

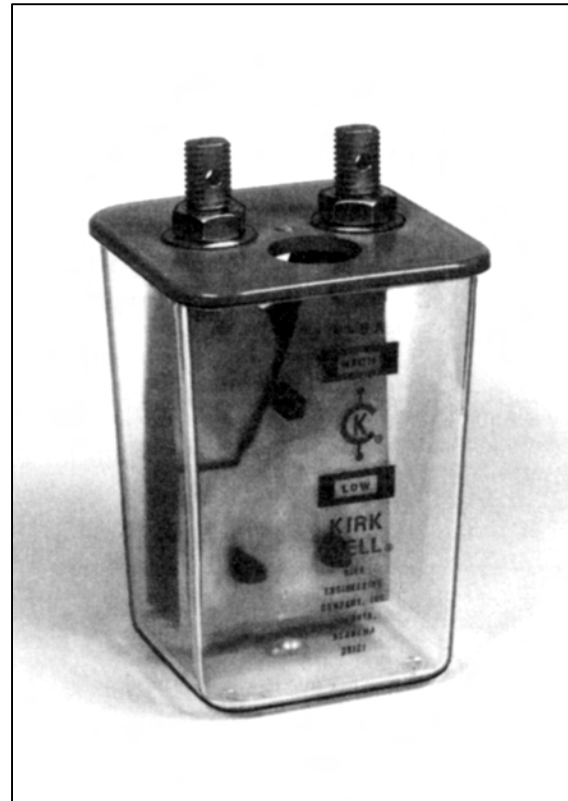
Kirk[®]

Grounding Cells

Protection Against Dangerous Voltage

Induced alternating current, lightning strikes, and grounding fault current on buried pipelines not only pose serious safety threats to pipeline operators and contractors, they can also cause major damage to buried pipelines. Kirk grounding cells control these hazardous voltages while permitting lower level cathodic protection voltage to flow. The cells do not possess an internal voltage. Instead they act as an electrochemical switch to shunt dangerous voltage to ground. They consist of multiple pairs of stainless steel plates, which are immersed in a 30 percent potassium hydroxide solution. An oil seal is also added to prevent evaporation and limit foaming of the electrolyte solution under high current flow. When low levels of DC current flow through the grounding cell, a film of hydrogen gas forms on the negative plates of the Kirk cell. At the same time a film of oxygen gas forms on the positive plates. This polarization allows the low level DC voltage associated with cathodic protection to develop. As the applied voltage across the cell increases from either AC or higher DC current, the polarization film on the plates breaks down and the Kirk cell conducts current.

Kirk grounding cells can be installed above or below grade. For exterior installations, a series of galvanized steel enclosures are offered which are NEMA 3R and 3S rated. The cells are shipped with a dry package of potassium hydroxide and can be stored indefinitely in clean, dry locations.



Typical Applications

Kirk grounding cells control the flow of potentially dangerous AC and DC current on buried metallic structures. They are often used on buried oil, gas, and water pipelines that share the same right-of-way as high voltage power lines. Because the cells produce various gases that can be explosive, they should be installed with proper venting. They should also be routinely inspected to ensure adequate electrolyte levels are present. The cells can be operated in temperatures ranging from -40°F to 140°F.



Corrpro Companies Europe Limited

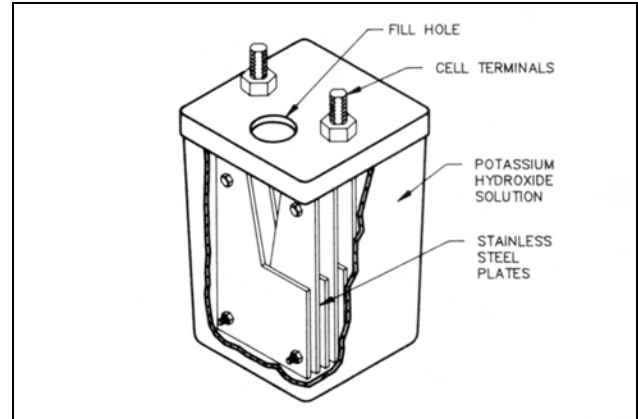
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Kirk® Grounding Cells

Ordering Procedure

Corrpro is an authorized distributor for Kirk grounding cells. To order the right cell for your particular application, indicate that you need a Kirk grounding cell and specify the quantity desired, the cell model, and the type of enclosure if any. An example is included to help illustrate this process.

Ordering Procedure Example	
ITEM	EXAMPLE
Quantity	5
Product	<i>Kirk Grounding Cell</i>
Model	<i>K-25</i>
Enclosure	<i>5-1</i>



Kirk Cell Ordering Information

CELL MODEL	RATED CAPACITY FOR ONE-HALF SECONDS (AMPERES)	MAX. RATED STEADY STATE CAPACITY (AMPERES)	NO. OF PLATES (PAIRS)	CONDUCTOR SIZES AWG (mm ²)	TOTAL WT. lbs. (kg)
K-5A	5,000	30	5	#8-2 AWG (10-35)	6 (2.7)
<i>K-25</i>	<i>25,000</i>	<i>175</i>	<i>12</i>	<i>#2 AWG-250 MCM (35-125)</i>	<i>74 (33.5)</i>
K-50	50,000	350	25	#1/0 AWG-500 MCM (50-250)	90 (40.8)

Kirk Cell Enclosures Ordering Information

ENCL. MODEL	NOMINAL DIMEN. in. (mm)			ENCL. RATING	MATERIALS & FEATURES
	HEIGHT	WIDTH	DEPTH		
<i>5-1</i>	<i>10.75 (273)</i>	<i>8.25 (209)</i>	<i>6.5 (165)</i>	<i>NEMA 3R-CV IP32</i>	<i>20 Gauge Galvanized</i>
5-1L	10.75 (273)	8.25 (209)	6.5 (165)	NEMA 3R-CV IP32	20 Gauge Galvanized Locking Lid
5-2L	10.75 (273)	8.25 (209)	6.5 (165)	NEMA 3R-CV IP32	11 Gauge Galvanized Locking Lid
5-3L	12 (305)	10 (254)	6.5 (165)	NEMA 3R-CV IP32	20 Gauge Galvanized Locking Lid
5-4L	12.25 (311)	8.25 (209)	6.5 (165)	NEMA 3S IP64	14 Gauge Galvanized Locking Lid
5-5	10 (254)	14.5 (368)	8.5 (216)	NEMA 3R-CV IP32	14 Gauge Galvanized Pad Mount Cvr.
5-6L	10.75 (273)	8.25 (209)	6.5 (165)	NEMA 3R-CV IP32	11 Gauge Galvanized Hinged Locking Lid



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