

## ARCTIC GRADE Fire resistant, instrumentation cable BFOU(i) 150/250(300)V, S3/S7



Fire resistant, flame retardant halogen-free instrumentation cable. Oil & Mud resistant. Cold bend / Cold impact resistant

# BFOU(i) 150/250(300)V

MGT/EPR/EPR/TCWB/EVA

NEK TS 606 CodeS3/S7 Arctic Grade

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

### Application

Fixed installation for instrumentation, communication, control and alarm systems in both EX- and safe areas, emergency and critical systems where requirement for fire resistance exists. Meets the OIL & MUD resistance requirement in NEK TS 606:2009. Meets the cold bend / cold impact requirement in CSA 22.2 0.3-01 and IEC 60092-350 Clause 8.9 & Annex E at -40°C/-35°C.

### 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
CSA 22.2 0.3-01 (-40°C/-35°C) /	- Cold Bend /
IEC 60092-350 Annex E (-	- Cold Impact
40°C/-35°C)	

### 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		Rubberized Polyamide tape
Outer sheath	U	Flame retardant, halogen-free, mud and cold bend / cold impact resistant thermoset compound, SHF2 (IEC 60092-360)
Marking text		Eg. "meter" "year" DRAKA 01 BFOU(I) 250V S3/S7 4PAIR 0.75mm <sup>2</sup> FLEX - FLAME IEC 60092-376 IEC 60331-1*) or IEC 60331-2*) IEC 60331-21 IEC 60332-3-22 ARCTIC GRADE Cold bend (-40 deg. C) / Cold impact (-35 deg. C)
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

## 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 <sup>2</sup>	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 <sup>2</sup>	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
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
16	2	0.75	1.1	0.6	1.9	24 ± 1	0.3	20.4	1.8	29 ± 1	1400	465
16	2	0.75	1.1	0.6	1.9	24 ± 1	0.3	20.4	1.8	29 ± 1	1400	465
24	2	0.75	1.1	0.6	2.3	30 ± 1.5	0.3	25.4	2	35.5 ± 1.5	2020	647
24	2	0.75	1.1	0.6	2.3	30 ± 1.5	0.3	25.4	2	35.5 ± 1.5	2020	647
1	3	0.75	1.1	0.6	1.1	8 ± 0.5	0.2	4.5	1.1	11 ± 0.8	225	68
1	3	0.75	1.1	0.6	1.1	8 ± 0.5	0.2	4.5	1.1	11 ± 0.8	225	68
2	3	0.75	1.1	0.6	1.1	12 ± 0.8	0.3	10.2	1.4	16 ± 0.8	410	146
2	3	0.75	1.1	0.6	1.1	12 ± 0.8	0.3	10.2	1.4	16 ± 0.8	410	146
4	3	0.75	1.1	0.6	1.1	14 ± 0.8	0.3	11.9	1.4	18 ± 0.8	570	209
4	3	0.75	1.1	0.6	1.1	14 ± 0.8	0.3	11.9	1.4	18 ± 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
16	3	0.75	1.1	0.6	2.1	26.5 ± 1	0.3	22.9	1.9	32 ± 1.5	1770	594
24	3	0.75	1.1	0.6	2.5	33 ± 1.5	0.4	36.2	2.2	39 ± 1.5	2620	909
24	3	0.75	1.1	0.6	2.5	33 ± 1.5	0.4	36.2	2.2	39 ± 1.5	2620	909
1	2	1.5	1.6	0.7	1.1	9 ± 0.5	0.2	4.5	1.1	12 ± 0.8	255	79
1	2	1.5	1.6	0.7	1.1	9 ± 0.5	0.2	4.5	1.1	12 ± 0.8	255	79
2	2	1.5	1.6	0.7	1.1	13 ± 0.8	0.3	11.9	1.4	17 ± 0.8	480	184
2	2	1.5	1.6	0.7	1.1	13 ± 0.8	0.3	11.9	1.4	17 ± 0.8	480	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
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	1560	606
16	2	1.5	1.6	0.7	2.1	30 ± 1.5	0.3	22.9	2	35.5 ± 1.5	2080	766
16	2	1.5	1.6	0.7	2.1	30 ± 1.5	0.3	22.9	2	35.5 ± 1.5	2080	766
24	2	1.5	1.6	0.7	2.3	36.5 ± 1.5	0.4	40.7	2.3	43 ± 2	3060	1211
24	2	1.5	1.6	0.7	2.3	36.5 ± 1.5	0.4	40.7	2.3	43 ± 2	3060	1211
1	3	1.5	1.6	0.7	1.1	9.5 ± 0.5	0.2	4.5	1.2	13 ± 0.8	290	93
1	3	1.5	1.6	0.7	1.1	9.5 ± 0.5	0.2	4.5	1.2	13 ± 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	560	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	560	213
4	3	1.5	1.6	0.7	1.1	17 ± 0.8	0.3	15.3	1.6	21.5 ± 1	820	342

Number of elements	No of cores in element	Cross section core, mm <sup>2</sup>	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 <sup>2</sup>	Thickness Outer Sheath, mm	Diameter outer sheath, mm	Weight of Cable Approx. (Kg/Km)	Copper content Approx. (kg/km)
4	3	1.5	1.6	0.7	1.1	17 ± 0.8	0.3	15.3	1.6	21.5 ± 1	820	342
8	3	1.5	1.6	0.7	1.1	22.5 ± 1	0.3	20.4	1.8	27.5 ± 1	1380	584
8	3	1.5	1.6	0.7	1.1	22.5 ± 1	0.3	20.4	1.8	27.5 ± 1	1380	584
16	3	1.5	1.6	0.9	2.3	36.5 ± 1.5	0.4	36.2	2.2	42.5 ± 2	3040	1125
16	3	1.5	1.6	0.9	2.3	36.5 ± 1.5	0.4	36.2	2.2	42.5 ± 2	3040	1125
24	3	1.5	1.6	0.9	2.7	45.5 ± 2	0.4	45.2	2.5	52 ± 2.5	4370	1598
24	3	1.5	1.6	0.9	2.7	45.5 ± 2	0.4	45.2	2.5	52 ± 2.5	4370	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
16	2	2.5	2	0.9	2.3	36.5 ± 1.5	0.4	36.2	2.2	42.5 ± 2	3020	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	2930	1284

