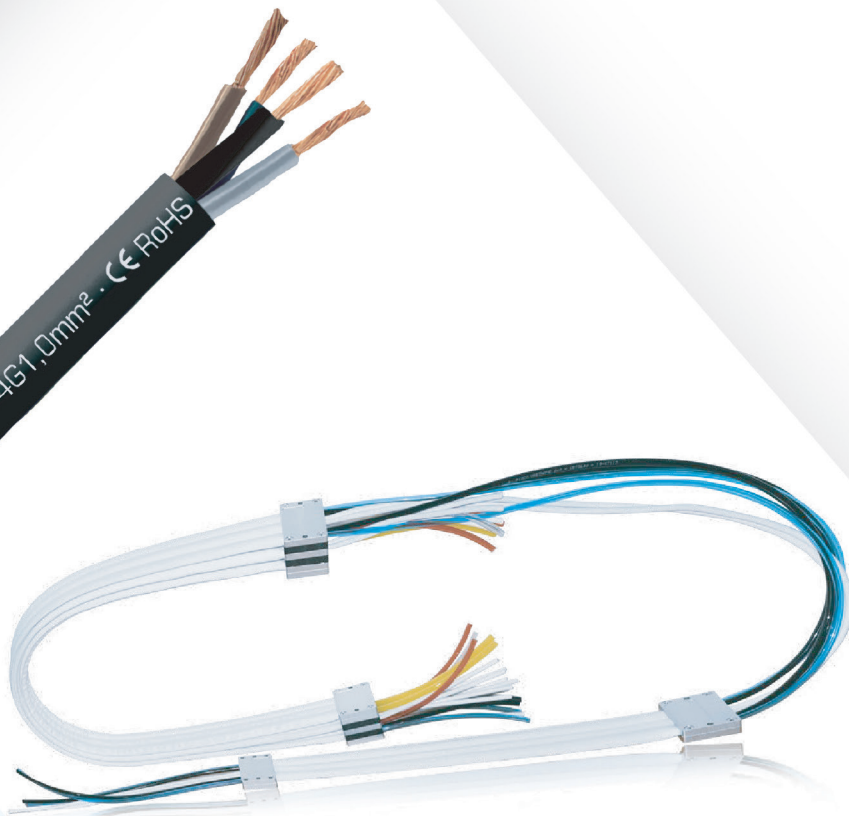


Thomas-Clean

반도체/디스플레이

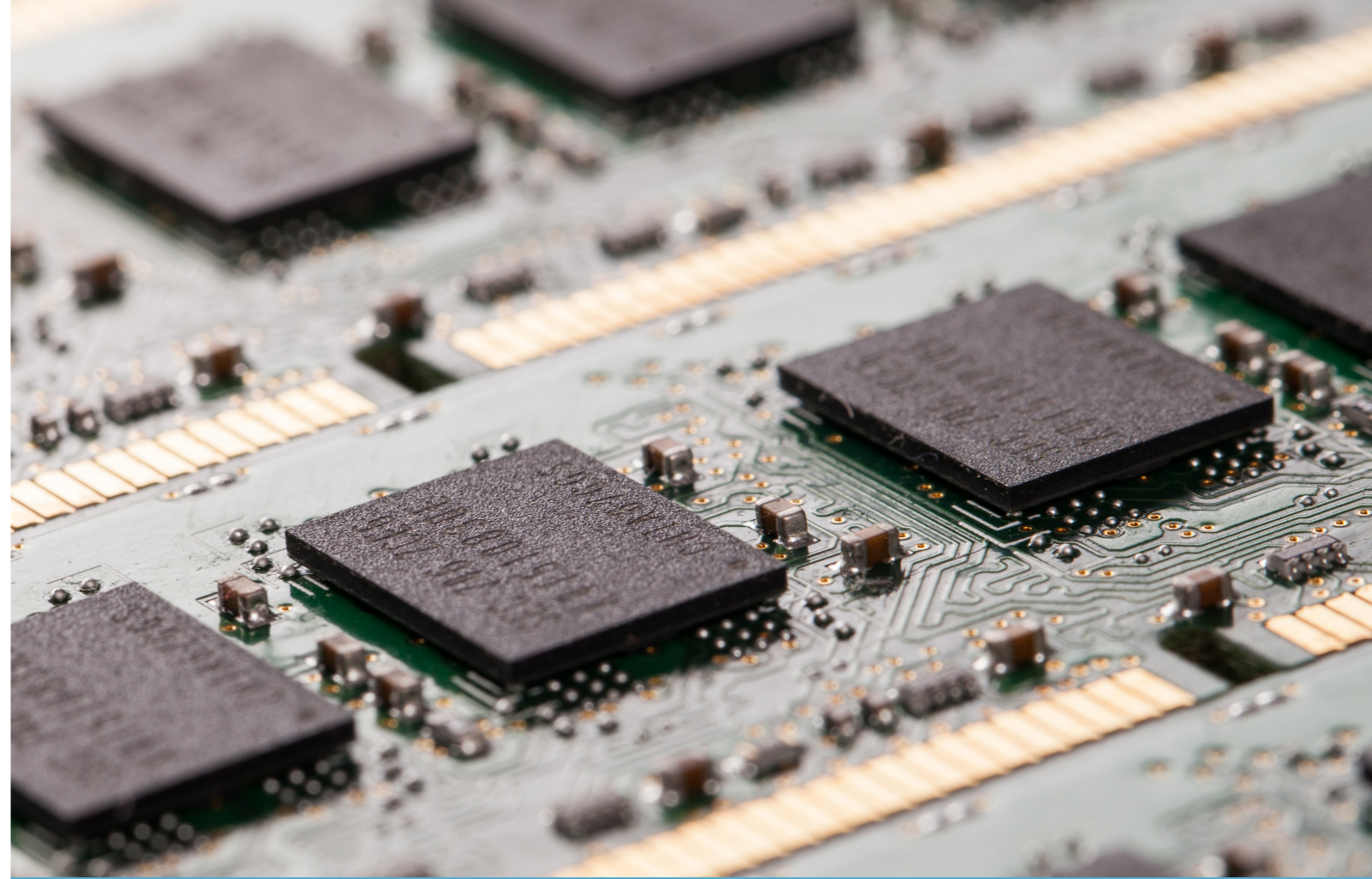
반도체/디스플레이 산업 및 주변환경의 적용 케이블

 (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-CLEAN

HISTORY

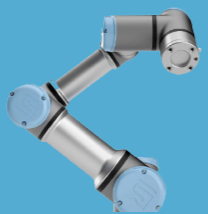
2005 토마스케이블 설립	2009 ISO9001인증 획득	2011 VDE/CE 인증취득	2016 UL인증취득 (AWM, MTW, TC외)	2019 IPA 인증취득

그룹사



Thomas (주)토마스

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



Thomas (주)토마스 오토메이션

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

반도체/디스플레이 공정은 높은 청정도와 효율적인 성능을 보장하기 위해 엄격한 요구사항을 충족해야 합니다.

