

eXtended Fire Resistant, instrumentation cable BFOU-XFR(c) 150/250(300)V

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

BFOU-XFR(c) 150/250(300)V MGT/EPR/EPR/TCWB/EVA



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

Standards applied

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 mud resistant requirements in NEK TS 606:2009. Cables have extended fire resistant (XFR) properties to IEC 60331-1&2 including water spray according to EN 50200 Annex E (90 minutes).

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	- Fire Resistant
EN 50200:2006 Annex E	- 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 and wrapped with polyester tape. Pairs/Triples are laid up collectively and screened by copper backed polyester tape with tinned copper drain wire. Pairs/triples are identified by numbered tape or by numbers printed directly on the insulated conductors.
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-XFR(C) 250V 4PAIR 1.5mm ² FLEX - FLAME IEC 60092-376 EN 50200:2006 Annex E IEC 60331-1*) or IEC 60331-2*) 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



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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)
2	2	0.75	1.1	1	1.1	14 ± 0.8	0.3	10.2	1.3	17.5 ± 0.8	440	130
2	2	0.75	1.1	1	1.1	14 ± 0.8	0.3	10.2	1.3	17.5 ± 0.8	440	130
4	2	0.75	1.1	1	1.1	16.5 ± 0.8	0.3	11.9	1.3	20 ± 1	580	172
4	2	0.75	1.1	1	1.1	16.5 ± 0.8	0.3	11.9	1.3	20 ± 1	580	172
8	2	0.75	1.1	1	1.1	22 ± 1	0.3	17.8	1.5	26.5 ± 1	960	282
8	2	0.75	1.1	1	1.1	22 ± 1	0.3	17.8	1.5	26.5 ± 1	960	282
12	2	0.75	1.1	1	1.4	26.5 ± 1	0.3	20.4	1.6	30.5 ± 1.5	1290	358
12	2	0.75	1.1	1	1.4	26.5 ± 1	0.3	20.4	1.6	30.5 ± 1.5	1290	358
16	2	0.75	1.1	1	1.9	29.5 ± 1	0.3	22.9	1.7	34.5 ± 1.5	1690	435
16	2	0.75	1.1	1	1.9	29.5 ± 1	0.3	22.9	1.7	34.5 ± 1.5	1690	435
24	2	0.75	1.1	1	2.3	36.5 ± 1.5	0.4	36.2	2	42.5 ± 2	2530	668
24	2	0.75	1.1	1	2.3	36.5 ± 1.5	0.4	36.2	2	42.5 ± 2	2530	668
2	3	0.75	1.1	1	1.1	16 ± 0.8	0.3	11.9	1.3	19.5 ± 0.8	530	159
2	3	0.75	1.1	1	1.1	16 ± 0.8	0.3	11.9	1.3	19.5 ± 0.8	530	159
4	3	0.75	1.1	1	1.1	18.5 ± 0.8	0.3	15.3	1.4	22.5 ± 1	750	231
4	3	0.75	1.1	1	1.1	18.5 ± 0.8	0.3	15.3	1.4	22.5 ± 1	750	231
8	3	0.75	1.1	1	1.1	25 ± 1	0.3	17.8	1.6	29 ± 1	1210	334
8	3	0.75	1.1	1	1.1	25 ± 1	0.3	17.8	1.6	29 ± 1	1210	334
12	3	0.75	1.1	1	1.4	30 ± 1.5	0.3	22.9	1.7	34.5 ± 1.5	1670	461
12	3	0.75	1.1	1	1.4	30 ± 1.5	0.3	22.9	1.7	34.5 ± 1.5	1670	461
16	3	0.75	1.1	1	2.1	34 ± 1.5	0.3	25.4	1.8	39 ± 1.5	2240	564
16	3	0.75	1.1	1	2.1	34 ± 1.5	0.3	25.4	1.8	39 ± 1.5	2240	564
24	3	0.75	1.1	1	2.5	42.5 ± 2	0.4	40.7	2.1	48 ± 2	3340	868
24	3	0.75	1.1	1	2.5	42.5 ± 2	0.4	40.7	2.1	48 ± 2	3340	868
2	2	1.5	1.6	1	1.1	15.5 ± 0.8	0.3	11.9	1.4	19.5 ± 0.8	540	179
2	2	1.5	1.6	1	1.1	15.5 ± 0.8	0.3	11.9	1.4	19.5 ± 0.8	540	179
4	2	1.5	1.6	1	1.1	18.5 ± 0.8	0.3	15.3	1.4	22 ± 1	750	268
4	2	1.5	1.6	1	1.1	18.5 ± 0.8	0.3	15.3	1.4	22 ± 1	750	268
8	2	1.5	1.6	1	1.1	25 ± 1	0.3	17.8	1.7	29.5 ± 1	1210	405
8	2	1.5	1.6	1	1.1	25 ± 1	0.3	17.8	1.7	29.5 ± 1	1210	405
12	2	1.5	1.6	1	1.4	29.5 ± 1	0.3	22.9	1.8	34.5 ± 1.5	1680	567
12	2	1.5	1.6	1	1.4	29.5 ± 1	0.3	22.9	1.8	34.5 ± 1.5	1680	567
16	2	1.5	1.6	1	1.9	33 ± 1.5	0.3	25.4	1.9	38 ± 1.5	2180	704
16	2	1.5	1.6	1	1.9	33 ± 1.5	0.3	25.4	1.9	38 ± 1.5	2180	704
24	2	1.5	1.6	1	2.3	41 ± 2	0.4	40.7	2.2	47 ± 2	3260	1077
24	2	1.5	1.6	1	2.3	41 ± 2	0.4	40.7	2.2	47 ± 2	3260	1077
2	3	1.5	1.6	1	1.1	17.5 ± 0.8	0.3	13.6	1.4	21.5 ± 1	660	224
2	3	1.5	1.6	1	1.1	17.5 ± 0.8	0.3	13.6	1.4	21.5 ± 1	660	224
4	3	1.5	1.6	1	1.1	21 ± 1	0.3	17.8	1.5	25 ± 1	960	350

