



Thomas-Robot

로봇

로봇 산업 및 주변환경의 적용 케이블

 (주)토마스케이블



토마스케이블

(주)토마스케이블은 30년간의 케이블 전문 연구개발 활동과 다양한 현장경험을 바탕으로 자체 케이블 제조 및 하네스 전문 회사로 다양한 산업군 고객에게 맞춤형 One-stop 솔루션을 제공합니다. 또한 다양한 해외 네트워크를 통한 세계적인 기술력으로 지속 성장을 실현하고 있습니다.



Thomas-Robot

HISTORY



2005
토마스케이블 설립

2009
ISO9001인증 획득

2011
VDE/CE 인증취득

2016
UL인증취득
(AWM, MTW, TC외)

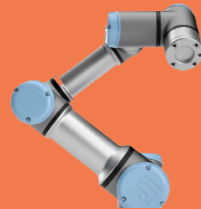
2019
IPA 인증취득

그룹사



Thomas (주)토마스

- 사업분야
 - 산업용 네트워크스위치
 - 무선장비 및 보안솔루션
 - 센서 및 커넥터 솔루션
 - 슬리핑 솔루션
 - 기타 FA제품 솔루션



Thomas (주)토마스 오토메이션

- 사업분야
 - 협동로봇
 - ThomS-RING
 - ThomS-Witch
 - 바이브레이터

산업용 로봇은 정밀한 작업과 높은 생산성을 보장하기 위해 엄격한 기술적 요구사항을 충족해야 합니다. 특히, 제조 공정에서 사용되는 로봇은 고속 이동과 반복적인 동작을 수행하면서도 내구성과 안정성을 유지해야 합니다.

산업용 로봇에 적용되는 케이블은 지속적인 굽힘, 비틀림, 장거리 이동에도 신뢰성을 보장해야 하며, 극한 환경에서도 최적의 성능을 발휘하도록 설계되어야 합니다. 또한, 오염과 마모에 강한 소재를 사용하여 장기적인 유지보수 비용을 절감하고, 생산성 향상에 기여해야 합니다.

고품질의 로봇 케이블은 장비의 성능 저하 없이 유연성과 안정성을 보장하며, 스마트 팩토리 및 자동화 시스템의 핵심 요소로 자리 잡고 있습니다.

토마스케이블의 독보적인 성능

토마스케이블의 로봇 전용 케이블은 극한의 작업 환경에서도 탁월한 성능을 발휘합니다. 고유의 내구성 설계를 통해 수백만 번의 굽힘 및 비틀림 테스트를 거쳤으며, 특수 코팅 기술을 적용해 마모와 외부 충격에도 강한 저항력을 가집니다. 또한, 고속 신호 전송과 안정적인 전력 공급을 보장하여 산업용 로봇이 최상의 퍼포먼스를 유지할 수 있도록 지원합니다.

로봇 산업분야



자동차



전기·전자



섬유



식·음료



유통·물류



화학



의료·바이오



항공·방산

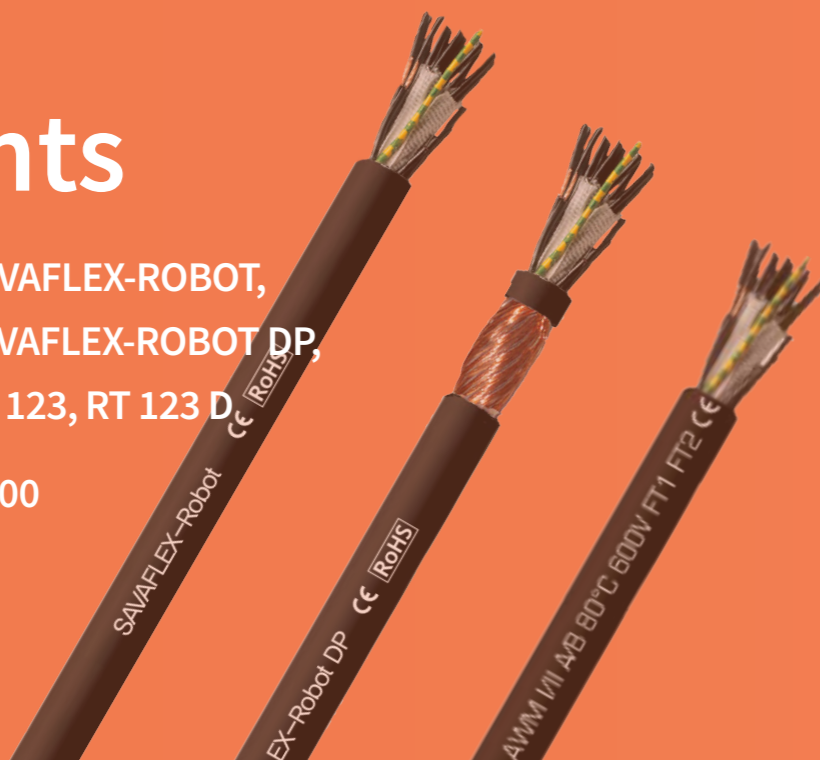
Contents

- 토션용 케이블 : SAVAFLEX-ROBOT, SAVAFLEX-ROBOT DP, RT 123, RT 123 D

- 가동용 케이블 : S 200

- 이더넷 케이블 : RT PN 668, CATLine Cat.6A RT, CATLine Cat.7A RT, CATLine SPE Robot

- 용접용 케이블 : Welding cable



SAVAFLEX-ROBOT, DP

토션용 케이블



Construction (구조)

