



## Power factor correction and harmonic filtering

## Capacitors 60 Hz network

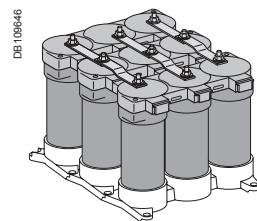
480 V network voltage

Varplus<sup>2</sup> capacitors

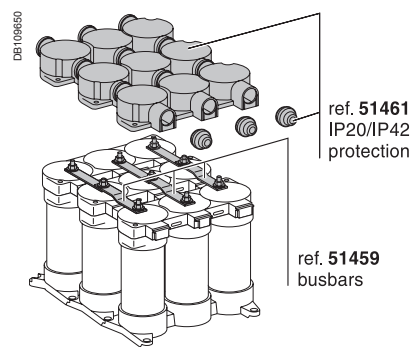
Varplus<sup>2</sup> modular capacitors allow by their different assembly combination to cover many power ratings (kvar) depending on the voltage (V), frequency (Hz) and harmonic pollution level of the network.



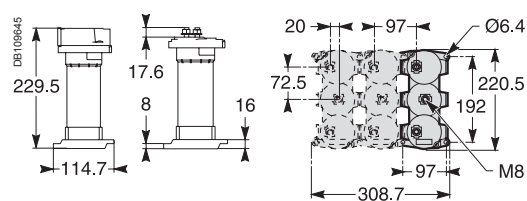
Varplus<sup>2</sup> IP00



Example of Varplus<sup>2</sup> IP00 assembly.



Varplus<sup>2</sup> accessories.



Weight of Varplus<sup>2</sup> 2.1 kg.

### Slightly polluted and polluted network (Gh/Sn ≤ 25 %)

Varplus <sup>2</sup>		
Usefull powers	Rated values	Reference
480 V (kvar)	550 V (kvar)	
10.5	14	51351
12.5	16.5	51353
15	19.5	51383
16.5	21.5	51357
Assembly advised		
21	28	2 x 51351
25	33	2 x 51353
33	43	2 x 51357
43.5		2 x 51357 + 51351
49.5	64.5	3 x 51357
60		3 x 51357 + 51351
66	86	4 x 51357

Maximum mechanical assembly: 4 capacitors and 66/86 kvar 480/550 V.  
Assembly > 66 kvar: see conditions to respect in Varplus<sup>2</sup> user manual.

### Highly polluted network (25 % < Gh/Sn ≤ 50 %)

Same capacitors will be used with detuned reactors.

### Technical data

- capacitor rated voltage: 550 V, 3-phase 60 Hz
- HQ protection system built into each single phase element
  - high current fault protection by HRC cartridge fuse
  - low current fault protection by combination of single phase internal overpressure device with the HRC fuse
- capacitance value tolerance: -5, +10 %
- insulation level:
  - withstand 60 Hz 1 minute: 4 kV
  - impulse wave withstand 1.2/50 μs: 15 kV
- voltage test: 2.15 Un (rated voltage) for 10 s
- maximum permissible overloads at service voltage network as per IEC 60831 1/2:
  - current: 30 % permanently
  - voltage: 10 % (8 hours over 24 hours)
- with internally fitted discharge resistors: residual voltage less than 50 V in 1 minute
- total losses: less than 0.5 Watt/kvar (discharge resistors included)
- temperature class D (+55 °C):
  - maximum: 55 °C
  - average over 24 hours: 45 °C
  - average over 1 year: 35 °C
  - maximum: -25 °C
- colour:
  - elements: RAL 9005
  - base and cover: RAL 7030
- standards: IEC 60831 1/2, CSA 22-2 N°190, UL 810
- execution: indoor
- protection:
  - IP00 without cover (option)
  - IP20 or IP42 see accessories
  - no earth connection is needed
  - terminals: 3 M8 rods allowing 360° cable connection (without cover).

Accessories for Varplus <sup>2</sup>	Reference
1 set of 3-phase copper bars for connection and assembly of 2 and 3 capacitors	51459
1 set of protective cover (IP20) and cable glands (IP42) for 1, 2 and 3 capacitors	51461

### Installation

All positions are convenient except vertical one with connecting terminals upside down. Fixing holes for M6 screws. A kit to replace Varplus by Varplus<sup>2</sup> is available (ref. 51298).

