

## FLT - spring driven cable reels



Manufactured by **Cavotec Alfo**

# Spring Driven Cable Reels

## Who we are

Cavotec is a multi-national group of companies serving the following industries: mining and tunnelling, ports and maritime, steel and aluminium, energy and offshore, airports, general industry and automation. In the early 1960's our main focus was the design and production of motorised cable reels primarily for manufacturers of tower cranes, harbour cranes and mining equipment.

Today, Cavotec is connecting mobile equipment around the world in many diverse applications.

## Where we are

The Cavotec Group consists of 7 manufacturing "Centres of Excellence" located in Canada, France, Germany, Italy, Norway and Sweden and by 5 local manufacturing units located in Australia, China, Germany and the USA. For the distribution of products and providing support to customers Cavotec has 27 sales companies which, together with a network of distributors, serve more than 30 countries in five continents.

The ultimate objective is to be perceived as "local everywhere".

## How we work

Our aim is to work closely with our customers in order to build long-term partnerships. To achieve this aim we have created a working environment that attracts the best people, encourages them to stay and brings out their best qualities. By producing totally reliable systems and backing them with efficient service, we strive to create true customer satisfaction.



## Cavotec Alfo

Established in 1991, Cavotec Alfo is a modern manufacturing company in the specialised field of spring reels and slinging columns. In 1997 Cavotec Alfo became a member of the Cavotec Group, a world leader in mobile power technology, as one of its manufacturing units.

The Cavotec Alfo FLT spring reels reflect the company's strong commitment to quality. Standard components produced in large series, enabling Cavotec Alfo to serve the market and meet both standard and special requirements at competitive prices and with short delivery times. The spring reels are strong and well designed guaranteeing the highest reliability even in difficult applications. All reels are equipped with two, totally sealed bearings which are lubricated for life. Cavotec Alfo has been the first manufacturer to build its slings in a totally sealed and modular unit, fully separated from any mechanical parts. Protection of slings and reel is IP65/66.

Cavotec Alfo spring driven cable reels meet all applicable IEC international norms and standards and comply to the latest EU-requirements (CE-marking).

# Cavotec Group Organization

As shown here the Cavotec Group is organized to support its customers around the world through its manufacturing units and sales companies. Each Cavotec manufacturing company, no matter where it is located, aims at being a market leader in its field by providing innovative and reliable products to Group customers. Each Cavotec sales company, in the 27 countries where they operate, aims at better serving its local market following the Group philosophy "to be local everywhere".

## Manufacturing network

### Centres of Excellence

#### France

##### Cavotec RMS

Spring Driven Reels

#### Germany

##### Cavotec Alfo

Spring Driven Reels

Slipring Columns

##### Cavotec Fladung

Aircraft Support Systems

Security Systems

#### Italy

##### Cavotec Specimas

Motorized Cable Reels

Panzerbelt Cable Protection

Slipring Columns

#### Norway

##### Cavotec Micro-control

Radio Remote Controls

#### Sweden

##### Cavotec Connectors

Electrical Plugs & Sockets

#### New Zealand

##### Cavotec MoorMaster

Automated Mooring Systems

### Local Manufacturing

#### Australia

##### Cavotec Australia

Motorized Cable Reels

#### China

##### Cavotec China

Product Assembly

#### Germany

##### Cavotec Micro-control

Radio Remote Controls

#### Sweden

##### Cavotec Sweden

Product Assembly

#### USA

##### Cavotec USA

Product Assembly

### Group Partners

#### Belgium

##### Gantry

Crane Rail Systems

#### Italy

##### Brevetti Stendalto

Cable Chains

##### Prysmian (Pirelli)

Flexible Cables

##### Tratos Cavi

Flexible Cables

## Sales network

### Cavotec Sales Companies

Cavotec Australia

Cavotec Belgium\*

Cavotec BeNeLux

Cavotec Brazil\*

Cavotec Canada

Cavotec Chile

Cavotec China

Cavotec Denmark

Cavotec Finland

Cavotec France

Cavotec Germany

Cavotec Hong Kong

Cavotec India

Cavotec Italy

Cavotec Korea

Cavotec Latin America

Cavotec Mexico

Cavotec Middle East

Cavotec Norway

Cavotec Russia\*

Cavotec Singapore

Cavotec South Africa

Cavotec Sweden

Cavotec Turkey

Cavotec UK & Ireland

Cavotec USA

\* Branch Office

# General product information

## Standards and norms

Spring driven cable reels are subject to the standards and norms set forth in VDE 0100 and the UVV in their latest edition.

## Warranty

Our warranty follows the general delivery conditions of the electric industry for products and services. Wear parts are exempted from the warranty. See also our Terms of Delivery.

## General installation instructions

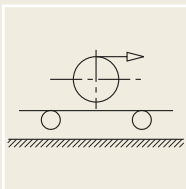
The drum shall be installed in such a way to ensure that the cable is reeled and unreeled to/from the drum freely and unhampered. **Forced guidance and too small bending radii on sheaves and roller guides should be avoided.** The Cavotec Alfo spring reels allows the feeding point of the cable to be placed on either side of the drum. The following selection tables cover only wide cable drums, with random wrapped layers, taking in consideration these typical application cases.

### Horizontal application Cable unreeling

#### horizontally (Case 1)

Drum mounted on a mobile vehicle, cable resting on a continuous surface or on supports having a distance of less than 1 m. Mounting height between drum centre and surface level  $h \leq 1.0$  m.

$v < 63$  m/min,  $a < 0.3$  m/s<sup>2</sup>

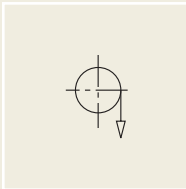


### Vertical application (Case 8)

Drum above feeding point, cable unreeled vertically downwards.

Please take note of measure "H".

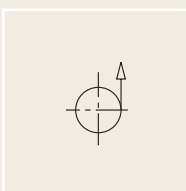
$v < 30$  m/min,  $a < 0.3$  m/s<sup>2</sup>



### Vertical application (Case 9)

Drum below feeding point, cable unreeled vertically upwards. For drum selection, use the tables for horizontal application.

Please contact us for information about all other application cases using the questionnaire on page 11.



## Recommendation on cable safety

Do not reel more cable onto the drum than necessary. **For tension relief**, 1 or 2 additional reeling turns ( $d \cdot \pi \cdot 2$ ) will remain on the drum when the maximum travelling distance has been reached.

## Cable selection

When selecting the cable, please take in consideration the cable data and the instructions provided by the manufacturer. In order to make the correct reel selection it is absolutely necessary to know the correct conditions of use. It is important to take in consideration the heating of the cable due to the number of layers on the drum. Also when selecting the cable it is important not to exceed the maximum allowed tension of the cable. The data contained in the selection tables are related to flexible cables of short lengths. The ambient temperature is assumed to be within +30°C to -10°C. Lower temperatures may require a higher spring force due to the higher rigidity of the cable.

The drum selection tables have been calculated with the maximum values (of each bracket) of diameter and weight. Consequently there could be significant deviations in particular cases. A correlation of the cable diameters is given on page 10.

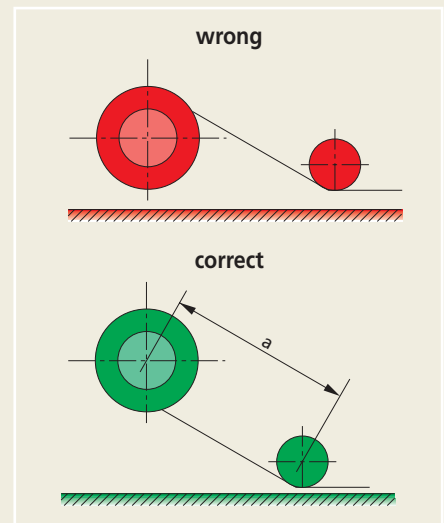
## Reeling cable on drum

It is absolutely necessary to reel the cable onto the drum without twists or bends. To this end, lay out the complete cable straight along the travel length. When reeling the cable on the drum be sure to maintain the same reeling direction used on the wooden drum delivered by the manufacture.

## Reeling through roller guides and sheaves

When roller guides and sheaves are used, it is important to avoid reverse bending whenever possible.

## Example



## Selection of the cable cross-section

When selecting the cable cross-section it is important to take in consideration the maximum current allowed (thermal heating) and the voltage drop limits, as well as the maximum tension allowed. The most important factors are:

1. Maximum current load allowed according to norms and/or manufacturer's data.
2. Reduction factors due to duty cycle
3. Ambient temperature
4. Number of cable layers on the drum

### Important:

- The number of layers  $L_z = 4$  should not be exceeded. With  $L_z > 4$  gives higher current reduction and worse reeling conditions. You will find the upper limits in the selection tables.
5. Reduction factor when using multi-core cables.

Relevant values are given by the cable manufacturer.

## Code key

19	36	14	20	BA	—	45	07
19 - 36 Drum size					45 - 07 Slipping assembly		
19: 190 mm inner Ø					45: Slipping type		
36: 360 mm outer Ø					07: number of poles incl. PE (earth)		
14: 140 mm drum width							
			20 BA Spring type				
			20: number and configuration of springs				
			BA: type of spring				

### Cavotec Alfo range of cables

Our cable range includes a wide variety of flexible cables for reeling applications which will stand the highest mechanical stresses and harsh ambient conditions.

### Drum design

Modular hot-dip galvanised steel drum design for all standard Cavotec Alfo spring reels. Springs made of high-grade spring steel having a long lifetime. The springs can be replaced without removing the drum.

### Unreeling direction Standard direction= left

Standard unreeling direction is anticlockwise, when looking into the slipping body, i.e. to the left when unreeling the cable.

### Protection type

Standard for drums and slipping bodies: **IP66**.

### Surface treatment

Standard treatment for drums: hot-dip galvanized steel and with slipping assembly housing in glasfiber reinforced polyamid.

### Operating voltages

Please find the operating voltages in the respective slipping data tables.

### Maximum current values

All drums and slipping bodies are designed for the maximum allowed current values of the cable at 100% ED. (duty cycle). Please find the maximum allowed values in the respective slipping data tables.

### Protective earth conductor and number of poles

All drums and slipping bodies for voltages > 24V are manufactured with an un-insulated protective earth conductor (PE). Number of poles = number of insulated poles including PE. In your order form, please state: number of poles, protective earth conductor, and operating voltage.

### Environmental and extreme operating conditions

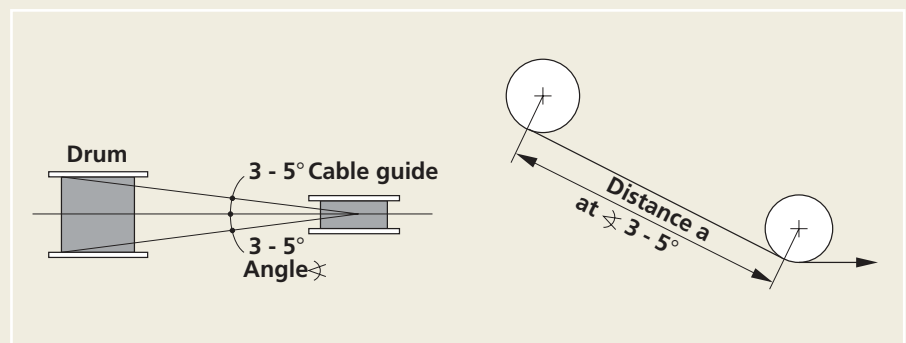
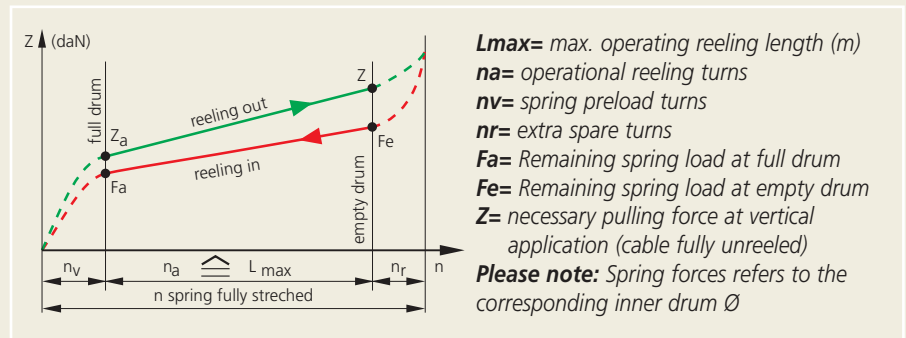
Extreme environmental and operating conditions must be given additional attention. The following factors are of primary importance:

- extreme high and low temperatures
- significant temperature variations
- high air humidity
- strong vibrations
- heavily polluted and aggressive air
- use on the sea or in marine environment

The force of the springs in spring reeling drums, may have to be increased, if:

- the unit is moving at very low speed  $v < 10$  m/min
- significant deflections of the cable is necessary
- at high acceleration and speeds
- the temperature is lower than  $-10^{\circ}\text{C}$ .

