The best of both worlds

Increasing motor life and reducing EMI while increasing ROI

Pure|Power|Perfection

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Business purchasing decisions are increasingly being made in a vicious cycle of short-termism, even under circumstances where a long term strategy may yield higher return on investment (ROI). At a time when austerity measures are leading businesses to cut costs. Manufacturers can use high current line reactors to make considerable energy savings, increase motor life and reduce electromagnetic interference (EMI) issues.

There is no doubt that we are living in an era of unprecedented change; in a world where competitiveness has captured the hearts and minds of decision makers. From lean and kaizen in manufacturing to third-tier auditing in supply chains and the push towards reducing carbon emissions using green technology saving money is high on the agenda. The way has been paved rapid business growth and the rise of empires in the space of a few decades.

However, in some cases this change has come at the cost of a long term perspective. Traditionally the most successful businesses have been those whose strategy has struck a good balance between short term efficiency and long term return on investment.

Short term parochialism has often led companies into a vicious downward spiral; many reputations have been left in tatters in the pursuit of price and chasing cheap, almost always by sacrificing long term quality and service.

Increased pressure to conform to legislative and corporate social responsibilities has further intensified the burden on companies to deliver high quality, on time and under budget. For instance, the eco design directive covering electric motors, EC 640/2009, mandates that from January 1, 2015, all new motors must be equipped with a variable speed drive (VSD) by default.

In industrial applications a VSD is often used to control the speed of a motor. This increases efficiency and provides cost savings. However the process is not completely without drawbacks. In order to control the motor speed, the supply current is manipulated using pulse width modulation (PWM) for high frequency switching.

Our value proposition

Working with you to develop innovative, energy efficient and EMC compliant solutions for your electrical power control and power quality problems.
Providing technical expertise to deliver an enhanced return on investment through lower energy consumption, superior process efficiency and increased product life.

The resultant fixed voltage, variable frequency supply output, while able to control motor speed, creates unwanted electromagnetic interference (EMI) and harmonic currents, whose high frequencies can damage equipment. Overheating of transformers, windings and capacitors as well as interference on telecommunications equipment and metering apparatus can render equipment unusable.

European legislation has sought to solve the problem through the introduction of the IEC/EN 61800-3 directive, which makes it obligatory for manufacturers, panel builders and systems integrators to ensure that all equipment is electromagnetically compatible with surrounding devices.

It is the combination of these factors which ultimately impact the triple bottom line; price, people and planet. Procurement and finance managers must make decisions which not only impact profitability but also the people and environment around them. Although ever decreasing budgets require intense scrutiny of any expense, some simple changes can result in significant savings.

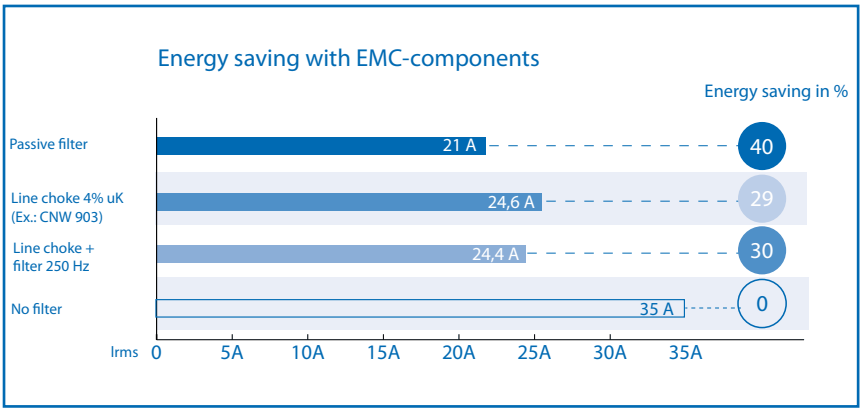
" A CNW 903 reactor can achieve savings of nearly $1000 in the first year alone; an incredible saving considering that the unit also increases motor life by reducing harmful harmonic currents and EMI. "

Price is the first 'P' of the triple bottom line. To provide original equipment manufacturers (OEMs) with a simple way to reduce energy costs, REO has developed an EMC compliant line reactor. The CNW903, three phase, high current line reactor removes harmonic currents and EMI from the power supply, reducing any voltage distortion, which could degrade or damage equipment.

The unit's small and efficient design has been achieved through careful selection of build materials and the application of design experience, which has resulted in a unit that requires much less panel space, and incorporates shielded terminals and protection covers.

