

The Direct on Line motor starter (DOL) is designed to switch a single or three phase induction motor at rated voltage. It comprises an enclosure in steel or plastic, a contactor, start contact, link wires and stop / start buttons. The Thermal overload is supplied as a separate item.

Selecting the correct starter

Various factors should be considered when selecting the correct DOL. Firstly the type of environment and mounting position will decide the enclosure material - Either steel or plastic. The size of unit is dictated by the motor that is being supplied and can be selected using the table opposite.

Note:

The current on the motor rating plate should not exceed the rating of the DOL.

For Example:

1) 2.2kW motor with FLC of 5 Amps @ 415Volts to be mounted in a protected position in a light commercial application will require a LE1-D123N7.

2) Similarly a 7.5kW motor with FLC of 12Amps@ 415Volts will require the next size of DOL, namely LE1-D253N7.

Selecting the correct Thermal Overload

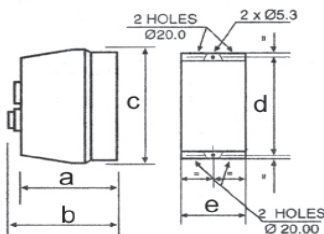
Having selected the correct DOL for the motor size, a suitable thermal overload now needs to be chosen to match the motor rating. The full load current (FLC) of the motor is shown on the motor rating plate. This should be used to select an overload so that this current falls within the rating of the chosen overload. See table opposite.

For Example:

1) 2.2kW motor with a FLC of 5 Amps @ 415Volts will need a TR2-D09310 overload rated at 4.00-6.00 amps. This will mount in the LE1-D123N7 starter.

2) 7.5kW motor with a FLC of 12 Amps @ 415Volts will need a TR2-D12316 overload rated at 9.00-13.00Amps. This will mount in the LE1-D253N7.

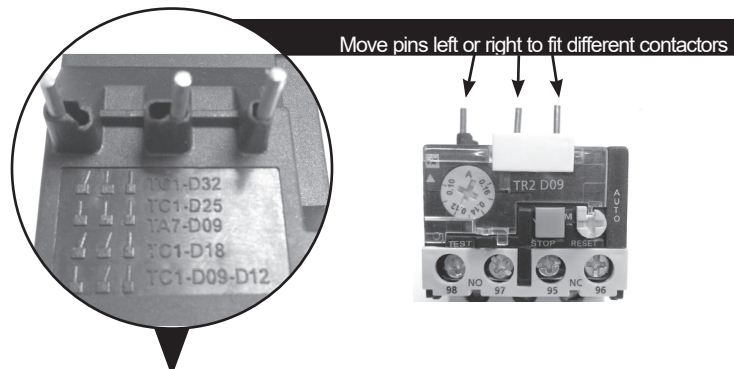
D O L Dimensions



Dim	Metal Clad 12A	Metal Clad 25/32A	Plastic 12A	Plastic 25/32A
a	116mm	135mm	120mm	135mm
b	128mm	147mm	140mm	155mm
c	214mm	252mm	166mm	185mm
d	134mm	162mm	150mm	165mm
e	123mm	156mm	88mm	101mm

Enclosure Type	Coil Voltage	Current Rating	Max Motor Size Approx kW @ 415V	Part Number
Insulated	230V	12 Amps AC3	5.5 kW	LE1-D123U7
	415V			LE1-D123N7
	230V	25 Amps AC3	11 kW	LE1-D253U7
	415V			LE1-D253N7
Steel	230V	12 Amps AC3	5.5 kW	BE1-T1235U7
	415V			BE1-T1235N7
	230V	25 Amps AC3	11 kW	BE1-T2535U7
	415V			BE1-T2535N7

Current Range	Overload Relay	For use with Contactors	Back Up Fuse (A)	
			aM	gL
0.10 - 0.16 Amps	TR2-D09301	TC1-D09 & D25	2	4
0.16 - 0.25 Amps	TR2-D09302			
0.25 - 0.40 Amps	TR2-D09303			
0.40 - 0.63 Amps	TR2-D09304			
0.63 - 1.00 Amps	TR2-D09305			
1.00 - 1.65 Amps	TR2-D09306			
1.60 - 2.50 Amps	TR2-D09307		4	6
2.50 - 4.00 Amps	TR2-D09308		6	10
4.00 - 6.00 Amps	TR2-D09310		8	16
5.50 - 8.00 Amps	TR2-D09312		12	20
7.00 - 10.00 Amps	TR2-D09314		16	25
9.00 - 13.00 Amps	TR2-D12316		20	32
12.00 - 18.00 Amps	TR2-D18321	TC1-D32	25	50
17.00 - 25.00 Amps	TR2-D25322		40	63
23.00 - 32.00 Amps	TR2-D32353			



Note: The copper pins of the overload relay need to be correctly positioned to suit the contactor that it is to be mounted to.

