

BE ROBOT READY

Preparing Your Site for Robotic Automation



1 Know Your Working Environment

Understanding the Landscape

- Use an Enclosed Indoor Facility
- Ensure an Ambient Temperature Between 0 to 45°C
- Control Humidity Levels Between 5% to 95% RHa
- Ensure Clean Air, Free from Dust, Flammables, Explosives and Corrosive Gasses
- Use Electrostatic Discharge Materials for the Floor
- Operate Within an Altitude Range of -60 to 3,000 Meters
- Enable Ambient Lighting and Avoid Direct Sunlight
- Use Halogen/Mercury Lights below 10,000 lux
- Use Fluorescent Lamps below 6,000 lux



2 What's Beneath: Facility Floor

Floor Foundations for Success

- Make Sure the Facility Floor is Flat and Even
- Ensure a Smooth Surface
- Assess and Enhance Surface
- Recommended Gap**
10 mm gap for optimal operation
- Saw Cuts**
Fill all saw cuts for joint protection
- Joint Filling**
Fill joints within 12 months with Shore A hardness 40
For older joints fill with Shore A hardness 60-70
- Resealing**
Reseal only if joints show signs of deterioration within 6 months of construction.
- Enable Obstacle-free Facility Floor
- Construction Joints**
Fill joints within 12 months with Shore A hardness 40
For older joints fill with Shore A hardness 60-80
- Resealing Construction Joints**
Reseal only if joints show signs of aris deterioration within 6 months of construction.
- Old Joints**
Seal with joint sealant of Shore A hardness 60-80 if over 12 months and >10 mm.
- Warehouse Roof and Walls**
Shield against liquid spillage and dust.
- Safeguard against rodents and birds.
- Establish a dedicated monitoring and service room for the GreyOrange team.



3 Electrical Infrastructure Setup

- Power Supply Specifications**
Single Phase: 230/110V AC, 50/60Hz
Three Phase: 200-400/415/480V AC, 50/60Hz
- Distribution Channel**
Single Phase: UPS
Three Phase: Central Distribution Panel to MCB with Industrial Socket
- Raw Power Path**
Single Phase: UPS to Distribution Board to Power Sockets
Three Phase: Directly to MCB with Industrial Socket
- Location of Power Sockets**
Single Phase: Near Pick-Put Station (PPS)
Three Phase: Near Ranger Bot Chargers
- Importance of UPS**
Single Phase: Prevents operational malfunctions during power outages
Three Phase: Not required due to system redundancy for power outage management
- Customer Responsibility**
Facilitate drop points for UPS and raw power supply



4 The 'IT' Factor: Network Infrastructure

1. Lan Wiring Insights

- Role:**
Connects servers to Ranger™ equipment (Auto-Charging Station, PPS, Wi-Fi access points).
- Hardware Recommendation:**
Cat 6 UTP wires with RJ45 plugs for reliable and fast communication.
- Length Restriction:**
60 m (196.85 ft) for 10/100 Ethernet port.
> 60 m: Install a field rack near the Ranger™ area to connect to the server room.

- Function:** Cryptographic network protocol for secure remote login and network services.
- Usage:** Allows GreyOrange to access customer servers securely for maintenance and updates.
- Cable Gap:** Maintain a minimum 300 mm (11.81 in) gap between power and network cables to prevent electrical noise interference.

2. Internet Access Necessities

- Role:**
System monitoring
Off-site server access (WWW or VPN)
Troubleshooting
Code deployments
Secure Shell (SSH) Protocols

3. Improving Wi-Fi Network

- Optimal Channel Usage:**
 - Use more channels to allow for greater distance between coverage areas.
- Enhances signal strength, reduces interference and improves signal-to-noise ratio for higher data rates.
- Minimizing Interference:**
 - Arrange and configure access points strategically.
 - Mitigate interference by optimizing access point placement and settings.
 - Prioritize minimizing interference from other Wi-Fi signals over general radio frequency disruptions.



Transform your facility into a hub of innovation with automation using the insights above. Once you have prepared your site for AMRs, we can help you unlock unique advantages and set new benchmarks that resonate with your specific needs and goals.

TALK TO US