In a typical example, a CNW903 reactor, costing only a little more than 75 dollars, used on a 4kW VSD, achieved such significant energy savings, that return on investment was realized in less than five weeks - amounting to nearly $1000 of savings in the first year alone. An incredible savings considering that the unit also increases motor life by reducing harmful harmonic current and EMI.

People are the second 'P'. As anyone that works in an industrial environment will know, working conditions on the factory floor can be demanding. Ear noise and hand protection is the norm. The CNW903 is able to eliminate excess heat, acoustic noise and component vibration - including mechanical stress on machinery, by reducing the overheating of in phase neutral conductors. This means a quieter and cooler working environment for everyone in the environment.



Planet is the final 'P'. By reducing energy bills, companies can expect to meet and exceed not only government targets for carbon emissions, but also corporate social responsibility goals. Green credentials and brand awareness is also enhanced.

So why is it that, even though equipment such as the CNW903 exists, many companies are yet to realize these cost savings and improve their return on investment?

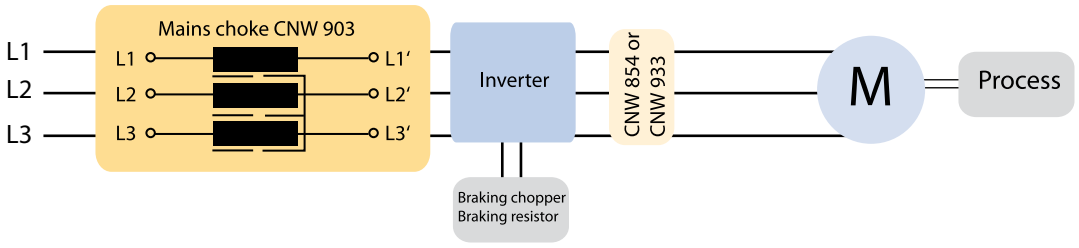
Three-phase line reactors (3 lines)
CNW 903

Description:
Commutation (current conduction between thyristors) for fast-switching semi conductors, PFC (Power Factor Correction)

- Conforming to: EN 60289 / EN 61558
- Test voltage: L-L 2500 V, DC 1s; L-PE 2500 V, DC 1s
- Rated voltage: V = 3 x 500 V
- Insulation material class: T40/F
- Protection: IP 00
- Climartic category: DIN IEC 60068-1
- Overload: 1.5 x INenn 1 min / h
- Construction: standing mounting profile

The advantages at a glance:

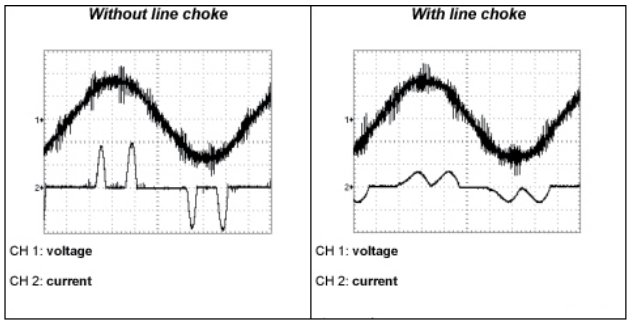
- **UL-listed**
- **compact construction**
- **low temperature rise**
- **connection via terminals or wire is an option**
- **low noise**
- **Manufacture concerning to UL insulation E251513**
- **Also available with high ingress protection (CNW M 903 IP), liquid cooled (CNW MC 903) or customer specific solutions**



Technical data:

Type	Rated voltage [V]	Rated current [A]	Inductance per branch [mH]	Copper approx. [kg]	Weight approx. [kg]
CNW 903/3	up to 3 x 500V	3	9,8	0,4	1,0
CNW 903/6		6	4,8	0,5	1,4
CNW 903/8		8	3,6	0,9	2,0
CNW 903/10		10	2,9	1,0	2,7
CNW 903/12		12	2,4	1,0	2,8
CNW 903/16		16	1,8	1,5	3,9
CNW 903/25		25	1,2	2,0	5,7
CNW 903/36		36	0,81	3,1	7,6
CNW 903/50		50	0,58	3,6	10,6
CNW 903/70		70	0,42	6,0	14
CNW 903/90		90	0,32	9,6	19
CNW 903/110		110	0,27	10,5	22
CNW 903/125		125	0,23	10,8	27
CNW 903/160		160	0,18	15,0	35
Higher ratings (CNW 903/200 up to CNW 903/1200) upon request					

The Comparison of harmonics graphs



Do you have an inquiry?
+1-317-899-1395

All reactors are available with high protection classes and encapsulated:

- The special design allows external mounting outside of the Inverter, without the need for an additional enclosure
- They are particularly robust
- Protected from dust, liquids and slurries

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