



FC SERIES PROCESS PUMPS

FC系列工业流程泵

OVERVIEW

FC SERIES PROCESS PUMPS

FC Series Process Pump is single stage, end suction, back pull-out with simplified heavy-duty bearing unit, designed in accordance with ISO 5199 and ISO 2858 international standards.

FC Series Process Pump is designed for continuous operation in industrial processes. It can be used for pumping clean, abrasive, erosive and corrosive liquids and slurries and also paper stocks of various kinds.

FC系列工业流程泵是一款根据ISO5199和ISO2858国际标准设计的单级端吸式离心泵，专门为了连续运行工况而开发；其配置了可靠的重载式轴承单元和方便维修的后拉式转子设计，既能稳定高效的输送清洁或具有磨蚀性和腐蚀性的介质，也能输送各类纸浆，浆料及含气介质。

OPERATING DATA | 性能范围

Capacities [流量]	11,000 m ³ /h	48,400 USgpm
Heads [扬程]	160 m	525 ft
Temperatures [温度]	180°C	356°F
Frequencies [频率]	50 or 60 Hz	50 or 60 Hz
Pressures [承压] *	16/25 bar	230/360 psi

* Depending on material and size [根据材料和型号而定]

DESIGNATION | 型号说明



APPLICATIONS INDUSTRY | 行业应用



Chemical/Petrochemical [石化/化工]



Steel/Nonferrous metal [钢铁/有色金属]



Pharmaceutical [制药]



Food & Beverage [食品/饮料]

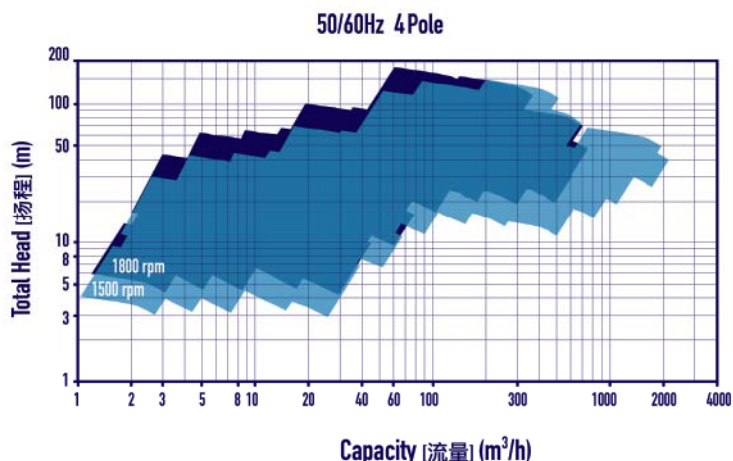
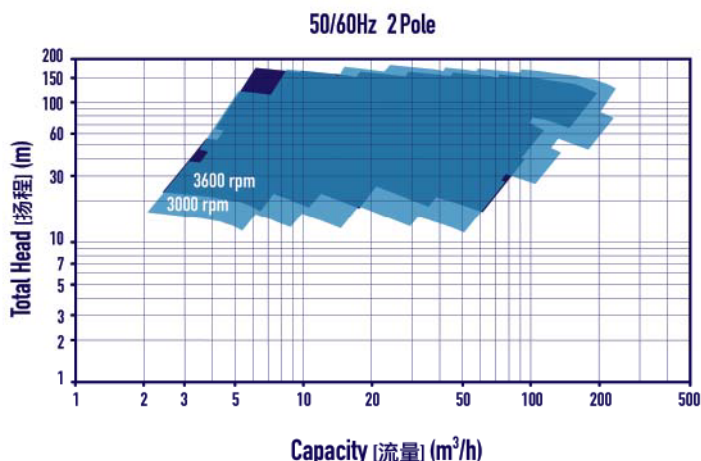


Pulp & Paper [制浆造纸]



Water Treatment [水处理]

