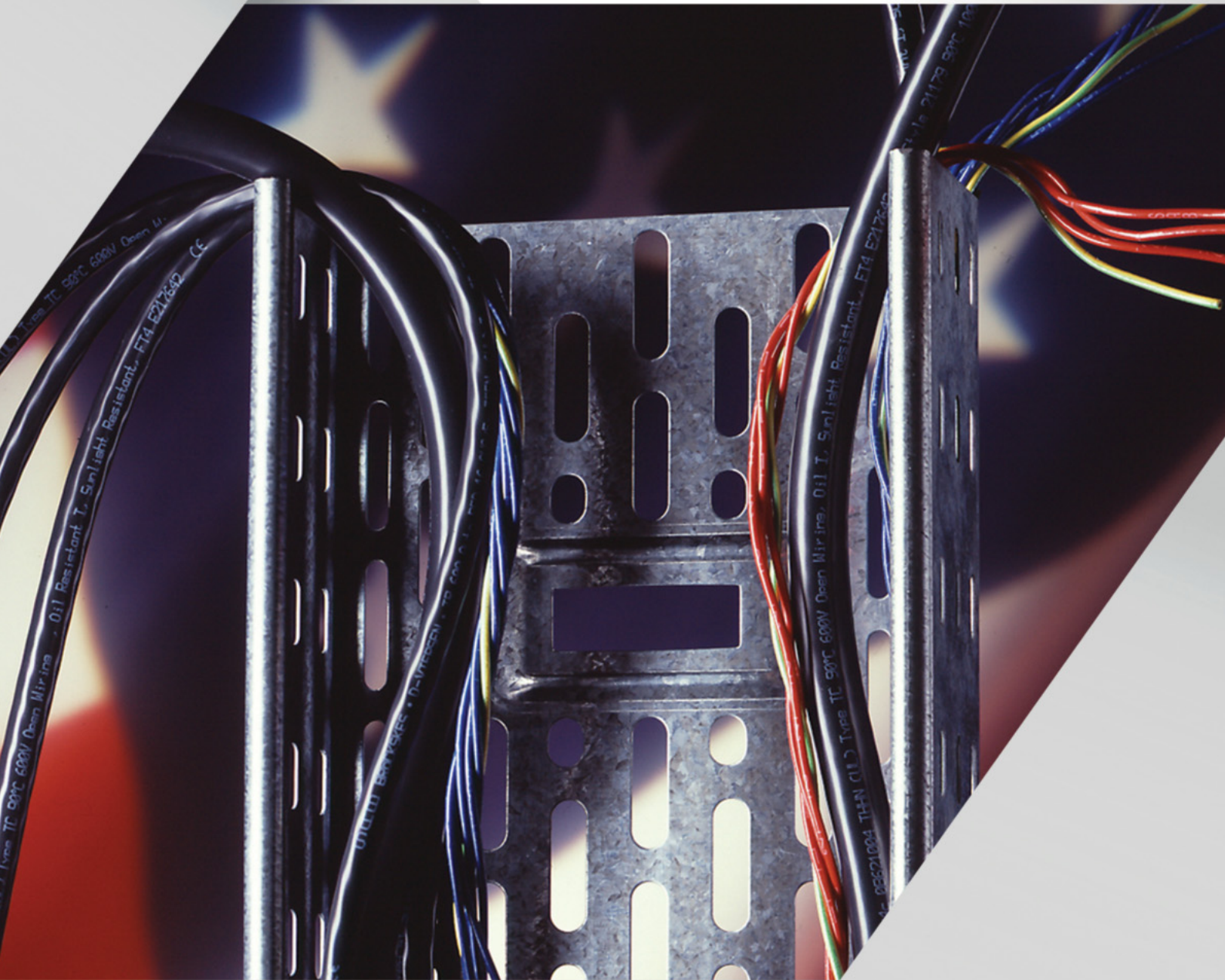
















TRAY CABLES

HH



Tray Cables

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Applications

■ Application of Tray Cable acc. to UL 1277 and Machine-Tool Cable acc. to UL 1063 Application of flexible Power and Control Tray Cable, Type TC, MTW and WTTTC

This special multi-conductor cables shall be permitted for used in power, lighting, control and signal circuits in accordance to the National Electrical Code (NEC), NFPA 70 Article 336. In cable trays, in raceways and in outdoor locations supported by a messenger wire in accordance to Underwriters Laboratories Inc. (UL) Standard of Safety UL 1277. For class I division 2 circuits as permitted in NEC article 501.10 (B) and for class II division 2 circuits as permitted in NEC article 502.10 (B). In industrial establishments where the conditions of maintenance and supervision ensure that only qualified persons service the installation, and where the cables are continuously supported and protected against physical damage using mechanical protection, such as struts, angles or channels. These Tray Cables comply with the crush and impact requirements of Type TC and are identified for such use with the ER marking on the jacket. The cables are for use as exposed runs between a cable tray and the utilization device where the cables are continuously supported and protected against physical damage and are secured at intervals not exceeding 1.8 m (6 feet). Grounding for the utilization equipment shall be provided by an equipment grounding conductor within the cables. This Tray Cables shall also be permitted to be used in wet locations and are resistant to moisture and corrosive agents. Cables that are surface marked „oil resistant I” have a jacket that is for exposure to mineral oil at temperature not in excess of 60 °C (140 °F). Marked with „oil resistant II” they have a jacket that is for exposure to mineral oil at temperatures not in excess of 75 °C (167 °F). The Type TC is flame retardant and self-extinguishing. Also sunlight resistant depending on the jacket colour. The cables listed as MTW can be applied in the NFPA 79 machinery area. MTW cables are specified for use acc. to National Electrical Code (NFPA 70) and acc. to the National Fire Protection Association Electrical Standard for industrial machinery (NFPA 79). Wind turbine power and control cables are intended to be installed in cable trays or raceways within a wind turbine generator.

Exemplary applications:

TR 600 type TC, MTW and WTTTC
TR 600 Auto type TC, MTW and WTTTC
TR 600 CY type TC, MTW and WTTTC
TR 600 CY Lean type TC, MTW and WTTTC
TR 600 Auto CY type TC, MTW and WTTTC
TR 249 type TC and ST00W

Recommended applications are machine tools, control systems assembly lines, CNC machining, grinding machines, bottling equipment, data processing equipment and connections between control panels and machines

Exemplary applications:

TR 600 HD type TC-ER
TR 600 C HD type TC-ER

In hazardous (classified) areas class I, Division 2 per NEC Article 501.4 (B), UL Type TC is in accordance with UL standard 1277 and NEC Article 336

■ You will find further information about the safe application of cables in chapter N

Tray Cables

Selection table

		Cable type	TR 600 black	TR 600 blue	TR 600 red	TR 600 yellow	TR 600 CY black	TR 600 CY blue	TR 600 CY Lean	TR 600 Auto black	TR 600 Auto blue	TR 600 Auto red	TR 600 Auto CY black	TR 600 HD	TR 600 C HD	TR 249
Basic construction	Numbered cores		●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Colour code US 2															●
	Copper screen						●	●	●				●		●	
	Inner sheath						●	●					●		●	
Temperature range	+105 °C		●	●	●	●	●	●	●	●	●	●	●	●	●	●
	+ 90 °C		●	●	●	●	●	●	●	●	●	●	●	●	●	●
	- 25 °C		●	●	●	●	●	●	●	●	●	●	●	●	●	●
	- 40 °C													●	●	
	Cold Bend Test - 40 °C													●	●	
Voltage	Voltage UL-AWM 600 V		●	●	●	●	●	●	●	●	●	●	●	●	●	
	Voltage (UL) / c(UL) 600 V		●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Voltage (UL) WTTTC 1000 V		●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Voltage CSA-AWM 1000 V		●													
	Testing voltage 2000 V													●	●	
	Testing voltage 18-10 AWG 3000 V															●
	Testing voltage 8- 2 AWG 3500 V															●
	Testing voltage 18-10 AWG 6000 V		●	●	●	●	●	●	●	●	●	●	●	●		
Testing voltage 8- 2 AWG 7500 V		●	●	●	●	●	●	●	●	●	●	●	●			
Standards and approvals	Fire performance (UL) FT4		●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Fire performance c(UL) FT1, FT2, FT4		●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Fire performance CSA FT1, FT2		●													
	UL recognized		●	●	●	●	●	●	●	●	●	●	●	●	●	●
	(UL) recognized		●	●	●	●	●	●	●	●	●	●	●	●	●	●
	c(UL)us recognized		●	●	●	●	●	●	●	●	●	●	●	●	●	●
CSA approval		●											●	●		
Characteristics	Oil resistance I		●	●	●	●	●	●	●	●	●	●	●			●
	Oil resistance I + II													●	●	
	Sunlight resistance		●	●	●	●	●	●	●	●	●	●	●			●
	Exposed Runs		●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Direct Burial		●	●	●	●	●	●	●	●	●	●	●			●
	Machinery Area		●	●	●	●	●	●	●	●	●	●	●			●



Tray Cables

TR 600 black Type TC, MTW and WTTC

UV and oil resistant, flexible Tray Cable and Machine-Tool cable with black cores

WTTC
approval

NFPA 79
for industrial machinery

FT1 FT2 FT4 CSA AWM I/II A/B 90°C 1000V FT1 FT2 CE



Marking for TR 600 black 02841612:

SAB BRÖCKSKES · D-VIERSEN · TR 600 black 16 AWG/37c 02841612 TFFN (UL) Type TC-ER 90°C 600V, Oil Resistant I, Sunlight Resistant, Direct Burial, FT4 (UL) WTTC 90°C 1000V (UL) MTW 16 AWG/12c 600V flexing AWM Style 21179 600V c(UL) Type CIC 90°C dry 600V FT1 FT2 FT4 CSA AWM I/II A/B 90°C 1000V FT1 FT2 CE

Construction:

Conductor:	bare copper strands with reference to IEC 60228, VDE 0295 class 5 + UL standard 758 table 5.1 + UL 1581 table 20.1
Insulation:	special formulated PVC/Nylon
Color code:	black cores with consecutive white numbers, green-yellow earth wire from 3 cores
Stranding:	in layers
Sheath material:	special sunlight and oil resistant PVC
Sheath color:	black (RAL 9005)

Technical data:

Voltage	600 V
UL-AWM / (UL) / c(UL):	1000 V
(UL) WTTC / CSA-AWM:	
Testing voltage:	AWG 18-10 = 6000 V AWG 8-2 = 7500 V
Min. bending radius	
<i>fixed laying:</i>	< 12 mm = 3 x d > 12 mm = 4 x d
<i>flexible application:</i>	< 12 mm = 5 x d > 12 mm = 6 x d
Radiation resistance:	8 x 10 ⁷ cJ/kg
Temperature:	UL-AWM: up to +105 °C (UL) / c(UL) / CSA-AWM: up to +90 °C
<i>fixed laying:</i>	-25 °C
Burning characteristics:	(UL) FT4 + c(UL) FT1, FT2, FT4 + CSA FT1, FT2
Oil resistance I:	yes
Sunlight resistance:	yes
Exposed Runs:	yes
Direct Burial:	yes
Machinery Area:	yes
Absence of harmful substances:	acc. to RoHS directive of the European Union see chapter N „Technical Data“

Outstanding features:



- Flexible cable for cable tray use
- Oil resistance
- Sunlight resistance
- NFPA 79 for industrial machinery
- WTTC approval
- WTTC: UL Subject 2277
- TC: UL Standard 1277
- (UL)/(cUL) listed

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
02841803	3 x 18	0,21	7,7	28,8	83
02841804	4 x 18	0,21	8,3	38,4	99
02841805	5 x 18	0,21	9,0	48,0	118
02841807	7 x 18	0,21	9,8	67,2	146
02841809	9 x 18	0,21	11,9	86,4	194
02841812	12 x 18	0,21	12,5	115,2	227
02841816	16 x 18	0,21	14,6	153,6	310
02841818	18 x 18	0,21	15,3	172,8	343
02841819	19 x 18	0,21	15,3	182,4	352
02841825	25 x 18	0,21	18,1	240,0	450
02841827	27 x 18	0,21	18,1	259,2	476
02841837	37 x 18	0,21	20,1	355,2	620
02841850	50 x 18	0,21	24,6	480,0	868
02841603	3 x 16	0,26	8,3	43,2	103
02841604	4 x 16	0,26	9,0	57,6	123
02841605	5 x 16	0,26	9,8	72,0	148
02841607	7 x 16	0,26	10,7	100,8	186
02841608	8 x 16	0,26	12,3	115,2	222
02841609	9 x 16	0,26	13,1	129,6	248
02841612	12 x 16	0,26	14,5	172,8	313
02841616	16 x 16	0,26	16,0	230,4	397
02841618	18 x 16	0,26	16,8	259,2	439
02841619	19 x 16	0,26	16,8	273,6	453
02841625	25 x 16	0,26	19,9	360,0	581
02841627	27 x 16	0,26	19,9	388,8	616
02841637	37 x 16	0,26	23,3	532,8	862
02841641	41 x 16	0,26	25,0	590,4	957

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
02841650	50 x 16	0,26	27,1	720,0	1126
02841661	61 x 16	0,26	28,8	878,4	1336
02841403	3 x 14	0,26	9,2	72,0	138
02841404	4 x 14	0,26	10,0	96,0	168
02841405	5 x 14	0,26	10,9	120,0	202
02841407	7 x 14	0,26	11,9	168,0	258
02841409	9 x 14	0,26	15,4	216,0	362
02841412	12 x 14	0,26	16,1	288,0	434
02841418	18 x 14	0,26	18,8	432,0	613
02841425	25 x 14	0,26	23,5	600,0	878
02841203	3 x 12	0,31	10,5	115,2	194
02841204	4 x 12	0,31	11,4	153,6	238
02841205	5 x 12	0,31	12,5	192,0	289
02841207	7 x 12	0,31	14,4	268,8	394
02841003	3 x 10	0,31	12,4	172,8	279
02841004	4 x 10	0,31	14,2	230,4	366
02841005	5 x 10	0,31	15,6	288,0	443
02841007	7 x 10	0,31	17,0	403,2	573
02840804	4 x 8	0,41	18,1	337,9	579
02840805	5 x 8	0,41	19,9	422,4	716
02840604	4 x 6	0,41	22,8	541,4	908
02840605	5 x 6	0,41	25,1	676,8	1099
02840404	4 x 4	0,41	27,4	844,8	1361
02840405	5 x 4	0,41	30,3	1056,0	1656
02840204	4 x 2	0,41	31,5	1305,6	1928
02840205	5 x 2	0,41	34,9	1632,0	2344

Other dimensions and colours are possible on request.

Tray Cables

TR 600 blue Type TC, MTW and WTTC

UV and oil resistant, flexible Tray Cable and Machine-Tool Cable with blue cores

WTTC approval

NFPA 79 for industrial machinery

179 600V c(UL) Type CIC 90°C dry 600V FT1 FT2 FT4 CE



Marking for TR 600 blue 02861612:

SAB BRÖCKSKES · D-VIERSEN · TR 600 blue 16 AWG/12c 02861612 TFFN (UL) Type TC-ER 90°C 600V, Oil Resistant I, Sunlight Resistant,

Direct Burial, FT4 (UL) WTTC 90°C 1000V (UL) MTW 16 AWG/37c 600V flexing AWM Style 21179 600V c(UL) Type CIC 90°C dry 600V FT1 FT2 FT4 CE

Construction:

Conductor:	bare copper strands with reference to IEC 60228, VDE 0295 class 5 + UL standard 758 table 5.1 + UL 1581 table 20.1
Insulation:	special formulated PVC/Nylon
Color code:	blue cores with numbers, white-blue ground wire and green-yellow earth wire from 3 cores
Stranding:	in layers
Sheath material:	special sunlight and oil resistant PVC
Sheath color:	black (RAL 9005)

Technical data:

Voltage	600 V
UL-AWM / (UL) / c(UL):	1000 V
(UL) WTTC:	
Testing voltage:	AWG 18-10 = 6000 V AWG 8-2 = 7500 V
Min. bending radius	
<i>fixed laying:</i>	< 12 mm = 3 x d > 12 mm = 4 x d
<i>flexible application:</i>	< 12 mm = 5 x d > 12 mm = 6 x d
Radiation resistance:	8 x 10 ⁷ cJ/kg
Temperature:	UL-AWM: up to +105 °C (UL) / c(UL) / CSA-AWM: up to +90 °C
<i>fixed laying:</i>	-25 °C
Burning characteristics:	(UL) FT4 + c(UL) FT1, FT2, FT4 + CSA FT1, FT2
Oil resistance I:	yes
Sunlight resistance:	yes
Exposed Runs:	yes
Direct Burial:	yes
Machinery Area:	yes
Absence of harmful substances:	acc. to RoHS directive of the European Union see chapter N „Technical Data“

Outstanding features:



- Flexible cable for cable tray use
- Oil resistance
- Sunlight resistance
- NFPA 79 for industrial machinery
- WTTC approval
- WTTC: UL Subject 2277
- TC: UL Standard 1277
- (UL)/(cUL) listed

H
6

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
02861803	3 x 18	0,21	7,7	28,8	83
02861804	4 x 18	0,21	8,3	38,4	99
02861805	5 x 18	0,21	9,0	48,0	118
02861807	7 x 18	0,21	9,8	67,2	146
02861809	9 x 18	0,21	11,9	86,4	194
02861812	12 x 18	0,21	12,5	115,2	227
02861816	16 x 18	0,21	14,6	153,6	310
02861818	18 x 18	0,21	15,3	172,8	343
02861819	19 x 18	0,21	15,3	182,4	352
02861825	25 x 18	0,21	18,1	240,0	450
02861827	27 x 18	0,21	18,1	259,2	476
02861837	37 x 18	0,21	20,1	355,2	620
02861850	50 x 18	0,21	24,6	480,0	868
02861603	3 x 16	0,26	8,3	43,2	103
02861604	4 x 16	0,26	9,0	57,6	123
02861605	5 x 16	0,26	9,8	72,0	148
02861607	7 x 16	0,26	10,7	100,8	186
02861608	8 x 16	0,26	12,3	115,2	222
02861609	9 x 16	0,26	13,1	129,6	248
02861612	12 x 16	0,26	14,5	172,8	313
02861616	16 x 16	0,26	16,0	230,4	397
02861618	18 x 16	0,26	16,8	259,2	439
02861619	19 x 16	0,26	16,8	273,6	453
02861625	25 x 16	0,26	19,9	360,0	581
02861627	27 x 16	0,26	19,9	388,8	616
02861637	37 x 16	0,26	23,3	532,8	862
02861641	41 x 16	0,26	25,0	590,4	957

