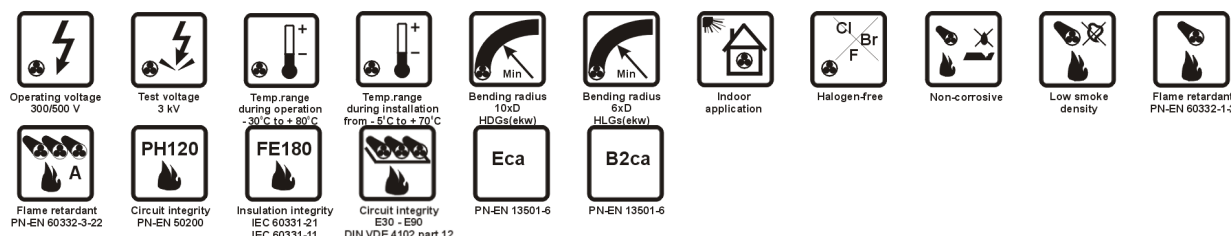


FIRE RESISTANT HALOGEN FREE POWER CABLES



APPLICATIONS

TECHNOFLAME HDGs(żo) FE180 PH120/E30-E90 300/500 V, TECHNOFLAME HLGs(żo) FE180 PH120/E30-E90 300/500 V fire resistant cables and TECHNOFLAME HDGsekw(żo) FE180 PH120/E30-E90 300/500 V, TECHNOFLAME HLGsekw(żo) FE180 PH120/E30-E90 300/500 V screened fire resistant cables, are intended for installation in alarm, signalling, sound warning and similar systems, also for power supply to fire protection equipment in objects of sharp fire protection requirements, particularly in fire alarm and fire automatic control systems.

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 – power is supplied to equipment which must operate in fire conditions and during fire fighting. The cables are flame retardant and their smoke emission is low, emitted fumes are non toxic and non corrosive.

The cables are certified by Scientific and Research Centre for Fire Protection - National Research Institute (Centrum Naukowo-Badawcze Ochrony Przeciwpowazarowej - PIB) at Józefów.

Cables can't be used in protected rooms by fixed water extinguishing devices. For such applications, use **TECHNOFLAME HDGs(żo)-W FE180 PH120/E30-E90 300/500 V** cables.

An overall electrostatic shield (**ekw**) in screened cables protects cable circuits against interference by external electric fields.

The cables are suitable for fixed indoor installations.

CONSTRUCTION

- bare copper, single wire (**D**) or stranded multi wire (**L**), round conductors meeting requirements of class 1 or 5 per PN-EN 60228,
- special silicone rubber insulation,
- identification colour code according to PN-HD 308 S2,

Number of conductors	Colour of insulation	
	with protective conductor (żo)	without protective conductor
2	-	blue and brown
3	green-yellow, blue and brown	brown, black and grey
4	green-yellow, brown, black and grey	blue, brown, black and grey
5	green-yellow, blue, brown, black and grey	black, blue, brown, black and grey
> 5	black and white conductor number printed on it or in each cable core layer brown ¹⁾ conductor (as a counter), blue conductor (as directional) and other black conductors	
1) for cables with protective conductor - green-yellow protective conductor is positioned as a counter conductor in the outer layer instead brown conductor		

- insulated conductors laid-up in layers,
- cable core wrapped in polyester tape - in **TECHNOFLAME HDGsekw** and **TECHNOFLAME HLGsekw**,

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- overall electrostatic shield incorporating aluminium-polyester tape and annealed tinned copper drain wire - in TECHNOFLAME HDGsekw and TECHNOFLAME HLGsekw,
- red cable sheath of halogen free compound.

CHARACTERISTICS

Conductor cross-section	mm ²	1	1,5	2,5	4	6	10
Conductor diameter (HDGs), approximate	mm	1.1	1.4	1.8	2.3	2.8	3.5
DC conductor resistance at 20°C, maximum – HDGs	Ω/km	18.1	12.1	7.41	4.61	3.08	1.83
DC conductor resistance at 20°C, maximum – HLGs	Ω/km	19.5	13.3	7.98	4.95	3.30	1.91
Capacitance between conductors at 1 kHz, – maximum	nF/km	120	120	120	120	120	120
– average	nF/km	70	80	80	100	100	100

