

Low Voltage Electrical Installation

MODULE 5

Chapter 3: Wiring System

by

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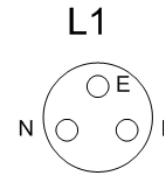
Module Description

- **Expected Outcomes**
 - Interpret rules and regulation for electrical wiring comprising of cable selection and load calculation.
 - Apply ethical principles and commit to professional ethics.
- **Module Outline**
 - 3.1 Lighting Circuit
 - 3.2 Socket Outlet Circuit
 - 3.3 Door Bell Circuit
 - 3.4 Air-Conditioner Circuit

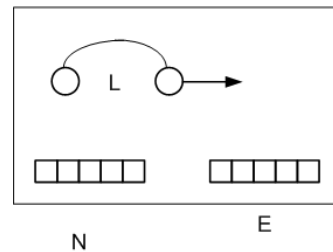
3.1 Lighting Circuit

- FUSE/MCB (Amp) – 6A/10A
- CABLE SIZE (mm^2) -1.25 mm^2 /1.5 mm^2
- MAX POWER(watt) – 1000 W

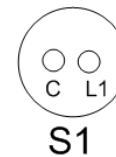
(a) Single light point controlled by a one way switch (S1 Control L1)



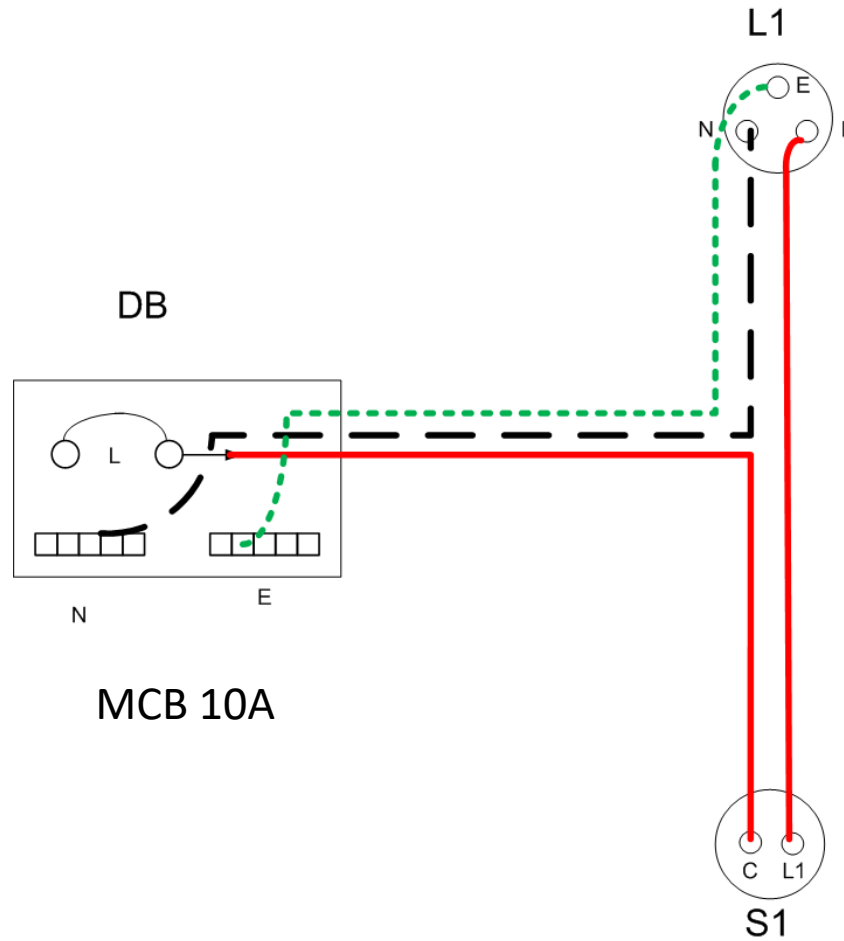
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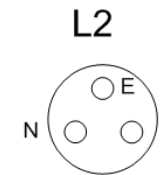
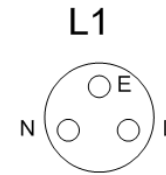
MCB 10A



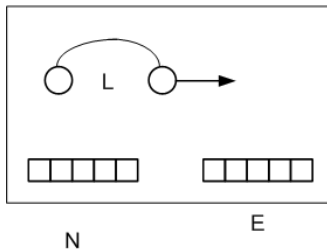
(a) (S1 Control L1)..Cont...



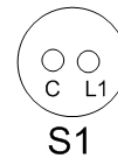
(b) Two light points controlled by a one way switch (S1 Control L1 & L2)



