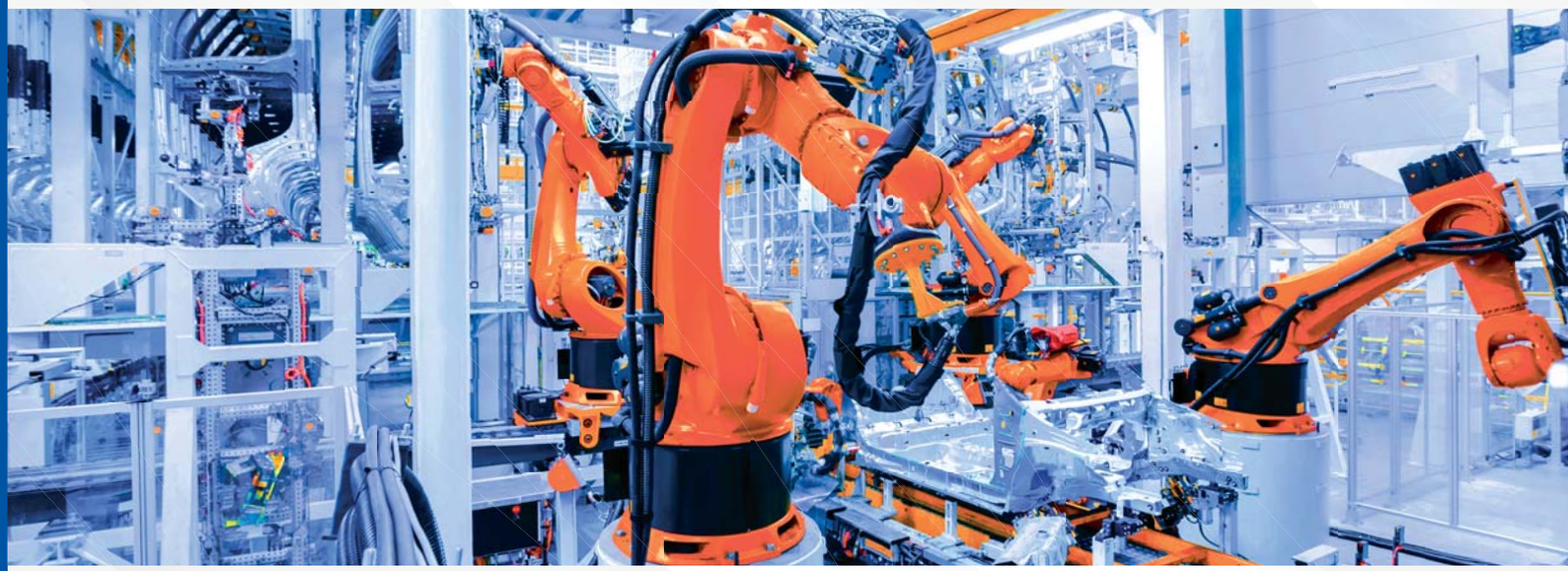
ELETTROTEKKABEL GROUP®



Automation & Material Handling Cables

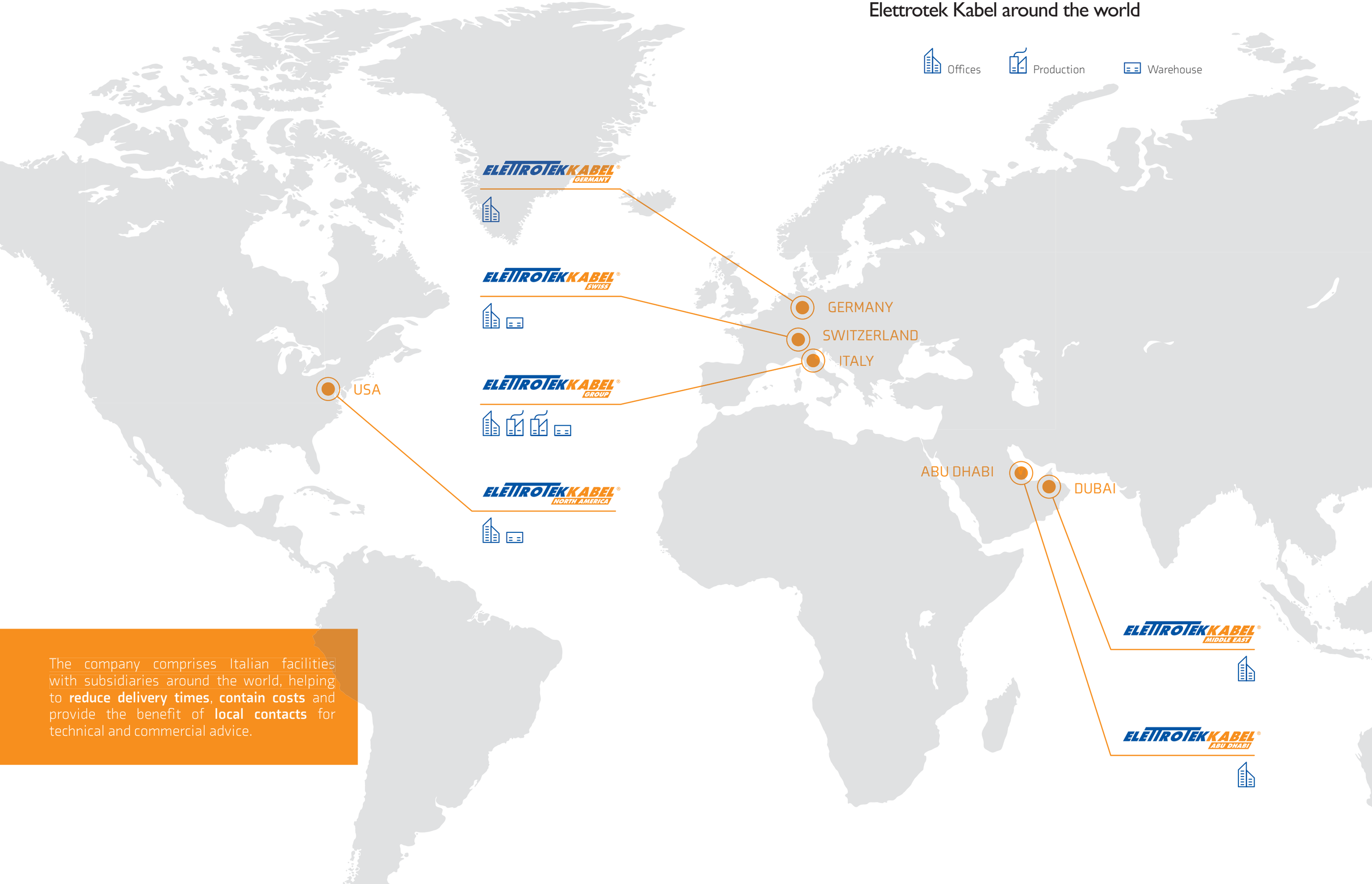
AMERICAN CATALOG

"We started out in Italy. After just a few years we opened subsidiaries in Europe. Then around the world. Now, with the acquisition of important manufacturing companies we have broadened our business and strategic vision even more.
We've faced many challenges along the way, always tackling them with real passion.

But right from the start we have taken only one direction: the path of quality. Quality in terms of technology, products, services and customer relations. That's the essence of Elettrotek Kabel.
And our products represent the best of us."

Elettrotek Kabel around the world

Offices Production Warehouse



The company comprises Italian facilities with subsidiaries around the world, helping to **reduce delivery times**, **contain costs** and provide the benefit of **local contacts** for technical and commercial advice.

Technological innovation, and much more besides.
From the very start, Elettrotek Kabel has targeted growth.

GROUP CERTIFICATIONS

ISO 9001:2015

QUALITY MANAGEMENT

OHSAS 18001:2017

OCCUPATIONAL HEALTH & SAFETY

CERTIFICATIONS FOR SHIPBOARD CABLES

DNV-GL - Det Norske Veritas
Germanischer Lloyd

CLASSIFICATION SOCIETY - NO

ABS
American Bureau of Shipping

CLASSIFICATION SOCIETY- USA

LR
Lloyd's Register

CLASSIFICATION SOCIETY - UK

RINA / RINAMIL
Italian Military Register

CLASSIFICATION SOCIETY - IT

BV
Bureau Veritas

CLASSIFICATION SOCIETY - FR

RS - Russian Maritime
Register of Shipping

CLASSIFICATION SOCIETY - RU

PRODUCT CERTIFICATIONS

CPR - Construction
Products Regulation

CONSTRUCTION PRODUCTS TRADE

UL - Underwriters Laboratories Inc.

MANUFACTURING STANDARDS FOR ELECTRICAL CABLES - USA

CSA - Canadian Standards Association

ELECTRICAL CABLE MANUFACTURING STANDARDS - CA

EAC - EurAsian Conformity

QUALITY, HEALTH & SAFETY CONTROL - EAEU

Control and Tray cables:

Track cables:

Servo cables:

Signal & Network cables:

Reeling cables:

Festoon cables:

Pendant cables:

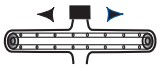
Basket cables:

Technical data:

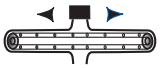
ELETTROTEKKABEL types	Main application	Secondary application	Reeling speed max.	Festoon speed max.	Chain speed max.	Basket speed max.
GAALFLEX® CHAIN TD 87					180 m/min	
GAALFLEX® CHAIN T 87					180 m/min	
GAALFLEX® CHAIN TD 87 C					180 m/min	
GAALFLEX® CHAIN T 87 C					180 m/min	
GAALFLEX® CHAIN TD 87 C TP					180 m/min	
FLEXIDRUM® T 100-101 (UL)				240 m/min	250 m/min	
FLEXIDRUM® T 100-101 C (UL)				240 m/min	250 m/min	
GAALTHERM® 180 UL						
GAALTHERM® 180 C UL						
FLEXIDRUM® T 210 FLEXIDRUM® TD 210				240 m/min	250 m/min	
FLEXIDRUM® T 210 C FLEXIDRUM® TD 210 C				240 m/min	250 m/min	
FLEXIDRUM® TD 210 C TP				240 m/min	250 m/min	
SPECIAL GAALFLEX® SERVO T 830 - T 830 C					Unsupported: 8 m/sec Gliding: 4 m/sec	
GAALFLEX® SERVO T 839 C					250 m/min	
FLEXIDRUM® T 310					250 m/min	
GAALFLEX® SERVO T 833 C					250 m/min	
GAALFLEX® SERVO T 834 C					300 m/min	
GAALFLEX® SERVO T 844 C					300 m/min	
SPECIAL PROFIBUS 634 UL				240 m/min	250 m/min	
PROFIBUS 637						
CAN-BUS 627 UL						
S CAN-BUS 628 UL				240 m/min	250 m/min	
ASI CABLES						
DEVICENET TM 650 DEVICENET TM 651						
DEVICENET TM 656 DEVICENET TM 657						
DEVICENET TM 658 DEVICENET TM 659						

ELETTROTEKKABEL types	Main application	Secondary application	Reeling speed max.	Festoon speed max.	Chain speed max.	Basket speed max.
PROFINET 654 PROFINET 655 UL						
PROFINET 662 PROFINET 663 PROFINET 663 PLTC						
PROFINET 678 SPECIAL PROFINET 678 UL						
SPECIAL PROFINET 681 SPECIAL PROFINET 682				240 m/min	250 m/min	
SPECIAL PROFINET 678 UL S_FTP CAT. 6A						
FLEXIDRUM® R 503			180 m/min	240 m/min		
FLEXIDRUM® FIBER 770			120 m/min	240 m/min	240 m/min	
FLEXFESTOON® NE-FLAT (NGFLGÖU) UL				180 m/min		
FLEXFESTOON® NE-FLAT M(STD)HÖU-J/O UL				180 m/min		
FLEXIFESTOON® PV FLAT UL				120 m/min		
FLEXIFESTOON® PV FLAT UL CY						
LIFT-1S UL CENTRAL PENDANT						
LIFT-1S UL						
LIFT-2S UL						
PENDANT ROUND LIFT 733 UL						
BASKET SPREADER 740 (YSLTÖE)						160 m/min
BASKET SPREADER 750 (3YSLTÖE)						160 m/min

(Values are valid only after check and confirmation of the application by Elettrotek Kabel Group Technical dept.)

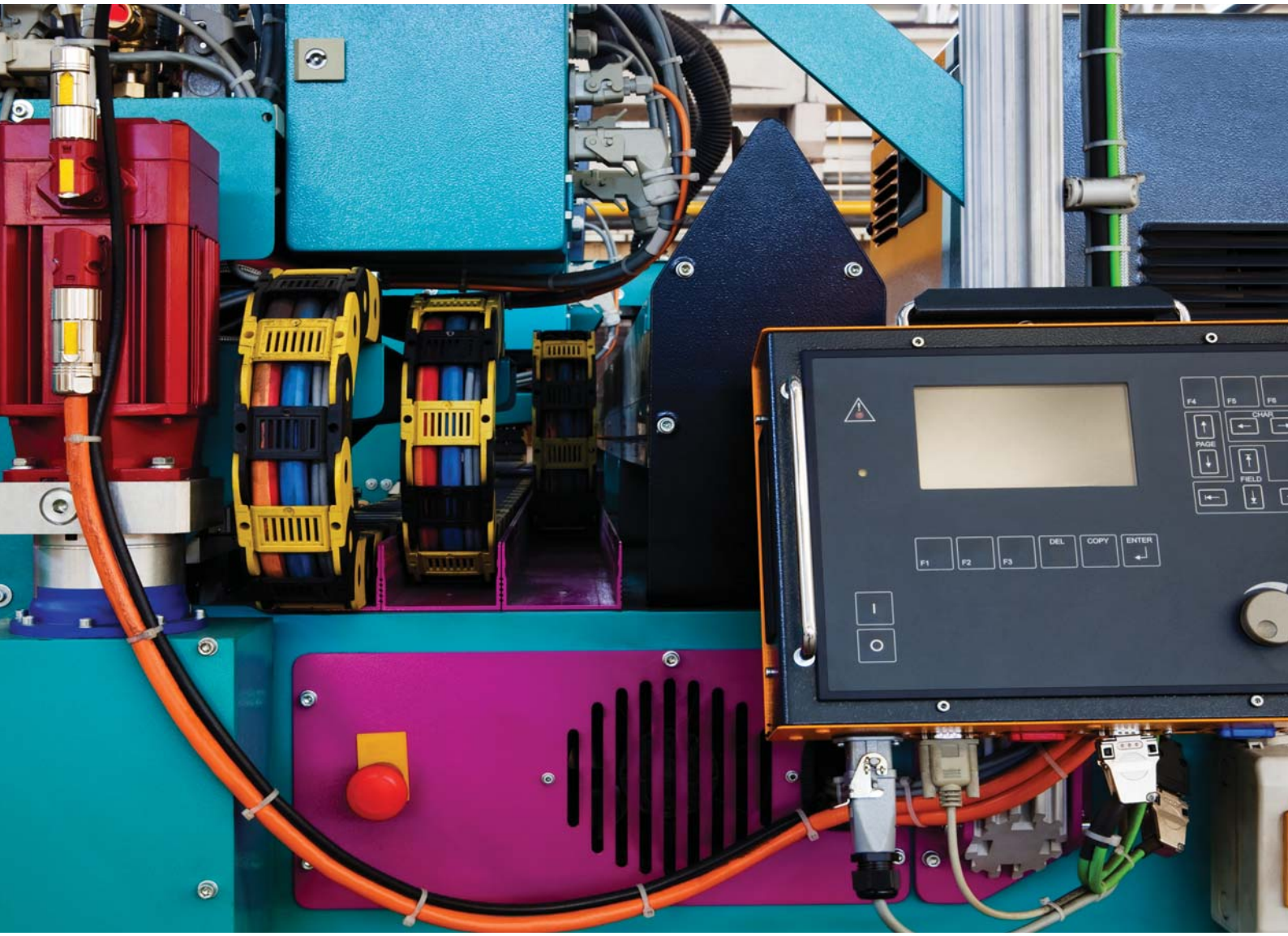
ELETTROTEKKABEL types	Fixed	 Reeling	 Festoon	 Chain	 Cable tender	 Deflection pulleys	 Basket speed max.
GAALFLEX® CHAIN TD 87	5 x D			7,5 x D			
GAALFLEX® CHAIN T 87	4 x D			7,5 x D			
GAALFLEX® CHAIN TD 87 C	5 x D			7,5 x D			
GAALFLEX® CHAIN T 87 C	5 x D			7,5 x D			
GAALFLEX® CHAIN TD 87 C TP	5 x D			7,5 x D			
FLEXIDRUM® T 100-101 (UL)	3 x D		7,5 x D	7,5 x D			
FLEXIDRUM® T 100-101 C (UL)	4 x D		7,5 x D	7,5 x D			
GAALTHERM® 180 UL	5 x D		10 x D	15 x D			
GAALTHERM® 180 C UL	5 x D		10 x D	15 x D			
FLEXIDRUM® T 210 FLEXIDRUM® TD 210	3 x D		5 x D	5 x D			
FLEXIDRUM® T 210 C FLEXIDRUM® TD 210 C	4 x D		7,5 x D	7,5 x D			
FLEXIDRUM® TD 210 C TP	5 x D		7,5 x D	7,5 x D			
SPECIAL GAALFLEX® SERVO T 830 - T 830 C	4 x D			7,5 x D			
GAALFLEX® SERVO T 839 C	5 x D		10 x D	12 x D			
FLEXIDRUM® T 310	4 x D		6 x D	10 x D			
GAALFLEX® SERVO T 833 C	5 x D		10 x D	12 x D			
GAALFLEX® SERVO T 834 C	5 x D		7 x D	7 x D			
GAALFLEX® SERVO T 844 C	5 x D		7 x D	7 x D			
SPECIAL PROFIBUS 634 UL	10 x D		15 x D	15 x D			
PROFIBUS 637	12 x D						
CAN-BUS 627 UL	7,5 x D						
S CAN-BUS 628 UL	7,5 x D						
ASI CABLES							
* DEVICENET TM 650 DEVICENET TM 651							
* DEVICENET TM 656 DEVICENET TM 657							
* DEVICENET TM 658 DEVICENET TM 659							

* Consult technical specification

	ELETTROTEKKABEL types	Fixed	 Reeling	 Festoon	 Chain	 Cable tender	 Deflection pulleys	 Basket speed max.
*	PROFINET 654 PROFINET 655 UL							
*	PROFINET 662 PROFINET 663 PROFINET 663 PLTC							
*	PROFINET 678 SPECIAL PROFINET 678 UL							
*	SPECIAL PROFINET 681 SPECIAL PROFINET 682							
*	SPECIAL PROFINET 678 UL S_FTP CAT. 6A							
	FLEXIDRUM® R 503	5 x D	7,5 x D	7,5 x D	7,5 x D			
	FLEXIDRUM® FIBER 770	100 mm	125 mm	125 mm	125 mm	200 mm	200 mm	500 mm
	FLEXFESTOON® NE-FLAT (NGFLGÖU) UL	3 x D* 4 x D	5 x D	4 x D* 5 x D	4 x D* 5 x D	7,5 x D	7,5 x D	
	FLEXFESTOON® NE-FLAT M(STD)HÖU-J/O UL	3 x D* 4 x D	5 x D	4 x D* 5 x D	4 x D* 5 x D	7,5 x D	7,5 x D	
	FLEXIFESTOON® PV FLAT UL			5 x D				
	FLEXIFESTOON® PV FLAT UL CY			5 x D				
	LIFT-1S UL CENTRAL PENDANT							
	LIFT-1S UL	10 x D						
	LIFT-2S UL	10 x D						
	PENDANT ROUND LIFT 733 UL	10 x D						
	BASKET SPREADER 740 (YSLTÖE)							15 x D
	BASKET SPREADER 750 (3YSLTÖE)							15 x D

(Values are valid only after check and confirmation of the application by Elettrotek Kabel Group Technical dept.)

* Consult technical specification


F4
F5
F6
CHAR
PAGE
FIELD
F1
F2
F3
DEL
COPY
ENTER

GAALFLEX® CONTROL 600

PVC control cable, UL 1000 V

Construction:

CONDUCTOR: FLEXIBLE RED COPPER CONDUCTOR CL.5, ACC.TO IEC 60228, DIN VDE 0295

INSULATION: GAALTHERM® 521

COLOUR CORES: BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334, GREEN-YELLOW FROM 3 CORES

STRANDING: IN LAYERS

OUTER SHEATH: GREY (RAL 7001) GAALTHERM® 521

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0472 PART 804 TEST METHOD B
IEC 60332-1-2,
IEC 60332-3/24,
UL VW-1

OIL RESISTANCE:
ACC. TO DIN EN 50290-2-22 RESP. VDE 0819-102, TM54

Technical data:

NOMINAL VOLTAGE: **UL/CSA**
1000 V

TEST VOLTAGE: 3 kV ACC.TO DIN VDE 0281 PART 2 + HD 21.2

TEMPERATURE RANGE **UL/CSA**

FIXED LAYING: -40°C UP TO +105°C

FLEXIBLE APPLICATION: (not-contoinuosly movement) -5°C UP TO +105°C

MIN. BENDING RADIUS

FIXED LAYING: 4 x D

FLEXIBLE INSTALLATION: (not-contoinuosly movement) 15 x D

Features:

SMALL BENDING RADIUS

SUITABLE IN DRY, DAMP AND WET ENVIRONEMENTS

ON REQUEST BLACK

NOMINAL VOLTAGE FOR IEC: 450/750 V

UL RECOGNIZED AWM STYLE 21179 105°C 1000 V, CSA AWM I/II A/B OR STYLE 2587 90°C 600 V IDENTIFIED WITH "0" ON THE 5th NUMBER OF THE PART. NO, AND "F" ON THE 6th NUMBER OF THE PART. NO

ROHS AND CE APPROVAL

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
31151H51020A20	2 x 0,5	5,8	9,6	46,5	20
31151H50031A20	3 g 0,5	6,2	14,4	55,5	20
31151H50041A20	4 g 0,5	6,9	19,2	69,7	20
31151H50051A20	5 g 0,5	7,5	24	83,3	20
31151H50061A20	6 G0,5	8,4	28,8	103,6	20
31151H50071A20	7 g 0,5	8,4	33,6	107	20
31151H50081A20	8 g 0,5	9,9	38,4	142,8	20
31151H50091A20	9 g 0,5	10,4	43,2	158,2	20
31151H50101A20	10 g 0,5	10,6	48	166,5	20
31151H50121A20	12 g 0,5	10,9	57,6	181	20
31151H50141A20	14 g 0,5	11,6	67,2	206,3	20
31151H50161A20	16 g 0,5	12,2	76,8	230	20
31151H50181A20	18 g 0,5	13,2	86,4	266,8	20
31151H50191A20	19 g 0,5	13,2	91,2	270,2	20
31151H50211A20	21G 0,5	14,5	100,8	319,4	20
31151H50251A20	25 g 0,5	15,2	120	357,6	20
31151H50271A20	27 g 0,5	-	129,6	401,4	20
31151H50301A20	30 g 0,5	16,5	144	423,2	20
31151H50321A20	32 g 0,5	17,1	153,6	453,8	20
31151H50341A20	34 g 0,5	18	163,2	497,8	20
31151H50351A20	35 g 0,5	18	168	501,3	20
31151H50371A20	37 g 0,5	18	177,6	508,1	20
31151H50401A20	40 g 0,5	19,2	192	570,9	20
31151H50411A20	41 g 0,5	19,5	196,8	588	20
31151H50421A20	42 g 0,5	19,5	201,6	591,4	20
31151H50501A20	50 g 0,5	21,5	240	715,4	20
31151H50561A20	56 g 0,5	21,5	268,8	735,9	20
31151H50611A20	61 g 0,5	21,5	292,8	753	20
31151H51020A19	2 x 0,75	6,2	14,4	55,5	19
31151H50031A19	3 g 0,75	6,6	21,6	66,7	19

GAALFLEX® CONTROL 600

PVC control cable, UL 1000 V

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
31151H50041A19	4 g 0,75	7,4	28,8	85	19
31151H50051A19	5 g 0,75	8,3	36	106,8	19
31151H50061A19	6 g 0,75	9	43,2	126,2	19
31151H50071A19	7 g 0,75	9	50,4	131,3	19
31151H50081A19	8 g 0,75	10,6	57,6	173,4	19
31151H50091A19	9 g 0,75	11,4	64,8	199,2	19
31151H50101A19	10 g 0,75	11,6	72	209,8	19
31151H50121A19	12 g 0,75	11,9	86,4	228,3	19
31151H50141A19	14 g 0,75	12,7	100,8	261,8	19
31151H50151A19	15 g 0,75	13,1	108	279,1	19
31151H50161A19	16 g 0,75	13,3	115,2	290,4	19
31151H50181A19	18 g 0,75	14,3	129,6	333,2	19
31151H50191A19	19 g 0,75	14,3	136,8	338,3	19
31151H50211A19	21 g 0,75	15,8	151,2	401,7	19
31151H50241A19	24 g 0,75	16,5	172,8	443,7	19
31151H50251A19	25 g 0,75	16,6	180	452,8	19
31151H50261A19	26 g 0,75	17,2	187,2	481,8	19
31151H50271A19	27 g 0,75	17,7	194,4	507,5	19
31151H50301A19	30 g 0,75	18	216	535,5	19
31151H50321A19	32 g 0,75	18,6	230,4	571,6	19
31151H50341A19	34 g 0,75	19,6	244,8	626,8	19
31151H50361A19	36 x 0,75	19,6	259,2	637,1	19
31151H50371A19	37 x 0,75	19,6	266,4	642,2	19
31151H50421A19	42 x 0,75	21,4	302,4	754,8	19
31151H50451A19	45 x 0,75	22,8	324	843,1	19
31151H50501A19	50 x 0,75	23,3	360	895,9	19
31151H50611A19	61 g 0,75	23,3	439,2	952,3	19
31151H51020A18	2 x 1	6,5	19,2	63,4	18
31151H50031A18	3 g 1	7,1	28,8	79,9	18
31151H50041A18	4 g 1	7,7	38,4	97,2	18
31151H50051A18	5 g 1	8,7	48	123,3	18
31151H50061A18	6 g 1	9,4	57,6	145,1	18
31151H50071A18	7 g 1	9,4	67,2	151,9	18
31151H50081A18	8 g 1	11,4	76,8	207,8	18
31151H50091A18	9 g 1	11,9	86,4	228,3	18
31151H50101A18	10 g 1	12,2	96	243,7	18
31151H50121A18	12 g 1	12,8	115,2	275	18
31151H50141A18	14 G1	13,4	134,4	307,2	18
31151H50161A18	16 g 1	14,2	153,6	346,9	18
31151H50181A18	18 g 1	15,1	172,8	391,7	18
31151H50191A18	19 g 1	15,1	182,4	398,5	18
31151H50201A18	20 g 1	16,1	192	442,1	18
31151H50211A18	21 g 1	16,7	201,6	472,1	18
31151H50241A18	24 g 1	17,6	230,4	529	18
31151H50251A18	25 g 1	17,6	240	535,8	18
31151H50261A18	26 g 1	18,1	249,6	563,7	18
31151H50271A18	27 g 1	18,8	259,2	600,9	18
31151H50301A18	30 g 1	19,2	288	639,4	18
31151H50321A18	32 g 1	19,6	307,2	671,3	18
31151H50341A18	34 g 1	20,9	326,4	747	18
31151H50361A18	36 g 1	20,9	345,6	760,7	18
31151H50371A18	37 g 1	20,9	355,2	767,5	18
31151H50411A18	41 g 1	22,8	393,6	892,7	18
31151H50421A18	42 g 1	22,8	403,2	899,5	18
31151H50501A18	50 g 1	24,8	480	1066,3	18
31151H50561A18	56 g 1	24,8	537,6	1107,4	18
31151H50611A18	61 g 1	24,8	585,6	1141,6	18
31151H51020A16	2 x 1,5	7,3	28,8	83,7	16
31151H50031A16	3 g 1,5	7,7	43,2	101,2	16
31151H50041A16	4 g 1,5	8,6	57,6	128,9	16
31151H50051A16	5 g 1,5	9,5	72	158,6	16
31151H50061A16	6 g 1,5	10,5	86,4	192,6	16
31151H50071A16	7 g 1,5	10,5	100,8	203,1	16
31151H50081A16	8 g 1,5	12,4	115,2	264,8	16
31151H50091A16	9 G1,5	13,3	129,6	302,5	16
31151H50101A16	10 g 1,5	13,5	144	319,2	16
31151H50111A16	11 g 1,5	13,6	158,4	332,9	16
31151H50121A16	12 g 1,5	14,2	172,8	363	16

GAALFLEX® CONTROL 600

PVC control cable, UL 1000 V

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
31151H50141A16	14 g 1,5	14,8	201,6	404,4	16
31151H50161A16	16 g 1,5	15,8	230,4	461,4	16
31151H50181A16	18 g 1,5	16,7	259,2	516,8	16
31151H50191A16	19 g 1,5	16,7	273,6	527,2	16
31151H50201A16	20 g 1,5	17,9	288	586,6	16
31151H50211A16	21 g 1,5	18,7	302,4	631,5	16
31151H50241A16	24 g 1,5	19,5	345,6	698,9	16
31151H50251A16	25 g 1,5	19,6	360	714	16
31151H50261A16	26 g 1,5	20,3	374,4	757,3	16
31151H50271A16	27 g 1,5	20,8	388,8	792	16
31151H50301A16	30 g 1,5	21,4	432	853,2	16
31151H50321A16	32 g 1,5	21,9	460,8	899,6	16
31151H50341A16	34 g 1,5	23,3	489,6	995	16
31151H50371A16	37 g 1,5	23,3	532,8	1026,4	16
31151H50411A16	41 g 1,5	25,2	590,4	1176,8	16
31151H50421A16	42 g 1,5	25,2	604,8	1187,3	16
31151H50501A16	50 g 1,5	27,6	720	1420,2	16
31151H50561A16	56 G1,5	27,6	806,4	1483	16
31151H50611A16	61 g 1,5	27,6	878,4	1535,3	16
31151H51020A14	2 x 2,5	8,5	48	120,1	14
31151H50031A14	3 g 2,5	9	72	147,8	14
31151H50041A14	4 g 2,5	10	96	187,7	14
31151H50051A14	5 g 2,5	11,2	120	235,2	14
31151H50071A14	7 g 2,5	12,2	168	297,7	14
31151H50081A14	8 g 2,5	14,6	192	390,9	14
31151H50091A14	9 g 2,5	15,6	216	444	14
31151H50101A14	10 g 2,5	15,9	240	472,6	14
31151H50121A14	12 g 2,5	16,4	288	526,6	14
31151H50141A14	14 g 2,5	17,4	336	601,4	14
31151H50161A14	16 g 2,5	18,5	384	682,8	14
31151H50181A14	18 g 2,5	19,6	432	767,2	14
31151H50241A14	24 g 2,5	23	576	1042,7	14
31151H50251A14	25 g 2,5	23	600	1060,1	14
31151H50341A14	34 g 2,5	27,4	816	1478,7	14
31151H51020A12	2 x 4	9,9	76,8	171,2	12
31151H50031A12	3 g 4	10,6	115,2	216	12
31151H50041A12	4 g 4	11,8	153,6	275,5	12
31151H50051A12	5 g 4	13,1	192	341,5	12
31151H50071A12	7 g 4	14,5	268,8	442,8	12
31151H50111A12	11 g 4	18,9	422,4	727,4	12
31151H50121A12	12 g 4	19,4	460,8	777,8	12
31151H51020A10	2 x 6	11,2	115,2	231,4	10
31151H50031A10	3 g 6	11,9	172,8	292,2	10
31151H50041A10	4 g 6	13,3	230,4	375,6	10
31151H50051A10	5 g 6	14,8	288	467,1	10
31151H50071A10	7 g 6	16,4	403,2	609,5	10
31151H51020A08	2 x 10	14,2	192	376,5	8
31151H50031A08	3 g 10	15,1	288	477,2	8
31151H50041A08	4 g 10	16,7	384	606,6	8
31151H50051A08	5 g 10	18,9	480	768,4	8
31151H50071A08	7 g 10	20,8	672	996,3	8
31151H50031A06	3 g 16	19,5	460,8	783,5	6
31151H50041A06	4 g 16	21,8	614,4	1007,3	6
31151H50051A06	5 g 16	24,5	768	1266,5	6
31151H50071A06	7 g 16	27,2	1075,2	1654,7	6
31151H50041A04	4 g 25	26	960	1493,8	4
31151H50051A04	5 g 25	29,1	1200	1869,4	4
31151H50071A04	7 g 25	32,2	1680	2442,1	4
31151H50041A02	4 g 35	29,2	1344	1977,8	2
31151H50051A02	5 g 35	32,7	1680	2476,4	2
31151H50041A01	3 g 50	32,1	1440	2255,6	1
31151H50051A01	4 g 50	35,9	1920	2907,2	1
31151H50041A2C	4 g 70	41,5	2688	3971,1	2/0
31151H50041A3C	4 g 95	45	3648	5078,9	3/0
31151H50041A4C	4 g 120	47,6	4608	5975,1	4/0
31151H50041A5C	4 g 150	54	5760	7584,5	250
31151H50041A7C	4 g 185	58,3	7104	9065,9	350

Other dimension and colours available on request.

GAALFLEX® CONTROL 600 CY Lean

PVC control cable with overall copper screen, UL 1000 V

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL.5, ACC.TO IEC 60228, DIN VDE 0295
INSULATION:	GAALTHERM® 521
COLOUR CORES:	BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334, GREEN-YELLOW FROM 3 CORES
STRANDING:	IN LAYERS
WRAPPING	PETP FOIL
SCREEN:	TINNED COPPER BRAID
OUTER SHEATH:	GREY (RAL 7001), GAALTHERM® 521

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2,
UL VW-1, CSA FT1 FT2

OIL RESISTANCE:
ACC. TO DIN EN 50290-2-22 RESP. VDE 0819-102, TM54

Technical data:

NOMINAL VOLTAGE:	**UL/CSA** 1000 V
TEST VOLTAGE:	3 kV ACC.TO DIN VDE 0281 PART 2 + HD 21.2
TEMPERATURE RANGE	**UL/CSA**
FIXED LAYING:	-40°C UP TO +105°C
FLEXIBLE APPLICATION: (not-contoinuosly movement)	-5°C UP TO +105°C
MIN. BENDING RADIUS	
FIXED LAYING:	6 x D
FLEXIBLE INSTALLATION: (not-contoinuosly movement)	20 x D

Features:

HIGH MECHANICAL LOADING CAPACITY

SUITABLE IN DRY, DAMP AND WET ENVIRONEMENTS

NOMINAL VOLTAGE FOR IEC: 450/750 V

UL RECOGNIZED AWM STYLE 21179 105°C 1000 V, CSA AWM I/II A/B OR STYLE 2587 90°C 600 V IDENTIFIED WITH "0" ON THE 5th NUMBER OF THE PART. NO, AND "F" ON THE 6th NUMBER OF THE PART. NO

ROHS AND CE APPROVAL

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
31191H51020A20	2 x 0,5	6,4	28,7	59,3	20
31191H50031A20	3 g 0,5	7	33,7	71	20
31191H50041A20	4 g 0,5	7,5	43,8	89,3	20
31191H50051A20	5 g 0,5	8,3	48,7	105	20
31191H50061A20	6 G0,5	9	58,4	124,5	20
31191H50071A20	7 g 0,5	9	63,2	127,9	20
31191H50081A20	8 g 0,5	10,5	72,9	165,9	20
31191H50091A20	9 g 0,5	11,2	82,7	193,4	20
31191H50101A20	10 g 0,5	11,4	87,4	183,6	20
31191H50121A20	12 g 0,5	11,7	97	203	20
31191H50141A20	14 g 0,5	12,2	106,7	224,8	20
31191H50161A20	16 g 0,5	13	121,3	258,4	20
31191H50181A20	18 g 0,5	14,2	147,7	307,1	20
31191H50191A20	19 g 0,5	14,2	152,5	310,6	20
31191H50211A20	21G 0,5	15,3	171,1	356	20
31191H50251A20	25 g 0,5	16,2	199	399,5	20
31191H50271A20	27 g 0,5	17,2	208,5	430,9	20
31191H50301A20	30 g 0,5	17,5	222,9	460,6	20
31191H50321A20	32 g 0,5	17,9	241,5	491,6	20
31191H50341A20	34 g 0,5	19	250,8	527,5	20
31191H50351A20	35 g 0,5	19	255,6	536,4	20
31191H50371A20	37 g 0,5	19	265,2	548,7	20
31191H50401A20	40 g 0,5	20,2	288,6	613,3	20
31191H50411A20	41 g 0,5	20,5	293,4	628,3	20
31191H50421A20	42 g 0,5	20,5	298,2	637,2	20
31191H50501A20	50 g 0,5	22,3	345,4	725,5	20
31191H50561A20	56 g 0,5	22,3	374,2	780,5	20
31191H50611A20	61 g 0,5	22,3	398,2	822,1	20

GAALFLEX® CONTROL 600 CY Lean

PVC control cable with overall copper screen, UL 1000 V

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ±10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
31191H51020A19	2 x 0,75	7	33,7	70,1	19
31191H50031A19	3 g 0,75	7,4	46,2	85,8	19
31191H50041A19	4 g 0,75	8	53,6	103,4	19
31191H50051A19	5 g 0,75	8,9	65,6	126,8	19
31191H50061A19	6 g 0,75	9,8	72,9	149,6	19
31191H50071A19	7 g 0,75	9,8	80,1	154,7	19
31191H50081A19	8 g 0,75	11,4	97	204,1	19
31191H50091A19	9 g 0,75	12	104,2	226,8	19
31191H50101A19	10 g 0,75	12,2	111,5	216,2	19
31191H50121A19	12 g 0,75	12,7	130,9	251,6	19
31191H50141A19	14 g 0,75	13,3	145,3	279,6	19
31191H50151A19	15 g 0,75	14,1	169,4	318,5	19
31191H50161A19	16 g 0,75	14,3	176,7	332,3	19
31191H50181A19	18 g 0,75	15,1	199,7	372	19
31191H50191A19	19 g 0,75	15,1	206,9	377,2	19
31191H50211A19	21 g 0,75	16,6	230	439,6	19
31191H50241A19	24 g 0,75	17,5	251,7	473	19
31191H50251A19	25 g 0,75	17,6	259,1	485,8	19
31191H50261A19	26 g 0,75	18	274,9	508,3	19
31191H50271A19	27 g 0,75	18,7	282,3	532,7	19
31191H50301A19	30 g 0,75	19	303,6	570,8	19
31191H50321A19	32 g 0,75	19,4	318,2	599,8	19
31191H50341A19	34 g 0,75	20,6	341,3	652	19
31191H50361A19	36 x 0,75	20,6	355,7	675,2	19
31191H50371A19	37 x 0,75	20,6	362,9	680,4	19
31191H50421A19	42 x 0,75	22,2	407,6	787,8	19
31191H50451A19	45 x 0,75	23,6	438,1	834	19
31191H50501A19	50 x 0,75	24,3	474,1	909,4	19
31191H50561A19	61 g 0,75	24,3	553,3	1036,3	19
31191H51020A18	2 x 1	7,3	38,7	77	18
31191H50031A18	3 g 1	7,7	53,6	94,9	18
31191H50041A18	4 g 1	8,5	63,2	119,4	18
31191H50051A18	5 g 1	9,3	77,6	141,9	18
31191H50061A18	6 g 1	10,2	92,1	172,6	18
31191H50071A18	7 g 1	10,2	101,7	179,4	18
31191H50081A18	8 g 1	12	116,2	230,4	18
31191H50091A18	9 g 1	12,7	130,9	266,4	18
31191H50101A18	10 g 1	13	140,5	255,9	18
31191H50121A18	12 g 1	13,4	159,6	286,7	18
31191H50141A18	14 G1	14,4	195,9	343,6	18
31191H50161A18	16 g 1	15	223,9	386,4	18
31191H50181A18	18 g 1	16,1	243,1	432,4	18
31191H50191A18	19 g 1	16,1	252,7	439,2	18
31191H50201A18	20 g 1	17,1	270,9	488,6	18
31191H50211A18	21 g 1	17,7	280,5	510,4	18
31191H50241A18	24 g 1	18,6	318	558,3	18
31191H50251A18	25 g 1	18,6	327,6	572,5	18
31191H50261A18	26 g 1	19,1	337,4	590,9	18
31191H50271A18	27 g 1	19,6	355,6	617,2	18
31191H50301A18	30 g 1	20,2	384,6	673,9	18
31191H50321A18	32 g 1	20,6	403,7	708	18
31191H50341A18	34 g 1	21,9	431,6	767,9	18
31191H50361A18	36 g 1	21,9	450,8	796,3	18
31191H50371A18	37 g 1	21,9	460,4	803,1	18
31191H50411A18	41 g 1	23,6	507,7	914	18
31191H50421A18	42 g 1	23,6	517,3	928,2	18
31191H50501A18	50 g 1	25,8	602,8	1071	18
31191H50561A18	56 g 1	25,8	660,4	1158,7	18
31191H50611A18	61 g 1	25,8	708,4	1226,1	18
31191H51020A16	2 x 1,5	7,7	51,8	97,2	16
31191H50031A16	3 g 1,5	8,1	71,1	121	16
31191H50041A16	4 g 1,5	8,8	90,1	151,4	16
31191H50051A16	5 g 1,5	9,9	104,5	183,9	16
31191H50061A16	6 g 1,5	10,7	123,6	218,9	16
31191H50071A16	7 g 1,5	10,7	138	229,1	16
31191H50081A16	8 g 1,5	12,8	161,7	299,7	16
31191H50091A16	9 g 1,5	13,5	176,1	342,6	16

GAALFLEX® CONTROL 600 CY Lean

PVC control cable with overall copper screen, UL 1000 V

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
31191H50101A16	10 g 1,5	14,5	205,3	341,1	16
31191H50101A16	11 g 1,5	14,6	228,7	378,8	16
31191H50121A16	12 g 1,5	15	243,1	391,9	16
31191H50141A16	14 g 1,5	15,8	271,9	444,4	16
31191H50161A16	16 g 1,5	16,6	309,2	500,3	16
31191H50181A16	18 g 1,5	17,7	338,1	559,3	16
31191H50191A16	19 g 1,5	17,7	352,5	569,8	16
31191H50201A16	20 g 1,5	18,9	375,6	631,1	16
31191H50211A16	21 g 1,5	19,5	398,8	667,3	16
31191H50241A16	24 g 1,5	20,5	442,2	721,9	16
31191H50251A16	25 g 1,5	20,6	456,5	742,3	16
31191H50261A16	26 g 1,5	21,1	470,8	766,1	16
31191H50271A16	27 g 1,5	21,8	494	808,5	16
31191H50301A16	30 g 1,5	22,2	537,2	872,7	16
31191H50321A16	32 g 1,5	22,9	566,1	930,4	16
31191H50341A16	34 g 1,5	24,3	603,7	1005,5	16
31191H50371A16	37 g 1,5	24,3	646,9	1055,4	16
31191H50411A16	41 g 1,5	26,2	713,3	1198,1	16
31191H50421A16	42 g 1,5	26,2	727,7	1217,8	16
31191H50501A16	50 g 1,5	28,6	860,2	1413,7	16
31191H50561A16	56 g 1,5	28,6	946,6	1534,9	16
31191H50611A16	61 g 1,5	28,6	1018,6	1628,9	16
31191H51020A14	2 x 2,5	9,1	77,5	131,4	14
31191H50031A14	3 g 2,5	9,8	101,7	164,2	14
31191H50041A14	4 g 2,5	10,6	130,4	209,1	14
31191H50051A14	5 g 2,5	11,8	159,5	255,4	14
31191H50071A14	7 g 2,5	13	212,5	326,1	14
31191H50081A14	8 g 2,5	15,6	262,1	439,5	14
31191H50091A14	9 g 2,5	16,4	295,2	498,6	14
31191H50101A14	10 g 2,5	16,7	319,2	484,8	14
31191H50121A14	12 g 2,5	17,4	366,9	556,8	14
31191H50141A14	14 g 2,5	18,2	423,9	633,9	14
31191H50161A14	16 G2,5	19,3	471,6	714,4	14
31191H50181A14	18 g 2,5	20,6	528,5	808,3	14
31191H50241A14	24 g 2,5	23,8	690,1	1039,9	14
31191H50251A14	25 g 2,5	23,8	714,1	1070,2	14
31191H50341A14	34 g 2,5	28,2	956,6	1455,6	14
31191H51020A12	2 x 4	10,5	111,3	181	12
31191H50031A12	3 g 4	11,4	154,6	233,7	12
31191H50041A12	4 g 4	12,4	198,1	299,1	12
31191H50051A12	5 g 4	14,1	253,4	381,9	12
31191H50071A12	7 g 4	15,3	339,1	481,4	12
31191H50111A12	11 g 4	19,9	519	771,3	12
31191H50121A12	12 g 4	20,4	557,3	803,3	12
31191H51020A10	2 x 6	11,8	154,7	237,4	10
31191H50031A10	3 g 6	12,7	217,3	309,1	10
31191H50041A10	4 g 6	14,3	291,9	416,5	10
31191H50051A10	5 g 6	15,8	358,3	507,3	10
31191H50071A10	7 g 6	17,4	482,1	652,8	10
31191H50031A08	3 G10	16,1	358,3	496,9	8
31191H50041A08	4 g 10	17,7	462,9	649,8	8
31191H50051A08	5 g 10	19,9	576,6	809,3	8
31191H50071A08	7 g 10	21,8	777,2	1040,9	8
31191H50031A06	3 g 16	20,5	557,4	789	6
31191H50041A06	4 g 16	22,8	719,8	1045,3	6
31191H50051A06	5 g 16	25,3	890,8	1277,7	6
31191H50071A06	7 g 16	28	1215,6	1669,4	6
31191H50041A04	4 g 25	26,8	1091,7	1509,9	4
31191H50051A04	5 g 25	30,1	1348,9	1872,1	4
31191H50041A02	4 g 35	30,2	1493,3	1995,3	2
31191H50051A02	5 g 35	33,9	1885,5	2491,2	2
31191H50041A01	4 g 50	36,9	2153,2	2915,6	1
31191H50041A2C	4 g 70	42,5	2948,3	3903,4	2/0
31191H50041A3C	4 g 95	46	3935,6	4931,9	3/0
31191H50041A4C	4 g 120	48,6	4923,1	5868,3	4/0
31191H50041A5C	4 g 150	55	6116	7375,8	250 MCM
31191H50041A7C	4 g 185	59,3	7501,4	8785,6	350 MCM

Other dimension and colours available on request.

