

FlexFlame BFOU(i) 150/250(300)V S3/S7 Instr. cable



Fire resistant, flame retardant halogen-free instrumentation cable. Mud resistant

BFOU(i) 150/250(300)V

MGT/EPR/EPR/TCWB/EVA

NEK TS 606 CodeS3/S7

Operating temperature : 90°C
Operating Voltage : 150/250(300)V

Application

Fixed installation for instrumentation, communication, control and alarm systems in both EX (Zone 0, 1 & 2)- and safe areas, emergency and critical systems where requirement for fire resistance exists. Meets the mud resistant requirements in NEK TS 606:2009.

Standards applied

IEC 60092-376 (2003-05)	- Design
IEC 60228 class 2	- Conductor
IEC 60092-360	- Insulation
IEC 60092-360	- Sheath
IEC 60332-1-2	- Flame Retardant
IEC 60332-3-22	- Flame Retardant
IEC 60331-1, -2, -21	- Fire Resistant
IEC 60754-1,2	- Halogen Free
IEC 61034-1,2	- Low Smoke

Construction

	Code Letter	
Conductor		Tinned annealed stranded circular copper (STCC), IEC 60228 class 2
Insulation	B	Mica-tape + EP-rubber, IEC 60092-360 (EPR)
Pair / Triple / Quad twisting		Color coded cores twisted together. Pairs/Triples are screened by copper backed polyester tape with tinned copper drain wire. Each pair/triple is wrapped with polyester tape to prevent electrical contact with adjacent pairs/triples. Pairs/triples are identified by numbered tape or by numbers printed directly on the insulated conductors.
Lay up / Shielding		Individually shielded pairs/triples/quads are laid up in concentric layers and wrapped with a PETP tape.
Inner covering	F	Flame retardant and halogen-free thermoplastic compound
Tape over inner covering		PET tape
Armour/screen	O	Tinned annealed copper wire braid
Tape over armour/screen		PET tape
Outer sheath	U	Flame retardant, halogen-free and mud resistant thermoset compound, SHF2 (IEC 60092-360)
Marking text		Eg. "meter" "year" DRAKA 01 BFOU(i) 250V S3/S7 16 PAIR 0,75 mm ² FLEX - FLAME IEC 60092-376 IEC 60331-1*) or IEC 60331-2*) IEC 60331-21**) IEC 60332-3-22
Manufacturing unit		DRAKA 01 = Draka Norsk Kabel
Outer sheath colour		Grey or Blue

*) IEC 60331-1 for cables with an overall diameter exceeding 20 mm and IEC 60331-2 for cables with an overall diameter not exceeding 20 mm
**) IEC 60331-21 also at enhanced temperature 1000°C for 180 minutes

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Core identification instrumentation cables

