAR 11-08-500 ES	V83PU92N1NB44	500	11	15	1700	1.70	60	8	116	FS50	67	3/4"	410	2000x730x1660	450	2065x800x1850
POLAR 11-10-500 ES	V83PJ92N1NB44	500	11	15	1600	1.60	57	10	145	FS50	67	3/4"	410	2000x730x1660	450	2065x800x1850
POLAR 11-13-500 ES	V83PW92N1NB44	500	11	15	1250	1.25	44	13	189	FS50	67	3/4"	442	2000x730x1660	482	2065x800x1850
15 kW									-							
POLAR 15-10	V60PV92N1NA64	-	15	20	2100	2.10	74	10	145	FS50	67	3/4"	248	1030x730x1000	275	1240x850x1190
POLAR 15-13	V60PX92N1NA64	-	15	20	1550	1.55	55	13	189	FS50	67	3/4"	248	1030x730x1000	268	1240x850x1190
POLAR 15-10 ES	V60PV92N1NB64	-	15	20	2100	2.10	74	10	145	FS50	67	3/4"	293	1400x730x1000	313	1505x810x1180
POLAR 15-13 ES	V60PX92N1NB64	-	15	20	1550	1.55	55	13	189	FS50	67	3/4"	293	1400x730x1000	313	1505x810x1180
POLAR 15-10-500	V83PV92N1NA44	500	15	20	2100	2.10	74	10	145	FS50	67	3/4"	375	2000x730x1660	415	2065x850x1850
POLAR 15-13-500	V83PX92N1NA44	500	15	20	1550	1.55	55	13	189	FS50	67	3/4"	404	2000x730x1660	446	2065x850x1850
POLAR 15-10-500 ES	V83PV92N1NB44	500	15	20	2100	2.10	74	10	145	FS50	67	3/4"	420	2000x730x1660	460	2065x850x1850
POLAR 15-13-500 ES	V83PX92N1NB44	500	15	20	1550	1.55	55	13	189	FS50	67	3/4"	452	2000x730x1660	495	2065x850x1850

Air flow was measured in the following operating pressure values: 8 bar for "08" models - 10 bar for "10" models - 13 bar for "13" models. The data and results were measured in accordance with Standard ISO 1217. The sound level was measured in accordance with Standard ISO 3744.









