

This document must be retained for future reference.

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.

All connections (including factory made) must be checked for the correct tightness prior to commissioning of the electrical installation.  
All connections should also be inspected periodically to ensure correct tightness.

DO NOT USE POWER TOOLS ON THESE PRODUCTS



## (DOL) Motor Starter With Isolator

### Instructions for Direct-On-Line



The Direct On Line Motor Starter (DOL) is designed to switch a single or three phase induction motor at rated voltage. It comprises of an isolator, steel enclosure, a contactor, start contact, link wires and stop / start buttons. The thermal overload is supplied as a separate item. Various factors should be considered when selecting the correct DOL. The size of unit is dictated by the motor that is being supplied and can be selected using the table below.

| Enclosure Type | Coil Voltage | Current Rating | Max Motor Size Approx. kW @ 415V | Part No.   |
|----------------|--------------|----------------|----------------------------------|------------|
| Steel          | 240V         | 12 Amps AC3    | 5.5kW                            | BE2-D123U7 |
| Steel          | 415V         | 12 Amps AC3    | 5.5kW                            | BE2-D123N7 |
| Steel          | 240V         | 25 Amps AC3    | 11kW                             | BE2-D253U7 |
| Steel          | 415V         | 25 Amps AC3    | 11kW                             | BE2-D253N7 |

**Note:** The current on the motor rating plate should not exceed the rating of the DOL. For example:

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

Having selected the 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. For example:

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

| Overload Part Number | Relay Range | Useable with 12A DOL | Useable with 25A DOL |
|----------------------|-------------|----------------------|----------------------|
| TR2-D09301           | 0.1-0.16A   | ✓                    | ✓                    |
| TR2-D09302           | 0.16-0.25A  | ✓                    | ✓                    |
| TR2-D09303           | 0.25-0.40A  | ✓                    | ✓                    |
| TR2-D09304           | 0.40-0.63A  | ✓                    | ✓                    |
| TR2-D09305           | 0.63-1.00A  | ✓                    | ✓                    |
| TR2-D09306           | 1.00-1.65A  | ✓                    | ✓                    |
| TR2-D09307           | 1.60-2.50A  | ✓                    | ✓                    |
| TR2-D09308           | 2.5-4.00A   | ✓                    | ✓                    |
| TR2-D09310           | 4.00-6.00A  | ✓                    | ✓                    |
| TR2-D09312           | 5.50-8.00A  | ✓                    | ✓                    |
| TR2-D09314           | 7.00-10.0A  | ✓                    | ✓                    |
| TR2-D12316           | 9.00-13.0A  | ✓                    | ✓                    |
| TR2-D18321           | 12.0-18.0A  | -                    | ✓                    |
| TR2-D25322           | 17.0-25.0A  | -                    | ✓                    |