적용케이블은 클린룸 환경의 자동화 시스템에 필수적인 연결 및 전력 전송 기능을 제공하여 제조 부문에서 중요한 역할을 합니다. 클린룸은 공기 품질 및 입자 제어에 대한 매우 엄격한 표준을 갖고 있으므로 케이블의 재질과 설계는 유해한 입자나 물질의 유입을 방지하기 국제 클린룸 표준(ISO 14644-1)을 준수해야 합니다.

반도체/디스플레이 장비의 플렉시블 케이블은 입자를 방출하거나 장비 성능에 영향을 미치지 않고 복잡한 움직임과 굽힘 및 비틀림을 견뎌야 하고 장시간 사용해도 안정적인 성능을 보장하기 위해 고품질 소재가 적용된 케이블이 필요합니다.

토마스케이블의 독보적인 성능

토마스케이블의 클린룸 케이블은 Air cleanliness class 1(IPA 승인)을 획득했고, 이러한 제품 성능과 신뢰성의 높은 요구사항을 충족하는 고품질 플렉시블 케이블로써 반도체/디스플레이 제조 시설의 엄격한 청결도, 유연성 및 신뢰성 요구사항을 충족할 수 있으므로 생산공정의 효율적이고 안정적인 진행을 보장할 수 있습니다.



