

SP 199

Filotex®

Type : MTV - BTV

FLEXIBLE SPACE CABLES PTFE INSULATED

These cables are intended for space use and could be manufactured with different control levels :

- AQ, AQR or AQS for Space use or
- P for standard use, out of space field

Electrical Characteristics

- Voltage Rating : 600 V. RMS.
- Voltage Test : - 100 % Impulse test
- Immersion test on sample
- Insulation resistance (500 V = 1 mn) > 5000 MΩ x Km.
from 20°C to 150°C
- Surface resistance (25 mm between Electrodes)
> 125 MΩ x mm
- Braided shield with OFHC SPC - Coverage Factor : > 90%

LINE OF PRODUCTS

MTV/ BTV

MTV BFG

BTV BFG

CONSTRUCTION

Cores :

- ① Stranded conductors OFHC
Silver Plated Copper or
Copper Alloy (30 to 26 AWG)
Silver thickness $\geq 2 \mu\text{m}$.
- ② Extruded PTFE insulation
- ③ Mechanical polyimide coating
Protection wall
thickness 25 μm .

Above cores could be :

- ④ Twisted with or without
an overall polyimide jacket.
(2.5 μm FEP/ 25 μm polyimide/
2.5 μm FEP) Overlap > 50%

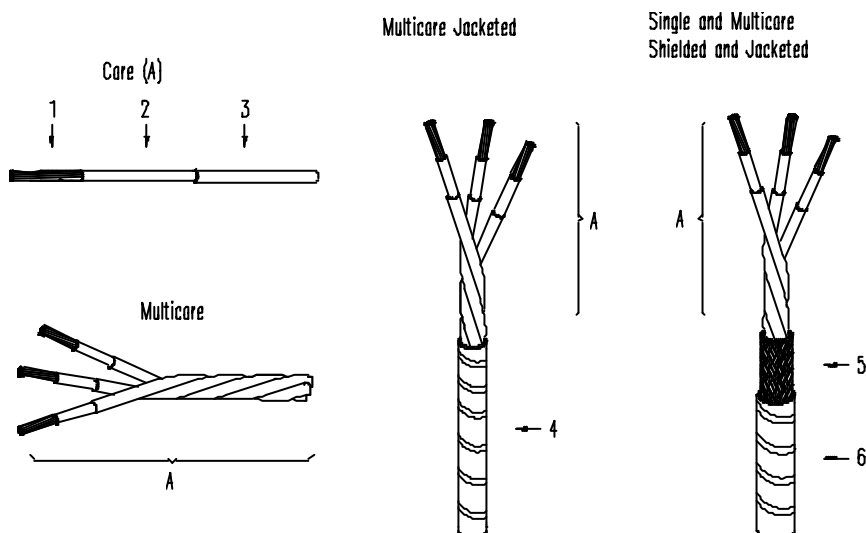
Shielded and jacketed with one or more cores :

- ⑤ Braided shield with OFHC SPC
Silver thickness $\geq 2 \mu\text{m}$
Coverage $\geq 90\%$

Overall jacket :

- ⑥ FEP coated polyimide tape.
(2.5 μm FEP/ 25 μm polyimide/
2.5 μm FEP) Overlap > 50%

Type : MTV / BTV



Thermal Characteristics

- Temperature rating : -100°C at + 200°C (Peak at + 260°C)
- Shrinkage : After 6 Hour at 260°C, Shrinkage < 2 mm.
- Blocking : After 6 Hour at 260°C, No blocking.
- Smoke test (1 Hour at 230°C) : No smoke.
- Cold bend : 4 Hour at - 80°C (On 10 times O.D.)
- Heat ageing : 120 Hour at 250°C.