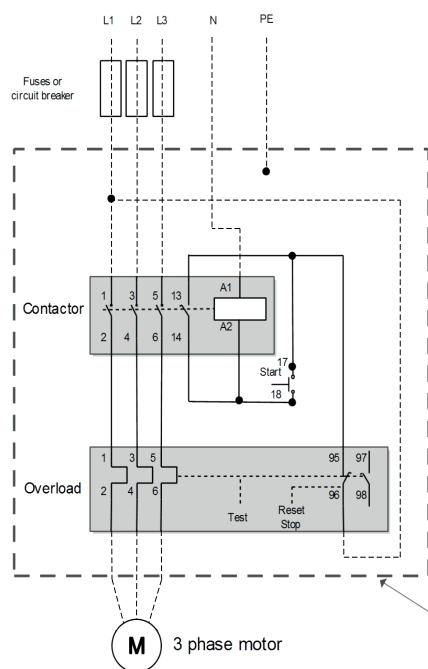
Cable Type	Contactor Type			
	TC1-D09	TC1-D12	TC1-D18	TC1-D25/D32
Stranded	2 x 1mm Min		2 x 1.5mm Min	
	2 x 4mm Max		2 x 6mm Max	
	-	-	-	1 x 10mm Max
Stranded with Ferrule	2 x 1mm Min			
	2 x 2.5mm Max		2 x 4mm Max	
	1 x 4mm Max		1 x 6mm Max	
Solid without Ferrule	2 x 1mm Min		2 x 1.5mm Min	
	2 x 4mm Max		2 x 6mm Max	
	-	-	1 x 6mm Max	

1) Three Phase Supply 230Volt Coil - see wiring **diagram 1**. The following links are pre-fitted to the starter; 13 - 17 with a flying lead to be connected to Overload terminal 95; A2 - 14 - 18. All other control and power connections have to be made by the installer as per the dotted lines.

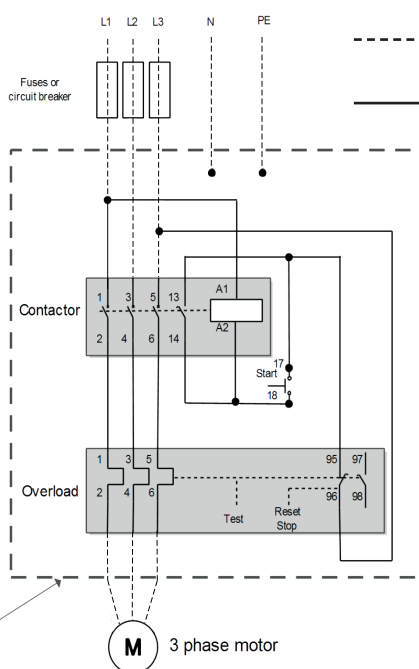
2) Three Phase supply 415 Volt Coil - see wiring **diagram 2**. The following links are pre-fitted to the starter; 13 - 17 with a flying lead to be connected to Overload terminal 95; A2 - 14 - 18; Contactor terminal 1 - A1; Contactor terminal 5 via flying lead to Overload terminal 96. All other control and power connections have to be made by the installer as per the dotted lines.

3) Single Phase supply 230 Volt Coil - see wiring **diagram 3**. The following links are pre-fitted to the starter; 13 - 17 with a flying lead to be connected to Overload terminal 95; A2 - 14 - 18; Contactor terminal 5 - A1; Contactor terminal 5 via flying lead to Overload terminal 96. All other control and power connections have to be made by the installer as per the dotted line.

