

# 100S, 250S, 500S, 600S

## Технические характеристики

### По вопросам продаж и поддержки обращайтесь:

Алматы (7273)495-231  
Архангельск (8182)63-90-72  
Астрахань (8512)99-46-04  
Барнаул (3852)73-04-60  
Белгород (4722)40-23-64  
Брянск (4832)59-03-52  
Владивосток (423)249-28-31  
Волгоград (844)278-03-48  
Вологда (8172)26-41-59  
Воронеж (473)204-51-73  
Екатеринбург (343)384-55-89  
Иваново (4932)77-34-06  
Ижевск (3412)26-03-58  
Иркутск (395)279-98-46  
Россия (495)268-04-70

Казань (843)206-01-48  
Калининград (4012)72-03-81  
Калуга (4842)92-23-67  
Кемерово (3842)65-04-62  
Киров (8332)68-02-04  
Краснодар (861)203-40-90  
Красноярск (391)204-63-61  
Курск (4712)77-13-04  
Липецк (4742)52-20-81  
Магнитогорск (3519)55-03-13  
Москва (495)268-04-70  
Мурманск (8152)59-64-93  
Набережные Челны (8552)20-53-41  
Нижний Новгород (831)429-08-12  
Киргизия (996)312-96-26-47

Новокузнецк (3843)20-46-81  
Новосибирск (383)227-86-73  
Омск (3812)21-46-40  
Орел (4862)44-53-42  
Оренбург (3532)37-68-04  
Пенза (8412)22-31-16  
Пермь (342)205-81-47  
Ростов-на-Дону (863)308-18-15  
Рязань (4912)46-61-64  
Самара (846)206-03-16  
Санкт-Петербург (812)309-46-40  
Саратов (845)249-38-78  
Севастополь (8692)22-31-93  
Симферополь (3652)67-13-56  
Казахстан (7172)727-132

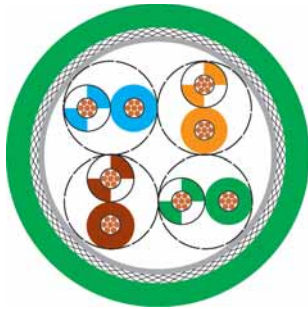
Смоленск (4812)29-41-54  
Сочи (862)225-72-31  
Ставрополь (8652)20-65-13  
Сургут (3462)77-98-35  
Тверь (4822)63-31-35  
Томск (3822)98-41-53  
Тула (4872)74-02-29  
Тюмень (3452)66-21-18  
Ульяновск (8422)24-23-59  
Уфа (347)229-48-12  
Хабаровск (4212)92-98-04  
Челябинск (351)202-03-61  
Череповец (8202)49-02-64  
Ярославль (4852)69-52-93

# Industrial Ethernet

Drag Chain ECO 1000V rating

**HELUKAT® 100S**

SF/UTP 4-pair, Category 5e



## Type

### Cable structure

Inner conductor diameter:  
Core insulation:  
Core colours:  
Stranding element:  
Separator:  
Shielding 1:  
Total shielding:  
Outer sheath material:  
Cable external diameter:  
Outer sheath colour:

## Drag chain applications

### SF/UTP 4x2x0.15 mm<sup>2</sup> (stranded)

Copper, bare (AWG 26/19)  
PO  
whbu/bu, whog/og, whgn/gn, whbn/bn  
Double core  
-  
PETP fleece  
AL-Foil + braid  
PUR  
app. 6,6 mm ± 0,2 mm  
Green similar to RAL 6018

## Electrical data

Characteristic impedance: 100 Ohm ± 15 Ohm at 1 to 100 MHz  
Conductor resistance, max.: 125 Ohm/km  
Insulation resistance, min.: 5 GOhm x km  
Loop resistance: 250 Ohm/km max.  
Mutual capacitance: 50 nF/km nom.  
Test voltage: 0,5 kV  
Relative propagation velocity: 67 %

## Typical values

Frequency (MHz)	10	16	62,5	100	155
Attenuation (db/100m)	9,5	12,1	24,8	32,0	41,0
Next (db)	50,3	47,2	38,4	35,3	30,0

## Technical data

Weight: app. 56 kg/km  
bending radius, repeated: 102 mm  
Operating temperature range min.: -40°C  
Operating temperature range max.: +80°C  
Caloric load, approx. value: 0,64 MJ/m  
Copper weight: 31,00 kg/km

## Norms

Acc. to ISO/IEC 11801, Acc. to EN 50173, Acc. to EIA/TIA 568-A, Category 5e, Flame-retardant acc. to IEC 60332-1-2, Halogen-free acc. to 60754-1, AWM Style 21576 80°C 1000V

## Application

HELUKAT® 100S Category 5e drag chain Eco is designed for use in cable carriers and the recurring loads caused by moving machine components. Thanks to the PUR sheath, it also offers excellent resistance to common mineral oils, greases and cooling lubricants.