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	3	1.5	1.6	1	1.1	21 ± 1	0.3	17.8	1.5	25 ± 1	960	350
8	3	1.5	1.6	1	1.1	28 ± 1	0.3	20.4	1.8	32.5 ± 1.5	1580	543
8	3	1.5	1.6	1	1.1	28 ± 1	0.3	20.4	1.8	32.5 ± 1.5	1580	543
12	3	1.5	1.6	1	1.4	34 ± 1.5	0.3	25.4	1.9	38.5 ± 1.5	2190	762
12	3	1.5	1.6	1	1.4	34 ± 1.5	0.3	25.4	1.9	38.5 ± 1.5	2190	762
16	3	1.5	1.6	1	2.3	38.5 ± 1.5	0.4	40.7	2.1	44.5 ± 2	3150	1080
16	3	1.5	1.6	1	2.3	38.5 ± 1.5	0.4	40.7	2.1	44.5 ± 2	3150	1080
24	3	1.5	1.6	1	2.7	47.5 ± 2	0.4	45.2	2.4	54 ± 2.5	4450	1462
24	3	1.5	1.6	1	2.7	47.5 ± 2	0.4	45.2	2.4	54 ± 2.5	4450	1462
2	2	2.5	2	1	1.1	17 ± 0.8	0.3	13.6	1.4	20.5 ± 1	620	234
2	2	2.5	2	1	1.1	17 ± 0.8	0.3	13.6	1.4	20.5 ± 1	620	234
4	2	2.5	2	1	1.1	19.5 ± 0.8	0.3	15.3	1.5	24 ± 1	880	343
4	2	2.5	2	1	1.1	19.5 ± 0.8	0.3	15.3	1.5	24 ± 1	880	343
8	2	2.5	2	1	1.1	27 ± 1	0.3	20.4	1.8	31.5 ± 1.5	1480	577
8	2	2.5	2	1	1.1	27 ± 1	0.3	20.4	1.8	31.5 ± 1.5	1480	577
12	2	2.5	2	1	2.1	33.5 ± 1.5	0.3	25.4	1.9	38.5 ± 1.5	2240	811
12	2	2.5	2	1	2.1	33.5 ± 1.5	0.3	25.4	1.9	38.5 ± 1.5	2240	811
16	2	2.5	2	1	2.3	36.5 ± 1.5	0.4	36.2	2.1	42.5 ± 2	2900	1101
16	2	2.5	2	1	2.3	36.5 ± 1.5	0.4	36.2	2.1	42.5 ± 2	2900	1101
24	2	2.5	2	1	2.7	45 ± 2	0.4	45.2	2.4	51.5 ± 2.5	4150	1558
24	2	2.5	2	1	2.7	45 ± 2	0.4	45.2	2.4	51.5 ± 2.5	4150	1558
2	3	2.5	2	1	1.1	19 ± 0.8	0.3	15.3	1.5	23 ± 1	780	297
2	3	2.5	2	1	1.1	19 ± 0.8	0.3	15.3	1.5	23 ± 1	780	297
4	3	2.5	2	1	1.1	22.5 ± 1	0.3	17.8	1.6	27 ± 1	1160	461
4	3	2.5	2	1	1.1	22.5 ± 1	0.3	17.8	1.6	27 ± 1	1160	461
8	3	2.5	2	1	1.1	30 ± 1.5	0.3	22.9	1.9	35 ± 1.5	1950	788
8	3	2.5	2	1	1.1	30 ± 1.5	0.3	22.9	1.9	35 ± 1.5	1950	788
12	3	2.5	2	1	2.6	39 ± 1.5	0.4	40.7	2.1	44.5 ± 2	3230	1241
12	3	2.5	2	1	2.6	39 ± 1.5	0.4	40.7	2.1	44.5 ± 2	3230	1241
16	3	2.5	2	1	2.6	42.5 ± 2	0.4	40.7	2.3	48.5 ± 2	3950	1518
16	3	2.5	2	1	2.6	42.5 ± 2	0.4	40.7	2.3	48.5 ± 2	3950	1518