CAPACITY RANGE | 型谱图



DESIGN STANDARDS | 设计标准

Design [设计]	EN ISO 5199:2002	Technical specifications for centrifugal pumps – Class II 离心泵技术规范- II 类
Dimensions [尺寸]	EN ISO 2858:2010	End-suction centrifugal pumps (rating 16 bar) – Designation, nominal duty point and dimensions 端吸式离心泵 (额定压力16 bar) – 标记, 名义工作点和尺寸
Testing [实验]	EN ISO 9906:2012 HI 14.6-2011	Rotodynamic pumps – Hydraulic performance acceptance tests / 离心泵-水力性能验收试验 – Grades 1E and 1B / –1E级和1B级 – Grade 2B / –2B级
	EN 10204:2004	Metallic products – Types of inspection documents 金属产品-检验文件的类型 – Inspection document type 2.2 / –检验文件 2.2类 – Inspection document type 3.1 / –检验文件 3.1类
	EN 735:1995	Overall dimensions of rotodynamic pumps tolerances. 离心泵的外形尺寸公差
Flange drilling [法兰钻孔]	EN 1092-1:2007+A1:2013	Flanges and their joints – Part 1: Steel flanges – PN10, PN16, PN25
	GB/T 9119-2010	Slip-on-welding plate steel pipe flanges – PN10, PN16, PN25
	ASME B16.5:2009	Pipe flanges and flanged fittings – NPS ½ Through NPS 24 – Class 150, 300
	JIS B 2220:2012	Steel pipe flanges – 10K, 16K, 20K, 30K
Quality system [质量体系]	EN ISO 9001:2008	Quality management systems Requirements. 质量管理体系要求

FEATURES AND BENEFITS

1 Impeller / 叶轮



Generalization and modularization design, can be installed close, open, semi open and vortex impeller for fast transition. Varieties of impeller designs are suitable for clean, viscous, containing slight particles and fibers liquids.

模块化设计，可以安装闭式、开式、半开式以及涡流叶轮，实现快速切换，从而满足清洁、高粘性、轻微颗粒、含气以及纤维浆料等不同介质的传输需求。

Impeller's balance hole and back vanes can balance axial force for extending bearing life.

叶轮上的平衡孔和背叶片设计可以更好的平衡轴向力，延长轴承寿命。

2 Casing cover / 泵盖



The Cyclone seal chamber design has been effective in reducing wear of casing cover in solid particles, and removes suspended solids away from mechanical seal resulting in extended seal life.

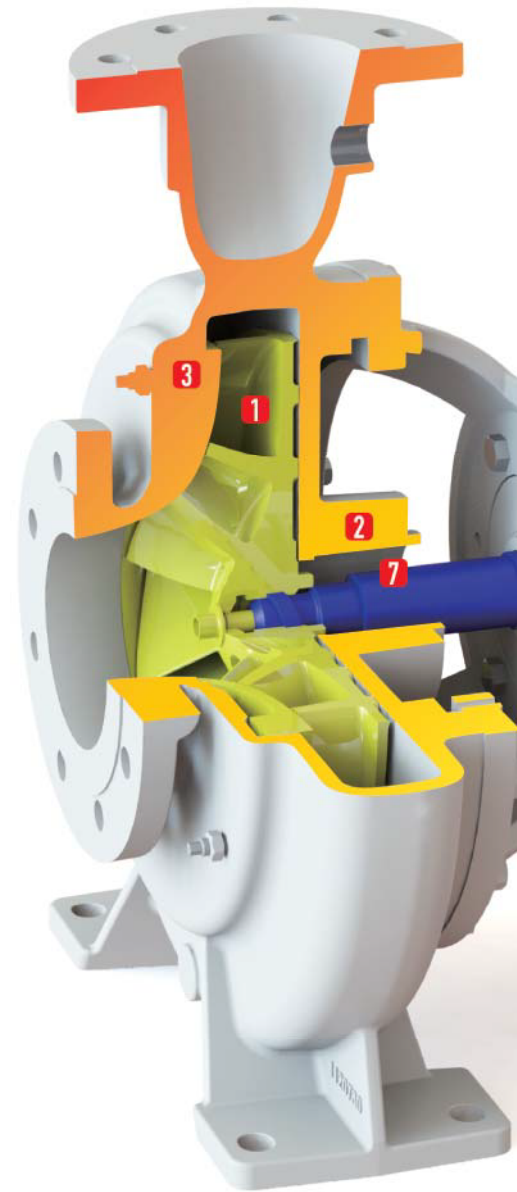
锥形密封腔设计，可以有效降低在介质含颗粒的工况下泵盖的磨损，同时有利于排出密封腔内的颗粒，延长机封寿命。

3 Side plate / 耐磨板



Impeller clearance can be easily reset by external adjustment to maintain hydraulic performance. Delivers long time energy savings, while downtime is kept to a minimum.

