TSUBAKI

KABELSCHLEPP

CABLES FOR MOTION

CONTINUOUS-BENDING HI-FLEX ELECTRICAL CABLES

TOTALTRAX TURN-KEY SYSTEMS

PRE-ASSEMBLED CABLES

STRAIN RELIEF DEVICES

... FOR CABLE CARRIERS

EDITION
09-2012

Durable, reliable, cost-effective

Cables for cable carriers

Ready for solutions – your advantage

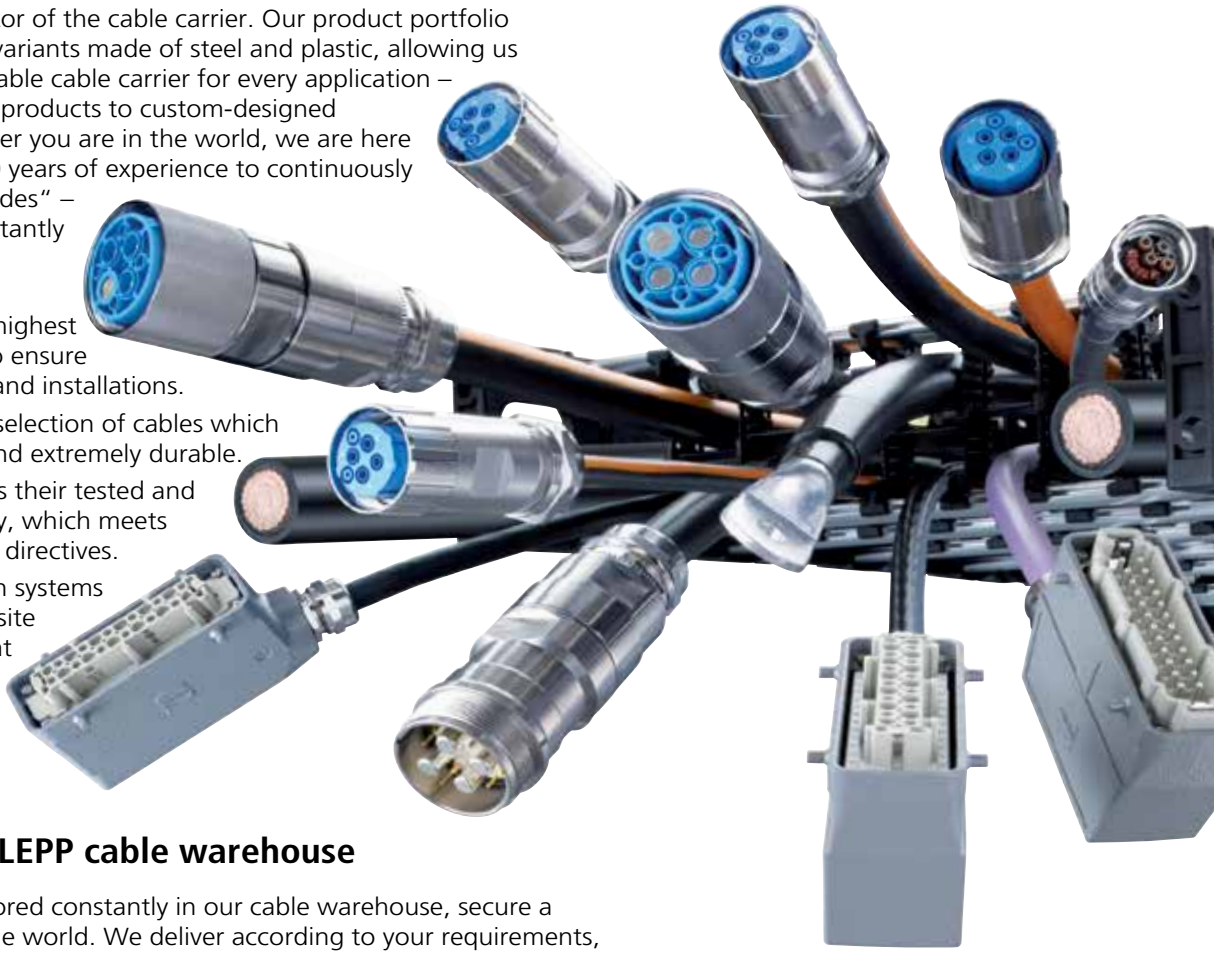
KABELSCHLEPP – the inventor of the cable carrier. Our product portfolio covers more than 100,000 variants made of steel and plastic, allowing us to deliver a suitable and reliable cable carrier for every application – from standard off-the-shelf products to custom-designed complete solutions. Wherever you are in the world, we are here to help. We use our over 50 years of experience to continuously develop and refine the "insides" – i.e. the cables – and to constantly adapt them to the market requirements.

Our cable ranges meet the highest quality standards in order to ensure availability of your systems and installations.

With the range, we offer a selection of cables which are cost-effective, flexible and extremely durable.

A key factor for our cables is their tested and proven operational reliability, which meets all applicable standards and directives.

Competent, objective-driven systems consultation and global on-site service are both part of what we consider an on-going commitment to the technical and commercial optimisation of your applications.



TSUBAKI KABELSCHLEPP cable warehouse

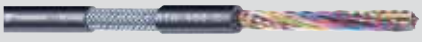
Hundreds of cable types, stored constantly in our cable warehouse, secure a fast availability all around the world. We deliver according to your requirements, no minimum quantities, each length without extra cutting costs.

■ TSUBAKI KABELSCHLEPP cable warehouse.

The successful TSUBAKI KABELSCHLEPP cable program will currently extended and optimized as an innovative standard product line, especially for the installation of cables in dynamic cable and hose carrier systems. Our clearly structured type selection offers a unique combination of performance features.

■ Fully harnessed cable and hose carrier system QUANTUM equipped with electrical cables.

Overview cable types

Cable type		Outer jacket	Shield	Factor for KR_{min} = n x Ø cable	Temperature moved	Approvals
CONTROL cables						
CONTROL 200		PVC	–	10	-5 to +80 °C	
CONTROL 200 C		PVC	✓	10	-5 to +80 °C	
CONTROL 400 – 600 V		PVC	–	7.5	-5 to +80 °C	
CONTROL 400 C – 600 V		PVC	✓	7.5	-5 to +80 °C	
CONTROL 700 – 600 V		PUR	–	7.5	-30 to +90 °C	
CONTROL 700 C – 600 V		PUR	✓	7.5	-30 to +90 °C	
POWER cables						
POWER 400 1 KV		PVC	–	7.5	-5 to +80 °C	
POWER 400 C 1 KV		PVC	✓	7.5	-5 to +80 °C	
POWER 700 1 KV		PUR	–	7.5	-30 to +90 °C	
POWER ONE 700 1 KV		PUR	–	7.5	-40 to +90 °C	
POWER ONE 700 PE		PUR	–	7.5	-40 to +90 °C	
POWER 700 C 1 KV		PUR	✓	7.5	-30 to +90 °C	
POWER ONE 700 C 1 KV		PUR	✓	7.5	-40 to +90 °C	
DATA cables						
DATA 400 C		PVC	✓	7.5	-5 to +80 °C	
DATA 700		PUR	–	7.5	-30 to +90 °C	
DATA 700 TPi C		PUR	✓	7.5	-30 to +90 °C	
DATA 700 TPi CD DATA/POWER		PUR	✓	7.5	-30 to +90 °C	

Cable index by part number ➤ Page 83

Standards	Color type-department	Halogen-free	Flame-retardant	Oil-resistant	v_{max} supported (m/s)	v_{max} gliding (m/s)	a_{max} (m/s2)	Diameter mm²/ Type/Other	Core number	Page
12										
CE RoHS conform	**black/ grey**	–	✓	✓	3.5	2	10	$0,5^2$ to 2.5^2	2-25	**12**
CE RoHS conform	**black/ grey**	–	✓	✓	3.5	2	10	0.5^2 to 1.5^2	2-25	**14**
CE RoHS conform	**black/ grey**	–	✓	✓	10	5	20	0.5^2 to 2.5^2	2-30	**16**
CE RoHS conform	**black/ grey**	–	✓	✓	10	5	20	0.5^2 to 1.5^2	3-36	**18**
CE RoHS conform	**black/ grey**	✓	✓	✓	20	5	50	0.5^2 to 2.5^2	2-36	**20**
CE RoHS conform	**black/ grey**	✓	✓	✓	20	5	50	0.5^2 to 1^2	2-25	**22**
24										
CE RoHS conform	**black**	–	✓	✓	5	3	20	1.5^2 to 70^2	2-25	**24**
CE RoHS conform	**black**	–	✓	✓	5	3	20	1.5^2 to 35^2	4-7	**26**
CE RoHS conform	**black**	✓	✓	✓	20	5	50	1.5^2 to 185^2	2-36	**28**
CE RoHS conform	**black**	✓	✓	✓	20	5	50	0.25^2 to 700^2	1	**30**
CE RoHS conform	**black**	✓	✓	✓	20	5	50	1.5^2 to 95^2	1	**32**
CE RoHS conform	**black**	✓	✓	✓	20	5	50	1.5^2 to 150^2	2-49	**34**
CE RoHS conform	**black**	✓	✓	✓	20	5	50	1.5^2 to 300^2	1	**36**
38										
CE RoHS conform	**black/ purple**	✓	✓	✓	20	5	50	0.25^2 to 0.34^2	4-25	**38**
CE RoHS conform	**black/ purple**	✓	✓	✓	20	5	50	0.25^2 to 0.34^2	3-15	**40**
CE RoHS conform	**black/ purple**	✓	✓	✓	20	5	50	0.25^2 to 1^2	2-32	**42**
CE RoHS conform	**black/ purple**	✓	✓	✓	20	5	50	0.25^2 to 1.5^2	6-20	**44**

Cable index by part number ➤ Page 83

Overview cable types

Cable type		Outer jacket	Shield	Factor for KR_{min} = n x Ø cable	Temperature moved	Approvals
BUS-/fiber optic-/coaxial cables						
Profibus 700 C		PUR	✓	15	-20 to +60 °C	
CAN-BUS 700 C		PUR	✓	7.5	-30 to +70 °C	
USB S 700 C		PUR	✓	10	-10 to +70 °C	
Interbus 700 C		PUR	✓	12	-30 to +70 °C	
CAT5E / CAT6 700 CD		PUR	✓	10	-20 to +60 °C	
Koax 700 C / 700 CD		PUR	✓	14	-5 to +50 °C	
LWL 700		PUR	–	7.5	-30 to +90 °C	–
OEM SYSTEM cables						
SYSTEM S 700 C		PUR	✓	7.5	-30 to +90 °C	
SYSTEM M 700 C		PUR	✓	7.5	-30 to +90 °C	

Cable index by part number ➤ Page 83

Standards	Color type-department	Halogen-free	Flame-retardant	Oil-resistant	v_{max} supported (m/s)	v_{max} gliding (m/s)	a_{max} (m/s2)	Diameter mm²/ Type/Other	Core number	Page
46										
CE RoHS conform	**purple/ black**	✓	✓	✓	3.5	2	10	0.5^2	2	**46**
CE RoHS conform	**purple/ black**	✓	✓	✓	3.5	2	10	0.5^2	2-4	**48**
CE RoHS conform	**purple**	✓	✓	✓	3.5	2	10	$(1x2x0.08^2 + 2x0.5^2)$	4	**50**
CE RoHS conform	**purple/ black**	✓	✓	✓	3.5	2	10	0.25^2 to 1^2	9	**52**
CE RoHS conform	**green/ black**	✓	✓	✓	3.5	2	10	0.15^2 to 0.22^2	8	**54**
CE RoHS conform	**black**	–	–	✓	3.5	2	10	HF 50/75	1-3	**56**
CE RoHS conform	**black**	✓	✓	✓	4	4	10	50µ/62,5µ	6-12	**58**
60										
CE RoHS conform	**green**	✓	✓	✓	6	3	8	0.14^2 to 0.5^2	4-16	**60**
CE RoHS conform	**orange**	✓	✓	✓	6	3	8	1.5^2 to 50^2	4-6	**62**

Cable index by part number ➤ Page 83

Overview pre-assembled cables

USB / CAT5E 65

Signal cables Cables with connections compatible with the OEM standards 66

Power cables Cables with connections compatible with OEM standards 67

Technical Data, further information Page

Cable index by part number ➤ Page 83

KABELSCHLEPP and EPLAN

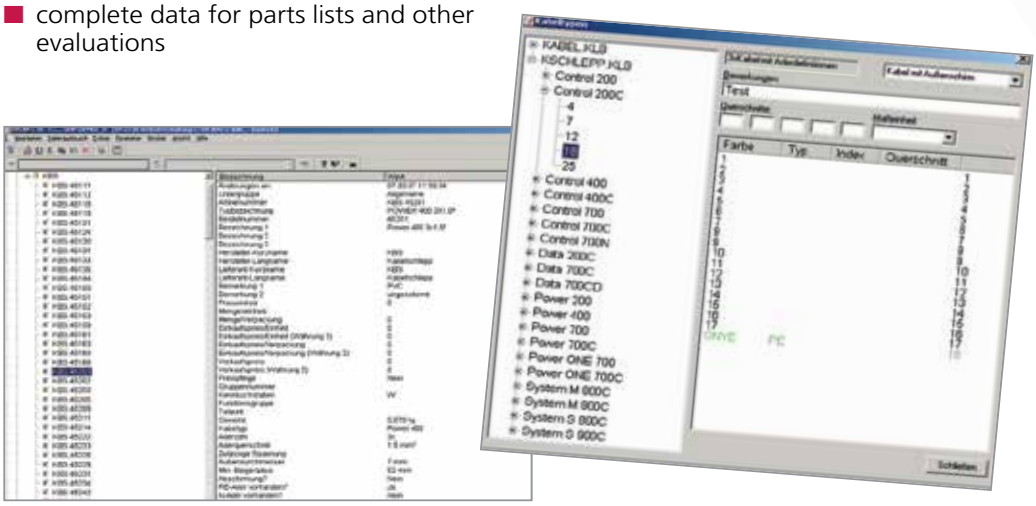
EPLAN has developed over more than 20 years into a leading E-CAD system and has become more-or-less established as a standard in some branches.

Cable database for EPLAN

As a provider of highly-flexible electrical cables for cable and hose carriers, we offer you the KABELSCHLEPP cable data bases as a superior tool for optimising your daily work with EPLAN.

The databases are optimized for use in EPLAN5 and for transmission according to EPLAN P8 electric.

- easy cable selection by construction
- automatic addition of core number, cross-section and core color
- complete data for parts lists and other evaluations



Cable index by part number ➤ Page 83

TOTALTRAX turn-key systems
Fully harnessed cable carrier systems

The product you need – we support and supply it to you completely harnessed

One supplier – one responsibility

We develop, design and supply all components required for your individual cable & hose carrier system.

■ Ready-to-connect assembled plastic cable carrier system, packed ready for installation

Everything you need

- Consulting
- Planning
- Design
- Cable carriers
- Electrical cables
- Complete guarantee
- Hydraulic hoses
- Pneumatic hoses
- Plug-and-socket connectors
- Assembly plates
- Complete assembly of all components

\+ One contact person
\+ One order
\+ One delivery
\+ Guaranteed quality

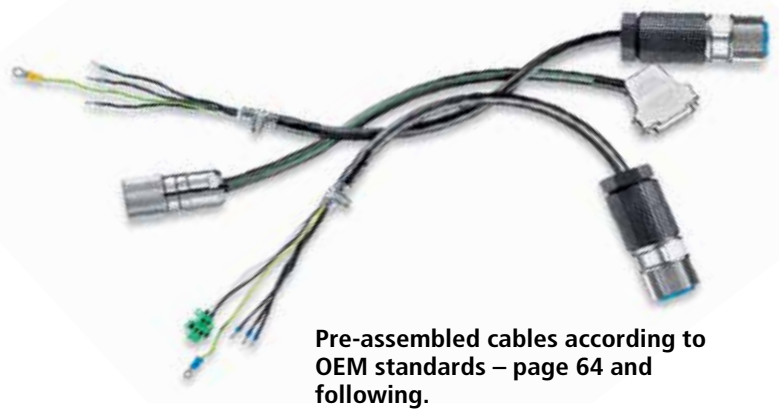
= TOTALTRAX Complete System

TOTALTRAX – from design to the complete system

NOTE:
Harnessed cables according to all OEM

We manufacture KABELSCHLEPP cables according to OEM specifications, suitable for all drive controls which consist of signal and power cables and/or extension cables.

- any cable length available
- delivery minimum: 1 unit



Pre-assembled cables according to OEM standards – page 64 and following.

Cut costs with TOTALTRAX complete cable carrier systems

We help you . . .

- Advice on planning
- Support in the design phase
- Only one contact person for the complete system including all the individual components
- Complete delivery from a single source
- Only one supplier – one purchase order and one item number
- All components match each other perfectly
- Guarantee certificate upon requests

. . . to cut your costs!

- Goods receiving inspections for all individual components are no longer required
- Expensive technical personnel and special tools are no longer required
- Shorter assembly times
- No hidden costs, e.g. cables being cut to excessive lengths etc.
- Less captive capital with almost no inventory
- On-time delivery directly to your production site

No storage costs for individual components like cables and connectors

Our warehouses offer cables, plug-and-socket connectors as well as many other individual components.

Complete system with reusable shipping fixture

Fully harnessed steel cable carrier

Plastic cable carrier fully harnessed with cables, hoses, connectors and holding plates

Complete service – even for applications with extreme assembly conditions

Our service team can design and assemble your cable carrier system even for applications with extreme assembly conditions. Our service center experts provide you with the support you need.

- Complete assembly with guide channels
- Uncoiling of harnessed cable carrier systems with long travel lengths
- Assembly at great heights (e. g. crane systems)

Fully harnessed cable carrier system in shipping crate

Assembly of the fully harnessed cable carrier system

CONTROL 200

Unshielded continuous bending hi-flex PVC control cables

Picture obtainable.

Up to 2 million motion cycles!

Up to 25 m travel length!

TSUBAKI KABELSCHLEPP
cables for cable carriers

Developed for

- systems engineering and mechanical engineering
- crane and conveyor equipment
- monitoring, measuring and control cables
- light to medium loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- CFC-free
- flame-retardant
- silicone-free
- ozone-resistant

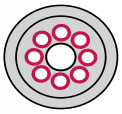
Design

Conductor:	finely stranded bare copper wires class 5 in an optimized hi-flex design
Center element:	type-dependent
Core insulation:	KS-PP
Core identification:	black with white numbers, protective conductor green/yellow
Core stranding:	conductor cores layered
Outer jacket:	KS-PVC

Technical Data

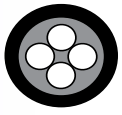
Temperature range:	– 5 to + 80 °C
Minimum bend radius while moved:	$KR_{min} \geq 10 \times Ø$
v_{max} supported:	3.5 m/s
v_{max} gliding:	2 m/s
a_{max}:	10 m/s²
Insulation resistance:	≥ 10 MΩ x km
Rated voltage:	according to VDE 300/500 V according to UL 300 V
Approvals:	UL, cUL, based on VDE

varying parameters possible – please contact us



Core insulation
KS-PP
layered

Outer jacket
KS-PVC
valley-sealed extruded
hi-flex design
UV-resistant
ozone-resistant
high abrasion-resistant



Jacket color black
ozone-resistant
UV-resistant

Subject to change.

