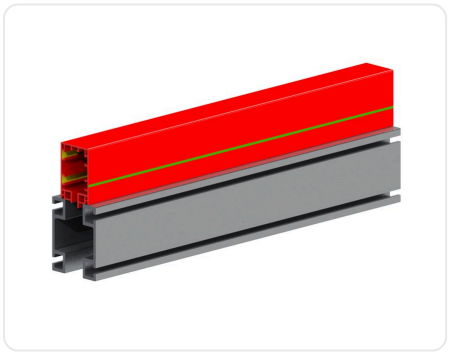
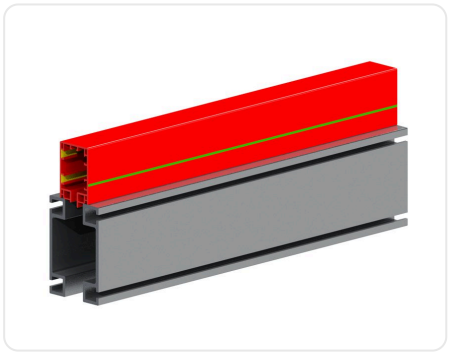
Electrified Rail



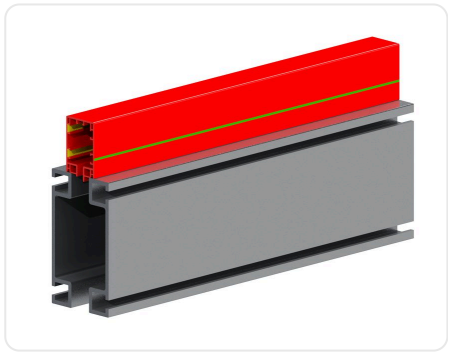
ERAIL electrified rail systems



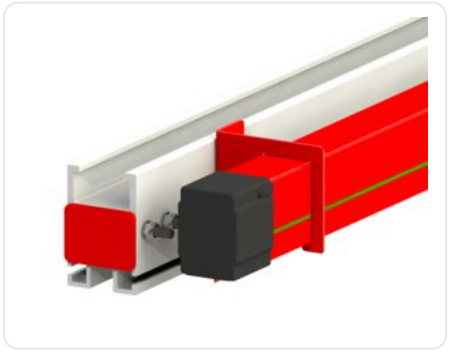
ERAD4000



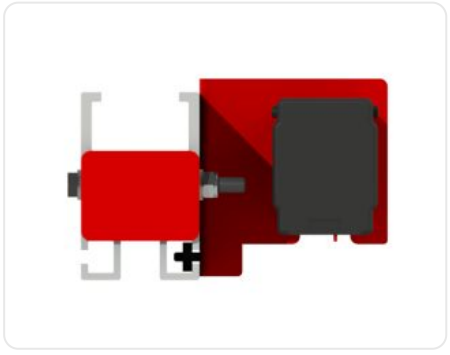
ERAD6000



ERAD7000



Side-mounted style



Side-mounted – Front view



Side-mounted – Top view

Series: ERAD4000 / ERAD6000 / ERAD7000

The Electrified Rail System is a complete overhead power delivery solution that can be combined with the **Knight Servo System**, VFD trolleys, power tools and other electrical equipment.

The **ERAD** series is a fully enclosed electrical system that eliminates the clutter of cable festooning. Power is carried through the conductor rail (ERail), mounted on top of the ERAD4000, ERAD6000 or ERAD7000 aluminum rail. The standard ERail is **4-pole, rated 60 Amp, 240/480V** – powering multiple systems from a single rail assembly.

ERail can also be mounted on **the side of the aluminum rail** – reducing overall height and allowing standard Knight rail to be used instead of custom top-mounted rail. It can be **retrofitted to existing Knight systems** to eliminate electrical festooning without replacing the rail.

ERAD aluminum rail is supplied **without splices** in lengths of up to 25 ft [9.1 m] per section. Maximum system capacity is up to **3,000 lbs [1,360 kg]**.

***Note:** The top-mounted style is patent pending. The standard ERail is 4-pole, rated 60 A, 240/480V. Accessories can be positioned anywhere along the rail.

Features & benefits

Features

- Patent pending (top-mounted style)
- Fully enclosed electrical system
- ERail electrical capacity: up to **60 Amp / 690 Volt**
- Horizontal curved sections available
- Maximum capacity: up to **3,000 lbs [1,360 kg]**
- Complies with international standards
- Enhanced protection against electric shock
- Proprietary Knight adjustable hangers – flexible leveling during installation

Benefits

- Side-mounted rail option
- Eliminates trolley festooning and hanging power cables
- Simplified installation – conductor rail integrated into the suspension
- No tow bar required
- Compact stacked design – no separate load rail and power rail
- Twice the capacity of competing systems
- Can be retrofitted to existing Knight Global systems
- Saves installation time and cost

System components



ERail – Conductor Rail

4-pole with a rated current of 60 A. Carries power along the full length of the system.

ERail Conductor Trolley

Travels inside the ERail and works together with the Knight load trolley. Uses copper-graphite brushes for power and for control circuits above 35 V.

