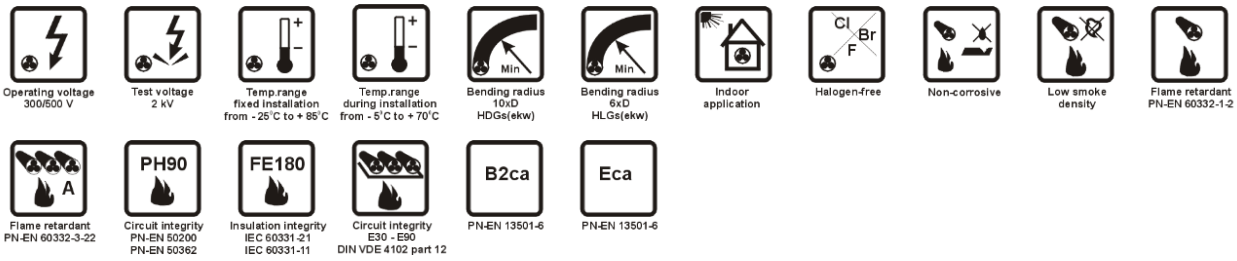
FIRE RESISTANT HALOGEN FREE POWER CABLES



APPLICATIONS

TECHNOFLAME HDGs(żo) FE180 PH90/E30-E90 300/500 V, TECHNOFLAME HLGs(żo) FE180 PH90/E30-E90 300/500 V fire resistant cables and **TECHNOFLAME HDGsekw(żo) FE180 PH90/E30-E90 300/500 V, TECHNOFLAME HLGsekw(żo) FE180 PH90/E30-E90 300/500 V** screened fire resistant cables, are intended for power supply to fire protection equipment which is to operate in fire conditions. The cables are suitable for installation in alarm, signalling, transmission, sound warning and similar systems.
Halogen free cables shall be 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.

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

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

Cables can't be used in protected rooms by fixed water extinguishing devices. For such applications, use **HDGs(żo)-W FE180 PH90 / E30-E90 300/500 V** cables.

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	Color 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	

- insulated conductors laid-up in layers,
- cable core wrapped in polyester tape - in **TECHNOFLAME HDGsekw** and **TECHNOFLAME HLGsekw**,
- overall electrostatic shield incorporating aluminium-polyester tape and stranded annealed tinned copper drain wire - in **TECHNOFLAME HDGsekw** and **TECHNOFLAME HLGsekw**,
- red, cable sheath made of halogen free compound.

CHARACTERISTICS

Conductor cross-section	mm^2	**0,75**	**1**	**1,5**	**2,5**	**4**	**6**	**10**
Conductor diameter	mm	**1,0**	**1,1**	**1,4**	**1,8**	**2,3**	**2,8**	**3,5**
DC conductor resistance at 20°C, maximum – HDGs	Ω/km	24.5	18.1	12.1	7.41	4.61	3.08	1.83
DC conductor resistance at 20°C, maximum – HLGs	Ω/km	26.0	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	120
– average		70	70	80	80	100	100	100

Operating voltage U_o/U	300/500 V
Voltage test	2 kVrms
Insulation resistivity at 20°C, minimum	500 MΩ·km
Inductance, approximate	0,7 mH/km
Conductor temperature limit	
in work conditions	+ 85°C
in short-circuit (max 5 s)	+ 250°C
Operating temperature range	
during operation	from - 25 to + 85°C
during installation	from - 5 to + 70°C
Minimum bending radius	
HDGs(ekw) cables	10 x cable diameter
HLGs(ekw)cables	6 x cable diameter

Corrosivity of emitted gases	very low, halogen free PN-EN 50267-2-3, IEC 60754-2
pH	>4.3
conductivity	<2.5 µS/cm
Smoke density per	low smoke density PN-EN 50268-2-3, IEC 61034-2
light transmittance, minimum	80 % for s1a
Cable combustibility	flame retardant
Combustibility tests	PN-EN 60332-1-2, IEC 60332-1-2, PN-EN 60332-3-22, IEC 60332-3-22 (cat.A)
Circuit integrity*	
E30-E90	DIN 4102-12
PH90	PN-EN 50200 or PN-EN 50362
Insulation integrity FE180	IEC 60331-21; IEC 60331-11
Reference standards	CNBOP-PIB-KOT-2018/0054-3701 edition 1 and WT-TK-46
Class reaction to fire (according to PN-EN 13501-6)	B2ca-s1a,d0,a1; Eca

*Circuit integrity is dependent on installation method

Cable installation – only certified cable fixing systems shall be used. Systems certified according to DIN 4102 part 12 or PN-EN 50200 (PN-EN 50362).

