RHX controls for rotary heat exchanger

RHX2M-1xxx

- Energy-optimum recovery
- 3 step motor sizes
- Delivered with cable
- OJ Air2 compatible
- QuickPlug™ installation
- 0-10 V and Modbus

The RHX2M is a step motor system designed for accurate, silent control of rotary heat exchangers in ventilation systems.

The RHX2M step motor system provides even torque throughout the entire speed range of 1 to 200 rpm. The rotor can therefore be accurately controlled over a wide operating range, resulting in energy-optimised heat recovery and precise temperature control.

The RHX2M is suitable for either conventional systems with 0-10 V control or more advanced systems with Modbus control, e.g. the OJ Air2 system from OJ Electronics.

Wide control range

The torque characteristic of the RHX2M system is ideal for controlling rotary heat exchangers. The system is therefore an advantageous alternative to solutions based on frequency converters and geared motors. The higher starting torque ensures reliable operation, while the wider control range provides greater energy savings.

Built-in know-how

The built-in features offered by the RHX2M system, e.g. rotation monitoring, automatic purging and linearised heat recovery, ensure reliable rotor control and economic operation for many years to come.

Direct drive

To achieve correct rotor speed, all that is necessary is for the RHX2M step motor shaft to be attached to a suitable pulley. Gears/screws, which cause energy loss and require maintenance, are superfluous. Maximum utilisation of motor power is thus ensured, together with prolonged service life and low service costs.

Plug & Play

The RHX2M is fully integrated in the OJ Air2 system and is connected rapidly and reliably with QuickPlug™ Modbus. This keeps installation costs down and makes operation monitoring simple and easy.

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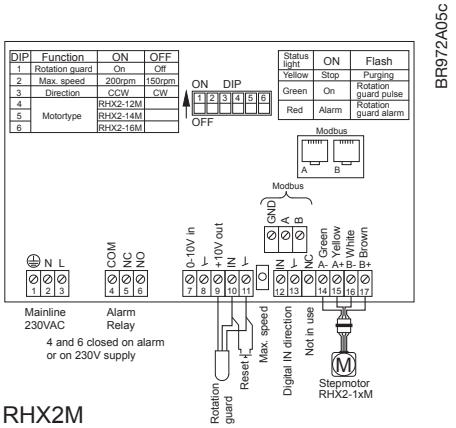
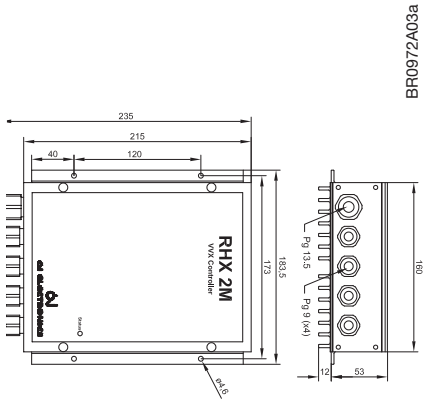
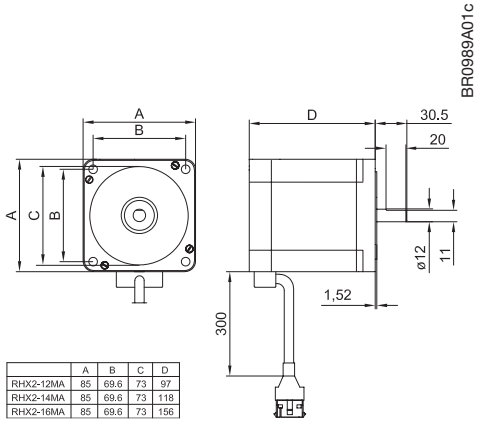


RHX2M

Connection



Dimensioned drawing, controller



Dimensioned drawing, step motor

Choice of size

The required motor torque depends on the actual rotor type, drive belt, ratio of pulley to rotor diameter and required rotor speed. The following are guideline sizes for a standard rotor:

Step motor control system	Rotor diameter
RHX2M-12xx	< 1800 mm
RHX2M-14xx	< 2500 mm
RHX2M-16xx	< 3500 mm

INSTALLATION

The RHX2M is designed to be installed inside the heat exchanger housing. The controller and step motor are connected by means of the factory-fitted cable. The motor is designed for flange mounting and is equipped with a Ø12 shaft for pulley attachment by means of a setscrew. The motor mount should be equipped with vibration dampers to prevent resonance in the rotor housing and ensure silent operation.

Cable connections

Cables are connected to screw terminals for wires of max. 1.5 mm². OJ Air2 system components are connected via QuickPlug™ Modbus connections using a standard telecom cable, e.g. INEC TD6006, fitted with RJ12 connectors.

PRODUCT PROGRAMME

TYPE	PRODUCT
RHX2M-1211	RHX2M, 2 Nm, Modbus, 0-10 V, IP43
RHX2M-1411	RHX2M, 4 Nm, Modbus, 0-10 V, IP43
RHX2M-1611	RHX2M, 6 Nm, Modbus, 0-10 V, IP43
RHX2M-1212	RHX2M, 2 Nm, Modbus, 0-10 V, IP54
RHX2M-1412	RHX2M, 4 Nm, Modbus, 0-10 V, IP54
RHX2M-1612	RHX2M, 6 Nm, Modbus, 0-10 V, IP54

CE marking

OJ Electronics A/S hereby declares that the product is in conformity with the following directives of the European Parliament:

2011/65/EU	RoHS Directive
2014/30/EU	EMC Directive
2014/35/EU	Low Voltage Directive

Applicable standards:

EN 60730-1	2011
EN 61000-6-3	2007
EN 61000-6-2	2005

TECHNICAL DATA

Supply voltage	230 V AC ±15% 50/60 Hz
Motor speed	1-150 / 1-200 rpm
Input signal	0-10 V DC
Rotation guard	Inductive sensor
Supply volt. for Hall element	+10 V DC, max. 100 mA
Reversing	DIP switch / Digital input
Alarm relay	Change-over relay NO 5 A 250 V AC
Modbus	RS-485
Protocol	38.4 kBaud, 1 startbit, 8 databits, 1 stopbit
Connection	2 x RJ12 6/6 QuickPlug™ connections Max. 1.5 mm², screw terminals
Max. cable length	100 m
Cable dimension	MPFK6S or similar
Power consumption	Standby/holding torque: 3 W
Amb. operating temperature	-20°C /+40°C
Storage	-20°C /+60°C
Dimensions, controller	184 x 65 x 235 mm
Weight, controller	1.6 kg
Enclosure	RHX2M-1x11: IP43 RHX2M-1x12: IP54
RHX2M-121x	
Torque	2 Nm
Operating	45 W
Motor	2.4 kg
Cable length, controller	1.7 m
RHX2M-141x	
Torque	4 Nm
Operating	90 W
Motor	3.6 kg
Cable length, controller	2.2 m
RHX2M-161x	
Torque	6 Nm
Operating	150 W
Motor	5.5 kg
Cable length, controller	2.7 m