GAALFLEX® TRAY 1002

Special PVC oil resistant, flexible tray cable, Machine-Tool cable,
acc. to UL 1277 (TC-ER) DIR BUR OIL RES I 600 V 90°C Dry / 75°C Wet FT4
or UL 1277 FLEXIBLE MOTOR SUPPLY CABLE 1000 V 90°C Dry and UL 2277 WTTC 1000 V 90°C Dry or UL 1063 MTW "FLEXING"
or AWM 21179 c(UL) CONTROL CABLE CIC/TC PVC FT4 or AWM I/II A/B 90°C 1000 V FT1

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 5, ACC TO IEC 60228, DIN VDE 0295 AND UL STANDARD 83 **FROM 18 TO 16 AWG:** CORES TYPE TFF **FROM 14 AWG AND OVER:** CORES TYPE THHW
INSULATION:	GAALTHERM® 522
COLOUR CORES:	BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334, GREEN-YELLOW FROM 3 CORES
STRANDING:	IN LAYERS
OUTER SHEATH:	BLACK (RAL 9005), SPECIAL PVC OIL RESISTANT COMPOUND ACC. TO UL 1277 AND UL 1063

Resistance:

FIRE PERFORMANCE ACC. TO:
(UL) FT4/IEEE, UL 1685

OIL RESISTANCE ACC. TO:
TO UL OIL RES I

UV RESISTANT / SUNLIGHT RESISTANT:
ACC. TO EN 50396 AND HD 605 A1, UL 1581

Technical data:

NOMINAL VOLTAGE:	**UL-TC/MTW** 600 V
NOMINAL VOLTAGE:	**IEC / UL-AWM** 1000 V
TEST VOLTAGE:	4 kV
TEMPERATURE RANGE	
FIXED LAYING:	-40°C UP TO +90°C (**UL-AWM** UP TO +105°C)
FLEXIBLE APPLICATION:	-5°C UP TO +90°C (**UL-AWM** UP TO +105°C)
MIN. BENDING RADIUS:	
FIXED LAYING:	4 x D
FLEXIBLE INSTALLATION:	13 x D

Features:

AWM STYLE 10012/21179 90°C 600 OR 1000 V
C(UL) CONTROL CABLE CIC/TC PVC FT4,
CSA AWM I/II A/B 90°C 1000 V FT1

ACC. TO UL 1063 UL(MTW) "FLEXING" AND UL 1277 (TC-ER)
DIR BUR OIL RES I 600 V 90°C DRY / 75°C WET FT4

ACC. TO UL 2277: FLEXIBLE MOTOR SUPPLY LEAD CABLE
AND WIND TURBINE TRAY CABLE (WTTC) 1000 V 90°C DRY

ACC. TO NFPA 79 2007 AND NEC 336.10(7)
CLASS 1 DIV. 2 ART 336, 392, 501

DIRECT BURIAL ACC. TO UL 1277 PART. 5.2.
(WET LOCATION INSULATIONS)
AND 18.1 - 18.6 (CRUSHING TEST)

OUTDOOR USE

EXPOSED RUNS

CABLE FOR TRAY USE

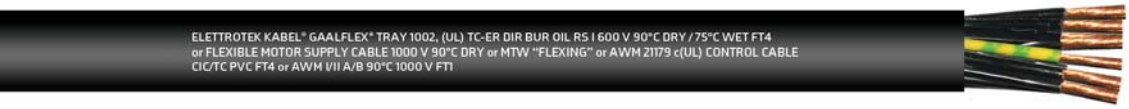
OIL RESISTANCE

WATER RESISTANCE

ROHS AND CE APPROVAL

GAALFLEX® TRAY 1002

Special PVC oil resistant, flexible tray cable, Machine-Tool cable,
acc. to UL 1277 (TC-ER) DIR BUR OIL RES I 600 V 90°C Dry / 75°C Wet FT4
or UL 1277 FLEXIBLE MOTOR SUPPLY CABLE 1000 V 90°C Dry and UL 2277 WTTC 1000 V 90°C Dry or UL 1063 MTW "FLEXING"
or AWM 21179 c(UL) CONTROL CABLE CIC/TC PVC FT4 or AWM I/II A/B 90°C 1000 V FT1



Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
32230H71020A20	2 x 0,5	7,3	9,6	69	20
32230H71020A18	2 x 1	8	19,2	90	18
32230H70031A18	3 g 1	8,4	28,8	105	18
32230H70041A18	4 g 1	9,2	38,4	125	18
32230H70051A18	5 g 1	10	48	150	18
32230H70071A18	7 g 1	10,9	67,2	185	18
32230H70081A18	8 g 1	12,8	76,8	245	18
32230H70101A18	10 g 1	14,2	96	305	18
32230H70121A18	12 g 1	14,7	115,2	335	18
32230H70181A18	18 g 1	17,1	172,8	470	18
32230H70251A18	25 g 1	19,5	240	620	18
32230H71020A16	2 x 1,5	8,7	28,8	110	16
32230H70031A16	3 g 1,5	9,2	43,2	130	16
32230H70041A16	4 g 1,5	10	57,6	150	16
32230H70051A16	5 g 1,5	10,9	72	190	16
32230H70071A16	7 g 1,5	11,9	100,8	240	16
32230H70081A16	8 g 1,5	14,6	115,2	335	16
32230H70121A16	12 g 1,5	16,1	172,8	430	16
32230H70181A16	18 g 1,5	18,8	259,2	600	16
32230H70251A16	25 g 1,5	22,7	360	860	16
32230H70651A16	65 g 1,5	33,9	936	2016	16
32230H71020A14	2 x 2,5	9,5	48	150	14
32230H70031A14	3 g 2,5	10	72	170	14
32230H70041A14	4 g 2,5	10,9	96	210	14
32230H70051A14	5 g 2,5	12	120	255	14
32230H70071A14	7 g 2,5	13,1	168	325	14
32230H70081A14	8 g 2,5	16,1	192	440	14
32230H70121A14	12 g 2,5	17,8	288	580	14
32230H70181A14	18 g 2,5	20,9	432	820	14
32230H70251A14	25 g 2,5	24,9	600	1167	14
32230H70031A12	3 g 4	11,4	115,2	235	12
32230H70041A12	4 g 4	12,5	153,6	295	12
32230H70051A12	5 g 4	14,5	192	385	12
32230H70071A12	7 g 4	15,8	268,8	485	12
32230H70031A10	3 G6	12,6	172,8	310	10
32230H70041A10	4 g 6	14,6	230,4	415	10
32230H70051A10	5 g 6	16	288	510	10
32230H70031A08	3 g 10	17,1	288	550	8
32230H70041A08	4 g 10	18,7	384	685	8
32230H70051A08	5 g 10	20,7	480	850	8
32230H70031A06	3 g 16	20,8	460,8	840	6
32230H70041A06	4 g 16	23,9	614,4	1115	6
32230H70051A06	5 g 16	26,4	768	1375	6
32230H70031A04	3 g 25	24,9	720	1254	4
32230H70041A04	4 g 25	27,4	960	1580	4
32230H70051A04	5 g 25	30,3	1200	1953	4
32230H70041A02	4 g 35	30,1	1344	2050	2
32230H70051A02	5 g 35	34,5	1680	2365	2
32230H70031A01	3 g 50	33,1	1440	2315	1
32230H70041A01	4 g 50	36,8	1920	2980	1
32230H70041A2C	4 g 70	41,8	2688	3975	2/0
32230H70041A3C	4 g 95	46,8	3648	5200	3/0
32230H70041A4C	4 g 120	49,4	4608	6330	4/0
32230H70041A5C	4 g 150	55	5760	7660	250 MCM
32230H70041AAC	4 g 240	67,6	9216	11650	500 MCM

Other dimension and colours available on request.

GAALFLEX® TRAY1002 CY Lean

Special PVC oil resistant, flexible tray cable, Machine-Tool cable, with overall copper screen,
acc. to UL 1277 (TC-ER) DIR BUR OIL RES I 600 V 90°C Dry / 75°C Wet FT4
or UL 1277 FLEXIBLE MOTOR SUPPLY CABLE 1000 V 90°C Dry and UL 2277 WTTC 1000 V 90°C Dry
or UL 1063 MTW "FLEXING" or AWM 21179 c(UL) CONTROL CABLE CIC/TC PVC FT4 or AWM I/II A/B 90°C 1000 V FT1

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 5, ACC TO IEC 60228, DIN VDE 0295 AND UL STANDARD 83 **FROM 18 TO 16 AWG:** CORES TYPE TFF **FROM 14 AWG AND OVER:** CORES TYPE THHW
INSULATION:	GAALTHERM® 522
COLOUR CORES:	BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334, GREEN-YELLOW FROM 3 CORES
STRANDING:	IN LAYERS
SCREEN:	ALUMINIUM TAPE AND TINNED COPPER BRAID
OUTER SHEATH:	BLACK (RAL 9005), SPECIAL PVC OIL RESISTANT COMPOUND ACC. TO UL 1277 AND UL 1063

Resistance:

FIRE PERFORMANCE ACC. TO:
(UL) FT4/IEEE, UL 1685

OIL RESISTANCE ACC. TO:
TO UL OIL RES I

UV RESISTANT / SUNLIGHT RESISTANT ACC. TO:
EN 50396 AND HD 605 A1, UL 1581

Technical data:

NOMINAL VOLTAGE:	**UL-TC/MTW** 600 V
NOMINAL VOLTAGE:	**IEC / UL-AWM** 1000 V
TEST VOLTAGE:	4 kV
TEMPERATURE RANGE	
FIXED LAYING:	-40°C UP TO +90°C (**UL-AWM** UP TO +105°C)
FLEXIBLE APPLICATION:	-5°C UP TO +90°C (**UL-AWM** UP TO +105°C)
MIN. BENDING RADIUS:	
FIXED LAYING:	6 x D
FLEXIBLE INSTALLATION:	20 x D

Features:

AWM STYLE 10012/21179 90°C 600 OR 1000 V
C(UL) CONTROL CABLE CIC/TC PVC FT4,
CSA AWM I/II A/B 90°C 1000 V FT1

ACC. TO UL 1063 UL(MTW) "FLEXING" AND UL 1277 (TC-ER)
DIR BUR OIL RES I 600 V 90°C DRY / 75°C WET FT4

ACC. TO UL 2277: FLEXIBLE MOTOR SUPPLY LEAD CABLE
AND WIND TURBINE TRAY CABLE (WTTC) 1000 V 90°C DRY

ACC. TO NFPA 79 2007 AND NEC 336.10(7)
CLASS 1 DIV. 2 ART 336, 392, 501

DIRECT BURIAL ACC. TO UL 1277 PART. 5.2.
(WET LOCATION INSULATIONS)
AND 18.1 - 18.6 (CRUSHING TEST)

OUTDOOR USE

EXPOSED RUNS

CABLE FOR TRAY USE

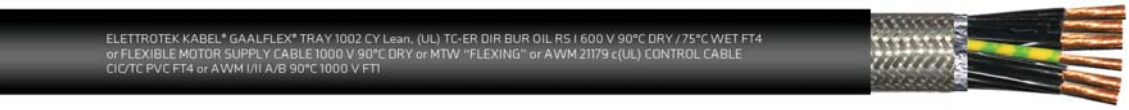
OIL RESISTANCE

WATER RESISTANCE

ROHS AND CE APPROVAL

GAALFLEX® TRAY1002 CY Lean

Special PVC oil resistant, flexible tray cable, Machine-Tool cable, with overall copper screen, acc. to UL 1277 (TC-ER) DIR BUR OIL RES I 600 V 90°C Dry / 75°C Wet FT4
or UL 1277 FLEXIBLE MOTOR SUPPLY CABLE 1000 V 90°C Dry and UL 2277 WTTC 1000 V 90°C Dry
or UL 1063 MTW "FLEXING" or AWM 21179 c(UL) CONTROL CABLE CIC/TC PVC FT4 or AWM I/II A/B 90°C 1000 V FT1



Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
32240H71020A18	2 x 1	8,5	44,0	100	18
32240H70031A18	3 g 1	8,9	58,4	122	18
32240H70041A18	4 g 1	9,7	67,9	145	18
32240H70051A18	5 g 1	10,5	82,6	175	18
32240H70071A18	7 g 1	11,4	106,7	212	18
32240H70121A18	12 g 1	15,5	185,2	350	18
32240H70181A18	18 g 1	17,9	260,5	485	18
32240H70251A18	25 g 1	20,3	336,3	610	18
32240H71020A16	2 x 1,5	9,2	58,4	125	16
32240H70031A16	3 g 1,5	9,7	72,7	145	16
32240H70041A16	4 g 1,5	10,5	92,2	185	16
32240H70051A16	5 g 1,5	11,4	111,5	220	16
32240H70071A16	7 g 1,5	12,4	145,3	270	16
32240H70121A16	12 g 1,5	16,9	251,8	450	16
32240H70181A16	18 g 1,5	19,6	355,6	630	16
32240H70191A16	19 g 1,5	19,6	370	636	16
32240H70251A16	25 g 1,5	23,4	474,0	770	16
32240H71020A14	2 x 2,5	10,0	82,5	158	14
32240H70031A14	3 g 2,5	10,5	106,6	190	14
32240H70041A14	4 g 2,5	11,4	135,6	240	14
32240H70051A14	5 g 2,5	12,5	164,4	290	14
32240H70071A14	7 g 2,5	14,6	229,6	390	14
32240H70121A14	12 g 2,5	18,5	375,9	610	14
32240H70181A14	18 g 2,5	22,6	537,5	850	14
32240H70031A12	3 g 4	11,9	154,6	260	12
32240H70041A12	4 g 4	13,0	198,1	335	12
32240H70051A12	5 g 4	15,2	262,1	435	12
32240H70071A12	7 g 4	16,5	348,0	550	12
32240H70031A10	3 G6	13,9	217,2	355	10
32240H70041A10	4 g 6	15,3	300,7	480	10
32240H70051A10	5 g 6	16,7	367,0	570	10
32240H70041A08	4 g 10	19,4	480,8	770	8
32240H70051A08	5 g 10	22,4	585,4	960	8
32240H70041A06	4 g 16	24,6	737,3	1210	6
32240H70051A06	5 g 16	27,1	899,7	1450	6
32240H70041A04	4 g 25	28,1	1100,6	1700	4
32240H70041A02	4 g 35	31,0	1502,0	2210	2
32240H70041A01	4 g 50	37,7	2166,7	3210	1
32240H70041A2C	4 g 70	44,2	2976,1	4400	2/0
32240H70041A3C	4 g 95	47,7	3963,5	5570	3/0
32240H70041A4C	4 g 120	50,3	4937,2	6660	4/0
32240H70041A5C	4 g 150	55,9	6130,5	8260	250 MCM

Other dimension and colours available on request.

GAALFLEX® TRAY VFD 1405 600 V

Inverter, connection to frequency converters, UV Resistant,
UL 2277 WTTC 1000 V, UL 1277 TC-ER 600 V 90°C Dry or 90°C Wet

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 5, ACC. TO IEC 60228, DIN VDE 0295 AND UL STANDARD 83
INSULATION:	**FROM 18 AWG UP TO 16 AWG:** GAALTHERM® 520 **FROM 14 AWG AND OVER:** GAALTHERM® 591
CORES COLOR:	**3x..+3g..:** 3 BLACK CONDUCTORS NUMBERED + 3 GREEN-YELLOW CONDUCTORS DIVIDED IN 3 INERTSTICES **3x..+1g.. / 4g..+(2x..) OR 4g..+(2x..+2x..):** BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334 + GREEN/YELLOW
STRANDING:	**3x..+1g..:** CORES TWISTED TOGETHER + FILLERS **3x..+3g..:** PHASE UNITS LAID UP WITH EARTH-CONDUCTORS IN INTERSTICES **4g..+(2x..) or 4g..+(2x..+2x..):** CONTROL CORES TWISTED IN PAIR(S) AND SCREENED, SUPPLY CORES AND CONTROL SCREENED PAIR(S) TWISTED TOGETHER
INDIVIDUAL SCREEN:	**4g..+(2x..) or 4g..+(2x..+2x..):** ALUMINIUM TAPE + PETP FOIL AND TINNED COPPER BRAID 85% COVERAGE +/- 5%
OVERALL SCREEN:	ALUMINIUM TAPE + PETP FOIL AND TINNED COPPER BRAID 85% COVERAGE +/- 5%
OUTER SHEATH:	BLACK (SIMILAR RAL 9005), GAALTHERM® 520

Technical data:

NOMINAL VOLTAGE:	**UL 1277 TC-ER** 600 V **UL 2277 WTTC** 1000 V **IEC:** Uo/U 600/1000 V
TEMPERATURE RANGE:	**UL:** UP TO 90°C
FIXED LAYING:	-40 °C UP TO +105 °C
FLEXIBLE INSTALLATION:	-5 °C UP TO +105 °C
MIN. BENDING RADIUS	
FIXED LAYING:	6 x D
FLEXIBLE APPLICATION:	20 x D

Resistance:

FLAME RETARDANT AND SELF-EXTINGUISHING ACC.TO:
UL FT4/IEEE 1202
UL 1685

UV RESISTANT / SUNLIGHT RESISTANT ACC. TO:
EN 50396 AND HD 605 A1, UL 1581

Features:

UV RESISTANT

OUTDOOR USE

INSTALLATION IN HAZARDOUS AREAS

ACC. TO UL 2277 WTTC OR FLEXIBLE MOTOR SUPPLY

ACC. TO UL 1277 (OIL-RESISTANT ACCORDING TO UL OIL RES I AND WATER-RESISTANT, UL 90°C DRY OR 90°C WET)

UL ONLY FOR TC-ER USE

ON REQUEST C(UL) TYPE CIC FT4

ON REQUEST DIRECT BURIAL

ACC. TO TO NFPA 79 2007 AND NEC 336.10(7) CLASS 1, DIV. 2 ART. 336, 392, 501

ROHS AND CE APPROVAL

UL Standards:

UL 1277

UL 2277

GAALFLEX® TRAY VFD 1405 600 V

Inverter, connection to frequency converters, UV Resistant,
UL 2277 WTTC 1000 V, UL 1277 TC-ER 600 V 90°C Dry or 90°C Wet

Part no.	No. of cores x cross section n x AWG/MCM	Outer Ø inches/mm ±10%	Copper weight Lbs/Mft - kg/km	Cable weight approx. Lbs/Mft - kg/km
33290F70041A14	4 g 14	0,456 - 11,4	91,4 - 136	150,5 - 224
33290F70041A12	4 g 12	0,52 - 13	136,4 - 203	209,7 - 312
33290F70041A10	4 g 10	0,612 - 15,3	202,3 - 301	301,1 - 448
33290F70041A08	4 g 8	0,776 - 19,4	323,2- 481	479,8 - 714
33290F70041A06	4 g 6	0,912 - 22,8	489,2- 728	702,2 - 1045
33290F70041A04	4 g 4	1,052 - 26,3	733,8 - 1092	1004 - 1494
33290F70041A02	4 g 2	1,168 - 29,2	1009,3 - 1502	1323,9 - 1970
33290F70041A01	4 g 1	1,384 - 34,6	1446,8 - 2153	1872,9 - 2787
33290F70041A2C	4 g 2/0	1,584 - 39,6	1990,5 - 2962	2526,7 - 3760
33290F70041A3C	4 g 3/0	1,784 - 44,6	2651 - 3945	3332,4 - 4959
33290F70041A4C	4 g 4/0	1,936 - 48,4	3317,7 - 4937	4085,1 - 6079
33290F70041A5C	4 g 250	2,088 - 52,2	4110,6 - 6117	4961,4 - 7383
33290F70041A7C	4 g 350	2,26 - 56,5	5041,3 - 7502	5999 - 8927
33290F70037A10	3 x 10 + 3 g 18	0,608 - 15,2	179,4- 267	252 - 375
33290F70037A08	3 x 8 + 3 g 16	0,724 - 18,1	277,5- 413	378,3 - 563
33290F70037A06	3 x 6 + 3 g 14	0,804 - 20,1	428,7 - 638	552,4 - 822
33290F70037A04	3 x 4 + 3 g 12	0,976 - 24,4	643,8 - 958	824,5 -1227
33290F70037A02	3 x 2 + 3 g 10	1,08 - 27	887,7 - 1321	1077,9 -1604
33290F70037A01	3 x 1 + 3 g 8	1,28 - 32	1308,4 - 1947	1560,4 - 2322
33290F70037A2C	3 x 2/0 + 3 g 8	1,46 - 36,5	1714,3 - 2551	1992,5 - 2965
33290F70037A3C	3 x 3/0 + 3 g 6	1,592 - 39,8	2332,5 - 3471	2598 - 3866
33290F70037A4C	3 x 4/0 + 3 g 6	1,788 - 44,7	2835,2 - 4219	3198,7 - 4760
33290F70037A5C	3 x 250 + 3 g 4	1,928 - 48,2	3608,6 - 5370	3972,9 - 5912
33290F70037A7C	3 x 350 + 3 g 2	2,084 - 52,1	4497,7 - 6693	4831,7 - 7190
33290F70037AAC	3 x 500 + 3 g 6	2,365 - 60,1	/ - /	6392 - 9511

GAALFLEX® TRAYVFD 1405 600 V

Inverter, connection to frequency converters, UV Resistant,
UL 2277 WTTC 1000 V, UL 1277 TC-ER 600 V 90°C Dry or 90°C Wet

Part no.	No. of cores x cross section n x AWG/MCM	Outer Ø inches/mm ±10%	Copper weight Lbs/Mft - kg/km	Cable weight approx. Lbs/Mft - kg/km
33290F7004BA14	4 g 14 + (2 x 18)C	0,608 - 15,2	135,7 - 202	229,2 - 341
33290F7004BA12	4 g 12 + (2 x 18)C	0,66 - 16,5	179,4 - 267	284,2 - 423
33291F7004BA14	4 g 14 + (2 x 16)C	0,63 - 15,7	149,9 - 223	246 - 366
33291F7004BA12	4 g 12 + (2 x 16)C	0,68 - 17	193,5 - 288	302,4 - 450
33291F7004BA10	4 g 10 + (2 x 16)C	0,72 - 18	245,3 - 365	359,6 - 535
33291F7004BA08	4 g 8 + (2 x 16)C	0,912 - 22,8	366,9 - 546	567,9 - 845
33291F7004BA06	4 g 6 + (2 x 16)C	1 - 25	528,9 - 787	747,9 - 1113
33292F7004BA14	4 g 14 + (2 x 14)C	0,638 - 16,2	162,6 - 242	256,7 - 382
33292F7004BA12	4 g 12 + (2 x 14)C	0,697 - 17,7	207 - 308	309,8 - 461
33292F7004BA10	4 g 10 + (2 x 14)C	0,744 - 18,9	264,1 - 393	323,9 - 482
33292F7004BA08	4 g 8 + (2 x 14)C	0,913 - 23,2	384,4 - 572	514,8 - 766
33292F7004BA06	4 g 6 + (2 x 14)C	1,012 - 25,7	545 - 811	708,3 - 1054
33292F7004BA04	4 g 4 + (2 x 14)C	1,138 - 28,9	788,9 - 1174	992,5 - 1477
33292F7004BA02	4 g 2 + (2 x 14)C	1,268 - 32,2	1058,4 - 1575	1297 - 1930
33292F7004BA01	4 g 1 + (2 x 14)C	1,504 - 38,2	1493,9 - 2223	1842,6 - 2742
33292F7004BA2C	4 g 2/0 + (2 x 14)C	1,72 - 43,7	2036,8 - 3031	2483 - 3695
33290F7004B900	4 g 14 + (2 x 18)C + (2 x 18)C	0,692 - 17,3	173,4 - 258	287,6 - 428
33290F7004B901	4 g 12 + (2 x 18)C + (2 x 18)C	0,74 - 18,5	216,4 - 322	346,1 - 515
33290F7004B902	4 g 12 + (2 x 18)C + (2 x 16)C	0,76 - 19	224,4 - 334	358,2 - 533
33290F7004B903	4 g 10 + (2 x 18)C + (2 x 16)C	0,8 - 20	283,6 - 422	424,7 - 632
33290F7004B904	4 g 8 + (2 x 18)C + (2 x 16)C	0,98 - 24,4	401,2 - 597	633 - 942
33290F7004B905	4 g 6 + (2 x 16)C + (2 x 16)C	1,08 - 27	571,9 - 851	826,6 - 1230
33290F7004B906	4 g 12 + (2 x 14)C + (2 x 14)C	0,78 - 19,8	266,1 - 396	396,5 - 590
33290F7004B907	4 g 10 + (2 x 14)C + (2 x 14)C	0,87 - 22,1	317,9 - 473	494,6 - 736
33290F7004B908	4 g 8 + (2 x 14)C + (2 x 14)C	1,004 - 25,5	435,5 - 648	665,3 - 990
33290F7004B909	4 g 6 + (2 x 14)C + (2 x 14)C	1,138 - 28,9	608,8 - 906	905,2- 1347
33290F7004B910	4 g 4 + (2 x 14)C + (2 x 14)C	1,268 - 32,2	883,7 - 1315	1210,9 - 1802
33290F7004B911	4 g 2 + (2 x 14)C + (2 x 14)C	1,362 - 34,6	1141,7 - 1699	1485,8 - 2211

Other dimension and colours available on request.

GAALFLEX® TRAY 603

Special PVC oil resistant, continuously flexible tray cable, Machine-Tool cable, acc. to UL 1277 (TC-ER) and UL 1063 (MTW), 600 V

SUITABLE FOR CHAIN APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295 AND UL STANDARD 83 **FROM 18 TO 16 AWG:** CORES TYPE TFF **FROM 14 AWG AND OVER:** CORES TYPE THHW
INSULATION:	SPECIAL PVC TYPE QMTT2
COLOUR CORES:	BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334, GREEN-YELLOW FROM 3 CORES
STRANDING:	IN LAYERS
WRAPPING:	NON WOVEN TAPE OVER EACH LAYER
OUTER SHEATH:	GREY (RAL 7001), SPECIAL PVC OIL RESISTANT COMPOUND ACC. TO UL 1277 AND UL 1063

Resistance:

FIRE PERFORMANCE ACC. TO:
(UL) FT4/IEEE, UL 1685

OIL RESISTANCE ACC. TO:
TO UL OIL RES I

Technical data:

NOMINAL VOLTAGE:	600 V
TEST VOLTAGE:	4 KV
TEMPERATURE RANGE	
FIXED LAYING:	- 40°C UP TO +90°C
FLEXIBLE APPLICATION:	- 5°C UP TO +90°C
MIN. BENDING RADIUS:	
FIXED LAYING:	4 X D
FLEXIBLE INSTALLATION:	7,5 X D

Features:

AWM STYLE 10012/2587 90°C 600 V, CSA AWM I/II A/B

ACC. TO UL 1063 UL (MTW) AND UL 1277 (TC-ER)
OIL RESISTANT ACC. TO UL OIL RES I,
WATER RESISTANCE AND UL WET APPROVAL 75°C

ACC. TO UL 2277: FLEXIBLE MOTOR SUPPLY LEAD CABLE AND WIND TURBINE TRAY CABLE

ACC. TO NFPA 79 2007 AND NEC 336.10(7)
CLASS 1 DIV. 2 ART 336, 392, 501

EXPOSED RUNS

CABLE FOR TRAY USE

OIL RESISTANCE

WATER RESISTANCE

UP TO 8 MILION BENDING/UNBENDING CYCLES

UP TO 12 MT TRAVEL DISTANCE

ROHS AND CE APPROVAL

GAALFLEX® TRAY 603

Special PVC oil resistant, continuously flexible tray cable, Machine-Tool cable, acc. to UL 1277 (TC-ER) and UL 1063 (MTW), 600 V

SUITABLE FOR CHAIN APPLICATION

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
32250F51020A18	2 x 1	8,1	19,2	95	18
32250F50031A18	3 g 1	8,8	28,8	115	18
32250F50041A18	4 g 1	9,5	38,4	135	18
32250F50051A18	5 g 1	10,4	48	165	18
32250F50071A18	7 g 1	12,2	67,2	225	18
32250F50081A18	8 g 1	13,1	76,8	260	18
32250F50121A18	12 g 1	15,2	115,2	360	18
32250F50181A18	18 g 1	17,7	172,8	495	18
32250F50251A18	25 g 1	20,9	240	700	18
32250F51020A16	2 x 1,5	8,7	28,8	110	16
32250F50031A16	3 g 1,5	9,5	43,2	140	16
32250F50041A16	4 g 1,5	10,2	57,6	165	16
32250F50051A16	5 g 1,5	11,2	72	200	16
32250F50071A16	7 g 1,5	13,2	100,8	280	16
32250F50081A16	8 g 1,5	14,9	115,2	350	16
32250F50121A16	12 g 1,5	16,5	172,8	450	16
32250F50181A16	18 g 1,5	19,3	259,2	630	16
32250F50251A16	25 g 1,5	23,9	360	940	16
32250F51020A14	2 x 2,5	9,5	48	145	14
32250F50031A14	3 g 2,5	10,4	72	180	14
32250F50041A14	4 g 2,5	11,2	96	220	14
32250F50051A14	5 g 2,5	12,3	120	270	14
32250F50071A14	7 g 2,5	15,3	168	405	14
32250F50081A14	8 g 2,5	16,4	192	460	14
32250F50121A14	12 g 2,5	18,2	288	605	14
32250F50031A12	3 g 4	11,8	115,2	250	12
32250F50041A12	4 g 4	12,8	153,6	305	12
32250F50051A12	5 g 4	14,8	192	400	12
32250F50071A12	7 g 4	17,9	268,8	575	12
32250F50031A10	3 g 6	14	172,8	360	10
32250F50041A10	4 g 6	15,1	230,4	440	10
32250F50051A10	5 g 6	16,6	288	540	10
32250F50041A08	4 g 10	19,4	384	730	8
32250F50051A08	5 g 10	22,6	480	955	8
32250F50041A06	4 g 16	25	614,4	1190	6
32250F50051A06	5 g 16	27,7	768	1470	6
32250F50041A04	4 g 25	27,9	960	1620	4
32250F50041A02	4 g 35	32,4	1344	2230	2

Other dimension and colours available on request.

GAALFLEX® TRAY 603 CY Lean

Special PVC oil resistant, continuously flexible tray cable, Machine-Tool cable, with overall copper screen, acc. to UL 1277 (TC-ER) and UL 1063 (MTW), 600 V

SUITABLE FOR CHAIN APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295 AND UL STANDARD 83 **FROM 18 TO 16 AWG:** CORES TYPE TFF **FROM 14 AWG AND OVER:** CORES TYPE THHW
INSULATION:	SPECIAL PVC TYPE QMTT2
COLOUR CORES:	BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334, GREEN-YELLOW FROM 3 CORES
STRANDING:	IN LAYERS
WRAPPING:	NON WOVEN TAPE
SCREEN:	TINNED COPPER BRAID
WRAPPING:	NON WOVEN TAPE OVER EACH LAYER
OUTER SHEATH:	GREY (RAL 7001), SPECIAL PVC OIL RESISTANT COMPOUND ACC. TO UL 1277 AND UL 1063

Resistance:

FIRE PERFORMANCE ACC. TO:
(UL) FT4/IEEE, UL 1685

OIL RESISTANCE ACC. TO:
TO UL OIL RES I

Technical data:

NOMINAL VOLTAGE:	600 V
TEST VOLTAGE:	4 KV
TEMPERATURE RANGE	
FIXED LAYING:	- 40°C UP TO +90°C
FLEXIBLE APPLICATION:	- 5°C UP TO +90°C
MIN. BENDING RADIUS:	
FIXED LAYING:	4 X D
FLEXIBLE INSTALLATION:	7,5 X D

Features:

AWM STYLE 10012/2587 90°C 600 V, CSA AWM I/II A/B

ACC. TO UL 1063 UL (MTW) AND UL 1277 (TC-ER)
OIL RESISTANT ACC. TO UL OIL RES I,
WATER RESISTANCE AND UL WET APPROVAL 75°C

ACC. TO UL 2277: FLEXIBLE MOTOR SUPPLY LEAD CABLE AND WIND TURBINE TRAY CABLE

ACC. TO NFPA 79 2007 AND NEC 336.10(7)
CLASS 1 DIV. 2 ART 336, 392, 501

EXPOSED RUNS

CABLE FOR TRAY USE

OIL RESISTANCE

WATER RESISTANCE

UP TO 8 MILION BENDING/UNBENDING CYCLES

UP TO 12 MT TRAVEL DISTANCE

ROHS AND CE APPROVAL

GAALFLEX® TRAY 603 CY Lean

Special PVC oil resistant, continuously flexible tray cable, Machine-Tool cable, with overall copper screen, acc. to UL 1277 (TC-ER) and UL 1063 (MTW), 600 V

SUITABLE FOR CHAIN APPLICATION

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
32260F51020A18	2 x 1	8,7	47,6	105	18
32260F50031A18	3 g 1	9,4	57,1	125	18
32260F50041A18	4 g 1	10,1	72,3	150	18
32260F50051A18	5 g 1	11	87,4	180	18
32260F50071A18	7 g 1	12,8	112,4	235	18
32260F50081A18	8 g 1	13,9	146,9	280	18
32260F50121A18	12 g 1	16	195,8	385	18
32260F50181A18	18 g 1	18,5	263,5	515	18
32260F50251A18	25 g 1	21,7	350,8	680	18
32260F51020A16	2 x 1,5	9,3	56,9	120	16
32260F50031A16	3 g 1,5	10,1	77,1	150	16
32260F50041A16	4 g 1,5	10,8	97,1	185	16
32260F50051A16	5 g 1,5	11,8	117,2	215	16
32260F50071A16	7 g 1,5	14	171,1	305	16
32260F50081A16	8 g 1,5	15,7	195,6	370	16
32260F50121A16	12 g 1,5	17,3	263,6	470	16
32260F50181A16	18 g 1,5	20,1	359,7	640	16
32260F50251A16	25 g 1,5	24,7	490,8	910	16
32260F51020A14	2 x 2,5	10,1	81,9	150	14
32260F50031A14	3 g 2,5	11	111,4	190	14
32260F50041A14	4 g 2,5	11,8	141,2	240	14
32260F50051A14	5 g 2,5	12,9	165,4	275	14
32260F50071A14	7 g 2,5	16,1	248,2	425	14
32260F50081A14	8 g 2,5	17,2	282,6	450	14
32260F50121A14	12 g 2,5	19	388,8	615	14
32260F50031A12	3 g 4	12,4	160,6	255	12
32260F50041A12	4 g 4	13,6	224,2	340	12
32260F50051A12	5 g 4	15,6	262,2	420	12
32260F50031A10	3 g 6	14,8	243,4	375	10
32260F50041A10	4 g 6	15,9	310,7	475	10
32260F50051A10	5 g 6	17,4	378,4	560	10
32260F50041A08	4 g 10	20,2	484,7	740	8
32260F50051A08	5 g 10	23,4	600,6	945	8
32260F50041A06	4 g 16	25,8	744,9	1170	6
32260F50051A06	5 g 16	28,5	918,6	1405	6
32260F50041A04	4 g 25	28,7	1111	1585	4
32260F50041A02	4 g 35	33,4	1563,8	2170	2

Other dimension and colours available on request.

GAALFLEX® CHAIN TD 87

Continuously flexible PVC data cable with colored cores, DIN VDE max. 350 V (UL) 300 V

SUITABLE FOR CHAIN APPLICATION

SUITABLE FOR FESTOON APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295
INSULATION:	PVC TYPE TI2, ACC. TO DIN VDE 0281 PART 1 + HD 21.1
COLOUR CORES:	ACC. TO DIN 47100
STRANDING:	IN LAYERS
WRAPPING:	NON-WOVEN TAPE OVER EACH LAYER
OUTER SHEATH:	GREY (RAL 7032), PVC TYPE TM2, ACC. TO TO DIN VDE 0281 PART 1 + HD 21.1

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2
UL VW-1

OIL RESISTANCE ACC. TO:
DIN VDE 0473 PART 811-2-1
IEC EN 60811-2-1

Technical data:

NOMINAL VOLTAGE:	**DIN VDE:** MAX. 350 V **UL:** 300 V	
TEST VOLTAGE:	1,5 kV ACC. TO DIN VDE 0472 PART 509	
TEMPERATURE RANGE	**DIN VDE:**	**UL/CSA:**
FIXED LAYING:	-30°C UP TO +80°C	UP TO +80°C
FLEXIBLE INSTALLATION:	-5°C UP TO +80°C	
RADIATION RESISTANCE:	8×10^7 CJ/Kg	
MIN. BENDING RADIUS		
CONTINUOUSLY FLEXIBLE:	7,5 x D	
MAX SPEED (MAIN APPLICATION):	180 m/min	

Features:

- AWM STYLE 2464 80°C 300 V
- GOOD FLEXIBILITY
- SMALL OUTER DIAMETER
- SMALL BENDING RADIUS
- FOR SPEEDS AND MINIMUM BENDING RADIUS SEE PAGES FROM 1 TO 4 OF CATALOGUE
- ROHS AND CE APPROVAL

RoHS CE

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
36080C64020A26	2 x 0,14	4,1	2,7	20	26
36080C64030A26	3 x 0,14	4,3	4	25	26
36080C64040A26	4 x 0,14	4,7	5,4	30	26
36080C64050A26	5 x 0,14	5,1	6,7	35	26
36080C64070A26	7 x 0,14	5,9	9,4	45	26
36080C64100A26	10 x 0,14	6,9	13,4	55	26
36080C64140A26	14 x 0,14	7,4	18,8	70	26
36080C64180A26	18 x 0,14	8,4	24,2	90	26
36080C64250A26	25 x 0,14	10,4	33,6	120	26
36080C64020A24	2 x 0,25	4,4	4,8	25	24
36080C64030A24	3 x 0,25	4,5	7,2	30	24
36080C64040A24	4 x 0,25	5	9,6	35	24
36080C64050A24	5 x 0,25	5,5	12	45	24
36080C64070A24	7 x 0,25	6,5	16,8	55	24
36080C64100A24	10 x 0,25	7,5	24	70	26
36080C64140A24	14 x 0,25	8,3	33,6	95	24
36080C64180A24	18 x 0,25	9,2	43,2	120	24
36080C64250A24	25 x 0,25	11,2	60	160	24
36080C64020A22	2 x 0,34	4,6	6,5	35	22
36080C64030A22	3 x 0,34	4,9	9,8	35	22
36080C64040A22	4 x 0,34	5,3	13,1	40	22
36080C64050A22	5 x 0,34	5,7	16,3	50	22
36080C64070A22	7 x 0,34	6,8	22,8	65	22
36080C64100A22	10 x 0,34	8,1	32,6	85	26
36080C64140A22	14 x 0,34	8,7	45,7	110	22
36080C64180A22	18 x 0,34	9,8	58,8	140	22
36080C64250A22	25 x 0,34	12	81,6	190	22

Other dimension and colours available on request.

