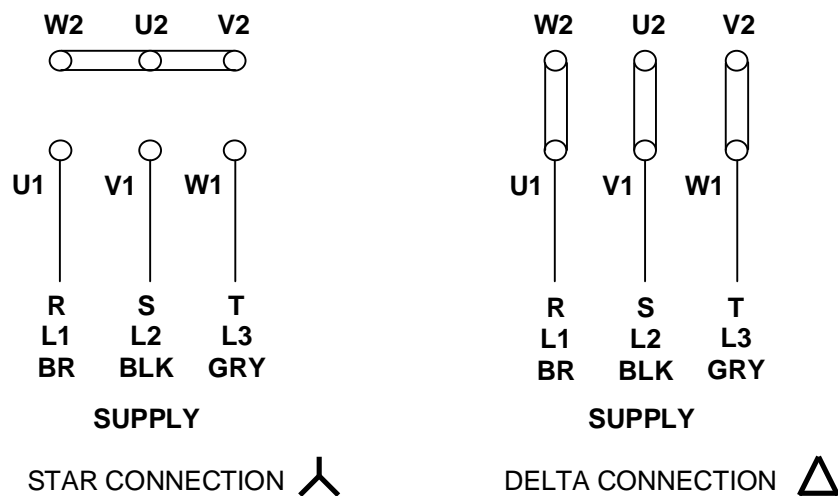


## Wiring Information for standard **Three Phase Electric Motors**

Before installing and operating this Motor please read the following instructions.

Applies to Three Phase Motors series - **DPIG/DPIH/EMT/PEMT/TM/TMA**



### Motor normally supplied connected 400 Volts

**Wiring diagrams** - It is essential that the Motor is connected to the supply in accordance with the relevant diagram or instructions for that Motor. If for any reason the diagram is not available/unreadable or the installer is unsure then please contact our works for instructions prior to connection. Also ensure that any installation complies with current electrical and safety regulations.

**Rotation** – Connection of the supply L1, L2, L3 (R, S, T) as shown above will give clockwise rotation (facing shaft end). To reverse rotation, interchange any two phases of the supply connections.

Attempting to run it in the wrong direction can often damage machinery. Please check the rotation of the motor before connecting to any drive. Unless requested by a customer all motors are supplied with clockwise rotation looking at the shaft end (drive end).

## Kenworth Electric Motors

A Division of Kenworth Products Ltd

U.K Distributors for FFD, E.M.G, Bartec-Varnost and Electromotor  
Unit 2, Crossley Mills, New Mill Road, Honley, Holmfirth, HD9 6QB, England

**Tel: +44(0)1484 660222**

**Fax: +44(0)1484 660333**

## General Connection/Supply information

The terminal box on a standard single speed motor contains 6 winding terminals and at least one earth terminal.

Motors that have been specified with thermistors, anti-condensation heaters or switches will have extra terminals for these items inside the terminal box.

Earthing must be carried out in accordance with current regulations before the machine is connected to the power supply.

The body of the motor should be bonded to earth using the external earth screw.

The voltage is shown on the motor nameplate.

**Frames 56-100** – Standard motors are dual voltage 230/400 and should be connected in Star for high voltage (e.g. 400 volt) or Delta for low voltage (e.g. 230 volt). May be Star/Delta started if used on a low voltage supply.

**Frames 112-132** – May be Star or Delta for 400 volt Check if Star nameplate states 230/400. If motor is Delta nameplate states 400/690 or 400.

**Frames 160-315** – Suitable as standard for Direct on Line (Delta connection) or Star/Delta starting.

**Star/Delta starting** – Ensure the supply voltage is the same as the motor voltage in Delta. Remove the terminal block links and connect the terminals to the appropriate connections on the starter.

**NOTE – MOTORS MUST NOT BE USED ON INVERTORS/SPEED CONTROLLERS WITHOUT CHECKING WITH OUR SALES OFFICE.**

**Operating Conditions** – The motor is intended for use in an industrial drive application.

Normal ambient temperature limits are -25°C to +40°C with a maximum altitude of 1000m above sea level.

### Effects on standard electric motors of Temperature and Altitude

Ambient Temperature		30	40	45	50	55	60
Rated output reduced to %		100	100	96	90	86	82

Altitude of site metres	1,000	1,500	2,000	2,500	3,000	3,500	4,000
Rated Output reduced to %	100	97	94	90	86	82	77

## Maintenance

Always **isolate** the supply to the Motor before carrying out any maintenance. Motors supplied with pre-greased sealed for life bearings should require no maintenance other than ensuring that the fan cowl and cooling fins of the motor are clear of dust dirt and other obstructions. When Motors are supplied with re-greasable bearings then this should be carried out after 6 months and then dependant on the running time of the motor. **Note** – Do not over fill with grease as this can result in serious damage to the bearings.

