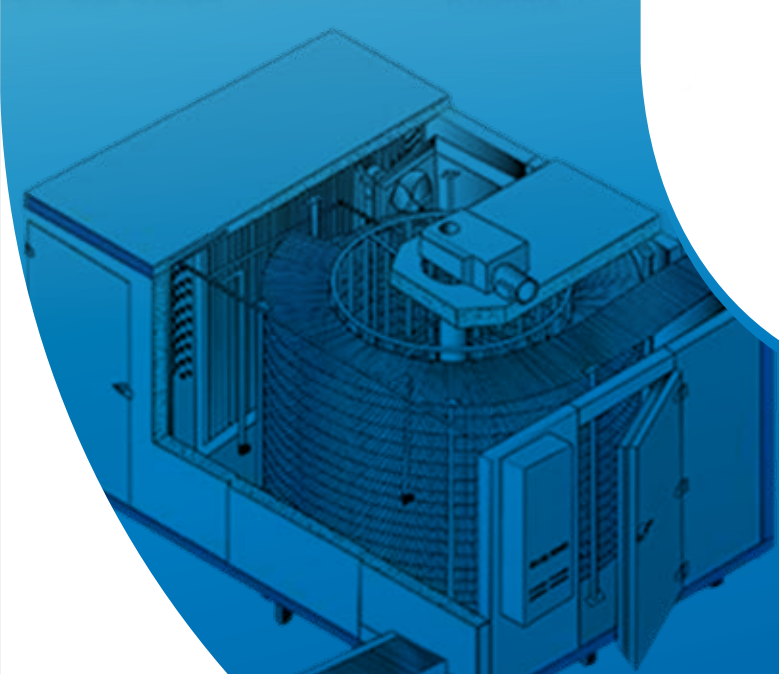




# 3<sup>rd</sup> GEN INDUSTRY LEADER



**50+ YEARS**  
IN AMMONIA REFRIGERATION

# ABOUT THERMOREF

Thermoref India, though an emerging enterprise, brings over fifty years of collective experience in industrial refrigeration, dating back to 1968. Specializing in turnkey project solutions with IoT automation, we pioneer solutions tailored for ammonia refrigeration projects, combining our rich heritage of expertise with cutting-edge technologies to deliver unparalleled efficiency, safety, and sustainability.

At Thermoref India, we harness the power of IoT sensors, data analytics, and automation to provide real-time monitoring, predictive maintenance, and optimized performance for industrial refrigeration systems. Our comprehensive turnkey project solutions cover design, implementation, and ongoing support, ensuring our clients benefit from intelligent solutions that not only meet their specific needs but also drive measurable value and tangible results. With Thermoref India, the future of ammonia refrigeration is not just efficient it's intelligent.

## VISION & MISSION



### Project Focus

Our primary focus lies in undertaking challenging projects within our Project Division.



### Technological Innovation

We strive to implement and incorporate newer, energy-efficient technologies in our projects.



### IoT Automation Expertise

Our team includes a dedicated in-house IoT Automation design and implementation team.



### Continuous Improvement

Our projects are geared towards providing solutions that align with the needs & expectations of our customers.



### Design Principles

Our designs are centered around energy savings, aiming to provide tangible benefits to the end customer.



### Product Quality:

We prioritize delivering higher product quality output as a result of our meticulous design and Implementation processes.



### Customer-Centric Approach

Our commitment to energy efficiency aligns with sustainable practices, promoting eco-friendly solutions in project design and execution.



### Innovation in Automation:

Emphasizing innovation, we integrate automation solutions that contribute to project efficiency and effectiveness.



### Adaptability

We stay abreast of industry advancements, ensuring our projects are at the forefront of technological innovation.



### Sustainable Practices

Our commitment to energy efficiency aligns with sustainable practices, promoting eco-friendly solutions in project design and execution.