Pair - Black - Light Blue

Triple - Black - Light Blue - Brown

Quad - Black - Light Blue - Brown - Grey

Range and dimensions

Number of elements	No of cores in element	Cross section core, mm ²	Conductor Diameter, mm	Insulation Thickness, mm	Thickness Inner covering, mm	Diameter inner covering, mm	Diameter Braid Wire, mm	Mechanical cross-section of the braid, mm ²	Thickness Outer Sheath, mm	Diameter outer sheath, mm	Weight of Cable Approx. (Kg/Km)	Copper content Approx. (kg/km)
1	2	0.75	1.1	0.6	1.1	7.5 ± 0.5	0.2	3.8	1.1	10.5 ± 0.8	200	54
1	2	0.75	1.1	0.6	1.1	7.5 ± 0.5	0.2	3.8	1.1	10.5 ± 0.8	200	54
1	4	0.75	1.1	0.6	1.1	8.5 ± 0.5	0.2	4.5	1.2	12 ± 0.8	250	74
2	2	0.75	1.1	0.6	1.1	11 ± 0.8	0.3	10.2	1.3	14.5 ± 0.8	360	133
2	2	0.75	1.1	0.6	1.1	11 ± 0.8	0.3	10.2	1.3	14.5 ± 0.8	360	133
4	2	0.75	1.1	0.6	1.1	12.5 ± 0.8	0.3	11.9	1.4	16.5 ± 0.8	490	183
4	2	0.75	1.1	0.6	1.1	12.5 ± 0.8	0.3	11.9	1.4	16.5 ± 0.8	490	183
8	2	0.75	1.1	0.6	1.1	17 ± 0.8	0.3	15.3	1.6	21.5 ± 1	780	283
8	2	0.75	1.1	0.6	1.1	17 ± 0.8	0.3	15.3	1.6	21.5 ± 1	780	283
12	2	0.75	1.1	0.6	1.4	20.5 ± 1	0.3	17.8	1.7	25 ± 1	1060	373
12	2	0.75	1.1	0.6	1.4	20.5 ± 1	0.3	17.8	1.7	25 ± 1	1060	373
16	2	0.75	1.1	0.6	1.9	24 ± 1	0.3	20.4	1.8	28.5 ± 1	1400	465
16	2	0.75	1.1	0.6	1.9	24 ± 1	0.3	20.4	1.8	28.5 ± 1	1400	465
19	2	0.75	1.1	0.6	1.9	25 ± 1	0.3	20.4	1.9	29.5 ± 1	1550	514
19	2	0.75	1.1	0.6	1.9	25 ± 1	0.3	20.4	1.9	29.5 ± 1	1550	514
24	2	0.75	1.1	0.6	2.3	30 ± 1.5	0.4	31.7	2.1	35.5 ± 1.5	2100	708
24	2	0.75	1.1	0.6	2.3	30 ± 1.5	0.4	31.7	2.1	35.5 ± 1.5	2100	708
1	3	0.75	1.1	0.6	1.1	8 ± 0.5	0.2	4.5	1.1	11 ± 0.8	220	68
1	3	0.75	1.1	0.6	1.1	8 ± 0.5	0.2	4.5	1.1	11 ± 0.8	220	68
2	3	0.75	1.1	0.6	1.1	12 ± 0.8	0.3	10.2	1.4	15.5 ± 0.8	410	146
2	3	0.75	1.1	0.6	1.1	12 ± 0.8	0.3	10.2	1.4	15.5 ± 0.8	410	146
4	3	0.75	1.1	0.6	1.1	14 ± 0.8	0.3	11.9	1.4	17.5 ± 0.8	570	209
4	3	0.75	1.1	0.6	1.1	14 ± 0.8	0.3	11.9	1.4	17.5 ± 0.8	570	209
8	3	0.75	1.1	0.6	1.1	18.5 ± 0.8	0.3	17.8	1.7	23 ± 1	960	359
8	3	0.75	1.1	0.6	1.1	18.5 ± 0.8	0.3	17.8	1.7	23 ± 1	960	359
12	3	0.75	1.1	0.6	1.4	22.5 ± 1	0.3	20.4	1.8	27.5 ± 1	1310	477
12	3	0.75	1.1	0.6	1.4	22.5 ± 1	0.3	20.4	1.8	27.5 ± 1	1310	477
16	3	0.75	1.1	0.6	2.1	26.5 ± 1	0.3	22.9	1.9	31.5 ± 1.5	1770	594
16	3	0.75	1.1	0.6	2.1	26.5 ± 1	0.3	22.9	1.9	31.5 ± 1.5	1770	594
19	3	0.75	1.1	0.6	2.3	28 ± 1	0.3	22.9	2	33 ± 1.5	2000	663
24	3	0.75	1.1	0.6	2.5	33 ± 1.5	0.4	36.2	2.2	39 ± 1.5	2630	909
24	3	0.75	1.1	0.6	2.5	33 ± 1.5	0.4	36.2	2.2	39 ± 1.5	2630	909
1	2	1.5	1.6	0.7	1.1	9 ± 0.5	0.2	4.5	1.2	12 ± 0.8	260	79
1	2	1.5	1.6	0.7	1.1	9 ± 0.5	0.2	4.5	1.2	12 ± 0.8	260	79
2	2	1.5	1.6	0.7	1.1	13 ± 0.8	0.3	11.9	1.4	17 ± 0.8	470	184
2	2	1.5	1.6	0.7	1.1	13 ± 0.8	0.3	11.9	1.4	17 ± 0.8	470	184
4	2	1.5	1.6	0.7	1.1	15.5 ± 0.8	0.3	13.6	1.5	19.5 ± 0.8	670	269