Type selection

CONTROL 200 – unshielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max. OD in mm	weight kg/m	Cu index kg/m
2 x 0.5²	20 / 2c	**47351**	4.5	0.026	0.010
3 G 0.5²	20 / 3c	**47352**	4.7	0.031	0.015
5 G 0.5²	20 / 5c	**47354**	5.5	0.045	0.024
7 G 0.5²	20 / 7c	**47356**	6.5	0.062	0.035
12 G 0.5²	20 / 12c	**47360**	7.6	0.090	0.058
18 G 0.5²	20 / 18c	**47364**	9.0	0.131	0.087
25 G 0.5²	20 / 25c	**47367**	11.4	0.195	0.125
3 G 0.75²	19 / 3c	**47372**	5.5	0.043	0.022
4 G 0.75²	19 / 4c	**47373**	6.1	0.055	0.029
5 G 0.75²	19 / 5c	**47374**	6.6	0.066	0.036
7 G 0.75²	19 / 7c	**47376**	7.7	0.088	0.053
12 G 0.75²	19 / 12c	**47380**	9.3	0.134	0.087
18 G 0.75²	19 / 18c	**47384**	11.2	0.197	0.130
25 G 0.75²	19 / 25c	**47387**	13.9	0.290	0.180
3 G 1²	18 / 3c	**47392**	6.0	0.054	0.030
4 G 1²	18 / 4c	**47393**	6.5	0.067	0.040
5 G 1²	18 / 5c	**47394**	7.0	0.079	0.048
7 G 1²	18 / 7c	**47396**	8.2	0.107	0.068
12 G 1²	18 / 12c	**47400**	10.2	0.168	0.116
18 G 1²	18 / 18c	**47404**	12.0	0.243	0.174
25 G 1²	18 / 25c	**47407**	15.1	0.363	0.246
3 G 1.5²	16 / 3c	**47412**	6.6	0.071	0.043
4 G 1.5²	16 / 4c	**47413**	7.1	0.087	0.058
5 G 1.5²	16 / 5c	**47414**	7.7	0.105	0.072
7 G 1.5²	16 / 7c	**47416**	9.2	0.144	0.101
12 G 1.5²	16 / 12c	**47420**	11.5	0.230	0.173
18 G 1.5²	16 / 18c	**47424**	13.4	0.330	0.260
25 G 1.5²	16 / 25c	**47427**	16.8	0.491	0.360
4 G 2.5²	14 / 4c	**47433**	8.7	0.136	0.100

Subject to change.

Additional cable types upon request.

CONTROL 200 C

Shielded continuous bending hi-flex PVC control cables

Picture obtainable.

Core insulation
KS-PP
layered

Inner jacket
KS-PVC
valley-sealed,
pressure extruded,
hi-flex design

Overall shield
high flexural strength,
tin-plated copper braiding
for small bend radii

Outer jacket
KS-PVC
pressure extruded
hi-flex design
high abrasion-resistant

Jacket color black
ozone-resistant
UV-resistant

Up to 2 million motion cycles!

Up to 25 m travel length!

TSUBAKI KABELSCHLEPP
cables for cable carriers

Developed for

- systems engineering and mechanical engineering
- crane and conveyor equipment
- monitoring, measuring and control cables
- light to medium loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- CFC-free
- silicone-free
- flame-retardant
- ozone-resistant

Design

Conductor:	finely stranded bare copper wires class 5 in an optimized hi-flex design
Center element:	type-dependent
Core insulation:	KS-PP
Core identification:	black with white numbers, protective conductor green/yellow
Core stranding:	conductor cores layered
Shielding:	coverage nom. 83 %
Outer jacket:	KS-PVC
Jacket color:	black
Inner jacket:	KS-PVC

Technical Data

Temperature range:	– 5 to + 80 °C
Minimum bend radius while moved:	$KR_{min} \geq 10 \times Ø$
v_{max} supported:	3.5 m/s
v_{max} gliding:	2 m/s
a_{max}:	10 m/s²
Insulation resistance:	≥ 10 MΩ x km
Rated voltage:	according to VDE 300/500 V according to UL 300 V
Approvals:	UL, cUL, based on VDE

varying parameters possible – please contact us

Subject to change.

Type selection

CONTROL 200 C – shielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
(2 x 0.5²)	(20 / 2c)	**47651**	6.2	0.057	0.030
(3 G 0.5²)	(20 / 4c)	**47652**	6.4	0.062	0.036
(4 G 0.5²)	(20 / 5c)	**47653**	6.8	0.070	0.042
(5 G 0.5²)	(20 / 6c)	**47654**	7.2	0.081	0.048
(7 G 0.5²)	(20 / 7c)	**47656**	8.2	0.104	0.064
(12 G 0.5²)	(20 /8c)	**47660**	9.7	0.149	0.105
(18 G 0.5²)	(20 / 9c)	**47664**	11.0	0.194	0.137
(25 G 0.5²)	(20 / 10c)	**47667**	13.6	0.283	0.210
(3 G 0.75²)	(19 / 3c)	**47672**	7.2	0.079	0.048
(4 G 0.75²)	(19 / 4c)	**47673**	7.6	0.090	0.055
(5 G 0.75²)	(19 / 5c)	**47674**	8.3	0.108	0.066
(7 G 0.75²)	(19 / 7c)	**47676**	9.8	0.147	0.085
(12 G 0.75²)	(19 / 12c)	**47680**	11.3	0.198	0.135
(18 G 0.75²)	(19 / 18c)	**47684**	13.4	0.284	0.190
(25 G 0.75²)	(19 / 25c)	**47687**	16.5	0.416	0.275
(3 G 1²)	(18 / 3c)	**47692**	7.7	0.091	0.050
(4 G 1²)	(18 / 4c)	**47693**	8.2	0.108	0.070
(7 G 1²)	(18 / 7c)	**47696**	10.4	0.167	0.106
(12 G 1²)	(18 / 12c)	**47700**	12.1	0.232	0.174
(18 G 1²)	(18 / 18c)	**47704**	14.2	0.334	0.240
(25 G 1²)	(18 / 25c)	**47707**	17.5	0.486	0.332
(4 G 1.5²)	(16 / 4c)	**47713**	8.8	0.133	0.090
(7 G 1.5²)	(16 / 7c)	**47716**	11.2	0.207	0.157
(12 G 1.5²)	(16 / 12c)	**47720**	13.7	0.318	0.240
(18 G 1.5²)	(16 / 18c)	**47724**	15.8	0.440	0.355
(25 G 1.5²)	(16 / 25c)	**47727**	19.6	0.646	0.448

Subject to change.

Additional cable types upon request.

CONTROL 400 – 600 V

Unshielded continuous bending hi-flex PVC control cables

Picture obtainable.

Up to 4 million motion cycles!

Up to 50 m travel length!

TSUBAKI KABELSCHLEPP
cables for cable carriers

Developed for

- systems engineering and mechanical engineering
- crane and conveyor equipment
- monitoring, measuring and control cables
- medium to heavy loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- CFC-free
- silicone-free
- flame-retardant
- ozone-resistant

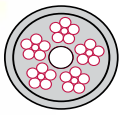
Design

Conductor:	finely stranded bare copper wires class 6 in an optimized hi-flex design
Center element:	type-dependent
Core insulation:	KS-PP
Core identification:	black with white numbers, protective conductor green/yellow
Core stranding:	conductor cores bundled in short pitches with minimal torsion (> 8 cores) conductor cores layered in short pitches with minimal torsion (≤ 8 cores)
Outer jacket:	KS-PVC
Jacket color:	black

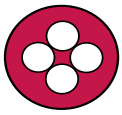
Technical Data

Temperature range:	– 5 to + 80 °C
Minimum bend radius while moved:	$KR_{min} \geq 7.5 \times Ø$
v_{max} supported:	5 m/s
v_{max} gliding:	3 m/s
a_{max}:	20 m/s²
Insulation resistance:	≥ 10 MΩ x km
Rated voltage:	according to VDE 300/500 V, according to UL 600 V
Approvals:	UL, cUL, based on VDE

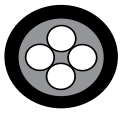
varying parameters possible – please contact us



Core insulation
KS-PP
bundled stranding
(> 8 cores)



Outer jacket
KS-PVC
valley-sealed extruded
hi-flex design
high abrasion-resistant



Jacket color black
ozone-resistant
UV-resistant

Subject to change.

Type selection

CONTROL 400 – 600 V – unshielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
2 x 0.5²	20 / 2c	**48110**	5.0	0.032	0.010
3 G 0.5²	20 / 3c	**48111**	5.3	0.038	0.014
4 G 0.5²	20 / 4c	**48112**	5.7	0.045	0.019
5 G 0.5²	20 / 5c	**48113**	6.4	0.058	0.025
7 G 0.5²	20 / 7c	**48115**	7.5	0.078	0.034
12 G 0.5²	20 / 12c	**48119**	10.3	0.137	0.063
18 G 0.5²	20 / 18c	**48121**	12.7	0.199	0.087
25 G 0.5²	20 / 25c	**48124**	14.4	0.275	0.130
30 G 0.5²	20 / 30c	**48125**	15.9	0.324	0.155
36 G 0.5²	20 / 36c	**48126**	17.5	0.390	0.185
48 G 0.5²	20 / 48c	**48128**	21.0	0.524	0.260
4 G 0.75²	19 / 4c	**48040**	6.4	0.057	0.029
5 G 0.75²	19 / 5c	**48041**	7.0	0.070	0.036
7 G 0.75²	19 / 7c	**48042**	8.3	0.096	0.051
12 G 0.75²	19 / 12c	**48043**	11.9	0.178	0.088
18 G 0.75²	19 / 18c	**48044**	14.5	0.258	0.138
25 G 0.75²	19 / 25c	**48045**	16.6	0.354	0.195
3 G 1²	18 / 3c	**48046**	6.2	0.056	0.029
4 G 1²	18 / 4c	**48047**	6.8	0.070	0.039
5 G 1²	18 / 5c	**48048**	7.4	0.084	0.050
7 G 1²	18 / 7c	**48049**	9.0	0.119	0.068
12 G 1²	18 / 12c	**48050**	12.5	0.212	0.125
18 G 1²	18 / 18c	**48051**	15.4	0.310	0.187
25 G 1²	18 / 25c	**48052**	17.7	0.429	0.260
3 G 1.5²	16 / 3c	**48053**	6.9	0.073	0.045
4 G 1.5²	16 / 4c	**48054**	7.9	0.097	0.058
5 G 1.5²	16 / 5c	**48055**	9.1	0.125	0.072
7 G 1.5²	16 / 7c	**48056**	10.8	0.170	0.101
12 G 1.5²	16 / 12c	**48057**	14.7	0.303	0.174
18 G 1.5²	16 / 18c	**48058**	18.0	0.437	0.280
25 G 1.5²	16 / 25c	**48059**	20.9	0.597	0.360
4 G 2.5²	14 / 4c	**48060**	9.2	0.140	0.096

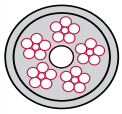
Subject to change.

Additional cable types upon request.

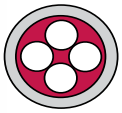
CONTROL 400 C – 600 V

Shielded continuous bending hi-flex PVC control cables

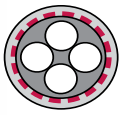
Picture obtainable.



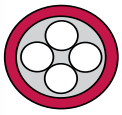
Core insulation
KS-PP
bundled stranding
(> 8 cores)



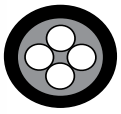
Inner jacket
KS-PVC
valley-sealed,
pressure extruded,
hi-flex design



Overall shield
continuous bending hi-flex,
tin-plated copper braiding
for smallest bend radii



Outer jacket
KS-PVC
pressure extruded
hi-flex design
very abrasion-resistant



Jacket color black
ozone-resistant
UV-resistant

Up to 4 million motion cycles!

Up to 50 m travel length!

TSUBAKI KABELSCHLEPP
cables for cable carriers

Developed for

- systems engineering and mechanical engineering
- crane and conveyor equipment
- monitoring, measuring and control cables
- medium to heavy loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- CFC-free
- silicone-free
- flame-retardant
- ozone-resistant

Design

Conductor:	finely stranded bare copper wires class 6 in an optimized hi-flex design
Center element:	type-dependent
Core insulation:	KS-PP
Core identification:	black with white numbers, protective conductor green/yellow
Core stranding:	conductor cores bundled in short pitches with minimal torsion (> 8 cores) conductor cores layered in short pitches with minimal torsion (≤ 8 cores)
Shielding:	coverage nom. 85 %
Outer jacket:	KS-PVC
Jacket color:	black
Inner jacket:	KS-PVC

Technical Data

Temperature range:	– 5 to + 80 °C
Minimum bend radius while moved:	$KR_{min} \geq 7.5 \times Ø$
v_{max} supported:	5 m/s
v_{max} gliding:	3 m/s
a_{max}:	20 m/s²
Insulation resistance:	≥ 10 MΩ x km
Rated voltage:	according to VDE 300/500 V according to UL 600 V
Approvals:	UL, cUL, based on VDE

varying parameters possible – please contact us

Subject to change.

Type selection

Control 400 C – 600 V – shielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
(5 G 0.5²)	20 / 5c	**48664**	8.0	0.104	0.052
(7 G 0.5²)	20 / 7c	**48666**	9.3	0.137	0.066
(9 G 0.5²)	20 / 9c	**48668**	10.4	0.158	0.090
(12 G 0.5²)	20 / 12c	**48670**	12.1	0.211	0.106
(18 G 0.5²)	20 / 18c	**48674**	14.5	0.289	0.169
(25 G 0.5²)	20 / 25c	**48678**	16.6	0.385	0.223
(30 G 0.5²)	20 / 30c	**48679**	18.5	0.482	0.272
(36 G 0.5²)	20 / 36c	**48680**	20.4	0.571	0.302
(3 G 0.75²)	(19 / 3c)	**48682**	7.8	0.089	0.045
(4 G 0.75²)	(19 / 4c)	**48070**	8.4	0.107	0.055
(7 G 0.75²)	(19 / 7c)	**48071**	10.4	0.158	0.085
(12 G 0.75²)	(19 / 12c)	**48072**	13.5	0.256	0.151
(18 G 0.75²)	(19 / 18c)	**48073**	15.9	0.345	0.225
(25 G 0.75²)	(19 / 25c)	**48074**	19.0	0.507	0.295
(4 G 1²)	(18 / 4c)	**48075**	9.0	0.125	0.073
(7 G 1²)	(18 / 7c)	**48076**	11.3	0.188	0.115
(12 G 1²)	(18 / 12c)	**48077**	14.3	0.296	0.198
(18 G 1²)	(18 / 18c)	**48078**	17.8	0.456	0.272
(25 G 1²)	(18 / 25c)	**48079**	20.8	0.612	0.357
(4 G 1.5²)	(16 / 4c)	**48080**	9.6	0.152	0.085
(5 G 1.5²)	(16 / 5c)	**48081**	10.4	0.173	0.103
(7 G 1.5²)	(16 / 7c)	**48082**	12.3	0.234	0.148
(12 G 1.5²)	(16 / 12c)	**48083**	17.3	0.422	0.269
(18 G 1.5²)	(16 / 18c)	**48084**	21.7	0.656	0.382
(25 G 1.5²)	(16 / 25c)	**48085**	25.2	0.892	0.503
(30 G 1.5²)	(16 / 30c)	**48086**	27.2	1.015	0.635

Subject to change.

Additional cable types upon request.

CONTROL 700 – 600 V

Unshielded continuous bending hi-flex PUR control cables

Picture obtainable.

Up to 7 million motion cycles!

Up to 500 m travel length!

TSUBAKI KABELSCHLEPP cables for cable carriers

Developed for

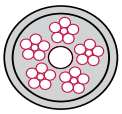
- systems engineering and mechanical engineering
- crane and conveyor equipment
- monitoring, measuring and control cables
- extremely heavy loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- halogen-free
- CFC-free
- silicone-free
- flame-retardant
- ozone-resistant

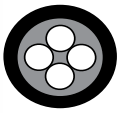
Design

Conductor:	finely stranded conductors class 6 of bare copper wires in an optimized hi-flex design
Center element:	type-dependent
Core insulation:	KS-PP
Core identification:	black with white numbers, protective conductor green/yellow
Core stranding:	conductor cores bundled in short pitches with minimal torsion (> 8 cores) conductor cores layered in short pitches with minimal torsion (≤ 8 cores)
Outer jacket:	KS-PUR
Jacket color:	black



Core insulation KS-PP
bundled stranding
(> 8 cores)

Outer jacket KS-PUR
valley-sealed extruded hi-flex design
extremely abrasion-resistant



Jacket color black
ozone-resistant
UV-resistant

Technical Data

Temperature range:	– 30 to + 90 °C
Minimum bend radius while moved:	$KR_{min} \geq 7.5 \times Ø$
v_{max} supported:	20 m/s
v_{max} gliding:	5 m/s
a_{max}:	50 m/s²
Insulation resistance:	≥ 30 MΩ x km
Rated voltage:	according to VDE 300/500 V, according to UL 600 V
Approvals:	UL, cUL, based on VDE

varying parameters possible – please contact us

Subject to change.

Type selection

CONTROL 700 – 600 V – unshielded

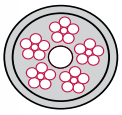
core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
2 x 0.5²	20 / 2c	**45391**	5.0	0.031	0.010
3 G 0.5²	20 / 3c	**45392**	5.3	0.038	0.014
4 G 0.5²	20 / 4c	**45393**	5.7	0.045	0.020
7 G 0.5²	20 / 7c	**45396**	7.5	0.078	0.035
12 G 0.5²	20 / 12c	**45400**	10.3	0.137	0.060
15 G 0.5²	20 / 15c	**45401**	11.3	0.161	0.072
16 G 0.5²	20 / 16c	**45402**	11.6	0.177	0.077
36 G 0.5²	20 / 36c	**45412**	17.1	0.375	0.198
3 G 0.75²	19 / 3c	**45421**	5.8	0.045	0.023
4 G 0.75²	19 / 4c	**45422**	6.4	0.057	0.031
5 G 0.75²	19 / 5c	**45423**	7.0	0.070	0.038
7 G 0.75²	19 / 7c	**45425**	8.3	0.096	0.053
12 G 0.75²	19 / 12c	**45429**	11.3	0.164	0.096
18 G 0.75²	19 / 18c	**45431**	13.9	0.241	0.146
25 G 0.75²	19 / 25c	**45434**	15.8	0.328	0.209
36 G 0.75²	19 / 36c	**45436**	19.6	0.481	0.270
3 G 1²	18 / 3c	**45441**	6.2	0.056	0.029
4 G 1²	18 / 4c	**45442**	6.8	0.069	0.044
5 G 1²	18 / 5c	**45443**	7.4	0.084	0.048
7 G 1²	18 / 7c	**45445**	9.0	0.118	0.070
8 G 1²	18 / 8c	**45446**	9.7	0.135	0.077
12 G 1²	18 / 12c	**45449**	11.9	0.197	0.125
18 G 1²	18 / 18c	**45451**	14.6	0.286	0.210
25 G 1²	18 / 25c	**45454**	16.9	0.400	0.302
7 G 1.5²	16 / 7c	**45477**	10.8	0.169	0.105
12 G 1.5²	16 / 12c	**45480**	13.7	0.269	0.195
18 G 2.5²	14 / 18c	**45497**	21.8	0.653	0.450
25 G 2.5²	14 / 25c	**45498**	24.0	0.866	0.625

Additional cable types upon request.

