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Data sheet and list of spare parts for Red Dragon® 4 pump

For all Red Dragon® 4 Dreamliner 1600 Watt pumps

v1.0

ENG





Since 1986



Data sheet and power curve for flow pump

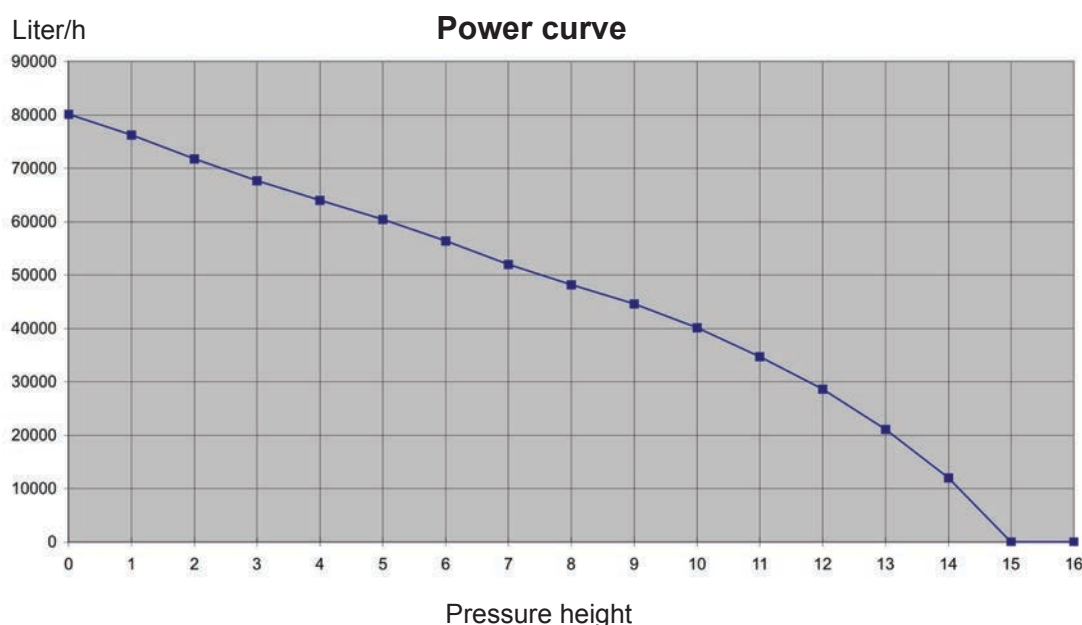
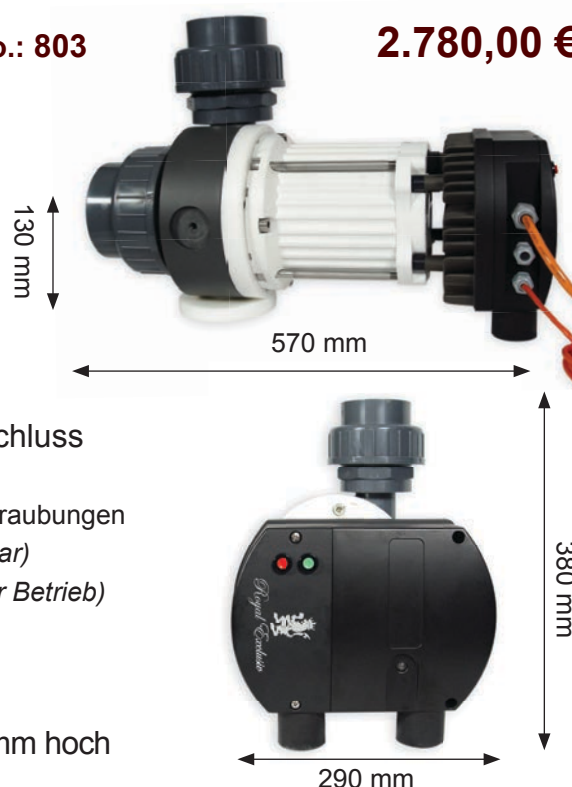
Red Dragon® 4 Dreamliner 1600