# TYPES OF PROJECTS WE ARE WORKING FOR

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**Ready 2 Eat Segments Like Samosa, Tikki, Cut Vegetables, French Fries**



**Diaries with Milk Processing, Powder Plant and also now By Products such as Icecream Spiral Freezers, Cone Hardening Tunnel, Blast for Curd , Paneer.**

**Pre Cooling, Blast Freezing and Cold Storages for Farm to Fork Units .**



**Tube Ice, Flake Ice and Ice Factory for Chemical, Dyes Industries, Cement processing Industries.**

**Meat Plants such as Chicken Processing, Red Meat Processing and Mutton complete solutions from Chiller rooms.**



**Fisheries for Blast Freezing, IQF, Plate Freezer Turnkey**

# PRODUCT COOLING SOLUTION

## Ammonia Turnkey Refrigeration Projects: Your Complete Cooling Solution

### Why Choose Ammonia Turnkey Refrigeration Projects?

Ammonia has long been recognized as one of the most reliable and efficient refrigerants, making it an ideal choice for industrial cooling applications.

#### Proven Reliability

#### Comprehensive Service

From initial design and installation to ongoing maintenance and support, we provide end-to-end solutions to meet your refrigeration needs.

#### Proven Efficiency

Ammonia-based systems offer superior energy efficiency, helping reduce operational costs and minimize environmental impact.

#### Scalability

Our turnkey solutions are scalable to accommodate a wide range of applications and production capacities, from small-scale facilities to large industrial complexes.

#### Compliance

Our ammonia refrigeration systems are designed to meet or exceed all relevant safety and environmental regulations, ensuring compliance and peace of mind for our clients.

### Key Components & Features

#### Refrigeration Equipment

- High-Quality Compressors
- Condensers
- Evaporators
- Other Essential Components

#### Control Systems

- Advanced Control System
- Automation Technology
- Precise Temperature Control
- Monitoring
- Optimization Of Refrig

#### Piping and Insulation

- Durable Piping
- Insulation Materials Designed
- Minimize Heat Transfer
- Ensure Efficient Operation.

#### Safety Systems

- Incorporating State of the Art Safety Systems
- Emergency Shutdown Procedures

#### Environmental Considerations

- Environmentally Friendly Practices
- Technologies to Minimize Ammonia Emissions

## Applications: Our ammonia turnkey refrigeration projects are suitable for a wide range of applications, including



### Food and Beverage Processing



### Cold Storage and Distribution



### Chemical Manufacturing



### Pharmaceutical Production



### HVAC and Comfort Cooling



### Ice Rinks and Recreational Facilities

**Case Studies:** Explore our portfolio of successful turnkey refrigeration projects across various industries, showcasing our expertise, innovation, and commitment to delivering exceptional results for our clients.

## Support and Service

**Project Management:** Our experienced project management team oversees every phase of the project, ensuring timely completion and adherence to quality standards.

**Installation and Commissioning:** Our skilled technicians handle the installation and commissioning of all equipment, ensuring proper functionality and performance.

**Training:** We provide comprehensive training for operators and maintenance personnel to ensure safe and efficient operation of the refrigeration system.

**Maintenance and Support:** Our dedicated service team offers ongoing maintenance, repairs, and technical support to keep your refrigeration system running smoothly.

**Contact Us:** Ready to discuss your ammonia turnkey refrigeration project? Contact us today to learn more about our capabilities and how we can help you achieve your cooling objectives.



# THERMOPREF IN-HOUSE IOT RESEARCH CENTRE FOR AMMONIA REFRIGERATION

In the realm of industrial processes, effective management of ammonia systems is paramount for safety, efficiency, and compliance. Leveraging the power of Internet of Things (IoT) technology, in-house automation solutions are transforming the way organizations handle their ammonia-related operations. From real-time monitoring to predictive maintenance, IoT-enabled automation offers a comprehensive approach to optimizing ammonia management processes.

## Key Features and Benefits



### Real-Time Monitoring

Gain instant visibility into critical parameters such as ammonia levels, temperature, and pressure, empowering operators to make informed decisions in real-time.

### Remote Access and Control

Seamlessly monitor and control ammonia systems from anywhere, at any time, enhancing operational flexibility and efficiency.