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)
Unshielded pair 0,75 mm ²	55	0,94	26,3	17,9
Unshielded triple 0,75 mm ²	55	0,94	26,3	17,9
Unshielded pair 1,5 mm ²	65	0,89	12,9	32,6
Unshielded triple 1,5 mm ²	65	0,89	12,9	32,6
Unshielded pair 2,5 mm ²	75	0,77	8,02	48
Unshielded triple 2,5 mm ²	75	0,77	8,02	48

Ordering information

New Part number	Old Part number	Description	Sheath Colour	Stock item	EAN No. DNK	EL No.
	822906	BFOU-XFR(C) 2PAIR 0.75mm ²	GREY	-	7021528229066	-
	822907	BFOU-XFR(C) 2PAIR 0.75mm ²	BLUE	-	7021528229073	-
	822918	BFOU-XFR(C) 4PAIR 0.75mm ²	GREY	-	7021528229189	-
	822919	BFOU-XFR(C) 4PAIR 0.75mm ²	BLUE	-	7021528229196	-
	822930	BFOU-XFR(C) 8PAIR 0.75mm ²	GREY	-	7021528229301	-
	822931	BFOU-XFR(C) 8PAIR 0.75mm ²	BLUE	-	7021528229318	-
	822936	BFOU-XFR(C) 12PAIR 0.75mm ²	GREY	-	7021528229363	-
	822937	BFOU-XFR(C) 12PAIR 0.75mm ²	BLUE	-	7021528229370	-
	822942	BFOU-XFR(C) 16PAIR 0.75mm ²	GREY	-	7021528229424	-
	822943	BFOU-XFR(C) 16PAIR 0.75mm ²	BLUE	-	7021528229431	-
	822948	BFOU-XFR(C) 24PAIR 0.75mm ²	GREY	-	7021528229486	-
	822949	BFOU-XFR(C) 24PAIR 0.75mm ²	BLUE	-	7021528229493	-
	822966	BFOU-XFR(C) 2TRIP 0.75mm ²	GREY	-	7021528229660	-
	822967	BFOU-XFR(C) 2TRIP 0.75mm ²	BLUE	-	7021528229677	-
	822978	BFOU-XFR(C) 4TRIP 0.75mm ²	GREY	-	7021528229783	-
	822979	BFOU-XFR(C) 4TRIP 0.75mm ²	BLUE	-	7021528229790	-
	822990	BFOU-XFR(C) 8TRIP 0.75mm ²	GREY	-	7021528229905	-
	822991	BFOU-XFR(C) 8TRIP 0.75mm ²	BLUE	-	7021528229912	-
	822996	BFOU-XFR(C) 12TRIP 0.75mm ²	GREY	-	7021528229967	-
	822997	BFOU-XFR(C) 12TRIP 0.75mm ²	BLUE	-	7021528229974	-
	823002	BFOU-XFR(C) 16TRIP 0.75mm ²	GREY	-	7021528230024	-
	823003	BFOU-XFR(C) 16TRIP 0.75mm ²	BLUE	-	7021528230031	-
	823008	BFOU-XFR(C) 24TRIP 0.75mm ²	GREY	-	7021528230086	-
	823009	BFOU-XFR(C) 24TRIP 0.75mm ²	BLUE	-	7021528230093	-
	823306	BFOU-XFR(C) 2PAIR 1.5mm ²	GREY	-	7021528233063	-
	823307	BFOU-XFR(C) 2PAIR 1.5mm ²	BLUE	-	7021528233070	-
	823318	BFOU-XFR(C) 4PAIR 1.5mm ²	GREY	-	7021528233186	-
	823319	BFOU-XFR(C) 4PAIR 1.5mm ²	BLUE	-	7021528233193	-
	823330	BFOU-XFR(C) 8PAIR 1.5mm ²	GREY	-	7021528233308	-
	823331	BFOU-XFR(C) 8PAIR 1.5mm ²	BLUE	-	7021528233315	-
	823336	BFOU-XFR(C) 12PAIR 1.5mm ²	GREY	-	7021528233360	-
	823337	BFOU-XFR(C) 12PAIR 1.5mm ²	BLUE	-	7021528233377	-
	823342	BFOU-XFR(C) 16PAIR 1.5mm ²	GREY	-	7021528233421	-