Physical and Chemical characteristics

- Wall thickness of insulation : 0.18 mm
- Concentricity : > 70%
- Cut-through resistance : > 20 N
- Radiation resistance : No crack, no breakdown under 2 kV after a 1 Mrad radiation dosage.
- Vacuum mass loss : At 200°C on core, Loss < 0.2%.
- Fluids resistance : Solvents, Oils, Hydrocarbons, Skydrol, concentrated acid, Propellant, Dimethylhydrazine (UDMH)

Non Flammable

These cables are Specially designed to be stripped with thermal device in order to avoid any damage on conductor.

Identification Code :

X TV X / XX / XX / X / XX → Level of Control : AQS - AQR - AQ or P

A = Single core.
G = Jacket on shield or assembly
BF = Braided shield.
AWG
Number of Conductors
Type Reference
Conductor : B = Silver plated copper Alloy
M = Silver plated copper

Exemple : BTV / 1 / 26 / BF/ G AQS: Single core 26 AWG Shielded and jacketed with an AQS level of control.

Packaging : (For AQS, AQR and AQ Only)

- Minimum length : 30 m
- Cable cleaned, wound on reels with spool hub at least 70 times the maximum external diameter for single wire and 30 times for multiconductor cable.
- The wires spools are heat-sealed into polyethylene bags with a humidity indicator inside
Ends are sealed with caps and accesible over a length of 10 cm.

