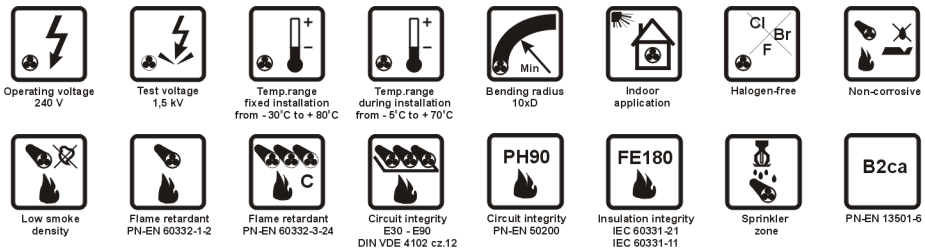
TECHNOKABEL®
Connecting since 1982

CNBOP-PIB

TECHNOFLAME
HTKSH FE180 PH90/E30-E90



APPLICATIONS

HTKSH FE180 PH90/E30-E90 fire resistant and halogen free cables are intended for installation in alarm, signalling, transmission, sound warning and similar systems, also for data processing systems and for analogue or digital data transmission in industrial electronics and control applications in objects of sharp fire protection requirements, particularly in fire alarm and fire automatic control systems.

The cables are certified by **Scientific and Research Development Centre for Fire Protection** (Centrum Naukowo-Badawcze Ochrony Przeciwpożarowej - PIB) at Józefów.

Halogen free cables are applied in locations where, in case of fire, higher safety for human beings and expensive electronic equipment is required.

Functions of the cables are maintained – data are transmitted and power is supplied to equipment which must operate in fire conditions and during fire fighting (e.g. emergency lighting). The cables are flame retardant and their smoke emission is low, emitted fumes are non toxic and non corrosive.

The cables are resistant to water in accordance with the standard PN-EN 50200 Annex E and can be used in fire protected rooms with fixed pressure water spraying fire extinguishing systems **(sprinkler zones)**.

The cables are suitable for indoor installations.

CONSTRUCTION

- **conductor** – bare copper, solid,
- **insulation** – mica tape and halogen free compound insulation - colours in accordance with IEC 60189-2 and PN-92/T-90321 standards,
- **pair** – insulated conductors twisted into pairs,
- **cable core** – pairs laid-up into a cable core,
- **separator** – polyester tape,
- **sheath** – red, cable sheath made of halogen free compound according to EN 50290-2-27 and VDE 0250-214 – HM2.

CHARACTERISTICS

Cable type			HTKSH FE180 PH90/E30-E90					
Conductor diameter		mm	0.8	1.0	1.4	1.8	2.3	2.8
Conductor cross-section		mm^2	0.5	0.75	1.5	2.5	4	6
DC loop resistance at 20°C, maximum		Ω/km	75	48	24.5	14.9	9.3	6.3
Capacitance between conductors at 1 kHz	maximum	nF/km	80	80	90	90	100	100
	avarage		60	60	70	70	70	80

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Operating voltage Uo/U	240 V
Voltage test	1500 V rms
Insulation resistance, minimum	500 MΩ · km
Inductance, approximate	0.7 mH/km
Corrosivity of emitted gases per	PN-EN 60754-1, PN-EN 60754-2, IEC 60754-2
pH	>4.3
conductivity	<2.5 μS/mm
Smoke density	PN-EN 61034-2, IEC 61034-2
Light transmittance, minimum	60-80%
Operating temperature range	
during operation	from - 30 to + 80°C
during installation	from - 5 to + 70°C
Minimum bending radius	10 x cable diameter
Cable combustibillity	flame retardant

Combustibillity tests	PN-EN 60332-1-2, IEC 60332-1-2, PN-EN 60332-3-24, IEC 60332-3-24
Circuit integrity:	
E30–E90	DIN 4102-12
PH90	PN-EN 50200 + Annex E
Insulation integrity FE180	IEC 60331-21, IEC 60331-11
Reference standards	CNBOP-PIB- KOT-2021/0296-3701 edition 1, WT-TK-43
Class reaction to fire (PN-EN 13501-6)	B2ca-s1b,d0,a1
DoP declarations are available at	technokabel.com.pl

The cable meets requirements of the low voltage direction 2014/35/EU

Cable installation – should be carried out on a certified cable fastening system, in accordance with the National Technical Assessments (KOT) issued for fastening manufacturers. Only certified cable fixing systems, tested according to DIN 4102 part 12, should be used.

Product No.	Number of pairs x conductor diameter	Cable outer diameter (appr.)	Copper index	Cable weight (appr.)	Fire load	Class reaction to fire
	mm	mm	kg/km	kg/km	kWh/m	
1638 005	1 x 2 x 0,8	5.1	9.7	31	0.09	B2ca-s1b,d0,a1
1638 029	1 x 4 x 0,8	5.6	19.3	50	0.12	B2ca-s1b,d0,a1
1638 004	2 x 2 x 0,8	7.6	19.3	57	0.17	B2ca-s1b,d0,a1
1638 011	3 x 2 x 0,8	8.0	29.0	73	0.19	B2ca-s1b,d0,a1
1638 014	4 x 2 x 0,8	8.8	38.6	90	0.23	B2ca-s1b,d0,a1
1638 017	5 x 2 x 0,8	9.7	48.3	108	0.26	B2ca-s1b,d0,a1
1638 022	6 x 2 x 0,8	10.5	57.9	125	0.32	B2ca-s1b,d0,a1
1638 019	7 x 2 x 0,8	10.5	67.6	139	0.34	B2ca-s1b,d0,a1
1638 025	8 x 2 x 0,8	11.4	77.2	162	0.38	B2ca-s1b,d0,a1
1638 020	10 x 2 x 0,8	13.0	96.5	197	0.45	B2ca-s1b,d0,a1
1638 026	14 x 2 x 0,8	14.6	135.1	261	0.56	B2ca-s1b,d0,a1