### Predictive Maintenance

Leverage data analytics and machine learning algorithms to predict equipment failures and proactively address maintenance needs, minimizing downtime and maximizing productivity.

### Safety Compliance

Ensure adherence to safety regulations and standards by implementing automated alarm systems and emergency response protocols, safeguarding personnel and assets.



### Energy Efficiency

Optimize energy consumption by analyzing operational data and implementing intelligent control strategies, reducing costs and environmental impact.

## Technical Specifications



**Sensor Integration:** Utilize a variety of sensors to monitor key parameters such as ammonia concentration, temperature, pressure, and humidity.



**Data Transmission:** Employ secure communication protocols to transmit data from sensors to a centralized IoT platform for analysis and processing.



**Cloud-Based Analytics:** Leverage cloud-based analytics platforms to analyze large volumes of data in real-time and generate actionable insights for operational optimization.



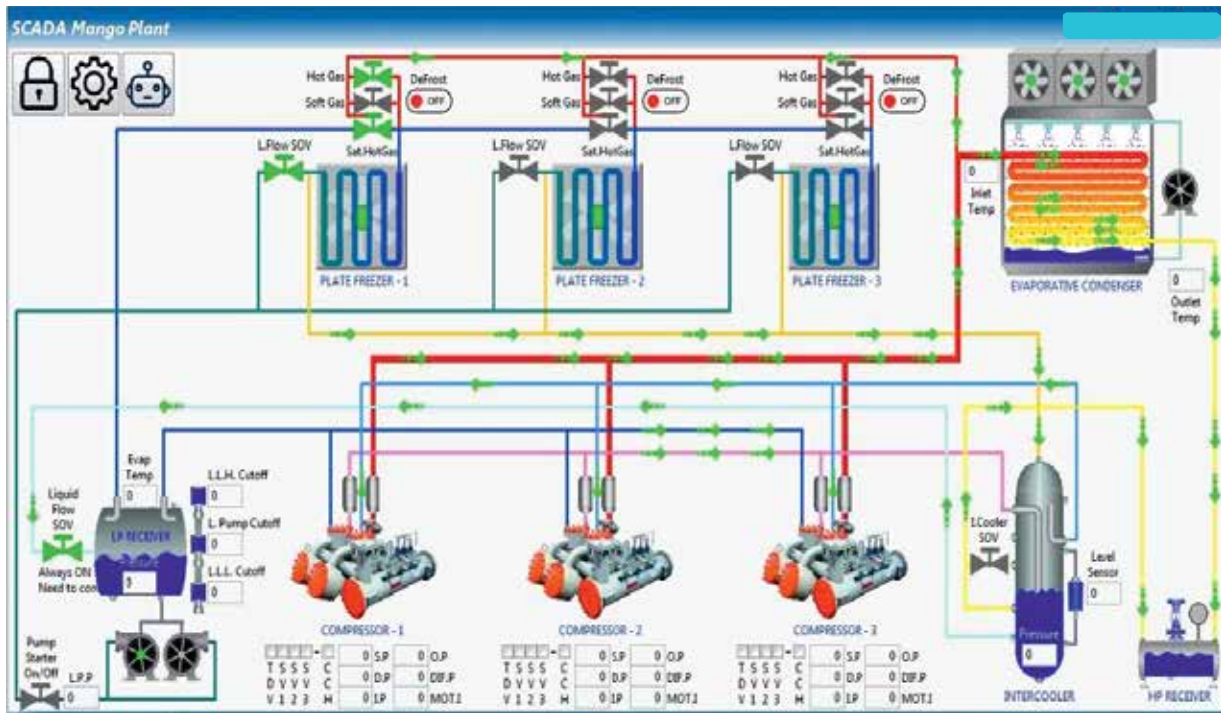
**Integration with Existing Systems:** Ensure seamless integration with existing control systems and SCADA (Supervisory Control and Data Acquisition) infrastructure to enhance interoperability and efficiency.

# Application Areas

**Cold Storage Facilities:** Monitor and control ammonia-based refrigeration systems in cold storage warehouses to ensure optimal temperature and humidity levels for perishable goods.

