APT INDUSTRIAL CHILLER

INDUSTRIAL COOLING DATASHEET REFERENCE

Custom Industrial Chiller Datasheet Reference

Technical reference for non-standard industrial chiller configuration, including high ambient design, explosion-proof direction, stainless steel wetted parts, compact layout, mobile cooling, OEM integration, and special process cooling review.

- **Project-defined configuration**
- **Special environment review**
- **Material compatibility**
- **Electrical customization**
- **OEM and compact layout**
- **Quotation data checklist**

TECHNICAL DATASHEET PREVIEW

DATASHEET FIELD	REFERENCE DIRECTION
Datasheet Type	Custom Industrial Chiller
Chiller Category	Project-defined process chiller configuration
Typical Purpose	Non-standard capacity, temperature, material, layout, voltage, safety, or integration requirement
Configuration Scope	Compressor, condenser, evaporator, pump, tank, control panel, protection, cabinet, and documentation
Review Stage	Preliminary technical review before final model, price, and production confirmation

Custom chillers should not be selected by cooling capacity only. Process data, site limits, electrical conditions, safety direction, and service access must be reviewed together.

This datasheet is for preliminary engineering review. Final selection should be confirmed according to cooling capacity, process temperature, cooling medium, flow rate, pump head, voltage, ambient condition, safety requirement, and installation layout.

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QUICK DATASHEET SUMMARY

Custom Chiller General Data

Use this table as the first review layer for a project-defined industrial chiller. Unknown values can be marked as project-defined before detailed engineering confirmation.

ITEM	REFERENCE DATA	ENGINEERING NOTES
Chiller Type	Custom air cooled, water cooled, compact, vertical, mobile, stainless steel, explosion-proof, or OEM integrated chiller	Selected according to site condition, utility, installation layout, and process equipment requirement.
Cooling Capacity	Project-defined	Confirm by heat load, process inlet/outlet temperature, operating duty, and safety margin.
Temperature Range	Project-defined low, medium, or standard process temperature	Low-temperature projects may require glycol, anti-freeze protection, and different evaporator selection.
Cooling Medium	Water, glycol water, DI water, clean water, chemical fluid, or project-defined medium	Fluid quality affects pump, seal, evaporator, tank, piping, and wetted material selection.
Condenser Direction	Air cooled, water cooled, remote condenser, or project-defined	Review ambient temperature, ventilation, condenser water condition, and heat rejection route.
Evaporator Direction	Plate heat exchanger, shell and tube, coil-in-tank, stainless steel, titanium, or project-defined	Material and structure depend on fluid, water quality, fouling risk, maintenance, and pressure drop.
Pump System	Standard pump, high pressure pump, stainless steel pump, dual pump, external pump, or no built-in pump	Confirm process flow, pump head, pipe distance, height difference, filters, and equipment pressure drop.
Electrical Supply	220V, 380V, 400V, 415V, 460V, 480V, 50Hz, 60Hz, or project-defined	Voltage, phase, frequency, control voltage, and protection devices must be confirmed before production.
Control System	Temperature controller, PLC, HMI, remote signal, alarm output, or communication interface	Depends on equipment integration, operator preference, and automation requirement.
Document Role	Preliminary engineering datasheet reference	Final quotation requires confirmed project data, component availability, and production review.

Reference note: A custom industrial chiller datasheet should show what must be confirmed, not only what can be supplied. The goal is to support technical comparison, quotation preparation, and internal engineering review.

CONFIGURATION MATRIX

Custom Chiller Configuration Reference

The following matrix converts custom project requirements into engineering configuration items for early review.