AWG	Number of Cond.	CHARACTERISTICS OF CONDUCTORS					SINGLE CORES				JACKETED CABLES				SHIELDED AND JACKETED CABLES				
		Cross Section (mm²)	Construction n x mm	Nom. Dia. (mm)	Max. Dia. (mm)	Ohmic Résist. at 20°C (Ω/Km)	Nexans Reference *	Nom. Dia. (mm)	Max. Dia. (mm)	Max. Weight (g/m)	Nexans Reference *	Nom. Dia. (mm)	Max. Dia. (mm)	Max. Weight (g/m)	Nexans Reference *	Screen strands Dia (mm)	Nom. Dia. (mm)	Max. Dia. (mm)	Max. Weight (g/m)
30	1	0.055	7 X 0.10 S.P.All	0.30	0.32	375	BTV 1/30/A	0.68	0.71	1.2									
28	1	0.10	7 X 0.127 S.P.All	0.38	0.42	215	BTV 1/28/A	0.79	0.82	1.80					BTV 1/28/BF/G	0.055	1.19	1.22	3.77
28	2	"	"	"	"	225	BTV 2/28/A	1.58	1.64	3.80	BTV 2/28/G	1.71	1.92	4.32	BTV 2/28/BF/G	0.07	2.05	2.12	7.62
28	3	"	"	"	"	"	BTV 3/28/A	1.70	1.76	5.70	BTV 3/28/G	1.83	2.04	6.26	BTV 3/28/BF/G	0.07	2.17	2.24	10.7
28	4	"	"	"	"	"	BTV 4/28/A	1.90	1.97	7.55	BTV 4/28/G	2.03	2.25	8.17	BTV 4/28/BF/G	0.07	2.36	2.45	12.8
26	1	0.14	7 X 0.16 S.P.All	0.48	0.50	146	BTV 1/26/A	0.86	0.89	2.30					BTV 1/26/BF/G	0.055	1.27	1.29	4.63
26	2	"	"	"	"	153	BTV 2/26/A	1.72	1.78	4.84	BTV 2/26/G	1.85	2.06	5.28	BTV 2/26/BF/G	0.07	2.20	2.26	9.24
26	3	"	"	"	"	"	BTV 3/26/A	1.85	1.92	7.28	BTV 3/26/G	1.98	2.20	7.80	BTV 3/26/BF/G	0.07	2.33	2.39	12.5
26	4	"	"	"	"	"	BTV 4/26/A	2.06	2.14	9.71	BTV 4/26/G	2.19	2.42	10.3	BTV 4/26/BF/G	0.07	2.55	2.62	15.6
24	1	0.22	7 X 0.20 S.P.C.	0.60	0.62	87.2	MTV 1/24/A	0.98	1.04	3.34					MTV 1/24/BF/G	0.07	1.47	1.52	6.38
24	2	"	"	"	"	91.6	MTV 2/24/A	1.96	2.08	6.90	MTV 2/24/G	2.09	2.36	7.54	MTV 2/24/BF/G	0.07	2.45	2.56	11.7
24	3	"	"	"	"	"	MTV 3/24/A	2.11	2.24	10.3	MTV 3/24/G	2.24	2.52	11.0	MTV 3/24/BF/G	0.07	2.60	2.72	16.0
24	4	"	"	"	"	"	MTV 4/24/A	2.35	2.50	14.0	MTV 4/24/G	2.48	2.78	14.8	MTV 4/24/BF/G	0.07	2.85	2.98	20.5
22	1	0.34	7 X 0.25 S.P.C.	0.75	0.77	55.8	MTV 1/22/A	1.14	1.19	4.84					MTV 1/22/BF/G	0.07	1.62	1.67	8.26
22	2	"	"	"	"	58.7	MTV 2/22/A	2.28	2.38	10.0	MTV 2/22/G	2.41	2.66	10.7	MTV 2/22/BF/G	0.07	2.76	2.86	15.5
22	3	"	"	"	"	"	MTV 3/22/A	2.45	2.56	15.0	MTV 3/22/G	2.58	2.84	15.8	MTV 3/22/BF/G	0.07	2.93	3.04	21.2
22	4	"	"	"	"	"	MTV 4/22/A	2.74	2.86	20.3	MTV 4/22/G	2.87	3.14	21.2	MTV 4/22/BF/G	0.10	3.37	3.49	30.5
20	1	0.60	19 X 0.20 S.P.C.	1.00	1.03	32.2	MTV 1/20/A	1.38	1.44	7.40					MTV 1/20/BF/G	0.07	1.86	1.92	11.4
20	2	"	"	"	"	33.8	MTV 2/20/A	2.76	2.88	15.3	MTV 2/20/G	2.89	3.16	16.2	MTV 2/20/BF/G	0.07	3.24	3.36	21.7
20	3	"	"	"	"	"	MTV 3/20/A	2.97	3.12	23.0	MTV 3/20/G	3.10	3.40	24.0	MTV 3/20/BF/G	0.10	3.60	3.73	33.7
20	4	"	"	"	"	"	MTV 4/20/A	3.31	3.46	31.1	MTV 4/20/G	3.44	3.74	32.2	MTV 4/20/BF/G	0.10	3.94	4.09	43.2
18	1	0.93	19 X 0.25 S.P.C.	1.21	1.29	20.6	MTV 1/18/A	1.77	1.85	12.0					MTV 1/18/BF/G	0.07	2.18	2.26	17.0
18	2	"	"	"	"	21.6	MTV 2/18/A	3.54	3.70	24.9	MTV 2/18/G	3.62	3.83	26.0	MTV 2/18/BF/G	0.10	4.07	4.23	35.5
18	3	"	"	"	"	"	MTV 3/18/A	3.81	3.98	37.3	MTV 3/18/G	3.88	4.13	38.6	MTV 3/18/BF/G	0.10	4.34	4.60	51.0
18	4	"	"	"	"	"	MTV 4/18/A	4.25	4.46	49.7	MTV 4/18/G	4.40	4.59	51.2	MTV 4/18/BF/G	0.10	4.80	5.07	65.9
16	1	1.23	19 X 0.285 S.P.C.	1.38	1.44	16.5	MTV 1/16/A	2.16	2.23	17.0					MTV 1/16/BF/G	0.07	2.57	2.60	22.9
16	2	"	"	"	"	17.3	MTV 2/16/A	4.32	4.46	34.6	MTV 2/16/G	4.4	4.63	35.8	MTV 2/16/BF/G	0.10	4.85	4.98	47.8
16	3	"	"	"	"	"	MTV 3/16/A	4.64	4.80	51.8	MTV 3/16/G	4.72	4.93	53.3	MTV 3/16/BF/G	0.10	5.17	5.41	67.9
16	4	"	"	"	"	"	MTV 4/16/A	5.18	5.37	69.1	MTV 4/16/G	5.34	5.5	70.9	MTV 4/16/BF/G	0.10	5.74	5.97	91.5

S.P.All. = Silver Plated Copper Alloy -- S.P.C. = Silver Plated Copper

Final Production Control : According to ESCC 3901/013

* Add the control level symbol (AQS- AQR- AQ or P).