### Spring diagram



### Warning

When spring reels are mounted low, the cable must always leave the drum from the top. When roller guides or sheaves are used it is important to respect a minimum distance (a) between drum and guide.

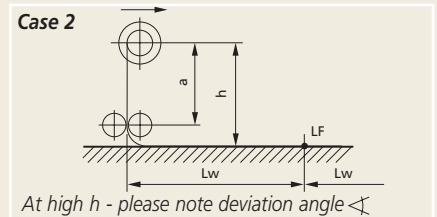
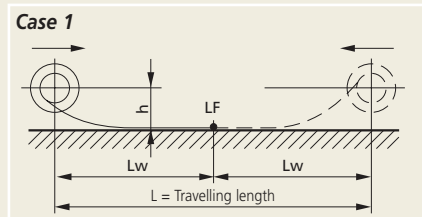
# General product information

## APPLICATION EXAMPLES

### Case 1 - Case 2

#### Horizontal mobile application

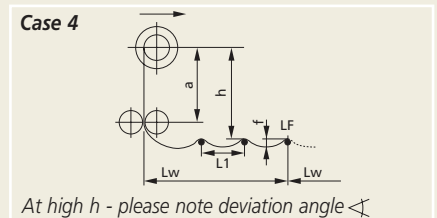
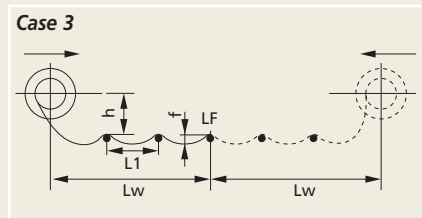
Cable is unreeled on a flat continuous surface. The cable is unreeled horizontally in either travelling directions.



### Case 3 - Case 4

#### Horizontal mobile application

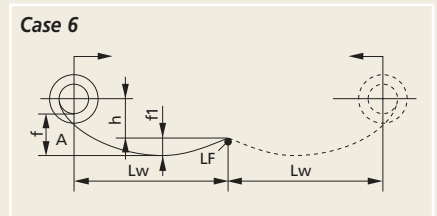
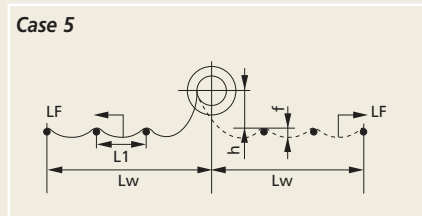
The cable is reeled out on supports ( $L1 < 1\text{m}$ ) or on rollers or rounded smooth supports ( $L1 = 1$  to  $3\text{m}$ , depending on the cable size). The cable is unreeled horizontally in either travelling directions.



### Case 5

#### Stationary application (cable fixed point on the mobile vehicle)

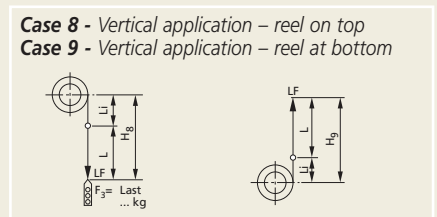
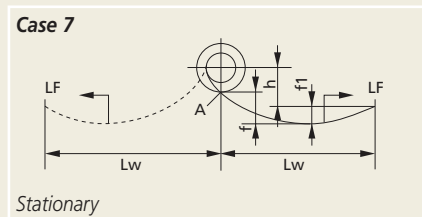
The cable is unreeled from the drum horizontally in either travelling directions through support rollers ( $L1 = 1$  to  $3\text{m}$ , depending on the cable size). This type of application is not recommended.



### Case 6 - Case 7

#### Horizontal mobile application

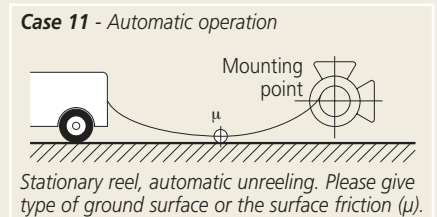
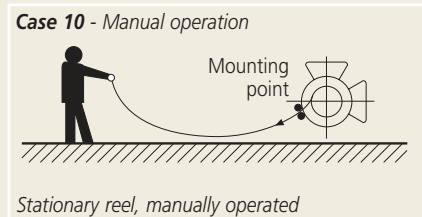
The cable is unreeled horizontally above the ground and without support in either travelling directions. The catenary  $f1$  must be calculated accurately. As a rule the value of  $f_{\text{max}}$  is approx. 10% of  $L$ .



### Case 8 - Case 9

#### Vertical application

Cable unreeled vertically downwards or in applications with strong inclination downwards. Cable unreeled vertically upwards or in applications with strong inclination upwards.



#### Explanation of the symbols (case 1 to 7):

- Lw**= maximum reeling cable length [m], (reeling length for reels travelling in both directions = one-half of the total travelling length);
- h**= (installation height) distance between lowest cable end position and drum centre [m];
- LF**= cable feeding point;
- f**= maximum cable sag [m], in case 6 and 7 related to position A in drawing;
- f1**= maximum cable sag [m], related to cable feeding point LF;
- L1**= roller or support distance [m]

$$\text{Calculation formula } f1 (m) \sim \frac{10 \times Lw^2 \times g}{8 \times F}$$

- L**= support distance [m];
- g**= cable weight [kg/m];
- F**= pulling force [Newton]

#### Explanation of the symbols (case 8 and 9):

- Lw**= maximum reeling cable length [m];
- H8/9**= maximum cable length hanging down from the drum [m].  
The drum is selected according to the total cable weight of the hanging cable.  
Additional weight (F3) must be considered and added to the cable weight.



# General product information

## CABLE CALCULATION TABLES

Selecting the correct cable for your application is extremely important. This page shows the Cavotec Alfo range of cables and their relative technical specifications. For specific help in selecting the correct cable or, if you have any special requirement for your type of application, please contact your local Cavotec office.

### Special reeling cables - NSHT

Cross sec.	kg/km	Ø (mm)	Max. allowed tension
			N
4 x 1,5	157	10,2	150
5 x 1,5	176	10,8	190
7 x 1,5	245	12,9	265
12 x 1,5	337	16,8	450
18 x 1,5	526	18,6	675
24 x 1,5	662	21,3	900
30 x 1,5	901	24,6	1125
36 x 1,5 (Bd)	950	29,0	1890
42 x 1,5	1056	26,5	1575
42 x 1,5 (Bd)	1192	29,5	2200
4 x 2,5	208	11,7	250
5 x 2,5	263	12,7	315
7 x 2,5	327	14,8	440
12 x 2,5	533	20	750
18 x 2,5	725	20,4	1125
24 x 2,5	988	24,8	1500
30 x 2,5 (Bd)	1325	28,2	2250
36 x 2,5	950	29,0	1890
36 x 2,5 (Bd)	1411	32,4	3150
4 x 4	270	12,5	600
5 x 4	362	14,3	900
4 x 6	409	16,9	900
5 x 6	511	17,8	750
7 x 6	715	20,9	1050
4 x 10	633	19,6	1000
5 x 10	766	20,9	1250
4 x 16	936	23,8	1600
5 x 16	1173	25,5	2000
4 x 25	1483	27,7	2500
4 x 35	2115	30,1	3500
49 x 2,5 (Bd)	2156	38,0	4280

### Calculation table for multi-layer reels/drums (VDE 0298 part 4 1995 table 19)

No. of layers	1	2	3	4	5
Correction factor	0,76	0,58	0,47	0,4	0,38

\* VDE 298 Part 4 1995 table 19

### Current capacity correction factor for multi-core cables\*°

No. loaded conductors	5	7	10	14	19	24	40	61
Correction factor	0,75	0,65	0,55	0,50	0,45	0,40	0,35	0,30

\* VDE 298 part 4 1995 table 18

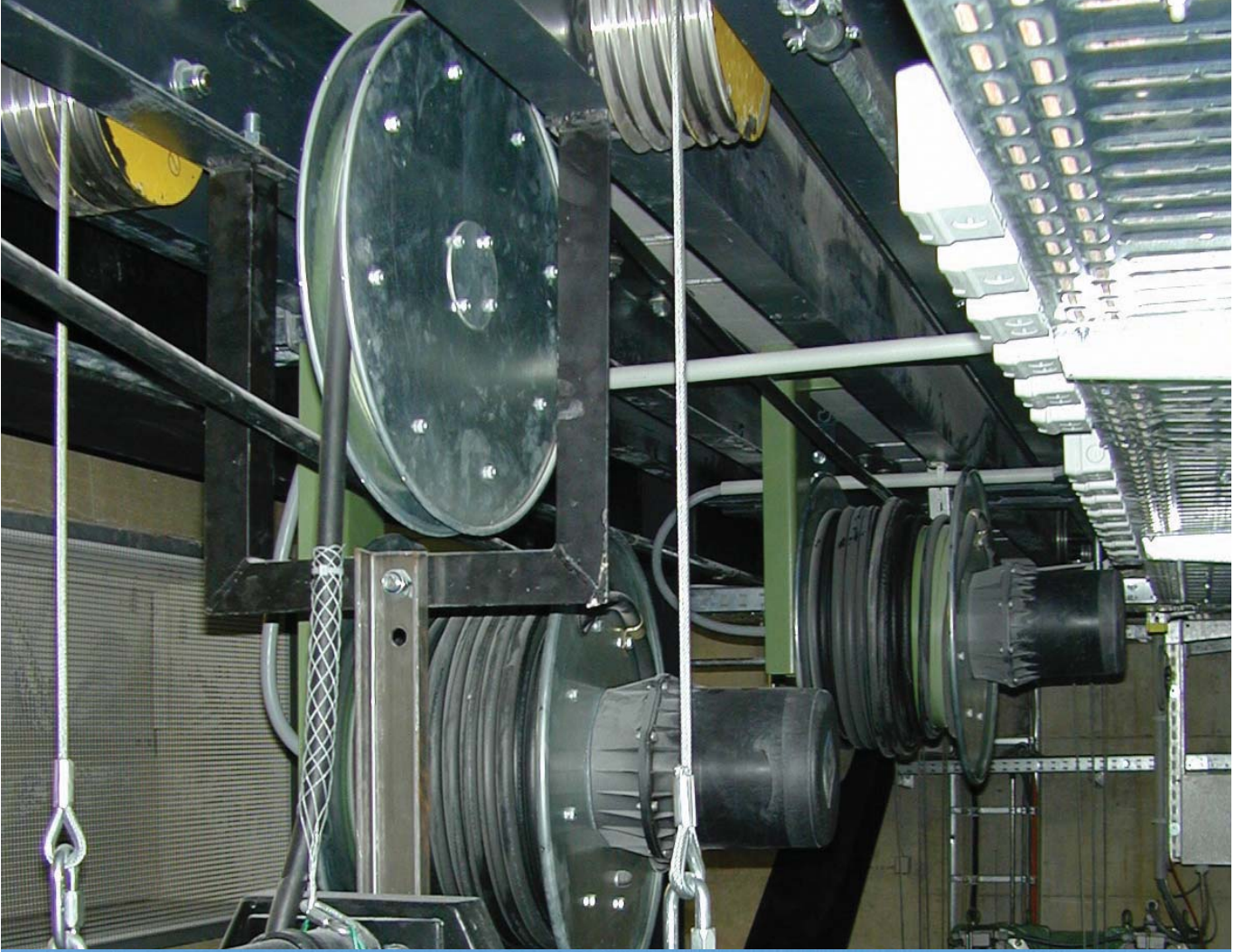
° max. conductor size 10 mm<sup>2</sup>

### Ambient temperature for NSHT cable

Temperature °C	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75
Correction factor	1	0,95	0,98	0,84	0,77	0,71	0,63	0,55	0,45	0,32