POLAR 15-500 VS

POLAR 7.5 ES VS

IE3	Codo	Air receiver	Mo pov	tor ver	Air ( (m	outflow rate in max.)	)	N pre	lax. ssure	Air- end	Sound level	Air outlet	Net weight	Net dimensions	Gross weight	Gross dimensions
WOUCH	oue	l	kW	HP	l/min.	m³/min.	c.f.m.	bar	p.s.i.		dB(A)	G	kg	LxWxH (mm)	kg	LxWxH (mm)
7.5 kW													-		-	
POLAR 7.5-08 VS	V51QT97N1NA64	-	7.5	10	600-1300	0.60-1.30	21-46	8	116	FS26	63	1/2"	172	830x680x850	186	940x770x1030
POLAR 7.5-10 VS	V51PT97N1NA64	-	7.5	10	500-1100	0.50-1.10	18-39	10	145	FS26	63	1/2"	172	830x680x850	186	940x770x1030
POLAR 7.5-13 VS	V51PY97N1NA64	-	7.5	10	207-621	0.21-0.62	7-22	13	189	FS26	63	1/2"	172	830x680x850	186	940x770x1030
POLAR 7.5-08 ES VS	V51QT97N1NB64	-	7.5	10	600-1300	0.60-1.30	21-46	8	116	FS26	63	1/2"	210	1120x710x850	230	1290x770x1030
POLAR 7.5-10 ES VS	V51PT97N1NB64	-	7.5	10	500-1100	0.50-1.10	18-39	10	145	FS26	63	1/2"	210	1120x710x850	230	1290x770x1030
POLAR 7.5-13 ES VS	V51PY97N1NB64	-	7.5	10	207-621	0.21-0.62	7-22	13	189	FS26	63	1/2"	210	1120x710x850	230	1290x770x1030
POLAR 7.5-08-270 VS	V91QT97N1NA44	270	7.5	10	600-1300	0.60-1.30	21-46	8	116	FS26	63	1/2"	250	1200x680x1540	278	1320x850x1720
POLAR 7.5-10-270 VS	V91PT97N1NA44	270	7.5	10	500-1100	0.50-1.10	18-39	10	145	FS26	63	1/2"	250	1200x680x1540	278	1320x850x1720
POLAR 7.5-13-270 VS	V91PY97N1NA44	270	7.5	10	207-621	0.21-0.62	7-22	13	189	FS26	63	1/2"	273	1200x680x1540	278	1320x850x1720
POLAR 7.5-08-270 ES VS	V91QT97N1NB44	270	7.5	10	600-1300	0.60-1.30	21-46	8	116	FS26	63	1/2"	290	1200x680x1540	318	1320x850x1720
POLAR 7.5-10-270 ES VS	V91PT97N1NB44	270	7.5	10	500-1100	0.50-1.10	18-39	10	145	FS26	63	1/2"	290	1200x680x1540	318	1320x850x1720
POLAR 7.5-13-270 ES VS	V91PY97N1NB44	270	7.5	10	207-621	0.21-0.62	7-22	13	189	FS26	63	1/2"	290	1200x680x1540	318	1320x850x1720
11 kW																
POLAR 11-08 VS	V60PU97N1NA64	-	11	15	680-1700	0.68-1.70	24-60	8	116	FS50	67	3/4"	246	1030x730x1000	273	1240x850x1190
POLAR 11-10 VS	V60PJ97N1NA64	-	11	15	620-1580	0.62-1.58	22-56	10	145	FS50	67	3/4"	246	1030x730x1000	273	1240x850x1190
POLAR 11-13 VS	V60PW97N1NA64	-	11	15	373-1250	0.37-1.25	13-44	13	189	FS50	67	3/4"	246	1030x730x1000	273	1240x850x1190
POLAR 11-08 ES VS	V60PU97N1NB64	-	11	15	680-1700	0.68-1.70	24-60	8	116	FS50	67	3/4"	290	1400x730x1000	310	1505x810x1180
POLAR 11-10 ES VS	V60PJ97N1NB64	-	11	15	620-1580	0.62-1.58	22-56	10	145	FS50	67	3/4"	290	1400x730x1000	310	1505x810x1180
