

Victron Phoenix Inverter 1200W 24V

Max wire size it's capable of accepting = 4 AWG.

Max efficiency = 94%

$1200W/24 = 50A$ and on DC side accounting for 80% inverter efficiency ($/0.8$) = 62.5A

$2400W/24 = 100A$ and on DC side ($/0.8$) = 125A [Surge]



Manual Recommended DC cable size:

Length up to 1.5m = 10mm² [AWG 7 = 10.5mm²]

Length 1.5m to 3m = 16mm² [AWG 6 = 16.8mm²] **65A @ 75C**

These wire sizes do not account for surges.

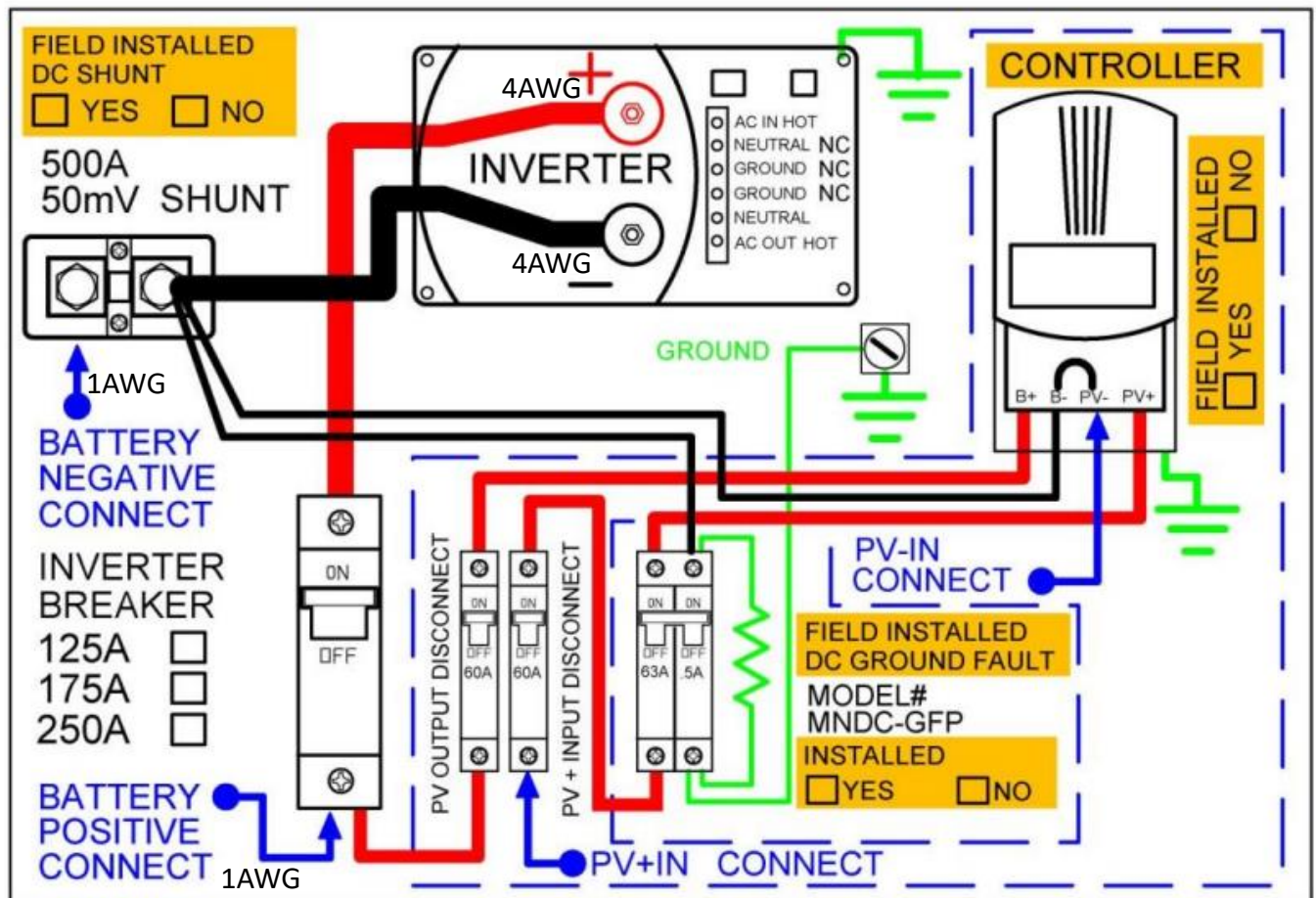
Wire size to account for surge.

In Midnite Mini series C enclosure NEC Table 310.15(B)(17) applies.

4 AWG = 125A @ 75C (to inverter but cannot be in conduit – see below)

Outside of the enclosure in conduit NEC Table 310.15(B)(16) applies.

1 AWG = 130A @ 75C (Battery +ve to breaker and –ve to DC Shunt – see below)



Wiring diagram supplied on the door of MNDC

MidNite Classic 200

DC output max = 79A

NEC code requires addition of 25% (only 25% as using breaker rated for continuous duty) = 98.75A

In the enclosure Table 310.15(B)(17) allows use of 4AWG wire rated for 125A @ 75C.

Outside of enclosure and in conduit Table 310.15(B)(16) allows use of 3 AWG wire rated for 100A @75C.



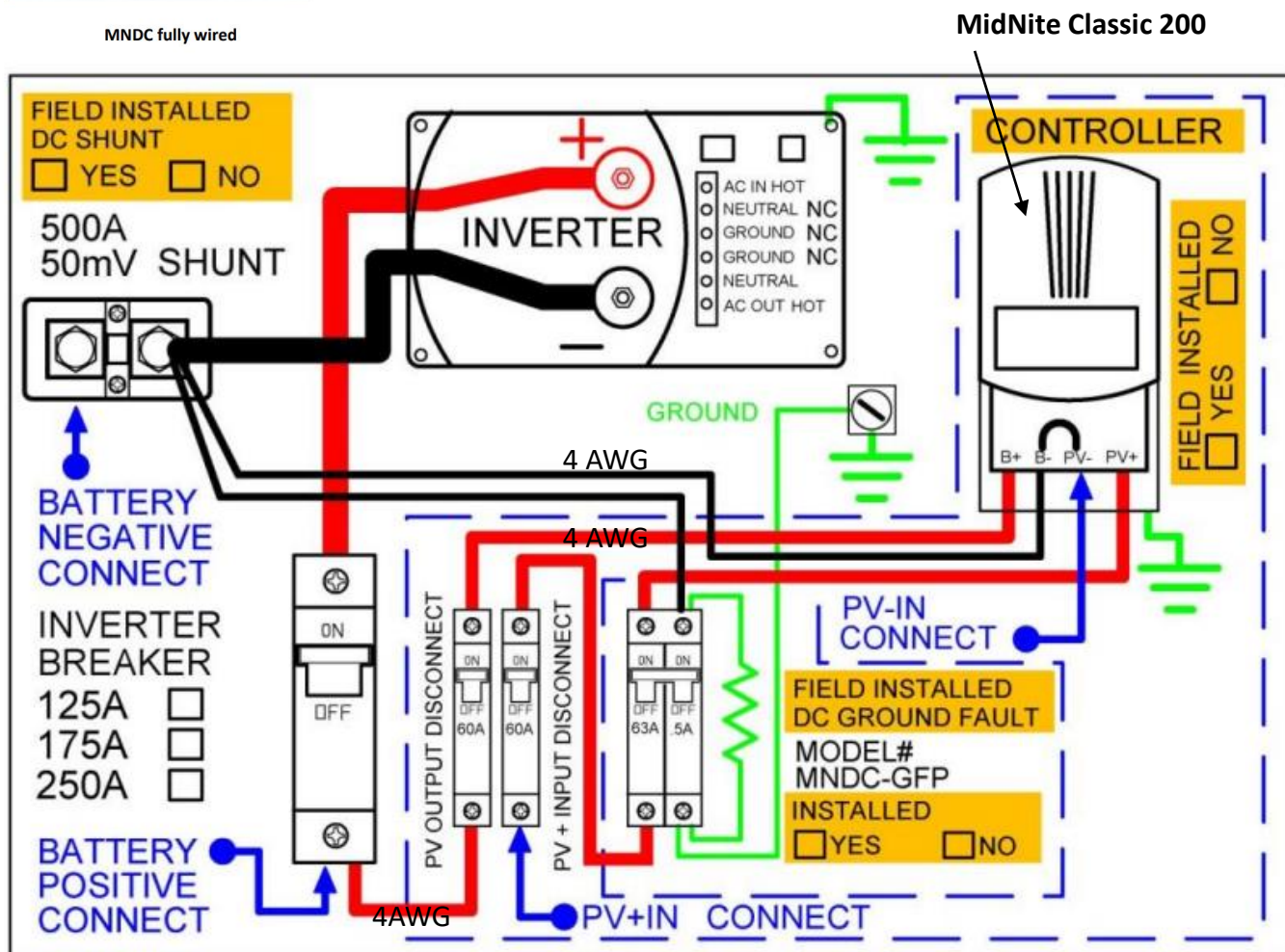
MNDC fully wired

Note:

To be NEC code compliant the 4AWG wire cannot run in conduit from the MidNite Classic 200 because in conduit the 4AWG max permitted ampacity is 85A @ 75C and 95A @90C (See Table 310:15(B)(16).

Both fall short of the 98.75A in conduit.

Attaching the MNDC series C enclosure to the classic avoids this issue.



Wiring diagram supplied on the door of MNDC