Reactive Power

what voltage should be referred to?

The reactive power of a PFC system, be it Automatic or Fixed, both «Standard» and «Detuned», **must always refer to the network voltage (or operating voltage).**

Besides offering no technical feedback, referring to the Capacitor voltage power can only mislead and negatively influence the choice of the correct power itself, because the higher the voltage, the higher the value in kVAr increases.

In parallel, however, once the System is installed, a % power deficit will be obtained as a function of the network voltage on which the system will operate.

Below is a summary table showing the **deficit %** referring to a 400 V network, which **can even reach close to 50%.**

Capacitor Voltage	Network Voltage	Power deficit %
415	400	8%
440	400	18%
450	400	21%
460	400	25%
500	400	36%
525	400	42%
550	400	48%

Example
The following is a definition that we have seen many times.

“Standard” Power Factor Correction 500 kVAr with Capacitors 550 V

Unless otherwise indicated, anyone could assume that the System, despite being equipped with 550 V Capacitors (not necessary, see paragraph on Capacitor Voltages), is capable of delivering 500 kVAr at a voltage of 400 V.

In fact, the System is proposed for a power of 500 kVar referred to the voltage of the Capacitors (550 V) and therefore, once installed and operating on a 400 v network, will supply a reactive power of 264 kVAr (- 48 %).

Caution!!

Regardless of the voltage of the Capacitors, TELEGROUP always refers the power of the Systems to the network voltage.