Product no.: 803

2.780,00 €

Technical data Red-Dragon® 4 Dreamliner 1600 DC-Brushless
Speed adjustable high efficiency pump / flow pump:

Leistung:	max. 80.000 Liter / h
Kabellänge:	5,0 Meter (Stromzufuhr) 2,5 Meter (Netzwerkkabel)
Druckstutzen:	Ø 90 mm
Saugstutzen:	Ø 110 mm
Stromverbrauch:	regelbar max. 1550 Watt (bei Vollast)
Netzwerk:	über Netzwerk einstellbar / RJ45 Anschluss
Förderhöhe:	max. 15,0 Meter
Material/Farbe:	Alu weiß/PVC schwarz/grau mit Verschraubungen
Betriebsspannung:	230 Volt 50 Hz (auch in 110V/60Hz lieferbar)
Geräuschpegel:	38 db (gemessen in 1m Entfernung externer Betrieb)
Schutzklasse:	IP 44 für externen Betrieb / Süßwasser !
Gewicht:	30 kg
Höhe Ansaugseite:	Mitte 130 mm
Abmessungen Pumpe:	290 mm breit / 570 mm lang / ~ 380 mm hoch



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A new generation of regulated circulation pumps with electronically commuted motor

The pumps of the new **Red Dragon® 4** pump series differ from other similar pumps in that they are driven by an electronically commuted electrical motor with permanent magnets rotor (*Brushless DC*). Such electrical motor consumes less energy as asynchronous electrical motor.

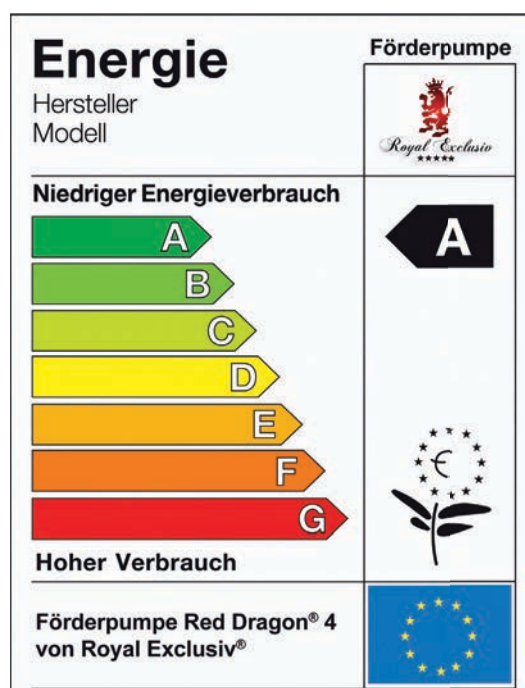
The electronically commuted electrical motor is driven by frequency converter with integrated PFC filter. Motor is driven by electric current which is rectified and then changed by frequency converter into appropriate shape. Converter measures the motor power consumption and calculates current flow and pressure, which are required data for pump adjustment.

Electronic circuit enables optimal adaptation with power adjustment to the requirements of the hydraulic system and as result energy savings. When there is requirement for low flow operation, the pump could reduce motor power consumption and operate at reduced rpm's.

An ETHERNET communication provides remote control via HTTP or FTP protocol, ensuring user-friendly environment. The **Red Dragon® 4** could be self-regulated or could be regulated via PC by WINDOWS application or MAC. Optional LonWorks® network connection could be provided.

The **Red Dragon® 4** pumps achieve significant energy savings compared to other pumps of the same size. The New Motor Technology ensures safe and reliable operation.

Red Dragon® 4 pumps fulfil the strictest requirements of EU legislation with "A" energy labelling class.



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Benefits for pond and swimming pool owners:

The **Red Dragon® 4** pump is designed for energy savings. It saves up to 60% electrical energy compared with three-speed commercial pumps.

The **Red Dragon® 4** pumps are designed as external pumps and can not be operated underwater. The pumps are extremely quiet and designed as 24 hours / 365 days endurance.

Standard control functions:

Remote control - All parameters could be set-up by ETHERNET communicator. The manual or automatic control by JavaScript programs or similar tools is possible.