GAALFLEX® CHAIN T 87

Continuously flexible PVC control cable, DIN VDE 300/500 V UL/CSA 600 V

SUITABLE FOR CHAIN APPLICATION

SUITABLE FOR FESTOON APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295
INSULATION:	PVC COMPOUND
COLOUR CORES:	BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334, GREEN-YELLOW FROM 3 CORES
STRANDING:	IN LAYERS
WRAPPING:	NON-WOVEN TAPE OVER EACH LAYER
OUTER SHEATH:	GREY (RAL 7000 OR 7001), PVC COMPOUND

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2
IEC 60332-3-24
UL VW-1, CSA FT1

OIL RESISTANCE ACC. TO:
DIN EN 50290-2-22 TM 54

UV RESISTANT / SUNLIGHT RESISTANT ACC. TO:
ISO 4892-3

Technical data:

NOMINAL VOLTAGE:	**DIN VDE:** Uo/U 300/500 V **UL:** 600 V	
TEST VOLTAGE:	3 kV ACC. TO DIN VDE 0281 PART 2 + HD 21.2	
TEMPERATURE RANGE	**DIN VDE:**	**UL/CSA:**
FIXED LAYING:	-40°C UP TO +80°C	UP TO +90°C
FLEXIBLE INSTALLATION:	0°C UP TO +80°C	UP TO +90°C
RADIATION RESISTANCE:	8×10^7 CJ/Kg	
MIN. BENDING RADIUS		
FIXED LAYING::	4 x D	
FLEXIBLE INSTALLATION	7,5 x D	
MAX SPEED (MAIN APPLICATION):		
UNSUPPORTED:	3 m/sec	
GLIDING:	2 m/sec	
MAX ACCELERATION (MAIN APPLICATION):	20 m/sec^2	
BENDING CYCLES (MAIN APPLICATION):	UP TO 4,5 MILION	
TRAVEL DISTANCES (MAIN APPLICATION):	UP TO 9 mt	
MAX. TORSION (MAIN APPLICATION):	UP TO 90°, FOR 1 mt. LENGHT	

Features:

AWM STYLE 2587 90°C 600V
CSA AWM I/II A/B 90°C 600V FT1 CE

GOOD FLEXIBILITY

SMALL OUTER DIAMETER

SMALL BENDING RADIUS

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

RoHS CE

GAALFLEX® CHAIN T 87

Continuously flexible PVC control cable, DIN VDE 300/500 V UL/CSA 600 V

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
36090F41020A20	2 x 0,5	5,1	9,6	35	20
36090F40031A20	3 g 0,5	5,6	14,4	45	20
36090F40041A20	4 g 0,5	6,0	19,2	50	20
36090F40051A20	5 g 0,5	6,5	24	60	20
36090F40071A20	7 g 0,5	7,7	33,6	85	20
36090F40081A20	8 g 0,5	7,8	38,4	100	20
36090F40121A20	12 g 0,5	9,3	57,6	130	20
36090F40181A20	18 g 0,5	11,2	86,4	195	20
36090F40251A20	25 g 0,5	13,4	20	265	20
36090F40341A20	34 g 0,5	15,0	163,2	340	20
36090F40501A20	50 g 0,5	17,4	240	475	20
36090F40611A20	61 g 0,5	19,2	292,8	595	20
36090F41020A19	2 x 0,75	5,6	14,4	40	19
36090F40031A19	3 g 0,75	6,1	21,6	55	19
36090F40041A19	4 g 0,75	6,6	28,8	65	19
36090F40051A19	5 g 0,75	7,2	36	80	19
36090F40071A19	7 g 0,75	8,7	50,4	115	19
36090F40121A19	12 g 0,75	10,5	86,4	175	19
36090F40181A19	18 g 0,75	12,7	129,6	260	19
36090F40251A19	25 g 0,75	15,1	180	355	19
36090F40341A19	34 g 0,75	16,4	244,8	475	19
36090F40501A19	50 g 0,75	19,2	360	680	19
36090F40611A19	61 g 0,75	21,3	439,2	835	19
36090F41020A18	2 x 1	5,8	19,2	50	18
36090F40031A18	3 g 1	6,4	28,8	60	18
36090F40041A18	4 g 1	6,8	38,4	75	18
36090F40051A18	5 g 1	7,5	48	90	18
36090F40071A18	7 g 1	9,1	67,2	130	18
36090F40121A18	12 g 1	11,2	115,2	210	18
36090F40181A18	18 g 1	13,2	172,8	305	18
36090F40251A18	25 g 1	16	240	425	18
36090F40341A18	34 g 1	17,1	326,4	570	18
36090F40501A18	50 g 1	20,5	480	830	18
36090F40611A18	61 g 1	22,3	585,6	1000	18
36090F41020A16	2 x 1,5	6,4	28,8	60	16
36090F40031A16	3 g 1,5	7	43,2	80	16
36090F40041A16	4 g 1,5	7,6	57,6	100	16
36090F40051A16	5 g 1,5	8,5	72	130	16
36090F40071A16	7 g 1,5	10,3	100,8	180	16
36090F40121A16	12 g 1,5	12,6	172,8	285	16
36090F40181A16	18 g 1,5	14,9	259,2	415	16
36090F40251A16	25 g 1,5	18	360	580	16
36090F40341A16	34 g 1,5	19,1	489,6	780	16
36090F40501A16	50 g 1,5	22,8	720	1120	16
36090F40611A16	61 g 1,5	25	878,4	1365	16
36090F41020A14	2 x 2,5	7,4	48	100	14
36090F40031A14	3 g 2,5	8,6	72	125	14
36090F40041A14	4 g 2,5	9,3	96	150	14
36090F40051A14	5 g 2,5	10,4	120	200	14
36090F40071A14	7 g 2,5	12,7	168	285	14
36090F40121A14	12 g 2,5	15,6	288	450	14
36090F40181A14	18 g 2,5	18,8	432	650	14
36090F40251A14	25 g 2,5	22,8	600	880	14
36090F40031A12	3 g 4	10,2	115,2	185	12
36090F40041A12	4 g 4	11,2	153,6	240	12
36090F40051A12	5 g 4	12,6	192	300	12
36090F40071A12	7 g 4	15,1	268,8	445	12
36090F40031A10	3 g 6	12,5	172,8	275	10
36090F40041A10	4 g 6	13,5	230,4	350	10
36090F40051A10	5 g 6	15,4	288	445	10
36090F40071A10	7 g 6	17,7	403,2	640	10

GAALFLEX® CHAIN T 87

Continuously flexible PVC control cable, DIN VDE 300/500 V UL/CSA 600 V

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
36090F40031A08	3 g 10	14,6	288	455	8
36090F40041A08	4 g 10	17,6	384	584	8
36090F40051A08	5 g 10	19,8	480	739	6
36090F40031A06	3 g 16	17,7	460,8	680	6
36090F40041A06	4 g 16	20,7	614,4	870	6
36090F40051A06	5 g 16	23,3	768	1100	6
36090F40041A04	4 g 25	23,6	960	1300	4
36090F40051A04	5 g 25	26,4	1200	1650	4
36090F40041A02	4 g 35	27	1344	1800	2
36090F40051A02	5 g 35	29,9	1680	2200	2
36090F40041A01	4 g 50	31,5	1920	2500	1

Other dimension and colours available on request.

GAALFLEX® CHAIN TD 87 C

Continuously flexible PVC data cable with colored cores and overall copper screen,
DIN VDE max. 350 V (UL) 300 V

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295
INSULATION:	PVC TYPE TI2, ACC. TO DIN VDE 0281 PART 1 + HD 21.1
COLOUR CORES:	ACC. TO DIN 47100
STRANDING:	IN LAYERS
WRAPPING:	NON-WOVEN TAPE OVER EACH LAYER
SCREEN:	TINNED COPPER BRAID
WRAPPING:	NON-WOVEN TAPE
OUTER SHEATH:	GREY (RAL 7032), PVC TYPE TM2, ACC. TO TO DIN VDE 0281 PART 1 + HD 21.1

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2
UL VW-1

OIL RESISTANCE ACC. TO:
DIN VDE 0473 PART 811-2-1
IEC EN 60811-2-1

Technical data:

NOMINAL VOLTAGE:	**DIN VDE:** MAX. 350 V **UL:** 300 V	
TEST VOLTAGE:	1,5 kV ACC. TO DIN VDE 0472 PART 509 CORE/SCREEN 1,2 kV	
TEMPERATURE RANGE	**DIN VDE:**	**UL/CSA:**
FIXED LAYING:	-30°C UP TO +80°C	UP TO +80°C
FLEXIBLE INSTALLATION:	-5°C UP TO +80°C	
RADIATION RESISTANCE:	8×10^7 CJ/Kg	
MIN. BENDING RADIUS		
CONTINUOUSLY FLEXIBLE:	7,5 x D	
MAX SPEED (MAIN APPLICATION):	180 m/min	

Features:

- AWM STYLE 2464 80°C 300 V
- VERY GOOD FLE X IBILITY
- SMALL OUTER DIAMETER
- SMALL BENDING RADIUS
- GOOD EMC CHARACTERISTICS
- FOR SPEEDS AND MINIMUM BENDING RADIUS SEE PAGES FROM 1 TO 4 OF CATALOGUE
- ROHS AND CE APPROVAL

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
36100C64020A26	2 x 0,14	4,8	13,8	30	26
36100C64030A26	3 x 0,14	5	15,7	35	26
36100C64040A26	4 x 0,14	5,5	19,4	40	26
36100C64050A26	5 x 0,14	5,8	22,6	45	26
36100C64070A26	7 x 0,14	6,7	26,1	60	26
36100C64100A26	10 x 0,14	7,7	45,7	70	26
36100C64140A26	14 x 0,14	8,8	56,4	90	26
36100C64180A26	18 x 0,14	9,5	64,7	110	26
36100C64250A26	25 x 0,14	11,3	84,4	150	26
36100C64020A24	2 x 0,25	5,2	18	35	24
36100C64030A24	3 x 0,25	5,5	20,7	40	24
36100C64040A24	4 x 0,25	5,8	25,5	45	24
36100C64050A24	5 x 0,25	6,5	28,3	55	24
36100C64070A24	7 x 0,25	7,3	46,3	65	24
36100C64100A24	10 x 0,25	8,8	61,7	95	24
36100C64140A24	14 x 0,25	9,5	72,1	115	24
36100C64180A24	18 x 0,25	10,4	93,2	140	24
36100C64250A24	25 x 0,25	12,8	115,8	205	24
36100C64020A22	2 x 0,34	5,4	19,9	35	22
36100C64030A22	3 x 0,34	5,7	25,4	40	22
36100C64040A22	4 x 0,34	6	29,1	50	22
36100C64050A22	5 x 0,34	6,6	44,5	60	22
36100C64070A22	7 x 0,34	7,6	54,9	75	22
36100C64100A22	10 x 0,34	9	70,9	105	22
36100C64140A22	14 x 0,34	9,9	86,8	130	22
36100C64180A22	18 x 0,34	11	109,4	170	22
36100C64250A22	25 x 0,34	13,3	139,1	230	22

Other dimension and colours available on request.

GAALFLEX® CHAIN T 87 C

Continuously flexible PVC control cable with overall copper screen, DIN VDE 300/500 V UL/CSA 600 V

SUITABLE FOR CHAIN APPLICATION

SUITABLE FOR FESTOON APPLICATION

Construction:

CONDUCTOR:	FLE XIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295
INSULATION:	PVC COMPOUND
COLOUR CORES:	BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334, G REEN-YELLOW FROM 3 CORES
STRANDING:	IN LAYERS
WRAPPING:	NON-WOVEN TAPE OVER EACH LAYER
INNER SHEATH:	PVC COMPOUND
SCREEN:	TINNED COPPER BRAID
WRAPPING:	NON-WOVEN TAPE
OUTER SHEATH:	GREY (RAL 7000 OR 7001), PVC COMPOUND

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2
UL VW-1, CSA FT1 FT2

OIL RESISTANCE ACC. TO:
DIN VDE 0473 PART 811-2-1
IEC EN 60811-2-1

Technical data:

NOMINAL VOLTAGE:	**DIN VDE:** Uo/U 300/500 V **UL:** 600 V	
TEST VOLTAGE:	3 kV ACC. TO DIN VDE 0281 PART 2 + HD 21.2	
TEMPERATURE RANGE	**DIN VDE:**	**UL/CSA:**
FIXED LAYING:	-30°C UP TO +80°C	UP TO +90°C
FLEXIBLE INSTALLATION:	-5°C UP TO +80°C	
RADIATION RESISTANCE:	8×10^7 CJ/Kg	
MIN. BENDING RADIUS		
CONTINUOUSLY FLEXIBLE:	7,5 x D	
MAX SPEED (MAIN APPLICATION):	180 m/min	

Features:

AWM STYLE 2587 90°C 600V
CSA AWM I/II A/B 90°C 600V FT1 FT2 CE

VERY GOOD FLE XIBILITY

SMALL OUTER DIAMETER

SMALL BENDING RADIUS

GOOD EMC CHARACTERISTICS

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

RoHS CE

GAALFLEX® CHAIN T 87 C

Continuously flexible PVC control cable with overall copper screen, DIN VDE 300/500 V UL/CSA 600 V

SUITABLE FOR CHAIN APPLICATION

SUITABLE FOR FESTOON APPLICATION

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
36110F41020A20	2 x 0,5	7,6	42,5	80	20
36110F40031A20	3 g 0,5	8,1	48,3	95	20
36110F40041A20	4 g 0,5	8,6	56	105	20
36110F40051A20	5 g 0,5	9	64,6	125	20
36110F40071A20	7 g 0,5	10,4	78,7	165	20
36110F40121A20	12 g 0,5	12,6	119	245	20
36110F40181A20	18 g 0,5	14,5	172,4	340	20
36110F40251A20	25 g 0,5	17	234,2	445	20
36110F41020A19	2 x 0,75	8,1	51,7	90	19
36110F40031A19	3 g 0,75	9	59,2	105	19
36110F40041A19	4 g 0,75	9	67,5	125	19
36110F40051A19	5 g 0,75	9,8	77	145	19
36110F40071A19	7 g 0,75	11,2	101,2	190	19
36110F40121A19	12 g 0,75	13,6	146,3	280	19
36110F40181A19	18 g 0,75	15,6	227,3	390	19
36110F40251A19	25 g 0,75	18,7	292	525	19
36110F41020A18	2 x 1	8,5	56,7	100	18
36110F40031A18	3 g 1	8,8	66,6	115	18
36110F40041A18	4 g 1	9,3	77,3	135	18
36110F40051A18	5 g 1	10,1	89,5	160	18
36110F40071A18	7 g 1	11,7	122	220	18
36110F40121A18	12 g 1	14,1	200,9	335	18
36110F40181A18	18 g 1	16,4	271,2	460	18
36110F40251A18	25 g 1	19,4	368,2	610	18
36110F41020A16	2 x 1,5	9	67	120	16
36110F40031A16	3 g 1,5	9,5	83	140	16
36110F40041A16	4 g 1,5	10,5	102,5	165	16
36110F40051A16	5 g 1,5	11,1	123,7	215	16
36110F40071A16	7 g 1,5	13,1	160,4	290	16
36110F40121A16	12 g 1,5	15,6	270,5	425	16
36110F40181A16	18 g 1,5	18,2	370,3	590	16
36110F40251A16	25 g 1,5	21,7	498,6	795	16
36110F41020A14	2 x 2,5	11,1	98,7	185	14
36110F40031A14	3 g 2,5	11,6	127	225	14
36110F40041A14	4 g 2,5	12,7	156,3	270	14
36110F40051A14	5 g 2,5	14,1	205,5	345	14
36110F40071A14	7 g 2,5	15,5	270,2	440	14
36110F40121A14	12 g 2,5	19,8	419,4	655	14
36110F40181A14	18 g 2,5	22,6	573,9	915	14
36110F40251A14	25 g 2,5	27,1	783,5	1215	14
36110F40031A12	3 g 4	13,3	183,2	310	12
36110F40041A12	4 g 4	14,2	239,3	380	12
36110F40051A12	5 g 4	15,5	296,6	460	12
36110F40031A10	3 g 6	15,8	243,7	440	10
36110F40041A10	4 g 6	16,8	340,2	520	10
36110F40051A10	5 g 6	18,5	418,1	625	10
36110F40041A08	4 g 10	20,4	524,1	800	8
36110F40051A08	5 g 10	22,6	652,6	965	8
36110F40041A06	4 g 16	24	781,5	1100	6
36110F40051A06	5 g 16	26,3	954,2	1345	6
36110F40041A04	4 g 25	28,3	1158,2	1680	4
36110F40051A04	5 g 25	31,4	1429,7	1985	4
36110F40041A02	4 g 35	31,8	1575,3	2115	2
36110F40041A01	4 g 50	38	2181,8	3015	1

Other dimension and colours available on request.

GAALFLEX® CHAIN TD 87 C TP

Continuously flexible paired PVC data cable with colored cores and overall copper screen
DIN VDE max. 350 V (UL) 300 V

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295
INSULATION:	PVC TYPE TI2, ACC. TO DIN VDE 0281 PART 1 + HD 21.1
COLOUR CORES:	ACC. TO DIN 47100
STRANDING:	CORES TWISTED IN PAIRS, PAIRS TWISTED IN LAYERS
WRAPPING:	NON-WOVEN TAPE OVER EACH LAYER
SCREEN:	TINNED COPPER BRAID
WRAPPING:	NON-WOVEN TAPE OVER EACH LAYER
OUTER SHEATH:	GREY (RAL 7032), PVC TYPE TM2, ACC. TO TO DIN VDE 0281 PART 1 + HD 21.1

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2
UL VW-1

OIL RESISTANCE ACC. TO:
DIN VDE 0473 PART 811-2-1
IEC EN 60811-2-1

Technical data:

NOMINAL VOLTAGE:	**DIN VDE:** MAX. 350 V **UL:** 300 V	
TEST VOLTAGE:	1,5 kV ACC. TO DIN VDE 0472 PART 509 CORE/SCREEN 1,2 kV	
TEMPERATURE RANGE	**DIN VDE:**	**UL/CSA:**
FIXED LAYING:	-30°C UP TO +80°C	UP TO +80°C
FLEXIBLE INSTALLATION:	-5°C UP TO +80°C	
RADIATION RESISTANCE:	8×10^7 CJ/Kg	
MIN. BENDING RADIUS		
CONTINUOUSLY FLEXIBLE:	7,5 x D	
MAX SPEED (MAIN APPLICATION):	180 m/min	

Features:

- AWM AWM STYLE 2464 80°C 300V
- GOOD FLEXIBILITY
- SMALL OUTER DIAMETER
- SMALL BENDING RADIUS
- FOR SPEEDS AND MINIMUM BENDING RADIUS SEE PAGES FROM 1 TO 4 OF CATALOGUE
- ROHS AND CE APPROVAL

RoHS CE

GAALFLEX® CHAIN TD 87 C TP

Continuously flexible paired PVC data cable with colored cores and overall copper screen
DIN VDE max. 350 V (UL) 300 V

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
36120C64022A26	2 x 2 x 0,14	5,8	19,4	40	26
36120C64032A26	3 x 2 x 0,14	6,5	33	55	26
36120C64042A26	4 x 2 x 0,14	7,5	43,1	70	26
36120C64052A26	5 x 2 x 0,14	8	46,3	80	26
36120C64072A26	7 x 2 x 0,14	8,7	54	100	26
36120C64102A26	10 x 2 x 0,14	10,2	70,7	120	26
36120C64142A26	14 x 2 x 0,14	11,8	87,3	155	26
36120C64182A26	18 x 2 x 0,14	12,6	107	195	26
36120C64252A26	25 x 2 x 0,14	14,5	128,6	235	26
36120C64022A24	2 x 2 x 0,25	6,7	34,4	55	24
36120C64032A24	3 x 2 x 0,25	7,3	42,2	65	24
36120C64042A24	4 x 2 x 0,25	8,1	52,1	80	24
36120C64052A24	5 x 2 x 0,25	8,8	59,4	95	24
36120C64072A24	7 x 2 x 0,25	9,4	69,9	125	24
36120C64102A24	10 x 2 x 0,25	11	96,2	150	24
36120C64142A24	14 x 2 x 0,25	12,8	126,1	200	24
36120C64182A24	18 x 2 x 0,25	13,8	147	245	24
36120C64252A24	25 x 2 x 0,25	15,9	211,2	325	24
36120C64022A22	2 x 2 x 0,34	6,8	38,4	60	22
36120C64032A22	3 x 2 x 0,34	7,4	47,9	75	22
36120C64042A22	4 x 2 x 0,34	8,5	61	90	22
36120C64052A22	5 x 2 x 0,34	9,2	68,6	110	22
36120C64072A22	7 x 2 x 0,34	9,9	89,4	150	22
36120C64102A22	10 x 2 x 0,34	11,6	114,6	170	22
36120C64142A22	14 x 2 x 0,34	13,6	151,4	225	22
36120C64182A22	18 x 2 x 0,34	14,8	205,9	305	22
36120C64252A22	25 x 2 x 0,34	16,8	273,7	390	22
36120C64022A20	2 x 2 x 0,50	7,4	47,5	75	20
36120C64032A20	3 x 2 x 0,50	8,2	61,7	90	20
36120C64042A20	4 x 2 x 0,50	9,3	74,5	110	20
36120C64052A20	5 x 2 x 0,50	10,2	92,1	135	20
36120C64072A20	7 x 2 x 0,50	11	115,6	185	20
36120C64102A20	10 x 2 x 0,50	12,8	154,9	220	20
36120C64142A20	14 x 2 x 0,50	15,3	223,8	310	20
36120C64182A20	18 x 2 x 0,50	16,5	265,4	380	20
36120C64252A20	25 x 2 x 0,50	18,7	355,9	495	20
36120C64022A19	2 x 2 x 0,75	8,3	61,9	95	19
36120C64032A19	3 x 2 x 0,75	9,2	79,2	115	19
36120C64042A19	4 x 2 x 0,75	10,6	105,3	150	19
36120C64052A19	5 x 2 x 0,75	11,5	121,3	180	19
36120C64072A19	7 x 2 x 0,75	12,5	159,2	245	19
36120C64102A19	10 x 2 x 0,75	14,8	232,4	315	19
36120C64142A19	14 x 2 x 0,75	17,4	313,8	425	19
36120C64182A19	18 x 2 x 0,75	18,8	375,4	525	19
36120C64252A19	25 x 2 x 0,75	22	484,6	695	19

Other dimension and colours available on request.

FLEXIDRUM® T 100 UL

Continuously flexible single conductor, 0,6/1 kV, UL/CSA 1000 V

SUITABLE FOR CHAIN APPLICATION

SUITABLE FOR FESTOON APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, UL 758
INSULATION:	SPECIAL TPE COMPOUND
COLOUR CORES:	BLACK
WRAPPING:	NON-WOVEN TAPE
OUTER SHEATH:	BLACK (RAL 9005), SPECIAL PUR COMPOUND

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2
UL 1581 VW-1, CSA FT-1

OIL RESISTANCE ACC. TO:
TMPU ACC. TO DIN VDE 0473 PART 811-2-1,
EN 60811-2-1,
IEC 60811-2-1

HALOGEN FREE ACC. TO:
DIN VDE 0482 PART 267,
EN 50267-2-1,
IEC 60754-1

Technical data:

NOMINAL VOLTAGE:	Uo/U 0,6/1 kV	
UL/CSA:	1000 V	
TEST VOLTAGE:	4 kV EN 50289-1-3	
TEMPERATURE RANGE	**DIN VDE:**	**UL/CSA:**
FIXED LAYING:	-50°C UP TO +90°C	UP TO +80°C
FLEXIBLE INSTALLATION:	-40°C UP TO +90°C	
RADIATION RESISTANCE:	5×10^7 CJ/Kg	
MIN. BENDING RADIUS		
CONTINUOUSLY FLEXIBLE:	7,5 x D	
MAX PULLING FORCE:		
STATIC:	50 N/mm²	
DINAMIC:	20 N/mm²	
MAX SPEED (MAIN APPLICATION):	250 m/min	

Features:

HIGHLY FLE XIBLE SINGLE CONDUCTOR
FOR USE IN CABLE TRACKS

GOOD AGAINST ACIDS, ALKALINES, SOLVENTS, HYDRAULIC LIQUIDS ETC

HIGH ABRASION RESISTANCE

UV RESISTANT

AWM STYLE 10553 AWM I/II A/B 80°C 1000V FT1
OR AWM STYLE 10848 AWM I/II A/B 80°C 1000V FT1

TEST VOLTA G E ACC.TO EN 50289-1-3

CONDUCTOR RESISTANCE AT 20°C ACC.TO EN 50289-1-2

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
04030H7L010A16	1 x 1,5	5,6	14,4	45	16
04030H7L010A14	1 x 2,5	6,5	24	63	14
04030H7L010A12	1 x 4	7,3	38,4	85	12
04030H7L010A10	1 x 6	8	57,6	114	10
04030H7L010A08	1 x 10	9,8	96	173	8
04030H7L010A06	1 x 16	10,8	153,6	245	6
04030H7L010A04	1 x 25	12,7	240	353	4
04030H7L010A02	1 x 35	14	336	459	2
04030H7L010A01	1 x 50	16,1	480	638	1
04030H7L010A2C	1 x 70	18,1	672	854	2/0
04030H7L010A3C	1 x 95	21	912	1140	3/0
04030H7L010A4C	1 x 120	22,8	1152	1394	4/0
04030H7L010A5C	1 x 150	24,6	1440	1716	250 MCM
04030H7L010A7C	1 x 185	26,7	1776	2077	350 MCM
04030H7L010A9C	1 x 240	31,5	2304	2750	450 MCM
04030H7L010ACC	1 x 300	34,3	2880	3389	600 MCM

Other dimension and colours available on request.

FLEXIDRUM® T 100 C UL

Continuously flexible single conductor with overall copper screen, 0,6/1 kV, UL/CSA 1000 V

SUITABLE FOR CHAIN APPLICATION

SUITABLE FOR FESTOON APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, UL 758
INSULATION:	SPECIAL TPE COMPOUND
COLOUR CORES:	BLACK
SCREEN:	TINNED COPPER BRAID ACC. TO UL 1569
WRAPPING:	NON-WOVEN TAPE
OUTER SHEATH:	BLACK (RAL 9005), SPECIAL PUR COMPOUND

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2
UL 1581 VW-1,CSA FT-1

OIL RESISTANCE ACC. TO:
TMPU ACC. TO DIN VDE 0473 PART 811-2-1,
EN 60811-2-1,
IEC 60811-2-1

HALOGEN FREE ACC. TO:
DIN VDE 0482 PART 267,
EN 50267-2-1,
IEC 60754-1

Technical data:

NOMINAL VOLTAGE:	Uo/U 0,6/1 kV	
UL/CSA:	1000 V	
TEST VOLTAGE:	4 kV EN 50289-1-3	
TEMPERATURE RANGE	**DIN VDE:**	**UL/CSA:**
FIXED LAYING:	-50°C UP TO +90°C	UP TO +80°C
FLEXIBLE INSTALLATION:	-40°C UP TO +90°C	
RADIATION RESISTANCE:	5×10^7 CJ/Kg	
MIN. BENDING RADIUS		
CONTINUOUSLY FLEXIBLE:	7,5 x D (OTHER MIN.BENDING RADIUS ON REQUEST)	
MAX PULLING FORCE:		
STATIC:	50 N/mm²	
DINAMIC:	20 N/mm²	
MAX SPEED (MAIN APPLICATION):	250 m/min	

Features:

HIGHLY FLEXIBLE SINGLE CONDUCTOR
FOR USE IN CABLE TRACKS

GOOD AGAINST ACIDS,ALKALINES,SOLVENTS,HYDRAULIC LIQUIDS ETC

HIGH ABRASION RESISTANCE

UV RESISTANT

AWM STYLE 10553 AWM I/II A/B 80°C 1000V FT1
OR AWM STYLE 10848 AWM I/II A/B 80°C 1000V FT1

TEST VOLTAGE ACC.TO EN 50289-1-3

CONDUCTOR RESISTANCE AT 20°C ACC.TO EN 50289-1-2

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
04040H7L010A10	1 x 6	8,5	77	120	10
04040H7L010A08	1 x 10	10,5	127	170	8
04040H7L010A06	1 x 16	11,8	189	236	6
04040H7L010A04	1 x 25	13,5	285	341	4
04040H7L010A02	1 x 35	15	389	447	2
04040H7L010A01	1 x 50	17,5	544	613	1
04040H7L010A2C	1 x 70	19,5	768	837	2/0
04040H7L010A3C	1 x 95	23	1020	1096	3/0
04040H7L010A4C	1 x 120	24,5	1265	1331	4/0
04040H7L010A5C	1 x 150	27,5	1450	1578	250 MCM
04040H7L010A7C	1 x 185	30	2040	2166	350 MCM
04040H7L010A9C	1 x 240	32	2621	2791	450 MCM
04040H7L010ACC	1 x 300	33	-	3130	600 MCM

Other dimension and colours available on request.

FLEXIDRUM® T 101 UL

Continuously flexible single conductor, 0,6/1 kV, UL/CSA 1000 V

SUITABLE FOR CHAIN APPLICATION

SUITABLE FOR FESTOON APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295
INSULATION:	SPECIAL TPE COMPOUND
COLOUR CORES:	GREEN/YELLOW
WRAPPING:	NON-WOVEN TAPE
OUTER SHEATH:	BLACK (RAL 9005), SPECIAL PUR COMPOUND

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2
UL 1581 VW-1,CSA FT-1

OIL RESISTANCE ACC. TO:
TMPU ACC. TO DIN VDE 0473 PART 811-2-1,
EN 60811-2-1,
IEC 60811-2-1

HALOGEN FREE ACC. TO:
DIN VDE 0482 PART 267,
EN 50267-2-1,
IEC 60754-1

Technical data:

NOMINAL VOLTAGE: **UL/CSA:**	Uo/U 0,6/1 kV 1000 V	
TEST VOLTAGE:	4 kV EN 50289-1-3	
TEMPERATURE RANGE	**DIN VDE:**	**UL/CSA:**
FIXED LAYING:	-50°C UP TO +90°C	UP TO +80°C
FLEXIBLE INSTALLATION:	-40°C UP TO +90°C	
RADIATION RESISTANCE:	5×10^7 CJ/Kg	
MIN. BENDING RADIUS		
CONTINUOUSLY FLEXIBLE:	7,5 x D	
MAX PULLING FORCE:		
STATIC:	50 N/mm²	
DINAMIC:	20 N/mm²	
MAX SPEED (MAIN APPLICATION):	250 m/min	

Features:

HIGHLY FLEXIBLE SINGLE CONDUCTOR
FOR USE IN CABLE TRACKS

GOOD CHEMICAL RESISTANCE

GOOD AGAINST ACIDS,ALKALINES,SOLVENTS,HYDRAULIC LIQUIDS ETC

HIGH ABRASION RESISTANCE

UV RESISTANT

AWM STYLE 10553 AWM I/II A/B 80°C 1000V FT1
OR AWM STYLE 10848 AWM I/II A/B 80°C 1000V FT1

TEST VOLTAGE ACC.TO EN 50289-1-3

CONDUCTOR RESISTANCE AT 20°C ACC.TO EN 50289-1-2

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
04070H7P011A16	1 g 1,5	5,6	14,4	45	16
04070H7P011A14	1 g 2,5	6,5	24	63	14
04070H7P011A12	1 g 4	7,3	38,4	86	12
04070H7P011A10	1 g 6	8,0	57,6	114	10
04070H7P011A08	1 g 10	8,7	96	149	8
04070H7P011A06	1 g 16	10,3	153,6	210	6
04070H7P011A04	1 g 25	11,9	240	310	4
04070H7P011A02	1 g 35	13,7	336	420	2
04070H7P011A01	1 g 50	16,1	480	625	1
04070H7P011A2C	1 g 70	18,1	672	854	2/0
04070H7P011A3C	1 g 95	21	912	1140	3/0
04070H7P011A4C	1 g 120	22,8	1152	1394	4/0
04070H7P011A5C	1 g 150	24,6	1440	1716	250 MCM
04070H7P011A7C	1 g 185	26,7	1776	2077	350 MCM
04070H7P011A9C	1 g 240	31,5	2304	2750	450 MCM
04070H7P011ACC	1 g 300	34,3	2880	3389	600 MCM

Other dimension and colours available on request.

FLEXIDRUM® T 101 C UL

Continuously flexible single conductor with overall copper screen, 0,6/1 kV, UL/CSA 1000 V

SUITABLE FOR CHAIN APPLICATION

SUITABLE FOR FESTOON APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295
INSULATION:	SPECIAL TPE COMPOUND
COLOUR CORES:	GREEN/YELLOW
SCREEN:	TINNED COPPER BRAID
WRAPPING:	NON-WOVEN TAPE
OUTER SHEATH:	BLACK (RAL 9005), SPECIAL PUR COMPOUND

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2
UL 1581 VW-1,CSA FT-1

OIL RESISTANCE ACC. TO:
TMPU ACC. TO DIN VDE 0473 PART 811-2-1,
EN 60811-2-1,
IEC 60811-2-1

HALOGEN FREE ACC. TO:
DIN VDE 0482 PART 267,
EN 50267-2-1,
IEC 60754-1

Technical data:

NOMINAL VOLTAGE:	Uo/U 0,6/1 kV	
UL/CSA:	1000 V	
TEST VOLTAGE:	4 kV EN 50289-1-3	
TEMPERATURE RANGE	**DIN VDE:**	**UL/CSA:**
FIXED LAYING:	-50°C UP TO +90°C	UP TO +80°C
FLEXIBLE INSTALLATION:	-40°C UP TO +90°C	
RADIATION RESISTANCE:	5×10^7 CJ/Kg	
MIN. BENDING RADIUS		
CONTINUOUSLY FLEXIBLE:	7,5 x D	
MAX PULLING FORCE:		
STATIC:	50 N/mm²	
DINAMIC:	20 N/mm²	
MAX SPEED (MAIN APPLICATION):	250 m/min	

Features:

HIGHLY FLEXIBLE SINGLE CONDUCTOR
FOR USE IN CABLE TRACKS

GOOD CHEMICAL RESISTANCE

GOOD AGAINST ACIDS,ALKALINES,SOLVENTS,HYDRAULIC LIQUIDS ETC

HIGH ABRASION RESISTANCE

UV RESISTANT

AWM STYLE 10553 AWM I/II A/B 80°C 1000V FT1
OR AWM STYLE 10848 AWM I/II A/B 80°C 1000V FT1

TEST VOLTAGE ACC.TO EN 50289-1-3

CONDUCTOR RESISTANCE AT 20°C ACC.TO EN 50289-1-2

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
04080H7P011A10	1 g 6	8,5	77	120	10
04080H7P011A08	1 g 10	10,5	127	170	8
04080H7P011A06	1 g 16	11,8	189	236	6
04080H7P011A04	1 g 25	13,5	285	341	4
04080H7P011A02	1 g 35	15	389	447	2
04080H7P011A01	1 g 50	17,5	544	613	1
04080H7P011A2C	1 g 70	19,5	768	837	2/0
04080H7P011A3C	1 g 95	23	1020	1096	3/0
04080H7P011A4C	1 g 120	24,5	1265	1331	4/0
04080H7P011A5C	1 g 150	27,5	1450	1578	250 MCM
04080H7P011A7C	1 g 185	30	2040	2166	350 MCM
04080H7P011A9C	1 g 240	32	2621	2791	450 MCM
04080H7P011ACC	1 g 300	33	-	3130	600 MCM

Other dimension and colours available on request.

GAALTHERM® 180 UL

Continuously flexible high temperature control cable with numbered cores 0,6/1 kV, UL/CSA 1000 V

Construction:

CONDUCTOR:	FLEXIBLE TINNED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295
INSULATION:	GAALTHERM® 545
COLOUR CORES:	BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334, GREEN-YELLOW FROM 3 CORES
STRANDING:	IN LAYERS
WRAPPING:	NON-WOVEN TAPE OVER EACH LAYER
OUTER SHEATH:	GREY (RAL 7000), G AALTHERM® 540

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2

Technical data:

NOMINAL VOLTAGE: UL/CSA:	Uo/U 0,6/1 kV 1000 V
TEST VOLTAGE:	4 kV ACC. TO EN 50264
TEMPERATURE RANGE	
FIXED LAYING:	-25°C UP TO +180°C
FLEXIBLE INSTALLATION:	-25°C UP TO +180°C
SHORT-TIME USE:	+ 200°C
MIN. BENDING RADIUS	
CONTINUOUSLY FLEXIBLE:	10 x D

Features:

HIGH TEMPERATURE RESISTANCE

HIGH NOTCH RESISTANCE

VERY GOOD FLE X IBILITY

SUITABLE FOR USE ON FESTOONS AS LONG AS THERE IS NO FRICTION OR MECHANICAL STRESS ON THE OUTER SHEATH WITH A MAX. TENSILE LOAD OF 15 N/mm²

UL AWM STYLE 4476 200°C 1000 V
CUL AWM I/II A/B 180°C

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

RoHS CE

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
51080H40031A16	3 g 1,5	8	43,2	100	16
51080H40041A16	4 g 1,5	8,5	57,6	120	16
51080H40051A16	5 g 1,5	9,5	72	150	16
51080H40071A16	7 g 1,5	10,5	100,8	210	16
51080H40031A14	3 g 2,5	10	72	148	14
51080H40041A14	4 g 2,5	10,5	96	185	14
51080H40051A14	5 g 2,5	11,8	120	240	14
51080H40071A14	7 g 2,5	13,8	168	330	14
51080H40191A14	19 g 2,5	21,8	456	710	14
51080H40041A12	4 g 4	12,5	153,6	275	12
51080H40051A12	5 g 4	13,8	192	340	12
51080H40071A12	7 g 4	16,3	268,8	480	12
51080H40041A10	4 g 6	15	230,4	420	10
51080H40051A10	5 g 6	16,8	288	500	10
51080H40071A10	7 g 6	19,9	403,2	700	10
51080H40041A08	4 g 10	18	384	620	8
51080H40051A08	5 g 10	19,3	480	750	8
51080H40041A06	4 g 16	21	614,4	920	6
51080H40051A06	5 g 16	23,6	768	1150	6
51080H40041A04	4 g 25	24,5	960	1320	4
51080H40041A02	4 g 35	28,6	1344	1810	2

Other dimension and colours available on request.

GAALTHERM® 180 C UL

Continuously flexible high temperature control cable
with numbered cores, and overall copper screen, 0,6/1 kV UL/CSA 1000 V

Construction:

CONDUCTOR: FLEXIBLE TINNED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295

INSULATION: GAALTHERM® 545

COLOUR CORES: BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334, GREEN-YELLOW FROM 3 CORES

STRANDING: IN LAYERS

WRAPPING: NON-WOVEN TAPE OVER EACH LAYER

SCREEN: TINNED COPPER BRAID

OUTER SHEATH: GREY (RAL 7000), G AALTHERM® 540

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2

Technical data:

NOMINAL VOLTAGE: Uo/U 0,6/1 kV
UL/CSA: 1000 V

TEST VOLTAGE: 4 kV ACC. TO EN 50264

TEMPERATURE RANGE

FIXED LAYING: -25°C UP TO +180°C

FLEXIBLE INSTALLATION: -25°C UP TO +180°C

SHORT-TIME USE: + 200°C

MIN. BENDING RADIUS

CONTINUOUSLY FLEXIBLE: 15 x D

Features:

HIGH TEMPERATURE RESISTANCE

HIGH NOTCH RESISTANCE

VERY GOOD FLE XIBILITY

SUITABLE FOR USE ON FESTOONS AS LONG AS THERE IS NO FRICTION OR MECHANICAL STRESS ON THE OUTER SHEATH WITH A MAX. TENSILE LOAD OF 15 N/mm²

UL AWM STYLE 4476 200°C 1000 V
CUL AWM I/II A/B 180°C

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

RoHS CE

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
51090H4L010A12	1 x 4	7	54,6	-	12
51090H4L010A08	1 x 10	9	118,7	-	8
51090H4L010A3C	1 x 95	22	456	-	3/0
51090H4L010A4C	1 x 120	23,5	2289,3	-	4/0
51090H40031A16	3 g 1,5	8,5	63,8	115	16
51090H40041A16	4 g 1,5	9	80,4	140	16
51090H40051A16	5 g 1,5	10	98,3	170	16
51090H40071A16	7 g 1,5	11,5	147,6	250	16
51090H40031A14	3 g 2,5	10	98,5	170	14
51090H40041A14	4 g 2,5	11,3	142,1	230	14
51090H40051A14	5 g 2,5	12,4	171,9	270	14
51090H40071A14	7 g 2,5	14,4	229,2	370	14
51090H40041A12	4 g 4	13	206,4	310	12
51090H40051A12	5 g 4	14,3	253,2	390	12
51090H40071A12	7 g 4	17	368	550	12
51090H40041A10	4 g 6	15,5	297,9	460	10
51090H40051A10	5 g 6	17,5	388	570	10
51090H40071A10	7 g 6	20,5	519,5	790	10
51090H40041A08	4 g 10	18	485,6	690	8
51090H40051A08	5 g 10	20	594,9	830	8
51090H40041A06	4 g 16	21,8	747,7	1010	6
51090H40051A06	5 g 16	24,3	922,4	1260	6
51090H40041A04	4 g 25	25,5	1117,5	1450	4
51090H40041A02	4 g 35	29,4	1532,5	1950	2

Other dimension and colours available on request.

FLEXIDRUM® TD 210

High speed continuously flexible PUR halogen-free data cable with colored cores,
DIN VDE 300/500 UL/CSA 300 V

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295
INSULATION:	SPECIAL TPE COMPOUND
COLOUR CORES:	ACC. TO DIN 47100
STRANDING:	IN LAYERS
WRAPPING:	NETTING TAPE OVER EACH LAYER AND OVERALL NON-WOVEN TAPE
OUTER SHEATH:	GREY (RAL 7032), PUR TYPE TMPU, ACC. TO DIN VDE 0282 PART 10 + HD 21.1

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2
UL VW-1, CSA FT1, (ACC. TO DIMENSION) FT2

OIL RESISTANCE:
VERY GOOD TMPU ACC. TO DIN VDE 0282 PART 10
DIN VDE 0473 PART 811-2-1
IEC EN 60811-2-1

HALOGEN FREE ACC. TO:
DIN VDE 0482 PART 267,
EN 50267-2-1,
IEC 60754-1

Technical data:

NOMINAL VOLTAGE:	**DIN VDE:** Uo/U 300/500 V **UL/CSA:** 300 V	
TEST VOLTAGE:	1,5 kV ACC. TO DIN VDE 0472 PART 509	
TEMPERATURE RANGE	**DIN VDE:**	**UL/CSA:**
FIXED LAYING:	-50°C UP TO +90°C	UP TO +80°C
FLEXIBLE INSTALLATION:	-40°C UP TO +90°C	
RADIATION RESISTANCE:	5 x 10^7 CJ/K g	
MIN. BENDING RADIUS		
CONTINUOUSLY FLEXIBLE:	5 x D	
MAX SPEED (MAIN APPLICATION):	250 m/min	

Features:

FLEXIBLE AT LOW TEMPERATURES

HIGH ABRASION RESISTANCE

MAT SURFACE OUTER SHEATH

GOOD AGAINST ACIDS, ALKALINES, SOLVENTS, HYDRAULIC LIQUIDS ETC

AWM STYLE 21198 80°C 300V
CSA AWM I/II A/B 80°C 300V FT1 FT2 CE

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
36350C64030A26	3 x 0,14	3,8	4	15	26
36350C64040A26	4 x 0, 14	4	5,4	18	26
36350C64050A26	5 x 0, 14	4,4	6,7	21	26
36350C64070A26	7 x 0, 14	5	9,4	27	26
36350C64100A26	10 x 0, 14	5,5	13,4	33	24
36350C64140A26	14 x 0,14	5,9	18,8	40	26
36350C64180A26	18 x 0,14	6,8	24,2	52	26
36350C64250A26	25 x 0,14	8	33,6	66	26
36350C64030A24	3 x 0,25	4,4	7,2	21	24
36350C64040A24	4 x 0, 25	4,7	9,6	24	24
36350C64050A24	5 x 0, 25	5	12	28	24
36350C64070A24	7 x 0, 25	5,7	16,8	37	24
36350C64100A24	10 x 0, 25	6	24	48	24
36350C64140A24	14 x 0,25	6,5	33,6	60	24
36350C64180A24	18 x 0,25	8	43,2	73	24
36350C64250A24	25 x 0,25	9,4	60	99	24
36350C64030A22	3 x 0,34	4,6	9,8	25	22
36350C64040A22	4 x 0,34	4,7	13	28	22
36350C64050A22	5 x 0,34	5,3	16,3	33	22
36350C64070A22	7 x 0,34	6,1	22,8	44	22
36350C64100A22	10 x 0,34	6,8	32,6	55	22
36350C64140A22	14 x 0,34	7,3	45,7	73	22
36350C64180A22	18 x 0,34	8,5	58,8	91	22
36350C64250A22	25 x 0,34	10,2	81,6	124	22

Other dimension and colours available on request.

