

shelfbot

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Shelfbot Electrical Specification v2

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1. Introduction

This document outlines the electrical requirements for each robot in a Shelfbot installation. It is intended for warehouse designers, electricians, racking installers, and commissioning technicians responsible for preparing a site for Shelfbot deployment.

2. Purpose & Scope

2.1 Purpose

The purpose of this specification is to define the electrical infrastructure required to safely and reliably operate the Shelfbot Automated Storage & Retrieval System (ASRS). This includes outlet placement, cable routing, dedicated circuits, protection devices, and installation guidelines for each racking row that houses a Shelfbot.

2.2 Scope

This document covers:

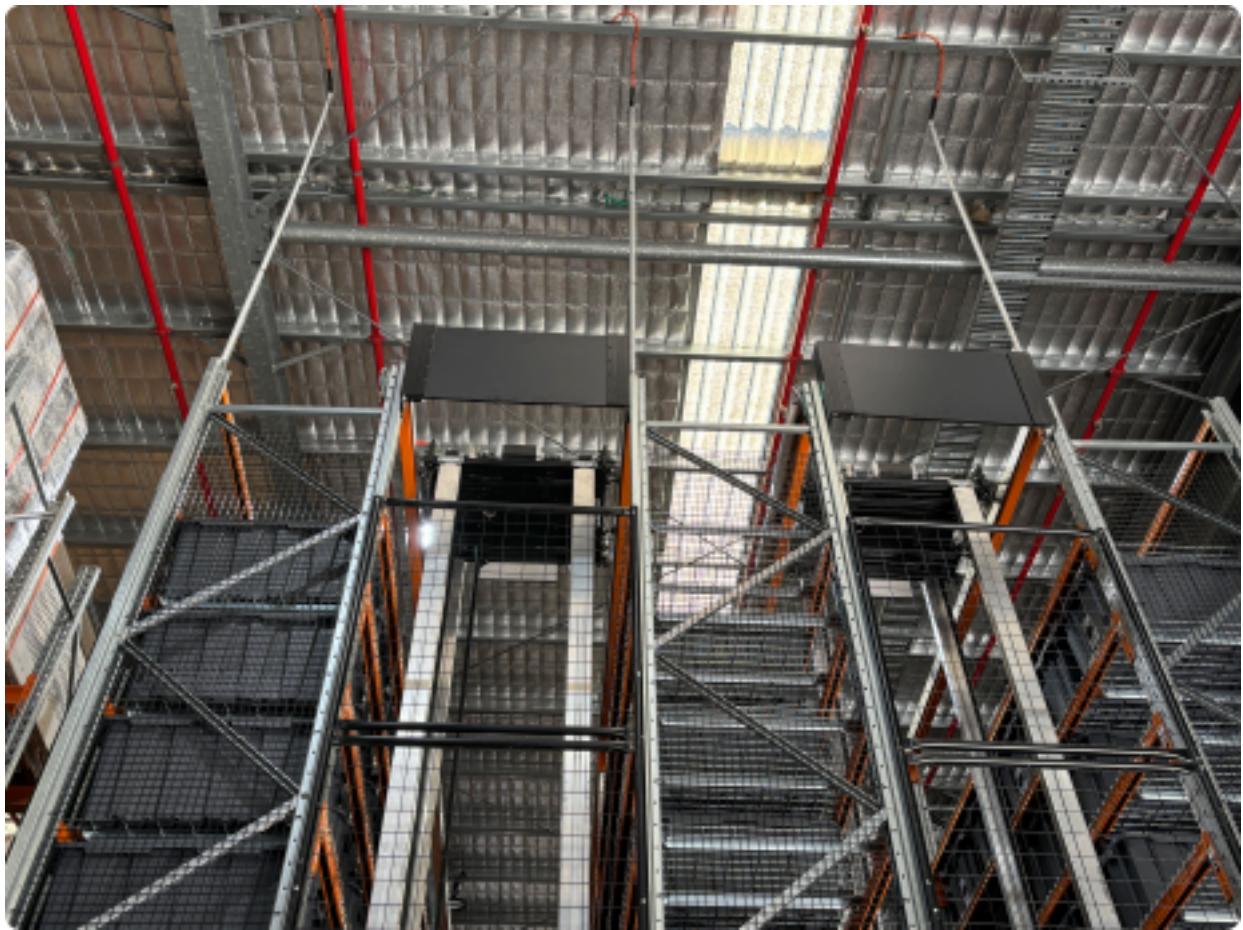
- Electrical requirements for Shelfbot robots
- Electrical requirements for the Shelfbot Server cabinet
- Outlet type, placement, and mounting specifications
- Conduit and cable routing requirements
- Compliance obligations for installers
- Customer responsibilities relating to power and infrastructure

This document does not cover robot operation, mechanical installation, WMS integration, or safety procedures. For those topics, refer to the Shelfbot User Manual

3. System Overview

Each Shelfbot installation consists of:

- One 15A Industrial GPO mounted on the racking upright
- Rigid conduit routed inside the racking upright
- Cable feed via ceiling drop
- Supply Voltage: 240VAC $\pm 10\%$
- Frequency: 50–60 Hz
- Current: 16A per robot
- Circuit Protection: User-supplied 16A breaker or inline fuse



Example Installation with Three Rows of Racking and Two Shelfbots

4. Parts & Hardware

Recommended parts:

- Voltex C66C315D – 15A Switched Socket Outlet
- Voltex C66CMB – Metal Pendant Bracket for upright mounting

Alternative brands (e.g., Clipsal) may be used if equivalent electrical and mechanical specifications are met.
Ensure the following;

- A metal pendant bracket is available for mounting
- The outlet is rated IP66 or better
- All hardware is suitable for warehouse environments

Switched Socket Outlets
3 Flat Pin 250V 10-15A

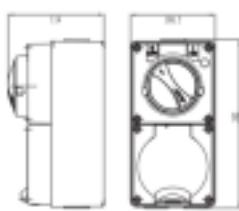
Specifications:

| | |
|--------------------------------------|---|
| Case Material: | Polycarbonate |
| Protection type: | Without protection [No IP65] |
| IP rating: | IP65 |
| Operating temperature: | -25°C to +70°C |
| UL Resistant: | Yes |
| Chemical resistant: | Low - Not suitable for environments with chemicals/ salts |
| Cable entry in enclosure: | 25mm x 2 and 30mm x 1 |
| Max Terminal size for cable: | 25mm ² |
| Appropriate entry reducers included: | |

Compliance:

| | |
|-----------------------|-----------------------------------|
| AS/NZS 2916 | AS/NZS 3205/IEC 60364-7-1 Annex C |
| AS/NZS 3325 | |
| AS/NZS 3308 +AS-41-40 | |

Dimensions:



| Reference | Value | Amp | Power | Switch | Mount | MTBF | UL Rating | UL Rating |
|-----------|-------|-----|-------|--------|-------|------------|------------|------------|
| 60023400 | 200 | 10 | 2 | ○ | 250 | 1000000000 | 4000000000 | 4000000000 |
| 60023400 | 200 | 10 | 3 | ○ | 250 | 1000000000 | 4000000000 | 4000000000 |



Voltex C66C315D Voltex C66CMB Metal Pendant Bracket

5. Power Outlet Location & Mounting

The 15A Industrial GPO must be:

- Mounted on the inside of the racking upright
- Positioned ~320 mm from ground height
- Located just above the mesh deck
- Installed on the left-hand side when facing into the aisle
- Positioned at the front of each row, where the operator accesses the robot through the safety door

This placement ensures:

- Consistent robot docking
- Accessible serviceability
- Compliance with Shelfbot safety clearances



Directly above first level of shelving ~320mm from ground

6. Cable Requirements

Each Shelfbot requires:

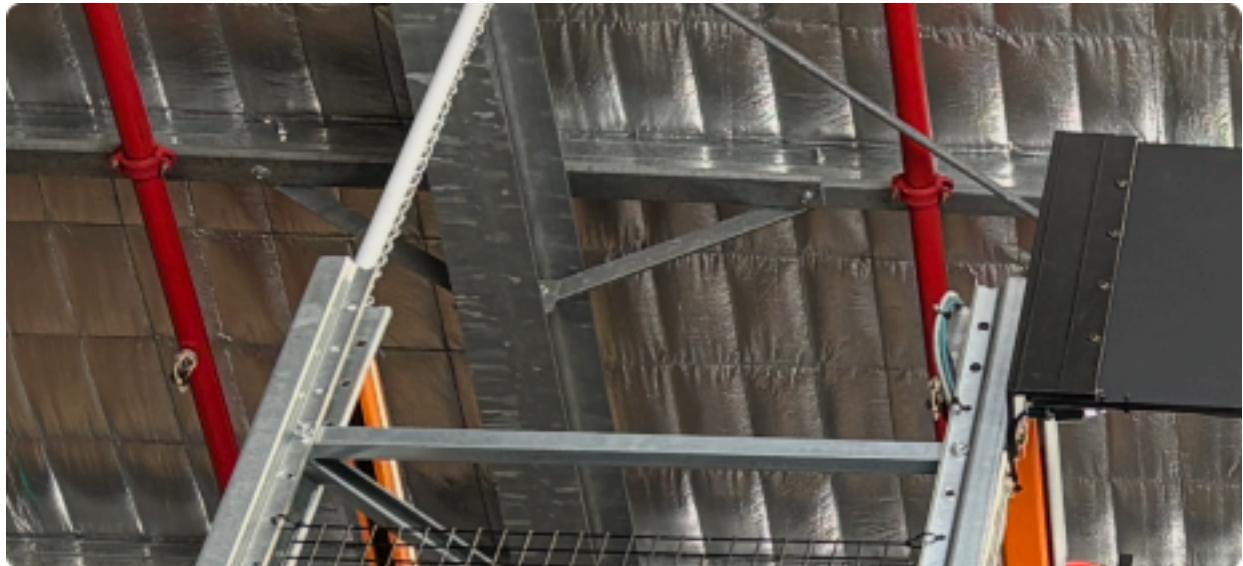
- A dedicated 15A protected circuit
- Circuit must not be shared with other equipment
- Cable must be routed from the ceiling down the racking upright
- 20mm rigid conduit must be installed inside the upright (see diagram on page 7) 
- Cable must exit via the pendant bracket and into the IP66 outlet