웨이퍼 공정



산화 공정



포토 공정



식각 공정



증착, 이온공정



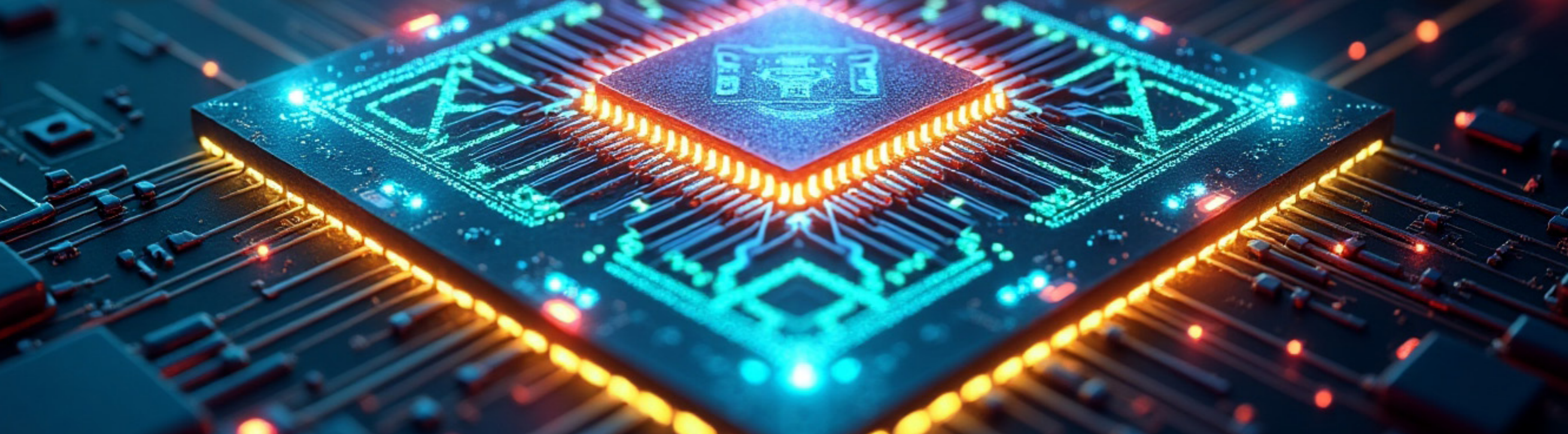
금속배선 공정



EDS 공정



패키징 공정



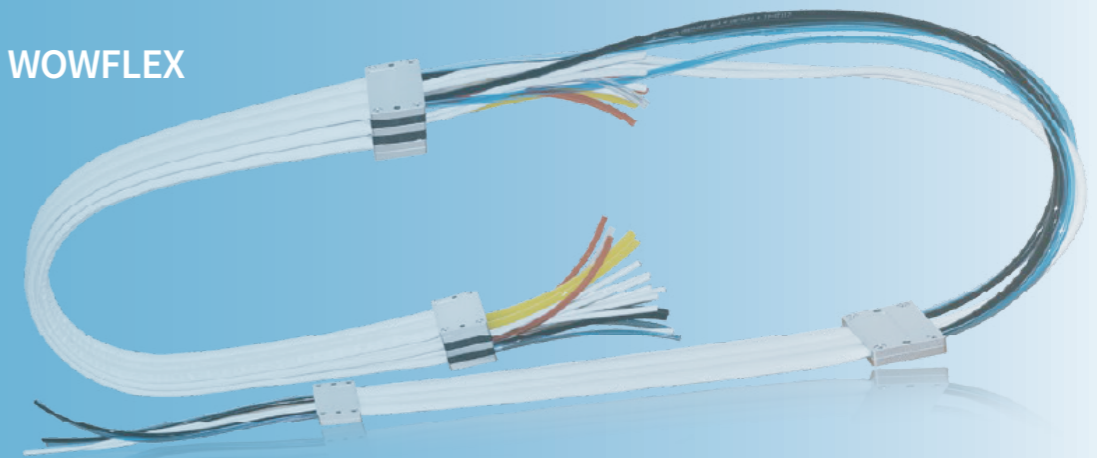
CABLE

- 제어용 케이블 : S 771, S 775C, S 200
- 데이터용 케이블 : SD 771, SD 788 C TP
- 이더넷 케이블 : CAT Line - Cat 5e S, 6A S, 7A S
- 토션용 케이블 : RT-123 D TP, RT-793 D



무빙시스템

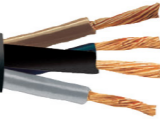
- 무빙 시스템 : WOWFLEX



S 771 / SD 771

가동용 클린룸 케이블 (번호 & 색상식별)

MIERSEN · Thomas Cable SAB Clean S 771 · 4G1,0mm² · CE RoHS



Marking for Thomas Cable SAB Clean S 771 37710410:

SAB BRÜCKSKES · D-VIERSEN · Thomas Cable SAB Clean S 771 · 4G1,0mm² · CE RoHS

· Thomas Cable SAB Clean SD 771 · 14x0,25mm² · CE RoHS



Marking for Thomas Cable SAB Clean SD 771 37711402:

SAB BRÜCKSKES · D-VIERSEN · Thomas Cable SAB Clean SD 771 · 14x0,25mm² · CE RoHS

Construction (구조)

- 도체 : bare copper strands, especially for continuous flexible applications
- 절연체 : TPE
- 선심식별 : SD 771 : with reference to DIN 47100 S 771 : black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, green-yellow earth wire from 3 cores ≤ 4 cores : coloured acc. to HD 308 (VDE 0293-308)
- 연합 : cores twisted with special adjusted layering wrapped with tape over each layer
- 시스 소재 : TPE
- 시스 색상 : Black (RAL 9005)

Characteristics (특징)

- 높은 내마모성 (high abrasion resistance)
- 작은 외경 (small outer diameter)
- 내유성 (oil resistant)

Technical data (기술 데이터)