POLAR 11-13 ES VS	V60PW97N1NB64	-	11	15	373-1250	0.37-1.25	13-44	13	189	FS50	67	3/4"	290	1400x730x1000	310	1505x810x1180
POLAR 11-08-500 VS	V83PU97N1NA44	500	11	15	680-1700	0.68-1.70	24-60	8	116	FS50	67	3/4"	372	2000x730x1660	402	2065x800x1850
POLAR 11-10-500 VS	V83PJ97N1NA44	500	11	15	620-1580	0.62-1.58	22-56	10	145	FS50	67	3/4"	372	2000x730x1660	402	2065x800x1850
POLAR 11-13-500 VS	V83PW97N1NA44	500	11	15	373-1250	0.37-1.25	13-44	13	189	FS50	67	3/4"	404	2000x730x1660	444	2065x800x1850
POLAR 11-10-270 ES VS	V91PJ97N1NB44	270	11	15	620-1700	0.62-1.70	22-60	10	145	FS50	67	3/4"	353	1450x730x1700	385	1720x750x1770
POLAR 11-08-500 ES VS	V83PU97N1NB44	500	11	15	680-1700	0.68-1.70	24-60	8	116	FS50	67	3/4"	420	2000x730x1660	460	2065x800x1850
POLAR 11-10-500 ES VS	V83PJ97N1NB44	500	11	15	620-1580	0.62-1.58	22-56	10	145	FS50	67	3/4"	420	2000x730x1660	460	2065x800x1850
POLAR 11-13-500 ES VS	V83PW97N1NB44	500	11	15	373-1250	0.37-1.25	13-44	13	189	FS50	67	3/4"	452	2000x730x1660	492	2065x800x1850
15 kW																
POLAR 15-08 VS	V60PI97N1NA64	-	15	20	950-2500	0.95-2.50	34-88	8	116	FS50	68	3/4"	263	1030x730x1000	290	1240x850x1190
POLAR 15-10 VS	V60PV97N1NA64	-	15	20	840-2100	0.84-2.10	30-74	10	145	FS50	68	3/4"	263	1030x730x1000	290	1240x850x1190
POLAR 15-13 VS	V60PX97N1NA64	-	15	20	585-1600	0.59-1.60	21-57	13	189	FS50	68	3/4"	263	1030x730x1000	290	1240x850x1190
POLAR 15-08 ES VS	V60PI97N1NB64	-	15	20	950-2500	0.95-2.50	34-88	8	116	FS50	68	3/4"	308	1400x730x1000	328	1505x810x1180
POLAR 15-10 ES VS	V60PV97N1NB64	-	15	20	840-2100	0.84-2.10	30-74	10	145	FS50	68	3/4"	308	1400x730x1000	328	1505x810x1180
POLAR 15-13 ES VS	V60PX97N1NB64	-	15	20	585-1600	0.59-1.60	21-57	13	189	FS50	68	3/4"	308	1400x730x1000	328	1505x810x1180
POLAR 15-08-500 VS	V83PI97N1NA44	500	15	20	950-2500	0.95-2.50	34-88	8	116	FS50	68	3/4"	390	2000x730x1660	430	2065x850x1850
POLAR 15-10-500 VS	V83PV97N1NA44	500	15	20	840-2100	0.84-2.10	30-74	10	145	FS50	68	3/4"	390	2000x730x1660	430	2065x850x1850
POLAR 15-13-500 VS	V83PX97N1NA44	500	15	20	585-1600	0.59-1.60	21-57	13	189	FS50	68	3/4"	423	2000x730x1660	463	2065x850x1850
POLAR 15-08-500 ES VS	V83PI97N1NB44	500	15	20	950-2500	0.95-2.50	34-88	8	116	FS50	68	3/4"	435	2000x730x1660	475	2065x850x1850
POLAR 15-10-500 ES VS	V83PV97N1NB44	500	15	20	840-2100	0.84-2.10	30-74	10	145	FS50	68	3/4"	435	2000x730x1660	475	2065x850x1850
POLAR 15-13-500 ES VS	V83PX97N1NB44	500	15	20	585-1600	0.59-1.60	21-57	13	189	FS50	68	3/4"	467	2000x730x1660	507	2065x850x1850