ERAD4000 / ERAD6000 / ERAD7000

Ergonomic aluminum rail used with Knight load trolleys. Lengths up to 25 ft [9.1 m] without splices. Capacity up to 3,000 lbs [1,360 kg].

Suspension Points

Adjustable hangers and end trucks support both the load rail and the ERail. Mount to I-beams, C-channel, angle iron and many other structural members.

ERail End Caps & Stops

Fitted to the ends of the ERail. The redundant end cap prevents the load trolley and ERail trolley from leaving the rail.

Power Supply End Feed

Power input connection for the ERail. Supplied as standard with 4 poles.

Load tables by model

***Deflection criteria:** Each hanger spacing is tested for the maximum single point load that produces deflection at a ratio of **1:350** (1" deflection per 350" of length), **1:450** (1" per 450"), **1:550** (1" per 550").

ERAD4000 capacity – by hanger span

Hanger Span	Ratio 1:350		Ratio 1:450		Ratio 1:550
lbs	kg	lbs	kg	lbs	kg

ERAD6000 capacity – by hanger span

Hanger Span	Ratio 1:350		Ratio 1:450		Ratio 1:550
lbs	kg	lbs	kg	lbs	kg

ERAD7000 capacity – by hanger span

Hanger Span	Ratio 1:350		Ratio 1:450		Ratio 1:550
lbs	kg	lbs	kg	lbs	kg

Deflection criteria & ergonomic force explained

***1:350, 1:450 and 1:550 explained:**

Each rail span is tested to determine the maximum allowable single point load that produces a specified deflection:

- **1:350** = 1 inch of deflection per 350 inches of rail length (more flexible, heavier loads).
- **1:450** = 1 inch of deflection per 450 inches of rail length (stiffer, better ergonomics).
- **1:550** = 1 inch of deflection per 550 inches of rail length (stiffest, for the most demanding requirements).

Operating force estimation formula

For a quick estimate of ergonomic operating force, use the formula:

Fs = 0.009 × Total Mass = Maximum Force (lbf) To Overcome Inertia

The force to keep the load moving is **0.35 × the force to overcome inertia (Fs)**.

Mass 250 lbs (113.4 kg) · → Fs = 0.009 × 250 = · to overcome inertia · → Fk = 2.25 × 0.35 = · to keep moving

General accessories



Cord Clamp Protects the power cable as the trolley moves EMRMA6172 0.14 lbs [0.06 kg] 4000 · 6000 · 7000

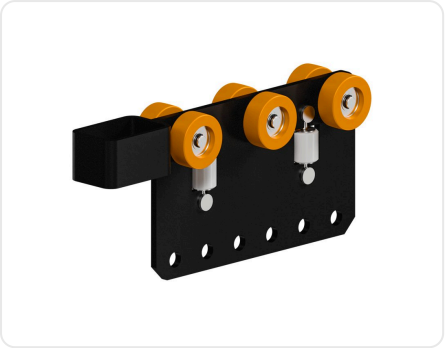


Conductor trolley 240VAC 1P / 480VAC 3P – 15/20/30A – 1m/3m EMRTA6196-XXX-X-X 1.5 lbs [0.68 kg] 4000 · 6000 · 7000



ERail Cleaning Trolley Nylon brushes – will not damage the rail KSAA1080 20 lbs [9 kg]

Load trolleys



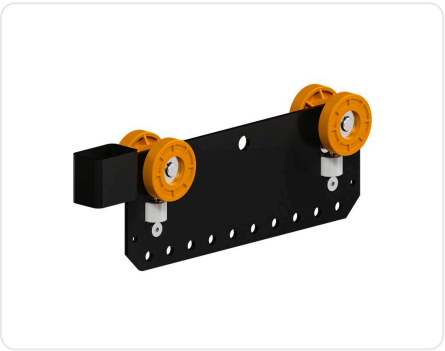
Servo Trolley – ERAD4000 Max. load 1,140 lbs [517 kg] EMRTA4176 5.7 lbs [2.56 kg] ERAD4000



Load Trolley – ERAD4000 Max. load 1,140 lbs [517 kg] EMRTA4190 5.5 lbs [2.48 kg] ERAD4000



Low Profile Load Trolley – ERAD4000 Max. load 1,140 lbs [517 kg] EMRTA4194 4.9 lbs [2.22 kg] ERAD4000



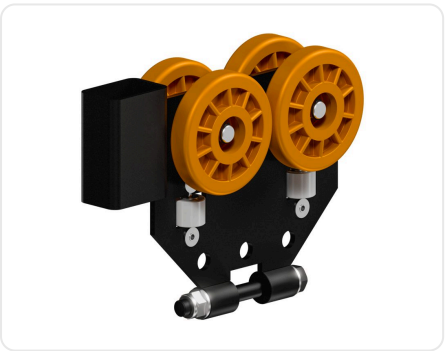
Servo Trolley – ERAD6000 Max. load 2,030 lbs [920 kg] EMRTA6176 11.2 lbs [5.06 kg] ERAD6000



