



PORT INTERLOCK APPLICATIONS

DATA SHEET

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COLD IRONING / SHORE POWER



Type DM
Access Interlock



Type DM
Latch Bolt



Type T
3-Key Key
Exchange Unit



When a ship comes to port and is mooring at dock, ships equipped with an Alternative Maritime Power (AMP) cable reel are able to shut down their generators, reducing noise and air pollution, and connect to land based power. This process is also known as cold ironing. Using Kirk interlocks when connecting ship's power cables to on shore power will ensure that the cables are properly coupled to the junction box before energizing.

The application overleaf provides a step by step process of performing the connection of the AMP cables to the junction box in the quayside vaults.

"Since 2003 Cavotec has helped the Ports in California by addressing the technical challenges for shore power connection to docking container ships. We at Cavotec appreciate the support Kirk Key provides to our Alternative Marine Power boxes, by increasing the safety of the electrical system with their mechanical interlock components."

-Rob Thompson AMP Product Manager, Cavotec USA, Inc.

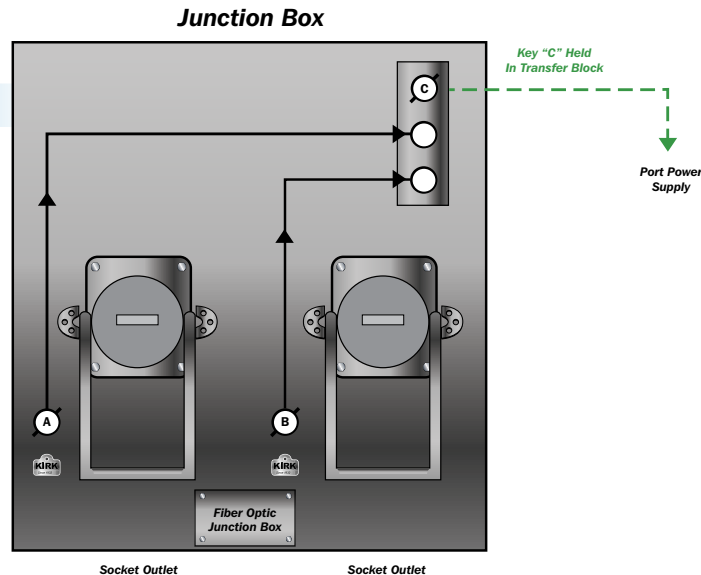
PROCESS SAFETY CONTROL

www.kirkkey.com

INTERLOCKING LOGIC

LEGEND

- Key Free
- ⊙ Key Trapped



The interlocking logic shown illustrates a typical cold ironing mechanical bolt interlock system.

Note: An additional interlock may be added to accommodate a ground switch.

OPERATION

INITIAL STATE OF SHIP:

- Ship is moored at dock
- Ships generators are powered off

Typically, 2 Kirk type DMs are installed on the medium voltage socket handles and a 3-key Kirk transfer block is installed directly to the front of the junction box, located in the quayside vaults. The DM latch bolt with cable connection is installed directly on the ships shore power plug. An F-lock is installed directly on the upstream breakers powering the junction box in the vault, and is keyed to coordinate with the transfer block within the quayside vault.

INITIAL SYSTEM STATUS:

All socket handles trap Key A and Key B in the socket handle until the switch is engaged.

SYSTEM OPERATION:

- 1) Lower cable with DM latch bolt attached from ship until it reaches SPO vault on the wharf.
- 2) Pull back the plug protection bell and secure ship cable using the Kellum grip
WARNING: Before connecting plug and socket, verify that there is no presence of water in the plug or socket and contact pins are undamaged.
- 3) Remove the PC5 shore plug covers.
- 4) Insert the DM latch bolts fixed to the ship plugs into each Kirk type DM lock attached to socket handles and rotate 90° to release trapped Key A and Key B.
- 5) Insert Key A and Key B into the Kirk transfer block and rotate to trap Key A, Key B and release Key C.
- 6) Follow the ports sequence of operations for initiating power using Key C.



INTERLOCKING SEQUENCES CAN BE DESIGNED TO SUIT ANY OPERATIONAL OR PROCESS REQUIREMENTS

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