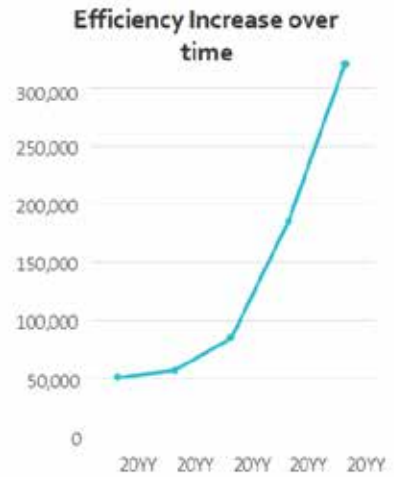
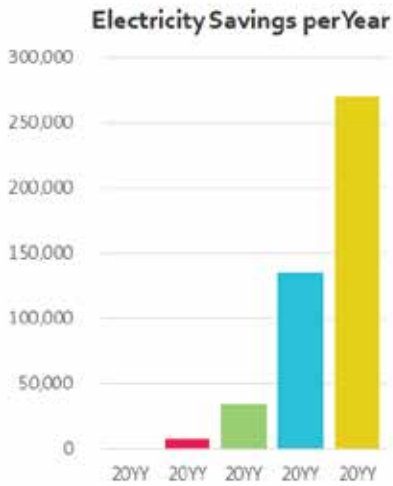
**Food Processing Plants:** Automate ammonia handling processes in food processing plants to maintain sanitary conditions and compliance with food safety regulations.

**Chemical Manufacturing:** Implement IoT-based automation in chemical manufacturing facilities to optimize ammonia usage and enhance process efficiency while ensuring safety and environmental compliance.



# Why Data Driven Model is the Future...

Data Driven model gives our user a pictorial representation with what is really happening with his plant and inturn lead to higher profits in his business.





# PRODUCT CONDENSER

## ATMOSPHERIC CONDENSOR :

These are specially designed Atmospheric Condensers which condense ammonia into liquid state from gaseous state. The robustly constructed ammonia base Atmospheric Condensers that we offer are of high efficiency and durability. The pipes used for atmospheric condensers are of 2" TATA or equivalent make heavy pipe and every pipe will have the embossed mark of the manufacturer. The pipe is of High Frequency Induction Welded (HFIW) type and the condenser overall length will be 20'. Each condenser will be provided with 2" size Globe valve at inlet top and 3/4" Globe Valve at outlet.

## ADVANTAGE OF ATMOSPHERIC CONDENSER:

No preventive maintenance required fit and forget. Better efficiency than air cooled and water cooled Easy to replace even single set and easy to install. Low capital cost Corrosion resistant Galvanized pipes minimum 100 micron.



## PLATE HEAT EXCHANGER FOR CONDENSER AND AS EVAPORATOR FOR IBT, GLYCOL, BLENDING:

A plate heat exchanger is a type of heat exchanger that uses metal plates to transfer heat between two fluids. This has a major advantage over a conventional heat exchanger in that the fluids are exposed to a much larger surface area because the fluids are spread out over the plates. This facilitates the transfer of heat, and greatly increases the speed of the temperature change. Stainless steel is a commonly used metal for the plates because of its ability to withstand high temperatures, its strength, and its corrosion resistance.



# PRODUCT HIGH PRESSURE VESSELS

## Features

- Our Pressure Vessels are designed to be of the highest quality, usability and durability
- They are made to be sturdy and long-lasting
- They scale to high volume requirements well and provide utmost performance Leakage proofing ensures there are no leakage problems
- They are robust and tensile Impeccable finishing which prevents corrosion and preserves aesthetic

## Why Our Vessels ?

**HRA** : A pressure vessel is a container designed to hold gases or liquids at a pressure substantially different from the ambient pressure. Receiver is integral part of ammonia refrigeration system. Our Capacity ranges from 200 kgs to 6000 kgs capacity

**LPR Or Pump Feed System:** The liquid overfeed or also known as pump recirculation system designs are widely used, especially in low temperature multi-evaporator systems, more popular with ammonia refrigerant. The overfeed means much more liquid is fed to evaporator than the liquid actually vaporizes. Excess liquid is called overfeed, which returns to low pressure side accumulator or L.P. receiver By over feeding the evaporator, the inner surface is kept thoroughly wetted and thus achieves optimum heat transfer.