外置调节螺栓可以方便的调节耐磨板与叶轮之间的间隙，保持泵运行在高效区域。既可以长期保持节能，又可以最大程度降低停机维护时间。



ENEFITS | 特点和优点

4 Bearing unit / 轴承



Oversized bearing design significantly expands the limits for long, trouble-free bearing and seal life. On high load applications, the L¹⁰ Bearing Life is increased 150% to 200%.

强化的轴承设计显著增加了轴承和机封的免维护时长，在高负载的工况下，轴承寿命L¹⁰ 提高了150% 到 200%。

Includes oil and grease lubrication for all performance needs: grease lubrication for applications up to 120°C / 250°F; and oil lubrication for up to 180°C / 355°F.

提供油润滑和脂润滑两种方案：脂润滑适用于低于 120°C的工况，油润滑可支持180°C以内的工况。

5 Shaft / 轴



Heavy-duty shaft with low stiffness ratio minimizes deflection at stuffing box to less than 0.05 mm / 0.002 in, to extend the shaft seal lifetime.

具有较低的刚度比的重载轴设计确保轴跳动在0.05mm/0.002 in以内，有效延长密封和轴承的寿命。

6 Labyrinth ring / 迷宫密封



Non-contacting labyrinth ring to avoid the shaft wearing out.

非接触式迷宫密封避免轴被磨损。

Effectively prevent dust and rainwater from entering the bearing housing to extend the bearing life.

有效阻止尘土和雨水进入轴承箱，延长轴承。

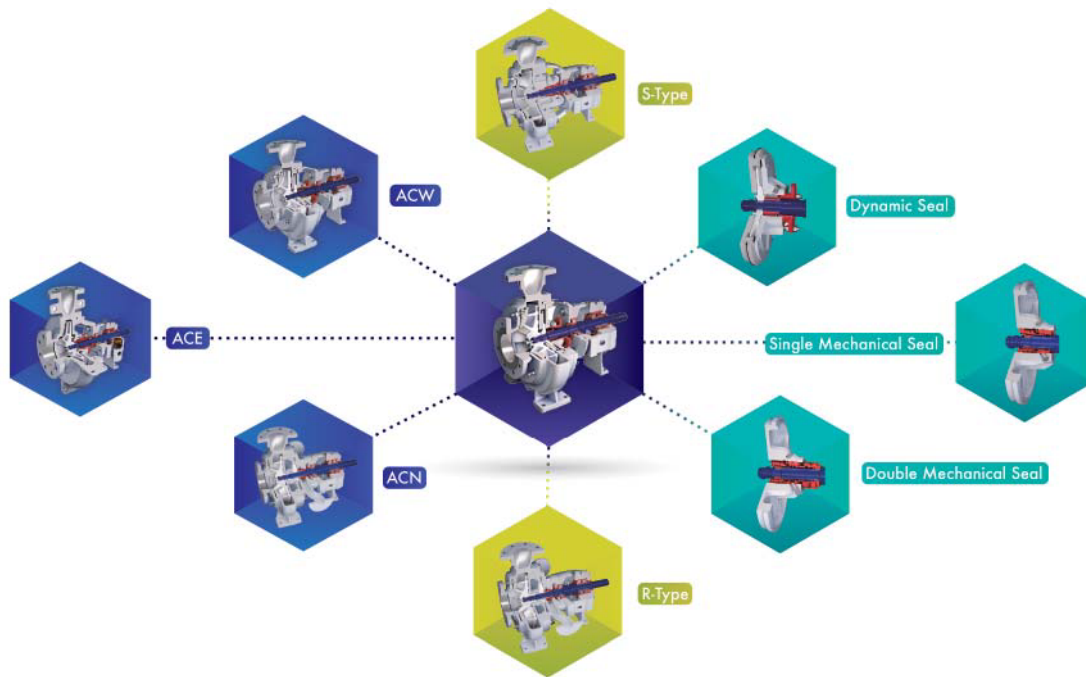
7 Shaft seal / 机封



Effective dynamic, single and double mechanical seals and gland packing.