1 Wiring of DOL devices for 400V 3 phase with 230V coil



2 Wiring of DOL devices for 400V 3 phase with 415V coil

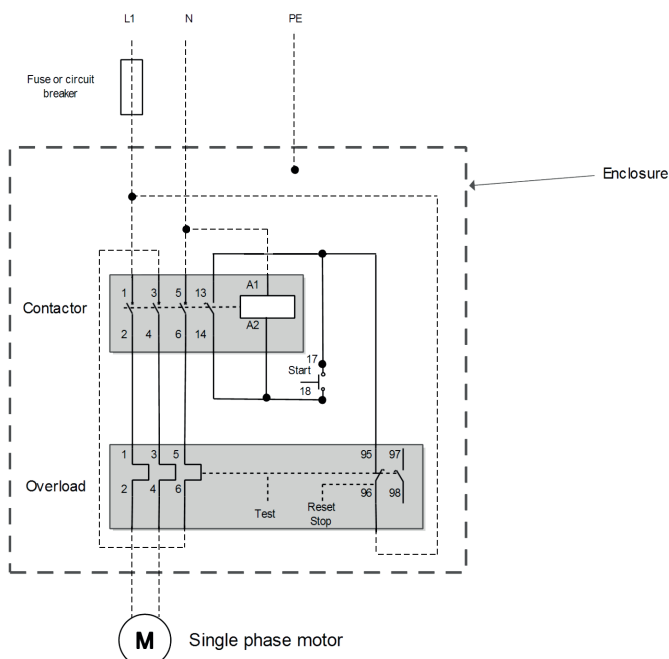


Wiring Key

----- Customer Wiring

———— Wiring Supplied

3 Wiring of DOL devices for 230V single phase with 230V coil



Important Safety Notice

It is the responsibility of the person installing the electrical equipment to ensure that the installation meets the requirements of the IET wiring regulations and is therefore 'fit for purpose'. Factors such as correct selection of components, cable sizing, protective devices and Earth bonding are all critical and should be checked prior to full testing and power-up. Any other regulations applicable to the equipment being installed such as the Machinery Directive and current health and safety legislation must also be adhered to. Terminals should be checked periodically to ensure correct tightness.

Wiring of additional start stop devices on DOL devices for 400V 3 phase with 230V coil

Wiring Key

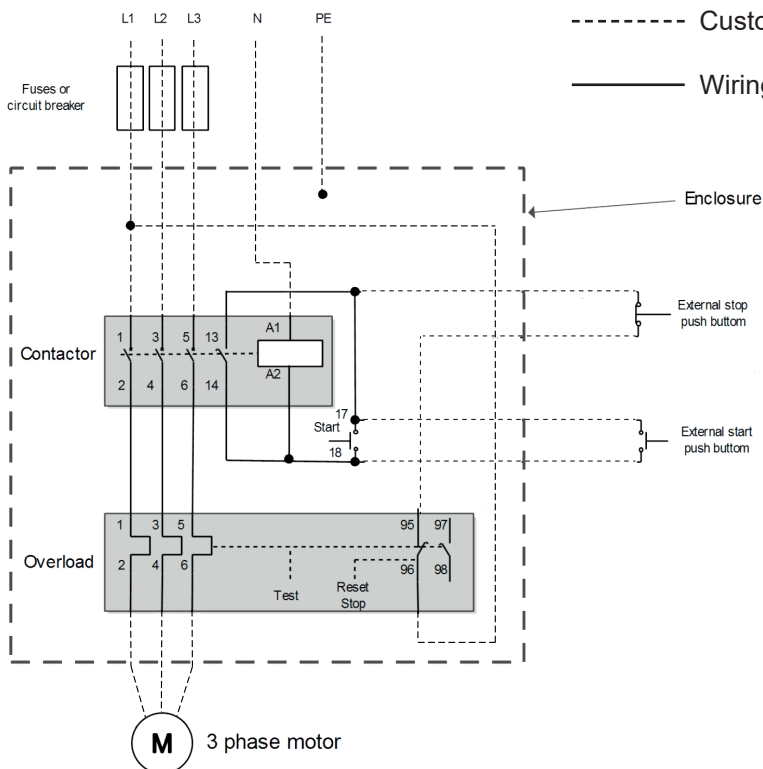
----- Customer Wiring
——— Wiring Supplied

Additional start and stop stations can be wired to the DOL control circuit. In principle, the start buttons should be momentary normally open device and wired in parallel with terminals 17 & 18.

The wire between terminals 95 and 13 must be removed and the stop buttons must be wired in the circuit between terminals 95 & 13 in series with the internal stop contact 95-96.

Europa remote stop/start stations

Metal
RM2GES55
RM2GR
Plastic
RC2PGES55
RC2PGR



Wiring of additional start stop devices on DOL devices for 230V single phase with 230V coil

