RECOMMENDED NOISE FILTER FOR THE FR-HC2 SERIES HIGH POWER FACTOR CONVERTERS

The following introduces a recommended noise filter for the FR-HC2-H400/560K.
Install this to reduce the electromagnetic noise.

1. Connection and components of the recommended noise filter

The noise filter composed of zero-phase ring cores and damping resistors is connected to the input side of the FR-HC2 as shown in Figure 1. Use the FINEMET® ring cores (manufactured by Hitachi Metals, Ltd.) and the Mitsubishi FR-ABR damping resistors.
For the model and quantity of the components, refer to the Table 1.
For wiring instructions of using peripheral equipment with FR-HC2, please refer to the instruction manual of FR-HC2.

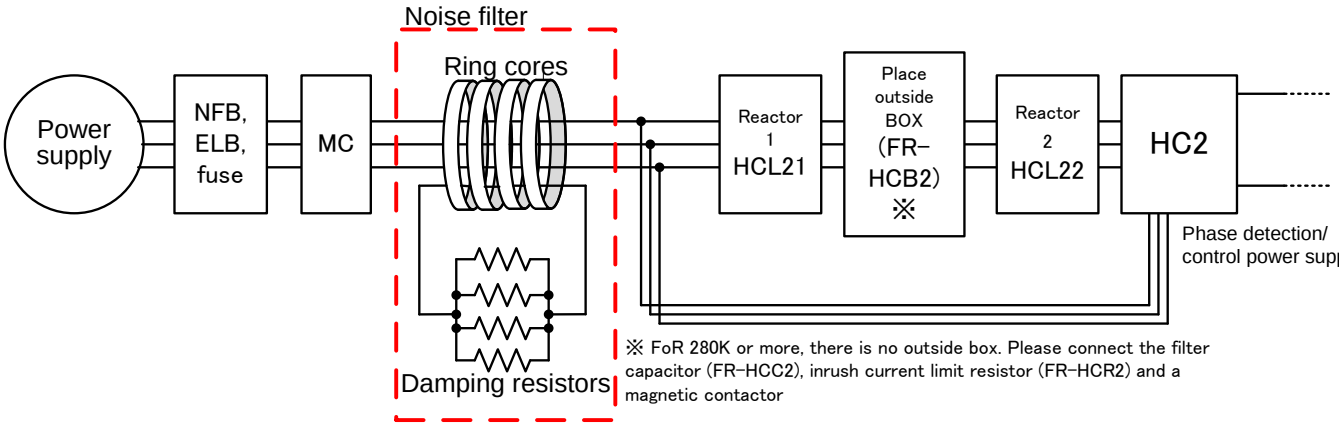

Figure 1: Noise filter connection diagram

Table 1: Noise filter components

Item		FR-HC2-□		
		H110K/H160K/H220K	H280K	H400K/H560K
Ring core	Model	FT-3KM F11080GB (*1)	FT-3KM F140100PB (*1)	FT-3KM F200160PB (*1)
	Quantity	4 pcs (penetrated)	4 pcs (penetrated)	4 pcs (penetrated)
Damping resistor	Model	FR-ABR-H22K (*2)		
	Quantity	4 pcs in parallel (combined resistance: 13 Ω)		
Damping resistor wire	Wire diameter	5.5 sq or more AWG 10 or less (when used THHW wire etc) 6 sq or more (when used PVC wire etc)		
	Wire length	As short as possible within 10 m		

*1: Manufactured by Hitachi Metals, Ltd.
Contact: <North America Chicago Offic e>
・Company name: Hitachi Metals America, Ltd.
・Tel: 847-364-7200
・Address: 2010 S.Arlington Heights Road Suite 116 Arlington Heights ,IL 60005-4142

*2: The FR-ABR-H22K set consists of two resistors.
Order two FR-ABR-H22K resistor sets to have a total of 4 resistors.

2. Precautions

・ Refer to the instructions given in the Instruction Manual of each component.

・ The FR-ABR requires 5 cm clearance around it for directions.
Besides, the distance between the damping resistors requires 1 cm or more.

3. Registered trademark

FINEMET is a registered trademark of Hitachi Metals, Ltd.

Supplement

The leakage current flowing through the route indicated by the arrow in Fig.2, can be suppressed by the filter on the primary side of FR-HC2 as shown in the connection example on the previous page.