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

## (DOL) Motor Starter With Isolator

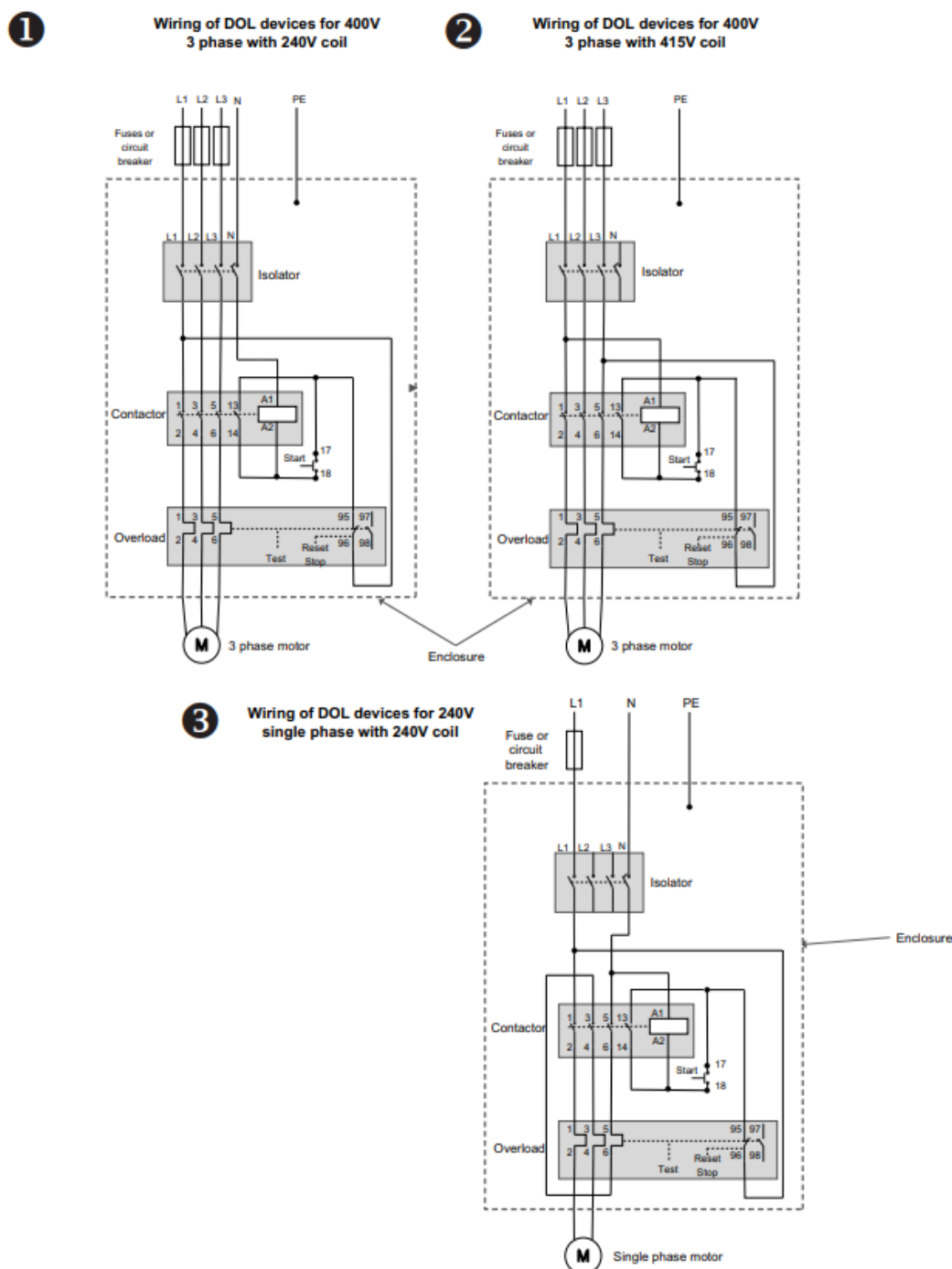
### Instructions for Direct-On-Line

#### Wiring of the Direct-On-Line (DOL) Motor Starter with Isolator

1) Three Phase Supply 240Volt 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.

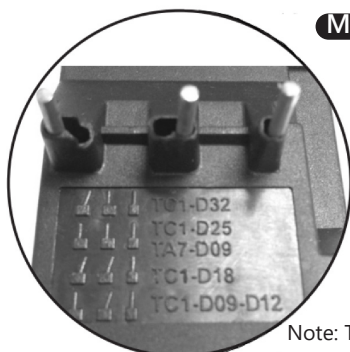
2) Three Phase supply 415 Volt Coil - see wiring diagram ②. The following links are pre-fitted to the starter; 13 - 17 with a flying lead to be connected to Overload terminal 95; A2 - 14 - 18; Contactor terminal 1 - A1; Contactor terminal 5 via flying lead to Overload terminal 96. All other control and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

3) Single Phase supply 240 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 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.

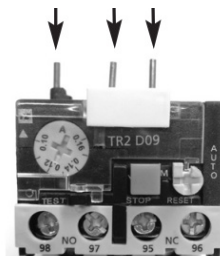


## (DOL) Motor Starter With Isolator

Instructions for Direct-On-Line



Move pins left or right to fit different contactors



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

### Wiring of additional start stop devices on DOL devices for 400V 3 Phase with 240V coil

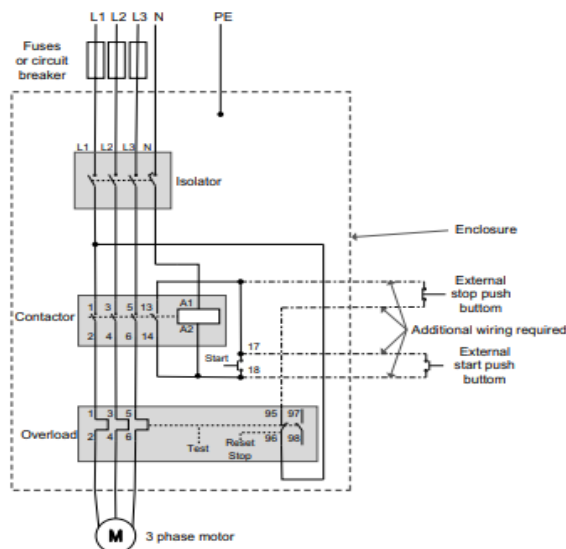
Additional start and stop stations can be wired to the DOL control circuit. In principle, the start buttons should be momentary normally open device and wired in parallel with terminals 17 & 18.

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

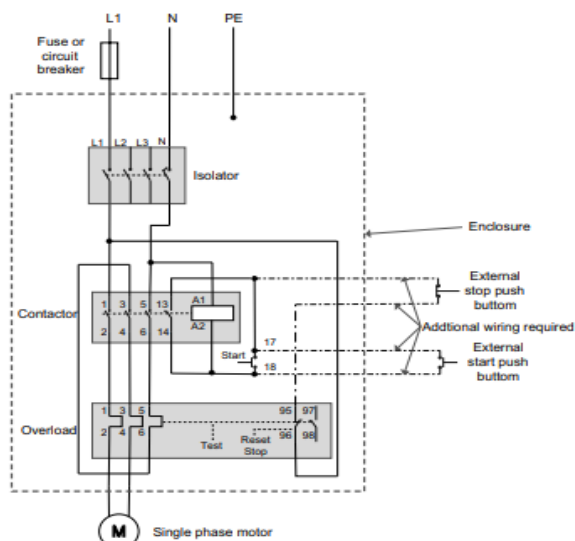
#### Europa remote stop/start stations

Metal  
RM2GES55  
RM2GR

Plastic  
RC2GES55  
RC2PGR



### Wiring of additional start stop devices on DOL devices for 240V single phase with 240V coil



## (DOL) Motor Starter With Isolator

Instructions for Direct-On-Line