Load Trolley – ERAD6000 Max. load 2,030 lbs [920 kg] EMRTA6190 6.1 lbs [2.77 kg] ERAD6000



Servo Trolley – ERAD7000 Max. load 3,000 lbs [1,360 kg] EMRTA7176 16.8 lbs [7.62 kg] ERAD7000



Low Profile Load Trolley – ERAD7000 Max. load 3,000 lbs [1,360 kg] EMRTA7194 11.5 lbs [5.22 kg] ERAD7000



Load trolley + yoke – ERAD6000 pivots on the X and Y axes EMRTA6192 6.1 lbs [2.77 kg] ERAD6000

Hangers



C-Channel Hanger – ERAD4000 Straight / offset load, adjustable height EMRHA4161 8.7 lbs [3.9 kg] ERAD4000



C-channel tube hanger – 4/6/7000 ACC 900® autophoretic corrosion-resistant coating EMRHA6160 5.2 lbs [2.36 kg] 4000 · 6000 · 7000



2÷7 inch I-Beam Hanger – ERAD6000 Flange 51–178 mm, adjustable height EMRHS6162 18.3 lbs [8.29 kg] ERAD6000

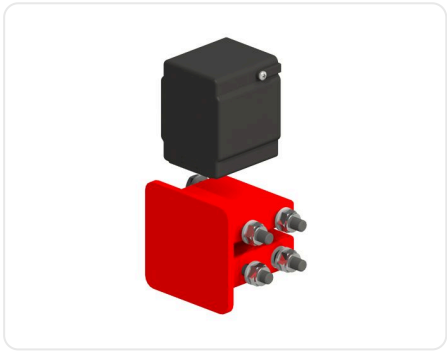


C-Channel Hanger Sub-Assembly – ERAD4000 Header steel parallel // or perpendicular ⊥ to the rail EMRHA4165 6.6 lbs [3 kg] ERAD4000

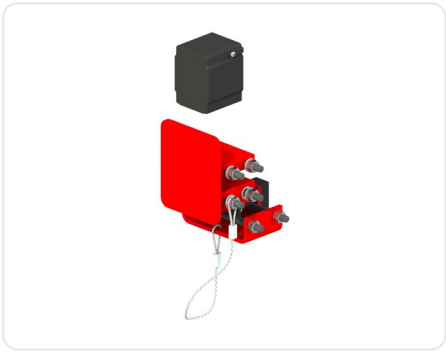
End caps, stops & rail splices



ERail End Cap Keeps dust out of the ERail EMRAA6170 0.07 lbs [0.03 kg] 4000 · 6000 · 7000



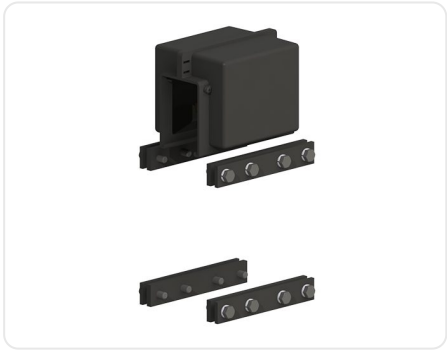
End Cap Kit – ERAD6000 Prevents the load trolley from leaving the rail EMRAA6182 4.5 lbs [2.06 kg] ERAD6000



Redundant End Cap – ERAD7000 Prevents end trucks and trolleys from leaving the rail EMRAS7171 13.8 lbs [6.2 kg] ERAD7000



Rail Splice – ERAD4000/6000 Bolted, no welding, easy access EMRHA4178 5.8 lbs [2.64 kg] ERAD4000 · ERAD6000



Pivoting End Truck – ERAD6000 Pivots on X & Y axes, 2,030 lbs [920 kg] capacity EMRES6181 37.7 lbs [17.1 kg] ERAD6000

Technical documents

Brochure

- ERail Electrified Rail Systems – Overview brochure PDF

Installation & maintenance guides

- ERail maintenance & cleaning guide PDF
- Rail Hanger Placement – Hanger installation positions PDF

CAD drawings (accessory CAD files – examples)

- EMRTA4176 – CAD Drawings, ERAD4000 Servo Trolley (.zip) ZIP
- EMRHA4161 – CAD Drawings, ERAD4000 C-Channel Hanger (.zip) ZIP
- EMRHA4178 – CAD Drawings, ERAD4000/6000 Rail Splice (.zip) ZIP

FULL-SHARP AUTOMATIZED VN (FULLSHARP)

Authorized distributor of Knight Global electrified rail systems and lifting equipment in Vietnam
For advice on an ERAIL configuration for your project, please contact a FULLSHARP representative for a quotation and detailed design drawings.

Contact us for consultation and a quotation

Vietnam factory: Workshop A1-1, VSIP Hai Phong, Nam Trieu Ward, Hai Phong City · +84 817 888 198
Taiwan factory: Zhongli District, Taoyuan City · +886 3-451-8806
Email: sales@fullsharp.com.vn · **Website:** www.fullsharp.com

Specifications may vary with the ordered configuration. Please contact FullSharp for exact details.