

# OJ Drives® for Compressors



## OJ DC series

- 5 power variants
- 2 enclosure sizes
- PM and BLDC motors
- Operation from -40°C to +50°C
- BACnet MS/TP
- UL 61800-5-1, CS22.2.174 recognized

**This new series of drives is dedicated to compressor systems comprising 5 output variants (from 4 to 15kW) fitted in 2 different enclosures to match scroll compressors for chillers and AHUs.**

### Robust and built to last

With a durable aluminium enclosure, the DC series can continuously operate in almost any environment from -40°C to +50°C / -40°F to +122°F.

### Energy efficient

The OJ DC drives save energy while providing reliable, highly efficient power for the compressor. With OJ DC, there will be efficiency of up to 97%.

### BACnet MS/TP

BACnet ensures that information is exchanged standardised between sensors, actuators, and controls in a building. Equipped with BACnet MS/TP, the OJ DC can now be part of the building automation. BACnet MS/TP is running on RS-485.

### Dedicated compressor functions

A dedicated drive for scroll compressors in your chiller or AHU system ensures optimal lubrication control and flawless performance regardless of variable loads or capacity. The DC drive is matched with your compressor specifications.

### Plug & Play technology


Pre-programmed compressor settings help maximise functionality, while the removable front cover facilitates easy access to connectors for instant system configuration.

### Norms and standards

The OJ DC series comes with a fully integrated EMC filter and therefore meets norms for emissions and immunity in industrial and residential areas EN 61800-3 (C1 and C2). IE requirements can be easily fulfilled using a PM motor with an OJ DC.

The OJ DC product series is cULus recognised according to UL 61800-5-1 and CS22.2.174.



	Type	DC-3040	DC-3055	DC-3075	DC-3110	DC-3150
Enclosure			H4		H5	
Power size	kW	4.0	5.5	7.5	11	15
Horsepower	Hp	5.4	7.4	10.0	14.7	20.1
Efficiency	%		> 96.5%			> 97.5%
<b>Power supply</b>						
Voltage	VAC	3 x 208 - 240 VAC 50/60 Hz +/-10% *1 3 x 380 - 480 VAC 50/60 Hz +/-10%				
Supply current at max. load at nominal supply voltage (400V/480V)	A	8.4/7.0	11.5/9.6	15.7/13.1	23/19.1	31.1/26.1
Power factor (cos-phi) at max. load		> 0.9				
<b>Motor output</b>						
Nominal motor power (on shaft) *2	kW	4.0	5.5	7.5	11	15
Frequency	Hz	AC motor: 0-120   PM motor: 0-400				
Max. output voltage	Vrms	3 x 0 - 0.9 x Vin				
Max. output current	Arms	10.0	12.0	19.0	27	32
<b>Protection</b>						
Max. fuse	A	16			32	
Short circuit capacity	A	3500	3500	5000	5000	5000
FLA	A	8.7	12.0	16.4	23.8	32.5
Motor output		Short-circuit protected between phases				
Motor		Protected by current limit				
Over-voltage protection		Yes, 565 V				
Overload protection		Current and temperature overload protection				
<b>Environment</b>						
Operating temperature	°C/°F	-40°C to +50°C / -40°F to +122°F				
Starting temperature	°C/°F	-40°C to +50°C / -40°F to +122°F				
Storage temperature	°C/°F	-40°C to +70°C / -40°F to +158°F				
Dimensions	mm	220 x 294 x 107 mm			244 x 399 x 144 mm	
Protection rating		IP 54 & 65 / NEMA 4x				
Enclosure material		Aluminium				
Front cover		Plastic				
Weight	kg	3.9			9.5	
Humidity	% rh	10-95% rh, non-condensing				
Surface		Corrosion resistant to EN/ISO 12944-2:1998 Category C4				
<b>Interfaces</b>						
Modbus RTU		RS485 (baud rate: 9.6, 19.2, 38.4, 57.6, 115.2 Kbaud)				
BACnet MS/TP		Baud rate: 9.600, 19.200, 38.400, 57.600, 115.200 kbs MAC: 0 - 127, MAX Master: 1 -127, Device object ID: 0 - 4194302				
Digital communication	Slave	2 x RJ12 & 2 x spring terminals				
Digital communication	Master	1 x RJ12 connection				
Analogue In1		0-10 VDC, 100% @ 9.5 V DC +/-2%				
Analogue Out1		+10 VDC				
Digital In1		Start/stop with internal pull-up				
Digital In2		Alarm reset				
Digital Out1		Tacho: 1 pulse/revolution   Alarm/running signal				
Green LED		Lit: Power connected   Flashing: Active communication				
Red LED		Flashing: Alarm but still running   Constantly lit: Critical alarm - stop motor				
<b>Features</b>						
Technology		Sinusoidal back-EMF signal controlled via FOC (Field Oriented Control)				
Ramp-up time	sec.	15-300				
Ramp-down time	sec.	15-300				
Alarm		Yes				
Alarm reset		Via digital input, MODBUS or powering down for more than 60 seconds				
Service data log		Operating hours, alarms, loads, software version, max. temp., max. motor voltage, max. motor current, max. ripple voltage, max. ripple current				
Software updating		Yes, via serial interface				
Motor parameters		Preprogrammed by OJ or on-site configuration				
Field weakening		Yes				
Short-circuit protection		Yes				
Integrated EMC filters		Yes				
<b>Approvals</b>						
EMC		EN/BS 61800-3 (C1 & C2)				
LVD		EN/BS 61800-5-1 / UL 61800-5-1				
Product standard		EN/BS 61800 Part 2				
North America		UL 61800-5-2 / CS22.2.174				
RoHS Directive		Yes				
Product approvals						

Note: Data are valid at: nominal supply voltage  
 \* 1: At 3 x 230V supply the output power is derated to 58% / \* 2: Motor Power Factor = 0.8 and efficiency = 90%