## Part no.

**11007779**, INDUSTRIAL ETHERNET CAT.5e

Dimensions and specifications may be changed without prior notice.

# Industrial Ethernet

Drag Chain PVC

**HELUKAT® 250S**

SF / UTP, Category 6



## Cable structure

Inner conductor Ø:  
Conductor material:  
Core insulation:  
Core colours:  
Separator:  
Inner sheath material:  
Screen over stranding element:  
Total shielding:  
Outer sheath material:  
Outer diameter:  
Outer sheath colour:

## SF/UTP 4x2xAWG 24/7 PVC

0,6 mm  
Copper, bare  
Foam-skin-PE  
whbu/bu, whog/og, whgn/gn, whbn/bn  
Polyester foil over stranded bundle  
FRNC  
-  
AL-Foil + braid  
PVC  
app. 8,0 mm  
Green similar to RAL 6018

## Electrical data

Characteristic impedance:  
Conductor resistance, max.:  
Insulation resistance, min.:  
Loop resistance:  
Mutual capacitance:  
Test voltage:  
Rel. propagation velocity:

100 Ohm ± 15 Ohm at 1 to 100 MHz  
100 Ohm ± 20 Ohm bei 101 bis 250 MHz  
90 Ohm/km  
0,5 GOhm x km  
180 Ohm/km max.  
50 nF/km nom.  
1,5 kV  
67 %

## Typical values

Frequency	(MHz)	10	16	62,5	100	200	250
Attenuation	(db/100m)	9,0	11,4	23,2	29,9	43,7	49,5
Next	(dB)	59,3	56,2	47,4	44,3	39,8	38,3
PSNext	(dB)	57,3	54,2	45,4	42,3	37,8	36,3

## Technical data

Weight:  
bending radius, repeated:  
Operating temperature range min.:  
Operating temperature range max.:  
Caloric load, approx. value:  
Copper weight:

app. 72 kg/km  
160 mm  
-5°C  
+50°C  
1,69 MJ/m  
39,00 kg/km

## Norms

Acc. to ISO/IEC 11801, Acc. to EN 50173, Acc. to EIA/TIA 568-A, Category 6, Flame-retardant acc. to IEC 60332-3, CMG FT4

## Application

HELUKAT® 250S was designed specially for extreme industrial applications. The copper data cable is especially well-suited for Category 6 Ethernet applications. It guarantees excellent transmission characteristics and may be used even under the harshest conditions. This version with PVC jacket and stranded conductor is designed specifically for trailing use under difficult industrial conditions.

## Part no.

**805658**, INDUSTRIAL ETHERNET CAT.6

Dimensions and specifications may be changed without prior notice.

# Industrial Ethernet

Drag Chain

**HELUKAT® 500S**

SF/FTP, Category 6A



## Cable structure

Inner conductor Ø:	0,55 mm
Conductor material:	Copper, tinned
Core insulation:	Foam-skin-PE
Core colours:	wh/bu, wh/og, wh/gn, wh/bn
Separator:	-
Screen over stranding element:	Al-Foil
Total shielding:	Al-Foil + braid
Outer sheath material:	PUR
Outer diameter:	app. 7,8 mm
Outer sheath colour:	Green similar to RAL 6018

## Electrical data

Characteristic impedance:	100 Ohm ± 15 Ohm at 1 to 100 MHz 100 Ohm ± 20 Ohm at 101 to 500 MHz
Conductor resistance, max.:	140 Ohm/km
Insulation resistance, min.:	5 GOhm x km
Loop resistance:	280 Ohm/km max.
Mutual capacitance:	50 nF/km nom.
Test voltage:	0,7 kV

## Typical values

Frequency (MHz)	10	16	62,5	100	300	500
Attenuation (db/10m)	0,9	1,1	2,3	2,9	5,1	6,8
Next (db)	60,3	57,2	48,4	45,3	38,1	34,8

## Technical data

Weight:	app. 64 kg/km
bending radius, repeated:	117 mm
Operating temperature range min.:	-10°C
Operating temperature range max.:	+70°C
Caloric load, approx. value:	1,35 MJ/m
Copper weight:	34,00 kg/km

## Norms

Acc. to ISO/IEC 11801, Acc. to EN 50173, Acc. to EIA/TIA 568-A, Category 6A, Flame-retardant acc. to IEC 60332-1-2, Halogen-free acc. to 60754-1, CMX 75°C (shielded) or AWM 21576 1000V

## Application

HELUKAT® 500S trailing cable Category 6A is designed for use in cable carriers and the recurring loads caused by moving machine components. It provides excellent transmission characteristics under extremely difficult conditions.