Air flow was measured in the following operating pressure values: 7.5 bar for "08" models - 9.5 bar for "10" models - 12.5 bar for "13" models. The data and results were measured in accordance with Standard ISO 1217. The sound level was measured in accordance with Standard ISO 3744.









POLAR 45

IF4															
Model	Code	Mo pov	otor wer	Air	outflow r	ate	Ma pres	ax. sure	Air- end	Sound level	Air outlet	Net weight	Net dimensions	Gross weight	Gross dimensions
		kW	HP	l/min.	m³/min.	c.f.m.	bar	p.s.i.		dB(A)	G	kg	LxWxH (mm)	kg	LxWxH (mm)
18.5 kW															
POLAR 18.5-10	V60DQ92N1NA64	18.5	25	2600	2.60	92	10	145	FS100	62	1" 1/4	527	1330x850x1370	597	1530x1000x1590
POLAR 18.5-10 ES	V60DQ92N1NB64	18.5	25	2600	2.60	92	10	145	FS100	62	1" 1/4	587	1710x850x1370	677	2060x1140x1680
22 kW															
POLAR 22-08	V60DR92N1NA64	22	30	3600	3.60	127	7.5	109	FS140	60	1" 1/4	620	1330x850x1370	690	1530x1000x1590
POLAR 22-13	V60DT92N1NA64	22	30	2600	2.60	92	13	189	FS100	62	1" 1/4	560	1330x850x1370	630	1530x1000x1590
POLAR 22-08 ES	V60DR92N1NB64	22	30	3600	3.60	127	7.5	109	FS140	60	1" 1/4	680	1710x850x1370	770	2060x1140x1680
POLAR 22-13 ES	V60DT92N1NB64	22	30	2600	2.60	92	13	189	FS100	62	1" 1/4	620	1710x850x1370	710	2060x1140x1680
37 kW															
POLAR 38-08	V60DU92N1NA64	37	50	6600	6.60	233	7.5	109	FS270	70	1" 1/2	902	1590x1000x1560	987	1800x1200x1810
POLAR 38-08 ES	V60DU92N1NB64	37	50	6600	6.60	233	7.5	109	FS270	70	1" 1/2	986	1960x1000x1560	1078	2130x1200x1810
45 kW															
POLAR 45-10	V60FV92N1NA64	45	60	6700	6.70	237	10	145	FS270	72	2''	1194	1700x1250x1700	1305	1920x1420x1960

