



# Press Release

Nippon Chemi-Con Corporation  
May 18, 2021

## Development of Iron-Based Nanocrystalline Common Mode Choke Coils FL-W Series

Nippon Chemi-Con has developed common mode choke coils FL-W Series, which have a 50% higher permeability than that of conventional products (FL-V Series) at 10kHz. We propose the Series as effective products for reducing size, weight and noise and improving performance of switching power supplies, inverter equipment and automotive equipment.

To date, we have commercialized the FL Series and the FL-V Series as common mode choke coils that use iron-based nanocrystalline alloys for magnetic materials. We marketed these products for applications such as noise filters for power input/output and DC lines.

The frequency characteristics of the new FL-W Series have been further improved from the conventional FL-V Series by improving the characteristics of magnetic materials.

More specifically, while maintaining high permeability at 100kHz, which is the characteristic of the conventional FL-V Series, the permeability at 10kHz has been improved by approximately 50%. The impedance is also improved from the conventional FL-V Series in a wide frequency band up to several hundred kHz. (The following is in the case of coil design: impedance improvement of approx. 30% at 10kHz and approx. 10% at 100kHz)

		FL-V		FL-W (compared to FL-V)	
		Permeability*1	Impedance*1,*2	Permeability*1	Impedance*1,*2
Frequency	10kHz	68000	830Ω	100000	1100Ω(132%)
	100kHz	31000	5900Ω	31000	6700Ω(113%)

\*1: Typical value

\*2: Example for coils with - coil size [mm]: external diameter 31 x width 21,  
copper wire: φ1.0mm, turns: 16

Coil size [mm]: external diameter 16 x width 12 to external diameter 50 x width 33  
Coil specifications (reference):

rated voltage - 250V to 700V, rated current - 3.5A to 39A

inductance - (10kHz) 3.5mH to 38mH, (100kHz) 1.0mH to 11.5mH

[Samples and Mass Production]

The FL-W Series is already available as samples and mass production is scheduled to start after September 2021. They will be produced at Chemi-Con East Japan Corp. Iwate Plant (a wholly owned subsidiary of Nippon Chemi-Con).

[Product Appearance]