## Part no.

**805548**, INDUSTRIAL ETHERNET KAT.6A 10GIG PUR

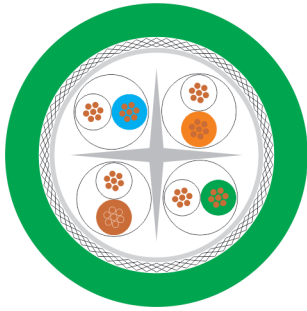
Dimensions and specifications may be changed without prior notice.

# Industrial Ethernet

Drag Chain PVC + PUR SF/FTP, Category 6A  
4x2xAWG24/7 PVC

**HELUKAT® 500S**

SF/FTP, Category 6A



## Type

### Cable structure

Inner conductor diameter:  
Core insulation:  
Core colours:  
Stranding element:  
Screen over stranding element:  
Separator:  
Total shielding:  
Outer sheath material:  
Cable external diameter:  
Outer sheath colour:

### Drag chain applications

#### SF/FTP 4x2xAWG 24/7

Copper, tinned (AWG 24/7)  
Foam-skin-PE  
wh/bu, wh/og, wh/gn, wh/bn  
Double core  
Al-Foil  
-  
conductive fleece + braid  
PVC  
app. 8,7 mm ± 0,3 mm  
Green similar to RAL 6018

### Drag chain applications

#### SF/FTP 4x2xAWG 24/7

Copper, tinned (AWG 24/7)  
Foam-skin-PE  
wh/bu, wh/og, wh/gn, wh/bn  
Double core  
Al-Foil  
-  
conductive fleece + braid  
PUR  
app. 8,7 mm ± 0,3 mm  
Green similar to RAL 6018

## Electrical data

Characteristic impedance:

100 Ohm ± 15 Ohm at 1 to 100 MHz  
100 Ohm ± 20 Ohm at 101 to 500 MHz

100 Ohm ± 15 Ohm at 1 to 100 MHz

100 Ohm ± 20 Ohm at 101 to 500 MHz

Insulation resistance, min.:

5 GOhm x km

5 GOhm x km

Mutual capacitance:

50 nF/km nom.

50 nF/km nom.

Test voltage:

0,7 kV

0,7 kV

Relative propagation velocity:

75 %

75 %

## Typical values

frequency (MHz)	10	16	62,5	100	200	300	500
attenuation (db/100m)	6,6	8,4	17,3	22,0	31,4	38,9	51,2
next (dB)	72,8	73,0	74,1	74,4	74,4	72,7	69,2

## Technical data

Weight:

app. 88 kg/km

app. 88 kg/km

bending radius, repeated:

135 mm

135 mm

Operating temperature range min.:

-10°C

-10°C

Operating temperature range max.:

+60°C

+60°C

Caloric load, approx. value:

1,69 MJ/m

1,69 MJ/m

Copper weight:

44,00 kg/km

44,00 kg/km

## Norms

Acc. to ISO/IEC 11801, Acc. to EN 50173, Acc. to EIA/TIA 568-A, Category 6A, CMX 75°C (shielded) or AWM 21576 1000V

## Application

HELUKAT® 500S was designed specially for flexible applications in drag chains in extreme industrial environments. The copper data cable is especially well-suited for Category 6A Ethernet applications. It guarantees excellent transmission characteristics and may be used even under the harshest conditions.

The PVC version has UL CM listing; the PUR version UL CMX listing and is additional halogen free

## Part no.

**805704**, INDUSTRIAL ETHERNET KAT.6A  
10GIG PVC

**805703**, INDUSTRIAL ETHERNET KAT.6A  
10GIG PUR

Dimensions and specifications may be changed without prior notice.

# Industrial Ethernet

PROFINet Drag Chain + Torsion

**HELUKAT® 600S**

CC-Link IE Field SF/FTP, Category 7



## Cable structure

Inner conductor diameter:  
Core insulation:  
Core colours:  
Separator:  
Shielding 1:  
Screen 1 over stranding:  
Screen 2 over stranding:  
Outer sheath material:  
Cable external diameter:  
Outer sheath colour:

## Drag Chain

### SF/FTP 4x2xAWG 24/7 (stranded) PUR

Copper, tinned (AWG 24/7)  
Foam-skin-PE  
wh/bu, wh/og, wh/gn, wh/bn  
-  
Al-Foil  
Al-Foil  
Cu braid  
PUR  
app. 8,7 mm ± 0,3 mm  
Green similar to RAL 6018

