

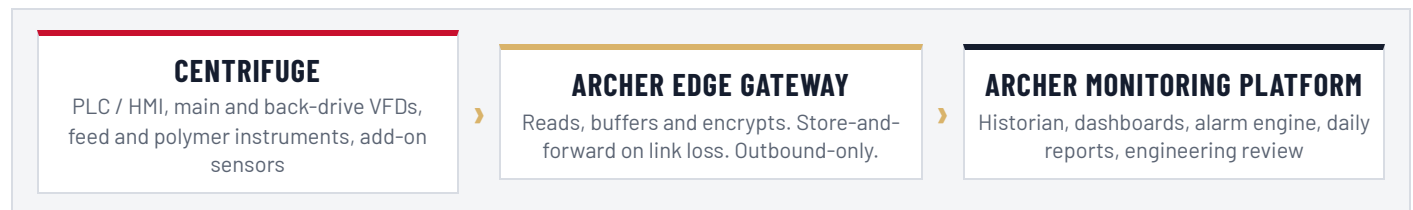
IIOT CENTRIFUGE MONITORING

Remote machine health, process and energy monitoring for decanter centrifuges **DS-IIOT-CM REV A · 08/2026**

TECHNICAL DATASHEET

Archer's centrifuge monitoring service combines an industrial edge gateway, optional condition-monitoring sensors and a hosted analytics platform into a subscription delivered and supported by Archer. AI-assisted analytics watch every connected site around the clock; Archer's team reviews the results with you. It connects to the centrifuge's existing control system, does not modify control logic, and reports through web dashboards, alarms and automated daily PDF reports.

SYSTEM OVERVIEW



MONITORED PARAMETERS

PARAMETER	SOURCE	USED FOR
Bowl speed	PLC / main VFD	G-force, baseline, startup profile
Differential speed	PLC / back-drive VFD	Cake dryness and stability trending
Scroll torque	PLC / back-drive VFD	Loading, overload risk, separation stability
Main and back-drive current, kW	VFDs / power meter	Energy per m ³ and per dry tonne
Bearing temperatures	PLC or Archer PT100 kit	Rate-of-rise and absolute alarms
Casing vibration	Archer vibration kit	Bearing, imbalance and scroll wear indication
Feed flow and polymer flow	Existing instruments	Dose per dry tonne, throughput
Feed solids (optional)	Existing analyzer or lab entry	Dry-tonne normalization
States and alarms	PLC	Run hours, starts, availability, alarm history
Lube and flush cycles	PLC	Verification, maintenance countdown

Parameter set depends on the signals available at each machine. Archer confirms the tag list during scoping.

ANALYTICS AND OUTPUTS

Dashboards	Live and historical trends per machine, fleet overview for multiple units and sites, browser-based, no client software
Alarm engine	Absolute limits, rate-of-rise, deviation from baseline, missing-data and gateway-offline alarms
Vibration limits	Zone limits per ISO 20816 as a starting point, tuned to the machine's own baseline
Notifications	Email and SMS to defined recipients by severity, with acknowledgement tracking
Daily report	Automated PDF at a set local time: run summary, throughput, energy, polymer, temperature and vibration trends, alarms
Monthly summary	Availability, kWh per dry tonne, polymer per dry tonne, trend commentary (Advanced and Managed)
Data export	CSV on demand; API access available on request
Retention	Raw data 13 months, aggregated data for term of subscription

COMPATIBLE CENTRIFUGES

HAUS	Alfa Laval	Andritz	Flottweg	Pieralisi
Centrisys	GEA	Hiller	Others on request	

Connection via the machine's PLC, VFDs or dedicated I/O; add-on sensors where no digital interface exists.

HARDWARE, CONNECTIVITY AND SERVICE

EDGE GATEWAY

Form factor	DIN-rail industrial gateway, fanless; supplied in a pre-wired panel or fitted in an existing enclosure
Supply	24 VDC nominal (18 to 32 VDC), typical 10 W; 120/240 VAC option with panel
Operating range	-20 to +60 °C, 5 to 95% RH non-condensing
Networking	2 x Gigabit Ethernet (plant / OT and WAN separated); LTE cellular option with external antenna
Fieldbus and protocols	Modbus TCP and RTU, EtherNet/IP, PROFINET, OPC UA, Siemens S7, Beckhoff ADS, EtherCAT (device or master, machine dependent)
Local I/O	Isolated RS-485; optional expansion for 4-20 mA, RTD and digital inputs
Sampling and buffering	Configurable from 1 s; store-and-forward for 30 days minimum with automatic backfill on reconnect
Certifications	CE / UL recognized components; CSA-certified panels where required; Class I Div 2 / Zone 2 options

OPTIONAL SENSOR KIT

Vibration	Industrial accelerometers, 2 to 4 per machine at main bearing housings; velocity and acceleration overalls, 10 Hz to 10 kHz
Bearing temperature	PT100 or PT1000, surface or bayonet mount, per bearing housing
Power	Panel-mounted power meter with split-core CTs on main and back-drive feeds
Flow	Clamp-on ultrasonic feed and polymer flow where instruments are absent

SECURITY

- Outbound-only, TLS-encrypted link with per-device credentials; no inbound ports on the plant network
- Read-only access to control tags; no write path to PLC or VFD control by default
- Hardened gateway OS with read-only system partition and signed updates managed by Archer
- Role-based access with MFA and audit log; data hosted in Canada

SERVICE LEVELS

FEATURE	ESSENTIAL	ADVANCED	MANAGED
Gateway and connectivity	✓	✓	✓
Dashboards, alarms, daily PDF report	✓	✓	✓
Vibration and bearing temperature kit	option	✓	✓
Energy and polymer per dry tonne	-	✓	✓
Monthly summary, quarterly engineering review	-	✓	✓
Alarm triage by Archer (business hours)	-	-	✓
Service and spares planning, priority field response	-	-	✓

Priced per machine per month plus one-time commissioning. Multi-machine and multi-site pricing available. Minimum term 12 months; 90-day pilot available.

DEPLOYMENT

Scoping	Remote review of machine drawings, PLC and VFD models, network and available signals
Commissioning	Typically one to two days on site per machine including sensor mounting and tag verification
Baseline	Two to four weeks of operation to establish machine-specific baselines and alarm limits
Customer provides	24 VDC or 120 VAC supply, panel space or wall space, network drop or antenna location, PLC read access
Support	Archer engineering support, remote gateway management and platform updates included in subscription

Specifications are typical and subject to change without notice; final configuration is confirmed in Archer's scope of supply.