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Number of elements	No of cores in element	Cross section core, mm ²	Conductor Diameter, mm	Insulation Thickness, mm	Thickness Inner covering, mm	Diameter inner covering, mm	Diameter Braid Wire, mm	Mechanical cross-section of the braid, mm ²	Thickness Outer Sheath, mm	Diameter outer sheath, mm	Weight of Cable Approx. (Kg/Km)	Copper content Approx. (kg/km)
4	2	1.5	1.6	0.7	1.1	15.5 ± 0.8	0.3	13.6	1.5	19.5 ± 0.8	670	269
8	2	1.5	1.6	0.7	1.1	21 ± 1	0.3	17.8	1.7	25.5 ± 1	1090	446
8	2	1.5	1.6	0.7	1.1	21 ± 1	0.3	17.8	1.7	25.5 ± 1	1090	446
12	2	1.5	1.6	0.7	1.4	25.5 ± 1	0.3	20.4	1.9	30.5 ± 1.5	1530	606
12	2	1.5	1.6	0.7	1.4	25.5 ± 1	0.3	20.4	1.9	30.5 ± 1.5	1530	606
16	2	1.5	1.6	0.7	2.1	30 ± 1.5	0.3	22.9	2	35 ± 1.5	2060	766
16	2	1.5	1.6	0.7	2.1	30 ± 1.5	0.3	22.9	2	35 ± 1.5	2060	766
19	2	1.5	1.6	0.7	2.1	31 ± 1.5	0.4	36.2	2.1	36.5 ± 1.5	2440	998
24	2	1.5	1.6	0.7	2.3	36.5 ± 1.5	0.4	40.7	2.3	43 ± 2	3080	1211
24	2	1.5	1.6	0.7	2.3	36.5 ± 1.5	0.4	40.7	2.3	43 ± 2	3080	1211
1	3	1.5	1.6	0.7	1.1	9.5 ± 0.5	0.2	4.5	1.2	12.5 ± 0.8	290	93
1	3	1.5	1.6	0.7	1.1	9.5 ± 0.5	0.2	4.5	1.2	12.5 ± 0.8	290	93
2	3	1.5	1.6	0.7	1.1	14.5 ± 0.8	0.3	11.9	1.5	18.5 ± 0.8	550	213
2	3	1.5	1.6	0.7	1.1	14.5 ± 0.8	0.3	11.9	1.5	18.5 ± 0.8	550	213
4	3	1.5	1.6	0.7	1.1	17 ± 0.8	0.3	15.3	1.6	21 ± 1	820	342
4	3	1.5	1.6	0.7	1.1	17 ± 0.8	0.3	15.3	1.6	21 ± 1	820	342
8	3	1.5	1.6	0.7	1.1	22.5 ± 1	0.3	20.4	1.8	27 ± 1	1370	584
8	3	1.5	1.6	0.7	1.1	22.5 ± 1	0.3	20.4	1.8	27 ± 1	1370	584
12	3	1.5	1.6	0.7	1.6	28.5 ± 1	0.3	22.9	2	33.5 ± 1.5	1970	802
12	3	1.5	1.6	0.7	1.6	28.5 ± 1	0.3	22.9	2	33.5 ± 1.5	1970	802
16	3	1.5	1.6	0.9	2.3	36.5 ± 1.5	0.4	36.2	2.2	42.5 ± 2	3060	1125
16	3	1.5	1.6	0.9	2.3	36.5 ± 1.5	0.4	36.2	2.2	42.5 ± 2	3060	1125
24	3	1.5	1.6	0.9	2.7	45.5 ± 2	0.4	45.2	2.5	52 ± 2.5	4400	1598
24	3	1.5	1.6	0.9	2.7	45.5 ± 2	0.4	45.2	2.5	52 ± 2.5	4400	1598
1	2	2.5	2	0.7	1.1	9.5 ± 0.5	0.2	4.5	1.2	13 ± 0.8	300	99
1	2	2.5	2	0.7	1.1	9.5 ± 0.5	0.2	4.5	1.2	13 ± 0.8	300	99
2	2	2.5	2	0.7	1.1	14.5 ± 0.8	0.3	11.9	1.5	18.5 ± 0.8	560	225
4	2	2.5	2	0.7	1.1	17 ± 0.8	0.3	15.3	1.6	21.5 ± 1	830	367
8	2	2.5	2	0.7	1.1	23.5 ± 1	0.3	20.4	1.8	28 ± 1	1390	633
12	2	2.5	2	0.7	2.3	30 ± 1.5	0.3	22.9	2	35.5 ± 1.5	2170	874
16	2	2.5	2	0.9	2.3	36.5 ± 1.5	0.4	36.2	2.2	42.5 ± 2	3040	1222
1	3	2.5	2	0.7	1.1	10.5 ± 0.8	0.2	5.3	1.2	13.5 ± 0.8	350	129
8	3	2.5	2	0.7	1.3	25.5 ± 1	0.3	22.9	2	30.5 ± 1.5	1820	844
12	3	2.5	2	0.7	2.6	33.5 ± 1.5	0.4	36.2	2.2	39.5 ± 1.5	2940	1284

