

## ARCTIC GRADE instrumentation cable RFOU(i) 150/250(300)V, S1/S5

Flame retardant halogen-free instrumentation cable. Oil & Mud resistant. Cold bend / Cold impact resistant



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

EPR/EPR/TCWB/EVA

NEK TS 606 Code S1/S5 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. For installation in areas exposed to MUD and drilling/cleaning fluids. 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 60754-1,2	- Halogen Free
IEC 61034-1,2	- Low Smoke
CSA 22.2 0.3-01 (-40°C/-35°C)	- Cold Bend /
/ IEC 60092-352 Annex E	Cold Impact
(-40°C/-35°C)	

### Construction

	Code Letter	
<b>Conductor</b>		Tinned annealed stranded circular copper (STCC), IEC 60228 class 2
<b>Insulation</b>	<b>R</b>	EP-rubber, IEC 60092-360 (EPR)
<b>Pair / Triple / Quad twisting</b>		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 numbers printed directly on the insulated conductors.
<b>Lay up / Shielding</b>		Individually shielded pairs/triples/quads are laid up in concentric layers and wrapped with a PETP tape.
<b>Inner covering</b>	<b>F</b>	Flame retardant and halogen-free thermoset compound
<b>Tape over inner covering</b>		PET tape
<b>Armour/screen</b>	<b>O</b>	Tinned annealed copper wire braid
<b>Tape over armour/screen</b>		Rubberized Polyamide tape
<b>Outer sheath</b>	<b>U</b>	Flame retardant, halogen-free, mud and cold bend / cold impact resistant thermoset compound, SHF2 (IEC 60092-360)
<b>Marking text</b>		E.g. "meter" "year" DRAKA 01 RFOU(I) 250V S1/S5 4PAIR 0.75mm <sup>2</sup> IEC 60092-376 IEC 60332-3-22 ARCTIC GRADE Cold bend (-40 deg. C) / Cold impact (-35 deg. C)
<b>Manufacturing unit</b>		DRAKA 01 = Draka Norsk Kabel,
<b>Outer sheath colour</b>		Grey or Blue



