Electric Motor Cable Reel Introduction

Technical Manual

Product Name: Electric Motor cable reel

The electric cable reel can stably, conveniently and effectively collect and disassemble the optical cable, and reasonably allocate the layout of each optical cable. It is not recommended to use the electric method when laying the optical cable. You can switch the manual clutch to the separation position, switch the automatic cable arrangement device to the o position and move it to both sides, and use the manual mode.

Product Composition

The portable electric motor optical cable reel is composed of a speed regulating motor assembly, a tension clutch assembly, an optical cable transmission guide assembly, a power supply system assembly and other components.

The functions of each component are as follows:

1. Power Supply Speed Regulating Motor : Provides the power required for cable drum retraction and release, and can adjust the motor power to adjust the cable drum retraction and release speed
2. Tension Clutch : Provide variable tension to adapt to the tension during deployment to avoid damaging the fiber core.
3. Optical Cable Transmission Guide : It can control the guidance of the optical cable retraction and release, and at the same time, according to different cable diameters, it can be evenly wound on the cable drum through the screw adjustment.
4. System Components: Provide power supply for the entire platform, using DC 12V motor configuration

Electric Motor Cable Reel Function and Protection

1. Overload Protection
2. Work Instruction
3. Manual and Automatic Retraction
4. Automatic Wiring

The schematic diagram is shown in Figure 1

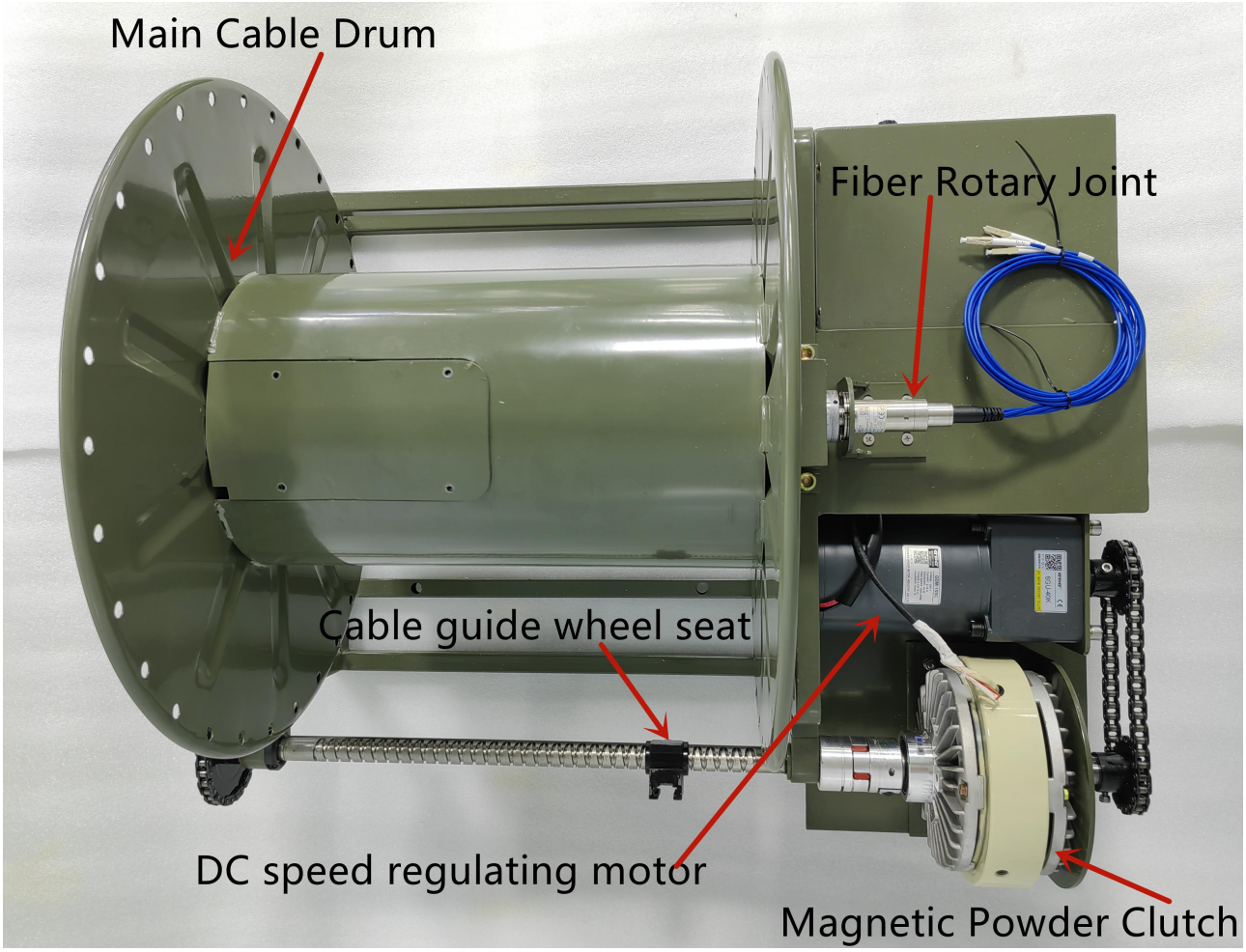

Figure 1

Main Parameter

a. Power Supply : Support DC 12V power supply

b. Total Motor Power ≤ 200W

c. Maximum Cable Retracting and Releasing Speed: 1 m/s;

d. Panel Control: supports start, stop and speed regulation

e. Cable Laying Device Weight: ≤50KG (excluding optical cable)

f. Dimensions (approx.): 800*620*560mm (L*W*H)

g. Automatic cable arrangement function when retracting the cable;

h. The cable retracting and releasing speed can be adjusted.

Cable Installation Methods

When winding the optical cable, insert the head of the optical cable connector clockwise into the winding inner cylinder (the cover of the inner cylinder is removed for easy installation) and insert it into the inner connector. Then fix the cover. Start winding the optical cable clockwise. After winding 500 meters of optical cable, turn off the power.

Hook the optical cable connector with the hook on the hook hole on the outside of the disk to complete the fixation. After the optical cable is wound, use nylon straps to tie the optical cable connector to the crossbeam of the automatic cable arrangement device. When the optical cable reel is reeled in and out, personnel are required to apply resistance to the optical cable to ensure that the cable winding is neat and compact.

Motor Torque Protection