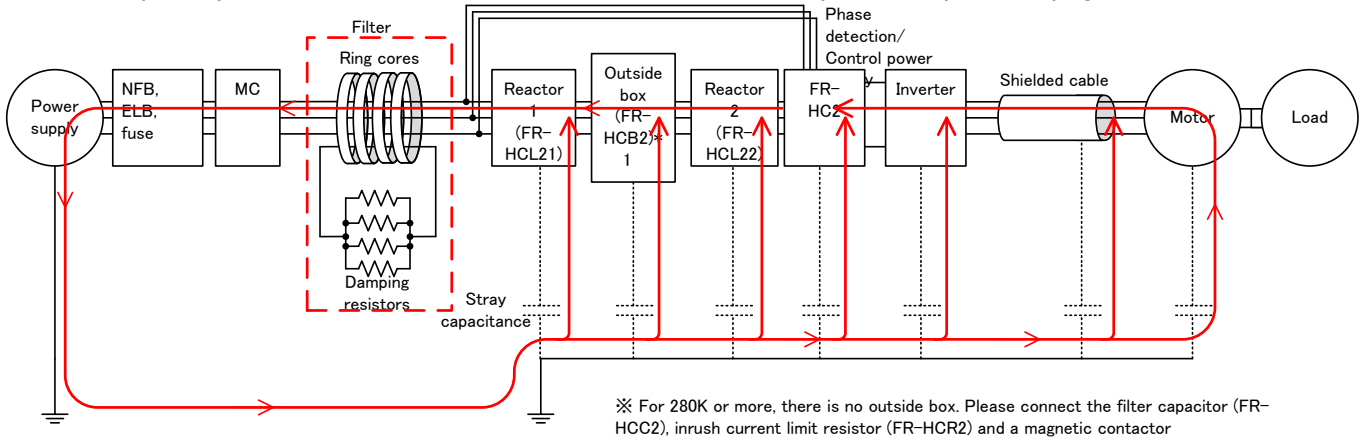

Figure 2 Leakage current propagation path 1

However when the leakage current generated from the inverter or FR-HC2 flows in the path indicated by the arrow in Fig.3, will not pass through the filter on the primary side of FR-HC2, so the suppression effect cannot be obtained. In that case, leakage current can be suppressed by attaching a ring core between the inverter and the motor as shown in Fig.3

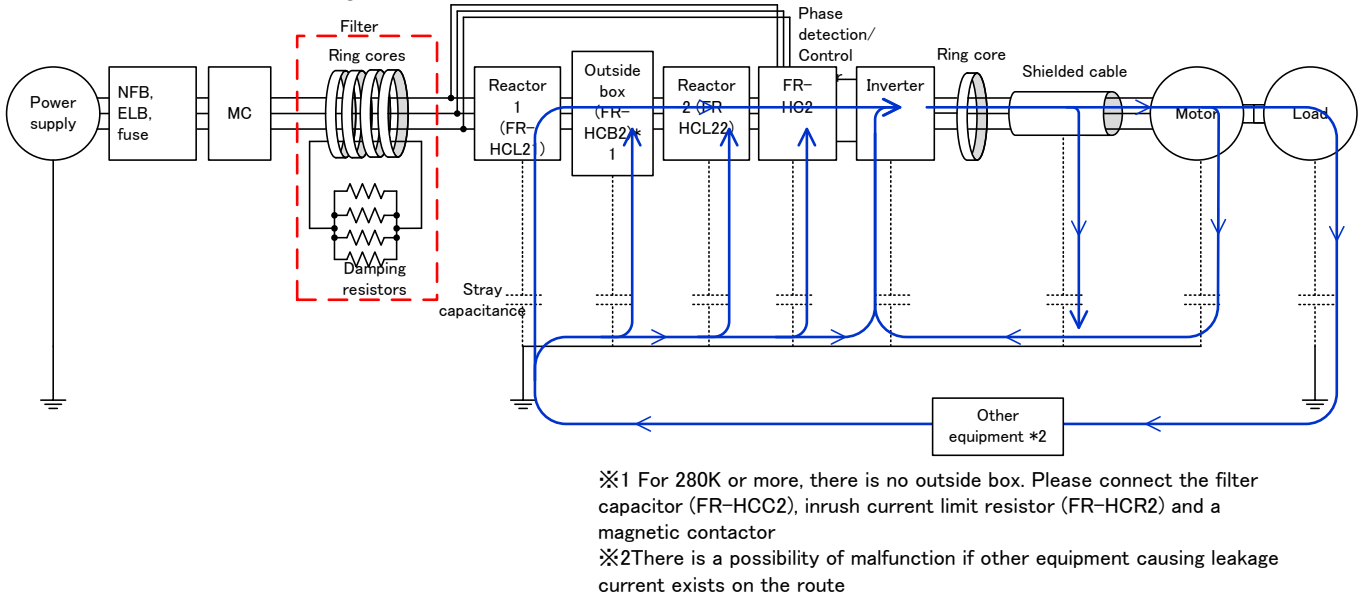

Figure 3 Leakage current propagation path 2