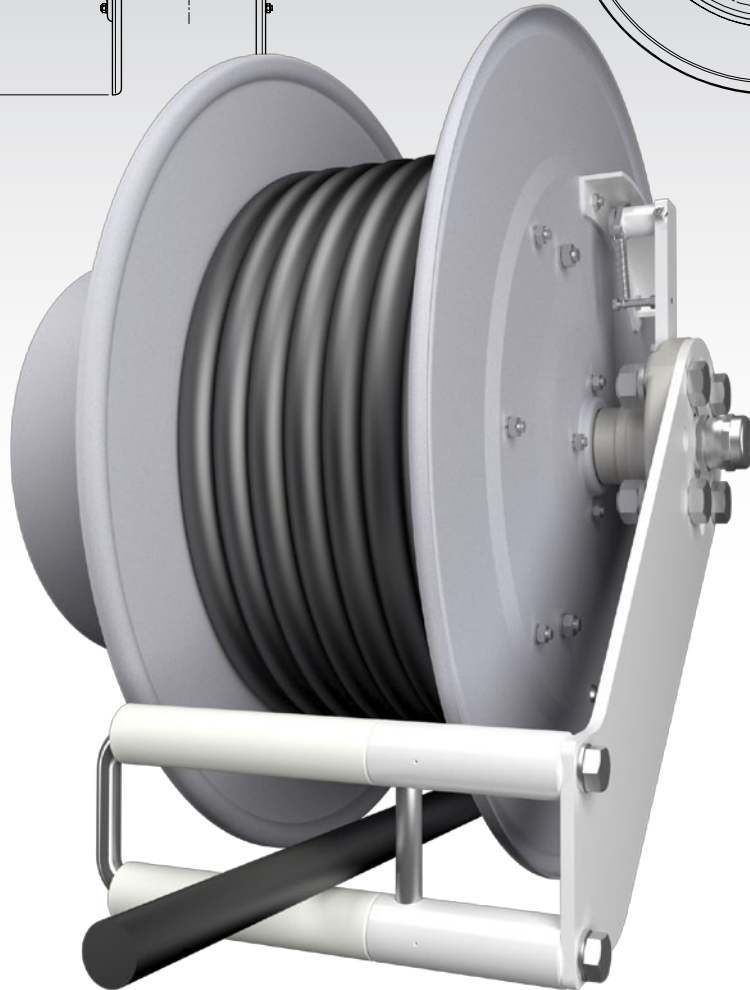
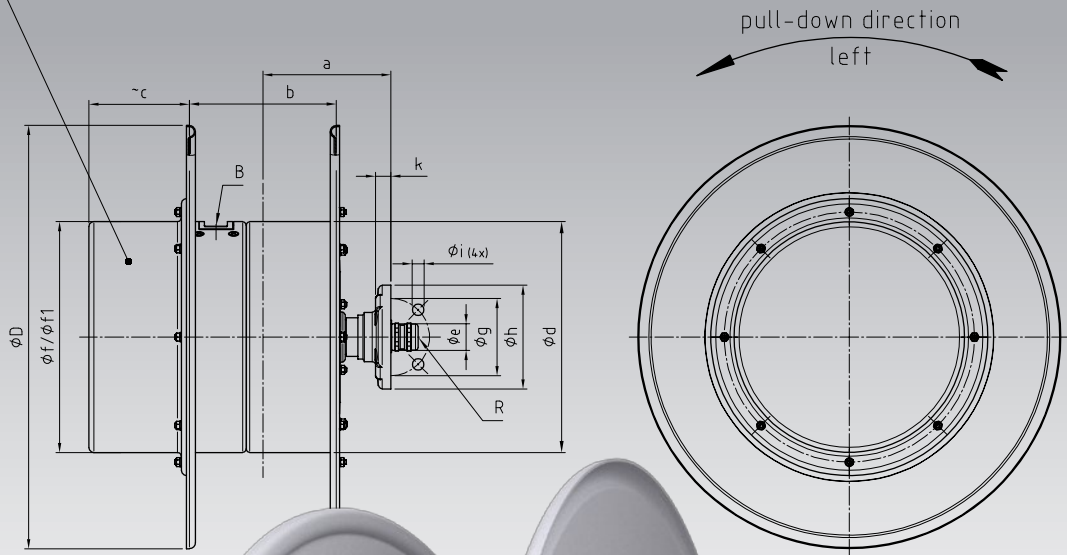




Hartmann & König  
STROMZUFÜHRUNGS AG

Attention!  
Needed space for removing  
the slip ring cover.



## Spring cable reels

Portfolio & 48h express delivery programme





# Cable reels 100 % Made in Germany

Robust and reliable for industrial applications

## Competence with tradition

As one of the leading manufacturers of cable reels and slip ring assemblies, Hartmann & König Stromzuführungs AG supplies its customers worldwide with technologically advanced energy and data transfer systems for mobile consumers.

