

↓ **Designed with Simplicity
and Efficiency in Mind**

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HVAC
CONTROLS & DRIVES

OJ DRHX

A drives programme dedicated to rotary heat exchangers


OJ ELECTRONICS
BY BITZER GROUP

OJ Drives®

A product programme dedicated to ventilation solutions

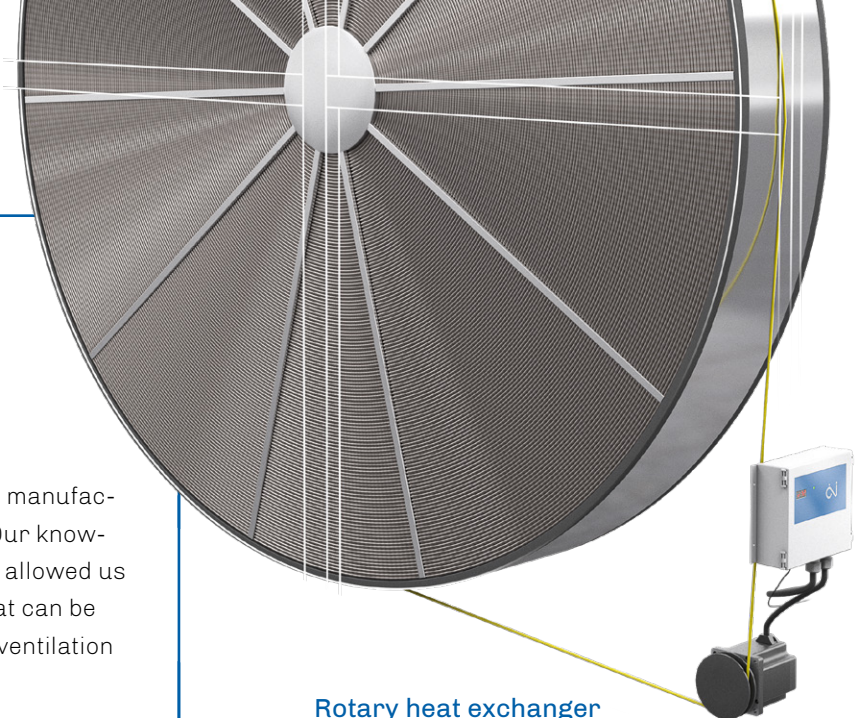
OJ Drives® is our endeavor for developing and manufacturing drive solutions to ventilation systems. Our knowledge within HVAC and motor applications has allowed us to create smart and flexible drive products that can be configured to meet the specific needs of your ventilation system.

OJ Electronics has more than 50 years of experience in the HVAC business and has developed drives for the ventilation segment for more than 25 years. The combination of our high product quality and our extensive ventilation application know-how has resulted in highly dependable drives - and real innovation within the field.

With a drive from OJ Electronics, your ventilation application will work reliably for years to come.

The OJ Drives® programme contains a range of drive products for different ventilation applications, including air handling units, rooftop fans, plug fans, box fans and rotary heat exchangers.

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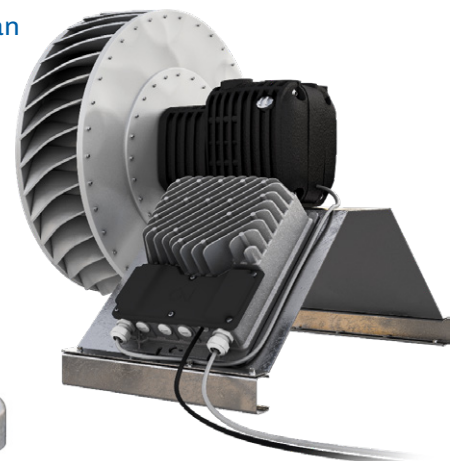


Rotary heat exchanger



Box fan

Plug fan



Air Handling Unit (AHU)



Rooftop fan



OJ DRHX Product Range

Technology for energy-efficient heat recovery

The OJ DRHX product range has been designed with simplicity and efficiency in mind. It employs new technology to deliver exactly the features and functionalities you need from a rotary heat exchanger drive.

