



Enclosed Direct-On-Line (DOL) Starter - User Guide

**0.37kW to 7.5kW
415V 3 Phase & 230V 1 Phase**



V1.0.2

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Safety Information

This chapter provides very important information so that you can use the **Enclosed Direct-On-Line Starter** safely, prevent injury or death, or damage to equipment. Please read this information thoroughly and make sure you observe all the safety information shown below and elsewhere in this manual. Please make this User Guide available for the end user.

Safety symbols



Danger: Danger of electrical shock which can cause injury or death, or damage to equipment



Warning: Potential hazard, other than electrical, that can cause physical injury or damage to equipment



Danger

- The Enclosed Direct-On-Line Starter should **ONLY** be installed, commissioned and maintained by qualified and competent personnel.
- The Enclosed DOL starter must be installed to the latest IEE wiring regulations taking into account local regulations.
- Dangerous voltages are present when the input power supply is connected to the Enclosed DOL starter. Before attempting any work on the Enclosed DOL starter or motor, isolate and lock off the input power supply. Prove dead using a voltage tester. The voltage tester itself should be proved immediately before and after testing using a proving unit with a low power output.
- The earth terminal of the Enclosed DOL starter must be connected to the system ground. The size of the earth conductor and earth loop impedance must comply with national and local electrical regulations.
- The Enclosed DOL starter is a non-field repairable unit. Contact the supplier of the Enclosed DOL starter.
- The mains supply to the Enclosed DOL starter must be protected by suitable rated fuses/MCBs.



Warning

- All machinery, in which this Enclosed DOL starter is used, within the European Union, must comply with directive 98/37/EC, Safety of Machinery.
- Do not install the Enclosed DOL starter in an explosive environment.
- The motor must be used within the manufacturers guidelines.
- Do not allow conductive material to enter the components within the Enclosed DOL starter, e.g. from drilling during installation.

Rating Information

Model	kW rating	Input phase	Input voltage on main contacts (VAC $\pm 10\%$)	Max allowed motor current (A)	Motor current (A) (overload range)
DOL037EN400V	0.37	3	400	1.6	1.0 to 1.6
DOL075EN400V	0.75	3	400	2.5	1.6 to 2.5
DOL15EN400V	1.5	3	400	4.0	2.5 to 4.0
DOL22EN400V	2.2	3	400	6.0	4.0 to 6.0
DOL30EN400V	3.0	3	400	8.0	5.5 to 8.0
DOL40EN400V	4.0	3	400	10.0	7.0 to 10.0
DOL55EN400V	5.5	3	400	13.0	9.0 to 13.0
DOL75EN400V	7.5	3	400	18.0	12.0 to 18.0
-	-	-	-	-	-
DOL037EN230V	0.37	1	230	4.0	2.5 to 4.0
DOL055EN230V	0.55	1	230	6.0	4.0 to 6.0
DOL75EN230V	0.75	1	230	6.0	4.0 to 6.0
DOL11EN230V	1.1	1	230	10.0	7.0 to 10.0
DOL15EN230V	1.5	1	230	13.0	9.0 to 13.0
DOL22EN230V	2.2	1	230	18.0	12.0 to 18.0

NOTE: The thermal overload setting is set to minimum as default. It should be adjusted to suit the motor used.

NOTE: The thermal overload is set to Auto reset as standard, repeated restarting of a tripped DOL may cause damage to the starter or motor, please check for the cause of overload trip before restarting the DOL starter.

NOTE: The contactor coil is supplied from the input supply.

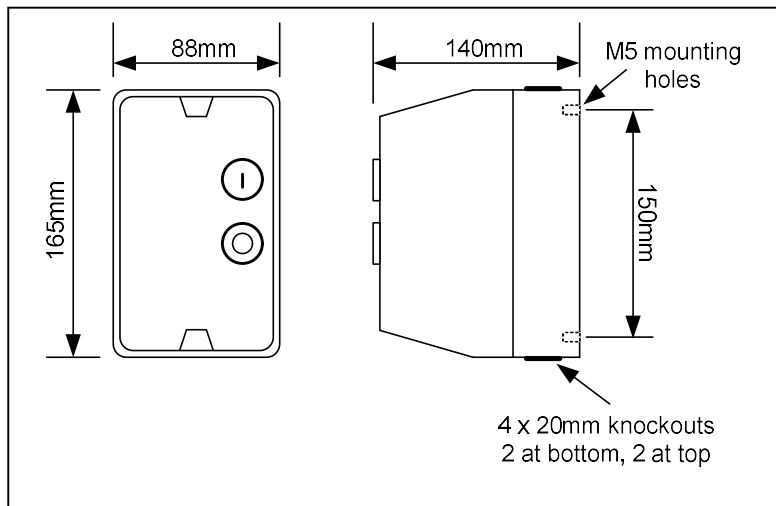
Please note: Starting the motor more than once every 10 minutes will alter the thermal overload tripping characteristic by heating the current sensing elements, making the overload trip more quickly for a given setting.

Technical Data

Approvals	CE approval	CE
Environment	Altitude	1000m rated 1000m~3000m, 1% rated current de-rating per 100m
	Operating Temperature	-10°C~+40°C
	Max. Humidity	≤90%RH, non-condensing
	Vibration	≤5.9m/s ² (0.6g)
	Storage Temperature	-40°C~+70°C
	Running Environment	Non-flammable, No corrosive gasses, no contamination with electrically conductive material
Supported Power Supply Systems		TT & TN
Enclosed DOL Enclosure Rating		IP42
Supply frequency		50 to 60Hz
Supply voltage 3 Phase Version		3 phase 400Vac ±10%
Contactor coil voltage		400Vac (+/-10%)
Supply voltage 1 Phase Version		1 phase 200Vac ±10%
Contactor coil voltage		200Vac (+/-10%)

Dimensions

Dimensions (H x W x D) mm	Weight Kg
165 x 88 x 140	0.9



DOL Trip Class

The MCW DOL starters are fitted with a **Trip Class 10** thermal overload relay as standard which is suitable for light to medium industrial type load applications.