The motor torque protection device is a component that connects the driving shaft and the driven shaft. Its main function is overload protection. When the required torque exceeds the set value due to overload or mechanical failure, it limits the torque transmitted by the transmission system in the form of slipping, and automatically restores the connection when the overload disappears. This prevents mechanical damage and avoids expensive downtime losses.

When an emergency occurs and the cable needs to be pulled to prevent the cable drum from rotating, the characteristics of the motor torque protection device provide a safety protection function in which the cable drum is stationary while the motor rotates. The preset value of the torque of this cable drum is 60N.M. When the friction plate wears due to multiple frictions and the torque decreases, or when the cable drum requires a higher torque, the bolts can be adjusted to increase the friction and increase the sliding torque.

Suggestion: It is not advisable to arbitrarily increase the preset torque value to prevent excessive torque from affecting the service life of the motor. When the temperature is too low, the cable reel resistance torque is too large and slippage occurs, the cable can be manually dragged to reduce the resistance of the cable reel.

Chain Adjustment

Due to long-term rotation, the chain on the torque limiter may become loose. You can loosen the motor mounting foot bolts, move the motor as a whole backward until the chain is properly tensioned, and then tighten the motor mounting foot bolts.

Electrical Control System

(1) The control system consists of a DC deceleration control switch and a magnetic powder tension controller.

(2) The DC deceleration control switch can be adjusted from zero to 30 meters per minute, and the magnetic powder clutch controller can be adjusted from 0.6 to 40 kilograms.

(3) The vehicle-mounted 12V power supply is directly connected to the boost module.

Product Packaging, Storage and Delivery Requirements

- Product Labeling and Packaging Requirements
- Storage time: 5 years.
- Surface spray treatment, Army green.
- Cable diameter: ϕ4±0.2mm (minimum winding length: 2000 meters). Φ5±0.2mm (minimum winding length: 1200 meters).

Maintenance Content

The purpose of maintenance of electric cable drum is to keep it in good condition and ready for use at any time, reduce or eliminate operating failures as much as possible, and ensure safe use.

The contents and requirements of maintenance are as follows:

- Check whether the mechanical and electrical circuit connections are loose. If they are loose, tighten them immediately;

- Check whether the wires and cables, switches, contactors and other components are damaged. If damaged, repair or replace them;
- Check whether all knobs and indicator lights are in good condition. If they are damaged or display errors, they should be repaired or replaced in time;
- The polished rod of the automatic cable arranging device needs to be regularly coated with anti-rust grease to ensure its service life.

Electric Motor Cable Reel Drawing