CONFIGURATION ITEM	TYPICAL OPTIONS	DATA TO CONFIRM	SELECTION NOTES
Compressor	Scroll, semi-hermetic, screw, inverter, project-selected	Capacity, refrigerant, voltage, duty cycle	Continuous duty and special voltage may change compressor selection.
Condenser	Air cooled, water cooled, oversized condenser, remote condenser	Ambient temperature, condenser water, ventilation, heat rejection	High ambient or poor ventilation requires condenser margin review.
Evaporator	Plate, shell and tube, coil-in-tank, stainless steel, titanium	Fluid type, flow, water quality, pressure drop	Dirty water, DI water, or corrosive fluid should be reviewed before material selection.
Pump	Standard, high pressure, stainless steel, dual pump, external	Flow rate, pump head, pipe length, equipment resistance	Do not select pump only by chiller capacity; confirm hydraulic condition.
Tank	Built-in, external, stainless steel, enlarged, no tank	Loop volume, stability, space, fluid type	Tank volume supports temperature stability and buffer capacity.
Cabinet Layout	Standard, vertical, compact, skid-mounted, mobile, OEM frame	Footprint, access, airflow, pipe direction, lifting method	Layout must preserve service clearance and condenser airflow.
Electrical Panel	Standard panel, special voltage, transformer, remote panel, explosion-proof direction	Voltage, phase, frequency, control voltage, local electrical requirement	Electrical review should be completed before component purchase.
Protection	High/low pressure, overload, phase sequence, anti-freeze, flow switch, level switch	Application risk, fluid temperature, unattended operation	Protection logic should match the process and site maintenance capability.
Controls	Controller, PLC, HMI, remote start/stop, alarm output, Modbus option	Equipment interface, operator access, signal requirement	Integration details should be defined before wiring diagram preparation.
Documentation	Datasheet, drawing, wiring diagram, manual, test report, certificate direction	Buyer review process and local requirement	Confirm required documents before order to avoid project delay.

Engineering focus: For custom chillers, the datasheet should connect the requested project condition with the actual configuration decision. This makes the document useful for engineers, equipment builders, and purchasing teams.

SPECIAL PROJECT CONDITIONS

Custom Requirement Review Matrix

Different custom chiller projects need different review paths. Use this page to identify which technical tables or drawings should be prepared.

PROJECT CONDITION	COMMON CHILLER DIRECTION	KEY DATASHEET ITEMS	REVIEW NOTES
High ambient or outdoor installation	Oversized air cooled condenser, T3 direction, weather review	Ambient temperature, airflow clearance, cabinet protection, condenser margin	High ambient affects condensing pressure, capacity, and protection settings.
Hazardous area or explosion-proof requirement	Explosion-proof direction, remote control panel, special electrical review	Area classification, gas or dust group, control location, cable entry	Final design depends on actual site safety classification and local requirement.
Corrosive or hygiene-sensitive fluid	Stainless steel tank, stainless steel piping, special evaporator	Fluid chemistry, water quality, pH, chloride, cleaning method	Wetted material compatibility must be confirmed before quotation.
DI water or clean loop	Stainless steel or non-copper wetted parts, clean circulation design	Conductivity, material restriction, filter, tank, pump, heat exchanger	DI water may require special material and maintenance review.
Limited footprint near equipment	Vertical, compact, side-discharge, top-discharge, or split layout	Available space, airflow direction, service access, pipe route	Compact layout should not reduce maintenance access or ventilation.
Mobile or temporary cooling	Caster base, hose connection, quick coupling, compact tank and pump	Movement route, hose length, power connection, pump head	Mobility changes mechanical base, connection, and protection design.
OEM machine integration	Machine-side chiller, skid, built-in controller, communication interface	Machine layout, signal, enclosure, cooling circuit, delivery standard	OEM projects should confirm drawing interface early.
Large process heat load	Water cooled, screw, dual circuit, modular, or central cooling review	Heat load, duty cycle, condenser water, redundancy, utility	Large systems require utility and maintenance review, not only capacity selection.
Low temperature process	Glycol circuit, anti-freeze protection, low-temperature compressor review	Target temperature, glycol ratio, fluid viscosity, evaporator protection	Low-temperature systems need anti-freeze and pump viscosity review.
Special export voltage	50Hz or 60Hz components, transformer, revised electrical panel	Voltage, phase, frequency, control voltage, site standard	Do not use standard 50Hz configuration for 60Hz projects without review.

TECHNICAL DATA TABLES

Process, Pump, Material, and Electrical Data

These tables show the minimum technical data normally required before APT prepares a project-specific custom chiller datasheet or quotation.