Air flow was measured in the following operating pressure values: 7.5 bar for "08" models - 10 bar for "10" models - 13 bar for "13" models. The data and results were measured in accordance with Standard ISO 1217. The sound level was measured in accordance with Standard ISO 3744.





POLAR 24 ES VS PM





POLAR 45E VS PM

IE4		Motor		Motor		Air o	outflow rate	)	N	lax.	Air-	Sound	Air	Net	Net	Gross	Gross
Model	Code	ром	ver	(m	in max.)		pre	ssure	end	level	outlet	weight	dimensions	weight	dimensions		
		kW	HP	l/min.	m³/min.	c.f.m.	bar	p.s.i.		dB(A)	G	kg	LxWxH (mm)	kg	LxWxH (mm)		
18.5 kW																	
POLAR 18.5-08 VS PM	V60DP97N1NG64	18.5	25	630-3500	0.63-3.50	22-124	8	116	FS100	63	1" 1/4	475	1330x850x1370	545	1530x1000x1590		
POLAR 18.5-10 VS PM	V60DQ97N1NA64	18.5	25	633-3050	0.63-3.05	22-108	10	145	FS100	63	1" 1/4	475	1330x850x1370	545	1530x1000x1590		
POLAR 18.5-13 VS PM	V60D097N1NG64	18.5	25	583-2500	0.58-2.50	21-88	13	189	FS100	63	1" 1/4	475	1330x850x1370	545	1530x1000x1590		
POLAR 18.5-08 ES VS PM	V60DP97N1NH64	18.5	25	630-3500	0.63-3.50	22-124	8	116	FS100	63	1" 1/4	535	1710x850x1370	625	2050x1140x1670		
POLAR 18.5-10 ES VS PM	V60DQ97N1NH64	18.5	25	633-3050	0.63-3.05	22-108	10	145	FS100	63	1" 1/4	535	1710x850x1370	625	2050x1140x1670		
POLAR 18.5-13 ES VS PM	V60D097N1NH64	18.5	25	583-2500	0.58-2.50	21-88	13	189	FS100	63	1" 1/4	535	1710x850x1370	625	2050x1140x1670		
22 kW																	
POLAR 22-08 VS PM	V60DR97N1NA64	22	30	560-3800	0.56-3.80	20-134	8	116	FS100	61	1" 1/4	475	1330x850x1370	545	1530x1000x1590		
POLAR 22-10 VS PM	V60DS97N1NA64	22	30	572-3300	0.57-3.30	20-117	10	145	FS100	63	1" 1/4	475	1330x850x1370	545	1530x1000x1590		
POLAR 22-13 VS PM	V60DT97N1NA64	22	30	533-2700	0.53-2.70	19-95	13	189	FS100	63	1" 1/4	475	1330x850x1370	545	1530x1000x1590		
POLAR 22-08 ES VS PM	V60DR97N1NB64	22	30	560-3800	0.56-3.80	20-134	8	116	FS100	61	1" 1/4	535	1710x850x1370	625	2050x1140x1670		
POLAR 22-10 ES VS PM	V60DS97N1NB64	22	30	572-3300	0.57-3.30	20-117	10	145	FS100	63	1" 1/4	535	1710x850x1370	625	2050x1140x1670		
POLAR 22-13 ES VS PM	V60DT97N1NB64	22	30	533-2700	0.53-2.70	19-95	13	189	FS100	63	1" 1/4	535	1710x850x1370	625	2050x1140x1670		
POLAR 24-08 VS PM	V60LD97N1NA64	22	30	810-4500	0.81-4.50	29-159	8	116	FS140	61	1" 1/4	590	1330x850x1370	660	1530x1000x1590		
POLAR 24-10 VS PM	V60LF97N1NA64	22	30	790-3750	0.79-3.75	28-132	10	145	FS140	63	1" 1/4	590	1330x850x1370	660	1530x1000x1590		
POLAR 24-13 VS PM	V60LG97N1NA64	22	30	775-3300	0.78-3.30	27-117	13	189	FS140	63	1" 1/4	590	1330x850x1370	660	1530x1000x1590		
POLAR 24-08 ES VS PM	V60LD97N1NB64	22	30	810-4500	0.81-4.50	29-159	8	116	FS140	61	1" 1/4	650	1710x850x1370	725	2050x1140x1670		
POLAR 24-10 ES VS PM	V60LF97N1NB64	22	30	790-3750	0.79-3.75	28-132	10	145	FS140	63	1" 1/4	650	1710x850x1370	725	2050x1140x1670		
POLAR 24-13 ES VS PM	V60LG97N1NB64	22	30	775-3300	0.78-3.30	27-117	13	189	FS140	63	1" 1/4	650	1710x850x1370	725	2050x1140x1670		
30 kW																	
POLAR 31-08 VS PM	V60DY97N1NG64	30	40	845-5500	0.85-5.50	30-194	8	116	FS140	68	1" 1/2	795	1590x1000x1560	870	1800x1200x1810		
POLAR 31-10 VS PM	V60DX97N1NG64	30	40	850-5050	0.85-5.05	30-178	10	145	FS140	68	1" 1/2	795	1590x1000x1560	870	1800x1200x1810		
POLAR 31-13 VS PM	V60DZ97N1NG64	30	40	900-4500	0.90-4.50	32-159	13	189	FS140	68	1" 1/2	795	1590x1000x1560	870	1800x1200x1810		
POLAR 31-08 ES VS PM	V60DY97N1NH64	30	40	845-5500	0.85-5.50	30-194	8	116	FS140	68	1" 1/2	875	1960x1000x1560	965	2130x1200x1810		
POLAR 31-10 ES VS PM	V60DX97N1NH64	30	40	850-5050	0.85-5.05	30-178	10	145	FS140	68	1" 1/2	875	1960x1000x1560	965	2130x1200x1810		
POLAR 31-13 ES VS PM	V60DZ97N1NH64	30	40	900-4500	0.90-4.50	32-159	13	189	FS140	68	1" 1/2	875	1960x1000x1560	965	2130x1200x1810		
37 kW																	
POLAR 38-08 VS PM	V60DU97N1NA64	37	50	1350-6900	1.35-6.90	48-244	8	116	FS270	70	1" 1/2	795	1590x1000x1560	925	1800x1200x1810		
POLAR 38-10 VS PM	V60DV97N1NA64	37	50	950-5500	0.95-5.50	34-194	10	145	FS140	70	1" 1/2	795	1590x1000x1560	870	1800x1200x1810		
POLAR 38-13 VS PM	V60DW97N1NA64	37	50	900-5100	0.90-5.10	32-180	13	189	FS140	68	1" 1/2	795	1590x1000x1560	870	1800x1200x1810		
POLAR 38-08 ES VS PM	V60DU97N1NB64	37	50	1350-6900	1.35-6.90	48-244	8	116	FS270	70	1" 1/2	875	1960x1000x1560	1020	2130x1200x1810		
POLAR 38-10 ES VS PM	V60DV97N1NB64	37	50	950-5500	0.95-5.50	34-194	10	145	FS140	70	1" 1/2	875	1960x1000x1560	965	2130x1200x1810		
POLAR 38-13 ES VS PM	V60DW97N1NB64	37	50	900-5100	0.90-5.10	32-180	13	189	FS140	68	1" 1/2	875	1960x1000x1560	965	2130x1200x1810		
POLAR 39-08 VS PM	V60LL97N1NA64	37	50	1570-7255	1.57-7.26	55-256	8	116	FS270	70	1" 1/2	855	1590x1000x1560	930	1800x1200x1810		
POLAR 39-10 VS PM	V60LM97N1NA64	37	50	1570-6335	1.57-6.34	55-224	10	145	FS270	70	1" 1/2	855	1590x1000x1560	930	1800x1200x1810		
45 kW																	
POLAR 45E-08 VS PM	V60KT97N1NA64	45	60	1570-8800	1.57-8.80	55-311	8	116	FS270	72	2''	855	1590x1000x1560	930	1800x1200x1810		
POLAR 45E-10 VS PM	V60KV97N1NA64	45	60	1570-7350	1.57-7.35	55-260	10	145	FS270	72	2''	855	1590x1000x1560	930	1800x1200x1810		