- 도체 : 6등급 집합선, 초미세연선
- 절연 : PVC
- 선심식별 : 0.34mm² ↓ : DIN VDE 47100 참조
0.5mm² ↑ : 흑색선심 위 연속적인 번호 표시
Y/G 접지선은 3코어 이상 적용
- 개연 : 2개의 선심을 1쌍으로 꼬음
- 연합 : 필요한 선심을 적절한 테이프와 함께 연합
- 차폐 : 주석도금선 편조
- 시스 : PUR
- 시스 색상 : Black (RAL 9005)

Characteristics (특징)

- 내구성 및 신뢰성 (rugged and reliable)
- UL AWM 인증 적용 가능 (UL AWM certification applicable)

선심수 x 도체단면적 (No. x mm ²)	외경(공칭) (mm)	도체 소요량(약) (kg/km)	케이블 소요량(약) (kg/km)
7 x 0.25	6.1	16.3	45.7
25 x 0.25	10.0	58.1	131.0
4 x 0.5	6.2	18.6	47.2
12 x 0.5	9.5	55.8	121.1
18 x 0.5	11.4	83.7	181.8
25 x 0.5	13.5	116.2	250.2
4 x 0.75	6.9	27.9	62.4
7 x 0.75	8.9	48.8	108.2
10 x 0.75	10.1	69.7	142.5
2 x 1.0	6.3	18.8	44.4
3 x 1.0	7.0	28.2	61.4
4 x 1.0	7.6	37.5	77.7
5 x 1.0	8.5	46.9	98.1
7 x 1.0	10.1	65.7	139.7
10 x 1.0	11.5	93.8	184.1
12 x 1.0	12.0	112.6	207.5
18 x 1.0	14.4	168.9	311.2
25 x 1.0	17.1	234.6	432.4
7 x 1.5	11.0	91.6	175.3
12 x 1.5	13.2	157.1	268.0
18 x 1.5	15.8	235.7	399.7
3 x 2.5	8.9	65.6	114.2

Other dimensions and colours are possible on request.

Technical data (기술 데이터)

Rated voltage :	Max. 250V (0.34mm ² ↓) 300/500V (0.5mm ² ↑)
Testing voltage :	1,500V (0.34mm ² ↓) 2,000V (0.5mm ² ↑)
Min. bending radius continuously flexible :	7.5 x D
Torsion angle :	up to ±360°/0.5m
Temperature range fixed laying :	-15°C ~ 90°C
flexible application :	-15°C ~ 90°C
Flame retardant :	IEC 60332-1-2
Oil resistance :	very good
Chem. Resistance :	good

선심수 x 도체단면적 (No. x mm ²)	외경(공칭) (mm)	도체 소요량(약) (kg/km)	케이블 소요량(약) (kg/km)
5 x 2 x 0.25	8.0	38.7	76.7
5 x 2 x 0.34	9.1	48.3	97.2
6 x 2 x 0.5	11.7	80.3	170.9

RT 123

토션용 케이블



Marking for RT 123 07951815:

SAB BRÖCKSKES · D-VIERSEN · 07951815 18 x 1.5 mm² RT 123 16 AWG/18 c 07951618 AWM Style 21060 80°C 600V CSA AWM VII A/B 80°C 600V FT1 FT2 CE

Construction (구조)

- 도체 : bare copper strands, extra fine wires (0.14-0.34mm²)
bare copper strands acc. to IEC 60228, VDE 0295, class 6
(from 0.5mm²)
- 절연 : TPE
- 선심식별 : acc. to colour code US 2, (0.14-0.34mm²)
black cores with consecutive numbers acc. to DIN VDE 0293
+ HD 186; green-yellow earth wire from 3 cores (from 0.5mm²)
- 연합 : specially adjusted layering with netting tape over each layer
and one additional non-woven tape over the outer layer
- 시스 : PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
- 시스 색상 : Black (RAL 9005)

Characteristics (특징)

- 내구성 및 신뢰성 (rugged and reliable)
- 0.5m에 걸쳐 최대 ±450° 비틀림 각도 (torsion angle - up to ±450° over 0.5m)
- UL/CSA 규격으로 생산

Technical data (기술 데이터)

