

ELECTRICAL CABLE SIZING REPORT

PROJECT INFORMATION

Project Name:	Industrial Motor Control Panel
Engineer:	John Smith, PE
Date:	2025-11-29 05:00
Report ID:	CBL-20251129_050029
NEC Version:	2023

CALCULATION SUMMARY

Parameter	Value	Unit
Load Current	30	Amps
Voltage	208	Volts
Distance	150	Feet
Ambient Temperature	40	°C
Installation Type	N/A	
Recommended Cable Size	6 AWG	
Voltage Drop	2.13	%
NEC Compliance	YES	

DETAILED CALCULATIONS

NEC Reference: NEC 310.60, NEC 210.19

Cable Ampacity Analysis

Base Ampacity	55 A
Temperature Derating Factor	0.94
Installation Derating Factor	0.8

Adjusted Ampacity	41.4 A
Required Ampacity	37.5 A

Voltage Drop Analysis

Voltage Drop	2.13 %
Maximum Allowable	5.0 %
Result	PASS

RECOMMENDED CABLE PRODUCTS

SIEMENS Cables

Part Number	Description	Price	Availability
1FK7022-5AK71-1QG0	10HP Motor...	\$2850.00	In Stock

ABB Cables

Part Number	Description	Price	Availability
M3BP 132SMA 4	10HP Motor...	\$2650.00	In Stock

INSTALLATION NOTES

- Verify local electrical codes and amendments to NEC 2023
- Maintain proper conduit fill ratios per NEC Chapter 9
- Ensure proper grounding and bonding per NEC Article 250
- Use appropriate cable glands for cable entry/exit
- Allow for proper cable pulling tension during installation
- Document all calculations and as-built modifications

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