Air-Cooled Glycol-Based Chilled Water Plant

Industrial cooling catalogue for low-temperature process and HVAC applications



Product Overview

An air-cooled glycol-based chilled water plant is a packaged cooling solution designed to deliver reliable chilled glycol or chilled water to industrial processes, comfort cooling systems, data centres, food and beverage production, pharmaceuticals, plastics, laboratories, and other temperature-critical applications. Glycol in the circulating fluid helps protect the system from freezing and supports operation at lower leaving-fluid temperatures.

Key Features

- Air-cooled condenser design for outdoor installation without cooling tower water consumption.
- Compatible with ethylene glycol or propylene glycol mixtures for freeze protection and low-temperature operation.
- High-efficiency scroll or screw compressor options, selected according to plant capacity.
- Microprocessor-based control panel with temperature control, alarms, diagnostics, and automatic start/stop logic.
- Integrated safety protections including high/low pressure, anti-freeze, flow, overload, and phase protection.
- Low-noise axial condenser fans and robust weather-resistant cabinet construction.
- Optional hydraulic module with pump, buffer tank, expansion vessel, strainers, gauges, and valves.

Typical Applications

- Food and beverage process cooling, including breweries, dairies, and cold production areas.
- Pharmaceutical and laboratory temperature control.
- Plastic moulding, extrusion, and machinery cooling.
- Data centre and process equipment heat rejection.
- Cold storage support, brine circuits, and low-temperature industrial cooling.
- Commercial HVAC chilled water systems where freeze protection is required.

Indicative Technical Data

Parameter	Typical Range / Option
Cooling capacity	Approx. 30 kW to 900 kW, project dependent
Cooling medium	Water/glycol mixture or brine solution
Leaving fluid temperature	Typical range from +25°C down to approximately -20°C, depending on glycol type and design
Condenser type	Air-cooled condenser with axial fans
Compressor options	Scroll, inverter scroll, or screw compressor
Evaporator options	Plate heat exchanger or shell-and-tube heat exchanger
Control system	Microprocessor controller with alarms, diagnostics, and remote interface options
Installation	Outdoor packaged plant, skid-mounted or modular arrangement

Available Options

- Low-noise acoustic package for noise-sensitive sites.
- Duty/standby pump sets and variable-speed pump control.
- Integrated buffer vessel and expansion kit.
- Free-cooling coil or heat-recovery option where project conditions allow.
- BMS communication via Modbus, BACnet, or other project-specified protocol.
- Anti-corrosion condenser coil coating for coastal or harsh environments.

Benefits

- Reduced site complexity because no cooling tower or condenser water circuit is required.
- Improved freeze protection compared with water-only systems.
- Stable process temperature control for critical production environments.
- Scalable modular design for future capacity expansion.
- Lower maintenance requirements with factory-assembled packaged equipment.

Enquiry Information

For accurate selection, please provide the required cooling capacity, entering and leaving glycol temperature, ambient design temperature, glycol type and concentration, electrical supply, site noise limits, pump requirements, and preferred communication interface.