FLEXIDRUM® T 210

High speed continuously flexible PUR halogen-free control cable,
DIN VDE 0,6/1 kV, UL/CSA 600/1000 V

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295
INSULATION:	SPECIAL TPE COMPOUND
COLOUR CORES:	BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334, GREEN-YELLOW FROM 3 CORES
STRANDING:	IN LAYERS
WRAPPING:	NON-WOVEN TAPE OVER EACH LAYER
OUTER SHEATH:	GREY (RAL 7000), PUR COMPOUND ACC. TO UL 1581

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2
UL VW-1, CSA FT1, FT2

OIL RESISTANCE:
VERY GOOD TMPU ACC. TO DIN VDE 0282 PART 10
DIN VDE 0473 PART 811-2-1
IEC EN 60811-2-1

HALOGEN FREE ACC. TO:
DIN VDE 0482 PART 267,
EN 50267-2-1,
IEC 60754-1

Technical data:

NOMINAL VOLTAGE:	**DIN VDE:** Uo/U 0,6/1 kV **UL/CSA:** 600/1000 V	
TEST VOLTAGE:	3 kV ACC. TO DIN VDE 0281 PART 2 + HD 21.2	
TEMPERATURE RANGE	**DIN VDE:.**	**UL/CSA:**
FIXED LAYING:	-50°C UP TO +90°C	UP TO +80°C
FLEXIBLE INSTALLATION:	-40°C UP TO +90°C	
RADIATION RESISTANCE:	5 x 10^7 CJ/Kg	
MIN. BENDING RADIUS		
CONTINUOUSLY FLEXIBLE:	5 x D	
MAX SPEED (MAIN APPLICATION):	250 m/min	

Features:

FLEXIBLE AT LOW TEMPERATURES

HIGH ABRASION RESISTANCE

MAT SURFACE OUTER SHEATH

GOOD AGAINST ACIDS,ALKALINES,SOLVENTS,HYDRAULIC LIQUIDS ETC

AWM STYLE 21223 80°C 600 1000 V
CSA AWM I/II A/B 80°C 600V FT1 FT2 CE

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
04110G40031A20	3 g 0,5	5,6	14,4	38	20
04110G40041A20	4 g 0,5	6,2	19,2	45	20
04110G40051A20	5 g 0,5	6,7	24	55	20
04110G40071A20	7 g 0,5	7,6	33,6	72	20
04110G40121A20	12 g 0,5	8,9	57,6	105	20
04110G40181A20	18 g 0,5	10,5	86,4	155	20
04110G40251A20	25 g 0,5	12,2	120	210	20
04110G40341A20	34 g 0,5	13,7	163,2	260	20
04110G40501A20	50 g 0,5	16,3	240	390	20
04110G40611A20	61 g 0,5	18,2	292,6	450	20
04110G41020A19	2 x 0,75	5,8	14,6	41	19
04110G40031A19	3 g 0,75	6,5	21,6	55	19
04110G40041A19	4 g 0,75	6,6	28,8	60	19
04110G40051A19	5 g 0,75	7,2	36	75	19
04110G40071A19	7 g 0,75	8,6	50,4	100	19
04110G40121A19	12 g 0,75	10,3	86,4	150	19
04110G40181A19	18 g 0,75	11,8	129,6	220	19
04110G40251A19	25 g 0,75	14,2	180	290	19
04110G40341A19	34 g 0,75	15,8	244,8	380	19
04110G40501A19	50 g 0,75	18,7	360	540	19
04110G40611A19	61 g 0,75	20,8	439,2	650	19

FLEXIDRUM® T 210

High speed continuously flexible PUR halogen-free control cable,
DIN VDE 0,6/1 kV, UL/CSA 600/1000 V

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
04110G41020A18	2 x 1	6,7	19,2	50	18
04110G40031A18	3 g 1	6,9	28,8	60	18
04110G40041A18	4 g 1	7,1	38,4	75	18
04110G40051A18	5 g 1	7,7	48	90	18
04110G40071A18	7 g 1	9	67,2	125	18
04110G40121A18	12 g 1	11	115,2	185	18
04110G40181A18	18 g 1	13	172,8	270	18
04110G40251A18	25 g 1	15,7	240	370	18
04110G40341A18	34 g 1	17,4	326,4	490	18
04110G40501A18	50 g 1	20,5	480	695	18
04110G40611A18	61 g 1	22,9	586,6	870	18
04110G41020A16	2 x 1,5	7,3	28,8	50	16
04110G40031A16	3 g 1,5	7,4	43,2	80	16
04110G40041A16	4 g 1,5	7,9	57,6	100	16
04110G40051A16	5 g 1,5	8,6	72	120	16
04110G40071A16	7 g 1,5	10,1	100,8	170	16
04110G40121A16	12 g 1,5	12,4	172,8	260	16
04110G40181A16	18 g 1,5	14,5	259,2	375	16
04110G40251A16	25 g 1,5	18	360	510	16
04110G40341A16	34 g 1,5	19,9	489,6	690	16
04110G40501A16	50 g 1,5	23,4	720	975	16
04110G40611A16	61 g 1,5	26	878,4	1200	16
04110G41020A14	2 x 2,5	8,3	48	78	14
04110G40031A14	3 g 2,5	8,8	72	125	14
04110G40041A14	4 g 2,5	10,2	96	160	14
04110G40051A14	5 g 2,5	11,1	120	190	14
04110G40071A14	7 g 2,5	13,2	168	270	14
04110G40121A14	12 g 2,5	15,8	288	420	14
04110G40181A14	18 g 2,5	18,6	432	620	14
04110G40251A14	25 g 2,5	22,8	600	830	14
04110G40031A12	3 g 4	10,5	115,2	180	12
04110G40041A12	4 g 4	11,4	153,6	230	12
04110G40051A12	5 g 4	12,5	192	290	12
04110G40031A10	3 g 6	12,4	172,8	260	10
04110G40041A10	4 g 6	13,8	230,4	330	10
04110G40051A10	5 g 6	15,1	288	420	10
04110G40031A08	3 g 10	15,6	288	430	8
04110G40041A08	4 g 10	17,3	384	360	8
04110G40051A08	5 g 10	19,3	480	520	8
04110G40031A06	3 g 16	18,2	460,8	620	6
04110G40041A06	4 g 16	20,2	614,4	800	6
04110G40051A06	5 g 16	22,4	768	1000	6
04110G40041A04	4 g 25	25,2	960	1200	4
04110G40051A04	5 g 25	25,7	1200	1500	4
04110G40041A02	4 g 35	26,8	1344	1620	2
04110G40051A02	5 g 35	28,7	1680	2030	2
04110G40051A01	4 g 50	34	1920	2280	1

Other dimension and colours available on request.

FLEXIDRUM® TD 210 C

High speed continuously flexible PUR halogen-free with colored cores and overall copper screen, DIN VDE 300/500 UL/CSA 300 V

SUITABLE FOR CHAIN APPLICATION

SUITABLE FOR FESTOON APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295
INSULATION:	SPECIAL TPE COMPOUND
COLOUR CORES:	ACC. TO DIN 47100
STRANDING:	IN LAYERS
WRAPPING:	NETTING TAPE OVER EACH LAYER AND OVERALL NON-WOVEN TAPE
SCREEN:	TINNED COPPER BRAID
WRAPPING:	NON-WOVEN TAPE
OUTER SHEATH:	GREY (RAL 7032), PUR TYPE TMPU, ACC. TO DIN VDE 0282 PART 10 + HD 21.1

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2
UL VW-1, CSA FT1, (ACC. TO DIMENSION) FT2

OIL RESISTANCE:
VERY GOOD TMPU ACC. TO DIN VDE 0282 PART 10
DIN VDE 0473 PART 811-2-1
IEC EN 60811-2-1

HALOGEN FREE ACC. TO:
DIN VDE 0482 PART 267,
EN 50267-2-1,
IEC 60754-1

Technical data:

NOMINAL VOLTAGE:	**DIN VDE:** Uo/U 300/500 V **UL/CSA:** 300 V	
TEST VOLTAGE:	1,5 kV ACC. TO DIN VDE 0472 PART 509 CORE/SCREEN 1,2 kV	
TEMPERATURE RANGE	**DIN VDE:**	**UL/CSA:**
FIXED LAYING:	-50°C UP TO +90°C	UP TO +80°C
FLEXIBLE INSTALLATION:	-40°C UP TO +90°C	
RADIATION RESISTANCE:	5×10^7 CJ/K g	
MIN. BENDING RADIUS		
CONTINUOUSLY FLEXIBLE:	7,5 x D	
MAX SPEED (MAIN APPLICATION):	250 m/min	

Features:

FLEXIBLE AT LOW TEMPERATURES

HIGH ABRASION RESISTANCE

MAT SURFACE OUTER SHEATH

GOOD AGAINST ACIDS,ALKALINES,SOLVENTS,HYDRAULIC LIQUIDS ETC

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

AWM STYLE 21198 80°C 300V
CSA AWM I/II A/B 80°C 300V FT1 FT2 CE

RoHS CE

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
36360C64030A26	3 x 0,14	3,8	13	22	26
36360C64040A26	4 x 0, 14	4,1	16,2	27	26
36360C64050A26	5 x 0, 14	4,3	17,7	32	26
36360C64070A26	7 x 0, 14	4,9	22,7	45	26
36360C64100A26	10 x 0, 14	5,6	41	50	24
36360C64140A26	14 x 0,14	6,3	45	58	26
36360C64180A26	18 x 0,14	6,7	53,2	82	26
36360C64250A26	25 x 0,14	7,8	71,2	105	26
36360C64030A24	3 x 0,25	4,8	18,1	28	24
36360C64040A24	4 x 0, 25	5,1	20,7	33	24
36360C64050A24	5 x 0, 25	5,5	25,1	43	24
36360C64070A24	7 x 0, 25	6,2	32,5	55	24
36360C64100A24	10 x 0, 25	6,8	52	65	24
36360C64140A24	14 x 0,25	7,5	62	75	24
36360C64180A24	18 x 0,25	8,5	75,6	108	24
36360C64250A24	25 x 0,25	10	100,8	135	24
36360C64030A22	3 x 0,34	5,1	20,4	35	22
36360C64040A22	4 x 0,34	4,5	26,2	44	22
36360C64050A22	5 x 0,34	5,8	29,7	54	22
36360C64070A22	7 x 0,34	6,6	53	65	22
36360C64100A22	10 x 0,34	7,2	65	85	22
36360C64140A22	14 x 0,34	8	75	100	22
36360C64180A22	18 x 0,34	9	96,6	128	22
36360C64250A22	25 x 0,34	10,8	131,5	170	22

Other dimension and colours available on request.

FLEXIDRUM® T 210 C

High speed continuously flexible PUR halogen-free control cable
with overall copper screen, DIN VDE 0,6/1 kV, UL/CSA 600/1000 V

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295
INSULATION:	SPECIAL TPE COMPOUND
COLOUR CORES:	BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334, GREEN-YELLOW FROM 3 CORES
STRANDING:	IN LAYERS
WRAPPING:	NON-WOVEN TAPE OVER EACH LAYER
SCREEN:	TINNED COPPER BRAID
WRAPPING:	NON-WOVEN TAPE
OUTER SHEATH:	GRAY (SIMILAR TO RAL 7000), PUR TYPE TMPU ACC.TO DIN VDE 0282 PART.10 + HD 22.1

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2
UL VW-1, CSA FT1, (ACC. TO DIMENSION) FT2

OIL RESISTANCE:
VERY GOOD TMPU ACC.TO DIN VDE 0282 PART 10
DIN VDE 0473 PART 811-2-1
IEC EN 60811-2-1

HALOGEN FREE ACC. TO:
DIN VDE 0482 PART 267,
EN 50267-2-1,
IEC 60754-1 (EQUIVALENT DIN VDE 0472 PART 815)

Technical data:

NOMINAL VOLTAGE:	**DIN VDE:** Uo/U 0,6/1 kV **UL/CSA:** 600/1000 V	
TEST VOLTAGE:	3 kV ACC. TO DIN VDE 0281 PART 2 + HD 21.2 CORE/SCREEN 2 kV	
TEMPERATURE RANGE	**DIN VDE:.**	**UL/CSA:**
FIXED LAYING:	-50°C UP TO +90°C	UP TO +80°C
FLEXIBLE INSTALLATION:	-40°C UP TO +90°C	
RADIATION RESISTANCE:	5×10^7 CJ/Kg	
MIN. BENDING RADIUS		
CONTINUOUSLY FLEXIBLE:	7,5 x D	
MAX SPEED (MAIN APPLICATION):	250 m/min	

Features:

FLEXIBLE AT LOW TEMPERATURES

HIGH ABRASION RESISTANCE

MAT SURFACE OUTER SHEATH

GOOD AGAINST ACIDS,ALKALINES,SOLVENTS,HYDRAULIC LIQUIDS ETC

GOOD EMC RESISTANCE

AWM STYLE 21223 80°C 600 1000 V
CSA AWM I/II A/B 80°C 600V FT1 FT2 CE

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

RoHS CE

FLEXIDRUM® T 210 C

High speed continuously flexible PUR halogen-free control cable
with overall copper screen, DIN VDE 0,6/1 kV, UL/CSA 600/1000 V

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
04120G41020A20	2 x 0,5	6,1	19	47	20
04120G40031A20	3 g 0,5	6,3	43,6	58	20
04120G40041A20	4 g 0,5	6,7	51,1	67	20
04120G40051A20	5 g 0,5	7,1	61,5	77	20
04120G40071A20	7 g 0,5	8,2	74,1	101	20
04120G40121A20	12 g 0,5	9,6	108,2	151	20
04120G40181A20	18 g 0,5	11,1	143	203	20
04120G40251A20	25 g 0,5	12,9	217	299	20
04120G40301A20	30 g 0,5	14,3	235	330	20
04120G40311A20	36 g 0,5	14,6	275,3	379	20
04120G41020A19	2 x 0,75	6,4	27,3	53	19
04120G40031A19	3 g 0,75	6,9	54,1	70	19
04120G40041A19	4 g 0,75	7,3	64	82	19
04120G40051A19	5 g 0,75	7,9	74,3	98	19
04120G40071A19	7 g 0,75	9,2	92,3	123	19
04120G40121A19	12 g 0,75	11	142,4	192	19
04120G40181A19	18 g 0,75	12,6	215,3	294	19
04120G40251A19	25 g 0,75	15,2	289,7	386	19
04120G40301A19	30 g 0,75	16,5	320	440	19
04120G40311A19	36 g 0,75	16,7	387,7	520	19
04120G40031A18	3 g 1	7,1	66,4	82	18
04120G40041A18	4 g 1	8,1	77,3	97	18
04120G40051A18	5 g 1	8,6	89	114	18
04120G40071A18	7 g 1	10	117,9	159	18
04120G40121A18	12 g 1	12	174,9	239	18
04120G40181A18	18 g 1	13,8	270,2	353	18
04120G40251A18	25 g 1	16,5	367,5	481	18
04120G40301A18	30 g 1	18	410	550	18
04120G40311A18	36 g 1	18,3	478,7	633	18
04120G41020A16	2 x 1,5	7,4	45	75	16
04120G40031A16	3 g 1,5	8,1	81,5	104	16
04120G40041A16	4 g 1,5	8,8	101,2	125	16
04120G40051A16	5 g 1,5	9,3	122,2	145	16
04120G40071A16	7 g 1,5	11,1	156,8	206	16
04120G40121A16	12 g 1,5	13,4	269,7	341	16
04120G40181A16	18 g 1,5	15,5	369,2	465	16
04120G40251A16	25 g 1,5	17,5	493,4	633	16
04120G40301A16	30 g 1,5	20,5	525	750	16
04120G40311A16	36 g 1,5	20,7	660,3	856	16
04120G41020A14	2 x 2,5	8,8	65,5	110	14
04120G40031A14	3 g 2,5	8,7	122,8	159	14
04120G40041A14	4 g 2,5	11	150,1	197	14
04120G40051A14	5 g 2,5	11,5	179,6	236	14
04120G40071A14	7 g 2,5	14	265,2	335	14
04120G40121A14	12 g 2,5	16,3	417,1	525	14
04120G40181A14	18 g 2,5	19,7	571,4	739	14
04120G40251A14	25 g 2,5	23,7	780,8	1004	14
04120G40031A12	3 g 4	11,2	172,9	224	12
04120G40041A12	4 g 4	12,1	216,5	287	12
04120G40051A12	5 g 4	13,2	289,2	357	12
04120G40031A10	3 g 6	13,1	258,8	334	10
04120G40041A10	4 g 6	14,7	328,3	414	10
04120G40051A10	5 g 6	16	398,4	485	10
04120G40031A08	3 g 10	16,5	392,9	502	8
04120G40041A08	4 g 10	18,3	507,4	624	8
04120G40051A08	5 g 10	20,5	615,5	731	8
04120G40031A06	3 g 16	19,1	598,4	724	6
04120G40041A06	4 g 16	21,1	758,2	915	6
04120G40051A06	5 g 16	23,3	947,1	1101	6
04120G40041A04	4 g 25	25,9	1148	1312	4
04120G40051A04	5 g 25	28,5	1400,1	1610	4
04120G40041A02	4 g 35	29,7	1546,4	1765	2
04120G40051A02	5 g 35	32,5	1915,1	2119	2

Other dimension and colours available on request.

FLEXIDRUM® TD 210 C TP

High speed continuously flexible PUR halogen-free, screened, twisted pairs data cable,
DIN VDE 300/500 UL/CSA 300 V

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295
INSULATION:	SPECIAL TPE COMPOUND
COLOUR CORES:	ACC. TO DIN 47100
STRANDING:	CORES TWISTED IN PAIRS, PAIRS TWISTED IN LAYERS
WRAPPING:	NETTING TAPE OVER EACH LAYER
SCREEN:	TINNED COPPER BRAID
WRAPPING:	NON-WOVEN TAPE
OUTER SHEATH:	GREY (RAL 7032), PUR TYPE TMPU, ACC. TO DIN VDE 0282 PART 10 + HD 21.1

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2
UL VW-1, CSA FT1, (ACC. TO DIMENSION) FT2

OIL RESISTANCE:
VERY GOOD TMPU ACC. TO DIN VDE 0282 PART 10
DIN VDE 0473 PART 811-2-1
IEC EN 60811-2-1

HALOGEN FREE ACC. TO:
DIN VDE 0482 PART 267,
EN 50267-2-1,
IEC 60754-1

Technical data:

NOMINAL VOLTAGE:	**DIN VDE:** Uo/U 300/500 V **UL/CSA:** 300 V	
TEST VOLTAGE:	1,5 kV ACC. TO DIN VDE 0472 PART 509 CORE/SCREEN 1,2 kV	
TEMPERATURE RANGE	**DIN VDE:**	**UL/CSA:**
FIXED LAYING:	-50°C UP TO +90°C	UP TO +80°C
FLEXIBLE INSTALLATION:	-40°C UP TO +90°C	
RADIATION RESISTANCE:	5×10^7 CJ/Kg	
MIN. BENDING RADIUS		
CONTINUOUSLY FLEXIBLE:	7,5 x D	
MAX SPEED (MAIN APPLICATION):	250 m/min	

Features:

FLEXIBLE AT LOW TEMPERATURES

HIGH ABRASION RESISTANCE

MAT SURFACE OUTER SHEATH

GOOD AGAINST ACIDS, ALKALINES, SOLVENTS, HYDRAULIC LIQUIDS ETC

GOOD EMC RESISTANCE

AWM STYLE 21198 80°C 300 V
CSA AWM I/II A/B 80°C 300V FT1 FT2 CE
OR:
c us AWM STYLE 20233 80°C 300 V FT2 CE

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

FLEXIDRUM® TD 210 C TP

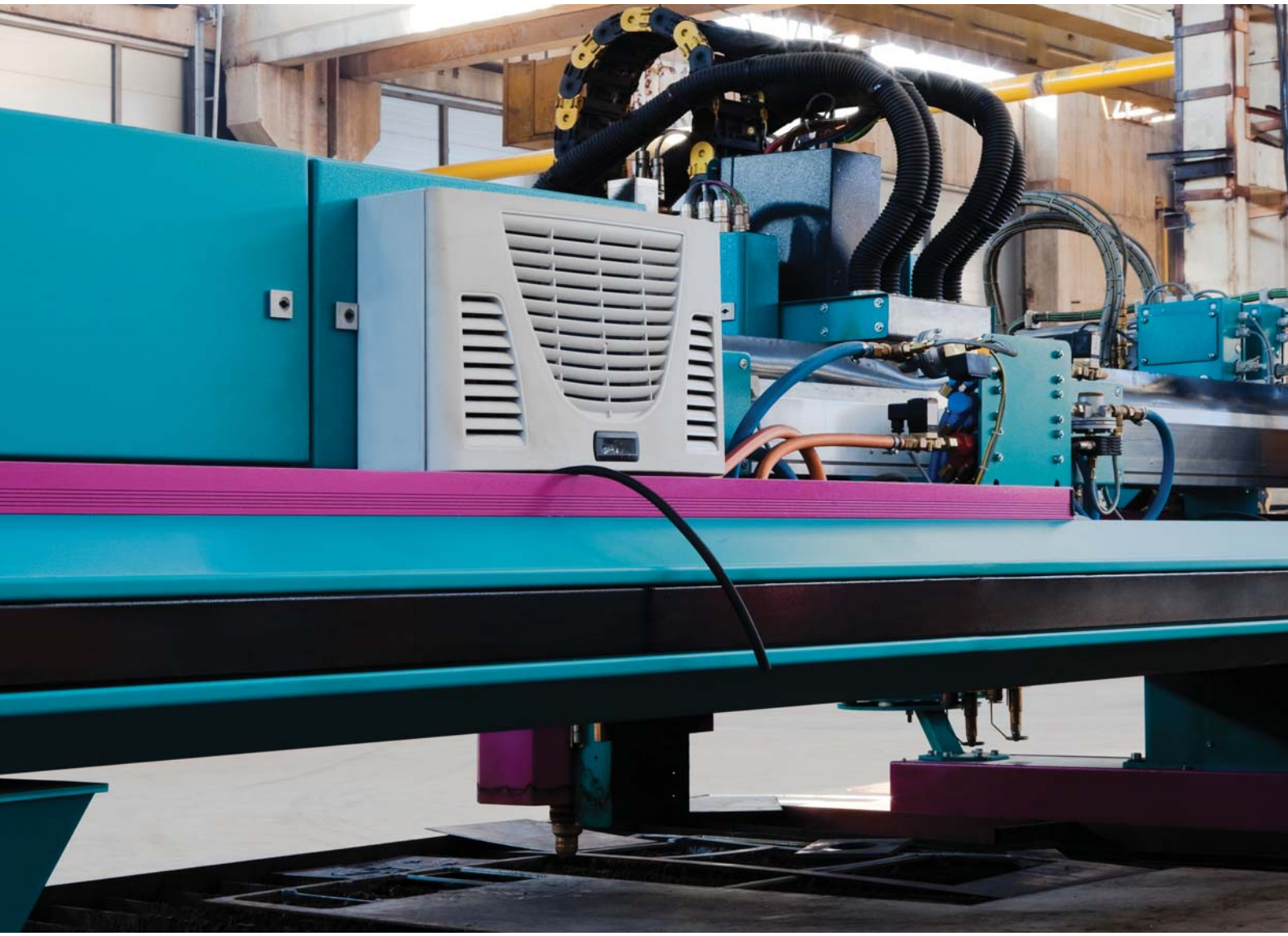
High speed continuously flexible PUR halogen-free, screened, twisted pairs data cable,
DIN VDE 300/500 UL/CSA 300 V

SUITABLE FOR CHAIN APPLICATION

SUITABLE FOR FESTOON APPLICATION

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
36370C64022A26	2 x 2 x 0,14	5,3	17,4	28	26
36370C64032A26	3 x 2 x 0,14	5,9	20,2	32	26
36370C64042A26	4 x 2 x 0, 14	6,3	24,7	39	26
36370C64052A26	5 x 2 x 0, 14	6,7	28,8	46	26
36370C64072A26	7 x 2 x 0,14	7,8	35,9	59	26
36370C64102A26	10 x 2 x 0,14	9	47,5	72	24
36370C64142A26	14 x 2 x 0,14	9,8	62,7	96	26
36370C64182A26	18 x 2 x 0,14	10,4	89,6	129	26
36370C64252A26	25 x 2 x 0,14	11,7	114,3	170	26
36370C64022A24	2 x 2 x 0,25	5,7	21,8	35	24
36370C64032A24	3 x 2 x 0,25	6,3	28,3	44	24
36370C64042A24	4 x 2 x 0, 25	7	36,1	52	24
36370C64052A24	5 x 2 x 0, 25	7,5	41,1	71	24
36370C64062A24	6 x 2 x 0, 25	8,3	47,3	89	24
36370C64072A24	7 x 2 x 0, 25	8,5	54,1	92	24
36370C64102A24	10 x 2 x 0, 25	10	70,8	101	24
36370C64142A24	14 x 2 x 0,25	10,8	108,7	153	24
36370C64182A24	18 x 2 x 0,25	11,4	133,4	189	24
36370C64252A24	25 x 2 x 0,25	12,9	171,9	262	24
36370C64022A22	2 x 2 x 0,34	6,1	20,3	40	22
36370C64032A22	3 x 2 x 0,34	7	34,9	52	22
36370C64042A22	4 x 2 x 0,34	7,5	43,2	63	22
36370C64052A22	5 x 2 x 0,34	8,1	53,1	73	22
36370C64072A22	7 x 2 x 0,34	9,3	66,4	94	22
36370C64102A22	10 x 2 x 0,34	10,8	90,5	121	22
36370C64142A22	14 x 2 x 0,34	11,8	138,3	181	22
36370C64182A22	18 x 2 x 0,34	12,4	169,2	223	22
36370C64252A22	25 x 2 x 0,34	14,2	247,3	313	22
36370C64022A20	2 x 2 x 0,5	6,3	34,6	52	20
36370C64032A20	3 x 2 x 0,5	7,5	47,3	69	20
36370C64042A20	4 x 2 x 0,5	8,5	61,4	87	20
36370C64052A20	5 x 2 x 0,5	9,5	73,1	115	20
36370C64062A20	6 x 2 x 0,5	10,7	85,3	147	20
36370C64072A20	7 x 2 x 0,5	11	108,4	161	20
36370C64082A20	8 x 2 x 0,5	12	121,5	175	20
36370C64102A20	10 x 2 x 0,5	13	143,3	192	20
36370C64142A20	14 x 2 x 0,5	15	191,7	276	20
36370C64182A20	18 x 2 x 0,5	16,5	257,8	345	20
36370C64252A20	25 x 2 x 0,5	19,5	336,5	446	20
36370C64022A19	2 x 2 x 0,75	9	47,4	69	19
36370C64032A19	3 x 2 x 0,75	9,5	66,2	87	19
36370C64042A19	4 x 2 x 0,75	10,5	101	112	19
36370C64052A19	5 x 2 x 0,75	11,5	118,8	163	19
36370C64072A19	7 x 2 x 0,75	12,5	148	212	19
36370C64082A19	8 x 2 x 0,75	14	188	258	19
36370C64102A19	10 x 2 x 0,75	15,5	228	296	19
36370C64122A19	12 x 2 x 0,75	16	266	358	19
36370C64142A19	14 x 2 x 0,75	17,5	296,9	390	19
36370C64182A19	18 x 2 x 0,75	19,5	366,1	482	19
36370C64252A19	25 x 2 x 0,75	22,5	480,5	620	19
36370C64032A18	3 x 2 x 1	10	88	128	18
36370C64042A18	4 x 2 x 1	10,7	101,4	153	18
36370C64052A18	5 x 2 x 1	11,7	119,4	190	18
36370C64062A18	6 x 2 x 1	12,8	140	250	18
36370C64082A18	8 x 2 x 1	15,6	191	370	18
36370C64062A16	6 x 2 x 1,5	14,8	226	319	16

Other dimension and colours available on request.



SPECIAL GAALFLEX® SERVO T 830
PVC motor connection cable

SPECIAL GAALFLEX® SERVO T 830 C
PVC motor connection cable with overall copper screen

SUITABLE FOR CHAIN APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6 ACC TO IEC 60228, DIN VDE 0295
INSULATION:	SPECIAL PP COMPOUND
COLOUR CORES:	BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334 +GREEN-YELLOW
STRANDING:	IN LAYERS
WRAPPING:	NON-WOVEN TAPE
SCREEN (SPECIAL T 830 C):	TINNED COPPER BRAID
WRAPPING (SPECIAL T 830 C):	NON-WOVEN TAPE
OUTER SHEATH:	ORANGE (RAL 2003), SPECIAL PVC COMPOUND 90°C

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0472 PART 804 TEST METHOD B,
IEC 60332-1, IEC 60332-3-24, CSA FT1

OIL RESISTANCE ACC. TO:
EN 50363-4-1

Technical data:

NOMINAL VOLTAGE:	Uo/U 0,6/1 KV **UL/CSA:**1000 V
TEST VOLTAGE:	SUPPLY CORES:4 kV CORE SCREEN: 1,5 kV
TEMPERATURE RANGE	
FIXED LAYING:	- 40°C UP TO + 80°C
FLEXIBLE INSTALLATION:	- 10°C UP TO + 80°C
MIN. BENDING RADIUS	
FIXED LAYING:	4 x D
FLEXIBLE INSTALLATION:	7,5 x D
MAX SPEED (MAIN APPLICATION):	
UNSUPPORTED:	8 m/sec
GLIDING:	4 m/sec
MAX ACCELERATION (MAIN APPLICATION):	30 m/sec²
BENDING CYCLES (MAIN APPLICATION):	UP TO 6 MILION
TRAVEL DISTANCES (MAIN APPLICATION):	UP TO 10 mt

Features:

UL AWM STYLE 2570 80°C 1000 V, CSA AWM I/II A/B

SUITABLE FOR TRACK CABLES
SPEED 8 M/SEC (UNSUPPORTED), 4 M/SEC (GLIDING), ACC. 30 M/SEC²

LOW CAPACITANCE

HIGH OIL RESISTANCE

HIGH FLEXIBILITY

DESINA® COLOURS

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

SPECIAL GAALFLEX® SERVO T 830
PVC motor connection cable

SPECIAL GAALFLEX® SERVO T 830 C
PVC motor connection cable with overall copper screen

SUITABLE FOR CHAIN APPLICATION

DESINA® T 830

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ±10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
37010HG0041A19	4 g 0,75	6,9	28,8	76	19
37010HG0041A18	4 g 1	7,4	38,4	92	18
37010HG0041A16	4 g 1,5	8,1	57,6	120	16
37010HG0041A14	4 g 2,5	9,5	96	173	14
37010HG0041A12	4 g 4	11,2	153,6	255	12
37010HG0041A10	4 g 6	13,4	230,4	385	10
37010HG0041A08	4 g 10	16,3	384	595	8
37010HG0041A06	4 g 16	20,3	614,4	888	6
37010HG0041A04	4 g 25	24,2	960	1296	4

DESINA® T 830 C

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ±10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
37020HG0041A19	4 g 0,75	7,5	51,4	87	19
37020HG0041A18	4 g 1	8	66,7	105	18
37020HG0041A16	4 g 1,5	8,7	85,8	130	16
37020HG0041A14	4 g 2,5	10,1	130,2	183	14
37020HG0041A12	4 g 4	11,8	198,7	265	12
37020HG0041A10	4 g 6	14,4	300,6	397	10
37020HG0041A08	4 g 10	17,3	474,4	601	8
37020HG0041A06	4 g 16	21,3	724,9	913	6
37020HG0041A04	4 g 25	25	1090,8	1320	4
37020HG0041A02	4 g 35	30,2	1504,9	1863	2
37020HG0041A01	4 g 50	35,9	2155,8	2650	1
37020HG0041A2C	4 g 70	42,3	2970,8	3637	2/0

SPECIAL GAALFLEX® SERVO T 830

PVC motor connection cable

SPECIAL GAALFLEX® SERVO T 830 C

PVC motor connection cable with overall copper screen

SUITABLE FOR CHAIN APPLICATION

DESINA® SPECIAL T 830 C + 1 SCREENED PAIR

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
37025HG004BA19	4 g 0,75 + (2 x 0,5)C	10	89,6	124,2	19
37025HG004BA16	4 g 1,5 + (2 x 0,5)C	11,1	124,3	166,7	16
37025HG004BA14	4 g 2,5 + (2 x 0,5)C	11,3	162,6	207	14
37026HG004BA16	4 g 1,5 + (2 x 0,75)C	12,2	137,1	179,8	16
37026HG004BA14	4 g 2,5 + (2 x 0,75)C	12,4	175,4	220,3	14
37027HG004BA16	4 g 1,5 + (2 x 1)C	11,7	143,8	218,8	16
37027HG004BA14	4 g 2,5 + (2 x 1)C	12,7	187,8	271,4	14
37027HG004BA12	4 g 4 + (2 x 1)C	14,2	265,1	357,7	12
37027HG004BA10	4 g 6 + (2 x 1)C	15,9	352	466,3	10
37027HG004BA08	4 g 10 + (2 x 1)C	18,6	525,3	637,3	8
37027HG004BA06	4 g 16 + (2 x 1)C	22,2	775,9	936,4	6
37028HG004BA16	4 g 1,5 + (2 x 1,5)C	12,1	156,5	233,9	16
37028HG004BA14	4 g 2,5 + (2 x 1,5)C	13,1	200,6	286,7	14
37028HG004BA12	4 g 4 + (2 x 1,5)C	14,6	287,3	381,3	12
37028HG004BA10	4 g 6 + (2 x 1,5)C	16,3	374,3	490,2	10
37028HG004BA08	4 g 10 + (2 x 1,5)C	18,9	537,9	686,4	8
37028HG004BA06	4 g 16 + (2 x 1,5)C	22	788,4	979,7	6
37028HG004BA04	4 g 25 + (2 x 1,5)C	26,2	1154,5	1399,1	4
37028HG004BA02	4 g 35 + (2 x 1,5)C	30,6	1568,3	1914	2

DESINA® SPECIAL T 830 C + 2 SCREENED PAIRS

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
37025HG004B900	4 g 0,75 + (2 x 0,5)C + (2 x 0,5)C	11,2	122,1	196,7	19
37025HG004B901	4 g 1 + (2 x 0,75)C + (2 x 0,75)C	12,1	152,5	233,6	18
37025HG004B902	4 g 1,5 + (2 x 0,75)C + (2 x 0,75)C	12,7	177,1	264,8	16
37025HG004B903	4 g 2,5 + (2 x 1)C + (2 x 1)C	14,4	248,4	349,9	14
37025HG004B904	4 g 4 + (2 x 1)C + (2 x 1,5)C	16,3	338,5	460,5	12
37025HG004B905	4 g 6 + (2 x 1)C + (2 x 1,5)C	17,9	425,1	571,6	10
37025HG004B906	4 g 10 + (2 x 1)C + (2 x 1,5)C	20,4	589,2	771,9	8
37025HG004B907	4 g 16 + (2 x 1,5)C + (2 x 1,5)C	23,5	852,1	1082,5	6
37025HG004B908	4 g 25 + (2 x 1,5)C + (2 x 1,5)C	27,2	1217,6	1501,1	4

Other dimension and colours available on request.

GAALFLEX® SERVO T 839 C

paired PUR transmission cable with coloured cores and overall copper screen

SUITABLE FOR CHAIN APPLICATION

SUITABLE FOR FESTOON APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE TINNED COPPER ACC. TO DIN VDE 0812
INSULATION:	SPECIAL POLYMER COMPOUND
COLOUR CORES:	DIN 47100 AS FAR APPLICABLE
SCREEN:	PAIRS SCREENED INDIVIDUALLY WITH TINNED COPPER BRAID
INNER SHEATH:	SPECIAL POLYMER COMPOUND
STRANDING:	CORES TWISTED TOGETHER IN PAIRS AND IN LAYERS
WRAPPING:	NON WOVEN TAPE OR PETP FOILL
SCREEN:	TINNED COPPER BRAID
WRAPPING:	NON-WOVEN TAPE
OUTER SHEATH:	GREEN (RAL 6018), PUR TYPE TMPU ACC.TO DIN VDE 0282 PART 10 + HD 22.1, OR GREEN (RAL 6018), PUR TYPE PU ACC. TO UL 758

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
IEC 60332-1-2
EN 60332-1-2
UL CSA FT-1,FT-2

OIL RESISTANCE:
VERY GOOD - PUR TMPU ACC. TO DIN VDE 0282 PART.10+ HD 22.10

HALOGEN FREE ACC. TO:
DIN VDE 0472 PART 815 + IEC

Technical data:

NOMINAL VOLTAGE:	MAX. 30 V	**UL**: 30 V
TEST VOLTAGE:	750 V	
TEMPERATURE RANGE	**DIN VDE:**	**UL:** UP TO + 80°C
FIXED LAYING:	- 50°C UP TO + 80°C	
FLEXIBLE INSTALLATION:	- 40°C UP TO + 80°C	
RADIATION RESISTANCE:	5 x 10^7 CJ/kg	
MIN. BENDING RADIUS		
FIXED LAYING:	5 x D	
FLEXIBLE INSTALLATION:	10 x D	
CONTINUOUSLY FLEXIBLE:	12 x D	
MAX SPEED (MAIN APPLICATION):	250 m/min	

Features:

UL AWM STYLE 20236 80°C 30 V

GOOD EMC CHARACTERISTICS

FLEXIBLE INSTALLATION

OIL RESISTANT

VERY GOOD WEATHER RESISTANCE

GOOD AGAINST ACIDS, ALKALINES, SOLVENTS, HYDRAULIC LIQUIDS ETC.
OR OIL-RATING 60°C ACC. TO UL 758

LONG SERVICE LIFE

ADHESION-FREE INSTALLATION

HALOGEN-FREE

LABS UNCRITICA

MAT SURFACE OUTER SHEATH

DESINA® COLOURS

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

RoHS CE

GAALFLEX® SERVO T 839 C

paired PUR transmission cable with coloured cores and overall copper screen

SUITABLE FOR CHAIN APPLICATION

SUITABLE FOR FESTOON APPLICATION

SHEATH MATERIAL PU ACC. TO UL 758

Part no.	Color code	No. of cores x cross section n x mm²	Outer Ø ca. mm ±10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
37140AE4029901	SPECIAL COLORED	2 x 2 x 0,15 + 2 x 0,38	6,9	28,1	52	-/-
37140AE4029902	DIN 47100	4 x 0,18	4,9	18,9	28	-
37140AE4022903	DIN 47100	4 x 2 x 0,18	6,3	30,8	47	-
37140AE4029904	SPECIAL COLORED	4 x 2 x 0,25 + 2 x 1	8	61	96	24/18
37140AE4029905	SPECIAL COLORED	4 x 2 x 0,14 + 4 x 0,5	8	49,7	74	26/20
37140AE4039906	SPECIAL COLORED	3 x (2 x 0,25)D2Y + 4 x 0,5	9,7	81,9	122	24/20
37140AE4029907	SPECIAL COLORED	3 x 2 x 0,25 + 2 x 0,5	6,7	41,7	66	24/20
37140AE4029908	SPECIAL COLORED	4 x (2 x 0,25)D + 2 x 0,5	8,2	60,7	91	24/20
37140AE4029909	SPECIAL COLORED	6 x 2 x 0,34 + 1 x (2 x 0,34)C+ 2 x 1	9,4	107,8	134	22/22/18
37140CE4042A24	DIN 47100	4 x 2 x 0,25	7,2	38,7	64	24
37140AE4042A24	DIN 47100	4 x (2 x 0,25)CY	9,1	80,3	120	24
37140AE4042A22	DIN 47100	4 x (2 x 0,34)C	9,8	92,3	138	22
37140AE4082A22	DIN 47100	8 x (2 x 0,34)C	16,2	188	282	22
37140AE4029913	SPECIAL COLORED	5 x (2 x 0,14)D + 2 x 0,5	8	49	73	26/20
37140AE4029914	ACC. TO SIEMENS STANDARD	3 x (2 x 0,14)D2Y + 4 x 0,14 + 4 x 0,22 + 2 x 0,5	9,5	80,4	130	26/26/-/20
37140AE4029915	SPECIAL COLORED	3 x (2 x 0,34)D12Y + 16 x 0,34	11,6	117,1	175	22/22
37140AE4029916	DIN 47100	4 x (2 x 0,5)C	9,9	123	184	20
37140AE4039917	SPECIAL COLORED	3 x (2 x 0,14)D2Y + 2 x 0,5	8,6	57,7	86	26/20
37140CE405B927	DIN 47100	5X0,5+2X0,18	7,5	49	95	20/25

SHEATH MATERIAL TMPU ACC. TO DIN VDE 0282

Part no.	Color code	No. of cores x cross section n x mm²	Outer Ø ca. mm ±10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
37140AE4039919	SPECIAL COLORED	3 x (2 x 0,14)D + 2 x (0,5)D	9	71,4	96	26/20
37140AE4029920	ACC. TO SIEMENS STANDARD	3 x (2 x 0,14)D + 4 x 0,14 + 2 x 0,5	8,9	61	97	26/26/20
37140AE4029921	SPECIAL COLORED	3 x (2 x 0,14)D + 4 x 0,14 + 4 x 0,22 + 2 x 0,5	9,5	79	111	26/26/-/20
37140AE4049922	SPECIAL COLORED	4 x 2 x 0,38 + 4 x 0,5	8,9	76,3	106	-/20
37140AE4082923	DIN 47100	8 x 2 x 0,18	7,8	48	74	-
37140AE4029924	DIN 47100	12 x 0,22	6,9	42,5	63	-
37140AE4029925	ACC. TO SIEMENS STANDARD	4 x (2 x 0,25)C12Y + (2 x 1)C12Y	13,2	-	-	24/18
37140AE4029926	SPECIAL COLORED	3X(2X0,25)C+2X0,5	8,8	-	-	24/20
37140AE8039910	US4	3 x (2 x 0,14)D2Y + 2 x 0,5	8,6	57,5	89	26/20

Other dimension and colours available on request.

FLEXIDRUM® T 310

TPE/PUR motor connection cable 0,6/1 kV, UL/CSA 1000 V

SUITABLE FOR CHAIN APPLICATION

SUITABLE FOR FESTOON APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6 ACC. TO IEC 60228, DIN VDE 0295
INSULATION:	SPECIAL TPE COMPOUND
COLOUR CORES:	BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334 GREEN-YELLOW FROM 3 CORES
STRANDING:	IN LAYERS + FILLERS
WRAPPING:	NON-WOVEN TAPE
OUTER SHEATH:	ORANGE (RAL 2003), SPECIAL PUR COMPOUND

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2

OIL RESISTANCE:
VERY GOOD TMPU ACC. TO DIN VDE 0282 PART 10
+ HD 22.10, ACC. TO DIN VDE 0473 PART 811-2-1,
EN 60811-2-1
EC 60811-2-1

HALOGEN FREE ACC. TO:
ACC. TO DIN VDE 0482, PART 267
EN 50267-2-1 /
IEC 60754-1
(EQUIVALENT DIN VDE 0472 PART 815)

Technical data:

NOMINAL VOLTAGE:	Uo/U 0,6/1 KV	**UL/CSA:** 1000 V
TEST VOLTAGE:	4 kV	
TEMPERATURE RANGE	**DIN VDE**	**UL/CSA:** UP TO +80°C
FIXED LAYING:	- 50°C UP TO + 90°C	
FLEXIBLE INSTALLATION:	- 40°C UP TO + 90°C	
RADIATION RESISTANCE:	5 x 10^7 CJ/KG	
MIN. BENDING RADIUS		
FIXED LAYING:	4 x D	
FLEXIBLE INSTALLATION:	6 x D	
CONTINUOUSLY FLEXIBLE:	10 x D	
MAX SPEED (MAIN APPLICATION):	250 m/min	

Features:

AWM STYLE 21223 80°C 1000 V
CSA AWM I/II A/B 80°C 1000 V FT1 CE

VERY HIGH FLEXIBLE

SUITABLE FOR CABLE TRACKS

OIL RESISTANT

VERY LONG SERVICE LIFE

ADHESION-FREE INSTALLATION

HALOGEN-FREE

LABS UNCRITICAL

FLEXIBLE AT LOW TEMPERATURES

GOOD AGAINST ACIDS, ALKALINES, SOLVENTS,
HYDRAULIC LIQUIDS ETC.

VERY GOOD WEATHER RESISTANT

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
04150HG0041A16	4 g 1,5	7,7	57,6	100	16
04150HG0041A14	4 g 2,5	9,3	96	149	14
04150HG0041A12	4 g 4	10,8	153,6	230	12
04150HG0041A10	4 g 6	12,9	230,4	334	10
04150HG0041A08	4 g 10	15,5	384	520	8
04150HG0041A06	4 g 16	18,8	614,4	806	6
04150HG0041A04	4 g 25	23,7	960	1245	4
04150HG0041A02	4 g 35	26,6	1344	1688	2
04150HG0041A01	4 g 50	31,8	1920	2381	1

Other dimension and colours available on request.