**Advantages:** Power Saving 15% Uniform Liquid Distribution. No Oil Deposition In Fcu. Protect Compressor From Liquid Entering Unaffected From Outdoor Ambient Temperature Low Compressor Load. systems comply with strict sanitation standards.

## All Type Industrial Pressure Vessels

- LP Receiver / Skid system
- HP Receiver
- Inter-stage Cooler
- Closed Inter-stage Cooler
- Horizontal Accumulator Or Surge Drum
- Vertical Accumulator Or Surge Drum
- Oil Separate Demister Pad /Flap
- Oil Cooler- Water Cooled and Thermosyphon
- Oil filter
- Oil Pot



# PRODUCT EVAPORATIVE CONDENSER

## Single Circuit Coil



## Twin Circuit Coil

For running Part Load & Full Load



Low Energy Consumption



Low Installed Cost



Long Service Life



Zero Maintenance



# PRODUCT IQF & SPIRAL FREEZERS

## Revolutionize Your Freezing Process with IQF Solutions

### Why Choose IQF?

#### Preserve Freshness

- Rapidly Freezes Food Products
- Locking in Freshness
- Flavor
- Nutritional Value

#### Enhance Product Quality

- Superior Texture
- Appearance
- Individually Frozen Food Items.

#### Maximize Efficiency

- Optimize Production Throughput
- Minimize Processing Times
- Precise Freezing Control

#### Expand Product Offerings

- New Opportunities with the Ability to Freeze a Wide Variety of Foods
- Fruits & Vegetables to Seafood

### Key Features & Benefits



#### Versatile Design

Our IQF systems are available in various configurations to accommodate different product types, production volumes, & space constraints.

#### Precision Freezing

Ensure consistent freezing results with adjustable belt speeds, variable airflow control, and precise temperature management.



#### Easy Operation

Intuitive user interface and automated controls simplify operation and minimize training requirements for operators.

#### Energy Efficiency

Reduce operating costs and environmental impact with energy-saving features such as heat recovery systems and variable frequency drives.



#### Hygienic Design

Constructed from food-grade materials and featuring easy-to-clean surfaces, our IQF systems comply with strict sanitation standards.

#### Customization Options

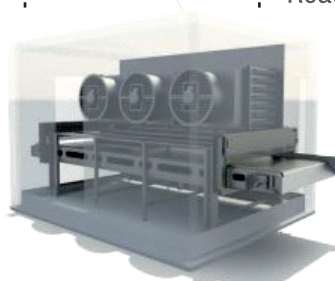
Tailor the IQF system to your specific requirements with optional features such as product loading and unloading systems, product handling conveyors, and additional safety features.



### Applications

Our IQF systems are ideal for a wide range of food processing applications, including:

- |                         |                   |                                      |
|-------------------------|-------------------|--------------------------------------|
| •Fruits & Vegetables    | •Meat and Poultry | •Bakery Items                        |
| •Seafood & Fish Fillets | •Dairy Products   | •Prepared Meals & Ready-to-Eat Foods |