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
02861650	50 x 16	0,26	27,1	720,0	1126
02861661	61 x 16	0,26	28,8	878,4	1336
02861403	3 x 14	0,26	9,2	72,0	138
02861404	4 x 14	0,26	10,0	96,0	168
02861405	5 x 14	0,26	10,9	120,0	202
02861407	7 x 14	0,26	11,9	168,0	258
02861409	9 x 14	0,26	15,4	216,0	362
02861412	12 x 14	0,26	16,1	288,0	434
02861418	18 x 14	0,26	18,8	432,0	613
02861425	25 x 14	0,26	23,5	600,0	878
02861203	3 x 12	0,31	10,5	115,2	194
02861204	4 x 12	0,31	11,4	153,6	238
02861205	5 x 12	0,31	12,5	192,0	289
02861207	7 x 12	0,31	14,4	268,8	394
02861003	3 x 10	0,31	12,4	172,8	279
02861004	4 x 10	0,31	14,2	230,4	366
02861005	5 x 10	0,31	15,6	288,0	443
02861007	7 x 10	0,31	17,0	403,2	573
02860804	4 x 8	0,41	18,1	337,9	579
02860805	5 x 8	0,41	19,9	422,4	716
02860604	4 x 6	0,41	22,8	541,4	908
02860605	5 x 6	0,41	25,1	676,8	1099
02860404	4 x 4	0,41	27,4	844,8	1361
02860405	5 x 4	0,41	30,3	1056,0	1656
02860204	4 x 2	0,41	31,5	1305,6	1928
02860205	5 x 2	0,41	34,9	1632,0	2344

Other dimensions and colours are possible on request.

Tray Cables

TR 600 red Type TC, MTW and WTTC

UV and oil resistant, flexible Tray Cable and Machine-Tool Cable with red cores

WTTC
approval

NFPA 79
for industrial machinery

179 600V c(UL) Type CIC 90°C dry 600V FT1 FT2 FT4 CE



Marking for TR 600 red 02981612:

SAB BRÖCKSKES · D-VIERSEN · TR 600 red 16 AWG/12c 02981612 TFFN (UL) Type TC-ER 90°C 600V, Oil Resistant I, Sunlight Resistant,

Direct Burial, FT4 (UL) WTTC 90°C 1000V (UL) MTW 16 AWG/37c 600V flexing AWM Style 21179 600V c(UL) Type CIC 90°C dry 600V FT1 FT2 FT4 CE

Construction:

Conductor:	bare copper strands with reference to IEC 60228, VDE 0295 class 5 + UL standard 758 table 5.1 + UL 1581 table 20.1
Insulation:	special formulated PVC/Nylon
Color code:	red cores with numbers, white ground wire and green-yellow earth wire from 3 cores
Stranding:	in layers
Sheath material:	special sunlight and oil resistant PVC
Sheath color:	black (RAL 9005)

Technical data:

Voltage	600 V
UL-AWM / (UL) / c(UL):	1000 V
(UL) WTTC:	
Testing voltage:	AWG 18-10 = 6000 V AWG 8-2 = 7500 V
Min. bending radius	
<i>fixed laying:</i>	< 12 mm = 3 x d > 12 mm = 4 x d
<i>flexible application:</i>	< 12 mm = 5 x d > 12 mm = 6 x d
Radiation resistance:	8 x 10 ⁷ cJ/kg
Temperature:	UL-AWM: up to +105 °C (UL) / c(UL) / CSA-AWM: up to +90 °C
<i>fixed laying:</i>	-25 °C
Burning characteristics:	(UL) FT4 + c(UL) FT1, FT2, FT4 + CSA FT1, FT2
Oil resistance I:	yes
Sunlight resistance:	yes
Exposed Runs:	yes
Direct Burial:	yes
Machinery Area:	yes
Absence of harmful substances:	acc. to RoHS directive of the European Union see chapter N „Technical Data“

Outstanding features:



- Flexible cable for cable tray use
- Oil resistance
- Sunlight resistance
- NFPA 79 for industrial machinery
- WTTC approval
- WTTC: UL Subject 2277
- TC: UL Standard 1277
- (UL)/(cUL) listed

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
02981803	3 x 18	0,21	7,7	28,8	83
02981804	4 x 18	0,21	8,3	38,4	99
02981805	5 x 18	0,21	9,0	48,0	118
02981807	7 x 18	0,21	9,8	67,2	146
02981809	9 x 18	0,21	11,9	86,4	194
02981812	12 x 18	0,21	12,5	115,2	227
02981816	16 x 18	0,21	14,6	153,6	310
02981818	18 x 18	0,21	15,3	172,8	343
02981819	19 x 18	0,21	15,3	182,4	352
02981825	25 x 18	0,21	18,1	240,0	450
02981827	27 x 18	0,21	18,1	259,2	476
02981837	37 x 18	0,21	20,1	355,2	620
02981850	50 x 18	0,21	24,6	480,0	868
02981603	3 x 16	0,26	8,3	43,2	103
02981604	4 x 16	0,26	9,0	57,6	123
02981605	5 x 16	0,26	9,8	72,0	148
02981607	7 x 16	0,26	10,7	100,8	186
02981608	8 x 16	0,26	12,3	115,2	222
02981609	9 x 16	0,26	13,1	129,6	248
02981612	12 x 16	0,26	14,5	172,8	313
02981616	16 x 16	0,26	16,0	230,4	397
02981618	18 x 16	0,26	16,8	259,2	439
02981619	19 x 16	0,26	16,8	273,6	453
02981625	25 x 16	0,26	19,9	360,0	581
02981627	27 x 16	0,26	19,9	388,8	616
02981637	37 x 16	0,26	23,3	532,8	862
02981641	41 x 16	0,26	25,0	590,4	957

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
02981650	50 x 16	0,26	27,1	720,0	1126
02981661	61 x 16	0,26	28,8	878,4	1336
02981403	3 x 14	0,26	9,2	72,0	138
02981404	4 x 14	0,26	10,0	96,0	168
02981405	5 x 14	0,26	10,9	120,0	202
02981407	7 x 14	0,26	11,9	168,0	258
02981409	9 x 14	0,26	15,4	216,0	362
02981412	12 x 14	0,26	16,1	288,0	434
02981418	18 x 14	0,26	18,8	432,0	613
02981425	25 x 14	0,26	23,5	600,0	878
02981203	3 x 12	0,31	10,5	115,2	194
02981204	4 x 12	0,31	11,4	153,6	238
02981205	5 x 12	0,31	12,5	192,0	289
02981207	7 x 12	0,31	14,4	268,8	394
02981003	3 x 10	0,31	12,4	172,8	279
02981004	4 x 10	0,31	14,2	230,4	366
02981005	5 x 10	0,31	15,6	288,0	443
02981007	7 x 10	0,31	17,0	403,2	573
02980804	4 x 8	0,41	18,1	337,9	579
02980805	5 x 8	0,41	19,9	422,4	716
02980604	4 x 6	0,41	22,8	541,4	908
02980605	5 x 6	0,41	25,1	676,8	1099
02980404	4 x 4	0,41	27,4	844,8	1361
02980405	5 x 4	0,41	30,3	1056,0	1656
02980204	4 x 2	0,41	31,5	1305,6	1928
02980205	5 x 2	0,41	34,9	1632,0	234

Other dimensions and colours are possible on request.

Tray Cables

TR 600 yellow Type TC, MTW and WTTC

UV and oil resistant, flexible Tray Cable and Machine-Tool Cable with yellow cores

WTTC approval

NFPA 79 for industrial machinery

179 600V c(UL) Type CIC 90°C dry 600V FT1 FT2 FT4 CE



Marking for TR 600 yellow 02901612:

SAB BRÖCKSKES · D-VIERSEN · TR 600 yellow 16 AWG/12c 02901612 TFFN (UL) Type TC-ER 90°C 600V, Oil Resistant I, Sunlight Resistant,

Direct Burial, FT4 (UL) WTTC 90°C 1000V (UL) MTW 16 AWG/37c 600V flexing AWM Style 21179 600V c(UL) Type CIC 90°C dry 600V FT1 FT2 FT4 CE

Construction:

Conductor:	bare copper strands with reference to IEC 60228, VDE 0295 class 5 + UL standard 758 table 5.1 + UL 1581 table 20.1
Insulation:	special formulated PVC/Nylon
Color code:	yellow cores with numbers, white-yellow ground wire and green-yellow earth wire from 3 cores
Stranding:	in layers
Sheath material:	special sunlight and oil resistant PVC
Sheath color:	black (RAL 9005)

Technical data:

Voltage	600 V
UL-AWM / (UL) / c(UL):	1000 V
(UL) WTTC:	
Testing voltage:	AWG 18-10 = 6000 V AWG 8-2 = 7500 V
Min. bending radius	
<i>fixed laying:</i>	< 12 mm = 3 x d > 12 mm = 4 x d
<i>flexible application:</i>	< 12 mm = 5 x d > 12 mm = 6 x d
Radiation resistance:	8 x 10 ⁷ cJ/kg
Temperature:	UL-AWM: up to +105 °C (UL) / c(UL) / CSA-AWM: up to +90 °C
<i>fixed laying:</i>	-25 °C
Burning characteristics:	(UL) FT4 + c(UL) FT1, FT2, FT4 + CSA FT1, FT2
Oil resistance I:	yes
Sunlight resistance:	yes
Exposed Runs:	yes
Direct Burial:	yes
Machinery Area:	yes
Absence of harmful substances:	acc. to RoHS directive of the European Union see chapter N „Technical Data“

Outstanding features:



- Flexible cable for cable tray use
- Oil resistance
- Sunlight resistance
- NFPA 79 for industrial machinery
- WTTC approval
- WTTC: UL Subject 2277
- TC: UL Standard 1277
- (UL)/(cUL) listed

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
02901803	3 x 18	0,21	7,7	28,8	83
02901804	4 x 18	0,21	8,3	38,4	99
02901805	5 x 18	0,21	9,0	48,0	118
02901807	7 x 18	0,21	9,8	67,2	146
02901809	9 x 18	0,21	11,9	86,4	194
02901812	12 x 18	0,21	12,5	115,2	227
02901816	16 x 18	0,21	14,6	153,6	310
02901818	18 x 18	0,21	15,3	172,8	343
02901819	19 x 18	0,21	15,3	182,4	352
02901825	25 x 18	0,21	18,1	240,0	450
02901827	27 x 18	0,21	18,1	259,2	476
02901837	37 x 18	0,21	20,1	355,2	620
02901850	50 x 18	0,21	24,6	480,0	868
02901603	3 x 16	0,26	8,3	43,2	103
02901604	4 x 16	0,26	9,0	57,6	123
02901605	5 x 16	0,26	9,8	72,0	148
02901607	7 x 16	0,26	10,7	100,8	186
02901608	8 x 16	0,26	12,3	115,2	222
02901609	9 x 16	0,26	13,1	129,6	248
02901612	12 x 16	0,26	14,5	172,8	313
02901616	16 x 16	0,26	16,0	230,4	397
02901618	18 x 16	0,26	16,8	259,2	439
02901619	19 x 16	0,26	16,8	273,6	453
02901625	25 x 16	0,26	19,9	360,0	581
02901627	27 x 16	0,26	19,9	388,8	616
02901637	37 x 16	0,26	23,3	532,8	862
02901641	41 x 16	0,26	25,0	590,4	957

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
02901650	50 x 16	0,26	27,1	720,0	1126
02901661	61 x 16	0,26	28,8	878,4	1336
02901403	3 x 14	0,26	9,2	72,0	138
02901404	4 x 14	0,26	10,0	96,0	168
02901405	5 x 14	0,26	10,9	120,0	202
02901407	7 x 14	0,26	11,9	168,0	258
02901409	9 x 14	0,26	15,4	216,0	362
02901412	12 x 14	0,26	16,1	288,0	434
02901418	18 x 14	0,26	18,8	432,0	613
02901425	25 x 14	0,26	23,5	600,0	878
02901203	3 x 12	0,31	10,5	115,2	194
02901204	4 x 12	0,31	11,4	153,6	238
02901205	5 x 12	0,31	12,5	192,0	289
02901207	7 x 12	0,31	14,4	268,8	394
02901003	3 x 10	0,31	12,4	172,8	279
02901004	4 x 10	0,31	14,2	230,4	366
02901005	5 x 10	0,31	15,6	288,0	443
02901007	7 x 10	0,31	17,0	403,2	573
02900804	4 x 8	0,41	18,1	337,9	579
02900805	5 x 8	0,41	19,9	422,4	716
02900604	4 x 6	0,41	22,8	541,4	908
02900605	5 x 6	0,41	25,1	676,8	1099
02900404	4 x 4	0,41	27,4	844,8	1361
02900405	5 x 4	0,41	30,3	1056,0	1656
02900204	4 x 2	0,41	31,5	1305,6	1928
02900205	5 x 2	0,41	34,9	1632,0	2344

Other dimensions and colours are possible on request.

Tray Cables

TR 600 CY black Type TC, MTW and WTTC

UV and oil resistant, flexible Tray Cable and Machine-Tool Cable with black cores and overall copper screen

WTTC approval

NFPA 79 for industrial machinery



Marking for TR 600 CY black 32231612:

SAB BRÖCKSKES · D-VIERSEN · TR 600 CY black 16 AWG/12c 32231612 TFFN (UL) Type TC-ER 90°C 600V, Oil Resistant I, Sunlight Resistant,

Direct Burial, FT4 (UL) WTTC 90°C 1000V (UL) MTW 16 AWG/12c 600V flexing AWM Style 21179 600V c(UL) Type CIC SHIELDED 90°C dry 600V FT1 FT2 FT4 CE

Construction:

Conductor:	bare copper strands with reference to IEC 60228, VDE 0295 class 5 + UL standard 758 table 5.1 + UL 1581 table 20.1
Insulation:	special formulated PVC/Nylon
Color code:	black cores with consecutive white numbers, green-yellow earth wire from 3 cores
Stranding:	in layers
Inner sheath:	special formulated PVC
Screen:	tinned copper braiding
Sheath material:	special sunlight and oil resistant PVC
Sheath color:	black (RAL 9005)

Technical data:

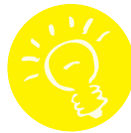
Voltage	600 V
UL-AWM / (UL) / c(UL):	1000 V
(UL) WTTC:	
Testing voltage:	AWG 18-10 = 6000 V AWG 8-2 = 7500 V
Min. bending radius	
<i>fixed laying:</i>	5 x d
<i>flexible application:</i>	10 x d
Radiation resistance:	8 x 10 ⁷ cJ/kg
Temperature:	UL-AWM: up to +105 °C (UL) / c(UL): up to +90 °C
<i>fixed laying:</i>	-25 °C
Burning characteristics:	(UL) FT4 + c(UL) FT1, FT2, FT4
Oil resistance I:	yes
Sunlight resistance:	yes
Exposed Runs:	yes
Direct Burial:	yes
Machinery Area:	yes
Absence of harmful substances:	acc. to RoHS directive of the European Union see chapter N „Technical Data“

Outstanding features:



- Flexible cable for cable tray use
- Oil resistance
- Sunlight resistance
- NFPA 79 for industrial machinery
- WTTC approval
- WTTC: UL Subject 2277
- TC: UL Standard 1277
- (UL)/(cUL) listed

Possible on request:



- also available with blue, red or other color cores

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
32231803	3 x 18	0,21	9,1	52,6	118
32231804	4 x 18	0,21	9,7	64,7	137
32231805	5 x 18	0,21	10,4	77,1	159
32231807	7 x 18	0,21	11,4	115,0	203
32231809	9 x 18	0,21	14,2	146,2	280
32231812	12 x 18	0,21	15,0	201,0	337
32231816	16 x 18	0,21	17,2	263,4	444
32231818	18 x 18	0,21	17,9	283,5	483
32231819	19 x 18	0,21	17,9	293,1	492
32231825	25 x 18	0,21	20,7	366,1	611
32231827	27 x 18	0,21	20,7	385,3	633
32231837	37 x 18	0,21	23,8	496,5	853
32231850	50 x 18	0,21	27,9	654,8	1128
32231603	3 x 16	0,26	9,7	69,5	141
32231604	4 x 16	0,26	10,4	86,7	165
32231605	5 x 16	0,26	11,4	119,8	205
32231607	7 x 16	0,26	12,3	155,2	249
32231608	8 x 16	0,26	14,8	200,8	330
32231609	9 x 16	0,26	15,6	226,7	368
32231612	12 x 16	0,26	17,1	282,5	450
32231616	16 x 16	0,26	18,6	342,0	541
32231618	18 x 16	0,26	19,4	383,2	595
32231619	19 x 16	0,26	19,4	397,6	608
32231625	25 x 16	0,26	23,6	500,9	812
32231627	27 x 16	0,26	23,6	529,7	848
32231637	37 x 16	0,26	26,6	704,3	1113
32231641	41 x 16	0,26	28,3	766,3	1214

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
32231650	50 x 16	0,26	30,4	918,1	1408
32231661	61 x 16	0,26	32,1	1038,0	1637
32231403	3 x 14	0,26	10,6	101,2	180
32231404	4 x 14	0,26	11,6	149,9	229
32231405	5 x 14	0,26	12,5	174,5	266
32231407	7 x 14	0,26	14,2	227,8	348
32231409	9 x 14	0,26	18,0	326,8	504
32231412	12 x 14	0,26	18,7	399,7	579
32231418	18 x 14	0,26	22,5	570,8	842
32231425	25 x 14	0,26	26,8	772,0	1131
32231203	3 x 12	0,31	12,1	169,4	256
32231204	4 x 12	0,31	13,0	213,2	306
32231205	5 x 12	0,31	15,0	277,8	400
32231207	7 x 12	0,31	17,0	367,4	524
32231003	3 x 10	0,31	14,9	258,5	390
32231004	4 x 10	0,31	16,8	328,8	495
32231005	5 x 10	0,31	18,2	399,1	585
32231007	7 x 10	0,31	19,6	527,5	730
32230804	4 x 8	0,41	20,7	464,0	741
32230805	5 x 8	0,41	23,6	563,3	933
32230604	4 x 6	0,41	26,1	711,7	1156
32230605	5 x 6	0,41	28,4	852,9	1365
32230404	4 x 4	0,41	30,7	1044,0	1653
32230405	5 x 4	0,41	33,6	1277,3	1974
32230204	4 x 2	0,41	34,8	1532,4	2261
32230205	5 x 2	0,41	38,2	1879,0	2713

Other dimensions and colours are possible on request.