\* VDE 298 part 4 1995 table 13

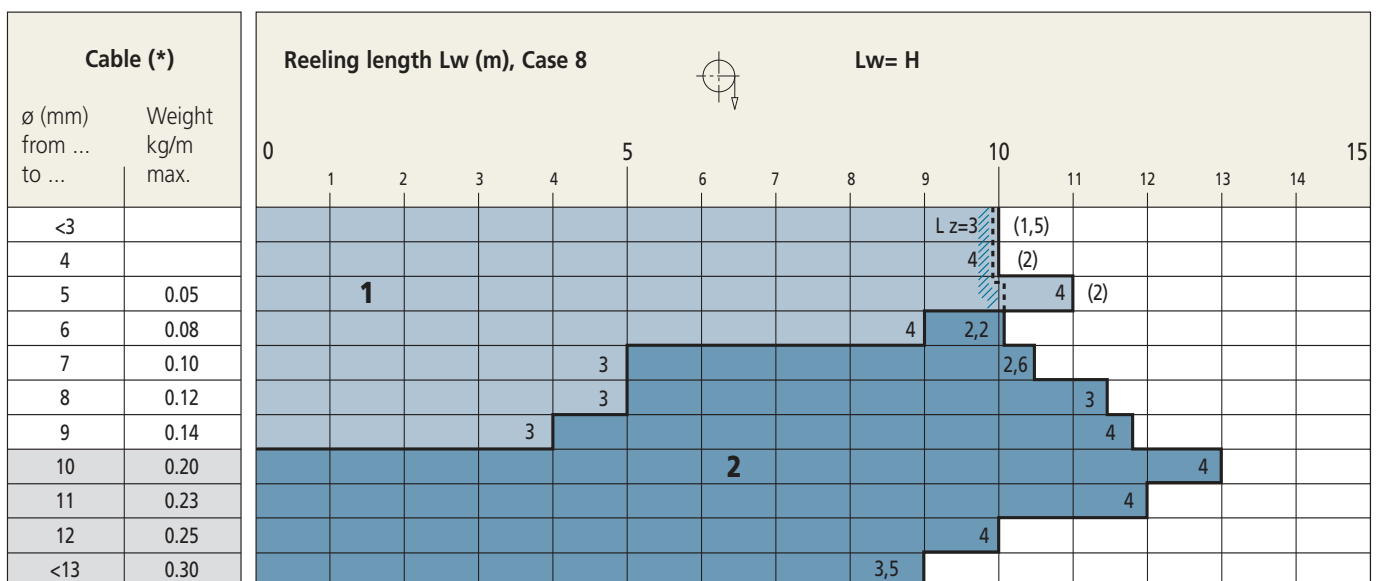
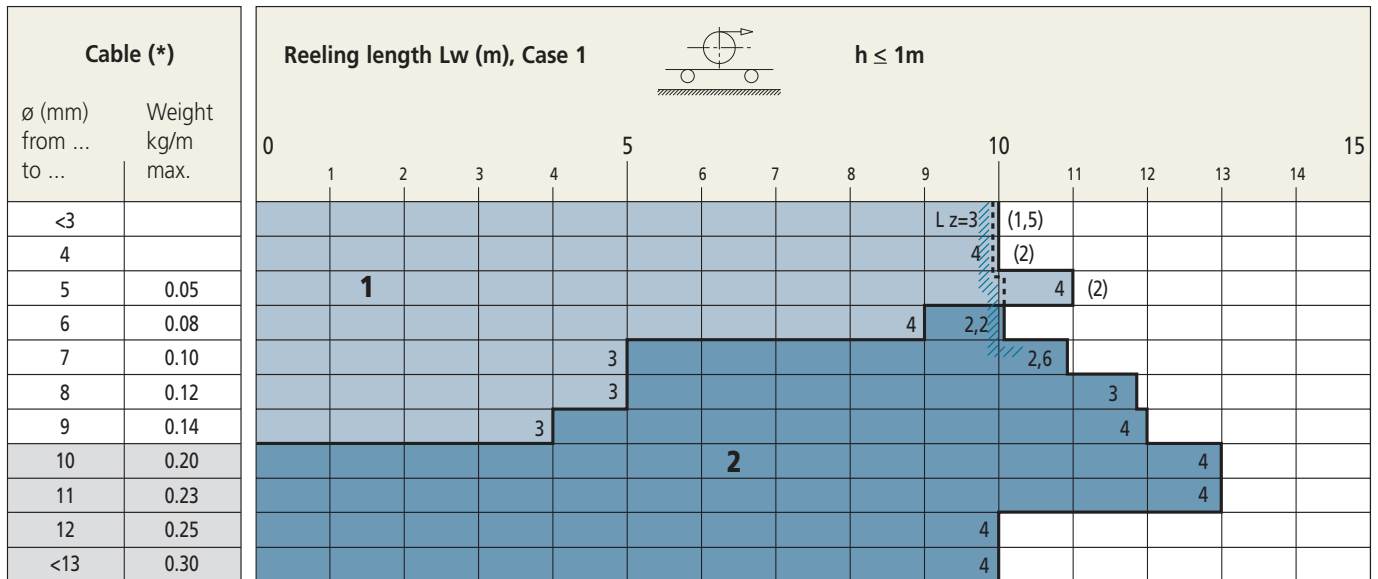




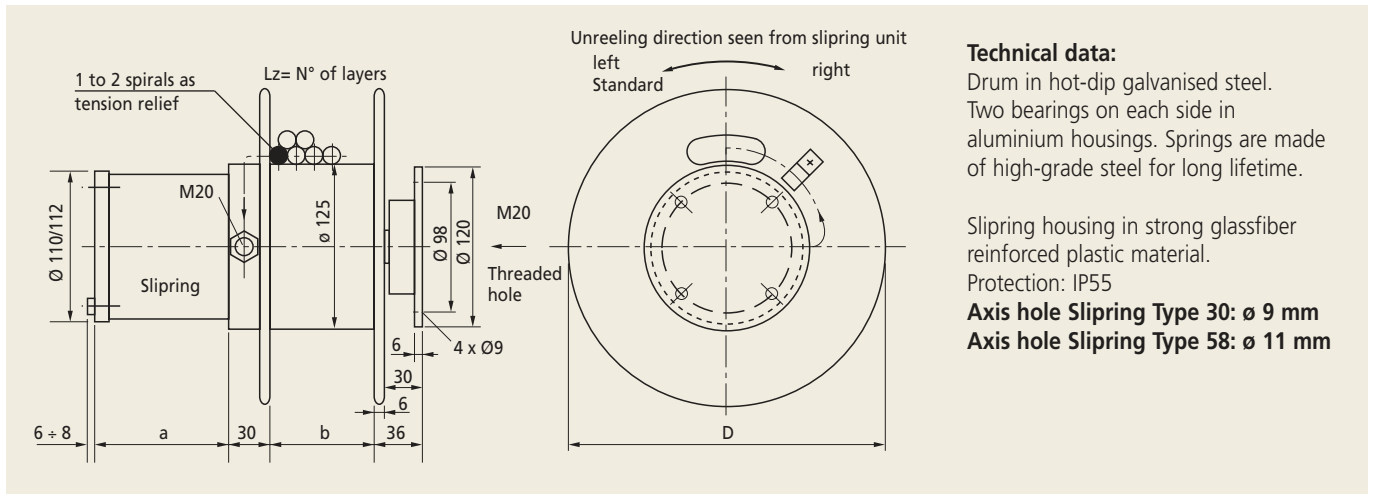
# Spring cable reel

## Type 125

### CHOICE OF CABLE REEL ACCORDING TO SEARCH KEY 1 AND 2



(\*) The correct cable data are given by each cable manufacturer and should be compared with the values in the tables.  
 For vertical applications the cable weight (kg/m) and additional load must be considered. Always check actual reeling length when near capacity limits.



**Technical data:**  
 Drum in hot-dip galvanised steel.  
 Two bearings on each side in aluminium housings. Springs are made of high-grade steel for long lifetime.

Slipping housing in strong glassfiber reinforced plastic material.  
 Protection: IP55  
**Axis hole Slipping Type 30: ø 9 mm**  
**Axis hole Slipping Type 58: ø 11 mm**

Special dimensions  
 b = 70  
 D = 220

Search key	Drum type	Slipping type	Dimensions (mm)			Spring force (daN)				Number of spring turns			Weight (kg)
			d ø	Dø	b	Za	Fa	Fe	Z	n vor	n Res.	n turns	
1	12180410AA -	30	125	180	36	0,8	0,7	2,2	2,6	2 u.>	1	30	3,6
2	12240812AA -		125	240	80	1,6	1,4	4,3	5,2	2 u.>	1	30	4,8
Special	12240410AA -	58	125	240	36	0,8	0,7	2,2	2,6	2 u.>	1	30	3,8
Special	12180812AA -		125	180	80	1,6	1,4	4,3	5,2	2 u.>	1	30	4,6

**Technical data for Slippings**

Drum type	type	Slipping				Housing Ø (mm)
		N° of poles	Current 100% ED, max. A	Cross sec mm²	Max. voltage V	
12...-	30	10	50mA-16A	1,5	380	110
	58	12	30mA-16A	1,5	125/380/500	110

**Housing dimensions**

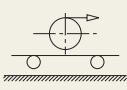
Dimension a - Standard depth of housing in relation to N° of poles											Gland		
Poles	Dim.	Poles	Dim.	Poles	Dim.	Poles	Dim.	Poles	Dim.	Poles		Dim.	
3	110	4	120	5	125	6	150	7	160	10	195	M20	
4/-/-		6/4/-		8/6/4		12/10/8		-/12/10		-/12		140	M20

▼ Slippings connected to cable terminals

# Spring cable reel


## Type 190

### CHOICE OF CABLE REEL ACCORDING TO SEARCH KEY 1.1 TO 3.10

Cable (*)		Reeling length Lw (m), Case 1	
∅ (mm) from ... to ...	Weight kg/m max.	 $h \leq 1m$	
		0	30
		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29	
<8	0.09		L z=1 2,8
8 - 10	0.15		1 2,5 2,4 3,9 3,5
10 - 12	0.25		1,4 2,8 4,2
12 - 14	0.30	1,1	1,7 2,7 2,6 3,5 5
14 - 16	0.40		1,9 2,7 4 4,2
16 - 18	0.45		2 4
18 - 20	0.55		2

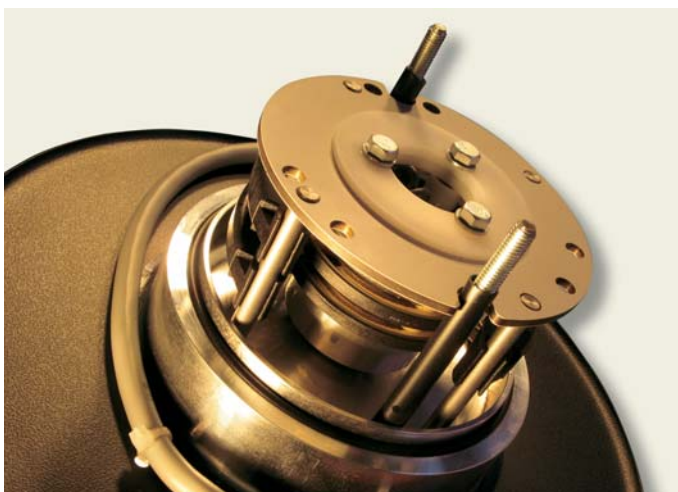
L z= N° of layers

■ = Grey background: diameter of axis hole is 15 mm

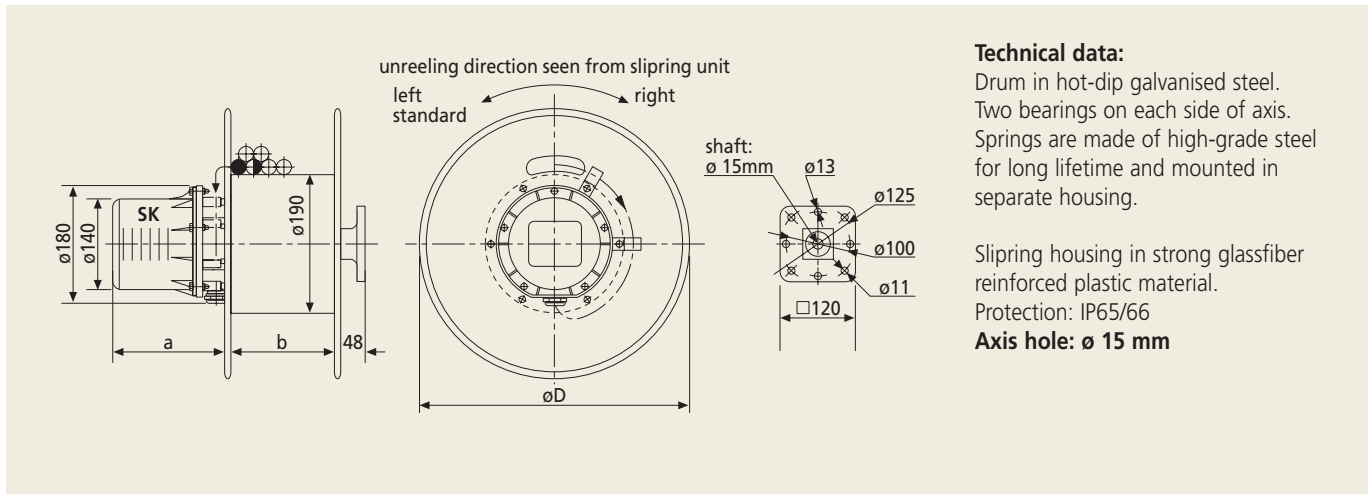
Cable (*)		Reeling length Lw (m), Case 8	
∅ (mm) from ... to ...	Weight kg/m max.	 $Lw = H$	
		0	30
		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29	
<8	0.09		L z=1 3,9 2,8
8 - 10	0.15		1 2,5 2,4 3,5
10 - 12	0.25		1,4 2,7 3
12 - 14	0.30	1,1	1,7 2,7 3,10 3,8
14 - 16	0.40		1,9 2,8 2,7 3,9
16 - 18	0.45		2 3,1 3,8
18 - 20	0.55		2 3