Operating voltage U ₀ /U	300/500 V	Corrosivity of emitted gases	very low, halogen free PN-EN 60754-1, PN-EN 60754-2
Voltage test	3 kV rms	pH conductivity	IEC 60754-2 >4,3 <2.5 μS/mm
Insulation resistance at 20°C, minimum	100 MΩ·km	Smoke density	low smoke density PN-EN 61034-2, IEC 61034-2
Inductance, approximate	0,7 mH/km	light transmittance, minimum	80% for s1a
Conductor temperature limit in work conditions	+ 90°C	Cable combustibility	flame retardant
in short-circuit (max. 5 s)	+ 250°C	Combustibility tests	PN-EN 60332-1-2, IEC 60332-1-2, PN-EN 60332-3-22, IEC 60332-3-22
Operating temperature range during operation	from - 30 to + 80°C	Circuit integrity	DIN 4102-12
during installation	from - 5 to + 70°C	E30-E90	PN-EN 50200 or EN 50200
Minimum bending radius HDGs(ekw) cables	10 x cable diameter	PH120	IEC 60331-21; IEC 60331-11
HLGs(ekw) cables	6 x cable diameter	Insulation integrity FE180	CNBOP-PIB-KOT-2018/2023/0054-3701 edition 1, WT-TK-46
		Reference standards	B2ca-s1a,d0,a1; B2ca-s1a,d1,a1; Eca
		Reaction to fire (PN-EN 13501-6)	

Cable installation – only certified cable fixing systems shall be used. Systems certified according to DIN 4102 part 12 or PN-EN 50200

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

Product No.	Number of conductors x conductor cross-section	Cable outer diameter (appr.)	Class reaction to fire	Copper index	Cable weight (appr.)
	mm ²	mm		kg/km	kg/km
HDGs					
1195 005	2 x 1,0	6.3	B2ca-s1a,d0,a1	19.2	51
1195 006	2 x 1,5	7.2	B2ca-s1a,d0,a1	28.8	67
1195 007	2 x 2,5	8.6	B2ca-s1a,d0,a1	48.0	99
1195 014	2 x 4	9.7	B2ca-s1a,d0,a1	76.8	137
1195 023	2 x 6	11.1	B2ca-s1a,d0,a1	115.2	186
1195 026	2 x 10	13.1	B2ca-s1a,d0,a1	192.0	278
HDGszo					
1195 003	3 x 1,0	6.7	B2ca-s1a,d0,a1	28.8	66
1195 001	3 x 1,5	7.6	B2ca-s1a,d0,a1	43.2	89
1195 002	3 x 2,5	9.3	B2ca-s1a,d0,a1	72.0	136
1195 004	3 x 4	10.3	B2ca-s1a,d0,a1	115.2	185
1195 015	3 x 6	11.8	B2ca-s1a,d0,a1	172.8	255
1195 038	3 x 10	13.9	B2ca-s1a,d0,a1	288.0	388
1195 010	4 x 1,0	7.3	B2ca-s1a,d0,a1	38.4	82
1195 008	4 x 1,5	8.6	B2ca-s1a,d0,a1	57.6	116
1195 017	4 x 2,5	10.1	B2ca-s1a,d0,a1	96.0	173

Product No.	Number of conductors x conductor cross-section	Cable outer diameter (appr.)	Class reaction to fire	Copper index	Cable weight (appr.)
	mm ²	mm		kg/km	kg/km
1195 021	4 x 4	11.3	B2ca-s1a,d0,a1	153.6	239
1195 025	4 x 6	12.9	B2ca-s1a,d0,a1	230.4	332
1195 027	4 x 10	16.2	B2ca-s1a,d0,a1	384.0	540
1195 020	5 x 1,0	8.1	B2ca-s1a,d0,a1	48.0	106
1195 012	5 x 1,5	9.5	B2ca-s1a,d0,a1	72.0	148
1195 011	5 x 2,5	11.1	B2ca-s1a,d0,a1	120.0	214
1195 013	5 x 4	12.4	B2ca-s1a,d0,a1	192.0	295
1195 022	5 x 6	14.4	B2ca-s1a,d0,a1	288.0	419
1195 036	5 x 10	17.7	B2ca-s1a,d0,a1	480.0	670
1195 016	7 x 1,5	10.4	B2ca-s1a,d0,a1	100.8	188
1195 019	7 x 2,5	12.1	B2ca-s1a,d0,a1	168.0	273
HLGs					
1197 001	2 x 1,0	6.6	Eca	19.2	52
1197 002	2 x 1,5	7.5	Eca	28.8	68
1197 006	2 x 2,5	9.2	Eca	48.0	104
1197 010	2 x 4	10.2	Eca	76.8	136
1197 012	2 x 6	11.7	Eca	115.2	185

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TECHNOFLAME HDGsekw(żo) FE180 PH120/E30-E90
TECHNOFLAME HLGsekw(żo) FE180 PH120/E30-E90