Peak operating voltage :	SD 771 max. 350 V
Nominal voltage :	S 771 U ₀ /U 300/500 V
Testing voltage :	SD 771 core/core 1,500V S 771 core/core 2,000V
Min. bending radius continuously flexible :	7,5 xd
Temperature range fixed laying :	-40/+70 °C
flexible application :	+5/+70 °C
Fire performance :	flame retardant acc. to I EC 60332-1 -2
Oil resistance :	very good - Oil 60 °C acc. to UL 758
Air cleanliness class 1 :	acc. to DIN EN 14644-1 US Federal Standard 209 E
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-ø ± 10% (mm)	Copper figure (kg/km)	Cable weight (≈ kg/km)	DC resistance at 20 °C (max. Ω/km)
S 771						
37710205	2 x 0,50	0,16	4,5	9,6	27	39,0
37710405	4 G 0,50	0,16	5,1	19,2	40	39,0
37710705	7 G 0,50	0,16	6,5	33,6	66	39,0
37711205	12 G 0,50	0,16	7,8	57,6	97	39,0
37710407	4 G 0,75	0,16	5,8	28,8	53	26,0
37710607	6 x 0,75	0,16	6,9	43,2	77	26,0
37710410	4 G 1,00	0,16	6,0	38,4	63	19,5
37710415	4 G 1,50	0,16	6,7	57,6	83	13,3
37710425	4 G 2,50	0,16	8,1	96,0	129	7,98
37710440	4 G 4,00	0,16	9,8	153,6	196	4,95
37710460	4 G 6,00	0,21	11,4	230,4	288	3,30

Other dimensions and colours are possible on request.

item no.	no. of cores x cross section (n x mm ²)	largest single wire (ø mm)	outer-ø ± 10% (mm)	Copper figure (kg/km)	Cable weight (≈ kg/km)	DC resistance at 20 °C (max. Ω/km)
SD 771						
37710302	3 x 0,25	0,11	4,0	7,2	22	78,0
37710402	4 x 0,25	0,11	4,2	9,6	26	78,0
37710502	5 x 0,25	0,11	4,6	12,0	31	78,0
37710702	7 x 0,25	0,11	5,2	16,8	41	78,0
37711002	10 x 0,25	0,11	6,0	24,0	51	78,0
37711402	14 x 0,25	0,11	6,4	33,6	64	78,0
37711503	15 x 0,34	0,11	7,6	49,5	89	57,4
37711802	18 x 0,25	0,11	7,2	43,2	80	78,0
37712502	25 x 0,25	0,11	8,6	60,0	108	78,0
37710603	6 x 0,34	0,11	5,2	19,8	42	57,4
37710903	9 x 0,34	0,11	6,5	29,7	65	57,4

Other dimensions and colours are possible on request.

S 775 C

가동용 클린룸 차폐 케이블 (번호 & 색상식별)

Thomas Cable SAB Clean S 775 C · 4x1,50mm² · CE RoHS



Marking for Thomas Cable SAB Clean S 775 C 37750415:

SAB BRÜCKSKES · D-VIERSEN · Thomas Cable SAB Clean S 775 C · 4x1,50mm² · CE RoHS

Construction (구조)

- 도체 : bare copper strands, especially for continuous flexible applications
- 절연체 : TPE
- 선심식별 : black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, green-yellow earth wire from 3 cores, ≤ 4 cores : coloured acc. to HD 308 (VDE 0293-308)
- 연합 : cores twisted with special adjusted layering, wrapped with tape
- 차폐 : tinned copper braiding wrapped with tape
- 시스 소재 : TPE
- 시스 색상 : Black (RAL 9005)

Characteristics (특징)

- 높은 내마모성 (high abrasion resistance)
- 작은 외경 (small outer diameter)
- 내유성 (oil resistant)
- 양호한 EMC 특성 (good EMC characteristics)

Technical data (기술 데이터)

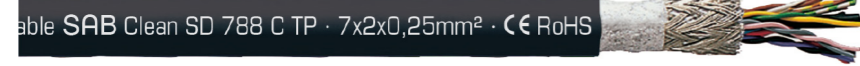
Nominal voltage :	U ₀ /U 300/500 V
Testing voltage :	core/core 2,000V core/screen 2,000V
Min. bending radius continuously flexible :	7,5 x d
Temperature range fixed laying :	-40/+70 °C
flexible application :	+5/+70 °C
Fire performance :	flame retardant acc. to I EC 60332-1 -2
Oil resistance :	very good - Oil 60 °C acc. to UL 758
Air cleanliness class 1 :	acc. to DIN EN 14644-1 US Federal Standard 209 E
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-ø ± 10% (mm)	Copper figure (kg/km)	Cable weight (≈ kg/km)	ohmic resistance at 20 °C (max. Ω/km)
37750405	4 G 0,50	0,16	5,6	34,9	51	39,0
37750407	4 G 0,75	0,16	6,3	46,2	66	26,0
37750415	4 G 1,50	0,16	7,4	78,0	97	13,3
37750425	4 G 2,50	0,16	8,8	122,1	146	7,98
37750440	4 G 4,00	0,16	10,7	200,1	232	4,95

Other dimensions and colours are possible on request.

