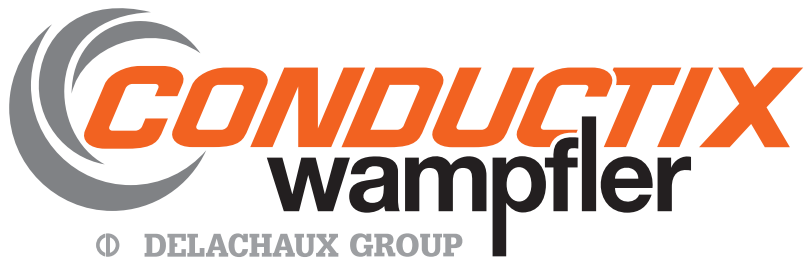




# High Dynamics SMART Drive

## VFD Motor Driven Cable Reels



Ⓞ DELACHAUX GROUP

# High Dynamics SMART Drive Cable Reels

## Features & benefits:

- Cable reel design has been optimized for highly dynamic applications. Streamlined spools and reduced inertia components make the reel more maneuverable and more reactive during startup and slowdown. Low inertia means less stress on the cable during transient phases and increases the cable lifetime.
- Large selection of gear ratios and optimized design of rotating parts for precise adjustment to the application. These factors contribute to reducing power consumption. Power infeed drives are available to recover the braking energy.
- Unique realtime, model-based, predictive cable control algorithm provides optimum cable tension even in transient phases. End feed operation up to 300 m/min and center feed point crossing up to 250 m/min. Smooth handling of the cable is key to extending cable lifetime.
- Robust design and easy maintenance. Two gear trains. Sturdy main gearbox, consistent oil lubrication, high quality components, large inspection window in the slipping housing allow high productivity and minimum Total Cost of Ownership.

The High Dynamics SMART Drive range is aimed at today's container handling applications and other demanding industries. Material handling equipment is operating at ever faster pace, with growing use of automation and remote control. This is the cable reel of the future that can support and facilitate power supply and data transmission without limitation or adverse effect on expensive flexible cables.

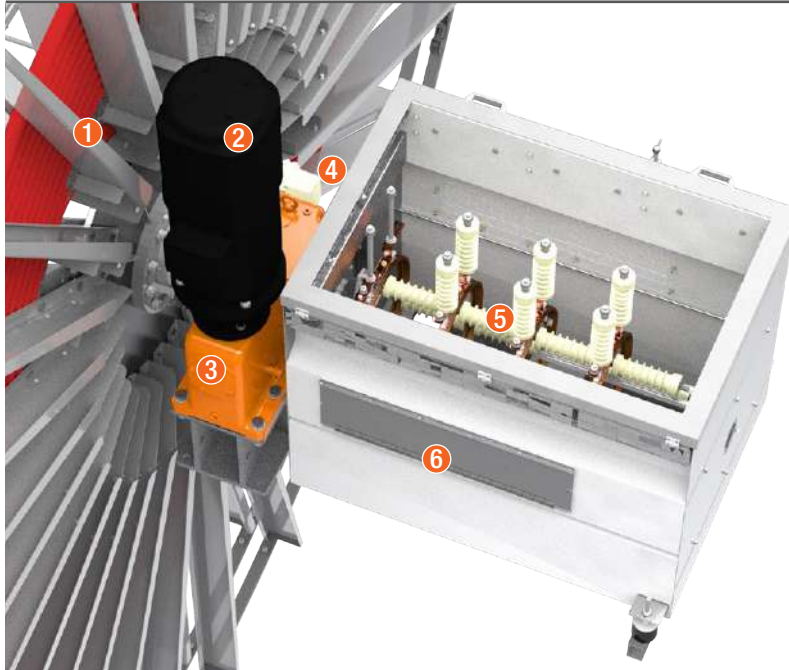


# Technical Data

## Technical Specifications

Cable types:	<ul style="list-style-type: none"><li>• Power cables (Low Voltage or High Voltage)</li><li>• Combined power and data cable (fiber optic or copper cores)</li></ul>
Cable voltage and cross-section:	<ul style="list-style-type: none"><li>• Low voltage: 690 Va - up to 3 x 300 mm<sup>2</sup></li><li>• High voltage: 24000 V - up to 3 x 185 mm<sup>2</sup></li></ul>
Spool type:	<ul style="list-style-type: none"><li>• Monospiral or single layer drum</li><li>• Monospiral outer diameter: from 2.2 m to 8.0 m</li></ul>
Ambient temperature:	-40 °C / +60 °C
Motor power:	Up to 30 kW
Motor features:	IE2, over-temperature sensor, heating resistance, IP55, canopy
Motor position:	Horizontal or/and vertical (72°)
Main gearbox:	<ul style="list-style-type: none"><li>• Three geartrains</li><li>• Helical bevel entry gear</li><li>• Cast iron casing</li></ul>
Total gear ratio:	Main + secondary gearboxes   1:25 to 1:160
Lubrication (Oil):	Type Mobil SHC 629 for gear motor and main gearboxes
Slip ring type:	<ul style="list-style-type: none"><li>• High Voltage: 7.2 to 24 kV, 3 or 4 phases up to 500 A</li><li>• Low Voltage: 690 V (power), up to 1.250 A</li><li>• Control and data: up to 72 rings; silver or gold plated</li><li>• Fiber Optic: up to 24 channels, multimode or single mode</li></ul>
Control unit implementation:	<ul style="list-style-type: none"><li>• Complete control unit in separate enclosure (indoor or outdoor)</li><li>• Panel for standard E-Room installation</li><li>• Software only</li></ul>
Frequency converter:	<ul style="list-style-type: none"><li>• Siemens Sinamics</li><li>• ABB ACS</li><li>• TMEIC</li></ul>