L z= N° of layers

■ = Grey background: diameter of axis hole is 15 mm



(\*) The correct cable data are given by each cable manufacturer and should be compared with the values in the tables.  
For vertical applications the cable weight (kg/m) and additional load must be considered. Always check actual reeling length when near capacity limits.



**Technical data:**

Drum in hot-dip galvanised steel.  
Two bearings on each side of axis.  
Springs are made of high-grade steel for long lifetime and mounted in separate housing.

Slipring housing in strong glassfiber reinforced plastic material.  
Protection: IP65/66

**Axis hole:  $\varnothing$  15 mm**

Special dimensions  
b = 110/ 180/ 215

Search key	Drum type	Slipring type	Dimensions (mm)			Spring force (daN)				Number of spring turns			Weight (kg)
			d $\varnothing$	D $\varnothing$	b	Za	Fa	Fe	Z	n vor	n Res.	n turns	
1.1	19291410BA -	45	190	290	136	3,4	2,9	6,8	7,8	3	1	17,5	10,0
2.5	19291420BA -	46	190	290	136	3,4	2,9	6,8	7,8	6	2	35	12,5
2.6	19331420BA -	47	190	330	136	3,4	2,9	6,8	7,8	6	2	35	13,1
2.7	19361420BA -	58	190	360	136	3,4	2,9	6,8	7,8	6	2	35	13,7
2.8	19361420DA -		190	360	136	5,0	3,7	11,0	12,0	4	2	26	15,0
3.9	19361430BA -	special	190	360	136	3,4	2,9	6,8	7,8	9	3	53	15,8
3.10	19361430DA -		190	360	136	5,0	3,7	11,0	12,0	6	3	39	18,0

Standard model

**Technical data for Sliprings**

Drum type	type	N° of poles	Slipring			Housing $\varnothing$ (mm)
			Current 100% ED, max. A	Cross sec. mm <sup>2</sup>	Max. voltage V	
19..-	45	18	50mA-25A	(2,5 <sup>2</sup> )	415	140
	46	5	50mA-25A	(4 <sup>2</sup> )	415	140
	47	5	50mA-50A	(6 <sup>2</sup> )	500	140
	58	24	30mA-16A	(1,5 <sup>2</sup> )	125/380/500	140

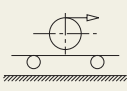
**Housing dimensions**

Dimension a - Standard depth of housing in relation to N° of poles										Gland
Poles	Dim.	Poles	Dim.	Poles	Dim.	Poles	Dim.	Poles	Dim.	
4	130	5	150	8	190	12	245	18	325	M25
4	130	5	150	—	—	—	—	—	—	M25
3	130	4	150	5	190	—	—	—	—	M25
8/8/6	130	12/10/8	150	22/18/14	190	24/24/24	245	—	—	M25

Sliprings connected to cable terminals  
For size 58 only up to 24 poles


# Spring cable reel Type 220

## CHOICE OF CABLE REEL ACCORDING TO SEARCH KEY 1.1 TO 4.13

Cable (*)		Reeling length Lw (m), Case 1				h ≤ 1m																																								
∅ (mm) from ... to ...	Weight kg/m max.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
<8	0.09									L z= 1,1																																				
8 - 10	0.15									1,3																																				
10 - 12	0.25																																													
12 - 14	0.30																																													
14 - 16	0.40																																													
16 - 18	0.45																																													
18 - 20	0.55																																													
20 - 22	0.70																																													
22 - 24	0.80																																													

L z= N° of layers

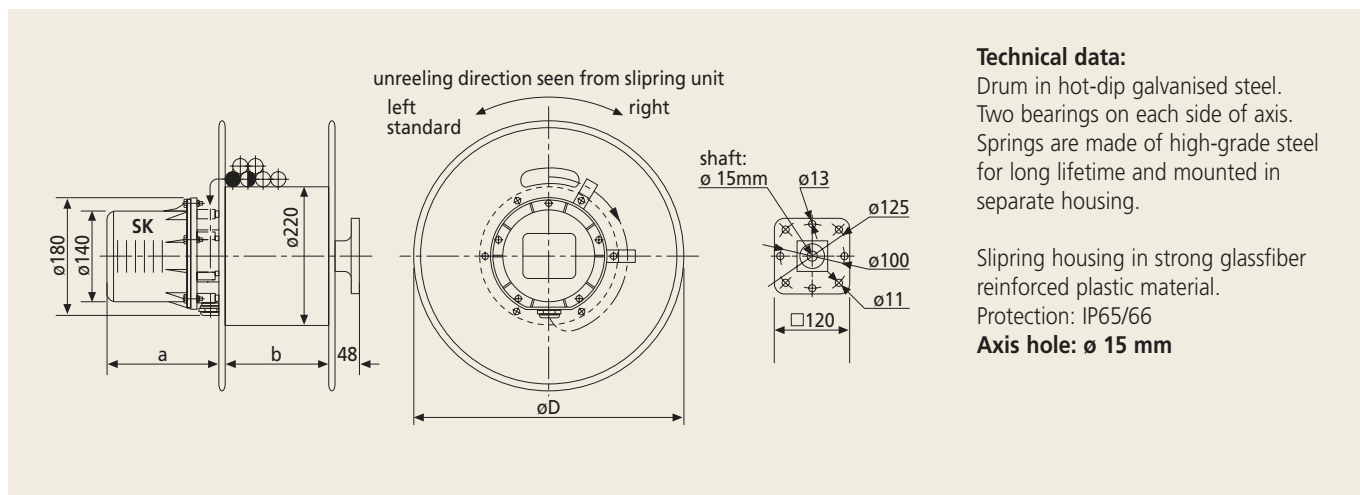
■ = Grey background: diameter of axis hole is 15 mm

Cable (*)		Reeling length Lw (m), Case 8				Lw= H																																			
∅ (mm) from ... to ...	Weight kg/m max.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35					
<8	0.09									L z= 1,1																															
8 - 10	0.15																																								
10 - 12	0.25																																								
12 - 14	0.30																																								
14 - 16	0.40																																								
16 - 18	0.45																																								
18 - 20	0.55																																								
20 - 22	0.70																																								
22 - 24	0.80																																								

L z= N° of layers

■ = Grey background: diameter of axis hole is 15 mm

(\*) The correct cable data are given by each cable manufacturer and should be compared with the values in the tables.  
For vertical applications the cable weight (kg/m) and additional load must be considered. Always check actual reeling length when near capacity limits.



**Technical data:**

Drum in hot-dip galvanised steel.  
Two bearings on each side of axis.  
Springs are made of high-grade steel for long lifetime and mounted in separate housing.

Slipring housing in strong glassfiber reinforced plastic material.  
Protection: IP65/66  
**Axis hole:  $\varnothing$  15 mm**

Special dimensions  
b = 215

Search key	Drum type	Slipring type	Dimensions (mm)			Spring force (daN)				Number of spring turns			Weight (kg)
			d $\varnothing$	D $\varnothing$	b	Za	Fa	Fe	Z	n vor	n Res.	n turns	
1.1	22301410BC -	45	220	300	136	2,5	2,4	5,8	6,1	3	1,5	20,5	12
1.2	22361410BC -		220	360	136	2,5	2,4	5,8	6,1	3	1,5	20,5	12,6
1.3	22361410DC -		220	360	136	3,5	3,3	10,3	10,8	2	1,5	16,5	12,8
1.4	22431410DC -		220	430	136	3,5	3,3	10,3	10,8	2	1,5	16,5	13
2.5	22361420BC -		220	360	136	3	2,7	5,8	6,1	8	3	41	14,7
2.6	22431420BC -		220	430	136	3	2,7	5,8	6,1	8	3	41	15
2.7	22361420DC -		220	360	136	3,5	3,3	10,3	10,8	4	3	33	15
2.8	22431420DC -		220	430	136	3,5	3,3	10,3	10,8	4	3	33	16
2.9	22431420EB -		220	430	136	6,1	5,7	14,5	15	5	2	25	18
3.10	22361830DC -		220	360	180	3,5	3,3	10,3	10,8	6	4,5	49,5	19,5
3.11	22431830DC -		220	430	180	3,5	3,3	10,3	10,8	6	4,5	49,5	20
3.12	22431830EB -		220	430	180	6,1	5,7	14,5	15	7,5	3	37,5	22
4.13	22431840DC -		220	430	180	3,5	3,3	10,3	10,8	8	6	66	25
4.14	22431840EB -		220	430	180	6,1	5,7	14,5	15	10	4	50	30

Standard model

**Technical data for Sliprings**

Drum type	type	N° of poles	Slipring Current 100% ED, max. A	Cross sec mm²	Max. voltage V	Housing $\varnothing$ (mm)
22...	45	18	50mA-25A	2,5	415	140
	46	5	50mA-25A	4	415	140
	47	5	50mA-50A	6	500	140
	58	24	30mA-16A	1,5	125/380/500	140

**Housing dimensions**

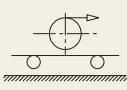
Dimension a - Standard depth of housing in relation to N° of poles										Gland
Poles	Dim.	Poles	Dim.	Poles	Dim.	Poles	Dim.	Poles	Dim.	
4	130	5	150	8	190	12	245	18	325	M25 M32
4	130	5	150	—	—	—	—	—	—	M25 M32
3	130	4	150	5	190	—	—	—	—	M32
8/8/6	130	12/10/8	150	22/18/14	190	24/24/24	245	—	—	M25 M32

Sliprings connected to cable terminals  
For size 58 only up to 24 poles

# Spring cable reel


## Type 280

### CHOICE OF CABLE REEL ACCORDING TO SEARCH KEY 1.1 TO 5.19

Cable (*)		Reeling length Lw (m), Case 1		h ≤ 1m									
∅ (mm) from ... to ...	Weight kg/m max.												
		10	20	30	40	50	60	70	80	90			
		2 4 6 8	12 14 16 18	22 24 26 28	32 34 36 38	42 44 46 48	52 54 56 58	62 64 66 68	72 74 76 78	82 84 86 88			
<8	0.09		L z=1	1,7	2,1		3,1		4,2				
8 - 10	0.15		1,3	2,1	2,6	4,14		4,2	5,17	5,6			
10 - 12	0.25		1,6		2,6	3,11	3,2		4,9	5,1			
12 - 14	0.30		2		3,9	3,1		3,8	4,6	5,18	6,1		
14 - 16	0.40		1,1	2,1		3	3,4	3,12	4,2	4,15	5,1	5,19	6
16 - 18	0.45			2,3		3		3,8		4,7	5,7	6	
18 - 20	0.55			2,6	3		3,10	4	4,15	5			
20 - 22	0.70			2,5		3		4	3,13	4,8	5		
22 - 24	0.80		2	1,2	3	3,13	4,3						

