

Cable Calculation Report

Project Reference: SingleCable

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Calculated in accordance with BS7671

Cable Cable

Connection From: Source To: Load
Active Source: Source

Load Type: Cooking appliance Design Current Ib (A): 30.0

Comments

Protective Device

[a] = Auto, [f] = Fixed, [m] = Max.

Overcurrent protection: Generic BS EN60898 MCB Type B Th/Mag
Rating In (A): 32 [f] Overload Setting Ir (A): 32 [m]

Conductors

[a] = Auto, [f] = Fixed, [d] = Double

70°C thermoplastic insulated/sheathed Flat Twin and Earth Cu Table 4D5 **1 x 1 x 3c** **Size (mm²): 6 [f]**
Neutral: 6 mm²[a] **Length (m): 15**
20 - Clipped direct on a wooden/masonry wall

Rating Factors

Air Temperature(°C) = 30.0 Ca = 1.00 [BS 7671, Table 4B1]
Circuits In Group = 1 Cg = 1.00 [BS 7671, Table 4C1]
3rd Harmonics (%) = 0.00 Ch = 1.00
CPD and Installation Factor Cc = 1.00 [Factor: 0.725 for CPD type BS 30365; 0.9 for Installation Methods 70-73]

Cable sizing (A)

Sized For: Phase Current Carrying Capacity

Auto-sized for current-carrying capacity and voltage drop limits.

Voltage drop limit = 4.6 V (User defined)

Design Current Ib = 30.0
Device Rating In = 32 Overload Setting Ir = 32 [Ir ≥ Ib]
Min. Cable Capacity Iz = 32.0 [BS 7671, Appendix 4.5, Formula (1)]
Actual Cable Rating It = 47.0 [It ≥ Iz]

Load Current and Voltage Drop	L1	L2	L3	Neutral
Design Current Ib (A/PF)	30.0 / 1.00	0.0 / 0.00	0.0 / 0.00	30.0
3rd Harmonic Current (A)	0.0	0.0	0.0	0.0
Voltage Drop - This circuit (V/%)	3.03 / 1.32	0.00 / 0.00	0.00 / 0.00	-----
Voltage Drop - From Source (V/%)	3.03 / 1.32	0.00 / 0.00	0.00 / 0.00	-----

Earth Fault

Circuit Protective Conductor (CPC) (mm²):

Earth Conductor 2.5 [a]

[a] = Auto, [f] = Fixed

Earth Fault Loop Impedance ()Z _e	Z ₁	Z ₂	Z _s	Max. Z _s	Earth Fault Current (kA)
0.03833	0.05475	0.13338	0.20117	1.43736	
Disconnection time (s):	From characteristic: 0.01		Maximum for circuit: 0.40		1.14
Adiabatic check (mm) ²	CPC Section = Earth Conductor 2.5		Total = 2.5	Min. Section = 0.91	

Phase Fault

Phase Fault Current Max./Min. (kA):	Source End: 6.000 / 6.000	Load End: 2.141 / 1.844
Protective Device Breaking Capacity (kA):	Icu: 10	Ics: 10
Adiabatic Check:	CPD Energy Let-through (A ² s): 11.00 x 10 ³	Adiabatic Limit k ² S ² (A ² s): 476.10 x 10 ³