OJ Air2 AHU control system

OJ-Air2FanIO21

- Direct Modbus dampers
- Direct Modbus valves
- Two pressure measurements
- Two temperature measurements
- Controls one fan
- QuickPlug™ installation

The OJ Air2 system has been specially designed to control air handling units and forms a complete control system where all components are fully integrated and optimised.

The OJ-Air2FanIO21 is specially designed for mounting in the fan section in an air handling unit. All functions for controlling heating/cooling valves, dampers, fan, filter monitoring and temperature measurement are built-in.

With the OJ-Air2FanIO21, all components are connected up with QuickPlug™ Modbus, including dampers and valves. The risk of installation errors is reduced significantly, and operating reliability is increased.

OJ air2 COMPATIBLE

No valves that stick
The OJ-Air2Master monitors all Direct Modbus valves in the system and immediately triggers an alarm if a valve does not attain the desired position. The risk of overconsumption of heating and cooling is reduced, and operating disruptions can be handled efficiently.

No clogged dampers
All Direct Modbus dampers in the system are monitored, and the person responsible for operation can identify extremely quickly where service is needed. Is there a risk of snow in the ducts with ensuing moisture damage due to a defective discharge damper? Or does the energy consumption rise sharply due to a defective bypass damper in the counterflow heat exchanger?

Simple installation
The OJ-Air2FanIO21 is connected to the OJ-Air2Master with QuickPlug™ Modbus, eliminating time-consuming installation faults and troubleshooting. The built-in connectors are used both for Direct Modbus actuators and QuickPlug™ Modbus products from OJ Electronics.

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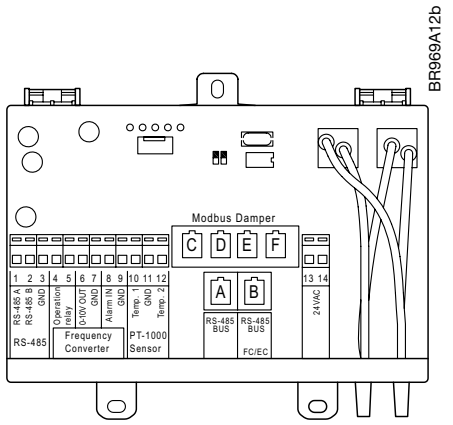
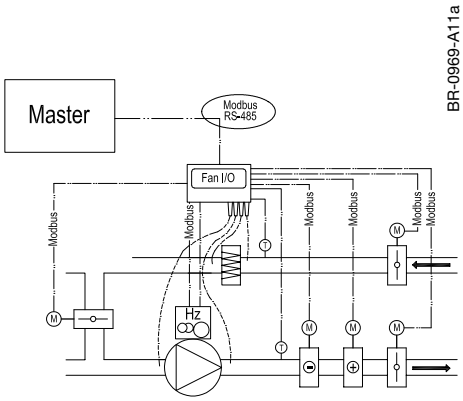
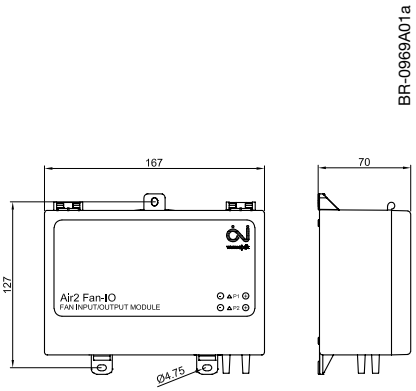
KNOW-HOW CREATES



Connection



Application example



Dimensioned drawing

From 719 possible errors to only one
Position feedback from valves and dampers is traditionally addressed with a potentiometer that follows the spindle. This typically means 6 wires, which must be connected correctly. Out of 720 possible combinations, there is only one that is correct.
With an RJ12 connector and Direct Modbus, there are only 2 possibilities. If the connector is mounted backwards on the cable, the OJ-Air2Master issues an alarm.

Automatic 0-calibration
Pressure measurement in the OJ-Air2FanIO21 is based upon the same advanced technology as the PTH pressure transmitter program and delivers accurate measurements in the entire range. The OJ-Air2Master performs automatic 0-calibration of the pressure transmitters, and the accuracy is maintained year after year.

INSTALLATION

Installation of OJ-Air2FanIO21
The OJ-Air2FanIO21 is installed on a flat surface in the air handling unit nearby the fan. A typical placement would be in a corner of the fan section. The OJ-Air2FanIO21 specifications are such that it tolerates being placed directly in the airflow. Power to the OJ-Air2FanIO21 is supplied via the QuickPlug™ Modbus cable and possible with 24 V AC.

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
OJ-Air2FanIO21	Double pressure transmitter med Direct Modbus interface
OJ-Air2Master	AHU controller
OJ-VD-xxxx	Fan drive, 0.5 to 15 kW
RHX2M-xxxx	Rotor controller with step motor
OJ-Air2Ext	I/O extension module
OJ-Air2Lon	LON extension module
xTH-xxxx	QuickPlug™ transmitters
ETF-xx98	PT1000 temperature sensors

TECHNICAL DATA

Supply voltage	24 V DC ±15% via QuickPlug™ connector A max. 600 mA 24 V AC ±15% via spring terminals max. 3500 mA
Max. power consumption	RJ12 600 mA
Power consumption	< 2.5 VA
Electrical connection	max. 1.5 mm², spring terminals
QuickPlug™ Modbus	6 x RJ12 (6P6C) max. 300 mA DC
Digital inputs	1 x internal pull-up
Digital outputs	1 x potential-free relay, 30 V DC 2 A
Analogue outputs	1 x 0-10 V DC
Sensor inputs	2 x PT1000
Pressure transmitters	2 x 0 – 2500 Pa differential pressure
Accuracy	0.5% of measured value +/- 2.5 Pa
Pressure connectors	4 x Ø 6.2
Amb. operating temperature	-20/+40°C
Dimensions	169 x 139 x 71 mm
Enclosure	IP54, ABS HI 100 UV protection
Weight	320 g

CE marking
The OJ-Air2FanIO complies with the requirements of the following directives:
EMC Directive
EN 61000-6-2
EN-61000-6-3