L z= N° of layers

■ = Grey background: diameter of axis hole is 20 mm

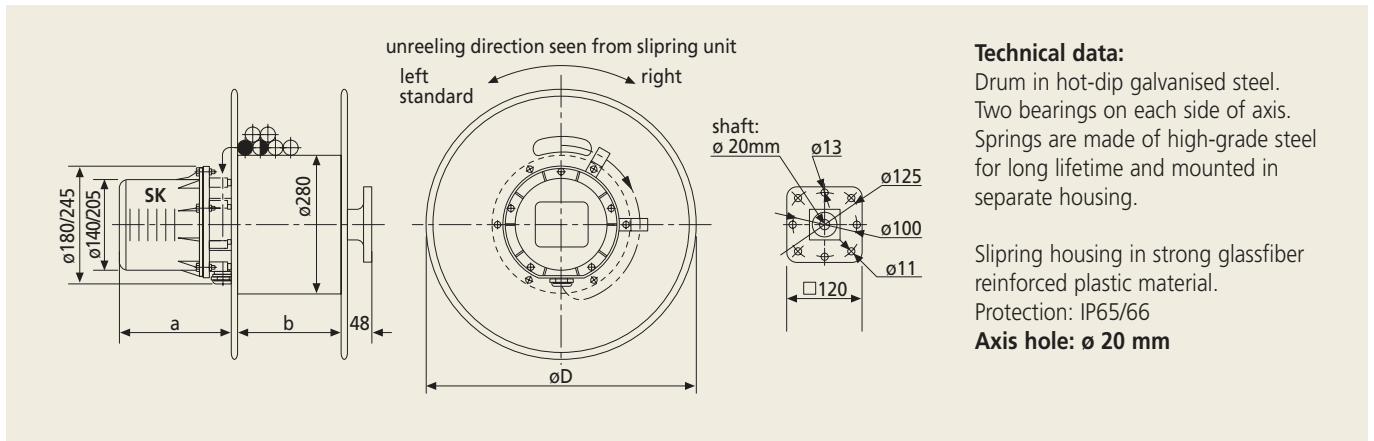
Cable (*)		Reeling length Lw (m), Case 8		Lw= H						
∅ (mm) from ... to ...	Weight kg/m max.									
		5	10	15	20	25	30	35	40	45
		1 2 3 4	6 7 8 9	1 2 3 4	6 7 8 9	1 2 3 4	6 7 8 9	1 2 3 4	6 7 8 9	1 2 3 4 6
<8	0.09			L z=1			1,7			2,6
8 - 10	0.15			1,1	3,9		2,1		4,16	3
10 - 12	0.25		1,3		1,3		2,6			
12 - 14	0.30			1,6		3,1				
14 - 16	0.40			1,7						
16 - 18	0.45			1,7	1,9					
18 - 20	0.55		1,4	1,5	2,1					
20 - 22	0.70		1,4	2,5	2,4					
22 - 24	0.80		1,4	2	2,6	3				

L z= N° of layers

■ = Grey background: diameter of axis hole is 20 mm

(\*) The correct cable data are given by each cable manufacturer and should be compared with the values in the tables.  
For vertical applications the cable weight (kg/m) and additional load must be considered. Always check actual reeling length when near capacity limits.





**Technical data:**

Drum in hot-dip galvanised steel.  
Two bearings on each side of axis.  
Springs are made of high-grade steel for long lifetime and mounted in separate housing.

Slipring housing in strong glassfiber reinforced plastic material.  
Protection: IP65/66

**Axis hole:  $\varnothing$  20 mm**

Special dimensions b = 136/ 215/ 250, D = 460

Search key	Drum type	Slipring type	Dimensions (mm)			Spring force (daN)				Number of spring turns			Weight (kg)
			d $\varnothing$	D $\varnothing$	b	Za	Fa	Fe	Z	n vor	n Res.	n turns	
1.1	28431810DB —	02	280	430	180	3,0	2,5	7,0	9,0	3	1,0	24,5	21,0
1.2	28501810DB —		280	500	180	3,0	2,5	7,0	9,0	3	1,0	24,5	22,0
1.3	28361810EA —		280	360	180	4,5	4,0	10,0	12,0	3	1,5	21	21,0
1.4	28431810EA —		280	430	180	4,5	4,0	10,0	12,0	3	1,5	21	21,5
2.5	28431812EA —	03	280	430	180	9,0	8,0	20,0	24,0	3	1,5	21	26,0
2.6	28501812EA —	45	280	500	180	9,0	8,0	20,0	24,0	3	1,5	21	27,0
3.9	28431820EA —		280	430	180	4,5	4,0	10,0	12,0	6	3,0	42,5	26,0
3.10	28501820EA —	46	280	500	180	4,5	4,0	10,0	12,0	6	3,0	42,5	27,0
3.11	28431820DB —		280	430	180	3,0	2,5	7,0	9,0	6	2,0	49,5	27,0
3.12	28501820DB —	47	280	500	180	3,0	2,5	7,0	9,0	6	2,0	49,5	28,0
3.13	28551820EA —		280	550	180	4,5	4,0	10,0	12,0	6	3,0	42,5	28,0
4.14	28431830DB —	58	280	430	180	3,0	2,5	7,0	9,0	9	3,0	74,5	30,0
4.15	28551830EA —		280	550	180	4,5	4,0	10,0	12,0	9	4,5	64	32,5
4.16	28431830EA —	98	280	430	180	4,5	4,0	10,0	12,0	9	4,5	64	31,0
5.17	28431840DB —		280	430	180	3,0	2,5	7,0	9,0	12	4,0	99,5	34,5
5.18	28501840EA —	98	280	500	180	4,5	4,0	10,0	12,0	12	6,0	85,5	36,5
5.19	28551840EA —		280	550	180	4,5	4,0	10,0	12,0	12	6,0	85,5	37,0

Standard model

**Technical data for Sliprings**

Drum type	type	N° of poles	Slipring			Housing $\varnothing$ (mm)
			Current 100% ED, max. A	Cross sec mm <sup>2</sup>	Max. voltage V	
28...-	02	7	50	max 10 <sup>2</sup>	500	205/245
	03	5	90	max 16 <sup>2</sup>	500	205/245
	45	18	25	(2,5 <sup>2</sup> )	415	140/180
	46	5	25	(4 <sup>2</sup> )	415	140/180
	47	5	50	(6 <sup>2</sup> )	500	140/180
	58	26	16	(1,5 <sup>2</sup> )	125/380/500	140/180
	98	36	20 (25)	(2,5 <sup>2</sup> )	500	205/245

**Housing dimensions**

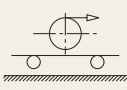
Dimension a – Standard depth of housing in relation to N° of poles																Gland		
Poles	Dim.	Poles	Dim.	Poles	Dim.	Poles	Dim.	Poles	Dim.	Poles	Dim.	Poles	Dim.	Poles	Dim.			
—	—	7	205	—	—	—	—	—	—	—	—	—	—	—	—	M32 M40		
—	—	6	205	—	—	—	—	—	—	—	—	—	—	—	—	M32 M40		
4	130	5	150	8	190	—	—	12	245	—	—	18	325	—	—	M25 M32		
4	130	5	150	—	—	—	—	—	—	—	—	—	—	—	—	M25 M32		
3	130	4	150	5	190	—	—	7	245	—	—	—	—	—	—	M32		
8	130	12	150	22	190	—	—	27	245	—	—	—	—	—	—	M25		
8		10		18		27	—	—		—	—	—	—	—	—	—	—	M32
6		8		14		27	—	—		—	—	—	—	—	—	—	—	—
—	—	12	205	24	295	24	295	36	385	—	—	—	—	—	—	M32 M40		

Sliprings connected to cable terminals  
For size 58 only up to 24 poles

# Spring cable reel


## Type 280 HA (with higher spring force)

### CHOICE OF CABLE REEL ACCORDING TO SEARCH KEY 1.5 TO 6.22

Cable (*)		Reeling length $L_w$ (m), Case 1				$h \leq 1m$																																																									
$\varnothing$ (mm)	Weight kg/m max.																																																														
from ...	to ...																																																														
<8	0.09																																																														
8 - 10	0.15																																																														
10 - 12	0.25																																																														
12 - 14	0.30																																																														
14 - 16	0.40																																																														
16 - 18	0.45																																																														
18 - 20	0.55																																																														
20 - 22	0.70																																																														
22 - 24	0.80																																																														

$Lz = N^\circ$  of layers

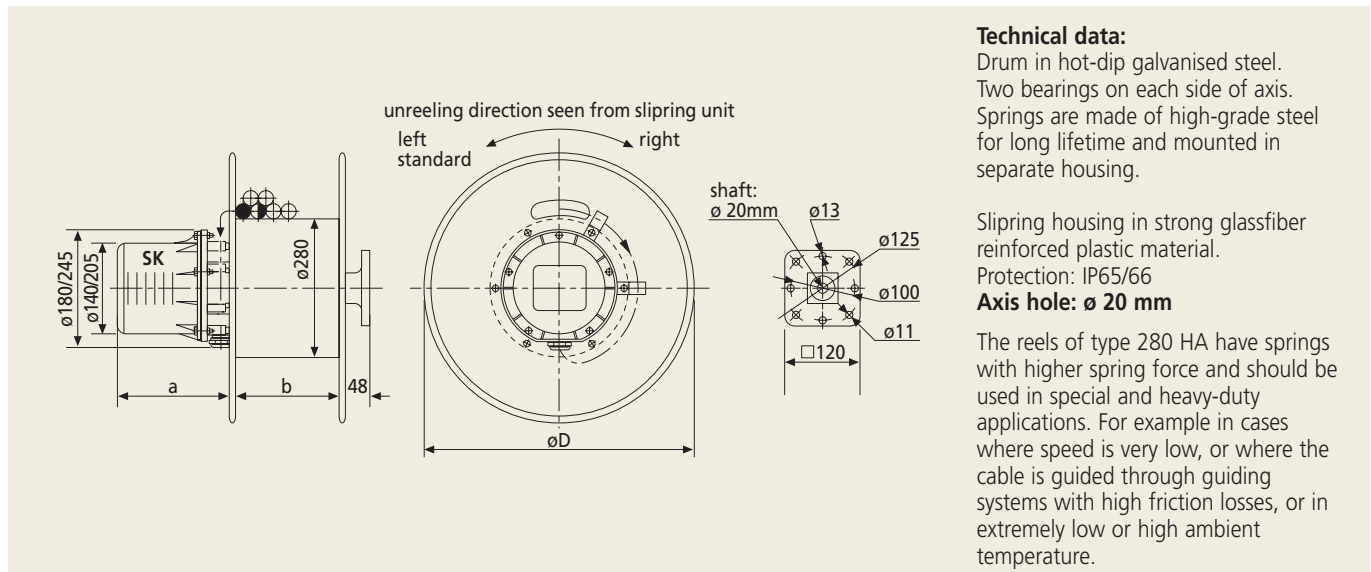
■ = Grey background: diameter of axis hole is 20 mm

Cable (*)		Reeling length $L_w$ (m), Case 8				$Lw = H$																																																									
$\varnothing$ (mm)	Weight kg/m max.																																																														
from ...	to ...																																																														
<8	0.09																																																														
8 - 10	0.15																																																														
10 - 12	0.25																																																														
12 - 14	0.30																																																														
14 - 16	0.40																																																														
16 - 18	0.45																																																														
18 - 20	0.55																																																														
20 - 22	0.70																																																														
22 - 24	0.80																																																														

$Lz = N^\circ$  of layers

■ = Grey background: diameter of axis hole is 20 mm

(\*) The correct cable data are given by each cable manufacturer and should be compared with the values in the tables.  
For vertical applications the cable weight (kg/m) and additional load must be considered. Always check actual reeling length when near capacity limits.



**Technical data:**

Drum in hot-dip galvanised steel.  
Two bearings on each side of axis.  
Springs are made of high-grade steel for long lifetime and mounted in separate housing.

Slipring housing in strong glassfiber reinforced plastic material.  
Protection: IP65/66

**Axis hole: ø 20 mm**

The reels of type 280 HA have springs with higher spring force and should be used in special and heavy-duty applications. For example in cases where speed is very low, or where the cable is guided through guiding systems with high friction losses, or in extremely low or high ambient temperature.