ETHERNET: TCP/IP with HTTP, FTP (the pump is a simple web server)

Digital inputs for:

remote control - external power on - external regulation - operating in pairs

Relay output:

stand-by - operation - error

Numerous, already as standard integrated options, available via Ethernet connection:

- Operating hours counter, elapsed overall time of the pump from purchase
- Current power consumption in Watts
- Watts display when turned on power limitation
- Current, recorded overall performance in amperes
- Efficiency display in %
- Restart counter
- Current speed display
- Integrated flowmeter in m³/h
- Current back pressure in metres
- Current status display engine temperature in degrees
- Current status indicator controller temperature in degrees
- Engine status indicator ok / error
- Display ok / error with colored LED lights red/blue, externally visible
- Interfaces, such as 10 Volt analog, digital, NC or Ethernet enabled display
- Display enable/disable of the div. interfaces
- Display activate the pressure height limitation in metres



The pumps are intended for external operation. The pumps are exceptionally low noise, since low-speed, round about +/-2000 RPM. Wattage limitations and not activated pressure height limiter, the pump runs automatically in higher speeds with increasing pressure.

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The benefits in detail:

- Unbreakable shafts, with 25 mm diameter (!!!)
- Extremely low noise, quieter than a mini Red Dragon 1
- Pump head made of solid 200/220 mm PVC full bars CNC cut and CNC milled, with at least 30 mm wall thickness inside
- Fittings from 63 to 110 mm suction side
- Low-speed runner
- With automatic cruise control
- Speed control: Speed up/down - wattage up/down - ampere consumption up/down
- Overcross regulation possible
- Complies with CE/GS and VDE standards
- Extremely low current consumption, engines have **"A" certified energy label**
- Efficiency: over 90%. Motor remains cold/lukewarm
- ECM Sinewave-technology, latest design (electronic commutation, brushless DC motor)
- EMC standards ability electronics, no DC high-pitched whistling in the kHz range
- No plastic parts inside the magnetic anchor
- Overload protected
- Automatic overheat protection, blockades or closed valve
- Extremely high starting torque, reached with diameter 80 mm rotor magnets
- Rotors digital fine balancing, the pump has almost no vibrations
- No O-ring fixing the bearings all bearings are rigidly built into shrink fit technology
- Shafts also with shrink technology in the rotor fixed and not glued or pressed
- Simply rotor disassembling, end of shaft with screw fixed, can be completely disassemble to the de-scale
- Hollow shaft, (in 5 mm through-hole) as integrated anti lime bypass
- Suitable for living room, extremely low noise, the heavy and solid construction almost give no vibration transmitting to the pipe network
- Quality Standard ISO 9001 (corresponding build quality)
- Motor body from solid, stainless and saltwater-resistant cast aluminium, white powder coated
- Barely measurable heat to the water, because external execution and outsourced electronics pump side
- Up to 60% less energy consumption than conventional pond pumps

Areas of application:

Large pond equipment, filter cellar pumps, closed-loop applications in living quarters, large freshwater grounds, in the commercial area, breeding and sell equipment, Zoo stores, Koi ponds, BBF filters, drum and sieve filters, etc. everywhere where much flow and pressure is needed.

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Performance examples:

Red Dragon® 4 DL 500 watt: electronically reduced to 200 Watts: = 20.300 litres, maximum height of cruise control regulated flow: 15 metres. This value, which has the **Red Dragon® 4** DL is the half power consumption, as any currently currently comparable DC pump on the market. If for example the 500 watt pump Overcross setting to 200 Watts is set, the control automatically searches are the most economical operating point. It connects the hydraulic with power consumption and calculated the highest possible flow itself, without exceeding the set power (200 watts).

By overcross-regulation the pump will automatically activate the cruise control and keeps the pump permanently to this value. A reduction of speed or ampere, is also possible. Each control type has its specific advantages and disadvantages. The most economical regulation will be found about the function of Overcross and activated cruise control.

On this pump model working **Royal-Exclusiv®** and a team of specialized professionals in the field of hydraulics, technology, software, control and ECM engineers and IT specialists closely together.