# Components



- 1 Low inertia spool
- 2 Heavy-duty gear motor
- 3 High Dynamics gearbox
- 4 Oil lubrication
- 5 High-voltage slip ring
- 6 Inspection window

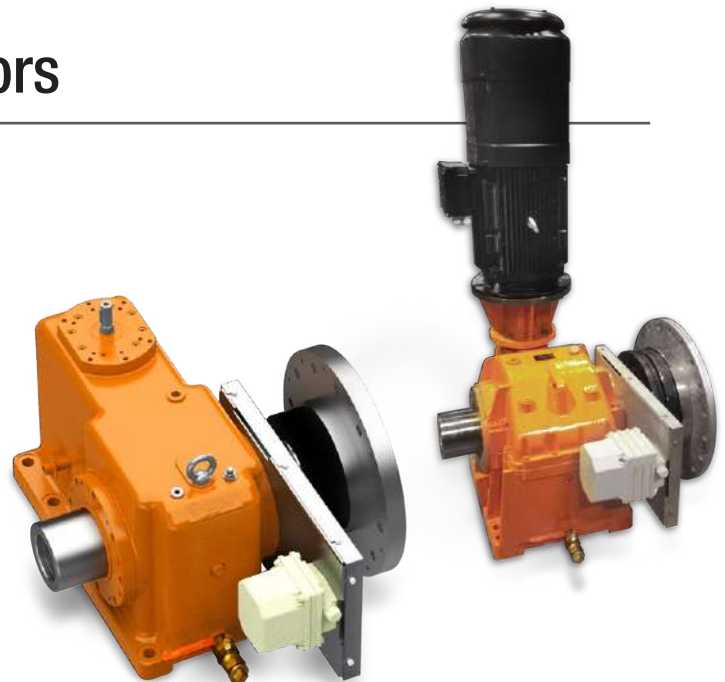
## Gearboxes and Gear Motors

The **main gearbox** is available in three sizes:

- K16 | 2400 N m
- K20 | 5400 N m
- K25 | 110000 N m

It is powered by a **gear motor** of configurable power and gear ratio, predefined according to installation parameters.

We offer a very large range of **20 gear ratios from 1:25 to 1:160** and 10 motor sizes from 3 kW to 30 kW for precise adjustment of power and torque to the application.



# Variable Frequency Drive

## *SMART Drive Variable frequency drive for motor driven cable reels*

The VFD drives the electric motor by varying the frequency and current supplied to the electric motor. It provides performance, responsiveness and flexibility.

### **Electronic control units**

The control unit is the brain of a VFD cable reel. It combines the frequency converter (hardware) and control laws (software) to control the electric motor during all phases of the reel operation.

To address widely different customer requirements and applications, we offer a broad choice of control units with the High Dynamics SMART Drive range.



### **Choice of frequency converter brand:**

- Siemens
- ABB
- TMEIC

### **Choice of physical implementation:**

- enclosure in main E-room
- panel plate
- outdoor cabinet
- software only

### **Choice of three different performance levels:**

- Basic – suitable for travel speeds up to 100 m/min (with end feed) or 50 m/min (center feed)
- Advanced – suitable for travel speeds up to 300 m/min and acceleration up to 1 m/s<sup>2</sup>, includes active tension control at center feed

# Slip Ring Assemblies

## *High Dynamics SMART Drive reels are available with a complete range of slip rings to suit all types of electric needs*

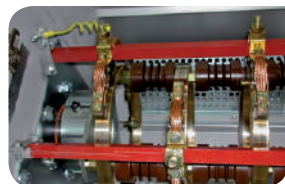
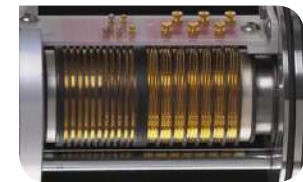


### **Low voltage power slip rings**

- from 25 to 1250 A, up to 12 rings
- for cables with cross section up to 300 mm<sup>2</sup>.

### **Control and data slip rings**

Up to 72 control rings. Multi-layer, silver or gold plated rings are available for signal transmission.



### **High voltage power slip rings**

- from 7.2 to 24 kV
- up to 500 A.
- 3 or 4 rings + PE.



### **Fiber Optic**

- Single mode 9/125 or multi-mode 50/125 & 62.5/125
- 40 up to 120 turns
- 6, 12, 18 and 24 fibers

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