ABN: 39101655734

Electrical, Electronics and Controls Technical Services
P.O. Box 1619, Hoppers Crossing, Victoria 3029
Phone: +613 9731 6101 Fax: +613 9748 5025
REC: 17796

3 Phase Industrial Extension Leads by EEC Technical Services

The EEC Industrial extension leads are available in 3 ranges:

Light Duty*:
The "Light Duty" extension lead is suitable for indoor and outdoor use. The "light" extension lead has the shortest maximum length allowed from the outlet to the appliance.

Light-duty extension leads are recommended for indoor or outdoor applications with an ambient temperature below 40°C.

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

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

Heavy Duty*:
The "heavy-duty" extension lead is suitable for indoor, outdoor and harsh environments. The "heavy duty" extension lead has a larger diameter cable and longer maximum allowable length from the outlet to the appliance than the "light duty" lead.

Extra Heavy Duty*:

For indoor, outdoor and harsh environments.

The "extra heavy duty" 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 outlets if 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).

Calculation of the maximum extension cable length.

In industrial installations, the outlets can be a substantial distance from the distribution board (fuse board). For calculating the voltage drop from the distribution board and the extension lead's maximum length, the power outlet is assumed to be 25m from the distribution board.

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Extension Lead Specifications

Cable Specifications:

Rubber insulted H07 standard cable.

Submersible to:200m

Max Voltage: 06/1kV

Insulation: Ethelyne-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 "Extra Heavy duty " 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 30m.
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 DB to the appliance did not exceed 5% as per AS3000.
4. For calculating the voltage drop, AS3008.1.1:2009 Table 48 60°C cable operating temperature resistance is used as the worst-case scenario. (Under regular operation, the cable can be hot to the touch).
5. The maximum extension cord length for equipment with high starting currents(equipment with motors with a steady state running current greater than 50% of the rating of the extension lead).
    a. Maximum voltage drop of 3% has been used.
    b. The full load running current is close to the lead-rated current.
    c. The starting current is 4-10 times the full load current of the motor, which has been assumed to determine the lead length for starting motors.

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Maximum 3 Phase Extension Lead Length.

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

10A 3 Phase Lead	Cord CSA in mm²	Max Length For general use	The maximum length for use with equipment that has a high starting current. (i.e. motors)
Light	1.5	40m	25m
Heavy	2.5	70m	40m
Extra Heavy	4	110m	70m

20A 3 Phase Lead	Cord CSA in mm²	Max Length For general use	The maximum length for use with equipment that has a high starting current. (i.e. motors)
Light Duty	2.5	30m	10m
Heavy Duty	4	50m	15m
Extra Heavy Duty	6	75m	20m

32A 3 Phase Lead	Cord CSA in mm²	Max Length For general use	The maximum length for use with equipment that has a high starting current. (i.e. motors)
Light	4	40m	15m
Heavy Duty	6	60m	30m
Extra Heavy Duty	10	100m	45m

50A Lead	Cord CSA in mm²	Max Length For general use	The maximum length for use with equipment that has a high starting current. (i.e. motors)
	10	60m	30m

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