### 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 <sup>2</sup>	110	0,67	26,3	12,7
Shielded triple 0,75 mm <sup>2</sup>	110	0,67	26,3	12,7
Shielded pair 1,5 mm <sup>2</sup>	125	0,63	12,9	24,4
Shielded triple 1,5 mm <sup>2</sup>	125	0,63	12,9	24,4
Shielded pair 2,5 mm <sup>2</sup>	145	0,59	8,02	36,8
Shielded triple 2,5 mm <sup>2</sup>	145	0,59	8,02	36,8
Shielded 16 and 24 triple 1,5 mm <sup>2</sup>	105	0,71	12,9	24,4
Shielded 16 pair 2,5 mm <sup>2</sup>	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.
20110770		BFOU(I) 1PAIR 0.75mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528132007	-
	813201	BFOU(I) 1PAIR 0.75mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528132014	-
	813206	BFOU(I) 2PAIR 0.75mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528132069	-
	813207	BFOU(I) 2PAIR 0.75mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528132076	-
	813218	BFOU(I) 4PAIR 0.75mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528132182	-
	813219	BFOU(I) 4PAIR 0.75mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528132199	-
	813230	BFOU(I) 8PAIR 0.75mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528132304	-
	813231	BFOU(I) 8PAIR 0.75mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528132311	-
	813242	BFOU(I) 16PAIR 0.75mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528132427	-
	813243	BFOU(I) 16PAIR 0.75mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528132434	-
	813248	BFOU(I) 24PAIR 0.75mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528132489	-
	813249	BFOU(I) 24PAIR 0.75mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528132496	-
	813260	BFOU(I) 1TRIP 0.75mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528132601	-
	813261	BFOU(I) 1TRIP 0.75mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528132618	-
	813266	BFOU(I) 2TRIP 0.75mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528132663	-
	813267	BFOU(I) 2TRIP 0.75mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528132670	-
	813278	BFOU(I) 4TRIP 0.75mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528132786	-
	813279	BFOU(I) 4TRIP 0.75mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528132793	-
	813290	BFOU(I) 8TRIP 0.75mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528132908	-
	813291	BFOU(I) 8TRIP 0.75mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528132915	-
	813302	BFOU(I) 16TRIP 0.75mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528133028	-
	813308	BFOU(I) 24TRIP 0.75mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528133080	-
	813309	BFOU(I) 24TRIP 0.75mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528133097	-

New Part number	Old Part number	Description	Sheath Colour	Stock item	EAN No. DNK	EL No.
20113810		BFOU(I) 1PAIR 1.5mm <sup>2</sup> S3/S7 Cold	GREY	Yes	7021528134001	-
20126333		BFOU(I) 1PAIR 1.5mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528134018	-
20110771		BFOU(I) 2PAIR 1.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528134063	-
	813407	BFOU(I) 2PAIR 1.5mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528134070	-
	813418	BFOU(I) 4PAIR 1.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528134186	-
	813419	BFOU(I) 4PAIR 1.5mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528134193	-
	813430	BFOU(I) 8PAIR 1.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528134308	-
	813431	BFOU(I) 8PAIR 1.5mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528134315	-
	813436	BFOU(I) 12PAIR 1.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528134360	-
	813442	BFOU(I) 16PAIR 1.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528134421	-
	813443	BFOU(I) 16PAIR 1.5mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528134438	-
	813448	BFOU(I) 24PAIR 1.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528134483	-
	813449	BFOU(I) 24PAIR 1.5mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528134490	-
20126334		BFOU(I) 1TRIP 1.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528134605	-
	813461	BFOU(I) 1TRIP 1.5mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528134612	-
	813466	BFOU(I) 2TRIP 1.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528134667	-
	813467	BFOU(I) 2TRIP 1.5mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528134674	-
	813478	BFOU(I) 4TRIP 1.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528134780	-
	813479	BFOU(I) 4TRIP 1.5mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528134797	-
	813490	BFOU(I) 8TRIP 1.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528134902	-
	813491	BFOU(I) 8TRIP 1.5mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528134919	-
	813502	BFOU(I) 16TRIP 1.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528135022	-
	813503	BFOU(I) 16TRIP 1.5mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528135039	-
	813508	BFOU(I) 24TRIP 1.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528135084	-
	813509	BFOU(I) 24TRIP 1.5mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528135091	-
	813600	BFOU(I) 1PAIR 2.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528136005	-
	813601	BFOU(I) 1PAIR 2.5mm <sup>2</sup> S3/S7 Cold	BLUE	-	7021528136012	-
	813606	BFOU(I) 2PAIR 2.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528136067	-
	813618	BFOU(I) 4PAIR 2.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528136180	-
	813630	BFOU(I) 8PAIR 2.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528136302	-
	813642	BFOU(I) 16PAIR 2.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528136425	-
	813660	BFOU(I) 1TRIP 2.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528136609	-
	813690	BFOU(I) 8TRIP 2.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528136906	-
	813696	BFOU(I) 12TRIP 2.5mm <sup>2</sup> S3/S7 Cold	GREY	-	7021528136968	-

### 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 <sup>2</sup>	-40°C



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