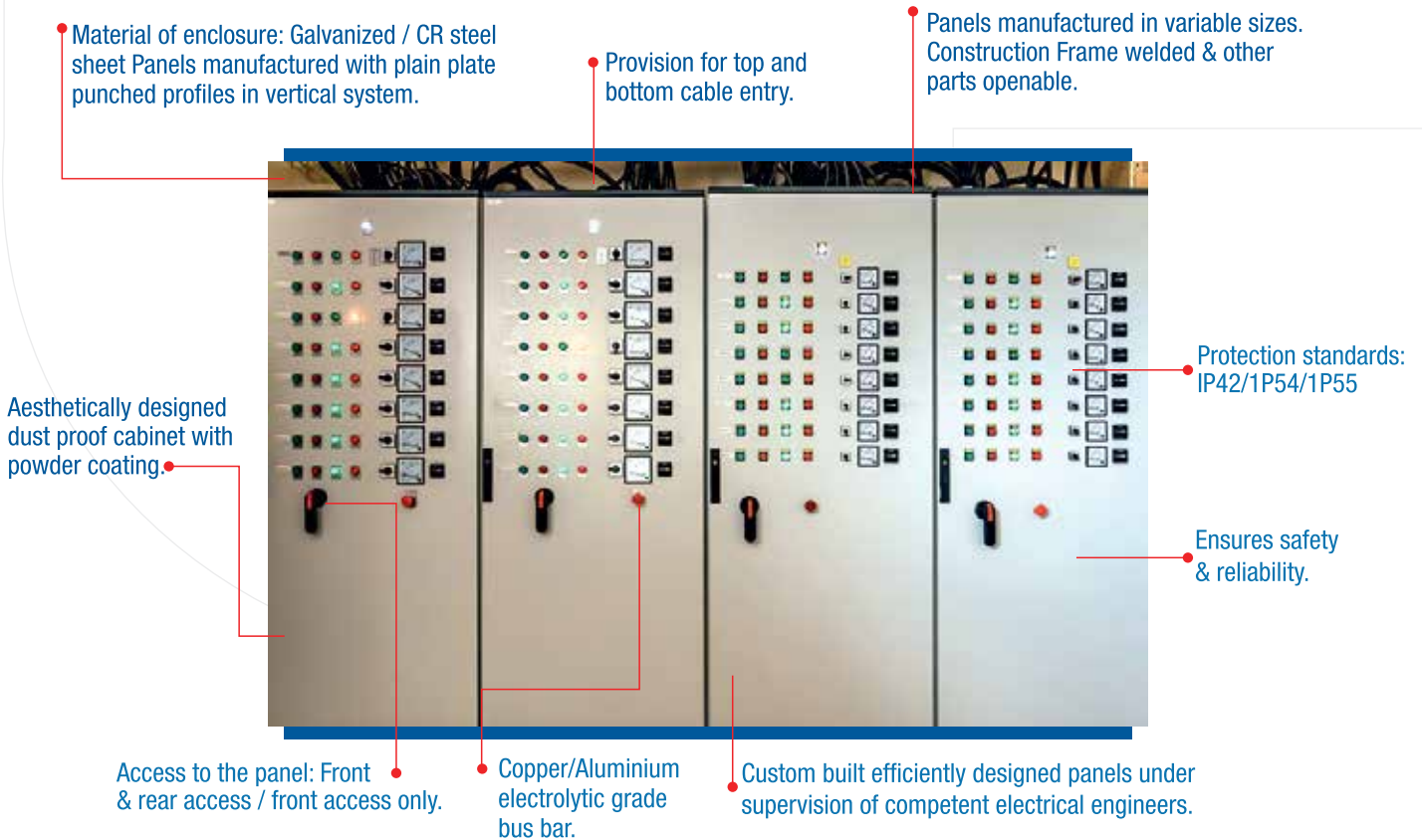
# PRODUCT CONTROL PANEL & SWITCHGEAR

## MCC Panel Manufacturers

Catering to multiple markets, has become the leading manufacturer and supplier of control panels including Standard Panels, AMF Panels, Synchronization Panel, LT/HT Panel, PCC Panel, MCC Panels, APC Panel, PLC Panels, and MIMIC Panels. Our PCC/MCC Panel designs are robust and rigidly constructed to withstand a wide range of industrial demands.

We have successfully implemented many projects and are capable of serving multiple markets such as machine control, building control, and process control by executing flexible and innovated manufacturing procedures. pays great attention to the standard of workmanship to encompass each client's customized requirements. Our world-class MCC panels are used in

## Features



Normal design temperature: 42°C (Special Panels : Above 42°C).

# Client & Accreditation



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**Factory** :- Plot No 40/6 , Opp Technofour Electronics, Kasurdi , Khed Shivapur, Pune – 412205  
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