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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 <sup>2</sup>	Conductor Diameter, mm	Insulation Thickness, mm	Thickness Inner covering, mm	Diameter inner covering, mm	Diameter Braid Wire, mm	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 ± 0.5	0.2	1.1	10 ± 0.8	185	54
1	2	0.75	1.1	0.6	1.1	7 ± 0.5	0.2	1.1	10 ± 0.8	185	54
2	2	0.75	1.1	0.6	1.1	10 ± 0.8	0.2	1.2	13 ± 0.8	280	85
2	2	0.75	1.1	0.6	1.1	10 ± 0.8	0.2	1.2	13 ± 0.8	280	85
4	2	0.75	1.1	0.6	1.1	11.5 ± 0.8	0.3	1.3	15.5 ± 0.8	430	166
4	2	0.75	1.1	0.6	1.1	11.5 ± 0.8	0.3	1.3	15.5 ± 0.8	430	166
8	2	0.75	1.1	0.6	1.1	15.5 ± 0.8	0.3	1.5	19.5 ± 0.8	690	265
8	2	0.75	1.1	0.6	1.1	15.5 ± 0.8	0.3	1.5	19.5 ± 0.8	690	265
16	2	0.75	1.1	0.6	1.9	21.5 ± 1	0.3	1.7	26.5 ± 1	1240	439
16	2	0.75	1.1	0.6	1.9	21.5 ± 1	0.3	1.7	26.5 ± 1	1240	439
24	2	0.75	1.1	0.6	2.1	26.5 ± 1	0.3	1.9	31.5 ± 1.5	1720	596
24	2	0.75	1.1	0.6	2.1	26.5 ± 1	0.3	1.9	31.5 ± 1.5	1720	596
1	3	0.75	1.1	0.6	1.1	7.5 ± 0.5	0.2	1.1	10.5 ± 0.8	200	60
1	3	0.75	1.1	0.6	1.1	7.5 ± 0.5	0.2	1.1	10.5 ± 0.8	200	60
2	3	0.75	1.1	0.6	1.1	11 ± 0.8	0.3	1.3	15 ± 0.8	360	130
2	3	0.75	1.1	0.6	1.1	11 ± 0.8	0.3	1.3	15 ± 0.8	360	130
4	3	0.75	1.1	0.6	1.1	12.5 ± 0.8	0.3	1.4	17 ± 0.8	510	192
4	3	0.75	1.1	0.6	1.1	12.5 ± 0.8	0.3	1.4	17 ± 0.8	510	192
8	3	0.75	1.1	0.6	1.1	17 ± 0.8	0.3	1.5	21.5 ± 1	810	318
8	3	0.75	1.1	0.6	1.1	17 ± 0.8	0.3	1.5	21.5 ± 1	810	318
16	3	0.75	1.1	0.6	2.1	24.5 ± 1	0.3	1.8	29.5 ± 1	1540	544
16	3	0.75	1.1	0.6	2.1	24.5 ± 1	0.3	1.8	29.5 ± 1	1540	544
24	3	0.75	1.1	0.6	2.5	30.5 ± 1.5	0.3	2	36 ± 1.5	2240	778
24	3	0.75	1.1	0.6	2.5	30.5 ± 1.5	0.3	2	36 ± 1.5	2240	778
1	2	1.5	1.6	0.7	1.1	8 ± 0.5	0.2	1.1	11.5 ± 0.8	230	71
1	2	1.5	1.6	0.7	1.1	8 ± 0.5	0.2	1.1	11.5 ± 0.8	230	71
2	2	1.5	1.6	0.7	1.1	12 ± 0.8	0.3	1.3	16 ± 0.8	420	168
2	2	1.5	1.6	0.7	1.1	12 ± 0.8	0.3	1.3	16 ± 0.8	420	168
4	2	1.5	1.6	0.7	1.1	14 ± 0.8	0.3	1.4	18 ± 0.8	600	252
4	2	1.5	1.6	0.7	1.1	14 ± 0.8	0.3	1.4	18 ± 0.8	600	252
8	2	1.5	1.6	0.7	1.1	19 ± 0.8	0.3	1.6	23.5 ± 1	980	420
8	2	1.5	1.6	0.7	1.1	19 ± 0.8	0.3	1.6	23.5 ± 1	980	420
12	2	1.5	1.6	0.7	1.4	23 ± 1	0.3	1.8	28 ± 1	1380	580
16	2	1.5	1.6	0.7	1.9	26.5 ± 1	0.3	1.9	32 ± 1.5	1820	740
16	2	1.5	1.6	0.7	1.9	26.5 ± 1	0.3	1.9	32 ± 1.5	1820	740
24	2	1.5	1.6	0.7	2.3	33 ± 1.5	0.4	2.2	39 ± 1.5	2770	1165
24	2	1.5	1.6	0.7	2.3	33 ± 1.5	0.4	2.2	39 ± 1.5	2770	1165
1	3	1.5	1.6	0.7	1.1	8.5 ± 0.5	0.2	1.1	12 ± 0.8	265	93
1	3	1.5	1.6	0.7	1.1	8.5 ± 0.5	0.2	1.1	12 ± 0.8	265	93
2	3	1.5	1.6	0.7	1.1	13.5 ± 0.8	0.3	1.4	17.5 ± 0.8	510	213
4	3	1.5	1.6	0.7	1.1	15.5 ± 0.8	0.3	1.5	20 ± 1	740	325
4	3	1.5	1.6	0.7	1.1	15.5 ± 0.8	0.3	1.5	20 ± 1	740	325
8	3	1.5	1.6	0.7	1.1	21.5 ± 1	0.3	1.7	26 ± 1	1230	558
8	3	1.5	1.6	0.7	1.1	21.5 ± 1	0.3	1.7	26 ± 1	1230	558
16	3	1.5	1.6	0.7	2.3	31 ± 1.5	0.3	2	36.5 ± 1.5	2410	992
16	3	1.5	1.6	0.7	2.3	31 ± 1.5	0.3	2	36.5 ± 1.5	2410	992
24	3	1.5	1.6	0.7	2.5	38 ± 1.5	0.4	2.3	44 ± 2	3550	1551
24	3	1.5	1.6	0.7	2.5	38 ± 1.5	0.4	2.3	44 ± 2	3550	1551
1	2	2.5	2	0.7	1.1	9 ± 0.5	0.2	1.1	12.5 ± 0.8	280	99
2	2	2.5	2	0.7	1.1	13.5 ± 0.8	0.3	1.4	17.5 ± 0.8	530	225
4	2	2.5	2	0.7	1.1	16 ± 0.8	0.3	1.5	20.5 ± 1	770	350