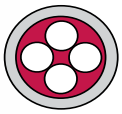
CONTROL 700 C – 600 V

Shielded continuous bending hi-flex PUR control cables

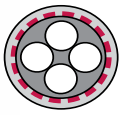
Picture obtainable.



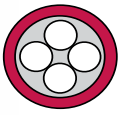
Core insulation
KS-PP
bundled stranding
(> 8 cores)



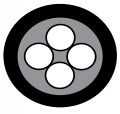
Inner jacket
KS-TPE
valley-sealed,
pressure extruded,
hi-flex design



Overall shield
continuous bending hi-flex,
tin-plated copper braiding
for smallest bend radii



Outer jacket
KS-TPE
pressure extruded
hi-flex design
extremely abrasion-resistant



Jacket color black
ozone-resistant
UV-resistant

Up to 7 million motion cycles!

Up to 500 m travel length!

TSUBAKI KABELSCHLEPP
cables for cable carriers

Developed for

- systems engineering and mechanical engineering
- crane and conveyor equipment
- monitoring, measuring and control cables
- extremely heavy loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- halogen-free
- CFC-free
- silicone-free
- flame-retardant
- ozone-resistant

Design

Conductor:	finely stranded conductors class 6 of bare copper wires in an optimized hi-flex design
Center element:	type-dependent
Core insulation:	KS-PP
Core identification:	black with white numbers, protective conductor green/yellow
Core stranding:	conductor cores bundled in short pitches with minimal torsion (> 8 cores) conductor cores layered in short pitches with minimal torsion (≤ 8 cores)
Shielding:	coverage nom. 85 %
Outer jacket:	KS-PUR
Jacket color:	black
Inner jacket:	KS-TPE

Technical Data

Temperature range:	– 30 to + 90 °C
Minimum bend radius while moved:	$KR_{min} \geq 7.5 \times Ø$
v_{max} supported:	20 m/s
v_{max} gliding:	5 m/s
a_{max}:	50 m/s²
Insulation resistance:	≥ 30 MΩ x km
Rated voltage:	according to VDE 300/500 V, according to UL 600 V
Approvals:	UL, cUL, based on VDE

varying parameters possible – please contact us

Subject to change.

Type selection

CONTROL 700 C – 600 V – shielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
(3 G 0.5²)	(20 / 3c)	**45701**	7.1	0.073	0.036
(4 G 0.5²)	(20 / 4c)	**45702**	7.5	0.081	0.042
(5 G 0.5²)	(20 / 5c)	**45703**	8.0	0.095	0.048
(7 G 0.5²)	(20 / 7c)	**45705**	9.3	0.125	0.064
(12 G 0.5²)	(20 / 12c)	**45709**	12.1	0.199	0.109
(18 G 0.5²)	(20 / 18c)	**45712**	14.5	0.274	0.167
(25 G 0.5²)	(20 / 25c)	**45715**	16.6	0.364	0.212
(3 G 0.75²)	(19 / 3c)	**45721**	7.8	0.085	0.048
(4 G 0.75²)	(19 / 4c)	**45722**	8.4	0.103	0.055
(5 G 0.75²)	(19 / 5c)	**45723**	9.0	0.119	0.066
(7 G 0.75²)	(19 / 7c)	**45725**	10.4	0.152	0.087
(12 G 0.75²)	(19 / 12c)	**45729**	13.5	0.242	0.147
(18 G 0.75²)	(19 / 18c)	**45732**	15.9	0.328	0.222
(25 G 0.75²)	(19 / 25c)	**45735**	19.0	0.482	0.293
(3 G 1²)	(18 / 3c)	**45741**	8.3	0.102	0.059
(4 G 1²)	(18 / 4c)	**45742**	9.0	0.120	0.070
(5 G 1²)	(18 / 5c)	**45743**	9.6	0.137	0.084
(7 G 1²)	(18 / 7c)	**45745**	11.3	0.181	0.106
(12 G 1²)	(18 / 12c)	**45749**	14.3	0.281	0.174
(18 G 1²)	(18 / 18c)	**45752**	17.8	0.496	0.240
(25 G 1²)	(18 / 25c)	**45755**	20.8	0.585	0.332

Additional cable types upon request.

POWER 400 – 1 kV

Unshielded continuous bending hi-flex PVC power cables

Picture obtainable.

Up to 4 million motion cycles!

Up to 50 m travel length!

TSUBAKI KABELSCHLEPP *cables for cable carriers*

DESINA

Developed for

- systems engineering and mechanical engineering
- crane and conveyor equipment
- power and supply cable
- medium to heavy loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- CFC-free
- silicone-free
- flame-retardant
- ozone-resistant

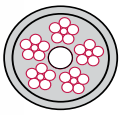
Design

Conductor:	finely stranded conductors class 6 of bare copper wires in an optimized hi-flex design
Center element:	type-dependent
Core insulation:	KS-PP
Core identification:	black with white numbers, protective conductor green/yellow
Core stranding:	conductor cores bundled in short pitches with minimal torsion (> 8 cores) conductor cores layered in short pitches with minimal torsion (≤ 8 cores)
Outer jacket:	KS-PVC
Jacket color:	black (according to DESINA)

Technical Data

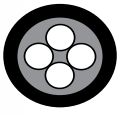
Temperature range:	– 5 to + 80 °C
Minimum bend radius while moved:	$KR_{min} \geq 7.5 \times Ø$
v_{max} supported:	5 m/s
v_{max} gliding:	3 m/s
a_{max}:	20 m/s²
Insulation resistance:	≥ 30 MΩ x km
Rated voltage:	according to VDE 0.6/1 kV according to UL 1 kV
Approvals:	UL, cUL, based on VDE

varying parameters possible – please contact us



Core insulation
KS-PP
bundled stranding
(> 8 cores)

Outer jacket
KS-PVC
valley-sealed extruded
hi-flex design
high abrasion-resistant



Jacket color black
ozone-resistant
UV-resistant

Subject to change.

Type selection

POWER 400 – 1 kV – unshielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
2 x 1.5²	16 / 2c	**45200**	6.5	0.060	0.031
3 G 1.5²	16 / 3c	**45201**	6.9	0.073	0.045
4 G 1.5²	16 / 4c	**45202**	7.9	0.097	0.060
5 G 1.5²	16 / 5c	**45203**	9.1	0.125	0.072
7 G 1.5²	16 / 7c	**45205**	10.8	0.170	0.105
12 G 1.5²	16 / 12c	**45209**	14.5	0.295	0.180
18 G 1.5²	16 / 18c	**45211**	18.0	0.437	0.270
20 G 1.5²	16 / 20c	**45212**	18.9	0.496	0.303
25 G 1.5²	16 / 25c	**45214**	20.9	0.597	0.405
3 G 2.5²	14 / 3c	**45221**	8.9	0.122	0.075
4 G 2.5²	14 / 4c	**45222**	9.7	0.152	0.100
5 G 2.5²	14 / 5c	**45223**	10.8	0.185	0.125
7 G 2.5²	14 / 7c	**45225**	12.5	0.244	0.168
12 G 2.5²	14 / 12c	**45229**	17.7	0.457	0.300
18 G 2.5²	14 / 18c	**45231**	22.2	0.677	0.450
25 G 2.5²	14 / 25c	**45234**	24.8	0.906	0.625
4 G 4²	12 / 4c	**45242**	11.5	0.237	0.160
5 G 4²	12 / 5c	**45243**	12.8	0.288	0.200
7 G 4²	12 / 7c	**45245**	14.8	0.397	0.280
4 G 6²	10 / 4c	**45252**	13.5	0.357	0.240
5 G 6²	10 / 5c	**45253**	14.8	0.433	0.288
7 G 6²	10 / 7c	**45254**	17.7	0.604	0.420
4 G 10²	8 / 4c	**45262**	16.5	0.523	0.400
5 G 10²	8 / 5c	**45263**	18.1	0.632	0.480
4 G 16²	6 / 4c	**45272**	20.8	0.877	0.640
4 G 25²	4 / 4c	**45282**	25.8	1.294	1.000
4 G 35²	2 / 4c	**45292**	29.8	1.763	1.400
4 G 50²	1 / 4c	**45302**	34.4	2.470	1.910
4 G 70²	0 / 4c	**45312**	40.6	3.493	2.700

Subject to change.

Additional cable types upon request.

POWER 400 C – 1 kV

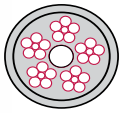
Shielded continuous bending hi-flex PVC power cables

Up to **4 million** motion cycles!

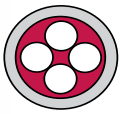
Up to **50 m** travel length!

TSUBAKI KABELSCHLEPP *cables for cable carriers*

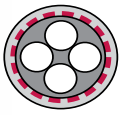
Picture obtainable.



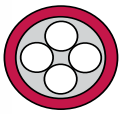
Core insulation
KS-PP
bundled stranding
(> 8 cores)



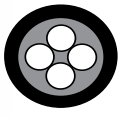
Inner jacket
KS-PVC
valley-sealed,
pressure extruded,
hi-flex design



Overall shield
continuous bending
hi-flex, tin-plated
copper braiding
for smallest bend radii



Outer jacket
KS-PVC
pressure extruded
hi-flex design
high abrasion-resistant



Jacket color black
ozone-resistant
UV-resistant

Developed for

- systems engineering and mechanical engineering
- crane and conveyor equipment
- power and supply cable
- medium to heavy loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- CFC-free
- silicone-free
- flame-retardant
- ozone-resistant

Design

Conductor:	finely stranded conductors class 6 of bare copper wires in an optimized hi-flex design
Center element:	type-dependent
Core insulation:	KS-PP
Core identification:	black with white numbers, protective conductor green/yellow
Core stranding:	conductor cores bundled in short pitches with minimal torsion (> 8 cores) conductor cores layered in short pitches with minimal torsion (≤ 8 cores)
Shielding:	coverage nom. 83 %
Outer jacket:	KS-PVC
Jacket color:	black
Inner jacket:	KS-PVC

Technical Data

Temperature range:	– 5 to + 80 °C
Minimum bend radius while moved:	$KR_{min} \geq 7.5 \times Ø$
v_{max} supported:	5 m/s
v_{max} gliding:	3 m/s
a_{max}:	20 m/s²
Insulation resistance:	≥ 30 MΩ x km
Rated voltage:	according to VDE 0.6/1 kV according to UL 1 kV
Approvals:	UL, cUL, based on VDE

varying parameters possible – please contact us

Subject to change.

Type selection

POWER 400 C – 1 kV – shielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
(4 G 1.5²)	(16 / 4c)	**47202**	10.0	0.159	0.104
(4 G 2.5²)	(14 / 4c)	**47222**	11.8	0.224	0.148
(5 G 2.5²)	(14 / 5c)	**47223**	12.9	0.264	0.171
(7 G 2.5²)	(14 / 7c)	**47225**	15.1	0.356	0.235
(4 G 4²)	(12 / 4c)	**47242**	13.7	0.325	0.209
(7 G 4²)	(12 / 7c)	**47245**	17.4	0.523	0.360
(4 G 6²)	(10 / 4c)	**47252**	16.1	0.449	0.307
(4 G 10²)	(8 / 4c)	**47262**	19.6	0.690	0.520
(4 G 16²)	(6 / 4c)	**47272**	24.0	1.062	0.746
(5 G 16²)	(6 / 5c)	**47273**	27.3	1.327	0.904
(4 G 25²)	(4 / 4c)	**47282**	29.2	1.566	1.163
(4 G 35²)	(2 / 4c)	**47292**	34.0	2.129	1.667

Subject to change.

Additional cable types upon request.

POWER 700 – 1 kV

Unshielded continuous bending hi-flex PUR power cables

Picture obtainable.

Up to 7 million motion cycles!

Up to 500 m travel length!

TSUBAKI KABELSCHLEPP cables for cable carriers

DESINA

Developed for

- systems engineering and mechanical engineering
- crane and conveyor equipment
- power and supply cable
- extremely heavy loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- halogen-free
- CFC-free
- silicone-free
- flame-retardant
- ozone-resistant

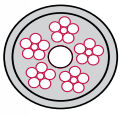
Design

Conductor:	finely stranded conductors class 6 of bare copper wires in an optimized hi-flex design
Center element:	type-dependent
Core insulation:	KS-PP
Core identification:	black with white numbers, protective conductor green/yellow
Core stranding:	conductor cores bundled in short pitches with minimal torsion (> 8 cores) conductor cores layered in short pitches with minimal torsion (≤ 8 cores)
Outer jacket:	KS-PUR
Jacket color:	black (according to DESINA)

Technical Data

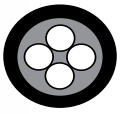
Temperature range:	– 30 to + 90 °C
Minimum bend radius while moved:	$KR_{min} \geq 7.5 \times Ø$
v_{max} supported:	20 m/s
v_{max} gliding:	5 m/s
a_{max}:	50 m/s²
Insulation resistance:	≥ 30 MΩ x km
Rated voltage:	according to VDE 0.6/1 kV according to UL 1 kV
Approvals:	UL, cUL, based on VDE

varying parameters possible – please contact us



Core insulation
KS-PP
bundled stranding
(> 8 cores)

Outer jacket
KS-PUR
valley-sealed extruded
hi-flex design
extremely abrasion-resistant



Jacket color black
ozone-resistant
UV-resistant

Subject to change.

Type selection

POWER 700 – 1 kV – unshielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
2 x 1.5²	16 / 2c	**45500**	7.5	0.071	0.031
3 G 1.5²	16 / 3c	**45501**	7.7	0.084	0.045
4 G 1.5²	16 / 4c	**45502**	8.4	0.105	0.058
5 G 1.5²	16 / 5c	**45503**	9.1	0.125	0.072
7 G 1.5²	16 / 7c	**45505**	10.8	0.171	0.105
12 G 1.5²	16 / 12c	**45509**	14.5	0.294	0.195
18 G 1.5²	16 / 18c	**45511**	18.0	0.447	0.270
25 G 1.5²	16 / 25c	**45514**	20.9	0.596	0.405
36 G 1.5²	16 / 36c	**45516**	26.2	0.894	0.540
2 x 2.5²	14 / 2c	**45520**	8.4	0.107	0.050
3 G 2.5²	14 / 3c	**45521**	8.9	0.122	0.075
4 G 2.5²	14 / 4c	**45522**	9.7	0.151	0.108
5 G 2.5²	14 / 5c	**45523**	10.8	0.185	0.125
7 G 2.5²	14 / 7c	**45525**	12.7	0.254	0.175
12 G 2.5²	14 / 12c	**45529**	17.7	0.456	0.300
18 G 2.5²	14 / 18c	**45531**	22.2	0.676	0.450
25 G 2.5²	14 / 25c	**45534**	24.8	0.904	0.625
36 G 2.5²	14 / 36c	**45536**	30.0	1.265	0.900
2 x 4²	12 / 2c	**45540**	9.9	0.147	0.080
3 G 4²	12 / 3c	**45541**	10.6	0.182	0.120
4 G 4²	12 / 4c	**45542**	11.5	0.226	0.154
5 G 4²	12 / 5c	**45544**	12.9	0.274	0.240
7 G 4²	12 / 7c	**45543**	15.3	0.395	0.269
3 G 6²	10 / 3c	**45551**	12.2	0.259	0.173
4 G 6²	10 / 4c	**45552**	13.5	0.330	0.240
5 G 6²	10 / 5c	**45553**	15.1	0.410	0.288
7 G 6²	10 / 7c	**45555**	18.2	0.577	0.403
4 G 10²	8 / 4c	**45562**	16.9	0.537	0.384
5 G 10²	8 / 5c	**45563**	18.9	0.669	0.500
4 G 16²	6 / 4c	**45565**	21.0	0.842	0.640
5 G 16²	6 / 5c	**45566**	23.7	1.054	0.800
4 G 25²	4 / 4c	**45568**	25.8	1.292	1.000
5 G 25²	5 / 4c	**45569**	28.8	1.599	1.200
3 G 35²	2 / 3c	**45570**	26.6	1.361	1.008
4 G 35²	2 / 4c	**45571**	29.8	1.760	1.344
5 G 35²	2 / 5c	**45560**	33.4	2.187	1.750
4 G 50²	1 / 4c	**45572**	34.4	2.471	1.920
4 G 70²	2 / 0 / 4c	**45573**	40.6	3.493	2.700
4 G 95²	3 / 0 / 4c	**45574**	45.1	4.481	3.800

Subject to change.

Additional cable types upon request.

POWER ONE 700 – 1 kV

Unshielded continuous bending hi-flex PUR single-core cables

Picture obtainable.

Up to 7 million motion cycles!

Up to 500 m travel length!

TSUBAKI KABELSCHLEPP
cables for cable carriers

DESINA

Developed for

- systems engineering and mechanical engineering
- crane and conveyor equipment
- power and supply cable
- extremely heavy loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- halogen-free
- CFC-free
- silicone-free
- flame-retardant
- ozone-resistant

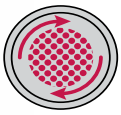
Design

Conductor:	finely stranded conductors class 6 of bare copper wires in an optimized hi-flex design
Core insulation:	KS-PUR
Core stranding:	single-core
Outer jacket:	KS-PUR
Jacket color:	black (according to DESINA)

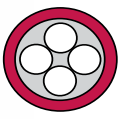
Technical Data

Temperature range:	– 40 to + 90 °C
Minimum bend radius while moved:	$KR_{min} \geq 7.5 \times Ø$
v_{max} supported:	20 m/s
v_{max} gliding:	5 m/s
a_{max}:	50 m/s²
Insulation resistance:	≥ 30 MΩ x km
Rated voltage:	according to VDE 0.6/1 kV according to UL 1 kV
Approvals:	UL, cUL, based on VDE

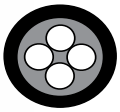
varying parameters possible – please contact us



Core insulation
KS-PUR
wire bundles
in short pitches



Outer jacket
KS-PUR
pressure extruded
hi-flex design
extremely abrasion-resistant



Jacket color black
ozone-resistant
UV-resistant

Subject to change.

Type selection

POWER ONE 700 – 1 kV – unshielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
1 x 0.25²	23 / 1c	**45575**	4.05	0.018	0.002
1 x 0.34²	22 / 1c	**45576**	4.15	0.019	0.003
1 x 0.5²	20 / 1c	**45577**	4.25	0.021	0.005
1 x 0.75²	19 / 1c	**45578**	4.65	0.026	0.007
1 x 1.0²	18 / 1c	**45579**	4.85	0.029	0.010
1 x 1.5²	16 / 1c	**45580**	5.4	0.037	0.014
1 x 2.5²	14 / 1c	**45581**	6.2	0.053	0.025
1 x 4²	12 / 1c	**45582**	6.8	0.072	0.040
1 x 6²	10 / 1c	**45583**	7.4	0.094	0.060
1 x 10²	8 / 1c	**45584**	8.6	0.141	0.100
1 x 16²	6 / 1c	**45585**	9.7	0.201	0.154
1 x 25²	4 / 1c	**45586**	11.3	0.293	0.240
1 x 35²	2 / 1c	**45587**	13.3	0.406	0.350
1 x 50²	1 / 1c	**45588**	15.7	0.577	0.500
1 x 70²	2 / 0 / 1c	**45589**	17.5	0.802	0.700
1 x 95²	3 / 0 / 1c	**45590**	19.5	1.008	0.950
1 x 120²	4 / 0 / 1c	**45591**	21.4	1.268	1.200
1 x 150²	250 MCM / 1c	**45592**	24.2	1.595	1.500
1 x 185²	350 MCM / 1c	**45593**	26.6	1.949	1.850
1 x 240²	400 MCM / 1c	**45594**	30.2	2.537	2.304
1 x 300²	500 MCM / 1c	**45595**	34.4	3.160	2.880
1 x 400²	800 MCM / 1c	**45596**	40.2	4.096	3.800
1 x 500²	1000 MCM / 1c	**45597**	42.8	5.262	5.000
1 x 700²	1380 MCM / 1c	**45598**	49.9	7.405	6.680

Subject to change.