Our tailor-made motorised cable reels, spring cable reels and slip ring assemblies are sophisticated and sturdy constructed. Therefore, they are perfectly designed for reliable power supply of ship and construction cranes, excavators, and each kind of mobile hoisting devices.

## Spring cable reels by Hartmann & König

Spring cable reels serve as reliable energy and data transfer systems for the orderly winding of flexible cables, hoses or ropes. The mechanical drive itself is realised via spiral leaf springs made of a high-quality texture-milled spring band steel, guaranteeing an average of 100.000 spring deflections at high levels of functionality and a long service life.

Spring driven cable reels are best suitable, in comparison to motor driven cable reels, for smaller cable cross sections, limited installation space, shorter transfer distances as well as for lower travel speed and acceleration. So, they are ideally for continuous operation (100% ED) in industrial applications for a wide range of demanding lifting and logistic tasks.

With regard to quality we make no compromises: All series and sizes of our spring cable reels are equipped with extremely rugged and durable reel bodies and slip ring housings made from galvanised steel sheet.

In addition to a broad range of our standard cable reels within the scope of our 48-hour express delivery programme we offer and design a huge variety of special spring driven cable reels according to customers' requirements and tasks, for example with reinforced spiral or cylindrical winding spoke reels or outside of the reel bodies arranged spring assemblies.



Motorised cable reels



Spring cable reels



Slip ring assemblies

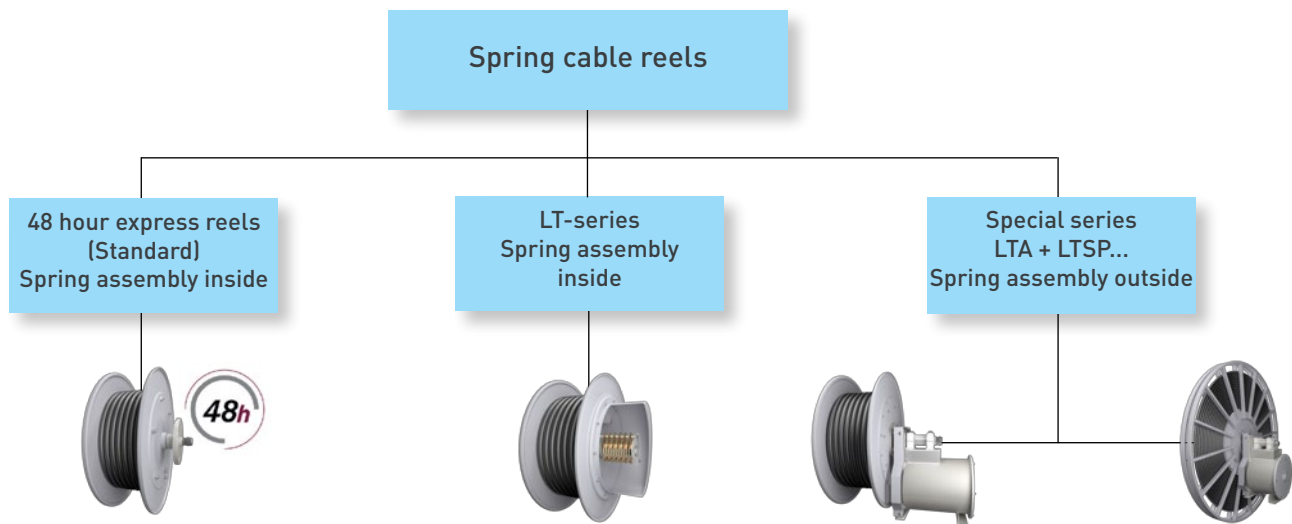


Energy chains



# Spring cable reels - product portfolio

Competence from standard to special solutions



## 48-hour express cable reels

- Due to standardised mechanical and electrical components standard spring cable reels are ready for dispatch within 48 hours after receipt of order
- For horizontal and vertical cable payout
- Payout left or right
- Protection class IP 55
- Accessories: ratchet, roller yoke, cable grip

## Spring cable reels LT-series

- Larger variety in construction types and slip ring assemblies
- Special double-layer coatings according to customers' wishes on demand
- Horizontal and vertical payout
- Payout left or right
- Protection class up to IP65 (higher on request)
- Extended accessories programme for all series

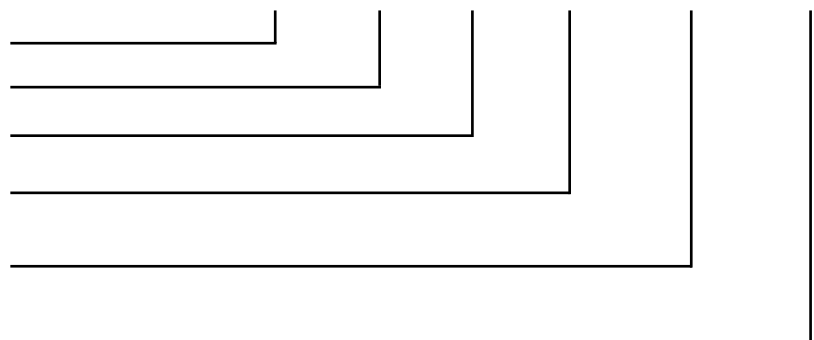
## Customised spring cable reels

- Spring assemblies outside the reel body possible (various springs can be arranged in parallel or in a row)
- Suitable for higher tensile forces
- Longer distances >60 m possible
- Reel bodies as reinforced cylindrical and spiral winding spoke reels available
- Payout left or right
- Protection class up to IP65 (higher on request)
- Special double-layer coatings possible
- Extended accessories programme for all series