Peak operating voltage (0,14mm ² - 0,34mm ²) :	max. 350 V
Nominal voltage (from 0,50mm ²) :	U ₀ /U 300/500 V
Voltage UL/CSA (0,14mm ² - 0,34mm ²) :	300 V
Voltage UL/CSA (from 0,50 mm) :	600 V
Testing voltage (0,14mm ² - 0,34mm ²) :	core/core 1500 V
Testing voltage (from 0,50mm ²) :	core/core 3000 V
Min. bending radius continuously flexible :	12 x d
from 34 cores :	20 x d
Radiation resistance :	5 x 10 ⁷ cJ/kg
Temperature range fixed laying :	DIN VDE -50/+90 °C
flexible application :	UL/CSA: up to +80 °C -40/+90 °C
Fire performance :	acc. to IEC 60332-1-2 + VDE 0482-332-1-2, UL VW-1, CSA FT1, FT2
Oil resistance :	very good - TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Chem. resistance :	good against acids, alkalines, solvents, hydraulic liquids etc
Continuous flexibility :	very good
Absence of harmful substances :	acc. to RoHS directive of the European Union

item no.	no. of cores x cross section (n x mm ²)	largest single wire (ø mm)	outer-0 ± 5% (mm)	Copper figure (kg/km)	Cable weight (≈ kg/km)
07950301	3 x 0,14	0,11	5,5	4	31
07950401	4 x 0,14	0,11	4,7	5,4	26
07950302	3 x 0,25	0,11	4,6	7,2	25
07950402	4 x 0,25	0,11	4,8	9,6	28
07950702	7 x 0,25	0,11	5,4	16,8	39
07952502	25 x 0,25	0,11	9,1	60	117
07950203	2 x 0,34	0,11	4,8	6,6	27
07951805	18 x 0,50	0,16	12,5	95	216
07952505	25 x 0,50	0,16	14,6	132	303
07950407	4 x 0,75	0,16	7,8	28,8	78
07951407	14 x 0,75	0,16	12,6	100,8	207
07950210	2 x 1,00	0,16	7,3	19,2	64
07950310	3 x 1,00	0,16	7,6	28,8	75
07950410	4 x 1,00	0,16	8,1	38,4	91
07950610	6 x 1,00	0,16	9,4	57,6	127
07950710	7 x 1,00	0,16	10	67,2	147
07951210	12 x 1,00	0,16	12,2	115,2	214
07951810	18 x 1,00	0,16	14,7	172,8	316

item no.	no. of cores x cross section (n x mm ²)	largest single wire (ø mm)	outer-0 ± 5% (mm)	Copper figure (kg/km)	Cable weight (≈ kg/km)
07952510	25 x 1,00	0,16	16,6	240	428
07951810	18 x 1,00	0,16	14,7	172,8	316
07952510	25 x 1,00	0,16	16,6	240,0	428
07953410	34 x 1,00	0,16	19,7	326,4	559
07954010	40 x 1,00	0,16	20,9	384,0	659
07954110	41 x 1,00	0,16	20,9	393,6	670
07950715	7 x 1,50	0,16	11,3	100,8	197
07951215	12 x 1,50	0,16	14,3	172,8	303
07951815	18 x 1,50	0,16	16,6	259,2	435
07952515	25 x 1,50	0,16	19,1	360,0	609
07950325	3 x 2,50	0,16	9,9	72,0	136
07950425	4 x 2,50	0,16	10,3	96,0	166
07950525	5 x 2,50	0,16	11,8	120,0	210
07950340	3 x 4,00	0,16	11,5	115,2	211
07950361	3 x 10,00	0,21	16,5	288,0	471
07950362	3 x 16,00	0,21	19,4	460,8	682
07950363	3 x 25,00	0,21	24,0	720,0	1035
07950364	3 x 35,00	0,21	27,2	1008,0	1389

Other dimensions and colours are possible on request.

RT 123 D

토션용 케이블



Marking for RT 123 D 07961815:
SAB BRÖCKSKES · D-VIERSEN · 07961815 18x1,5mm² RT 123 D 16 AWG/18c 07961618 AWM Style 21060 80°C 600V CSA AWM I/II A/B 80°C 600V FT1 FT2 CE

Construction (구조)

- 도체(0,14mm² - 0,34mm²) : bare copper strands, extra fine wires
- 도체(from 0,50mm²) : bare copper strands
acc. to IEC 60228, VDE 0295, class 6
- 절연 : TPE
- 선심식별(0,14mm² - 0,34mm²) : acc. to colour code US 2,
- 선심식별(from 0,50mm²) : black cores with consecutive numbers
acc. to EN 50334 + VDE 0293-334,
green-yellow earth wire from 3 cores
- 연합 : specially adjusted layering with netting
tape over each layer and one additional
non-woven tape over the outer layer
- 차폐 : wrapped with bare copper wires
- 테이핑 : non-woven tape
- 시스 : PUR, TPU acc. to
EN 50363-10-2 + VDE 0207-363-10-2
- 시스 색상 : black (RAL 9005)