### Motors fitted with re-greasable bearings

Speed r.p.m	Lubrication Interval (h)	or	Time (months)	Speed r.p.m	Change Grease (h)	or	Time months
Max. 1800	1,500		6	Max. 1800	10,000		24
Above 1800	750		3	Above 1800	5,000		12

The maintenance intervals are based on standard ambient conditions.

The table above applies to horizontally mounted motors.

Lubrication intervals for vertically mounted motors are half the times shown.

Re-grease motors while running.

The times shown are based on a bearing temperature of 80°C values should be halved for every 15°C increase in bearing temperature.

## Spares

When ordering spares please state the KP number for the motor which is shown on an Orange sticker in the terminal box. If this is not available then please take all information from the rating plate before contacting our sales office, including mounting information (does the motor have feet if a flange is fitted what type B5, B14 etc.). If single phase is it Capacitor Start Capacitor Run or Permanent Capacitor type.

## Guarantee

All motors supplied carry a 12-month guarantee valid from date of first operation or 18-months from date of despatch whichever expires soonest. In the unlikely event of a failure occurring during this period the buyer or user should not undertake any repairs by themselves or a third party without written consent from our office. Failure to do this will result in the guarantee being invalid.

**NOTE** – Any goods that are to be returned must be accompanied by an RMA (Returned Motor Authorisation). Goods returned without an RMA will be rejected by our goods inwards. If Motors are to be returned contact our sales office for the required forms.

Any goods returned and found to be of merchantable quality and free of proposed defects then the buver shall bear a restocking or redeliverv charae of 25%.

# Kenworth Electric Motors

A Division of Kenworth Products Ltd

U.K Distributors for FFD, E.M.G, Bartec-Varnost and Electromotor  
Unit 2, Crossley Mills, New Mill Road, Honley, Holmfirth, HD9 6QB, England

**Tel: +44(0)1484 660222**

**Fax: +44(0)1484 660333**

## Installation/Operation/Maintenance instructions for standard THREE PHASE electric motors

**Warning** – All work must be carried out by appropriately qualified personnel. Always use any lifting facilities provided. The manufacturer will not accept any warranty claim arising from incorrect mounting, connection or operation.

### Delivery

On receipt of the Motor please inspect the goods for any damage and report to the carrier immediately. Note that any goods signed for, but found to be damaged, can not be claimed for under warranty.

### Storage

The Motors should be stored indoors in a dry, vibration and dust free environment within the ambient temperature range of -20°C to +75°C and humidity of no more than 90%. If anti-condensation heaters are fitted they should where possible be energised.

### Installation and connection

Qualified Electro-mechanical personnel shall install the motor. Ensure that the installation is in compliance with all rating plate data and any warning labels. If the Motor has been stored for any length of time the insulation resistance should be tested using an Ohmmeter and be a least 10 MΩ. In the event that the insulation resistance is lower than this then the Motor should be subjected to a drying process. Prior to installation the information on the rating plate of the Motor should be carefully checked to ensure that it conforms to the electrical supply and control gear to be used. Standard Motors are designed to operate in an ambient temperature of -20°C to + 40°C, a relative humidity of 100% and an altitude of up to 1000m. If the motor is to be used outside these parameters then please refer to our works before installation. Motors can be manufactured to meet non-standard requirements. Care should be taken when fitting pulleys, couplings etc. as excessive loading can result in permanent damage to the motor bearings. It is also important to align pulleys and couplings correctly as failure to do so can result in excessive vibration and ultimately bearing collapse or shaft breakage. The correct belt tension is little more than is necessary to transmit the load.

Ensure that the connection cables between starting equipment and the Motor are adequately rated for both full load current and starting current so that excessive voltage drop does not occur. **Appropriate overload and short circuit protection must be fitted and correctly adjusted for all motors.** Fuses should not be used as overload protection. Bond all equipment to earth in accordance with legislation. Electrical compliance should be in accordance with BS 7671.

When mounting a Motor of the form B3 (with feet) particular care must be taken to ensure that the surface to which the Motor is mounted is flat. Failure to do this can result in the casting twisting and the feet cracking or breaking when the fastenings are secured.

With B14 mounting (flange or face) the length of the fastenings must be checked before fixing. Using fastenings that are to long can result in damage to the winding of the Motor as fastening holes in the B14 flange continue through the flange and into the Motor.

In addition to the main winding and earth terminals the terminal box may also have connections for thermistors, anti-condensation heaters or bimetallic switches.

**Warning** – If Anti-condensation heaters are fitted a supply may be connected to the motor even when being stored ready for use.