SD 788 C TP

가동용 클린룸 데이터 차폐 케이블(번호 & 색상식별)



Marking for Thomas Cable **SAB**^{clean} SD 788 C TP 37880725:
SAB BRÖCKSKES · D-VIERSEN · Thomas Cable **SAB** Clean SD 788 C TP · 7x2x0,25mm² · CE RoHS

Construction (구조)

- 도체 : bare copper strands, especially for continuous flexible applications
- 절연체 : TPE
- 선심식별 : with reference to DIN 47100
- 연합 : cores twisted to pairs, pairs twisted with special adjusted layering, wrapped with tape over each layer
- 차폐 : tinned copper braiding wrapped with tape
- 시스 소재 : TPE
- 시스 색상 : Black (RAL 9005)

Characteristics (특징)

- 높은 내마모성 (high abrasion resistance)
- 작은 외경 (small outer diameter)
- 내유성 (oil resistant)
- 양호한 EMC 특성 (good EMC characteristics)

Technical data (기술 데이터)

Peak operating voltage :	max. 350 V
Testing voltage :	core/core 1,500V core/core 1,200V
Min. bending radius Continuously flexible :	7,5 xd
Temperature range fixed laying :	-40/+70 °C
flexible application :	+5/+70 °C
Fire performance :	flame retardant acc. to IEC 60332-1-2
Oil resistance :	very good - Oil 60 °C acc. to UL 758
Air cleanliness class 1 :	acc. to DIN EN 14644-1 US Federal Standard 209 E
Absence of harmful substances :	acc. to RoHS directive of the European Union

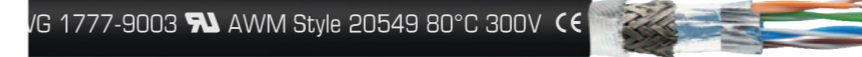
item no.	no. of cores x cross section (n x mm)	largest single wire (ø mm)	outer-ø ± 5% (mm)	Copper figure (kg/km)	Cable weight (≈ kg/km)	ohmic resistance at 20 °C (max. Ω/km)
3788-0214	2 x 2 x 0,14	0,11	4,9	16,5	36	139,3
3788-0314	3 x 2 x 0,14	0,11	5,4	23,3	42	139,3
3788-0414	4 x 2 x 0,14	0,11	6,1	25,7	48	139,3
3788-0225	2 x 2 x 0,25	0,11	5,4	25,1	45	78,0
3788-0325	3 x 2 x 0,25	0,11	6,0	30,6	53	78,0
3788-0425	4 x 2 x 0,25	0,11	6,7	37,0	61	78,0
3788-0525	5 x 2 x 0,25	0,11	7,2	44,4	73	78,0
3788-0625	6 x 2 x 0,25	0,11	7,4	49,4	81	78,0
3788-0725	7 x 2 x 0,25	0,11	8,3	59,6	98	78,0
3788-0825	8 x 2 x 0,25	0,11	9,1	64,9	115	78,0
3788-1025	10 x 2 x 0,25	0,11	9,2	74,6	116	78,0
3788-1225	12 x 2 x 0,25	0,11	10,3	104,1	147	78,0
3788-2525	25 x 2 x 0,25	0,11	13,7	181,9	262	78,0
3788-0234	2 x 2 x 0,34	0,11	5,7	29,1	52	57,4
3788-0334	3 x 2 x 0,34	0,11	6,3	38,4	61	57,4
3788-0434	4 x 2 x 0,34	0,11	7,2	46,8	73	57,4
3788-0250	2 x 2 x 0,50	0,11	6,4	38,0	67	39,0
3788-0350	3 x 2 x 0,50	0,11	7,2	51,0	79	39,0
3788-0450	4 x 2 x 0,50	0,11	8,2	67,6	97	39,0
3788-0850	8 x 2 x 0,50	0,11	11,2	134,0	199	39,0
3788-0275	2 x 2 x 0,75	0,11	7,3	51,1	87	26,0
3788-0375	3 x 2 x 0,75	0,11	8,3	75,8	108	26,0
3788-0475	4 x 2 x 0,75	0,11	9,9	113,8	148	26,0

Other dimensions and colours are possible on request.