## Matchcode spring cable reels

LT	-	220	-	2	-	551H	-	4	-	26
LTAI	-	530	-	4	-	524	-	5	-	150
LTAII	-	700	-	6	-	525	-	4	-	220

- Construction type
- Cable reel dimension
- Number of springs
- Type and arrangement of springs (in a row = H, or parallel)
- Pole number of slip ring assembly (including protective earth conductor (PE))
- Max. current of slip ring assembly [A]



In our offer text or confirmation of order the type keys are written as follows: LT220/251H4-25 or LTAI530/424-5-150...



# Spring cable reels

## Application fields & performance

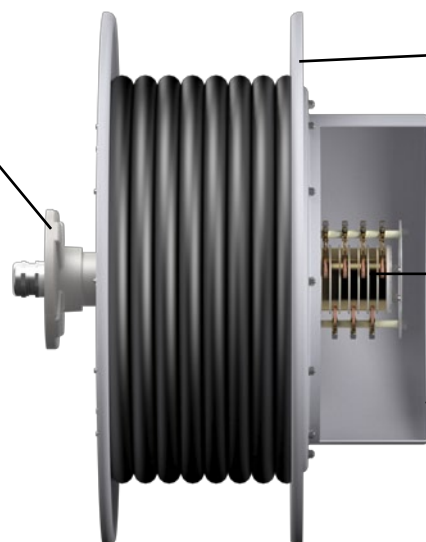
### Classical applications

- Power supply of extension arms on cranes and mobile construction vehicles
- Lifting technology: energy and data transfer for gripper and magnets
- Fassade cranes
- E-mobility: battery charging cable reels for workshops, car garages, parking facilities, bus depots ...
- Entertainment technology: mobile power & data for stage equipment (lighting bridges, lifting podiums ...)
- Integrated cable reel into emergency vehicles (fire engines ...)

### Product features at a glance

- Standard spring cable reels for distances up to 60 m
- Maximum speed 60 m/min
- Maximum acceleration 0,2 m/s<sup>2</sup>
- Ambient temperature from -40 bis +60°C
- Available with payout left / payout right
- For horizontal and vertical cable payout
- Maximal corrosion protection in C3 / C5
- Protection class IP55 / IP65 for industrial applications
- Special designed spring cable reels without slip ring assemblies for potentially explosive environmental conditions

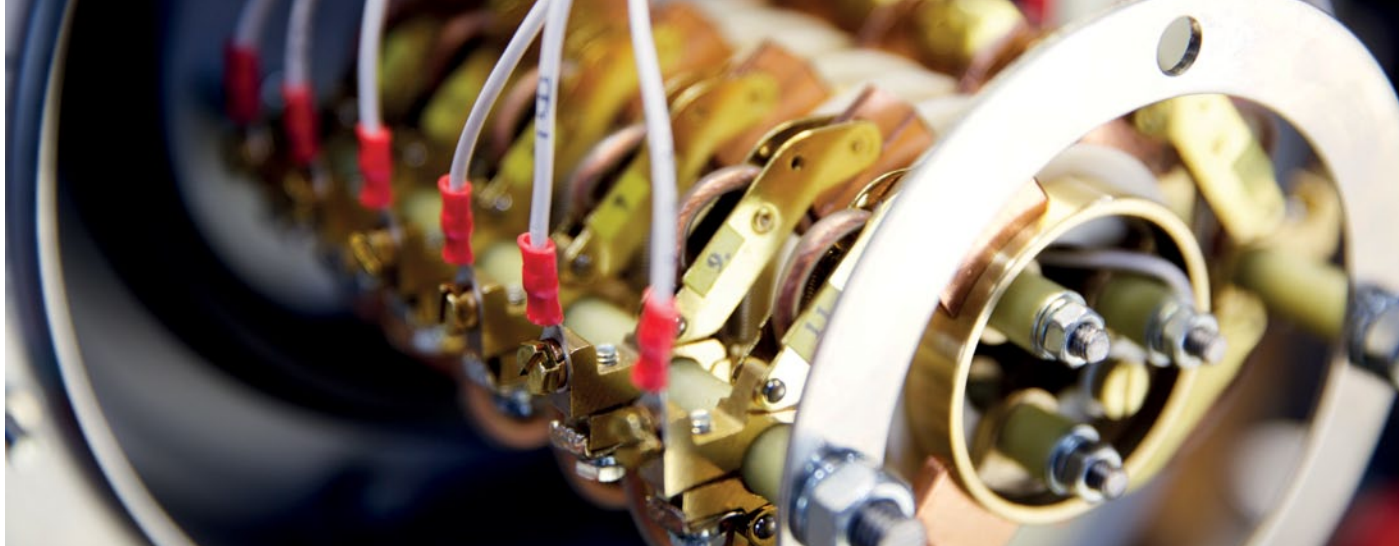
*Mounting flange made from cast iron is included as standard (cable reels are equipped with mounting flanges for an easy, quick and safe installation)*