Additional cable types upon request.

POWER ONE 700 PE

Unshielded, continuous bending highly-flexible PUR single-core cables with PE core identification

Picture obtainable.

Up to 7 million motion cycles!

Up to 500 m travel length!

TSUBAKI KABELSCHLEPP cables for cable carriers

Developed for

- systems engineering and mechanical engineering
- crane and conveyor equipment
- power and supply cable
- extremely heavy loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- halogen-free
- CFC-free
- silicone-free
- flame-retardant
- ozone-resistant

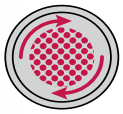
Design

Conductor:	finely stranded conductors class 6 of bare copper wires in an optimized hi-flex design
Core insulation:	KS-PUR
Core identification:	green/yellow
Core stranding:	single-core
Outer jacket:	KS-PUR
Jacket color:	black

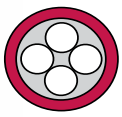
Technical Data

Temperature range:	– 40 to + 90 °C
Minimum bend radius while moved:	$KR_{min} \geq 7.5 \times Ø$
v_{max} supported:	20 m/s
v_{max} gliding:	5 m/s
a_{max}:	50 m/s²
Insulation resistance:	≥ 30 MΩ x km
Rated voltage:	according to VDE 0.6/1 kV according to UL 1 kV
Approvals:	UL, cUL, based on VDE

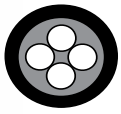
varying parameters possible – please contact us



Core insulation
KS-PUR
wire bundles
in short pitches



Outer jacket
KS-PUR
pressure extruded
hi-flex design
extremely abrasion-resistant



Jacket color black
ozone-resistant
UV-resistant

Subject to change.

Type selection

POWER ONE 700 PE – unshielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
1 G 1.5²	16 / 1c	**47580**	5.4	0.037	0.015
1 G 2.5²	14 / 1c	**47581**	6.2	0.053	0.025
1 G 4²	12 / 1c	**47582**	6.8	0.072	0.040
1 G 6²	10 / 1c	**47583**	7.4	0.094	0.060
1 G 10²	8 / 1c	**47584**	8.6	0.141	0.100
1 G 16²	6 / 1c	**47585**	9.7	0.201	0.154
1 G 25²	4 / 1c	**47586**	11.3	0.293	0.240
1 G 35²	2 / 1c	**47587**	13.3	0.406	0.350
1 G 50²	0 / 1c	**47588**	15.7	0.577	0.500
1 G 70²	3 / 0 / 1c	**47589**	17.5	0.802	0.700
1 G 95²	4 / 0 / 1c	**47590**	19.5	1.008	0.950

Subject to change.

Additional cable types upon request.

POWER 700 C – 1 kV

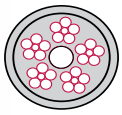
Shielded continuous bending hi-flex PUR power cables

Up to 7 million motion cycles!

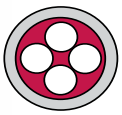
Up to 500 m travel length!

TSUBAKI KABELSCHLEPP *cables for cable carriers*

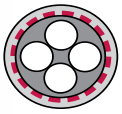
Picture obtainable.



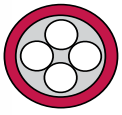
Core insulation
KS-PP
bundled stranding
(> 8 cores)



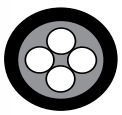
Inner jacket
KS-TPE
valley-sealed,
pressure extruded,
hi-flex design



Overall shield
continuous bending
hi-flex, tin-plated
copper braiding for
smallest bend radii



Outer jacket
KS-PUR
pressure extruded,
hi-flex design, extremely
abrasion-resistant



Jacket color black
ozone-resistant
UV-resistant

Developed for

- systems engineering and mechanical engineering
- crane and conveyor equipment
- power and supply cable
- extremely heavy loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- halogen-free
- CFC-free
- silicone-free
- flame-retardant
- ozone-resistant

Design

Conductor:	finely stranded conductors class 6 of bare copper wires in an optimized hi-flex design
Center element:	type-dependent
Core insulation:	KS-PP
Core identification:	black with white numbers, protective conductor green/yellow
Core stranding:	conductor cores bundled in short pitches with minimal torsion (> 8 cores) conductor cores layered in short pitches with minimal torsion (≤ 8 cores)
Shielding:	coverage nom. 85 %
Outer jacket:	KS-PUR
Jacket color:	black
Inner jacket:	KS-TPE

Technical Data

Temperature range:	– 30 to + 90 °C
Minimum bend radius while moved:	$KR_{min} \geq 7.5 \times Ø$
v_{max} supported:	20 m/s
v_{max} gliding:	5 m/s
a_{max}:	50 m/s²
Insulation resistance:	≥ 30 MΩ x km
Rated voltage:	according to VDE 0.6/1 kV according to UL 1 kV
Approvals:	UL, cUL, based on VDE

varying parameters possible – please contact us

Subject to change.

Type selection

POWER 700 C – 1 kV – shielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
(2 x 1.5²)	(16 / 2c)	**45760**	9.1	0.114	0.064
(3 G 1.5²)	(16 / 3c)	**45761**	9.7	0.134	0.075
(4 G 1.5²)	(16 / 4c)	**45762**	10.5	0.161	0.089
(5 G 1.5²)	(16 / 5c)	**45763**	11.2	0.183	0.108
(7 G 1.5²)	(16 / 7c)	**45765**	12.7	0.235	0.148
(12 G 1.5²)	(16 / 12c)	**45769**	17.3	0.420	0.264
(18 G 1.5²)	(16 / 18c)	**45772**	21.7	0.716	0.362
(25 G 1.5²)	(16 / 25c)	**45775**	25.2	0.852	0.564
(36 G 1.5²)	(16 / 36c)	**45777**	30.0	1.170	0.698
(49 G 1.5²)	(16 / 49c)	**45778**	35.9	1.633	0.950
(3 G 2.5²)	(14 / 3c)	**45780**	11.0	0.179	0.110
(4 G 2.5²)	(14 / 4c)	**45781**	11.8	0.216	0.142
(5 G 2.5²)	(14 / 5c)	**45783**	12.9	0.254	0.170
(7 G 2.5²)	(14 / 7c)	**45785**	15.1	0.365	0.268
(12 G 2.5²)	(14 / 12c)	**45787**	21.6	0.648	0.421
(18 G 2.5²)	(14 / 18c)	**45789**	26.2	0.919	0.607
(20 G 2.5²)	(14 / 20c)	**45790**	26.8	1.003	0.621
(25 G 2.5²)	(14 / 25c)	**45791**	28.8	1.176	0.765
(4 G 4²)	(12 / 4c)	**45801**	13.7	0.313	0.211
(4 G 6²)	(10 / 4c)	**45802**	16.1	0.432	0.298
(4 G 10²)	(8 / 4c)	**45803**	19.6	0.666	0.526
(4 G 16²)	(6 / 4c)	**45804**	24.6	1.100	0.781
(5 G 16²)	(6 / 5c)	**45812**	27.7	1.368	0.904
(4 G 25²)	(4 / 4c)	**45805**	29.2	1.516	1.145
(4 G 35²)	(2 / 4c)	**45806**	34.0	2.060	1.667
(4 G 50²)	(1 / 4c)	**45807**	38.9	2.833	2.306
(4 G 70²)	(2 / 0 / 4c)	**45808**	45.6	3.974	3.045
(4 G 95²)	(3 / 0 / 4c)	**45809**	50.5	5.056	4.060
(4 G 120²)	(4 / 0 / 4c)	**45810**	55.9	6.424	5.128
(4 G 150²)	(250 MCM / 0 / 4c)	**45811**	62.5	7.783	6.525

Subject to change.

Additional cable types upon request.

POWER ONE 700 C – 1 kV

Shielded continuous bending hi-flex PUR single-core cables

Picture obtainable.

Up to 7 million motion cycles!

Up to 500 m travel length!

TSUBAKI KABELSCHLEPP
cables for cable carriers

Developed for

- systems engineering and mechanical engineering
- crane and conveyor equipment
- power and supply cable
- extremely heavy loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- halogen-free
- CFC-free
- silicone-free
- flame-retardant
- ozone-resistant

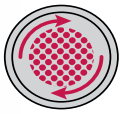
Design

Conductor:	finely stranded conductors class 6 of bare copper wires in an optimized hi-flex design
Core insulation:	KS-PUR
Core stranding:	Single-core
Shielding:	coverage nom. 85 %
Outer jacket:	KS-PUR
Jacket color:	black

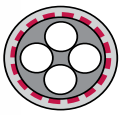
Technical Data

Temperature range:	– 40 to + 90 °C
Minimum bend radius while moved:	$KR_{min} \geq 7.5 \times Ø$
v_{max} supported:	20 m/s
v_{max} gliding:	5 m/s
a_{max}:	50 m/s²
Insulation resistance:	≥ 30 MΩ x km
Rated voltage:	according to VDE 0.6/1 kV according to UL 1 kV
Approvals:	UL, cUL, based on VDE

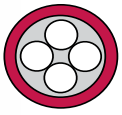
varying parameters possible – please contact us



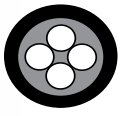
Core insulation
KS-PUR
wire bundles
in short pitches



Overall shield
continuous bending hi-flex,
tin-plated copper braiding
for smallest bend radii



Outer jacket
KS-PUR
pressure extruded
hi-flex design
extremely abrasion-resistant



Jacket color black
ozone-resistant
UV-resistant

Subject to change.

Type selection

POWER ONE 700 C – 1 kV – shielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
(1 x 1.5²)	(16 / 1c)	**45814**	6.4	0.55	0.029
(1 x 2.5²)	(14 / 1c)	**45815**	6.8	0.072	0.041
(1 x 4²)	(12 / 1c)	**45816**	7.4	0.093	0.059
(1 x 6²)	(10 / 1c)	**45817**	8.0	0.119	0.071
(1 x 10²)	(8 / 1c)	**45818**	9.2	0.169	0.122
(1 x 16²)	(6 / 1c)	**45819**	10.4	0.236	0.190
(1 x 25²)	(4 / 1c)	**45820**	11.9	0.333	0.289
(1 x 35²)	(2 / 1c)	**45821**	13.9	0.451	0.393
(1 x 50²)	(1 / 1c)	**45822**	16.5	0.651	0.560
(1 x 70²)	(2 / 0 / 1c)	**45823**	18.3	0.883	0.873
(1 x 95²)	(3 / 0 / 1c)	**45824**	20.3	1.099	1.029
(1 x 120²)	(4 / 0 / 1c)	**45825**	22.2	1.373	1.272
(1 x 150²)	(250 MCM / 1c)	**45826**	25.0	1.716	1.578
(1 x 185²)	(350 MCM / 1c)	**45827**	27.4	2.081	1.911
(1 x 240²)	(400 MCM / 1c)	**45828**	31.1	2.685	2.451
(1 x 300²)	(500 MCM / 1c)	**45829**	35.4	3.393	2.997

Subject to change.

Additional cable types upon request.

DATA 400 C

Shielded continuous bending hi-flex PVC control cables

Picture obtainable.

Core insulation
KS-PP
bundled stranding
(> 8 cores)

Inner jacket
KS-PVC
valley-sealed,
pressure extruded,
hi-flex design

Overall shield
continuous bending hi-flex,
tin-plated copper braiding
for smallest bend radii

Outer jacket
KS-PVC
pressure extruded
hi-flex design
high abrasion-resistant

Jacket color black
ozone-resistant
UV-resistant

Up to 4 million motion cycles!

Up to 50 m travel length!

TSUBAKI KABELSCHLEPP
cables for cable carriers

Developed for

- systems engineering and mechanical engineering
- crane and conveyor equipment
- monitoring, measuring and control cables
- medium to heavy loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- CFC-free
- silicone-free
- flame-retardant
- ozone-resistant

Design

Conductor:	finely stranded bare copper wires class 6 in an optimized hi-flex design
Center element:	type-dependent
Core insulation:	KS-PVC
Core identification:	core identification coloured according to DIN 47100
Core stranding:	conductor cores bundled in short pitches with minimal torsion (> 8 cores) conductor cores layered in short pitches with minimal torsion (≤ 8 cores)
Shielding:	coverage nom. 83 %
Outer jacket:	KS-PVC
Jacket color:	coloured/black
Inner jacket:	KS-PVC

Technical Data

Temperature range:	– 5 to + 80 °C
Minimum bend radius while moved:	$KR_{min} \geq 7.5 \times Ø$
v_{max} supported:	5 m/s
v_{max} gliding:	3 m/s
a_{max}:	20 m/s²
Insulation resistance:	≥ 10 MΩ x km
Rated voltage:	according to VDE 300/500 V according to UL 600 V
Approvals:	UL, cUL, based on VDE

varying parameters possible – please contact us

Subject to change.

Type selection

DATA 400 C – shielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
(4 x 0.25²)	24 / 4c	**48623**	6.9	0.065	0.029
(8 x 0.25²)	24 / 8c	**48627**	9.1	0.109	0.056
(25 x 0.25²)	24 / 25c	**48638**	15.3	0.286	0.134
(4 x 0.34²)	22 / 4c	**48647**	7.3	0.077	0.041
(5 x 0.34²)	22 / 5c	**48648**	7.7	0.085	0.046
(7 x 0.34²)	22 / 7c	**48649**	9.0	0.116	0.058

Subject to change.

Additional cable types upon request.

DATA 700 – 300 V / 600 V

Unshielded continuous bending hi-flex PUR control cables

Picture obtainable.

Up to 7 million motion cycles!

Up to 500 m travel length!

TSUBAKI KABELSCHLEPP
cables for cable carriers

Developed for

- systems engineering and mechanical engineering
- crane and conveyor equipment
- monitoring, measuring and control cables
- extremely heavy loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- halogen-free
- CFC-free
- silicone-free
- flame-retardant
- ozone-resistant

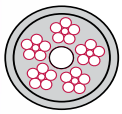
Design

Conductor:	extremely fine stranded conductors class 6 of bare copper wires in an optimized hi-flex design
Center element:	type-dependent
Core insulation:	KS-PP
Core identification:	core identification coloured according to DIN 47100
Core stranding:	conductor cores bundled in short pitches with minimal torsion (> 8 cores) conductor cores layered in short pitches with minimal torsion (≤ 8 cores)
Outer jacket:	KS-PUR
Jacket color:	coloured/black

Technical Data

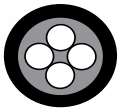
Temperature range:	– 30 to + 90 °C
Minimum bend radius while moved:	$KR_{min} \geq 7.5 \times Ø$
v_{max} supported:	20 m/s
v_{max} gliding:	5 m/s
a_{max}:	50 m/s²
Insulation resistance:	≥ 30 MΩ x km
Rated voltage:	according to VDE 300/500 V, according to UL 300 V/600 V
Approvals:	UL, cUL, based on VDE

varying parameters possible – please contact us



Core insulation
KS-PP
bundled stranding
(> 8 cores)

Outer jacket
KS-PUR
valley-sealed extruded
hi-flex design
extremely abrasion-resistant



Jacket color black
ozone-resistant
UV-resistant

Subject to change.

Type selection

DATA 700 – 300 V – unshielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
6 x 0.25²	24 / 3c	**45355**	6.0	0.043	0.014
7 x 0.25²	24 / 4c	**45356**	6.5	0.050	0.017
8 x 0.25²	24 / 5c	**45357**	7.0	0.057	0.019
9 x 0.25²	24 / 7c	**45358**	8.3	0.075	0.023
10 x 0.25²	24 / 8c	**45359**	9.1	0.085	0.024
12 x 0.25²	24 / 12c	**45360**	9.2	0.094	0.029
15 x 0.25²	24 / 15c	**45361**	9.8	0.123	0.039

Type selection

DATA 700 – 600 V – unshielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
3 x 0.34²	22 / 3c	**45372**	5.1	0.033	0.010
4 x 0.34²	22 / 4c	**45373**	5.5	0.037	0.014
5 G 0.34²	22 / 5c	**45374**	5.9	0.043	0.017
7 x 0.34²	22 / 7c	**45376**	7.0	0.061	0.024
8 x 0.34²	22 / 8c	**45377**	7.7	0.072	0.027
12 G 0.34²	22 / 12c	**45380**	9.8	0.111	0.041
15 x 0.34²	22 / 15c	**45382**	10.9	0.133	0.053

Subject to change.

Additional cable types upon request.

DATA 700 TPi C

Shielded continuous bending hi-flex PUR data cables

Picture obtainable.

Up to 7 million motion cycles!

Up to 200 m travel length!

TSUBAKI KABELSCHLEPP
cables for cable carriers

Developed for

- measurement and control equipment
- sensor equipment
- data and signal cables
- extremely heavy loads

Properties

- oil-resistant
- UV-stable
- RoHS-conform
- halogen-free
- CFC-free
- silicone-free
- flame-retardant
- ozone-resistant

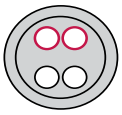
Design

Conductor:	finely stranded conductors class 6 of bare copper wires in an optimized hi-flex design
Core insulation:	KS-PP
Core identification:	according to DIN 47100
Core stranding:	cores bundled in pairs in short pitches with minimal torsion
Shielding:	coverage nom. 85 %
Outer jacket:	KS-PUR
Jacket color:	black
Inner jacket:	KS-TPE

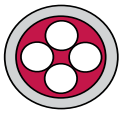
Technical Data

Temperature range:	– 30 to + 90 °C
Minimum bend radius while moved:	$KR_{min} \geq 7.5 \times Ø$
v_{max} supported:	20 m/s
v_{max} gliding:	5 m/s
a_{max}:	50 m/s²
Insulation resistance:	≥ 30 MΩ x km
Rated voltage:	according to VDE 300/500 V according to UL 300 V
Approvals:	UL, cUL, based on VDE

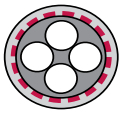
varying parameters possible – please contact us



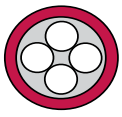
Core insulation
KS-PP
stranded in pairs



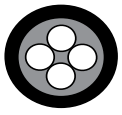
Inner jacket
KS-TPE
valley-sealed,
pressure extruded,
hi-flex design



Overall shield
continuous bending hi-flex,
tin-plated copper braiding
for smallest bend radii



Outer jacket
KS-PUR
pressure extruded
hi-flex design
extremely abrasion-resistant



Jacket color black
ozone-resistant
UV-resistant

Subject to change.

