



JZD系列

轮胎吊电缆卷筒自动取电系统

JZD Series Automatic Take-Power System For RTG Cable Reel

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上海振华重工（集团）宁波传动机械有限公司
ZPMC Ningbo Transmission Machinery Co.,Ltd.
宁波伟隆传动机械有限公司
Ningbo Weilong Transmission Machinery Co.,Ltd.



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一、概述

轮胎式集装箱门式起重机 (RTG) 是港口集装箱堆场的主力设备,也是主导集装箱码头作业效率及经济收益的关键因素,随着油价的逐步攀升及节能减排举措的不断深入,市电RTG的应用正在逐步替代柴油机发电。

市电RTG供电主要有三种形式:

- ◆ 电缆卷筒
- ◆ 低架滑触线
- ◆ 高架滑触线

市电RTG采用电缆卷筒供电是ZPMC宁波伟隆公司的成熟产品,目前已经有几百台市电RTG采用电缆卷筒的供电方式在各个码头运行,其具有供电质量高、对场地要求低等特点受到用户的肯定,但在RTG转场操作中,目前都需要采用人工方式进行插拔,我公司应市场需要,开发了JZD系列轮胎吊电缆卷筒自动取电装置,填补了行业空白,为码头采用市电RTG又多了一种可靠方案。

二、优势介绍

- 1、采用电缆输电是所有输电系统中最可靠的方式,其能排除接触式取电所带来的种种弊端,能实现全气候供电无障碍。
- 2、电缆卷筒自动取电的实现,解决了人工插拔的不安全性,提高了工作效率,并且大大地节约了人工成本,为码头自动化管理创造了条件。
- 3、系统操作实行PLC控制,辅助人机界面,一键操作,简单可靠。
- 4、全电动操作,故障率低,维护方便。
- 5、设有过载、超限、自定位纠偏功能,能适应各种工况的取电、断电作业,智能化程度高。

三、主要技术参数

- 1、自动取(断)电的允许偏差范围:
 - A、横向距离偏差 $\pm 200\text{mm}$;
 - B、高度位置偏差 $\pm 100\text{mm}$;
 - C、角度范围偏差 $\pm 3\sim 5$ 度。
- 2、一次取电(断电)操作时间 $\approx 4\text{min}$
- 3、操作电源:220VAC。
- 4、防护等级:IP55。
- 5、绝缘水平:3000V/1min无击穿、无闪络。

I, Overview

Tyred container gantry crane (RTG) is the main equipment of the port container yard, but also led a key factor in the efficiency of container terminal operations and the economic benefits, with the deepening of the gradual rise in oil prices and energy saving initiatives, the electric RTG application is replacing diesel power generation.

Mains RTG power supply there are three main forms:

- (1) Cable reel
- (2) Low frame slide-conduct line
- (3) High frame slide-conduct line

Municipal electric RTG cable reel power supply is a mature product of ZPMC Ningbo Weilong company, there are already hundreds of electric RTG power supply cable reel to run at each pier, which has a supply of high quality on site and low by the user's definitely, but in the RTG transfer operation, currently requires the artificial plug, my company according to market needs, has development the series JZD RTG cable reel auto-take-power device to fill the industry blank, e-RTG has an addition optional program of take-power method.

II, Advantages

- 1, The electricity cable transmission is the most reliable way of all transmission system, it can get rid of all the drawbacks of contact take-power method, as all-weather power supply.
- 2, Cable reel auto-take-power method realization, to resolve the artificial plug unsafe, improve work efficiency and saving labor costs, to create the conditions for the terminal automation management.
- 3, The system operation to implement a PLC control, with the man-machine interface, one-button operation, simple and reliable.
- 4, All-electric operation, low failure rate, easy maintenance; with overload, over-limit, self-positioning correction function, able to adapt to a variety of conditions to take power, power-down operation, a high degree of intelligence.

III, Main technical parameters

- 1, The allowable deviation range of automatic-take(leave)-power:
 - A Horizontal distance deviation is $\pm 200\text{mm}$.
 - B, The height deviation of $\pm 100\text{mm}$.
 - C, Angle range of deviation is ± 5 degrees.
- 2, One time to take(leave) power operation is 4 min.
- 3, The operating power supply: 220VAC.
- 4, Protection: IP55.
- 5, The insulation level: 3000V/1min no breakdown, no flashover.