Clean CATLine CAT 5e S / 6A S / 7A S

Thomas Cable

클린룸 환경에 적합한 산업용 이더넷 케이블



Marking for **SAB**^{clean} CATLine CAT 7A S 17779003:
SAB BRÖCKSKES · D-VIERSEN · **SAB** Clean **CATLine** Cat. 7A S 4x2x26AWG 1777-9003 **AWM** Style 20549 80°C 300V **CE** RoHS and current meter marking

Construction (구조)

- 도체 : bare copper strands, fine wire
- 절연체 : special polymer
- 선심식별 : white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
- 연합 : Clean CATLine CAT 5e S & 6A S: cores twisted to pairs, pairs screened with foil, pairs together
Clean CATLine CAT 7A S: pairs screened with foil
- 차폐 : Clean CATLine CAT 5e S & 6A S: alu foil and tinned copper braiding
Clean CATLine CAT 7A S: aluminized non-woven tape and tinned copper braiding
- 테이핑 : non-woven tape
- 시스 소재 : TPE
- 시스 색상 : Black (RAL 9005)

Technical data (기술 데이터)

Item number :	1577-9001, 1677-9006, 1777-9003
Peak operating voltage :	max. 90 V
Voltage UL :	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
Temperature range fixed laying :	UL : up to + 80°C -40/+70 °C
flexible application :	-30/+70 °C
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
Characteristic impedance :	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-2-2 / CAT 5e EN 50288-10-2 / CAT 6A EN 50288-9-2 / CAT 7A
Oil resistance :	very good - Oil 60 °C acc. to UL 758
Flexibility :	very good
Air cleanliness class 1 :	acc. to DIN EN ISO 14644-1
UL Style :	20549
Application :	suitable for EtherCAT and EtherNET/IP applications
Absence of harmful substances :	acc. to RoHS directive of the European Union

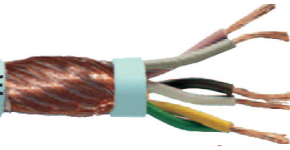
type	item no.	dimension	outer-ø max. (mm)	Copper figure (kg/km)	Cable weight (≈ kg/km)
Clean CATLine CAT 5e S	15779001	4 x 2 x 26 AWG	6,4	31,8	48
Clean CATLine CAT 6A S	16779006	4 x 2 x 26 AWG	6,9	31,8	56
Clean CATLine CAT 7A S	17779003	4 x 2 x 26 AWG	8,9	38,5	85

Other dimensions and colours are possible on request.

RT 123 D TP (B)

클린룸 환경에 적합한 토션 케이블(트위스트 페어타입)

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



Marking for SAB^{clean} RT 123 D TP (B):

SAB BRÖCKSKES · D-VIERSEN · SAB Clean RT 123 D TP (B) AWM Style 20233 80°C 300V CSA AWM I/II A/B 80°C 300V FT1 FT2 CE

Construction (구조)

- 도체 : bare copper strands, extra fine wire, with reference to VDE 0812
- 절연체 : TPE
- 선심식별 : colour code US 2
- 연합 : cores twisted to pairs in specially adjusted layering
- 테이핑 : netting tape, non-woven tape
- 차폐 : wrapped with bare copper wires
- 접지선 : bare copper strands, extra fine wire 0,34 mm²
- 테이핑 : non-woven tape
- 시스 소재 : TPE
- 시스 색상 : Whitegreen (RAL 6019)

Characteristics (특징)

- 견고하고 내구성이 좋음 (rugged and reliable)
- 1m에 걸쳐 최대 ±450°의 비틀림 각도 (torsion angle up to ± 450° over 1m)

Technical data (기술 데이터)

Peak operating voltage :	max. 350 V
Voltage UL/CSA :	300 V
Testing voltage :	core/core 2,000V core/core 2,000V
Torsion angle :	up to ± 450°/1 m
Min. bending radius Continuously flexible :	7,5 xd
Temperature range fixed laying :	DIN VDE UL/CSA : up to + 80°C -50/+70 °C
flexible application :	-40/+70 °C
Air cleanliness class 1 :	acc. to DIN EN ISO 14644-1
Absence of harmful substances :	acc. to RoHS directive of the European Union

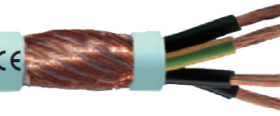
item no.	no. of cores x cross section (n x mm ²)	largest single wire (ø mm)	outer-ø ± 5% (mm)	Copper figure (kg/km)	Cable weight (≈ kg/km)
on request	3 x 2 x 0,34	0,11	7,7	37,7	69
	4 x 2 x 0,34	0,11	8,6	44,5	82

Other dimensions and colours are possible on request.

RT 793 D

클린룸 환경에 적합한 토션 케이블(코어 타입)

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



Marking for SAB^{clean}:

SAB BRÖCKSKES · D-VIERSEN · 4 x 1,5 mm² SAB Clean RT 793 D 16 AWG/4c 37930415

AWM Style 21060 80°C 600V CSA AWM I/II A/B 80°C 600V FT1 FT2 CE

Construction (구조)

- 도체 : bare copper strands acc. to IEC 60228, VDE 0295, class 6
- 절연체 : 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
- 테이핑 : netting tape, non-woven tape
- 차폐 : wrapped with bare copper wires
- 테이핑 : non-woven tape
- 시스 소재 : TPE
- 시스 색상 : Whitegreen (RAL 6019)

Characteristics (특징)

