Frame Size 8 Additional Instructions

Optidrive P2 / HVAC Frame Size 8

This document provides additional technical and mounting information specific to the Frame Size 8 Optidrive P2 & HVAC Models. The mechanical dimensions, mounting arrangement and technical data are identical for both versions of the drive.

Important Safety Information

This option is specifically designed to be used with the Optidrive variable speed drive product range and is intended for professional incorporation into complete equipment or systems. If installed incorrectly it may present a safety hazard. The Optidrive uses high voltages and currents, carries a high level of stored electrical energy, and is used to control mechanical plant that may cause injury. Close attention is required to system design and electrical installation to avoid hazards in either normal operation or in the event of equipment malfunction. Optidrives and the Options should be installed only by qualified electrical persons and in accordance with local and national regulations and codes of practice.

Electric shock hazard! Disconnect and **ISOLATE** the Optidrive before attempting any work on it. High voltages are present at the terminals and within the drive for up to 10 minutes after disconnection of the electrical supply.

Where the electrical supply to the drive is through a plug and socket connector, do not disconnect until 10 minutes have elapsed after turning off the supply.

It is the responsibility of the installer to ensure that the equipment or system into which the product is incorporated complies with the EMC legislation of the country of use. Within the European Union, equipment into which this product is incorporated must comply with 2004/108/EC, Electromagnetic Compatibility.

Within the European Union, all machinery in which this product is used must comply with the Directive 98/37/EC, Safety of Machinery. In particular, the equipment should comply with EN60204-1.

The manufacturer accepts no liability for any consequences resulting from inappropriate, negligent or incorrect installation.

The contents of this User Guide are believed to be correct at the time of printing. In the interests of a commitment to a policy of continuous improvement, the manufacturer reserves the right to change the specification of the product or its performance or the contents of the User Guide without notice.

Dimensions

Drive Type / Rating	EMC Category		
	Cat C1	Cat C2	Cat C3
3 Phase, 400 Volt Input IP20 Models OD#-2-84###-3#0#2-TC	Use Additional External Filter		No Additional Filtering Required
	Use Shielded Motor Cable		

Note	
	Compliance with EMC standards is dependent on a number of factors including the environment in which the drive is installed, motor switching frequency, motor, cable lengths and installation methods adopted.
	For motor cable lengths greater than 100m, an output dv / dt filter must be used, please refer to the Invertek Stock Drives Catalogue for further details
	Vector Speed and Torque control modes may not operate correctly with long motor cables and output filters. It is recommended to operate in V/F mode only for cable lengths exceeding 50m

Technical Data

Environmental

Ambient Temperature Range	Operational	-10 … 50°C
	Storage & Transportation	40 °C … 60 °C
Max altitude for rated operation	1000m / 3300 ft	
Relative Humidity	< 95% (non-condensing)	Note : Drive must be Frost and moisture free at all times

Input / Output Power and Current ratings

The following tables provide the output current rating information for the various Optidrive P2 models. Invertek Drives always recommend that selection of the correct Optidrive is based upon the motor full load current at the incoming supply voltage.

Power Rating		Nominal Input Current (A)			Fuse or MCB (Type B)	Supply Cable Size		Rated Output Current	Motor Cable Size		Maximum Motor Cable Length		Recommended Brake Resistance
kW	HP	Without Choke	With 1% Line Choke	With 4% Line Choke	A	mm	AWG / kcmil	A	mm	AWG / kcmil	m	ft	Ω
200	300	359	349	339	500	240	500	370	240	500	100	330	3
250	350	437	425	412	600	240	500	450	240	500	100	330	3