Process Cooling Data

ITEM	CUSTOMER INPUT	NOTES
Application equipment	Project-defined	Machine type and process duty
Heat load / capacity	kW, kcal/h, RT, or HP	Use measured heat load if available
Outlet temperature	Target value	Main selection condition
Return temperature	Project-defined	Used for load calculation
Cooling medium	Water / glycol / DI / other	Affects material and pump
Duty cycle	Continuous / intermittent	Affects capacity margin

Pump and Hydraulic Data

ITEM	CUSTOMER INPUT	NOTES
Process flow	L/min or m3/h	Confirm equipment requirement
Pump head	m or bar	Include pipe and filter resistance
Pipe distance	Project-defined	Affects pressure drop
Height difference	Project-defined	Important for pump selection
Filter requirement	Optional / required	Recommended for sensitive loops
Tank volume	Built-in / external	Review process buffer volume

Material Compatibility Data

ITEM	CUSTOMER INPUT	NOTES
Water quality	Clean / treated / DI / other	Confirm scaling or corrosion risk
pH / chemistry	If available	Useful for special fluids
Wetted material	Carbon steel / stainless / titanium	Project review required
Evaporator material	Project-defined	Match process medium
Pump material	Standard / stainless	Depends on water quality
Cleaning method	If required	Important for hygiene projects

Electrical and Control Data

ITEM	CUSTOMER INPUT	NOTES
Voltage	Project-defined	Confirm actual site voltage
Phase / frequency	1PH / 3PH, 50Hz / 60Hz	Affects all rotating components
Control voltage	24V / 110V / 220V / other	Match local maintenance preference
Remote signal	Optional	Start/stop or alarm output
Communication	Optional	PLC or Modbus review
Protection	Project-defined	Electrical and process protection

QUOTATION PREPARATION

Information Needed Before Custom Chiller Review

Send the following information so APT can prepare a useful custom industrial chiller datasheet direction and quotation review.

REQUIRED INFORMATION	CUSTOMER INPUT	WHY IT IS NEEDED
Installation country and site		Supports voltage, ambient, service, and export review.
Application equipment type		Identifies process sensitivity and cooling circuit requirement.
Required cooling capacity or heat load		Main basis for compressor and condenser selection.
Target outlet temperature and return temperature		Used for cooling capacity and evaporator review.
Cooling medium and water quality		Determines wetted materials, pump, tank, and evaporator direction.
Required flow rate and pump pressure		Required for pump and hydraulic selection.
Ambient temperature and installation location		Affects condenser, cabinet, ventilation, and protection design.
Power supply voltage / phase / frequency		Required before selecting compressor, pump, fan, and electrical parts.
Space limitation or layout drawing		Needed for cabinet size, airflow direction, and service access.
Special protection or certification requirement		Important for hazardous area, outdoor, marine, or export projects.
Photos or drawings of existing equipment		Helps review pipe route, interface, footprint, and replacement constraints.

- ☐ Confirm whether a standard chiller can fit the project before requesting a full custom design.
- ☐ Confirm process water flow and pump head instead of using only nominal chiller capacity.
- ☐ Confirm water quality before selecting stainless steel, titanium, copper, or other wetted parts.
- ☐ Confirm whether the project needs air cooled, water cooled, or remote condenser heat rejection.
- ☐ Confirm voltage and frequency before compressor, pump, fan, and control panel selection.
- ☐ Confirm final technical data before quotation, production, and PDF datasheet release.

FAQ AND CONTACT

Custom Industrial Chiller Datasheet FAQ

Common questions for project-defined industrial chiller datasheet preparation.

When is a custom industrial chiller datasheet needed?

A custom datasheet is needed when a standard chiller page cannot fully describe the required capacity, temperature, material, layout, voltage, safety, installation, or control configuration.

What data is required before APT prepares a custom chiller datasheet?

APT usually needs cooling capacity, process temperature, cooling medium, flow rate, pump head, ambient condition, installation layout, site voltage, and special material or protection requirements.

Can APT prepare high ambient or outdoor chiller configurations?

Yes. High ambient and outdoor configurations can be reviewed according to ambient temperature, condenser margin, airflow clearance, cabinet protection, and installation location.

Can stainless steel or special material be used in a custom chiller?

Yes. Stainless steel tanks, piping, pumps, evaporators, or other wetted materials can be reviewed according to water quality, corrosion risk, hygiene requirement, and process fluid.

Can APT review explosion-proof or hazardous-area chiller directions?

Yes. APT can review explosion-proof direction, remote control panel, and special electrical configuration after the actual hazardous-area classification and site requirement are confirmed.

Is this datasheet a final quotation?

No. This PDF is a technical reference for early engineering review. Final quotation should be confirmed after the project data, component selection, price, lead time, and production requirements are reviewed.

Need a Custom Industrial Chiller Datasheet?

Send your cooling capacity, target temperature, process fluid, flow rate, pump pressure, voltage, installation condition, and special project requirements for engineering review.

Email: sales@applied-chiller.com
Website: https://applied-chiller.com/