提供动力密封，单封，双封和填料密封方案。

INTERCHANGEABILITY | 模块化设计



ACW Wear resistant pumps designed for applications where the normal pumps quickly fail, e.g. erosive and corrosive liquids and slurries containing solid particles.
耐磨泵设计，适用于普通离心泵迅速失效的工况，比如含有较高固体颗粒含量的具有磨蚀性和腐蚀性的液体和浆料。

ACE Hot Liquid Pump can be used for pumping hot clean, abrasive or corrosive liquids and liquors.
高温泵设计，适用于输送高温的清洁的各类液体，采用中心支撑。

ACN Non-clogging Hydraulics designed for pumping abrasive or corrosive liquids, sludges and slurries containing big particles and long fibers.
无堵塞水力设计，适用于输送含有大颗粒和长纤维的具有磨蚀性和腐蚀性的液体、污泥和浆液。

S-Type Self-priming pumps with internal vacuum pump are designed for self-priming purposes and to pump gas containing liquids.
内置真空泵设计的自吸泵，用在自吸工况和传输含气介质。

R-Type Air separating pumps with external vacuum pump are particularly capable of pumping gas containing liquids.
外置真空泵设计的气体分离泵，用在传输高含气量的液体。

Dynamic Seal Dynamic Seal is designed for all liquids (clean liquids, viscous liquids, fibrous slurries, non-fibrous slurries, liquids containing large solids). It requires no external sealing water. It is essentially maintenance-free and offers outstanding reliability.
动力密封：动力密封可适用于各类介质（清洁液体，高粘度液体，纤维浆料，含固浆料等）。无需机封冲洗水，几乎免维护并具有很高的可靠性。

Single Mechanical Seal The single mechanical seal with the optimal seal chamber is specifically designed for use with fibrous slurries up to 8% consistency without flushing water. It also is suitable for clean, viscose and liquids containing large solids.
单端面机械密封：单端面机械密封配合优化过的机封腔，可承受高达8%的纤维浆料而无需冲洗水，同样也适用于清洁介质，高粘度介质和含固介质。

Double Mechanical Seal The double seal with optimal seal chamber is designed for all consistencies and concentrations of clean, viscose, fibrous slurries, non-fibrous slurries and liquids containing large solids. The double seal is suited for temperatures up to 180 °C / 355 °F.
双端面机械密封：双端面机械密封配合优化过的机封腔，可适用于各种浓度的清洁介质、高粘度介质、纤维浆料，含固介质等。耐受温度可达180 °C / 355 °F。

MATERIALS | 材质表

Stainless steel design / 不锈钢设计		Nominal chemical composition % / 名义化学成分 %					
		C	Cr	Ni	Mo	Cu	N
Duplex / 双相钢	ASTM A890 3A	0.06 max.	24.0-27.0	4.0-6.0	1.75-2.5	-	0.15-0.25
	ASTM A890 1B	0.04 max.	24.5-26.5	4.7-6.0	1.7-2.3	2.7-3.3	0.10-0.25
	ASTM A890 5A	0.03 max.	24.0-26.0	6.0-8.0	4.0-5.0	-	0.10-0.30
Austenitic / 奥氏体不锈钢	ASTM A743 CF-8	0.08 max.	18.0-21.0	8.0-11.0	-	-	-
	ASTM A743 CF-3M	0.03 max.	17.0-21.0	9.0-13.0	2.0-3.0	-	-
	ASTM A743 CN-7M	0.07 max.	19.0-22.0	27.5-30.5	2.0-3.0	3.0-4.0	-
Martensitic / 马氏体不锈钢	ASTM A747 CB7Cu-2	0.07 max.	14.0-15.5	4.5-5.5	-	2.5-3.2	-
Carbon steel, cast iron design* 碳钢、铸铁设计*		C	Cr	Ni	Mo	Cu	Si
Chromium iron / 高铬铸铁	ASTM A532 IIIA	2.0-3.3	23.0-30.0	2.5 max.	3.0 max.	1.2 max.	1.5 max.
Carbon steel / 碳钢	ASTM A216 WCB	0.30 max.	0.50 max.	0.50 max.	0.20 max.	0.30 max.	0.6 max.

