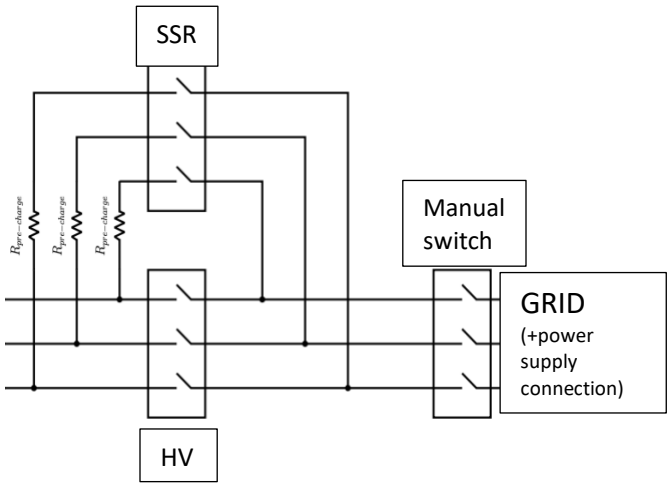
HV circuit and ratings (updated)

As we talked, we are using this configuration of switches (HV – Soft Start Relay - Manual switch):



The 3 main switches for each phase:

- the right one is main switch so we can control the circuit manually
- HV is high-voltage relay for protection.
- soft start relay (for pre charging) which limits the inrush current at powering-up.

The models that meet the requirements and may be appropriate:

- HV: https://www.farnell.com/datasheets/2626616.pdf
  the same model in "List of components" documents.

- Soft-Start Relay: https://www.farnell.com/datasheets/3625081.pdf
  - $R_{Pre\text{-}charge}$ = 100[Ohm]

- Manual Switch:
  we looked in the link you sent us : http://www.langirele.com/pdf/rotary-switch-lw30.pdf

We calculate the current rating for 230[V] and 10[kW]:

We have 3-phase so each phase is $\frac{10[kW]}{3} = \boldsymbol{3.333[kW]}$

Assuming a power factor of 0.92 in Israel, we have a current of:

$$I_{rms} = \frac{P * 0.92}{V} = \frac{0.92 * 3.333[kW]}{230[V]} = \boldsymbol{13.333[A]}$$

Adding a margin of 50% we get a current rating of:

$$current\ rating = 1.5 * 13.333[A] = 23.6[A] \approx \boldsymbol{20[A]}$$