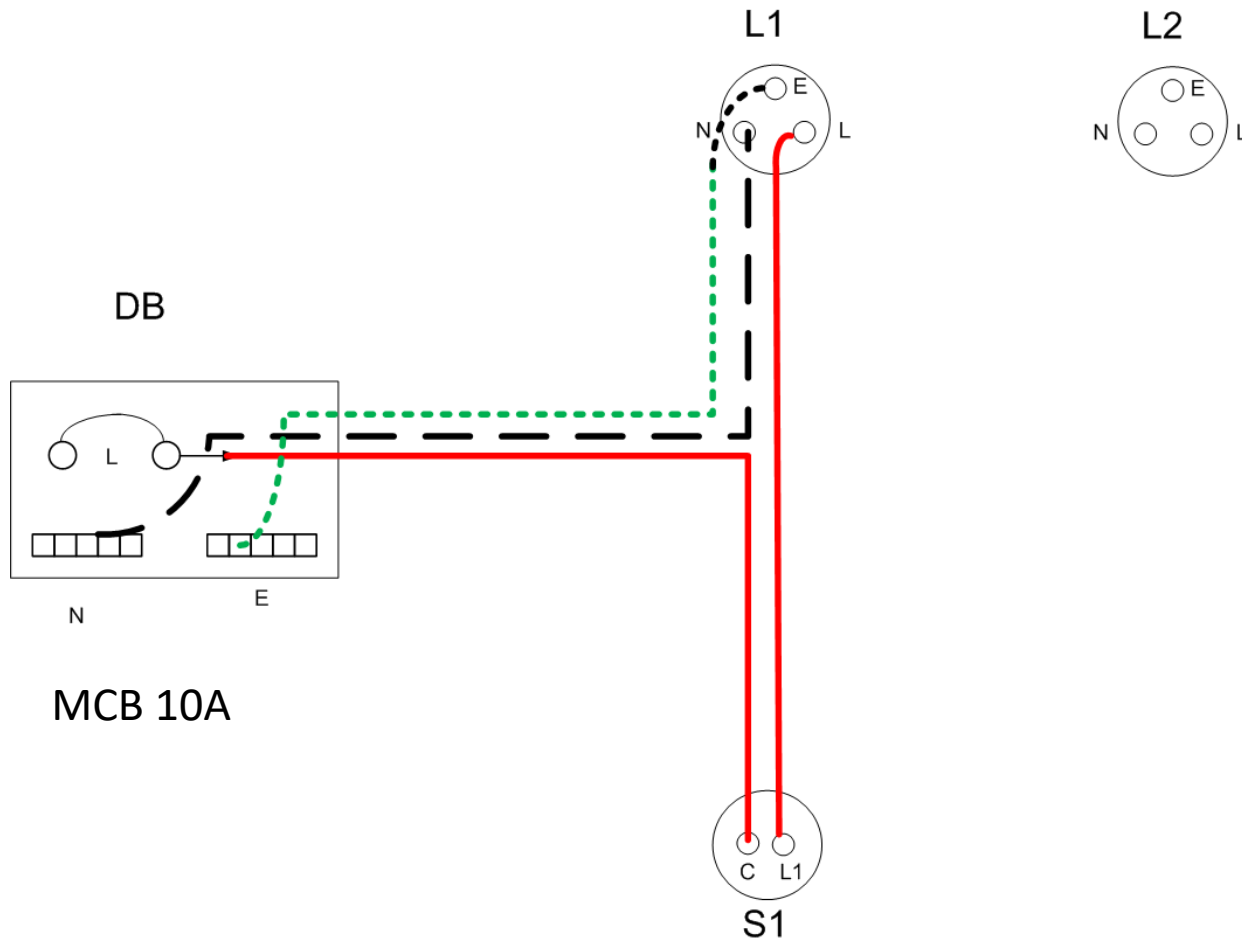
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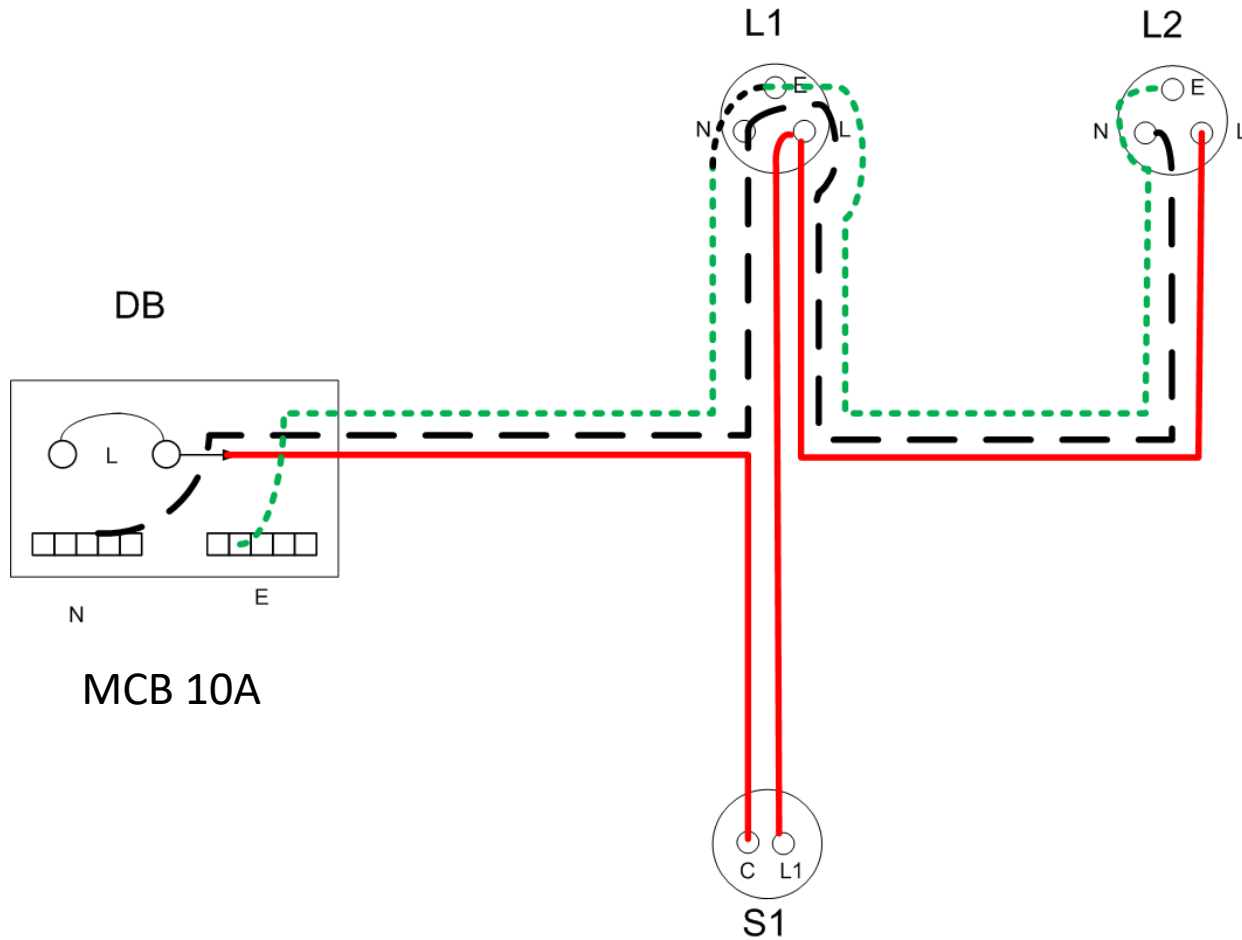
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(b) (S1 Control L1 & L2)..Cont...



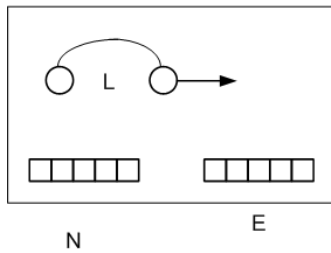
(b) (S1 Control L1 & L2)..Cont...



(c) Two light points controlled by two one way switches (S1 Ctrl L1 & S2 Ctrl L2)