*Screwed reel bodies made from galvanised steel sheet, on demand made from stainless steel or with additional double-layer coatings*

*Slip ring assembly (standard material combination: metal (brass) rings and copper-graphite brushes)*

*Robust slip ring housing made from deep drawn, galvanised steel sheet*



# Technical components

## Slip ring assemblies and cable basics at a glance

### Slip ring assemblies by H&K

- Integrated into spring cable reels
- Safe and reliable transfer of power, control signals, data, bus and video signals
- Power supply in the area of 16 A up to 220 A
- Highest wear resistance and vibration strength
- Suitable for continuous operation (100% ED)
- All cable reels can be assembled with multi-pole slip ring assemblies according to the appropriate cables
- The number of poles and cross section of cables determine the design of slip ring assembly

### Cables for challenging applications

- In principle, we offer reeling cables with approved characteristics for enhanced mechanical requirements
- Total cable length includes: max. payout length between reel and end of cable + 2 additional windings for mechanical strain relief of the cable (security winding) + 1 m normally connecting length to slip ring assembly + cable length for connection into the feed-in point (depending on the application)
- Number of poles correspond to the number of isolated poles (for example 3 pole + PE); protective earth conductor is clearly identifiable and not possible to replace with a phase
- Mandatory cable specifications for individual designed spring cable reels can be requested by filling out our cable reel questionnaire at the end of this brochure.



Arrangement example of slip rings in a slip ring assembly [series type YB / blocked design] for power transfer from 26 A bis 220 A



Compact slip ring assembly design with pancake / flat slip ring assemblies 16 A, with collectors and clamp plate



# 48h-Express delivery programme

Our spring cable reel standard

Article-no.	Horizontal payout	Vertical payout	Reel type
Coiling length in meter			
4 x 1.5 mm <sup>2</sup> , Ø 11.2 mm, 0.16 kg/m			
E1075-5000	7	7	LT155/108-4-26
E1076-5000	12	12	LT180/131-4-26
E1076-5005	27	18	LT180/231H4-26
E1077-5008	26	26	LT220/251H4-26
E1079-5011	47	35	LT300/252H4-26
5 x 1.5 mm <sup>2</sup> , Ø 11.8 mm, 0.18 kg/m			
E1075-5001	7	7	LT155/108-5-26
E1076-5001	12	12	LT180/131-5-26
E1076-5006	20	18	LT180/231H5-26
E1077-5009	26	25	LT220/251H5-26
E1079-5012	47	31	LT300/252H5-26
7 x 1.5 mm <sup>2</sup> , Ø 13.3 mm, 0.23 kg/m			
E1075-5002	7	7	LT155/108-7-26
E1076-5002	10	10	LT180/131-7-26
E1077-5002	12	12	LT220/151-7-26
E1077-5010	20	20	LT220/251H7-26
E1078-5002	26	24	LT221/251H7-26
E1079-5022	35	34	LT300/272H7-26
E1079-5013	49	24	LT300/252H7-26
12 x 1.5 mm <sup>2</sup> , Ø 16.9 mm, 0.36 kg/m			
E1076-5003	7	7	LT180/131-12-26
E1077-5003	12	12	LT220/151-12-26
E1077-5011	22	15	LT220/251H12-26
E1078-5003	29	15	LT221/251H12-26
E1079-5004	22	22	LT300/252-12-26
E1079-5014	50	15	LT300/252H12-26