Type selection

DATA 700 TPi C – shielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
(1 x 2 x 0.25²)	(23 / 2c / 1p)	**45622**	5.4	0.050	0.016
(2 x 2 x 0.25²)	(23 / 2c / 2p)	**45623**	7.0	0.061	0.023
(3 x 2 x 0.25²)	(23 / 2c / 3p)	**45624**	8.3	0.092	0.037
(4 x 2 x 0.25²)	(23 / 2c / 4p)	**45625**	8.8	0.105	0.045
(5 x 2 x 0.25²)	(23 / 2c / 5p)	**45626**	9.4	0.120	0.057
(6 x 2 x 0.25²)	(23 / 2c / 6p)	**45627**	10.0	0.129	0.061
(8 x 2 x 0.25²)	(23 / 2c / 8p)	**45628**	11.7	0.168	0.086
(10 x 2 x 0.25²)	(23 / 2c / 10p)	**45629**	12.1	0.179	0.095
(12 x 2 x 0.25²)	(23 / 2c / 12p)	**45630**	12.2	0.184	0.100
(16 x 2 x 0.25²)	(23 / 2c / 16p)	**45632**	13.6	0.229	0.124
(1 x 2 x 0.5²)	(20 / 2c / 1p)	**45634**	7.4	0.071	0.032
(2 x 2 x 0.5²)	(20 / 2c / 2p)	**45635**	9.2	0.106	0.050
(3 x 2 x 0.5²)	(20 / 2c / 3p)	**45636**	9.8	0.128	0.058
(4 x 2 x 0.5²)	(20 / 2c / 4p)	**45637**	10.4	0.144	0.078
(5 x 2 x 0.5²)	(20 / 2c / 5p)	**45638**	11.4	0.171	0.091
(6 x 2 x 0.5²)	(20 / 2c / 6p)	**45639**	12.2	0.191	0.106
(10 x 2 x 0.5²)	(20 / 2c / 10p)	**45641**	15.0	0.287	0.178
(12 x 2 x 0.5²)	(20 / 2c / 12p)	**45642**	15.3	0.291	0.204
(14 x 2 x 0.5²)	(20 / 2c / 14p)	**45643**	16.2	0.353	0.218
(1 x 2 x 0.75²)	(18 / 2c / 2p)	**45646**	7.9	0.085	0.029
(2 x 2 x 0.75²)	(18 / 2c / 1p)	**45647**	10.1	0.136	0.068
(4 x 2 x 0.75²)	(18 / 2c / 4p)	**45649**	11.5	0.180	0.105
(5 x 2 x 0.75²)	(18 / 2c / 5p)	**45650**	12.4	0.216	0.124
(6 x 2 x 0.75²)	(18 / 2c / 6p)	**45651**	13.4	0.245	0.155
(8 x 2 x 0.75²)	(18 / 2c / 8p)	**45652**	15.9	0.348	0.215
(12 x 2 x 0.75²)	(18 / 2c / 12p)	**45654**	17.8	0.433	0.293
(12 x 2 x 1.0²)	(17 / 2c / 12p)	**45665**	19.1	0.502	0.391

Subject to change.

Additional cable types upon request.

DATA 700 TPi CD / Data/Power 700 TPi CD

Double-shielded continuous bending hi-flex PUR data cables

Picture obtainable.

Up to 7 million motion cycles!

Up to 500 m travel length!

TSUBAKI KABELSCHLEPP
cables for cable carriers

Developed for

- measurement and control equipment
- sensor equipment
- data and signal cables
- extremely heavy loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- halogen-free
- CFC-free
- silicone-free
- flame-retardant
- ozone-resistant

Design

Conductor:	finely stranded conductors class 6 of bare copper wires in an optimized hi-flex design
Center element:	type-optimized
Core insulation:	KS-PP
Core identification:	according to DIN 47100 part number 45669, 45679: black with white numbers
Core stranding:	cores bundled in pairs in short pitches with minimal torsion
Shielding:	coverage nom. 85 %
Outer jacket:	KS-PUR
Jacket color:	black/purple (type dependent) part number 45669, 45679: black/black with ICC color identification
Inner jacket pairs:	KS-TPE
Inner jacket:	KS-TPE

Technical Data

Temperature range:	– 30 to + 90 °C
Minimum bend radius while moved:	$KR_{min} \geq 7.5 \times Ø$
v_{max} supported:	20 m/s
v_{max} gliding:	5 m/s
a_{max}:	50 m/s²
Insulation resistance:	≥ 30 MΩ x km
Rated voltage:	according to VDE 300/300 V according to UL 300 V part number 45668, 45669, 45679: according to VDE 0.6/1 kV according to UL 1 kV
Approvals:	UL, cUL, based on VDE

varying parameters possible – please contact us

Core insulation
KS-PP
stranded in pairs

Element shield
continuous bending hi-flex, tin-plated braided copper shield

Inner jacket
KS-TPE
valley-sealed,
pressure extruded,
hi-flex design

Overall shield
continuous bending hi-flex,
tin-plated copper braiding
for smallest bend radii

Outer jacket
KS-PUR
pressure extruded
hi-flex design
extremely abrasion-resistant

Jacket color black
ozone-resistant
UV-resistant

Subject to change.

Type selection

DATA 700 TPi CD – double-shielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
(3 x (2 x 0.25²))	((24 / 2c) / 3p)	**45661**	12.4	0.197	0.077
(4 x (2 x 0.5²))	((20 / 2c) / 4p)	**45662**	15.6	0.326	0.158
(10 x (2 x 0.5²))	((20 / 2c) / 10p)	**45664**	28.6	0.870	0.335

DATA/POWER 700 TPi CD – double-shielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
(6 x (2 x 1²))	((20 / 2c) / 6p)	**45668**	22.9	0.658	0.300
(6 x (2 x 1.5²))	((16 / 2c) / 6p)	**45669**	27.0	0.928	0.403
(10 x (2 x 1.5²))	((16 / 2c) / 10p)	**45679**	37.5	1.771	0.752

Additional cable types upon request.

PROFIBUS 700 C

Shielded continuous bending hi-flex Profibus PUR cables

Picture obtainable.

Up to 7 million motion cycles!

Up to 100 m travel length!

TSUBAKI KABELSCHLEPP cables for cable carriers

DESINA

Developed for

- Profibus applications
- sensor equipment
- data and signal cables
- extremely heavy loads

Properties

- oil-resistant
- UV-stable
- RoHS-conform
- halogen-free
- CFC-free
- silicone-free
- flame-retardant
- ozone-resistant

Design

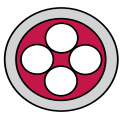
Conductor:	extremely fine stranded conductors of bare copper wires in an optimized hi-flex design
Center element:	type-optimized
Core insulation:	KS-PP/TPE
Core identification:	coloured, Profibus
Core stranding:	cores type-optimized stranded in short pitches with minimal torsion
Shielding:	coverage 85 %
Outer jacket:	KS-PUR
Jacket color:	purple (according to DESINA)
Inner jacket:	KS-PP/TPE

Technical Data

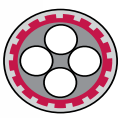
Temperature range:	– 20 to + 60 °C
Minimum bend radius while moved:	$KR_{min} \geq 15 \times Ø$
v_{max} supported:	3.5 m/s
v_{max} gliding:	2 m/s
a_{max}:	10 m/s²
Insulation resistance:	≥ 10 MΩ x km
Rated voltage:	according to VDE 300/300 V
Approvals:	UL, based on VDE

varying parameters possible – please contact us

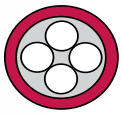
Core insulation
KS-PP
concentrically stranded



Inner jacket
KS-PP
valley-sealed, pressure extruded, hi-flex design



Overall shield
continuous bending hi-flex, tin-platedcopper braiding Coverage: approx. 90 % and foil shield



Outer jacket
KS-PUR
pressure extruded
hi-flex design
extremely abrasion-resistant

Subject to change.

Type selection

PROFIBUS 700 C – shielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
(1 x 2 x 0.5²)	(20 / 2c / 1p)	**45690**	9.5	0.086	0.039

Additional cable types upon request.

CAN-BUS 700 C

Shielded continuous bending hi-flex and robust PUR bus cables

Picture obtainable.

Up to 7 million motion cycles!

Up to 200 m travel length!

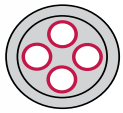
TSUBAKI KABELSCHLEPP
cables for cable carriers

Developed for

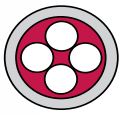
- CAN bus applications
- sensor equipment
- data and signal cables
- extremely heavy loads

Properties

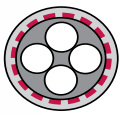
- oil-resistant
- UV-stable
- RoHS-conform
- halogen-free
- CFC-free
- silicone-free
- flame-retardant
- ozone-resistant



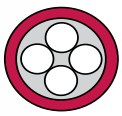
Core insulation
KS-PP
star quad
stranded



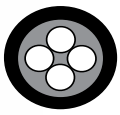
Inner jacket
KS-PP
valley-sealed,
pressure extruded,
hi-flex design



Overall shield
continuous bending hi-flex,
tin-plated copper braiding
for smallest bend radii
Coverage: approx. 85 %



Outer jacket
KS-PUR
pressure extruded
hi-flex design
extremely abrasion-resistant



Jacket color black
ozone-resistant
UV-resistant

Design

Conductor:	extremely fine stranded conductors of bare copper wires in an optimized hi-flex design
Center element:	type-optimized
Core insulation:	KS-PP/TPE
Core identification:	coloured, CAN-BUS
Core stranding:	cores type-optimized stranded in short pitches with minimal torsion
Shielding:	coverage 85 %
Outer jacket:	KS-PUR
Jacket color:	black with ICC color identification based on the DESINA color code
Inner jacket:	KS-PP/TPE

Technical Data

Temperature range:	– 30 to + 70 °C
Minimum bend radius while moved:	$KR_{min} \geq 10 \times Ø$ (– 30 to + 70 °C) $KR_{min} \geq 7.5 \times Ø$ (– 5 to + 70 °C)
v_{max} supported:	3.5 m/s
v_{max} gliding:	2 m/s
a_{max}:	10 m/s²
Insulation resistance:	≥ 10 MΩ x km
Rated voltage:	according to VDE 300/300 V according to UL 300 V
Approvals:	UL, based on VDE

varying parameters possible – please contact us

Subject to change.

Type selection

CAN-BUS 700 C – shielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
(1 x 2 x 0.5²)	(20 / 2c / 1p)	**45670**	8.0	0.085	0.033
(2 x 2 x 0.5²)	(20 / 2c / 2p)	**45672**	8.4	0.095	0.044

Subject to change.

Additional cable types upon request.

USB S 700 C

Shielded continuous bending hi-flex USB PUR cables

Picture obtainable.

Up to 7 million motion cycles!

Up to 5 m travel length!

TSUBAKI KABELSCHLEPP
cables for cable carriers

Developed for

- USB applications
- data and image transmission
- transmission lengths up to 5 m
- extremely heavy loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- halogen-free
- ozone-resistant
- CFC-free
- silicone-free
- flame-retardant
- metal-free

Design

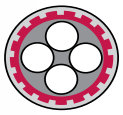
Conductor:	extremely fine stranded conductors of bare copper wires in an optimized hi-flex design
Center element:	type-optimized
Core insulation:	KS-PP/TPE
Core identification:	coloured, red, black/white, white, green
Core stranding:	cores type-optimized stranded in short pitches with minimal torsion
Shielding:	coverage 85 %
Outer jacket:	KS-PUR
Jacket color:	purple (according to DESINA)

Technical Data

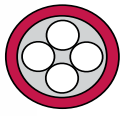
Temperature range:	– 10 to + 70 °C
Minimum bend radius while moved:	$KR_{min} \geq 10$
v_{max} supported:	3.5 m/s
v_{max} gliding:	2 m/s
a_{max}:	10 m/s²
Insulation resistance:	≥ 10 MΩ x km
Rated voltage:	according to VDE 30 V according to UL 30 V
Transmission length:	nom. 5 m
Approvals:	UL, based on VDE

varying parameters possible – please contact us

Core insulation
KS-PP
concentrically stranded



Overall shield
continuous bending hi-flex, tin-plated copper braiding
Coverage: approx. 90 % and foil shield



Outer jacket
KS-PUR
pressure extruded
hi-flex design
UV-resistant
extremely abrasion-resistant

Type selection

USB S 700 C

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
(1 x 2 x 28 AWG + 2 x 20 AWG)	(28 / 2c + 20 / 2c)	**45686**	5.2	0.045	0.030

Additional cable types upon request.

INTERBUS 700 C

Shielded continuous bending hi-flex Interbus PUR cables

Picture obtainable.

Up to 7 million motion cycles!

Up to 200 m travel length!

TSUBAKI KABELSCHLEPP cables for cable carriers

DESINA

Developed for

- Interbus applications
- sensor equipment
- data and signal cables
- extremely heavy loads

Properties

- oil-resistant
- UV-stable
- RoHS-conform
- halogen-free
- CFC-free
- silicone-free
- flame-retardant
- ozone-resistant

Design

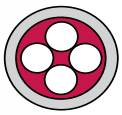
Conductor:	extremely fine stranded conductors of bare copper wires in an optimized hi-flex design
Core insulation:	KS-PP/TPE
Core identification:	coloured, Interbus
Core stranding:	cores type-optimized stranded in short pitches with minimal torsion
Shielding:	coverage 85 %
Outer jacket:	KS-PUR
Jacket color:	purple (according to DESINA)

Technical Data

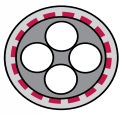
Temperature range:	– 30 to + 70 °C
Minimum bend radius while moved:	$KR_{min} \geq 10 \times Ø$
v_{max} supported:	3.5 m/s
v_{max} gliding:	2 m/s
a_{max}:	10 m/s²
Insulation resistance:	≥ 10 MΩ x km
Rated voltage:	according to VDE, Ø 0,25 mm² 30 V Ø 1 mm² 300/300 V according to UL 300 V
Approvals:	UL, based on VDE

varying parameters possible – please contact us

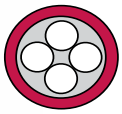
Core insulation
KS-PP/TPE
concentrically stranded



Inner jacket
KS-PP/TPE
valley-sealed, pressure extruded, hi-flex design



Overall shield
continuous bending hi-flex, tin-plated copper braiding for smallest bend radii
Coverage: approx. 85 %



Outer jacket
KS-PUR
pressure extruded
hi-flex design
UV-resistant
extremely abrasion-resistant

Subject to change.

Type selection

INTERBUS 700 C – shielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
(3 x 2 x 0.25²)	(24 / 2c / 3p)	**45676**	8.3	0.085	0.047
(3 x 1² + 3 x 2 x 0.25²)	(17 / 2c + 24 / 2c / 3p)	**45678**	10.6	0.155	0.088

Subject to change.

Additional cable types upon request.

CAT5E / CAT6 700 CD

Shielded continuous bending hi-flex CAT5E / CAT6 PUR cable

Picture obtainable.

Up to 7 million motion cycles!

Up to 60 m travel length!

TSUBAKI KABELSCHLEPP
cables for cable carriers

Developed for

- computer cables
- sensor equipment
- data and signal cables
- extremely heavy loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- halogen-free
- CFC-free
- silicone-free
- flame-retardant

Design

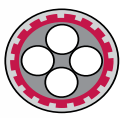
Conductor:	extremely fine stranded conductors of bare copper wires in an optimized hi-flex design
Core insulation:	KS-PP/TPE
Core identification:	coloured, white/blue, blue, white/orange, orange, white/green, green, white/brown, brown
Core stranding:	cores type-optimized stranded in short pitches with minimal torsion
Shielding:	coverage 85 %
Outer jacket:	KS-PUR
Jacket color:	black with ICC color identification based on the DESINA color code

Technical Data

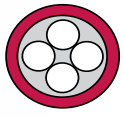
Temperature range:	– 20 to + 60 °C
Minimum bend radius while moved:	$KR_{min} \geq 10 \times Ø$
v_{max} supported:	3.5 m/s
v_{max} gliding:	2 m/s
a_{max}:	10 m/s²
Insulation resistance:	≥ 10 MΩ x km
Rated voltage:	according to VDE 30 V according to UL 30 V
Approvals:	UL, based on VDE

varying parameters possible – please contact us

Core insulation
KS-PP/TPE
concentrically stranded



Overall double-shielding
continuous bending hi-flex, tin-plated copper braiding
Coverage: approx. 90 % and foil shield



Outer jacket
KS-PUR
pressure extruded
hi-flex design
UV-resistant
extremely abrasion-resistant

Type selection

CAT5E 700 CD – double-shielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
((4 x 2 x 0.15²))	((26 / 2c / 4p))	**45693**	6.8	0.055	0.030

CAT6 700 CD – double-shielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
((4 x 2 x 0.24²))	((24 / 2c / 4p))	**45684**	10.8	0.145	0.078

Subject to change.

Additional cable types upon request.

KOAX 700 CD

Continuous bending hi-flex PUR data cables

Picture obtainable.

Coax cable
flexible,
continuous bending hi-flex

Core insulation
KS-PP/TPE
concentrically
stranded

Element shield
continuous bending hi-flex
copper braiding
– see type/design

Overall shield
continuous bending hi-flex,
tin-plated copper braiding
for smallest bend radii
Coverage: approx. 90 %

Outer jacket
KS-PUR
pressure extruded
hi-flex design
UV-resistant
extremely abrasion-resistant

Jacket color black
ozone-resistant
UV-resistant

Up to 2 million motion cycles!

Up to 50 m travel length!

TSUBAKI KABELSCHLEPP
cables for cable carriers

Developed for

- image transmission
- sensor equipment
- data and signal cables
- extremely heavy loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- CFC-free
- silicone-free

Design

Conductor:	extremely fine stranded conductors of bare copper wires in an optimized hi-flex design
Core insulation:	KS-PVC
Core identification:	part number 45680: black part number 45694: black with white numbers
Core stranding:	optimized stranding with maximum flexural strength
Shielding:	part number 45694: coverage 90 %
Outer jacket:	KS-PUR
Jacket color:	black

Technical Data

Temperature range:	type dependent
Minimum bend radius while moved:	type dependent
v_{max} supported:	3.5 m/s
v_{max} gliding:	2 m/s
a_{max}:	10 m/s^2
Rated voltage:	type dependent
Approvals:	type dependent

varying parameters possible – please contact us

Subject to change.

Type selection

KOAX 700 CD – 50 Ohm – double-shielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	approx. OD in mm	weight kg/m	Cu index kg/m
(1 x (1HF50)) 50 Ohm	(1 x (1HF50))	**45680**	9	0.059	0.021
(3 x (1HF50)) 50 Ohm	(3 x (1HF50))	**45683**	12	0.140	0.060
(5 x (1HF50)) 50 Ohm	(5 x (1HF50))	**45685**	15	0.230	0.099

Type selection

KOAX 700 CD – 75 Ohm – double-shielded

core number x nominal-cross-section in mm²	conductor cross section AWG (approximate values)	part number	approx. OD in mm	weight kg/m	Cu index kg/m
(1 x (1HF75)) 75 Ohm	(1 x (1HF75))	**45691**	9	0.061	0.024
(3 x (1HF75)) 75 Ohm	(3 x (1HF75))	**45694**	12	0.143	0.063
(5 x (1HF75)) 75 Ohm	(5 x (1HF75))	**45695**	15	0.238	0.102

Additional cable types upon request.

LWL 700

Continuous bending hi-flex multi-mode glass fiber optic cable

Picture obtainable.

Up to 7 million motion cycles!

Up to 500 m travel length!