- 견고하고 내구성이 좋음 (rugged and reliable)
- 1m에 걸쳐 최대 ±360°의 비틀림 각도 (torsion angle up to ± 360° over 1m)

Technical data (기술 데이터)

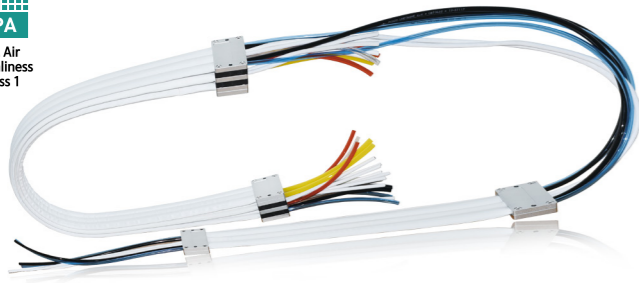
Nominal voltage :	1577-9001, 1677-9006
Voltage UL/CSA :	600 V
Testing voltage :	core/core 3,000 V core/screen 2,000 V
Torsion angle :	up to ± 360°/1 m
Min. bending radius continuously flexible :	7,5 x d
Temperature range fixed laying :	DIN VDE UL/CSA : up to + 80°C -50/+70 °C
flexible application :	-40/+70 °C
Air cleanliness class 1 :	acc. to DIN EN ISO 14644-1
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-ø ± 5% (mm)	Copper figure (kg/km)	Cable weight (≈ kg/km)	ohmic resistance at 20 °C (max. Ω/km)
37930505	5 x 0,50	0,16	8,7	40,3	99	39,0
37930415	4 x 1,50	0,16	9,6	88,3	145	13,3
37931215	12 x 1,50	0,16	14,1	216,4	317	13,3
37930225	2 x 2,50	0,16	9,8	80,7	140	7,98
37930425	4 x 2,50	0,16	11,0	130,9	192	7,98

Other dimensions and colours are possible on request.

WOWFLEX

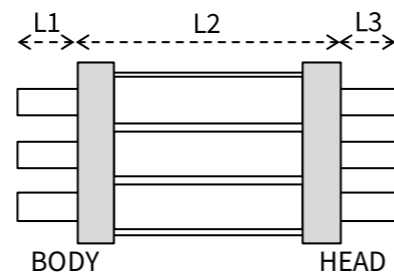
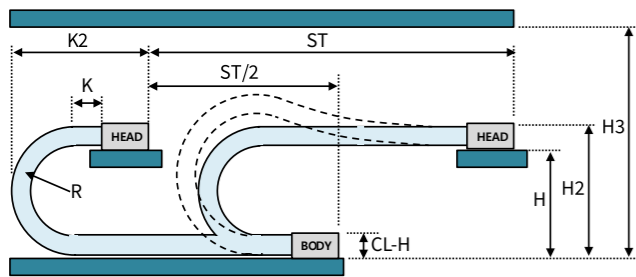
클린룸 무분진 무빙 시스템



Features	Descriptions
Life	1,000만 Cycle 이상
Bending radius	40mm / 70mm
Standard components	1POD ~ 6POD
Inner width	20.5mm
Cable specification	Extra Fine Wire / FEP / Spiral Shield FR-PVC
Temperature range	-15 °C ~ +80 °C
Certification	CE , IPA Air Cleanliness Class 1
Self supportion	Max ST 3000mm

제품사양

• 시스템 설계 기준



ST	ST/2	KR	CL-W	H2	H3	L1	L2	L3	
이동거리	이동거리/2	안전거리	곡률반경	브라켓 폭	최대 설치높이	설치공간높이 (상단간섭)	고정 부 인출 길이	포드 내부 케이블 길이	가동 부 인출 길이

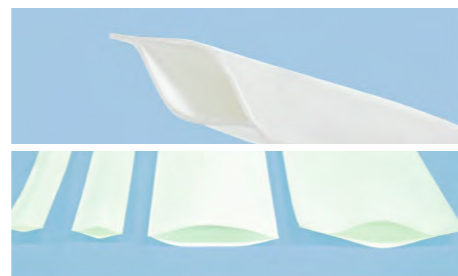
• Standard Pod Solution

Model	구성	Pod 폭	전체 폭
SPS2050-1	1Pod	20.5mm	25.1mm
SPS2050-2	2Pod	20.5mm	47.9mm
SPS2050-3	3Pod	20.5mm	70.7mm
SPS2050-4	4Pod	20.5mm	93.5mm
SPS2050-5	5Pod	20.5mm	116.3mm
SPS2050-6	6Pod	20.5mm	139.1mm