Tray Cables

TR 600 CY blue Type TC, MTW and WTTC

UV and oil resistant, flexible Tray Cable and Machine-Tool Cable with blue cores and overall copper screen

WTTC approval

NFPA 79 for industrial machinery



Marking for TR 600 CY blue 32211612:

SAB BRÖCKSKES · D-VIERSEN · TR 600 CY blue 16 AWG/12c 32211612 TFFN (UL) Type TC-ER 90°C 600V, Oil Resistant I, Sunlight Resistant, Direct Burial, FT4 (UL) WTTC 90°C 1000V (UL) MTW 16 AWG/12c 600V flexing AWM Style 21179 600V c(UL) Type CIC SHIELDED 90°C dry 600V FT1 FT2 FT4 CE

Construction:

Conductor:	bare copper strands with reference to IEC 60228, VDE 0295 class 5 + UL standard 758 table 5.1 + UL 1581 table 20.1
Insulation:	special formulated PVC/Nylon
Color code:	blue cores with numbers, green-yellow earth wire from 3 cores
Stranding:	in layers
Inner sheath:	special formulated PVC
Screen:	tinned copper braiding
Sheath material:	special sunlight and oil resistant PVC
Sheath color:	black (RAL 9005)

Technical data:

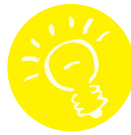
Voltage	600 V
UL-AWM / (UL) / c(UL):	1000 V
(UL) WTTC:	
Testing voltage:	AWG 18-10 = 6000 V AWG 8-2 = 7500 V
Min. bending radius	
fixed laying:	5 x d
flexible application:	10 x d
Radiation resistance:	8 x 10 ⁷ cJ/kg
Temperature:	UL-AWM: up to +105 °C (UL) / c(UL): up to +90 °C
fixed laying:	-25 °C
Burning characteristics:	(UL) FT4 + c(UL) FT1, FT2, FT4
Oil resistance I:	yes
Sunlight resistance:	yes
Exposed Runs:	yes
Direct Burial:	yes
Machinery Area:	yes
Absence of harmful substances:	acc. to RoHS directive of the European Union see chapter N „Technical Data“

Outstanding features:



- Flexible cable for cable tray use
- Oil resistance
- Sunlight resistance
- NFPA 79 for industrial machinery
- WTTC approval
- WTTC: UL Subject 2277
- TC: UL Standard 1277
- (UL)/(cUL) listed

Possible on request:



- also available with black, red or other color cores

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item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
32211803	3 x 18	0,21	9,1	52,6	118
32211804	4 x 18	0,21	9,7	64,7	137
32211805	5 x 18	0,21	10,4	77,1	159
32211807	7 x 18	0,21	11,4	115,0	203
32211809	9 x 18	0,21	14,2	146,2	280
32211812	12 x 18	0,21	15,0	201,0	337
32211816	16 x 18	0,21	17,2	263,4	444
32211818	18 x 18	0,21	17,9	283,5	483
32211819	19 x 18	0,21	17,9	293,1	492
32211825	25 x 18	0,21	20,7	366,1	611
32211827	27 x 18	0,21	20,7	385,3	633
32211837	37 x 18	0,21	23,8	496,5	853
32211850	50 x 18	0,21	27,9	654,8	1128
32211603	3 x 16	0,26	9,7	69,5	141
32211604	4 x 16	0,26	10,4	86,7	165
32211605	5 x 16	0,26	11,4	119,8	205
32211607	7 x 16	0,26	12,3	155,2	249
32211608	8 x 16	0,26	14,8	200,8	330
32211609	9 x 16	0,26	15,6	226,7	368
32211612	12 x 16	0,26	17,1	282,5	450
32211616	16 x 16	0,26	18,6	342,0	541
32211618	18 x 16	0,26	19,4	383,2	595
32211619	19 x 16	0,26	19,4	397,6	608
32211625	25 x 16	0,26	23,6	500,9	812
32211627	27 x 16	0,26	23,6	529,7	848
32211637	37 x 16	0,26	26,6	704,3	1113
32211641	41 x 16	0,26	28,3	766,3	1214

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
32211650	50 x 16	0,26	30,4	918,1	1408
32211661	61 x 16	0,26	32,1	1038,0	1637
32211403	3 x 14	0,26	10,6	101,2	180
32211404	4 x 14	0,26	11,6	149,9	229
32211405	5 x 14	0,26	12,5	174,5	266
32211407	7 x 14	0,26	14,2	227,8	348
32211409	9 x 14	0,26	18,0	326,8	504
32211412	12 x 14	0,26	18,7	399,7	579
32211418	18 x 14	0,26	22,5	570,8	842
32211425	25 x 14	0,26	26,8	772,0	1131
32211203	3 x 12	0,31	12,1	169,4	256
32211204	4 x 12	0,31	13,0	213,2	306
32211205	5 x 12	0,31	15,0	277,8	400
32211207	7 x 12	0,31	17,0	367,4	524
32211003	3 x 10	0,31	14,9	258,5	390
32211004	4 x 10	0,31	16,8	328,8	495
32211005	5 x 10	0,31	18,2	399,1	585
32211007	7 x 10	0,31	19,6	527,5	730
32210804	4 x 8	0,41	20,7	464,0	741
32210805	5 x 8	0,41	23,6	563,3	933
32210604	4 x 6	0,41	26,1	711,7	1156
32210605	5 x 6	0,41	28,4	852,9	1365
32210404	4 x 4	0,41	30,7	1044,0	1653
32210405	5 x 4	0,41	33,6	1277,3	1974
32210204	4 x 2	0,41	34,8	1532,4	2261
32210205	5 x 2	0,41	38,2	1879,0	2713

Other dimensions and colours are possible on request.

Tray Cables

TR 600 CY Lean Type TC, MTW and WTTC

UV and oil resistant, flexible Tray Cable and Machine-Tool Cable with black cores and overall copper screen

WTTC approval

NFPA 79 for industrial machinery

Type CIC SHIELDED 90°C dry 600V FT1 FT2 FT4 CE



Marking for TR 600 CY lean 32241612:

SAB BRÖCKSKES · D-VIERSEN · TR 600 CY Lean 16 AWG/12c 32241612 TFFN (UL) Type TC-ER 90°C 600V, Oil Resistant I, Sunlight Resistant, Direct Burial, FT4 (UL) WTTC 90°C 1000V (UL) MTW 16 AWG/12c 600V flexing AWM Style 21179 600V c(UL) Type CIC SHIELDED 90°C dry 600V FT1 FT2 FT4 CE

Construction:

Conductor:	bare copper strands with reference to IEC 60228, VDE 0295 class 5 + UL standard 758 table 5.1 + UL 1581 table 20.1
Insulation:	special formulated PVC/Nylon
Color code:	black cores with numbers, green-yellow earth wire from 3 cores
Stranding:	in layers
Wrapping:	PETP foil
Screen:	tinned copper braiding
Sheath material:	special sunlight and oil resistant PVC
Sheath color:	black (RAL 9005)

Technical data:

Voltage	600 V
UL-AWM / (UL) / c(UL):	1000 V
(UL) WTTC:	
Testing voltage:	AWG 18-10 = 6000 V AWG 8-2 = 7500 V
Min. bending radius	
<i>fixed laying:</i>	5 x d
<i>flexible application:</i>	10 x d
Radiation resistance:	8 x 10 ⁷ cJ/kg
Temperature:	UL-AWM: up to +105 °C (UL) / c(UL): up to +90 °C
<i>fixed laying:</i>	-25 °C
Burning characteristics:	(UL) FT4 + c(UL) FT1, FT2, FT4
Oil resistance I:	yes
Sunlight resistance:	yes
Exposed Runs:	yes
Direct Burial:	yes
Machinery Area:	yes
Absence of harmful substances:	acc. to RoHS directive of the European Union see chapter N „Technical Data“

Outstanding features:



- Flexible cable for cable tray use
- Oil resistance
- Sunlight resistance
- NFPA 79 for industrial machinery
- WTTC approval
- WTTC: UL Subject 2277
- TC: UL Standard 1277
- (UL)/(cUL) listed

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
32241603	3 x 16	0,26	8,8	66,9	109
32241604	4 x 16	0,26	9,5	83,8	132
32241605	5 x 16	0,26	10,3	101,1	158
32241607	7 x 16	0,26	11,4	148,6	209
32241612	12 x 16	0,26	15,4	269,7	369
32241618	18 x 16	0,26	17,7	369,6	502
32241625	25 x 16	0,26	20,8	486,2	653
32241403	3 x 14	0,26	9,7	98,3	142
32241404	4 x 14	0,26	10,5	125,2	175
32241405	5 x 14	0,26	11,6	173,9	226
32241407	7 x 14	0,26	12,6	222,6	282
32241412	12 x 14	0,26	17,0	386,6	487

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
32241418	18 x 14	0,26	19,7	556,5	685
32241425	25 x 14	0,26	24,4	766,2	974
32241204	4 x 12	0,31	12,1	207,8	256
32241205	5 x 12	0,31	13,2	251,7	311
32241207	7 x 12	0,31	15,3	354,8	435
32241004	4 x 10	0,31	15,1	316,3	405
32241005	5 x 10	0,31	16,5	386,0	490
32241007	7 x 10	0,31	17,9	513,9	617
32240804	4 x 8	0,41	19,0	461,3	619
32240604	4 x 6	0,41	23,7	682,5	932
32240404	4 x 4	0,41	28,3	1020,7	1359
32240204	4 x 2	0,41	32,4	1511,3	1875

Other dimensions and colours are possible on request.