TSUBAKI KABELSCHLEPP
cables for cable carriers

CE

Developed for

- light signal transmission
- sensor equipment
- data and signal cables
- extremely heavy loads

Properties

- halogen-free
- Multimode 1300 nm
- RoHS-conform
- absolutely EMC safety
- CFC-free
- silicone-free
- flame-retardant
- metal-free

Design

Fiber-optic cable glass
flexible, continuous bending hi-flex, aramid fiber protection

Core insulation KS-PP/TPE
concentrically stranded

Inner jacket KS-PUR
valley-sealed, pressure extruded, hi-flex design

Outer jacket KS-PUR
pressure extruded
hi-flex design
UV-resistant
extremely abrasion-resistant

Jacket color black
ozone-resistant
UV-resistant

Conductor:	glass
Conductor insulation:	KS-PP/TPE
Conductor identification:	coloured, color coded
Conductor stranding:	concentrically around center element
Outer jacket:	KS-PUR
Jacket color:	black

Technical Data

Temperature range:	– 30 to + 90 °C
Minimum bend radius while moved*:	$KR_{min} \geq 7.5 \times Ø$
v_{max} supported:	3.5 m/s
v_{max} gliding:	2 m/s
a_{max}:	10 m/s²
Approvals:	IEC 60794 IEC 61300

varying parameters possible – please contact us

Subject to change.

Type selection

LWL 700

number of conductors x nominal-cross-section in µm	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m
6G50/125	6G 50/125	**45696**	13.4	0.140
6G50/125	6G 62.5/125	**45697**	13.4	0.140
6G62,5/125	12G 50/125	**45698**	13.4	0.140
12G62,5/125	12G 62.5/125	**45699**	13.4	0.140

Additional cable types upon request.

SYSTEM S 700 C

Shielded continuous bending hi-flex PUR signal cables

Picture obtainable.

Up to 5 million motion cycles!

Up to 50 meter travel length

TSUBAKI KABELSCHLEPP *cables for cable carriers*

DESINA

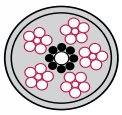
Developed for

- KS alternative to OEM standards
- long transmission distances
- servo drives
- extremely heavy loads

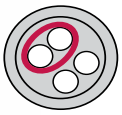
Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- halogen-free
- CFC-free
- silicone-free
- flame-retardant
- DESINA

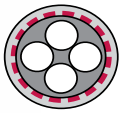
Design



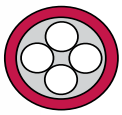
Core insulation
KS-PP/TPE
hybrid stranded



Element shield
continuous bending hi-flex,
in-plated braided copper shield
with the option of foil shield
– see type/design



Overall shield
continuous bending hi-flex,
tin-plated copper braiding
for smallest bend radii
Coverage: approx. 80 %



Outer jacket
KS-PUR
pressure extruded
hi-flex design
UV-resistant
extremely abrasion-resistant

Conductor:	extra-fine wire conductor made from bare or tin-plated copper wires, design-optimized for maximum flexural strength
Center element:	type-optimized
Core insulation:	KS-PP
Core identification:	according to OEM specifications (type-dependent)
Core stranding:	cores type-optimized stranded in short pitches with minimal torsion
Shielding:	coverage 80/85 % (type-dependent)
Outer jacket:	KS-PUR
Jacket color:	green (according to DESINA)

Technical Data

Temperature range:	– 30 to + 90 °C
Minimum bend radius while moved*:	$KR_{min} \geq 7.5 \times Ø$
v_{max} supported:	5 m/s
v_{max} gliding:	5 m/s
a_{max}:	50 m/s²
Insulation resistance:	≥ 10 MΩ x km
Rated voltage:	OEM type-dependent
Approvals:	UL, or UL/CSA (type-dependent), based on VDE

varying parameters possible – please contact us

Subject to change.

Type selection

SYSTEM S 700 C –shielded

KS alternative to OEM-standard	type KS / construction	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
6FX8008 1BD11	(8 x 2 x 0.18²)	(25 / 2c / 8p)	**46100**	8.0	0.79	0.054
6FX8008 1DC00	(2 x 2 x 0.25² + 1 x 2 x 0.38²)	(23 / 2c / 2p + 21 / 2c / 1p)	**46104**	7.0	0.72	0.041
6FX8008 1BD21	(4 x 2 x 0.38² + 4 x 0.5²)	(21 / 2c / 4p + 20 / 4c)	**46105**	10.1	0.135	0.083
6FX8008 1BD31	(3 x (2 x 0.14²) + 2 x (0.5²))	((26 / 2c) / 3p + (20) / 2c))	**46110**	9.2	0.119	0.074
6FX8008 1BD41	(3 x (2 x 0.14²) + 4 x 0.14² + 2 x 0.5²)	((26 / 2c) / 3p + 26 / 4c + 20 / 2c)	**46115**	9.1	0.120	0.066
6FX8008 1BD51	(3 x (2 x 0.14²) + 4 x 0.14² + 4 x 0.25² + 2 x 0.5²)	((26 / 2c) / 3p + 26 / 4c + 23 / 2c / 4p) + 20 / 2c	**46120**	9.8	0.138	0.075
6FX8008 1BD61	(4 x 2 x 0.18²)	(25 / 2c / 4p)	**46125**	6.6	0.057	0.035
6FX8008 1BD71	(2 x 2 x 0.18²)	(25 / 2c / 2p)	**46130**	5.2	0.042	0.024
6FX8008 1BD81	(12 x 0.23²)	(23 / 12 c)	**46135**	7.7	0.074	0.065

KS alternative to OEM-standard	type KS / construction	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
INK 0448	(4 x 2 x 0.25² + 2 x 0.5²)	(23 / 2c / 4p + 20 / 2c)	**46400**	8.7	0.106	0.051
INK 0209	(4 x 2 x 0.25² + 2 x 1²)	(23 / 2c / 4p + 17 / 2c)	**46410**	9.1	0.099	0.064
INK 0280	(3 x 0.25² + 3 x (2 x 0.25²) + 2 x 1²)	23 / 3c + ((23 / 2c) / 3p + 17 / 2c)	**46412**	9.3	0.135	0.084
INK 0532	(2 x 0.14² + 4 x 1² + (4 x 0.14²))	(26 / 2c + 17 / 4c + (26 / 4c))	**46415**	10.0	0.142	0.081

KS alternative to OEM-standard	type KS / construction	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
–	(4 x 2 x 0,14² + 4 x 0.5²)	(26 / 2c / 4p + 20 / 4c)	**46505**	8.8	0.100	0.052

KS alternative to OEM-standard	type KS / construction	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
–	(5 x 2 x 0,14² + 2 x 0.5²)	(26 / 2c / 5p + 20 / 2c)	**46090**	9.3	0.098	0.072

Additional cable types upon request.

SYSTEM M 700 C

Shielded continuous bending hi-flex PUR motor/servo drive cables

Picture obtainable.

Up to 5 million motion cycles!

Up to 50 meter travel length

TSUBAKI KABELSCHLEPP cables for cable carriers

DESINA

Developed for

- KS alternative to OEM standards
- long transmission distances
- motor server/servo drives
- extremely heavy loads

Properties

- oil-resistant
- UV-resistant
- RoHS-conform
- halogen-free
- CFC-free
- silicone-free
- flame-retardant
- DESINA

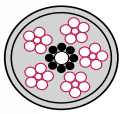
Design

Conductor:	finely stranded conductors of bare copper wires in an optimized hi-flex design
Center element:	NEW – OEM types-optimized
Core insulation:	KS-PP
Core identification:	according to OEM specifications (type-dependent)
Core stranding:	cores type-optimized stranded in short pitches with minimal torsion
Shielding:	coverage 80/85 % (type-dependent)
Outer jacket:	KS-PUR
Jacket color:	orange (according to DESINA)

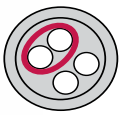
Technical Data

Temperature range:	– 30 to + 90 °C
Minimum bend radius while moved*:	$KR_{min} \geq 7.5 \times Ø$ / ≥ 25 mm²: $KR_{min} \geq 10 \times Ø$
v_{max} supported:	5 m/s
v_{max} gliding:	5 m/s
a_{max}:	50 m/s²
Insulation resistance:	≥ 10 MΩ x km
Rated voltage:	type-dependent
Approvals:	UL, cUL or UL/CSA (type-dependent), based on VDE

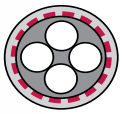
varying parameters possible – please contact us



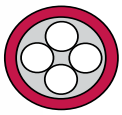
Core insulation
KS-PP/TPE
hybrid stranded



Element shield
continuous bending hi-flex, in-plated braided copper shield with the option of foil shield – see type/design



Overall shield
continuous bending hi-flex, tin-plated copper braiding for smallest bend radii
Coverage: approx. 80 %



Outer jacket
KS-PUR
pressure extruded
hi-flex design
UV-resistant
extremely abrasion-resistant

Subject to change.

Type selection

SYSTEM M 700 C – shielded

KS alternative to OEM standard	type KS / construction	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
6FX8008 1BB11	(4 G 1.5²)	(16 / 4c)	**46200**	9.4	0.144	0.080
6FX8008 1BB21	(4 G 2.5²)	(14 / 4c)	**46205**	10.9	0.209	0.120
6FX8008 1BB31	(4 G 4²)	(12 / 4c)	**46210**	12.2	0.298	0.195
6FX8008 1BB41	(4 G 6²)	(10 / 4c)	**46215**	14.7	0.439	0.296
6FX8008 1BB51	(4 G 10²)	(8 / 4c)	**46220**	17.8	0.660	0.445
6FX8008 1BB61	(4 G 16²)	(6 / 4c)	**46225**	21.9	1.025	0.730
6FX8008 1BB25	(4 G 25²)	(4 / 4c)	**46230**	25.5	1.225	1.100
6FX8008 1BB35	(4 G 35²)	(2 / 4c)	**46235**	28.9	1.685	1.522
6FX8008 1BB50	(4 G 50²)	(1 / 4c)	**46240**	33.7	2.405	2.165
6FX8008 1BA11	(4 G 1,5² + (2 x 1.5²))	(16 / 4c + (16 / 2c))	**46150**	11.9	0.233	0.136
6FX8008 1BA21	(4 G 2,5² + (2 x 1.5²))	(14 / 4c + (16 / 2c))	**46155**	13.7	0.313	0.178
6FX8008 1BA31	(4 G 4² + (2 x 1.5²))	(12 / 4c + (16 / 2c))	**46160**	15.1	0.416	0.268
6FX8008 1BA41	(4 G 6² + (2 x 1.5²))	(10 / 4c + (16 / 2c))	**46165**	17.1	0.546	0.358
6FX8008 1BA51	(4 G 10² + (2 x 1.5²))	(8 / 4c + (16 / 2c))	**46170**	19.7	0.757	0.515
6FX8008 1BA61	(4 G 16² + (2 x 1.5²))	(6 / 4c + (16 / 2c))	**46175**	23.4	1.095	0.802
6FX8008 1BA25	(4 G 25² + (2 x 1.5²))	(4 / 4c + (16 / 2c))	**46250**	26.9	1.540	1.144
6FX8008 1BA35	(4 G 35² + (2 x 1.5²))	(2 / 4c + (16 / 2c))	**46255**	31.2	2.033	1.850
6FX8008 1BA50	(4 G 50² + (2 x 1.5²))	(1 / 4c + (16 / 2c))	**46260**	34.3	2.755	2.540

KS alternative to OEM standard	type KS / construction	conductor cross section AWG (approximate values)	part number	max OD in mm	weight kg/m	Cu index kg/m
INK 0653	(4 G 1² + 2 x (2 x 0.75²))	(17 / 4c + (18 / 2c) / 2p)	**46300**	12.7	0.225	0.136
INK 0650	(4 G 1.5² + 2 x (2 x 0.75²))	(16 / 4c + (18 / 2c) / 2p)	**46305**	12.5	0.290	0.170
INK 0602	(4 G 2.5² + 2 x (2 x 1²))	(14 / 4c + (18 / 2c) / 2p)	**46315**	14.9	0.336	0.229
	(4 G 4² + (2 x 1²) + (2 x 1.5²))	(12 / 4c + (17 / 2c) / 2p + 16 / 2c)	**46323**	17.5	0.475	0.328
INK 0604	(4 G 6² + (2 x 1²) + (2 x 1,5²))	(10 / 4c + (17 / 2c) / 2p + 16 / 2c)	**46330**	19.1	0.615	0.445
INK 0605	(4 G 10² + (2 x 1.5²) + (2 x 1²))	(8 / 4c + (17 / 2c) / 2p + 16 / 2c)	**46345**	23.3	0.875	0.626
INK 0606	(4 G 16² + 2 x (2 x 1.5²))	(6 / 4c + (16 / 2c) / 2p)	**46350**	26.5	1.170	0.922
INK 0607	(4 G 25² + 2 x (2 x 1.5²))	(4 / 4c + (16 / 2c) / 2p)	**46355**	30.8	1.590	1.280
INK 0667	(4 G 35² + 2 x (2 x 1.5²))	(2 / 4c + (16 / 2c) / 2p)	**46360**	32.8	2.196	1.621
INK 0668	(4 G 50² + 2 x (2 x 1.5²))	(1 / 4c + (16 / 2c) / 2p)	**46365**	37.3	3.000	2.600

Subject to change.

Additional cable types upon request.

Pre-assembled OEM high flex cables

You need connection-ready harnessed **bus cables**? Or harnessed **signal- or power cables** for drives – in accordance to OEM specifications?

Simply order by quoting just the **order number and cable length**, and wait for your original quality goods to arrive.

Connection-ready harnessed cables

- easy to order with just order number and cable length
- in accordance to OEM specifications
- Just-in-time delivery of three work days
- **no minimum order quantities**
- **individual cable lengths without surcharge**
- checked and monitored for reliable connection

Properties of the cables:

Subject to change.

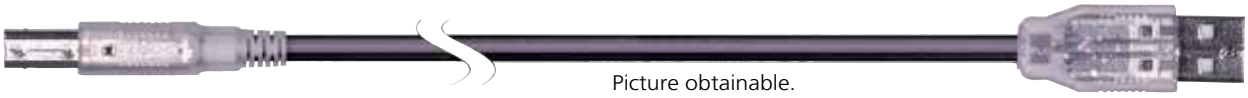
USB S 700 C pre-assembled

Shielded continuous bending hi-flex USB PUR cable

Properties of the cables:

- UV-resistant
- CFC-free
- Minimum bend radius 10 x Ø
- halogen-free
- flame-retardant
- Approvals: UL, based on VDE, RoHS conform

TSUBAKI KABELSCHLEPP cables for cable carriers



Picture obtainable.

cable type	approx. diameter mm	minimum bend radius moved KR_{min}
USB 700 C – type A/B	5.2	10 x Ø

Smaller bend radii are possible in many cases – contact us about options.

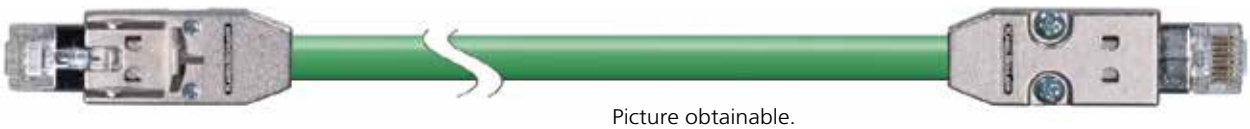
CAT5E 700 C pre-assembled

Shielded continuous bending hi-flex CAT5E PUR cable

Properties of the cables:

- UV-stable
- CFC-free
- Minimum bend radius 7.5 x Ø
- halogen-free
- flame-retardant
- Approvals: UL, based on VDE, RoHS conform

TSUBAKI KABELSCHLEPP cables for cable carriers



Picture obtainable.

cable type	approx. diameter mm	minimum bend radius moved KR_{min}
CAT5E 8-stranded straight	6.80	7.5 x Ø
CAT5E 8-stranded cross-over	6.80	7.5 x Ø

Smaller bend radii are possible in many cases – contact us about options.

Pre-assembled PUR signal cables

Cables with connections compatible with the OEM standards

Properties of the cables:

- UV-resistant
- CFC-free
- Minimum bend radius 7.5 x Ø
- halogen-free
- flame-retardant
- Approvals: UL, CSA, based on VDE, RoHS conform

Signal basic cables

PUR design

TSUBAKI KABELSCHLEPP cables for cable carriers

KS alternative to OEM standard	approx. diameter mm	minimum bend radius moved KR_{min}
6FX8002 2AD00	9.50	7.5 x Ø
6FX8002 2CA31	10.10	7.5 x Ø
6FX8002 2CA51	9.50	7.5 x Ø
6FX8002 2CA61	9.50	7.5 x Ø
6FX8002 2CF02	9.50	7.5 x Ø
6FX8002 2CH00	9.50	7.5 x Ø
6FX8002 2EQ00	10.10	7.5 x Ø
6FX8002 2EQ10	10.10	7.5 x Ø

Varying parameters possible – contact us about options.

Signal extension cables

PUR design

TSUBAKI KABELSCHLEPP cables for cable carriers

KS alternative to OEM standard	approx. diameter mm	minimum bend radius moved KR_{min}
6FX8002 2AD04	9.50	7.5 x Ø
6FX8002 2CA34	10.10	7.5 x Ø
6FX8002 2CA54	9.50	7.5 x Ø
6FX8002 2CB54	9.30	7.5 x Ø
6FX8002 2CF04	9.50	7.5 x Ø
6FX8002 2EQ14	10.10	7.5 x Ø

Varying parameters possible – contact us about options.

Subject to change.

Pre-assembled PUR power cables

Cables with connections compatible with the OEM standards

Properties of the cables:

- UV-resistant
- CFC-free
- Minimum bend radius 7.5 x Ø
- halogen-free
- flame-retardant
- Approvals: UL, CSA, based on VDE, RoHS conform

Power basic cables without brake wires

PUR design

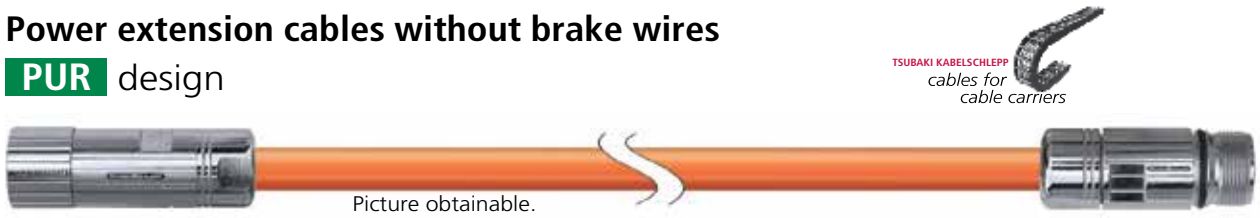
Picture obtainable.

KS alternative to OEM standard	approx. diameter mm	minimum bend radius moved KR_{min}
6FX8002 5CA01	10.40	7.5 x Ø
6FX8002 5CA11	11.70	7.5 x Ø
6FX8002 5CA21	10.40	7.5 x Ø
6FX8002 5CA31	11.70	7.5 x Ø
6FX8002 5CA41	13.50	7.5 x Ø
6FX8002 5CA51	16.30	7.5 x Ø
6FX8002 5CA61	19.70	7.5 x Ø

Varying parameters possible – contact us about options.

Power extension cables without brake wires

PUR design



Picture obtainable.

KS alternative to OEM standard	approx. diameter mm	minimum bend radius moved KR_{min}
6FX8002 5CA05	10.40	7.5 x Ø
6FX8002 5CA15	11.70	7.5 x Ø
6FX8002 5CA28	10.40	7.5 x Ø
6FX8002 5CA38	11.70	7.5 x Ø
6FX8002 5CA48	13.50	7.5 x Ø
6FX8002 5CA58	16.30	7.5 x Ø
6FX8002 5CA68	19.70	7.5 x Ø

Varying parameters possible – contact us about options.

