

3 Phase Industrial Extension Leads **by** **EEC Technical Services**

The EEC 3 Phase industrial extension leads are available in 3 ranges:

Light Duty*:

The “Light Duty” extension lead is suitable for indoor use and infrequent short duration outdoor use. The “light” extension lead has the shortest maximum length allowed from the outlet to the appliance

These light duty extension leads are recommended for indoor use or for short duration outdoor applications where the ambient temperature is below 40°C.

For extended use outdoors or in environments with high ambient temperatures use the Heavy extension leads.

(Intermittent use: Ambient temperature above 40°C below 45°C)

Heavy*:

The “heavy” extension lead is suitable for indoor, outdoor and harsh environments. The “heavy” extension lead has a larger diameter cable and longer maximum allowable length from the outlet to the appliance than the “light” lead.

Construction*:

For indoor, outdoor and harsh environments.

The “construction” lead has a larger diameter cable and longer maximum allowable length from the outlet to the appliance than heavy-duty leads. It is suitable for use on sites that have a few 3 phase outlets, or the lead is connected to a temporary site power board that is a long way from the local distribution board. Where voltage drop is a consideration (either the machine is a considerable distance from the main distribution board or has high starting current).

*For the calculation of the maximum extension cable length, the outlet is assumed to be 25m from the distribution board and the extension lead length is additional.

Extension Lead Specifications

Cable Specifications:

Rubber insulated H07 standard cable.

Submersible to:200m

Max Voltage: 06/1kV

Insulation: Ethylene-propylene rubber (EPR) R-EP-90 90 deg C Conductor

Sheath Colour: Black

Suitable for fresh water, salt water, sewage/contaminated water, UV, sunlight, oil and weather resistant.

Cable Temperature Range: -25 deg C to +90 deg C (mobile) -40 deg C to +90 Deg C (fixed)

Maximum permissible short-circuit temperature: 250 deg C for 1 Sec

Fittings.

The leads are made using quality SAA, and Standards Australia approved, Australian and International Standard Plugs and Sockets.

Cord Length Calculation.

The current ratings of the cable comply with AS3008.1.1:2009 Table 14 "Touching" for calculating the "Light Duty" indoor use current capacity and the "Exposed to sun" current carrying capacity for the "Heavy duty" and "Construction" extension leads.

When calculating the total lead lengths for general use, the following assumptions:

1. From the distribution board (DB) to the outlet the cable run distance is 25m.
2. The cable used for the supply from the DB to the outlet is the minimum cable size required.
3. Maximum voltage drops from the MDB to the appliance did not exceed 5% as per AS3000.
4. For calculating the voltage drop, AS3008.1.1:2009 Table 48 90°C cable operating temperature resistance used as the worst-case scenario. (Under normal operation the cable can be warm to touch)
5. When calculating the maximum extension cord length for equipment with high starting currents. The maximum voltage drop is 3%, and the running current is close to the lead rated current, and the starting current is 4-10 times the full load current of the motor.

Maximum Allowable 3 Phase Extension Lead Length.

(For Ethylene-propylene rubber insulated (EPR) R-EP-90 90 deg C Conductor cords)

<u>10A 3 Phase Lead</u>	Cord CSA in mm ²	Max Length For general use	The maximum length for use with any equipment that has a high starting current
Light	1.5	40m	15m
Heavy	2.5	70m	25m
Construction	4	110m	40m

<u>20A 3 Phase Lead</u>	Cord CSA in mm ²	Max Length For general use	The maximum length for use with any equipment that has a high starting current
Light	2.5	30m	10m
Heavy	4	50m	15m
Construction	6	75m	20m

<u>32A 3 Phase Lead</u>	Cord CSA in mm ²	Max Length For general use	The maximum length for use with any equipment that has a high starting current
Light	4	40m	15m
Heavy	6	60m	25m
Construction	10	100m	45m

<u>40A Lead</u>	Cord CSA in mm ²	Max Length For general use	The maximum length for use with any equipment that has a high starting current
Light	6	30m	15m
Heavy	10	75m	30m

<u>50A Lead</u>	Cord CSA in mm ²	Max Length For general use	The maximum length for use with any equipment that has a high starting current
Heavy	10	60m	30m



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