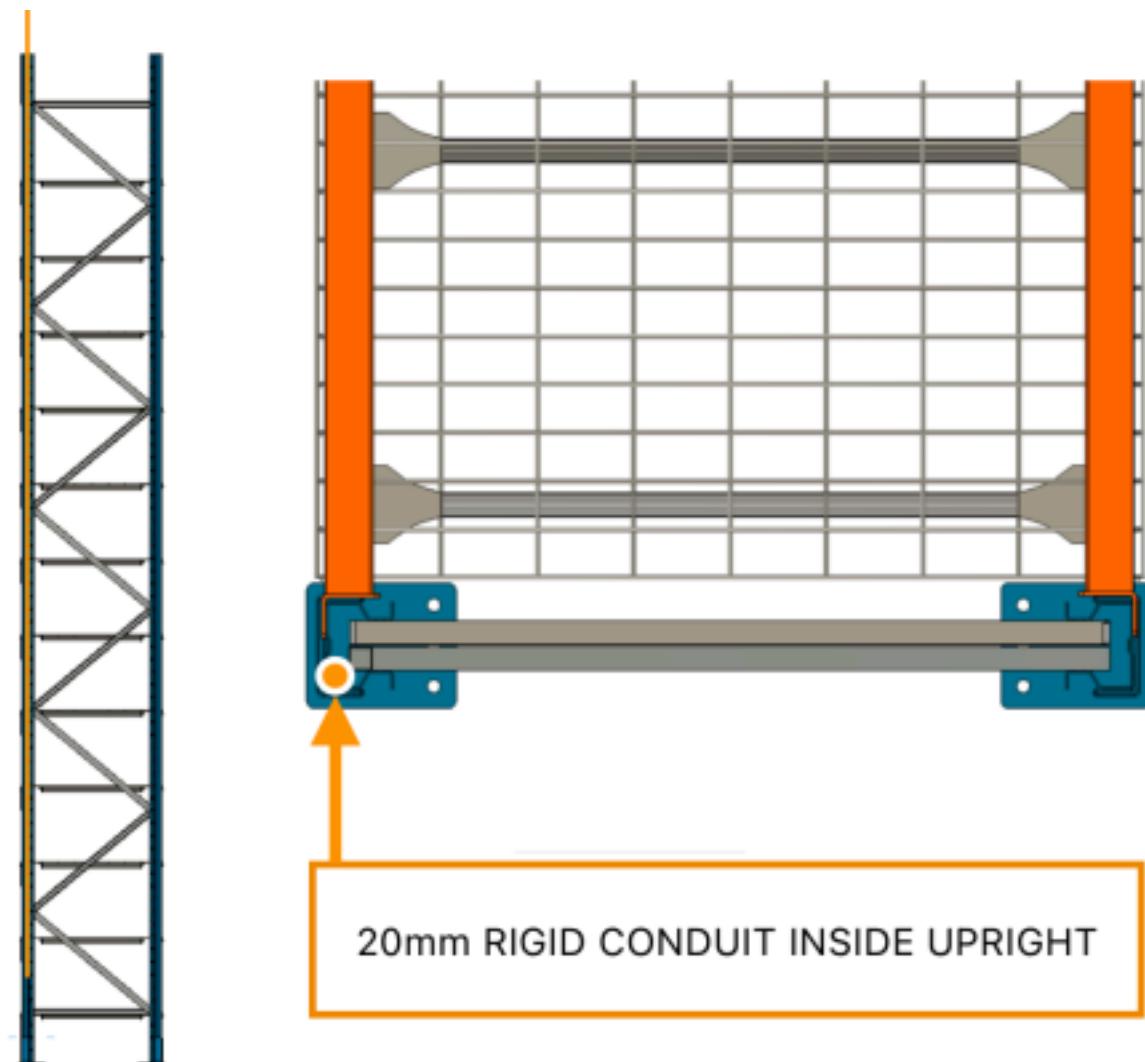
Recommended cable:

- Minimum 2.5mm² 3-core cable (or as determined by licensed electrician per voltage drop requirements)
- All cabling must comply with AS/NZS 3000 (Australian Wiring Rules)
- Conduit must be securely fastened and free of sharp edges or obstructions

Cable routing must not interfere with:

- Sprinkler lines
- Racking structural elements
- Shelfbot safety guarding
- Robot travel path





Cable drop from ceiling Cable Conduit must be installed inside the racking upright