Standard delivery state from factory Cologne:

The **Red Dragon® 4** pumps are delivered ex-works with 50% of the nominal power of the software control. The values are always changeable via Ethernet interface. More information in the operating instructions of the software. (also at the net www.royal-exclusiv.de)

- Including VDE certified network cable, 5 meters, suitable for wet areas
- Motor in IP 44 splash waterproof design made of stainless aluminium
- Including complete standard fittings DIN 50 to 110 mm
- M10 DIN 912 screws in stainless steel quality
- Motor made in Europe, pump configuration made in Germany by **Royal-Exclusiv®**
- Including rubber buffer/feets for decoupling
- Extremely low noise execution
- Including interfaces, 10 Volt analog, 24 volts digital, Ethernet or NC inputs
- 30 mm solid wall thickness of 200 and 230 mm PVC - rods, CNC - turned and milled

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<i>list of spare parts</i>	<i>Product.no. (110V)</i>	<i>(230V)</i>	<i>Price</i>
rotor complete 1600	-	803-001	710,00 €
motor block 1600	-	803-002	970,00 €
impeller-wheel 1600	-	803-003	74,00 €
disk rotor 1600	-	803-004	70,00 €
rotor shaft 1600 with magnet	-	803-005	560,00 €
rotor-nut left-hand thread (1piece)	-	801-006	19,00 €
separating can 1600	-	803-007	95,00 €
o-ring for separating can	-	800-008	4,00 €
plastic adaptor with o-ring	-	803-009	94,00 €
o-ring for plastic adaptor	-	800-010	9,10 €
o-ring for rotor	-	800-011	7,25 €
screw connection complete pressure side Ø 90 mm	-	175-90	42,90 €
screw connection complete intake side Ø 110 mm	-	175-110	55,50 €
pump head with screw connections without stator	-	803-014	345,00 €
main-stand/feet with screw	-	800-015	42,00 €
controller unit complete 1100	-	803-016	696,00 €
mainboard for controller 1100	-	803-017	465,00 €
press/push-button red	-	800-018	12,80 €
press/push-button green	-	800-019	12,80 €
pump feet with thread 40mm	-	802-020	22,00 €
V2A pump head screw 10x90mm (1piece)	-	802-021	4,75 €
V2A motor block screw 10x40mm (1piece)	-	800-022	3,00 €
V2A controller-unit screw 5x40mm (1piece)	-	800-023	2,75 €

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spare parts	spare parts	spare parts	spare parts
			
rotor complete 1600 803-001 710,00 €	motor block 1600 803-002 970,00 €	impeller-wheel 1600 803-003 74,00 €	disk rotor 1600 803-004 70,00 €
spare parts	spare parts	spare parts	spare parts
			
rotor shaft 1600 with magnet 803-005 560,00 €	rotor-nut left-hand thread 801-006 19,00 €	separating can 1600 803-007 95,00 €	o-ring for separating can 800-008 4,00 €
spare parts	spare parts	spare parts	spare parts
			
plastic adaptor with o-ring 803-009 94,00 €	o-ring for plastic adaptor 800-010 9,10 €	o-ring for rotor 800-011 7,25 €	screw connection complete pressure side Ø 90 mm 175-90 42,90 €
spare parts	spare parts	spare parts	spare parts
			
screw connection complete intake side Ø 110 mm 175-110 55,50 €	pump head with screw connections 803-014 345,00 €	main-stand/feet with screw 800-015 42,00 €	controller unit complete 1600 803-016 696,00 €

For more information, please visit www.royal-exclusiv.de. Simply enter the part number or name into the search box or email: info@royal-exclusiv.de.

All information subject to change. We try our best, but printing errors reserved.

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spare parts



mainboard
for controller 1600
803-017 465,00 €

spare parts



press/push-button red
800-018 12,80 €

spare parts



press/push-button green
800-019 12,80 €

spare parts



pump feet
with thread 40mm
802-020 22,00 €

spare parts



V2A pump head screw
10x90mm (1piece)
802-021 4,75 €

spare parts



V2A motor block screw
10x40mm (1piece)
800-022 3,00 €

spare parts



V2A controller-unit screw
5x40mm (1piece)
800-023 2,75 €