GAALFLEX® SERVO T 834 C

TPE/PUR with overall copper screen,acc.to SIEMENS standard 6FX8008

SUITABLE FOR CHAIN APPLICATION

SUITABLE FOR FESTOON APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6 ACC TO IEC 60228, DIN VDE 0295
INSULATION:	SPECIAL TPE COMPOUND
COLOUR CORES:	BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334 GREEN-YELLOW FROM 3 CORES 0,34 mm² : ACC. TO DIN 47100
STRANDING:	IN LAYERS + FILLERS
WRAPPING:	NON-WOVEN TAPE
SCREEN:	TINNED COPPER BRAID
OUTER SHEATH:	ORANGE (RAL 2003), PUR COMPOUND, ACC. TO UL 758

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
IEC 60332-1-2
EN 60332-1-2
UL CSA FT-1, FT-2

OIL RESISTANCE ACC. TO:
DIN VDE 0473 PART 811-2-1,
IEC 60811-2-1

HALOGEN FREE ACC. TO:
IEC 60754-1
(EQUIVALENT DIN VDE 0472 PART 815)

Technical data:

NOMINAL VOLTAGE:	Uo/U 0,6/1 KV	**UL/CSA:**1000 V
TEST VOLTAGE:	4 kV x 5 MIN 4 kV x 1 MIN	
TEMPERATURE RANGE	**DIN VDE**	**UL/CSA:** UP TO +80°C
FIXED LAYING:	- 50°C UP TO + 90°C	
FLEXIBLE INSTALLATION:	- 40°C UP TO + 90°C	
RADIATION RESISTANCE:	5 x 10^7 CJ/kg	
MIN. BENDING RADIUS		
FIXED LAYING:	5 x D	
FLEXIBLE INSTALLATION:	7 x D	
CONTINUOUSLY FLEXIBLE:	7 x D	
MAX SPEED (MAIN APPLICATION):	300 m/min	

Features:

UL AWM STYLE 21223 80°C,1000V
CSA AWM I/II A/B 80°C 1000 V FT1 FT2

VERY HIGH FLEXIBILITY

OIL RESISTANT

VERY LONG SERVICE LIFE

ADHESION-FREE INSTALLATION

LABS UNCRITICAL

FLEXIBLE AT LOW TEMPERATURE

DESINA® COLOURS

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

SIEMENS

Part no.	acc.to SIEMENS Standard	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
37080HG0041A16	6FX8008-1BB11	4 g 1,5	9,1	83,5	126	16
37080HG0041A14	6FX8008-1BB21	4 g 2,5	11	142,5	192	14
37080HG0041A12	6FX8008-1BB31	4 g 4	12,5	206,7	273	12
37080HG0041A10	6FX8008-1BB41	4 g 6	15,5	298,3	399	10
37080HG0041A08	6FX8008-1BB51	4 g 10	17,8	495,2	605	8
37080HG0041A06	6FX8008-1BB61	4 g 16	22,8	750	951	6
37080HG0041A04	6FX8008-1BB25	4 g 25	25,7	1120	1331	4
37080HG0041A02	6FX8008-1BB35	4 g 35	29,2	1534	1732	2
37080HG0041A01	6FX8008-1BB50	4 g 50	34,3	2144	2428	1
37080HG0041A2C	6FX8008-1BB70	4 g 70	39,9	3029	3803	2/0

Other dimension and colours available on request.

GAALFLEX® SERVO T 844 C

paired TPE/PUR with overall copper screen acc.to SIEMENS standard 6FX8008

SUITABLE FOR CHAIN APPLICATION

SUITABLE FOR FESTOON APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC. TO IEC 60228, DIN VDE 0295 > 0,5 mm² ACC. TO DIN VDE 0812
INSULATION:	SPECIAL TPE COMPOUND
POWER COLOUR CORES:	BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334 GREEN-YELLOW FROM 3 CORES **0,34 mm² :** ACC. TO DIN 47100
SIGNAL COLOUR CORES:	
PAIRS:	BLACK AND WHITE
MULTI PAIRS:	BLACK AND WHITE NUMERED
QUADS:	BLACK, WHITE, RED, YELLOW
STRANDING:	SUPPLY CORES AND CONTROL CORES TOGETHER IN LAYERS + FILLERS
SCREEN:	TINNED COPPER BRAID
WRAPPING:	PLASTIC TAPE
OUTER SHEATH:	ORANGE (RAL 2003), PUR COMPOUND, ACC. TO UL 758

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
IEC 60332-1-2
EN 60332-1-2
UL CSA FT-1, FT-2

OIL RESISTANCE:
VERY GOOD, ACC. TO INTERNAL STANDARD, IEC 60811-2-1

HALOGEN FREE ACC. TO:
IEC 60754-1
(EQUIVALENT DIN VDE 0472 PART 815)

Technical data:

NOMINAL VOLTAGE:	**DIN VDE:** SUPPLY CORES Uo/U 0,6/1 KV **UL/CSA:** SUPPLY CORES 1000 V **DIN VDE:** CONTROL CORES 350 V **UL/CSA:** CONTROL CORES 300 V
TEST VOLTAGE:	SUPPLY CORES: 4 kV CORE SCREEN: 1,5 kV
TEMPERATURE RANGE	**DIN VDE** **UL/CSA:** UP TO +80°C
FIXED LAYING:	- 50°C UP TO + 90°C
FLEXIBLE INSTALLATION:	- 40°C UP TO + 90°C
RADIATION RESISTANCE:	5 x 10^7 CJ/kg
MIN. BENDING RADIUS	
FIXED LAYING:	5 x D
FLEXIBLE INSTALLATION:	7 x D
CONTINUOUSLY FLEXIBLE:	7 x D
MAX SPEED (MAIN APPLICATION):	300 m/min

Features:

UL AWM STYLE 21223 80°C, 1000V
CSA AWM I/II A/B 80°C 300 V FT1 FT2

VERY GOOD EMC CHARACTERISTICS

LONG LIFE SERVICE

ADHESION-FREE INSTALLATION

HIGH FLEXIBILITY

GOOD AGAINST ACIDS, ALKALINES, SOLVENTS,
HYDRAULIC LIQUIDS ETC.

VERY GOOD WEATHER RESISTANCE

HALOGEN-FREE

LABS UNCRITICAL

FLEXIBLE AT LOW TEMPERATURES

DESINA® COLOURS

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

RoHS CE

GAALFLEX® SERVO T 844 C

paired TPE/PUR with overall copper screen acc.to SIEMENS standard 6FX8008

SUITABLE FOR CHAIN APPLICATION

SUITABLE FOR FESTOON APPLICATION

DESINA® INDRAMAT

Part no.	acc. to INDRAMAT Standard	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
37100HG004B926	-	4 x 0,75+(2 x 0,5)STC	8,7	75,2	-	19/20
37100HG004B909	INK-0653	4 g 1 + 2 x (2 x 0,75)STC	11,8	148	260	18/19
37100HG004B910	INK-0650	4 g 1,5 + 2 x (2 x 0,75)STC	12,5	170	300	16/19
37100HG004B911	-	4 g 2,5 + 2 x (2 x 0,75)STC	-	-	-	14/19
37100HG004B912	INK-0602	4 g 2,5 + 2 x (2 x 1)STC	15	229	350	14/18
37100HG004B913	-	4 g 4 + 2 x (2 x 1)STC	16,5	312	480	12/18
37100HG004B914	INK-0603	4 g 4 + (2 x 1,5) STC + (2 x 1)STC	16,3	318	500	12/18
37100HG004B915	-	4 g 4 + 2 x (2 x 1,5)STC	17	324	505	12/16
37100HG004B916	-	4 g 6 + 2 x (2 x 1)STC	18,5	437	615	10/18
37100HG004B917	INK-0604	4 g 6 + (2 x 1,5)STC + (2 x 1)STC	19	445	630	10/16/18
37100HG004B918	-	4 g 6 + 2 x (2 x 1,5)STC	19,3	450	640	10/16
37100HG004B919	-	4 g 10 + 2 x (2 x 1)STC	21,8	609	920	8/18
37100HG004B920	INK-0605	4 g 10 + (2 x 1,5)STC + (2 x 1)STC	22,7	610	930	8/16/18
37100HG004B921	-	4 x 10 + 2 x (2 x 1,5)STC	22,7	625	940	8/16
37100HG004B922	INK-0606	4 x 16 + 2 x (2 x 1,5)STC	27,2	904	1240	6/16
37100HG004B923	INK-0607	4 x 25 + 2 x (2 x 1,5)STC	28,3	1323	1610	4/16
37100HG004B924	INK-0667	4 x 35 + 2 x (2 x 1,5)STC	32,8	1621	2220	2/16

DESINA® SIEMENS

Part no.	acc. to SIEMENS Standard	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
37100HG004B900	6FX8008-1BA11	4 g 1,5 + (2 x 1,5)C	12	153	230	16/16
37100HG004B901	6FX8008-1BA21	4 g 2,5 + (2 x 1,5)C	13,5	193	285	14/16
37100HG004B902	6FX8008-1BA31	4 g 4 + (2 x 1,5)C	15	260	370	12/16
37100HG004B903	6FX8008-1BA41	4 g 6 + (2 x 1,5)C	17	355	480	10/16
37100HG004B904	6FX8008-1BA51	4 g 10 + (2 x 1,5)C	19,5	525	680	8/16
37100HG004B905	6FX8008-1BA61	4 g 16 + (2 x 1,5)C	22,5	800	1030	6/16
37100HG004B906	6FX8008-1BA25	4 g 25 + (2 x 1,5)C	26	1180	1400	4/16
37100HG004B907	6FX8008-1BA35	4 g 35 + (2 x 1,5)C	30	1585	1905	2/16
37100HG004B908	6FX8008-1BA50	4 x 50 + (2 x 1,5) C	34	2173	2525	1/16

Other dimension and colours available on request.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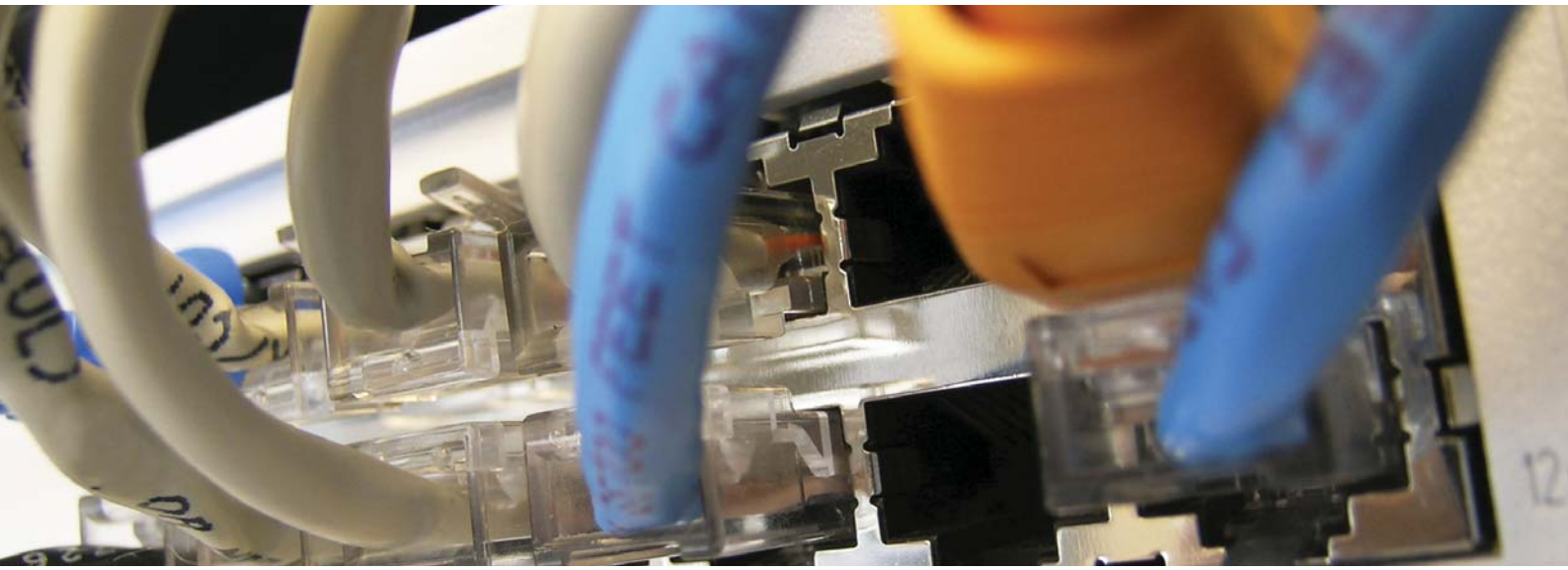


PROFIBUS 637 UL approval

Construction:

CONDUCTOR:	SOLID (39141) OR STRANDED (39140) RED COPPER CONDUCTOR 7X0,25 mm -22/7 AWG
INSULATION:	SPECIAL PE COMPOUND ACC. TO DIN VDE 0819 PART 103
COLOUR CORES:	RED, GREEN
STRANDING:	IN LAYERS
SCREEN:	ALUMINIUM TAPE AND TINNED COPPER BRAID
OUTER SHEATH:	VIOLET (RAL 4001 OR 4005), PVC OIL RESISTANT COMPOUND, ACC. TO DIN VDE 0281 PART 1

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
IEC 60332-1-2
EN 60332-1-2

OIL RESISTANCE ACC. TO:
DIN VDE 0281 PART 1
DIN VDE 0473 PART.811-2-1
DIN VDE 0207 PART. 5

UV RESISTANCE ACC. TO:
UL1581 §1200 STD.

Technical data:

PEAK OPERATING VOLTAGE:	MAX. 350 V
UL VOLTAGE:	**(PROFIBUS 637):** 300 V
TEST VOLTAGE:	1,5 kV
TEMPERATURE RANGE	**(PROFIBUS 637): UL:** UP TO +80°C
FIXED LAYING:	-30°C UP TO +80°C
FLEXIBLE INSTALLATION:	-5°C UP TO +80°C
MIN. BENDING RADIUS:	12 x D
CHARACTERISTIC IMPEDANCE 3-20 MHz:	150 Ω ± 10%

Features:

UL STYLE: AWM STYLE 2571 80°C 300V

ROHS AND CE APPROVAL

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
39140CVB020A22	2 x 0,34	7,3	23,8	53	22
39141CVB020A22	2 x 0,34	7,3	23,8	53	22

Other dimension and colours available on request.

SPECIAL PROFIBUS 634 UL, UL approval, for cable tracks

SUITABLE FOR CHAIN APPLICATION

SUITABLE FOR FESTOON APPLICATION

Construction:

CONDUCTOR:	**0,34 mm²:** FLEXIBLE RED COPPER CONDUCTOR, 19X0,16 mm - 22/19 AWG ACC. TO DIN VDE 0812 **0,75 mm²:** FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295 42X0,15 mm - AWG 19/42
INSULATION:	**0,34 mm²:** SPECIAL PE COMPOUND **0,75 mm²:** SPECIAL PP COMPOUND
COLOUR CORES:	**0,34 mm²:** RED, GREEN **0,75 mm²:** BROWN, LIGHT BLUE AND GREEN-YELLOW
STRANDING:	**0,34 mm²:** IN PAIR + PE FILLERS **0,75 mm²:** IN LAYERS + FILLERS
SCREEN:	**0,34 mm²:** ALUMINIUM TAPE + PETP FOIL AND TINNED COPPER BRAID
WRAPPING:	**0,34 mm²:** NON-WOVEN TAPE **0,75 mm²**: NON-WOVEN TAPE
OUTER SHEATH:	VIOLET (RAL 4001 OR 4005), PUR COMPOUND

Technical data:

PEAK OPERATING VOLTAGE:	MAX. 350 V
VOLTAGE UL:	300 V
TEST VOLTAGE:	1,5 kV
TEMPERATURE RANGE	-40°C UP TO +80°C
MIN. BENDING RADIUS:	
FIXED LAYING:	10 x D
FLEXIBLE INSTALLATION:	15 x D
MAX SPEED (MAIN APPLICATION):	250 m/min

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
UL 1581 1061,
IEC 60332-1-2
EN 60332-1-2

OIL RESISTANCE ACC. TO:
IEC 60811-2-1
ICEA S-82-552 AND ASTM OIL 1

HALOGEN-FREE ACC. TO:
IEC 60754-1
EN 50267-2-1

CORROSIVENESS OF CONFLAGRATION GASES ACC.TO:
IEC 60754-2 AND EN 50267-2-2 + VDE 0482 PART 267-2-2
NO DEVELOPMENT OF CORROSIVE CONFLAGRATION GASES

UV RESISTANCE ACC. TO:
UL1581 §1200 STD.

Features:

AWM STYLE 10493 - 20233 80°C 300 V

PROFIBUS DP TYPE A

FOR SPEED AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

Electrical and Trasmission proprieties at 20°C PROFIBUS UL

Profinet bus

MAX. DC COND. RESISTANCE	59,4 Ω x km
MAX. CAPACITANCE AT 800 Hz	30 nF/km
IMPEDANCE AT 800 1-20 MHz	150 Ω (± 10%)
MAX. ATTENUATION AT 9,6 KHz MAX. ATTENUATION AT 38,4 KHz MAX. ATTENUATION AT 4 MHz MAX. ATTENUATION AT 16 MHz	4,2 dB/km 5,2 dB/km 2,3 dB/km 44,0 dB/km
DIELECTRIC STRENGHT (COND/COND/ SHIELD)	1,5 kVAC/1 min.
MIN. INSULATION RESISTANCE	5,0 Ω x km
TRANSFER IMPEDANCE AT 10 MHz	20 MΩ/m

Power conductors

MAX. DC COND. RESISTANCE	26,0 Ω x km
DIELECTRIC STRENGHT (COND/COND)	2,5 kVAC/10 min.
MIN. INSULATION RESISTANCE	5,0 Ω x km

SPECIAL PROFIBUS 634 UL, UL approval, for cable tracks

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
39180CVB020M03	2 x 0,34	8	30,9	74	22
39180CV403BM07	2 x 0,34+3 x 0,75	10,4	45	90	22/19

Other dimension and colours available on request.

CAN-BUS 627

UL approval

Construction:

CONDUCTOR:	STRANDED RED COPPER CONDUCTOR, 7 x 0,25 mm - 22/7 AWG
INSULATION:	SPECIAL PE COMPOUND, ACC. TO DIN VDE 0207 PART 2
COLOUR CORES:	ACC. TO DIN 47100
WRAPPING:	PETP FOIL
SCREEN:	TINNED COPPER BRAID
OUTER SHEATH:	VIOLET (RAL 4001 OR 4005), PVC OIL RESISTANT COMPOUND, ACC. TO DIN VDE 0281 PART 1

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
IEC 60332-1-2
EN 60332-1-2

OIL RESISTANCE:
VERY GOOD ACC. TO DIN VDE 0207 PART 5

Technical data:

PEAK OPERATING VOLTAGE:	MAX. 350 V
VOLTAGE:	UL: 300 V
TEST VOLTAGE:	1,5 kV
TEMPERATURE RANGE	UL: UP TO +80°C
FIXED LAYING:	-30°C UP TO +70°C
FLEXIBLE INSTALLATION:	-5°C UP TO +70°C
MIN. BENDING RADIUS:	7,5 x D
CHARACTERISTIC IMPEDANCE:	120 Ω (95 - 140 Ω)
RADIATION RESISTANCE:	8 x 10^6 CJ/KG

Features:

UL STYLE: AWM STYLE 2571 80°C 300V CE

ROHS AND CE APPROVAL

GOOD AGAINST ACIDS, ALKALINES, SOLVENTS, HYDRAULIC LIQUIDS ETC.

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
39050CV4020A24	2 x 0,25	6	19	44	24
39050CV4020A22	2 x 0,34	6,4	21,8	47	22
39050CV4020A20	2 x 0,5	7,6	28,4	63	20
39050CV4020A19	2 x 0,75	9,6	39,6	93	19
39050CV4022A24	2 x 2 x 0,25	7,1	27,4	57	24
39050CV4022A22	2 x 2 x 0,34	7,7	33,5	66	22
39050CV4022A20	2 x 2 x 0,5	9,5	44,3	98	20
39050CV4022A19	2 x 2 x 0,75	13,5	80,8	174	19

Other dimension and colours available on request.

S CAN-BUS 628

UL approval, halogen-free for cable tracks

SUITABLE FOR CHAIN APPLICATION

SUITABLE FOR FESTOON APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR EXTRA FINE WIRES
INSULATION:	SPECIAL PE COMPOUND, ACC. TO DIN VDE 0207 PART 2
COLOUR CORES:	ACC. TO DIN 47100
STRANDING:	IN LAYERS
WRAPPING:	NON-WOVEN TAPEL
Inner sheath:	HALOGEN-FREE COMPOUND
SCREEN:	TINNED COPPER BRAID
OUTER SHEATH:	VIOLET (RAL 4001 OR 4005), PUR TYPE TMPU, ACC. TO DIN VDE 0281 PART 10, (ROUGH SURFACE)

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
IEC 60332-1-2
EN 60332-1-2

HALOGEN FREE ACC. TO:
DIN VDE 0472 PART 815+IEC 60754-1

CORROSIVENESS OF CONFLAGRATION GASES ACC. TO:
IEC 60754-2 AND EN 50267-2-2 + VDE 0482 PART 267-2-2

OIL RESISTANCE ACC. TO:
DIN VDE 0282 PART 10 + HD 22.10

Technical data:

PEAK OPERATING VOLTAGE:	MAX. 350 V
VOLTAGE:	UL: 300 V
TEST VOLTAGE:	1,5 kV
TEMPERATURE RANGE	**UL:** UP TO +80°C
FIXED LAYING:	- 50°C UP TO + 70°C
FLEXIBLE INSTALLATION:	- 40°C UP TO + 70°C
MIN. BENDING RADIUS:	7,5 x D
MAX SPEED (MAIN APPLICATION):	250 m/min
CHARACTERISTIC IMPEDANCE:	120 Ω (95 - 140 Ω)
RADIATION RESISTANCE:	5 x 10^6 CJ/KG

Features:

AWM STYLE 20233 80°C 300 V

FOR SPEED SEE PAGES FROM 1 AND 2 OF CATALOGUE

ROHS AND CE APPROVAL

RoHS CE

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
39060CV4020A24	2 x 0,25	7,9	20,2	71	24
39060CV4020A22	2 x 0,34	8,3	22,9	77	22
39060CV4020A20	2 x 0,50	8,7	29,0	74	20
39060CV4022A24	2 x 2 x 0,25	9,1	27,9	90	24
39060CV4022A22	2 x 2 x 0,34	9,6	32,7	97	22
39060CV4022A20	2 x 2 x 0,5	10,6	44,9	94	20

Other dimension and colours available on request.

ASI CABLES

EPDM, PUR, TPE

Construction:

CONDUCTOR:	FLEXIBLE TINNED COPPER CONDUCTOR CL. 5, ACC TO IEC 60228, DIN VDE 0295
INSULATION:	EPDM TYPE: RUBBER COMPOUND PUR TYPE: PUR TYPE PO (UL) TPE TYPE: TPE COMPOUND (UL)
COLOUR CORES:	ACC. TO DIN VDE 0293-308, HD 308 S2
STRANDING:	IN LAYERS
OUTER SHEATH:	YELLOW (RAL 1021) OR BLACK (RAL 9005) EPDM TYPE: RUBBER TYPE EPDM PUR TYPE: PUR COMPOUND (UL) TPE TYPE: TPE COMPOUND (UL)

Features:

AWM STYLE 20549, UL 758, UL 1581 FT2 CSA FT2 (PUR TYPES)
ROHS AND CE APPROVAL

AWM STYLE 21439, UL 758, UL 1581 FT2 CSA FT2 (TPE TYPES)
ROHS AND CE APPROVAL (TPE)

RoHS CE

Technical data:

NOMINAL VOLTAGE:	YELLOW: 32 V BLACK: 48 V
TEST VOLTAGE:	1 kV EPDM, PUR TYPES (UL) 1,5 kV TPE TYPE (UL)
TEMPERATURE RANGE	EPDM TYPE: -40°C UP TO +85°C PUR TYPE: -40°C UP TO +85°C **(UL)** TPE TYPE: -40°C UP TO +105°C **(UL)**
CONDUCTOR RESISTANCE:	13,7 Ω/km MAX.
INSULATION RESISTANCE:	1 GΩ/km MIN.
MIN. BENDING RADIUS:	EPDM AND PUR TYPES: 30 MM TPE TYPE: 24 MM

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
39420AYX020A16	2 x 1,5	-	31	70	16
39420A7X020A16	2 x 1,5	-	31	70	16
39421AYX020A16	2 x 1,5	-	31	64	16
39421A7X020A16	2 x 1,5	-	31	64	16
39422AYX020A16	2 x 1,5	-	31	70	16
39422A7X020A16	2 x 1,5	-	31	70	16

the 5th digit of part number refers to the different material.
0: EPDM
1: PUR
2: TPE

Other dimension and colours available on request.

DEVICENET™ 650 UL approval
DEVICENET™ 651 UL approval

Construction:

CONDUCTOR:	FLEXIBLE TINNED COPPER CONDUCTOR
INSULATION:	**1ST PAIR:** SPECIAL PE COMPOUND, ACC. TO DIN VDE 0819 PART 103 **2ND PAIR:** PVC TYPE TI2 ACC. TO DIN VDE 0281 PART 1
COLOUR CORES:	**SUPPLY PAIR:** BLACK AND RED **DATA PAIR:** WHITE AND LIGHT BLUE
STRANDING:	CORES TWISTED IN PAIRS, PAIRS TWISTED TOGETHER
SCREEN:	PAIRS SCREENED INDIVIDUALLY WITH ALUMINIUM TAPE TINNED COPPER DRAIN WIRE
WRAPPING:	NON-WOVEN TAPE
SCREEN:	**(DEVICENET 650):** TINNED COPPER BRAID **(DEVICENET 651):** ALUMINIUM TAPE
OUTER SHEATH:	VIOLET (RAL 4001 OR 4005), PVC TYPE TM1 ACC. TO DIN VDE 0281 PART 1

Technical data:

PEAK OPERATING VOLTAGE:	MAX. 350 V	
UL VOLTAGE:	30 V	
TEST VOLTAGE:	1,5 kV	
TEMPERATURE RANGE	**DIN/VDE**	**UL:**
FIXED LAYING:	-30 UP TO+70°C	UP TO +60 °C
FLEXIBLE INSTALLATION:	-5 UP TO+70°C	
MIN. BENDING RADIUS:		
FIXED LAYING:	7,5 x D	
FLEXIBLE INSTALLATION:	15 x D	
CHARACTERISTIC IMPEDANCE AT 1 MHz:	120 Ω ± 10%	

Features:

AWM STYLE 2560 60°C 30 V CE

ROHS AND CE APPROVAL

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
39350AVX02BA24	2 x 0,24 + 2 x 0,38	6,5	41,2	74	24/22
39350AVX02BA18	2 x 0,96 + 2 x 1,53	11,5	98,7	166	18/16
39360AVX02BA24	2 x 0,24 + 2 x 0,38	6,5	16,4	57	24/22
39360AVX02BA18	2 x 0,96 + 2 x 1,53	11,5	58,4	116	18/16

Other dimension and colours available on request.

DEVICENET™ 656 halogen-free UL approval
DEVICENET™ 657 halogen-free

Construction:

CONDUCTOR:	FLEXIBLE TINNED COPPER CONDUCTOR
INSULATION:	**1ST PAIR:** SPECIAL PE COMPOUND, ACC. TO DIN VDE 0819 PART 103 **2ND PAIR:** PVC TYPE TI2 ACC. TO DIN VDE 0281 PART 1
COLOUR CORES:	**SUPPLY PAIR:** BLACK AND RED **DATA PAIR:** WHITE AND LIGHT BLUE
STRANDING:	CORES TWISTED IN PAIRS, PAIRS TWISTED TOGETHER
SCREEN:	PAIRS SCREENED INDIVIDUALLY WITH ALUMINIUM TAPE TINNED COPPER DRAIN WIRE
WRAPPING:	NON-WOVEN TAPE
SCREEN:	**(DEVICENET 657):** TINNED COPPER BRAID **(DEVICENET 656):** ALUMINIUM TAPE
OUTER SHEATH:	VIOLET (RAL 4001 OR 4005), HALOGEN FREE COMPOUND

Technical data:

PEAK OPERATING VOLTAGE:	MAX. 350 V
UL VOLTAGE:	**(DEVICENET 656):** 300 V
TEST VOLTAGE:	1,5 kV
TEMPERATURE RANGE	**(DEVICENET 656) UL:** UP TO + 75°C
FIXED LAYING:	- 40 UP TO+70°C
FLEXIBLE INSTALLATION:	- 30 UP TO+70°C
MIN. BENDING RADIUS:	
FIXED LAYING:	7,5 x D
FLEXIBLE INSTALLATION:	15 x D
CHARACTERISTIC IMPEDANCE AT 1 MHz:	120 Ω ± 10%

Features:

AWM STYLE 21080 75°C 300 V **(DEVICENET 656)**

ACC. TO DIN VDE 0472 PART 815+IEC60754-1

ROHS AND CE APPROVAL

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
39370CVX02BA24	2 x 0,24 + 2 x 0,38	6,5	16,4	56	24/22
39370CVX02BA18	2 x 0,96 + 2 x 1,53	11,5	58,4	120	18/16
39380CVX02BA24	2 x 0,24 + 2 x 0,38	6,5	41,2	74	24/22
39380CVX02BA18	2 x 0,96 + 2 x 1,53	11,5	98,7	183	18/16

Other dimension and colours available on request.

DEVICENET™ 658 UL approval
DEVICENET™ 659 UL approval

Construction:

CONDUCTOR:	FLEXIBLE TINNED COPPER CONDUCTOR
INSULATION:	**1ST PAIR:** SPECIAL PE COMPOUND, ACC. TO DIN VDE 0819 PART 103 **2ND PAIR:** PVC TYPE TI2 ACC. TO DIN VDE 0281 PART 1
COLOUR CORES:	**SUPPLY PAIR:** BLACK AND RED **DATA PAIR:** WHITE AND LIGHT BLUE
STRANDING:	CORES TWISTED IN PAIRS, PAIRS TWISTED TOGETHER
SCREEN:	PAIRS SCREENED INDIVIDUALLY WITH ALUMINIUM TAPE + TINNED COPPER DRAIN WIRE
WRAPPING:	NON-WOVEN TAPE (OPTIONAL)
SCREEN:	**(DEVICENET 658):** TINNED COPPER BRAID **(DEVICENET 659):** ALUMINIUM TAPE
OUTER SHEATH:	VIOLET (RAL 4001 OR 4005), PUR TYPE TMPU, ACC. TO DIN VDE 0281 PART. 10

Technical data:

PEAK OPERATING VOLTAGE:	MAX. 350 V
UL VOLTAGE:	30 V
TEST VOLTAGE:	1,5 kV
TEMPERATURE RANGE	**UL:** UP TO + 60°C
FIXED LAYING:	-30 UP TO+70°C
FLEXIBLE INSTALLATION:	-5 UP TO+70°C
MIN. BENDING RADIUS:	
FIXED LAYING:	7,5 x D
FLEXIBLE INSTALLATION:	15 x D
CHARACTERISTIC IMPEDANCE AT 1 MHz:	120 Ω ± 10%

Features:

AWM STYLE 20417 60°C 30V

POSSIBLE VERSION WITH AWM STYLE 21576 80°C 1000V IDENTIFIED WITH "H" ON THE 6TH NUMBER OF THE PART. N

ROHS AND CE APPROVAL

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
39390CVX02BA22	2 x 0,24 + 2 x 0,38	6,5	41,2	74	24/22
39390CVX02BA16	2 x 0,96 + 2 x 1,53	11,5	98,7	166	18/16
39400CVX02BA22	2 x 0,24 + 2 x 0,38	6,5	16,4	57	24/22
39400CVX02BA16	2 x 0,96 + 2 x 1,53	11,5	58,4	115	18/16

Other dimension and colours available on request.

PROFINET 654 fixed installation,type A
PROFINET 655 fixed installation,type A, UL approval

Construction:

CONDUCTOR:	SOLID BARE COPPER CONDUCTOR
INSULATION:	PE COMPOUND
COLOUR CORES:	BLUE, YELLOW, WHITE, ORANGE
STRANDING:	
- PROFINET 654:	IN LAYERS
- PROFINET 655:	IN LAYERS + CENTRAL FILLER
WRAPPING:	PET FOIL
SCREEN:	
- PROFINET 654:	TINNED COPPER BRAID
- PROFINET 655:	ALUMINIUM TAPE + PET FOIL AND TINNED COPPER BRAID
OUTER SHEATH:	GREEN (SIMILAR RAL 6018) PVC COMPOUND

Resistance:

FLAME RETARDANT ACC. TO (PROFINET 655):
UL 1581 & 1060 (FT1)
UL 1061
IEC 60332-1

OIL RESISTANCE ACC. TO:
DIN VDE 0473 PART.811-2-1 IEC 60811-2-1

OZONE RESISTANCE ACC. TO (PROFINET 655):
EN 50396

Technical data:

PEAK OPERATING VOLTAGE:	MAX. 350 V	
UL VOLTAGE:	300 V **(PROFINET 655)**	
TEST VOLTAGE:		
- PROFINET 654:	CORE/CORE 1,5 kV CORE/SCREEN 1,2 kV	
- PROFINET 655:	2 kV	
TEMPERATURE RANGE	**PROFINET 654**	**PROFINET 655**
FIXED LAYING:	-30 UP TO+70°C	-30°C UP TO +80°C
FLEXIBLE APPLICATION:	-5 UP TO+70°C	/
MIN. BENDING RADIUS:		
- PROFINET 654:	5 x D	
- PROFINET 655:	8 x D	
CHARACTERISTIC IMPEDANCE:	100Ω ± 5Ω, ACC. TO EN 50288-2-2 (CAT 5E ACC. TO EN 50173-1)	
OHMIC RESISTANCE AT 20°C MAX.Ω/km:		
- PROFINET 654:	58 ACC. TO VDE 0812	
- PROFINET 655:	56,4	

Features:

AWM STYLE 10578-2571 80°C 300V **(PROFINET 655)**

ACC. TO STANDARD IEC 61156-5 AND EN 50228-2-1 **(PROFINET 655)**

ROHS AND CE APPROVAL

PROFINET 654 fixed installation,type A
PROFINET 655 fixed installation,type A, UL approval

PROFINET 655 UL

FREQUENCY (MHZ)	ATTENUATION (DB/100 M)		NEXT (DB)		ACR-F (DB/100 M)	ACR (DB/100 M)			RETURN LOSS (DB/100 M)	
	MAX. - STD	TYPICAL	MIN. - STD	TYPICAL	MIN.	MIN.	MIN - STD	TYPICAL	MIN. STD	TYPICAL
1	2,1	1,6	65,3	80	64	81	63,2	78,4	-	29
4	4	3,2	56,3	73	52	72	52,3	69,8	23	30
10	6,3	5,1	50,3	65	44	63	44	59,9	25	31
16	8	6,5	47,2	63	39,9	57	39,2	56,5	25	31
20	9	7,4	45,8	60	38	54	36,8	52,6	25	31
31,25	11,4	9,5	42,9	56	34,1	48	31,5	46,5	23,6	27
62,5	16,5	14,3	38,4	51	28,1	39	21,9	36,7	21,5	26
100	21,3	22	35,3	48	24	32	14	29	20,1	25

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
39210CEX022M03	2 x 2 x 0,34	5,3	28	43	22
39220CEX022A22	2 x 2 x 0,34	5,9	30,4	51	22

Other dimension and colours available on request.

PROFINET 662 flexible application, type B
PROFINET 663 flexible application, type B, UL approval,
PROFINET 663 PLTC flexible application, type B, UL & PLTC approval

PROFINET 663

PROFINET 663 PLTC

Construction:

CONDUCTOR:	**PROFINET 662):** FLEXIBLE TINNED COPPER CONDUCTOR, FINE WIRES ACC. TO VDE 0812 **(PROFINET 663):** FLEXIBLE RED COPPER CONDUCTOR, FINE WIRES ACC. TO VDE 0812 **(PROFINET 663 PLTC):** FLEXIBLE TINNED COPPER CONDUCTOR, FINE WIRES ACC. TO VDE 0812
INSULATION:	PE TYPE L/MD ACC. TO DIN VDE 0819 PART 103
COLOUR CORES:	BLUE, YELLOW, WHITE, ORANGE
STRANDING:	**(PROFINET 662 AND 663 PLTC):** CORES TWISTED IN PAIRS, PAIRS TWISTED TOGETHER **(PROFINET 663):** IN LAYERS (STAR-QUAD CONSTRUCTION)
WRAPPING:	PETP FOIL
INNER SHEATH	PVC COMPOUND
SCREEN:	ALUMINIUM TAPE AND TINNED COPPER BRAID
OUTER SHEATH:	GREEN (SIMILAR RAL 6018), PVC COMPOUND

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:

(PROFINET 662)
IEC 60332-1-2
EN 60332-1-2

(PROFINET 663)
EC 60332-1-2
EN 60332-1-2,
UL 1581 SECTION 1061 CSA FT1

(PROFINET 663 PLTC)
IEC 60332-3A,
UL 1685 CSA FT4

OIL RESISTANCE ACC. TO:

(PROFINET 662 AND 663 PLTC)
DIN VDE 0473 PART.811-2-1
IEC 60811-2-1

(PROFINET 663)
DIN VDE 0473 PART.811-2-1
IEC 60811-2-1
AND ICEA S-82-552,

UV RESISTANCE ACC. TO (PROFINET 663, PROFINET 663 PLTC):
UL1581 §1200 STD.

Technical data:

NOMINAL VOLTAGE:	**(PROFINET 662 AND 663):** 300 V **(PROFINET 663 PLTC):** 600 V		
TEST VOLTAGE:	**(PROFINET 662 AND 663):** 1,5 KV **(PROFINET 663 PLTC):** 2 KV		
TEMPERATURE RANGE	**(PROFINET 662):**	**(PROFINET 663):** **UL:** UP TO +80°C	**(PROFINET 663 PLTC):** **UL:** UP TO +80°C
FIXED LAYING:	-30 UP TO+70°C	-30 UP TO+80°C	-40 UP TO+80°C
FLEXIBLE INSTALLATION:	-5 UP TO+70°C	-5 UP TO+80°C	-5 UP TO+80°C
MIN. BENDING RADIUS:	**(PROFINET 662):**	**(PROFINET 663):**	**(PROFINET 663 PLTC):**
FIXED LAYING:	5 x D	5 x D	5 x D
FLEXIBLE INSTALLATION:	10 x D	10 x D	10 x D
CHARACTERISTIC IMPEDANCE:	100Ω ± 5Ω, ACC. TO EN 50288-2-2 CAT 5E ACC. TO EN 50173-1)		
OHMIC RESISTANCE AT 20°C MAX.Ω/km:	58, ACC. TO VDE 0812		

Features:

AWM STYLE 10578-2571 80°C 300V **(PROFINET 663)**

AWM STYLE 21694 80°C 600V **(PROFINET 663 PLTC)**

ROHS AND CE APPROVAL

PROFINET 662 flexible application, type B
PROFINET 663 flexible application, type B, UL approval,
PROFINET 663 PLTC flexible application, type B, UL & PLTC approval

PROFINET 663

PROFINET 663 PLTC

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ±10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
39230CEX022M03	2 x 2 x 0,34	6,6	36,2	67	22
39240CEX022A22	2 x 2 x 0,34	6,6	36,2	70	22

Other dimension and colours available on request.

PROFINET 678 fixed installation, type A

SPECIAL PROFINET 678 UL flexible application, type B, UL approval

Construction:

CONDUCTOR:	**(PROFINET 678):** SOLID TINNED COPPER CONDUCTOR **(PROFINET 678 UL):** STRANDED TINNED COPPER CONDUCTOR, 7X0,16 mm - 26/7 AWG
INSULATION:	PE COMPOUND
COLOUR CORES:	WHITE/BLUE, WHITE/ORANGE, WHITE/GREEN, WHITE/BROWN
STRANDING:	CORES TWISTED IN PAIRS, PAIRS TWISTED TOGETHER
WRAPPING:	ALUMINIUM TAPE **(PROFINET 678)**
WRAPPING:	PETP FOIL **(PROFINET 678 UL):**
SCREEN:	TINNED COPPER BRAID **(PROFINET 678)**
SCREEN:	ALUMINIUM TAPE + PETP FOIL AND TINNED COPPER BRAID **(PROFINET 678 UL)**
OUTER SHEATH:	GREEN (SIMILAR RAL 6018), PVC COMPOUND

Technical data:

PEAK OPERATING VOLTAGE:	MAX. 350 V **(PROFINET 678)**
NOMINAL VOLTAGE:	125 V **(PROFINET 678 UL)**
TEST VOLTAGE:	**(PROFINET 678)** CORE/CORE 1,5 kV CORE/SCREEN 1,2 kV
TEST VOLTAGE:	**(PROFINET 678 UL)** CORE/CORE 700 V x 1 min CORE/SCREEN 700 V x 1 min
TEMPERATURE RANGE	**(PROFINET 678):**
FIXED LAYING:	-30 UP TO+70°C
FLEXIBLE INSTALLATION:	-5 UP TO+70°C
TEMPERATURE RANGE	**(PROFINET 678 UL):**
FIXED LAYING:	-30 UP TO+80°C
FLEXIBLE APPLICATION:	-5 UP TO+50°C
MIN. BENDING RADIUS:	
FIXED LAYING:	5 x D
SPORADIC MOVEMENT:	10 x D **(PROFINET 678 UL)**
OHMIC RESISTANCE AT 20°C MAX. Ω/km:	MAX. 150, ACC. TO VDE 0812 **(PROFINET 678)**
MAX. DC CONDUCTOR RESISTANCE:	140 Ω/km **(PROFINET 678 UL)**
CAPACITANCE AT 800 Hz:	48 pF/m **(PROFINET 678 UL)**
MAX. CAPACITANCE UNBALANCE:	1600 pF/km **(PROFINET 678 UL)**
PROPAGATION VELOCITY AT 100 MHz:	APPROX. 75% **(PROFINET 678 UL)**
CHARACTERISTIC IMPEDANCE:	**(PROFINET 678)** 100Ω (± 10%) ACC. TO EN 50288-2-2, CAT 5E ACC. TO EN 50173-1
CHARACTERISTIC IMPEDANCE:	**(PROFINET 678 UL)** 100Ω (± 15%), CAT 5E
MIN. INSULATION RESISTANCE:	5 GΩ x km (PROFINET 678 UL)
TRANSFER IMPEDANCE:	10 MΩ/m AT 1 MHZ, 4 MΩ/m AT 10 MHZ 4 MΩ/m AT 30 MHZ, 2 MΩ/m AT 100 MHZ **(PROFINET 678 UL)**
STANDARD REFERENCE:	IEC 61156-3, EN 50288-1, EN 50288-2-2 ISO IEC 11801

Resistance:

FLAME RETARDANT ACC. TO:
UL 1581 1061, CSA FT1, IEC 60332-1
STANDARD REQUIREMENTS **(PROFINET 678 UL)**

OIL RESISTANCE ACC. TO:
DIN VDE 0473 PART. 811-2-1 IEC 60811-2-1
(PROFINET 678)
EN 50363-4-1, IEC 60811-2-1, DIN VDE 0472-803
UL 13 (60°C), ACC. TO ICEA S-82-552 AND NEMA WC55
(PROFINET 678 UL)

SUNLIGHT RESISTANT ACC. TO:
UL 1581 1200 STANDARD REQUIREMENT
(PROFINET 678 UL)

Features:

(UL) AWM STYLE 1598 - 2571 30 V 80°C **(PROFINET 678 UL)**

ROHS AND CE APPROVAL

PROFINET 678 fixed installation, type A

SPECIAL PROFINET 678 UL flexible application, type B, UL approval

FREQUENCY (MHZ)	ATTENUATION (DB/100 M)		NEXT (DB)		PS NEXT (DB)		PS EL-FEXT (DB/100M)		PS ACR DB/100 M)		RETURN LOSS (DB)	
	MAX. - STD	TYPICAL	MIN. - STD	TYPICAL	MIN.	MIN.	MIN - STD	TYPICAL	MIN.	TYPICAL	MIN. STD	TYPICAL
1	3,2	2,5	65,3	71	62,3	69	60,8	69	62,1	68,5	-	29
4	6	5,2	56,3	63	53,3	61	48,8	57	50,3	57,8	24,1	32
10	9,5	8,4	50,3	58	47,3	56	40,8	51	40,8	49,6	25	32
16	12,1	11	47,2	56	44,2	54	36,7	47	35,1	45	25	32
20	13,6	12,5	45,8	54	42,8	52	34,8	45	32,2	41,5	25	32
31,25	17,1	16	42,9	50	39,9	48	30,9	42	25,8	34	23,6	30
62,5	24,8	23,6	38,4	45	35,4	43	24,9	36	13,6	21,4	21,5	28
100	32	29,9	35,3	43	32,3	41	20,8	32	3,3	13,1	20,1	26
155,52		37,4		40		38	-	26	-	2,6	-	24
200		42,8		37		35	-	22	-	-	-	23

PROFINET 678 UL

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
39290CEX042M01	4 x 2 x 0,14	6,2	33	49	26
39300BEX042A26	4 x 2 x 0,14	6,2	33	54	26

Other dimension and colours available on request.