Article-no.	Horizontal payout	Vertical payout	Reel type
Coiling length in meter			
18 x 1.5 mm <sup>2</sup> , Ø 17.9 mm, 0.47 kg/m			
E1077-5004	8	8	LT220/151-18-26
E1078-5004	18	12	LT221/251H18-26
E1079-5005	23	23	LT300/252-18-26
E1079-5024	29	21	LT300/272H18-26
E1081-5006	73	14	LT420/283H18-36
24 x 1.5 mm <sup>2</sup> , Ø 22.6 mm, 0.59 kg/m			
E1079-5006	24	19	LT300/252-24-36
E1081-5011	41	22	LT420/253-24-36
30 x 1.5 mm <sup>2</sup> , Ø 24.2 mm, 0.71 kg/m			
E1079-5007	20	16	LT300/252-30-36
E1081-5012	38	20	LT420/253-30-36
4 x 2.5 mm <sup>2</sup> , Ø 12.1 mm, 0.21 kg/m			
E1075-5000	7	7	LT155/108-4-26
E1076-5000	10	10	LT180/131-4-26
E1076-5005	18	16	LT180/231H4-26
E1077-5008	26	26	LT220/251H4-26
E1079-5011	46	27	LT300/252H4-26
5 x 2.5 mm <sup>2</sup> , Ø 12.8 mm, 0.24 kg/m			
E1075-5001	7	7	LT155/108-5-26
E1076-5001	11	11	LT180/131-5-26
E1076-5006	18	14	LT180/231H5-26
E1077-5009	26	23	LT220/251H5-26
E1079-5012	46	23	LT300/252H5-26
7 x 2.5 mm <sup>2</sup> , Ø 14 mm, 0.31 kg/m			
E1076-5002	10	10	LT180/131-7-26
E1077-5002	12	12	LT220/151-7-26



# Express cable reels with payout left & right

Essential accessories for express reels with short-term availability

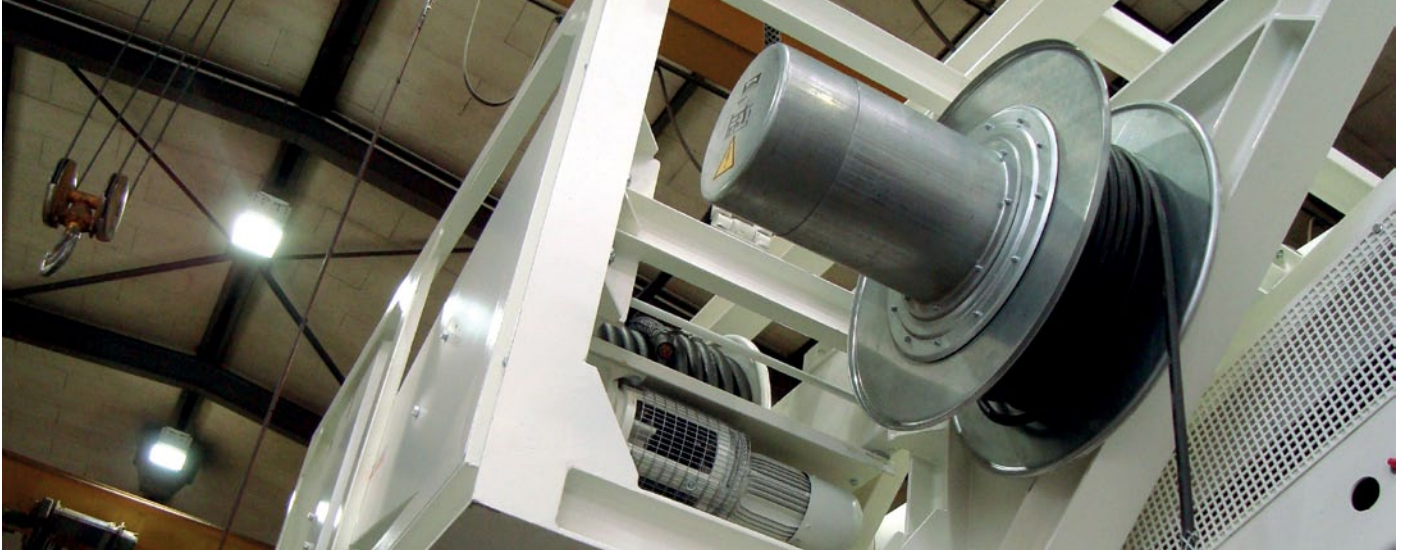
Article-no.	Horizontal payout	Vertical payout	Reel type
Coiling length in meter			
E1077-5010	17	17	LT220/251H7-26
E1078-5002	26	18	LT221/251H7-26
E1079-5013	47	18	LT300/252H7-26
E1079-5022	36	30	LT300/272H7-26
12 x 2.5 mm <sup>2</sup> , Ø 20.2 mm, 0.48 kg/m			
E1077-5003	10	10	LT220/151-12-26
E1078-5003	16	12	LT221/251H12-26
E1079-5004	25	23	LT300/252-12-26
18 x 2.5 mm <sup>2</sup> , Ø 20.6 mm, 0.68 kg/m			
E1077-5004	8	8	LT220/151-18-26
E1078-5004	15	8	LT221/251H18-26
E1079-5015	26	8	LT300/252H18-26
24 x 2.5 mm <sup>2</sup> , Ø 25.5 mm, 0.82 kg/m			
E1079-5018	22	22	LT300/272-24-36
4 x 4 mm <sup>2</sup> , Ø 13.4 mm, 0.28 kg/m			
E1076-5004	10	10	LT180/131-4-40
E1077-5005	12	12	LT220/151-4-40
E1078-5005	26	20	LT221/251H4-40
E1079-5016	47	22	LT300/252H4-40
E1079-5025	35	34	LT300/272H4-40
4 x 6 mm <sup>2</sup> , Ø 14.8 mm, 0.37 kg/m			
E1077-5006	12	12	LT220/151-4-60
E1077-5013	21	15	LT220/251H4-60
E1078-5006	26	15	LT221/251H4-60
E1079-5021	50	15	LT300/252H4-60
E1079-5026	36	25	LT300/272H4-60
E1081-5007	69	18	LT420/283H4-60