Pre-assembled PUR power cables

Cables with connections compatible with the OEM standards

Properties of the cables:

- UV-resistant
- CFC-free
- Minimum bend radius 7.5 x Ø
- halogen-free
- flame-retardant
- Approvals: UL, CSA, based on VDE, RoHS conform

Power basic cables with brake wires

PUR design

TSUBAKI KABELSCHLEPP cables for cable carriers

Picture obtainable.

KS alternative to OEM standard	approx. diameter mm	minimum bend radius moved KR_{min}
6FX8002 5DA01	12.60	7.5 x Ø
6FX8002 5DA11	14.00	7.5 x Ø
6FX8002 5DA21	12.60	7.5 x Ø
6FX8002 5DA31	14.00	7.5 x Ø

Varying parameters possible – contact us about options.

Power extension cables with brake wires

PUR design

TSUBAKI KABELSCHLEPP cables for cable carriers

Picture obtainable.

KS alternative to OEM standard	approx. diameter mm	minimum bend radius moved KR_{min}
6FX8002 5DA05	12.60	7.5 x Ø
6FX8002 5DA15	14.00	7.5 x Ø
6FX8002 5DA28	12.60	7.5 x Ø
6FX8002 5DA38	14.00	7.5 x Ø

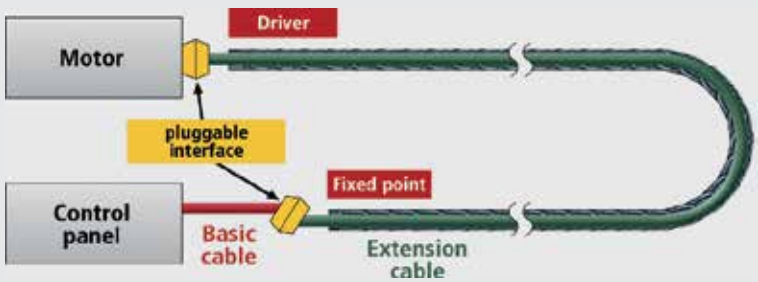
Varying parameters possible – contact us about options.

Extension cables

In addition to connection-ready harnessed basic cables, **extension cables** are also available.

These are available as **signal and power cables** for drives – according to OEM specifications.

Simply order by quoting just the **order number and cable length**, and wait for your original quality goods to arrive.



Subject to change.

Application parameters

Application parameters*	CONTROL 200/200 C	CONTROL 400/400 C	POWER 400/400 C	CONTROL / POWER 700/700 C	SYSTEM S 700 SYSTEM M 700
Acceleration a	up to 10 m/s2	up to 20 m/s2	up to 20 m/s2	up to 50 m/s2	subject to cable type
Speed v, self-supporting	up to 3,5 m/s	up to 5 m/s	up to 5 m/s	up to 20 m/s	subject to cable type
Speed v, gliding	up to 2 m/s	up to 5 m/s	up to 3 m/s	up to 5 m/s	subject to cable type
Travel length recommended application areas	up to 25 m	up to 50 m	up to 50 m	up to 500 m	up to 50 m
DESINA	subject to cable type	subject to cable type	subject to cable type	subject to cable type	subject to cable type
Cold-resistant	•	•	•	•••	••
Minimum bend radius, unshielded	KR_{min} ≥ 10 x Ø	KR_{min} ≥ 7,5 x Ø	KR_{min} ≥ 7,5 x Ø	KR_{min} ≥ 7,5 x Ø	–
Minimum bend radius, shielded	KR_{min} ≥ 10 x Ø	KR_{min} ≥ 7,5 x Ø	KR_{min} ≥ 7,5 x Ø	KR_{min} ≥ 7,5 x Ø*	subject to cable type
UL-Approval	+	+	+	+	+
Combined UL/CSA-Approval	subject to cable type	subject to cable type	+	+	subject to cable type
Operating temperature range	- 5 to + 80 °C	- 5 to + 80 °C	- 5 to + 80 °C	- 30 to + 90 °C*	subject to cable type
UV-resistance	+	+	+	• jacket coloured ••• jacket black	• jacket coloured ••• jacket black
OEM-specification	–	–	–	–	+
OEM-specification	–	–	–	–	+
CFC-free	+	+	+	+	+
flame-retardant	+	+	+	+	+
halogen-free	–	–	–	+	subject to cable type
oil-resistant	+	+	+	+	+
silicone-free	+	+	+	+	+

+ Yes – No • suitable •• well suitable ••• very well suitable

* Recommended values for the design of KABELSCHLEPP cable carrier systems, deviations possible in case of data cables.

Electrical load capacity

Cross section	PVC	PUR	PUR Single cores
0.75 mm²	12 A		15 A
1 mm²	15 A		19 A
1.5 mm²	18 A	23 A	24 A
2.5 mm²	26 A	32 A	32 A
4 mm²	34 A	42 A	42 A
6 mm²	44 A	54 A	54 A
10 mm²	61 A	75 A	73 A
16 mm²	82 A	100 A	98 A
25 mm²	108 A	127 A	141 A
35 mm²	135 A	158 A	176 A
50 mm²	168 A	192 A	216 A
70 mm²	207 A	246 A	279 A
95 mm²	250 A	298 A	342 A
120 mm²	292 A	346 A	400 A
150 mm²	335 A	399 A	464 A
185 mm²	382 A	456 A	533 A
240 mm²	453 A	538 A	634 A
300 mm²	523 A	621 A	736 A
400 mm²			868 A
500 mm²			998 A
700 mm²			1240 A

DIN VDE 0298-4 page 33, chart 11, column 5

DIN VDE 0298-4 page 23, chart 6, column 5

DIN VDE 0298-4 page 33, chart 11, column 2

DIN VDE 0298-4 page 23, chart 6, column 7

These values are extracted from DIN VDE 0298-4. The laying procedure "Continuous flexible/moving in a cable carrier" is not standardized. Due to this fact these values are for orientation only. Please observe reduction factors for cumulation of cables and varying ambient temperatures while selecting cables. Please observe additional standards which will be security-relevant for the application.

All data in this publication are to be used as guidelines for planning purposes only. In particular, we do not guarantee that the products supplied suit the users application. It is the customer's responsibility to verify that our products fit the users application specifications.

Conversion factors for different ambient temperatures

	Permitted/recommended operating temperature at conductor					
	40 °C	60 °C	70 °C	80 °C	85 °C	90 °C
Ambient temperatures in °C	Conversion factors, must be applied to the loading capacity information!					
10	1.73	1.29	1.22	1.18	1.17	1.15
15	1.58	1.22	1.17	1.14	1.13	1.12
20	1.41	1.15	1.12	1.10	1.09	1.08
25	1.22	1.08	1.06	1.05	1.04	1.04
30	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**
35	0.71	0.91	0.94	0.95	0.95	0.96
40	–	0.82	0.87	0.89	0.90	0.91
45	–	0.71	0.79	0.84	0.85	0.87
50	–	0.58	0.71	0.77	–	0.82
55	–	0.41	0.61	0.71	–	0.76
60	–	–	0.50	0.63	–	0.71
65	–	–	0.35	0.55	–	0.65
70	–	–	–	0.45	–	0.58
75	–	–	–	0.32	–	0.50
80	–	–	–	–	–	0.41
85	–	–	–	–	–	0.29
90	–	–	–	–	–	–
95	–	–	–	–	–	–

Color codes

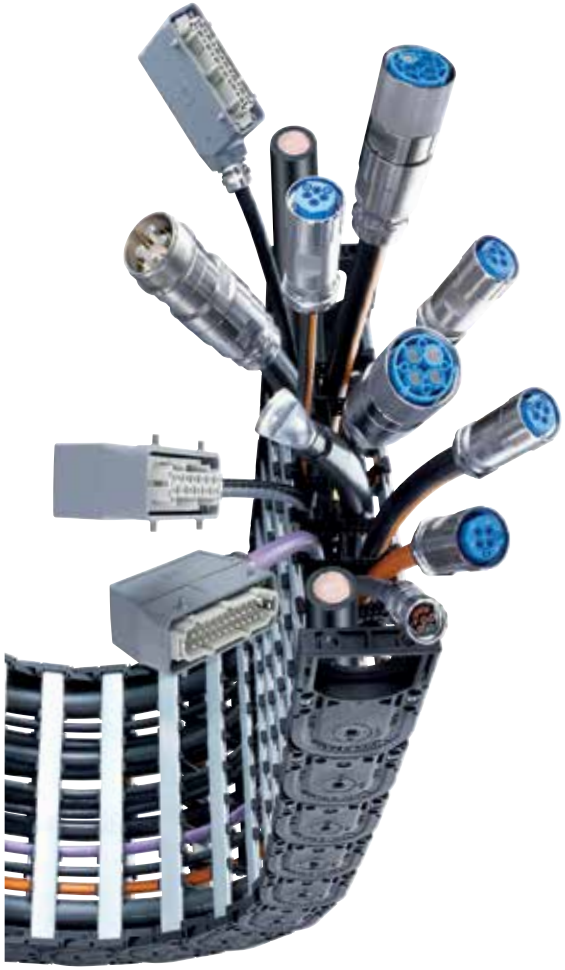
DIN 47100 color code

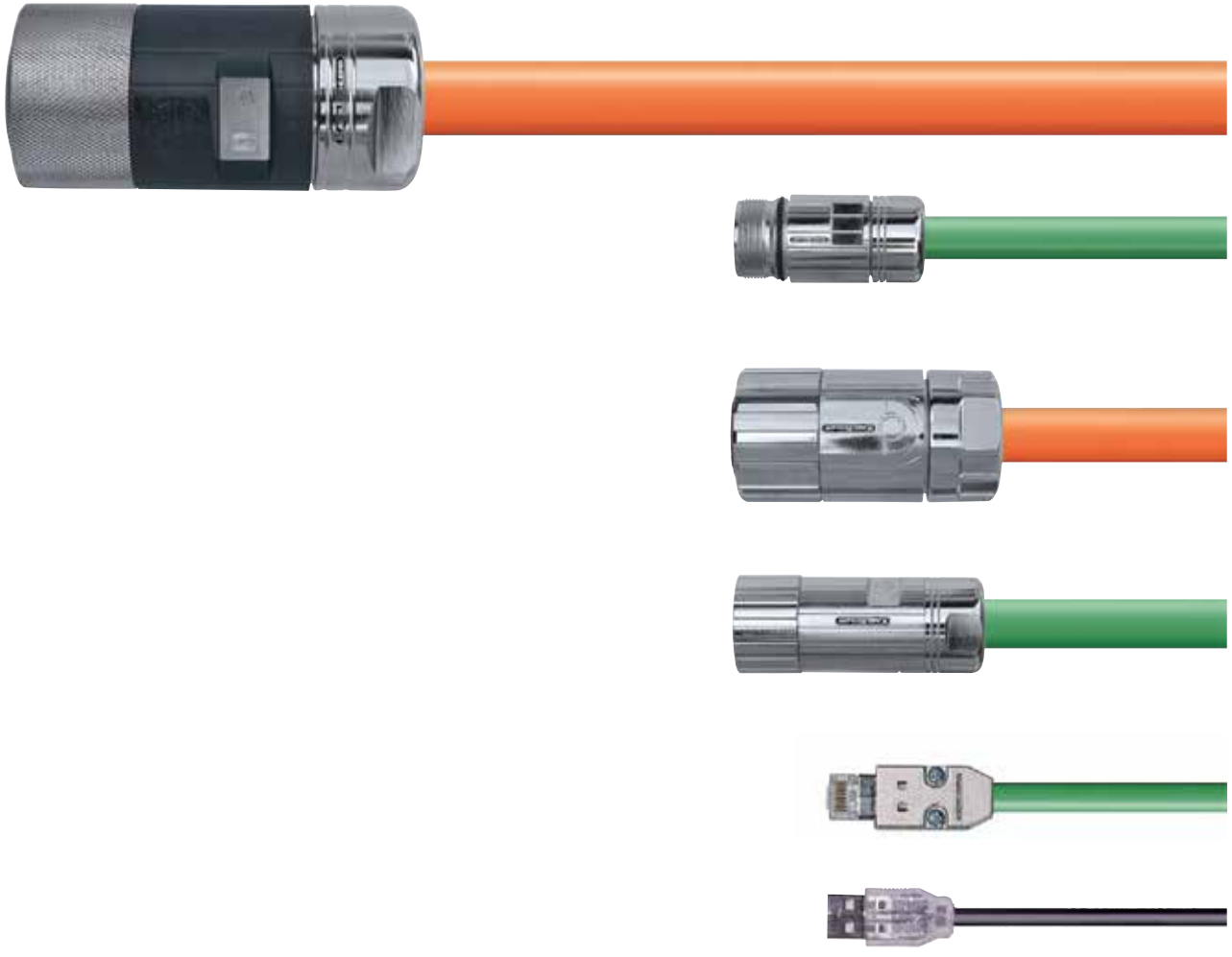
1 white	11 grey-pink	21 white-blue	31 green-blue	41 grey-black
2 brown	12 red-blue	22 brown-blue	32 yellow-blue	42 pink-black
3 green	13 white-green	23 white-red	33 green-red	43 blue-black
4 yellow	14 brown-green	24 brown-red	34 yellow-red	44 red-black
5 grey	15 white-yellow	25 white-black	35 green-black	
6 pink	16 yellow-brown	26 brown-black	36 yellow-black	
7 blue	17 white-grey	27 grey-green	37 grey-blue	
8 red	18 grey-brown	28 yellow-grey	38 pink-blue	
9 black	19 white-pink	29 pink-green	39 grey-red	
10 purple	20 pink-brown	30 yellow-pink	40 pink-red	

The first color describes the base color of the core insulation, the second color that of the printed ring.

Copper wire dimensions according to AWG

AWG-No.	Cross section mm²	Diameter mm	AWG-No.	Cross section mm²	Diameter mm
500	254	20.7	**16**	1.31	1.29
400	203	18.9	**17**	1.04	1.15
350	178	17.3	**18**	0.823	1.024
300	152	16	**19**	0.653	0.912
250	127	14.6	**20**	0.519	0.812
4/0	107.2	11.68	**21**	0.412	0.723
3/0	85	10.4	**22**	0.325	0.644
2/0	67.5	9.27	**23**	0.259	0.573
0	53.4	8.25	**24**	0.205	0.511
1	42.4	7.35	**25**	0.163	0.455
2	33.6	6.54	**26**	0.128	0.405
3	26.7	5.83	**27**	0.102	0.361
4	21.2	5.19	**28**	0.0804	0.321
5	16.8	4.62	**29**	0.0646	0.286
6	13.3	4.11	**30**	0.0503	0.255
7	10.6	3.67	**31**	0.04	0.227
8	8.366	3.26	**32**	0.032	0.202
9	6.63	2.91	**33**	0.0252	0.18
10	5.26	2.59	**34**	0.04	0.16
11	4.15	2.3	**35**	0.0161	0.143
12	3.3	2.05	**36**	0.0123	0.127
13	2.62	1.83	**37**	0.01	0.113
14	2.08	1.63	**38**	0.00795	0.101
15	1.65	1.45	**39**	0.00632	0.0897





Subject to change.

Definitions

Definition	Description	Example
Design	number of cores x nominal cross-section in mm^2	3 G 1.5^2
Design AWG	American Wire Gauge	18AWG/2c
Shielding	without	4 G 1.5^2
	total	(4 G 1.5^2)
	total and pair	(4 x (2 x 0.5^2))
	total and pair and center element	((2 x 0.75^2) + 2 x (1^2))
DESINA	decentral and standardized installation technology on machine tools	
Flame-retardant	according to UL or equal specification	
Halogen-free	according to VDE 0282-13 attachment C	700 Series
Oil-resistant	for special applications	see application parameters
UV-resistant	without any restriction	outer jacket: black / black + ICC
UV-stable	time restriction possible	outer jacket: coloured
Stranding	core stranding in bundle technology	5 x 5 x 2.5^2 = 25 x 2.5^2
	core stranding mixed, in hybrid technology	((4 G 50^2) + 2 x (2 x 1.5^2))
	core stranding in layer design	7 x 1.5^2
	core stranding in pairs	(8 x 2 x 0.75^2)

Abbreviations

Abbreviation	Description	Note
C	total shield with Cu-braid	optical coverage
D	double-shielded	CD identification
Ø max	maximum outer diameter	see type selection
EMV	electromagnetic compatibility	use shielded cables
LWL	fiber-optic cables – fiber/diameter	e.g. 6G62,5/125
KS-PUR	special KABELSCHLEPP compound	e.g. 11 Y
KS-TPE-E	Thermoplastic Polyester Elastomer	12 Y
KS-PP/TPE	special KABELSCHLEPP compound	e.g. 9 Y
KS-PVC	special KABELSCHLEPP PVC compound	Y
UL/CSA	USA/Canada approval	

Chemical resistance

Chemical product	Resistance				
	Control 200	Control/Power 400	Control/Power 700	Data 700 C/CD	Control/Power 700 C
Inorganic chemicals / aqueous solutions, neutral					
Water	✓	✓	✓	✓	✓
Common salt (10%)	✓	✓	✓	✓	✓
Sodium sulphate (10%)	✓	✓	✓	✓	✓
Aqueous solutions, alkaline					
Soda (10%)	✓	✓	✓	✓	✓
Aqueous solutions, acidic					
Aqueous solutions, oxidising	◆	◆	✓	✓	✓
Hydrogen peroxide (3%)	✓	✓	✓	✓	✓
Potassium permanganate (2%)	✓	✓	✓	✓	✓
Inorganic acids					
Concentrated hydrochloric acid	–	–	–	–	–
Hydrochloric acid (10 %)	✓	✓	✓	✓	✓
Concentrated sulphuric acid	–	–	✓	✓	✓
Sulphuric acid (10 %)	✓	✓	✓	✓	✓
Concentrated nitric acid	–	–	✓	✓	✓
Nitric acid (10 %)	o	o	✓	✓	✓
Inorganic alkalis					
Concentrated sodium hydroxide	–	–	✓	✓	✓
Sodium hydroxide (10 %)	✓	✓	✓	✓	✓
Concentrated caustic potash solution	–	–	✓	✓	✓
Caustic potash solution (10 %)	✓	✓	✓	✓	✓
Concentrated ammonia	o	o	✓	✓	✓
Ammonia (10 %)	✓	✓	✓	✓	✓
Organic chemicals / organic acids					
Concentrated acetic acid	–	–	✓	✓	✓
Acetic acid (10% in H_2O)	✓	✓	✓	✓	✓
Tartaric acid (10% in H_2O)	✓	✓	✓	✓	✓
Citric acid (10% in H_2O)	–	–	–	–	–
Ketones					
Acetone	–	–	–	–	–
Methyl ethyl ketone (MEK)	–	–	–	–	–
Alcohols					
Ethyl alcohol (white spirits)	–	–	o	o	o
Isopropyl alcohol	–	–	✓	✓	✓
Diethylene glycol	o	o	✓	✓	✓
Aromatics					
Toluene	–	–	–	–	–
Xylene	–	–	–	–	–
Fuels					
Petrol	–	–	✓	✓	✓
Diesel	o	o	✓	✓	✓
Kerosene	–	–	✓	✓	✓
Synthetic oils / lubricating oil					
ASTM oil #2	✓	✓	✓	✓	✓
Hydraulic fluid					
Based on mineral oil	–	–	✓	✓	✓
Based on glycol	–	–	✓	✓	✓
Based on synthetic ester	–	–	◆	◆	◆
Vegetable oils					
Rapeseed oil	o	o	✓	✓	✓
Olive oil	o	o	✓	✓	✓
Soybean oil	o	o	✓	✓	✓
Other					
Seawater	✓	✓	✓	✓	✓

✓ = resistant – = not resistant o = short-term resistance ◆ = no data

Subject to change.