Tray Cables

TR 600 Auto black Type TC, MTW and WTTC

UV and oil resistant, flexible Tray Cable and Machine-Tool Cable with black cores for cable tracks

WTTC approval

NFPA 79 for industrial machinery

high-flex

179 600V c(UL) Type CIC 90°C dry 600V FT1 FT2 FT4 CE



Marking for TR 600 Auto black 32121612:

SAB BRÖCKSKES · D-VIERSEN · TR 600 Auto black 16 AWG/12c 32121625 TFFN (UL) Type TC-ER 90°C 600V, Oil Resistant I, Sunlight Resistant,

Direct Burial, FT4 (UL) WTTC 90°C 1000V (UL) MTW 16 AWG/12c 600V flexing AWM Style 21179 600V c(UL) Type CIC 90°C dry 600V FT1 FT2 FT4 CE

Construction:

Conductor:	bare copper strands with reference to IEC 60228, VDE 0295 class 6
Insulation:	special formulated PVC/Nylon
Color code:	black cores with consecutive white numbers, green-yellow earth wire from 3 cores
Stranding:	in layers
Sheath material:	special sunlight and oil resistant PVC
Sheath color:	black (RAL 9005)

Technical data:

Voltage	600 V
UL-AWM / (UL) / c(UL):	1000 V
(UL) WTTC:	
Testing voltage:	AWG 18-10 = 6000 V AWG 8-2 = 7500 V
Min. bending radius	
<i>fixed laying:</i>	< 12 mm = 3 x d > 12 mm = 4 x d
<i>flexible application:</i>	< 12 mm = 5 x d > 12 mm = 6 x d
<i>continuously flexible:</i>	10 x d
Radiation resistance:	8 x 10 ⁷ cJ/kg
Temperature:	UL-AWM: up to +105 °C (UL) / c(UL): up to +90 °C -25 °C
<i>fixed laying:</i>	
Burning characteristics:	(UL) FT4 + c(UL) FT1, FT2, FT4
Oil resistance I:	yes
Sunlight resistance:	yes
Exposed Runs:	yes
Direct Burial:	yes
Machinery Area:	yes
Absence of harmful substances:	acc. to RoHS directive of the European Union see chapter N „Technical Data“

Outstanding features:



- Flexible cable for cable tray use
- Oil resistance
- Sunlight resistance
- NFPA 79 for industrial machinery
- WTTC approval
- WTTC: UL Subject 2277
- TC: UL Standard 1277
- (UL)/(cUL) listed

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item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
32121803	3 x 18	0,16	7,7	28,8	84
32121804	4 x 18	0,16	8,3	38,4	100
32121805	5 x 18	0,16	9,0	48,0	125
32121807	7 x 18	0,16	10,5	67,2	165
32121809	9 x 18	0,16	11,9	86,4	210
32121812	12 x 18	0,16	12,5	115,2	232
32121816	16 x 18	0,16	14,6	153,6	316
32121818	18 x 18	0,16	15,3	172,8	350
32121819	19 x 18	0,16	16,0	182,4	376
32121825	25 x 18	0,16	18,1	240,0	460
32121603	3 x 16	0,16	8,3	43,2	105
32121604	4 x 16	0,16	9,0	57,6	129
32121605	5 x 16	0,16	9,8	72,0	150
32121607	7 x 16	0,16	11,5	100,8	211
32121608	8 x 16	0,16	12,3	115,2	243

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
32121609	9 x 16	0,16	13,1	129,6	270
32121612	12 x 16	0,16	14,5	172,8	324
32121616	16 x 16	0,16	16,0	230,4	410
32121618	18 x 16	0,16	16,8	259,2	453
32121619	19 x 16	0,16	17,6	273,6	490
32121625	25 x 16	0,16	19,9	360,0	604
32121403	3 x 14	0,16	9,9	72,0	153
32121404	4 x 14	0,16	10,7	96,0	184
32121405	5 x 14	0,16	11,7	120,0	230
32121407	7 x 14	0,16	14,5	168,0	334
32121409	9 x 14	0,16	16,5	216,0	431
32121412	12 x 14	0,16	17,4	288,0	479
32121418	18 x 14	0,16	20,3	432,0	690
32121425	25 x 14	0,16	25,3	600,0	966
32121007	7 x 10	0,21	18,7	369,6	583

Other dimensions and colours are possible on request.

Tray Cables

TR 600 Auto blue Type TC, MTW and WTTC

UV and oil resistant, flexible Tray Cable and Machine-Tool Cable with blue cores for cable tracks

WTTC approval

NFPA 79 for industrial machinery

high-flex

179 600V c(UL) Type CIC 90°C dry 600V FT1 FT2 FT4 CE



Marking for TR 600 Auto blue 32101612

SAB BRÖCKSKES · D-VIERSEN · TR 600 Auto blue 16 AWG/12c 32101612 TFFN (UL) Type TC-ER 90°C 600V, Oil Resistant I, Sunlight Resistant,

Direct Burial, FT4 (UL) WTTC 90°C 1000V (UL) MTW 16 AWG/12c 600V flexing AWM Style 21179 600V c(UL) Type CIC 90°C dry 600V FT1 FT2 FT4 CE

Construction:

Conductor:	bare copper strands with reference to IEC 60228, VDE 0295 class 6
Insulation:	special formulated PVC/Nylon
Color code:	blue cores with numbers, white-blue ground wire and green-yellow earth wire from 3 cores
Stranding:	in layers
Sheath material:	special sunlight and oil resistant PVC
Sheath color:	black (RAL 9005)

Technical data:

Voltage	600 V
UL-AWM / (UL) / c(UL):	1000 V
(UL) WTTC:	
Testing voltage:	AWG 18-10 = 6000 V AWG 8-2 = 7500 V
Min. bending radius	
<i>fixed laying:</i>	< 12 mm = 3 x d > 12 mm = 4 x d
<i>flexible application:</i>	< 12 mm = 5 x d > 12 mm = 6 x d
<i>continuously flexible:</i>	10 x d
Radiation resistance:	8 x 10 ⁷ cJ/kg
Temperature:	UL-AWM: up to +105 °C (UL) / c(UL): up to +90 °C -25 °C
<i>fixed laying:</i>	
Burning characteristics:	(UL) FT4 + c(UL) FT1, FT2, FT4
Oil resistance I:	yes
Sunlight resistance:	yes
Exposed Runs:	yes
Direct Burial:	yes
Machinery Area:	yes
Absence of harmful substances:	acc. to RoHS directive of the European Union see chapter N „Technical Data“

Outstanding features:



- Flexible cable for cable tray use
- Oil resistance
- Sunlight resistance
- NFPA 79 for industrial machinery
- WTTC approval
- WTTC: UL Subject 2277
- TC: UL Standard 1277
- (UL)/(cUL) listed

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
32101803	3 x 18	0,16	7,7	28,8	84
32101804	4 x 18	0,16	8,3	38,4	100
32101805	5 x 18	0,16	9,0	48,0	125
32101807	7 x 18	0,16	10,5	67,2	165
32101809	9 x 18	0,16	11,9	86,4	210
32101812	12 x 18	0,16	12,5	115,2	232
32101816	16 x 18	0,16	14,6	153,6	316
32101818	18 x 18	0,16	15,3	172,8	350
32101819	19 x 18	0,16	16,0	182,4	376
32101825	25 x 18	0,16	18,1	240,0	460
32101603	3 x 16	0,16	8,3	43,2	105
32101604	4 x 16	0,16	9,0	57,6	129
32101605	5 x 16	0,16	9,8	72,0	150
32101607	7 x 16	0,16	11,5	100,8	211
32101608	8 x 16	0,16	12,3	115,2	243

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
32101609	9 x 16	0,16	13,1	129,6	270
32101612	12 x 16	0,16	14,5	172,8	324
32101616	16 x 16	0,16	16,0	230,4	410
32101618	18 x 16	0,16	16,8	259,2	453
32101619	19 x 16	0,16	17,6	273,6	490
32101625	25 x 16	0,16	19,9	360,0	604
32101403	3 x 14	0,16	9,9	72,0	153
32101404	4 x 14	0,16	10,7	96,0	184
32101405	5 x 14	0,16	11,7	120,0	230
32101407	7 x 14	0,16	14,5	168,0	334
32101409	9 x 14	0,16	16,5	216,0	431
32101412	12 x 14	0,16	17,4	288,0	479
32101418	18 x 14	0,16	20,3	432,0	690
32101425	25 x 14	0,16	25,3	600,0	966
32101007	7 x 10	0,21	18,7	369,6	583

Other dimensions and colours are possible on request.