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NEXANS and ESCC CROSS REFERENCES

NEXANS P/N	ESCC COMPONENT/NUMBER
BTV 1 / 30 / A *	3901 . 013 . 78 *
BTV 1 / 28 / A *	3901 . 013 . 01 *
BTV 1 / 26 / A *	3901 . 013 . 02 *
MTV 1 / 24 / A *	3901 . 013 . 03 *
MTV 1 / 22 / A *	3901 . 013 . 04 *
MTV 1 / 20 / A *	3901 . 013 . 05 *
MTV 1 / 18 / A *	3901 . 013 . 56 *
MTV 1 / 16 / A *	3901 . 013 . 57 *

BTV 2 / 28 / A *	3901 . 013 . 06 *
BTV 2 / 26 / A *	3901 . 013 . 07 *
MTV 2 / 24 / A *	3901 . 013 . 08 *
MTV 2 / 22 / A *	3901 . 013 . 09 *
MTV 2 / 20 / A *	3901 . 013 . 10 *
MTV 2 / 18 / A *	3901 . 013 . 58 *
MTV 2 / 16 / A *	3901 . 013 . 59 *

BTV 3 / 28 / A *	3901 . 013 . 11 *
BTV 3 / 26 / A *	3901 . 013 . 12 *
MTV 3 / 24 / A *	3901 . 013 . 13 *
MTV 3 / 22 / A *	3901 . 013 . 14 *
MTV 3 / 20 / A *	3901 . 013 . 15 *
MTV 3 / 18 / A *	3901 . 013 . 60 *
MTV 3 / 16 / A *	3901 . 013 . 61 *

BTV 4 / 28 / A *	3901 . 013 . 16 *
BTV 4 / 26 / A *	3901 . 013 . 17 *
MTV 4 / 24 / A *	3901 . 013 . 18 *
MTV 4 / 22 / A *	3901 . 013 . 19 *
MTV 4 / 20 / A *	3901 . 013 . 20 *
MTV 4 / 18 / A *	3901 . 013 . 62 *
MTV 4 / 16 / A *	3901 . 013 . 63 *

BTV 2 / 28 / G *	3901 . 013 . 21 *
BTV 2 / 26 / G *	3901 . 013 . 22 *
MTV 2 / 24 / G *	3901 . 013 . 23 *
MTV 2 / 22 / G *	3901 . 013 . 24 *
MTV 2 / 20 / G *	3901 . 013 . 25 *
MTV 2 / 18 / G *	3901 . 013 . 64 *
MTV 2 / 16 / G *	3901 . 013 . 65 *

BTV 3 / 28 / G *	3901 . 013 . 26 *
BTV 3 / 26 / G *	3901 . 013 . 27 *
MTV 3 / 24 / G *	3901 . 013 . 28 *
MTV 3 / 22 / G *	3901 . 013 . 29 *
MTV 3 / 20 / G *	3901 . 013 . 30 *
MTV 3 / 18 / G *	3901 . 013 . 66 *
MTV 3 / 16 / G *	3901 . 013 . 67 *

NEXANS P/N	ESCC COMPONENT/NUMBER
BTV 4 / 28 / G *	3901 . 013 . 31 *
BTV 4 / 26 / G *	3901 . 013 . 32 *
MTV 4 / 24 / G *	3901 . 013 . 33 *
MTV 4 / 22 / G *	3901 . 013 . 34 *
MTV 4 / 20 / G *	3901 . 013 . 35 *
MTV 4 / 18 / G *	3901 . 013 . 68 *
MTV 4 / 16 / G *	3901 . 013 . 69 *

