



**Comprehensive  
services in  
power quality**

# TKF PROVIDES COMPREHENSIVE SERVICES IN POWER QUALITY

We are an expert in power factor correction and help our customers in matters related to power quality.

For the customer, reactive power often appears as an additional fee on the electricity bill. TKF provides solutions for the cost-effective elimination of reactive power fees. Reactive power fees will be a thing of the past, and the investment typically repays itself in 1-3 years.

If necessary, we will measure power quality on-site and offer our recommendation for the best course of action. We manufacture power factor correctors and harmonic filters according to customers' needs in our own production unit. We also provide inspection

and maintenance services for equipment. Outdated power factor correctors, regardless of the manufacturer, can be repaired with our spare parts or replaced with entirely new equipment.

The solutions offered by TKF are in use at thousands of customer sites, from office buildings to industrial facilities. Our customers' needs range from conventional power factor correction to demanding applications in critical public infrastructure.

## Detuned filter capacitor banks:

Product	Power (kvar)	Steps (kvar)	Current (A)	Dimensions (width x depth x height)	Weight (kg)	Fuse (A)	Cable (Cu/mm <sup>2</sup> , recommended)
TKF-E45/7.5+12.5+25/400-50-189	45	7.5+12.5+25	65	800x600x1150*	130	3*100	3 x 50 + 25
TKF-E70/7.5+12.5+2x25/400-50-189	70	7.5+12.5+2x25	101	800x600x1150*	150	3*160	3 x 70 + 35
TKF-E75/2x12.5+2x25/400-50-189	75	2x12.5+2x25	108	800x600x1150*	150	3*160	3 x 70 + 35
TKF-E75/12.5+25+37.5/400-50-189	75	12.5+25+37.5	108	800x600x1150*	150	3*160	3 x 70 + 35
TKF-E95/7.5+12.5+25+50/400-50-189	95	7.5+12.5+25+50	137	800x600x1150	180	3*200	3 x 120 + 70
TKF-E100/2x12.5+25+50/400-50-189	100	2x12.5+25+50	144	800x600x1150	180	3*200	3 x 120 + 70
TKF-E125/12.5+25+37.5+50/400-50-189	125	12.5+25+37.5+50	180	800x600x1150	190	3*250	2 x (3 x 70 + 35)
TKF-E150/2x12.5+25+2x50/400-50-189	150	2x12.5+25+2x50	217	800x600x1150	200	3*315	2 x (3 x 70 + 35)
TKF-E175/25+3x50/400-50-189	175	25+3x50	252	800x600x2000	280	*315	2 x (3 x 95 + 50)
TKF-E200/2x12.5+25+3x50/400-50-189	200	2x12.5+25+3x50	288	800x600x2000	320	3*400	2 x (3 x 95 + 50)
TKF-E200/2x25+3x50/400-50-189	200	2x25+3x50	288	800x600x2000	320	3*400	2 x (3 x 95 + 50)
TKF-E225/25+4x50/400-50-189	225	25+4x50	324	800x600x2000	350	3*400	2 x (3 x 120 + 70)
TKF-E250/2x25+4x50/400-50-189	250	2x25+4x50	361	800x600x2000	380	3*500	2 x (3 x 150 + 70)
TKF-E275/25+5x50/400-50-189	275	25+5x50	397	800x600x2000	420	3*630	2 x (3 x 185 + 95)
TKF-E300/2x25+5x50/400-50-189	300	2x25+5x50	433	800x600x2000	450	3*630	2 x (3 x 185 + 95)
TKF-E300/6x50/400-50-189	300	6x50	433	800x600x2000	450	3*630	2 x (3 x 185 + 95)
TKF-E400/2x25+50+4x75/400-50-189	400	2x25+50+4x75	577	800x600x2000	520	3*800	2 x (3 x 240 + 120)

\*Wall-mounted model 450x300x1200 (W x D x H) is available for power class 45-75 kvar detuned filter capacitor banks.

## What is reactive power?

All electrical devices require active power in order to function. Many electrical devices, such as electric motors, also require reactive power.

Reactive power may be generated at a power plant and transmitted via the power grid to the electrical installation. In this case, the electricity company charges a reactive power fee. **Instead of paying the electricity company, reactive power can be generated locally by means of a power factor corrector installed to the electrical installation.** The device may be a detuned filter capacitor bank installed in the electrical room, or a capacitor unit adjacent to an individual electric motor.

## What are harmonics?

Ideally, electric current and voltage follow a sinusoidal pattern. Some electrical devices cause distortions in the sine wave of the power network supplying the device. These distortions in the sine wave are called harmonics. **High levels of harmonics in a network result in disruptions and additional costs.** A suspected high level of harmonics in the system is confirmed by measurements.

In a system with a high level of harmonics, active harmonic filters or passive harmonic filters are required instead of or in addition to a detuned filter capacitor bank. The most commonly used harmonic filters are for the 5th and 7th order harmonics. **More information [www.tkf.fi](http://www.tkf.fi)**



## Detuned filter capacitor banks

In selecting the detuned filter capacitor bank, the system's reactive power need and fluctuations in the need must be known. The total reactive power need is usually evident in the electricity bill. A detuned filter capacitor bank is comprised of suitable compensation steps. The steps are selected depending on the fluctuation of compensation needs in the system. In more complex systems, reactive power need and power quality are verified by measurements.

### Features:

- 400V, 50Hz
- Tuning frequency 189 Hz
- 6-step controller (12-step controller in products with more than 6 steps)
- Cabling from above
- Filter fan
- Enclosure class IP30
- Indoor installation 0-35°C

### Options:

- Tuning frequency other than 189 Hz, such as 134 Hz or 141 Hz.
- Outdoor installation: IP43, -25-(+35)°C
- Cabling from below or side
- Slave capacitor bank without controller

## Capacitor units

Capacitor units are intended for local power factor correction of an electric motor or as a replacement for capacitor units fitted in the detuned filter capacitor bank.

Capacitor units with enclosure class IP54:  
7.5 kvar | 12.5 kvar | 25 kvar | 37.5 kvar | 50 kvar

TKF also provides other spare parts for power factor correction equipment, such as cylindrical capacitors and power factor controllers. **More information [www.tkf.fi](http://www.tkf.fi)**



Dimensions 300\*150\*420 mm (W\*D\*H) with enclosure



**[www.tkf.fi](http://www.tkf.fi)**

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