Characteristics (특징)

- 내구성 및 신뢰성 (rugged and reliable)
- 0.5m에 걸쳐 최대 ±450° 비틀림 각도 (torsion angle - up to ±450° over 0.5m)
- UL 인증, CSA 승인 (UL recognized, CSA approval)

Technical data (기술 데이터)

Peak operating voltage 0,14mm² - 0,34mm² :	max. 350 V	
Nominal voltage from 0,50mm² :	U ₀ /U 300/500 V	
Voltage UL/CSA 0,14mm² - 0,34mm² :	300 V	
Voltage UL/CSA from 0,50mm² :	600 V	
Testing voltage 0,14mm² - 0,34mm² :	core/core 1,500 V	core/screen 1,200 V
Testing voltage from 0,50mm² :	core/core 3,000 V	core/screen 2,000 V
Torsion angle :	up to ± 450°/0.5 m	
Min. bending radius continuously flexible:	12 x d	
from 34 cores:	20 x d	
Radiation resistance :	5 x 10 ⁷ cJ/kg	
Temperature range fixed laying :	DIN VDE	UL/CSA: up to +80 °C
flexible application :	-50/+90 °C	
Halogen-free :	acc. to IEC 60754-1 + VDE 0482-754-1	
Fire performance :	acc. to IEC 60332-1-2 + VDE 0482-332-1-2, UL VW-1, CSA FT1, FT2	
Oil resistance :	very good - TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2	
Chem. resistance :	good against acids, alkalines, solvents, hydraulic liquids etc .	
Continuous flexibility :	very good	
Absence of harmful substances :	acc. to RoHS directive of the European Union	

Other dimensions and colours are possible on request.

item no.	no. of cores x cross section (n x mm²)	largest single wire (ø mm)	outer-0 ± 10% (mm)	Copper figure (kg/km)	Cable weight (≈kg/km)
07961201	12 x 0,14	0,11	6,9	30,2	62
07962502	25 x 0,25	0,11	10	90,9	156
07960505	5 x 0,50	0,16	8,2	40,5	94
07960710	7 x 1,00	0,16	10,7	108,5	178
07961215	12 x 1,50	0,16	14,9	214,7	338
07961815	18 x 1,50	0,16	17,1	326	496

S 200

가동용 제어 케이블 (번호식별)



Marking for S 200 07440161:
SAB BRÖCKSKES · D-VIERSEN · S 200 1 x 10,0 mm² CE



Marking for S 200 07741215:
SAB BRÖCKSKES · D-VIERSEN · S 200 12 x 1,5 mm² CE

Construction (구조)

- 도체 : bare copper strands acc. to IEC 60228, VDE 0295, class 6
- 절연 : TPE
- 선심식별 : black cores with consecutive numbers
acc. to EN 50334 + VDE 0293-334, green-yellow earth
wire from 3 cores
- 연합 : specially adjusted layering
with non-woven tape over each layer
- 테이핑 : non-woven tape
- 시스 : PUR, TPU acc. to
EN 50363-10-2 + VDE 0207-363-10-2
with mat surface
- 시스 색상 : Grey (RAL 7000)

Characteristics (특징)

- 매우 유연한 (highly flexible)
- 페인트 습윤 장애 물질(PWIS) 포함하지 않음 (PWIS uncritical)
(PWIS= 페인트 도장 과정에서 표면에 결함을 유발할 수 있는 물질)
- 저온에서 유연한 (flexible at low temperatures)
- 할로겐 프리 (halogen-free)
- 10미터 이상 이동 가능 (travel > 10 m is possible)
- 높은 내마모성 (high abrasion resistance)
- 최소 굽힘 반경 (min. bending radius)
- 작은 외경 (small outer diameter)

Technical data (기술 데이터)

Nominal voltage :	U ₀ /U 300/500 V
Testing voltage :	core/core 2,000 V
Min. bending radius continuously flexible :	7,5 x d
Temperature range fixed laying :	-50/+90 °C
flexible application :	-40/+90 °C
Halogen-free :	acc. to IEC 60754-1 + VDE 0482-754-1
Oil resistance :	very good - TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Chem. resistance :	good against acids, alkalines, solvents, hydraulic liquids etc.
Continuous Flexibility :	very good
Weather resistance :	very good
Absence of harmful substances :	acc. to RoHS directive of the European Union