## 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

## Ordering information

New Part number	Old Part number	Description	Sheath Colour	Stock item	EAN No. DNK	EL No.
	812000	RFOU(I) 1PAIR 0.75mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528120004	-
	812001	RFOU(I) 1PAIR 0.75mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528120011	-
	812006	RFOU(I) 2PAIR 0.75mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528120066	-
	812007	RFOU(I) 2PAIR 0.75mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528120073	-
	812018	RFOU(I) 4PAIR 0.75mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528120189	-
	812019	RFOU(I) 4PAIR 0.75mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528120196	-
	812030	RFOU(I) 8PAIR 0.75mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528120301	-
	812031	RFOU(I) 8PAIR 0.75mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528120318	-
	812042	RFOU(I) 16PAIR 0.75mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528120424	-
	812043	RFOU(I) 16PAIR 0.75mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528120431	-
	812048	RFOU(I) 24PAIR 0.75mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528120486	-
	812049	RFOU(I) 24PAIR 0.75mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528120493	-
	812060	RFOU(I) 1TRIP 0.75mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528120608	-
	812061	RFOU(I) 1TRIP 0.75mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528120615	-
	812066	RFOU(I) 2TRIP 0.75mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528120660	-
	812067	RFOU(I) 2TRIP 0.75mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528120677	-
	812078	RFOU(I) 4TRIP 0.75mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528120783	-
	812079	RFOU(I) 4TRIP 0.75mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528120790	-
	812090	RFOU(I) 8TRIP 0.75mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528120905	-
	812091	RFOU(I) 8TRIP 0.75mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528120912	-
	812102	RFOU(I) 16TRIP 0.75mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528121025	-
	812103	RFOU(I) 16TRIP 0.75mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528121032	-
	812108	RFOU(I) 24TRIP 0.75mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528121087	-
	812109	RFOU(I) 24TRIP 0.75mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528121094	-
	812200	RFOU(I) 1PAIR 1.5mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528122008	-
	812201	RFOU(I) 1PAIR 1.5mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528122015	-
	812206	RFOU(I) 2PAIR 1.5mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528122060	-
	812207	RFOU(I) 2PAIR 1.5mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528122077	-
	812218	RFOU(I) 4PAIR 1.5mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528122183	-
	812219	RFOU(I) 4PAIR 1.5mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528122190	-
	812230	RFOU(I) 8PAIR 1.5mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528122305	-
	812231	RFOU(I) 8PAIR 1.5mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528122312	-
	812236	RFOU(I) 12PAIR 1.5mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528122367	-
	812242	RFOU(I) 16PAIR 1.5mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528122428	-
	812243	RFOU(I) 16PAIR 1.5mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528122435	-
	812248	RFOU(I) 24PAIR 1.5mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528122480	-
	812249	RFOU(I) 24PAIR 1.5mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528122497	-
	812260	RFOU(I) 1TRIP 1.5mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528122602	-
	812261	RFOU(I) 1TRIP 1.5mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528122619	-
	812266	RFOU(I) 2TRIP 1.5mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528122664	-
	812278	RFOU(I) 4TRIP 1.5mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528122787	-
	812279	RFOU(I) 4TRIP 1.5mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528122794	-
	812290	RFOU(I) 8TRIP 1.5mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528122909	-
	812291	RFOU(I) 8TRIP 1.5mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528122916	-
	812302	RFOU(I) 16TRIP 1.5mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528123029	-
	812303	RFOU(I) 16TRIP 1.5mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528123036	-
	812308	RFOU(I) 24TRIP 1.5mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528123081	-
	812309	RFOU(I) 24TRIP 1.5mm <sup>2</sup> S1/S5 Cold	BLUE	-	7021528123098	-
	812400	RFOU(I) 1PAIR 2.5mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528124002	-
	812406	RFOU(I) 2PAIR 2.5mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528124064	-
	812418	RFOU(I) 4PAIR 2.5mm <sup>2</sup> S1/S5 Cold	GREY	-	7021528124187	-

## 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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