BTV 1 / 28 / BF / G *	3901 . 013 . 36 *
BTV 1 / 26 / BF / G *	3901 . 013 . 37 *
MTV 1 / 24 / BF / G *	3901 . 013 . 38 *
MTV 1 / 22 / BF / G *	3901 . 013 . 39 *
MTV 1 / 20 / BF / G *	3901 . 013 . 40 *
MTV 1 / 18 / BF / G *	3901 . 013 . 70 *
MTV 1 / 16 / BF / G *	3901 . 013 . 71 *

BTV 2 / 28 / BF / G *	3901 . 013 . 41 *
BTV 2 / 26 / BF / G *	3901 . 013 . 42 *
MTV 2 / 24 / BF / G *	3901 . 013 . 43 *
MTV 2 / 22 / BF / G *	3901 . 013 . 44 *
MTV 2 / 20 / BF / G *	3901 . 013 . 45 *
MTV 2 / 18 / BF / G *	3901 . 013 . 72 *
MTV 2 / 16 / BF / G *	3901 . 013 . 73 *

BTV 3 / 28 / BF / G *	3901 . 013 . 46 *
BTV 3 / 26 / BF / G *	3901 . 013 . 47 *
MTV 3 / 24 / BF / G *	3901 . 013 . 48 *
MTV 3 / 22 / BF / G *	3901 . 013 . 49 *
MTV 3 / 20 / BF / G *	3901 . 013 . 50 *
MTV 3 / 18 / BF / G *	3901 . 013 . 74 *
MTV 3 / 16 / BF / G *	3901 . 013 . 75 *

BTV 4 / 28 / BF / G *	3901 . 013 . 51 *
BTV 4 / 26 / BF / G *	3901 . 013 . 52 *
MTV 4 / 24 / BF / G *	3901 . 013 . 53 *
MTV 4 / 22 / BF / G *	3901 . 013 . 54 *
MTV 4 / 20 / BF / G *	3901 . 013 . 55 *
MTV 4 / 18 / BF / G *	3901 . 013 . 76 *
MTV 4 / 16 / BF / G *	3901 . 013 . 77 *

* = The reference shall be completed with a letter or a group of letters indicating the control level

NEXANS	ESCC
AQS	B1
AQR	B2
AQ	B3
P	For orders without any reference to ESCC specification.

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ISSUE	DATE	PAGE	CHANGE
Origin	Nov./71		
A			Page setting change
B	March/75	Title 2-3 4	"D2B" application cancelled 4 conductors added S.P.C. shield added
C	June/78	Title 1-4 4	"Programme Concerto" cancelled Jacketed type added Ribbon shield cancelled
D	June/78	1 1-2 2 2 2 4	OFHC S.P.C.added Quality control levels added Temperature heat ageing changed Thermal life 20 000 h. at 275°C Thermal life 50 000 h. cancelled References added
E	August/78	4 4-5	Single wires characteristics added Pages renumbered
F	June/79	1 5 5	Polyimide tape changed Quality control level ammended AQR level added
H	August/81	2	Previsional thermal life cancelled
I	Sept./83	4-5	16 and 18 AWG added
J	July/86	1	Silver tickness 2.0 µm
K	March/89	4 5	Table ammended 30, 18, and 16 AWG added ESA/SCC Ref. number changed
L	Nov.90	4	28 AWG conductor construction changed 7 x 0.127 instead of 7 x 0.135
M	Jan./98	ALL	New presentation - English version.
N	Jan/00	2	Typing correction
O	Sep/03	3-4	Transfer of the ESA/ SCC System to the ESCC System Ref : QCS/AJG/030508 dated 2003-05-12