item no.	no. of cores x cross section (n x mm²)	largest single wire (ø mm)	outer-0 ± 10% (mm)	Copper figure (kg/km)	Cable weight (≈kg/km)
07740205	2 x 0,50	0,16	4,9	9,6	28
07740305	3 x 0,50	0,16	5,1	14,4	34
07740405	4 x 0,50	0,16	5,5	19,2	41
07740505	5 x 0,50	0,16	6	24	51
07740705	7 x 0,50	0,16	6,9	33,6	69
07741205	12 x 0,50	0,16	8,3	57,6	99
07741805	18 x 0,50	0,16	9,9	86,4	143
07742505	25 x 0,50	0,16	11,9	120	197
07743605	36 x 0,50	0,16	13,7	172,8	282
07745005	50 x 0,50	0,16	16,1	240	381
07746505	65 x 0,50	0,16	18,2	312	478
07740207	2 x 0,75	0,16	5,4	14,4	36
07740307	3 x 0,75	0,16	5,7	21,6	44
07740407	4 x 0,75	0,16	6,1	28,8	54
07740507	5 x 0,75	0,16	6,7	36	67
07740707	7 x 0,75	0,16	7,9	50,4	93
07741207	12 x 0,75	0,16	9,6	86,4	137
07741807	18 x 0,75	0,16	11,3	129,6	202
07742507	25 x 0,75	0,16	13,9	180	279
07743607	36 x 0,75	0,16	15,4	259,2	384
07745007	50 x 0,75	0,16	18,4	360	528
07746507	65 x 0,75	0,16	20,8	468	688
07740210	2 x 1,00	0,16	5,8	19,2	45
07740310	3 x 1,00	0,16	6,1	28,8	54

item no.	no. of cores x cross section (n x mm²)	largest single wire (ø mm)	outer-0 ± 10% (mm)	Copper figure (kg/km)	Cable weight (≈kg/km)
07740410	4 x 1,00	0,16	6,6	38,4	67
07740510	5 x 1,00	0,16	7,2	48	82
07740710	7 x 1,00	0,16	8,6	67,2	116
07741210	12 x 1,00	0,16	10,4	115,2	173
07741810	18 x 1,00	0,16	12,3	172,8	256
07742510	25 x 1,00	0,16	15,1	240	353
07743610	36 x 1,00	0,16	17	345,6	496
07745010	50 x 1,00	0,16	20,3	480	682
07746510	65 x 1,00	0,16	22,9	624	885
07740115	1 x 1,50	0,16	4	14,4	25
07740215	2 x 1,50	0,16	6,4	28,8	57
07740315	3 x 1,50	0,16	6,7	43,2	70
07740415	4 x 1,50	0,16	7,3	57,6	89
07740515	5 x 1,50	0,16	8	72	110
07740715	7 x 1,50	0,16	9,6	100,8	159
07741215	12 x 1,50	0,16	11,8	172,8	242
07741815	18 x 1,50	0,16	14,2	259,2	362
07742515	25 x 1,50	0,16	17,1	360	490
07743615	36 x 1,50	0,16	19,3	518,4	691
07745015	50 x 1,50	0,16	23	720	950
07746515	65 x 1,50	0,16	26	936	1240
07740125	1 x 2,50	0,16	4,7	24	39
07740225	2 x 2,50	0,16	7,8	48	85
07740325	3 x 2,50	0,16	8,3	72	106

S 200

가동용 제어 케이블 (번호식별)