Air flow was measured in the following operating pressure values: 7.5 bar for "08" models - 9.5 bar for "10" models - 12.5 bar for "13" models. The data and results were measured in accordance with Standard ISO 1217. The sound level was measured in accordance with Standard ISO 3744.





#### HRS Heat Recovery System

- Heat recovery is a real opportunity to increase the effectiveness of a compressed air system: with HRS it is possible to recover the heat generated by screw compressors to generate hot water within the plant itself.
- Most of the energy used to produce compressed air is converted into heat, much of it recoverable.

About 75% of the energy used in the compressor process is in the lubrication system and in the cooling circuit can be reused as a source of heat. Therefore, the system can be used to produce compressed air in a reliable way, by also recovering the thermal energy.

The amount of energy recovery depends on the compressor capacity, and the investment becomes interesting on compressors with installed capacities above 11 kW.

#### **COMPRESSION HEAT**

#### 4% 📃 Remaining heat in the air

- 2% Losses due to radiation
- 12% Heat removed by the air heat exchanger
- 75% Heat removed by the oil heat exchanger
- 7% Heat released by the electric motor



The HRS system can be used on all oil-injected screw compressors.





Compressor	KRC connection kit for HRS	HEAT RECOV	VERY SYSTEM	V/Ph/Hz	Max. water flow rate	G	Dimensions	kg
model	code	model	code		(m³/h)		L x W x H (mm)	
POLAR 11 POLAR 15	#260PU0200	HRS 30	#548700000	230/1/50	1.92	3/4"	666 x 236 x 430	24.4
POLAR 18.5 Polar 22 Polar 24	#260DP0050	HRS 50	#548720000	230/1/50	4.2	3/4"	666 x 236 x 430	27.5
POLAR 31 POLAR 38	#260DY0050							
POLAR 39 Polar 45e	#260LL0050	HRS 75	#548730000	230/1/50	6	3/4"	666 x 236 x 430	29.3
POLAR 45	#260GB0050							





		25555555
	Ideal for technical assistance and training	
	<ul> <li>complete simulation of the functions of a compressor controlled from Login</li> </ul>	
cod. 8101979	<ul> <li>- 3 potentiometers (pressure, oil temperature values, dryer temperature)</li> </ul>	
	- 7 switches (alarm simulation and remote control	
	- A.	

Compressed air is an essential resource in industrial applications, as well as one of the main sources of energy consumption. Energy costs are constantly increasing, therefore it is fundamental need to monitor, analyse and reduce the energy consumption of the compressed air system. This not only applies for large companies but equally for medium and small-sized facilities.

#### Why run an energy audit?

- The energy efficiency of a compressed air system within a production facility, is a large influence on the company's entire production process, in terms of the potential for increased efficiency and reducing costs.
- The energy audit is a process, that identifies potential efficiency improvements. The report that we provide allows our customer to accurately identify the amount of energy being used and wasted, the energy that may be saved, along with suitable alternative equipment and controls to maximise energy efficiency, specific to the exact requirements and operational characteristics of the application.

# Our experience at your service

- Thanks to the consolidated experience in the industrial sector, Nuair can provide companies with a detection and analysis service for professional auditing (EATool).
- Furthermore, with "Demo Login" it is possible to simulate compressor operation to provide immediate technical assistance remotely and/ or use it as a tool to train maintenance technicians and installers on the full operation of the Login controller.



