Three-phase power factor correction device series AF - 4W

The A2B company introduces a solution for the problematic of reactive power with tenable economic costs.

Bill of cost for electrical energy consists of two items, active power (kW) and reactive power (kVAr). The reactive power can have capacitive or inductive characteristics. Both items are billed according to the regulations set by the Regulatory Office in each country.
- reactive energy of a capacitive character - is defined as a supply of electric energy (kVArh)
- reactive energy of an inductive character - is defined as a loss during supply of electric energy (kVArh).
Both these items compensate each other during operation, but their amounts are never equal to zero under normal conditions and as such, with regard to billing fees of the electric energy, it‘s more efficient to set the reactive electric energy for the inductive property with power factor cosϕ>0,95, as it results in billing fees only for the active power (kWh) with penalty fees not billed.

MAIN ADVANTAGES OF THE POWER FACTOR CORRECTION DEVICE:

- **Saving consumer's costs by compensating the reactive power, which can contribute to annual financial savings of up to hundreds of EUR,** depending on the electric energy consumption on consumer's side.
- Electronic correction power factor – capacitive and inductive items.
- Developed by using most advanced technologies:
  - based on the **DSP (Digital Signal Processor)** - enables implementation of **the most advanced managing algorithms** which help achieve better quality and flexibility of the system.
  - minimizing dimensions by applying SMT (Surface Mount Technology) technology.
- Fulfils the role of a specified filter, eliminating the impact of reactive load on the supply electric network.
- As opposed to a passive filter, it can dynamically adapt correction load and generate corrective current that results in eliminating reactive energy values almost to zero.
- Power losses of the power factor correction device, in comparison to a passive filter, with the same operational parameters are much lower.
- Compared to passive filters it takes much less space

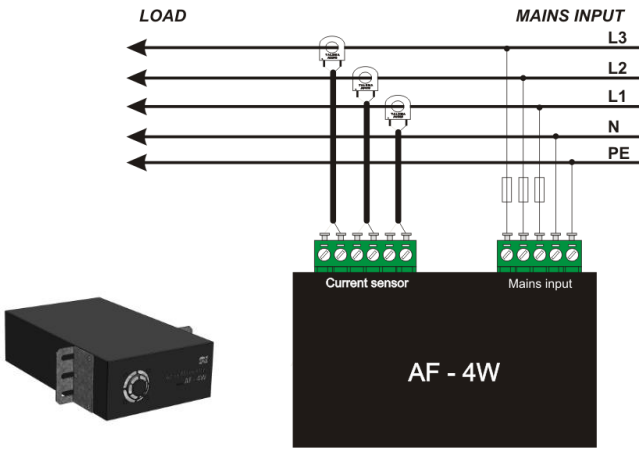

Diagram of the connection of AF-4W (PFC device) to the TN-S system

Three-phase power factor correction device series AF - 4W

TECHNICAL SPECIFICATION

TYPE	AF-4W-1000	AF 4W-3000	AF 4W-3000L
AC INPUT / OUTPUT			
Mains system on input	TNS / TNC		
Nominal input voltage	3 x 230 V / 400 V		
Input mains range	3x160 ÷ 275/277 ÷ 475 V		
Mains frequency	50 Hz		
Max. measured input current	11,8 A rms	41 A rms	61 A rms
Max. measured input power	8,1 kVA	28 kVA	42 kVA
Pre-protection	Fuse medium slow, ceramic M 2,5 A, 5 x 20 mm / 3 pcs	Fuse medium slow, ceramic M 6,3 A, 5 x 20 mm / 3 pcs	Fuse medium slow, ceramic M 6,3 A, 5 x 20 mm / 3 pcs
Diameter of current transformer hole	9,5 mm	14,5 mm	19 mm
Wire cross section – mains input	1,5 mm^2	2,5 mm^2	
Compensation nominal power	1000VAr–330Var / phase	3000VAr–1000VAr / phase	
Own consumption	max. 20 W [1)]	max. 50 W [1)]	
Cooling	Forced		
COMMUNICATION OPTIONS			
Indications	Galvanically isolated RS485 interface, MODBUS protocol. 2 x potential-free relay 4 kV isolated - switching contact LED on the front		
CONSTRUCTION PARAMETERS			
Dimensions (W x D x H) [mm]	150 x 250 x 70		
Weight [kg]	1,5	2	
Degree of protection	IP20		
AMBIENT CONDITIONS			
Operating temperature	-25 ºC up to 40 ºC		
Relative humidity	0 – 90 % non-condensing		
STANDARDS			
Safety	STN EN 60950-1		
EMC	STN EN 61000-3-3: 2013, STN EN 55022: 2010/AC: 2011		

[1)] Self consumption is depending on the amount of compensated energy. Showcased value corresponds to maximal load of the compensator.