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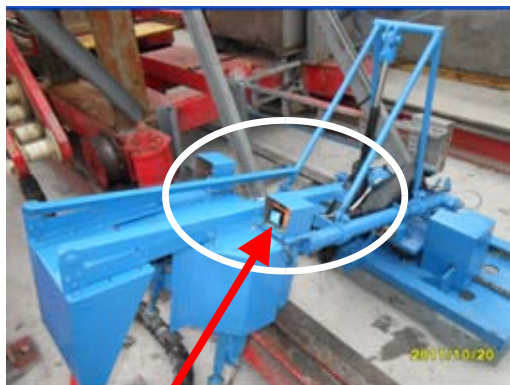
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四、主要功能介绍

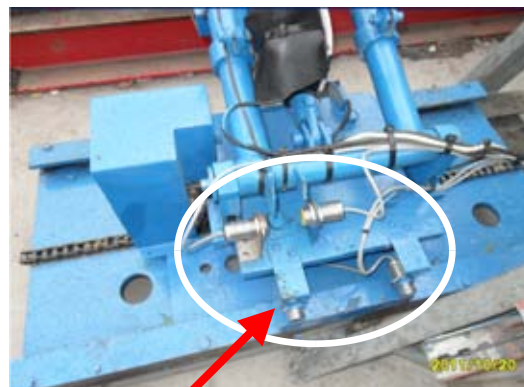
IV, The main function introduce

1、采用IFM高精度激光定位及TURCK接近开关检测,能动态调整机械手动作位置。

1, Use IFM high-precision laser positioning and the detection of the TURCK close switch can dynamically adjust the location of the robot action.



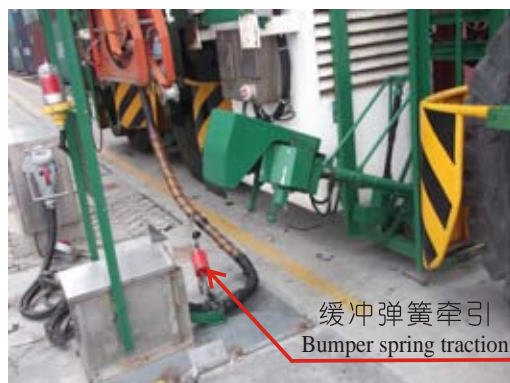
IFM激光定位 IFM laser positioning



自动对中纠偏 Automatic aim correction

2、采用钢丝网套加缓冲弹簧的形式连接电缆与地面固定,具有牵引缓冲保护的功能。

2, Use the form of steel mesh cover and buffer spring to connect the cable and terrestrial fixed, with traction buffer protection function.



缓冲弹簧牵引
Bumper spring traction



3、采用抱指式触头,具有可靠的挠性接触,导电能力强。

4、司机室借助视频辅助,一键操作,简单易行。

3, Use surround finger type contactor, reliable and flexible contact with good conductive ability.

4, The cab with the video-assisted, one-button operation is very simple.



监视屏
Monitor



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五、转场电源的可选方案

可根据用户需要，配置辅助电源转场。能取消柴油机或减少柴油机的频繁启动，提高作业效率。
转场方式一：蓄电池替代柴油机，能减少功率消耗，真正达到轮胎吊作业、转场时的零排放。



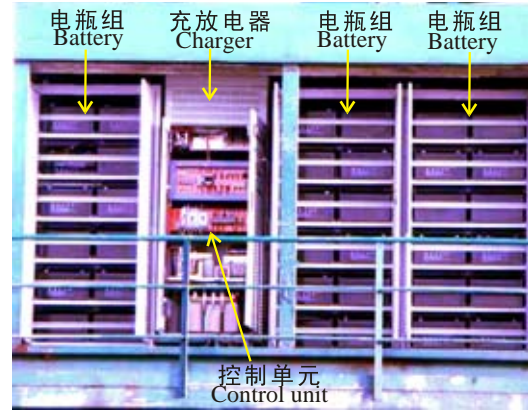
转场方式二：采用车载发电机组，转场时车载发电机组接入RTG进行随机转场供电。



V, Transition power supply options

According to user needs, the other can be configured auxiliary power transitions, can reduce diesel engine starts or cancel diesel engine, improve operating efficiency.

Transition(i): Battery replacement diesel engine, can reduce power consumption, thereby achieving the RTG operation, zero emissions in the transition;



蓄电池作转场动力

Use battery for transition system

Transition(ii): vehicle generator sets, it accesses RTG to random transitions for power supply.



上海振华重工(集团)宁波传动机械有限公司

ZPMC NINGBO TRANSMISSION MACHINERY CO.,LTD.

宁波伟隆传动机械有限公司

NINGBO WEILONG TRANSMISSION MACHINERY CO.,LTD.

地址：中国宁波市东钱湖工业园区莫枝北路505号

电话：(86)574-88372266 83066266

传真：(86)574-88372264 88373712

邮编：315121

公司网站：<http://www.weilongme.com.cn>

电子信箱：weilong@weilongme.com.cn

服务热线：(86)574-88373131 88395022

Addr: Dongqianhu Development Zone, Ningbo, China

Tel: (86)574-88372266 83066266

Fax: (86)574-88372264 88373712

P.C.: 315121

Web-site: <http://www.weilongme.com.cn>

E-mail: weilong@weilongme.com.cn

serve-online: (86)574-88373131 88395022