Marking for S 200 07440161:
SAB BRÖCKSKES · D-VIERSEN · S 200 1 x 10,0 mm² CE



Marking for S 200 07741215:
SAB BRÖCKSKES · D-VIERSEN · S 200 12 x 1,5 mm² CE

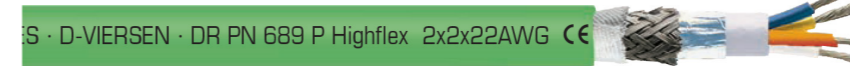


item no.	no. of cores x cross section (n x mm)	largest single wire (ø mm)	outer-Ø ± 10% (mm)	Copper figure (kg/km)	Cable weight (≈ kg/km)
07740425	4 x 2,50	0,16	9,2	96,0	142
07740525	5 x 2,50	0,16	10,2	120,0	175
07740725	7 x 2,50	0,16	12,2	168,0	256
07741225	12 x 2,50	0,16	15,4	288,0	399
07741825	18 x 2,50	0,16	18,1	432,0	588
07742525	25 x 2,50	0,16	22,1	600,0	802
07743625	36 x 2,50	0,16	24,8	864,0	1128
07740140	1 x 4,00	0,16	5,4	38,4	56
07740240	2 x 4,00	0,16	9,3	76,8	129
07740340	3 x 4,00	0,16	9,8	115,2	172
07740440	4 x 4,00	0,16	10,8	153,6	217
07740540	5 x 4,00	0,16	12,1	192,0	268
07740740	7 x 4,00	0,16	14,6	268,8	394
07740160	1 x 6,00	0,21	6,1	57,6	76
07740260	2 x 6,00	0,21	10,8	115,2	176
07740360	3 x 6,00	0,21	11,7	172,8	246
07740460	4 x 6,00	0,21	12,8	230,4	316
07740560	5 x 6,00	0,21	14,5	288,0	388
07740760	7 x 6,00	0,21	17,3	403,2	504
07740161	1 x 10,0	0,21	7,1	96,0	120
07740361	3 x 10,0	0,21	14,1	288,0	395
07740461	4 x 10,0	0,21	15,8	384,0	507
07740561	5 x 10,0	0,21	17,2	480,0	610
07740162	1 x 16,0	0,21	8,3	153,6	177
07740362	3 x 16,0	0,21	17,0	460,8	597
07740462	4 x 16,0	0,21	19,0	614,4	782
07740562	5 x 16,0	0,21	21,2	768,0	981
07740163	1 x 25,0	0,21	9,9	240,0	263
07740363	3 x 25,0	0,21	20,6	720,0	848
07740463	4 x 25,0	0,21	22,8	960,0	1155
07740563	5 x 25,0	0,21	25,4	1200,0	1359
07740164	1 x 35,0	0,21	11,5	336,0	367
07740464	4 x 35,0	0,21	26,4	1344,0	1533
07740564	5 x 35,0	0,21	29,8	1680,0	1894
07740165	1 x 50,0	0,31	14,0	480,0	538
07740465	4 x 50,0	0,31	31,8	1920,0	2266
07740166	1 x 70,0	0,31	16,7	672,0	754
07740167	1 x 95,0	0,31	20,5	912,0	1028
07740168	1 x 120,0	0,31	21,5	1152,0	1260
07740169	1 x 150,0	0,31	24,6	1440,0	1618
07740170	1 x 185,0	0,41	26,7	1776,0	1942
07740171	1 x 240,0	0,41	30,1	2304,0	2483

Other dimensions and colours are possible on request.

RT PN 668

프로피넷 이더넷 케이블



Marking for RT PN 689 P Highflex 6892202:
SAB BRÖCKSKES · D-VIERSEN · DR PN 689 P Highflex 2x2x22AWG CE



Construction (구조)

- 도체 : tinned copper strands, extra fine wires
- 절연 : PE
- 선심식별 : blue, yellow, white, orange
- 연합 : in layers
- 테이핑 : netting tape, alu foil
- 차폐 : wrapped with bare copper wires
- 테이핑 : non-woven tape
- 시스 : PUR,
- 시스 색상 : Green (similar RAL 6018)

Characteristics (특징)

- 로봇에 적합한 (suitable for robots)
- 할로겐 프리 (halogen-free)
- 매우 우수한 내유성 (very good oil resistance)

Technical data (기술 데이터)

Peak operating voltage :	max. 350 V
Testing voltage :	core/core 1,500 V core/screen 1,200 V
Min. bending radius	
fixed laying :	5 x d
flexible application :	10 x d
Temperature range	
fixed laying :	-40/+70 °C
flexible application :	-30/+70 °C
Torsion angle :	+/- 180°/m
Halogen-free :	acc. to IEC 60754-1 + VDE 0482-754-1
Oil resistance :	TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Characteristic impedance :	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-2-2 + VDE 0819-2-2 (CAT 5 acc. to EN 50173-1)
Application :	suitable for EtherCAT and EtherNET/IP applications
Absence of harmful substances :	acc. to RoHS directive of the European Union

item no.	dimension	max. core-ø (mm)	outer-Ø ± 5% (mm)	Copper figure (kg/km)	Cable weight (≈ kg/km)	ohmic resistance at 20°C acc. to VDE 0812 (max. Ω/km)
06689001	2 x 2 x 22 AWG	1,50	7,0	36,3	62	58,0

Other dimensions and colours are possible on request.

CAT LINE CAT 6A RT

기가비트 이더넷케이블



Marking for CATLine CAT 6ART:

SAB BRÖCKSKES · D-VIERSEN · CATLine Cat.6 S 4x2x26AWG 1677-4630 AWM Style 20549 80°C 300V CSA AWM I/II A/B 80°C 300V FT2 CE

Construction (구조)

- 도체 : bare copper strands, fine wires
- 절연 : special polymer
- 선심식별 : white-blue/blue, white-orange/orange, white-green/green, white-brown/brownpolymer
- 연합 : cores twisted to pairs, pairs together
- 테이핑 : non-woven tape
- 차폐 : alu foil and tinned copper braiding
- 테이핑 : non-woven tape
- 시스 : PUR, TPU
- 시스 색상 : Green (similar RAL 6018)

Characteristics (특징)

- UL 인증, CSA 승인 (UL recognized, CSA approved)
- 케이블 트랙에 적합한 (suitable for cable tracks)
- 할로겐 프리 (halogen-free)
- 난연성 및 자기 소화성 (flame retardant and self-extinguishing)
- 매우 우수한 내유성 (very good oil resistance)
- 공격적인 화학 물질에 대해 좋은 (good against aggressive chemicals)