Article-no.	Horizontal payout	Vertical payout	Reel type
Coiling length in meter			
4 x 10 mm <sup>2</sup> , Ø 18.8 mm, 0.61 kg/m			
E1077-5006	7	7	LT220/151-4-60
E1077-5007	13	13	LT220/251-4-60
E1078-5006	20	9	LT221/251H4-60
E1079-5026	29	15	LT300/272H4-60
E1081-5013	40	24	LT420/253-4-60
4 x 16 mm <sup>2</sup> , Ø 23.4 mm, 0.92 kg/m			
E1079-5010	20	12	LT300/252-4-125
E1079-5020	18	18	LT300/272-4-125

## Accessory programme & payout right

Cable reels and accessories with payout „right“ have the same article-no. like payout left with an additional suffix **-RE** behind each item number.

Reel type	Ratchet	Roller yoke
LT155	E2315-2000	E2350-2000
LT180	E2316-2000	E2351-2000
LT220	E2317-2000	E2352-2000
LT221	E2317-2000	E2353-2000
LT300	E2319-2000	E2354-2000
LT420	E2321-2000	E2356-2000
Cable diameter		Cable grip
Ø 09 - 12 mm		X2850-0912
Ø 12 - 15 mm		X2850-1215
Ø 15 - 20 mm		X2850-1520
Ø 20 - 25 mm		X2850-2025
Ø 25 - 30 mm		X2850-2530



## 48h-Express delivery programme

### Cable reel and covering dimensions of our express cable reels

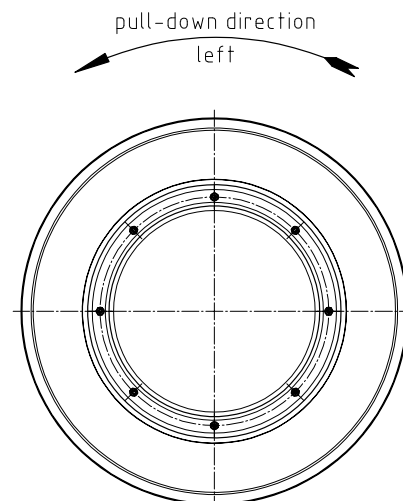
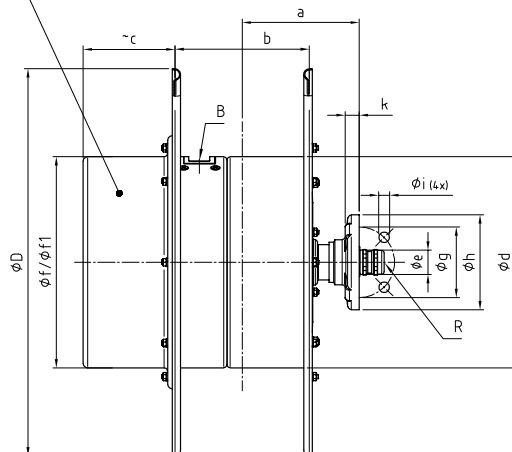
Dimensions for cable reels (according to dimension sheet below)

Type	Ø d	Ø D	a	b	Ø e	Ø f	Ø g	Ø h	Ø i	k
LT155-	155	260	101	110	35	155	65	85	4 x Ø 9	5
LT180-	180	300	109	130	35	180	65	85	4 x Ø 9	5
LT220-	220	400	114	120	35	220	100	130	4 x Ø 13.5	12
LT221-	220	450	129	150	35	220	100	130	4 x Ø 13.5	12
LT300-	300	550	165	190	50	300	100	135	4 x Ø 15.5	20
LT420-	420	680	200	240	60	420	135	178	4 x Ø 17.5	20

Covering dimension „c“ (in mm) in relation to the number of poles

Type	3+PE 26 A	3+PE 40 A	3+PE 60 A	3+PE 125 A	4+PE 26 A	6+PE 26 A	11+PE 26 A	17+PE 26 A	23+PE 36 A	29+PE 36 A
LT155-	60	60	/	/	60	100	150	/	/	/
LT180-	90	90	/	/	90	100	150	/	/	/
LT220-	50	50	100	/	75	100	150	260	350	/
LT221-	50	50	75	/	50	75	130	210	350	/
LT300-	80	80	80	120	80	80	150	262	320	400
LT420-	/	85	85	/	/	/	/	/	355	435

Attention!  
Needed space for removing  
the slip ring cover.