SPECIAL PROFINET 681 continuosly flexible, type C
SPECIAL PROFINET 682 continuosly flexible, type C, UL approval

Construction:

CONDUCTOR:	**(PROFINET 681):** FLEXIBLE TINNED COPPER CONDUCTORS EXTRA FINE WIRES **(PROFINET 682):** FLEXIBLE RED COPPER CONDUCTORS EXTRA FINE WIRES
INSULATION:	HALOGEN FREE COMPOUND
COLOUR CORES:	WHITE/BLUE, WHITE/ORANGE, WHITE/GREEN, WHITE/BROWN
STRANDING:	CORES TWISTED IN PAIRS
WRAPPING:	NON-WOVEN TAPE
SCREEN:	ALUMINIUM TAPE AND TINNED COPPER BRAID
WRAPPING:	NON-WOVEN TAPE
OUTER SHEATH:	GREEN (SIMILAR RAL 6018) PUR COMPOUND

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
IEC 60332-1
(SPECIAL PROFINET 682)

HALOGEN-FREE ACC. TO:
DIN VDE 0472, PART 815,
EN 50267-2-2,
IEC 60754-1
(SPECIAL PROFINET 681 & 682)

CORROSIVENESS OF CONFLAGRATION GASES ACC. TO:
EN 50267-2-2,
IEC 60754-2
(SPECIAL PROFINET 682)

OIL RESISTANCE ACC.TO:
DIN VDE 0282 PART 10 + HD 22.10
(SPECIAL PROFINET 681)
IEC 60811-2-1,
ICEA S-82-552 AND ASTM-OIL 1
(SPECIAL PROFINET 682)

UV RESISTANT / SUNLIGHT RESISTANT ACC. TO:
UL1581§1200
(SPECIAL PROFINET 682)

MUD RESISTANCE ACC.TO:
NEK 606
(SPECIAL PROFINET 682)

Technical data:

PEAK OPERATING VOLTAGE:	MAX. 350 V
TEST VOLTAGE:	CORE/CORE 1,5 KV CORE/SCREEN 1,2 KV
TEMPERATURE RANGE	
FIXED LAYING:	- 40 UP TO +90°C
FLEXIBLE APPLICATION:	- 30 UP TO +70°C
MIN. BENDING RADIUS:	
FIXED LAYING:	5 x D
FLEXIBLE INSTALLATION:	10 x D
CONTINUOSLY FLEXIBLE:	12 x D
MAX SPEED (MAIN APPLICATION):	250 m/min
CHARACTERISTIC IMPEDANCE:	100Ω ± 5Ω, ACC. TO EN 50288-2-2 (CAT 5E ACC. TO EN 50173-1)

Features:

AWM 10493-20233 300V/80°C CE
(SPECIAL PROFINET 682)

ACC. TO STANDARDS:
EN 50288-1,
EN 50288-2-2,
EN 50173,
IEC 61156-3,
ISO/IEC 11801
(SPECIAL PROFINET 682)

FOR SPEED SEE PAGES FROM 1 AND 2 OF CATALOGUE

ROHS AND CE APPROVAL

RoHS CE

SPECIAL PROFINET 681 continuosly flexible, type C
SPECIAL PROFINET 682 continuosly flexible, type C, UL approval

Part no.	No.of cores x cross section n x mm²	Outer-Ø ca.mm ±10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
39320CEX042M01	4 x 2 x 0,14	7,2	35,5	58	26
39330CEX022A22	2 x 2 x 0,34	6,8	25	-	22
39330CEX042A26	4 x 2 x 0,14	7,3	35,5	60	26

Other dimension and colours available on request.

SPECIAL PROFINET 678 UL
S/FTP CAT. 6A

Construction:

CONDUCTOR:	STRANDED BARE COPPER CONDUCTOR
INSULATION:	PO COMPOUND
COLOUR CORES:	WHITE/BLUE, WHITE/ORANGE, WHITE/GREEN, WHITE/BROWN
STRANDING:	CORES TWISTED IN PAIRS, PAIRS TWISTED TOGETHER
INDIVIDUAL SCREEN:	ALUMINIUM/POLYESTER TAPE
OVERALL SCREEN:	TINNED COPPER BRAID (COVERAGE 85%)
OUTER SHEATH:	GREEN (SIMILAR RAL 6018), PVC COMPOUND

Resistance:

FLAME RETARDANT ACC. TO:
CEI 20-35
EN 50265
IEC 60332-1
UL VW-1
CSA FT1

HYDROCARBONS AND OIL RESISTANCE ACC.TO:
UL 1581
DIN VDE 0472 PART 803
HD 22.10

Technical data:

OPERATING VOLTAGE:	MAX. 125 V
TEST VOLTAGE:	
- DIRECT CURRENT	1000 V X 1 min
- ALTERNATE CURRENT	700 V x 1 min
TEMPERATURE RANGE	-20°C UP TO +80°C
MIN. BENDING RADIUS:	
- FIXED LAYING:	5 x D
MAX. CONDUCTOR RESISTANCE AT 20°C:	MAX. 69,5 Ω/km
CAPACITANCE AT 800 TO 1000 Hz:	43 pF/m
PROPAGATION VELOCITY:	APPROX. 78%
CHARACTERISTIC IMPEDANCE:	100 ± 10 Ω
MIN. INSULATION RESISTANCE:	MIN. 5 GΩ x km
TRANSFER IMPEDANCE:	10 MΩ/m AT 1 MHz, 10 MΩ/m AT 10 MHz 15 MΩ/m AT 30 MHz

Features:

cURus AWM STYLE 2919 80°C 30 V

ROHS AND CE APPROVAL

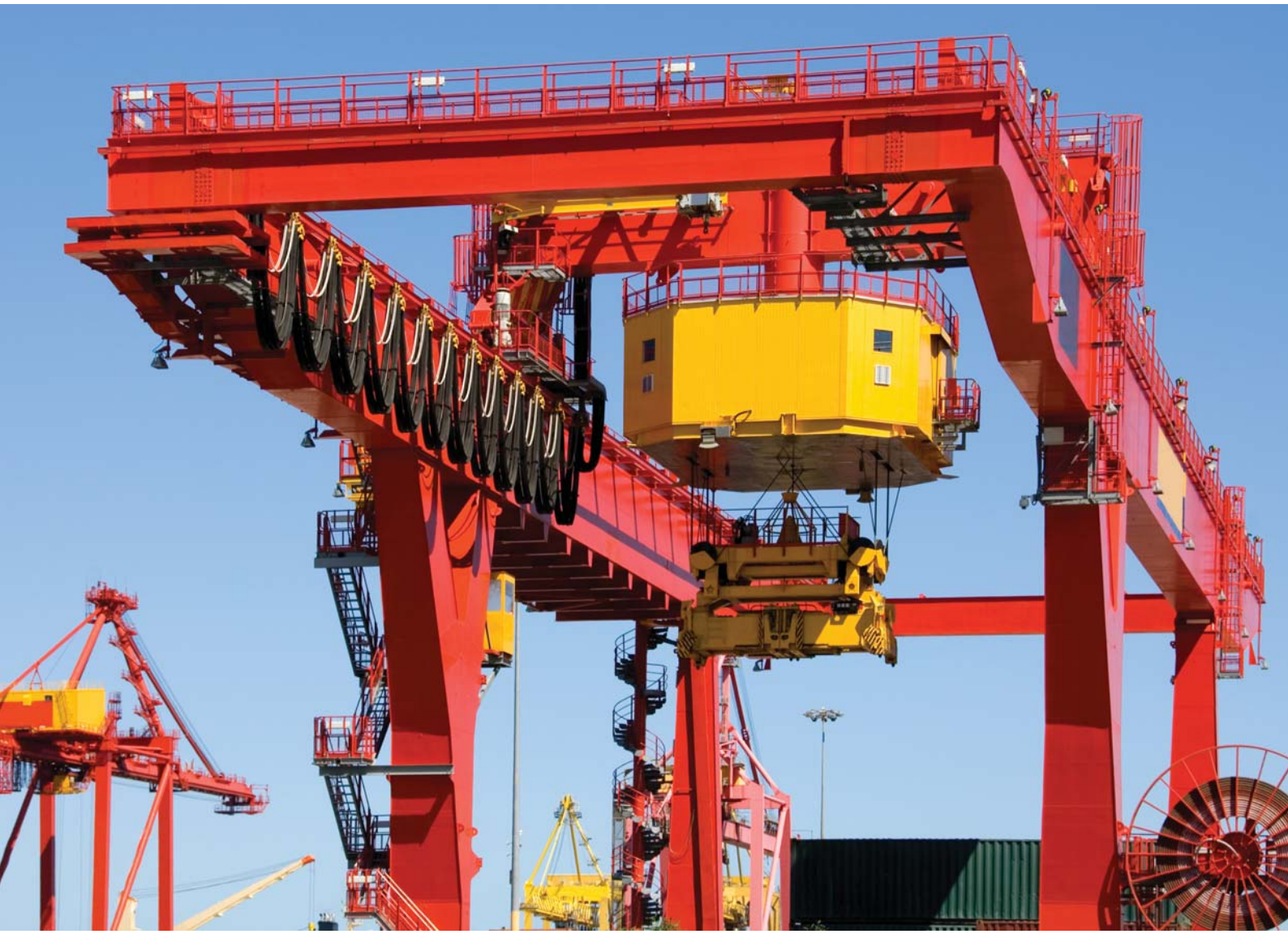
SPECIAL PROFINET 678 UL

S/FTP CAT. 6A

FREQUENCY (MHZ)	ATTENUATION (DB/100 M)		NEXT (DB)		PS NEXT (DB)		EL-FEXT (DB/100M)		PS EL-FEXT (DB/100M)		RETURN LOSS (DB)	
	REQUIRED	TYPICAL	REQUIRED	TYPICAL	REQUIRED	TYPICAL	REQUIRED	TYPICAL	REQUIRED	TYPICAL	REQUIRED	TYPICAL
1	2,9	2,2	80	100	77	95	80	96	77	98	-	-
4	5,5	3,8	80	100	77	95	80	93	77	90	23,1	35
10	8,5	5,9	80	95	77	90	74	90	71	98	25	38
16	10,8	7,4	80	90	77	86	69,9	100	66,9	105	25	32
20	12,1	8,4	80	90	77	80	68	100	65	90	25	32
31,25	15,2	10,5	80	90	77	80	64,1	100	61,1	90	23,6	31
62,5	21,7	15,3	75,1	85	72,5	80	58,1	100	55,1	90	21,5	27
100	27,8	18,1	72,4	82	69,4	75	54	100	51	90	20,1	34
155,52	35	23,2	69,6	80	66,6	70	50,2	100	47,2	90	18,8	28
200	40,1	26,6	67,9	77	64,9	68	48	100	45	90	17,3	25
300	50	33,3	65,3	71	62,3	66	44,5	100	41,5	90	17,3	23
600	73,3	50,1	60,8	67	57,8	62	38,4	100	35,4	90	17,3	21

Part no.	No.of cores x cross section n x AWG	Outer-Ø ca.mm ± 10%	Cable weight approx. kg/km
39620AEX042A23	4 x 2 x AWG23	8,6	91

Other dimension and colours available on request.



FLEXIDRUM® R 503

SUITABLE FOR REELING APPLICATION

SUITABLE FOR FESTOON APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295
INSULATION:	GA ALTHERM® 585
CORES COLOR:	**CONSTRUCTION IN LAYER/S (EG 4g, 12g, 30g):** BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334 + GREEN-YELLOW **CONSTRUCTION 3+3 (EG 3 x 25+3 g 4):** 3 BLACK CONDUCTORS NUMBERED + 3 GREEN-YELLOW CONDUCTORS DIVIDED IN 3 INETSTICES **CONSTRUCTION IN PAIRS (EG 6 x (2 x 1)C):** BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334
CENTRAL UNIT:	CORE ELEMENT (IF NECESSARY)
STRANDING:	**CONSTRUCTION IN LAYER/S (EG 4g, 12g, 30g):** IN LAYERS WIH SPECIALYARNS BETWEEN CORES + PLASTIC TAPE BETWEEN LAYERS **CONSTRUCTION 3+3 (EG 3 x 25+3 g 4):** PHASE UNITS LAID UP WITH EARTH-CONDUCTORS IN INTERSTICES, WITH SPECIAL YARNS BETWEEN PHASES + FILLERS (IF NECESSARY) **CONSTRUCTION IN PAIRS (EG 6 x (2 x 1)C):** CORES TWISTED IN PAIRS + PLASTIC FOIL / TINNED COPPER BRAID / PLASTIC FOIL / GA ALTHERM® 585 SHEATH, PAIRS IN LAYERS AROUND CENTRAL UNIT + FILLER (IF NECESSARY)
WRAPPING:	NON-WOVEN TAPE OR PLASTIC TAPE
INNER SHEATH:	PUR COMPOUND
SUPPORTING SCREEN:	ANTI-TWISTING PROTECTION OF TEXTILE BRAID
OUTER SHEATH:	BLACK (SIMILAR TO RAL 9005), PUR COMPOUND

Technical data:

NOMINAL VOLTAGE:	Uo/U 0,6/1 KV
NOMINAL VOLTAGE UL:	1000 V
TEST VOLTAGE:	4 KV
TEMPERATURE RANGE DIN VDE:	
FIXED LAYING:	-50°C UP TO +90°C
FLEXIBLE INSTALLATION:	-40°C UP TO +90°C
TEMPERATURE RANGE UL:	
FIXED LAYING:	UP TO +80°C
FLEXIBLE INSTALLATION:	UP TO +80°C
MAX. TEMPERATURE ON CONDUCTOR:	+ 90°C
MAX. TEMPERATURE IN SHORT CIRCUIT:	+ 250 °C
MIN. BENDING RADIUS:	
FIXED LAYING:	5 x D
FLEXIBLE LAYING:	7,5 x D
TENSILE STRENGHT:	
STATIC	50 N/mm²
DYNAMIC:	20 N/mm²
MAX. TORSION:	± 25°/1mt.
MAX SPEED (MAIN APPLICATION):	180 m/min

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2
UL-VW-1, CSA FT-1

HALOGEN-FREE ACC. TO:
DIN VDE 0482 PART 267,
EN 50267-2-1,
IEC 60754-1

OIL RESISTANCE ACC. TO:
DIN VDE 0473 PART 811-2-1
IEC EN 60811-2-1

Features:

UV RESISTANCE: VERY GOOD

CHEMICAL RSISTANCE: GOOD

SMALL OUTER DIAMETER

REDUCED CABLE WEIGHT

HIGH WINDING AND UNWINDING STRENGTH

c us AWM STYLE 10492/21223 80°C 600, 1000 V
AWM II A/B 80°C 1000 V FT1

OR

c us AWM STYLE 21897 80°C
AWM II A/B 80°C, 0,6/1 KV, FT1

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

Applications:

FLEXIDRUM® R 503 IS USED ON HEAVY APPLIANCES LIKE MOTOR CABLE REEL HOISTS, TRANSPORT SYSTEMS, MOVABLE MOTORS AND FARM VEHICLES WITH HIGH MECHANICAL STRESS

FLEXIDRUM® R 503

SUITABLE FOR REELING APPLICATION

SUITABLE FOR FESTOON APPLICATION

Part no.	No. of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	Tensile strenght N	AWG no.*)
01120G70041A16	4 g 1,5	9,4	57,6	135	2000	16
01120G70051A16	5 g 1,5	10,1	72	160	2000	16
01120G70071A16	7 g 1,5	11,1	101	210	2500	16
01120G70121A16	12 g 1,5	13,6	172,8	310	3000	16
01120G70181A16	18 g 1,5	15,7	259,2	420	3500	16
01120G70241A16	24 g 1,5	18,8	345	560	4000	16
01120G70361A16	36 g 1,5	25,4	518,4	992	-	16
01120G70041A14	4 g 2,5	11	96	195	2500	14
01120G70051A14	5 g 2,5	12	120	235	2500	14
01120G70071A14	7 g 2,5	13,8	168	305	3000	14
01120G70121A14	12 g 2,5	17	288	460	3500	14
01120G70181A14	18 g 2,5	20	432	695	4000	14
01120G70241A14	24 g 2,5	23,2	576	925	4500	14
01120G70301A14	30 g 2,5	23,7	720	1250	5000	14
01120G70361A14	36 g 2,5	27,8	864	1410	5700	14
01120G70041A12	4 g 4	12,5	153,6	275	2500	12
01120G70041A10	4 g 6	14,9	230,4	390	3000	10
01120G70041A08	4 g 10	18	384	570	4000	8
01120G70041A06	4 g 16	21,5	614,4	915	4500	6
01120G70041A04	4 g 25	25,5	960	1360	5500	4
01120G70041A02	4 g 35	29,2	1344	1865	7000	2
01120G70041A01	4 g 50	34,5	1920	2650	9000	1
01120G70051A12	5 g 4	14,3	192	365	-	12
01120G70051A08	5 g 10	19,6	480	730	4000	8
01120G70051A06	5 g 16	23,6	768	1110	5500	6
01120G70051A04	5 g 25	28,3	1200	1685	6000	4
01120G70081A12	8 g 4	18,4	307,2	-	-	4
01120G70121A12	12 g 4	19,5	367,2	630	-	4
01120G70201A12	20 g 4	24,8	768	-	-	4
01120G70241A12	24 g 4	27,8	921.6	1442,5	-	4
01120G70301A12	30 g 4	31,2	1152	1840	-	4
01120G70037A04	3 x 25+3 g 6	23,2	892,9	1105	5000	4
01120G70037A02	3 x 35+3 g 6	26,5	1180	1525	6000	2
01120G70037A01	3 x 50+3 g 10	31	1728	2155	7000	1
01120G70037A2C	3 x 70+3 g 16	36,4	2477	3100	8000	2/0
01121G70062A18	6 x (2 x 1)C	20,1	204	455	2500	18
01120G70031900	30 g 2,5+(4 x 1,5)C	28,4	799	1395	10000	14
01120G72049904	4 g 70+12 g 62,5/125	39,6	2688	3612	-	2/0

Other dimensions and colors available on request.

FLEXIDRUM® FIBER 770

Construction:

OPTICAL FIBERS:	CORE Ø: 50 µm, 62,5 µm, 9 µm CLADDING: 125 µm COATING: 250 µm STANDARD TYPE: 62,5/125 (OTHERS ON REQUEST)
TUBES:	THERMOPLASTIC COMPOUND
CENTRAL UNIT:	HIGH-TECH YARNS
STRANDING:	FIBER-OPTICS AROUND CENTRAL UNIT 6-12-18 FIBER-OPTICS LAYING IN 6 TUBES (1,2 OR 3 FIBERS PER TUBE)
SUPPORTING SCREEN:	ANTI-TWISTING PROTECTION OF SYNTHETIC YARNS
OUTER SHEATH:	BLACK (SIMILAR TO RAL 9005), RUBBER PCP TYPE 5GM2

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2

OIL RESISTANCE ACC. TO:
DIN VDE 0473 PART 811-2-1
IEC EN 60811-2-1

Technical data:

TEMPERATURE RANGE:	
FIXED LAYING:	-40°C UP TO +80°C
FLEXIBLE INSTALLATION:	-30°C UP TO +60°C
MIN. BENDING RADIUS:	15 x D
MAX TORSION:	± 120°/M
TENSILE STRENGHT:	1200 N
MAX TRANSVERSE PRESSURE:	300 N/cm
MAX SPEED (MAIN APPLICATION):	240 m/min

Features:

UV RESISTANT

OIL AND CHEMICAL RESISTANCE

FOR SPEED AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS APPROVAL

Part no.	No. of fibers	No. of fibers x tube	Outer-Ø ca. mm ± 10%	Cable weight approx. kg/km	Tensile strength N
0109007F061F62	6 g 62,5/125 MICRON	1	14	230	1200
0109007F061F52	6 g 50/125 MICRON	1	14	230	1200
0109007F06AF09	6 e 9/125 MICRON	1	14	230	1200
0109007F121F62	12 g 62,5/125 MICRON	2	14	230	1200
0109007F121F52	12 g 50/125 MICRON	2	14	230	1200
0109007F12AF09	12 e 9/125 MICRON	2	14	230	1200
0109007F181F62	18 g 62,5/125 MICRON	3	14	230	1200
0109007F181F52	18 g 50/125 MICRON	3	14	230	1200
0109007F18AF09	18 e 9/125 MICRON	3	14	230	1200

Other dimensions and colors available on request.

FLEXIFESTOON® NE-FLAT (NGFLGÖU) UL

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295 **(FROM 1 UP TO 25 mm²)** FLEXIBLE RED COPPER CONDUCTOR CL. 5, ACC TO IEC 60228, DIN VDE 0295 **(FROM 35 mm²)**
INSULATION:	EPR TYPE 3GI3 ACC. TO DIN VDE 0207
CORES COLOR:	ACC. TO DIN VDE 0293-308, HD 308 S2 FROM 6 CORES BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334; GREEN-YELLOW EARTH-WIRE FROM 3 CORES
STRANDING:	CORES LAYING PARALLEL
OUTER SHEATH:	BLACK (SIMILAR TO RAL 9005), RUBBER PCP TYPE 5GM3, YELLOW (SIMILAR TO RAL 1021) ON REQUEST

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2

OIL RESISTANCE ACC. TO:
DIN VDE 0473 PART 404, PART.10

Technical data:

NOMINAL VOLTAGE:	Uo/U 300/500 V (**UL** 600 V)
TEST VOLTAGE:	3 kV
TEMPERATURE RANGE:	
FIXED LAYING:	-50°C UP TO +80°C
FLEXIBLE APPICATION:	-35°C UP TO +80°C
MAX. TEMP ON CONDUCTOR:	
IN SERVICE:	UP TO +90°C
IN SHORT CIRCUIT:	UP TO +250°C
MIN. BENDING RADIUS:	ACC. TO DIN VDE 0298 PART 3
TENSILE STRENGHT:	15 N/mm²
MAX SPEED (MAIN APPLICATION):	180 m/min

Features:

ACC. TO DIN VDE 0250-809

UV, OZONE, AND CHEMICAL RESISTANT

INDOOR/OUTDOOR USE

EXTREMELY SMALL BENDING RADIUS

MINIMUM WASTE OF SPACE

HIGH FLEXIBILITY

COLD RESISTANT

APPROVAL AVAILABLE

GOST-R/EAC APPROVAL

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

FLEXIFESTOON® NE-FLAT (NGFLGÖU) UL

Part no.	No. of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
03030F72031A16	3 g 1,5	6 x 12,1	43,2	140	16
03030F72041A16	4 g 1,5	6 x 15,4	58	180	16
03030F72051A16	5 g 1,5	5,8 x 19,3	72	220	16
03030F70071A16	7 g 1,5	5,8 x 25,9	101	290	16
03030F70081A16	8 g 1,5	5,8 x 28,4	115	320	16
03030F70101A16	10 g 1,5	6,5 x 36,3	144	450	16
03030F70121A16	12 g 1,5	6,5 x 42,8	173	540	16
03030F70241A16	24 g 1,5	11,9 x 52,1	345,6	1050	16
03030F70421A16	42 g 1,5	15,6 x 71,3	604,8	1930	16
03030F72041A14	4 g 2,5	7,1 x 19	96	270	14
03030F72051A14	5 g 2,5	7 x 23,8	120	330	14
03030F70071A14	7 g 2,5	7,1 x 31,9	168	450	14
03030F70081A14	8 g 2,5	7,1 x 35	192	500	14
03030F70101A14	10 g 2,5	7,7 x 44,2	240	670	14
03030F70121A14	12 g 2,5	7,7 x 52,1	288	790	14
03030F70241A14	24 g 2,5	15,2 x 66,7	576	1700	14
03030F72041A12	4 g 4	8,7 x 23	154	400	12
03030F72051A12	5 g 4	8,8 x 30,1	192	520	12
03030F70071A12	7 g 4	8,7 x 39,7	269	700	12
03030F70081A12	8 g 4	8,5 x 42,3	307,2	757	12
03030F70121A12	12 g 4	8,4 x 61,9	460,8	1131	12
03030F72041A10	4 g 6	9,3 x 26,2	230	510	10
03030F72051A10	5 g 6	9,4 x 33	288	650	10
03030F70071A10	7 g 6	9,3 x 44,1	403	880	10
03030F72041A08	4 g 10	10,8 x 31,4	384	760	8
03030F72051A08	5 g 10	10,9 x 40,4	480	970	8
03030F70071A08	7 g 10	10,9 x 54,5	672	1330	8
03030F72041A06	4 g 16	12,5 x 36,8	614	1070	6
03030F72051A06	5 g 16	12,5 x 46,4	768	1370	6
03030F70071A06	7 g 16	13 x 62,3	1075	2000	6
03030F72041A04	4 g 25	14 x 42,7	960	1510	4
03030F72051A04	5 g 25	13,2 x 60	1200	2210	4
03030F70071A04	7 g 25	15,2 x 74,3	1680	2830	4
03030F72041A02	4 g 35	15,8 x 48,5	1344	2050	2
03030F70071A02	7 g 35	16,9 x 85,4	2352	3830	2
03030F72041A01	4 g 50	18,5 x 57	1920	2840	1
03030F72041A2C	4 g 70	20,8 x 64,2	2688	3830	2/0
03030F72041A3C	4 g 95	23,6 x 73,6	3648	4940	3/0
03030F72041A4C	4 g 120	25,7 x 81,2	4608	6230	4/0

Other dimensions and colors available on request.

FLEXIFESTOON® NE FLAT M(StD)HÖU-J/O UL

Screened rubber flat cables, UL approval

SUITABLE FOR FESTOON APPLICATION

Construction:

COND CTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC TO IEC 60228, DIN VDE 0295 **(FROM 1 UP TO 25 mm²)** FLEXIBLE RED COPPER CONDUCTOR CL. 5, ACC TO IEC 60228, DIN VDE 0295 **(FROM 35 mm²)**
WRAPPING:	PETP TAPE
INSULATION:	RUBBER HEPR TYPE 3GI3 ACC. TO DIN VDE 0207
CORES COLOR:	ACC. TO DIN VDE 0293-308, HD 308 S2 FROM 6 CORES BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334; GREEN-YELLOW EARTH-WIRE FROM 3 CORES
STRANDING:	CORES LAYING PARALLEL PAIRS: CORES TWISTED IN PAIRS WITH SHORT LAY LENGHT WRAPPING WITH PETP FOIL, PAIRS LAYING PARALLEL
SCREEN:	TINNED COPPER WIRES + ALUMINIUM TAPE/PETP FOIL
OUTER SHEATH:	BLACK (SIMILAR TO RAL 9005), RUBBER PCP TYPE 5GM3

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2

OIL RESISTANCE ACC. TO:
DIN VDE 0473 PART 811-2-1
IEC EN 60811-2-1

Technical data:

NOMINAL VOLTAGE:	Uo/U 0,6/1 kV (**UL** 600 V)
TEST VOLTAGE:	4 kV
TEMPERATURE RANGE:	
UL:	UP TO +90°C
FIXED LAYING:	-40°C UP TO +85°C
FLEXIBLE APPICATION:	-30°C UP TO +85°C
MAX. TEMP ON CONDUCTOR:	
IN SERVICE:	UP TO +90°C
IN SHORT CIRCUIT:	UP TO +250°C
MIN. BENDING RADIUS:	ACC. TO DIN VDE 0298 PART 3
MAX SPEED (MAIN APPLICATION):	180 m/min
RADIATION RESISTANCE:	UP TO 50X10⁶ CJ/Kg (UP TO 50 Mrad)
TENSILE STRENGHT:	
STATIC:	15 N/mm²
DYNAMIC:	30 N/mm²

Features:

UV, OZONE, AND CHEMICAL RESISTANT

EXTREMELY SMALL BENDING RADIUS

MINIMUM WASTE OF SPACE

HIGH FLEXIBILITY

COLD RESISTANT

ACC. TO DIN VDE 0250 PART 809 TABLE 2

UL LISTED APPROVAL AVAILABLE ON REQUEST

AWM STYLE 4540 90°C 600 V FT-1 600 V

FOR SPEEDS AND MINIMUM BENDING RADIUS
SEE PAGES FROM 1 TO 4 OF CATALOGUE

ROHS AND CE APPROVAL

RoHS CE

FLEXIFESTOON® NE FLAT M(StD)HÖU-J/O UL

Screened rubber flat cables, UL approval

SUITABLE FOR FESTOON APPLICATION

Part no.	No. of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
03190F72041A16	4 g 1,5	20,8 x 7,5	99	291	16
03190F72051A16	5 g 1,5	24,8 x 7,5	124	350	16
03190F70081A16	8 g 1,5	38,1 x 7,5	228	537	16
03190F71080A16	8 x 1,5	38,1 x 7,5	228	537	16
03190F70121A16	12 g 1,5	55,3 x 7,5	343	795	16
03190F71120A16	12 x 1,5	55,3 x 7,5	343	795	16
03190F72041A14	4 g 2,5	23,4 x 8,2	163	418	14
03190F70061A14	6 g 2,5	32,5 x 8,2	245	535	14
03190F70121A16	12 g 2,5	63 x 8,2	493	1004	14
03190F72041A12	4 g 4	26,8 x 9	241	440	12
03190F72041A10	4 g 6	29,7 x 9,7	353	603	10
03190F72041A08	4 g 10	35,9 x 11,7	497	955	8
03190F72041A06	4 g 16	39,9 x 13,1	805	1254	6
03190F72041A04	4 g 25	45,5 x 14,2	1200	1694	4
03190F72041A02	4 g 35	53,1 x 16,4	1657	2282	2
03190F72041A01	4 g 50	63,2 x 19,2	2261	3130	1
03190F72041A2C	4 g 70	75 x 22,9	3259	4680	2/0
03190F72041A3C	4 g 95	79,1 x 24	4311	5605	3/0
03190F70042A18	4 x (2 x 1)STD	32 x 11,7	156	525	18
03190F70072A18	7 x (2 x 1)STD	57,5 x 11,7	205	909	18
03190F70122A18	12 x (2 x 1)STD	68,3 x 15,4	460	1500	18
03190F70122A18	4 x (4 g 1,5)STD	40,6 x 11,5	440	900	16

Other dimensions and colors available on request.

FLEXIFESTOON® PV-FLAT UL

SUITABLE FOR FESTOON APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CLASS M **FROM 16 AWG UP TO 14 AWG** FLEXIBLE RED COPPER CONDUCTOR CLASS K **FROM 12 AWG AND LARGER**
INSULATION:	SPECIAL PVC COMPOUND 105°C
CORES COLOR:	ACC. TO ICEA METHOD 1-E2 (K-2)* *5 CONDUCTORS: 1 GREEN, 2 WHITE, 3 BLACK, 4 RED AND BLUE
STRANDING:	CORES LAYING PARALLEL
OUTER SHEATH:	YELLOW (SIMILAR TO RAL 1021), SPECIAL PVC COMPOUND 105°C BLACK (SIMILAR TO RAL 9005), ON REQUEST

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
UL VW-1, CSA FT1

Technical data:

NOMINAL VOLTAGE:	600 V
MAX. OPERATING VOLTAGE:	2000 V
TEST VOLTAGE:	2 kV
TEMPERATURE RANGE:	-40°C UP TO +105°C
MAX. TEMP ON CONDUCTOR:	
IN SERVICE:	UP TO +90°C (105°C)
IN SHORT CIRCUIT:	UP TO +150°C
MIN. BENDING RADIUS:	5 x D
TENSILE STRENGHT:	
STATIC:	15 N/mm²
DYNAMIC:	30 N/mm²
MAX SPEED (MAIN APPLICATION):	120 m/min

Features:

- OIL RESISTANT OUTER SHEATH
- UV RESISTANT
- COLD RESISTANT
- INDOOR/OUTDOOR USE
- HIGH FLEXIBILITY
- MINIMUM WASTE OF SPACE
- ACC. TO NEC APPROVAL
- UL FESTOON AND AWM 105°C 600 V
- CSA FESTOON 105°C 600 V

FLEXIFESTOON® PV-FLAT UL

SUITABLE FOR FESTOON APPLICATION

Part no.	No. of cores x cross section n x AWG	Outer Ø inches/mm ±10%	Copper weight Lbs/Mft - kg/km	Cable weight approx. Lbs/Mft - kg/km
03220FYU040A16	4 x 16	0,6 x 0,2 - 15,2 x 5,1	33,8 - 50,3	87,4 - 130
03220FYU080A16	8 x 16	1,12 x 0,2 - 28,5 x 5,1	67,6 - 100,6	174,7 - 260
03220FYU120A16	12 x 16	1,68 x 0,2 - 41 x 5,1	101,4 - 150,9	268,8 - 400
03220FYU040A14	4 x 14	0,69 x 0,24 - 17,5 x 6,2	53,7 - 79,9	141,1 - 210
03220FYU080A14	8 x 14	1,34 x 0,24 - 34 x 6,2	107,3 - 159,7	255,4 - 380
03220FYU120A14	12 x 14	1,97 x 0,24 - 50 x 6,2	161,3 - 240	362,9 - 540
03220FYU040A12	4 x 12	0,71 x 0,24 - 18,1 x 6	85,4- 127,1	168 - 250
03220FYU050A12	5 x 12	0,85 x 0,22 - 21,5 x 5,6	106,8 - 158,9	201,6 - 300
03220FYU080A12	8 x 12	1,34 x 0,24 - 34 x 6	170,8 - 254,2	315,8 - 470
03220FYU040A10	4 x 10	0,89 x 0,27 - 22,5 x 6,9	135,7 - 202	255,4 - 380
03220FYU050A10	5 x 10	1,08 x 0,27 - 27,5 x 6,9	169,7 - 252,5	302,4 - 450
03220FYU040A08	4 x 8	1,2 x 0,37 - 30,5 x 9,4	215,2 - 320,2	403,2 - 600
03220FYU040A06	4 x 6	1,45 x 0,43 - 36,8 x 10,9	343 - 510,7	618,2 - 920
03220FYU050A06	5 x 6	1,81 x 0,43 - 46 x 10,9	429 - 638,4	780 - 1160,7
03220FYU040A04	4 x 4	1,68 x 0,49 - 42,6 x 12,5	547,1 - 814,1	873,6 - 1300
03220FYU040A02	4 x 2	1,97 x 0,57 - 50 x 14,5	867 - 1290,2	1276,8 - 1900
03220FYU040A1C	4 x 1/0	2,6 x 0,75 - 66 x 19,1	1378 - 2050,6	2221 - 3305
03220FYU040A2C	4 x 2/0	2,72 x 0,79 - 69 x 20	1739,1 - 2588,2	2587,2 - 3850

Other dimensions and colors available on request.

FLEXIFESTOON® PV-FLAT CY UL

SUITABLE FOR FESTOON APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR
INSULATION:	SPECIAL PVC COMPOUND 105°C
CORES COLOR:	ACC. TO ICEA METHOD 1-E2 (K-2)
WRAPPING:	CLEAR MYLAR TAPE
STRANDING:	CORES LAYING PARALLEL + NYLON RIPCORDS
SCREEN:	TINNED COPPER BRAID
OUTER SHEATH:	YELLOW (SIMILAR TO RAL 1021), SPECIAL PVC COMPOUND 105°C BLACK (SIMILAR TO RAL 9005), ON REQUEST

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
UL VW-1, CSA FT1

Technical data:

NOMINAL VOLTAGE:	600 V
MAX. OPERATING VOLTAGE:	2000 V
TEST VOLTAGE:	2 kV
TEMPERATURE RANGE:	
FIXED LAYING:	-40°C UP TO +105°C
FLEXIBLE APPICATION:	-10°C UP TO +70°C
MIN. BENDING RADIUS:	5 x D

Features:

- UV RESISTANT
- COLD RESISTANT
- INDOOR/OUTDOOR USE
- HIGH FLEXIBILITY
- MINIMUM WASTE OF SPACE
- ACC. TO NEC APPROVAL
- UL FESTOON, VW-1, 105°C 600 V
- CSA FESTOON, FT1, 105°C 600 V

Part no.	No. of cores x cross section n x AWG	Outer Ø inches/mm ±10%	Copper weight Lbs/Mft - kg/km	Cable weight approx. Lbs/Mft - kg/km
03340FYU040A14	4 x 14	0,256 x 0,799 - 6,5 x 20,3	/ - /	/ - /
03340FYU120A16	12 x 16	0,270 x 2,1 - 6,86 x 53,34	/ - /	/ - /

Other dimensions and colors available on request.

LIFT-1S UL Central

UL Type STOOW Cable / CSA STOOW AWM / 600V 105°C / FT1

Construction:

CONDUCTOR:	EXTRA FINELY STRANDED RED COPPER, CLASS M
INSULATION:	PVC COMPOUND
CORES COLOR:	1ST CORE: YELLOW 2ND CORE: BLUE 3DT CORE: BROWN 4TH CORE: RED 5TH CORE: ORANGE 6TH CORE: WHITE 7TH CORE: PURPLE
CENTRAL SUPPORTING UNIT:	CENTRAL GALVANIZED STEEL CORE A 1/16'' (7X7)
STRANDING:	IN LAYERS AROUND CENTRAL SUPPORTING UNIT
OUTER SHEATH:	YELLOW (SIMILAR TO RAL 1021), PVC COMPOUND, OIL RESISTANT

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2
UL TYPE MTW, VW-1,
CSA AWM, FT-1

Technical data:

NOMINAL VOLTAGE:	Uo/U 600 V
TEST VOLTAGE:	2 kV
TEMPERATURE RANGE:	
FIXED LAYING:	UP TO +105°C **UL/CSA:** +90°C
FLEXIBLE APPICATION:	UP TO +105°C **UL/CSA:** +90°C
MIN. BENDING RADIUS:	10 x D

Features:

UV, OZONE AND MOISTURE RESISTANCE

LOW ABRASION

HIGH NOTCH RESISTANT

UL PENDANT 600 V 90°C

UL TYPE MTW

CSA AWM 600 V 90°C

Part no.	No. of cores x cross section n x AWG	Outer-Ø inches/mm ± 10%	Cable weight approx. Lbs/Mft-kg/km
03300FYK030A16	3 x 16	0,514 - 13,1	100 - 149
03300FYK050A16	5 x 16	0,554 - 14,1	173 - 257
03300FYK070A16	7 x 16	0,592 - 15	185 - 275

Other dimensions and colors available on request.

LIFT- 1S UL

Construction:

CONDUCTOR:	EXTRA FINELY STRANDED RED COPPER, CLASS M
INSULATION:	PVC COMPOUND 105°C ACC. TO UL 62, CSA C22.2 NO.210.2
CORES COLOR:	ACC. TO ICEA METHOD 1-E1 (K-1)
STRANDING:	IN LAYER WITH FIBRILLATED POLYPROPYLENE FILLER
WRAPPING:	POLYESTER TAPE
SUPPORTING UNIT:	ONE GALVANIZED STEEL CORE + BLACK NYLON COVERING, LAYING PARALLEL WITH THE CABLE
OUTER SHEATH:	BLACK (SIMILAR TO RAL 9005), PVC COMPOUND ACC. TO UL 62, CSA C22.2 NO.210.2

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2
UL TYPE MTW, VW-1,
CSA AWM, FT-1

Technical data:

NOMINAL VOLTAGE:	Uo/U 600 V
TEST VOLTAGE:	2 kV
TEMPERATURE RANGE:	**(UL) / C(UL)**
FIXED LAYING:	-25°C UP TO +105°C
FLEXIBLE APPICATION:	-25°C UP TO +105°C
MIN. BENDING RADIUS:	10 x D

Features:

UV, OZONE AND MOISTURE RESISTANCE

LOW ABRASION

HIGH NOTCH RESISTANT

UL SUBJECT 2562 FOR PENDANT CABLES

UL 105°C 600 V

CSA AWM I/II A/B 105°C 600 V

Part no.	No. of cores x cross section n x mm²	Outer-Ø inches/mm ± 10%	Cable weight approx. Lbs/Mft-kg/km	Tensile strength N	AWG no.*)
03170F7K041A16	4 g 1,5	0,675 x 0,445 - 17,1 x 11,3	134 - 199,4	1000	16
03170F7K061A16	6 g 1,5	0,75 x 0,52 - 19 x 13,2	171 - 254,4	1000	16
03170F7K081A16	8 g 1,5	0,845 x 0,615 - 21,5 x 15,6	213 - 317	1000	16

Other dimensions and colors available on request.

LIFT-2S UL

Construction:

CONDUCTOR:	EXTRA FINELY STRANDED RED COPPER, CLASS M
INSULATION:	PVC/NYLON SPECIAL COMPOUND
CORES COLOR:	ACC. TO ICEA METHOD 1-E2 (K-2)
CENTRAL UNIT:	PVC FILLER (IF NECESSARY)
STRANDING:	IN LAYERS
WRAPPING:	MYLAR TAPE
SUPPORTING UNIT:	TWO GALVANIZED STEEL CORE + BLACK NYLON COVERING, LAYING PARALLEL WITH THE CABLE
OUTER SHEATH:	YELLOW (SIMILAR TO RAL 1021), PVC COMPOUND

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2
UL TYPE MTW, VW-1,
CSA AWM, FT-1

Technical data:

NOMINAL VOLTAGE:	Uo/U 600 V
TEST VOLTAGE:	2 kV
TEMPERATURE RANGE:	**(UL) / C(UL)**
FIXED LAYING:	-25°C UP TO +90°C
FLEXIBLE APPICATION:	-25°C UP TO +90°C
MIN. BENDING RADIUS:	10 x D

Features:

UV, OZONE AND MOISTURE RESISTANCE

LOW ABRASION

HIGH NOTCH RESISTANT

UL SUBJECT 2562 FOR PENDANT CABLES

UL 90°C 600 V

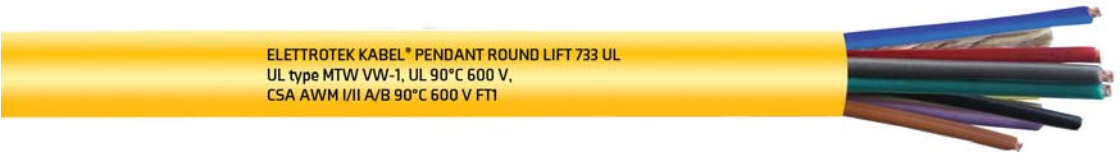
CSA AWM I/II A/B 90°C 600 V

Part no.	No. of cores x cross section n x mm²	Outer-Ø inches/mm ± 10%	Cable weight approx. Lbs/Mft-kg/km	Tensile strength N	AWG no.*)
03180FYU081A16	8 g 1,5	0,895 x 0,490 - 22,7 x 12,4	219 - 325,9	1000	16
03180FYU121A16	12 g 1,5	0,972 x 0,546 - 24,7 x 13,9	263 - 391,4	1000	16
03180FYU161A16	16 g 1,5	1,030 x 0,624 - 26,2 x 15,8	318 - 473,2	1000	16
03180FYU241A16	24 g 1,5	1,195 x 0,760 - 30,3 x 19,3	430 - 640	1000	16

Other dimensions and colors available on request.

PENDANT ROUND LIFT 733 UL

pendant control cable up to 60 mt.