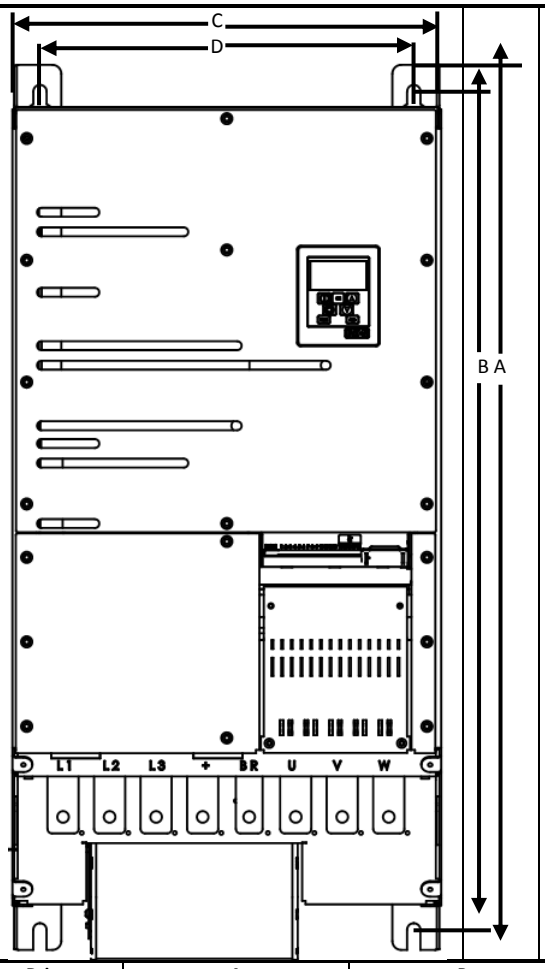
Note :-

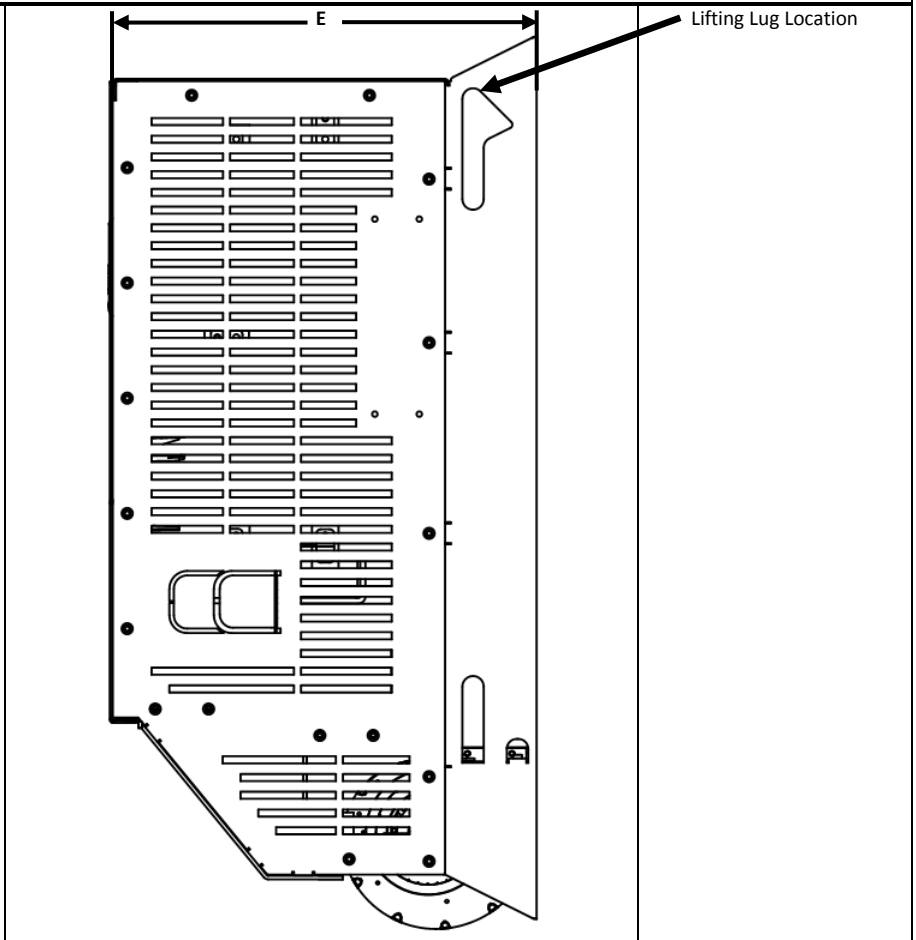
- Cable sizes shown are for guidance purposes only, assuming individual cables. Cables should always be selected according to the installation type, following any local or national codes relevant to the country or area of final installation.
- Input current level will vary according to supply impedance. At minimum a 1% line choke must be installed.
- Installing a 4% line choke further helps towards minimising harmonic current distortion and total current levels. 1% and 4% line chokes are available.

Important:-

It is important that the input supply phase orientation is correct, i.e. L1>L1, L2>L2, L3>L3, failure to do so will result in a "P-Lo55"trip.

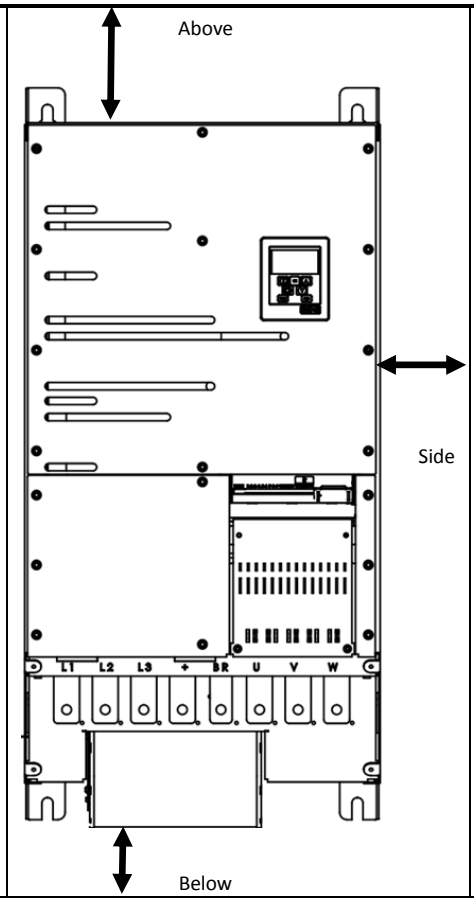
Dimensions





Drive Size	A		B		C		D		E		Weight	
	mm	in	mm	in	mm	in	mm	in	mm	in	Kg	lb
8	1005	39.57	944	37.17	480	18.9	420	16.54	480	18.9	130	4.0

Mounting Bolts : 4 x M12
Tightening Torques : Control Terminal Torque Settings : 0.8 Nm (7 lb-in)
Power Terminal Torque Settings : M12, 57 Nm (42 lb-ft)



Required Mounting Clearances for Cabinet Installation

Above the drive : 350 mm

Below the Drive : 350 mm

Each Side of the Drive : 50 mm

Required Cooling Airflow

Minimum Permissible : 13.75 m^3/min

Exact cooling Airflow can be calculated according to the following :-

$F = 0.053 * P / (T_{MAX} – T_{AMB})$

Where

- F = Airflow in Cubic metres per minute
- P = Total power dissipated in panel
- T_{MAX} = Maximum temperature allowed in the panel
- T_{AMB} = Maximum ambient temperature around the panel

Total heat loss for the drive : 2% of consumed motor power.