The MCW DOL range is not suitable for applications that have a heavy load on start that takes greater than 10s to start or high inertia loads such as high inertia fans, centrifuges or loaded crushers.

Trip Class Explained

At 600% of the maximum current rating of the motor the **Trip Class 10** unit will trip in 10 seconds or less, **Trip Class 20** will trip in 20 seconds or less, and **Trip Class 30** will trip in 30 seconds or less.

The class number indicates the thermal overload trip characteristics from cold state.

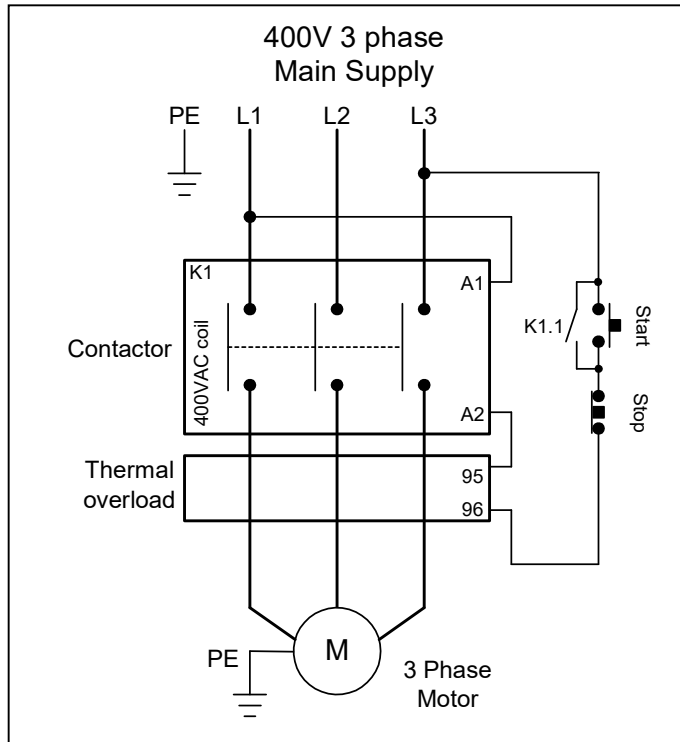
I_r = Current setting of overload relay. This should be the Full Load Current (FLC or FLA) shown on motor rating plate.

	$1.05 \times I_r$	$1.2 \times I_r$	$1.5 \times I_r$	$7.2 \times I_r$
	Time to trip from a cold start			
Trip Class 10	>2 hours	<2 hours	<4 minutes	2s< to <10s

Please note: Starting more than once every 10 minutes will alter the thermal overload tripping characteristic by heating the current sensing elements, making the overload trip more quickly for a given setting.

Wiring Information 400V

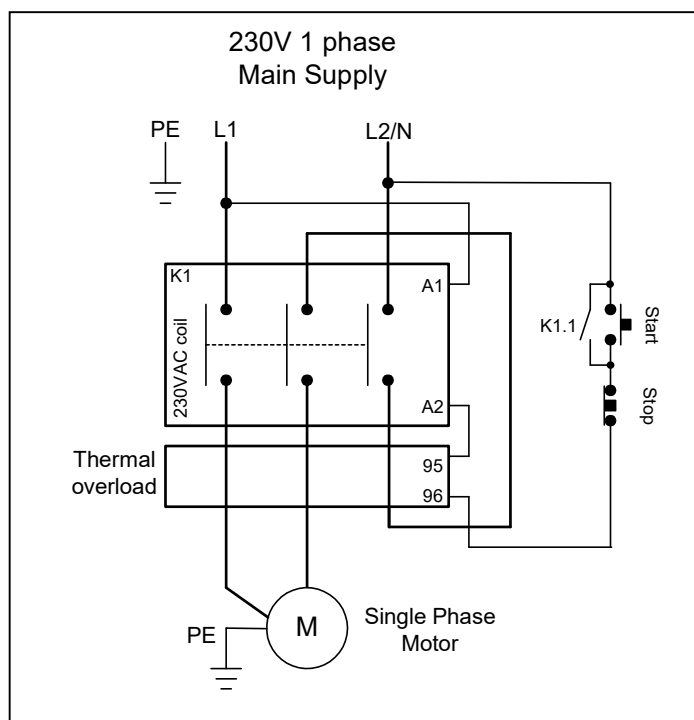
Enclosed DOL Starter Circuit diagrams for 3 phase motor starting (For models fitted with 400V coil contactor only).



NOTE: Please make sure the motor is connected in the correct **DELTA** or **STAR** connection for the voltage being applied to the motor.

Wiring Information 200V

Enclosed DOL Starter Circuit diagrams for single phase motor starting (For models fitted with 200V coil contactor only).



Other Products from Motor Control Warehouse



Features:

- IP54 Powder coated steel enclosure.
- Door interlocked mains isolator.
- Start/stop push buttons
- Motor outputs to DIN terminals
- Simplified installation and function.
- Ideal for fan, pump and conveyor systems



Features:

- IP54 Powder coated steel enclosure.
- Door interlocked mains isolator.
- Start/stop Push buttons
- Forward/ Reverse selector switch
- Speed control potentiometer
- Healthy and Running Indicators
- Emergency Stop button (Safety relay monitored) with Illuminated Reset.
- Motor outputs to DIN terminals
- Our safest ever Inverter in a box, ready for the toughest applications.