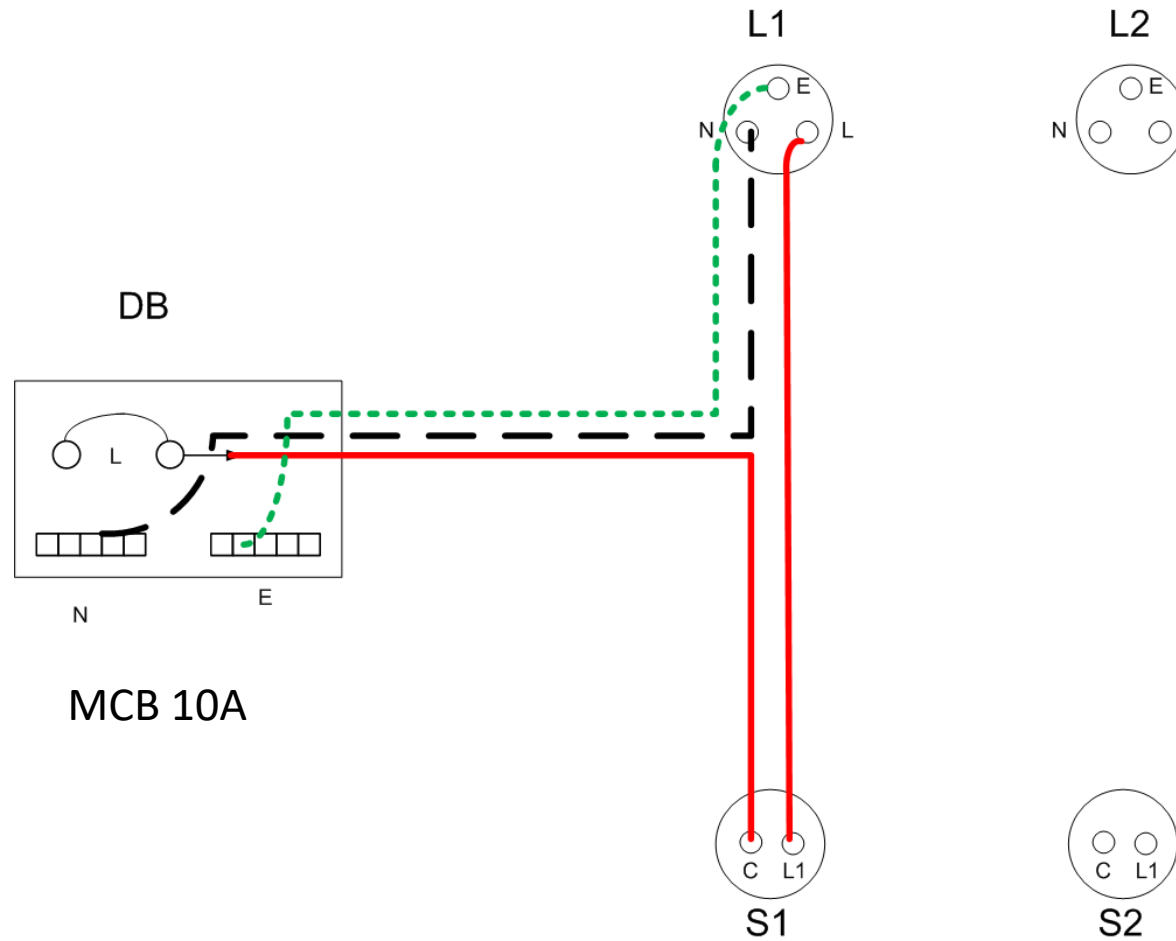
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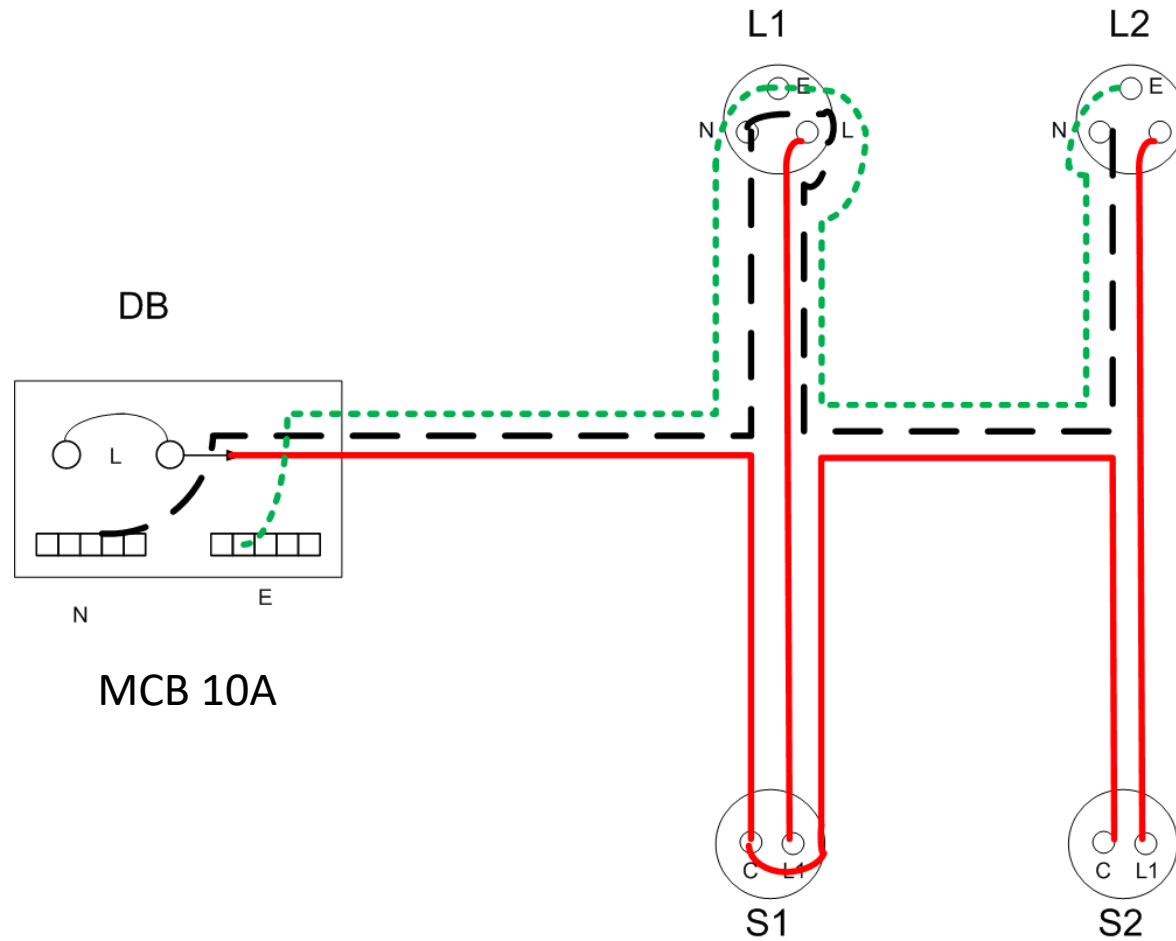
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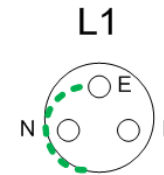
(c) (S1 Control L1 & S2 Control L2)..Cont...



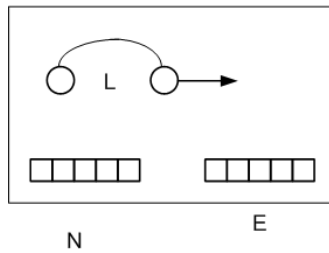
(c) (S1 Control L1 & S2 Control L2)..Cont...



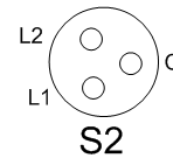
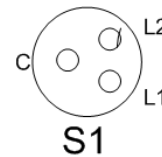
(d) Single light point controlled by two way switch (S1 & S2 Control L1)