#### **ORIGINAL SPARE PARTS FOR SCHEDULED MAINTENANCE**

FŠN

#### FSN

- FSN is the brand of the original spare parts for Nuair compressors and identifies after-sales services.
   It guarantees that the components are original and that they were carefully selected, checked and tested by skilled technicians.
   Using FSN certified original spare parts reduces management costs and guarantees the efficiency, reliability and longevity of the compressor.
- The parts are stored in our centralised and automated "LOGIMAT" warehouse in Zola Predosa (BO), where over 12,000 codes are handled every day on 10,000 square metres.
- Specialised staff is constantly in contact with our worldwide distribution centres to deliver spare parts as fast as possible.

#### Long Life Kit

To make it easier to replace components throughout the various maintenance intervals specified in the user manuals, Nuair has developed the LONG LIFE KITS, advantageous and specifically created for all screw compressor models, including the necessary filters for the various scheduled operations. Using FSN Long Life Kits ensures long-lasting maximum performance of the compressor. You can download the LLK catalogues from the website www.nuair.it and see the exploded drawings and spare parts, constantly updated for each compressor model.

#### 0il

Our FSN lubricants, selected from the world's best manufacturers, are specifically designed for use in our screw compressors. They are available in cans or drums.



#600000020	1 x 3.8-litre can (3.3 kg)
#600000021	1 x 20-litre can (17.36 kg)
#600000022	1 x 200-litre drum (174 kg)

#600000018A	1 x 3.8-litre can (3.25 kg)
#60000007A	1 x 19-litre can (16 kg)
#600000012A	1 x 208-litre drum (181 kg)

#600000019A	1 x 3.9-litre can (3.25 kg)
#600000016A	1 x 19-litre can (18.5 kg)
#600000017A	1 x 208-litre drum (175 kg)

#### The use of low-quality lubricants may cause irreparable damages to the compressor or lead to unforeseen repair and maintenance costs. The original FSN lubricants, with synthetic or mineral base, have been specifically designed for use on our screw compressors, supplied by the world leading manufacturers to maintain efficiency and reliability over time.

#### Mineral oil Rotar ECOFLUID 46 cSt

Formulated with high quality selected mineral-based oils, it offers an optimal control of oxidation and residue deposits as well as an excellent level of thermal stability and oxidation to ensure the longevity of equipment and long life performances.

#### Synthetic oil RotEnergyPlus 46 cSt

Ensures quick water separation and lower frictions and energy consumptions, extends maintenance intervals and ensures excellent lubrication of the bearings while offering an excellent protection.

#### Synthetic oil RotEnergyFood 46 cSt

A high quality lubricant for rotary compressors, suitable for use in the food industry, where high and specific quality standards are required.

We recommend changing the oil according to the interval reported in the use and maintenance manual of the compressor or once a year. We recommend using our original RotarECOFLUID, RotEnergyPlus and RotEnergyFood oils. (THE OILS ARE NOT INCLUDED IN THE LONG LIFE KIT).

# **Protect your investment,** extend the Warranty up to 5 years!

When installing your new NUAIR screw compressor, join the "Trust" Warranty 3- to 5-year extension program to benefit from countless advantages by maximising the effectiveness, safety, and duration over time of your investment. Thanks to scheduled maintenance programs, exclusively performed by NUAIR Authorised Service Centres, you can rely on a timely, highly professional service, as well as on the use of only original spare parts guaranteed by the FSN brand.

- $\star$  Easy and fast online activation.
- $\star$  You can choose to extend warranty to 3 or 5 years.

The "Trust" warranty can be easily extended online through EasyConnect, the new NUAIR online service portal specially created to simplify customers' lives by providing them with quick, clear responses about product availability, order management, and goods shipping times.

- ★ Lower maintenance costs as a result of using original spare parts.
- ★ Oualified assistance by authorised technicians.



YOUR WEB PORTAL SERVICES. OUR FUTURE.





THE WIND OF CHANGE. www.nuair.it



Authorized distributor: