



**INVERTRE
SCROLL
CHILLER**

HIGH ON ENERGY EFFICIENCY
AIR COOLED / WATER COOLED SCROLL CHILLER



Mfg. By : Aquatech Plus Private Limited

Inverter Scroll Chillers Energy (Efficient Scroll Chiller)

With over two decades of expertise in the HVAC industry and the largest installed base of scroll chillers in India, Fidem is the nation's leading provider of scroll chiller systems.

Now, Fidem introduces Inverter Scroll Chillers, designed with advanced technology and innovative features to redefine energy efficiency and performance.

Unmatched Efficiency & Savings

The Fidem Inverter Scroll Chiller is India's first scroll chiller to surpass high-efficiency norms, delivering exceptional energy savings and a high return on investment.

Precision Engineering & Versatile Performance

Manufactured at Fidem's ISO 9001-certified facility, this advanced range of inverter scroll chillers is available in capacities ranging from 10TR to 78TR. Engineered with a combination of inverter and fixed-speed compressors, these chillers efficiently adapt to fluctuating cooling demands, making them ideal for:

- Commercial Spaces – Offices, Hotels
- Healthcare – Hospitals, Laboratories
- Industrial Applications – Manufacturing Units, Data Centers

Designed for reliable performance in varying loads and seasonal changes, Fidem Inverter Scroll Chillers set new benchmarks in cooling efficiency and sustainability.



Inverter Compressor Technology

The latest range of Fidem Scroll Chillers features advanced inverter compressors equipped with an Intermediate Discharge Valve (IDV) and a Variable Frequency Drive (VFD). These cutting-edge components precisely regulate system capacity based on real-time load requirements, ensuring optimal performance.

By dynamically adjusting capacity, this innovative technology reduces power consumption by up to 25% compared to conventional scroll chillers, delivering exceptional energy savings and efficiency.

Compact & Space-Saving Design The Fidem Inverter Scroll Chiller range features an innovative 'Y' design condenser, engineered to optimize footprint and enhance space efficiency. This advanced design reduces floor space requirements by approximately 25% compared to conventional scroll chillers, making it an ideal choice for installations where space is a constraint.



Compact & Space-Saving Design

The Fidem Inverter Scroll Chiller range features an innovative 'Y' design condenser, engineered to optimize footprint and enhance space efficiency. This advanced design reduces floor space requirements by approximately 25% compared to conventional scroll chillers, making it an ideal choice for installations where space is a constraint.



High Reliability & Performance

The Fidem Inverter Scroll Chiller is engineered for superior reliability, featuring advanced control logic that intelligently manages chiller load variations using inverter scroll compressors. This minimizes on-off cycles of fixed-speed compressors, significantly extending the lifespan of the chiller while ensuring smooth and efficient operation.

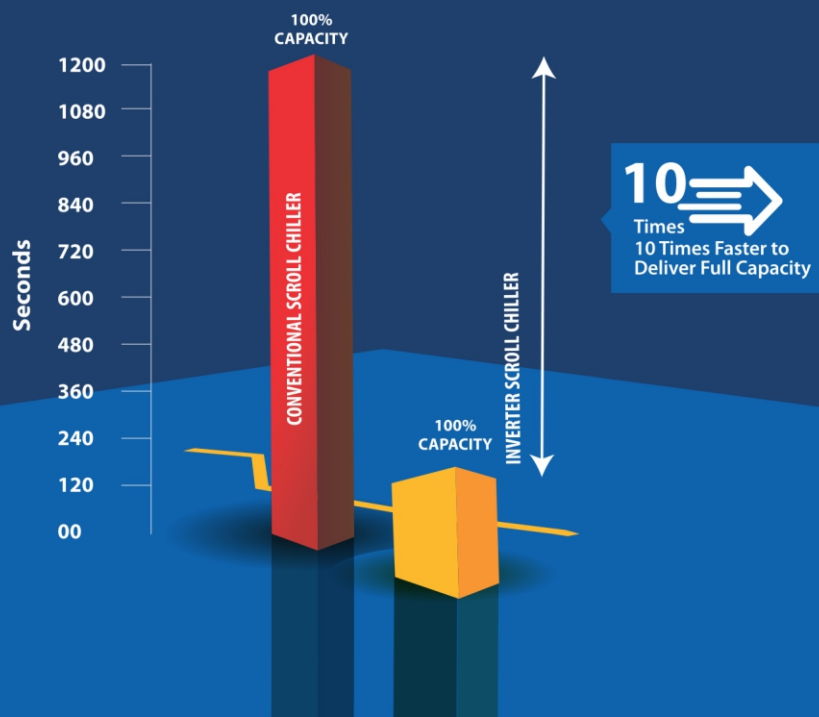


Rapid Cooling Mode for Critical Applications

Designed for process cooling, pharmaceuticals, and industrial applications, where load variations can be substantial, conventional chillers typically take 20 minutes to reach full capacity.

The Fidem Inverter Scroll Chiller features an innovative Rapid Cooling Mode, enabling 100% cooling capacity in just 2 minutes. This ensures precise temperature control and rapid response to cooling demands, making it ideal for industries requiring fast and reliable chilled water supply.

RAPID COOLING



Wide Operating Range Inverter Scroll Chillers

Fidem new range of Inverter Scroll Chillers has been designed to provide flexibility and efficiency for a variety of cooling needs. Unlike conventional scroll chillers, which typically operate with a chilled water temperature differential of just 5°C, our inverter scroll chillers can handle temperature differentials of up to 10°C. This wider operating range enables the chiller to serve a broader range of applications while optimizing running costs.

Key Features:

Wide Operating Range:

Conventional Chillers: Operate at a chilled water inlet temperature of 12°C and a chilled water outlet temperature of 7°C (5°C differential).

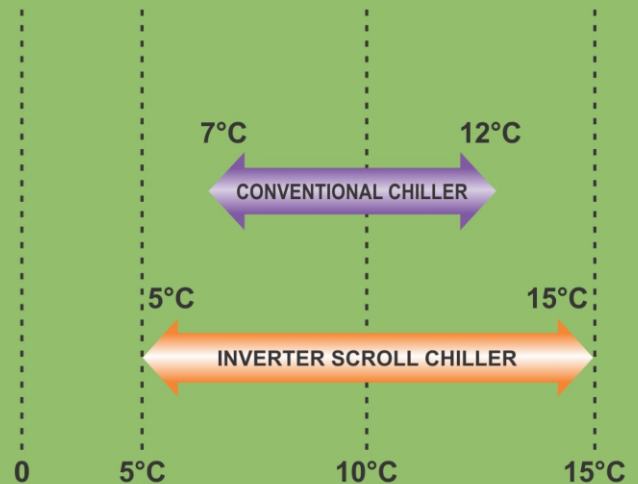
Inverter Scroll Chillers: Capable of operating with a chilled water temperature differential of up to 10°C, enabling more efficient performance across various applications.

Optimized Running Costs: The wider temperature differential helps reduce energy consumption and operational costs, making it a more sustainable solution for industrial and commercial cooling needs.

Versatility for Various Applications: Ideal for applications with high cooling demands or process cooling systems requiring higher temperature differentials.

Enhanced Efficiency: The inverter-driven compressor ensures that the chiller operates at the optimal speed, improving both energy efficiency and performance.

Reliability & Durability: Designed with advanced features for long-lasting performance in demanding environments.



Advanced Safety & Protection Features

The Fidem Inverter Scroll Chillers are equipped with a comprehensive multi-level protection system to ensure reliable and safe operation. These advanced safety features safeguard the chiller against:

- Anti-freeze protection
- High Pressure / Low Pressure (HP/LP) protection
- Single-phase protection
- Phase loss detection
- Overload protection
- Overcurrent & undercurrent protection
- Reverse rotation protection for inverter compressors
- Oil shortage detection



Enhanced Durability with Anti-Corrosion Coating

For installations in corrosive environments, Fidem offers an optional blue-fin coating for air-cooled condensers. This special treatment enhances corrosion resistance, extending the operational life of the chiller and ensuring long-term performance in challenging conditions.



Eco-Friendly & Sustainable Cooling

The Fidem Inverter Scroll Chillers are designed with sustainability in mind, utilizing zero ODP (Ozone Depletion Potential) R-410A refrigerant. This environmentally friendly refrigerant ensures efficient cooling performance while minimizing environmental impact, making it a responsible choice for green building initiatives.

Technical Specifications

DESCRIPTION	UNITS	FMACVS-12R	FMACVS-24R	FMACVS-36R	FMACVS-48R	FMACVS-60R	FMACVS-72R
Nominal Cooling Capacity	TR	12	24	36	48	60	72
Quantity of Compressors	Nos.	2	2	2	4	4	6
Type		Hermetically Sealed Scroll					
Motor Type		Refrigerant Cooled , 3 Ph, 2 Pole Squirrel Cage Induction Motor					
Operating Speed	RPM	2900					
Electrical Power Supply		400V(+/-10%), 3Ph,50Hz					
Condenser							
Tube Material		Grooved Copper					
Fin Material		Aluminum (Blue Hydrophilic)					
Quantity of Fan	Nos.	1	2	2	4	4	6
Condenser Fan Motor Details							
Type		Totally Enclosed, Pad Mounted					
Quantity	Nos.	1	2	2	4	4	6
Speed	RPM	910					
Airflow Quantity	CFM	9000	18000	27000	36000	45000	54000
DX Cooler							
Tube Material		IGT Copper					
Water Connection Size In/Out	mm	50	80				
No. of Refrigerant Circuit	Nos.	2	2	2	4	4	6

Note : PI refer GA drawings for exact dimension

Technical Specifications

DESCRIPTION	UNITS	FMWCVS-13R	FMWCVS-26R	FMWCVS-39R	FMWCVS-52R	FMWCVS-65R	FMWCVS-78R
Nominal Cooling Capacity	TR	13	26	39	52	65	78
Quantity of Compressors	Nos.	2	2	3	3	3	4
Type		Hermetically Sealed Scroll					
Motor Type		Refrigerant Cooled , 3 Ph, 2 Pole Squirrel Cage Induction Motor					
Operating Speed	RPM	2900					
Electrical Power Supply		400V(+/-10%), 3Ph, 50Hz					
Flooded - Condenser							
Tube Material		IGT Copper					
No. of Pass (Water Side)	Nos.	4	4	2	2	2	2
No. of Refrigerant Circuit	Nos.	2	2	2	2	2	3
DX Cooler							
Tube Material		Integral Finned Copper Tubes					
No. of Pass (Ref. Side)	Nos.	4	2	2	2	2	2
No. of Refrigerant Circuit	Nos.	2	2	2	2	2	3

Note : PI refer GA drawings for exact dimensions

Intelligent Microprocessor Control

The Fidem Inverter Scroll Chillers are equipped with an advanced BMS-compatible microprocessor control, enabling seamless integration with central Building Management Systems (BMS) for efficient and automated operation.



User-Friendly Touchscreen Interface

The new controller features a sleek, modern touchscreen display with a backlit interface, ensuring intuitive operation and easy access to key parameters. The graphical user interface (GUI) enhances usability, allowing for effortless monitoring and control of the chiller system.



Precision Temperature Control

The Fidem Inverter Scroll Chillers feature an advanced digital microprocessor-based controller, offering ultra-precise temperature regulation. Unlike conventional chillers with manual controllers that allow chilled water settings with a $\pm 1^{\circ}\text{C}$ variation, Fidem's intelligent system enables settings with $\pm 0.1^{\circ}\text{C}$ accuracy. This ensures optimal process cooling and significant energy savings.



Easy & Quick Installation

Designed for hassle-free deployment, Fidem Inverter Scroll Chillers are pre-wired, fully charged, and thoroughly tested at our factory before dispatch. This reduces installation time and ensures optimal performance by eliminating the inconsistencies associated with manual refrigerant charging at the site, a common issue with conventional chillers.



Silent Operation for Enhanced Comfort

The new-generation Fidem Scroll Chillers are engineered for ultra-quiet performance, incorporating advanced noise-reduction features

- Fully enclosed compressor section – Panels on all four sides minimize noise in air-cooled applications.
- Aerodynamically optimized condensers – Special bell-mouth venturi design reduces fan-generated air-cutting noise.
- Inverter compressor technology – Optimizes the on-off cycles of fixed-speed compressors, further lowering operational noise.

This ensures a quieter and more comfortable environment, ideal for commercial and industrial applications requiring low-noise cooling solutions.

Fidem Inverter Scroll Chillers – A Breakthrough in Design & Efficiency

The Fidem Inverter Scroll Chiller is an innovative hybrid system, integrating a variable capacity inverter scroll compressor with multiple fixed-speed scroll compressors. Advanced intelligent controllers optimize compressor operation based on real-time load conditions, ensuring maximum efficiency, superior performance, and long-term reliability.

PRODUCT RANGE:



AIR-COOLED



WATER-COOLED

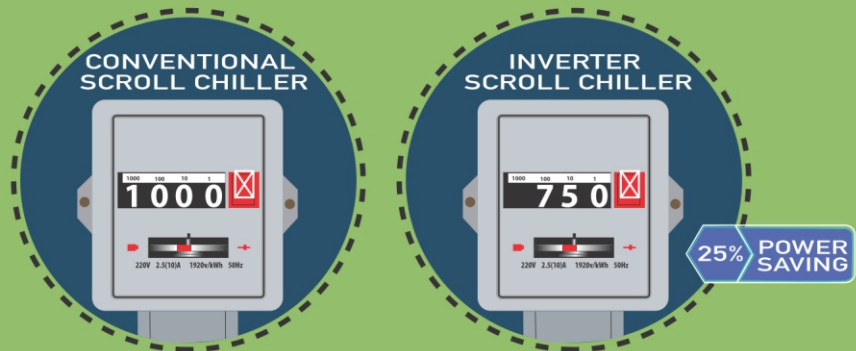




Key Features for Optimal Performance

Each component is carefully engineered to deliver efficient cooling, enhanced energy savings, and unmatched durability

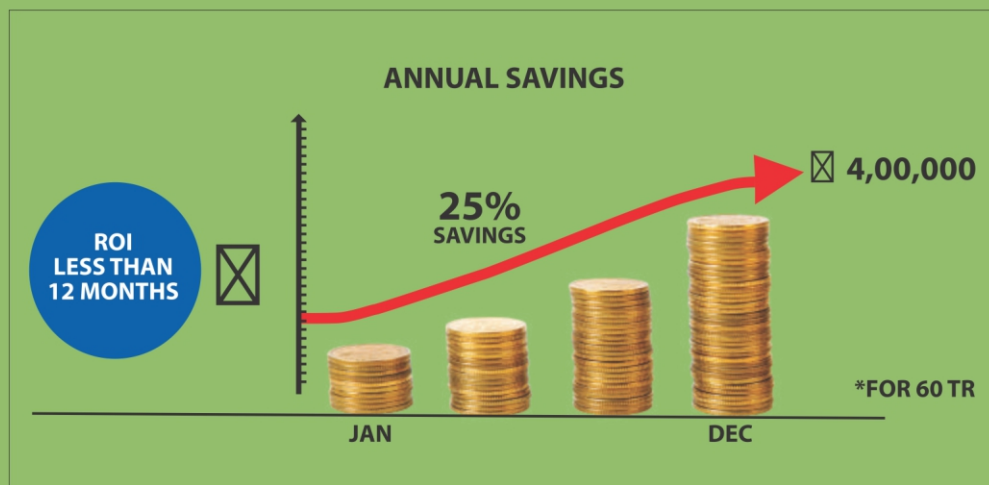
- Inverter & Fixed-Speed Scroll Compressors – Provide dynamic load management for energy efficiency.
- Advanced Inverter Drives – Ensure smooth operation and precise capacity control.
- Intelligent Controller – Optimizes performance under varying load conditions.
- High-Efficiency Heat Exchangers – Maximize cooling output while reducing energy consumption.



Exceptional Return on Investment (ROI)

The next-generation Fidem Inverter Scroll Chillers feature high-efficiency scroll compressors, enhanced coil face area, and advanced controllers, making them one of the most energy-efficient scroll chillers available in the market.

- More than 25% energy savings compared to conventional scroll chillers.
- ROI of less than one year, ensuring rapid payback on investment.
- Ideal for high-operation industries such as hotels, hospitals, and manufacturing units, where extended working hours further accelerate savings.





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CONSULTING STARTUPS - 2024



10000 +
Domestic
Clientele

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