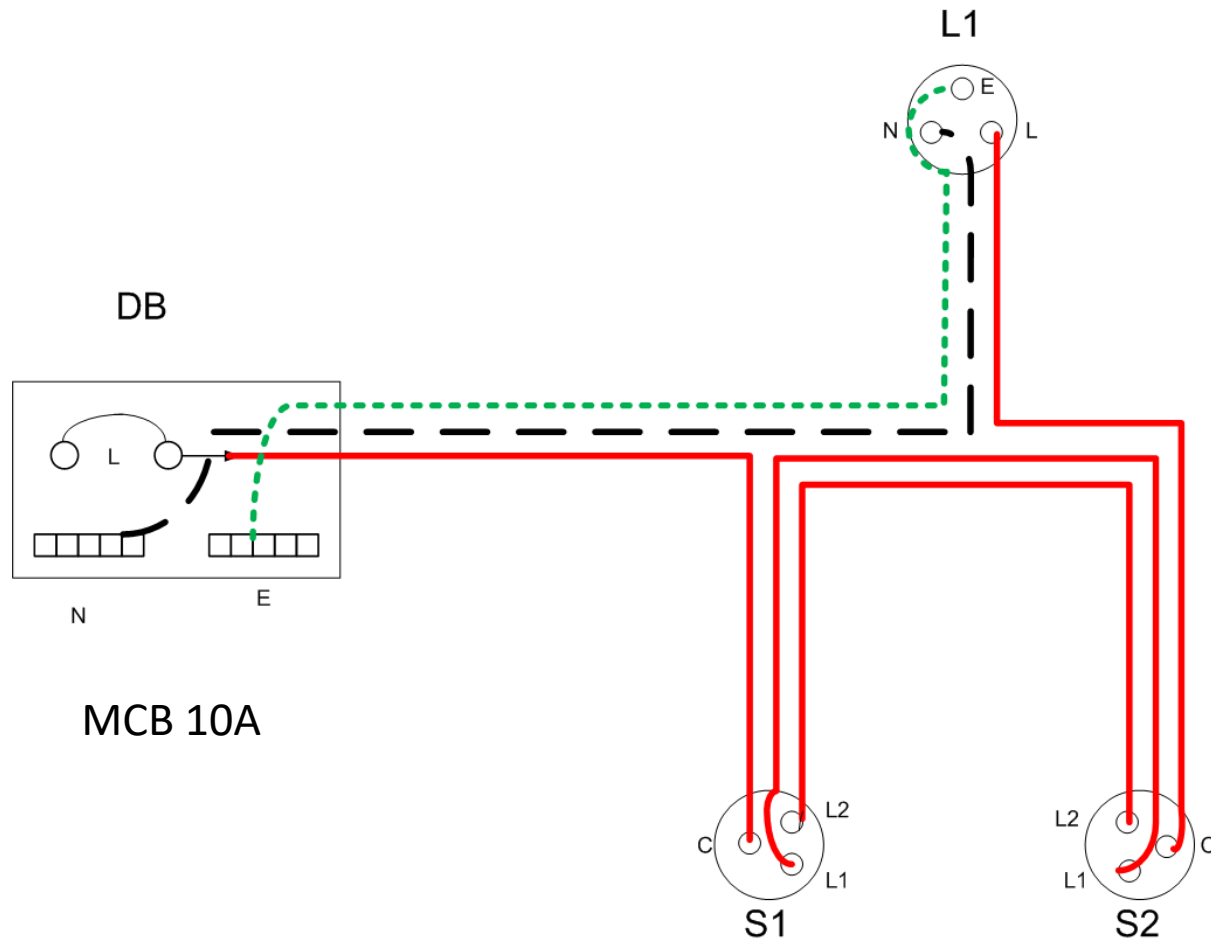
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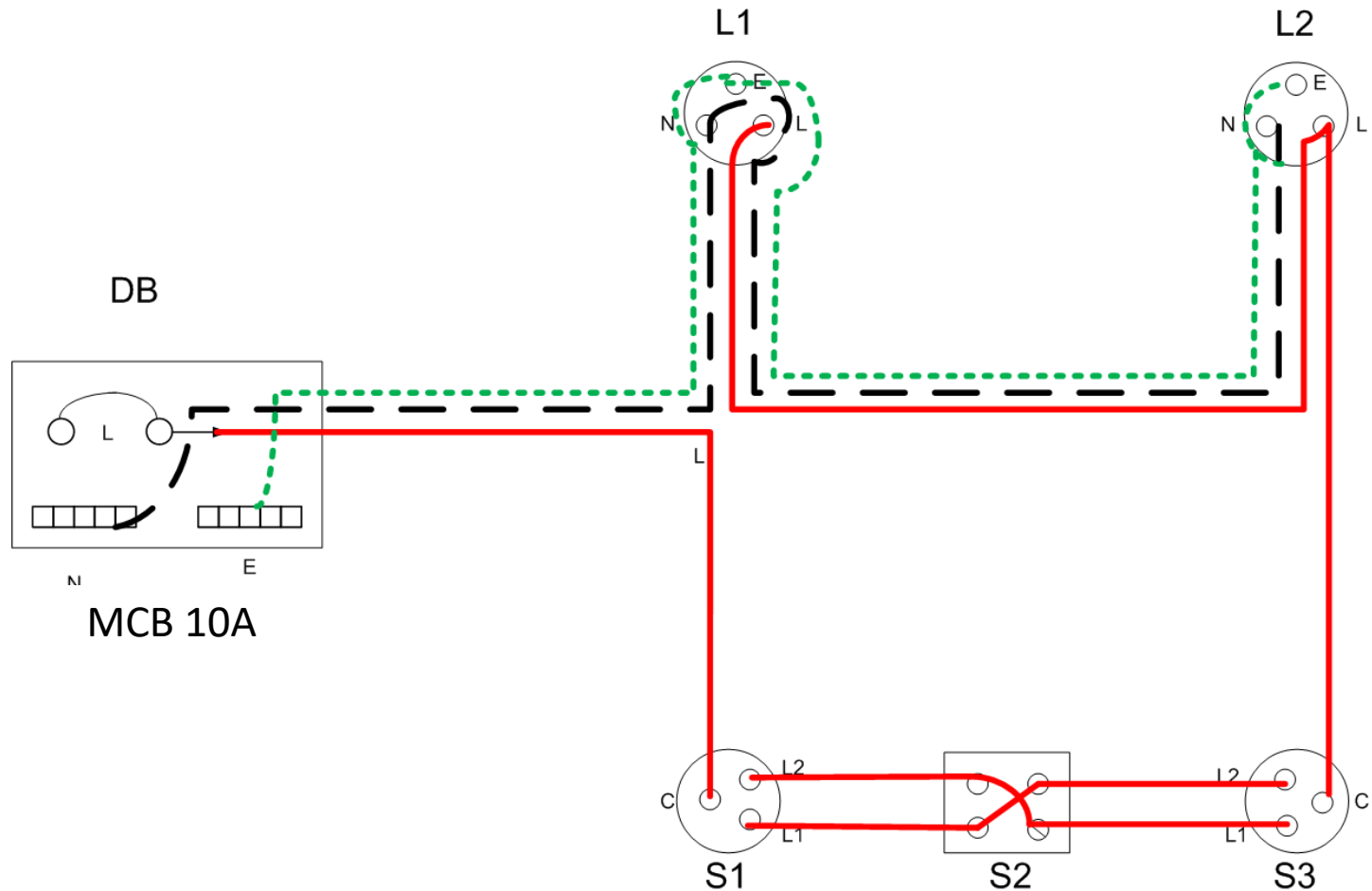
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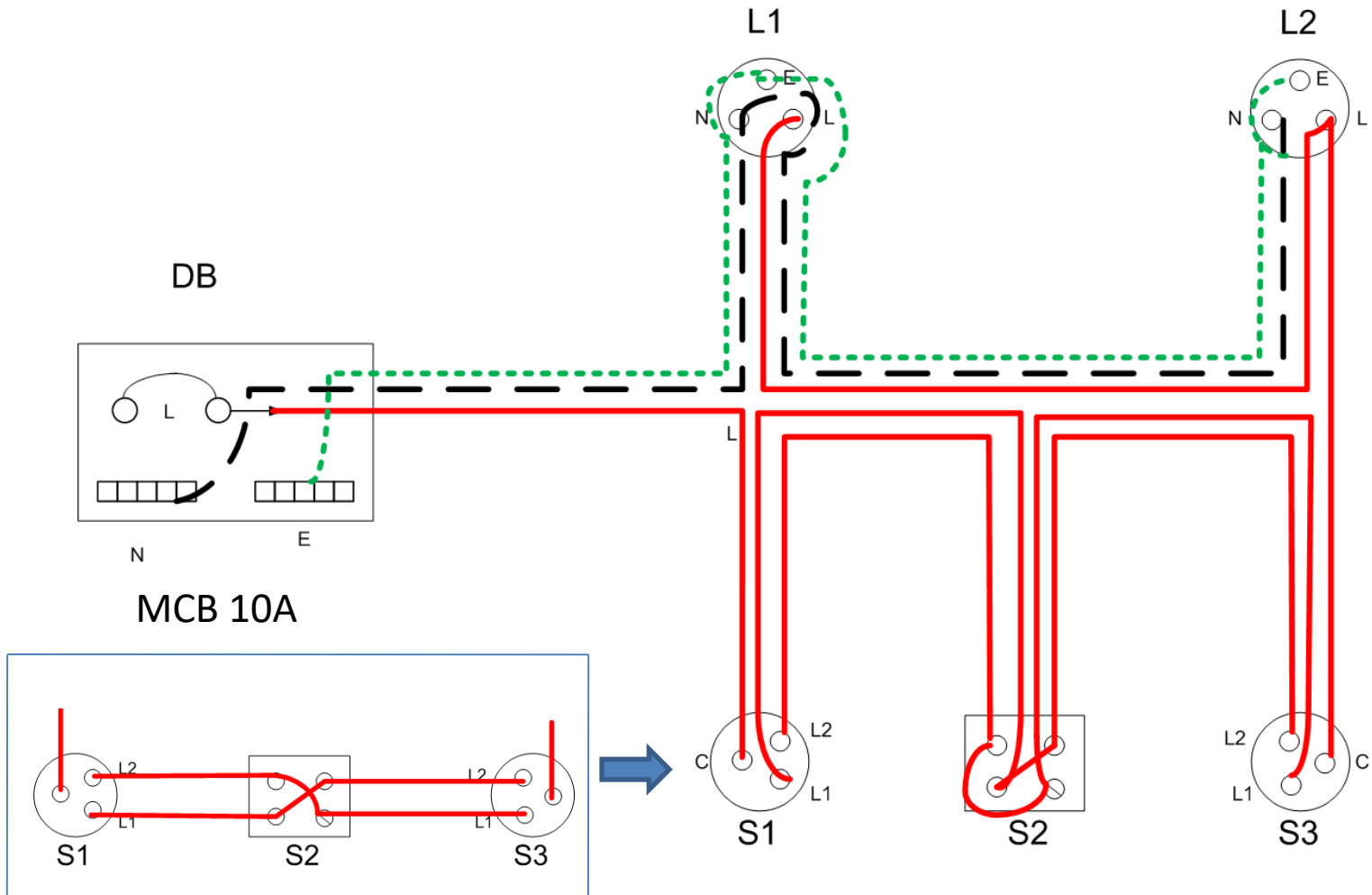
(d) (S1 & S2 Control L1)..Cont....