• One Pod Solution

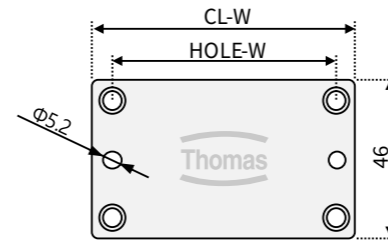
Model	구성	Pod 폭	전체 폭
OPS2030-1	1Pod	30mm	34.6mm
OPS2040-1	1Pod	40mm	44.6mm
OPS2062-1	1Pod	62mm	66.6mm
OPS2082-1	1Pod	82mm	87.6mm
OPS2105-1	1Pod	105mm	109.6mm
OPS2125-1	1Pod	125mm	129.6mm



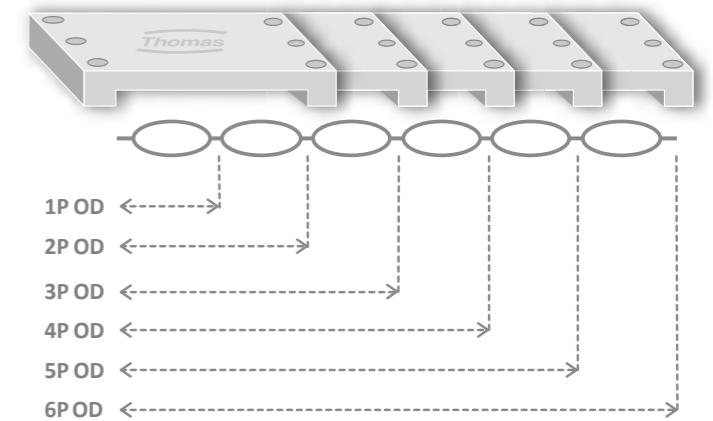
WOWFLEX

클린룸 무분진 무빙 시스템

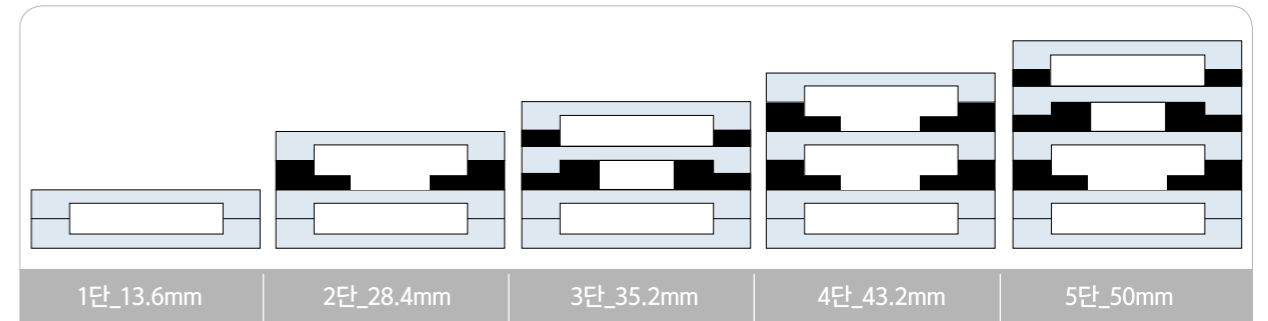
• WOWFLEX Clamp(Bracket)



Clamp Model	CL-W	HOLE-W
CL-2	57.7	47.7
CL-3	76.8	66.8
CL-4	96.0	86.0
CL-5	115.0	105.0
CL-6	134.1	124.1

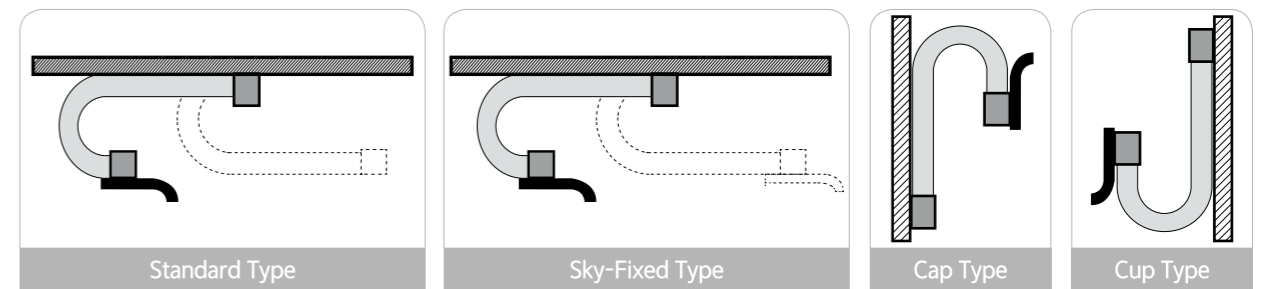


• WOWFLEX Clamp(Bracket) 높이



- 적층 높이(CL-H) 수치는 사양에 따라 달라질 수 있습니다.

• Installation Type



- Standard Type을 제외한 적용 모델의 경우 설계 담당자와 협의

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, TMPU 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, see chapter N „Technical data“

item no.	no. of cores x cross section (n x mm)	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 mm)	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-0 ± 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.



Thomas (주)토마스케이블

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