You don't know just how good a cable is until you see it in the carrier

Nothing proves the excellent performance of our products better than an uncompromising test

The following test set-ups were used as the basis for the indicated motion cycles:

Series 200

Test KS VL – 1 200

Travel length:	**13,8 m**	Speed:	**2 m/s**
Acceleration:	**2,2 m/s²**	Radius:	**9 to 11 x cable diameter**

Result: over two million cycles

Series 400

Test KS VL – 2 400

Travel length:	**17,4 m**	Speed:	**2,6 m/s**
Acceleration:	**2,2 m/s²**	Radius:	**7,5 to 8 x cable diameter**

Result: over four million cycles

Series 700

Test KS VL – 3 700

Travel length:	**28,3 m**	Speed:	**3 m/s**
Acceleration:	**2,2 m/s²**	Radius:	**7,5 to 8 x cable diameter**

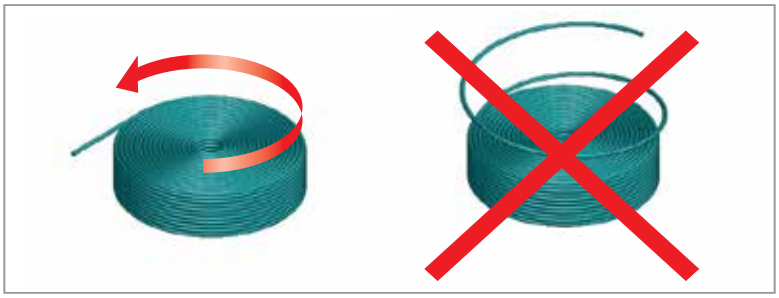
Result: over seven million cycles

With a cable from KABELSCHLEPP, you play it safe!

Installing cables into the cable carrier

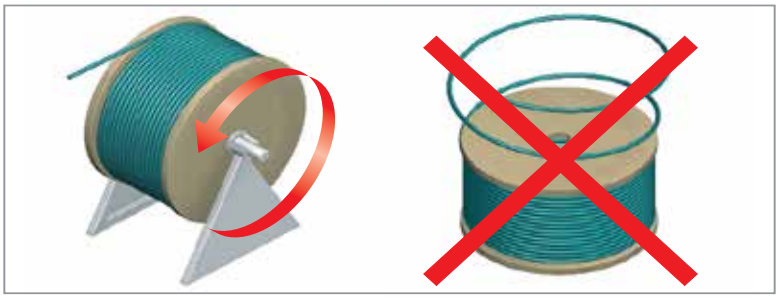
Do not cut ring-coiled cables

When cutting cables prior to installation into the cable carrier, ring-coiled cables must be unspooled tangentially and not be pulled in loops off the top.



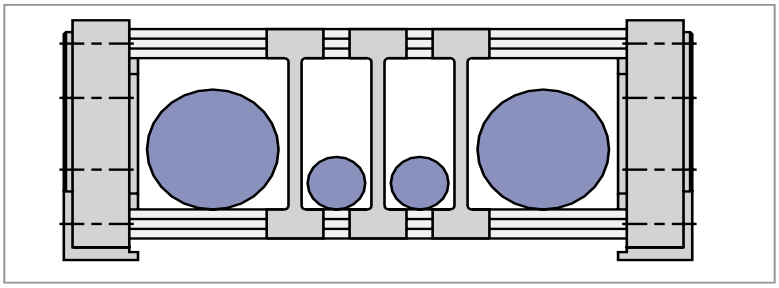
Uncoil cables from reels torsion-free

When cutting cables prior to installation into the cable carrier, drum-coiled cables must be unreeled, twist- and torsion-free.

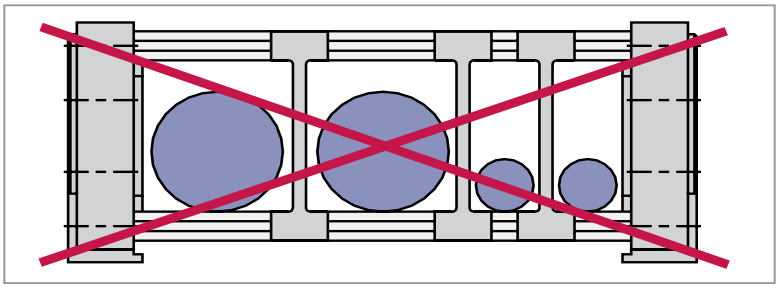


Weight distribution inside the carrier cavity

When inserting the cables into the cable carrier, the cable weight is to be symmetrically distributed within the cavity width to assure maximum cycle life of the cable carrier and reduce the likelihood of cable carrier twist or tilt during operation.



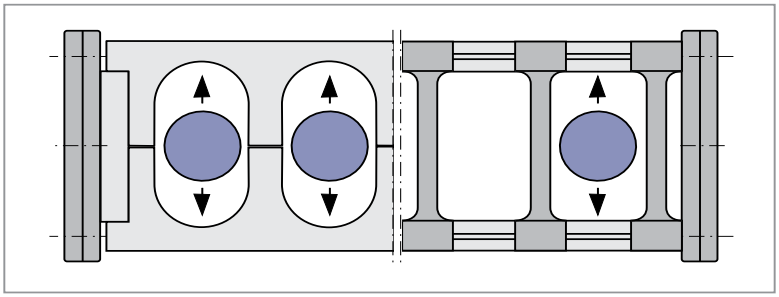
■ Right weight distribution



■ False weight distribution

Cable length

A change in the length of the cables after installation can be balanced out in the carrier loop. Thus, the cables must move freely inside the cable carrier at sufficient length and torsion-free.

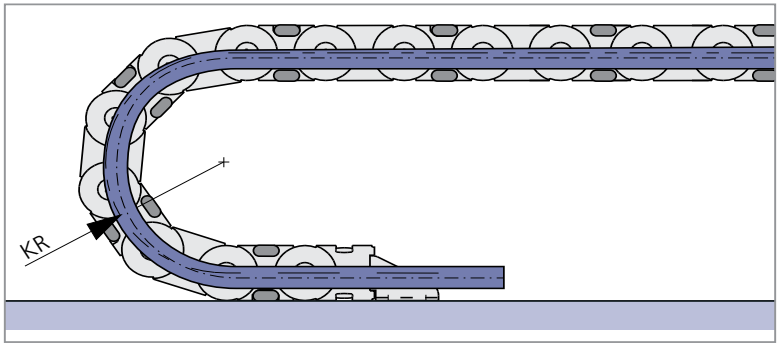


Installing cables into the carrier

The cables must be inserted into the carrier system in a way to allow them to move independently through the carrier's bend radius.

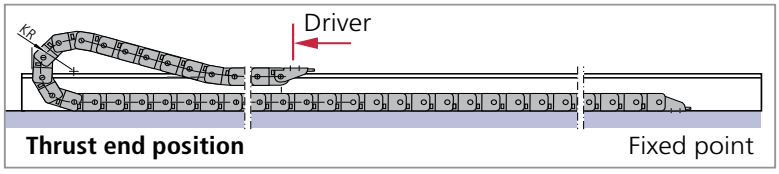
How to do it:

- Always allow sufficient clearance between the dividers and within the cable carrier cavity area.
- Insert cables tension-free.
- Never tie-wrap or fasten cables onto the carrier links or cross bars!



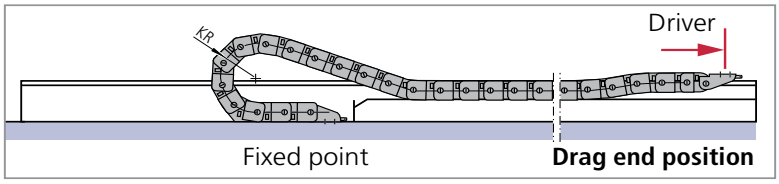
Strain relief at the driven end of the carrier

After positioning the driven end (moving end) in the **retracted position** the cables are strain-relieved at the moving end.



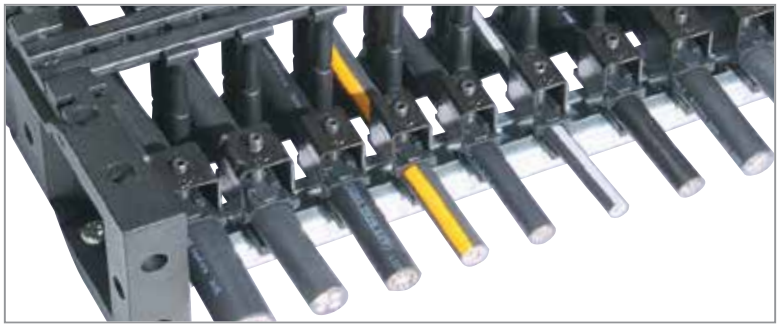
Correct cable length inside the carrier

After repositioning the driven end (moving end) in the carrier's **extended position** the cables are checked for tension-free length in the carrier loop and if necessary, pushed further into the carrier.



Strain relief at the fixed end of the carrier

At this tension-free "installation length", the cables are then strain-relieved at the carrier's fixed point.



Cable scout

Cable dimensioning for your cable carrier application

Inquiring party:
Company: _____
Contact person: _____
Telephone: _____
E-mail: _____
Street address: _____
City: _____ State: _____ Zip: _____

Cable application:
Is the cable being used in a cable carrier?
☐ yes ☐ no

Number of cables: _____ **please attach cable list**

Carrier application:
Machine type: _____
Carrier type: _____
Free installation height H (mm): _____ Bend radius of carrier KR (mm): _____

Operational parameters:
Travel length L_S (m): _____ Speed v (m/s): _____
Acceleration a (m/s2): _____ approx. number of cycles (per year):

Cable design:
No. of cores: _____ Core cross-section: _____

Shielding:
☐ unshielded ☐ shielded ☐ doubled shielded

Purchases & delivery:
approx. requirements per yea (m): _____ Lot size (m): _____
☐ coil ☐ reel
Desired date for 1st delivery: _____ Length of 1st delivery: _____
I would like a sample of a similar part no.: _____

Core identification:
☐ numbers + 1x gn/ye ☐ color acc. to DIN 47100

Voltage:
Rated voltage U (V): _____

Capacitance:
core/core c (nF/m): _____ core/shield c (nF/m): _____

Operating conditions:
Operating temperature range: T_{min} (°C): _____ T_{max} (°C): _____
Ambient conditions:
☐ indoor application ☐ outdoor application
Chemical resistance: _____
UV radiation: _____
other radiation: _____

Approvals:
☐ UL ☐ UL/CSA other _____

Other:
_____
_____
_____

Subject to change.

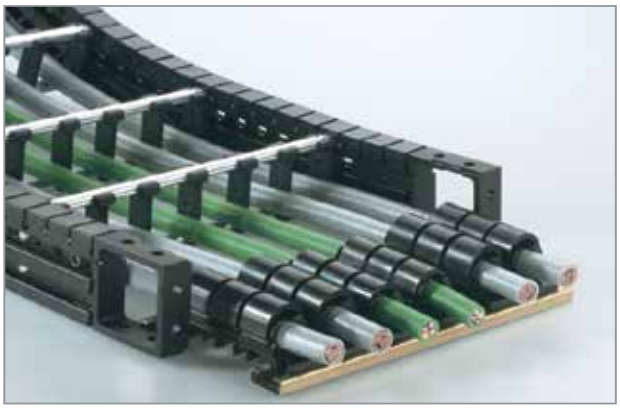
Application examples

- TOTALTRAX – the system solution for time-saving final assembly and short rework

- Complete systems with a total weight of up to 10+ tons
- Customer inspection, if desired, at the factory
- Special packaging and transportation logistics for delivery to the construction site
- Up to 50 % time saving during final assembly

- MC-crane cable with cable package, SZL strain relief driven-end plate and sea-watertight AL-guide channel for worldwide use in port cranes

- High-speed test stand
- Durability tests exceeding 25 million cycles



- Optimized SZL-strain relief for long cable life – safe, compact, easy-to-assemble

- 125 m travel length: carrier fully harnessed with Series 700

Definitions

Oil-resistant
The term "oil-resistant" means the chemical resistance of cables that are used in an environment where they are continuously exposed to oil or lubricants. Tests are carried out using approx. 55 oils and lubricants.

UV-resistant
The UV-resistance describes the resistance of the cable jacket to premature aging of the material due to sunlight. In addition, cables are also weather-resistant.

CFC-free
Chlorofluorocarbons
Due to the very detrimental effects of CFCs on the environment, and in particular on the ozone layer, we do not use them either in the manufacture of our products or in the products themselves.

Flame-retardant
Flame-retardant describes the fire behavior of cables tested according to IEC 60331. Flame retardant is a characteristic of the materials used in the insulation according to which it only catches fire after a delay when it is subjected to an open flame, and extinguishes itself when the flame is removed.

Silicone-free
The silicones used in cables are a very serious problem when applying paint, because if a surface contains silicone, paints and lacquers will not adhere to it properly. That is why all of our cables are generally silicone-free.

RoHS-compliant
Restriction of the use of certain hazardous substances in electrical and electronic equipment.
In particular, the use of lead, mercury and cadmium should be strictly limited.

Halogen-free
No materials such as chlorine, fluorine, iodine or bromide are used in our cables, because in the event of a fire corrosive gases would form hydrochloric acid, hydrofluoric acid, etc., thus greatly extending the scope of damage.

Profibus
This field bus was developed in Germany in 1989, and today is the most widespread bus of its type worldwide. It is used equally extensively in both production automation and process automation. We make a distinction between two types:
Profibus DP (Decentralized Periphery)
Sensors and actuators are controlled by a central controller. Data rates of up to 12 Mbit/s are possible.

Profibus PA (Process Automation)
Is used in process engineering and process technology. The data transfer rate is only 31.25 kbit/s.

Interbus
Is a field bus developed by the German company Phoenix Contact. The Interbus bus system is widely used in the automotive industry. The standard data transfer rate is 500 kBit/s.

Definitions

CAN-BUS

Is a bus system developed by Bosch. The CAN bus was developed for use in vehicles. Its data transfer capabilities are thus very large over short distances, but decrease greatly as the distance increases. The data transfer rate up to 40 m is 1 Mbit/s. Variants of the CAN bus:
CAN open – Primarily used in Europe.
DeviceNet – Primarily used in the USA. Developed by Allen-Bradley.

USB

Universal Serial Bus
A serial bus developed by Intel that connects a PC with external devices. USB 2.0 achieves a data rate of 480 Mbit/s, which gives it an advantage over the industrial bus systems, but because it transfers data only in packets, it is less suitable for time-critical applications.

LWL

Fiber-optic cables
Electric signals are converted by an optocoupler into light pulses, transferred via the fiber-optic cable and then converted back. The transfer rate is larger than for all comparable copper cables, and furthermore the cables are not subject to electromagnetic influences, and thus particularly suitable for industrial environments. The data transfer rate at 1300 nm/km is up to 10 Gbit/s. The fiber-optic cables can be made of plastic (POF) or glass.

Cable carrier suitability

Cable carrier suitability designates the characteristic of a cable to be moved continuously in a cable carrier. This characteristic is present if the cable can withstand more than one million motion cycles. All of the cables offered in our catalog are cable carrier suitable.

Servo cable

Servo cables designate cables that, in addition to the electric power required for the drive, can also transmit the signals generated by the servo controller. These measurements are made by means of an encoder such as a resolver, an incremental encoder or an absolute encoder.

Center element

The center element serves to fill the cavity that is present with an extruded jacket. This center element must be able to hold the stranded assembly securely in position. It is one of the essential elements of our cables.

Rated voltage

The rated voltage designates the working range of the cable as defined by standards.
The permissible voltage may differ depending on the approval.

Insulation resistance

The insulating materials used oppose the flow of electric current with a very high resistance. This is inversely proportional to the cable length. The insulation resistance is a measure of the quality of the insulating material between two conductors or between a conductor and a shield.

Temperature range

The temperature range designates the range in which the cables can be moved in a cable carrier. It is dependent on the insulating materials employed in the cable. Use outside of the specified temperature spectrum will result in significant damage to the cable.

Explanations

ICC

Integrated Color Code
Part-extruded color code based on the DESINA color code. Cable types are easy to distinguish, thus greater safety and shorter assembly times.

TOTALTRAX

Pre-assembled cable carrier systems.
Ready-to-connect cable carrier complete systems with system guarantee.

Approvals

Our cables feature extensive approvals: here are a few examples of the possibilities for KABELSCHLEPP cables:

UL – Underwriters Labotories
Required approval for use in the US market.

CSA – Canadian Standarts Association
Required approval for use in the Canadian market.

CE – Conformité Européenne
The cable conforms with the EU directives for use and sales.

Technical plastics

Insulating materials
The insulating materials used in our cables can be subdivided into the following groups:

PVC – polyvinyl chloride
The material most often used in the cable industry. Plasticizers, stabilizers, masterbatches and other additives are added to form an individual mix, i.e. KS-PVC. Operating temperature: from – 5 °C to + 80 °C

PUR – polyurethane
Besides a significantly higher notch toughness, polyurethane is also more resistant to chemicals. Its very good flexibility at low temperature makes this material excellent for outdoor applications. Operating temperature: from – 30 °C to + 90 °C

PP – polypropylene
Because of its very high dielectric strength, polypropylene is a very good insulating material. In combination with PUR insulation it is thus possible to produce cables that are excellent for use in cable carriers. Operating temperature: from – 30 °C to + 90 °C

CAT cables

Unlike with normal data cables, with a Cat cable the transfer parameters are always specified, and therefore the damping and frequency of transfer are clearly defined.

Cat 5

Frequency of transfer:	100 MHz
Damping:	22 dB
NEXT (min. at 100 MHz):	32.3 dB

Cat 5E

Frequency of transfer:	100 MHz
Damping:	22 dB
NEXT (min. at 100 MHz):	35.3 dB

Cat 6

Frequency of transfer:	250 MHz
Damping:	19.8 dB
NEXT (min. at 100 MHz):	44.3 dB

Ethernet

Ethernet is a defined standard for data transfer in networks (LANs). At present the transfer rates are up to 100 Mbit/s.

Overview as by part number

TSUBAKI

KABELSCHLEPP

CABLE CARRIER SYSTEMS
Cable carriers made of steel and plastic
QUANTUM cable and hose carrier system
PROTUM cable and hose carrier system
ROBOTRAX cable and hose carrier system

CABLES FOR MOTION
Continuous bending hi-flex cables for cable carriers
TOTALTRAX complete turn-key carrier systems
Pre-assembled cables

GUIDEWAY PROTECTION SYSTEMS
Armored apron covers
Way wipers
Protective devices

TSUBAKI KABELSCHLEPP America, Inc.
A division of U.S. Tsubaki Power Transmission LLC
7100 W. Marcia Road
Milwaukee, WI 53223
PH: (414) 354-1994
FX: (414) 354-1900
E-mail: info@kabelschlepp.com
kabelschlepp.com

TSUBAKI KABELSCHLEPP worldwide
For contacts, addresses and
much more, visit our web site at
kabelschlepp.de

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