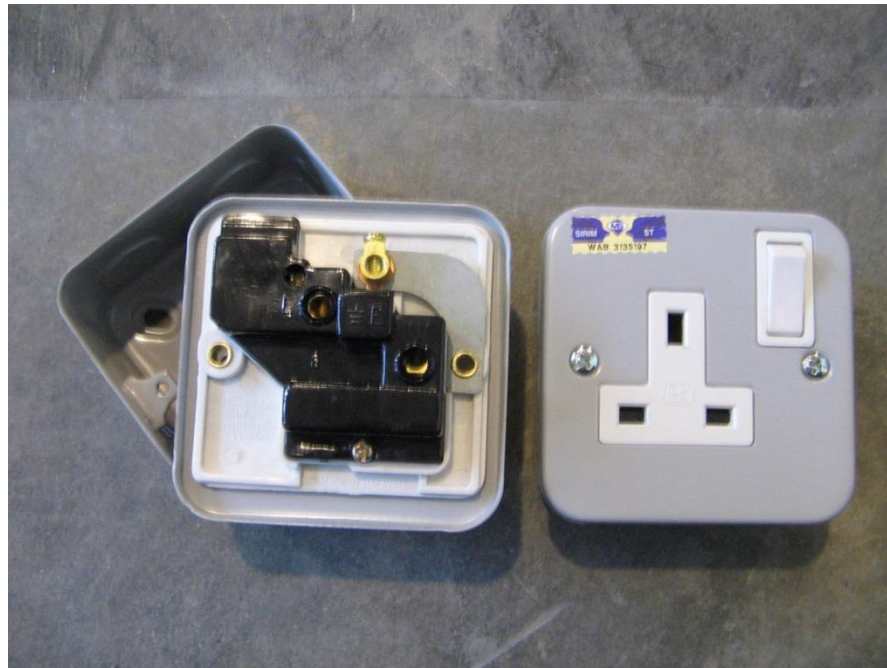
(e) Two light points controlled by two way switch and intermediate switch (S1, S2 & S3 Control L1 & L2)



(e) (S1, S2 & S3 Control L1 & L2)..Cont...



3.2 Socket Outlet Circuit



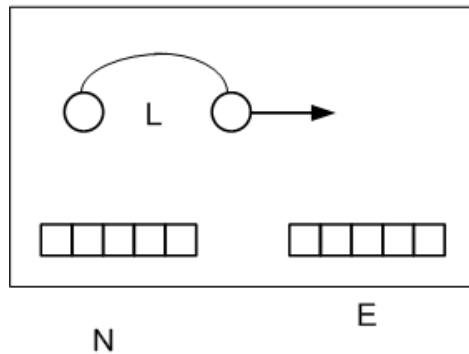
Final Circuit For 13A Socket Outlets

Circuit Type	Over Current Protection Rating (Fuse or MCB) (Amp)	Cable size (mm²)	Maximum Floor Area (m²)	Maximum total number of Socket Outlet
Ring	30 or 32	2.5	100	10
Radial	30 or 32	4.0	50	6
Radial	20	2.5	20	2

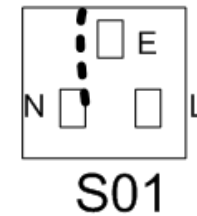
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(a) Socket Outlet – Single Socket

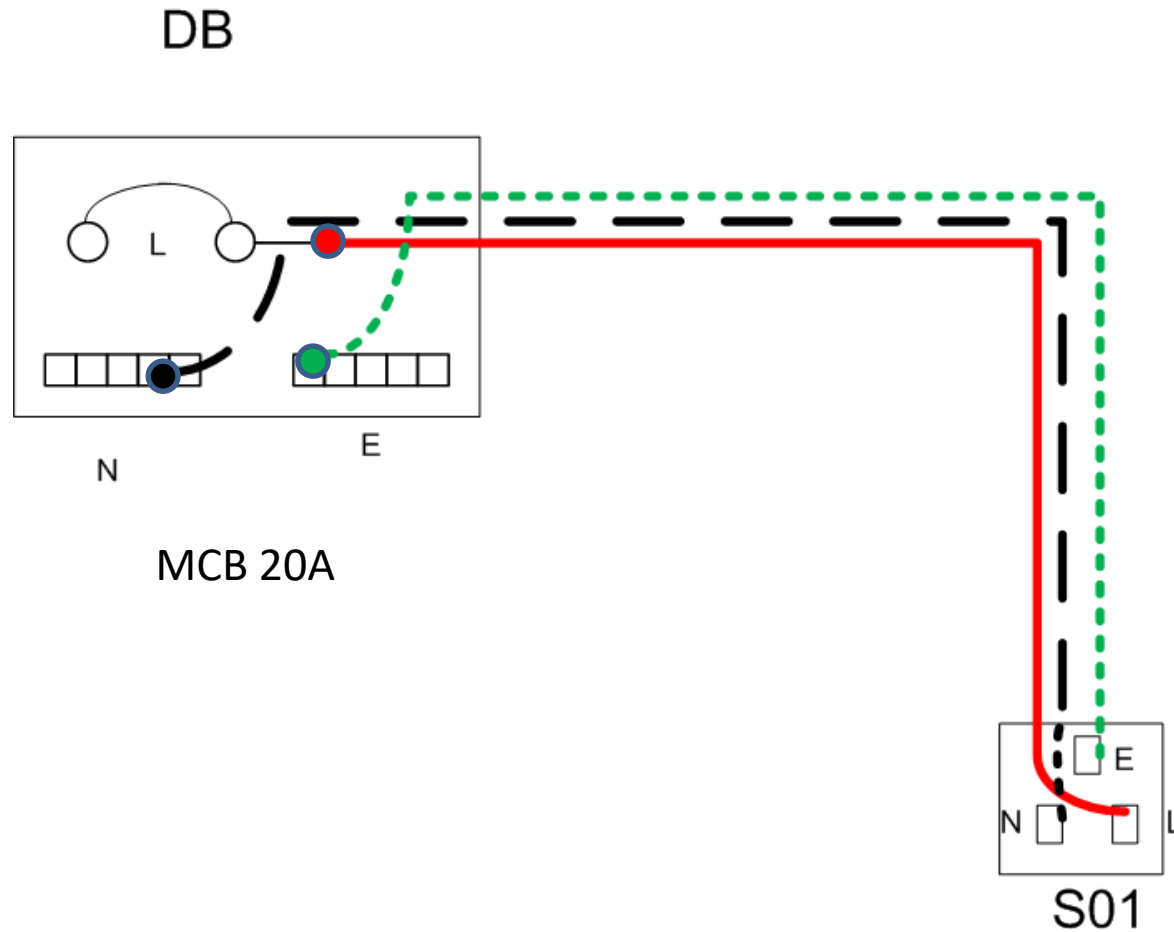
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MCB 20A