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Product No.	Number of conductors x conductor cross-section	Cable outer diameter (appr.)	Class reaction to fire	Copper index	Cable weight (appr.)
	mm ²	mm		kg/km	kg/km
HLGszo					
1197 003	3 x 1,0	7.0	Eca	28.8	67
1197 004	3 x 1,5	8.2	Eca	43.2	94
1197 005	3 x 2,5	9.7	Eca	72.0	137
1197 021	3 x 4	10.8	Eca	115.2	182
1197 022	3 x 6	12.5	Eca	172.8	252
1197 007	4 x 1,0	7.6	Eca	38.4	83
1197 008	4 x 1,5	8.9	Eca	57.6	116
1197 017	4 x 2,5	10.7	Eca	96.0	175
1197 023	4 x 4	11.9	Eca	153.6	235
1197 014	4 x 6	13.7	Eca	230.4	328
1197 009	5 x 1,0	8.5	Eca	48.0	108
1197 019	5 x 1,5	10.0	Eca	72.0	150
1197 020	5 x 2,5	11.7	Eca	120.0	215
1197 024	5 x 4	13.0	Eca	192.0	322
HDGsekw					
1196 008	2 x 1,0	6.5	B2ca-s1a,d1,a1	23.9	59
1196 007	2 x 1,5	7.4	B2ca-s1a,d1,a1	33.5	76
1196 003	2 x 2,5	8.8	B2ca-s1a,d1,a1	52.7	108
1196 009	2 x 4	9.9	B2ca-s1a,d1,a1	84.0	149
HDGsekwzo					
1196 029	3 x 1,0	6.9	B2ca-s1a,d1,a1	33.5	74
1196 001	3 x 1,5	8.0	B2ca-s1a,d1,a1	47.9	101
1196 010	3 x 2,5	9.5	B2ca-s1a,d1,a1	76.7	146
1196 030	3 x 4	10.5	B2ca-s1a,d1,a1	122.4	198
1196 002	4 x 1,0	7.5	B2ca-s1a,d1,a1	43.1	91
1196 020	4 x 1,5	8.8	B2ca-s1a,d1,a1	62.3	125
1196 013	4 x 2,5	10.3	B2ca-s1a,d1,a1	100.7	183
1196 014	4 x 4	11.5	B2ca-s1a,d1,a1	160.8	252
1196 019	5 x 1,5	9.7	B2ca-s1a,d1,a1	76.7	158

Product No.	Number of conductors x conductor cross-section	Cable outer diameter (appr.)	Class reaction to fire	Copper index	Cable weight (appr.)
	mm ²	mm		kg/km	kg/km
1196 031	5 x 2,5	11.3	B2ca-s1a,d1,a1	124.7	225
1196 032	5 x 4	12.6	B2ca-s1a,d1,a1	199.2	310
1196 021	7 x 2,5	12.3	B2ca-s1a,d1,a1	172.7	284
1196 016	7 x 4	13.7	B2ca-s1a,d1,a1	276.0	398
1196 017	10 x 1,0	11.5	B2ca-s1a,d1,a1	100.7	200
1196 025	10 x 2,5	16.4	B2ca-s1a,d1,a1	244.7	427
1196 011	10 x 4	18.9	B2ca-s1a,d1,a1	391.2	618
HLGsekw					
1198 001	2 x 1,0	6.8	Eca	24.0	60
1198 006	2 x 1,5	7.7	Eca	33.6	76
1198 007	2 x 2,5	9.4	Eca	52.8	113
1198 008	2 x 4	10.4	Eca	84.0	147
1198 009	2 x 6	11.9	Eca	122.4	197
HLGsekwzo					
1198 003	3 x 1,0	7.2	Eca	33.6	75
1198 004	3 x 1,5	8.4	Eca	48.0	102
1198 002	3 x 2,5	9.9	Eca	76.8	146
1198 011	3 x 4	11.0	Eca	122.4	194
1198 012	3 x 6	12.7	Eca	180.0	265
1198 005	4 x 1,0	8.0	Eca	43.2	95
1198 013	4 x 1,5	9.3	Eca	62.4	130
1198 014	4 x 2,5	10.9	Eca	100.8	185
1198 015	4 x 4	12.1	Eca	160.8	247
1198 016	4 x 6	13.9	Eca	237.6	341
1198 017	5 x 1,0	8.7	Eca	52.8	116
1198 010	5 x 1,5	10.2	Eca	76.8	160
1198 018	5 x 2,5	11.9	Eca	124.8	226
1198 019	5 x 4	13.2	Eca	199.2	304

TECHNOKABEL SA reserves the right to change specifications without prior notice.