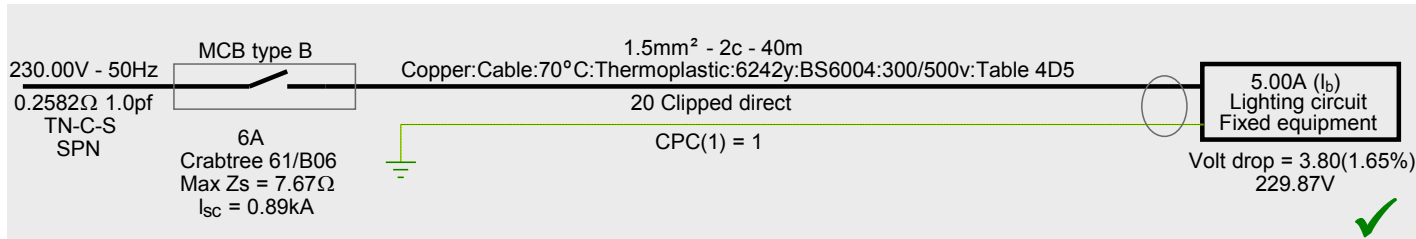


test

Lighting - 1

LIGHTS



Cable Data			1.5mm ² - 2c - 40m	
Copper: Cable: 70°C: Thermoplastic: 6242y: BS6004: 300/500v: Table 4D5				
Cable Rating I_t (tabulated)	Table 4D5A Col-4	20A		
Cable Rating I_z (effective)		20A	$I_z \geq I_b$	PASS
mV/A/mtr (tabulated)	Table 4D5A Col-7	29mV/A/m (r)		
mV/A/mtr (temperature corrected)	operating 30.10°C	25.143mV/A/m (r)		
Voltage drop (Design)	5.00%	11.50V		
Voltage drop (Calculated)	1.65%	3.80V		PASS

Correction Factors				C (total) = 1.000
Ambient temperature (C_a)	30°C	$C_a = 1.000$	Table 4B1	
Grouping (C_g)	1 ccts	$C_g = 1.000$	Table 4C1	
Thermal Insulation (C_i)	0mm	$C_i = 1$	Table 52.2	

Circuit Protective conductors (cpc)				Total cpc value = 0.7532Ω
Minimum CPC size ($S = \sqrt{I^2 t/k}$)	0.38mm ²	$k = 115$	$t = 0.100$ sec	$I = 138.08$ A
Internal core	1	1	$CPC \geq \sqrt{I^2 t/k}$	PASS

Protective Device Details				
Crabtree 61/B06		6A Type-B 6kA MCB BS EN 60898 [1 module]		
Selected for	Overload and short-circuit protection			
Rating (I_n)	6		$I_n \geq I_b$	PASS
Breaking capacity (I_{cn})	6kA	$6 \geq 0.89$	$I_{cn} \geq I_{sc}$	PASS
Operating current (I_z)	9.0A	$9.0 \leq 29.00$	$I_z \leq 1.45I_z$	PASS
Calculated disconnection time	0.100 sec			PASS
Maximum permitted disconnection time	0.4 sec	Table 41.1		
Impedance of device (Z)	7.67Ω			

Earth Fault Data				
Earth fault loop impedance (Z_e)	0.2582Ω			
Circuit R1 value	0.5036Ω			
Circuit R2 value	0.7532Ω			
Circuit R1+R2 value	1.4075Ω			
Earth loop impedance ($Z_s = Z_e + R1 + R2$)	1.6657Ω			
Earth fault current ($I_a = U_o / Z_s$)	138.08A	$U_o = 230.00V$	$Z_s = 1.6657Ω$	

Short Circuit Data				
Prospective short circuit current	16 kA			
Short circuit withstand time ($t = k^2 S^2 / I^2$)	1.561 sec	$k = 115$	$S = 1.5mm^2$	$I = 138.08$ A

Lighting - 1

LIGHTS

1.5mm ² - 2c - 40m								
Section	Load	Load(t)	Distance	Volt drop	R1+R2	Zs	Isc	Description
1	1	5	20	2.538	0.7102	0.96847	0.237	Lighting 1
2	1	4	5	0.506	0.8847	1.14298	0.201	L2
3	1	3	5	0.378	1.0588	1.31708	0.175	L3
4	1	2	5	0.252	1.2329	1.49119	0.154	L4
5	1	1	5	0.126	1.4075	1.66570	0.138	L5

Total	5.00A	40.00m	3.80V	1.407Ω	1.666Ω
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