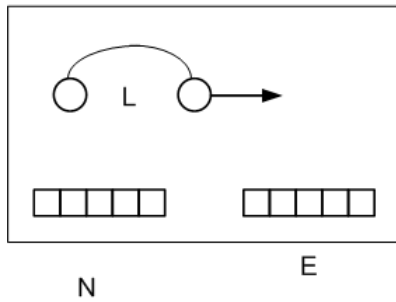


(a) Socket Outlet – Single Socket

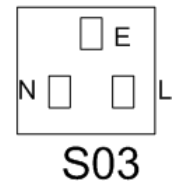
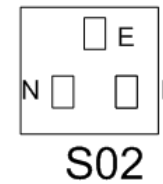
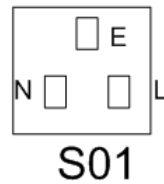


(b) Socket Outlet – Radial Connection

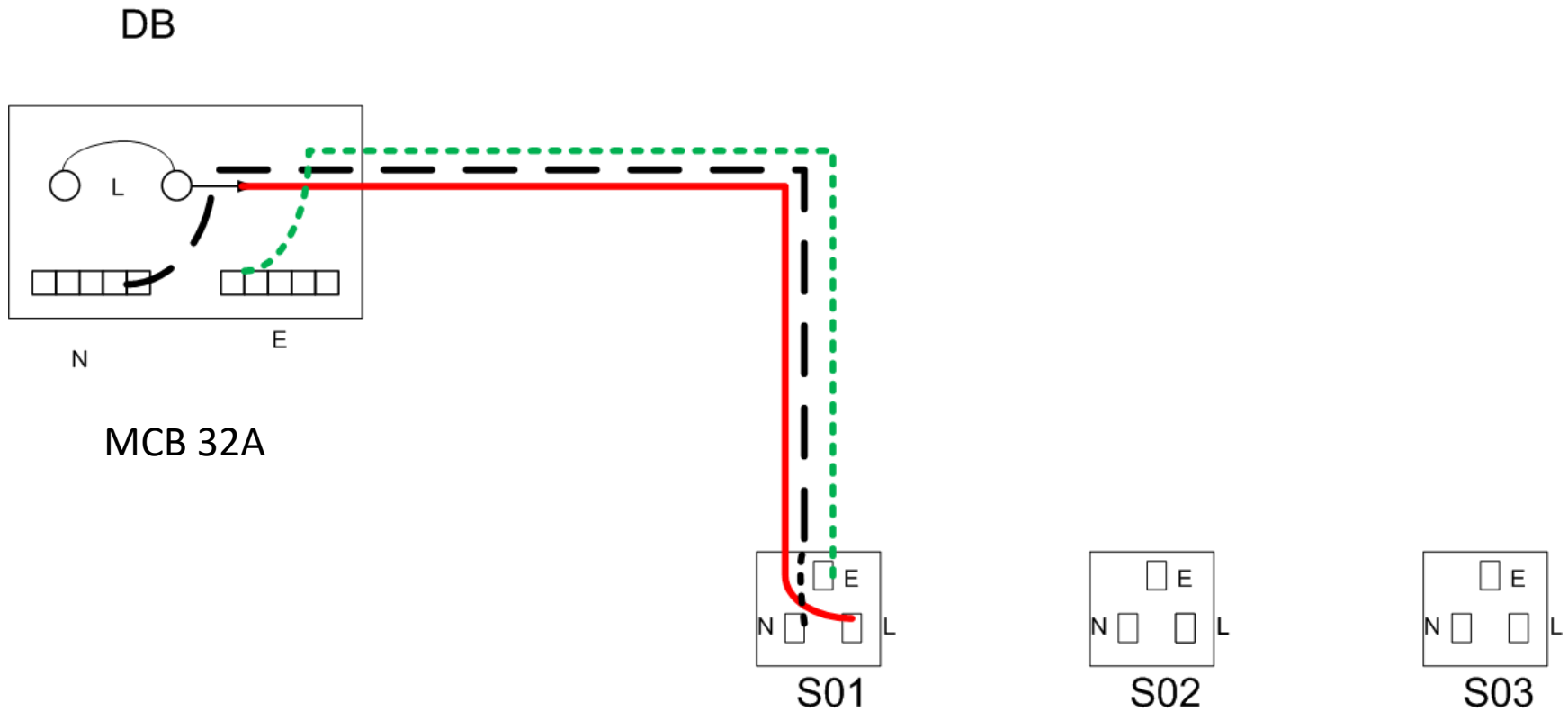
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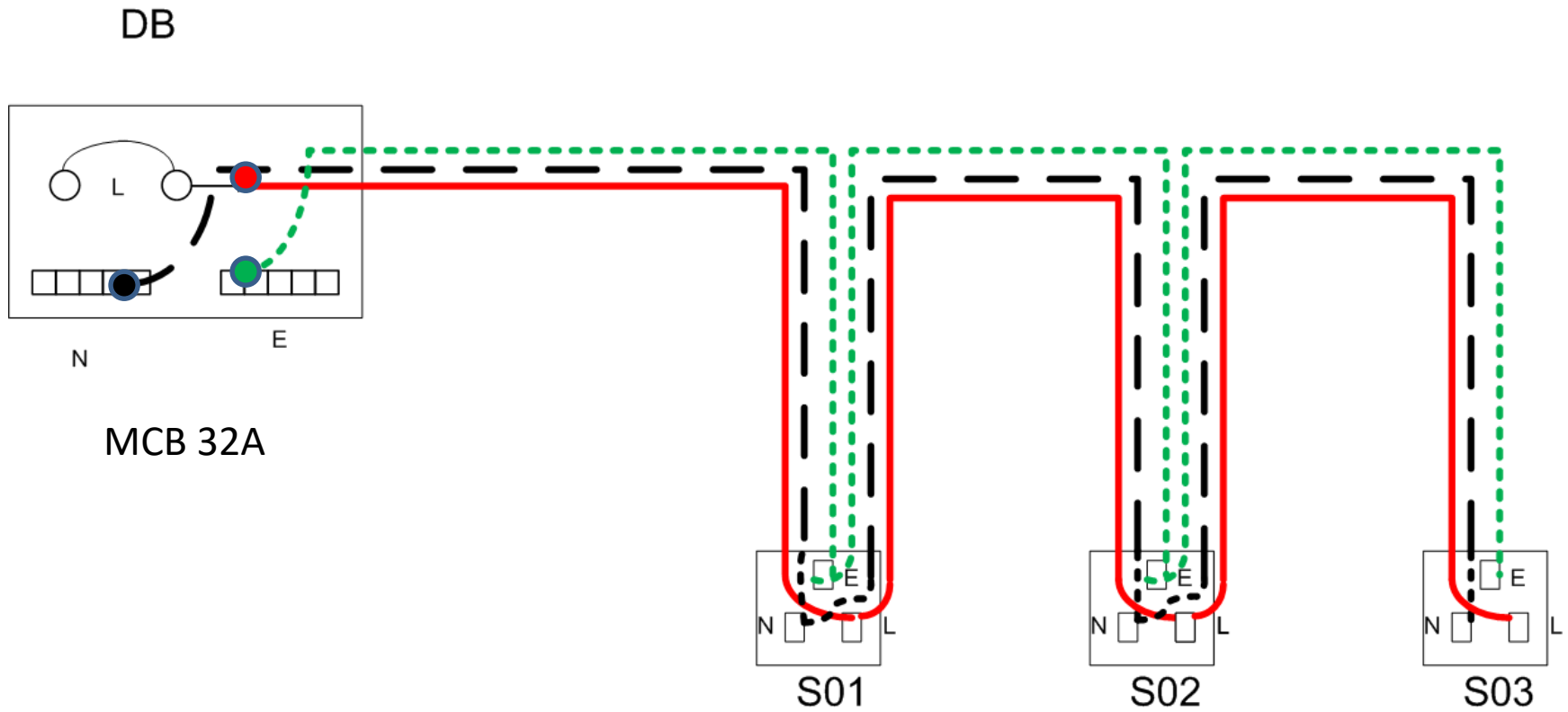
MCB 32A