Construction:

CONDUCTOR:	EXTRA FINELY STRANDED RED COPPER, CLASS M
INSULATION:	PVC/NYLON SPECIAL COMPOUND
CORES COLOR:	ACC. TO ICEA METHOD 1-E2 (K-2)
CENTRAL UNIT:	PVC FILLER
STRANDING:	IN LAYERS
WRAPPING:	MYLAR TAPE
OUTER SHEATH:	YELLOW (SIMILAR TO RAL 1021), PVC COMPOUND

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2
UL TYPE MTW, VW-1,
CSA AWM, FT-1

Technical data:

NOMINAL VOLTAGE:	Uo/U 600 V
TEST VOLTAGE:	2 kV
TEMPERATURE RANGE:	**(UL) / C(UL)**
FIXED LAYING:	-25°C UP TO +90°C
FLEXIBLE APPICATION:	-25°C UP TO +90°C
MIN. BENDING RADIUS:	10 x D

Features:

UL 90°C 600 V

CSA AWM I/II A/B 90°C 600 V

Part no.	No. of cores x cross section n x mm²	Outer-Ø inches/mm ± 10%	Cable weight approx. Lbs/Mft-kg/km	Max. Tensile strength N	AWG no.*)
07050FYU081A16	8 g 1,5	0,479 - 12,2	158 - 235	1000	16
07050FYU121A16	12 g 1,5	0,566 - 14,4	217 - 323	1000	16
07050FYU161A16	16 g 1,5	0,605 - 15,4	255 - 380	1000	16
07050FYU241A16	24 g 1,5	0,755 - 19,2	-	1000	16
07050FYU301A16	30 g 1,5	0,803 - 20,4	-	1000	16
07050FYU361A16	36 g 1,5	0,905 - 23	-	1000	16

Other dimensions and colors available on request.

BASKET SPREADER 740 (YSLTOE)

Control cable hoisting cages in crane systems

SUITABLE FOR SPREADER APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC. TO IEC 60228, DIN VDE 0295
INSULATION:	PVC TYPE YI2
CORES COLOR:	BLACK CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334 + GREEN/YELLOW
CENTRAL UNIT:	ARAMIDE YARNS WITH LEAD
STRANDING:	CORES ARE TWISTED TO BUNDLE WITH CENTRAL LEAD CORE, BUNDLES TWISTED AROUND CENTRAL UNIT
WRAPPING:	NON-WOVEN TAPE, ON EACH BUNDLE AND OVERALL
OUTER SHEATH:	BLACK (SIMILAR TO RAL 9005), PUR TYPE 11YM1

Resistance:

SELF-EXTINGUISHING AND FLAME RETARDANT ACC. TO:
DIN VDE 0482 PART 265-2-1
EN 50265-2-1
IEC 60332-1-2

OIL RESISTANCE ACC. TO:
DIN VDE 0282 PART. 10
IEC EN 60811-2-1

Technical data:

NOMINAL VOLTAGE:	Uo/U 300/500 V
MAX. OPERATING VOLTAGE IN A.C. SYSTEMS:	Uo/U 310/550 V
MAX. OPERATING VOLTAGE IN D.C. SYSTEMS:	Uo/U 410/825 V
TEST VOLTAGE:	2 kV
TEMPERATURE RANGE:	
FIXED LAYING:	-20°C UP TO +60°C
FLEXIBLE APPICATION:	-20°C UP TO +60°C
MAX. TEMP ON CONDUCTOR:	
IN SERVICE:	UP TO +70°C
IN SHORT CIRCUIT:	UP TO +150°C
MIN. BENDING RADIUS:	15 x D
TENSILE STRENGHT:	UP TO 15 N/mm²
MAX. TORSION:	± 25°/1MT.
MAX SPEED (MAIN APPLICATION):	160 m/min

Features:

UV, OZONE, AND MOISTURE RESISTANCE

OUTDOOR/INDOOR USE

UP TO 50 MT. SUSPENSION LENGTH

HIGH BREAKING LOAD OF SUPPORTING UNIT

COLD VERSION ON REQUEST

POSSIBLE CONSTRUCTIONS: CONTROL CABLES WITH BUS OR FIBRE OPTICS ELEMENT

UL/CSA APPROVAL ON REQUEST

GOST-R APPROVAL ON REQUEST

FOR SPEED SEE PAGES FROM 1 AND 2 OF CATALOGUE

CE APPROVAL

CE

BASKET SPREADER 740 (YSLTOE)

Control cable hoisting cages in crane systems

SUITABLE FOR SPREADER APPLICATION

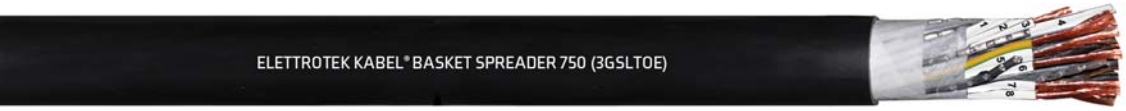
YSLTOE-J CONTROL CABLES

Part no.	No. of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
03150D70481M10	48 g 1	32	460,8	1900	18
03150D70121M25	12 g 2,5	22,9	288	834	14
03150D70241M25	24 g 2,5	30	576	1650	14
03150D70301M25	30 g 2,5	32,6	720	2050	14
03150D70361M25	36 g 2,5	36,2	864	2350	14
03150D70421M25	42 g 2,5	38,5	1008	3050	14
03150D70481M25	48 g 2,5	42,5	1152	3450	14
03150D70541M25	54 g 2,5	47	1296	3490	14
03150D70201M35	20 g 3,5	32,3	672	2000	12
03150D70241M35	24 g 3,5	32,5	806,4	2080	12
03150D70301M35	30 g 3,5	36,6	1008	2650	12
03150D70361M35	36 g 3,5	39,5	1209,6	3300	12
03150D70421M35	42 g 3,5	41,2	1411,2	3800	12
03150D70481M35	48 g 3,5	44,1	1612,8	4150	12
03150D70541M35	54 g 3,5	44,3	1814,4	4430	12

Other dimensions and colors available on request.

BASKET SPREADER 750 (3GSLTOE)

Control cable hoisting cages in crane systems



SUITABLE FOR SPREADER APPLICATION

Construction:

CONDUCTOR:	FLEXIBLE RED COPPER CONDUCTOR CL. 6, ACC. TO IEC 60228, DIN VDE 0295
INSULATION:	GAALTHERM® 530
CORES COLOR:	WHITE CORES WITH CONSECUTIVE NUMBERS ACC. TO EN 50334 + GREEN/YELLOW
INDIVIDUAL SCREEN:	TINNED COPPER BRAID (ONLY FOR CONTROL CABLES WITH BUS ELEMENT VERSION)
CENTRAL UNIT:	ARAMIDE YARNS WITH LEAD
STRANDING:	CORES ARE TWISTED TO BUNDLE WITH CENTRAL LEAD CORE, BUNDLES TWISTED AROUND CENTRAL UNIT
WRAPPING:	NON-WOVEN TAPE, ON EACH BUNDLE AND OVERALL
OUTER SHEATH:	BLACK (SIMILAR TO RAL 9005), PUR COMPOUND

Resistance:

OIL RESISTANCE ACC. TO:
DIN VDE 0473-811-404 PART. 10
DIN EN 60811-404

Technical data:

NOMINAL VOLTAGE:	Uo/U 0,6/1 KV
MAX. OPERATING VOLTAGE IN A.C. SYSTEMS:	Uo/U 0,7/1,2 KV
MAX. OPERATING VOLTAGE IN D.C. SYSTEMS:	Uo/U 0,9/1,8 KV
TEST VOLTAGE:	3,5 KV
TEMPERATURE RANGE:	
FIXED LAYING:	-50°C UP TO +80°C
FLEXIBLE APPICATION:	-40°C UP TO +80°C
MAX. TEMP ON CONDUCTOR:	
IN SERVICE:	UP TO +90°C
IN SHORT CIRCUIT:	UP TO +250°C
MIN. BENDING RADIUS:	5 X D
TENSILE STRENGHT:	UP TO 15 N/mm²
MAX. TORSION:	± 25°/1mt.
MAX SPEED (MAIN APPLICATION):	160 m/min

Features:

UV, OZONE, AND MOISTURE RESISTANCE

OUTDOOR/INDOOR USE

UP TO 50 MT. SUSPENSION LENGTH

HIGH BREAKING LOAD OF SUPPORTING UNIT

COLD RESISTANT

POSSIBLE CONSTRUCTIONS: CONTROL CABLES WITH BUS OR FIBRE OPTICS ELEMENT

GOST-R APPROVAL ON REQUEST

FOR SPEED SEE PAGES FROM 1 AND 2 OF CATALOGUE

CE APPROVAL

CE

BASKET SPREADER 750 (3GSLTOE)

Control cable hoisting cages in crane systems

SUITABLE FOR SPREADER APPLICATION

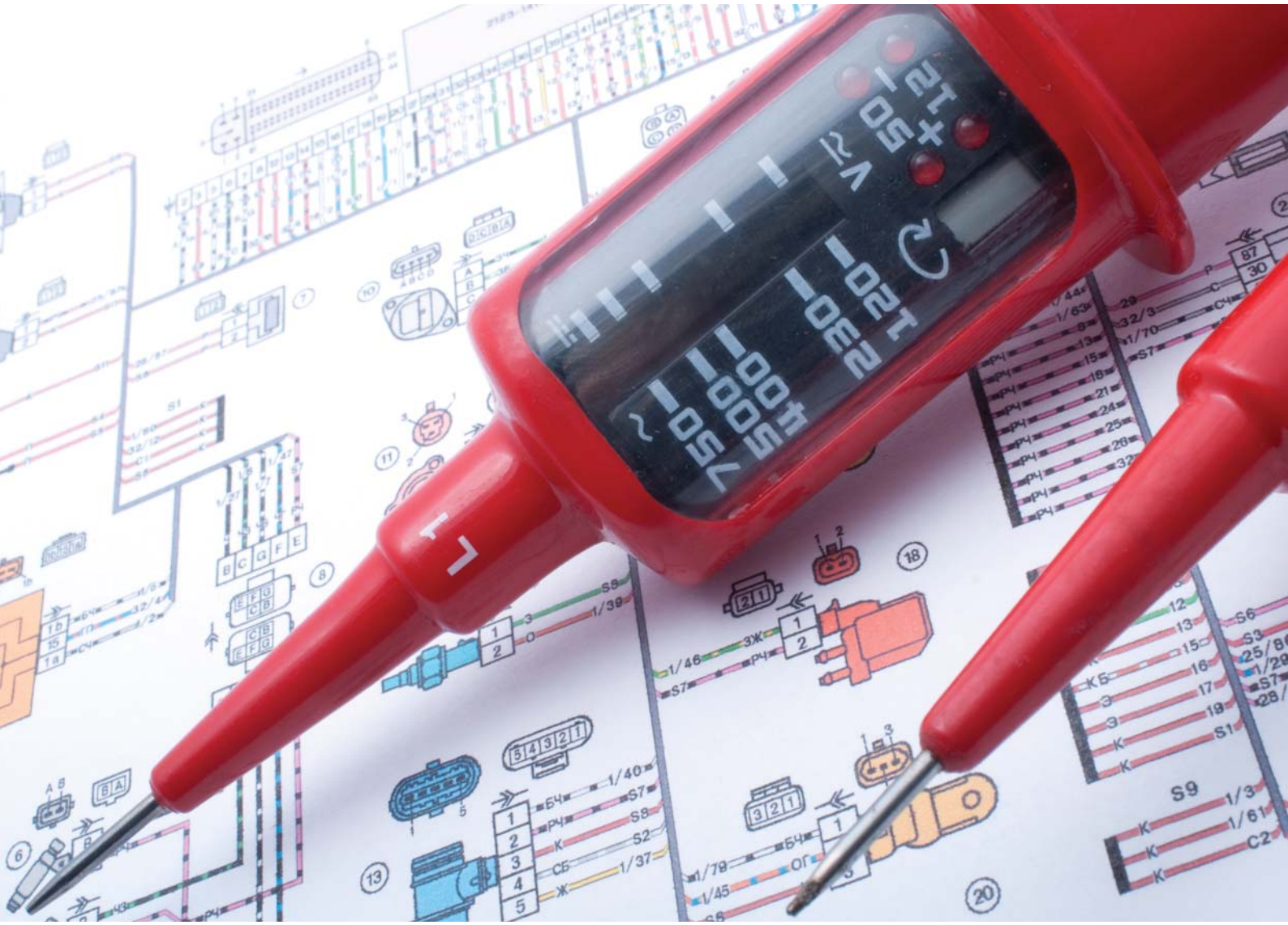
3GSLTOE-J CONTROL CABLES

Part no.	No. of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
03330G7A481M10	48 g 1	32,5	460,8	2350	18
03330G7A241M25	24 g 2,5	30,5	576	1750	14
03330G7A301M25	30 g 2,5	32,6	720	2250	14
03330G7A361M25	36 g 2,5	36,2	864	2800	14
03330G7A421M25	42 g 2,5	38,5	1008	3500	14
03330G7A481M25	48 g 2,5	42,5	1152	4050	14
03330G7A541M25	54 g 2,5	47	1296	3900	14
03330G7A201M35	20 g 3,5	32,5	672	2200	12
03330G7A241M35	24 g 3,5	33,5	806,4	2350	12
03330G7A301M35	30 g 3,5	36	1008	3000	12
03330G7A361M35	36 g 3,5	39,5	1209,6	3750	12
03330G7A421M35	42 g 3,5	44	1411,2	4500	12
03330G7A481M35	48 g 3,5	47	1612,8	4800	12
03330G7A541M35	54 g 3,5	47,5	1814,4	5100	12

3GSLTOE-J CONTROL CABLES WITH BUS ELEMENT

Part no.	No. of cores x cross section n x mm²	Outer-Ø ca.mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no.*)
03330G7A36BM25	36 g 2,5+2 x (2 x 1)C	43	-	3830	14/18

Other dimensions and colors available on request.



Fire performance
Fire resistant

Flame retardant and
self-extinguishing

Halogen-free

Smoke density/
low smoke emission

Corrosiveness of
combustion gases

Chem. resistance

Abrasion
notch resistant

UV resistant/
Sunlight resistant

Ozone resistance

Oil resistance

Ozone-Oxygene resistance

flourine
resistance

weather/atmospheric
resistance

impact-crushing
resistance

Mechanical resistance

water and cold
resistance

high temperature/
heat resistance

electro magnetic
resistance

ageing resistance

water resistant

mud resistant

microbe resistant

Railway
network stability

STRAND MAKE-UP ACCORDING TO DIN VDE 0295 and IEC 60228

Cross section mm²	Stranded wires	Multi-Stranded wires	Fine wires	Extra-fine wires
	Class 2 DIN VDE 0295		Class 5 DIN VDE 0295	Class 6 DIN VDE 0295
	1	2	3	4
	Number of single wires x wire Ø mm	Number of single wires x wire Ø mm	Number of single wires x wire Ø mm	Number of single wires x wire Ø mm
0,05				
0,08				
0,09				
0,14			± 18X0,1	±18X0,1
0,25			±14X0,15	±32X0,1
0,34		7X0,25	±19X0,15	±42X0,1
0,38		7X0,27	±12X0,2	±21X0,15
0,5	7X0,30	7X0,30	±16X0,2	±28X0,15
0,75	7X0,37	7X0,37	±24X0,2	±42X0,15
1,0	7X0,43	7X0,43	±32X0,2	±56X0,15
1,5	7X0,52	7X0,52	±30X0,25	±84X0,15
2,5	7X0,67	19X0,41	±50X0,25	±140X0,15
4	7X0,85	19X0,52	±56X0,3	±224X0,15
6	7X1,05	19X0,64	±84X0,3	±192X0,2
10	7X1,35	49X0,51	±80X0,4	±320X0,2
16	7X1,70	49X0,65	±128X0,4	±512X0,2
25	7X2,13	84X0,62	±200X0,4	±800X0,2
35	7X2,52	133X0,58	±280X0,4	±1120X0,2
50	19X1,83	133X0,69	±400X0,4	±705X0,3
70	19X2,17	189X0,69	±356X0,5	±990X0,3
95	19X2,52	259X0,69	±485X0,5	±1340X0,3
120	37X2,03	336X0,67	±614X0,5	±1690X0,3
150	37X2,27	392X0,69	±765X0,5	±2123X0,3
185	37X2,52	494X0,69	±944X0,5	1470X0,4
240	61X2,24	627X0,70	±1225X0,5	±1905X0,4
300	61X2,50	790X0,70	±1530X0,5	±2385X0,4
400	61X2,89		±2035X0,5	
500	61X3,23		±1768X0,6	
630	91X2,97		±2228X0,6	

allowable maximal diameter of single wire

nominal value mm	maximum value mm
0,2	0,21
0,25	0,26
0.3	0,31
0,4	0,41
0,5	0,51
0,6	0,51

COPPER CONDUCTOR AND STRANDING COMPOSITION DATA

Approx outer Ø	Pounds per 1000 ft.	Circular Mils	Size AWG/CM	CONCENTRIC STRAND					ROPE LAY Concentric Strand		ROPE LAY Bunch Strand	
				Class AA	Class A	Class B	Class C	Class D	Class G	Class H	Class K 30AWG (.010")	Class M 34AWG (.0063")
.0050	.0757	25.00	36									
.0056	.0954	31.52	35									
.0063	.1203	39.75	34									
.0071	.1517	50.13	33									
.0080	.1913	63.21	32									
.0089	.2413	79.70	30									
.0100	.3042	100.5	30									
.0113	.3836	126.7	29									
.0126	.4837	159.8	28									
.0142	.6100	201.5	27									
.0159	.7692	254.1	26									
.0179	.9699	320.4	25									
.0201	1.223	404.0	24									
.0226	1.542	509.5	23									
.0254	1.945	642.4	22									
.0285	2.452	810.1	21									
.0363	3.154	1,020	20			7	19				10	26
.0456	5.015	1,620	18			7	19				16	41
.0576	7.974	2,580	16			7	19				26	65
.0726	12.68	4,110	14			7	19	37	49		41	104
.0915	20.16	6,530	12			7	19	37	49		65	186
.1160	32.06	10,380	10			7	19	37	49		104	259
.1600	40.42	13,090	9			7	19	37	49	133		
.1460	51.0	16,510	8			7	19	37	49	133	168	420
.1840	80.9	26,240	6			7	19	37	49	133	266	665
.2320	129	41,740	4	3	7	7	19	37	49	133	420	1064
.2600	162	52,620	3	3	7	7	19	37	49	133	532	1323
.2990	205	66,630	2	3	7	7	19	37	49	133	665	1666
.3320	259	83,690	1	3	7	19	37	61	133	259	836	2107
.3730	326	105,600	1/0	7	7	19	37	61	133	259	1064	2646
.4190	411	133,100	2/0	7	7	19	37	61	133	259	1323	3325
.4700	518	167,800	3/0	7	7	19	37	61	133	259	1666	4256
.5280	653	211,600	4/0	7	7	19	37	61	133	259	2107	5320
.5750	772	250,000	250,000	12	19	37	61	91	259	427	2499	6384
.6300	925	300,000	300,000	12	19	37	61	91	259	427	2989	7581
.6810	1080	350,000	350,000	12	19	37	61	91	259	427	3458	8806
.7280	1236	400,000	400,000	19	19	37	61	91	259	427	3990	10,101
.8130	1542	500,000	500,000	19	37	37	61	91	259	427	5054	12,691
.8930	1850	600,000	600,000	37	37	61	91	127	427	703	5985	14,945
.9980	2316	750,000	750,000	37	61	61	91	127	427	703	7581	18,788
1.152	3086	1,000,000	1,000,000	37	61	61	91	127	427	703	10,101	25,193

DIMENSION AND WEIGHTS OF SOLID COPPER WIRE

Size AWG	Approximate Diameter	Circular Mils	Square Inches	Approximate Lbs/Mft
34	0,00063	39,7	0,0000312	0,120
32	0.0080	64.0	0.0000503	0.194
30	0.0100	100	0.0000785	0.303
29	0.0113	128	0.000100	0.387
28	0.0126	159	0.000125	0.481
27	0.0142	202	0.000158	0.610
26	0.0159	253	0.000199	0.765
25	0.0179	320	0.000252	0.970
24	0.0201	404	0.000317	1.22
23	0.0226	511	0.000401	1.55
22	0.0253	640	0.000503	1.94
21	0.0285	812	0.000638	2.46
20	0.0320	1020	0.000804	3.10
18	0.0403	1620	0.00128	4.92
16	0.0508	2580	0.00203	7.81
14	0.0641	4110	0.00323	12.4
12	0.0808	6530	0.00513	19.8
10	0.1019	10,380	0.00815	31.43
9	0.1144	13,090	0.01028	39.62
8	0.1285	16,510	0.01297	49.98
7	0.1443	20,820	0.01635	63.03
6	0.1620	26,240	0.02061	79.44
5	0.1819	33,090	0.02599	100.2
4	0.2043	41,740	0.03278	130.3
3	0.2294	52,620	0.04133	159.3
2	0.2576	66,360	0.05212	200.9

STRANDING-CLASS CONSTRUCTION AND USES

Concentric-lay Conductors

Class B	Power cables
Class C	Power cables where more flexible stranding than Class B is desired
Class D	Power cables where extra flexible stranding is desired

Rope-lay and Bunch-stranded Conductors

Class G	All cables for portable use
Class H	All cables where extreme flexibility is required, e.g. take-up reels
Class I	Apparatus cable and motor leads
Class K	Cords and cables 30 AWG copper wires - Stationary service
Class M	Cords and cables 34 AWG copper wires - Constant service

Note: Class G and H shall have concentric-lay stranded members and Class I, K and M shall have bunched stranded members.

AMERICAN/EUROPEAN CONVERSION TABLE FROM AWG TO mm²

AWG Number	Cross section mm² (AMERICAN COMPARISON)	Cross section mm² (EUROPEAN COMPARISON)	Ø mm	Conductor resistance Ω/km
1000 MCM	507	500	29,3	0,036
900	456	-	27,8	0,04
750	380	400	25,4	0,048
600	304	300	22,7	0,061
550	279	-	21,7	0,066
500	253	240	20,7	0,07
450	228	-	19,6	0,08
400	203	-	18,5	0,09
350	177	185	17,3	0,1
300	152	150	16	0,12
250	127		14,6	0,14
4/0	107,2	120	11,68	0,18
3/0	85	95	10,4	0,23
2/0	67,4	70	9,27	0,29
0	53,4	-	8,25	0,37
1	42,4	50	7,35	0,47
2	33,6	35	6,54	0,57
3	26,7	-	5,83	0,71
4	21,2	25	5,19	0,91
5	16,8	-	4,62	1,12
6	13,3	16	4,11	1,44
7	10,6	-	3,67	1,78
8	8,34	10	3,26	2,36
9	6,62	-	2,91	2,77
10	5,26	6	2,59	3,64
11	4,15	-	2,3	4,44
12	3,31	4	2,05	5,41
13	2,63	-	1,83	7,02
14	2,08	2,5	1,63	8,79
15	1,65	-	1,45	11,2
16	1,31	1,5	1,29	14,7
17	1,04	-	1,15	17,8
18	0,823	1	1,024	23
19	0,653	0,75	0,912	28,3
20	0,519	0,5	0,812	34,5
21	0,412	0,38	0,723	44
22	0,324	0,34	0,644	54,8
23	0,259	-	0,573	70,1
24	0,205	0,25	0,511	89,2
25	0,163	-	0,455	111
26	0,128	0,14	0,405	146
27	0,102	-	0,361	176
28	0,0804	0,08	0,321	232
29	0,0646	-	0,286	282
30	0,0503	0,05	0,255	350
31	0,04	-	0,227	446
32	0,032	-	0,202	578
33	0,0252	-	0,18	710
34	0,0200	-	0,16	899
35	0,0161	-	0,143	1125
36	0,0123	-	0,127	1426
37	0,01	-	0,113	1800
38	0,00795	-	0,101	2255
39	0,00632	-	0,0897	2860

4/0 is also known as oooo; 1 mil = inch = 0.0254 mm
*Shown in MCM (circular mills) for bigger cross sections

1 CM = 1 Circ. mil = 0.0005067 mm²
1 MCM = 1000 Circ. mils = 0.5067 mm²

1 CM = 1 Circ. mil = 0.0005067 mm²
1 MCM = 1000 Circ. mils = 0.5067 mm²

ADDITIONAL CONVERSION TABLE

LENGHT

From	to	Formula
INCH (IN)	MILLIMETER (MM)	IN X 25,4 = MM
MILLIMETER (MM)	INCH (IN)	MM X 0,03937 = IN
FOOT (FT)	METER (M)	FT X 0,03048 = M
METER (M)	FOOT (FT)	MT X 3,218 = FT
MILE (MI)	KILOMETER (KM)	MI X 1,609 = KM
KILOMETER (KM)	MILE (MI)	KM X 0,662 = MI

WEIGHTS

From	to	Formula
POUND (LB)	KILOGRAM (KG)	LB X 2,205 =KG
KILOGRAM (KG)	POUND (LB)	KG : 2,205 = LB

TEMPERATURE

From	to	Formula
FAHRENHEIT (F)	CELSIUS (C)	(F-32) X 0,56 = C
CELSIUS (C)	FAHRENHEIT (F)	C X 1,8 + 32 = F

ELETTROTEK KABEL SINGLE WIRE COLOR IDENTIFICATION

Core. no	Basic color	RAL
01	BLACK / NERO	9005
02	DARK BLUE / BLU SCURO (RAL 5010)	5010
03	BROWN / MARRONE	8003
04	GREY/ GRIGIO	7000
05	YELLOW / GIALLO	1021
06	GREEN / VERDE	6018
07	VIOLET/ VIOLA	4005
08	WHITE / BIANCO	9003
09	ORANGE / ARANCIONE	2003
10	RED / ROSSO	3000
11	LIGHT BLUE / BLU CHIARO (RAL 5015)	5015
12	LIGHT BLUE / BLU CHIARO (RAL 5012)	5012
13	PINK / ROSA	3015
14	SKY BLUE/BLU SKY	5024
15	YELLOW-GREEN / GIALLO-VERDE	1021/6018
16	WHITE-DARK BLUE / BIANCO-BLU SCURO	9003/5010
17	DARK BLUE-WHITE / BLU-BIANCO	5010/9003
18	WHITE-GREY/ BIANCO-GRIGIO	9003/7000
19	BLACK-GREEN / NERO-VERDE	9005/6018
20	BLACK-DARK BLUE / NERO-BLU SCURO	9005/5010
21	BLACK-WHITE / NERO-BIANCO	9005/9003
22	BLACK-VIOLET / NERO-VIOLA	9005/4005
23	BLACK-RED / NERO-ROSSO	9005/3000
24	WHITE-RED / BIANCO-ROSSO	9003/3000
25	WHITE-BROWN / BIANCO- MARRONE	9003/8003
26	DARK BLUE-RED / BLU SCURO-ROSSO	5010/3000
27	WHITE-VIOLET / BIANCO-VIOLA	9003/4005
28	WHITE-YELLOW / BIANCO-GIALLO	9003/1021
29	WHITE-GREEN / BIANCO-VERDE	9003/6018
30	WHITE-ORANGE / BIANCO-ARANCIONE	9003/2003
31	OFF WHITE GREY	9002
32	REDDISH BROWN	3016
33	BEIGE	1001
34		
35		
36		
37		
38		
39		

HD 308 S2

no. of cores	Cores with green-yellow insulated conductor (-J)	Cores without green-yellow insulated conductor (-O)
2	-	BLUE-BROWN
3	GREEN/YELLOW-BLUE-BROWN	BROWN-BLACK-GREY
4	GREEN/YELLOW-BROWN-BLACK-GREY	BLUE-BROWN-BLACK-GREY
5	GREEN/YELLOW-BLUE-BROWN-BLACK-GREY	BLUE-BROWN-BLACK-GREY-BLACK
6	GREEN-YELLOW/BLACK + WHITE PRINTED NUMBERS	BLACK + WHITE PRINTED NUMBERS

Core identification with numbers acc. to EN 50334

Number Printing used as the marking inscription for identifying the number of cores of electrical cables. Other core colors are possible. with the exception of green and yellow.

DIN 47100

Number	Color	Number	Color
1	WHITE	32	YELLOW - BLUE
2	BROWN	33	GREEN - RED
3	GREEN	34	YELLOW - RED
4	YELLOW	35	GREEN - BLACK
5	GREY	36	YELLOW - BLACK
6	PINK	37	GREY - BLUE
7	BLUE	38	PINK - BLUE
8	RED	39	GREY - RED
9	BLACK	40	PINK - RED
10	VIOLET	41	GREY - BLACK
11	GREY - PINK	42	PINK - BLACK
12	RED - BLUE	43	BLUE - BLACK
13	WHITE - GREEN	44	RED - BLACK
14	BROWN - GREEN	45	WHITE - BROWN - BLACK
15	WHITE - YELLOW	46	YELLOW - GREEN - BLACK
16	YELLOW - BROWN	47	GREY - PINK - BLACK
17	WHITE - GREY	48	RED - BLUE - BLACK
18	GREY - BROWN	49	WHITE - GREEN - BLACK
19	WHITE - PINK	50	BROWN - GREEN - BLACK
20	PINK - BROWN	51	WHITE - YELLOW - BLACK
21	WHITE - BLUE	52	YELLOW - BROWN - BLACK
22	BROWN - BLUE	53	WHITE - GREY - BLACK
23	WHITE - RED	54	GRAY - BROWN - BLACK
24	BROWN - RED	55	WHITE - PINK - BLACK
25	WHITE - BLACK	56	PINK - BROWN - BLACK
26	BROWN - BLACK	57	WHITE - BLUE - BLACK
27	GREY - GREEN	58	BROWN - BLUE - BLACK
28	YELLOW - GREY	59	WHITE - RED - BLACK
29	PINK - GREEN	60	BROWN - RED - BLACK
30	YELLOW - PINK	61	BLACK - WHITE
31	GREEN - BLUE		

COLOR CODE US 1

Core. no	Basic color	1 st ring	2nd ring
1	BLACK	-	-
2	WHITE	-	-
3	RED	-	-
4	GREEN	-	-
5	BROWN	-	-
6	BLUE	-	-
7	ORANGE	-	-
8	YELLOW	-	-
9	VIOLET	-	-
10	GREY	-	-
11	PINK	-	-
12	BEIGE	-	-

COLOR CODE US2

Comparable with IEEE 1580 table 22 and K1color code (for multi-conductor cables and per ICEA and NEC code)

Core. no	Basic color	1st stripe	2nd stripe
1	BLACK	-	-
2	WHITE	-	-
3	RED	-	-
4	GREEN	-	-
5	ORANGE	-	-
6	BLUE	-	-
7	WHITE	BLACK	-
8	RED	BLACK	-
9	GREEN	BLACK	-
10	ORANGE	BLACK	-
11	BLUE	BLACK	-
12	BLACK	WHITE	-
13	RED	WHITE	-
14	GREEN	WHITE	-
15	BLUE	WHITE	-
16	BLACK	RED	-
17	WHITE	RED	-
18	ORANGE	RED	-
19	BLUE	RED	-
20	RED	GREEN	-
21	ORANGE	GREEN	-
22	BLACK	WHITE	RED
23	WHITE	BLACK	RED
24	RED	BLACK	WHITE
25	GREEN	BLACK	WHITE
26	ORANGE	BLACK	WHITE
27	BLUE	BLACK	WHITE
28	BLACK	RED	GREEN
29	WHITE	RED	GREEN
30	RED	BLACK	GREEN
31	GREEN	BLACK	ORANGE
32	ORANGE	BLACK	GREEN
33	BLUE	WHITE	ORANGE
34	BLACK	WHITE	ORANGE
35	WHITE	RED	ORANGE
36	ORANGE	WHITE	BLUE
37	WHITE	RED	BLUE
38	BLACK	WHITE	GREEN
39	WHITE	BLACK	GREEN
40	RED	WHITE	GREEN
41	GREEN	WHITE	BLUE
42	ORANGE	RED	GREEN

Core. no	Basic color	1 st stripe	2nd stripe
43	BLUE	RED	GREEN
44	BLACK	WHITE	BLUE
45	WHITE	BLACK	BLUE
46	RED	WHITE	BLUE
47	GREEN	ORANGE	RED
48	ORANGE	RED	BLUE
49	BLUE	RED	ORANGE
50	BLACK	ORANGE	RED
51	WHITE	BLACK	ORANGE
52	RED	ORANGE	BLACK
53	GREEN	RED	BLUE
54	ORANGE	BLACK	BLUE
55	BLUE	BLACK	ORANGE
56	BLACK	ORANGE	GREEN
57	WHITE	ORANGE	GREEN
58	RED	ORANGE	GREEN
59	GREEN	BLACK	BLUE
60	ORANGE	GREEN	BLUE
61	BLUE	GREEN	ORANGE
62	BLACK	RED	BLUE
63	WHITE	ORANGE	BLUE
64	RED	BLACK	BLUE
65	GREEN	ORANGE	BLUE
66	ORANGE	WHITE	RED
67	BLUE	WHITE	RED
68	BLACK	GREEN	BLUE
69	WHITE	GREEN	BLUE
70	RED	GREEN	BLUE
71	GREEN	WHITE	RED
72	ORANGE	RED	BLACK
73	BLUE	RED	BLACK
74	BLACK	ORANGE	BLUE
75	RED	ORANGE	BLUE
76	GREEN	RED	BLACK
77	ORANGE	WHITE	GREEN
78	BLUE	WHITE	GREEN
79	RED	WHITE	ORANGE
80	GREEN	WHITE	ORANGE
81	BLUE	BLACK	GREEN
82	ORANGE	WHITE	-
83	GREEN	RED	-
84	BLACK	GREEN	-
85	WHITE	GREEN	-
86	BLUE	GREEN	-
87	BLACK	ORANGE	-
88	WHITE	ORANGE	-
89	RED	ORANGE	-
90	GREEN	ORANGE	-
91	BLUE	ORANGE	-
92	BLACK	BLUE	-

COLOR CODE US 3

Core. no	Basic color	Color combination
1	BLACK	PAIRED WITH RED
2	BLACK	PAIRED WITH WHITE
3	BLACK	PAIRED WITH GREEN
4	BLACK	PAIRED WITH BLUE
5	BLACK	PAIRED WITH YELLOW
6	BLACK	PAIRED WITH BROWN
7	BLACK	PAIRED WITH ORANGE
8	RED	PAIRED WITH WHITE
9	RED	PAIRED WITH GREEN
10	RED	PAIRED WITH BLUE
11	RED	PAIRED WITH YELLOW
12	RED	PAIRED WITH BROWN
13	RED	PAIRED WITH ORANGE
14	GREEN	PAIRED WITH WHITE
15	GREEN	PAIRED WITH BLUE
16	GREEN	PAIRED WITH YELLOW
17	GREEN	PAIRED WITH BROWN
18	GREEN	PAIRED WITH ORANGE
19	WHITE	PAIRED WITH BLUE
20	WHITE	PAIRED WITH YELLOW
21	WHITE	PAIRED WITH BROWN
22	WHITE	PAIRED WITH ORANGE
23	BLUE	PAIRED WITH YELLOW
24	BLUE	PAIRED WITH BROWN
25	BLUE	PAIRED WITH ORANGE
26	BROWN	PAIRED WITH YELLOW
27	BROWN	PAIRED WITH ORANGE
28	ORANGE	PAIRED WITH YELLOW
29	VIOLET	PAIRED WITH ORANGE
30	VIOLET	PAIRED WITH RED
31	VIOLET	PAIRED WITH WHITE
32	VIOLET	PAIRED WITH GREEN
33	VIOLET	PAIRED WITH BLUE
34	VIOLET	PAIRED WITH YELLOW
35	VIOLET	PAIRED WITH BROWN
36	VIOLET	PAIRED WITH BLACK
37	GREY PAIRED WITH WHITE	

K2 Color code (with printed numbers)
Chart 12: ICEA S-66-524 NEMA WC-7

Core. no	Basic color	Stripe
1	BLACK	-
2	RED	-
3	BLUE	-
4	ORANGE	-
5	YELLOW	-
6	BROWN	-
7	RED	BLACK
8	BLUE	BLACK
9	ORANGE	BLACK
10	YELLOW	BLACK
11	BROWN	BLACK
12	BLACK	RED
13	BLUE	RED
14	ORANGE	RED
15	YELLOW	RED
16	BROWN	RED
17	BLACK	BLUE
18	RED	BLUE
19	ORANGE	BLUE
20	YELLOW	BLUE
21	BROWN	BLUE
22	BLACK	ORANGE
23	RED	ORANGE
24	BLUE	ORANGE
25	YELLOW	ORANGE
26	BROWN	ORANGE
27	BLACK	YELLOW
28	RED	YELLOW
29	BLUE	YELLOW
30	ORANGE	YELLOW
31	BROWN	YELLOW
32	BLACK	BROWN
33	RED	BROWN
34	BLUE	BROWN
35	ORANGE	BROWN
36	YELLOW	BROWN

ICEA Table E2 (acc. to ICEA S-73-532)

Core. no	Basic color	Tracer
1	BLACK	-
2	RED	-
3	BLUE	-
4	ORANGE	-
5	YELLOW	-
6	BROWN	-
7	RED	BLACK
8	BLUE	BLACK
9	ORANGE	BLACK
10	YELLOW	BLACK
11	BROWN	BLACK
12	BLACK	RED
13	BLUE	RED
14	ORANGE	RED
15	YELLOW	RED
16	BROWN	RED
17	BLACK	BLUE
18	RED	BLUE
19	ORANGE	BLUE
20	YELLOW	BLUE
21	BROWN	BLUE
22	BLACK	ORANGE
23	RED	ORANGE
24	BLUE	ORANGE
25	YELLOW	ORANGE
26	BROWN	ORANGE
27	BLACK	YELLOW
28	RED	YELLOW
29	BLUE	YELLOW
30	ORANGE	YELLOW
31	BROWN	YELLOW
32	BLACK	BROWN
33	RED	BROWN
34	BLUE	BROWN
35	ORANGE	BROWN
36	YELLOW	BROWN

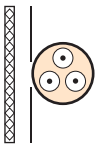
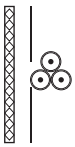
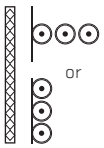
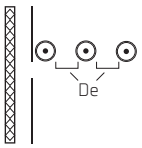
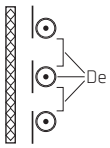
Pair cables are Black, Red and numbered. Triad cables are Black, Red, Blue and numbered.
Colors repeat after 36 conductors. There are no Green or White conductors stripes.

Acc. to IEC 60364-5-52 table A.52-10 and B.52.14 (acc. to VDE 0298 T4 08/03)

Current carrying capacities listed in amperes and Correction factors for ambient air temperature other than 30°C

PVC insulation / Copper conductor 70°C
Conductor temperature +70°C, Ambient temperature: +30°C

Installation methods - table A.52-1

Nominal cross sectional area of conductor mm²	Multi core cables	Single core cables			
	Three loaded conductors	Three loaded conductors trefoil	Three loaded conductors flat		
			Touching	Spaced	
				Horizontal	Vertical
					
1,5	18,5	-	-	-	-
2,5	25	-	-	-	-
4	34	-	-	-	-
6	43	-	-	-	-
10	60	-	-	-	-
16	80	-	-	-	-
25	101	110	114	146	130
35	126	137	143	181	162
50	153	167	174	219	197
70	196	216	225	281	254
95	238	264	275	341	311
120	276	308	321	396	362
150	319	356	372	456	419
185	364	409	427	521	480
240	430	485	507	615	569
300	497	561	587	709	659
400	-	656	689	852	795
500	-	749	789	982	920
600	-	855	905	1138	1070

Correction factors - table B.52.14.

AMBIENT TEMPERATURE °C	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
INSULATION MATERIAL PVC	1,22	1,17	1,12	1,06	1	0,94	0,87	0,79	0,71	0,61	0,50	-	-	-	-	-	-	-

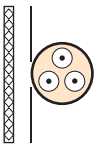
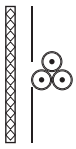
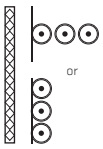
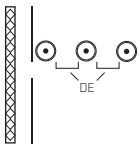
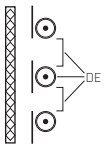
NOTE:
Circular conductors are estimated for sizes up to and including 16 mm².
Values for larger sizes relate to shaped conductors and may safely be applied to circular conductor

Acc.to IEC 60364-5-52 table B.52-12 and B.52.14 (acc. to VDE 0298 T4 08/03)

Current carrying capacities listed in amperes and Correction factors for ambient air temperature other than 30°C

XLPE or HEPR insulation / Copper conductor
Conductor temperature +90°C, Ambient temperature: +30°C

Installation methods - table B.52-1

Nominal cross sectional area of conductor mm²	Multi core cables	Single core cables			
	Three loaded conductors	Three loaded conductors trefoil	Three loaded conductors flat		
			Touching	Spaced	
				Horizontal	Vertical
					
1,5	23	-	-	-	-
2,5	32	-	-	-	-
4	42	-	-	-	-
6	54	-	-	-	-
10	75	-	-	-	-
16	100	-	-	-	-
25	127	135	141	182	161
35	158	169	176	226	201
50	192	207	216	275	246
70	246	268	279	353	318
95	298	328	342	430	389
120	346	383	400	500	454
150	399	444	464	577	527
185	456	510	533	661	605
240	538	607	634	781	719
300	621	703	736	902	833
400	-	823	868	1085	1008
500	-	946	998	1253	1169
600	-	1088	1151	1454	1362

Correction factors - table B.52.14.