# Questionnaire Cable Reels

Company

Phone

Fax

Contact person

E-mail

Address

Project title / Country of operation

Postcode / City / Country

Quantity of cranes / applications

## Application

01. Machine type .....

02. Installation

stationary

on a mobile unit

03. Arrangement of reels according to the figures below

A  B  C  D  E  F  G  H

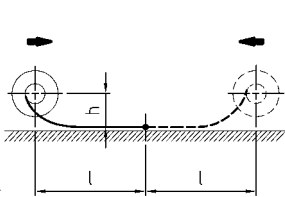


fig. A

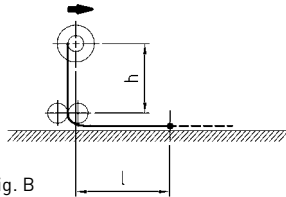


fig. B

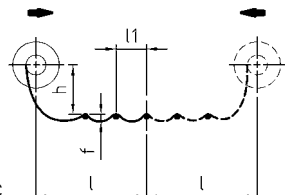


fig. C

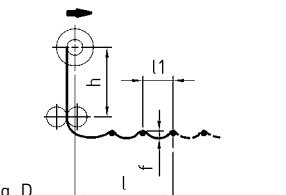


fig. D

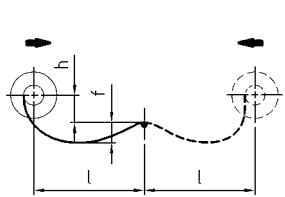


fig. E

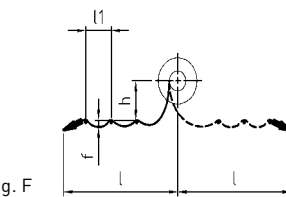


fig. F

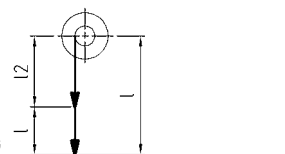


fig. G

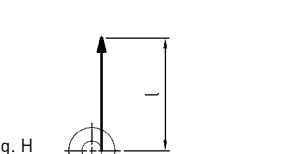


fig. H

04. Reel and winding type

spring cable reel

motorised cable reel

spiral winding

cylindrical winding

05. Travel length / lift ..... m

06. Total cable length<sup>(b)</sup> ..... m

07. Feed-in

centre feed

end feed

others .....

08. Cable payout

horizontal

vertical

09. Mounting height (from flange to ground) ..... m

10. Payout direction (view on slip ring assembly)

left

right

11. Special requirements / details

## Cable data

12. Cable provided by

customer

Hartmann & König

13. Cable type, if known .....

quantity of cores x cross section / cable weight

..... cores x ..... mm<sup>2</sup> / ..... kg/m

outer diameter (OD) ..... mm

14. Data for cable determination

total system capacity ..... kW

voltage ..... V current ..... A

quantity of cores ..... + PE (earth, ground)

Do you need a fibre optic cable?

yes

no

if yes, quantity of fibres & type .....

Red fields are mandatory fields



**Slip ring assembly**

- 15. Quantity of slip rings ..... cores + PE (earth, ground)
- 16. Max. current load of slip rings ..... A
- 17. Transfer of
  - power  control current
  - signals  communication
- 18. Bus-type for data transfer  
(communication + data technology)
  - Profibus  CAN-bus
  - Ethernet  Profinet
  - others .....
- 19.  Heating ..... V

**Device data**

- 20. Voltage ..... V
- 21. Motor frequency ..... Hz
- 22. Do you need a frequency controlled drive unit?
  - yes  no
- 23. Duty cycle ..... %
- 24. Travel frequency per hour ..... /h  
working hours per day ..... h
- 25. Travel / lifting speed ..... m/min
- 26. Ramp-up / deceleration time ..... s / ..... s
- 27. Acceleration ..... m/s<sup>2</sup>

**Environmental conditions**

- 28. Ambient temperature
  - indoor use  outdoor use ..... °C - ..... °C
- 29. Humidity ..... %
- 30. Pollution degree
  - little  medium  strong

**General remarks**

- a. Unless otherwise specified, spring cable reels will be quoted, if technically possible (max. travel speed 60 m/min).
- b. Total cable length includes max. payout length between reel and end of cable (horizontal payout considering installation height + if appropriate length for vertical cable payout) ...
  - + 2 additional windings for mechanical strain relief of the cable (security winding) → 2 x 2r x Π
  - + 1 m normally connecting length to slip ring assembly
  - + cable length for connection into the feed-in point (depending on the application)

**Environmental conditions**

- 31. Aggressive media
  - yes  no
  - if yes, please specify .....
- 32. Protection class
  - IP 55 (standard)  IP 65 (optional)
  - others .....