(b) Socket Outlet – Radial Connection

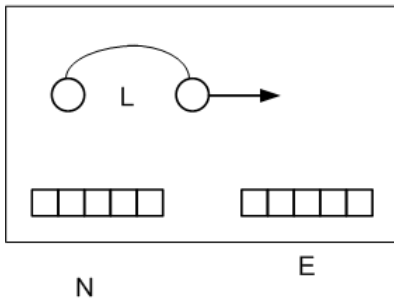


(b) Socket Outlet – Radial Connection

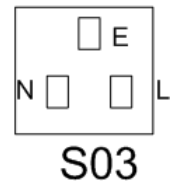
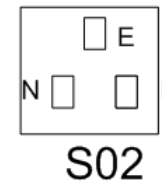
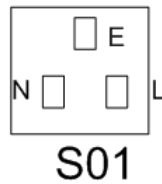


(c) Socket Outlet – Ring Connection

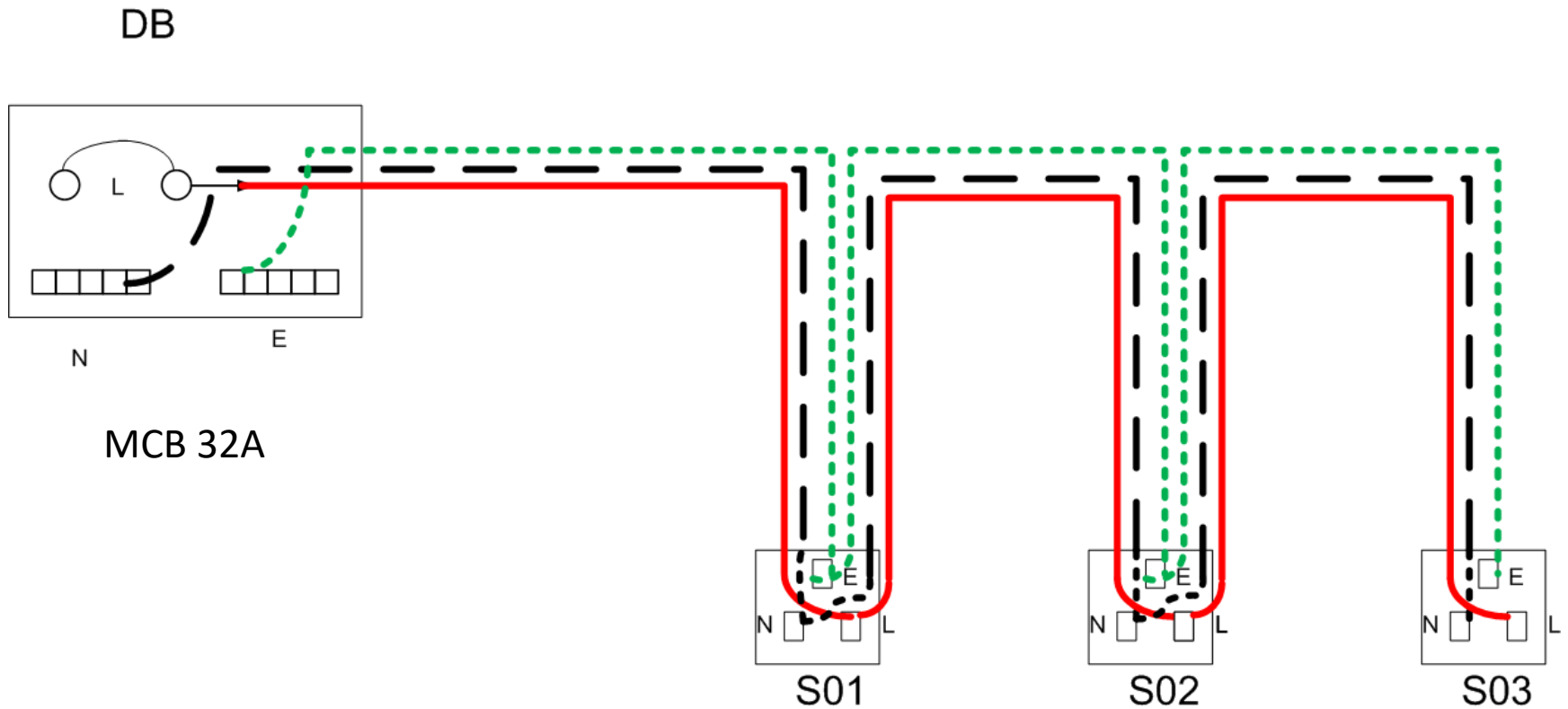
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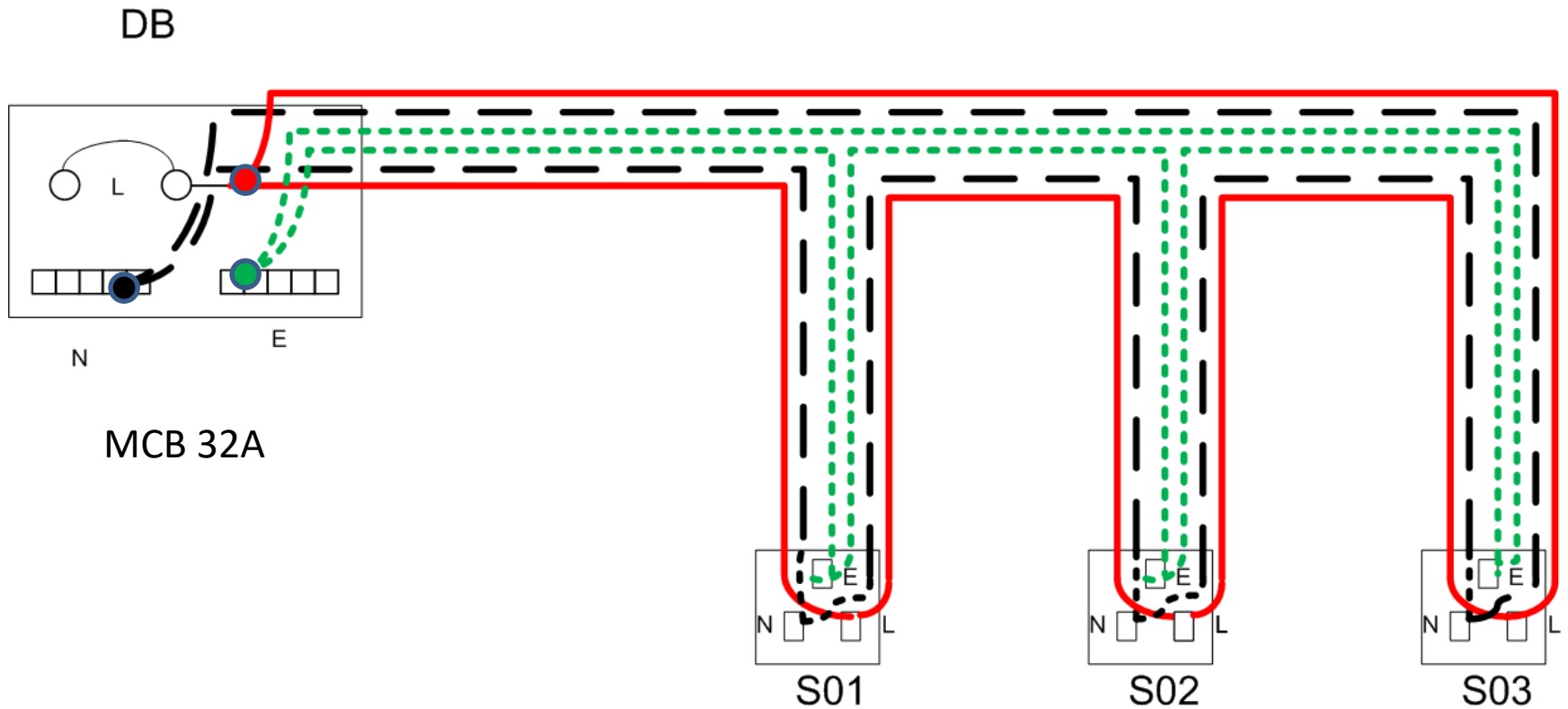
MCB 32A



