

1.0 Scope

- 1.1 To define the requirements for 3-Phase RY Electric Wire Rope Hoist on Motorized Cranes.

2.0 Codes and Standards

- 2.1 CMAA 74, "Specifications for Top Running & Under Running Single Girder Electric Traveling Cranes Utilizing Under Running Trolley Hoist"
- 2.2 ASME B30.16, "Overhead Hoists (Underhung)"
- 2.3 NFPA 70, "National Electric Code"
- 2.4 ASME HST-4M 1999, "Performance Standard for Overhead Electric Wire Rope Hoists"
- 2.5 FEM 9.682, "Rules for the Design of Serial Lifting Equipment – Selection of Lifting Motors"
- 2.6 ISO 4301, "Cranes and Lifting Appliance – Classification"
- 2.7 IEC 34-5, "Rotating Electrical Machines – Classification of Degrees of Protection Provided by Enclosures of Rotating Electrical Machines (IP Code)"
- 2.8 IEC 529, "Degrees of Protection Provided by Enclosures (IP Code)"

3.0 Design

3.1 RY Wire Rope Trolley Hoist

- 3.1.1 UL Listed to UL1340 and CSA 22.2 No. 33.
- 3.1.2 H4 Duty Rating – Heavy Duty Hoist Motor is Fan Cooled (TEFC) with Class F Insulation.
- 3.1.3 Heavy Duty Pull Rotor Brake on 3 & 5 ton with 5-Year Hoist Brake Warranty.
- 3.1.4 IP55 Electrical Enclosure and motors suitable for harsh environments.
- 3.1.5 VFD Control for Hoist and Trolley Function.
- 3.1.6 Standard No Load High Speed Function.
- 3.1.7 Equipped with overload limiter and count hour meter – function of VFD.
- 3.1.8 Electronic Thermal Motor Protection – function of VFD.
- 3.1.9 Trolley guide rollers, rubber bumpers and drop stops are standard.

- 3.1.10 Full 360 degree Rope Guide.
- 3.1.11 Premium Wire Rope Standard (IWRC with Coated Core).
- 3.1.12 Ultra - Low Headroom.
- 3.1.13 Easy Access Design Simplifies Inspection of Rope, Drum and Related Components.
- 3.1.14 Installation on Beam Requires No Special Tools.
- 3.1.15 Externally Adjustable Upper/Lower Limit Switch Limit.
- 3.1.16 Standard Upper Emergency Paddle Limit.
- 3.1.17 Standard 25 & 33 Foot of Lift.

3.2 **End Trucks**

- 3.2.1 Totally enclosed Non-Ventilated Motors (TENV) with class B insulation with Adjustable DC Brakes, IP 55 Rated.
- 3.2.2 Helical Gear Reducers.
- 3.2.3 Externally Adjustable, DC Brakes Allow Controlled Deceleration.
- 3.2.4 Thermal Overload Protection Standard.
- 3.2.5 Rubber bumpers and Rail Sweeps Standard.
- 3.2.6 Machined Steel, Flat Tread Wheels with Side Guide Rollers Reduced Wheel Friction.
- 3.2.7 Fully Machined Frames. Holes are Drilled and Tapped for Easy Installation.
- 3.2.8 Bridge Beam Hardware Kit Included.
- 3.2.9 Cross Bracing Provided for Spans Greater than 10 foot.
- 3.2.10 Top Running Frames ASTM A500 Structural Tube for Superior Strength and Rigidity.
- 3.2.11 Guide Roller to Span Ratio is 8:1.

3.3 **Crane Control Panel and Drives**

- 3.3.1 Electronic Acceleration Control standard via Soft Start or VFD.
- 3.3.2 Completely Pre-Wired and Tested.
- 3.3.3 Through-the-Door Fused Disconnect Switch is OSHA Compliant and Lock-Out Compatible.

- 3.3.4 Control Transformer with Primary and Secondary Fusing Provides Low Voltage Control Circuit.
- 3.3.5 Fusing for Crane Drives Protects Motors and are NEC Compliant.
- 3.3.6 Thermal Overload Relay (Auto-Reset) Protects Crane Drives from Overheating.
- 3.3.7 Panel Built to NEC Codes (Panel is NEMA4/12 and UL 0508A listed under normal circumstances).

3.4 **Wiring**

- 3.4.1 Industrial Flat Cable Festoon Track System used on both Hoist/Trolley Power (DWRPA).
- 3.4.2 Optional Roving Pendant – (DWRPB) Flat Cable Roving Pendant Provides Safe and Effective Handling without Close Proximity to Load.
- 3.4.3 Durable, Tangle-Free, Clean Design Provides Smooth and Maintenance Free Operation.
- 3.4.4 Pre-Wired, Pre-Fit and Completely Pre-tested Electrical Panel. Minimal Wiring Required.
- 3.4.5 Optional Plug and Play wiring with quick disconnect plugs for easy Crane Assembly.
- 3.4.6 Modular Design for Easy Packaging and Installation.
- 3.4.7 Wiring meets NEC Codes.

3.5 **Paint**

- 3.5.1 Water Based Enamel, Sprayed on Direct to Metal, Semi-Gloss Finish.
- 3.5.2 Color: RAL 1007 Yellow.
- 3.5.3 VOC Compliant.
- 3.5.4 Dry Film Thickness (DFT) of 2-4 mils.

4.0 **Documentation**

- 4.1 Each Crane shall be supplied with a Crane Binder that includes the following information:
 - 4.1.1 CMAA 79, "Crane Operator's Manual"
 - 4.1.2 Wiring Diagrams/Assembly Drawings

- 4.1.3 Product Owner's Manuals
 - 4.1.3.1 Important Information and Warnings
 - 4.1.3.2 Installation and Operation
 - 4.1.3.3 Inspection
 - 4.1.3.4 Lubrication, Maintenance and Handling, and Troubleshooting
- 4.1.4 Repair and Warranty Service Information