Technical data (기술 데이터)

Peak operating voltage :	max. 90 V
Voltage UL/CSA :	300 V
Testing voltage :	core/core 2,000 V core/screen 2,000 V
Min. bending radius	
fixed laying :	5 x d
flexible application :	10 x d
continuously flexible :	15 x d
Torsion angle :	up to ± 180°/m
Temperature range	UL/CSA: up to +80 °C
fixed laying :	-40/+70 °C
flexible application :	-40/+70 °C
Halogen-free :	acc. to IEC 60754-1 + VDE 0482-754-1
Fire performance :	TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Oil resistance :	TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Characteristic impedance (100 MHz) :	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-10-2 / CAT 6A
Flexibility :	very good
UL Style :	20549
Application :	suitable for EtherCAT and EtherNET/IP applications
Absence of harmful substances :	acc. to RoHS directive of the European Union

item no.	dimension	max. core-ø (mm)	outer-ø ± 5% (mm)	Copper figure (kg/km)	Cable weight (≈kg/km)
16874631	4 x 2 x 26 AWG	1,05	7,1	32,0	57

Other dimensions and colours are possible on request.

CAT LINE CAT 7A RT

기가비트 이더넷케이블



Marking for CATLine CAT 7ART 17774631:

SAB BRÖCKSKES · D-VIERSEN · CATLine Cat.7A S 4x2x26AWG 1777-4631 AWM Style 20549 80°C 300V CSA AWM I/II A/B 80°C 300V FT2 CE

Construction (구조)

- 도체 : bare copper strands, fine wires
- 절연 : special polymer
- 선심식별 : white-blue/blue, white-orange/orange, white-green/green, white-brown/brownpolymer
- 연합 : cores twisted to pairs, pairs screened with foil, pairs together
- 차폐 : aluminized non-woven tape and tinned copper braiding
- 테이핑 : non-woven tape
- 시스 : PUR
- 시스 색상 : green (similar RAL 6018)

Characteristics (특징)

- UL 인증, CSA 승인 (UL recognized, CSA approved)
- 케이블 트랙에 적합한 (suitable for cable tracks)
- 할로겐 프리 (halogen-free)
- 난연성 및 자기 소화성 (flame retardant and self-extinguishing)
- 매우 우수한 내유성 (very good oil resistance)
- 우수한 내화학성 (good against aggressive chemicals)

Technical data (기술 데이터)

Peak operating voltage :	max. 90 V
Voltage UL/CSA :	300 V
Testing voltage :	core/core 2,000 V core/screen 2,000 V
Min. bending radius	
fixed laying :	5 x d
flexible application :	10 x d
Torsion angle :	up to ± 180°/m
Temperature range	UL/CSA: up to +80 °C
fixed laying :	-40/+70 °C
flexible application :	-40/+70 °C
Halogen-free :	acc. to IEC 60754-1 + VDE 0482-754-1
Fire performance :	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
Flame test :	UL Horizontal Flame Test FT2
Oil resistance :	TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Characteristic impedance (100 MHz) :	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-9-2 + VDE 0819-9-2 / CAT 7A
Flexibility :	very good
UL Style :	20549
Application :	suitable for EtherCAT and EtherNET/IP applications
Absence of harmful substances :	acc. to RoHS directive of the European Union

item no.	dimension	Approx. core-ø (mm)	outer-ø ± 5% (mm)	Copper figure (kg/km)	Cable weight (≈kg/km)
17874631	4 x 2 x 26 AWG	1,5	8,9	36,3	62
17874431	4 x 2 x 24 AWG	1,6	9,3	44,0	98

Other dimensions and colours are possible on request.

CATLine SPE Robot

이더넷 케이블



Marking for CATLine SPE robot 17771630:
SAB BRÖCKSKES · D-VIERSEN · CATLine SPE robot 2xAWG26/7 1777-1630 AWM Style 20549 80°C 300V CE

Construction (구조)

- 도체 : bare copper strands
- 절연 : special polymer
- 선심식별 : white-blue
- 연합 : twisted to pairs
- 내부시스 : SABIX®
- 차폐 : alu foil and tinned copper braiding
- 테이핑 : non-woven tape
- 시스 : PUR
- 시스 색상 : green (similar RAL 6018)

Characteristics (특징)

- UL 인증 (UL recognition)
- 로봇에 적합한 (suitable for robots)
- 할로겐 프리 (halogen-free)
- 매우 우수한 내유성 (very good oil resistance)
- 낮은 케이블 연결 작업 (low cabling effort)
- 짧은 지연 시간 (short latency periods)
- 작은 외경 (small outer diameter)
- 페인트 흡윤 장애 물질(PWIS) 포함하지 않음 (PWIS uncritical)
(PWIS= 페인트 도장 과정에서 표면에 결함을 유발할 수 있는 물질)
- 우수한 내화학성 (good against aggressive chemicals)