(c) Socket Outlet – Ring Connection

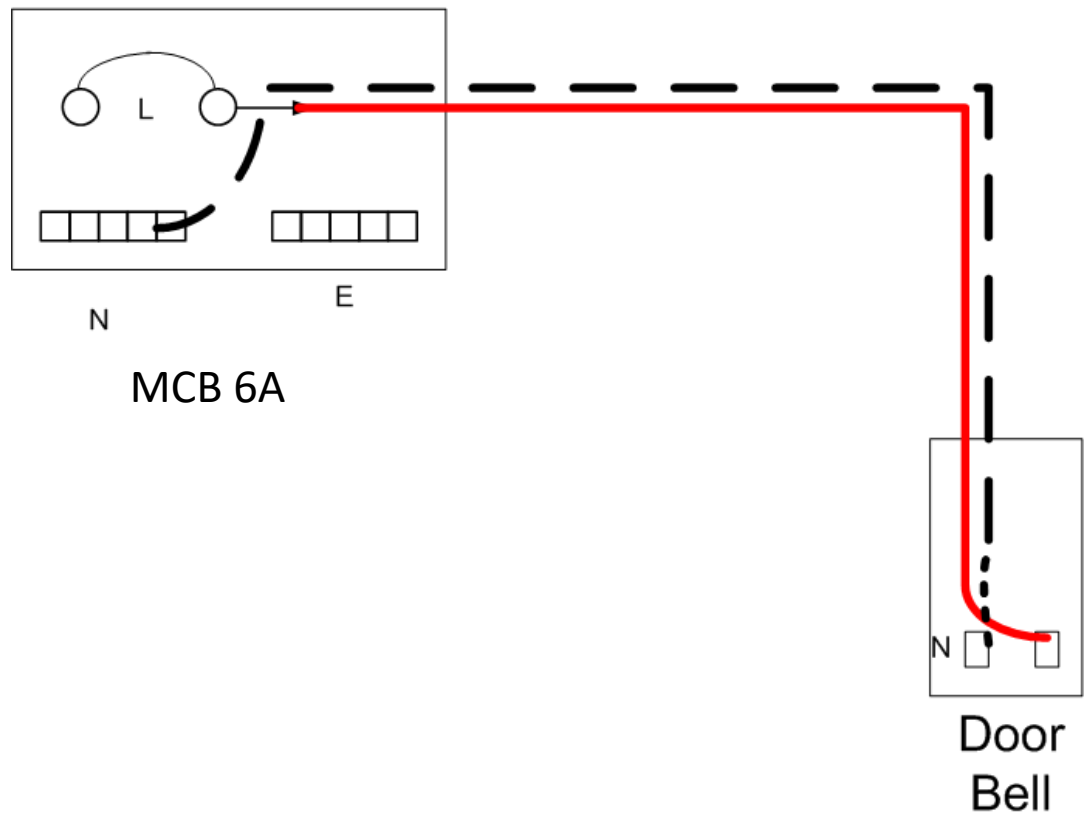


(c) Socket Outlet – Ring Connection

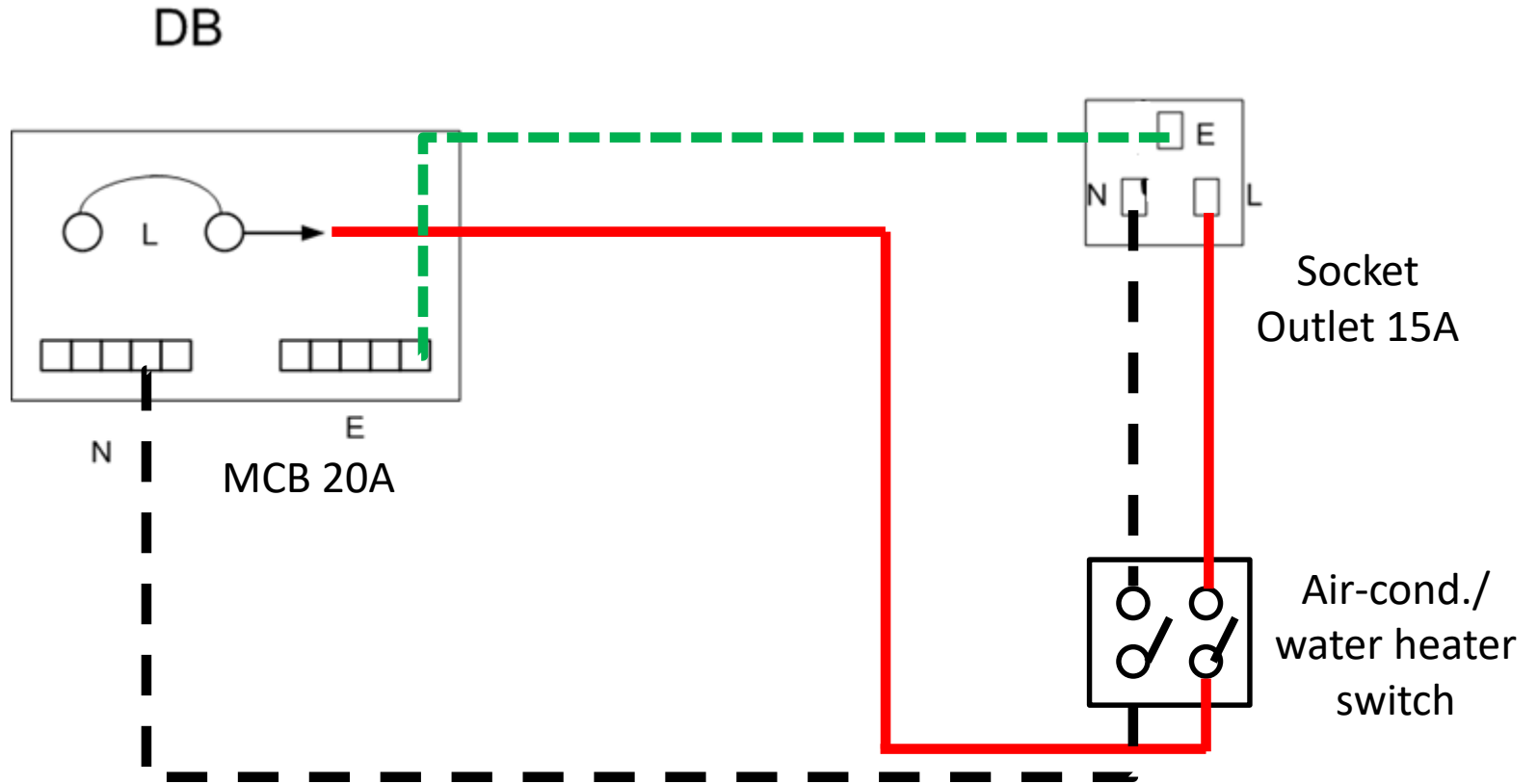


3.3 Door Bell Circuit

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3.4 Air-Conditioner Circuit



References

- [1] Suruhanjaya Tenaga, *Guideline For Electrical Wiring in Residential Buildings*, 2008.

Thank you