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Electrical values instrumentation cables

Type	Capacitance, approx. (nF/km)	Inductance, approx. (mH/km)	Resistance at 20°C, max. (Ohm/km)	L/R ratio, (microH/Ohm)
Shielded pair 0,75 mm ²	110	0,67	26,3	12,7
Shielded triple 0,75 mm ²	110	0,67	26,3	12,7
Shielded pair 1,5 mm ²	125	0,63	12,9	24,4
Shielded triple 1,5 mm ²	125	0,63	12,9	24,4
Shielded pair 2,5 mm ²	145	0,59	8,02	36,8
Shielded triple 2,5 mm ²	145	0,59	8,02	36,8
Shielded 16 and 24 triple 1,5 mm ²	105	0,71	12,9	24,4
Shielded 16 pair 2,5 mm ²	110	0,66	8,02	41,1

Ordering information

New Part number	Old Part number	Description	Sheath Colour	Stock item	EAN No. DNK	EL No.
20110623		BFOU(I) 1PAIR 0.75mm ² S3/S7	GREY	Yes	7021528932003	1043820
20110624		BFOU(I) 1PAIR 0.75mm ² S3/S7	BLUE	Yes	7021528932010	1043819
20110625		BFOU(I) 1QUAD 0.75mm ² S3/S7	GREY	-	7021528932034	-
20110626		BFOU(I) 2PAIR 0.75mm ² S3/S7	GREY	Yes	7021528932065	1044020
20104969		BFOU(I) 2PAIR 0.75mm ² S3/S7	BLUE	Yes	7021528932072	1044019
20110627		BFOU(I) 4PAIR 0.75mm ² S3/S7	GREY	Yes	7021528932188	1044021
20110628		BFOU(I) 4PAIR 0.75mm ² S3/S7	BLUE	-	7021528932195	1044022
20109496		BFOU(I) 8PAIR 0.75mm ² S3/S7	GREY	Yes	7021528932300	1044028
20110773		BFOU(I) 8PAIR 0.75mm ² S3/S7	BLUE	-	7021528932317	1044029
20110629		BFOU(I) 12PAIR 0.75mm ² S3/S7	GREY	-	7021528932362	1044030
20110630		BFOU(I) 12PAIR 0.75mm ² S3/S7	BLUE	-	7021528932379	1044031
20110631		BFOU(I) 16PAIR 0.75mm ² S3/S7	GREY	Yes	7021528932423	1044033
20110632		BFOU(I) 16PAIR 0.75mm ² S3/S7	BLUE	-	7021528932430	1044034
	893245	BFOU(I) 19PAIR 0.75mm ² S3/S7	GREY	-	7021528932454	-
	893246	BFOU(I) 19PAIR 0.75mm ² S3/S7	BLUE	-	7021528932461	-
20110633		BFOU(I) 24PAIR 0.75mm ² S3/S7	GREY	-	7021528932485	1044036
	893249	BFOU(I) 24PAIR 0.75mm ² S3/S7	BLUE	-	7021528932492	1044037
20110634		BFOU(I) 1TRIP 0.75mm ² S3/S7	GREY	Yes	7021528932607	1043920
20110635		BFOU(I) 1TRIP 0.75mm ² S3/S7	BLUE	-	7021528932614	1043919