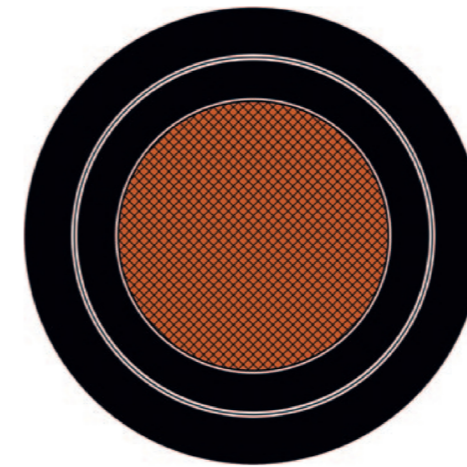
Technical data (기술 데이터)

Peak operating voltage :	max. 90 V
Voltage UL/CSA :	300 V
Testing voltage :	core/core 2,000 V core/screen 2,000 V
Min. bending radius	
fixed laying :	5 x d
flexible application :	10 x d
continuously flexible :	15 x d
Torsion angle :	up to ± 180°/m
Temperature range	UL/CSA: up to +80 °C
fixed laying :	-40/+70 °C
flexible application :	-40/+70 °C
Halogen-free :	acc. to IEC 60754-1 + VDE 0482-754-1
Oil resistance :	very good - TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Characteristic impedance (100 MHz) :	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to IEC 61156-12. Bandwidth 1 - 600 MHz.
UL Style :	20549
Absence of harmful substances :	acc. to RoHS directive of the European Union

item no.	dimension	outer-ø ± 10% (mm)	Copper figure (kg/km)	Cable weight (≈ kg/km)
17871630	2 x 26/7 AWG	4,6	16,9	29
17871230	2 x 22/19 AWG	5,7	22,7	40

Other dimensions and colours are possible on request.

Welding cables



Construction:

Conductor:	bare copper strands acc. to IEC 60228
Sheath material:	PUR, TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2

item no.	dimension mm ²	colour-coding	outer-ø ≈ mm
0726-0001	1 x 16,0	bk/bk	10,1
0726-0002	1 x 25,0	bk/bk	11,1
0726-0003	1 x 25,0	gnye/bk	11,1
0726-0004	1 x 35,0	bk/bk	13,3
0726-0005	1 x 35,0	gnye/bk	13,3
0726-0006	1 x 50,0	bk/bk	15,8
0726-0007	1 x 70,0	bk/bk	18,2
0726-0008	1 x 95,0	bk/bk	20,7

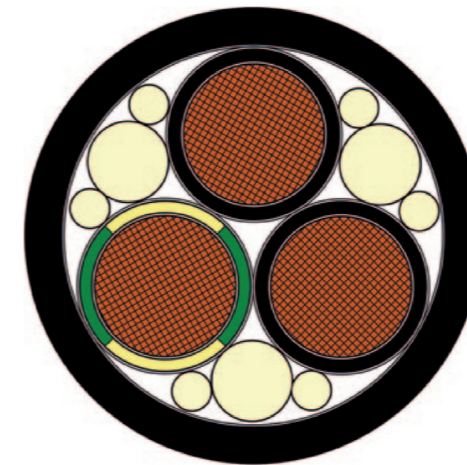
Other dimensions and colours are possible on request.



Preferred type

Technical Data:

Operating voltage	Testing voltage	Temperature range	Min. bending radius	Halogen-free	Absence of harmful substances
750 V (DC)	2000 V (AC)	flexible application: -40/+90 °C	recommended: 7,5 x d	acc. to IEC 60754-1 + VDE 0482-754-1	acc. to RoHS directive of the European Union



Construction:

Conductor:	bare copper strands acc. to IEC 60228
Insulation:	PUR
Colour code:	black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, green-yellow earth wire from 3 cores
Sheath material:	PUR, TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Sheath colour:	black (RAL 9005)

item no.	dimension mm ²	outer-ø ≈ mm
0726-0009	3 x 16,0	19,3
0726-0010	3 x 25,0	23,3
0726-0011	3 x 35,0	26,6
0726-0012	3 x 50,0	30,8

Other dimensions and colours are possible on request.

Technical Data:

Operating voltage	Testing voltage	Temperature range	Min. bending radius	Halogen-free	Absence of harmful substances
≤ 16,0 mm ² = 500 V (DC) ≥ 25,0 mm ² = 750 V (DC)	≤ 16,0 mm ² = 1500 V (AC) ≥ 25,0 mm ² = 2000 V (AC)	flexible application: -40/+90 °C	recommended: 7,5 x d	acc. to IEC 60754-1 + VDE 0482-754-1	acc. to RoHS directive of the European Union



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T. 031-467-8585 F. 031-424-3866