Tray Cables

TR 600 Auto red Type TC, MTW and WTTC

UV and oil resistant, flexible Tray Cable and Machine-Tool Cable with red cores for cable tracks

WTTC approval

NFPA 79 for industrial machinery

high-flex

179 600V c(UL) Type CIC 90°C dry 600V FT1 FT2 FT4 CE



Marking for TR 600 Auto red 32111612:

SAB BRÖCKSKES · D-VIERSEN · TR 600 Auto red 16 AWG/12c 32111625 TFFN (UL) Type TC-ER 90°C 600V, Oil Resistant I, Sunlight Resistant,

Direct Burial, FT4 (UL) WTTC 90°C 1000V (UL) MTW 16 AWG/12c 600V flexing AWM Style 21179 600V c(UL) Type CIC 90°C dry 600V FT1 FT2 FT4 CE

Construction:

Conductor:	bare copper strands with reference to IEC 60228, VDE 0295 class 6
Insulation:	special formulated PVC/Nylon
Color code:	red cores with numbers, white ground wire and green-yellow earth wire from 3 cores
Stranding:	in layers
Sheath material:	special sunlight and oil resistant PVC
Sheath color:	black (RAL 9005)

Technical data:

Voltage	600 V
UL-AWM / (UL) / c(UL):	1000 V
(UL) WTTC:	
Testing voltage:	AWG 18-10 = 6000 V AWG 8-2 = 7500 V
Min. bending radius	
<i>fixed laying:</i>	< 12 mm = 3 x d > 12 mm = 4 x d
<i>flexible application:</i>	< 12 mm = 5 x d > 12 mm = 6 x d
<i>continuously flexible:</i>	10 x d
Radiation resistance:	8 x 10 ⁷ cJ/kg
Temperature:	UL-AWM: up to +105 °C (UL) / c(UL): up to +90 °C -25 °C
<i>fixed laying:</i>	
Burning characteristics:	(UL) FT4 + c(UL) FT1, FT2, FT4
Oil resistance I:	yes
Sunlight resistance:	yes
Exposed Runs:	yes
Direct Burial:	yes
Machinery Area:	yes
Absence of harmful substances:	acc. to RoHS directive of the European Union see chapter N „Technical Data“

Outstanding features:



- Flexible cable for cable tray use
- Oil resistance
- Sunlight resistance
- NFPA 79 for industrial machinery
- WTTC approval
- WTTC: UL Subject 2277
- TC: UL Standard 1277
- (UL)/(cUL) listed

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item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
32111803	3 x 18	0,16	7,7	28,8	84
32111804	4 x 18	0,16	8,3	38,4	100
32111805	5 x 18	0,16	9,0	48,0	125
32111807	7 x 18	0,16	10,5	67,2	165
32111809	9 x 18	0,16	11,9	86,4	210
32111812	12 x 18	0,16	12,5	115,2	232
32111816	16 x 18	0,16	14,6	153,6	316
32111818	18 x 18	0,16	15,3	172,8	350
32111819	19 x 18	0,16	16,0	182,4	376
32111825	25 x 18	0,16	18,1	240,0	460
32111603	3 x 16	0,16	8,3	43,2	105
32111604	4 x 16	0,16	9,0	57,6	129
32111605	5 x 16	0,16	9,8	72,0	150
32111607	7 x 16	0,16	11,5	100,8	211
32111608	8 x 16	0,16	12,3	115,2	243

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
32111609	9 x 16	0,16	13,1	129,6	270
32111612	12 x 16	0,16	14,5	172,8	324
32111616	16 x 16	0,16	16,0	230,4	410
32111618	18 x 16	0,16	16,8	259,2	453
32111619	19 x 16	0,16	17,6	273,6	490
32111625	25 x 16	0,16	19,9	360,0	604
32111403	3 x 14	0,16	9,9	72,0	153
32111404	4 x 14	0,16	10,7	96,0	184
32111405	5 x 14	0,16	11,7	120,0	230
32111407	7 x 14	0,16	14,5	168,0	334
32111409	9 x 14	0,16	16,5	216,0	431
32111412	12 x 14	0,16	17,4	288,0	479
32111418	18 x 14	0,16	20,3	432,0	690
32111425	25 x 14	0,16	25,3	600,0	966
32111007	7 x 10	0,21	18,7	369,6	583

Other dimensions and colours are possible on request.

Tray Cables

TR 600 Auto CY black Type TC, MTW and WTTC

UV and oil resistant, flexible Tray Cable and Machine-Tool Cable with overall copper screen for cable tracks

WTTC approval

NFPA 79 for industrial machinery

high-flex



Marking for TR 600 Auto CY black 32261612:

SAB BRÖCKSKES · D-VIERSEN · TR 600 Auto CY black 16 AWG/12c 32261612 TFFN (UL) Type TC-ER 90°C 600V, Oil Resistant I, Sunlight Resistant, Direct Burial, FT4 (UL) WTTC 90°C 1000V (UL) MTW 16 AWG/12c 600V flexing AWM Style 21179 600V c(UL) Type CIC SHIELDED 90°C dry 600V FT1 FT2 FT4 CE

Construction:

Conductor:	bare copper strands with reference to IEC 60228, VDE 0295 class 6
Insulation:	special formulated PVC/Nylon
Color code:	black cores with consecutive white numbers, green-yellow earth wire from 3 cores. Also available with blue, red or other color cores
Stranding:	in layers
Wrapping:	non-woven tape
Inner sheath:	special formulated PVC
Screen:	tinned copper braiding
Sheath material:	special sunlight and oil resistant PVC
Sheath color:	black (RAL 9005)

Technical data:

Voltage	600 V
UL-AWM / (UL) / c(UL):	1000 V
(UL) WTTC:	
Testing voltage:	AWG 18-10 = 6000 V AWG 8-2 = 7500 V
Min. bending radius	
<i>fixed laying:</i>	5 x d
<i>flexible application:</i>	10 x d
<i>continuously flexible:</i>	12 x d
Radiation resistance:	8 x 10 ⁷ cJ/kg
Temperature:	UL-AWM: (UL) / c(UL): up to +105 °C up to +90 °C <i>fixed laying:</i> -25 °C
Burning characteristics:	(UL) FT4 + c(UL) FT1, FT2, FT4
Oil resistance I:	yes
Sunlight resistance:	yes
Exposed Runs:	yes
Direct Burial:	yes
Machinery Area:	yes
Absence of harmful substances:	acc. to RoHS directive of the European Union see chapter N „Technical Data“

Outstanding features:



- Flexible cable for cable tray use
- Oil resistance
- Sunlight resistance
- NFPA 79 for industrial machinery
- WTTC approval
- WTTC: UL Subject 2277
- TC: UL Standard 1277
- (UL)/(cUL) listed

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
32261803	3 x 18	0,16	8,2	52,6	116
32261804	4 x 18	0,16	9,8	64,7	135
32261805	5 x 18	0,16	10,5	77,2	159
32261807	7 x 18	0,16	12,2	121,5	224
32261809	9 x 18	0,16	14,3	146,3	296
32261812	12 x 18	0,16	15,1	201,1	338
32261816	16 x 18	0,16	17,3	263,5	451
32261818	18 x 18	0,16	18,0	283,6	492
32261819	19 x 18	0,16	18,7	294,1	515
32261825	25 x 18	0,16	20,8	366,2	616
32261603	3 x 16	0,16	9,8	69,5	139
32261604	4 x 16	0,16	10,5	86,8	164
32261605	5 x 16	0,16	11,5	119,9	202
32261607	7 x 16	0,16	13,9	160,5	294
32261608	8 x 16	0,16	14,9	200,9	347

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
32261609	9 x 16	0,16	15,7	226,8	359
32261612	12 x 16	0,16	17,2	282,6	456
32261616	16 x 16	0,16	18,7	342,1	548
32261618	18 x 16	0,16	19,5	383,3	602
32261619	19 x 16	0,16	20,3	399,0	643
32261625	25 x 16	0,16	23,7	501,1	829
32261403	3 x 14	0,16	11,2	119,7	197
32261404	4 x 14	0,16	12,1	150,2	237
32261405	5 x 14	0,16	13,2	179,7	286
32261407	7 x 14	0,16	16,9	266,5	448
32261409	9 x 14	0,16	18,8	327,9	515
32261412	12 x 14	0,16	19,7	412,5	619
32261418	18 x 14	0,16	23,6	572,9	901
32261425	25 x 14	0,16	28,1	775,3	1202
32261207	7 x 12	0,16	18,6	380,1	567

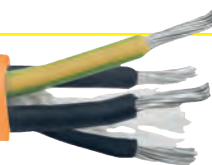
Other dimensions and colours are possible on request.