20110636		BFOU(I) 2TRIP 0.75mm ² S3/S7	GREY	-	7021528932669	1044121
20110864		BFOU(I) 2TRIP 0.75mm ² S3/S7	BLUE	-	7021528932676	1044122
20111212		BFOU(I) 4TRIP 0.75mm ² S3/S7	GREY	-	7021528932782	1044123
20110865		BFOU(I) 4TRIP 0.75mm ² S3/S7	BLUE	-	7021528932799	1044124
20110637		BFOU(I) 8TRIP 0.75mm ² S3/S7	GREY	-	7021528932904	1044128
20112240		BFOU(I) 8TRIP 0.75mm ² S3/S7	BLUE	-	7021528932911	1044129
20110878		BFOU(I) 12TRIP 0.75mm ² S3/S7	GREY	-	7021528932966	1044130
	893297	BFOU(I) 12TRIP 0.75mm ² S3/S7	BLUE	-	7021528932973	1044131
20110774		BFOU(I) 16TRIP 0.75mm ² S3/S7	GREY	-	7021528933024	1044132
	893303	BFOU(I) 16TRIP 0.75mm ² S3/S7	BLUE	-	7021528933031	-
	893305	BFOU(I) 19TRIP 0.75mm ² S3/S7	GREY	-	7021528933055	-
20131938		BFOU(I) 24TRIP 0.75mm ² S3/S7	GREY	-	7021528933086	1044138
	893309	BFOU(I) 24TRIP 0.75mm ² S3/S7	BLUE	-	7021528933093	1044139
20110638		BFOU(I) 1PAIR 1.5mm ² S3/S7	GREY	Yes	7021528934007	1043860
20110639		BFOU(I) 1PAIR 1.5mm ² S3/S7	BLUE	Yes	7021528934014	1043859
20110640		BFOU(I) 2PAIR 1.5mm ² S3/S7	GREY	Yes	7021528934069	1044060
20111213		BFOU(I) 2PAIR 1.5mm ² S3/S7	BLUE	-	7021528934076	1044061
20110641		BFOU(I) 4PAIR 1.5mm ² S3/S7	GREY	Yes	7021528934182	1044063
20110642		BFOU(I) 4PAIR 1.5mm ² S3/S7	BLUE	-	7021528934199	1044064
20110643		BFOU(I) 8PAIR 1.5mm ² S3/S7	GREY	Yes	7021528934304	1044068
20110644		BFOU(I) 8PAIR 1.5mm ² S3/S7	BLUE	-	7021528934311	1044069
20110645		BFOU(I) 12PAIR 1.5mm ² S3/S7	GREY	Yes	7021528934366	1044070
20110646		BFOU(I) 12PAIR 1.5mm ² S3/S7	BLUE	-	7021528934373	1044071
20109497		BFOU(I) 16PAIR 1.5mm ² S3/S7	GREY	Yes	7021528934427	1044073
20109498		BFOU(I) 16PAIR 1.5mm ² S3/S7	BLUE	-	7021528934434	1044074
	893445	BFOU(I) 19PAIR 1.5mm ² S3/S7	GREY	-	7021528934458	-
20109499		BFOU(I) 24PAIR 1.5mm ² S3/S7	GREY	Yes	7021528934489	1044076
20109500		BFOU(I) 24PAIR 1.5mm ² S3/S7	BLUE	-	7021528934496	-
20110647		BFOU(I) 1TRIP 1.5mm ² S3/S7	GREY	Yes	7021528934601	1044170