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

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 031	2 x 0,75	6.4	B2ca	14.4	50
1195 005	2 x 1	6.6	B2ca	19.2	55
1195 006	2 x 1,5	7.5	B2ca	28.8	75
1195 007	2 x 2,5	8.9	B2ca	48.0	105
1195 014	2 x 4	9.8	B2ca	77.0	140
1195 023	2 x 6	11.8	B2ca	115	196
1195 026	2 x 10	13.1	-	192.0	351
HDGsżo					
1195 032	3 x 0,75	6.5	B2ca	21.6	52
1195 003	3 x 1	6.8	B2ca	28.8	66
1195 001	3 x 1,5	8.2	B2ca	43.2	95
1195 002	3 x 2,5	9.4	B2ca	72.0	137
1195 004	3 x 4	10.6	B2ca	115.0	191
1195 015	3 x 6	12.5	B2ca	173.0	275
1195 038	3 x 10	13.9	B2ca	288.0	446
1195 033	4 x 0,75	7.3	B2ca	28.8	67
1195 010	4 x 1	7.6	B2ca	38.4	88
1195 008	4 x 1,5	8.9	B2ca	58.0	122

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 017	4 x 2,5	10.4	B2ca	96.0	180
1195 021	4 x 4	11.6	B2ca	154.0	235
1195 025	4 x 6	13.6	B2ca	230.0	340
1195 027	4 x 10	16.2	B2ca	384.0	598
1195 034	5 x 0,75	8.1	B2ca	36.0	86
1195 020	5 x 1	8.4	B2ca	48.0	121
1195 012	5 x 1,5	9.7	B2ca	72.0	151
1195 011	5 x 2,5	11.4	B2ca	120.0	220
1195 013	5 x 4	12.7	B2ca	192.0	305
1195 022	5 x 6	14.9	B2ca	288.0	420
1195 016	7 x 1,5	10.7	B2ca	101.0	190
1195 019	7 x 2,5	12.4	B2ca	168.0	285
1195 030	10 x 1	11.3	-	96.0	208
HLGs					
1197 001	2 x 1	6.8	Eca	19.2	55
1197 002	2 x 1,5	8.0	Eca	28.8	75
1197 006	2 x 2,5	9.4	Eca	48.0	110
1197 010	2 x 4	10.2	Eca	76.8	176
1197 012	2 x 6	11.7	Eca	115.2	240

HDGs FE180 PH90/E30-E90, HDGsekw FE180 PH90/E30-E90
HLGs FE180 PH90/E30-E90, HLGsekw FE180 PH90/E30-E90

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	7.2	Eca	28.8	72
1197 004	3 x 1,5	8.5	Eca	43.2	99
1197 005	3 x 2,5	9.9	Eca	72.0	149
1197 007	4 x 1	8.0	Eca	38.4	94
1197 008	4 x 1,5	9.4	Eca	58.0	130
1197 009	5 x 1	8.5	Eca	48.0	119
HDGsekw					
1196 008	2 x 1	6.6	B2ca	26.4	59
1196 007	2 x 1,5	7.7	B2ca	36.0	77
1196 003	2 x 2,5	9.1	B2ca	55.0	114
1196 009	2 x 4	9.9	B2ca	84.0	149
HDGsekwżo					

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 001	3 x 1,5	8.1	B2ca	50.0	101
1196 010	3 x 2,5	9.6	B2ca	79.0	149
1196 004	7 x 1	9.2	B2ca	71.9	146
1196 005	12 x 1	11.9	-	119.9	229
HLGsekw					
1198 001	2 x 1	7.0	Eca	19.2	73
1198 006	2 x 1,5	8.0	Eca	36.0	81
1198 007	2 x 2,5	9.4	Éca	52.8	113
1198 008	2 x 4	10.5	Eca	86.0	148
1198 009	2 x 6	11.9	Eca	122.4	197
HLGsekwżo					
1198 005	4 x 1	8.0	Eca	43.2	95

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