Reliable solution

OJ Electronics' insistence on quality combined with our extensive application know-how has resulted in a highly dependable drive and motor solution.

Flexible design

These all-in-one units combine modbus and analogue technology in very compact designs that are easy to install. You can place them horizontally or vertically as you wish.

Energy efficiency

The DRHX drives brings you system efficiency (drive & motor) of up to 65%. The self-cooling design eliminates the need for additional cooling such as fans, and the gear-free technology ensures perfectly accurate control throughout a wider speed range than ever.

Sensorless rotation monitor

Sophisticated software monitors the rotation of the rotor, which means that no physical/optical rotor guard is required. Naturally, fewer components also means that you get easier installation. Patent pending.

Field oriented sensorless motor control

Combining a high-torque stepper motor with closed-loop sensorless control gives you more accurate, energy-efficient control. The drive regulates the current to the exact level required to achieve the right speed and torque.

Ignition protected

To ensure safety and future-proof your systems, all DRHX drives are certified ignition protected in accordance with applicable UL and IEC standards.



Rotary Heat Exchanger

Field oriented sensorless motor control combined with stepper motor

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Unique solution

Combining a high-torque stepper motor with field oriented sensorless control brings you a unique solution – and great efficiency. The drive uses the feedback signal from the motor to ensure that the motor gets exactly the level of current required to achieve the desired speed and torque.

The closed-loop control makes it possible to detect the motor load, and a sophisticated software algorithm allows the drive to detect rotor rotation, eliminating the need for a physical rotation guard.

In brief, field oriented sensorless motor control makes operation more silent, more accurate and more energy-efficient.

The OJ DRHX Product Range

The OJ DRHX product range covers the full range from 1Nm to 14Nm in three drive power sizes.

Four different motor sizes are available to ensure optimum use of application workspace.

You get modbus and analogue control, and you can choose between versions with or without 3x7-segment display. Our drives are CE and cRUus approved.



Constant speed

- DRHX 55W, 1/2Nm
- DRHX 260W, 4/8Nm
- Start/Stop
- Up to 277V single phase supply
- Dimensions: 183 x 140 x 55 mm



Modbus control

- DRHX 55W, 1/2Nm
- DRHX 260W, 4/8Nm
- Modbus
- Up to 277V single phase supply
- Dimensions: 183 x 140 x 55 mm



Modbus & analogue control

- DRHX 55W, 1/2Nm
- DRHX 260W, 4/8Nm
- DRHX 790W, 14Nm
- Modbus / 0-10V control
- 3x7-segment display
- 208-277V single phase supply*
- Dimensions: 183 x 220 x 90 mm



MRHX-1Nm

- 3 x 0-200V
- Dimensions: 56 x 56 x 97 mm



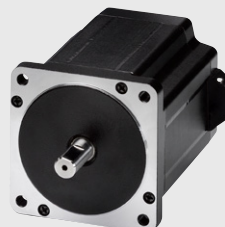
MRHX-2Nm

- 3 x 0-200V
- Dimensions: 85 x 85 x 67 mm



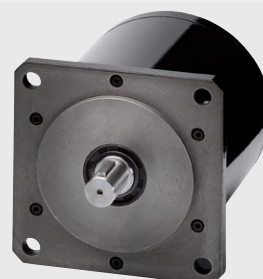
MRHX-4Nm

- 3 x 0-200V
- Dimensions: 85 x 85 x 97 mm



MRHX-8Nm

- 3 x 0-200V
- Dimensions: 85 x 85 x 156 mm



MRHX-14Nm

- 3 x 0-220V
- Dimensions: 134 x 134 x 170 mm

*277V available on request

For Easy Installation and Integration

– built to meet your needs

We have built an application-ready solution that can be installed and integrated to fit your exact requirements. No component or detail has been overlooked in creating these dedicated drives. Drives that are quick to install, simple to customise, easy to mount and work in any condition.