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New Part number	Old Part number	Description	Sheath Colour	Stock item	EAN No. DNK	EL No.
20110648		BFOU(I) 1TRIP 1.5mm ² S3/S7	BLUE	-	7021528934618	1044169
20110866		BFOU(I) 2TRIP 1.5mm ² S3/S7	GREY	-	7021528934663	1044171
	893467	BFOU(I) 2TRIP 1.5mm ² S3/S7	BLUE	-	7021528934670	-
20109501		BFOU(I) 4TRIP 1.5mm ² S3/S7	GREY	-	7021528934786	1044173
20117428		BFOU(I) 4TRIP 1.5mm ² S3/S7	BLUE	-	7021528934793	1044174
20110649		BFOU(I) 8TRIP 1.5mm ² S3/S7	GREY	-	7021528934908	1044177
20117424		BFOU(I) 8TRIP 1.5mm ² S3/S7	BLUE	-	7021528934915	1044178
20109502		BFOU(I) 12TRIP 1.5mm ² S3/S7	GREY	-	7021528934960	1044179
	893497	BFOU(I) 12TRIP 1.5mm ² S3/S7	BLUE	-	7021528934977	1044180
20109503		BFOU(I) 16TRIP 1.5mm ² S3/S7	GREY	-	7021528935028	1044181
	893503	BFOU(I) 16TRIP 1.5mm ² S3/S7	BLUE	-	7021528935035	1044182
	893508	BFOU(I) 24TRIP 1.5mm ² S3/S7	GREY	-	7021528935080	1044193
	893509	BFOU(I) 24TRIP 1.5mm ² S3/S7	BLUE	-	7021528935097	1044194
20110650		BFOU(I) 1PAIR 2.5mm ² S3/S7	GREY	Yes	7021528936001	1044140
20110867		BFOU(I) 1PAIR 2.5mm ² S3/S7	BLUE	-	7021528936018	-
	893606	BFOU(I) 2PAIR 2.5mm ² S3/S7	GREY	-	7021528936063	-
20110868		BFOU(I) 4PAIR 2.5mm ² S3/S7	GREY	-	7021528936186	-
	893630	BFOU(I) 8PAIR 2.5mm ² S3/S7	GREY	-	7021528936308	-
	893636	BFOU(I) 12PAIR 2.5mm ² S3/S7	GREY	-	7021528936360	-
20109504		BFOU(I) 16PAIR 2.5mm ² S3/S7	GREY	-	7021528936421	-
20110869		BFOU(I) 1TRIP 2.5mm ² S3/S7	GREY	-	7021528936605	-
	893690	BFOU(I) 8TRIP 2.5mm ² S3/S7	GREY	-	7021528936902	-
	893696	BFOU(I) 12TRIP 2.5mm ² S3/S7	GREY	-	7021528936964	-

Installation recommendations

Minimum Bending Radius during Installation	Minimum Bending Radius Fixed Installed	Maximum Tensile Load During Installation	Minimum Installation Temperature
8 x D	6 x D	50 N /mm ²	-20°C