**Options**

- 33.  cam limit switch ..... (quantity)
  - encoder .....
- 34.  connected cable to a slip ring assembly
  - pig tail & connected

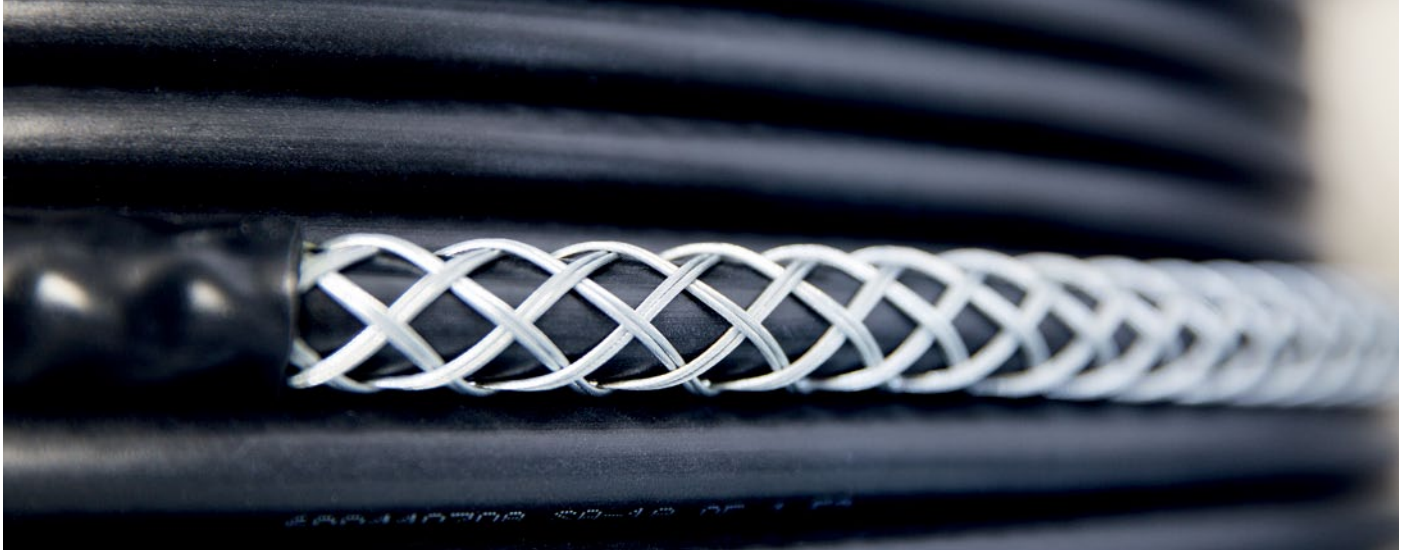
**Surface treatment**

- 35. Painting  standard colour RAL 7040
  - other colour .....
- 36.  hot-dip galvanised  V2A
  - sand-blasted  seawater protected
- 37.  others (please specify) .....

**Accessories**

- cable deposit roller  ratchet
- centre feed funnel  roller yoke
- deflection horn  rotating ceiling attachment
- deflection and guide rollers  rotating wall attachment
- winding device  cable grip
- deflection link chain  heater
- roller payout guide
  - with /  without slack & tight cable control

Red fields are mandatory fields



## Accessory programme spring cable reels

### Ratchet

The ratchet ensures a defined cable length, by default with one notch per rotation. Several ratchets can be installed on request. The ratchet also ensures the strain relief of the cable during the operation.



### Roller yoke

The roller yoke is rigidly installed to the fixing flange. The roller yoke ensures the even winding and unwinding of the cable and, at the same time, it prevents the cable from „jumping“ over the external shield of the reel. The roller yoke is fitted with plastic rollers which preserve the cable and also make sure that, up to certain extent, the cable can be unwound sideways.



### Rotating ceiling attachment

The rotating ceiling attachment has a swivelling range of 300° and a stop. It is used for ceiling mounting, for example in workshops or automated facilities, and covers a maximum working range of 300°.



### Rotating wall attachment

The rotating wall attachment has a swivelling range of 150°. It is used for wall mounting, for example in workshops or automated facilities, and covers a maximum working range of 150°.



### Fixed attachments

Our fixed attachments can be used for ceiling and ground mounting, for example in workshops or automated facilities in order to cover a maximum working range of 150°.

### Cable pulling grip, type LZ

The cable pulling grip ensures the strain relief for the cable at the feed point. The surface clamping prevents any point loads on the cable. It preserves the cable sheath and extends the cable's service life. The 800 mm long, galvanised cable pulling grip is adjusted to the cable diameter and, for safety reasons, it is calculated with 3 times the maximum tensile force.

### Cam limit switch

This switch is used for monitoring the reel positions „full“ and „empty“ as well as for other monitoring functions (it is not a safety switch.) Alternatively, other limit switches, proximity switches or transmitters can be installed.

### Heating unit

Thermally controlled stationary heaters at various output levels. Insulated installation in the slip ring housing. We recommend that a heater is installed in locations where low temperatures can occur or where the temperature fluctuates across a very wide range (within a short period of time).



**We energize mobility. Worldwide.**



*Motorised cable reels*



*Spring cable reels*



*Energy chains*



*Slip ring assemblies*

## 大连原实科技有限公司

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