	823343	BFOU-XFR(C) 16PAIR 1.5mm ²	BLUE	-	7021528233438	-
	823348	BFOU-XFR(C) 24PAIR 1.5mm ²	GREY	-	7021528233483	-
	823349	BFOU-XFR(C) 24PAIR 1.5mm ²	BLUE	-	7021528233490	-
	823366	BFOU-XFR(C) 2TRIP 1.5mm ²	GREY	-	7021528233667	-
	823367	BFOU-XFR(C) 2TRIP 1.5mm ²	BLUE	-	7021528233674	-
	823378	BFOU-XFR(C) 4TRIP 1.5mm ²	GREY	-	7021528233780	-
	823379	BFOU-XFR(C) 4TRIP 1.5mm ²	BLUE	-	7021528233797	-
	823390	BFOU-XFR(C) 8TRIP 1.5mm ²	GREY	-	7021528233902	-
	823391	BFOU-XFR(C) 8TRIP 1.5mm ²	BLUE	-	7021528233919	-
	823396	BFOU-XFR(C) 12TRIP 1.5mm ²	GREY	-	7021528233964	-
	823397	BFOU-XFR(C) 12TRIP 1.5mm ²	BLUE	-	7021528233971	-
	823402	BFOU-XFR(C) 16TRIP 1.5mm ²	GREY	-	7021528234022	-
	823403	BFOU-XFR(C) 16TRIP 1.5mm ²	BLUE	-	7021528234039	-
	823408	BFOU-XFR(C) 24TRIP 1.5mm ²	GREY	-	7021528234084	-
	823409	BFOU-XFR(C) 24TRIP 1.5mm ²	BLUE	-	7021528234091	-
	828506	BFOU-XFR(C) 2PAIR 2.5mm ²	GREY	-	7021528285062	-
	828507	BFOU-XFR(C) 2PAIR 2.5mm ²	BLUE	-	7021528285079	-
	828518	BFOU-XFR(C) 4PAIR 2.5mm ²	GREY	-	7021528285185	-
	828519	BFOU-XFR(C) 4PAIR 2.5mm ²	BLUE	-	7021528285192	-
	828530	BFOU-XFR(C) 8PAIR 2.5mm ²	GREY	-	7021528285307	-
	828531	BFOU-XFR(C) 8PAIR 2.5mm ²	BLUE	-	7021528285314	-
	828536	BFOU-XFR(C) 12PAIR 2.5mm ²	GREY	-	7021528285369	-
	828537	BFOU-XFR(C) 12PAIR 2.5mm ²	BLUE	-	7021528285376	-
	828542	BFOU-XFR(C) 16PAIR 2.5mm ²	GREY	-	7021528285420	-
	828543	BFOU-XFR(C) 16PAIR 2.5mm ²	BLUE	-	7021528285437	-
	828548	BFOU-XFR(C) 24PAIR 2.5mm ²	GREY	-	7021528285482	-
	828549	BFOU-XFR(C) 24PAIR 2.5mm ²	BLUE	-	7021528285499	-
	828566	BFOU-XFR(C) 2TRIP 2.5mm ²	GREY	-	7021528285666	-
	828567	BFOU-XFR(C) 2TRIP 2.5mm ²	BLUE	-	7021528285673	-

New Part number	Old Part number	Description	Sheath Colour	Stock item	EAN No. DNK	EL No.
	828578	BFOU-XFR(C) 4TRIP 2.5mm ²	GREY	-	7021528285789	-
	828579	BFOU-XFR(C) 4TRIP 2.5mm ²	BLUE	-	7021528285796	-
	828590	BFOU-XFR(C) 8TRIP 2.5mm ²	GREY	-	7021528285901	-
	828591	BFOU-XFR(C) 8TRIP 2.5mm ²	BLUE	-	7021528285918	-
	828596	BFOU-XFR(C) 12TRIP 2.5mm ²	GREY	-	7021528285963	-
	828597	BFOU-XFR(C) 12TRIP 2.5mm ²	BLUE	-	7021528285970	-
	828602	BFOU-XFR(C) 16TRIP 2.5mm ²	GREY	-	7021528286021	-
	828603	BFOU-XFR(C) 16TRIP 2.5mm ²	BLUE	-	7021528286038	-

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



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