Tray Cables

TR 600 HD Type TC-ER

Heavy Duty Tray Cable

TC PVC/N 600V FT4 CSA AWM I/II A/B 90C 600V FT4 RoHS CE



Marking for TR 600 HD 32301604:

SAB NORTH AMERICA TR 600 HD 16 AWG 4c P/N 32301604 (UL) TC-ER 90C DRY 75C WET 600V OIL RES I/II SUN RES DIR BUR OR WTTC 1000V OR AWM 21270 105C 600V OR c(UL) CIC-TC PVC/N 600V FT4 CSA AWM I/II A/B 90C 600V FT4 RoHS CE

Construction:

Conductor:	bare copper strands class K
Insulation:	special formulated PVC/Nylon
Color code:	black cores with consecutive white numbers* and green-yellow earth wire *alpha-numeric alternate and inverted, i.e. 1-ONE
Stranding:	in layers
Sheath material:	TPE
Sheath color:	orange (RAL 2003) also available in grey or black

Technical data:

Voltage	600 V
UL-AWM / (UL) / c(UL):	1000 V
(UL) WTTC:	2000 V
Testing voltage:	2000 V
Min. bending radius:	7,5 x d
Temperature:	UL-AWM: up to +105 °C (UL) / c(UL) / CSA-AWM: up to +90 °C
<i>fixed laying:</i>	-40 °C
Cold Bend Test:	-40 °C
Burning characteristics:	(UL) FT4 + c(UL) FT1, FT2, FT4
Oil resistance I & II:	yes
Exposed Runs:	yes
Absence of harmful substances:	acc. to RoHS directive of the European Union see chapter N „Technical Data“

Outstanding features:



- Heavy Duty Tray Cable, Control and Instrumentation Cable
- UL-AWM recognition for +105 °C
- extreme oil resistant
- WTTC approval
- WTTC: UL Subject 2277
- TC: UL Standard 1277
- (UL)/(cUL) listed
- CSA approval
- NFPA 79 2012
- c(UL) CIC-TC FT4

Possible on request:



- with grey or black outer sheath as well as blue or red cores

item no.	dimensions	outer-ø ± 5% mm	cable weight ≈ kg/km
	AWG		
32301803	18/3c	7,6	82
32301804	18/4c	8,2	99
32301805	18/5c	8,9	117
32301807	18/7c	9,6	149
32301812	18/12c	12,2	233
32301818	18/18c	15,1	363
32301825	18/25c	17,4	474
32301603	16/3c	8,2	104
32301604	16/4c	8,8	120
32301605	16/5c	9,6	143
32301607	16/7c	10,5	247
32301612	16/12c	13,4	291
32301618	16/18c	16,4	446
32301625	16/25c	18,9	588
32301403	14/3c	9,2	131
32301404	14/4c	10,1	137
32301407	14/7c	12,0	251
32301412	14/12c	16,4	442

item no.	dimensions	outer-ø ± 5% mm	cable weight ≈ kg/km
	AWG		
32301203	12/3c	10,2	178
32301204	12/4c	11,2	223
32301205	12/5c	12,2	271
32301207	12/7c	13,4	357
32301212	12/12c	18,3	625
32301003	10/3c	12,9	266
32301004	10/4c	15,0	369
32301005	10/5c	16,3	443
32300804	8/4c	19,2	573
32300805	8/5c	21,0	692
32300603	6/3c	19,5	634
32300604	6/4c	22,3	863
32300404	4/4c	26,9	1257
32300405	4/5c	29,9	1541
32300204	2/4c	31,4	1903
32300205	2/5c	34,6	2345
32300104	1/4c	35,6	2390

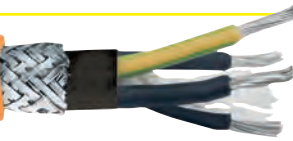
Other dimensions and colours are possible on request.

Tray Cables

TR 600 C HD Type TC-ER

Heavy Duty Tray Cable with overall copper screen

600V FT4 CSA AWM I/II AB SOC 90C 600V FT4 RoHS CE



Marking for TR 600 C HD 32401604:

SAB NORTH AMERICA TR 600 C HD 16 AWG 4c P/N 32401604 (UL) TC-ER 90C DRY 75C WET 600V OIL RES I/II SUN RES DIR BUR OR WTTC 1000V OR AWM 21270 105C 600V OR c(UL) CIC-TC PVC/N 600V FT4 CSA AWM I/II A/B 90C 600V FT4 RoHS CE

Construction:

Conductor:	bare copper strands class K
Insulation:	special formulated PVC/Nylon
Color code:	black cores with consecutive white numbers* and green-yellow earth wire *alpha-numeric alternate and inverted, i.e. 1-ONE
Stranding:	in layers
Inner sheath:	PVC, color black
Screen:	tinned copper braiding
Sheath material:	TPE
Sheath color:	orange (RAL 2003) also available in grey or black

Technical data:

Voltage	600 V
UL-AWM / (UL) / c(UL):	1000 V
(UL) WTTC:	2000 V
Testing voltage:	2000 V
Min. bending radius:	7,5 x d
Temperature:	UL-AWM: up to +105 °C (UL) / c(UL) / CSA-AWM: up to +90 °C
<i>fixed laying:</i>	-40 °C
Cold Bend Test:	-40 °C
Burning characteristics:	(UL) FT4 + c(UL) FT1, FT2, FT4
Oil resistance I & II:	yes
Exposed Runs:	yes
Absence of harmful substances:	acc. to RoHS directive of the European Union see chapter N „Technical Data“

Outstanding features:



- Heavy Duty Tray Cable, Control and Instrumentation Cable
- UL-AWM recognition for +105 °C
- extreme oil resistant
- WTTC approval
- WTTC: UL Subject 2277
- TC: UL Standard 1277
- (UL)/(cUL) listed
- CSA approval
- NFPA 79 2012
- c(UL) CIC-TC FT4

Possible on request:



- with grey or black outer sheath as well as blue or red cores

item no.	dimensions	outer-ø ± 5% mm	cable weight ≈ kg/km
	AWG		
32401803	18/3c	9,7	148
32401804	18/4c	10,4	168
32401805	18/5c	10,9	187
32401807	18/7c	11,6	224
32401812	18/12c	15,1	372
32401818	18/18c	17,6	542
32401825	18/25c	19,7	742
32401603	16/3c	10,3	166
32401604	16/4c	10,5	159
32401605	16/5c	11,7	229
32401607	16/7c	12,4	271
32401612	16/12c	16,3	448
32401618	16/18c	19,1	632
32401625	16/25c	22,4	846
32401403	14/3c	11,4	205
32401404	14/4c	12,2	221
32401407	14/7c	14,8	382
32401204	12/4c	13,3	323
32401205	12/5c	15,2	404
32401004	10/4c	17,7	544
32400804	8/4c	23,6	861
32400604	6/4c	26,0	1180
32400404	4/4c	30,6	1723
32400204	2/4c	35,1	2351
32400104	1/4c	39,3	4192

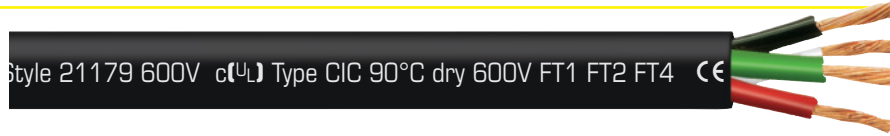
Other dimensions and colours are possible on request.

Tray Cables

NFPA 79
for industrial machinery

TR 249 Type TC and STOOW

UV and oil resistant, flexible Tray Cable with flexible Cord



Marking for TR 249 08491204:

SAB BRÖCKSKES · D-VIERSEN · TR 249 12 AWG/4c 08491004 THW-2 (UL) Type TC-ER 90°C 600V, Oil Resistant I, Sunlight Resistant, Direct Burial, FT4 (UL) STOOW 90°C 600V Oil Resistant I AWM Style 21179 600V c(UL) Type CIC 90°C dry 600V FT1 FT2 FT4 CE

Construction:

Conductor:	bare copper strands with reference to IEC 60228, VDE 0295 class 5 + UL standard 758 table 5.1 + UL 1581 table 20.1
Insulation:	special formulated PVC
Colour code:	acc. to colour code US 2, see chapter N „Technical data“
Stranding:	in layers
Sheath material:	special sunlight and oil resistant PVC
Sheath colour:	black (RAL 9005)

Technical data:

Voltage (UL) / c(UL):	600 V
Testing voltage:	AWG 12-10 = 3000 V AWG 8-2 = 3500 V
Min. bending radius <i>fixed laying:</i>	< 12 mm = 3 x d > 12 mm = 4 x d
<i>flexible application:</i>	< 12 mm = 5 x d > 12 mm = 6 x d
Temperature:	UL-AWM: up to +105°C c(UL): up to +90°C
Burning characteristics:	(UL) FT4 + c(UL) FT1, FT2, FT4
Oil resistance I:	yes
Sunlight resistance:	yes
Exposed Runs:	yes
Direct Burial:	yes
Machinery Area:	yes
Absence of harmful substances:	acc. to RoHS directive of the European Union, see chapter N „Technical data“

Outstanding features:



- Flexible cable for cable tray use
- NFPA 79 for industrial machinery
- (UL)/(cUL) listed

item no.	no. of cores x cross section n x AWG	largest single wire ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
08491806	6 x 18	0,21	13,0	57,6	230
08491807	7 x 18	0,21	13,0	67,2	260
08491808	8 x 18	0,21	14,6	76,8	300
08491603	3 x 16	0,26	10,0	43,2	145
08491203	3 x 12	0,26	15,8	115,2	339
08491204	4 x 12	0,26	17,0	153,6	405

Other dimensions and colours are possible on request.