Special dimensions b = 136/ 215/ 250, D = 460

Search key	Drum type	Slipring type	Dimensions (mm)			Spring force (daN)				Number of spring turns			Weight (kg)
			d ø	Dø	b	Za	Fa	Fe	Z	n vor	n Res.	n turns	
1.5	28361810HA -	02	280	360	180	7,1	6,8	17,5	19	3	1,5	17	21,5
1.6	28431810HA -		280	430	180	7,1	6,8	17,5	19	3	1,5	17	21,8
3.14	28431820HA -		280	430	180	7,1	6,8	17,5	19	6	3	34,5	28
3.15	28551820HA -		280	550	180	7,1	6,8	17,5	19	6	3	34,5	29
4.17	28431830HA -		280	430	180	7,1	6,8	17,5	19	9	4,5	52	32
4.18	28501830HA -		280	500	180	7,1	6,8	17,5	19	9	4,5	52	32,5
4.19	28551830HA -		280	550	180	7,1	6,8	17,5	19	9	4,5	52	33
5.20	28431840HA -		280	430	180	7,1	6,8	17,5	19	12	6	69,5	38
5.21	28552140HA -		280	550	215	7,1	6,8	17,5	19	12	6	69,5	39
6.22	28551822HA -		280	550	180	14	13,5	35	38	6	3	34,5	39

Standard model

**Technical data for Sliprings**

Drum type	type	N° of poles	Slipring			Housing Ø (mm)
			Current 100% ED, max. A	Cross sec mm²	Max. voltage V	
28...	02	7	50mA-50A	max 10²	500	205/245
	03	5	50mA-90A	max 16²	500	205/245
	45	18	50mA-25A	(2,5²)	415	140/180
	46	5	50mA-25A	(4²)	415	140/180
	47	5	50mA-50A	(6²)	500	140/180
	58	26	50mA-16A	(1,5²)	125/380/500	140/180
	98	36	50mA-25A	(2,5²)	500	205/245

**Housing dimensions**

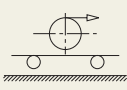
Dimension a - Standard depth of housing in relation to N° of poles														Gland
Poles	Dim.	Poles	Dim.	Poles	Dim.	Poles	Dim.	Poles	Dim.	Poles	Dim.	Poles	Dim.	
—	—	7	205	—	—	—	—	—	—	—	—	—	—	M32 M40
—	—	6	205	—	—	—	—	—	—	—	—	—	—	M32 M40
4	130	5	150	8	190	—	—	12	245	—	—	18	325	M25 M32
4	130	5	150	—	—	—	—	—	—	—	—	—	—	M25 M32
3	130	4	150	5	190	—	—	7	245	—	—	—	—	M32
8	130	12	150	22	190	—	—	27	245	—	—	—	—	M25
8		10		18		27	—	—		—	—			
6		8		14		27	—	—		—	—			
—	—	12	205	24	295	24	295	36	385	—	—	—	—	M32 M40

▼ Sliprings connected to cable terminals  
For size 58 only up to 24 poles


# Spring cable reel

## Type 400

### CHOICE OF CABLE REEL ACCORDING TO SEARCH KEY 1.1 TO 5.21

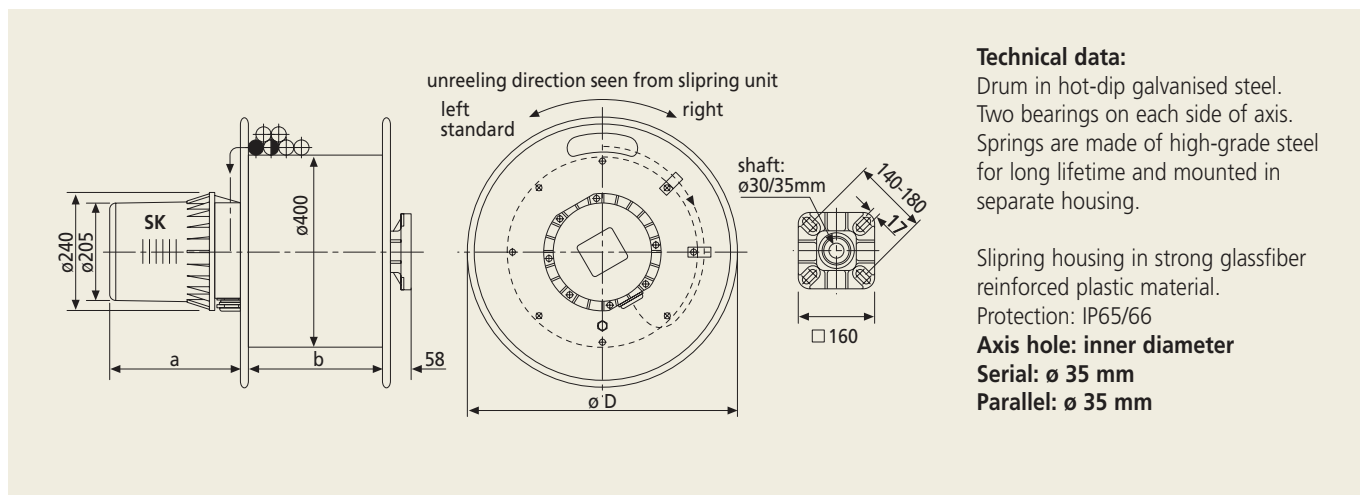
Cable (*)		Reeling length Lw (m), Case 1		h = 1 - 1,5 m																																	
∅ (mm) from ... to ...	Weight kg/m max.																																				
		10		20		30		40		50		60		70		80		90																			
		2	4	6	8	12	14	16	18	22	24	26	28	32	34	36	38	42	44	46	48	52	54	56	58	62	64	66	68	72	74	76	78	82	84	86	88
10 - 12	0,25																																				
12 - 14	0,30																																				
14 - 16	0,40																																				
16 - 18	0,45																																				
18 - 20	0,55																																				
20 - 22	0,70																																				
22 - 24	0,80																																				
24 - 26	0,95																																				
26 - 28	1,10																																				
28 - 30	1,30																																				
30 - 32	1,50																																				
32 - 34	1,60																																				

L z = N° of layers  = Grey background: diameter of axis hole is 20 mm

Cable (*)		Reeling length Lw (m), Case 8		Lw = H																					
∅ (mm) from ... to ...	Weight kg/m max.																								
		10		20		30		40		50		60													
		2	4	6	8	12	14	16	18	22	24	26	28	32	34	36	38	42	44	46	48	52	54	56	58
10 - 12	0,25																								
12 - 14	0,30																								
14 - 16	0,40																								
16 - 18	0,45																								
18 - 20	0,55																								
20 - 22	0,70																								
22 - 24	0,80																								
24 - 26	0,95																								
26 - 28	1,10																								
28 - 30	1,30																								
30 - 32	1,50																								
32 - 34	1,60																								

L z = N° of layers  = Grey background: diameter of axis hole is 20 mm

(\*) The correct cable data are given by each cable manufacturer and should be compared with the values in the tables.  
For vertical applications the cable weight (kg/m) and additional load must be considered. Always check actual reeling length when near capacity limits.



### Technical data:

Drum in hot-dip galvanised steel.  
Two bearings on each side of axis.  
Springs are made of high-grade steel for long lifetime and mounted in separate housing.

Slipring housing in strong glassfiber reinforced plastic material.  
Protection: IP65/66

**Axis hole: inner diameter**

**Serial:  $\varnothing$  35 mm**

**Parallel:  $\varnothing$  35 mm**

Special dimensions b = 215/ 340/ 150

Search key	Drum type	Slipring type	Dimensions (mm)			Spring force (daN)				Number of spring turns			Weight (kg)	
			d $\varnothing$	D $\varnothing$	b	Za	Fa	Fe	Z	n vor	n Res.	n turns		
1.1	40562810TA -	02	400	560	280	7	6	20	24	2,5	1,5	21	54	
1.2	40562810SA -		400	560	280	6	5	13	15	3,5	1,5	25	52	
1.3	40632810TA -		400	630	280	7	6	20	24	2,5	1,5	21	56	
1.4	40712810TA -		400	710	280	7	6	20	24	2,5	1,5	21	58	
1.6	40632810UA -		400	630	280	16	13	39	46	2,5	1,0	16,5	59	
2.7	40562812TA -		03	400	560	280	14	12	40	48	2,5	1,5	21	68
2.8	40632812TA -			400	630	280	14	12	40	48	2,5	1,5	21	70
3.9	40632813TA -		05	400	630	280	21	18	60	72	2,5	1,5	21	83
3.10	40712813TA -			400	710	280	21	18	60	72	2,5	1,5	21	84
4.11	40562820TA -		09	400	560	280	7	6	20	24	5	3	42	68
4.12	40632820SA -	400		630	280	6	5	13	15	7	3	50	65	
4.13	40712820TA -	(45)	400	710	280	7	6	20	24	5	3	42	72	
4.14	40802820TA -	80	400	800	280	7	6	20	24	5	3	42	75	
4.15	40562820UA -		400	560	280	16	13	39	46	5	2	33	74	
5.17	40632830SA -	98	400	630	280	6	5	13	15	10,5	4,5	75	75	
5.18	40712830SA -		400	710	280	6	5	13	15	10,5	4,5	75	78	
5.19	40632830TA -		400	630	280	7	6	20	24	7,5	4,5	63	83	
5.20	40712830TA -		400	710	280	7	6	20	24	7,5	4,5	63	84	
5.21	40802830TA -		400	800	280	7	6	20	24	7,5	4,5	63	86	
5.22	40632830UA -		400	630	280	16	13	39	46	7	3,5	49,5	92	

Standard model

### Technical data for Sliprings

Drum type	type	Slipring				Housing $\varnothing$ (mm)
		N <sup>o</sup> of poles	Current 100% ED, max. A	Cross sec mm <sup>2</sup>	Max. voltage V	
40...	02	24	50mA-50A	max 10 <sup>2</sup>	500	205
	03	17	50mA-90A	max 16 <sup>2</sup>	500	205
	06	7 u.>	50mA-200A	max 35 <sup>2</sup>	660	360
	45	18	50mA-25A	2,5 <sup>2</sup>	415	205
	80	32	50mA-16A	1,5 <sup>2</sup>	125/380/500	205
	98	42/60	30mA-25A	2,5 <sup>2</sup> /1,5 <sup>2</sup>	500	205

### Housing dimensions

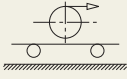
Dimension a - Standard depth of housing in relation to N <sup>o</sup> of poles								Gland
Poles	Dim.	Poles	Dim.	Poles	Dim.	Poles	Dim.	
7	205	11	295	16	390	19	430	M20
6	205	10	295	14	390	17	430	M25
								M25
								M32
								M40
								M63
24/22/18	205	32	295					M63
12	205	24	295	36	390	42	430	M48

Sliprings connected to cable terminals

# Spring cable reel


## Type 500 – Horizontal application

CHOICE OF CABLE REEL ACCORDING TO SEARCH KEY 1.1 TO 5.19 (FOR REELING LENGTH UP TO 60 M)

Cable (*)		Reeling length Lw (m), Case 1																		h= 1 - 1,5 m																	
∅ (mm)	Weight from ... to ... kg/m max.	1 2 3 4   5 6 7 8 9   10 11 12 13 14   15 16 17 18 19   20 21 22 23 24   25 26 27 28 29   30 31 32 33 34   35 36 37 38 39   40 41 42 43 44   45 46 47 48 49   50 51 52 53 54   55 56 57 58 59																																			
10 - 12	0.25																																				
12 - 14	0.30																																				
14 - 16	0.40																																				
16 - 18	0.45																																				
18 - 20	0.55																																				
20 - 22	0.70																																				
22 - 24	0.80																																				
24 - 26	0.95																																				
26 - 28	1.10																																				
28 - 30	1.30																																				
30 - 32	1.50																																				
32 - 34	1.60																																				
34 - 36	1.80																																				
36 - 38	2.25																																				
38 - 40	2.50																																				
40 - 42	2.80																																				
		L z= 0,9																																			
		0,95																		1,7																	
		1,1																		1,9																	
		1,2																		2,1																	
		1,5																		2,4																	
		1,7																		2,8																	
		1,7																		3,2																	
		2,21																		3,2																	
		2,21																		3,4																	
		2,21																		3,6																	
		2,2																		3,6																	
		2,2																		3,9																	
		2,2																		3,9																	
		2,2																		4																	
		2,4																		4																	
		2,4																		4,2																	
		2,5																		4,2																	
		2,6																		4,2																	
		3																		4,2																	
		3																		4,5																	
		2,7																		4,5																	
		2,6																		4,5																	
		2,8																		4,5																	
		2,9																		4,5																	
		3																		4,5																	
		3,7																		4,5																	
		3,8																		4,5																	
		4																		4,5																	
		4																		4,5																	
		4																		4,5																	