Ambient temperature °C	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
Insulation material XLPE or HEPR	1,15	1,12	1,08	1,04	1	0,96	0,91	0,87	0,82	0,76	0,71	0,65	0,58	0,50	0,41	-	-	-

NOTE:
Circular conductors are estimated for sizes up to and including 16 mm².
Values for larger sizes relate to shaped conductors and may safely be applied to circular conductor

PHASE SPLITTING

Single core cables laying in line

Cables laying in trefoil formation

Number 3 core units in the same layer

2		3			4			
T	T	T	T	T	T	T	T	T
RS	SR	RS	SR	RS	RS	SR	RS	SR

Cables laying in line: horizontally or vertically

Number 3 core units in the same layer(*)

2		4			
RST	TSR	RST	TSR	RST	TSR

(*) For cables installed in layers, the indicated arrangements are repeated for each layer

RESISTANCE AND REACTANCE

Cables insulated with thermoplastic compounds

Apparent resistance of flexible red copper conductor at 70°C and reactance at 50 Hz (for 0,6/1 Kv voltage rates)

Power cables

Conductor cross-section	Resistance at 70 °C		Reactance at 50 Hz single cores	multi-cores
(mm^2)	C.C. / DC (Ohm/km)	C A. / AC (Ohm/km)	(Ohm/km)	(Ohm/km)
1,5	15,9	15,9	0,147	0,106
2,5	9,55	9,55	0,186	0,098
4	5,92	5,92	0,129	0,097
6	3,95	3,95	0,121	0,092
10	2,29	2,29	0,111	0,086
16	1,45	1,45	0,103	0,081
25	0,93	0,93	0,097	0,080
35	0,66	0,66	0,093	0,077
50	0,46	0,46	0,090	0,076
70	0,33	0,33	0,086	0,074
95	0,25	0,25	0,085	0,074
120	0,193	0,194	0,081	-
150	0,154	0,156	0,081	-
185	0,127	0,129	0,081	-
240	0,096	0,099	0,080	-

Cables insulated with thermoplastic compounds

Control and signal cables

number of conductors	conductor cross-section (mm^2)	resistance at 70 °C C.C. / DC (Ohm/km)	C.C./ DC (Ohm/km)	reactance at 50 Hz (Ohm/km)
5	1,5	15,9	15,9	0,106
7	1,5	15,9	15,9	0,106
7	2,5	9,55	9,55	0,098
FROM 10 TO 19	1,5	16	16	0,106
FROM 10 TO 19	2,5	9,65	9,65	0,098
24	1,5	16,1	16,1	0,106
24	2,5	9,7	9,7	0,098

Cables insulated with elastomeric compounds

Resistance at 70°C

Conductor cross-section	Fexible red copper conductor		Rigid red copper conductor	
(mm^2)	C.C. / DC (Ohm/km)	C.A. / AC (Ohm/km)	C.C. / DC (Ohm/km)	C.A. / AC (Ohm/km)
1,5	16,95	16,95	15,4	15,4
2,5	10,17	10,17	9,45	9,45
4	6,31	6,31	5,88	5,88
6	4,20	4,20	3,93	3,93
10	2,43	2,43	2,33	2,33
16	1,54	1,54	1,47	1,47
25	0,99	0,99	0,93	0,93
35	0,71	0,71	0,67	0,67
50	0,49	0,50	0,49	0,49
70	0,34	0,35	0,34	0,34
95	0,26	0,27	0,25	0,25
120	0,20	0,21	0,20	0,20
150	0,16	0,17	0,16	0,16
185	0,13	0,14	0,13	0,13
240	0,102	0,104	0,96	0,99
300	0,081	0,085	0,076	0,080
400	0,062	0,065	0,060	0,064
500	-	-	0,047	0,052
630	-	-	0,037	0,043

Cables insulated with elastomeric compounds

Reactance at 50 Hz

Conductor cross-section	Rigid red copper conductor		Flexible red copper conductor	
(mm^2)	Single core (Ohm/km)	Multi cores (Ohm/km)	Single core (Ohm/km)	Multi cores (Ohm/km)
1,5	0,146	0,103	0,144	0,100
2,5	0,135	0,095	0,132	0,094
4	0,126	0,090	0,122	0,087
6	0,118	0,085	0,114	0,083
10	0,106	0,079	0,105	0,078
16	0,099	0,076	0,098	0,075
25	0,095	0,076	0,093	0,075
35	0,091	0,074	0,089	0,072
50	0,088	0,073	0,085	0,071
70	0,087	0,072	0,084	0,070
95	0,085	0,070	0,083	0,069
120	0,084	0,070	0,080	0,069
150	0,084	0,070	0,080	0,069
185	0,083	0,070	0,080	0,069
240	0,081	0,070	0,078	0,069
300	0,079	0,069	0,076	0,068
400	0,079	0,069	0,076	0,068
500	0,077	-	0,074	-
630	0,076	-	0,073	-

VOLTAGE DROP

For alternate currents, voltage drop is calculated (Volts) as follows:

$$\varphi V = \frac{Ct \cdot I \cdot L}{1000}$$

Where:
Ct (V/A km) = K • (R • cos j + X • sen j)
L (m) = length of line
I (A) = current
R (ohm/km) = conductor resistance at maximum operating temperature
X (ohm/km) = phase reactance
j = power factor
K = 2 for single-phase system
K = 1,73 for three-phase system

The formula is valid direct currents too

Voltage drop coefficients (Ct) in AC

Flexible PVC cables at 70°C

Cross-section	single-phase system single core				three-phase system single core				single-phase system multi-core				three-phase system multi-core			
mm²	cos φ 0,7	cos φ 0,8	cos φ 0,9	cos φ 1	cos φ 0,7	cos φ 0,8	cos φ 0,9	cos φ 1	cos φ 0,7	cos φ 0,8	cos φ 0,9	cos φ 1	cos φ 0,7	cos φ 0,8	cos φ 0,9	cos φ 1
1,5	22,49	25,63	28,77	31,83	19,45	22,17	24,89	27,53	22,43	25,59	28,73	31,83	19,40	22,1	24,86	27,53
2,5	13,56	15,43	17,30	19,10	11,73	13,35	14,97	16,52	13,50	15,39	17,27	19,10	11,68	13,31	14,94	16,52
4	8,47	9,63	10,77	11,84	7,33	8,33	9,32	10,25	8,43	9,59	10,74	11,84	7,29	8,30	9,29	10,25
6	5,70	6,46	7,21	7,90	4,93	5,59	6,24	6,83	5,66	6,43	7,19	7,90	4,89	5,56	6,22	6,83
10	3,36	3,79	4,21	4,57	2,90	3,28	3,64	3,95	3,32	3,76	4,19	4,57	2,87	3,25	3,62	3,95
16	2,17	2,44	2,69	2,90	1,88	2,11	2,33	2,50	2,14	2,41	2,69	2,90	1,85	2,09	2,31	2,50
25	1,45	1,61	1,76	1,87	1,25	1,39	1,53	1,61	1,42	1,59	1,74	1,87	1,23	1,37	1,51	1,61
35	1,06	1,17	1,27	1,33	0,29	1,01	1,10	1,15	1,04	1,15	1,26	1,33	0,90	1	1,09	1,15
50	0,77	0,85	0,91	0,92	0,67	0,73	0,79	0,80	0,76	0,83	0,90	0,92	0,65	0,72	0,78	0,80
70	0,58	0,62	0,66	0,65	0,50	0,54	0,57	0,56	0,56	0,61	0,65	0,65	0,49	0,53	0,56	0,56
95	0,47	0,50	0,52	0,50	0,41	0,43	0,45	0,43	-	-	-	-	0,39	0,42	0,44	0,43
120	0,39	0,41	0,42	0,39	0,34	0,34	0,36	0,34	-	-	-	-	-	-	-	-
150	0,34	0,35	0,35	0,31	0,29	0,30	0,30	0,27	-	-	-	-	-	-	-	-
185	0,30	0,30	0,30	0,26	0,26	0,26	0,26	0,22	-	-	-	-	-	-	-	-
240	0,25	0,25	0,25	0,20	0,22	0,22	0,21	0,17	-	-	-	-	-	-	-	-

Flexible HEPR cables at 90°C

Cross-section	single-phase system single core				three-phase system single core				single-phase system multi-core				three-phase system multi-core			
mm²	cos φ 0,7	cos φ 0,8	cos φ 0,9	cos φ 1	cos φ 0,7	cos φ 0,8	cos φ 0,9	cos φ 1	cos φ 0,7	cos φ 0,8	cos φ 0,9	cos φ 1	cos φ 0,7	cos φ 0,8	cos φ 0,9	cos φ 1
1,5	23,95	27,31	30,65	33,92	20,71	23,62	26,51	29,34	23,88	27,25	30,61	33,92	20,66	23,57	26,48	29,34
2,5	14,43	16,44	18,43	20,35	12,48	14,22	15,94	17,6	14,38	16,39	18,40	20,35	12,44	14,18	15,91	17,60
4	9,01	10,24	11,47	12,62	7,79	8,86	9,92	10,92	8,96	10,2	11,44	12,62	7,75	8,83	9,89	10,92
6	6,05	6,87	7,67	8,42	5,24	5,94	6,64	7,28	6,01	6,83	7,65	8,42	5,20	5,91	6,61	7,28
10	3,56	4,02	4,48	4,87	3,08	3,48	3,87	4,21	352	3,99	4,45	4,87	3,05	3,45	3,85	4,21
16	2,30	2,59	286	3,09	1,99	2,24	2,48	2,67	2,27	2,56	2,84	3,09	1,96	2,21	2,46	2,67
25	1,53	1,70	1,87	1,99	1,32	1,47	1,62	1,72	1,5	1,68	1,85	1,99	1,30	1,45	1,60	1,72
35	1,12	1,24	1,35	1,41	0,97	1,07	1,17	1,22	1,09	1,22	1,33	1,41	0,94	1,05	1,15	1,22
50	0,81	0,89	0,96	0,99	0,70	0,77	0,83	0,85	0,79	0,87	0,95	0,99	0,68	0,76	0,82	0,85
70	0,61	0,66	0,70	0,70	0,53	0,57	0,61	0,60	0,59	0,64	0,69	0,70	0,51	0,55	0,59	0,60
95	0,49	0,52	0,55	0,53	0,42	0,45	0,47	0,46	0,47	0,51	0,54	0,53	0,40	0,44	,46	0,46
120	0,40	0,43	0,44	0,41	0,35	0,37	0,38	0,36	0,39	0,41	0,43	0,41	0,34	0,36	0,37	0,36
150	0,35	0,36	0,37	0,33	0,30	0,31	0,32	0,29	0,33	0,35	0,36	0,33	0,29	0,30	0,31	0,29
185	0,31	0,32	0,32	0,27	0,26	0,27	0,27	0,24	-	-	-	-	0,25	0,26	0,27	0,24
240	0,26	0,26	0,26	0,21	0,22	0,23	0,22	0,18	-	-	-	-	0,21	0,22	0,22	0,18
300	0,23	0,23	0,22	0,17	0,20	0,20	0,19	0,15	-	-	-	-	0,19	0,19	0,18	0,15
400	0,20	0,20	0,19	0,13	0,18	0,17	0,16	0,12	-	-	-	-	0,17	0,16	0,16	0,12
500	0,18	0,17	0,16	0,11	0,16	0,15	0,14	0,091	-	-	-	-	-	-	-	-
630	0,16	0,16	0,14	0,09	0,14	0,14	0,12	0,075	-	-	-	-	-	-	-	-

Protection devices must take into consideration the maximum and the minimum short-circuit currents that are reported below

MAXIMUM SHORT-CIRCUIT CURRENT

Voltage Calculation for Alternative Current:

$$S \geq = \frac{Icc \sqrt{T}}{C}$$

The maximum short circuit current accepted by a conductor:
S is calculated with the following formula:

$$Icc\ (max) = \frac{S \cdot C}{\sqrt{T}}$$

Key:
T = short circuit duration (seconds)
S = cross-section of copper conductor (mm2)
Icc = short circuit current (A)
C = 115 for PVC copper cables (160 °C)
143 for G7 rubber copper cables (250 °C)

NOTE:
The formula above is valid for intermediate breaks (a maximum of 5 sec.).
For calculating effective short-circuit current allowed by shielding, see the CEI 64-8 standard, appendix D

Celsius coefficient values for copper conductors dependent on the difference in temperature between start and end of short-circuit acc. to the table 2.02.02 of the CEI 11-17 standard.

Starting temperature Θo °C	Ending temperature Θo °C					
	140	160	180	200	220	250
90	86	100	112	122	131	143
85	90	104	115	125	134	146
80	94	108	119	129	137	149
75	99	111	122	132	140	151
70	13	115	125	135	143	154
65	107	119	129	138	146	157
60	111	122	132	141	149	160
50	118	129	139	147	155	165
40	126	136	145	153	161	170
30	133	143	152	159	166	176

MINIMUM SHORT-CIRCUIT CURRENT

Minimum short-circuit current happens during a short-circuit between phase and neutral (or between phase and phase, for a non distributed neutral), at the farthest point of the conduit.
In a system powered by multiple origins, the only source to be taken into consideration is the one corresponding to the minimum value.
The minimum short-circuit current can be calculated using the formulas a) and b), considering: 50% resistance increase at 20 °C (due to the heating of conductors) and 80% rated voltage reduction, due to the effect of the short-circuit on the current carrying capacities.
If the impedance of the incoming circuit is well-known, the coefficient 0,8 must be replaced by a specific value.

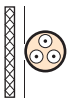
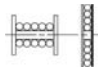
$$a)\ Icc = \frac{0{,}8\ U}{1{,}5\ \rho\ \frac{2\ L}{S}} \qquad b)\ Icc = \frac{0{,}8\ Uo}{1{,}5\ \rho\ (1+m)\ \frac{L}{S}}$$

Key:
a) for a neutral not distributed conductor, where:
U = line voltage supplied, linked rated voltage volts
ρ = resistivity of the conductor compounds at 20°C, ohm • mm^2 (0,018 for copper - 0,027 for aluminum)
L = length of protected conductor in meters
S = conductor cross-section in mm^2
Icc = short-circuit current

b) for a neutral distributed conductor, where:
Uo = phase rating voltage, volts
m = ratio of the neutral conductor resistance and the phase conductor resistance
(if composed of the same material, the ratio is the result between the phase conductor cross-section and the neutral conductor cross-section)

CURRENT CARRYNG CAPACITY

Current carrying capacities in amperes with correction factors for ambient air temperature other than 30°C

	PVC insulation	Rubber up to 10 kV								
										
Cross-section mm^2	Three loaded conductors	Stretched laying A factor 1	Suspended freely in air A 1,05	Reeled in 1 layer A 0,8	2 layers A 0,61	3 layers* A 0,49	4 layers A 0,42	5 layers A 0,38	6 layers A 0,27	7 layers A 0,22
1	18,5	18	19	14	11	9	8	7	5	4
1,5	25	23	24	18	14	11	10	9	6	5
2,5	34	30	2	24	18	15	13	11	8	7
4	43	41	43	33	25	20	17	16	11	9
6	60	53	56	42	32	26	22	20	14	12
10	80	74	78	59	45	36	31	28	20	16
16	101	99	104	79	60	49	42	38	27	22
25	126	131	138	105	80	64	55	50	35	29
35	153	162	170	130	99	79	68	62	44	36
50	196	202	22	162	123	99	85	78	55	44
70	238	250	263	200	153	123	105	95	68	55
95	276	301	316	241	184	147	126	114	81	66
120	319	352	370	282	215	172	148	134	95	77
150	364	404	424	323	246	198	170	154	109	89
185	430	461	484	369	281	226	194	175	124	101
240	497	540	567	432	329	265	227	205	146	119
300	-	620	651	496	378	304	260	236	167	136
Rubber - starting at 15 kV										
16	101	105	-	84	64	51	44	40	28	23
25	126	139	-	111	85	68	58	53	38	31
35	153	172	-	138	105	84	72	65	46	38
50	196	216	-	172	131	105	90	82	58	47
70	238	265	-	212	162	130	111	101	72	58
95	276	319	-	255	195	156	134	121	86	70
120	319	371	-	297	226	182	156	141	100	82
150	364	428	-	342	261	210	180	163	116	94
185	430	488	-	390	298	239	205	185	132	107
240	497	574	-	459	350	281	241	218	155	126
300	-	660	-	528	403	323	277	251	178	145

* The reduction factor is also valid for flat reeling cables (spirally)

Current carrying capacities in A are calculated according to the IEC 60287 standard.
They are calculated assuming the following values:
Ambient temperature for installation in open air : 30 °C
Ambient temperature for underground burial : 20 °
Laying depths: U = 3÷10 kV 0,8 m
U = 15÷30 KV 1,0 M
U = 45 KV 1,2 M
Metallic screens interconnected and grounded at both ends

CORRECTION FACTORS

Insulation	Conductor temperature °C	Cables type	Ambient temperature °C											
			10	15	20	25	30	35	40	45	50	55	60	65
PVC	70	in air cables*	1,22	1,17	1,12	1,06	1	0,94	0,87	0,79	0,71	0,61	0,50	-
EPR / RUBBER	90	in air cables*	1,15	1,12	1,08	1,04	1	0,96	0,91	0,87	0,82	0,76	0,71	0,65
	90	buried cables	1,07	1,04	1	0,96	0,93	0,89	0,85	0,80	0,76	-	-	-

* Not directly exposed to the sun

THREE-CORE CABLES GROUNDED LAYING
or single-core cables enclosed in trefoil

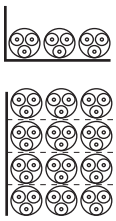
Number of cables or trefoil-set (horizontally)		2	3	4	6
Empty space between cables or trefoil-set	7 CM	0.84	0.74	0.67	0.60
	25 CM	0.86	0.78	0.74	0.69

THREE-CORE CABLES GROUNDED PIPE LAYING

Number of cables (horizontally)	1	2	3
	0.82	0.69	0.61

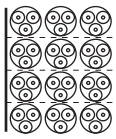
THREE-CORE CABLES SUSPENDED FREELY IN AIR

Number of sets of three (horizontally)		1	2	3	6	9
Single layer		0,95	0,9	0,88	0,85	0,84
Layers number (vertical)	1	1	0,98	0,96	0,93	0,92
	2	1	0,95	0,93	0,9	0,89
	3	1	0,94	0,92	0,89	0,88
	6	1	0,93	0,9	0,87	0,86

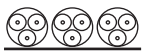


Number of sets of three (vertical)	1	2	3	6	9
	1	0,93	0,9	0,87	0,86

Cables number (horizontally)		1	2	3	6	9
Layers number (vertical)	1	0,95	0,84	0,8	0,75	0,73
	2	0,95	0,8	0,76	0,71	0,69
	3	0,95	0,78	0,74	0,7	0,68
	6	0,95	0,76	0,72	0,68	0,66

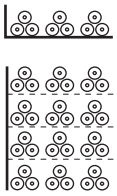


Cables number (horizontally)	1	2	3	6	9
	0,95	0,78	0,73	0,68	0,66

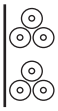


SINGLE CORE TREFOIL CORES CABLES SUSPENDED FREELY IN AIR

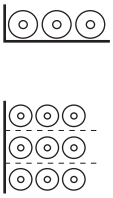
Number of sets of three (horizontally)		1	2	3	6	9
Single layer		0,95	0,9	0,88	0,85	0,84
Layers number (vertical)	1	1	0,98	0,96	0,93	0,92
	2	1	0,95	0,93	0,9	0,89
	3	1	0,94	0,92	0,89	0,88
	4	1	0,93	0,9	0,87	0,86



Number of sets of three (vertical)	1	2	3
	0,89	0,86	0,84



Number of single core (horizontally)		1	2	3
Single layer		0,92	0,89	0,88
Layers number (vertical)	1	1	0,97	0,96
	2	0,97	0,94	0,93
	3	0,96	0,93	0,92
	6	0,94	0,91	0,9



Number of single core (vertical)	1	2	3
	0,94	0,91	0,89

PHASE SPLITTING

Single core cables assembled in line

Cables lying in trefoil formation

Number 3 core units in the same layer

2		3			4			
T	T	T	T	T	T	T	T	T
RS	SR	RS	SR	RS	RS	SR	RS	SR

Cables lying in line horizontally or vertically

Number 3 core units in the same layer(*)

2		4			
RST	TSR	RST	TSR	RST	TSR

(*) Cables installed in layers: indicated arrangements are repeated for each layer

RESISTANCE

Cables insulated with elastomeric compounds

Observable resistance of red copper conductor and aluminum at 90°C and at 50 Hz

Conductor cross-section	Single core cables (copper-aluminum conductor)								Single core cables (copper-aluminum conductor any rated voltage)		three core cables (copper-aluminum conductor any rated voltage)	
(mm²)	1,8/3 KV - 3,6/6 kV (Ohm/km)		6/10 KV - 8,7/15 kV (Ohm/km)		12/20 kV - 18/30 kV (Ohm/km)		26/45 kV (Ohm/km)		(Ohm/km)		(Ohm/km)	
	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL
10	2,33	3,91	2,33	3,91	-	-	-	-	2,33	3,91	2,33	3,91
16	1,47	2,47	1,47	2,47	-	-	-	-	1,47	2,47	1,47	2,47
25	0,92	1,56	0,929	1,56	0,929	1,56	-	-	0,929	1,56	0,929	1,56
35	0,67	1,12	0,671	1,13	0,671	1,13	-	-	0,67	1,13	0,669	1,12
50	0,495	0,832	0,495	0,832	0,495	0,832	-	-	0,495	0,832	0,494	0,83
70	0,347	0,583	0,344	0,58	0,344	0,58	0,344	0,58	0,344	0,58	0,343	0,57
95	0,248	0,416	0,248	0,416	0,248	0,416	0,248	0,416	0,248	0,416	0,247	0,415
120	0,198	0,333	0,198	0,333	0,198	0,333	0,198	0,333	0,198	0,333	0,196	0,329
150	0,161	0,27	0,161	0,27	0,161	0,27	0,161	0,27	0,161	0,27	0,160	0,269
185	0,130	0,218	0,130	0,218	0,130	0,218	0,130	0,218	0,130	0,218	0,129	0,217
240	0,0984	0,165	0,0983	0,165	0,0982	0,165	0,0981	0,165	0,1	0,168	0,1	0,168
300	0,0789	0,132	0,0788	0,132	0,0787	0,132	0,0786	0,132	0,081	0,136	0,08	0,134
400	0,0625	0,105	0,0624	0,105	0,0623	0,105	0,0622	0,105	0,065	0,109	0,065	0,109
500	0,0496	0,0833	0,0494	0,0830	0,0493	0,0828	0,0491	0,0825	0,053	0,0890	0,0536	0,09
630	0,0396	0,0665	0,0394	0,0662	0,0393	0,0662	0,0391	0,0657	0,044	0,0739	-	-

Insulation resistance per phase (MOhm/km)

Conductor cross-section	Nominal voltage						
(mm²)	1,8/3 KV	3,6/6 KV	6/10 KV	8,7/15 KV	12/20 KV	18/30 KV	26/45 KV
10	1590	-	-	-	-	-	-
16	1360	1505	1645	1990	-	-	-
25	1140	1315	1445	1760	2130	-	-
35	995	1180	1300	1595	1830	2455	-
50	885	1075	1185	1460	1680	2155	-
70	755	945	1045	1300	1505	1950	2105
95	655	835	925	1155	1345	1760	1905
120	595	770	855	1070	1250	1645	1785
150	540	705	785	990	1160	1535	1665
185	485	645	720	910	1070	1420	1550
240	430	580	645	820	965	1295	1415
300	390	530	590	755	890	1200	1310
400	350	470	520	670	790	1070	1165
500	340	450	470	600	720	980	1065
630	330	400	420	540	650	890	970

REACTANCE

Single core cables phase reactance at 50 Hz

Conductor cross-section	Single core cables (average values)						
(mm^2)	1,8/3 kV (Ohm/km)	3,6/6 kV (Ohm/km)	6/10 kV (Ohm/km)	8,7/15 kV (Ohm/km)	12/20 kV (Ohm/km)	18/30 kV (Ohm/km)	26/45 kV (Ohm/km)
10	0,19	0,20	0,21	-	-	-	-
16	0,18	0,19	0,20	0,21	-	-	-
25	0,18	0,18	0,19	0,20	0,21	-	-
35	0,17	0,18	0,19	0,19	0,20	0,21	-
50	0,16	0,17	0,18	0,19	0,19	0,20	-
70	0,16	0,17	0,17	0,18	0,19	0,20	0,21
95	0,16	0,16	0,17	0,17	0,18	0,19	0,20
120	0,15	0,16	0,16	0,17	0,18	0,18	0,19
150	0,15	0,16	0,16	0,17	0,17	0,18	0,19
185	0,14	0,15	0,16	0,16	0,17	0,18	0,18
240	0,14	0,15	0,16	0,16	0,16	0,17	0,18
300	0,14	0,15	0,15	0,16	0,16	0,17	0,17
400	0,14	0,15	0,15	0,15	0,16	0,16	0,17
500	0,14	0,14	0,15	0,5	0,15	0,16	0,17
630	0,14	0,14	0,15	0,15	0,15	0,16	0,16

NOTE:
Valid for copper and aluminum cables

For single core cables in trefoil formation with phase reactance at 50 Hz

Conductor cross-section	Single core cables						
(mm^2)	1,8/3 kV (Ohm/km)	3,6/6 kV (Ohm/km)	6/10 kV (Ohm/km)	8,7/15 kV (Ohm/km)	12/20 kV (Ohm/km)	18/30 kV Ohm/km)	26/45 kV (Ohm/km)
10	0,14	0,16	0,16	-	-	-	-
16	0,13	0,14	0,15	0,16	-	-	-
25	0,12	0,13	0,14	0,15	0,15	-	-
35	0,11	0,12	0,13	0,14	0,14	0,16	-
50	0,11	0,12	0,12	0,13	0,13	0,15	-
70	0,1	0,11	0,12	0,12	0,13	0,14	0,15
95	0,098	0,11	0,11	0,12	0,12	0,13	0,14
120	0,097	0,1	0,11	0,11	0,12	0,13	0,14
150	0,092	0,099	0,1	0,11	0,11	0,12	0,13
185	0,089	0,096	0,1	0,11	0,11	0,12	0,12
240	0,086	0,093	0,096	0,1	0,1	0,11	0,12
300	0,084	0,092	0,094	0,098	0,1	0,11	0,12
400	0,082	0,090	0,092	0,095	0,099	0,11	0,11
500	0,081	0,088	0,089	0,092	0,095	0,1	0,11
630	0,079	0,086	0,087	0,090	0,093	0,099	0,10

NOTE:
Valid for copper and aluminum cables

Three core cables phase reactance at 50 Hz

Conductor cross-section	Three core cables						
(mm^2)	1,8/3 kV (Ohm/km)	3,6/6 kV (Ohm/km)	6/10 kV (Ohm/km)	8,7/15 kV (Ohm/km)	12/20 kV (Ohm/km)	18/30 kV Ohm/km)	26/45 kV (Ohm/km)
10	0,11	0,13	0,14	-	-	-	-
16	0,1	0,12	0,13	0,14	-	-	-
25	0,096	0,11	0,12	0,13	0,14	-	-
35	0,091	0,1	0,11	0,12	0,13	0,14	-
50	0,086	0,1	0,11	0,11	0,12	0,13	-
70	0,083	0,095	0,1	0,11	0,11	0,13	0,14
95	0,080	0,091	0,096	0,1	0,11	0,12	0,13
120	0,078	0,088	0,093	0,099	0,1	0,12	0,13
150	0,076	0,086	0,091	0,096	0,1	0,11	0,12
185	0,075	0,083	0,088	0,093	0,098	0,11	0,12
240	0,073	0,081	0,085	0,09	0,094	0,1	-
300	0,071	0,081	0,083	0,088	0,092	0,1	-
400	0,07	0,08	0,081	0,086	-	-	-
500	0,07	0,08	0,081	-	-	-	-

NOTE:
Valid both for copper and aluinium cables

MAX CURRENT CARRYING (kA) IN SHORT CIRCUIT

Conditions: 1 second duration; temperature 90°C

Conductor	Sections-mm														
	10	15	25	35	50	70	95	120	150	185	240	300	400	500	630
COPPER	1,4	2,3	3,6	5	7,1	10	14	17	21	26	34	43	57	72	90
ALLUMINUM	0,92	1,5	2,3	3,2	4,6	6,4	8,7	11	14	17	22	28	37	46	58

Minimum Bending Radius acc. to DIN VDE 0298 part. 3

Cables for fixed laying:

Cable type:	Voltage up to 0,6/1 kV			Voltage above to 0,6/1 kV
	Outer diameter of cable (or thickness of flat cables) in mm			
	UP TO 10	ABOVE 10 UP TO 25	ABOVE 25	
Fixed laying:	4 x D*	4 x D	4 x D	6 x D
Single bended installation:	1 x D	2 x D	3 x D	4 x D

Flexible cables:

Cable type:	Voltage up to 0,6/1 kV				Voltage above to 0,6/1 kV
	Outer diameter of round cable (or thickness of flat cables) in mm				
	UP TO 8	ABOVE 8 UP TO 12	ABOVE 12 UP TO 20	ABOVE 20	
Fixed laying:	3 x D	3 x D	4 x D	4 x D	6 x D
Freely movable:	3 x D	4 x D	5 x D	5 x D	10 x D
Cable entry/gland	3 x D	4 x D	5 x D	5 x D	10 x D
MECHANICAL RESTRAINT [1)]					
Cable-drum mode	5 x D	5 x D	5 x D	6 x D	12 x D
Festoon mode:	3 x D	4 x D	5 x D	5 x D	10 x D
Drag-chain mode:	4 x D	4 x D	5 x D	5 x D	10 x D
Roller reversing:	7,5 x D	7,5 x D	7,5 x D	7,5 x D	15 x D

NOTES:

D*= Outer diameter of cable
[1)] = Special structural support is required for suitability in the application

Substance	Concentr %	Temp °C	PVC	PUR	PE	Silicon	FEP	PFA	ETFE
ACETONE		20	-	-	+	+	+	+	+
ATHYLENCHLORID		50	-	-	+	+	+	+	+
ATHYLENGLYKOL		100	+	-	+	+	+	+	+
ALUM		20	+	+	+	-	+	+	+
AMMONIA	25	20	+	+	+	+	+	+	+
ANILINE		50	-	-	+	+	+	+	+
BENZINE		20	-	+	-	+	+	+	+
BENZOL	100	50	-	-	-	-	+	+	+
BORIC ACID	sat.	20	+	+	+	+	+	+	+
BREAK FLUID		100	+	-	-	+	+	+	+
BUTTER		50	+	+	+	+	+	+	+
CHLOROBENZINE		30	-	-	+	-	+	+	+
DIETHIL ETER		20	+	+	+	-	+	+	+
DIETHILENE GLICOL		50	+	+	+	+	+	+	+
PURE ACETIC ACID	concentr.	50	-	-	+	+	-	-	-
FREON		20	-	+	+	-	+	+	+
GEAR OIL		100	+	+	-	+	+	+	+
GLYCERINE	all	50	+	+	+	+	+	+	+
HYDRAULIC OIL		20	+	+	-	-	+	+	+
POTASSIUM CHLORIDE	sat.	20	+	-	+	+	+	-	-
POTASSIUM NITRATE		20	+	+	+	+	+	+	+
COPPER SALT		20	+	+	+	+	+	+	+
MACHINE OIL		20	-	+	-	+	+	+	+
METHANOL		50	+	-	+	+	+	+	+
DICHLOROMETANE	100	20	-	-	+	-	+	+	+
MOTOR OIL		120	-	-	-	+	+	+	+
SODIUM CHLORIDE	50	20	+	+	+	+	+	+	+
CAUSTIC SODA	50	50	+	+	+	-	+	+	+
NITROBENZENE	100	50	-	-	+	+	+	+	+
OLIVE OIL		50	+	+	+	+	+	+	+
MERCURY SALT		20	-	-	+	+	+	+	+
NITRIC ACID		20	-	-	+	-	+	+	+
HIDROCHLORIC ACID	concentr.	20	-	-	+	-	+	+	+
SULPHURIC ACID	50	50	+	-	+	-	+	+	+
SILVER SALTS		20	+	+	+	+	+	+	+
PHENOL FROM TAR (TECTAL)		20	+	-	-	-	+	+	+
CARBON TETRACHLORIDE	100	20	+	-	-	-	+	+	+
TRICHLORETYLENE	100	50	-	-	-	+	+	+	+
DETERGENT LYE	2	100	-	-	-	-	+	+	+
DESTILLED WATER		100	+	+	+	-	+	+	+
DESTILLED WATER		20	+	+	+	+	+	+	+
TARTARIC ACID	sat.	20	+	-	+	+	+	+	+
CITRIC ACID		20	+	+	+	+	+	+	+

- = Poor resistance + = Good resistance

Examination of the vertical flame length, test method 1 kV - flame with gas/air mixture

Description	VDE 0482 PART. 265-2-1, EN 50265-2-1 AND IEC 60332-1	VDE 0482 PART. 265-2-2, EN 50265-2-2 AND IEC 60332-2
Length of sample	600 mm	600 mm
Burner	Acc. to EN 60695-2-4-1	Acc. to VDE 0482 part. 265-1 and EN 50265-1
Test temperature	1 kW flame	Defined by the stipulated setting of the Flame length
Position of sample	Vertical	Vertical
Position of flame	45° to vertical sample	45° to vertical sample
Duration of flame	See table 1	20 seconds
Conditions	Cable must be self-extinguishing. The damage or carbonization may only reach max. 50 mm under the upper fixing clamp.	Cable must be self-extinguishing. The damage or carbonization may only reach max. 10 mm under the upper fixing clamp.

Table 1

outer diameter * of sample in mm

Nominal value	Duration of flame test in seconds
D ≤ 25	60
25 < D ≤ 50	120
50 < D ≤	240
D > 75	480

* If the insulated cables are not round (i.e. flat cables), dimensions must be measured to determine an equivalent diameter.

Description	UL 1581 section 1080 (VW-1 Flame test)
Length of sample	455 mm
Burner	Bunsen burner with added air supply Ø 9,5 mm
Test temperature	500 W flame
Position of sample	Vertical
Position of flame	20° to vertical sample
Duration of flame	Five 15 second trials with 15 seconds between each flame test
Conditions	Paper (25% carbonized) The sample may keep on burning for a maximum of 1 minute after any application. Material droppings must not ignite the cotton lying under the sample.

Description	UL 1581 section 1061 (Cable Flame Test)
Length of sample	455 mm
Burner	Bunsen burner with added air supply Ø 9,5 mm
Test temperature	500 W flame
Position of sample	Vertical
Position of flame	20° to vertical sample
Duration of flame	Three 60 seconds trials with 30 seconds between each flame test
Conditions	Paper (25% carbonized) The sample may keep on burning for a maximum of 1 minute after any application. Material droppings must not ignite the cotton lying under the sample.

Description	UL 1581 section 1060 (Vertical Flame and FT1 Test)
Length of sample	455 mm
Burner	Bunsen burner with added air supply Ø 9,5 mm
Test temperature	500 W flame
Position of sample	Vertical
Position of flame	20° to vertical sample
Duration of flame	Five 15 seconds trials with 15 seconds between each flame test
Conditions	Paper (25% carbonized) The sample may keep on burning for a maximum of 1 minute after any application.

Assessment of the vertical flame length for vertical extended bundle of insulated cables

Description	IEC 60332-3, EN 50266, DIN VDE 0482 part. 266
Length of sample	3500 mm
Burner	Flat burner (Ribbon gas burner)
Test temperature	500 W flame
Position of sample	Vertical
Position of flame	Horizontal
Duration of flame	Category A, B: 40 minutes Category C, D: 20 minutes
Conditions	The burned portion of the sample must be shorter than 2,5 m measured from the bottom edge of the burner, unless specified otherwise.

	EN 60332-	IEC 60332-
Category A-7 l/m	3/22	3/22
Category B-3,5 l/m	3/23	3/23
Category C-1,5 l/m > 12 mm cable-ø	3/24	3/24
Category D-0,5 l/m ≤ 12 mm cable-ø	3/25	3/25
Volume % of non metallic material x meter		

Tests for electric cables under fire conditions - Circuits integrity

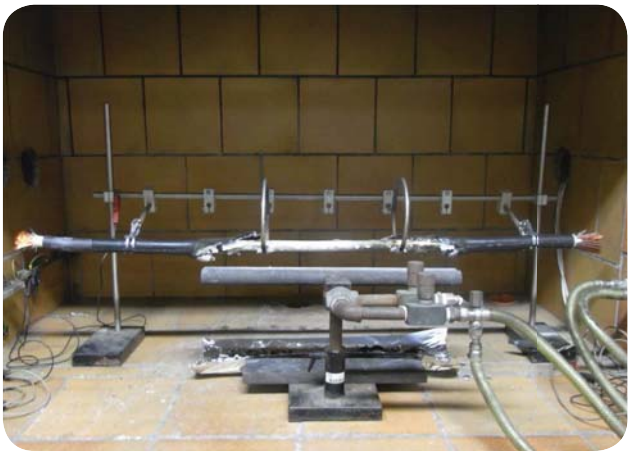
Description:	IEC 60331, CEI 20-36
	This test serves to verify the circuit can remain integral even during a fire. A sample of cable is held on an open flame at 750°C for a minimum period of 90 min, under the rated voltage. No break or short circuit should occur during the test in order to receive the rating. The test can also be performed with temperatures up to 1100 °C. Likewise, fibre optic cables can be tested in the same conditions while monitoring the attenuation of the signal of one or more fibres.
Classification:	IEC 60331-21 - CEI 20-36/2-1 - Electrical cables up to 0,6/1 kV IEC 60331-23 - CEI 20-36/2-3 - Data cables IEC 60331-25 - CEI 20-36/2-5 - Fibre optic cables

Tests for electric cables under fire conditions - Circuits integrity - part.2

Description:	IEC 60331-2
	Test method for fire with shock at a temperature of at least 830°C for cables of rated voltage up to 0,6/1 kV and with an overall diameter not exceeding 20 mm
Test temperature:	830°C (+40/-0°C)
Duration:	30*, 60, 90, 120 min (*with water spray BS EN 50200 annex E)
Mechanical shocks:	every 5 min.
Water spray:	0,8 lt/min. (last 15 min.) (with water spray BS EN 50200 annex E)

Tests for electric cables under fire conditions - Circuits integrity - part.1

Description:	IEC 60331-1
	Test method for fire with shock at a temperature of at least 830 °C for cables of rated voltage up to 0,6/1 kV and with an overall diameter exceeding 20 mm
Test temperature:	830°C (+40/-0°C)
Duration:	60, 90, 120 min
Mechanical shocks:	every 5 min.



Fire Resistance

Description:	BS EN 50200
	This test serves to verify the circuit integrity of cables while exposed to fire at 830°C as well as mechanical shocks.
Classification:	PH 15 - flame exposure for 15 min. PH 30 - flame exposure for 30 min. PH 60 - flame exposure for 60 min. PH 90 - flame exposure for 90 min. PH 120 - flame exposure for 120 min.

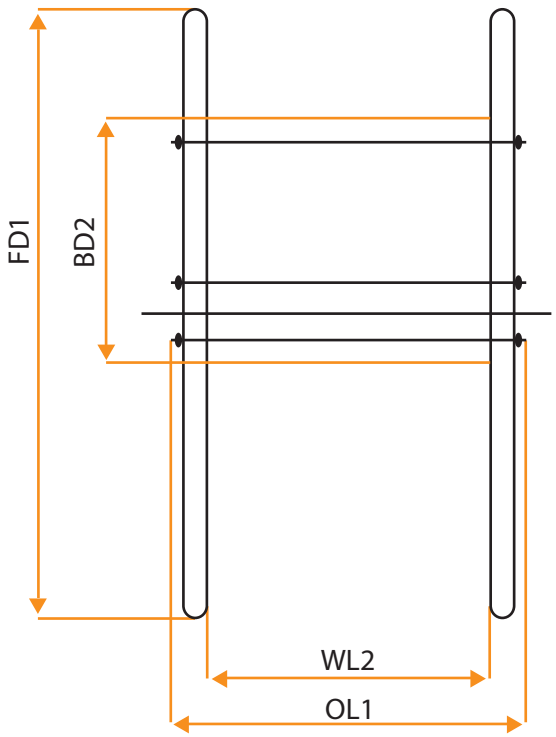
Description	NF C 32-070 "C1"
Length of sample	1600 mm
Test temperature	+ 830°C +/- 50°C
Position of sample	Vertical in the chimney
Duration of test	30 minutes
Conditions	The outstanding cable above the chymney may not be damaged

WOODEN DRUMS

Drum Type	Flange Ø FD1 (mm)	Barrel Ø BD2 (mm)	Overall width OL1 (mm)	Winding width WL2 (mm)	Max. carrying capacity (kg)	Drum weight (kg)
051	500	150	470	410	100	8
061	630	315	415	315	250	17
071	710	355	520	400	250	25
081	800	400	520	400	400	31
091	900	450	690	560	750	47
101	1000	500	710	560	900	71
121	1250	630	890	670	1700	144
141	1400	710	890	670	2000	175
161	1600	800	1100	850	3000	280
181	1800	1000	1100	840	4000	380
201	2000	1250	1350	1045	5000	550
221	2240	1400	1450	1140	6000	710
250	2500	1400	1450	1140	7500	875
251	2500	1600	1450	1130	7500	900
281	2800	1800	1635	1280	10000	1175

PLASTIC DRUMS

Drum Type	Flange Ø FD1 (mm)	Barrel Ø BD2 (mm)	Overall width OL1 (mm)	Winding width WL2 (mm)	Max. carrying capacity (kg)	Drum weight (kg)
050	500	150	456	404	100	4
070	710	355	510	400	250	15
080	800	400	510	400	350	16
090	900	450	680	560	400	23
100	1000	500	704	560	500	32



DRUM SIZE	CABLE Ø MM	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	CABLE Ø MM	DRUM SIZE
051		1130	815	630	460	390	320	260	220	190	170	150	130	110	105	100	80																														051
061		1110	840	640	470	388	315	254	238	190	180	140	134	102	96	92	90	65	62	60	58	56																										061
071		2024	1480	1064	890	680	564	470	385	360	300	239	228	218	172	165	159	122	117	113	110	80	78	76	73	70																				071	071
081		2755	2340	1463	1152	980	760	643	542	454	430	358	294	280	228	220	210	167	160	156	150	116	113	109	106	103	76	74	72																	081	081
091				2730	2202	1768	1404	1206	1032	880	749	632	603	505	485	402	387	315	304	294	285	226	220	215	209	162	157	153	150	146	108	105	103													091	091
101					2866	2349	1910	1540	1339	1159	1000	860	736	705	599	576	485	468	389	377	365	299	290	282	226	220	214	209	204	158	154	150	148	144	110	105	102	100									101	101
121									2727	2265	1990	1756	1545	1355	1184	1139	990	856	827	709	688	668	5667	550	462	450	438	428	352	344	336	329	365	259	254	249	244	190	187	183	180	177	174	130	127	121	121
141										2967	2480	2205	1960	1737	1535	1352	1304	1145	999	967	839	814	700	680	663	564	550	537	450	440	430	422	348	340	334	327	264	259	254	249	245	240	187	184	180	141	141
161															2722	2435	2172	1930	1870	1657	1608	1420	1244	1210	1180	1028	1003	866	846	828	710	692	678	664	560	549	539	529	437	430	422	415	408	330	325	161	161
181																2830	2527	2248	2172	1927	1867	1650	1450	1410	1370	1200	1166	1009	985	962	824	806	788	772	653	640	627	615	510	502	492	484	475	386	380	181	181
201																			2954	2608	2522	2218	2150	1880	1826	1583	1540	1500	1289	1257	1227	1040	1017	994	972	812	795	779	763	750	610	600	589	578	568	201	201
221																							2860	2777	2450	2383	2089	2035	1984	1726	1685	1646	1418	1386	1356	1328	1130	1107	1085	1065	890	874	858	842	828	221	221
250																												2978	2908	2605	2547	2270	2223	1969	1930	1892	1664	1633	1603	1574	1373	1349	1326	1144	1125	250	250
251																									2976	2893	2558	2490	2428	2134	2083	2035	1774	1735	1697	1486	1435	1406	1199	1175	1153	1130	1110	930	914	251	251
281																															2890	2820	2760	2432	2380	2330	2036	1995	1956	1962	1660	1630	1600	1366	1362	281	281

DRUM SIZE	CABLE Ø MM	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	CABLE Ø MM	DRUM SIZE
051																																															051
061																																															061
071																																														071
081																																														081
091																																														091
101																																														101
121		125	123	120																																									121	121
141		178	175	172	170	126	124	122	121	119	117																																			141	141
161		319	314	310	305	235	232	230	228	225	222	220	216	160	158	156	154	152	150																											161	161
181		373	367	360	356	280	276	270	267	263	260	256	252	190	187	184	182	180	178	174	172	170	168	166	164	162	160	112	110	109	108	107	106	105	103											181	181
201		558	442	435	428	420	414	408	400	304	300	295	290	287	282	280	275	270	266	264	186	184	182	180	177	175	173	170	168	166	164	163	161	158	156	155	154	152	150	149	147	146	144	90		201	201
221		878	666	655	644	634	624	614	488	480	473	466	460	453	448	440	335	330	326	320	317	313	310	305	300	297	294	291	287	284	281	278	196	194	192	190	188	186	184	182	180	178	176	175		221	221
250		1107	1089	1072	912	898	885	872	860	720	710	700	690	680	670	662	640	534	528	520	515	510	502	498	490	486	480	380	375	370	367	363	360	356	352	349	345	342	338	335	332	329	248	245		250	250
251		898	883	869	715	700	690	680	668	658	649	640	610	500	494	487	480	474	468	462	456	450	342	338	334	330	326	322	318	314	310	306	304	300	297	294	290	288	285	202	200	198	196	194		251	251
281		1320	1298	1276	1072	1056	1040	1022	1006	990	815	803	790	780	770	760	748	738	558	580	574	566	558	552	545	540	532	526	520	514	508	502	382	378	375	370	367	363	359	355	352	348	345	340		281	281

min. drum barrel Ø ≤ 40 x cable Ø
min. drum barrel Ø ≤ 30 x cable Ø
min. drum barrel Ø ≤ 25 x cable Ø
min. drum barrel Ø ≤ 20 x cable Ø
min. drum barrel Ø ≤ 15 x cable Ø

Subject to errors, modifications and amendments

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