Connections

The connection compartment underneath the front cover gives easy access to all connectors and connection points. All are clearly marked to ensure quick and reliable installation.

Flexible mounting

The OJ DRHX can be mounted vertically or horizontally, making it easy to adapt to your application.

Cable glands

Supply, motor and communication cables are easily installed through centrally positioned glands.

Compensation for non-linear heat transfer

The drive uses an inverted performance curve to automatically compensate the 0-10V signal, thereby ensuring much more linear heat transfer and more accurate control

Purging ensured

When DRHX is stopped due to a low 0-10V signal, it will automatically start every 10 minutes and run for 10 seconds at 10% of the maximum speed setting. This ensures that the rotor continually passes by its purging section.

Rotation monitor

The DRHX is equipped with a software rotation monitor, which means that no physical optical rotation guard is needed. A sophisticated control algorithm detects whenever rotation is absent.



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Not Yet Using Rotary Heat Exchangers? Here's Why You Should.

Heat exchangers are used to improve the efficiency of HVAC systems in most parts of the world.

In regions such as Europe, their use is near-universal, as high energy prices make energy-efficiency not just a "nice to have," but imperative for profitable operation. In parts of the world where energy prices aren't so high, why should you care about providing fresh air efficiently? Because people everywhere are demanding solutions to the climate crisis, governments are responding with targets and regulations, and energy costs are rising as a result. Efficiency is in. It has become business critical.

Heat exchanger basics

The main job of a heat exchanger is to reduce the amount of energy a HVAC system uses to condition incoming air. It does this by recovering warm or cool air already inside the building and applying the recovered heat or cold to incoming air – easing the load on energy-intensive conditioning processes. By saving energy in this way, the heat exchanger lowers costs and minimizes environmental impact.

In more technical terms, a heat exchanger works by transferring heat from one airstream to another without the airstreams mixing. It's important that the airstreams don't mix because mixing would send stale indoor air back into the building, where fresh air is what's needed.

During cold winters, for example, a heat exchanger would transfer the heat in warm indoor air being expelled outdoors to the fresh cold air entering the building. This enables the incoming air to reach the desired temperature using less energy, while the outgoing air is expelled outdoors.

The rotary advantage

Rotary heat exchangers offer several advantages over traditional crossflow and counterflow designs. They accommodate **higher air volumes** and **facilitate a greater range of applications**, making them **ideal for diverse operating conditions**.



Unlike traditional heat exchangers, the **rotary design regulates both heat and moisture**, enhancing indoor air quality along with temperature. For environments facing specific humidity challenges, an optional "desiccant" version further tailors the conditioning process to ensure comfort and a healthy indoor climate.

In addition to these benefits, rotary heat exchangers provide **superior control capabilities** that enable more precise adjustments in response to changing environmental conditions, ensuring continued maximal performance and efficiency.

Prized for their compact design and ease of maintenance, rotary heat exchangers are highly effective in transferring both sensible heat and latent heat, enhancing overall system efficiency.

About OJ Electronics

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Founded in 1964 and headquartered in Sønderborg, Denmark, OJ Electronics produces electronic controls for underfloor heating and HVAC controls and drives. Our products are available through partners and distributors worldwide, and we have subsidiaries and sales offices in key markets, including the United States and Poland. Everywhere, we are known for our innovative approach, insistence on product quality, and deep application knowledge – all of which helps customers differentiate themselves in the market.

In June 2023, OJ Electronics was acquired by BITZER Electronics, a BITZER Group company also headquartered in Sønderborg. This makes OJ Electronics part of the BITZER Group family, which is represented at 75 locations in over 40 countries and employs some 4000 people worldwide.



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OJ ELECTRONICS A/S

Headquarters

Stenager 13 B
6400 Sønderborg
Denmark

www.ojelectronics.com