

A reliable electric power supply is in companies the basic requirement for all operational sequences. Many electrical devices are polluting electrical grid by non-linear load current. Effect is, that electrical devices are disturbing each other and correct function is not possible. Also load in electrical grid is much more as necessary. In extreme situations, this can cause shortage in electrical power-supply. An indication for such situation are harmonics, unbalanced load, neutral current and bad power-factor. Function of active filter BEL-AF is improvement of voltage quality by filtering the current. BEL-AF is compensating harmonics upto 51st order, balancing phase current and improvement of power-factor. By this neutral current will be reduced.

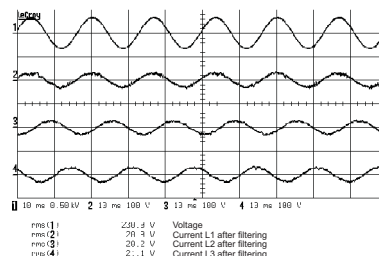
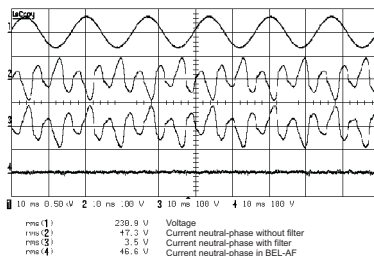
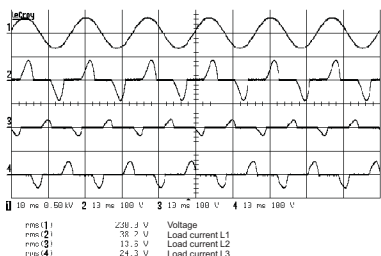


### EXAMPLE OF FUNCTION

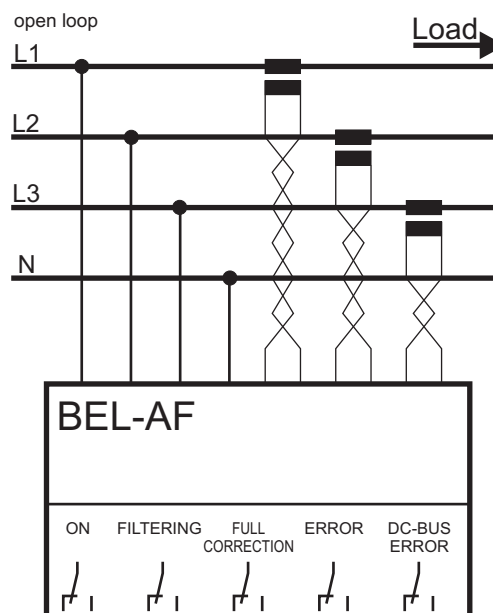
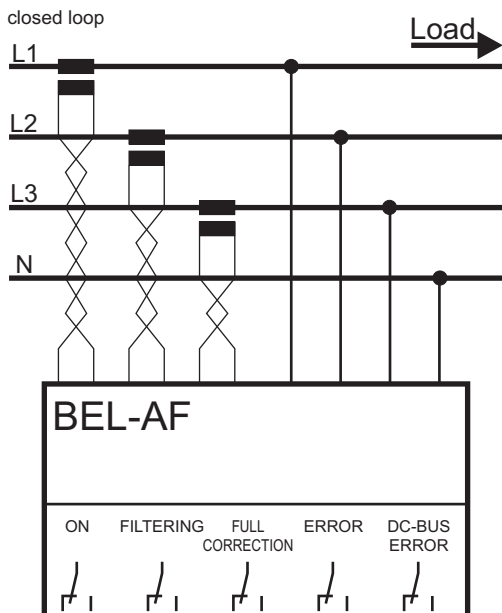
Unbalanced load current with high harmonic content can be the reason that required quality of mains-voltage cannot be met. Examples for electrical load which creates these problems are power supplies of electronic devices, inverter and energy saving lamps.

Current of harmonics divisible by three and unbalanced current create neutral current. This is often larger than phase current. BEL-AF is compensating harmonic current and unbalanced load. By this way neutral current is reduced.

Filtering of current by BEL-AF causes symmetrical sinusoidal phase current. Condition for this is, that BEL-AF is sized with sufficient capacity. With enough power reserve real-time compensation of phase-shift is also possible.



### CONNECTION DIAGRAM



## TECHNICAL DATA

		BEL-AFW435@400C	BEL-AFW460@400C	BEL-AFW490@400C	BEL-AFW4120@400C
Compensation current	3 phase / 3 wires	35A	60A	90A	120A
	3 phase / 4 wires	35A / 105A	60A / 180A	90A / 270A	120A / 360A
Current limit		at full correction			
Inrush current		less than rated current			
Compensated harmonic orders		2nd to 51st order			
Response time		< 20ms			
Power factor correction		ind. 0,70 - cap. 0,70			
Input voltage		400V +15% -20%			
Frequency		47 - 63 Hz			
Current transformer	standard	100A:1A - 10000A:1A			
	optional	100A:5A - 10000A:5A			
CT location	source side	close loop control			
	load side	open loop control			
Max. heat losses		< 700W	< 1350W	< 2000W	< 2650W
Cooling		AF, air forced			
Altitude		< 1000m above sea-level			
Ambient temperature	Operation	0°C - + 40°C			
	Storage	-20°C - + 70°C			
Display		LCD			
Status indication		4 LED - POWER ON, FILTERING, FULL CORRECTION, ERROR			
Handling		2 keys: ON/OFF, RESET; 6 keys: menu			
Indication in LCD	meter	paramter, wave form and spectrum			
	event log	upto 300 records (FIFO)			
	configuration	all necessary settings and modes			
	language setting	upto 10 different languages			
Interfaces	standard	RS232 / USB			
	optional	RS485 / RS422 / Ethernet			
I/O s	standard	5 output dry contacts			
	standard	1 input dry contact			
	standard	1 EPO			

## PARALLEL OPERATION