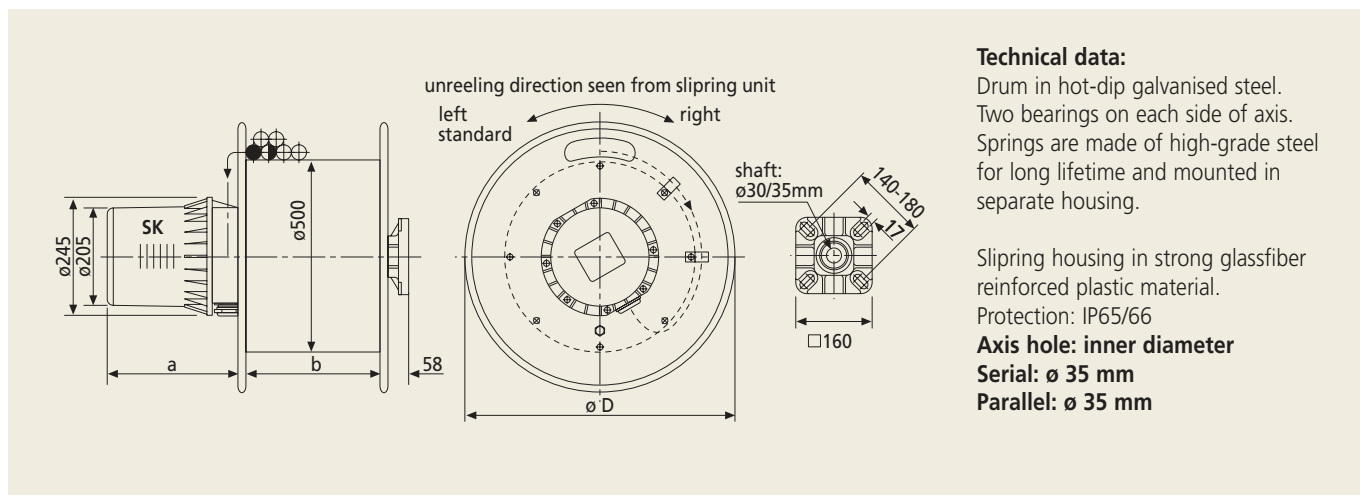
L z= N° of layers ■ = Grey background: diameter of axis hole is 30 mm

CHOICE OF CABLE REEL ACCORDING TO SEARCH KEY 4.14 TO 6.21 (FOR REELING LENGTH 61 TO 115 M)

Cable (*)		Reeling length Lw (m), Case 1																		h= 1 - 1,5 m																	
∅ (mm)	Weight from ... to ... kg/m max.	61 62 63 64   65 66 67 68 69   70 71 72 73 74   75 76 77 78 79   80 81 82 83 84   85 86 87 88 89   90 91 92 93 94   95 96 97 98 99   100 101 102 103 104   105 106 107 108 109   110 111 112 113 114																																			
10 - 12	0.25																																				
12 - 14	0.30																																				
14 - 16	0.40																																				
16 - 18	0.45																																				
18 - 20	0.55																																				
20 - 22	0.70																																				
22 - 24	0.80																																				
24 - 26	0.95																																				
26 - 28	1.10																																				
28 - 30	1.30																																				
30 - 32	1.50																																				
32 - 34	1.60																																				
34 - 36	1.80																																				
36 - 38	2.25																																				
38 - 40	2.50																																				
40 - 42	2.80																																				
		2,6																		2,7																	
		2,8																		3																	
		3,1																		3,5																	
		3,5																		3,5																	
		4,2																		3,9																	
		4,4																		4																	
		4,7																		4,2																	
		5																		4,3																	
		5,4																		5																	
		5,4																		5,5																	
		5,4																		5,5																	
		5,4																		5,5																	
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		5,4																		5,5																	
		5,4																		5,5																	
		5,4																		5,5																	
		5,4																		5,5																	
		5,4																		5,5																	

L z= N° of layers ■ = Grey background: diameter of axis hole is 30 mm

(\*) The correct cable data are given by each cable manufacturer and should be compared with the values in the tables. For vertical applications the cable weight (kg/m) and additional load must be considered. Always check actual reeling length when near capacity limits.



**Technical data:**

Drum in hot-dip galvanised steel.  
Two bearings on each side of axis.  
Springs are made of high-grade steel for long lifetime and mounted in separate housing.

Slipring housing in strong glassfiber reinforced plastic material.  
Protection: IP65/66

**Axis hole: inner diameter**

**Serial: ø 35 mm**

**Parallel: ø 35 mm**

Special dimension b= 215, D= > 900

Search key	Drum type	Slipring type	Dimensions (mm)			Spring force (daN)				Number of spring turns			Weight (kg)	
			d ø	Dø	b	Za	Fa	Fe	Z	n vor	n Res.	n turns		
1.1	50712810TA -	02	500	710	280	6	5	17	20	2,5	1,5	21	78	
1.2	50802810TA -		500	800	280	6	5	17	20	2,5	1,5	21	80	
1.3	50712810UA -		500	710	280	14	11	31	38	2,5	1	16,5	82	
1.4	50802810UA -		500	800	280	14	11	31	38	2,5	1	16,5	84	
1.5	50902810UB -		500	900	280	10	8,5	29	35	2,5	1,5	20	88	
2.6	50802812TA -		500	800	280	12	10	34	40	2,5	1,5	21	84	
2.7	50802812UA -		500	800	280	28	22	62	76	2,5	1	16,5	90	
3.8	50802813TA -		500	800	280	18	15	51	60	2,5	1,5	21	88	
3.9	50802813UA -		500	800	280	42	33	93	114	2,5	1	16,5	110	
4.10	50802820TA -		500	800	280	6	5	17	20	5	3	42	84	
4.11	50902820TA -		(45)	500	900	280	6	5	17	20	5	3	42	90
4.12	50802820UA -		500	800	280	14	11	31	38	5	2	33	90	
4.13	50802820UB -		500	800	280	10	8,5	29	35	5	3	40	95	
4.14	50902820UB -		500	900	280	10	8,5	29	35	5	3	40	102	
5.15	50802830TA -		500	800	280	6	5	17	20	7,5	4,5	63	88	
5.16	50802830UA -		98	500	800	280	14	11	31	38	7,5	3	49,5	110
5.17	50902830UA -		500	900	280	14	11	31	38	7,5	3	49,5	115	
5.18	50902830UB -		500	900	280	10	8,5	29	35	7,5	4,5	60	118	
5.19	50903430UB -		500	900	340	10	8,5	29	35	7,5	4,5	60	125	
6.20	50803440TA -		500	800	340	6	5	17	20	10	6	84	115	
6.21	50903440UB -	500	900	340	10	8,5	29	35	10	6	80	148		

Standard model

**Technical data for Sliprings**

Drum type	type	Slipring				Housing Ø (mm)
		N° of poles	Current 100% ED, max. A	Cross sec mm²	Max. voltage V	
50...	02	24	50mA-50A	max 10²	500	205
	03	17	50mA-90A	max 16²	500	205
	06	7	50mA-200A	max 35²	660	360
	45	18	50mA-25A	2,5²	415	205
	80	32	30mA-16A	1,5²	125/380/500	205
	98	42	30mA-25A	2,5²/1,5²	500	205
		60				

▼ Sliprings connected to cable terminals


**Housing dimensions**

Dimension a - Standard depth of housing in relation to N° of poles								Gland
Poles	Dim.	Poles	Dim.	Poles	Dim.	Poles	Dim.	
7	205	11	295	16	385	19	430	M20
6	205	10	295	14	385	17	430	M25
								M25
								M32
4	225	7	350					M40
7	205	13	295	18	385			M63
24/22/18	205	32	295					M63
12	205	24	295	36	385	42	430	M48

# Spring cable reel

## Type 500 – Vertical application

### CHOICE OF CABLE REEL ACCORDING TO SEARCH KEY 1.1 TO 5.16

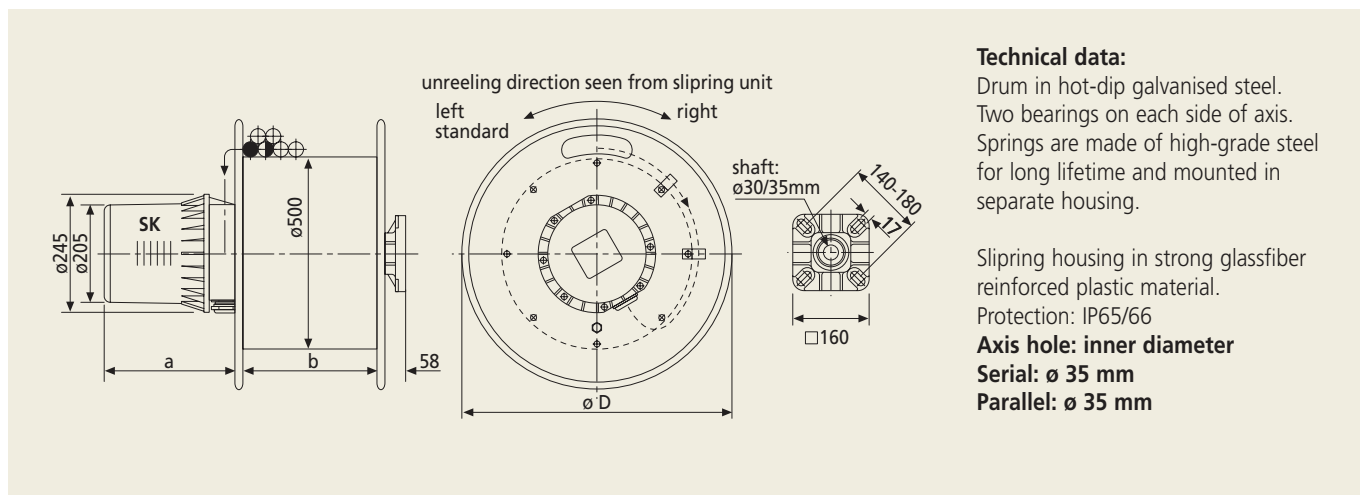
Cable (*)		Reeling length Lw (m), Case 8																																																											
∅ (mm)	Weight from ... to ... kg/m max.	Lw = H																																																											
																																																													
		1 2 3 4   5 6 7 8 9   10 11 12 13 14   15 16 17 18 19   20 21 22 23 24   25 26 27 28 29   30 31 32 33 34   35 36 37 38 39   40 41 42 43 44   45 46 47 48 49   50 51 52 53 54   55 56 57 58 59   60 61 62 63 64																																																											
10 - 12	0.25	Lz=0,9																																																											
12 - 14	0.30	4,10 1,4 4,13 1,6 5,16 1,8																																																											
14 - 16	0.40	0,95 1,3 1,4 1,8 1,9																																																											
16 - 18	0.45	1,1 1,1 4,12 1,6 1,7																																																											
18 - 20	0.55	1,1 1,2 1,8																																																											
20 - 22	0.70	1,1 1,1 2,6 1,4 1,7																																																											
22 - 24	0.80	1,1 1,2 1,7																																																											
24 - 26	0.95	0,9 1,3 1,5 1,7 3,8 2,1																																																											
26 - 28	1,10	0,8 1,4 1,5 2,1																																																											
28 - 30	1,30	0,6 1,1 1,5 1,8																																																											
30 - 32	1,50	0,6 1 1,6																																																											
32 - 34	1,60	0,6 1 1,7																																																											
34 - 36	1,80	0,6 1 2,7 1,9 2																																																											
36 - 38	2,25	0,5 0,8 1,7 2,2																																																											
38 - 40	2,50	0,5 0,9 1,5 3,9 2,2																																																											
40 - 42	2,80	0,5 0,8 1,5 2,2																																																											

Lz = N° of layers

■ = Grey background: diameter of axis hole is 30 mm

(\*) The correct cable data are given by each cable manufacturer and should be compared with the values in the tables.  
For vertical applications the cable weight (kg/m) and additional load must be considered. Always check actual reeling length when near capacity limits.





