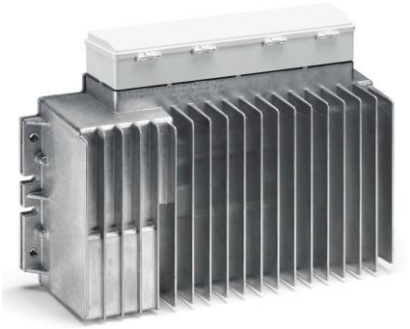
Product information No. 354A August 2016

OJ-EC drives in connection with Fan-wall

OJ-Air2EC



OJ-EC

OJ Electronics has during the last years been involved in several Fan wall projects and wants to highlight a few precautions.

A fan wall contains 2 or more fans that blow the air in the same direction.

Wrong parameter settings and system control can lead to damaging the OJ-EC drive.

Start-up:

Use of EC or PM motor in a fan-wall can result in the fact, that the fans will not start-up identically, meaning the start-up time for each fan may variate.
It leads to problems if one or more fans reach too high speed before the last one has even started rotating.
The last one that hasn't started rotating will start spinning backwards due to wind milling.
As long as the other fans are spinning at "high" speed the one will continue spinning backwards. The OJ-EV drive will try to break the fan to a stop and turn the spinning direction. The energy backwards into the OJ-EC drive is too high due to the high spinning and therefore it is impossible to break the wrong spinning fan.
The OJ-EC drive will continue to try to break the wrong spinning fan, but at some point some components get worn out and the OJ-EC gets defect.

OJ-EC parameter settings:

As the OJ-EC drive is used in many different ventilation systems, it is impossible to deliver the drive pre-configured with the right setting for each individual application. Therefore manufacturer of fan-walls and system integrators have to pay special attention to specific the ramp-up time and minimum speed.

The ramp-up time is covering the time it takes to go from min. speed to max. speed.

To "slow down" the system it needs to have a "low" min. speed and a long ramp-up time. The ramp-up time depends very much on the inertia of the system and especially a fan made of cast iron has a high inertia and needs a longer ramp-up time.
A ramp-up time of at least 60 sec. is recommended.

The ramp-up time can together with all other settings be adjusted by use of the OJ-EC-HTERM.

OJ ELECTRONICS