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	mm	mm	kg/km	kg/km	kWh/m	
1638 028	20 x 2 x 0,8	17.3	193.0	366	0.77	B2ca-s1b,d0,a1
1638 007	1 x 2 x 1,0	5.3	15.1	37	0.10	B2ca-s1b,d0,a1
1638 030	1 x 4 x 1,0	6.1	30.2	63	0.13	B2ca-s1b,d0,a1
1638 006	2 x 2 x 1,0	8.2	30.2	71	0.18	B2ca-s1b,d0,a1
1638 012	3 x 2 x 1,0	8.7	45.2	92	0.21	B2ca-s1b,d0,a1
1638 015	4 x 2 x 1,0	9.6	60.3	116	0.25	B2ca-s1b,d0,a1
1638 018	5 x 2 x 1,0	10.5	75.4	139	0.32	B2ca-s1b,d0,a1
1638 023	6 x 2 x 1,0	11.7	90.5	169	0.36	B2ca-s1b,d0,a1
1638 024	7 x 2 x 1,0	11.7	105.6	188	0.38	B2ca-s1b,d0,a1
1638 031	8 x 2 x 1,0	12.5	120.6	212	0.42	B2ca-s1b,d0,a1
1638 027	10 x 2 x 1,0	14.2	150.8	259	0.50	B2ca-s1b,d0,a1

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	mm	mm	kg/km	kg/km	kWh/m	
1638 001	1 x 2 x 1,4	6.0	29.6	53	0.12	B2ca-s1b,d0,a1
1638 032	1 x 4 x 1,4	7.0	59.1	96	0.16	B2ca-s1b,d0,a1
1638 008	2 x 2 x 1,4	9.5	59.1	104	0.22	B2ca-s1b,d0,a1
1638 013	3 x 2 x 1,4	10.1	88.7	140	0.26	B2ca-s1b,d0,a1
1638 016	4 x 2 x 1,4	11.3	118.2	184	0.33	B2ca-s1b,d0,a1
1638 033	5 x 2 x 1,4	12.5	147.8	223	0.38	B2ca-s1b,d0,a1
1638 034	7 x 2 x 1,4	13.6	206.9	295	0.46	B2ca-s1b,d0,a1
1638 035	8 x 2 x 1,4	14.5	236.4	333	0.50	B2ca-s1b,d0,a1
1638 036	10 x 2 x 1,4	16.6	295.6	411	0.60	B2ca-s1b,d0,a1
1638 002	1 x 2 x 1,8	7.8	48.9	86	0.19	B2ca-s1b,d0,a1
1638 037	1 x 4 x 1,8	9.1	97.7	156	0.27	B2ca-s1b,d0,a1
1638 010	2 x 2 x 1,8	12.3	97.7	171	0.36	B2ca-s1b,d0,a1
1638 038	3 x 2 x 1,8	13.1	146.6	233	0.44	B2ca-s1b,d0,a1
1638 039	4 x 2 x 1,8	14.5	195.4	297	0.52	B2ca-s1b,d0,a1

Product No.	Number of pairs x conductor diameter	Cable outer diameter (appr.)	Copper index	Cable weight (appr.)	Fire load	Class reaction to fire
	mm	mm	kg/km	kg/km	kWh/m	
1638 040	5 x 2 x 1,8	16.0	244.3	392	0.62	B2ca-s1b,d0,a1
1638 041	7 x 2 x 1,8	17.8	342.0	494	0.81	B2ca-s1b,d0,a1
1638 042	8 x 2 x 1,8	19.0	390.9	560	0.90	B2ca-s1b,d0,a1
1638 003	1 x 2 x 2,3	8.7	79.8	119	0.22	B2ca-s1b,d0,a1
1638 043	1 x 4 x 2,3	10.2	159.5	220	0.32	B2ca-s1b,d0,a1
1638 021	2 x 2 x 2,3	13.9	159.5	239	0.41	B2ca-s1b,d0,a1
1638 044	3 x 2 x 2,3	14.3	239.3	331	0.50	B2ca-s1b,d0,a1
1638 045	4 x 2 x 2,3	16.4	319.1	426	0.61	B2ca-s1b,d0,a1
1638 046	5 x 2 x 2,3	18.4	398.9	531	0.76	B2ca-s1b,d0,a1
1638 009	1 x 2 x 2,8	9.7	118.2	159	0.25	B2ca-s1b,d0,a1
1638 047	1 x 4 x 2,8	11.6	236.4	306	0.39	B2ca-s1b,d0,a1
1638 048	2 x 2 x 2,8	16.2	236.4	349	0.57	B2ca-s1b,d0,a1
1638 049	3 x 2 x 2,8	16.6	354.7	456	0.57	B2ca-s1b,d0,a1
1638 050	4 x 2 x 2,8	18.6	472.9	599	0.74	B2ca-s1b,d0,a1

TECHNOKABEL S.A. reserves the right to change specifications without prior notice.