## Torsion

### SF/FTP 4x2xAWG 24/7 (stranded) PUR

Copper, tinned (AWG 24/7)  
Foam-skin-PE  
wh/bu, wh/og, wh/gn, wh/bn  
-  
Al-Foil  
Al-Foil  
Cu braid  
PUR  
app. 8,7 mm ± 0,3 mm  
Green similar to RAL 6018

## Electrical data

Characteristic impedance:

100 Ohm ± 15 Ohm at 1 to 100 MHz  
100 Ohm ± 20 Ohm at 101 to 600 MHz  
175,2 Ohm/km max.

100 Ohm ± 15 Ohm at 1 to 100 MHz  
100 Ohm ± 20 Ohm at 101 to 600 MHz  
175,2 Ohm/km max.

Loop resistance:

## Typical values

frequency (MHz)		10	16	62,5	100	200	300	600
attenuation (db/100m)		6,7	8,5	17,4	22,1	31,6	39,2	57,4
next (db)		78	78	75,5	72,4	67,9	65,2	60,7
ACR (db)		71,3	69,5	58,1	50,3	36,3	26	3,3

## Technical data

Weight: app. 95 kg/km  
bending radius, repeated: 131 mm  
Operating temperature range min.: -30°C  
Operating temperature range max.: +70°C  
Copper weight: 46,00 kg/km

app. 95 kg/km  
131 mm  
-30°C  
+70°C  
46,00 kg/km

## Norms

Applicable standards:

Acc. to ISO/IEC 11801  
Acc. to EIA/TIA 568-A  
Category 7  
Halogen-free acc. to 60754-1  
Flame-retardant acc. to IEC 60332-1-2  
CMX 75°C (shielded) or AWM 20940 600V

Acc. to ISO/IEC 11801  
Acc. to EIA/TIA 568-A  
Category 7  
Halogen-free acc. to 60754-1  
Flame-retardant acc. to IEC 60332-1-2  
CMX 75°C (shielded) or AWM 20940 600V

UL Style:

## Application

HELUKAT® 600S Category 7 Trailing Cable is designed for use in cable carriers and the recurring loads caused by moving machine components. It provides excellent transmission characteristics under extremely difficult conditions. The Torsion edition has an optimized screen for torsion application which is typical in robotics.

## Part no.

**805614**, SF/FTP 4x2xAWG 24/7 PUR

**805828**, SF/FTP 4x2xAWG 24/7 PUR

Dimensions and specifications may be changed without prior notice.

**По вопросам продаж и поддержки обращайтесь:**

Алматы (7273)495-231	Казань (843)206-01-48	Новокузнецк (3843)20-46-81	Смоленск (4812)29-41-54
Архангельск (8182)63-90-72	Калининград (4012)72-03-81	Новосибирск (383)227-86-73	Сочи (862)225-72-31
Астрахань (8512)99-46-04	Калуга (4842)92-23-67	Омск (3812)21-46-40	Ставрополь (8652)20-65-13
Барнаул (3852)73-04-60	Кемерово (3842)65-04-62	Орел (4862)44-53-42	Сургут (3462)77-98-35
Белгород (4722)40-23-64	Киров (8332)68-02-04	Оренбург (3532)37-68-04	Тверь (4822)63-31-35
Брянск (4832)59-03-52	Краснодар (861)203-40-90	Пенза (8412)22-31-16	Томск (3822)98-41-53
Владивосток (423)249-28-31	Красноярск (391)204-63-61	Пермь (342)205-81-47	Тула (4872)74-02-29
Волгоград (844)278-03-48	Курск (4712)77-13-04	Ростов-на-Дону (863)308-18-15	Тюмень (3452)66-21-18
Вологда (8172)26-41-59	Липецк (4742)52-20-81	Рязань (4912)46-61-64	Ульяновск (8422)24-23-59
Воронеж (473)204-51-73	Магнитогорск (3519)55-03-13	Самара (846)206-03-16	Уфа (347)229-48-12
Екатеринбург (343)384-55-89	Москва (495)268-04-70	Санкт-Петербург (812)309-46-40	Хабаровск (4212)92-98-04
Иваново (4932)77-34-06	Мурманск (8152)59-64-93	Саратов (845)249-38-78	Челябинск (351)202-03-61
Ижевск (3412)26-03-58	Набережные Челны (8552)20-53-41	Севастополь (8692)22-31-93	Череповец (8202)49-02-64
Иркутск (395)279-98-46	Нижний Новгород (831)429-08-12	Симферополь (3652)67-13-56	Ярославль (4852)69-52-93
Россия (495)268-04-70	Киргизия (996)312-96-26-47	Казахстан (7172)727-132	