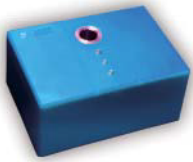
* Other materials available on request / 可根据要求提供其他材质组合

MONITORING SYSTEM

ΣBOX 动设备监测解决方案

Sensor | App | Intelligence Platform

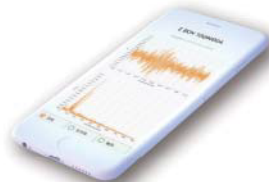
传感器、App、智能云平台



Bluetooth Sensors

蓝牙传感器

Monitor tri-axial vibration, temperature, run-time hours.
监测三轴向振动值，温度，运行时长。



Mobile App

手持设备App

Monitor your machine right from your phone with the free mobile app.

通过手持设备上安装的APP来连接设备读取数据。



Gateway

网关

Add remote monitoring capabilities by leveraging remote data collection devices.

通过网关自动收集范围内传感器数据并上传到云平台。



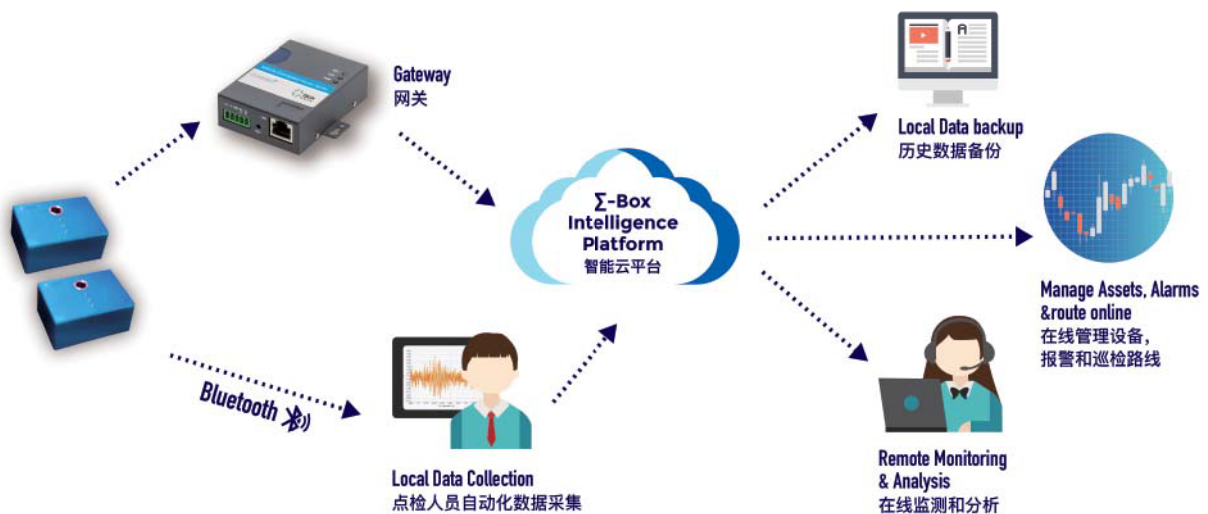
Intelligence Platform

智能云平台

Monitor all of your sensors and machines from a simple web interface.

通过网页登录智能云平台，可以管理所有的设备及报警。

Flexible Data Collection and Access | 灵活的数据收集和接入



Technical Specifications | 技术参数

Monitor and log the vibration and temperature of any rotating machine. Capture transient events with a 1 to 5 minute alarm check and trend overall health with 1 to 60 minute trend interval. For advance analysis request or download vibration spectrum on demand.

监测记录动设备的振动和温度数据。每1-5分钟进行一次数据读取并对总体趋势变化进行判断及预警。振动数据可供下载用于高级振动分析。

Size [尺寸]: 57mm x 39mm x 25mm

Vibration [振动]: 3-Axis, 10 to 1000Hz (X,Y) 10 to 600Hz (Z)
频率范围10赫兹到1000, 10赫兹到600

Temperature [温度]: -40°C to +84°C (-40°F to +183°F) T3
-40°C to +60°C (-40°F to +140°F) T4

Data Storage [数据储存]: 170 Days (based on hourly data)
170天 (基于每小时数据)

Analysis [分析]: Machine Run-Time, Kurtosis, Vibration Spectrum
设备运行时间，峭度，振动频谱

Wireless [无线]: Bluetooth V4, Range 30-100m (100-300ft)

Power [电源]: Lithium Battery, 3 Year Average Life (use dependent)
锂电池，3年平均寿命 (根据使用情况而定)

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