#### Technical data:

Drum in hot-dip galvanised steel.  
Two bearings on each side of axis.  
Springs are made of high-grade steel for long lifetime and mounted in separate housing.

Slipring housing in strong glassfiber reinforced plastic material.  
Protection: IP65/66

**Axis hole: inner diameter**

**Serial:  $\phi 35$  mm**

**Parallel:  $\phi 35$  mm**

Special dimension  $b = 215$

Search key	Drum type	Slipring type	Dimensions (mm)			Spring force (daN)				Number of spring turns			Weight (kg)
			d $\phi$	D $\phi$	b	Za	Fa	Fe	Z	n vor	n Res.	n turns	
1.1	50712810TA -	02	500	710	280	6	5	17	20	2,5	1,5	21	78
1.2	50802810TA -		500	800	280	6	5	17	20	2,5	1,5	21	80
1.3	50712810UA -		500	710	280	14	11	31	38	2,5	1	16,5	82
1.4	50802810UA -		500	800	280	14	11	31	38	2,5	1	16,5	84
1.5	50902810UB -		500	900	280	10	8,5	29	35	2,5	1,5	20	88
2.6	50802812TA -		500	800	280	12	10	34	40	2,5	1,5	21	84
2.7	50802812UA -		500	800	280	28	22	62	76	2,5	1	16,5	90
3.8	50802813TA -		500	800	280	18	15	51	60	2,5	1,5	21	88
3.9	50802813UA -		500	800	280	42	33	93	114	2,5	1	16,5	110
4.10	50802820TA -		500	800	280	6	5	17	20	5	3	42	84
4.11	50902820TA -		500	900	280	6	5	17	20	5	3	42	90
4.12	50802820UA -		500	800	280	14	11	31	38	5	2	33	90
4.13	50802820UB -		500	800	280	10	8,5	29	35	5	3	40	95
4.14	50902820UB -		500	900	280	10	8,5	29	35	5	3	40	102
5.15	50802830TA -		500	800	280	6	5	17	20	7,5	4,5	63	88
5.16	50802830UA -		500	800	280	14	11	31	38	7,5	3	49,5	110
5.17	50902830UB -		500	900	280	14	11	31	38	7,5	3	49,5	115
5.18	50902830UB -		500	900	280	10	8,5	29	35	7,5	4,5	60	118
5.19	50903430UB -		500	900	340	10	8,5	29	35	7,5	4,5	60	125
6.20	50803440TA -		500	800	340	6	5	17	20	10	6	84	115
6.21	50903440UB -		500	900	340	10	8,5	29	35	10	6	80	148

Standard model

#### Technical data for Sliprings

Drum type	type	Slipring				Max. voltage V	Housing $\phi$ (mm)
		N $^{\circ}$ of poles	Current 100% ED, max. A	Cross sec mm $^2$			
50...-	02	24	50mA-50A	max 10 $^2$	500	250	
	03	17	50mA-90A	max 16 $^2$	500	250	
	06	7 u.>	50mA-200A	max 35 $^2$	660	360	
	45	18	50mA-25A	2,5 $^2$	415	250	
	47	7	50mA-50A	6 $^2$	500	250	
	80	32	30mA-16A	1,5 $^2$	125/380/500	250	
	98	42 - 2,5 $^2$ 60 - 1,5 $^2$	30mA-25A	2,5 $^2$ /1,5 $^2$	500	250	

#### Housing dimensions

Dimension a - Standard depth of housing in relation to N $^{\circ}$ of poles								Gland
Poles	Dim.	Poles	Dim.	Poles	Dim.	Poles	Dim.	
7	205	11	295	16	385	19	430	M20 M25 M25 M32 M40 M63 M63 M48
6	205	10	295	14	385	17	430	
4	225	7	350					
7	205	13	295	18	385			
5	205	7 u.>	295					
24/22/18	205	32	295					
12	205	24	295	36	385	42	430	

▼ Sliprings connected to cable terminals

# Spring Reel accessories



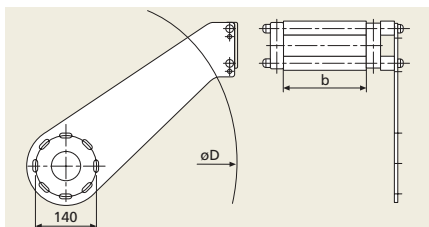
## Roller guides

Art. Nr.
RMS50-6 (left)
RMS30-26-4 (middle)
RMS30-26-4zö (right)



## Cable Grip

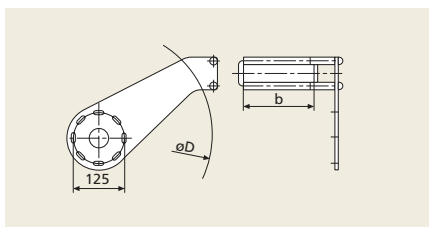
Art. Nr.	Type	Cable Ø
A09-B-Z0810-1	Type - 08	8-10 mm
A09-B-Z1013-1	Type - 12	10-13 mm
A09-B-Z1216-1	Type - 15	12-16 mm
A09-B-Z1518-1	Type - 17	15-18 mm
A09-B-Z1822-1	Type - 20	18-22 mm
A09-B-Z2228-1	Type - 25	22-28 mm
A09-B-Z2733-1	Type - 30	27-33 mm
A09-B-Z3338-1	Type - 35	33-38 mm



## Guide arm short version for SR 40/50

Type	Art.-Nr.
Guide arm 40/50-80-21 Ø 800	A06-A408021-OZ
Guide arm 40/50-80-28 Ø 800	A06-A408028-OZ
Guide arm 40/50-80-34 Ø 800	A06-A408034-OZ
Guide arm 40/50-100-21 Ø 1000	A06-A40A021-OZ
Guide arm 40/50-100-28 Ø 1000	A06-A40A028-OZ
Guide arm 40/50-100-34 Ø 1000	A06-A40A034-OZ

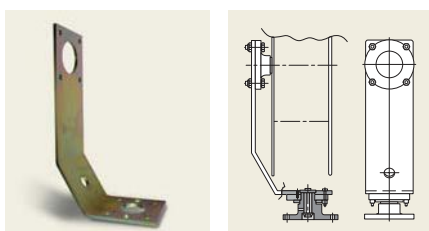
- Side plate diameter D: 800 mm, 1000 mm - Winding width B: 213 mm, 280 mm, 340 mm



## Guide arm short version for SR 19/28

Type	Art.-Nr.
Guide arm 19/28-36-14 Ø 360	A06-A193614-OZ
Guide arm 19/28-36-18 Ø 360	A06-A193618-OZ
Guide arm 19/28-36-21 Ø 360	A06-A193621-OZ
Guide arm 19/28-55-14 Ø 550	A06-A195514-OZ
Guide arm 19/28-55-18 Ø 550	A06-A195518-OZ
Guide arm 19/28-55-21 Ø 550	A06-A195521-OZ

- Side plate diameter D: 360 mm, 550 mm - Winding width b: 136 mm, 180 mm, 215 mm



## Mounting support and pivot bearing for connection to walls, floors and covers

Type	Art.-Nr.	Type	Art.-Nr.
Mounting support 19/28 - Ø 550	AA9-L05361-OZ		
Mounting support 40/50 - Ø 800	AA9-L04651-OB	pivot bearing 19/28	A09-L28000-OZ

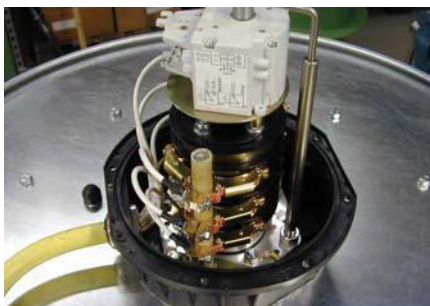


## Guidewheels

### with pin

### with flange

Type	Art.-Nr.	Art.-Nr.
UR-190	A09-F19035-10	A09-F19035-20
UR-280	A09-F28035-10	A09-F28035-20
UR-400	A09-F40035-10	A09-F40035-20



### Limit switches

Type	Art-Nr.
LS 70:1/2E	AA2-SR7001200



### Ratchets

Type	Art-Nr.
RLS 19/22	A09-DA1922-OZ
RLS 19/22 PC	A09-DA1922-OB
RLS 28	A09-DA2800-OZ
RLS 28 PC	A09-DA2800-OB
RLS 40/50	A09-DA4050-OZ
RLS 40/50 PC	A09-DA4050-OB

"PC": Polyester coated



### Guide Arms Long Version Type 190 up to 280

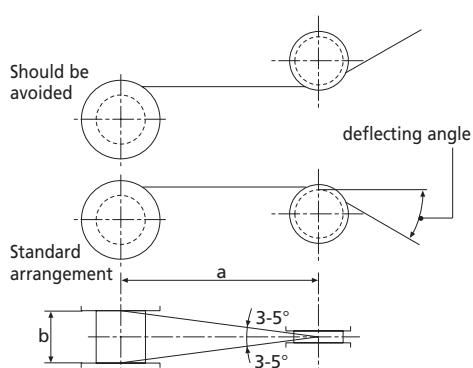
Winding width from 125 mm up to 215 mm

Typ	Art-Nr.
Diameter Side Plate up to 550 mm	
Guide arm long 19/28	A06-C19280-OZ
Guide arm long 19/28 PC	A06-C19280-OB

"PC": Polyester coated

### Springs

AA1-A-AA-0000	Spring AA
AA1-A-AB-0000	Spring AB
AA1-A-BA-0000	Spring BA
AA1-A-BC-0000	Spring BC
AA1-A-DA-0000	Spring DA
AA1-A-DB-0000	Spring DB
AA1-A-DC-0000	Spring DC
AA1-A-EA-0000	Spring EA
AA1-A-EB-0000	Spring EB
AA1-A-HA-0000	Spring HA
AA1-A-SA-0000	Spring SA
AA1-A-TA-0000	Spring TA
AA1-A-UA-0000	Spring UA
AA1-A-UB-0000	Spring UB



### Guide wheel/deflecting roll

Size	Deflecting angle 3°	Deflecting angle 5°
b [mm]	a [mm]	a [mm]
40	400	230
70	700	400
110	1050	650
136	1300	800
180	1700	1050
220	2100	1250
280	2600	1630
380	3350	1900

Head Office

**Cavotec MSL Holdings Ltd.**

Cavotec MSL is listed on the **NZX**

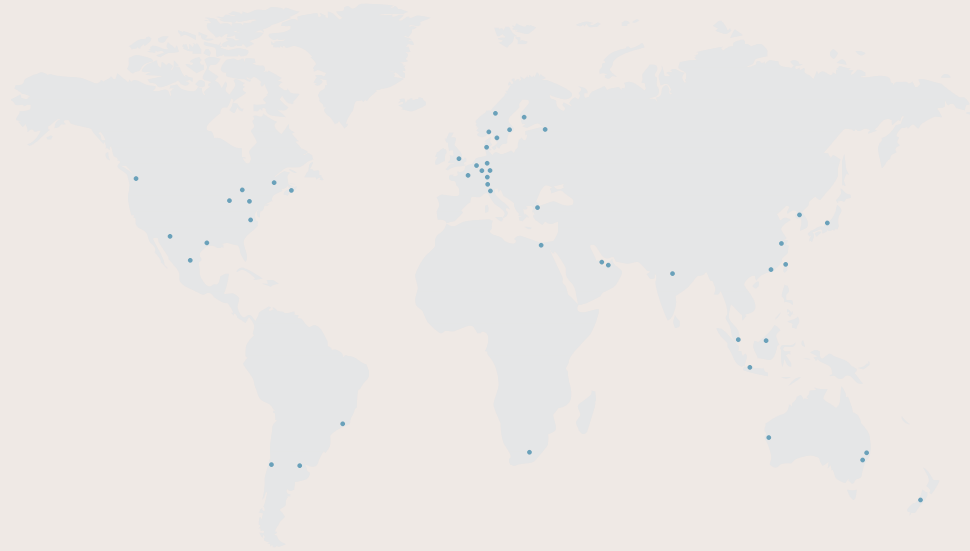
Corporate Office

**Cavotec (Swiss) SA**

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CH-6900 Lugano, Switzerland

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or contact us directly at [info@cavotec.com](mailto:info@cavotec.com)